



aerospace  
 climate control  
 electromechanical  
 filtration  
 fluid & gas handling  
 hydraulics  
 pneumatics  
 process control  
 sealing & shielding



# Industrial Tube Fittings Europe

Technical handbook/Catalogue 4100-9/UK



ENGINEERING YOUR SUCCESS.



### **For your safety!**

Under certain circumstances, tube fittings can be subjected to extreme loadings such as vibration and uncontrolled pressure peaks.

Only by using genuine Parker Components and following Parker assembly instructions can you be assured of the reliability and safety of the products and their conformity to the applicable standards.

Failure to follow this rule can adversely affect the functional safety and reliability of products, cause personal injury, property damage, and result in loss of your guarantee rights.

Subject to alteration

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**A****B****C****D****E****F****G****H****I****J****K****L****M****N****O****P****Q****R****S****T****U**

# Parker Hannifin – Professionals in System Solutions

aerospace  
climate control  
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hydraulics  
pneumatics  
process control  
sealing & shielding



Parker Hannifin is the world's leading manufacturer of motion and control technologies. The Company develops and designs systems and precision solutions for mobile and industrial applications as well as for the aerospace sector. It has around 55,000 employees in 46 countries.

The Company's main business objective is to help customers achieve maximum productivity for their applications with the support of professional Parker engineers. This is achieved through innovative, top quality and reliable proprietary products quickly available from a worldwide sales and distribution network. Parker is the consummate provider of customised system solutions.





# The strength of Parker

Under the umbrella of the Fluid Connectors Group Europe, Parker Hannifin brings together the connector technologies of brands such as Ermeto, Legris Transair, Legris Connectic, Legris Autoline, Polyflex, ITR, Rectus and Tema. Whether it be tube fittings, hose fittings or hoses, Parker offers the most comprehensive range available from a single supplier.

As part of the Fluid Connectors Group Europe, Tube Fittings Division Europe (TFDE) is one of largest businesses in Parker. The foundation stone for enduring business success was laid with the development of the Ermeto cutting ring. Nowadays, flanges, valves, tubing, measuring systems, and tube forming and pre-assembly machines, besides the classic DIN and SAE fittings, are manufactured in several locations.



Whether standard parts or application-specific special developments, the Parker product programme offers an appropriate solution for every customer requirement.

# Markets Create Brand Names

## Suitable Designs for Every Need

Partnership through cooperation with the customer is the defining characteristic of Parker's product policy. With a keen sense of the customer's needs and the requirements of different markets, Parker's engineers develop appropriate solutions.

Finally, these are products which have world-wide recognition as a byword for consistently high quality of materials and manufacture, and reliable functionality.



### EO-PSR

**The world's most widespread high-pressure fittings system.** Highest pressure resistance and extreme corrosion resistance thanks to Cr(VI)-free surfaces. Perceptibly reduced tightening torques. Considerable assembly advantages.



### The tried and tested Dry Technology concept.

Has a large volume elastomeric seal on the tube side and Cr(VI)-free surfaces, which are very corrosion resistant. Suitable for 800 bar (PN) in S Series and up to 500 bar (PN) in the L Series.

### EO-2





## E02-Form

**The positively locking high-pressure form connector.**  
Special features – classical E0-2 sealing ring and cold-formed tubing. Impressively superior mechanical strength and maximum pull-out resistance. For 800 bar (PN) in S Series and up to 500 bar (PN) in L Series.



## O-Lok®

**Fittings series with face-side O-ring seal.**

Suitable for a wide range of tube wall thicknesses. Applicable to metric and inch tubes and hose connections.

## 37° flare system.

The most widely used fittings system for inch tubes. For pressures up to 500 bar for smaller sizes and up to 140 bar for larger dimensions.

## Triple-Lok®



## The Parker Service Master Plus.

**Portable multi-function handheld measuring instrument.**

Measures, stores, monitors and analyses pressure, temperature, flow and rotational speeds. Multiple measurement and triggering methods. Measurement and display of more than 50 channels.



# Certified products are...



The Parker management of quality and environment is certified by ISO 9001, ISO/TS 16949, DIN/EN/ISO 14001 and IRIS.



...official proof for the user that Parker components satisfy the highest standards for design features, material quality and machining. When applying the product at the point of installation, approval is frequently an absolute necessity.

Whether ABS, LR or DNV, Parker products regularly pass the international and independent accreditation bodies' stringent tests. So suitability for reliable application even under the toughest conditions is officially confirmed.





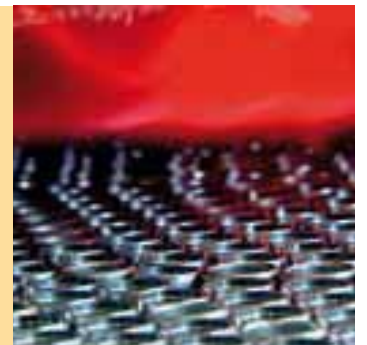
## ...of excellent quality

The manufacture of quality high-performance fitting components starts already at the ordering stage for the crack-tested primary material, which must be in accordance with Parker material specifications specially determined for product manufacture. Through the processing stages required both before and after production, those properties which will fulfil constantly increasing material requirements are guaranteed.

To ensure that the high quality of the materials used and the tube fittings made from them are guaranteed, continuous tests e.g. spectral analysis and dye penetration tests, are carried out in our own laboratories and testing facilities. The fittings systems' resistance to corrosion and static and dynamic loads are put through their paces on in-house test stands.



Top-class products result from selected materials and the most up-to-date manufacturing methods. Functionally reliable and durable. Quality pays off.



# The Parker Training Programme

The Tube Fittings Division Europe's education programme is widely diversified. From theoretical product training through to practical instruction, a large variety of training opportunities is offered. This multiple choice training concept from Tube Fittings Division Europe, in addition to the regular events at the Bielefeld location, also offers the possibility of arranging

customer-tailored in-house training. These training units are executed with the support of the very latest media and take place in modern teaching rooms. With the knowledge they will have gained, participants are in a position to operate more efficiently and to select and use the TFDE fittings programme advantageously and safely.



Basic or for experts – Parker offers a broad range of trainings. Tailormade for individual requirements.



Montage in der Praxis  
Assembly in practice

ENGINEERING YOUR SUCCESS.

Montage in der Praxis  
Assembly in practice  
TFDE CD 4153-UK/DE  
Version 1.0



- Formschlüssige Verbindung
- Einfache Montagekontrolle
- Geringe Fehlermöglichkeiten
- Kein Herausreißen des Rohres  
unter Montage





# Service before and after sales

To support its products, Parker offers its customers a comprehensive selection of services, i.e.

## **The Parker Store**

Providing outstanding expert consultation, it was one of the first self-service shops for hydraulic and pneumatic fittings – and much more besides. It offers immediate manufacture of hose assemblies. Up to 3,000 items from stock.

## **Parker Hose Doctor**

This emergency service can be reached via a toll-free hotline 24 hours a day, 7 days a week. Hose Doctor vans have fully-equipped workshops, spare parts and hydraulic oils on board. This enables the technician to rapidly replace faulty assemblies on site.

## **Tech Services**

Together with the customer, Parker engineers assess on site the optimal operation of the equipment in question. They are present from the design stage through to installation and carry out training for operatives.

**More than a product:**  
Parker offers an elaborated service to the customers.

## **Kitting Services**

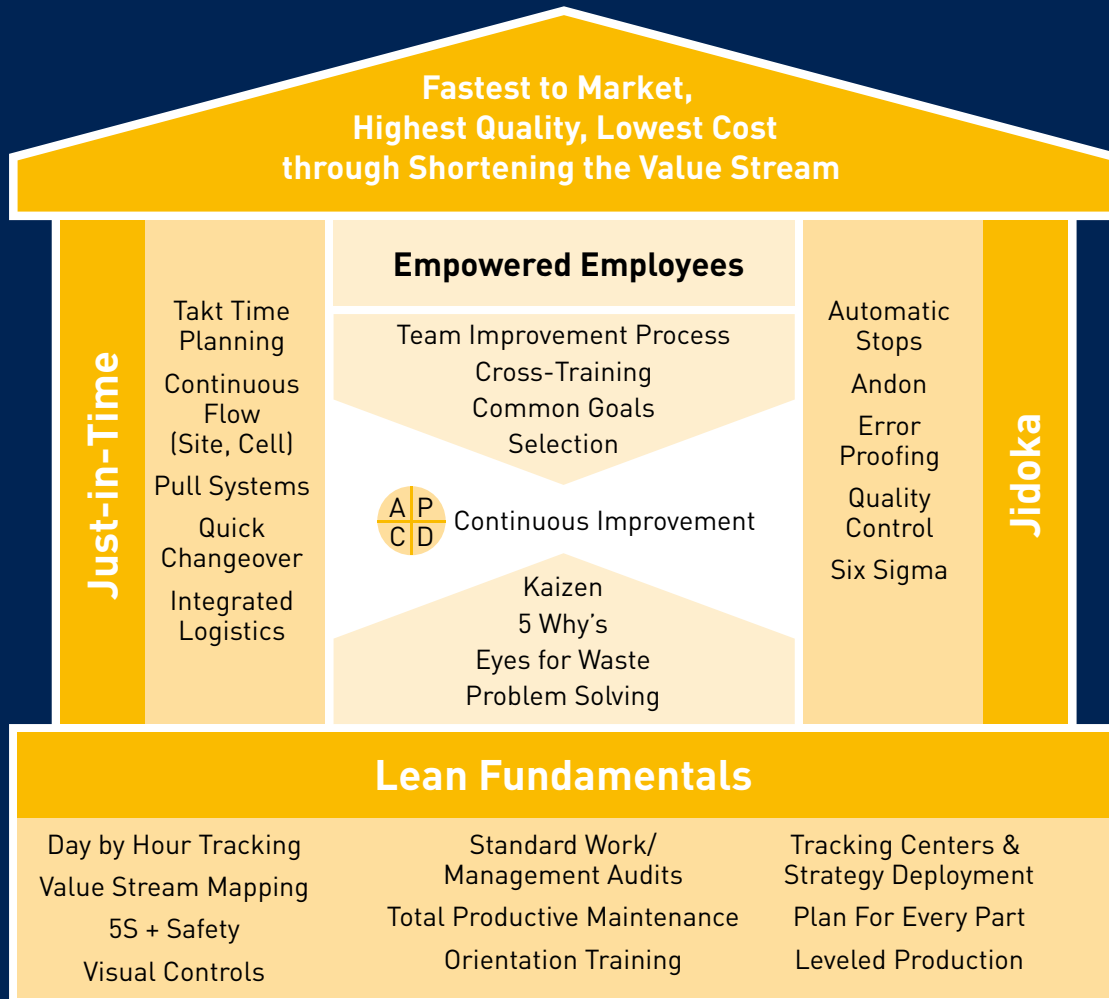
Should the customer require a particular set of fittings and related items, Parker can supply these items under a single reference number as a totally complete assembly set.

## **Parker Logistic Services**

Parker products can be supplied either directly from Parker or through a certified distributor on a just-in-time basis straight to the assembly point.



# LEAN – customer satisfaction is the supreme commandment



Whether development, manufacturing, distribution or after-sales service, all these Parker business segments making up the value creation chain are guided by the LEAN principle. The objective of this is to accelerate all working processes continuously, improve their quality and liberate them from unnecessary burdens. Adherence to delivery dates, an attractive cost-benefit ratio and consistently high product quality are the key customer benefits of this business philosophy.

The LEAN strategy followed by Parker is a constant striving for perfection in development, production and distribution. Everything is for the benefit of the customer.



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# ***Function of fittings***





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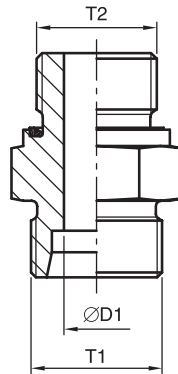
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## Function of fittings

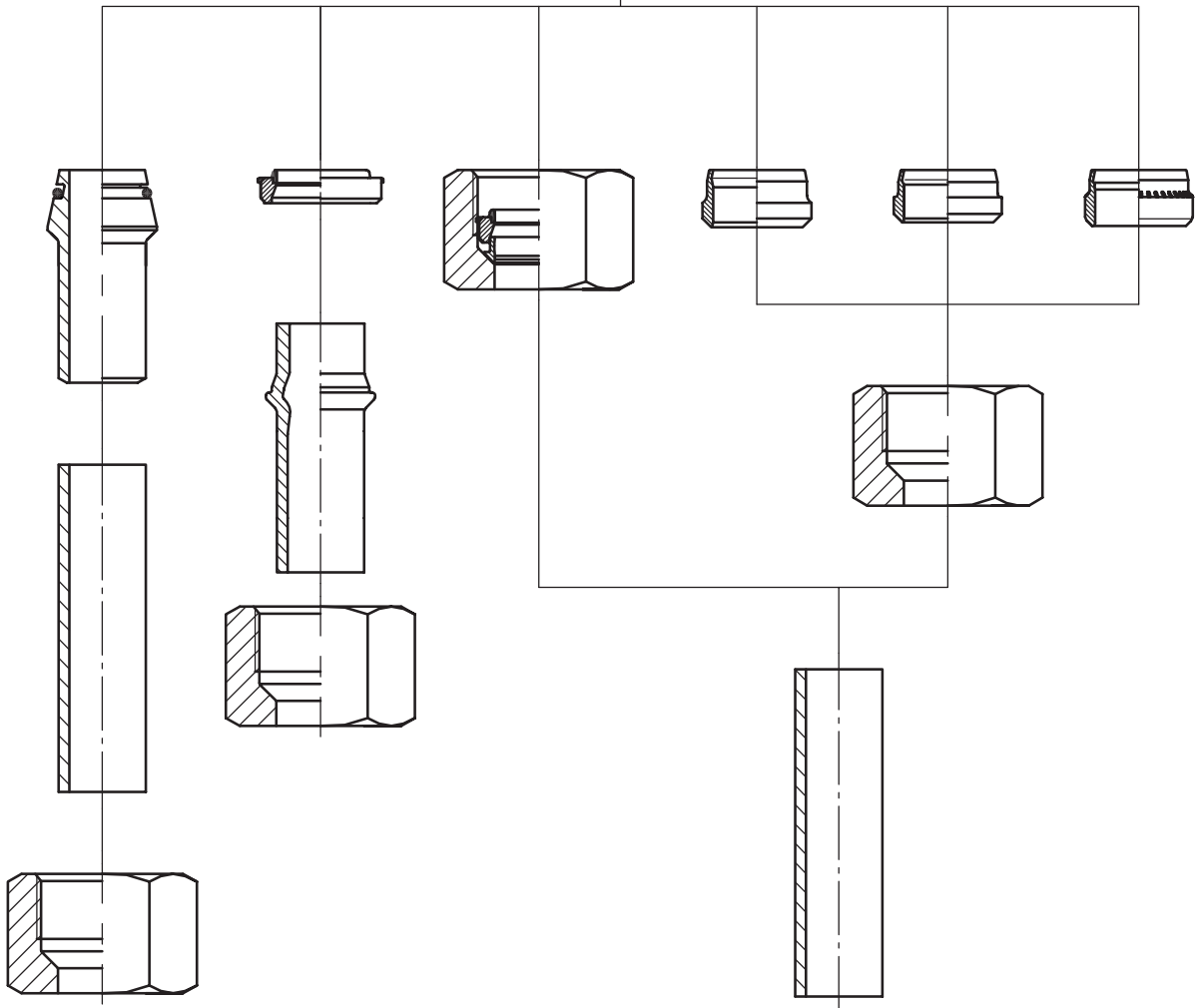


### 1) Weld nipple for steel and stainless steel EO-DUR fittings, series L+S

- Excellent leakage free performance due to elastomeric sealing element
- Low requirements on tube quality

### 2) E02-FORM Soft sealed tube forming system for steel and stainless steel EO-DUR fittings, series L+S

- Based on EO-2: Optimal leak free performance due to replaceable elastomeric sealing element
- Cutting ring free – best possible alternative to welding for applications, where form closing connections are required
- Assembly-proof – reduction of error sources due to machined pre-assembly/tube forming



### 3) EO-2 Soft sealed bite-type system for steel and stainless steel EO-DUR fittings, series L+S

- Optimal leak free performance due to elastomeric sealing element
- Easy assembly "on block" – also directly in fitting body
- Safety due to clear assembly check
- Replaceable sealing element

### 4) Cutting ring for steel and stainless steel EO-DUR fittings, series LL, as well as brass fittings, series L+S

- For decades approved cutting ring
- Tube clamping to transfer vibration and to protect the tube within the cutting area
- Spring effect – no settlement of the nut

### 5) DPR EO-progressive ring for stainless steel EO-DUR fittings, series L+S

- Especially adjusted to the requirements of stainless steel
- Optional in "SPH" finish – thereby despite of hardening no loss of corrosion resistance

### 6) EO-PSR Progressive Stop Ring for steel fittings, series L+S

- 2 cutting edges for optimal holding function and tear-off protection
- Over-assembly protection due to clear noticeable increase in force and stop shape
- Tube clamping to transfer vibration and to protect the tube within the cutting area

## EO-PSR: Progressive Stop Ring for steel fittings

### Introduction

The worldwide well-established high-pressure-fitting system is characterized by the highest pressure, Cr(VI)-free surface treatment with significantly higher corrosion resistance, and considerably reduced tightening torques.

The ingenious invention of the cutting ring system was made by the founder of Parker Ermeto in the late nineteen twenties. In 1934, this idea was patented and today it is just as useful as it was on the very first day. Considering the range of applications, quality, reliability and functional safety, the principle of the Parker's cutting ring fitting has been a leading system up to today.

Of course, this has only been possible by continuously adapting the original invention from 1934 to the practical requirements of state of the art technology. Thus, the first Parker Ermeto cutting ring has little left in common with the latest multifunctional EO-PSR cutting ring, the heart of EO-PSR.

The EO-PSR fitting meets the requirements of modern hydraulic systems. This is especially true for applications where the systems are exposed to extremely high loads.

EO-PSR is designed for metric tube and based on German Standards DIN 3861 and DIN 2353, which today are represented by the international standard ISO 8434-1. EO-PSR is available in "L"- and "S"-Series.

The EO-PSR (Progressive Stop Ring) is available for the steel fitting range. For stainless steel applications, the Progressive ring DPR 71 is used and the Cutting ring for brass fittings and series LL.

### EO-PSR fitting features

The EO-PSR fitting produces high pressure, leak free connection of tubes and components in hydraulic systems. The basic function of EO-PSR is the controlled progressive bite of the EO-PSR into the tube due to a unique internal geometry.

The front cutting edge (A) has already started cutting into the tube before the second cutting edge (B) begins. As soon as both cutting edges have cut into the tube to the designed depth further advance is limited by the stop shape (C) and the new overtightening protection (D). Additionally, the special form of the EO-PSR with its dimples at the front shoulder section gives an assembly state control.

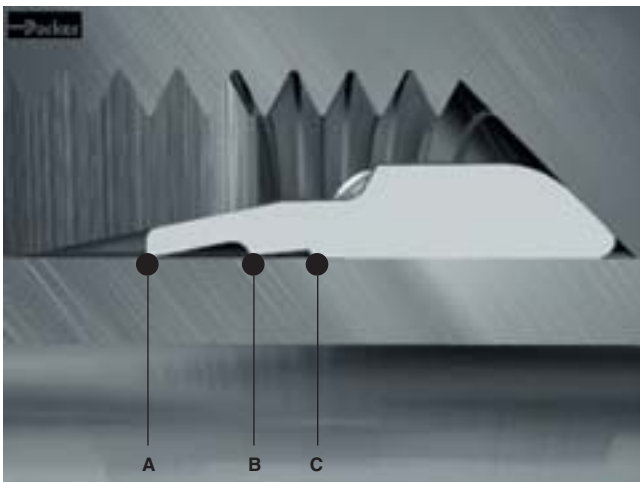
Owing to the design of both cutting edges and stop shape all forces arising are equally distributed. This distribution along with the specially designed interior collar (E) of the ring guarantees increased safety, particularly with regard to vibration and flexure stresses. Service vibration loading is not present in the areas of the tubing where the bite is made.

The stop shape as well as the overtightening protection cause a clear sharp increase in tightening forces. After assembly, a visible collar (F) of cut tube material must completely fill the space in front of the first cutting edge.

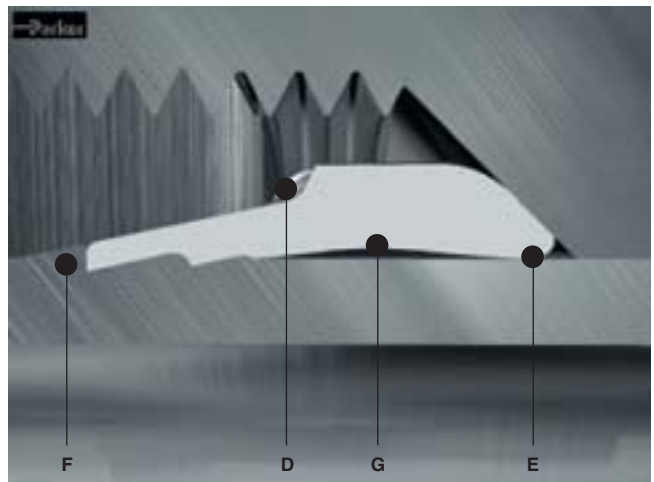
A slight bowing up of the ring (G) is desirable. This spring effect provides permanent compensation for flexural vibration and settling effects in the thread of the fitting nuts.

### Assembly

Assembly process is according to the EO-Progressive ring instruction. The design allows a 100%-pre-assembly for an easier final assembly.



Before tightening the nut



After tightening the nut



## Features, advantages and benefits of EO-PSR fittings

- **High corrosion resistance** – The Cr(VI)-free surface treatment causes an average corrosion resistance of more than 500 hours to white rust.
- **High pressure** – Due to the application of even better materials combined with the special processing of individual components, EO-PSR can be used in applications of up to 800 bar (S series) and 500 bar (L series). EO-PSR considerably exceeds the DIN/ISO requirements and guarantees a 4-fold design factor. Thanks to the higher pressure levels, less expensive “L” series fittings can now be used instead of the heavier “S” series, which also is of benefit in limited or tight space applications.
- **EO-LUB** – Due to the special treatment of the larger sized nuts by the EO-LUB procedure (25S/28L and larger), the tightening torques of EO-PSR fittings have been reduced by 25%. This makes assembly easier and prevents underassembly, the most common reason for tube fitting failure.
- **Safe assembly** – Two distinctive cutting edges provide a progressive increase of the tightening torque of the EO-PSR. The noticeable end point of assembly contributes to maximum safety of assembly, and the multifunctional ring geometry prevents over-tightening.
- **Overtightening protection** – The special geometry of the EO-PSR prevents the overassembly of EO-PSR fittings.
- **Spring effect** – Thanks to the spring effect, re-tightening of the fitting is not necessary. Upon the completion of the assembly (due to the geometry, material and heat treatment) an elastic initial tension is achieved which compensates displacement effects in the thread and at the bite point of the tube.
- **Cr(VI)-free** – Due to its Cr(VI)-free treated surface, Parker Ermeto meets the requirements of the automotive industry which prohibits the use of Cr(VI) since 2007. The removal of Cr(VI) reflects Parker’s ongoing commitment to an environmentally clean and safe production process.
- **Worldwide availability** – EO-PSR is available worldwide and meets the requirements of the applicable standards for 24° cutting ring fittings. The multifunctional EO-PSR can be used with all types, series and dimensions of the wide range of EO-PSR fittings.

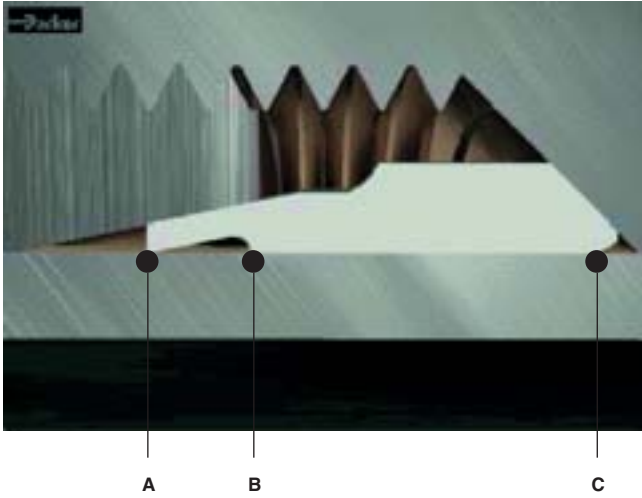


The multifunctional EO-PSR

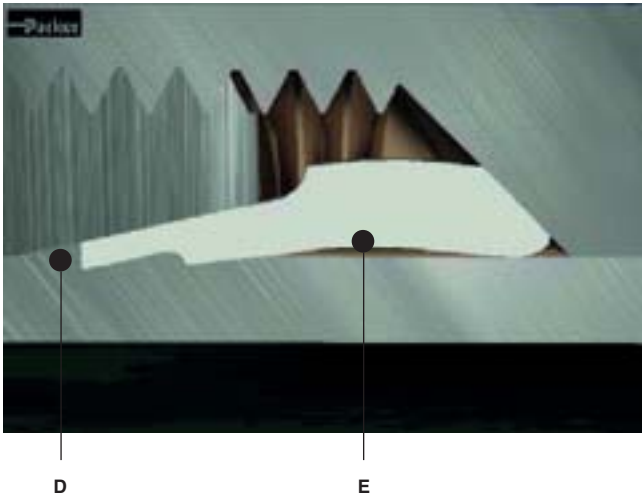


Classical application of the EO-PSR: Cranes

## EO-DUR Progressive Ring DPR for stainless steel fittings



Before tightening the nut



After tightening the nut

The proper assembly result is achieved by 1½ turns of the nut.

### The function of the EO stainless steel progressive ring fitting

The EO progressive ring fitting produces a low to high pressure, leak free connection of tubes and components in hydraulic systems. The basic function of the EO progressive ring is the controlled progressive bite of the ring into the tube due to its unique internal geometry. The design of the EO-DUR stainless steel progressive ring is based on three essential functions.

The front cutting edge (A) has already started cutting into the tube before the second cutting edge (B) starts. As soon as both cutting edges have cut into the tube to the designed depth further advance is limited.

Owing to the design of both cutting edges all forces arising are equally distributed. This distribution along

with the specially designed interior collar (C) of the ring guarantees increased safety, particularly with regard to vibration and flexure stresses. The design and function of the cutting ring ensure that service vibration loading is not present in the areas of the tubing where the bite is made.

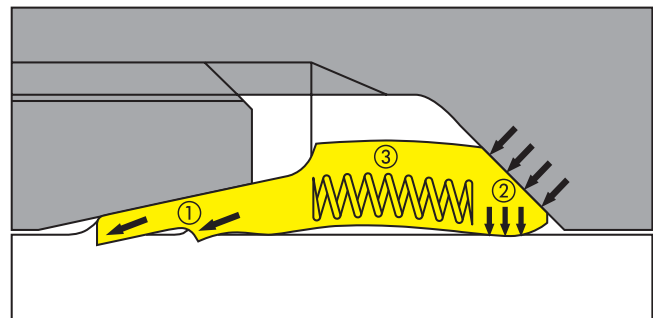
After assembly, a visible collar (D) of cut tube material must completely fill the space in front of the first cutting edge. With stainless steel tube and standpipe hose connections, the collar is smaller due to the harder material.

A slight bowing up of the ring (E) is desirable while this happens. This spring effect provides permanent compensation for flexural vibration and setting effects in the thread of the fitting nuts.

All EO-DUR stainless steel fittings show a special progressive ring design for best performance with stainless steel tubes. LL – series fittings and all brass fittings are equipped with a single bite “D”-ring.

### The spring effect

$$\textcircled{1} + \textcircled{2} + \textcircled{3} = 1\frac{1}{2} \textcircled{R}$$



The 3 vital effects of Progressive-Ring assembly: sealing (1), tube clamping (2), spring effect (3).

During assembly of the EO progressive ring fitting, three essential functions are achieved:

#### ① Tube bite

The tube bite guarantees the leak free sealing and ensures the necessary holding power for high operating pressures. After assembly, a collar of cut tube material in front of the cutting edge is the visible control for the proper function of the connection.

#### ② Tube clamping

The rear section of the progressive ring is designed for clamping the tube firmly. This ensures that service vibration loading is not present in the tube bite area.

### ③ Spring effect

Towards the end of assembly, the special EO progressive ring design, material and heat treatment allow a defined elastic deformation of the ring. This spring effect compensates subsidences of tube bite and threads, thus ensuring long term leakfree performance without retightening.

### EO-DUR stainless steel products with silver plated threads

All threads of the EO-DUR stainless steel nuts are surface treated to reduce the tightening-torques by 40 % compared to non treated products. The treatment also avoids galling of the threads. Nuts larger than size 12S/15L are delivered with silver plated threads, all smaller sizes are treated with a special wax.

### The EO-DUR Suparcased SPH cutting ring

On the basis of the proven progressive ring design, the suparcased stainless steel bite-type ring has been developed especially for aggressive internal and external media. The special geometry and thermochemical hardening process guarantee a permanently leak-proof and corrosion-resistant connection under extreme conditions. Typical applications are in the food, chemical and medical industries as well as in process engineering.

### Common features, advantages and benefits of the EO Bite type system

- **Field assembly** – EO progressive ring fittings can be assembled anywhere with just a couple of wrenches. For stainless steel tube simple presetting tools are available. No additional equipment or machine is required.
- **Low cost assembly** – Using an EOMAT machine is the most economic method to preassemble EO rings onto tube ends. Whereas the actual preassembly process only takes some 1.4 seconds on the EOMAT, the total “floor-to-floor” time averages around 15 seconds.
- **3 series** – Very Light (LL), Light (L) and Heavy (S) series can be individually selected. For each application there is a solution for best flow rate, sufficient pressure resistance, smallest envelope size, low assembly force and minimum fitting cost.
- **Available sizes** – Most EO fittings are available in 25 sizes from 4 to 42 mm tube OD. Additional reducers allow optimum dimensioning of each individual fluid line. This saves space and material costs.
- **Tube wall** – EO fittings are suitable for use with light wall, medium wall, heavy wall, and extra heavy wall tubing. Light wall tube may require support sleeve (VH). Usage of VH, see chapter E.



Top to bottom: EO Heavy (S), Light (L) and Very Light (LL) series:  
Best choice for each individual application  
(Illustration: Straight union 6 mm tube OD)

- **Tube material** – Even plastic tubes such as nylon, polyurethane, chlorinated polyvinyl chloride (PVC) or Polytetrafluoroethylene (PTFE) can be easily connected by using additional support sleeves E.
- **Visible bite** – The critical ring to tube front bite is clearly visible to tube fitters & inspectors. The presence of the recommended bite virtually eliminates any risk of catastrophic blow-off. This is a very important safety feature.
- **Reduced torque** – All nuts of EO-fittings are coated with a highly effective lubricant. Reduced assembly effort helps to prevent underassembly which is the most common reason for bite type fitting failure.
- **Sealing capability** – EO fittings have demonstrated a remarkable ability to remain leak free under various service conditions ranging from sealing high vacuum and small molecule gases to high pressure hydraulic fluids.
- **Distributed stresses** – Stresses due to flexural loading in service are distributed at several points in the joint, thus stress concentration in the bite is minimised.
- **Vibration control** – The rear bevel of the ring firmly grips tubing, thus dampening the effects of system vibration in the joint.
- **Envelope size** – EO fittings are comparatively small and compact, making them a suitable selection for tube connections in limited or tight spaces.
- **Temperature rating** – EO fittings are suitable for sub zero through elevated temperature applications. Service temperature rating is limited by the material chosen.

## Function of fittings

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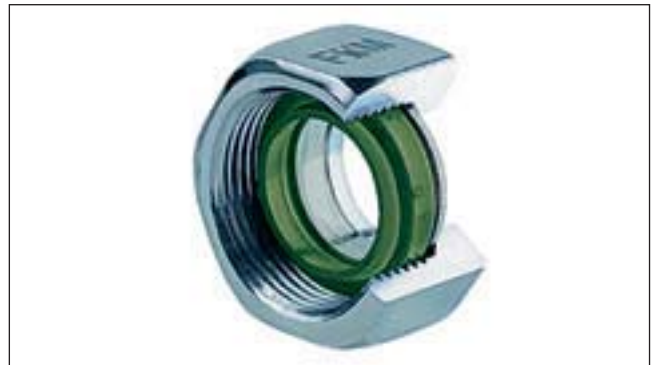
- **Compatibility** – Since EO fittings can be manufactured from a wide range of metals, compatibility factor with various fluids and atmospheric conditions is extensive.
- **Manufacture** – EO fittings are manufactured under tight quality controls which ensures that the product routinely satisfies or surpasses the requirements of the pertinent military and industrial standards. All manufacturing locations are ISO 9001 certified.
- **Silver plated nuts** – Stainless steel tube nuts are pre-lubricated with silver plated threads (size 15L – 42L, 12S – 38S). The threads of smaller sized stainless steel nuts are waxed. Thread galling is eliminated and assembly torque is reduced by as much as 40 percent. The EO-DUR treatment increases the speed and efficiency of stainless steel fitting assembly.
- **Tube length determination** – Exact tube length and bending can easily be checked by just trying out before assembly. This makes on-site piping very efficient.
- **Broad range of configurations** – EO fittings are available in more than 50 configurations. Especially for orientable fittings there is a wide variety of banjos, adjustable elbows or swivel combinations that allow an optimum solution for each application.
- **Functional fittings** – A variety of rotary fittings, non-return valves, Shut-off valves and test point connectors are available with the original EO-joint. This greatly reduces assembly time and cost of additional fittings and also eliminates possible leak paths.
- **True metric design** – EO fittings are designed to metric standards. All threads, hexagons, bores and other dimensions are purely metric.
- **No restrictions** – All bores of each fitting fit the inner diameter of the matching tube. LL, L and S-Series fittings are designed for best flow rate with thin, medium and heavy wall tube. Therefore, best performance without excessive noise or heat generation is always guaranteed.
- **World wide popularity** – The bite type fitting has worldwide acceptance. Most European, Asian, African and South American industry standards are purely metric. But also in Australia and Northern America DIN bite type fittings are gaining acceptance due to the metrification and end user specifications. Many machine operators prefer fittings that can be assembled without any additional equipment.

## EO-2

### Introduction

The common feature of all EO-2 fittings is elastomeric seals on all joints. These are also now available in FKM for applications with higher temperatures or aggressive media. This assures leak free operation without retightening – even under extreme working conditions. The easy handling, time and cost saving features, and many assembly advantages of the unique EO-2 functional nuts have made EO-2 fittings increasingly popular.

EO-2 is designed for metric tube and based on German Standards DIN 3861 and DIN 2353, which today are represented by the international standard ISO 8434-1. EO-2 is available in “LL”, “L”- and “S”-Series.



The Cr(VI) free EO-2 functional nut also with FKM sealing ring. Easy to handle and fast to assemble.

### Function of the EO-2 fitting system

#### Elastomeric sealing

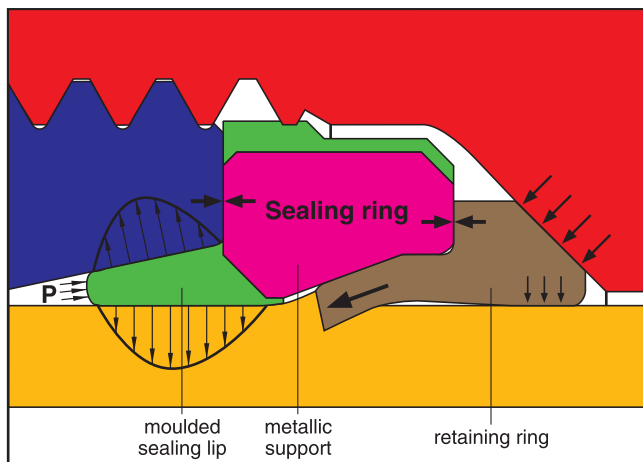
The elastomeric seal assures a hermetically sealed tube joint. It is located between the inner cone of the fitting body and the tube surface, thus blocking the only possible leak path. Due to its large cross-section, the seal effectively compensates for all manufacturing tolerances on tube and fitting cone.

The sealing effect is pressure supported which makes the EO-2 fitting suitable for high pressure applications. The static compression also eliminates air-ingress into the fluid system at vacuum conditions.

Elastomerically sealed EO-2 fittings do not require any retightening even in heavy duty applications. Seal extrusion is prevented by proper housing without gaps or dead volume. The sealing lip is bonded to a metallic support ring.



EO-2: Safe dry – clean – leakfree



The metallic support of the sealing ring acts just like an integrated pre-assembly tool.



Before tightening the nut



## Function of fittings

### Assembly “to block”

The retaining ring bites into the tube in accordance to the proven bite ring principle. The support ring reduces the danger of over- or underassembly by a special EO-2 design feature: Before assembly there is a gap in between the flat surfaces of the retaining ring and the metallic support ring of the seal. As soon as the retaining ring has reached the proper bite depth, the gap closes, resulting in a sharp increase of assembly torque. This results in uniform and reliable fitting assemblies. The assembly result can easily be inspected by just checking if the gap is closed.



After tightening the nut

Closing the gap at the end of assembly provides a clear “Hit-Home-Feel”.

The separation of sealing and fixing function to two separate elements finally allows a more effective solution of the over- and undertightening problems of bite type fittings than increasing the number of cutting edges.

### Integrated assembly tool

The metallic support ring of the seal is made of a special design, material and heat-treatment to act as a assembly tool. This makes sure that the retaining ring securely cuts into the tube surface without damaging the sensitive inner cone of the fitting body.

This unique feature of EO-2 fittings even allows direct assembly of stainless steel tube without any additional pre-assembly process. An EOMAT machine can be used to allow easy assembly of large dimension tube and drastically save total assembly time, effort and costs.

The integrated assembly tool of EO-2 fittings even helps to save further costs and trouble when using an EOMAT-type presetting machine:

As the presetting cone is only in contact with the elastomeric sealing lip, it cannot be worn out or damaged even

after thousands of assemblies. This does not only save replacement costs but also avoids leakage problems caused by worn presetting tools.

### The functional nut

The unique functional nut simplifies handling of fitting components and helps to minimise storage and procurement costs. The sealing and retaining rings are combined as a pair and are inserted into the internal thread of the nut in such a manner that they cannot fall out, so that these three parts form one functional element.

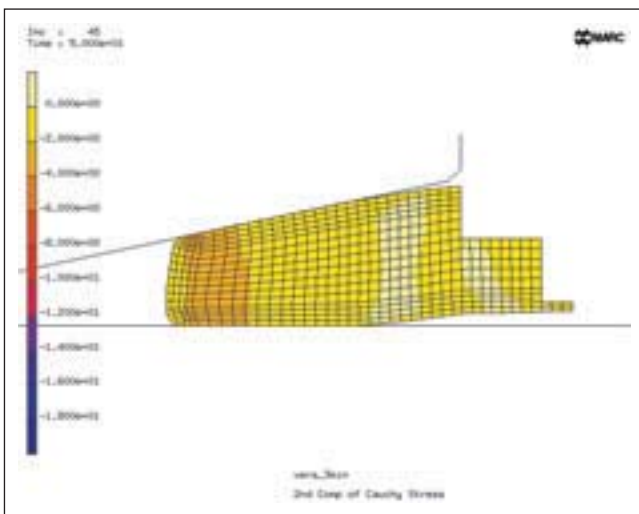
Individual components such as seals or retaining rings cannot be forgotten, confused or assembled in the wrong orientation. Time and cost is saved arranging the components to make up individual joints.

The functional nuts match all EO tube fitting joints. After assembly and disassembly, the sealing ring can be replaced individually without cutting off the tube end.

### Common features, advantages and benefits of the EO-2 fitting system

- **High corrosion resistance** – The Cr(VI)-free surface treatment causes an average corrosion resistance of more than 500 hours to white rust.
- **Increased pressure** – Due to the application of even better materials combined with the special processing of individual components, EO-2 can be used in applications of up to 800 bar (S series) and 500 bar (L series). EO-2 considerably exceeds the DIN/ISO requirements and guarantees a 4-fold design factor. Thanks to the higher pressure levels, less expensive “L” series fittings can now be used instead of the heavier “S” series, which also is of benefit in limited or tight space applications.
- **EO-LUB** – Due to the special treatment of the larger sized nuts by the EO-LUB procedure (25S/28L and larger), the tightening torques of EO-2 fittings have been reduced by 25%. This makes assembly easier and prevents underassembly, the most common reason for tube fitting failure.
- **Cr(VI)-free** – Due to its Cr(VI)-free treated surface, Parker Ermeto now meets the requirements to be expected in the automotive industry and the expected requirements issued by the European Parliament to eliminate the use of materials and surfaces containing Cr(VI). The removal of Cr(VI) reflects Parker’s ongoing commitment to an environmentally clean and safe production process.

- **Worldwide availability** – EO-2 is available worldwide and meets the requirements of the applicable standards for 24° cutting ring fittings.
- **Sealing capability** – An elastomeric seal forms the primary sealing element, thus assuring leakfree sealing. Even low-viscosity media such as water or gas are hermetically sealed. Hydraulic systems therefore do not “sweat” at fittings.
- **Durability** – The elastomeric seal does not require any retightening even after years of operation under extreme working conditions.



FEM (Finite Element Method) has been used to optimize the seal design (Picture: FES, Raiffeisenstr. 10a, D-74343 Sachsenheim).

- **Bite control** – The ideal bite depth is controlled by the fitting design rather than by the fitters force. Closing the gap at the end of manual assembly, the fitts gets a clear signal that setting is completed and the joint is ready for inspection.
- **Functional nut** – Individual components such as the retaining ring or seal cannot be lost, forgotten, confused or assembled in the wrong orientation. This dramatically saves assembly cost and helps to avoid dangerous assembly errors.
- **Assembly cost** – With less than 10 seconds cycle time on the EOMAT (actual presetting process: 1.4 seconds) the cost of presetting EO-2 is extremely low.
- **Integrated preassembly tool** – Each EO-2 functional nut comes assembled with an integrated assembly tool that makes sure that the retaining ring securely cuts into the tube surface without damaging the sensitive inner cone of the fitting body. This greatly reduces the danger of tube blow-off, even when using stainless steel tube.
- **Reliable repeatability** – When EOMAT machines are used for cost-efficient presetting, the preassembly tools do not wear out as they are only in contact with the rubber seal. This avoids leaks and dangerous blow-off which can result when traditional bite-type fittings are assembled using worn presetting tools.
- **Final assembly** – From the wrench-tight position of the preset EO-2 joint, one short pull on the wrench (approx. 1/6 to 1/4 turn) gives the assembly a quick high rise to required torque. EO-2 fittings have a solid “Hit-home-feel” and excellent over-torque resistance.
- **Visible inspection** – There is no doubt if an EO-2 functional nut has been preset correctly or not. Inspection is as simple as checking if the gap between retaining ring and sealing ring is completely closed. The tube end does not have to be disassembled out of the fitting for bite inspection.
- **No phantom leaks** – Lubrication is not mandatory for the assembly of steel EO-2 fittings. The machine operator will not be irritated about lubricant coming out of the fittings once the hydraulic system gets hot.
- **Reusability/Remakeability** – EO-2 fittings can be disassembled and reassembled many times. There is no wear or widening of the vulnerable inner cone. Damaged seals can easily be replaced. All spare DOZ-seals are marked by size-code (e.g.: 12-L).
- **On-Site-Maintenance** – For the maintenance and replacement of EO-2 fittings a set of wrenches is sufficient. Additional in – line – components, such as test points (GMA), ball valves (KH) or Tee-fittings can be added to an existing assembly within minutes.
- **Interchangeability** – The EO-2 functional nut can be used for the whole variety of the broad range of more than 50 configurations in some 25 sizes of standard EO LL, L and S-series fittings. Changeover from progressive ring or weld nipple is easy by the simple use of EO-2 functional nuts.
- **Reliability** – Millions of EO-2 fittings are working trouble free in applications like: Mobile Construction equipment, stationary machine tools, hydraulic presses, plastic injection moulding machines, shipbuilding, offshore exploration, submarines, railway trains and military equipment. Leakage does not occur on EO-2 pipework.
- **Trouble-free** – Regular bite type fittings allow typical assembly-errors such as: confusion of bite type ring material and size. Also, the use of worn-out pre-assembly tool may result in fitting failure. The clever EO-2 design does not allow most of these mistakes without making the assembly process more complicated.



## Function of fittings

- **Popularity** – EO-2 fittings are as easy to assemble as traditional bite type fittings, but they eliminate most of their typical assembly problems. EO-2 fittings are therefore appreciated by an increasing number of original

equipment manufactures. EO-2 also has become the fitting of choice of end-users that appreciate the leak-free performance, the easy maintenance and the global availability of the metric soft-seal bite type system.

### Suitable FM-type

	Steel tube	Stainless tube	Plastic tube
Steel fittings body (EO-2)	FM...CF	FM...SSA	FM...CF
Stainless steel fitting body (EO-2)	—	FM...71	FM...71



EO-2 fittings are used for heavy-duty applications, such as construction equipment or plastic injection molding.



Every day millions of EO-2 fittings perform absolutely trouble-free.

## EO2-FORM



### Introduction

EO2-FORM is the high pressure formed tube Generation of the Tube Fittings Division Europe. As with EO-2, it is designed in to eliminate leakage in all fluid systems, by using elastomeric sealing systems.

The common feature of all EO2-FORM connections are the EO-2 seal elements as well as the new cold forming process, that gives extreme rigidity and low tightening torques. The seals are also available in FKM for applications with higher temperatures or aggressive media.

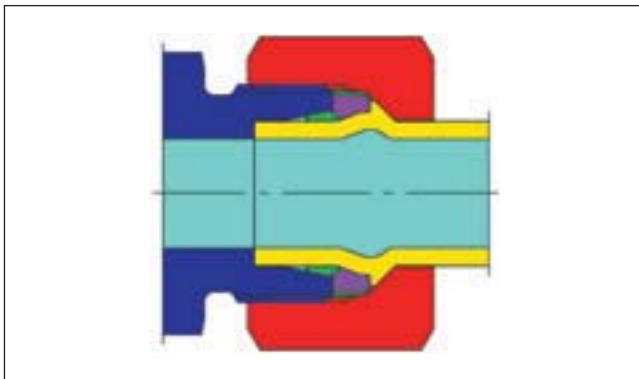
Through EO2-FORM, elastomeric sealing technology is made available even where bite-type connectors are not popular, like in hydraulic presses, cranes, lifts or ship canal locks. Compared to welding or brazing, the EO2-FORM process is faster and easier. It does not require special tube treatment, heating or chemicals.

EO2-FORM is designed for metric tube and fully interchangeable to the complete Ermeto Original product range according to ISO 8434-1/DIN 2353. EO2-FORM is available in "L"- and "S"-Series.

### Function of EO2-FORM

#### EO-2/EO2-FORM system

EO2-FORM is not a stand-alone product. It has been developed as an extension of the proven EO-2 system product range. All EO2-FORM components like nuts, seals



The EO2-FORM connection:  
Extreme rigidity and low tightening torques



The EO2-FORM F3 machine

and fitting bodies come from the EO-2 program. The only investment needed is the forming machine, which pays off quickly as it reduces assembly time and effort. Assembly characteristics of EO2-FORM are similar to EO-2 too. This allows the customer to use both products for his hydraulic pipework without increasing stock or confusing workfloor engineers with new components.

#### Elastomeric sealing

For EO2-FORM, the same sealing ring "DOZ" is used as for EO-2. The high volume elastomeric seal assures a hermetically sealed tube joint. It is located between the inner cone of the fitting body and the tube surface, thus blocking the only possible leak path. Due to its large cross section,

### The EO2-FORM process



Tube end is prepared and equipped with EO nut



Tube is inserted into the tools until it firmly touches the stop at the end



After starting the process, the dies clamp the tube and the forming pin starts to move forward



While moving, the pin is continuously forming the tube wall and compressing the material



The tool shape defines the outer contour of the formed tube wall



The inner contour also gets slightly deformed but remains smooth and unrestricted for good flow characteristics



As soon as the moving pin touches the clamping jaws, the forming process is completed



The tube end is released and ready for attaching the EO-2 seal



Installation is made in the fitting body

the seal effectively compensates for all manufacturing tolerances between the tube and fitting cone.

The sealing effect is pressure supported which makes the EO2-FORM fitting ideal for high pressure applications. The static compression also eliminates air-ingress into the fluid system in vacuum conditions.

Elastomerically sealed EO2-FORM fittings do not require any retightening even in heavy-duty applications. Seal extrusion is prevented by proper housing without gaps or dead volume areas. The sealing lip is bonded to a metallic support ring.

#### Cold-formed tube

The cold-forming of the tube is carried out by the EO2-FORM machine. Machine operation and tool setup are optimised for short cycle times, which makes the process

easy and fast. The tube is connected when the sealing ring is fixed and the nut is tightened.

The working contact area of the EO2-FORM connection is the flat front surface of the metallic support ring which is made of heat-treated, high-strength steel. This provides superior mechanical strength without settling, loosening or need for re-tightening.

### Features, advantages and benefits of the EO2-FORM fitting system

- **System solution** – No additional items need to be purchased or stocked on top of the existing EO-2 product range. Assembly characteristics of EO2-FORM are similar to EO-2.



Before tightening the nut



After tightening the nut

- **Flexible concept** – The product family of EO-2 and EO2-FORM allows the application of the optimum product within a complex hydraulic system or a whole manufacturing facility. EO2-FORM can be used for heavy duty applications like presses, EO-2 is ideal for general hydraulic and pneumatic pipework. This allows maximum total system performance with minimum component, assembly and stocking cost.
- **No risk** – EO2-FORM technology is based on the proven EO-2 technology. All components and the assembly technology are approved. The customer does not have to test a new system.
- **High pressure performance** – Due to the application of even better materials combined with the special processing of individual components, EO2-FORM can be used in applications of up to 800 bar (S series) and 500 bar (L series). EO2-FORM considerably exceeds the DIN/ISO requirements and guarantees a 4-fold design factor. Thanks to the higher pressure levels, less expensive “L” series fittings can now be used instead of the heavier “S” series, which also is a benefit in limited or tight space applications.
- **Sealing capability** – The high volume elastomeric seal forms the primary sealing element, thus assuring leak-free sealing. Even low-viscosity media such as water or gas are hermetically sealed. Hydraulic systems therefore do not “sweat” at the fitting joints.
- **No phantom leaks** – Lubrication is not mandatory for the assembly of steel EO weld nipples. The machine operator will not be irritated about lubricant coming out of the fittings once the hydraulic system gets hot.
- **Universal** – The EO2-FORM machine can cold-form all common steel tubes used in hydraulic systems (the EO2-FORM process also allows the use of stainless steel and exotic materials such as CuNiFe; please ask for separate catalogue). EO2-FORM tools cover metric tube from 6 to 42 mm OD. Thin wall tube of 1 mm wall thickness can be formed, too.
- **Vibration resistance** – The new EO2-FORM process achieves a smooth structural transformation of the tube wall allowing superior vibration resistance.
- **Durability** – The elastomeric seal does not require any re-tightening even after years of operation under extreme working conditions.
- **Efficient** – Compared to welding or brazing, EO2-FORM is much less time consuming. Special tube preparation and finishing are not necessary. Forming uses only a fraction of the energy needed for brazing or welding.
- **Quality** – Tube clamping and tooling are fully automated. Therefore, high and consistent quality is achieved without manual adjustment.
- **Noise reduction** – Compared to other forming methods, the EO2-FORM process results in a smooth inner contour of the tube that does not allow the accumulation of air, dirt or other sources of trouble. Less pressure drop, heat and noise is created.
- **Re-usability** – EO2-FORM connections can be disassembled and reassembled many times. There is no wear or widening of the vulnerable fitting inner cone.
- **Approved** – Both, EO-2 high pressure tube fittings and the EO2-FORM process are tested and approved by independent organisations such as Germanischer Lloyd and Det Norske Veritas (DNV).
- **Small bending radii** – The compact clamping device and special dies are suitable for forming short tube ends.
- **Clean** – The EO2-FORM process is environmentally clean and safe. As no heat is used, hazards from chemicals, fumes or heat do not occur.

### EO weld nipple



The leakfree performance of EO Weld nipples is assured by an o-ring seal.

#### Function of the EO weld nipple

The wide EO fitting range allows welded tube connections. Therefore, the EO weld nipple has to be welded onto the tube end.

Using the standard EO nut, this weld nipple can then be connected to the tube joint of any EO tube fitting.

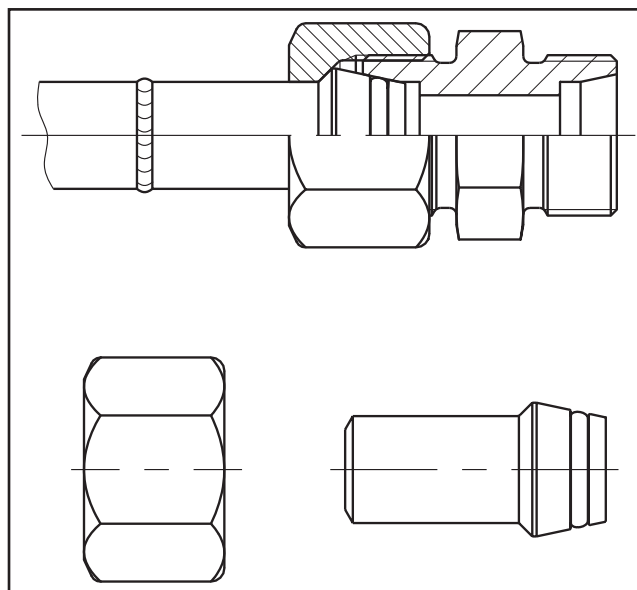
EO weld nipples are available for L and S-series tubes of 6–38/42 mm diameter. A broad range of weld nipple fittings including reducers or elbows covers most applications.

The use of EO weld nipples allows remakeable pipe systems based on rigid weld connections.

#### Features, advantages and benefits of the EO weld nipple

EO weld nipples feature most advantages of the attractive EO fitting program. The specific benefits of the EO weld nipple program are:

- **Low quality tube** – Unlike bite-type or flared fittings, dimensional tolerances and rough tube surface are not very critical. Therefore weld nipples are suitable for countries where only poor quality tube is available.
- **Sealing capability** – An elastomeric seal forms the primary sealing element, thus assuring leakfree sealing. Even low-viscosity media such as water or gas are hermetically sealed. Hydraulic systems therefore do not “sweat” at fittings.



EO-Weld Nipples

- **Durability** – The O-ring seal is assembled with a high initial compression. It does not require any retightening even after years of operation under extreme working conditions.
- **Failure mode** – Unlike bite type fittings there is little danger of tube blow off if the fitting is not properly tightened. A loose joint shows excessive leakage before total failure.
- **Reusability/Remakeability** – EO weld nipples can be disassembled and reassembled many times. There is no wear or widening up of vulnerable inner fitting cone. Damaged O-rings can easily be replaced.
- **Smooth edge** – Under extreme working conditions, weld nipples are most likely to crack at the dimensional step just under the nut. In an additional rolling process this critical edge is smoothed for increased vibration strength.
- **Stress-free** – By welding, small deviations on tube cutting or bending can be compensated. Tension-free pipework is not likely to break even under extreme working conditions.
- **Welding process** – EO weld nipples are designed to be used for most popular welding processes.



## Introduction to O-Lok®



The O-Lok® fitting was developed by Parker Tube Fittings Division in the USA in the early 1980's. This product has proven to be extremely effective in eliminating leaks at the higher pressures found in today's hydraulic systems.

The O-Lok® fitting is an O-ring face seal (O.R.F.S.) type fitting that consists of a nut, a body, an O-ring and a sleeve. Parker O-Lok® fittings come standard with a trapezoidal seal "Trap Seal". As shown in Fig. 1 the tube is flanged to 90° using the Parflange® system (or the tube may be brazed instead to a braze-type sleeve). When the fitting is assembled, it compresses an elastomeric seal in the precision-machined groove in the fitting body to form a leak-free connection.

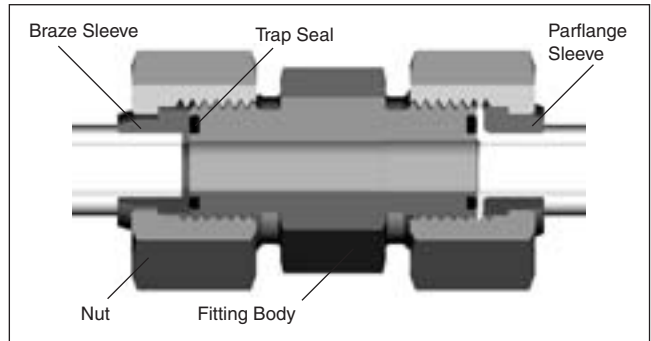


Fig. 1 – O-Lok® Union cutaway with brazed (LHS) and flanged assembly

O-Lok® fittings are suitable for a wide range of tube wall thickness and are also readily adaptable to inch or metric tubing and hose connections.



Before tightening the nut



After tightening the nut  
Standard O-Rings can be fitted instead of "Trap Seals"

## O-Lok® Progress

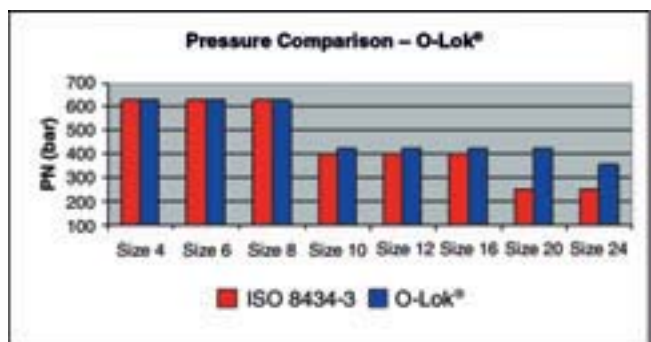
The last twenty years of experience supplying O-Lok® to the largest OEM customers have been well used in terms of listening to customer needs and refining design and material details to achieve the optimum mix of headline performance and a long trouble-free service life. After extensive product testing, it has been recognised that Parker O-Lok® fittings can be uprated to higher performance levels.

## O-Lok®

The O-Lok® fitting system is characterised by the words.

'Durability' and 'leakfree performance'.

- **Pressure Plus** – Larger fitting sizes nominal pressure increased
  - 20 from 280 to 420 bar\*
  - 24 from 280 to 350 bar\*



\*For detailed pressure ratings see chapter C.

## Function of fittings



- **Flange Seal Plus** – A development of the Parflange® system, the Flange Seal gives a cold-formed tube end connection to eliminate the need for costly brazing in Hose – Tube and Tube – Tube connections.
- **Plating Plus** – 120 hours resistance to white rust corrosion exceeds the requirements of international standards.
- **Cleanliness Plus** – Contamination is the biggest source of early component failure in hydraulic systems. Parker O-Lok® fittings meet all requirements from the factory to the point of use – backed up by individual bagging.
- **CORG Plus** – All Parker O-Lok® fittings are manufactured with the Captive O-Ring Grooves (CORG) as standard. (This is an optional version in ISO 8434-3 and SAE J1453). See fig. 2.
- **Range Plus** – Parker offers the widest range of catalogue standard materials, seal combinations, styles and sizes in the industry. Only Parker has all this.

### Introducing ACE Solutions

Advance Connector Enhancements are product features that take the fitting performance in the hands of customers beyond the standard we have come to expect. Driven by customer experiences and feedback from the field, ACE solutions are exactly that – simple engineering answers to real world problems.

#### Trap Seal

The Trap Seal in Parker O-Lok® fittings eliminates any possibility of the seal being rubbed out of position during the assembly process and hence cuts warranty costs and end customer dissatisfaction. Standard O-Rings can be dislodged without being noticed, leading to unexplained leaks after machines have been delivered to the end user. The simple patent pending engineered solution requires no changes in assembly method or order codes, and so is a seamless product upgrade unique to Parker. Existing standard O-Rings fit in the groove where necessary as field replacements.

#### Robust Adjustable Port Fittings

Robust Adjustable Port connections have been developed and tested to prevent leaks caused by incorrect assembly procedures. The joint geometry is re-designed to stop the backup washer being deformed / damaged if the fitting is over tightened when threaded into the port. The new robust locknut eliminates the possibilities of excessive tightening damage. It is available for all parallel thread types – UNF, Metric, BSPP. The simple design improvement leaves the assembly instructions unchanged. Patent pending.

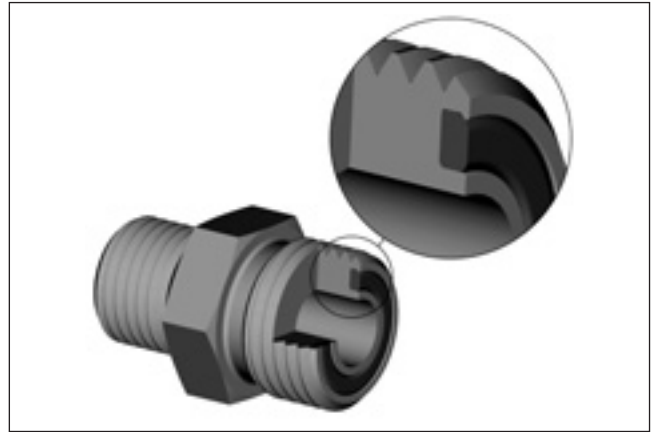


Fig 2 – Captive O-ring Groove (CORG) cutaway

#### Cr(VI)-free Surface finish

In accordance with European “end of vehicle life” directive 2000/53/EC which became law on 1st July 2007, all O-Lok® products have Cr(VI)-free surface protection. The new surface – introduced as a running change – gives a minimum of 120 hours to first white rust as measured according to ISO 9227 / ASTM B117 5% NaCl solution test standards.

### Applications

The original development of the O-Lok® fitting was heavily influenced to meet the needs of international mobile equipment companies, mining, site clearance, agricultural and other heavy duty equipment. Today, the O-Lok® fitting is becoming an industry standard hydraulic fitting system for rugged duty equipment mounted on tracks or wheels. Equipment in these fields of application endure some of the highest levels of use, sometimes round the clock operation, in tough environments with extremes of temperature and mechanical stress. The simple, but effective design of the O-Lok® connection when used with the Parflange® tube preparation technology mean that long term ‘fit and forget’ performance is ensured, despite the physical conditions.

Simple, low torque assembly, no tube entry breakaway feature, 2”/50 mm max. tube size, and the ease of use with inch or metric tubing also make O-Lok® eminently suitable for general hydraulic applications in hydraulic presses, injection moulding equipment, shipbuilding, machine tools and a range of other areas. Anywhere in fact where a high quality leak-free tube or hose connection is needed.



## Function of O-Lok® fittings

The O-Lok® fitting consists of four main components: a body, sleeve trapezoidal elastomeric seal and nut.

### The O-Lok® fitting body

There are over 40 different body configurations to choose from for specific applications. The body face has a groove, which contains a high durometer seal that is held captive during installation. In addition, the O-Lok® fitting body shapes are all forged for added strength and longer service life.

Straight fittings are made from cold drawn barstock. The cold drawing process ensures consistent dimensional tolerances, improved strength and consistent surface finish.

### CORG Groove

O-Lok® fittings are manufactured with a Captive seal Groove (CORG) design for prevention of seal fall out prior to final assembly. The international standards for ORFS fittings contain two versions of the seal groove. The original design had straight sides and under certain conditions of tolerance between the seal and the groove, it was possible for the seal to be dislodged. As a further refinement of the O-Lok® fitting, Parker introduced the CORG groove as standard production in all its plants in 1998.

### Elastomeric Sealing

From the design of the system, the Trap Seal compression gives excellent sealing characteristics from low pressure, low temperature circumstances found in winter during machine storage, to full pressure, high temperature cycles. Trap Seals are made from the same high quality NBR compound as the O-Rings superseded in 2006.

### The O-Lok® fitting nut

Smaller size O-Lok® fitting nuts are cold-formed to provide a more tightly packed grain structure, resulting in a much stronger component. Larger size nuts are made of warm-forged steel-blanks.

### The O-Lok® Parflange® sleeve

The preferred method of making an O-Lok® tube connection is by using the Parker Parflange® process to create the 90° flange on the tube end. A flange sleeve is used to support the flange and the tube, and provides the contact shoulder for the nut. After the Parflange® process, the sleeve is permanently fixed on the end of the tube reinforcing the joint.

The O-Lok® connection using the Parflange® method can be made with either metric or inch tubing by choosing the appropriate sleeves and tooling.

Parflange® sleeves from Parker are manufactured to exacting tolerances and geometry to work with the Parflange® machine and tooling, producing the robust, reinforced tube end connection. Failure to use the correct components can result in premature joint failure in the final application.

### The O-Lok® braze sleeve

The braze sleeve provides the mating surface between the tube and the fitting body. Secondly, the braze sleeve, as the name implies, is attached to the tube through silver brazing. The braze provides holding power as well as a method to seal the joint. It also has a flat and smooth contact shoulder for the nut to connect the tube to the fitting body.

O-Lok® braze sleeves are manufactured to exacting dimensions. Tightly toleranced dimensions are required to prevent binding in the nut when torqued, to provide a flat and smooth sealing surface against the seal, and to give the appropriate clearance for silver brazing to the tube.

The O-Lok® connection can be made with either metric or inch tubing by choosing the appropriate braze sleeve.

### The O-Lok® reducing braze sleeves

O-Lok® braze sleeves are manufactured in both even and reducing sizes. The reducing sleeves make it easy to adapt a larger face seal fitting to a smaller tube connection.

## O-Lok® fitting function

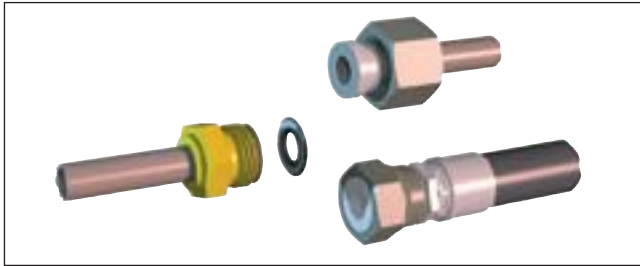
The O-Lok® fitting body face contains a high durometer seal that is held captive in a precision machined groove. As the nut is tightened onto the fitting body, the seal is compressed between the body and flat face of the tube flange or braze sleeve to form a tight, positive seal.

As the two faces come in contact, further tightening of the nut produces a sharp rise in assembly torque. A solid pull of the wrench at this point, to the recommended assembly torque, completes the assembly.

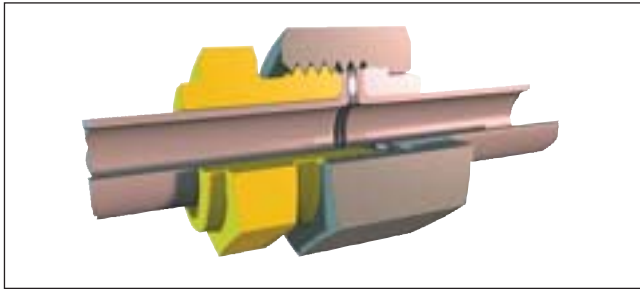
The sharp torque rise gives a “solid feel” at assembly, and minimises the possibility of over tightening.

Because the sealing surfaces are flat and perpendicular to the assembly forces, they remain virtually free of distortion during assembly, giving O-Lok® fittings virtually unlimited remakeability. The seal should be inspected at each disassembly and replaced when necessary.

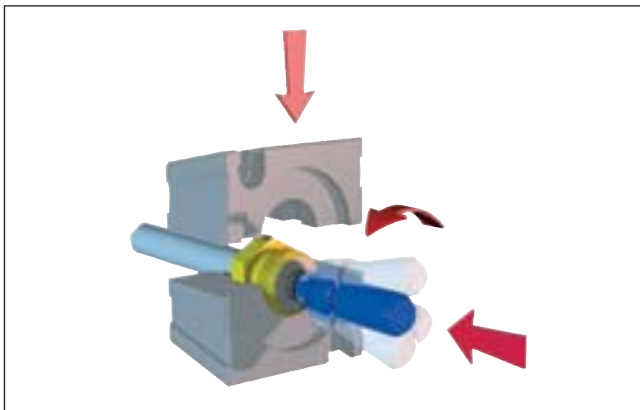
## Function of fittings



Flange-Seal fitting system



Dry Technology connection



Orbital flanging

### The Flange Seal System

Parker's new Flange Seal Fitting System, provides an efficient, fast, and economical method to connect a tube line to a hose assembly, or another tube line. It replaces the need for conventional braze-on male ORFS ends by a modern tube preparation method. By eliminating the brazing operation, this creates several advantages – flexibility of batch sizes, and production location, safer finished result, fewer process stages, all resulting in cost reduction opportunities.

The Flange Seal System is a development of the proven Parflange® process to create a 90° flange on the tube end. A custom-designed bonded elastomeric seal is positioned between the Flange Seal tube line and the mating hose/ tube assembly. The seal is designed with rubber tabs on the outside diameter, allowing it to be securely positioned within the tube nut or hose end swivel prior to assembly. When assembled by tightening the nut, the seal is com-

pressed between the two flat surfaces, providing a leak-tight connection.

### Flange Seal features, advantages and benefits

- Eliminates potential leak path and reduces costs
- Reduced assembly costs
- Leak free connection, lower assembly and rework costs
- Assures reliable sealing
- Reduced tube preparation cost
- Flexible, reduced batch sizes, lower stock costs
- Safer process
- Reduced cost and complexity
- Better asset utilisation

### O-Lok®

#### Features, advantages and benefits

- **Leak-free** – The O-Lok® fitting system provides a leak-free, 'fit and forget' performance due to the elastomeric sealing design. O-Lok® fittings form part of Tube Fitting Division's 'Dry Technology' family of products.
- **Pressure rating** – With pressure ratings up to 630 bar, the O-Lok® system meets the requirements of today's high pressure hydraulic systems.
- **Heavy duty capability** – In addition to high pressure resistance, O-Lok® fittings have been tested and proven in the heaviest duty applications known against the effects of shock and vibration, and are becoming the 'fitting of choice' in construction equipment.
- **Trap Seal** – Prevents seal rub out, hence reduces warranty costs from leaks in the field. Replaceable with standard O-Rings for convenience.
- **Robust Adjustable Port Connections** – Eliminates potential assembly errors associated with over tightening of the elbow or tee bodies into ports. Reduces warranty claims from unseen assembly faults.
- **Cr(VI)-free surface** – O-Lok® fittings conform to the requirements of the European directive 2000/53/EC.
- **Corrosion resistance** – O-Lok® fittings achieve a minimum of 120 hours to first white rust, exceeding industry standards.
- **Flexibility** – O-Lok® is available in steel, stainless steel and brass (on request). By selecting body materials and changing industry standard sized O-rings, the O-Lok® system can adapt to the extremes of temperatures and specified fluid media.

- **Hose or tube connections** – O-Lok® fittings can be used equally well as a tube fitting or a high performance hose adapter.
- **Ease of tube preparation** – The Parflange® tube preparation system flanges the tube end to 90 degrees to give a high quality seal face against the fitting TRAP seal.
- **Ease of tube preparation** – the new Flange Seal system allows the elimination of costly brazing for hose – tube and tube – tube connections.
- **Tube materials** – O-Lok® fittings can be used with most tube materials, such as high and low-grade steel or stainless steel, copper and aluminium.
- **Metric or inch tube compatibility** – Just by changing the tube sleeve, either inch or metric O.D. tube can be used. Customer tube specifications can be followed without changing the complete fitting system. O-Lok® is one of the few designs of tube fitting to allow this.
- **Range of standard sizes** – the O-Lok® system is available in sizes to suit from 6 mm/1/4" to 50 mm/2" tubes, or their equivalent hose sizes. No other manufacturer makes this range as standard.
- **Ease of assembly** – Because the system design requires no component deformation or tube forming during the final assembly, the O-Lok® fitting is exceptionally easy to assemble, requiring lower assembly torque than comparable fittings of similar working pressure.
- **Over torque capability** – Parker O-Lok® tube fittings are capable of withstanding up to twice the recommended assembly torque without damage or failure.
- **Consistency of assembly** – At final assembly, metallic faces are in direct contact, giving a clear signal to the assembler. After this point, a short sharp pull is all that is needed to complete the joint. This short assembly tightening angle means that fittings are much easier to assemble in areas with poor access or little space.
- **Visible quality check** – Due to the design, quality checking prior to final assembly is simple and therefore reliable.
- **No tube entry** – O-Lok® fittings and the corresponding tube end both have a flat face. This means that tube lines can be more easily installed without 'springing', and during maintenance, it is easier to disassemble hydraulic components without completely stripping the line.
- **Breadth of fitting styles** – O-Lok® is available as standard in over forty basic fitting body styles, making it a flexible system.
- **Worldwide availability** – O-Lok® fittings are available worldwide from the Parker network of sales locations and Certified Distributors, giving back-up wherever it is needed.
- **Standardised** – Parker O-Lok® fittings conform to the relevant international standards (SAE J1453 & ISO8434-3), which means that specification of the fitting system is easy, consistent and low cost compared to writing 'in-house' standards.

### Parflange® orbital flaring process and the Flange Seal system

#### The Parflange® process

With the Parflange® process, the tube to sleeve attachment is achieved mechanically during an orbital cold forming process with a Parflange® machine. The process progressively flares then flanges the tube. The final dwell action in the cycle ensures that the seal surface produced is smooth and flat, and also eliminates springback effects in the material. This flange provides both the holding power and sealing surface (eliminating the braze joint, and hence, a potential leak path found with brazed sleeve attachment). The only sealing point is between the fitting body and the tube flange face via the high durometer elastomeric seal. Trap Seals are now fitted as standard to Parker O-Lok® fittings.

The flanging process is very fast and requires very little cleaning prior to or after flanging. Thus, the process enhances the integrity of the joint and reduces cost.



Parflange® 1025

The Parflange® process utilises an orbital cold flow forming process to produce a flat, smooth, rigidly supported 90° sealing surface on the tube end. The process progressively flares then flanges the tube.

The Parflange® process conforms to the requirements for mechanical tube forming shown in the SAE J1453 standard, and has been specified after extensive testing by the majority of the large mobile equipment manufacturers.



Upgraded Parflange® 50 – Easier to use, reliable machine

Flanging with Parflange® eliminates the need for welding or brazing of the sleeve to the tube end.

#### Parflange® 50 series production machine

The 50 generation of the hugely successful Parflange® machine incorporates all the feedback and suggestions from professional tube manipulation users across the world. Ergonomics, controls and electronics and maintenance aspects are all improved, but the heart of the process – the Parflange® orbital forming head remains unchanged. Similarly existing tooling can be used with the new machine, making a 50 upgrade from the 1040 generation a seamless experience. For full details please see chapter H.

#### Parflange® advantages over brazing or welding

- **Flexibility** – Fast tool changes and easy set-up make small batches economical to reduce WIP (work in progress) and inventory costs.



Parflange® tools

- **Faster** – 9 to 12 times the speed of comparable induction brazing.
- **Simple tube preparation** – The Parflange® process does not require any special pre- or post-flange cleaning of the tube and sleeve. The process is simple and the machine requires straightforward training only to operate.
- **Safety** – Unlike brazing, the Parflange® process does not require any flux, braze alloy, post braze cleaner or rust inhibitor. An environmentally safe lubricant applied to the flanging pin is the only additive associated with the Parflange®.

### The Parflange® process



For O-Lok®, the sleeve is placed into clamping dies first



Tube is inserted into the tools until it firmly touches the stop at the end



After starting the process, the dies clamp the tube and the flanging pin starts the orbital movement and the forward stroke



While moving, the front pin expands the tube wall from the inside



As soon as the flat working surface of the pin contacts the tube end, the flanging process begins



The front surface is continuously rolled and compressed. From the inside, the tube surface is slightly expanded to clamp the sleeve



As soon as the defined flange contour is achieved, the orbital movement stops and the pin withdraws



The tube end is released and can be taken out of the machine



The connection is ready for assembly



## Function of fittings

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- **Environment** – The Parflange® process is environmentally clean and safe. It does not require open flame or any form of heating. Additionally, there is no emission of hazardous fumes, as is typical with welding and brazing.
- **Energy** – The Parflange® process uses only a fraction of the energy needed for welding or brazing.
- **Corrosion resistance** – The Parflange® process accommodates the use of plated or unplated components (i.e. tube and sleeve). Thus, the high costs of electroplating assemblies after fabrication is eliminated by using pre-plated tube.
- **Excellent surface quality** – The Parflange® process eliminates the potential leak path present at the braze or weld joint.  
The Parflange® process produces a burnished sealing surface, typically much smoother than the 3.1 µm/125 micro-inch Ra surface smoothness requirement of SAE J1453.

Users of Parflange® and Parker's O-Lok® fittings enjoy all the inherent sealing, reliability, time and cost saving benefits, without the many drawbacks which accompany welding or brazing.

Therefore, Parker strongly recommends the Parflange® process for the assembly of Triple-Lok® and O-Lok® connections. Parflange® machines range from desktop 1025 for flexible workshop use to Parflange® 50 for economic industrial production.

## Features, advantages and benefits of the Parflange® process for Triple-Lok®, O-Lok® and Flange Seal connections

- **Superior sealing performance** – The Parflange® process achieves a sealing surface of unique surface quality and mechanical strength.
- **Superior vibration resistance** – Unlike conventional flaring, the Parflange® process results in a rigid connection of the O-Lok® sleeve on the tube-end. Parflange®/O-Lok® connections perform much better under reversed bending stress conditions.
- **Easy to use** – No programming or adjustments necessary. High quality results are consistently achieved without manual adjustment.
- **Cost saving** – Compared to brazing or welding, orbital flanging is much less time consuming. Special tube preparation and finishing are not necessary. Flanging uses only a fraction of the energy needed for brazing or welding. In summary the Parflange® process can reduce costs for volume manufacture by more than half.
- **Clean** – The Parflange® process is environmental clean and safe. As no heat or chemicals are used, hazards from fumes or heat do not occur.
- **Zinc plated tubing** – The Parflange® process allows the use of zinc-plated tubing. The cost for cleaning, post process plating or painting can be saved.
- **Process/Product concept** – Parflange® machines are specially designed to match Parker O-Lok® and Triple-Lok® standards. Machine, tools and products are fine-tuned for reliable performance.
- **Proven technology** – For more than 14 years, hundreds of Parflange® machines have operated worldwide under heavy duty workshop conditions.

## Introduction to Triple-Lok®



The concept of flaring tube to provide a seal and holding power to the connection is very old. Its origin goes back to the early days of the automobile. Different types of flared connections including 45° single and double flares, inverted flare, 30° flare, etc., were developed for coolant, fuel, brake and lube systems of the early automobile.

Pioneered by Parker Hannifin, the Triple-Lok® 37° flared fitting evolved as a higher pressure version of the above connections. Its initial use was in the developing hydraulic systems of agricultural and earth moving machinery, automotive transfer lines and other machine tools.

As exports of machinery increased after World War II, the Triple-Lok® Plus fitting gained worldwide use and acceptance. Today it is the most widely used fitting in the world.



Before tightening the nut



After tightening the nut

It enjoys conformance approvals by a range of national and international technical and certifying organisations.

Its appeal is in its simplicity, compact design, ease of assembly, reliability (single sealing point), wide availability and acceptance. It is especially suited for low and medium wall thickness tubing. Today the Triple-Lok® generation capabilities range from 500 bar for smaller sizes to 140 bar for largest – 2" size. Currently it is used in virtually every application that uses fluid power for motion control.

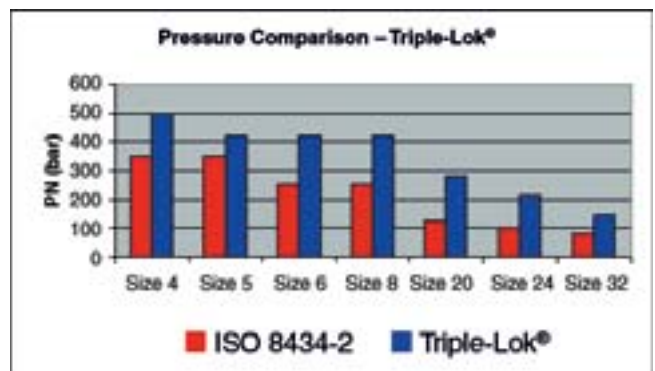
### Triple-Lok® Progress

Parker have supplied more Triple-Lok® fittings than any other manufacturer over the last seventy years. Parker engineers take a leading position in advising both customers and the international standards committees concerning 37° flare fittings. This experience, combined with optimised manufacturing methods and materials have resulted in steady product performance improvements verified by extensive testing in the laboratory. A combination of simple burst tests (with a 4× design factor), impulse and vibration tests have shown Parker Triple-Lok® fittings can be uprated to higher performance levels in the smaller and in the larger sized parts. Additionally, the corrosion protection level has been improved by 100% due to effective process control.

### Triple-Lok®

The Triple-Lok® fitting can be characterised by the phrase "reliable product performance".

- **Pressure Plus** – Following fitting sizes nominal pressure increased
  - Size 4: 350 ISO 8434-2 (bar) 500 Triple-Lok® (bar)
  - Size 5: 350 ISO 8434-2 (bar) 420 Triple-Lok® (bar)
  - Size 6: 350 ISO 8434-2 (bar) 420 Triple-Lok® (bar)
  - Size 8: 350 ISO 8434-2 (bar) 420 Triple-Lok® (bar)
  - Size 20: 210 ISO 8434-2 (bar) 280 Triple-Lok® (bar)
  - Size 24: 140 ISO 8434-2 (bar) 210 Triple-Lok® (bar)
  - Size 32: 105 ISO 8434-2 (bar) 140 Triple-Lok® (bar)



## Function of fittings



Fig. C1 – Assembled Triple-Lok® fitting cutaway and Triple-Lok® fitting components (fitting body with O-ring, sleeve and nut).

- **Plating Plus** – 120 hours resistance to white rust corrosion exceeds the requirements of international standards.
- **Cleanliness Plus** – Contamination is the biggest source of early component failure in hydraulic systems. Parker Triple-Lok® fittings meet all requirements from the factory to the point of use – backed up by individual bagging.
- **Range Plus** – Parker offers the widest range of catalogue standard materials, seal combinations, styles and sizes in the industry. Only Parker has all this.

This all adds up to an unbeatable combination of performance and customer-friendly features.

### Introducing ACE Solutions

Advance Connector Enhancements are product features that take the fitting performance in the hands of customers beyond the standard we have come to expect. Driven by customer experiences and feedback from the field, ACE solutions are exactly that – simple engineering answers to real world problems.

- **Robust Adjustable Port Fittings**

Robust Adjustable Port connections have been developed and tested to prevent leaks caused by incorrect assembly procedures. The joint geometry is re-designed to stop the backup washer being deformed / damaged if the fitting is over tightened when threaded into the port. The new robust locknut eliminates the possibilities of excessive tightening damage. It is available for all parallel thread types – UNF, Metric, BSPP. The simple design improvement leaves the assembly instructions unchanged.

- **Cr(VI)-free Surface finish**

In accordance with European “end of vehicle life” directive 2000/53/EC which became law on 1st July 2007, all



Fig. C2

Triple-Lok® products have Cr(VI)-free surface protection. The new surface – introduced as a running change – gives a minimum of 120 hours to first white rust as measured according to ISO 9227 / ASTM B117 5% NaCl solution test standards.

- **Dual Angle Swivel Connections**

In another ‘first’ for Parker, all swivel female cone connections will be switched to the unique dual angle design. This will make the connections even more effective by increasing the reliability in dynamic pressure conditions, making the contact point between the cones more stable, and easier to make a tight connection when the sealing cone gets damaged. Further, the pressure rating for some of the connections will be increased, without the need for heavier or higher strength materials. Another elegant engineering upgrade from Parker. There are no changes to the assembly procedures or part numbers. Customers need do nothing to start to receive a superior product.

### Applications

Because of its long history and the heavy influence of American industry worldwide, Triple-Lok® fittings designed to the original American SAE standard are found in almost every branch of hydraulics, from garbage trucks to ship-building. They are particularly prevalent in those branches of mobile hydraulics where medium pressure systems are used. The Triple-Lok® fitting system is especially applicable where high volumes of tubes are prepared, and efficient tube flaring equipment can be employed. Still field repairs can be made with hand tools where needed.

### Function of Triple-Lok® fittings

The Triple-Lok® fitting design is very simple. It uses an easily produced flare at the tube end to seal and hold fluid under high pressure. The fitting consists of three pieces: the body, sleeve and nut. The tube end is flared to a 37° angle and held between the fitting nose (seat) and the

sleeve (support) with the nut as shown in Fig. C1, providing a very effective single seal point between the fitting nose and the tube flare.

The support sleeve serves several important functions:

- It provides a clamping surface against the rear of the tube flare and a bearing shoulder for the nut. This minimises tube twisting during assembly.
- It provides support to the tube flare. The tapered fitting nose tends to wedge open the flare during assembly. The sleeve helps to resist this expansion, allowing the fitting to be tightened adequately.
- It makes the fitting adaptable to both metric and inch O.D. tubing merely by changing the sleeve. This feature has made Triple-Lok® fittings accepted worldwide.

The Triple-Lok® design is also very efficient. It has the smallest seal area of all fitting designs. The seal area is only slightly larger than the fluid flow area. The small seal area results in compactness and low assembly torque compared to the holding power of the joint.

The design was standardised initially as a J.I.C. (Joint Industrial Council) design and was later adopted by the S.A.E. (Society of Automotive Engineers) and I.S.O. (International Organisation for Standardisation) to assure complete dimensional interchangeability between various manufacturers.

Even though many manufacturers conform to the same dimensional standard, there are significant differences in actual performance of the fittings because of a variety of methods of manufacture and quality standards used.

Triple-Lok® fitting components are produced using the best methods of manufacture and state of the art equipment to assure construction integrity, high strength, long service life and high quality.

**The Triple-Lok® body** – Straight bodies are made from either cold drawn bar stock, or cold-formed construction. All shapes are of one-piece forged construction eliminating potential leak paths of multiple component constructions such as brazed shapes. The Triple-Lok® steel forged shapes also feature higher hardness for high pressure capability and minimising nose collapse (typical of sizes – 10 and under) during repeated assembly. This compares very favourably to parts of brazed construction, which typically exhibit lower hardness and hence much more nose deformation.

**The Triple-Lok® sleeve** – Triple-Lok® fitting support sleeves are cold-formed and heat treated for an optimum combination of strength and ductility. Cold forming also eliminates the problems of laps, folds, stringers, etc., associated with sleeves machined from bar stock.

**The Triple-Lok® nut** – Nuts for all but the three largest sizes (–20, –24 and –32) are cold formed. Cold forming increases material strength and its fatigue properties, imparting high strength and longer service life to the nuts.

Larger nuts which are less severely stressed, are hot forged.

### Triple-Lok® fittings sealing function

As seen in Fig. C2, tightening of the nut clamps the tube flare against the body nose, producing a leak tight joint. This clamping onto the 37° cone provides a measure of elasticity to the joint helping it to resist loosening under vibration. The clamping force results in a radial load ( $F_R$ ) that tends to deform the fitting nose inwards. The resistance of the nose to elastic deformation provides a constant pre-load (similar to a spring washer) keeping it tight.

The clamping force provided by the nut resists the opposing force of the fluid under pressure. The joint remains leak tight as long as the clamping force is higher than the opposing pressure load. Properly assembled Triple-Lok® fittings with appropriate tube will seal consistently under pressure until the tube bursts.

Sealing in Triple-Lok® fittings takes place between two smooth metal surfaces, the fitting nose and inside of the tube flare. Therefore, the sealing surfaces have to be round and smooth, free of any, scratches, dents, spiral tool marks, splits or weld beads, in the seal area.

Seamless or welded and redrawn fully annealed tubing is recommended for Triple-Lok® fittings for ease of flaring and tube bending.

### Features, advantages and benefits

- **Pressure** – Triple-Lok® fittings are rated up to 500 bar nominal pressure with 4× design factor. Triple-Lok® can be used in more applications.
- **Robust Adjustable Port connections** – Eliminates potential assembly errors associated with over tightening of the elbow or tee bodies into ports. Reduces warranty claims from unseen assembly faults.
- **Cr(VI)-free surface** – Triple-Lok® fittings conform to the requirements of the European directive 2000/53/EC.
- **Corrosion resistance** – Triple-Lok® fittings achieve a minimum of 120 hours to first white rust, exceeding industry standards.
- **Dual Anlge Swivel** – improved reliability in dynamic pressure conditions and increased pressure ratings for the swivel connection.



## Function of fittings

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- **Safety** – The flared tube provides a solid and visible stop for the nut. The tube flare means there is no risk of tear out of the tube, thus giving the Triple-Lok® system a reputation for safety.
- **Single seal point** – Triple-Lok® fittings have only one seal (between the fitting nose and flare I.D.). This makes a highly reliable joint that is easily maintained.
- **Easy to assemble** – Small seal area under pressure makes for high-pressure capability at relatively low torque levels. This allows the use of small wrenches for easy installation and maintenance.
- **Wide temperature and media compatibility** – Metal to metal seal allows a range of uses and many applications.
- **Tube materials** – Triple-Lok® fittings can be used with most tube materials, such as high and low-grade steel or stainless steel, copper and aluminium.
- **No minimum tube wall limitation** – Triple-Lok® fittings are suitable for very thin to medium wall tubing. The optimum wall thickness tubing can be used, reducing overall system cost.
- **Ease of installation and maintenance** – Short tube entry means that installation is simplified and minimum tube prying is necessary when maintenance is required on the system. It is easy and quick.
- **Adaptability to metric & inch tubing** – Triple-Lok® fitting sleeves make the system suitable for inch and metric tubing by merely changing the sleeve.
- **Adaptability to hose assembly** – Triple-Lok® fittings allow for direct connection to 37° flare hose assemblies, the most popular industrial hose connection worldwide.
- **Forged shapes** – Triple-Lok® fittings have no braze joints to leak. Forgings provide higher dependability and longer life compared to multiple component brazed constructions.
- **Hard forgings** – High hardness of Triple-Lok® fittings forged shapes minimises the deformation of the 37° nose during assembly, maintaining full flow area and good reuseability.
- **Cold formed sleeves and nuts** – Sleeves and nuts in popular sizes are cold formed for high strength and toughness through optimum grain flow. This imparts high dependability and long service life.
- **International standard design** – Triple-Lok® fittings offer worldwide availability and interchangeability, they conform to SAE and ISO standards. 37° fittings are the most widely used fitting type in the world.
- **Availability** – Triple-Lok® fittings offer the broadest range of sizes and configurations of any fitting. This provides users with the optimum choice of tube fitting options. Standard materials offered are steel, stainless steel and brass.

## Adapters – introduction

In addition to the tube fittings described earlier, there are needs for other adapters to complete hydraulic circuits which perform different functions:

- **Thread size adapters** – to reduce or expand the existing thread
- **Thread conversion adapters** – to change from one port thread to another to allow tube fitting or hose connections
- **Hose end adapters** – hose to port, hose to hose etc.
- Blanking plugs.

The range of Tube Fittings products, when used without the tube nut and ring/sleeve, can also be used as hose adapters to allow the corresponding hose assembly to connect to a port.

Adapters are frequently used in maintenance situations, where equipment is used outside the region in which it was manufactured. For example to convert BSPP threads from a European manufacturer to an American thread alternative – UNF or NPT. Adapters are therefore often the most economical way to solve short-term problems.

There are many types of threads used in the Fluid Power industry throughout the world. This section contains adapters with a wide range of those thread types including: NPT, NPTF, NPSM, BSPT, BSPP, SAE, UN/UNF, and Metric. All threads in this section are made to industry specifications with conformance shown in Table F1.

Thread	Standard
NPT	ANSI B1.21.1, FED-STD-H28/7
NPTF	SAE J476, ANSI B1.20.3, FED-STD-H28/8
NPSM	ANSI B1.20.1, FED-STD-28/7
BSPT	BS 21, ISO 7/1
BSPP	BS 2779, ISO 228/1
Metric	ISO 261, ANSI B1.13M, FED-STD-H28/21
UN/UNF*	ANSI B1.1, FED-STD-H28/2

Table F1 – Thread conformance standards

Adapters from Parker Hannifin are manufactured from drawn barstock for straight parts, or from forgings in the case of elbows, tees and crosses, to give higher durability and long term performance. Pressure ratings are based on the same requirements used for the tube fittings product ranges. Parts are corrosion protected also to the same high standard found in other Tube Fitting Division products.

## Adapters – function

### NPT/NPTF adapters

Commonly known as pipe thread adapters in USA, NPT and NPTF (Dryseal) adapters have tapered threads. These threads feature a 60° flank angle and 1°47" taper, as shown in Fig. F1. Because of the taper, they are commonly used in the USA as adjustable fittings in the elbow and tee forms. It has been found that although NPT/NPTF have a high static pressure capability, they are unreliable in dynamic applications, especially in the larger thread sizes 1" and above. Parker therefore recommends the use of alternative thread forms and sealing, based on elastomeric seals for new applications and designs.

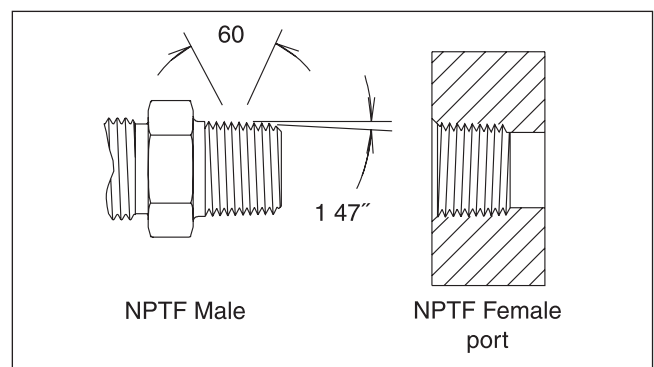


Fig. 1 – NPTF thread

NPT threads when assembled without a sealant, leave a spiral leak path at the crest-root junction as shown in Fig. F2. To seal pressurised fluid, NPT threads need a suitable sealer.

NPTF threads (Dryseal) on the other hand, when assembled, do not leave such spiral leak path. This is because they have controlled truncation at the crest and root, ensuring metal to metal crest-root contact as the male-female thread flanks make contact as seen in Fig. F3. Upon further tightening, the thread crests are flattened out until the flanks also make metal to metal contact as seen in Fig. F4. Theoretically, at least, there is no passage left for the fluid to leak, provided all surfaces are flawless and dimensions exact. In the real world, however, this is not the case and a sealant/lubricant is necessary to achieve a leak free joint even with NPTF threads. Because of the higher surface pressure contact with the NPTF design, Parker manufactures all Stainless steel adapters with the NPT thread form to reduce the possibility of thread galling (Cold welding effects).

## Function of fittings

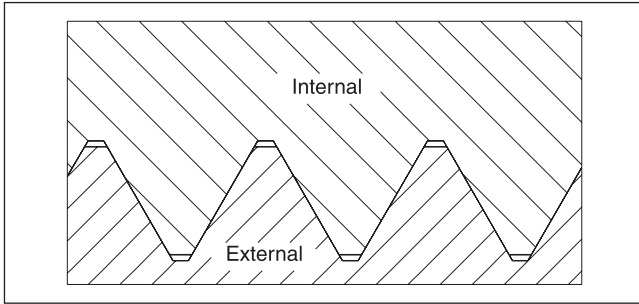


Fig. 2 – NPT – Wrench tight – No Crest-Root contact, Flank contact only.

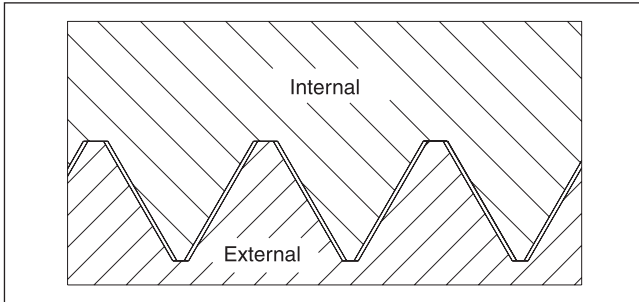


Fig. 3 – NPTF – Hand tight crest-root contact

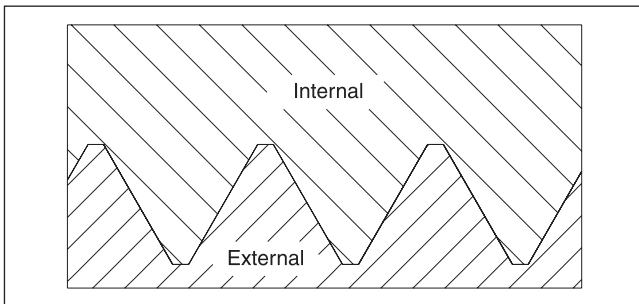


Fig. 4 – NPTF – Wrench tight crest-root and flank contact

### Type of sealant/lubricant

Sealant/Lubricant assist in sealing and provide lubrication during assembly, reducing the potential for galling. Pipe thread sealants are available in various forms such as dry pre-applied, tape, paste and anaerobic liquid. PTFE tape, if not applied properly, can contribute to system contamination during assembly and disassembly. Paste sealants can also contribute to system contamination, if not applied properly. They are also messy to work with, and some types require a cure period after component installation, prior to system start up.

### BSPT adapters

BSPT threads came from the British gas industry, where the outside diameter of a gas pipe was threaded at the end to allow a connection to be made. The thread form has a 55 degree flank angle, and the thread pitch is dif-

ferent generally to NPT threads. Therefore the two forms are not compatible. Today the BSPT thread is used in the pneumatics industry, but use on the hydraulics side is limited. In most cases, the BSPT male stud is screwed into a BSPP – parallel – port. Thread engagement in this situation is limited, giving lower holding power compared to NPT equivalents.

To seal BSPT threads, a sealant is always needed, since the sealing function is on the threads. BSPT fittings offer a limited adjustability when using elbow or tee types, and it is easy to overtighten and damage the port thread, stud thread or both. Re-useability is also therefore very limited. For all these reasons, BSPT threads should be limited to lower pressure applications with limited dynamic changes in pressure. Parker Hannifin does not use BSPT threads in it's "Dry Technology" programmes for this reason.

### UNF thread adapters

#### Function of UNF adapters

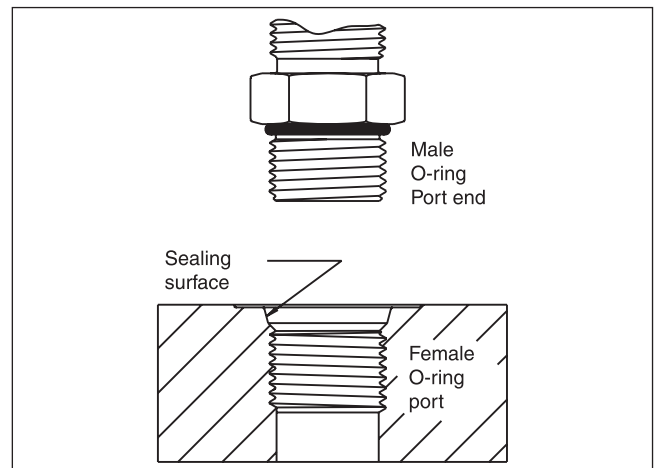


Fig. 5 – UNF port

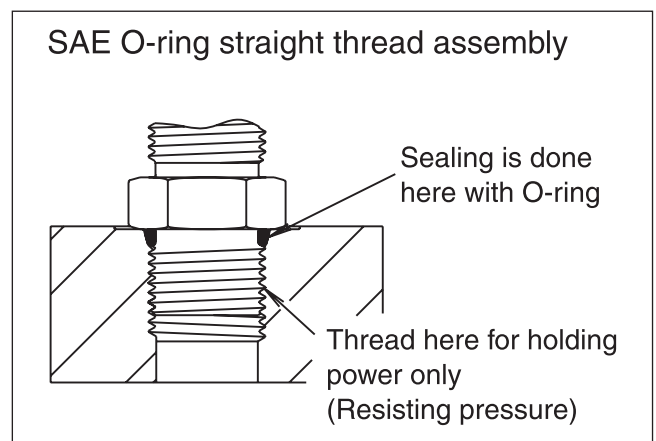


Fig. 6 – UNF port assembly

Parker fittings incorporating UN/UNF thread, O-ring port studs shown in this section are for connection with the UN/UNF thread ports. They are also known as O-Ring Boss (O.R.B.) connections. When properly assembled, they give performance equal to the best leak-free port connection available.

For this style of connection, the sealing and holding functions are separated. The threads have only the holding function. Thread tolerances are wider between the male stud and female port, and so the sensitivity to damage of the threads is much lower than the NPT for example. Sealing is achieved via a high durometer O-ring seal seated in a specially machined chamfer at the top of the port thread. When energised under pressure, the O-ring seals the only leak path. Good initial compression of the seal, means that the joint is leak tight at low and high pressures.

## Features, advantages and benefits

### SAE straight thread

- **Elastomeric seal** – SAE straight thread O-ring connections offer a high sealing reliability, especially in dynamic and shock loading applications. The O-ring seal offers a high tolerance to minor surface imperfections and damage.
- **Ease of assembly** – This design is extremely easy to assemble, even for less experienced workers.
- **Infinite positioning of shaped fittings** – Due to the design of shaped fittings, incorporating adjustable SAE straight thread connections, they allow for infinite positioning of the port end. Aligning for tube and hose connections is much easier as compared to tapered threads.
- **Reusability** – Since the sealing and mechanical holding functions are separated, the SAE straight thread male studs can be re-used many times simply by changing the O-ring.

## ISO 6149 adapters

The ISO 6149 connection design is similar to the UN/UNF, but with metric threads. The pressure performance of the connections is therefore similar, and also the user-friendly assembly characteristics. This design is recommended by the ISO standards committee for all new applications and designs. The ISO 6149 thread has gained widespread use with OEM's in the agricultural and construction equipment segments. Parker Hannifin offers one of the widest range of tube fittings and adapters to the ISO6149 standard.

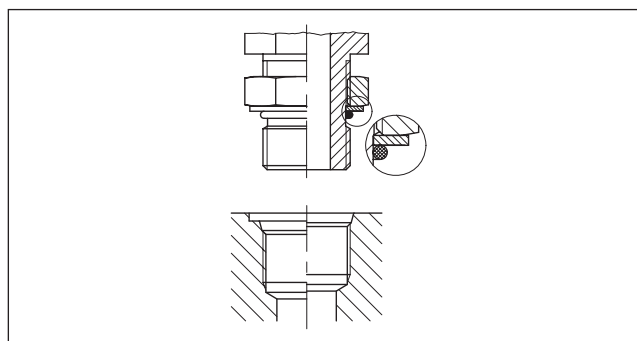


Fig. 7 – Adjustable UNF Port connection

## Japanese Industrial Standard (JIS) adapters

JIS adapters are typically used as hose adapters on equipment designed or built in Japan or Korea. Sealing is achieved with a line contact between the surfaces of mating 60 degree cones on the fitting and the hose end. These adapters are made according to the JIS B8363 standard. Although they have the same cone angle and threads as the BSPP 60 degree cone adapters below, they are not interchangeable. (Longer thread lengths on the JIS female swivel fittings lead to threads bottoming out before the seal is made on the corresponding BSPP fitting).

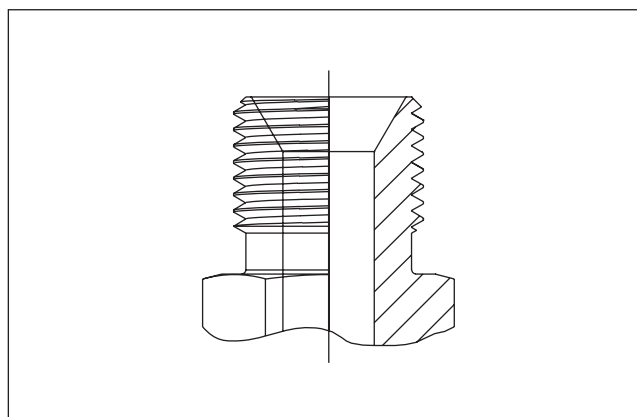


Fig. 8 – JIS adapter

## BSPP thread adapters

British Standard Pipe (Parallel) threads are still the most widely type used today in the Fluid Power Industry in Europe. This section is split into two parts, covering the thread adapters and later the BSP hose adapters.

## Function of 60 Deg cone

This form of BSPP adapter which has been modified to work as a hose adapter is still popular in the UK, Scandinavia and throughout the rest of Europe. These connections are standardised in BS5200. The bore of the BSPP thread is coned inwards with a 60 degree included angle



## Function of fittings

to match with a male cone of the same angle on a Swivel Female hose end see figure 9 below. When the nut is tightened, the two cone halves are clamped together to form a metallic seal. This type of connection is flexible in use, since the same thread end could also be used to screw into a BSPP threaded port. In this case a seal would be needed, normally a bonded washer consisting of a metallic outer ring and an elastomeric inner seal part.

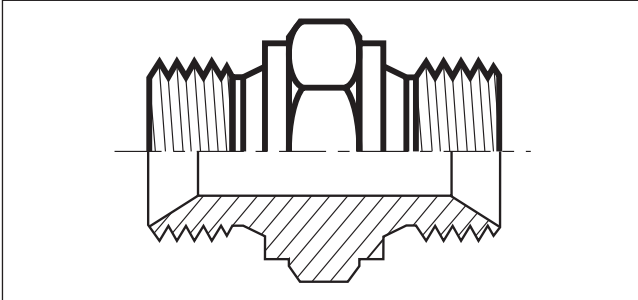


Fig. 9 – BSPP 60° cone adapter

Despite this flexibility, these adapters cannot be used as tube fittings in the same way as Triple-Lok®, O-Lok® or EO fittings, and therefore cannot be classed as a “universal system”.

Many manufacturers produce the elbow and tee adapters by brazing together straight parts. This can result in the fitting being effectively annealed during the brazing process, and therefore the material is left in its softest state. Parker tees and elbows are manufactured from high integrity forgings and offer superior long term performance.

## Function of BSPP thread adapters

BSPP thread adapters are designed to work with ports that have been machined with a flat ‘spot face’ concentrically around the thread. This spot face provides a consistent flat sealing area, whether the port is in a machined valve block, or on the face of a pump housing casting. Originally, the sealing was in the form of a copper (or other ductile metal) washer, but today most adapters use some form of elastomeric seal.

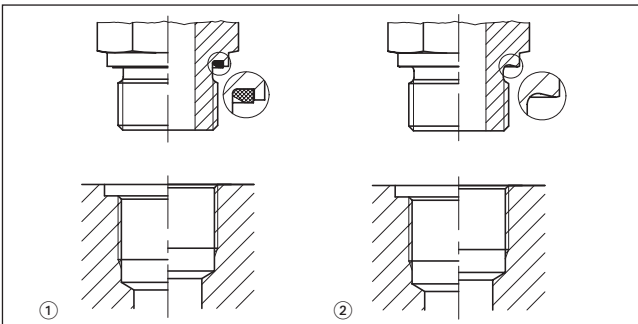


Fig. 10 – ① O-ring with retainer ring; ② Form A

The highest performance is achieved by the ED seal version, followed by the O-ring and retainer ring, bonded washer and lastly the German “Form-B” metallic sealed design. In terms of adjustable fittings, they are only normally available in the O-ring and retainer version. The ED seal design does not lend itself to adjustability.

## Metric thread adapters

Metric thread adapters have developed in parallel with the BSPP threaded adapters with a similar design based around the metric thread sizes.

## Pipe (NPSM) swivel adapters

### Function of NPSM swivels

NPSM swivel adapters are designed for use with male NPT/NPTF hose fittings that have a 30° machined seat. NPSM adapters do not seal on the threads like most NPT thread adapters, they seal on the nose of the NPSM swivel and the seat on the male NPT/NPTF pipe thread. This creates a metal to metal seal as shown in Fig. 11. The most important preparation prior to assembly is to make certain that the mating male NPT/NPTF pipe thread has a 30° seat as shown in Fig. 12.

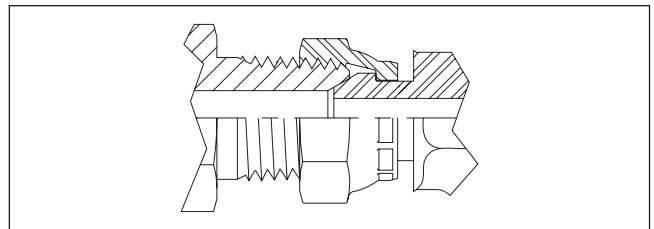


Fig. 11 – Illustration showing how NPSM swivel adapters seal on mating chamfer in male NPT thread

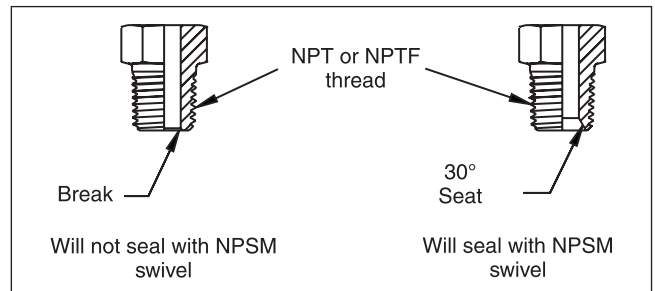


Fig. 12 – Illustration showing the required 30° seat on NPT/NPTF threads for NPSM swivel to seal

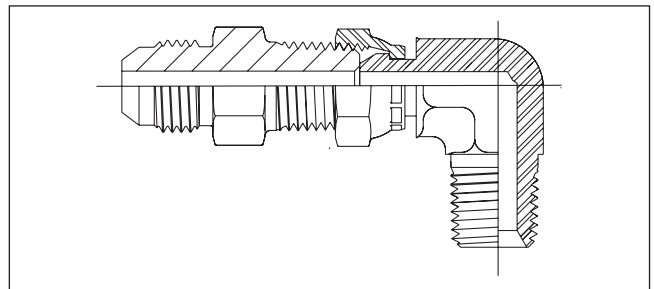


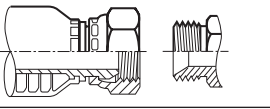
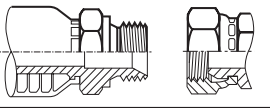
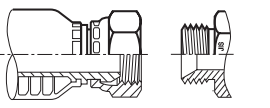
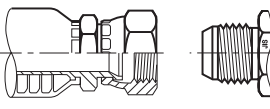
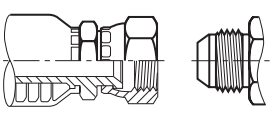
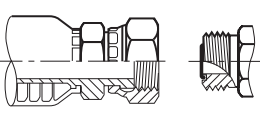

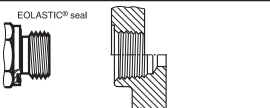
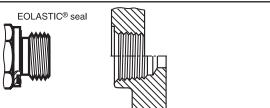
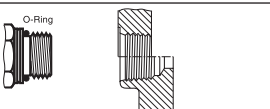
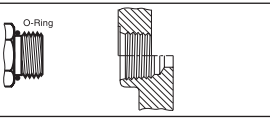
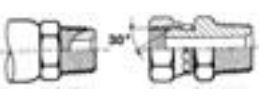


Fig. 13 – Chamfer of NPT/NPTF male thread does not provide appropriate contact for a reliable seal with cone of NPSM swivel

Thread configurations

<p>Taper thread adapters NPTF and</p>		<p>NPTF thread SAE J476-B2</p>
<p>BSPT</p>		<p>BSPT taper thread ISO 7</p>
<p>BSPP 60° cone adapters</p>		<p>BSPP male parallel thread 60° female cone BS5200</p>
<p></p>		<p>BSPP female parallel thread 60° male cone BS5200</p>
<p>JIS adapters</p>		<p>BSPP male parallel thread JIS B8363 60° female cone</p>
<p></p>		<p>BSPP female parallel thread JIS B8363 60° male cone</p>
<p>37° Flare (Triple-Lok®) and</p>		<p>SAE 37° Flare UNF thread SAE J514 ISO 8434-2</p>
<p>ORFS (O-Lok®) adapters</p>		<p>ORFS (O-ring Face Seal) UNF thread SAE J1453 ISO 8434-3</p>
<p>Male studs and female port threads</p>		<p>BSPP parallel thread O-ring and retaining ring according to ISO 1179</p>
<p></p>		<p>BSPP parallel thread with ED seal according to ISO 1179-2</p>
<p></p>		<p>Metric parallel thread with ED seal according to ISO 9974-2</p>
<p></p>		<p>Metric straight thread ISO 6149-2+3</p>
<p></p>		<p>UN/UNF threads SAE J475 thread ISO 11926-2/-3</p>
<p>NPSM female Swivel adapters</p>		<p>Hose adapters National pipe straight thread for mechanical joint 30° cone male / NPTF male thread. SAE J516</p>





# ***Systematic fitting selection***

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**Introduction**

**Product selection**

Ultimate target is to find the “best solution”. This optimum solution provides high system reliability, easy assembly characteristics, low maintenance effort and avoids the use of exotic components.

This “best solution” is not the ultimately achievable technology, but an adequate solution which fulfils the requirements of the individual application with minimum system cost.

The “best solution” looks different depending on the specific criteria of the given application.

**Dry Technology**

Modern TFDE fittings are designed for high reliability, easy assembly and lowest total cost performance.

These products are marked *Dry Technology* and indicated grey in selection charts.

Parker recommends to select only *Dry Technology* products for all new designs.

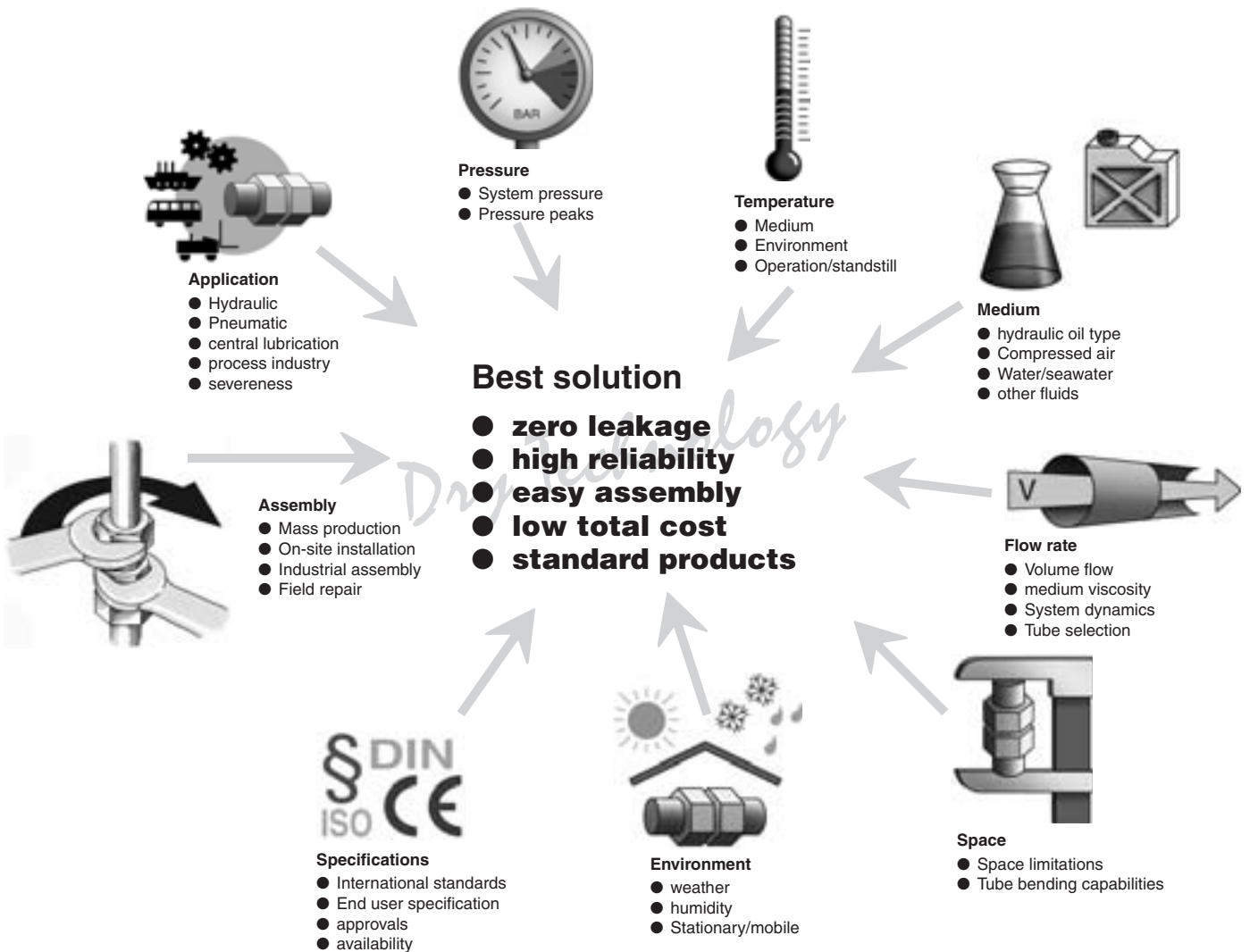
**Design criteria for fitting selection**

**Step 1**

First clarify all design criteria for the given application or project.

**Step 2**

Then determine the “best solution” product. Use selection charts on following pages.



**Material selection: Fitting material**



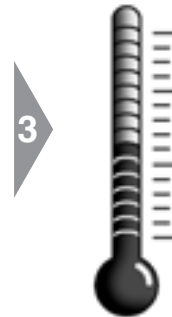
**Environment**

- select fitting material with suitable corrosion resistance



**Medium**

- select compatible fitting material



**Temperature**

- check suitability

Tube Material: Fitting material:	Steel, zinc-plated Steel, zinc-plated	Stainless steel Stainless steel	Copper Brass	Stainless steel Steel	Plastic Steel, Stainless steel, Brass
<b>Performance characteristics:</b>					
Pressure capability	Excellent	Excellent	Good	Excellent	Low
External temperature capability	Very good	Excellent	Very good	Very good	Depending on tube and material
Corrosion resistance	Good	Excellent	Very good	Good	Good
Internal media compatibility	Good	Excellent	Very good	Good	Good
<b>Current use</b>	Standard material combination for general use in hydraulic systems	Standard material combination for use with aggressive media or application in corrosive environments	Low to medium pressure applications in corrosive environment Use with compressed air (condensed water) or slightly corrosive media (water)	Special material combination for mildly corrosive environments	Special material combination for low pressure applications
<b>Typical applications:</b>	Machine tools, Mobile construction equipment	Shipbuilding, Offshore exploration, Process engineering, Paper machines costal installations	Central lubrication systems, Pneumatics, cooling water tubes	Some airbrake systems in railway industry wet machining area on machine tools	Pneumatic systems on machine tools central lubrication and airbrakes in truck industry

## Material selection: Sealing material

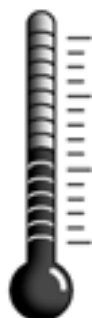
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### Medium

- select compatible fitting material

2



### Temperature

- check suitability

3



### Assembly

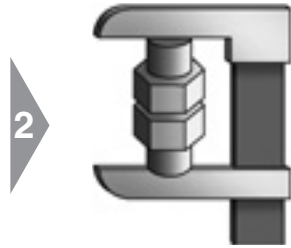
- Prefer elastomer sealing for easy assembly and economic service

Sealing technology	metal-to-metal	nitrile rubber (NBR)-Elastomer	Fluorcarbon (FKM)-Elastomer
<b>Performance characteristics:</b>			
High pressure capability	Good	Excellent	Excellent
Low temperature capability	Excellent	Very good	Good
High temperature capability	Excellent	Good	Very Good
Media compability	Excellent	Good	Very Good
Long term reliability	Good	Excellent	Excellent
<b>Assembly characteristics:</b>			
Ease of initial assembly	Good	Excellent	Excellent
Repeated assembly	Good	Excellent	Excellent
Replacement of seal	Not possible	Easy	Easy
<b>Current use</b>	Suitable for aggressive media respectively for very low or very high temperatures	General use in – hydraulic – pneumatic – lubrication – airbrake systems	Hydraulic and pneumatic systems with high operating temperature process engineering: some aggressive media
<b>Typical applications:</b>	Process engineering Agricultural Equipment	Machine tools Hydraulic presses Mobile construction equipment	Steelmill equipment Casting machines

**LL/L/S Series selection for EO fittings**






**Pressure**  
 ● select series with adequate pressure performance



**Space**  
 ● select series according to available space



**Specification**  
 ● prefer L or S series for best availability

			
Series	<b>LL</b>	<b>L</b>	<b>S</b>
Example of order code	G06ZLLCF	G06ZLCF	G06ZSCF
Design	Very light	Light	Heavy
Performance PN	100 bar	160–500 bar	315–800 bar
Suitability for heavy duty applications	Good	Good	Excellent
Tube dimension (mm)	4, 6, 8, 10, 12	6, 8, 10, 12, 15, 18, 22, 28, 35, 42	6, 8, 10, 12, 14, 16, 20, 25, 30, 38
Assembly Tightening effort Space requirement	Very low Very low	Normal Low	High High
<b>Current use</b>	Very light design for space-limited assemblies in low to medium pressure applications	medium to high pressure fitting for general use in hydraulic and pneumatic systems	Rigid design for use in heavy-duty applications
<b>Typical applications:</b>	Central lubrication Airbrake systems fuel lines oil/gas stoves micro hydraulics	machine tools agricultural vehicles	hydraulic presses plastic injection molding steel mills shipbuilding Mobile construction equipment

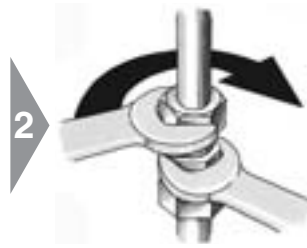


## Tube end selection



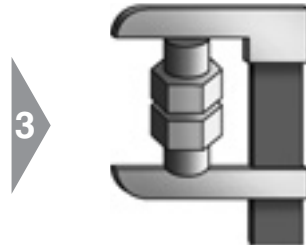
### Pressure

- select connection type with adequate pressure performance
- prefer elastomeric seal for most reliable sealing performance



### Assembly

- select product with adequate assembly process



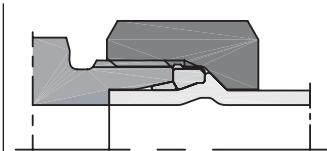
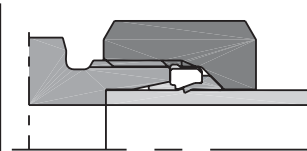
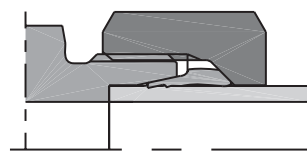
### Space

- select most suitable product



### Specification

- fitting type according to project specification



Type	EO PSR/DPR Metal seal bite type	EO-2 Soft seal bite type	EO2-Form Tube forming
Sealing method	Metal seal	Elastomeric seal	Elastomeric seal
International Standard	ISO 8434-1	ISO 8434-1	ISO 8434-1/4
National Standards	DIN EN ISO 8434-1 (old: DIN 2353/DIN 3861)	DIN EN ISO 8434-1 (old: DIN 2353/DIN 3861)	DIN EN ISO 8434-1 (old: DIN 3861)
Tube compatibility	Metal and plastic tube (steel, stainless steel, copper, aluminium, polyamide ...)		Steel, stainless steel, copper alloy
Available sizes (Tube O.D.)	4LL-12LL 6L-42L 6S-38S	4LL-6LL 6L-42L 6S-38S	Tube O.D. 6 to 42 mm 6L-42L 6S-38S
Performance seal reliability	Very good	Excellent	Excellent
Assembly Tube preparation Installation Field repair	Excellent Good Very good	Excellent Very good Excellent	Good Excellent Use EO2
Space requirements	Excellent	Excellent	Good
<b>Current use</b>	Most popular fitting for metric tube		Heavy duty alternative to EO/EO2 and EO weld nipple
	Traditional bite type fitting new designs	Global popularity for all	
<b>Typical applications</b>	General use in hydraulic, pneumatic, lubrication and coupling systems		General use in high pressure applications
	Agricultural equipment Process engineering	Hydraulic presses Injection Molding Mobile equipment Heavy machinery Ship building	

**Tube end selection**



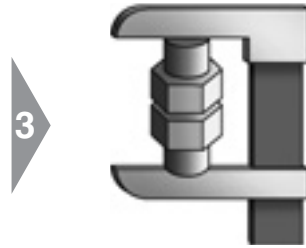
**Pressure**

- select connection type with adequate pressure
- prefer elastomeric seal for most reliable sealing performance



**Assembly**

- select product with adequate assembly process



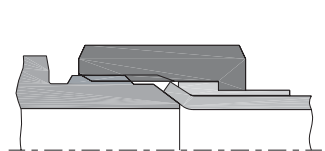
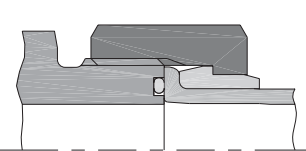
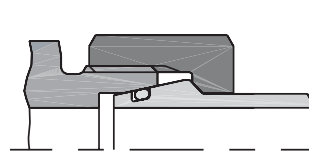
**Space**

- select most suitable product



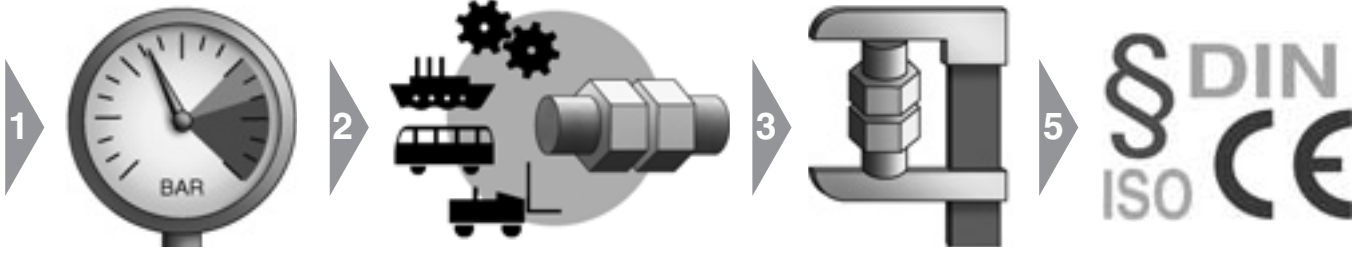
**Specification**

- fitting type according to project specification



Type	<b>EO SKA</b> Weld nipple	<b>O-Lok®</b> O-Ring Face Seal (ORFS)	<b>Triple-Lok®</b> 37° Flare
Sealing method	Elastomeric seal	Elastomeric seal	Metal seal
International Standard	ISO 8434-1/4	ISO 8434-3	ISO 8434-2
National Standards	DIN EN ISO 8434-1/-4 (old: DIN 3865)	SAE J1453/J516	SAE J514/J516
Tube compatibility	Weldable steel and stainless steel	Metal tube (steel, stainless steel, copper, aluminium)	
Available sizes (Tube O.D.)	6L-42L 6S-38S	Tube O.D. 6 to 50 mm Tube O.D. 1/4" to 2"	Tube O.D. 6 to 42 mm Tube O.D. 1/8" to 2"
Performance seal reliability	Excellent	Excellent	Very good
Assembly Tube preparation Installation Field repair	Difficult Excellent Difficult	Good Excellent Use braze adapter	Good Excellent Hand flaring
Space requirements	Very good	Good	Very good
<b>Current use</b>	Limited use in Northern Europe and Asia	Heavy duty <i>Dry Technology</i> alternative to Triple-Lok® Most popular fitting for inch tube (metric tube on request) USA, Europe, gaining acceptance in Asia.	Worldwide
<b>Typical applications</b>	Limited use for special applications Heavy machinery Ship building power plants	General use in high pressure-hydraulic Mobile equipment Injection Molding Hydraulic presses Heavy machinery Ship building	General use in hydraulic, pneumatic, lubrication and coupling systems Agricultural equipment* Process engineering

## Flange type selection



### Pressure

- select flange type connection with adequate pressure performance

### Application

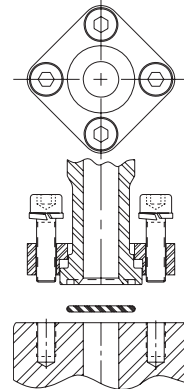
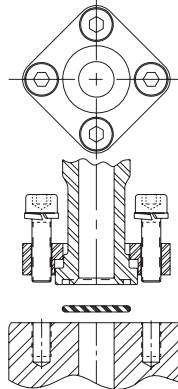
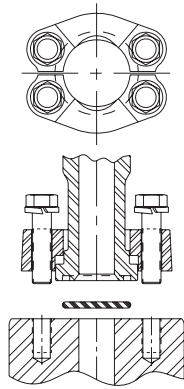
- select suitable flange type for specific application

### Space

- select flange type according to available space

### Specification

- select flange type according to project specification

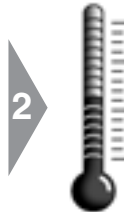


Flange type	Four screw split flange	Four screw one piece square flange	Cetop flange
Sealing method	Elastomeric seal	Elastomeric seal	Elastomeric seal
International standard	ISO 6162-1/-2	ISO 6164 (1994)	
National standard	DIN ISO 6162-1/-2/SAE J518	–	former Cetop
Tube compatibility	Combines weld and thread connections	Weld connection	Weld connection
Available sizes (Tube O.D.)	1/2" up to 5"	3/8" up to 4"	3/8" up to 4"
Performance seal reliability	Excellent	Excellent	Excellent
Assembly Tube preparation Installation Field repair	Good Excellent Good	Difficult Excellent Difficult	Difficult Excellent Difficult
Space requirements	Low	Low	Low
Used screws	metric screws according to: – DIN 912-8.8 (ISO 4762-8.8) or – DIN 912-10.9 (ISO 4762-10.9) UNC screws according to ASA B 18.3	metric screws according to: – DIN 912-8.8 (ISO 4762-8.8) or – DIN 912-10.9 (ISO 4762-10.9)	metric screws according to: – DIN 912-8.8 (ISO 4762-8.8) or – DIN 912-10.9 (ISO 4762-10.9)
Current use	Widely used throughout the world	Mainly used in Germany	Mainly used in Europe
Typical applications	Agriculture Hydraulic Offshore Ship building Cranes	Agriculture Hydraulic Offshore Ship building Cranes	Agriculture Hydraulic Offshore Ship building Cranes

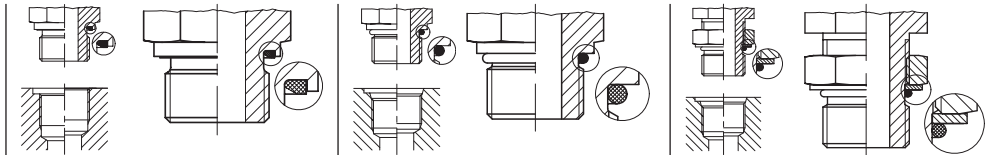
**Port/Stud selection**



**Pressure**  
 ● select connection with adequate pressure performance



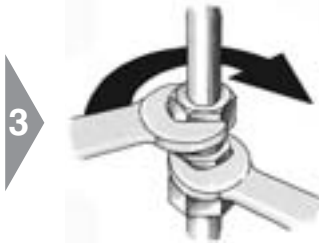
**Temperature**  
 ● Use elastomeric seal when suitable



Port end selection:	Male stud with EOLASTIC-seal	Male stud with O-Ring seal	Male stud adjustable with O-Ring seal
<b>Port description metric</b>	<b>Male stud with EOLASTIC-sealing</b>	<b>Male stud with O-ring sealing</b>	<b>Male stud adjustable with O-ring sealing</b>
Thread	Metric	Metric	Metric
Example of order code EO =	GE12ZLMEDCF	GEO12ZLMCF	VEE12ZSMORCF
Example of order code Triple-Lok® =	8M16F82EDMXS	8M16F87OMXS;	8M18V87OMXS
Example of order code O-Lok® =	8M16F82EDMLOS	8M16F87OMLOS	8M18V87OMLOS
Thread standard (Example)	M 16×1.5 ISO 261; ISO 724; DIN 13-T5-T7	M 16×1.5 ISO 261; ISO 724; DIN 13-T5-T7	M 18×1.5 ISO 261; ISO 724; DIN 13-T5-T7
Male stud standard	DIN EN ISO 9974-2 (old: DIN 3852 T11, type E)	DIN ISO 6149-2/3 (old: DIN 3852 T3, type F)	DIN ISO 6149-2/3
Port tapping standard	DIN EN ISO 9974-1 (old: DIN 3852 T1, type X, Y)	DIN ISO 6149-1 (old: DIN 3852 T3, type W)	DIN ISO 6149-1 (old: DIN 3852 T3, type W)
Performance characteristics – pressure capacity – sealing characteristics – additional sealant required	Very high Excellent No	Very high Excellent No	High Very good No
<b>Current use</b>	Solid, soft sealing male studs. Known worldwide. Well suitable for using with gas and high pressure hydraulics.	New safe sealing system for all areas of application, especially suitable for high pressure hydraulics. Standard sealing for the future. Identifying marking for metric version is a groove at the collar.	New safe adjustable sealing system for all areas of application, especially suitable for high pressure hydraulics. Standard sealing for the future.
	Well suitable for soften for counter material (e.g. housing of Al-alloy).		
<b>Port description inch</b>	<b>Male stud with EOLASTIC-sealing</b>	<b>Male stud with O-ring sealing</b>	Male stud adjustable with O-ring sealing
Thread	BSP	UN/UNF threads	UN/UNF threads
Example of order code EO =	GE12ZLR1/4EDCF	GE12ZL3/4UNFCF	VEE12ZL3/4UNFCF
Example of order code Triple-Lok® =	8-4F42EDMXS	8F50XS	8V50MXS
Example of order code O-Lok® =	8-4F42EDMLOS	8F50MLOS	8V50MLOS
Thread standard (Example)	G 1/4 A DIN/ISO 228-T1 BS 2779	GB: 1/4 BSPP Japan: 1/4 PF	3/4-16 UNF ISO 725/ANSI B1.1-1974
Male stud standard	DIN 3852 T11, type E ISO 1179-2	ISO 11926-2/3	ISO 11926-2/3
Port tapping standard	DIN 3852 T2, type X, Y ISO 1179-1	ISO 11926-1	ISO 11926-1
Performance characteristics – pressure capacity – sealing characteristics – additional sealant required	Very high Excellent No	Very high Excellent No	High Very good No
<b>Current use</b>	Solid, soft sealing male studs. Known worldwide. Well suitable for soften counter material (e.g. housing of Al-alloy). Well suitable for using with gas and high pressure hydraulics.	Predecessor of metric sealing system. Often used in USA. Well suitable for soften counter material (e.g. housing of Al-alloy). Well suitable for using with gas.	Predecessor of metric adjustable sealingsystem. Often used in USA. Well suitable for soften counter material (e.g. housing of Al-alloy).



## Port/Stud selection



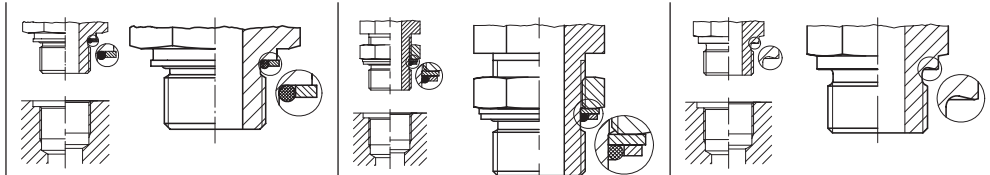
### Assembly

- prefer O-Ring/ ED-seal for easy assembly and economic service
- avoid tapered threads



### Application

- select standard connection for specific application



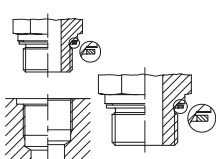
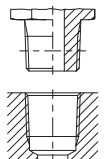
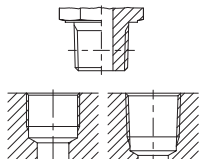
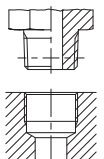
Port end selection:	Male stud O-ring retainer ring	Male stud adjustable with O-ring seal and Backup washer	Male stud with sealing by cutting face
<b>Port description metric</b>	<b>Male stud adjustable with O-ring sealing</b>	<b>Male stud adjustable with O-ring sealing</b>	<b>Male stud with sealing by cutting face</b>
Thread	Metric	Metric	Metric
Example of order code EO =	–	VEE12ZSMCF	GE12LMCF
Example of order code Triple-Lok® =	8M16F8OMXS	8M18V8OMXS	–
Example of order code O-Lok® =	–	8M18V8OMLOS	–
Thread standard (Example)	M 18×1.5 ISO 261; ISO 724; DIN 13-T5-T7	M 18×1.5 ISO 261; ISO 724; DIN 13-T5-T7	M 16×1.5 ISO 261; ISO 724; DIN 13-T5-T7
Male stud standard	–	–	DIN EN ISO 9974-3 (old: DIN 3852 T3, type B)
Port tapping standard	DIN EN ISO 9974-1 (old: DIN 3852 T1, type X, Y)	DIN EN ISO 9974-1 (old: DIN 3852 T1, type X, Y)	DIN EN ISO 9974-1 (old: DIN 3852 T1, type X, Y)
Performance characteristics – pressure capacity – sealing characteristics – additional sealant required	Medium Good No	Medium to high Good No	High Medium to good No
<b>Current use</b>		New adjustable sealing system for all areas of application.	Suitable for aggressive media respectively for very low or high temperatures, where elastic sealing cannot be used.
	Used in Europe and Asia-Pacific areas.		
	Well suitable for soften counter material/e. g. housing of Al-alloy.		
<b>Port description inch</b>	<b>Male stud adjustable with O-ring sealing</b>	<b>Male stud adjustable with O-ring sealing and Backup washer</b>	<b>Male stud with sealing by cutting face</b>
Thread	BSP	BSP	BSP
Example of order code EO =	–	VEE12ZLRCF	GE12LR1/4CF
Example of order code Triple-Lok® =	8-F40MXS	8V40MXS	–
Example of order code O-Lok® =	–	8V40ML0S	–
Thread standard (Example)	G 3/8 A DIN/ISO 228-T1	G 3/8 A DIN/ISO 228-T1	G 1/4 A DIN/ISO 228-T1, BS 2779
Further standards	GB: 1/4 BSPP, Japan: 1/4 PF	GB: 1/4 BSPP, Japan: 1/4 PF	GB: 1/4 BSPP, Japan: 1/4 PF
Male stud standard	ISO 1179-3	ISO 1179-3	DIN 3852 T2, type B, ISO 1179-4
Port tapping standard	ISO 1179-1; DIN 3852 T2, type X, Y	ISO 1179-1; DIN 3852 T2, type X, Y	DIN 3852 T2, type X, Y, ISO 1179-1
Performance characteristics – pressure capacity – sealing characteristics – additional sealant required	High Very good No	Medium to high Good No	High Medium to good No
<b>Current use</b>	Used in Europe and Asia-Pacific areas.	Solid, soft sealing male studs. Known worldwide.	Suitable for aggressive media respectively for very low or high temperatures, where elastic sealing cannot be used.
	Well suitable for soften counter material (e.g. housing of Al-alloy).		

Port/Stud selection



Specification

- select connection type according to project specification
- prefer international standards
- select ISO 6149 for new designs

Port end selection:	 Male stud with sealing by metal sealing ring	 Male stud with sealing by taper thread	 Male stud with sealing by taper thread	 Male stud with sealing by taper thread
<b>Port description metric</b>	<b>Male stud with sealing by metal sealing ring</b>	<b>Male stud with sealing by taper thread</b>	–	<b>Male stud with sealing by taper thread</b>
Thread	Metric	NPT	–	Metric
Example of order code EO =	GE12LMACF	GE12L1/2NPTCF	–	GE08LLMCF
Example of order code Triple-Lok® =	–	8-8FMTXSS	–	–
Example of order code O-Lok® =	–	8-8FLOSS	–	–
Thread standard (Example)	M 16×1.5; ISO 261; ISO 724; DIN 13-T5-T7	1/2-14 NPT ANSI B1.20.1-1983	–	M 10×1.0 tap. DIN 158
Male stud standard	DIN 3852 T1, type A DIN 7603 (Sealing washer)	ANSI B1.20.1-1983	–	DIN 3852 T1, type C
Port tapping standard	DIN EN ISO 9974-1 (old: DIN 3852 T1, type X, Y)	ANSI B1.20.1-1983	–	DIN 3859 T1, type Z (parallel)
Performance characteristics – pressure capacity – sealing characteristics – additional sealant required	Low Medium No	Very high Medium Yes	–	Low Medium Yes
<b>Current use</b>	Partly used for pneumatics and gas applications.	Mainly used in North America. Some used in rest of the world. Male studs and port tapping are tapered. Sealing only achieved with fluid or plastic sealing material.	–	Only for low requirements due to parallel port. Leakfree performance is only achieved with fluid or plastic thread sealing material. Mainly used in Germany.
<b>Port description inch</b>	<b>Male stud with sealing by metal sealing ring</b>	<b>Male stud with sealing by taper thread</b>	<b>Male stud with sealing by taper thread</b>	<b>Male stud with sealing by taper thread</b>
Thread	BSPP	NPTF	BSPT	Shorter BSPT
Example of order code EO =	GE12LR1/4ACF	–	GE12LR1/2KLCF**)	GE12LR1/4KEGCF
Example of order code Triple-Lok® =	–	12FMTXS	8-8F3MXS	–
Example of order code O-Lok® =	–	12FLOS	–	–
Thread standard (Example)	G 1/4 A DIN/ISO 228-T1 BS 2779	3/4-14 NPTF ANSI B1.20.3-1983	R 1/2 ISO 7; DIN 2999-1 BS 21	R 1/4 (short) DIN 3858
Further standards	GB: 1/4 BSPP; Japan: 1/4 PF	–	GB: 1/4 BSPT; Japan: 1/4 PT	–
Male stud standard	DIN 3852 T2, type A DIN 7603 (Sealing washer)	SAEJ 476a	ISO 7; DIN 2999-1	DIN 3852 T2, type C
Port tapping standard	DIN 3852 T2, type X, Y ISO 1179-1	SAEJ 476a ANSI B1.20.3	ISO 7/1-Rp/Rc; DIN 2999-Rc BS 21-Rp/Rc; Japan PT-Port	DIN 3852 T2, type Z (parallel)
Performance characteristics – pressure capacity – sealing characteristics – additional sealant required	Low Medium No	Very high Medium Recommended	Medium Medium Yes	Low Medium Yes
<b>Current use</b>	More and more unimportant. Partly used for pneumatics.	Mainly used in North America. Male studs and port tapping are tapered. The same as NPT except that closer tolerances are held to assure metal to metal contact (dryseal thread).	Mainly used in GB and Asia-Pacific areas. Male studs are tapered. Ports are mainly tapered, but can be parallel also. Leakfree performance is only achieved with fluid or plastic thread sealing material. <b>***)Male stud end not included in the catalogue!</b>	Only for low requirements due to parallel port. Leakfree performance is only achieved with fluid or plastic thread sealing material. Mainly used in Germany. <b>Not to be used for BSPT ports and PT ports (Japanese Standard) due to poor thread engagement!</b>

## Orientable Fitting Selection



1

### Pressure

- pre-select orientable fitting with sufficient pressure performance
- prefer elastomeric seal for most reliable sealing performance

2

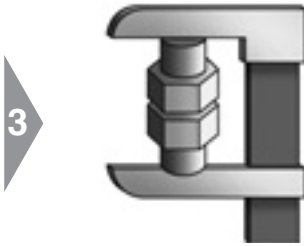


### Flow Rate

- select optimum solution for best flow rate and available space

Type	90° tube bend and male stud		Swivel Elbow		Adjustable Elbow
EO:	GE12LMCF	GE12ZLMEDCF	EVW	EW	WEE
Triple-Lok®:	FMTX, F3MX	F82EDMX	–	F82EDMX+C6MX	C8OMX
O-Lok®:	–	F82EDMLO	–	F82EDMLO+C6MLO	C8OMLO
Design	DPR/PSR Triple-Lok® Metal sealed port	EO-2 O-Lok® Elastomeric sealed port	Adjustable elbow with preassembled EO-DPR/PSR	Adjustable elbow with swivel nut connection	Adjustable Elbow with adjustable male stud
Sealing method	Metal	Elastomeric	Metal	Elastomeric	Elastomeric
Performance pressure Seal reliability Flow characteristics Compactness	Good Good Excellent Bulky	Excellent Excellent Excellent Bulky	Good Good Very good Good	Excellent Excellent Very good Good	Very good Good Very good Very good
Assembly/Installation Field repair	Very good Good	Excellent Excellent	Good Good	Excellent Excellent	Very good Difficult
Available sizes	Tube Outside Diameter 4 mm to 42 mm for DPR/PSR Triple-Lok® 6 mm to 50 mm and 1/4 in to 2 in	Tube Outside Diameter 4 mm to 42 mm for DPR/PSR/EO-2 Triple-Lok® and O-Lok® 6 mm to 50 mm and 1/4 in to 2 in	Tube Outside Diameter 6 mm to 42 mm for DPR/PSR	Tube Outside Diameter 6 mm to 42 mm for for DPR/PSR/EO-2 Triple-Lok® and O-Lok® 6 mm to 50 mm and 1/4 in to 2 in	Tube Outside Diameter 4 mm to 42 mm for DPR/PSR/EO-2 Triple-Lok® and O-Lok® 6 mm to 50 mm and 1/4 in to 2 in
Available threads	Metric ISO 9974-3 BSPP ISO 1179-4 DIN 3852 Form B NPT/NPFT	Metric ISO 6149 Metric ISO 9974-2 BSPP ISO 1179-2 UN/UNF	Metric ISO 9974-3 BSPP ISO 1179-4 DIN 3852 Form B NPT/NPFT	Metric ISO 6149 Metric ISO 9974-2 BSPP UN/UNF	Metric ISO ISO 6149 Metric ISO 9974-2 BSPP ISO 1179-2 UN/UNF
Current use	preferred use is not critical when space		not for new design	general use	general use
Typical Applications	Agricultural Equipment process engineering	All hydraulic + pneumatic systems	Agricultural Equipment process engineering	All hydraulic + pneumatic systems	All hydraulic + pneumatic systems

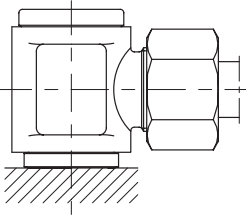
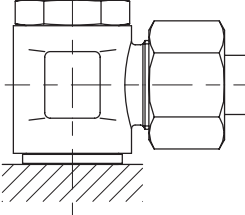
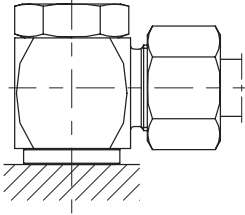
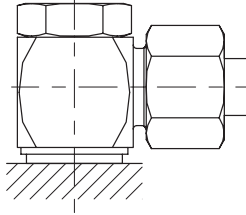
**Orientable Fitting Selection**



**Space**  
 ● select optimum solution for available space and best flow



**Assembly**  
 ● check, if assembly process is suitable

Type	Banjo		High pressure banjo	
				
EO:	DSVW	SWVE	WH DKA	WH KDS
Triple-Lok®:	–	–	–	–
O-Lok®:	–	–	–	–
Design	Fitting body with hollow bolt and cap	Fitting body with hollow bolt	Fitting body with hollow bolt	Fitting body with hollow bolt
Sealing method	Metal	Metal	Metal	Elastomeric
Performance pressure Seal reliability Flow characteristics Compactness	Low pressure Good Good Excellent	Good Good Good Excellent	Very good Good Good Excellent	Very good Excellent Good Excellent
Assembly/Installation Field repair	Good Good	Very good Good	Very good Good	Excellent Excellent
Available sizes	Tube Outside Diameter 4 mm to 42 mm for DPR/PSR	Tube Outside Diameter 4 mm to 42 mm for DPR/PSR	Tube Outside Diameter 6 mm to 42 mm for DPR/PSR	Tube Outside Diameter 6 mm to 42 mm for DPR/PSR/EO-2
Available threads	– Metric DIN 3852 BSPP –	– Metric BSPP –	– Metric BSPP –	– Metric BSPP –
<b>Current use</b>	Low pressure systems only, not for new designs	Low pressure systems only	Best solution for limited application space	
<b>Typical Applications</b>	Airbrake systems Return lines	Low to medium pressure systems	Space critical applications such as: forklift trucks Mobile hydraulics	

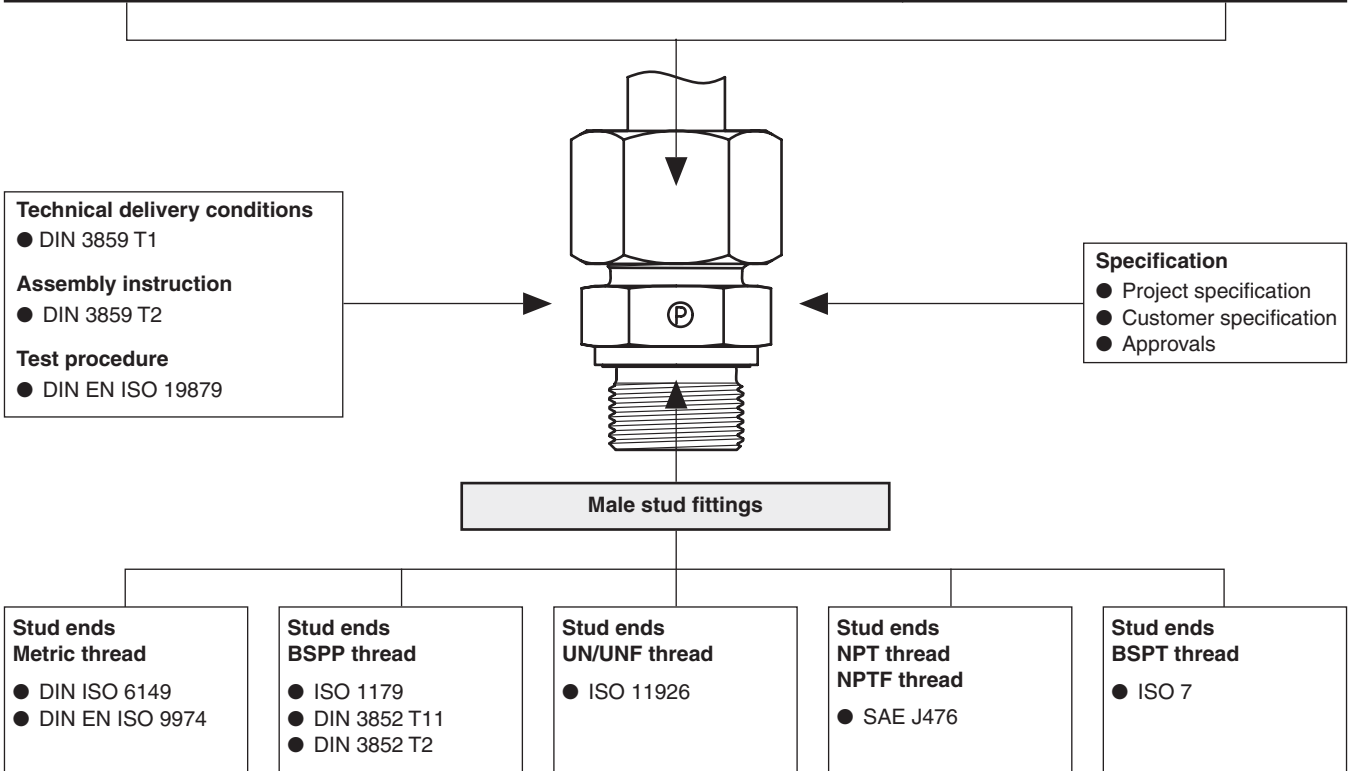
## Standardisation



5

- Specification**
- select fittings according to international standardisation
  - check specification of end-customer/end user
  - consider project-specific guidelines
  - avoid non-standard items

ISO-fitting standards				National Standards	
<b>EO 24° fittings</b> DIN EN ISO 8434-1/-4 (former: DIN 2353)	<b>Triple-Lok®</b> ISO 8434-2 ● 37° flared fittings	<b>O-Lok®</b> ISO 8434-3 ● O-ring face seal fittings	<b>K4 Adapter</b> ISO 8434-6 ● BSPP 60° cone adapter	<b>P4 Adapter</b> JIS B 8363 JIS BSPP 60° cone dapter	<b>NPSM-Adapter</b> SAE J 516 NPTF 30° cone



## Approvals

Parker tube fittings are recognized by various acceptance organizations, among which are:

- Germanischer Lloyd (GL)
- Lloyds Register of Shipping (LR)
- Det Norske Veritas (DNV)
- American Bureau of Shipping (ABS)
- Russian Maritime Register of Shipping (RMS)
- China Classification Society (CCS)
- Deutscher Verein des Gas- und Wasserfaches (DVGW)

For other applications, Parker tube fittings also approved by diverse national authorities.

Numerous original equipment manufacturers and end-users of various industries have approved Parker tube fittings.

**Attention:**

Type Approvals usually are limited to certain products, applications, working conditions, validity time or other restrictions. We gladly inform you on your individual application and send out the required documentation.



## Tube Specifications

### Tubes with metric outside diameters

Tube material Steel	Speci- fication	Construction	Condition	Tolerances OD/ wallthickness	Surface	Suitable fitting systems				Note
						DPR/PSR/ EO-2	EO-2 Form	T- Lok®	O-Lok®	
E235 (= 1.0308)	DIN EN 10305-4	Seamless cold drawn	+N (= normal annealed)	EN 10305-4	phosphated, oiled or A3C or CF	X	X	X	X	1)
R37	ISO 3304		NBK (= normal annealed)	ISO 3304		X	X	X	X	2)
E355 (= 1.0580)	DIN EN 10305-4		+N (= normal annealed)	EN 10305-4		X	X	X	X	3)
R50	ISO 3304		NBK (= normal annealed)	ISO 3304		X	X	X	X	4)

Tube material Stainless steel	Speci- fication	Construction	Condition	Tolerances OD/ wallthickness	Surface	Suitable fitting systems				Note	
						DPR/PSR/ EO-2	EO-2 Form	T- Lok®	O-Lok®		
1.4571 (= TP 316 Ti)	DIN EN 10216-5	Seamless cold drawn	CFA	DIN EN 10305-1	plain	X	X	X	(X)	5)	
1.4541 (= TP 321)						X	(X)	X	(X)	6)	
1.4404 (= TP 316L)	EN ISO 1127 or ASTM A269/A213		Solution heat treated (bright annealed)	D4/T3* (EN ISO 1127) or ASTM A269/A213		X	(X)	X	X	7)	
1.4301 (= TP 304)						X	(X)	X	X	8)	
1.4306 (= TP 304L)	EN ISO 1127	Welded tube	DIN 17457-K2 for OD 6–12 mm, cold drawn welded (CDW) with smooth outer surface for OD 14–42 mm	ASTM A269/A213	plain, weld seam approx. invisible	X	(X)	X	X	9)	
1.4401 (= TP 316)						X	(X)	(X)	(X)		10)
1.4541 (= TP 321)						X	(X)	(X)	(X)		

Tube material Copper	Speci- fication	Construction	Condition	Tolerances OD/ wallthickness	Surface	Suitable fitting systems				Note
						DPR/PSR/ EO-2	EO-2 Form	T- Lok®	O-Lok®	
Cu DHP R290/250/200	EN 1057 EN 12449	Seamless tube	EN 1057 EN 12449	EN 1057 EN 12449	clean, smooth plain	X	X	X	X	11)

- 1) Recommended EO standard precision tubes for high pressure hydraulic applications. Tight tolerances for easy handling. Good bendability and weldability.
- 2) Tolerance on large tube OD's not as tight as EO tube.
- 3) Precision tubes for very high pressure hydraulic applications. Tight tolerances for easy handling. Good bendability and weldability.
- 4) Tolerance on large tube OD's not as tight as EO tube.
- 5) Recommended EO standard precision tubes for high pressure hydraulic applications. Tight tolerances (same as steel tubes) for easy handling. Good weldability and corrosion resistance. ( ) = on request
- 6) Recommended EO standard precision tubes for high pressure hydraulic applications. Tight tolerances (same as steel tubes) for easy handling. Good weldability. ( ) = on request
- 7) Common tube, OD. tolerance not as tight as EO tube. Good weldability and corrosion resistance. ( ) = Tolerance at 42 mm tube OD is too large
- 8) Common tube, OD. tolerance not as tight as EO tube. ( ) = Tolerance at 42 mm tube OD is too large
- 9) Common tube, OD. tolerance not as tight as EO tube. ( ) = Tolerance at 42 mm tube OD is too large
- 10) Used in Pneumatic (low pressure) applications. ( ) = Only for tube with smooth outer and inner surface.
- 11) Support sleeve "VH" may be required, e.g. for R250-28x1.5.

\* = For DPR/PSR/EO-2 systems: thin walled tubes which need a support sleeve require tighter tolerance class T4. Tube O.D. tolerance class D3 is not recommended. D3 may reduce function and capability of the tube connection systems.

## Systematic fitting selection

### Tube Specifications

Tubes with imperial (inch) outside diameters

Tube material Steel	Specification	Construction	Condition	Tolerance OD/ wallthickness	Surface	Suitable		Note
						T- Lok®	O-Lok®	
Carbon steel C-1010	SAE J524 (AMS 5050 J, ASTM A179)	Seamless	Fully annealed	SAE J524 (AMS 5050 J, ASTM A179)	plain, oiled	X	X	1)
	SAE J525	Welded and drawn		SAE J525		X	X	2)

Tube material Stainless steel	Specification	Construction	Condition	Tolerance OD/ wallthickness	Surface	Suitable		Note
						T- Lok®	O-Lok®	
1.4404 (= TP 316L)	ASTM A269, ASTM A213	Seamless	Fully annealed	ASTM A269, ASTM A213	plain	X	X	3)
1.4301 (= TP 304)						X	X	4)
1.4401 (= TP 316)						X	X	
1.4404 (= TP 316L)	ASTM A249, ASTM A269	Welded and drawn		ASTM A249, ASTM A269		X	X	
1.4301 (= TP 304)						X	X	
1.4401 (= TP 316)						X	X	

Tube material Copper	Specification	Construction	Condition	Tolerance OD/ wallthickness	Surface	Suitable		Note
						T- Lok®	O-Lok®	
Copper	SAE J528 (ASTM B-75)	Seamless	Soft annealed Temper "O"	SAE J528 (ASTM B-75)	plain	X	X	4)

- 1) Recommended EO tubes for Hydraulic/Pneumatic applications
- 2) Common tubes in North-America
- 3) Recommended tubes for Hydraulic/Pneumatic applications. Good weldability and corrosion resistance
- 4) Tubes in North-America

## Fitting selection summary

Traditional bite-type fittings have been originally developed and designed for operating conditions of fluidpower systems completely different from today's and future market requirements.

New products and improved assembly technologies have been developed and introduced by Parker to fulfill today's and future requirements of the operators of fluidpower equipment. This new tube fitting generation and the according assembly methods are classified as *Dry Technology*. All qualifying products are explicitly *Dry Technology*-labelled throughout this catalogue.

For all new designs of

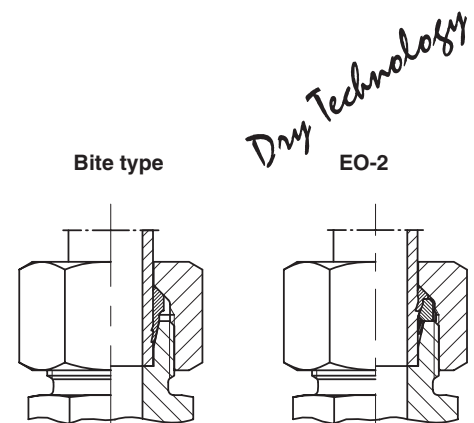
- hydraulic systems
- pneumatic systems,
- coolant systems,
- lubrication systems and
- sprinkler systems

only *Dry Technology*-classified components should be selected.

## Dry technology versus traditional technology

### EO-2 versus bite type

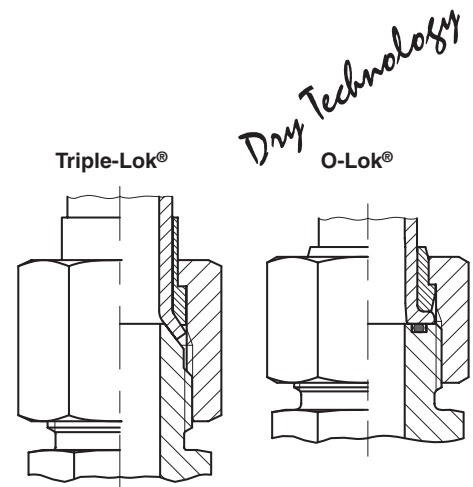
- + Elastomeric seal
- + Sufficient seal volume to compensate tube tolerance
- + High degree of fine sealing
- + Long-term reliability without retightening
- + No air ingress
- + Clear hit-home-feel at assembly
- + Easy assembly check
- + Integrated preassembly tool
- + No stress of inner cone of fitting body
- + No wear of preassembly tools
- + Direct assembly of stainless steel tubes possible (EO-2)
- + No galling of stainless steel threads
- + Existing tools and EOMAT machines can be used for efficient assembly (EO-2)
- + All parts integrated in Functional Nut (EO-2)
- + No confusion of individual ferrules
- + Less handling effort
- + Unlimited repeated assembly
- + Seal can be individually replaced
- + ISO-standardised (DIN EN ISO 8434-1)
- + Million times proven product since 1993 (EO-2)
- + Interchangeable with EO Progressive Ring (EO-2)
- Higher component cost than traditional bite-type fittings
- + Low total cost
- + Best value for end user
- + Mandatory specified from various industries, such as:  
automotive production, injection molding, mobile equipment, shipbuilding and offshore exploration
- + Globally gaining popularity



## Systematic fitting selection

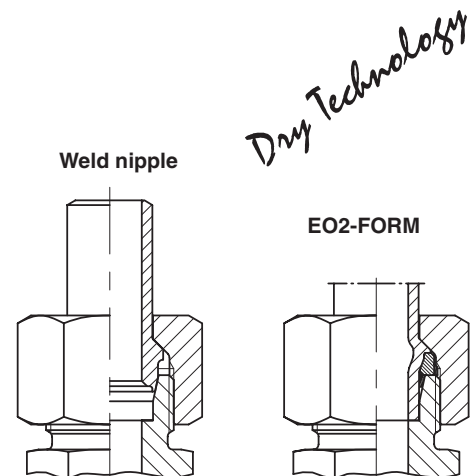
### O-Lok® versus traditional Triple-Lok®

- + Higher pressure resistance than Triple-Lok®
- + Elastomeric seal
- + Sufficient seal volume to compensate tube tolerance
- + High degree of fine sealing
- + Long-term reliability without retightening
- + No air ingress
- + Clear hit-home-feel at assembly
- + Easy assembly check
- + Easy installation of flat-face components
- + Superior vibration resistance
- + Parflange® orbital flanging technology
- + Unlimited repeated assembly
- + Seal can be individually replaced
- + ISO-standardised (DIN EN ISO 8434-2)
- + Million times proven product
- Higher component cost than Triple-Lok®
- Parflange® machine required
- + braze sleeves can be used for field repair
- + Low total cost
- + Best value for end user
- + Mandatory specified from various industries, such as:  
agricultural equipment, mobile construction machines, injection molding
- + Globally gaining popularity



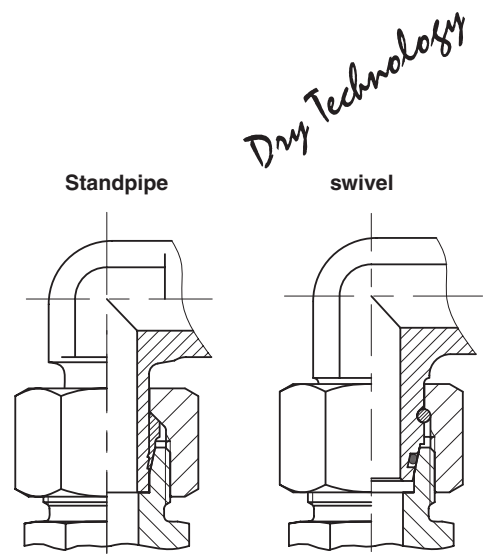
### EO2-FORM versus traditional Weld nipple

- + Safe, form-fit connection
- + Easy assembly process
- + trouble-free with zinc-plated tube
- + Elastomeric seal
- + Sufficient seal volume to compensate tube tolerance
- + High degree of fine sealing
- + Long-term reliability without retightening
- + No air ingress
- + Clear hit-home-feel at assembly
- + Easy assembly check
- + Easy tube preparation
- + Easy quality inspection
- + No rework of welding
- + Use of existing EO-2 seals
- + Unlimited repeated assembly
- + Seal can be individually replaced
- + ISO-standardised (DIN EN ISO 8434-1/-4)
- + Basic product EO-2 is million times proven
- + Interchangeable with EO Progressive Ring (EO-2)
- + No new or additional components required
- Higher component cost than traditional bite-type fittings
- EO2-FORM machine required
- + EO-2 can be used for field repair
- + Low total cost
- + Best value for end user
- + Approved for application in hydraulic presses, injection molding, lifts, waterlocks and shipbuilding
- + Globally gaining popularity



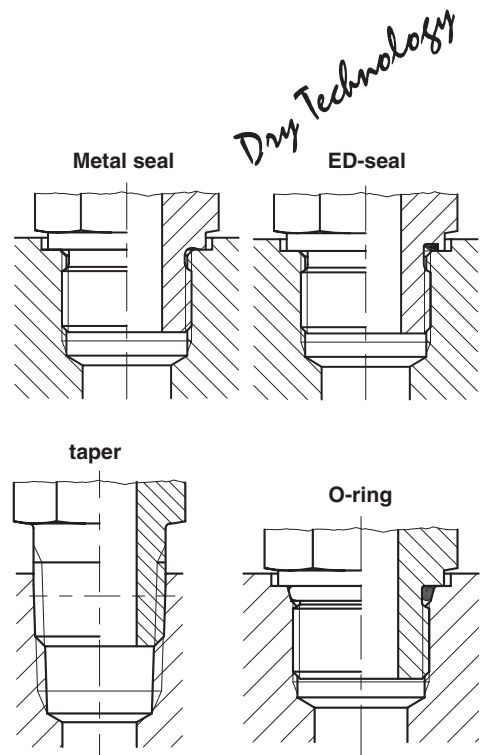
**Swivel adjustable versus traditional standpipe**

- + Elastomeric seal
- + High degree of fine sealing
- + Long-term reliability without retightening
- + No air ingress
- + Superior pressure rating
- + High mechanical strength
- + No blow-out at incomplete assembly
- + Easy fitting installation
- + No stress of inner cone of fitting body
- + No wear of preassembly tools
- + Unlimited repeated assembly
- + Seal can be individually replaced
- + ISO-standardised (DIN EN ISO 8434-1/-4)
- + Milliontimes proven product since 1970
- + Interchangeable with EO standpipe fittings
- Higher component cost than traditional standpipe fittings
- + Low total cost
- + Best value for end user
- + Mandatory specified from various industries, such as:  
automotive production, injection molding, mobile equipment, shipbuilding and offshore exploration
- + Most frequently used and still gaining popularity



**Male stud with Elastomeric or O-ring seal versus traditional Metal seal tapered thread**

- + Elastomeric seal
- + High degree of fine sealing
- + Long-term reliability without retightening
- + No air ingress
- + Superior pressure rating
- + Clear hit-home-feel at assembly
- + No damage to port surface
- + Assembly and performance almost independant of port material
- + Low assembly torques
- + No metal sealing edge which may be damaged at transport or handling
- + Unlimited repeated assembly
- + Seal can be individually replaced
- + ISO-standardised (ISO 1179/ISO 6149/DIN ISO 6149)
- + Million times proven product since 1964
- + Interchangeable with traditional fittings
- + Wider product range and better availability
- Higher component cost than traditional bite-type fittings
- + Low total cost
- + Best value for end user
- + Mandatory specified from various industries, such as:  
automotive production, injection molding, mobile equipment, shipbuilding and offshore exploration
- + Most frequently used and still gaining popularity



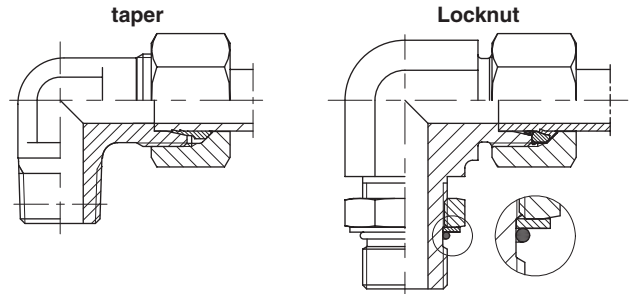


## Systematic fitting selection

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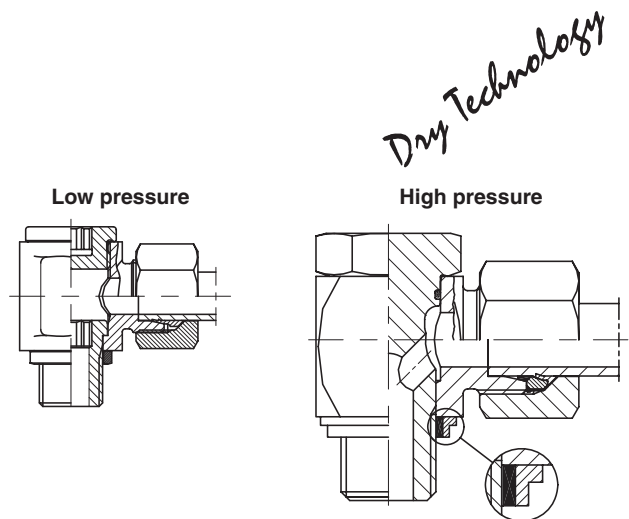
### Locknut Adjustables versus tapered thread

- + Elastomeric seal
- + High degree of fine sealing
- + Long-term reliability without retightening
- + No air ingress
- + Good flow characteristic
- + 360° orientable
- + More compact than swivel orientable combination
- + No additional sealant required
- + Clear hit-home-feel at assembly
- + No damage to port surface
- + Assembly and performance almost independent of port material
- + Low assembly torques
- + Unlimited repeated assembly
- + Seal can be individually replaced
- + Interchangeable with traditional fittings
- + Available in 90°, 45° elbow, T- and Run-T-configuration
- Machined spot surface required
- + Lower price than Banjo fittings
- + Low total cost
- + Best value for end user
- + Globally gaining popularity



### High pressure banjo versus traditional low pressure elbow

- + Elastomeric seal
- + High degree of fine sealing
- + Long-term reliability without retightening
- + No air ingress
- + 360° orientable
- + Compact design
- + Suitable for high pressure applications
- + Matching small spot surface
- + Clear hit-home-feel at assembly
- + No damage to port surface
- + Assembly and performance almost independent of port material
- + Seal does not fall off
- + Only one hollow bolt needs to be tightened
- + No hidden screw
- + Unlimited repeated assembly
- + Seal can be individually replaced
- + Million times proven product since 1980
- + Interchangeable with traditional fittings
- + Available in 90°elbow and T-configuration
- Slight flow restriction
- + Low total cost
- + Best value for end user
- + Globally gaining popularity





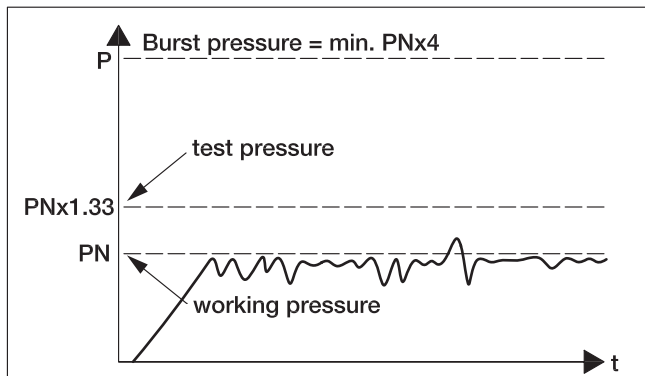
**EO<sup>®</sup> Ermeto Original**  
***Performance data***



## Pressure rating

### Nominal pressure PN

The Nominal pressure PN is a figure relating to the pressure rating of a fluid component for continuous dynamic applications. It is rounded to correspond to internationally standardised ratings. Logical series of fittings are grouped together, with the nominal pressure of the group being that of the “lowest common denominator” within the group.



Internationally, these nominal pressures are recognised and serve to match common sizes of components together. Parker tube fittings meet or exceed common standardised pressure ratings.

To prove the long term dynamic load resistance, components are tested under pressure impulse conditions of  $PN \times 1.33$ , at 1Hz for 1 million cycles. Static test burst pressures are at least 4 times the PN value.

Exception: for ball valves the static test burst pressures are at least 1.5 times the PN value according to DIN 3230 T5 and ISO 5108.

### Conversion chart

Bar	Mpa	PSI
100	10.0	1450
160	16.0	2321
210	21.0	3045
315	31.5	4569
350	35.0	5075
400	40.0	5801

## Pressure reductions and temperatures

Required pressure reductions (dependant on the material) with reference to the catalogue pressures for higher temperatures. Both metal fitting material and elastomeric sealing compound have to be selected according to the temperature range of the system.

**Attention:** Fluid Compatibility see page C5.

Fittings material	Pressure reduction of permissible operating temperatures TB in °C														
	-60	-50	-40	-35	-25	+20	+50	+100	+120	+150	+175	+200	+250	+300	+400
Steel, fittings						0%					-11%	-19%	-28%		
Steel, tubes						0%					-19%		-27%		
Stainless steel, fittings						0%					-11%		-20%		-30%
Stainless steel, tubes						0%		-5.5%	-11.5%		-21.5%			-29%	-34%
Brass, fittings <sup>1)</sup>						35%									
Sealing material NBR (e.g. Perbunan)															
Sealing material FKM															
Sealing material EPDM <sup>2)</sup>															

- Permissible operating temperature
- Ambient temperature of hydraulic and pneumatic applications
- Temperature not permissible

Perbunan = registered trademark of Bayer  
<sup>1)</sup> 35% (if not extra shown in PN-Column “MS” for Brass)  
<sup>2)</sup> EPDM is not compatible with oil (not normally held in Stock)

**Calculation example:**  
 PN fitting 16S/71 = 400 bar  
 Temperature = 200°C  
 Material = Stainless steel  
 Pressure reduction fittings = 20%  
 Pressure reduction tubes = 21,5%  
 PN tube 16 x 2.5/71, DIN 2413 III = 362 bar

Formula:

$$PN_{\text{fitting } 200^\circ\text{C}} = \frac{400 \text{ bar}}{100\%} \times (100\% - 20\%) = 320 \text{ bar}$$

$$PN_{\text{tube } 200^\circ\text{C}} = \frac{362 \text{ bar}}{100\%} \times (100\% - 21,5\%) = 284 \text{ bar}$$

## Materials

Fittings	Raw material	Material				Fitting type									
						EO				O-Lok®			Triple-Lok®		
		Designation <sup>2)</sup>	Material No.	Standard	US Designation <sup>2)</sup>	Bodies	Nuts	Ferrules	Weld fittings	Bodies	Nuts	Sleeves	Bodies	Nuts	Sleeves
Steel	Barstock	11SMnPb30	1.0718	DIN EN 10277-3	SAE 12L14	X				X		X	X		X
	Free cutting steel	11SMn30	1.0715	DIN EN 10277-3	SAE 1213	X									
		46S20	1.0727	DIN EN 10277-3	SAE 1146	X									
	Forgings Free cutting steel	15S10	1.0710	DIN 1651		X									
		11SMn30 modified	1.0715	DIN EN 10087	SAE 1213 modified					X			X		
		36SMn14	1.0764	DIN EN 10087		X									
	Extrusion steel	C10C	1.0214	DIN EN	SAE C1010		X				X	X		X	X
		Weldable steel	C15	1.0401	DIN 10277-3				X						
	Other	Steel at the manufacturers discretion special heat treated							X						X
Stainless steel	Barstock	X6CrNiMoTi 17-12-2	1.4571	DIN EN 10088	ANSI 316Ti	X	X		X						
		X2CrNiMo 17-13-2	1.4404	DIN EN 10088	ANSI 316L					X	X	X	X	X	X
	Forgings	X6CrNiMo Ti17-12-2	1.4571	DIN EN 10088	ANSI 316Ti	X	X		X						
		X5CrNiMo 17-12-2	1.4401	DIN EN 10088	ANSI 316					X	X	X	X	X	X
	Other	Stainless steel at the manufacturers discretion special heat treated							X						
Brass	Barstock	CuZn35Ni2	2.0540	DIN 17660		X	X	X							
				ASTM B16/B453	CA360/345				X	X	X	X	X	X	
	Forgings	CuZn35Ni2	2.0540	DIN 17660		X									
				ASTM B124	CA377				X			X			

1) Non standard fitting types like e.g. banjo fittings, rotary fittings, adjustable fittings with locknut and flanges might be made from different materials.

2) Equivalent materials may be used

Forging: 11 SMn 30+Bi (similar to 1.0715/DIN EN 10087)

Straight: 11 SMn Pb30 (1.0718/DIN EN 102773)

Sealings	NBR	e.g. N552-90, Perbunan (registered trademark of Bayer)
	FKM	e.g. V894-90
	EPDM	e.g. E540-80
	PTFE	e.g. Teflon® (registered trademark of DuPont)
	POM	e.g. Delrin (registered trademark of DuPont)

## Surface treatment

Parker tube fittings from steel are delivered worldwide with a high quality surface protection:

Galvanic zinc plated and bright passivated with special sealer (suffix CF).

### Why zinc plated?

The requirements for corrosion resistance of tube fittings have been increasing in the past few years. Increasingly tube systems are not painted. Higher demands are requested also for an aesthetic point of view.

The traditional black-grey surface “phosphated and oiled” (Znphr5f – DIN 50942) used for tube connections in the past does not longer meet these demands. An galvanized deposit zinc layer offers the following advantages: The corrosion resistance increases significantly due to a plating of min. 8 µ and additional sealing by chromating process. In case of scratches or nicks – which are unavoidable during assembly – zinc develops a cathodical protection of the steel fitting body against localised corrosion and abrasion.

The corrosion resistance of the CF surface is 400 % above zinc plated surfaces to meet highest requirements. The CF surface is also Cr(VI)-free to avoid any contamination in

the manufacturing process and meets current regulations e.g. European “End of Life Vehicles” directive.

The silver bright colour due to the chromating or passivation process offers an attractive appearance.

All major TFDE manufacturing locations are equipped with their own modern galvanic plants. The process control is specially orientated to the tube fitting product.

The users of Parker fittings benefit from:

- homogeneous thickness of plating (average 13 µm), measured on outside contour for good screwable threads
- high quality above-average concerning avoidance of nicks
- very good corrosion resistance

Continuous corrosion tests like salt spray tests according to ISO 9227/5% NaCl show an average resistance of 500 hr in contrast to white rust and 700 hr in contrast to red rust for CF surfaces.

Particular fitting series or fitting components and valves are delivered with other or modified surfaces for functional reasons or for better differentiation.

Material	Fitting system	Fitting type	Surface protection/Surface							
			CF/Cr3* Zinc plated bright passivated	CF + Glide coating	A3K Zinc plated bright passivated	Znphr5f black phosphated	Plain no coating	Plain + Glide coating	Plain + Inside silver	
Steel	EO-2	Fitting bodies	X							
		Functional nuts		X						
	EO	Fitting bodies	X							
		Nuts		X						
		Progressive stop rings			X					
		Weld fittings				X				
	EO2-FORM	Bodies and nuts from EO are used								
	O-Lok®	Fitting bodies	X							
		Nuts	X							
		Parflange® sleeves	X							
		Brazing sleeves					X			
	Triple-Lok®	Fitting bodies	X							
		Nuts	X							
Sleeves		X								
Stainless steel	EO-2	Fitting bodies					X			
		Functional nuts up to 12-L/10-S						X		
		Functional nuts from 15-L/12-S							X	



Material	Fitting system	Fitting type	Surface protection/Surface						
			CF/Cr3* Zinc plated bright passivated	CF + Glide coating	A3K Zinc plated bright passivated	Znphr5f black phosphated	Plain no coating	Plain + Glide coating	Plain + Inside silver
Stainless steel	EO	Fitting bodies					X		
		Nuts up to 12-L/10-S						X	
		Nuts from 15-L/12-S							X
		Progressive rings				X			
	E02-FORM	Bodies and nuts from EO are used							
	O-Lok®	Fitting bodies					X		
		Nuts					X		
		Sleeves					X		
	Triple-Lok®	Fitting bodies					X		
		Nuts					X		
Sleeves						X			
Brass	All systems	Fitting bodies					X		
		Nuts					X		
		Sleeves & ferrules					X		

A3K according to DIN EN ISO 4042 / Znphr5f according to DIN EN ISO 3892 and DIN 50942

O-Lok and Triple-Lok parts are plated Cr3 and conform to FC-F01 specification, 120 hours to white rust, 240 hours to red rust.

## Fluid compatibility

Both metal fitting material and elastomeric seal compound have to be selected according to the fluid used. Standard recommendations for static seals based on experience and sealing compound manufacturers specification. For use of sealing compounds that are used for dynamic seals like rotary fittings or non-return-valves, see note at end of table.

Fluid	Fitting material			Sealing material		
	Steel	Stainless steel	Brass	NBR	FKM	EPDM
Acetone	2	1	1	3	3	1
Acetylene	2	1	3	3	3	2
Air (oil free)	1	1	1	1	1	1
Ammonia liquid	2	1	3	2	3	1
Ammonia gas, cold	1	1	3	1	3	1
Animal oils (Lard oil)	2	2	2	1	1	2
Aral, Vitam BAF	1	1	X	1	1	3
Argon	1	1	1	1	1	1
Asphalt	3	1	3	2	1	3
ASTM-Oil, no. 1	1	1	1	1	1	3
ASTM-Oil, no. 2	1	1	1	1	1	3
ASTM-Oil, no. 3	1	1	1	1	1	3
ASTM-Oil, no. 4	1	1	1	2	1	3
ATF oil	1	1	1	1	1	3
Automotive brake fluid	1	1	1	3	3	1
Benzene	1	1	1	3	1	3
Brine (sodium chloride)	X	2	X	1	1	1
Butane	1	1	3	1	1	3
Carbon bisulphide	1	1	3	3	1	X
Carbon dioxide	1	1	1	1	2	1
Carbon oxide	1	1	1	1	1	1
Castrol, Biotec HVX	1	1	X	1	1	3
Chlorine (dry)	3	1	3	3	1	X
Compressed air	1	1	1	1	1	1
Crude oil	2	1	3	2	1	3

Fluid	Fitting material			Sealing material		
	Steel	Stainless steel	Brass	NBR	FKM	EPDM
Cutting oil	1	1	X	1	3	1
DEA, Econa E22	1	1	X	1	X	3
DEA, Econa E46	1	1	X	1	X	3
Diesel fuel	1	1	1	1	1	3
ECOOL	1	1	X	1	1	X
ESSO, Univis 13	1	1	X	1	1	3
ESSO, Univis 26	1	1	X	1	1	3
ESSO, Univis 32	1	1	X	1	1	3
ESSO, Univis 46	1	1	X	1	1	3
Ethanol (Ethylalcohol)	1	1	1	1	3	1
Ether	1	1	1	3	3	2
FINA, Biohydran RS 38	1	1	X	1	1	3
Flue gas	3	1	3	3	2	X
FRAGOL, Hydrolub 125	1	1	X	1	X	3
Freon 11	X	X	1	2	2	3
Freon 12	1	3	1	2	1	3
Freon 22	3	1	1	3	2	3
Gasoline	2	1	1	2	1	3
Gas, liquid propane (LPG)	1	1	1	1	1	3
Glycerine	2	1	2	1	1	1
Glycol (Ethylenglykol)	1	1	2	1	1	1
Heating fuel oil	1	1	1	1	1	3
Helium	1	1	1	1	1	1
Houghton Safe 1120	1	1	X	3	1	1
Houghton Safe 620	1	1	X	1	2	1
Hydrochlorid acid	3	2	3	3	1	2
Hydrogen	3	1	X	3	3	3
Hydrogen peroxide	3	1	3	3	1	2
Hydrolube	1	1	1	1	1	1
Iodine	3	1	3	2	1	2
Kerosene	1	1	1	1	1	3
Lubricating oil SAE 10,20,30,40,50	1	1	1	1	1	3
Methane	1	1	1	1	1	3
Methanol	1	1	1	1	3	1
MIL-F-8192 (JP-9)	1	1	1	3	1	3
MIL-H-5606	1	1	1	1	1	3
MIL-H-6083	1	1	1	1	1	3
MIL-H-7083	1	1	1	1	2	1
MIL-H-8446 (MLO-8515)	1	1	2	2	1	3
MIL-L-2104 & 2104B	1	1	1	1	1	3
MIL-L-7808	2	1	3	2	1	3
Mineral oil	1	1	1	1	1	3
Natural gas	1	1	2	1	1	3
Natural gas, untreated	3	2 <sup>1)</sup>	3	3	3	3
Natural mineral oil	1	1	3	2	1	3
Neon	3	1	1	1	1	1
Nitric acid	3	1	3	3	2	3
Nitrogen	1	1	1	1	1	1
Oil	1	1	3	1	1	3
Oxygen (gas, cold)	3	1	2	3	3	3
Ozone	1	1	3	3	1	1
Petrolatum	1	1	1	1	1	3
Petroleum oil	1	1	1	1	1	3
Phosphoric acid	3	3	1	3	1	2
Plantohyd 32 S	1	1	X	1	X	3
Plantohyd 40 N	1	1	X	1	1	3
Propane	1	1	1	1	1	3
R134A	1	1	1	3	3	1

Fluid	Fitting material			Sealing material		
	Steel	Stainless steel	Brass	NBR	FKM	EPDM
Sea Water	3	2	3	1	1	1
SHELL, Naturelle HF-E-46	1	1	X	1	1	3
SHELL, Tellus Oil DO 32	1	1	X	1	1	3
Silicone oil	1	1	X	1	1	1
Skydrol 500	1	1	3	3	3	1
Skydrol 7000	1	1	3	3	2	1
Soap solutions	3	1	3	1	1	1
Steam	2	1	2	3	3	1
Stoddard solvent	1	1	2	1	1	3
Sulphur dioxide	3	1	3	3	3	1
Sulphuric acid	3	2	3	3	1	3
Toluol	1	1	1	3	2	3
Transmission fluid	1	1	1	1	1	3
Trichlorethane	2	1	X	3	1	3
Turpentine	2	1	3	1	1	3
Water	2	1	1 <sup>2)</sup>	1	2	1
Xylol	1	1	1	3	1	3

Applicability: 1 = satisfactory  
 2 = fair  
 3 = not recommended  
 X = insufficient data

NBR = e.g. Perbunan (registered trademark of Bayer)  
 FKM

<sup>1)</sup> Untreated natural gas requires stainless steel with reduced material hardness.

<sup>2)</sup> Brass is resistant against crack under normal circumstances. If overloaded (e.g. by overassembly) the resistance especially against ammoniac and nitric derivatives can be negatively influenced. This might cause the defect of the connection.

This fluid compatibility chart is only applicable on so called "static seals", such as O-rings and profile sealing rings (e.g. ED-seal, DOZ-seal) in tube fitting and flange systems.

For fluid compatibility data of valves, rotary fittings or other multi-function components please review the relevant product pages.

## Biodegradable oils

Due to environmental concerns and new legislation biodegradable oils are rapidly gaining importance for both mobile and stationary applications. The usage of non-inflammable fluids will remain limited to special applications like mining, steel mills and heavy machines.

### Media

Biodegradable oils can be classified into 3 categories:

#### HEPG (Glycol based fluids)

- + Wide temperature range (−45°C ... 100°C)
- + Very stable against ageing
- + NBR and FKM seals are compatible
- + Moderate viscosity change with temperature
- + Water soluble
- Not mixable with mineral oils or HEES, HETG types
- Careful flushing recommended when changing from mineral oil
- Paints can be dissolved
- Care required with material compatibility (e.g. do not use any zinc containing materials)
- Density > 1,100 kg/m<sup>3</sup> possible design changes
- Price?

#### HETG (Vegetable-based fluids)

- + Mixable with mineral oils
- + Normal sealing material are compatible (e.g. NBR or FKM)
- + Good lubricating properties
- + Paint resistant to fluid
- + Viscosity changes with temperature are moderate
- Limited temperature range (−25° C to +70°C)
- Max. temperature not to be exceeded
- Limited lifetime
- UV and ozone sensitive
- Beware of water take-up (cracking?)
- Price?

#### HEES (Synthetic ester based fluids)

- + Wide temperature range (−30° C ... +90° C or over 100° C with some variants)
- + Good lifetime
- + Mixable with mineral oils
- + Normal sealing materials compatible (FKM and NBR recommended)
- + Machine paints resistant to fluid
- + Viscosity changes with temperature are moderate
- + Good lubricating properties
- Danger of hydrolysis with water take-up (filters, dryer, occlusion)
- Price?

### Compatibility

Generally, TFDE steel fittings with standard NBR seals are suitable for most applications.

	−20° C ... 80° C	80° C ... 120° C
HEPG Polyalkylenglycol	NBR FKM	Not suitable for Oil
HETG Vegetable Oil	NBR FKM	– FKM
HEES Synthetic ester	NBR FKM	– FKM

### Suitable sealing compounds

Experience shows that media compatibility is not a critical issue for static seals used on tube fittings. In doubt please contact TFDE application engineering.

### Pragmatic approach

If there is doubt about switching over to softseal fitting systems (ISO6149/Eolastic/O-Lok®/EO-2), it might be a good idea to have a close look on the existing hydraulic system. If NBR seals perform well on hoses, cylinders, valves or filters there is nothing to worry about standard TFDE fittings. Usually the design engineers know when special seal compounds like FKM have to be used.

## Flow characteristics

Hydraulic systems are in most cases only rated with a flow velocity defined on the basis of experience. The pressure losses in lines are not taken into account, or measured later on when testing the system. As the pressure losses increase proportionally greater than the flow resistance, it is important to achieve the best rating of the system, that they are already taken into account when planning the tube connections. Calculation is not as difficult as it is often thought, and this chapter is intended to provide a guideline. Besides, it provides information on how excessive pressure losses can be avoided, because pressure losses result in losses in performance and excessive heat. Noise occurs, and possibly cavitation in suction lines.

### Medium

All indication given with regard to flow restrictions and to flow properties refer exclusively to liquids. For gaseous media, the variable density of the gas must additionally be taken into account.

### Units

$$c = \text{Flow velocity} \left[ \frac{\text{m}}{\text{s}} \right]$$

$$d = \text{Pipe inside diameter [m]}$$

$$L = \text{Pipe length [m]}$$

$$p = \text{Pressure [Pa], 1 bar} = 100000 \text{ Pa}$$

$$\dot{V} = \text{Flow rate} \left[ \frac{\text{m}^3}{\text{s}} \right], 1 \frac{\text{m}^3}{\text{s}} = 60000 \frac{\text{l}}{\text{min}}$$

$$\lambda = \text{Pipe friction factor}$$

$$v(T) = \text{Kinematic viscosity of the medium depending on temperature} \left[ \frac{\text{m}^2}{\text{s}} \right]$$

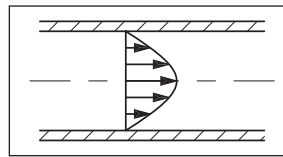
$$\rho(T) = \text{Density of the medium depending on temperature} \left[ \frac{\text{kg}}{\text{m}^3} \right]$$

$$\zeta = \text{Individual pressure loss coefficient}$$

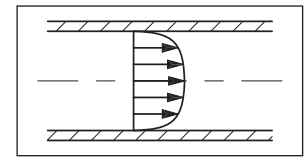
Only base units have been used. This has the advantage that the formula do not contain correction factors and there is no danger of confusion, e.g. that values are used with the wrong unit. In case values are given in other units – the flow rate is e.g. often given in l/min – it is advisable to convert them into the base units before starting calculation.

### Pressure losses in pipe lines

To calculate pressure losses in pipe lines, it must first be determined whether there is a laminar or a turbulent flow. Laminar flow is homogenous and without turbulence. In case of turbulent flow, the losses increase much more quickly.



Flow profile with laminar flow



Flow profile with turbulent flow

The kind of flow is defined by the Reynolds' number. With a Reynolds' number of more than 2320, the flow changes to turbulent. The Reynold number is calculated according to the formula:

$$Re = \frac{c \cdot d}{v(T)}$$

The Reynolds' number is a non-dimensional number. The critical fluid velocity at which the flow regime can change, is thus calculated from:

$$c_{cr} = 2320 \cdot \frac{v(T)}{d} \left[ \frac{\text{m}}{\text{s}} \right]$$

With a given flow rate, the fluid velocity can be calculated according to the formula:

$$c = \frac{\dot{V} \cdot 4}{d^2 \cdot \pi} \left[ \frac{\text{m}}{\text{s}} \right]$$

Subsequently, the pipe friction factor  $\lambda$  can be calculated. The pipe friction factor  $\lambda$  is a function of the Reynold number and also depends on the roughness of the pipe. As hydraulically smooth pipes can generally be assumed in hydraulic applications, the pipe friction factor  $\lambda$  is calculated according to the following formula:

$$\text{laminar flow, (Re} < 2320\text{): } \lambda = \frac{64}{Re}$$

$$\text{turbulent flow, (Re} > 2320\text{): } \lambda = \frac{0.3164}{\sqrt[4]{Re}}$$

Finally, if all factors are known, the pressure loss in a certain pipe line can be calculated according to the formula:

$$p = \lambda \cdot \frac{L}{d} \cdot \frac{\rho(T) \cdot c^2}{2} \text{ [Pa]}$$

### Calculation of individual losses

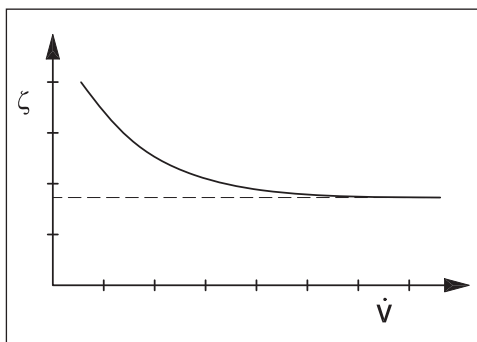
A hydraulic system does not only incorporate pipes, but also valves, fittings, pipe bends etc. that cause flow losses. These individual losses are often much higher than the pipe losses and are calculated according to the following formula:

$$p = \zeta \cdot \rho(T) \cdot \frac{c^2}{2} \text{ [Pa]}$$



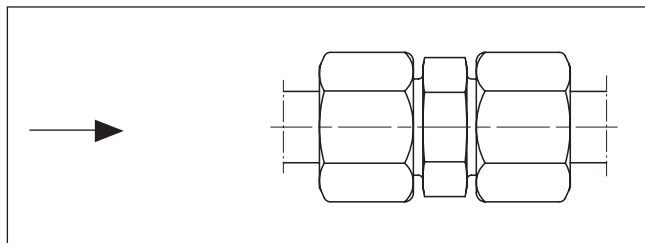
## Performance data

The pressure loss coefficient  $\zeta$  relates to an individual hydraulic component. It covers circulation, impact and separation losses of the flow in a component. In most cases, valve or fitting manufacturers state the pressure loss coefficient of their products. The  $\zeta$  values are not completely constant. The values increase in the case of very low fluid velocities. The following diagram shows the typical course of the  $\zeta$  values for a component, depending on the fluid velocity, as it has been determined through a series of tests in the laboratory of the Parker Hannifin GmbH & Co. KG.



As only the flow resistances at nominal power, i.e. at higher fluid velocities, are generally calculated to rate a hydraulic plant, they may therefore be slight variations for individual sizes.

**Straight fittings, e.g. G, GE, EGE, HMTX, F...MTX, F6...MX, HMLO, F...MLO, F6...MLO, ...**



If there is a step change between the bore of the fitting and the inside diameter of the pipe, the conditions applicable to reducers (see below) are valid.

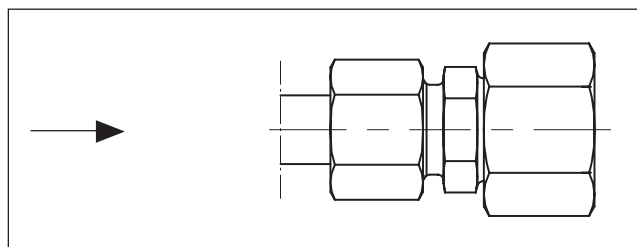
In a normal case, however, the pressure loss is very small, so that it cannot be measured by normal methods.

Literature gives a pressure loss coefficient of 0.01 to 0.05.

**Reducers, e.g. RED, GR, TRMTX, TRMLO, ...**

With reducers, distinction must be made between a cross section increase or reduction. The fluid velocity taken as a basis to calculate the pressure loss is always the velocity at the outlet of the flow.

**Extension of the cross section:**



$$\zeta = \left( \frac{A_2}{A_1} - 1 \right)^2$$

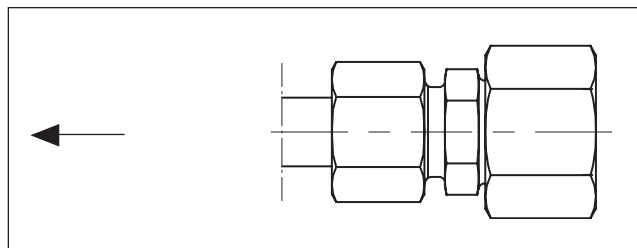
With  $A_1$  ... Inlet cross section area  
 $A_2$  ... Outlet cross section area

The formula stated is valid for a transition angle  $> 60^\circ$ , and thus also for EO fittings.

It is difficult to state a figure, as the program of reducers is extensive.

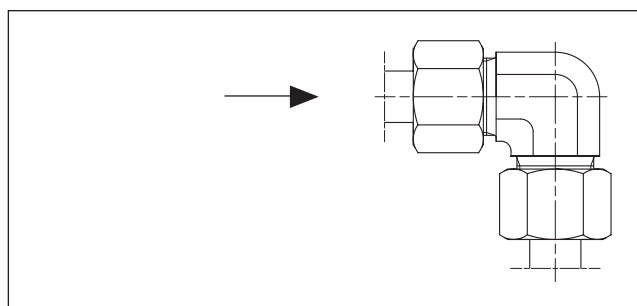
With an RED style of fitting, the pressure loss coefficient  $\zeta$  can vary between 1.5 and 5000, always referred to the flow velocity at the outlet.

**Reduction of the cross section:**



$A_2/A_1$	0.80	0.60	0.40	0.20
$\zeta$	0.15	0.25	0.35	0.42

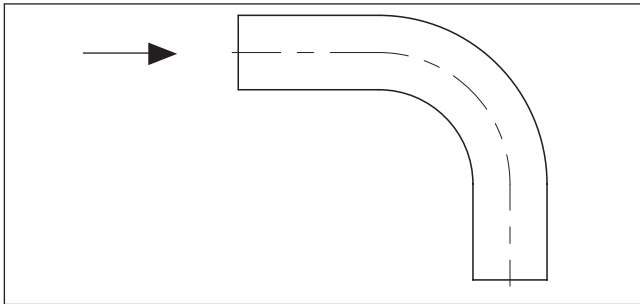
**Elbow connectors, e.g. W, EW, EMTX, C...MTX, EMLO, C...MLO, ...**



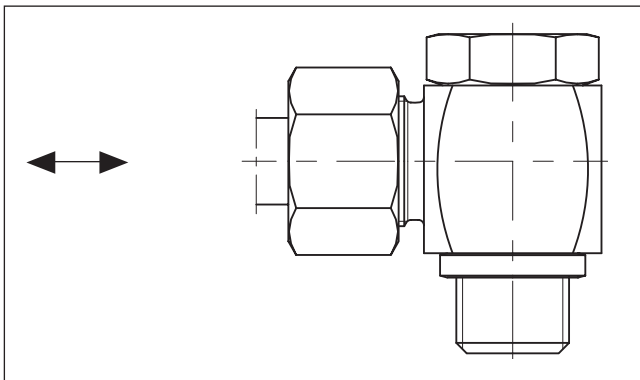
Type	Pressure loss coefficient $\zeta$
W, EMTX, EMLO	1
EW, C...MTX, C...MLO	1

**Tube bends**

With pipe bends, the pressure loss coefficient results from the ratio of bend radius to inside diameter (R/d).



Bend radius/Inside diameter	Pressure loss coefficient $\zeta$
2	0.21
4	0.14
6 and more	0.11

**Banjo fittings**


Type	Pressure loss coefficient $\zeta$
WH	3 ... 6
SWVE	6 ... 9
DSVW	approx. 4

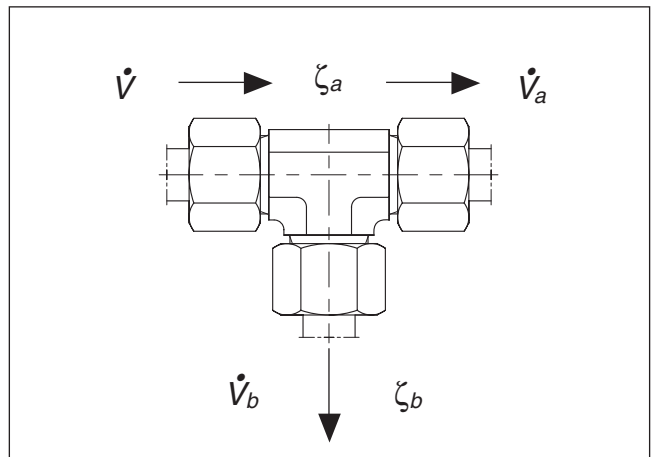
With WH and SWVE, the pressure loss depends on the position of the banjo bolt cross hole drilling to the tube connection aperture. The pressure loss coefficient is therefore given as a range.

**Manifolds and Tee/Cross fittings**

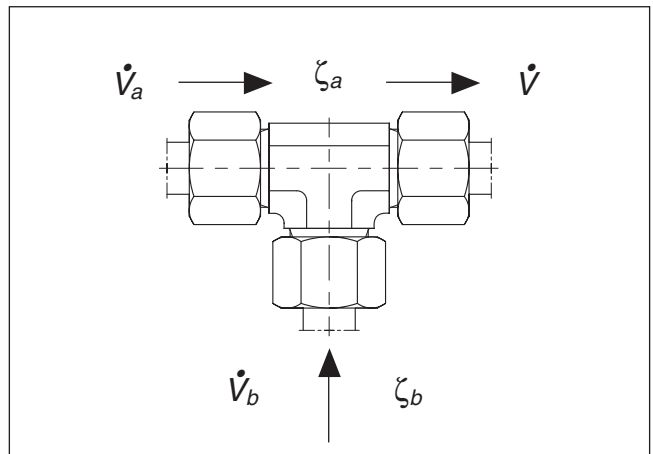
The pressure loss coefficient depends on whether the medium is divided or flows together, and in what ratio the medium is divided.

Index a: The medium flows straight through the manifold.  
 Index b: The medium flows through the cross branch of the manifold.

Flow division (to/from T branch)	Pressure loss coefficient $\zeta$ in case of pipe branching		Pressure loss coefficient $\zeta$ in case of pipe junction	
	$\dot{V}_b / \dot{V}$	$\zeta_a$	$\zeta_b$	$\zeta_a$
0.6	0.07	0.95	0.40	0.47
0.8	0.20	1.10	0.50	0.73
1.0	0.35	1.30	0.60	0.92



Pipe branching

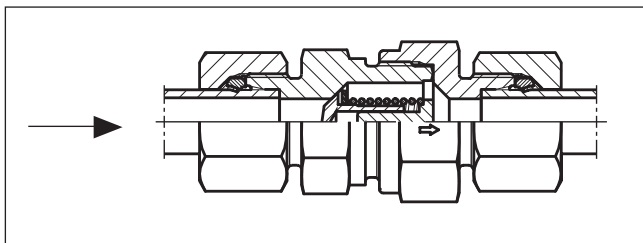


Pipe junction



## Performance data

Valves, e.g. RHD, DV, VDHA, ...



Type	Pressure loss coefficient $\zeta$
RH ...	5.0
DV	5.5
LD	4.0
VDHA	5.0
VDHB	5.5

The pressure loss coefficient stated is always valid for the fully opened valve.

### Calculation of the pressure loss $\Delta p$ – example a WH 16-SR/CF (Banjo fitting).

The pressure loss  $\Delta p$  is calculated according to the following formula:

$$p = \zeta \cdot \rho(T) \cdot \frac{c^2}{2} \text{ [Pa]}$$

To calculate pressure loss at a flow rate of 20 l/min is to be calculated.

The following values are known:

Pipe inside diameter  $d = 12 \text{ mm} = 0.012 \text{ m}$

Density of the medium  $\rho = 869; 4 \text{ kg/m}^3$

(Oil manufacturer's data sheet)

Pressure loss coefficient  $\zeta = 4.5$

(Average value for WH fittings)

$$\text{Flow rate } \dot{V} = \left[ \frac{20}{60000} \right] = 0.000333 \left[ \frac{\text{m}^3}{\text{s}} \right]$$

$$\text{Fluid velocity } c = \frac{\dot{V} \cdot 4}{d_2 \cdot \pi} = \frac{0.000333 \cdot 4}{0.012^2 \cdot \pi} = 2.95 \left[ \frac{\text{m}}{\text{s}} \right]$$

The thus resulting flow loss is then:

$$p = 4.5 \cdot 869.4 \cdot \frac{2.95^2}{2} = 17000 \text{ [Pa]} = 0.17 \text{ [bar]}$$

## Flow diameter and wall thickness

### Determining tube size for hydraulic systems

Proper tube material, type and size for a given application and type of fitting is critical for efficient and trouble free operation of the fluid system. Selection of proper tubing involves choosing the right tube material, and determining the optimum tube size (O.D. and wall thickness).

Proper sizing of the tube for various parts of a hydraulic system results in an optimum combination of efficient and cost effective performance.

A tube that is too small causes high fluid velocity, which has many detrimental effects. In pressure lines, it causes high friction losses and turbulence, both resulting in high pressure drops and heat generation. High heat accelerates wear in moving parts and rapid aging of seals and hoses, all resulting in reduced component life. High heat generation also means wasted energy, and hence, low efficiency.

Too large tubes increase system cost. Thus, optimum tube sizing is very critical. The following is a simple procedure for sizing the tubes.

### Determine required flow diameter

Use table to determine recommended flow diameter for the required flow rate and type of line.

The table is based on the following recommended flow velocities:

$$\text{Pressure lines} - 3 \rightarrow 5 \left[ \frac{\text{m}}{\text{s}} \right]$$

Avoid flow rates > 8 m/s!  
The resulting forces are high and can destroy the tube lines.

$$\text{Return lines} - 2 \rightarrow 4 \left[ \frac{\text{m}}{\text{s}} \right]$$

$$\text{Suction lines} - 1 \left[ \frac{\text{m}}{\text{s}} \right]$$

If you desire to use different velocities than the above, use one of the following formula to determine the required flow diameter.

$$\text{Tube - I.D. [mm]} = 4.61 * \sqrt{\frac{\text{Flow} \left[ \frac{\text{ltr.}}{\text{min}} \right]}{\text{Velocity} \left[ \frac{\text{m}}{\text{s}} \right]}}$$

### Determine required wall thickness

Use 2<sup>nd</sup> table to determine recommended wall thickness for the required working pressure and flow diameter of the line. Therefore choose an working pressure which is equal or higher than the required working pressure.

For other tubes and tube materials you have to calculate the wall thickness and working pressure acc. to the formula shown in the tube chapter.

Maximum flow l/min	Flow diameter in millimeters		
	5 m/s Pressure lines	3 m/s Return lines	1 m/s Suction lines
1	2.1	2.7	4.6
2	2.9	3.8	6.5
3	3.6	4.6	8.0
4	4.1	5.3	9.2
5	4.6	6.0	10.3
6	5.1	6.5	11.3
7	5.5	7.0	12.2
8	5.8	7.5	13.0
9	6.2	8.0	13.8
10	6.5	8.4	14.6
12	7.1	9.2	16.0
14	7.7	10.0	17.2
16	8.2	10.6	18.4
18	8.7	11.3	19.6
20	9.2	11.9	20.6
22	9.7	12.5	21.6
24	10.1	13.0	22.6
26	10.5	13.6	23.5
28	10.9	14.1	24.4
30	11.3	14.6	25.3
32	11.7	15.1	26.1
34	12.0	15.5	26.9
36	12.4	16.0	27.7
38	12.7	16.4	28.4
40	13.0	16.8	29.2
45	13.8	17.9	30.9
50	14.6	18.8	32.6
55	15.3	19.7	34.2
60	16.0	20.6	35.7
65	16.6	21.5	37.2
70	17.2	22.3	38.6
75	17.9	23.1	39.9
80	18.4	23.8	41.2
85	19.0	24.5	42.5
90	19.6	25.3	43.7
95	20.1	25.9	44.9
100	20.6	26.6	46.1
110	21.6	27.9	48.4
120	22.6	29.2	50.5
130	23.5	30.3	52.6
140	24.4	31.5	54.5
150	25.3	32.6	56.5
160	26.1	33.7	58.3
170	26.9	34.7	60.1
180	27.7	35.7	61.8
190	28.4	36.7	63.5
200	29.2	37.6	65.2
220	30.6	39.5	68.4
240	31.9	41.2	71.4
260	33.2	42.9	74.3
280	34.5	44.5	77.1
300	35.7	46.1	79.8
320	36.9	47.6	82.5
340	38.0	49.1	85.0
360	39.1	50.5	87.5
380	40.2	51.9	89.9
400	41.2	53.2	92.2
450	43.7	56.5	97.8
500	46.1	59.5	103.1



## Tube wall thickness

Flow diameter [mm]	Max. working pressure [bar] for steel tubes St37.4 NBK calculated acc. to DIN 2413 III for dynamic load Tube wall thickness [mm]										
	0.5	1	1.5	2	2.5	3	3.5	4	5	6	8
1.0	551	692	757	794	818	–	–	–	–	–	–
1.5	458	614	692	740	771	794	–	–	–	–	–
2.0	391	551	638	692	730	757	778	794	–	–	–
2.5	342	500	591	651	692	723	747	766	794	–	–
3.0	303	458	551	614	659	692	719	740	771	794	–
4.0	248	391	485	551	600	638	668	692	730	757	794
5.0	209	342	433	500	551	591	624	651	692	723	766
6.0	181	303	391	458	509	551	585	614	659	692	740
7.0	160	273	357	422	474	516	551	581	628	664	715
8.0	143	248	328	391	443	485	521	551	600	638	692
9.0	129	227	303	365	415	458	494	524	575	614	671
10.0	118	209	282	342	391	433	469	500	551	591	651
11.0	108	194	264	321	370	411	447	478	529	570	632
12.0	100	181	248	303	351	391	427	458	509	551	614
13.0	93	170	233	287	333	373	408	439	491	533	597
14.0	87	160	221	273	318	357	391	422	474	516	581
15.0	82	151	209	260	303	342	376	406	458	500	565
16.0	77	143	199	248	290	328	361	391	443	485	551
17.0	73	136	190	237	278	315	348	378	429	471	537
18.0	69	129	181	227	267	303	336	365	415	458	524
19.0	66	123	173	218	257	292	324	353	403	445	512
20.0	63	118	166	209	248	282	313	342	391	433	500
21.0	60	113	160	202	239	273	303	331	380	422	489
22.0	58	108	154	194	231	264	294	321	370	411	478
23.0	55	104	148	188	223	256	285	312	360	401	468
24.0	53	100	143	181	216	248	277	303	351	391	458
25.0	51	97	138	175	209	240	269	295	342	382	448
26.0	49	93	133	170	203	233	261	287	333	373	439
27.0	48	90	129	165	197	227	254	280	325	365	430
28.0	46	87	125	160	192	221	248	273	318	357	422
29.0	44	85	121	155	186	215	241	266	310	349	414
30.0	43	82	118	151	181	209	235	260	303	342	406
31.0	42	80	115	147	177	204	230	254	297	335	399
32.0	40	77	111	143	172	199	224	248	290	328	391
33.0	39	75	108	139	168	194	219	242	284	321	384
34.0	38	73	106	136	164	190	214	237	278	315	378
35.0	37	71	103	132	160	185	209	232	273	309	371
36.0	36	69	100	129	156	181	205	227	267	303	365
37.0	35	68	98	126	153	177	200	222	262	298	359
38.0	34	66	96	123	149	173	196	218	257	292	353
39.0	33	64	93	121	146	170	192	213	252	287	347
40.0	33	63	91	118	143	166	188	209	248	282	342
42.0	31	60	87	113	137	160	181	202	239	273	331
44.0	30	58	84	108	132	154	175	194	231	264	321
46.0	29	55	80	104	127	148	168	188	223	256	312
48.0	27	53	77	100	122	143	163	181	216	248	303
50.0	26	51	75	97	118	138	157	175	209	240	295
52.0	25	49	72	93	114	133	152	170	203	233	287
54.0	24	48	69	90	110	129	147	165	197	227	280
56.0	24	46	67	87	107	125	143	160	192	221	273
58.0	23	44	65	85	103	121	139	155	186	215	266
60.0	22	43	63	82	100	118	135	151	181	209	260
65.0	20	40	58	76	93	110	126	141	170	197	245
70.0	19	37	55	71	87	103	118	132	160	185	232
75.0	18	35	51	67	82	97	111	125	151	175	220
80.0	17	33	48	63	77	91	105	118	143	166	209





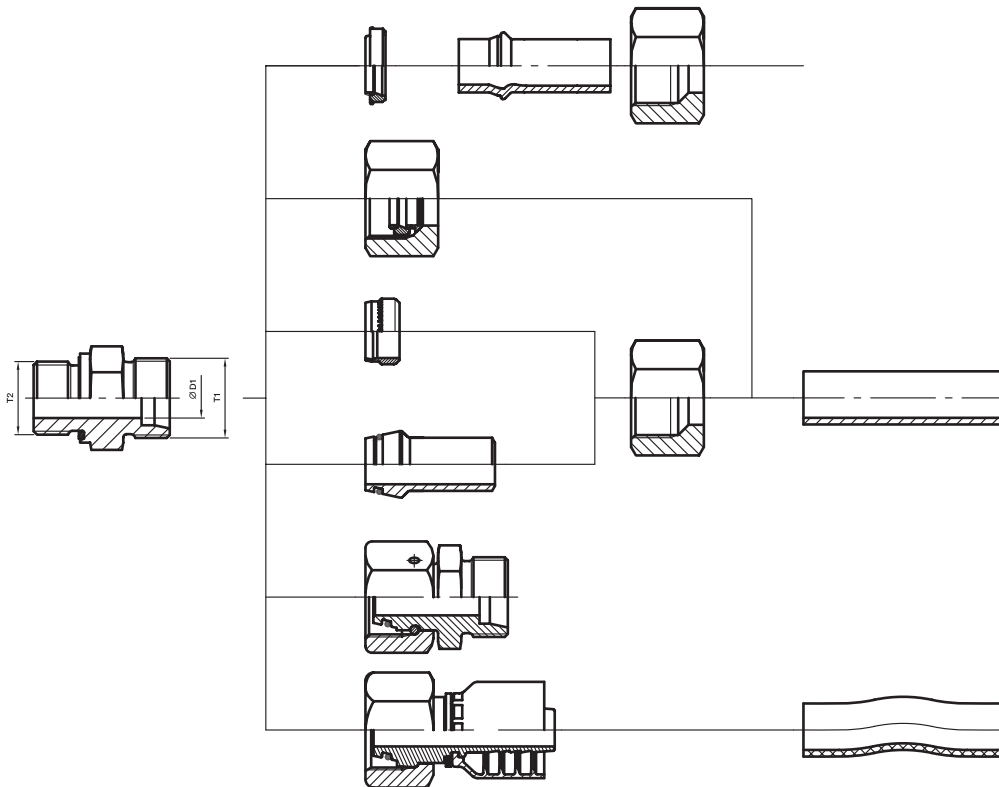
# ***Dimensioning***

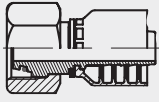


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DIN 60° cone end (DIN 7631)/dimensions .....	D14
Adapter 60° cone end (ISO/DIS 8434-6)/dimensions .....	D15
NPSM Swivel adapters (SAE J516)/dimensions .....	D16
Port end dimensions for tube fittings .....	D17–D19

Overview EO 24° cone connections

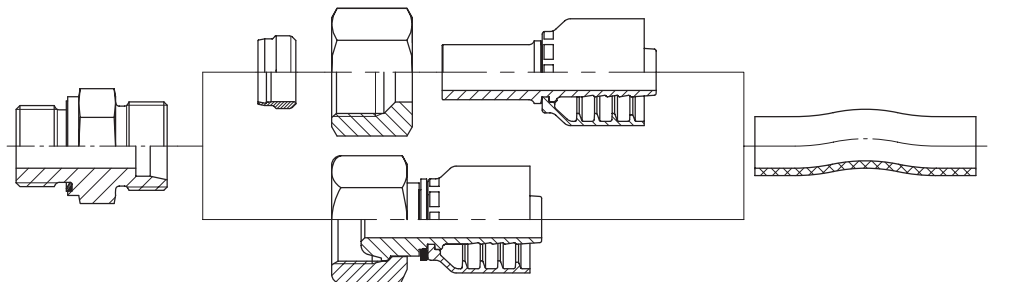


Size	D1 Tube O.D. mm	T1 Thread metric	Thread O.D. mm	T2 Port thread				
				BSPP	metric	BSPT (short)	metric tapered	
LL	04	M 08×1.0	8.0	G 1/8 A	M 08×1.0	R 1/8 tap.	M 08×1.0 tap.	
	05	M 10×1.0	10.0	G 1/8 A	M 08×1.0			
	06	M 10×1.0	10.0	G 1/8 A	M 10×1.0	R 1/8 tap.	M 10×1.0 tap.	
	08	M 12×1.0	12.0	G 1/8 A	M 10×1.0	R 1/8 tap.	M 10×1.0 tap.	
	10	M 14×1.0	14.0	G 1/4 A		R 1/4 tap.		
	12	M 16×1.0	16.0	G 1/4 A		R 1/4 tap.		
L	06	M 12×1.5	12.0	G 1/8 A	M 10×1.0		M 10×1.0 tap.	1CAxx-6-yy
	08	M 14×1.5	14.0	G 1/4 A	M 12×1.5		M 12×1.5 tap.	1CAxx-8-yy
	10	M 16×1.5	16.0	G 1/4 A	M 14×1.5		M 14×1.5 tap.	1CAxx-10-yy
	12	M 18×1.5	18.0	G 3/8 A	M 16×1.5		M 16×1.5 tap.	1CAxx-12-yy
	15	M 22×1.5	22.0	G 1/2 A	M 18×1.5		M 18×1.5 tap.	1CAxx-15-yy
	18	M 26×1.5	26.0	G 1/2 A	M 22×1.5		M 22×1.5 tap.	1CAxx-18-yy
	22	M 30×2.0	30.0	G 3/4 A	M 26×1.5		M 26×1.5 tap.	1CAxx-22-yy
	28	M 36×2.0	36.0	G 1 A	M 33×2.0			1CAxx-28-yy
	35	M 45×2.0	45.0	G 1 1/4 A	M 42×2.0			1CAxx-35-yy
	42	M 52×2.0	52.0	G 1 1/2 A	M 48×2.0			1CAxx-42-yy
S	06	M 14×1.5	14.0	G 1/4 A	M 12×1.5		M 12×1.5 tap.	1C9xx-6-yy
	08	M 16×1.5	16.0	G 1/4 A	M 14×1.5		M 14×1.5 tap.	1C9xx-8-yy
	10	M 18×1.5	18.0	G 3/8 A	M 16×1.5		M 16×1.5 tap.	1C9xx-10-yy
	12	M 20×1.5	20.0	G 3/8 A	M 18×1.5		M 18×1.5 tap.	1C9xx-12-yy
	14	M 22×1.5	22.0	G 1/2 A	M 20×1.5		M 20×1.5 tap.	1C9xx-14-yy
	16	M 24×1.5	24.0	G 1/2 A	M 22×1.5		M 22×1.5 tap.	1C9xx-16-yy
	20	M 30×2.0	30.0	G 3/4 A	M 27×2.0			1C9xx-20-yy
	25	M 36×2.0	36.0	G 1 A	M 33×2.0			1C9xx-25-yy
	30	M 42×2.0	45.0	G 1 1/4 A	M 42×2.0			1C9xx-30-yy
	38	M 52×2.0	52.0	G 1 1/2 A	M 48×2.0			1C9xx-38-yy

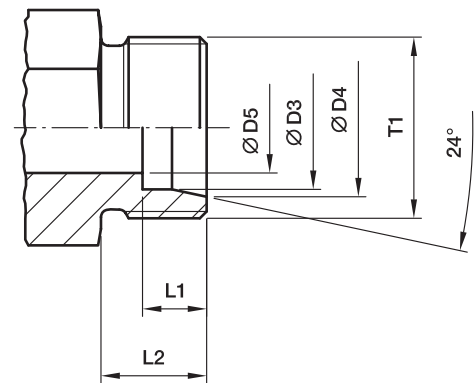
xx – Fitting Series • yy – Hose Size  
From Parker hose fitting (HPDE and PFDE)

## Dimensioning

### Not recommended

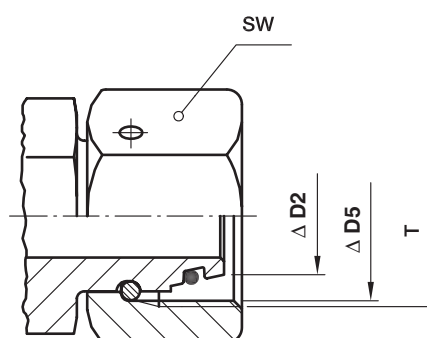
	Reason
	<p>High risk of hose blow off. For ferrule assembly special hardened tools are required.</p>
	<p>With the use of the Universal-connection high risk of cracks in 24° cone area of stud ends sizes 6-L up to 18-L.</p>

### EO 24° cone end (DIN 3861/ISO 8434-1)/dimension



Tube O.D. Size	T1	Ø D3 mm	Ø D4 mm	Ø D5 mm	L1 mm	L2 mm
04-LL	M 08×1.0	04	5.0	3.0	4.1	8
06-LL	M 10×1.0	06	7.5	4.5	5.6	8
08-LL	M 12×1.0	08	9.5	6.0	5.6	9
10-LL	M 14×1.0	10	11.5	8.0	5.6	9
12-LL	M 16×1.0	12	13.5	10.0	6.1	9
06-L	M 12×1.5	06	8.1	4.0	7.1	10
08-L	M 14×1.5	08	10.1	6.0	7.1	10
10-L	M 16×1.5	10	12.3	8.0	7.1	11
12-L	M 18×1.5	12	14.3	10.0	7.1	11
15-L	M 22×1.5	15	17.3	12.0	7.1	12
18-L	M 26×1.5	18	20.3	15.0	7.6	12
22-L	M 30×2.0	22	24.3	19.0	7.6	14
28-L	M 36×2.0	28	30.3	24.0	7.6	14
35-L	M 45×2.0	35	38.0	30.0	10.6	16
42-L	M 52×2.0	42	45.0	36.0	11.1	16
06-S	M 14×1,5	06	8.1	4.0	7.1	12
08-S	M 16×1.5	08	10.1	5.0	7.1	12
10-S	M 18×1.5	10	12.3	7.0	7.6	12
12-S	M 20×1.5	12	14.3	8.0	7.6	12
14-S	M 22×1.5	14	16.3	10.0	8.1	14
16-S	M 24×1.5	16	18.3	12.0	8.6	14
20-S	M 30×2.0	20	22.9	16.0	10.6	16
25-S	M 36×2.0	25	27.9	20.0	12.1	18
30-S	M 42×2.0	30	33.0	25.0	13.6	20
38-S	M 52×2.0	38	41.0	32.0	16.1	22

## EO 24°-DKO swivel connector (DIN 3865/DIN EN ISO 8434-4)/dimensions

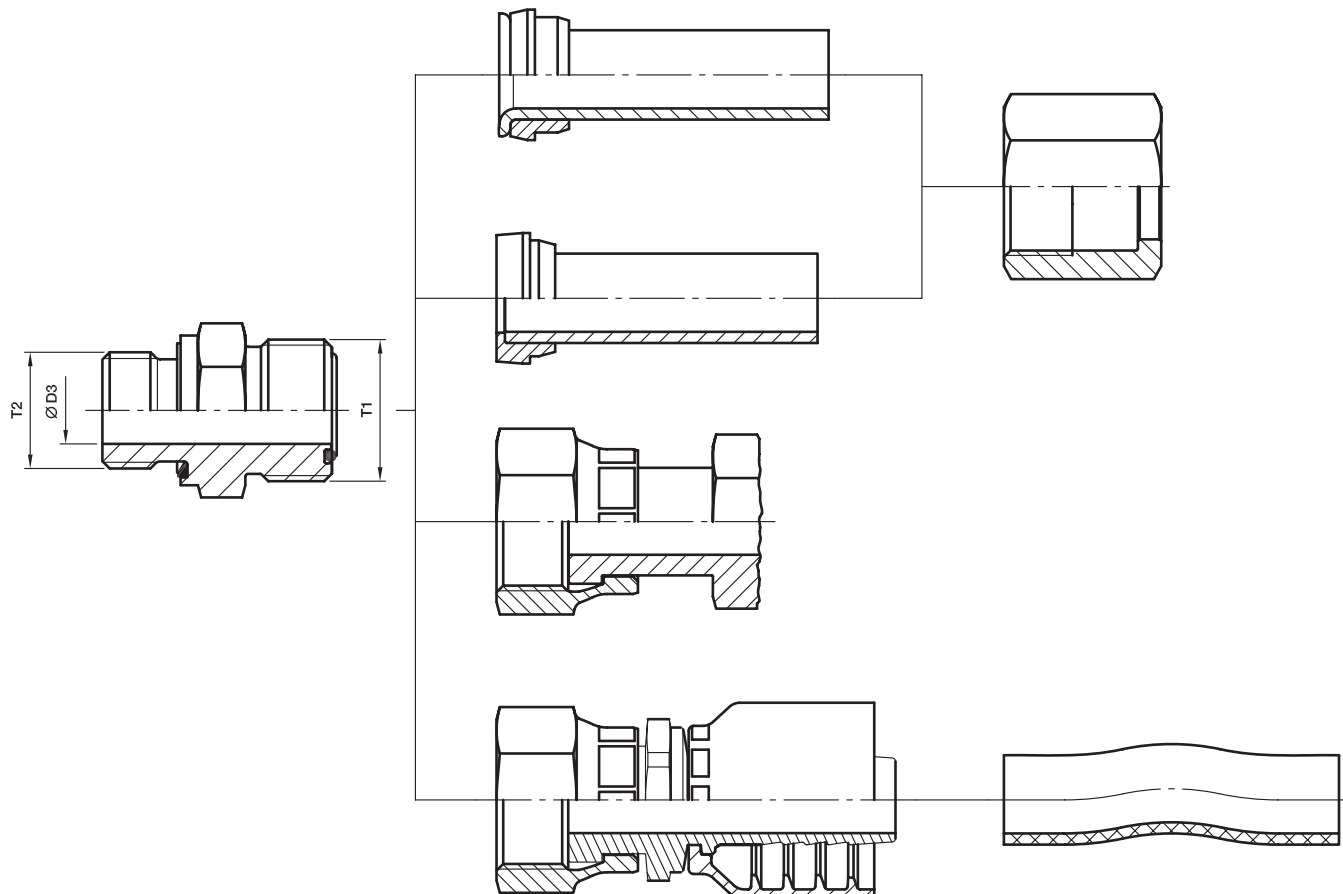


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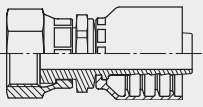
Tube O.D. Size	T	∅ D2 mm	∅ D5 mm Thread core diameter	SW mm
06-L	M 12×1.5	5.5	10.38	14
08-L	M 14×1.5	7.5	12.38	17
10-L	M 16×1.5	9.7	14.38	19
12-L	M 18×1.5	11.7	16.38	22
15-L	M 22×1.5	14.7	20.38	27
18-L	M 26×1.5	17.7	24.38	32
22-L	M 30×2.0	21.7	27.84	36
28-L	M 36×2.0	27.7	33.84	41
35-L	M 45×2.0	34.5	42.84	50
42-L	M 52×2.0	41.5	49.84	60
06-S	M 14×1.5	5.5	12.38	17
08-S	M 16×1.5	7.5	14.38	19
10-S	M 18×1.5	9.7	16.38	22
12-S	M 20×1.5	11.7	18.38	24
14-S	M 22×1.5	13.5	20.38	27
16-S	M 24×1.5	15.5	22.38	30
20-S	M 30×2.0	19.5	29.84	36
25-S	M 36×2.0	24.5	33.84	46
30-S	M 42×2.0	29.5	39.84	50
38-S	M 52×2.0	37.5	49.84	60



Overview O-Lok® connections



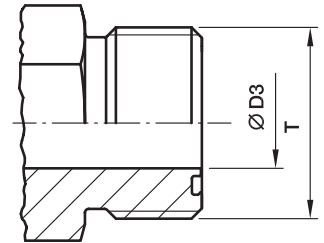
## Overview O-Lok® connections

Size	Tube				T1 Thread UN/UNF	Ø D3 Bore diameter mm	T2 Port thread				
	Metric tube		Inch tube				BSP	UN/UNF	NPTF	metric	
	O.D. mm	max. Wall thickness mm	O.D. inch	max. Wall thickness inch							
4	6	1.5	1/4	0.065	9/16-18	4.0	G 1/8 A	7/16-20	1/8	M 12x1.5	1JCxx-4-yy
4-4	6	1.5	1/4	0.065		4.5	G 1/4 A		1/4		
4-6	6	1.5	1/4	0.065		4.5	G 3/8 A	9/16-18	3/8		
4-8	6	1.5	1/4	0.065		4.5	G 1/2 A	3/4-16			
6	8	2.0	5/16	0.095	11/16-16	6.5	G 1/4 A	9/16-18	1/4	M 16x1.5	1JCxx-6-yy
6	10	2.0	3/8	0.095	11/16-16	6.5	G 1/4 A	9/16-18	1/4	M 16x1.5	
6-2	10	2.0	3/8	0.095		4.5	G 1/8 A				
6-4	10	2.0	3/8	0.095		4.5		7/16-20			
6-6	10	2.0	3/8	0.095		6.5	G 3/8 A		3/8		
6-8	10	2.0	3/8	0.095		6.5	G 1/2 A	3/4-16	1/2		
6-10	10	2.0	3/8	0.095		6.5		7/8-14			
6-12	10	2.0	3/8	0.095	6.5	G 3/4 A					
8	12	3.0	1/2	0.095	13/16-16	9.5	G 3/8 A	3/4-16	3/8	M 18x1.5	1JCxx-8-yy
8-4	12	3.0	1/2	0.095		7.5	G 1/4 A				
8-6	12	3.0	1/2	0.095		9.5		9/16-18			
8-8	12	3.0	1/2	0.095		9.5	G 1/2 A	1/2			
8-10	12	3.0	1/2	0.095		9.5		7/8-14			
8-12	12	3.0	1/2	0.095		9.5	G 3/4 A	1 1/16-12	3/4		
8-16	12	3.0	1/2	0.095		9.5		1 5/16-12			
10	14	2.5			1-14	12.5	G 1/2 A	7/8-14	1/2	M 22x1.5	1JCxx-10-yy
10	15	2.5			1-14	12.5	G 1/2 A	7/8-14	1/2	M 22x1.5	
10	16	3.0	5/8	0.120	1-14	12.5	G 1/2 A	7/8-14	1/2	M 22x1.5	
10-6	16	3.0	5/8	0.120		10.0	G 3/8 A				
10-8	16	3.0	5/8	0.120		9.5		3/4-16			
10-12	16	3.0	5/8	0.120		12.5	G 3/4 A	1 1/16-12	3/4		
10-16	16	3.0	5/8	0.120		12.5	G 1 A				
12	18	3.0			1 3/16-12	15.5	G 3/4 A	1 1/16-12	3/4	M 27x2.0	1JCxx-20-yy
12	20	3.5	3/4	0.156	1 3/16-12	15.5	G 3/4 A	1 1/16-12	3/4	M 27x2.0	
12-8	20	3.5	3/4	0.156		9.5	G 1/2 A	3/4-16	1/2		
12-10	20	3.5	3/4	0.156		12.5		7/8-14			
12-16	20	3.5	3/4	0.156		12.5	G 1 A	1 5/16-12	1		
12-20	20	3.5	3/4	0.156	12.5	G 1 1/4 A					
16	22	4.0			1 7/16-12	20.5	G 1 A	1 5/16-12	1	M 33x2.0	1JCxx-16-yy
16	25	4.0	1	0.188	1 7/16-12	20.5	G 1 A	1 5/16-12	1	M 33x2.0	
16-12	25	4.0	1	0.188		15.5	G 3/4 A	1 1/16-12	3/4		
16-20	25	4.0	1	0.188		20.5	G 1 1/4 A	1 5/8-12			
16-24	25	4.0	1	0.188	20.5	G 1 1/2 A					
20	28	4.0			1 11/16-12	26.0	G 1 1/4 A	1 5/8-12	1 1/4	M 42x2.0	1JCxx-20-yy
20	30	4.0			1 11/16-12	26.0	G 1 1/4 A	1 5/8-12	1 1/4	M 42x2.0	
20	32	4.0	1 1/4	0.188	1 11/16-12	26.0	G 1 1/4 A	1 5/8-12	1 1/4	M 42x2.0	
20-16	32	4.0	1 1/4	0.188		21.5	G 1 A	1 5/16-12			
20-24	32	4.0	1 1/4	0.188		26.0	G 1 1/2 A	1 7/8-12			
24	35	4.0			2-12	32.0	G 1 1/2 A	1 7/8-12	1 1/2	M 48x2.0	1JCxx-24-yy
24	38	5.0	1 1/2	0.220	2-12	32.0	G 1 1/2 A	1 7/8-12	1 1/2	M 48x2.0	
24-20	38	5.0	1 1/2	0.220	27.5	G 1 1/4 A	1 5/8-12				
32	50	3.0	2	0.120	2 1/2-12	45.0	G 2 A	2 1/2-12		M 60x2.0	—

xx – Fitting Series • yy – Hose Size  
From Parker hose fitting (HPDE and PFDE)

## Dimensioning

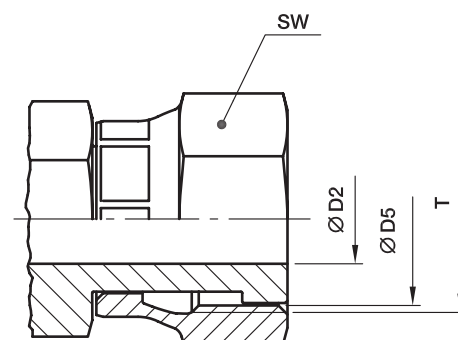
### O-Lok® end (ISO 8434-3/SAE J1453)/dimensions



Ø D5 Size	Tube O.D.		T	T	Ø D3 mm
	inch	mm	UN/UNF	Major thread Ø mm	
4	1/4	6	9/16-18	14.0	5.0
6	5/16, 3/8	8, 10	11/16-16	17.0	6.5
8	1/2	12	13/16-16	20.5	9.5
10	5/8	14, 15, 16	1-14	25.0	12.5
12	3/4	18, 20	1 3/16-12	30.0	15.5
16	7/8, 1	22, 25	1 7/16-12	36.0	20.5
20	1 1/4	28, 30, 32	1 11/16-12	42.5	26.0
24	1 1/2	35, 38	2-12	50.5	32.0
32	2	50	2 1/2-12	63.0	45.0

All dimensions shown are nominal for identification only.  
Small deviations may be found between SAE J1453 or ISO 8434-3 on bore sizes.

## O-Lok® swivel connector (ISO 8434-3/SAE J1453)/dimensions

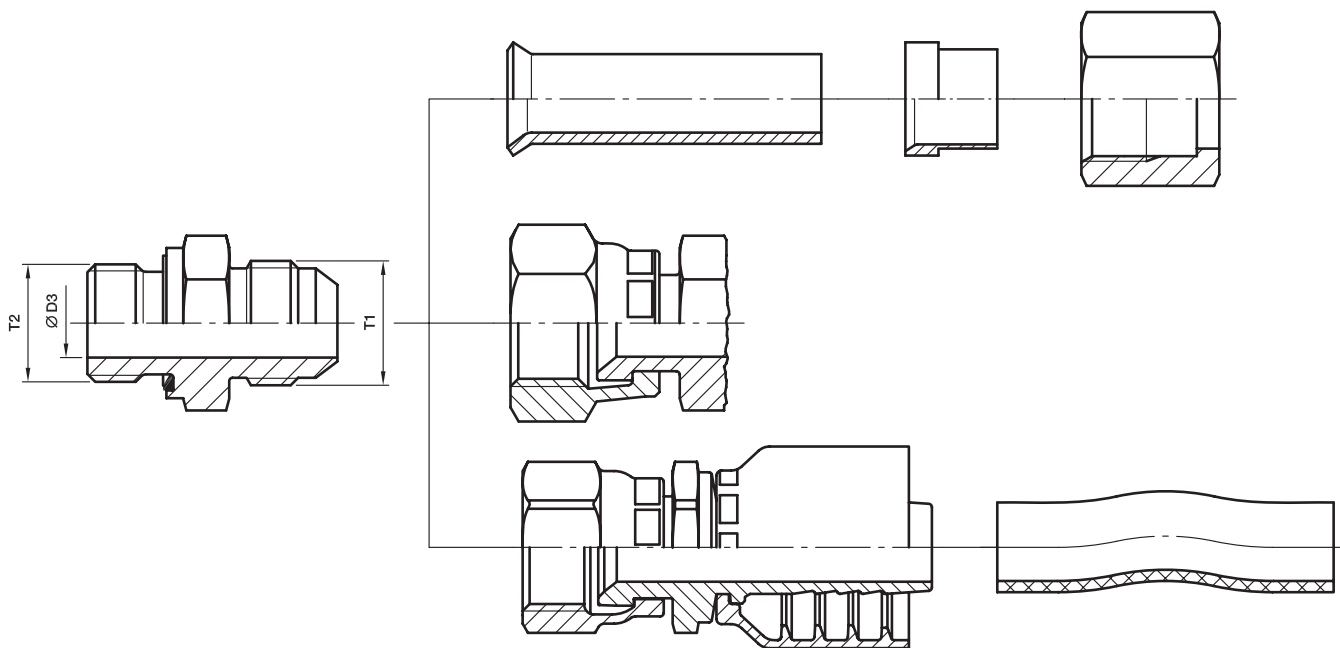


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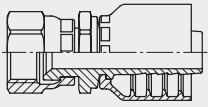
Size	Tube O.D.		T UN/UNF	Ø D5 Thread core diameter mm	SW mm	Ø D2 mm
	inch	mm				
4	1/4	6	9/16-18	12.5	17	4.0
6	5/16, 3/8	8, 10	11/16-16	16.0	22	6.5
8	1/2	12	13/16-16	19.0	24	9.0
10	5/8	14, 15, 16	1-14	23.0	30	11.5
12	3/4	18, 20	1 3/16-12	28.0	36	14.0
16	7/8, 1	22, 25	1 7/16-12	34.0	41	20.0
20	1 1/4	28, 30, 32	1 11/16-12	40.5	50	26.0
24	1 1/2	35, 38	2-12	48.0	60	32.0

All dimensions shown are nominal for identification only.  
Small deviations may be found between SAE J1453 or ISO 8434-3 on bore sizes.

Overview Triple-Lok® connections



## Overview Triple-Lok® connections

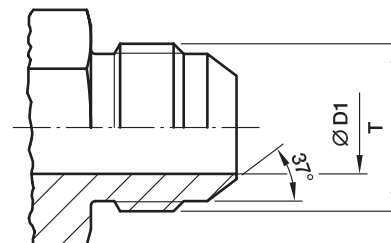
Size	Tube				T1 Thread UN/UNF	Ø D3 Bore diameter mm	T2 Port thread			
	Metric tube		Inch tube				BSPP (BSPT, NPTF)	UN/UNF	metric	
	O.D. mm	max. Wall thickness mm	O.D. inch	max. Wall thickness inch						
4	6	1.5	1/4	0.065		4.5	G 1/8 A			168xx-4-yy
4-4	6	1.5	1/4	0.065		4.5	G 1/4 A	7/16-20	M 10x1.0	
4-5	6	1.5	1/4	0.065	7/16-20	4.5		1/2-20		
4-6	6	1.5	1/4	0.065		4.5	G 3/8 A	9/16-18		
4-8	6	1.5	1/4	0.065		4.5	G 1/2 A			
5	8	1.5	5/16	0.065		6.0	G 1/8 A	1/2-20	M 12x1.5	168xx-5-yy
5-4	8	1.5	5/16	0.065		6.0	G 1/4 A			
5-6	8	1.5	5/16	0.065	1/2-20	6.0	G 3/8 A			
5-8	8	1.5	5/16	0.065		6.0	G 1/2 A			
6-2	10	1.5	3/8	0.065		7.5	G 1/8 A			106xx-6-yy
6	10	1.5	3/8	0.065		7.5	G 1/4 A	9/16-18	M 14x1.5	
6-6	10	1.5	3/8	0.065	9/16-18	7.5	G 3/8 A			
6-8	10	1.5	3/8	0.065		7.5	G 1/2 A	3/4-16		
8-4	12	2.0	1/2	0.083		10.0	G 1/4 A			168xx-8-yy
8	12	2.0	1/2	0.083		10.0	G 3/8 A	3/4-16	M 16x1.5	
8-8	12	2.0	1/2	0.083	3/4-16	10.0	G 1/2 A		M 18x1.5	
8-10	12	2.0	1/2	0.083		10.0		7/8-14		
8-12	12	2.0	1/2	0.083		10.0	G 3/4 A	1 1/16-12		
10-6	14, 15, 16	2.5	5/8	0.095		12.5	G 3/8 A			168xx-10-yy
10-8	14, 15, 16	2.5	5/8	0.095		12.5		3/4-16		
10	14, 15, 16	2.5	5/8	0.095	7/8-14	12.5	G 1/2 A	7/8-14	M 18x1.5	
10-12	14, 15, 16	2.5	5/8	0.095		12.5	G 3/4 A	1 1/16-12	M 22x1.5	
12-8	18, 20	3.0	3/4	0.109		15.5	G 1/2 A	3/4-16		106xx-12-yy
12-10	18, 20	3.0	3/4	0.109		15.5		7/8-14	M 22x1.5	
12	18, 20	3.0	3/4	0.109	1 1/16-12	15.5	G 3/4 A	1 1/16-12	M 27x2.0	
12-16	18, 20	3.0	3/4	0.109		15.5	G 1 A	1 5/16-12		
14	22	3.0	7/8	0.109	1 3/16-12	18.0	G 3/4 A	1 3/16-12	M 27x2.0	–
14-16	22	3.0	7/8	0.109		18.0	G 1 A	1 5/16-12		
16-12	25	3.0	1	0.120		21.5	G 3/4 A	1 1/16-12		106xx-16-yy
16	25	3.0	1	0.120	1 5/16-12	21.5	G 1 A	1 5/16-12	M 33x2.0	
16-20	25	3.0	1	0.120		21.5	G 1 1/4 A	1 5/8-12		
20-12	28, 30, 32	3.0	1 1/4	0.120		27.5	G 3/4 A			106xx-20-yy
20-16	28, 30, 32	3.0	1 1/4	0.120	1 5/8-12	27.5	G 1 A			
20	28, 30, 32	3.0	1 1/4	0.120		27.5	G 1 1/4 A	1 5/8-12	M 42x2.0	
24-20	35, 38	4.0	1 1/2	0.120	1 7/8-12	33.0	G 1 1/4 A			106xx-24-yy
24	35, 38	4.0	1 1/2	0.120		33.0	G 1 1/2 A	1 7/8-12	M 48x2.0	
28-24	42	3.0			2 1/4-12	39.0	G 1 1/2 A			–
32	50	3.5	2	0.134	2 1/2-12	45.0	G 2 A	2 1/2-12		106xx-32-yy

xx – Fitting Series • yy – Hose Size  
From Parker hose fitting  
(HPDE and PFDE)



## Dimensioning

### Triple-Lok® end (ISO 8434-2/SAE J514)/dimensions



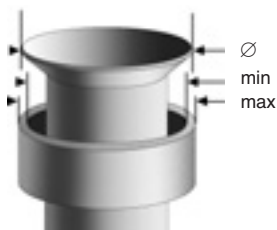
Size	Tube O.D.		T UN/UNF	T Major thread Ø mm	Ø D1 mm
	inch	mm			
4	1/4	6	7/16-20	11.0	4.5
5	5/16	8	1/2-20	12.5	6.0
6	3/8	10	9/16-18	14.0	7.5
8	1/2	12	3/4-16	19.0	10.0
10	5/8	14, 15, 16	7/8-14	22.0	12.5
12	3/4	18, 20	1 1/16-12	27.0	15.5
14	7/8	22	1 3/16-12	30.0	18.0
16	1	25	1 5/16-12	33.0	21.5
20	1 1/4	28, 30, 32	1 5/8-12	41.0	27.5
24	1 1/2	35, 38	1 7/8-12	47.5	33.0
28*	1 3/4	42	2 1/4-12	57.0	39.0
32	2	—	2 1/2-12	63.5	45.0

\*Size 28 is not part of SAE J514 or ISO 8434-2.

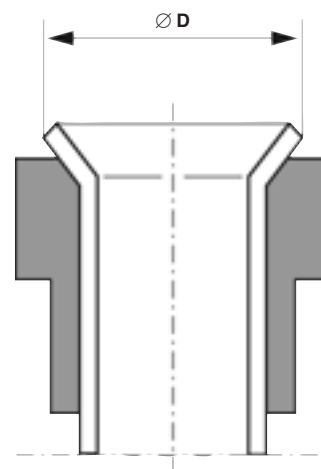
All dimensions shown are nominal for identification only.

Small deviations may be found between SAE J514 or ISO 8434-2 on bore sizes.

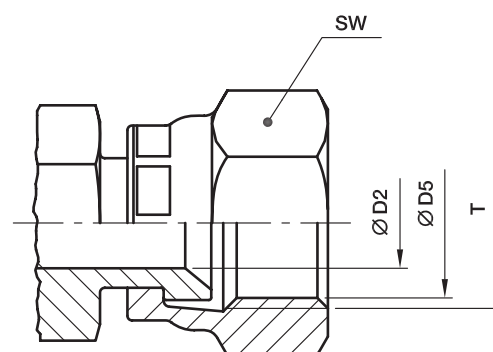
### Suitable Flare



Tube O.D.		Ø D	
mm	inch	Min.	Max.
6	1/4"	8.6	9.7
8	5/16"	10.2	11.3
10	3/8"	11.7	12.7
12	1/2"	16.0	17.3
14		19.3	20.2
15		19.3	20.2
16	5/8"	19.3	20.2
18		23.4	24.7
20	3/4"	23.4	24.7
22	7/8"	26.5	27.8
25	1"	29.7	31.0
28		37.6	38.9
30		37.6	38.9
32	1 1/4"	37.6	38.9
35		43.2	45.3
38	1 1/2"	43.2	45.3
42		52.0	54.8
	2"	59.2	61.2



## Triple-Lok® swivel connector (ISO 8434-2/SAE J514)/dimensions



D

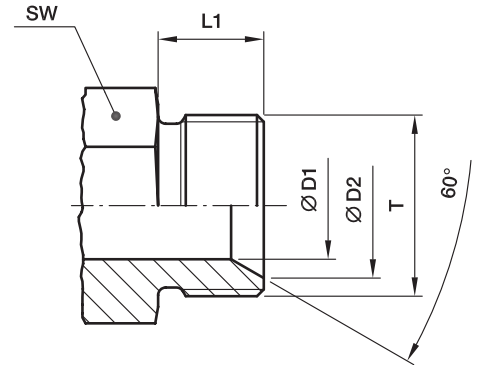
Size	Tube O.D.		T UN/UNF	SW mm	Ø D5 Thread core diameter mm	Ø D2 mm
	inch	mm				
4	1/4	6	7/16-20	17	10.0	4.4
5	5/16	8	1/2-20	17	11.5	6.0
6	3/8	10	9/16-18	19	13.0	7.5
8	1/2	12	3/4-16	22	17.5	9.9
10	5/8	14, 15, 16	7/8-14	27	20.5	12.3
12	3/4	18, 20	1 1/16-12	32	25.0	15.5
14	7/8	22	1 3/16-12	35	28.0	18.0
16	1	25	1 5/16-12	38	31.0	21.5
20	1 1/4	28, 30, 32	1 5/8-12	50	39.0	27.5
24	1 1/2	35, 38	1 7/8-12	60	45.5	33.0
32	2	–	2 1/2-12	75	61.5	45.0

All dimensions shown are nominal for identification only.

Small deviations may be found between SAE J514 or ISO 8434-2 on bore sizes.

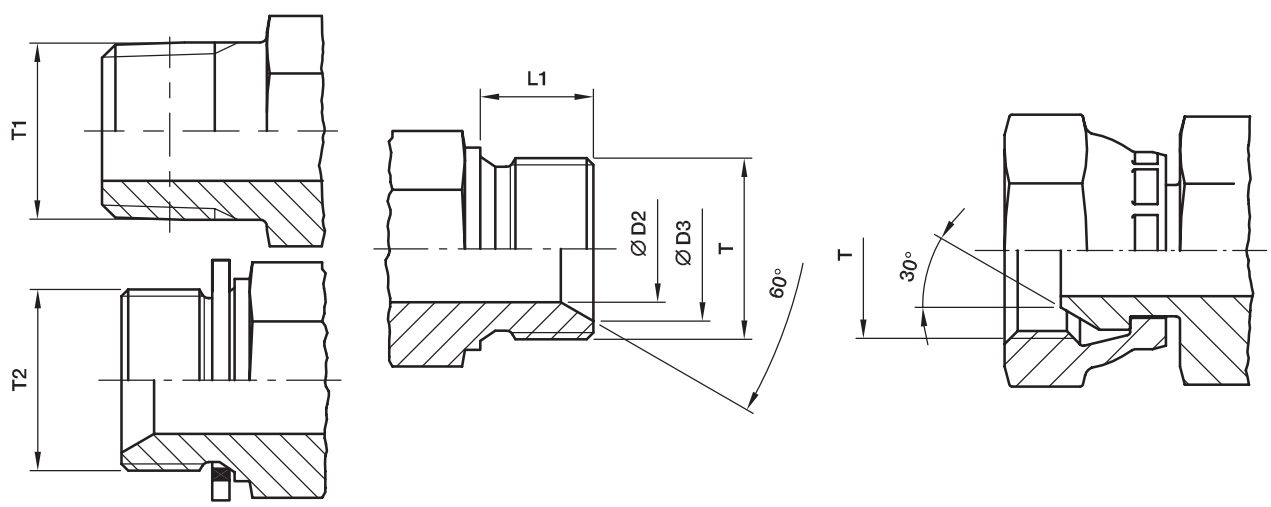
## Dimensioning

### DIN 60° cone end (DIN 7631)/dimensions



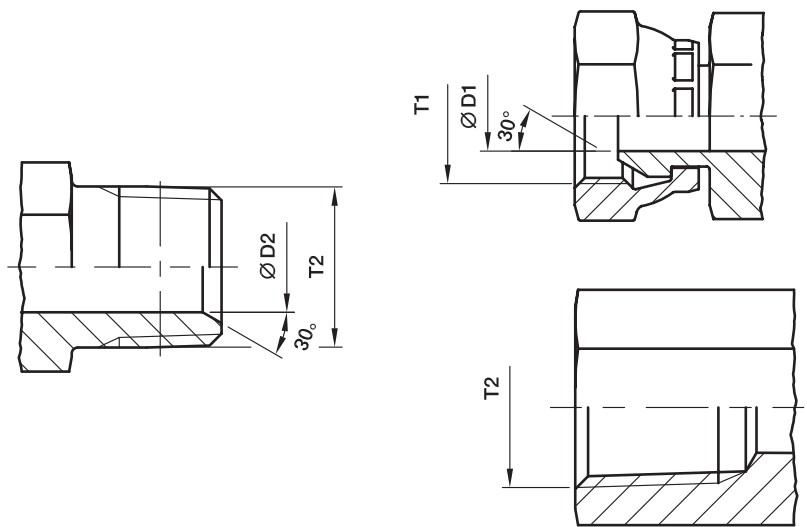
Tube O.D. mm	T	Ø D1 mm	Ø D2 mm	L1 mm	SW mm
4-5	M 10×1.5	3	8.0	8	11
06	M 12×1.5	4	9.0	10	12
08	M 14×1.5	6	11.0	10	14
10	M 16×1.5	8	13.0	11	17
12	M 18×1.5	10	15.0	11	19
15	M 22×1.5	12	19.0	12	24
18	M 26×1.5	15	22.0	12	27
22	M 30×1.5	19	26.0	14	32
28	M 38×1.5	25	33.0	14	41
35	M 45×1.5	32	40.0	16	46
42	M 52×1.5	39	47.0	16	55

**Adapter 60° cone end (ISO/DIS 8434-6)/dimensions**



Size	T BSPP	D2 mm	D3 mm	L1 mm	T1		T2 BSPP
					BSPT	NPT(F)	
02	G 1/8 A	3.5	7.5	8	1/8	1/8	1/8
					1/4	1/4	
04	G 1/4 A	4.7	10.4	11	1/4	1/4	1/4
					1/8	1/8	
					3/8	3/8	
06	G 3/8 A	7.9	14.0	12	3/8	3/8	3/8
					1/4	1/4	
					1/2	1/2	
08	G 1/2 A	11.1	17.5	14	1/2	1/2	1/2
					3/8	3/8	
						3/4	
10	G 5/8 A	14.3	19.3	16	1/2		1/2
					3/4		
12	G 3/4 A	16.7	22.9	16	3/4	3/4	3/4
					1/2	1/2	
					1	1	
16	G 1 A	22.2	28.7	19	1	1	1
					3/4	3/4	
20	G 1 1/4 A	28.6	36.8	22	1 1/4		3/4
24	G 1 1/2 A	33.3	42.7	22	1 1/2		1
32	G 2 A	46.0	54.6	25			1 1/2

NPSM Swivel adapters (SAE J516)/dimensions

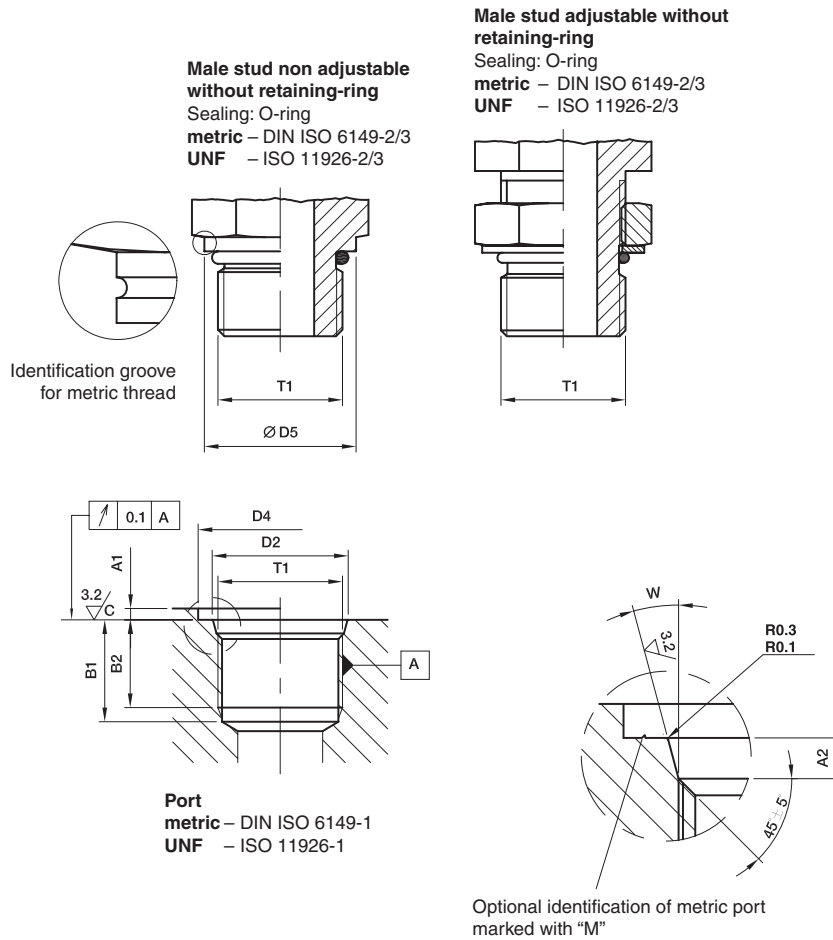


Size	T1 Thread NPSM	$\text{Ø D1}$ mm	$\text{Ø D2}$ mm	T2 Thread NPTF
2-2	1/8-27	4.0	5.0	1/8-27
2-4	1/4-18	5.6	7.0	1/8-27
4-4	1/4-18	5.6	7.0	1/4-18
4-6	3/8-18	8.8	10.0	1/4-18
4-8	1/2-14	12.0	13.5	1/4-18
6-4	1/4-18	5.6	7.0	3/8-18
6-6	3/8-18	8.8	10.0	3/8-18
6-8	1/2-14	12.0	13.5	3/8-18
8-4	1/4-18	5.6	7.0	3/4-16
8-6	3/8-18	8.8	10.0	1/2-14
8-8	1/2-14	12.0	13.5	1/2-14
8-12	3/4-14	16.3	18.0	1/2-14
10-6	3/8-18	8.8	10.0	7/8-14
10-8	1/2-14	12.0	13.5	7/8-14
10-12	3/4-14	16.3	18.0	7/8-14
12-6	3/8-18	8.8	10.0	3/4-14
12-8	1/2-14	12.0	13.5	3/4-14
12-12	3/4-14	16.3	18.0	3/4-14
12-16	1-11.5	21.4	28.9	
16-12	3/4-14	16.3	13.5	1-11.5
16-16	1-11.5	21.4	28.9	1-11.5
16-20	1 1/4-11.5	29.0	32.0	1-11.5
20-16	1-11.5	21.4	28.9	1 1/4-11.5
20-20	1 1/4-11.5	29.0	32.0	1 1/4-11.5
24-24	1 1/2-11.5	34.5	38.0	1 1/2-11.5
32-32	2-11.5	46.0	49.0	2-11.5

## Male stud ends/Port end dimensions for tube fittings

Preferred male stud ends for hydraulic applications

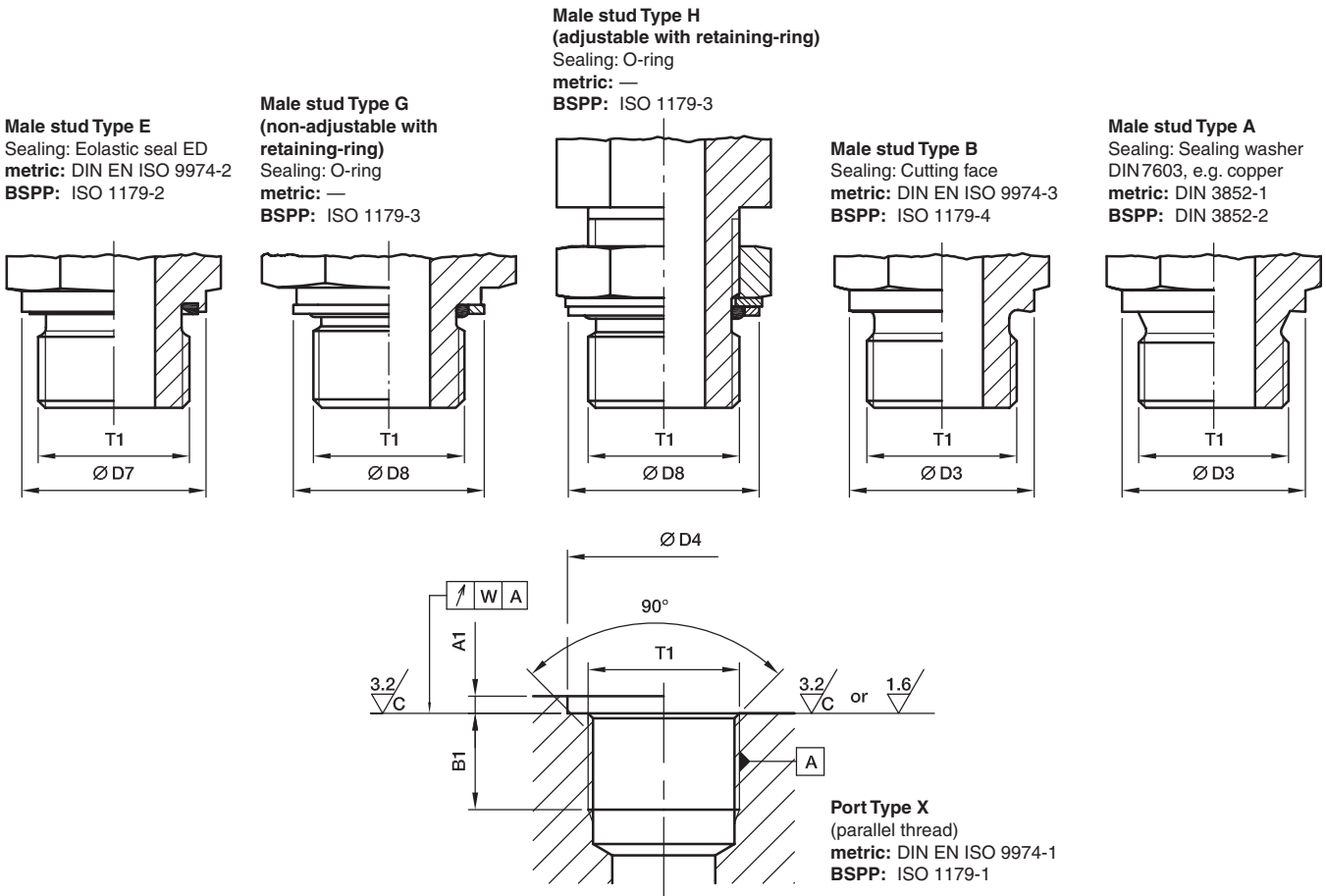
For new designs the metric version is recommended according to DIN ISO 6149



Thread T1	D5	D4		D2 0.1	A1 max.	A2 0.4	B1 min.	B2 min.	W ± 1°	Identification internal	
		small min.	wide min.							Thread major diameter	Thread minor diameter
M 08×1.0	11.8	14	17	9.10	1.0	1.6	11.5	10.0	12°	8.00	6.92
M 10×1.0	13.8	16	20	11.10	1.0	1.6	11.5	10.0	12°	10.00	8.92
M 12×1.5	16.8	19	23	13.80	1.5	2.4	14.0	11.5	15°	12.00	10.38
M 14×1.5	18.8	21	25	15.80	1.5	2.4	14.0	11.5	15°	14.00	12.38
M 16×1.5	21.8	24	28	17.80	1.5	2.4	15.5	13.0	15°	16.00	14.38
M 18×1.5	23.8	26	30	19.80	2.0	2.4	17.0	14.5	15°	18.00	16.38
M 22×1.5	26.8	29	34	23.80	2.0	2.4	18.0	15.5	15°	22.00	20.38
M 27×2.0	31.8	34	40	29.40	2.0	3.1	22.0	19.0	15°	27.00	24.84
M 33×2.0	40.8	43	49	35.40	2.5	3.1	22.0	19.0	15°	33.00	30.84
M 42×2.0	49.8	52	60	44.40	2.5	3.1	22.5	19.5	15°	42.00	39.84
M 48×2.0	54.8	57	66	50.40	2.5	3.1	25.0	22.0	15°	48.00	45.84
7/16-20 UNF-2B	13.8	21	–	12.40	1.6	2.4	14.0	11.5	12°	11.11	9.74
1/2-20 UNF-2B	16.8	23	–	14.50	1.6	2.5	14.0	11.5	12°	12.70	11.30
9/16-18 UNF-2B	16.8	25	–	15.65	1.6	2.5	15.5	12.7	12°	14.29	12.76
3/4-16 UNF-2B	21.8	30	–	20.60	2.4	2.5	17.5	14.3	15°	19.05	17.33
7/8-14 UNF-2B	26.8	34	–	23.95	2.4	2.5	20.0	16.7	15°	22.23	20.26
1 1/16-12 UN-2B	31.8	41	–	29.15	2.4	3.3	23.0	19.0	15°	26.99	24.69
1 5/16-12 UN-2B	40.8	49	–	35.50	3.2	3.3	23.0	19.0	15°	33.34	31.04
1 5/8-12 UN-2B	49.8	58	–	43.50	3.2	3.3	23.0	19.0	15°	41.28	38.99
1 7/8-12 UN-2B	54.8	65	–	49.85	3.2	3.3	23.0	19.0	15°	47.63	45.33



Port end dimensions for tube fittings



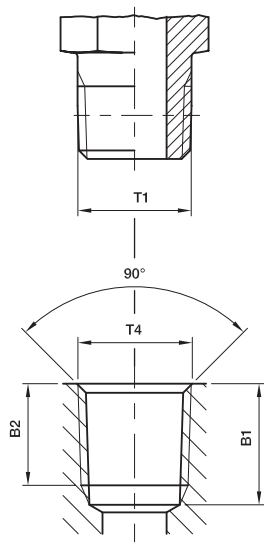
Thread T1	Ø D3 mm	Ø D7 mm	D8		D4 min. small	D4 <sup>+0.4</sup> wide*	A1 max.	B1 min.	W	Identification internal	
			small	wide						Thread major diameter	Thread minor diameter
M 08×1.0			12.8	13.15					0.1	8.00	6.92
M 10×1.0	13.9	13.9	14.8	14.75	15	20	1.0	8	0.1	10.00	8.92
M 12×1.5	16.9	16.9	17.8	17.75	18	25	1.5	12	0.1	12.00	10.38
M 14×1.5	18.9	18.9	19.8	19.75	20	25	1.5	12	0.1	14.00	12.38
M 16×1.5	20.9	21.9	22.8	21.75	23	28	1.5	12	0.1	16.00	14.38
M 18×1.5	22.9	23.9	24.8	23.75	25	30	2.0	12	0.1	18.00	16.38
M 20×1.5	24.9	25.9	26.8	25.75	27	34	2.0	14	0.1	20.00	18.38
M 22×1.5	26.9	26.9	27.8	27.75	28	34	2.5	14	0.1	22.00	20.38
M 26×1.5	30.9	31.9	32.8	31.75	33	42	2.5	16	0.2	26.00	24.38
M 27×2.0	31.9	31.9	32.8	32.75	33	42	2.5	16	0.2	27.00	24.84
M 33×2.0	38.9	39.9	40.8	39.75	41	47	2.5	18	0.2	33.00	30.84
M 42×2.0	48.9	49.9	50.8	49.75	51	58	2.5	20	0.2	42.00	39.84
M 48×2.0	54.9	54.9	55.8	54.95	56	65	2.5	22	0.2	48.00	45.84
G 1/8 A	13.8	13.9	14.8	15.00	15	19	1.0	8	0.1	9.73	8.57
G 1/4 A	17.8	18.9	19.8	19.50	20	25	1.5	12	0.1	13.16	11.45
G 3/8 A	21.8	21.9	22.8	23.50	23	28	2.0	12	0.1	16.66	14.95
G 1/2 A	25.8	26.9	27.8	28.50	28	34	2.5	14	0.1	20.96	18.63
G 3/4 A	31.8	31.9	32.8	34.50	33	42	2.5	16	0.2	26.44	24.12
G 1 A	38.8	39.9	40.8	43.50	41	47	2.5	18	0.2	33.25	30.29
G 1 1/4 A	48.8	49.9	50.8	52.50	51	58	2.5	20	0.2	41.91	38.95
G 1 1/2 A	54.8	54.9	55.8	60.00	56	65	2.5	22	0.2	47.80	44.85

\*For inch threads: Enlarged diameter vs. ISO 1179-1 to adopt multiple seal ring designs.

## Port end dimensions for tube fittings

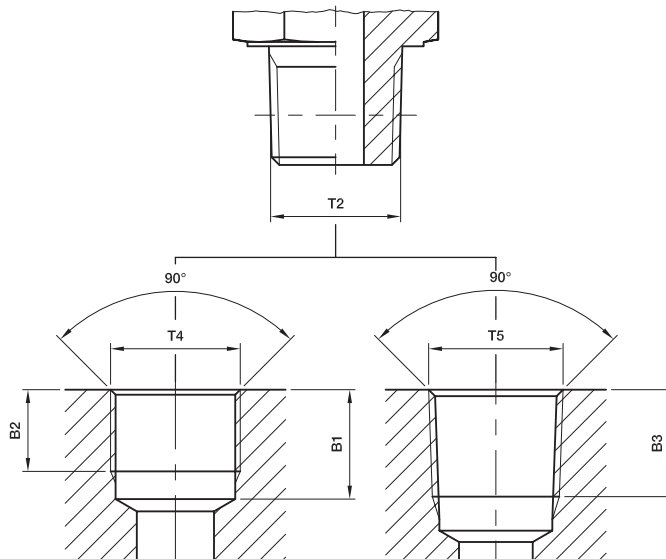
### Male stud NPT/F

Sealing: Tapered thread<sup>1)</sup>  
**NPT** ANSI/ASME B 1.20.1-1983  
**NPTF** ANSI/ASME B 1.20.3-1976



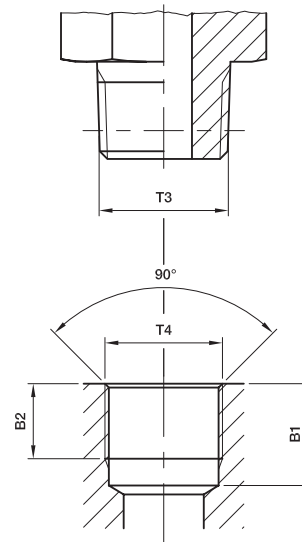
### Male stud BSPT

Sealing: Tapered thread<sup>1)</sup>  
 ISO 7/BS 21/DIN 2999-1



### Male stud Type C

Sealing: Tapered thread short<sup>1)</sup>  
**metric** DIN 3852-1  
**Inch** DIN 3852-2



### Port NPT/F (taper)

**NPT** ANSI/ASME B 1.20.1-1983  
**NPTF** ANSI/ASME B 1.20.3-1976

### Port BSPP (parallel)

ISO 7/1-Rp  
 BS 21-Rp (ISO 1179-1)

### Port BSPT (taper)

ISO 7/1-Rc/BS 21-Rc  
 DIN 2999-Rc (Japan: PT)

### Port (parallel)

**metric** DIN 3852-1  
**Inch** DIN 3852-2

Thread T1	Thread T2	Thread T3	Thread T4	Thread T5	B1 min.	B2 min.	B3 min.
1/8-27 NPT/F*			1/8-27 NPT/F*		11.6	6.9	
1/4-18 NPT/F*			1/4-18 NPT/F*		16.4	10.0	
3/8-18 NPT/F*			3/8-18 NPT/F*		17.4	10.3	
1/2-14 NPT/F*			1/2-14 NPT/F*		22.6	13.6	
3/4-14 NPT/F*			3/4-14 NPT/F*		23.1	14.1	
1-11.5 NPT/F*			1-11.5 NPT/F*		27.8	16.8	
1 1/4-11.5 NPT/F*			1 1/4-11.5 NPT/F*		28.3	17.3	
1 1/2-11.5 NPT/F*			1 1/2-11.5 NPT/F*		28.3	17.3	
	R 1/8 R 1/4 R 3/8 R 1/2 R 3/4 R 1 R 1 1/4 R 1 1/2		Rp 1/8 Rp 1/4 Rp 3/8 Rp 1/2 Rp 3/4 Rp 1 Rp 1 1/4 Rp 1 1/2	Rc 1/8 Rc 1/4 Rc 3/8 Rc 1/2 Rc 3/4 Rc 1 Rc 1 1/4 Rc 1 1/2	9.7 12.0 13.5 17.6 19.1 21.4 21.4 22.4	7.9 11.2 12.0 15.0 16.0 19.1 19.9 20.6	7.4 11.0 11.4 15.0 16.3 19.0 21.4 21.4
		M 08×1.0 tap. M 10×1.0 tap. M 12×1.5 tap. M 14×1.5 tap. M 16×1.5 tap. M 18×1.5 tap. M 20×1.5 tap. M 22×1.5 tap.	M 08×1.0 M 10×1.0 M 12×1.5 M 14×1.5 M 16×1.5 M 18×1.5 M 20×1.5 M 22×1.5		10.0 10.0 13.5 13.5 13.5 13.5 15.5 15.5	5.5 5.5 8.5 8.5 8.5 8.5 10.5 10.5	
		R 1/8 tap. R 1/4 tap. R 3/8 tap. R 1/2 tap.	Rp 1/8 Rp 1/4 Rp 3/8 Rp 1/2		8.5 12.5 12.5 16.5	5.5 8.5 8.5 10.5	

\*In the EO fitting range only NPT thread is manufactured.

In the Triple-Lok®, O-Lok® and adapters fitting range for steel NPTF thread is manufactured and for stainless steel NPT thread is manufactured.

1) Tightness can only be achieved by liquid or plastic sealing aids.





# *Tube assembly*





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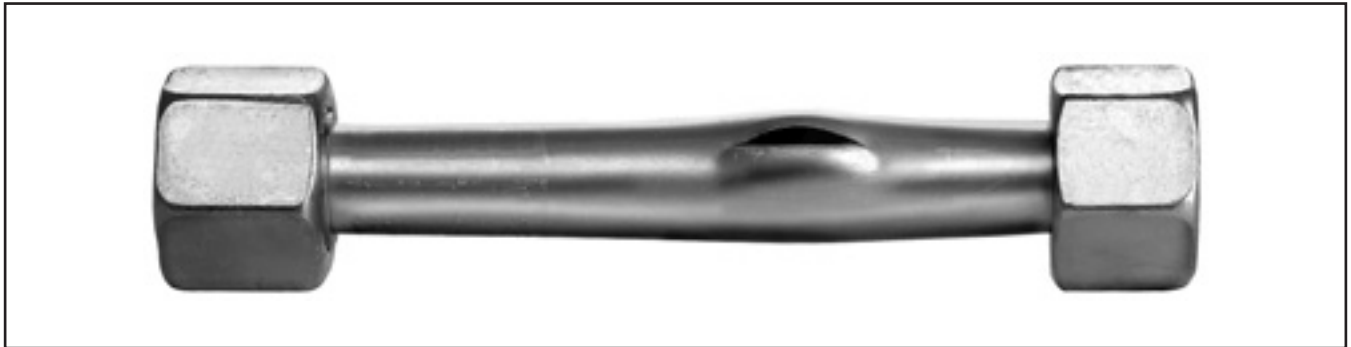
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### Safety instructions

#### Tube fittings are safe high-pressure connections



A carefully assembled Parker tube fitting will provide a sealed joint even up to tube burst. Experience has shown that break-downs, re-tightening and leaks can be avoided by following these safety instructions. Please review your fitting procedures.

#### General safety instructions

- Uncompleted assembly will reduce the pressure and vibration capability of a fitting. It can reduce the life cycle time of a connection and leakage can occur. In extreme cases the connection can fail due to tube shear or tube crack.
- After opening a tube connection, the unit has to be re-tightened with the same force used during prior assembly. Under tightening can result in leakage and can reduce the vibration resistance. Over tightening can reduce the possibilities of repeated assembly. In extreme cases the components can be destroyed.
- Parker tube fittings are intended solely for connections for fluid applications.
- Observe tube recommendations. Non-standard materials or tolerances lead to incorrect assembly.
- Do not use ball bearings, fitting pins or tapered pins, coins or washers instead of the correct Parker blanking plug as blanking parts for 24° cones.
- Tube connection and fitting body once assembled, should remain together. Fitting body is to be used once only for pre-assembly.
- Air bleeding of tube fittings which are under pressure can be dangerous.
- Tube under tension can lead to vibration failure. Tube length and bend angles are to be adhered to precisely. Fix tube lines with tube clamps.
- Tubes are not to be clamped to one another but to suitable fixed points. Plate brackets, cable connections and fixing elements are not suitable. Tubes are not mountings on which to integrate other components e.g. filters, ventilators or shut-off valves.
- Prevent oscillation, pressure surges and inherent strain by using flexible hoses for example.
- Under and over tightening of fittings during assembly reduces the capacity for withstanding pressure and vibration loads and therefore reduces the life of the tube fitting. Leaks from the tube can occur under these circumstances.
- When dismantling/transporting and re-assembling, make sure that no dirt enters the system, that the connection elements (threads, sealing surfaces) are not damaged, seals are not lost and tubes are not bent or flattened. We recommend the use of suitable protective caps.
- Disassembled fittings are to be checked for accuracy and damage and replaced if necessary.
- Do not use hand cutters or tube cutters.

- Dirt and metal contamination can lead to damage to the system and leaks.
- The operating parameters given (e.g. pressure, temperature, medium compatibility) are to be adhered to.
- Avoid flow rates > 8 m/s. The resulting forces are high and can destroy the tube lines.
- Relevant guidelines (e.g. CE, ISO, BG, TÜV, DIN) are to be observed.
- Weld fittings are manufactured out of weldable materials. No other fittings are suitable for welding.
- EO-NIROMONT and Parflange LUBSS are high-performance lubricants. The use of other lubricants generally leads to an increase in assembly force.
- The tools and lubricants recommended by Parker guarantee safe assembly.
- Components and tooling of different manufacturers are not necessarily compatible. For complete safety, use only Parker components.
- Fittings are to be handled with care.
- Tube lines need to be adapted tension free of the relevant connectors before assembly. An easy turning of the nut is required for the complete thread length. Otherwise leakage can occur. In extreme cases with additional vibrations tube cracks can occur.
- Vibrations have to be clamped by tube clamps. Independent vibrating units need to be separated with hoses. Otherwise tube cracks can occur.

#### Specific safety instructions for assembly

- During a progressive ring and EO-2 fitting assembly the tube has to bottom up in the stud or in the tool. Without tube bottoming the ring cannot bite sufficiently. Under load the connection can fail due to tube shear.
- Correctly flared tubes are essential for leak free performance of Triple-Lok® fittings. Special care must be taken over the flare diameter and surface finish.
- Preset bite type fittings (Progressive ring) need a final assembly according to assembly instructions.
- Stainless steel progressive ring fittings have to be preassembled in hardened tools. Otherwise the connection may fail under load due to tube shear.
- Do not assemble progressive rings and functional nuts on self-made standpipe stud ends. There is a risk of false assembly with the result of connection shear under load.
- The use of steel cutting rings for stainless steel tubes or other unauthorised tool combinations leads to incorrect assembly.

**In case of doubt please contact your Parker representative!**

General

Assembly of Parker tube fittings always follows the same pattern:



**Material combinations**

- Use recommended tube material
- Select suitable components according to tube material



**Tube preparation**

- Cut and deburr thoroughly
- Follow recommendations for minimum straight tube length
- Apply support sleeves when necessary



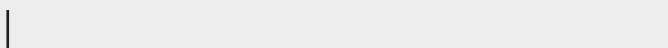
**Machine assembly**

- Preferred method
- Most efficient method
- Recommended for large EO progressive ring and EO-2
- Parflange® recommended for 37° flaring



**Manual assembly**

- Economical for assembly of small quantities
- Suitable for small O.D. tube
- For repair work
- Hand flaring does not provide reliable results
- Stainless steel progressive ring fittings need to be assembled with pre-assembly tools



**Assembly check**

- Check assembly tube preparation result
- ⚠ Incorrect assemblies must be corrected or scrapped



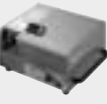
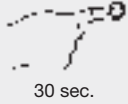









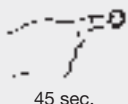

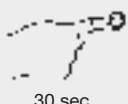


**Final installation**

- Final fitting assembly according to instruction
- Do not assemble under tension
- Clamp onto rigid fixtures
- Tighten tube clamps after final fitting installation


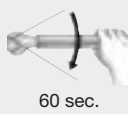

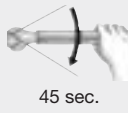

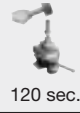





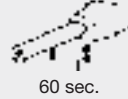


### Selection of assembly process for bite systems

Workshop machines for industrial assembly					
Process			Product		
Procedure	Equipment	Process/Time*	Economic production qty.	EO progressive ring PSR/DPR	EO-2
Pre-assembly using EOMAT ECO machine		 30 sec.	max. 50 assemblies per day	hydraulic service and on-site installation	ideal for workshop assembly, not ideal for serial production
Pre-assembly using EOMAT UNI machine		 30 sec.	max. 100 assemblies per day	ideal for workshop assembly, not suitable for LL series	ideal for workshop assembly, not suitable for LL series
Pre-assembly using EOMAT PRO machine		 10 sec.	min. 100 assemblies per day	ideal for workshop assembly and mass production	ideal for workshop assembly and mass production
Tube forming using EO2-FORM F3 machine		 40 sec.	max. 300 assemblies per day	not applicable	not applicable
Tube forming using EO2-FORM PRO22		 6 sec.	min. 100 assemblies per day	not applicable	not applicable
Tube flaring using Parflare ECO		 30 sec.	max. 50 assemblies per day	not applicable	not applicable
Tube flaring using Parflange® 1025 machine		 45 sec.	max. 100 assemblies per day	not applicable	not applicable
Tube flaring using Parflange® 50 machine		 30 sec.	Basic: max. 500 assemblies per day PRO: 1200 assemblies per day	not applicable	not applicable

\*Average for total assembly time of medium size fitting including assembly check and final tightening



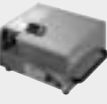
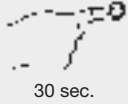









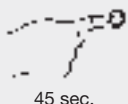

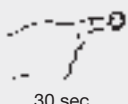
**Selection of assembly process for bite systems**

Manual assembly for field repair					
Process			Product		
Procedure	Equipment	Process/Time*	Economic production qty.	EO progressive ring PSR/DPR	EO-2
Direct in fitting		 60 sec.	max. 10 assemblies per week	field repair only, not for efficient production and tubes larger than 22 mm OD, preferred method for PSR, not for stainless steel	field repair only, not for efficient production and tubes larger than 22 mm OD
Pre-assembly in vice		 45 sec.	max. 10 assemblies per week	field repair only, not for efficient production	field repair only, not for efficient production
Flaring in vice		 120 sec.	max. 10 flarings per week	not applicable	not applicable
Pre-assembly using HVM-B device		 30 sec.	max. 50 assemblies per day	final assembly in fitting must be 1/2 turn, not for tubes larger than 15 mm OD, not for stainless steel	not applicable
Pre-assembly using EO-KARRYMAT		 60 sec.	max. 20 assemblies per day	ideal for repair jobs and small on-site installations, not suitable for volume production	ideal for repair jobs and small on-site installations, not suitable for volume production
Tube flaring using KARRYFLARE		 60 sec.	max. 20 flarings per day	not applicable	not applicable

\*Average for total assembly time of medium size fitting including assembly check and final tightening



## Selection of assembly process for tube forming systems

Workshop machines for industrial assembly					
Process			Product		
Procedure	Equipment	Process/Time*	EO2-FORM	Triple-Lok®	O-Lok®
Pre-assembly using EOMAT ECO machine		 30 sec.	not applicable	not applicable	not applicable
Pre-assembly using EOMAT UNI machine		 30 sec.	not applicable	suitable for workshop assembly, preferred process is Parflange®	not applicable
Pre-assembly using EOMAT PRO machine		 10 sec.	not applicable	not applicable	not applicable
Tube forming using EO2-FORM F3 machine		 40 sec.	ideal for workshop assembly and serial production	not applicable	not applicable
Tube forming with EO2-FORM PRO22 machine		 6 sec.	ideal for workshop assembly and serial production	not applicable	not applicable
Tube flaring using Parflare ECO machine		 30 sec.	not applicable	ideal for workshop assembly, not recommended for mass production	not applicable
Tube flaring using Parflange® 1025 machine		 45 sec.	not applicable	ideal for workshop assembly, not recommended for mass production, not suitable for assembly of SS tubes over 25 mm	ideal for workshop assembly, not recommended for mass production, not suitable for assembly of SS tubes over 25 mm
Tube flaring using Parflange® 50 machine		 30 sec.	not applicable	ideal for workshop assembly and serial production	ideal for workshop assembly and serial production automatic sleeve feeder available for mass production

\*Average for total assembly time of medium size fitting including assembly check and final tightening

**Selection of assembly process for tube forming systems**

Manual assembly for field repair					
Process			Product		
Procedure	Equipment	Process/Time*	EO2-FORM	Triple-Lok®	O-Lok®
Direct in fitting		 60 sec.	not possible, use EO-2 for field repair	not possible, use 1015 device or hand flaring tools for field repair	not possible, use braze sleeves or hose lines for field repair
Pre-assembly in vice		 45 sec.	not possible, use EO-2 for field repair	not possible, use 1015 device or hand flaring tools for field repair	not possible, use braze sleeves or hose lines for field repair
Flaring in vice		 120 sec.	not applicable	field repair only, not for efficient production, not for stainless steel tubes	not possible, use braze sleeves or hose lines for field repair
Pre-assembly using HVM-B device		 30 sec.	not applicable	not applicable	not applicable
Pre-assembly using EO-KARRYMAT		 60 sec.	not possible, use EO-2 for field repair	not applicable	not applicable
Tube flaring using KARRYFLARE		 60 sec.	not possible, use EO-2 for field repair	ideal for repair jobs and small on-site installations, not suitable for industrial production	not applicable

\*Average for total assembly time of medium size fitting including assembly check and final tightening



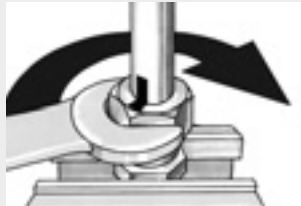
## New EO assembly instructions for 30° final assembly

### Traditional pre-assembly

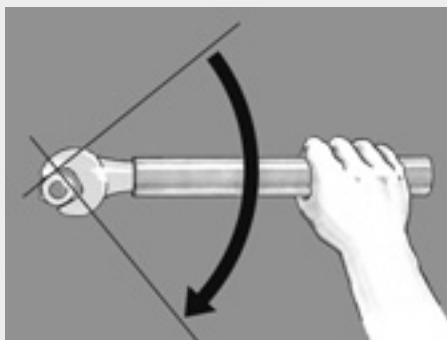
- According to DIN 3859 T2
- Can be used optional as usual
- Machine preset  $\Delta$  manual preset



- Machine presetting: Machine preset corresponding to 1/4 turn of nut



- Manual presetting: Tighten the nut by 1/4 turns



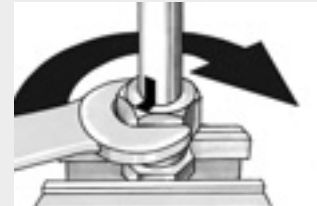
Final assembly  
**Before 90°**  
1/4 turn  
after perceptible rise in force

### Optimized EO pre-assembly

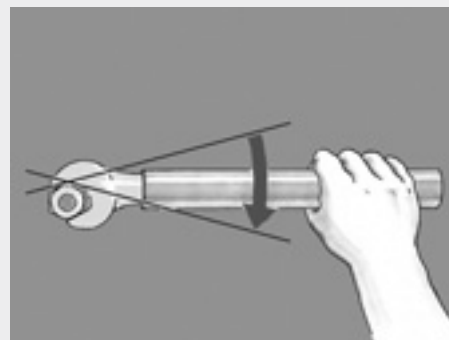
- Machine preset  $\Delta$  manual preset



- Machine presetting: Machine preset corresponding to 1/2 turn of nut



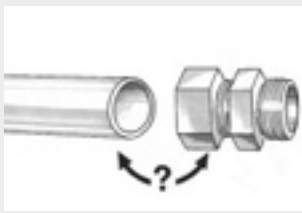
- Manual presetting: Tighten the nut by 1/2 turns



Final assembly  
**Now 30°**  
1/12 turn  
after perceptible rise in force



## EO progressive ring PSR/DPR



### Material combinations

- Select suitable EO progressive ring fitting

Tube material	EO-Fitting body	assembly instructions
Steel	Steel (LL=D-Ring)	
Stainless Steel	Stainless Steel	Pre-assembly by machine or hardened tool required
Copper	Brass (D-Ring)	
Plastic e.g. Polyamide	Steel, Brass, Stainless Steel	Support sleeve E required Check assembly devices for suitability
Stainless Steel	Steel	Stainless Steel DPR must be used Pre-assembly by machine or hardened tool required



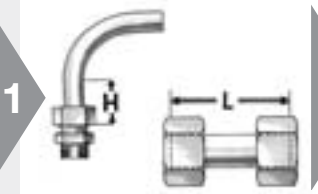
### Tube preparation

- Cut and deburr thoroughly
- Do not assemble under tension
- Clamp onto rigid fixtures

Tube OD	Min. length straight tube ends									
	Series L									
	06	08	10	12	15	18	22	28	35	42
L min	39	39	42	42	45	49	53	53	60	60

Tube OD	Series S									
		06	08	10	12	14	16	20	25	30
L min	44	44	47	47	54	54	59	68	73	82



- Minimum lengths of straight tube-ends, H=2x nut length
- Use swivel union "GZ" instead of short tubes

- Cut tube squarely
- max ±1° deviation
- ⚠ Do not use pipe cutters
- EO tube-cutting tool (AV) for manual cutting

- Remove internal and external burrs
- max. chamfer 0.3 mm x 45°
- Recommendation: In-Ex Tube Deburring Tool 226



### Support sleeves VH

- Support sleeve VH for thin wall or soft metal tubes (see chart)



### Tube insert E

- Support sleeve E for plastic tubes

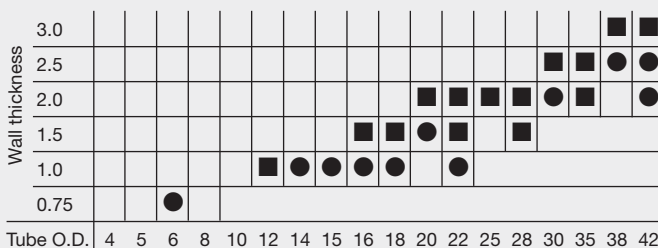


- Insert support sleeve like shown
- Drive VH into tube-end

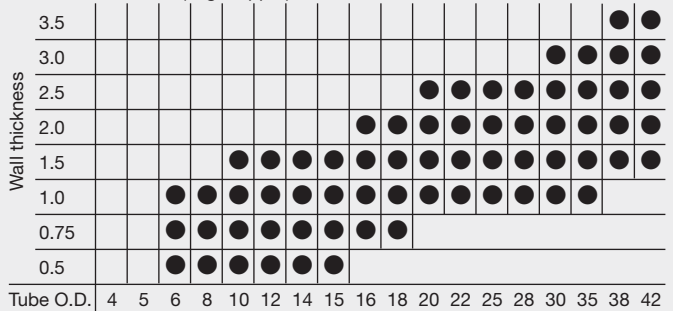
- Support sleeve required
- Support sleeve required for heavily loaded lines (vibrations)

#### VH selection chart for EO Progressive Ring

For steel tubes material ST 37.4 and for stainless steel tubes material 1.4571 and 1.4541



For soft metal tubes (e. g. copper)



EO progressive ring PSR/DPR



EOMAT PRO



EOMAT UNI



EO-KARRYMAT

100% Pre-assembly with EOMAT/EO-KARRYMAT

- Preferred method
- Most efficient method
- ⚠ HVMB-device not suitable for 100% assembly of PSR fittings

Automatik

12-L PSR/DPR

Counter	123	
Lifetime MOK	123456	

1

2

3

4



Ok?



- EOMAT ECO/UNI and EO-KARRYMAT: Adjustment according to pressure chart on machine (PSR/DPR) Reduction of preset pressures for tube materials softer than steel and stainless steel required
- EOMAT PRO: Automatic tool recognition
- Non-EOMAT-machines: Check suitability

- ⚠ Use genuine Parker assembly cone „MOK“
- Control (see checking instructions)
- Clean and lubricate assembly cone and thread regularly
- For EOMAT PRO use assembly cone "MOK...PRO" with transponder chip

- Insert proper tools
- Clean and lubricate assembly cones regularly
- EO-KARRYMAT: Close valve on handpump
- 2-piece backing plates for 35-L and 42-L



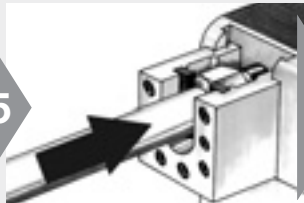
- Slide nut and progressive ring as shown onto the end of the tube

5

6

7

8



- Place tube with progressive ring and nut into the die
- Press tube-end firmly into the assembly cone



- Hold tube firmly
- EOMAT: Press and hold start button
- Use support and foot switch for long tubes
- EO-KARRYMAT: Operate handpump until assembly pressure is reached

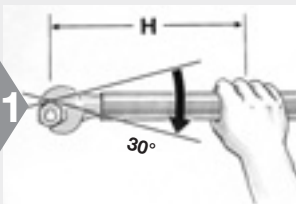
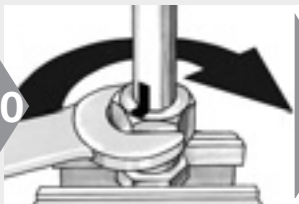
- After completion of pre-assembly, remove the tube for assembly check
- EO-KARRYMAT: Open valve on handpump

- ⚠ Check to make sure that a visible collar covers the front of the first cutting edge
- It does not matter if the ring can be rotated on the tube-end

9

10

11

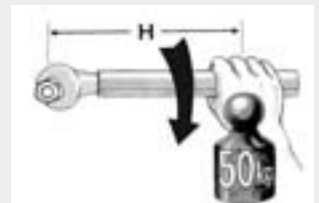


- Use distance gauge AKL for checking in mass production

- Assemble fitting until wrench-tight (without spanner extension)
- ⚠ Mark position of nut

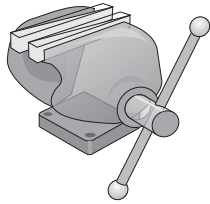
- ⚠ Then tighten fitting firmly by 30° (½ flat)
- ⚠ Recommended to use spanner extension for sizes over 20 mm O.D. (see chart)
- Assembly torques are available on request

Spanner length



Size	Spanner length H [mm]
22-L	400
28-L 20-S	500
35-L 25-S	800
42-L 30-S	1000
38-S	1200

EO progressive ring PSR/DPR



**Pre-assembly with hardened tool VOMO**

- Reliable method for repair jobs
- Only economic for assembly of small quantities
- ⚠ Stainless steel EO progressive rings must be pre-assembled using a hardened tool (VOMO)
- For tubes over 25 mm, EO-KARRYMAT/EOMAT is recommended



1

- ⚠ For stainless steel assembly threads must be lubricated
- Use EO-NIROMONT special high-performance lubricant for stainless steel fittings



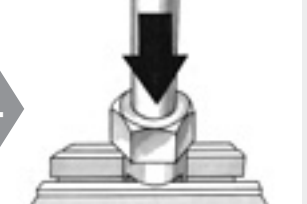
2

- Control (see checking instructions)
- Cones of pre-assembly bodies must be checked regularly (after 50 pre-assemblies) with cone templates (KONU)
- Clean and lubricate assembly cone and thread regularly



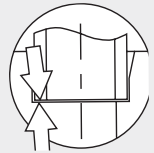
3

- Use pre-assembly tool VOMO
- Fitting body may be used one time only (not for stainless steel)
- Screw on nut until finger-tight



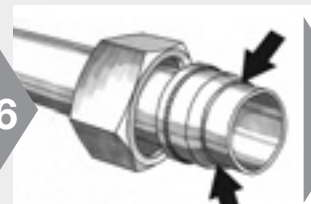
4

- ⚠ Press tube-end firmly into the assembly cone



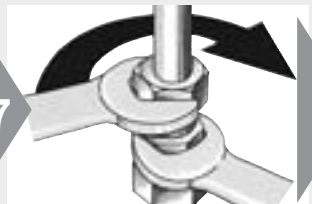
5

- ⚠ Mark position of the nut
- Tighten the nut by 1½ turns
- ⚠ Recommended to use spanner extension for sizes over 20 mm O.D.



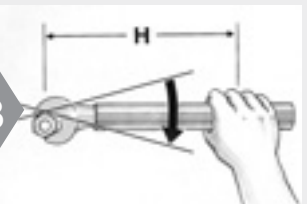
6

- Assembly check:**
- Loosen nut
  - ⚠ Check to make sure that a visible collar covers the front of the first cutting edge
  - ⚠ It does not matter if the ring can be rotated on the tube-end



7

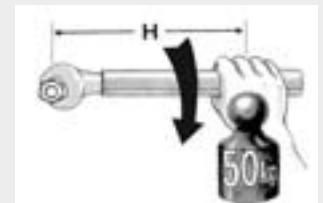
- Assemble fitting until wrench-tight (without spanner extension)
- ⚠ Mark position of nut



8

- ⚠ Then tighten fitting firmly by 30° (½ flat)
- ⚠ Recommended to use spanner extension for sizes over 20 mm O.D. (see chart)
- Assembly torques are available on request

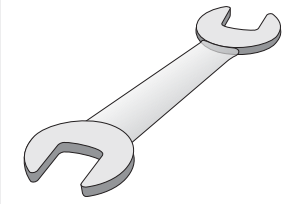
**Spanner length**



Size	Spanner length H [mm]
22-L	400
28-L 20-S	500
35-L 25-S	800
42-L 30-S	1000
38-S	1200

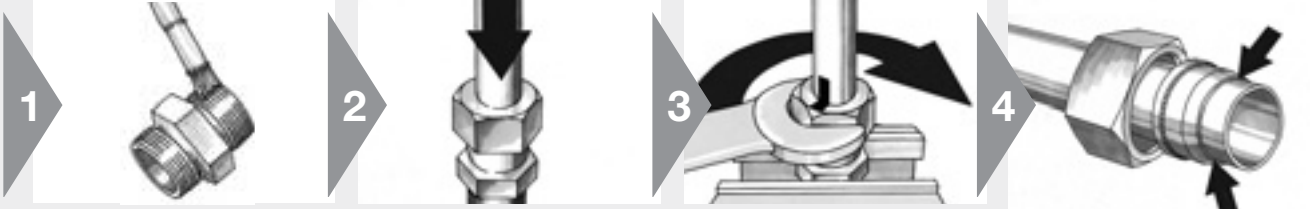


## EO progressive ring PSR/DPR



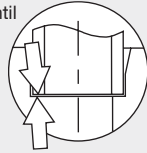
### Direct assembly

- Simple procedure for single assemblies of small dimensions
- Not economic for series assembly
- ⚠ Tubes  $\varnothing$  30, 35, 38 and 42 mm must be pre-assembled in vice
- ⚠ Stainless steel connections have to be assembled using pre-assembly tool (VOMO)
- ⚠ Properly cleaned studs ("BE") have to be assembled with pre-assembly tools



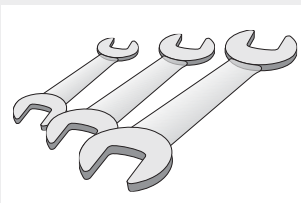
- ⚠ Lubrication of threads will reduce wear and assembly forces
- ⚠ Threads on stainless steel fittings must be lubricated
- ⚠ Use EO-NIROMONT special high-performance lubricant for stainless steel fittings

- Screw on nut until finger-tight
- ⚠ Press tube-end firmly into fitting body



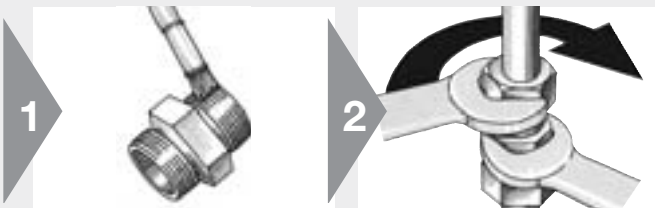
- Mark position of the nut
- Tighten the nut by 1½ turns
- ⚠ Recommended to use spanner extension for sizes over 20 mm O.D. (see chart)
- Fitting body may be used one time only

- Assembly check:**
- Loosen nut
  - ⚠ Check to make sure that a visible collar covers the front of the first cutting edge
  - It does not matter if the ring can be rotated on the tube-end



### Repeated assembly

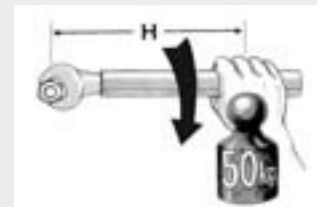
- Each time the tube-end has been disconnected, the fitting must be properly tightened again
- ⚠ EO progressive rings cannot be replaced, once assembled



- ⚠ Threads on stainless steel fittings must be lubricated
- ⚠ Use EO-NIROMONT special high-performance lubricant for stainless steel fittings

- Each time the fitting has been loosened, re-assembly must be performed with the same torque as initial assembly
- The body must be held rigid
- ⚠ Recommended to use spanner extension for sizes over 20 mm O.D. (see chart)

#### Spanner length



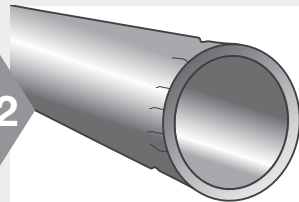
Size	Spanner length H [mm]
22-L	400
28-L 20-S	500
35-L 25-S	800
42-L 30-S	1000
38-S	1200

## EO-2 assembly instructions

Detailed assembly-instructions are included in each EO-2 product box.  
Details on EOMAT setting and selection of support sleeves can be found there as well.

### Tube preparation

- Cut and deburr thoroughly
- Do not assemble under tension
- Clamp onto rigid fixtures



1

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- Cut tube squarely
- max  $\pm 1^\circ$  deviation
- ⚠ Do not use pipe cutters
- EO tube-cutting tool (AV)

- Don't deform tube end at cutting or bending
- Marks or scratches can result in leakage
- Thin wall and soft tubes are very sensitive

- Remove internal and external burrs
- max. chamfer  $0.3 \text{ mm} \times 45^\circ$
- Seal can be damaged by large burrs



### Material combinations

- Select suitable FM-type

	Steel tube	Stainless Steel tube	Plastic tube
Steel fitting	FM...CF	FM...SSA	FM...CF+E
Stainless Steel fitting	—	FM...71	FM...71+E

### Tube insert E

- Tube insert E for plastic tubes



### Support sleeves VH

- Support sleeve VH for thin wall or soft metal tubes



1

2

- Support-sleeve selection: see instruction shipped with product

- Drive VH into tube-end

### Use of support sleeves "VH" with EO-2 fittings

Tube O.D.	0.5	0.75	1	1.5	2	2.5	3	3.5	4
4									
6									
8									
10									
12									
14									
15			○						
16									
18									
20									
22									
25									
28									
30									
35									
38									
42					○				

- Functional test required for other materials or dimensions not specified. Support sleeve VH **not required** for EO-2 and steel tube. For stainless steel tube functional test required. Support sleeve VH **not required** for EO-2 and steel tube. Support sleeve VH **not required** for EO-2/71 or EO-2/SSA and stainless steel tube.
- VH **required** for FM/71 and operating pressure above 100 bar.



## EO-2 assembly instructions

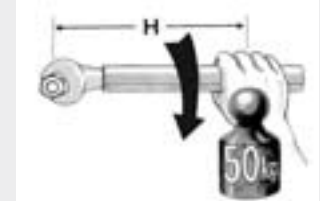
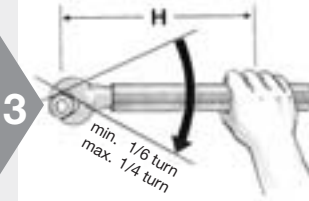
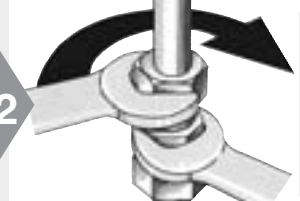
Detailed assembly-instructions are included in each EO-2 product box.  
 Details on EOMAT setting and selection of support sleeves can be found there as well.



### Replacement of sealing ring/Repeated assembly

- Sealing ring DOZ can be changed separately

Spanner length




- After disassembly, sealing ring can be pulled of the tube-end
- Check for damage and replace if necessary
- Abrasion on outer rubber parts does not effect performance
- Assemble fitting until wrench-tight (without spanner extension)

- ⚠ Then tighten fitting firmly by min  $\frac{1}{6}$  (max  $\frac{1}{4}$ ) turn (1 to  $1\frac{1}{2}$  flats)
- ⚠ Recommended to use spanner extension for sizes over 20 mm O.D. (see chart)


Size	Spanner length H [mm]
22-L	400
28-L 20-S	500
35-L 25-S	800
42-L 30-S	1000
38-S	1200




## EO-2 assembly instructions



**EOMAT PRO**



**EOMAT UNI**




**EO-KARRYMAT**


### Assembly with EOMAT/EO-KARRYMAT

- Preferred method
- Most efficient method
- HVM-B device is not suitable for EO-2

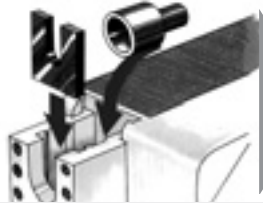
**Automatik**  
12-L EO-2

**1** Counter 123 

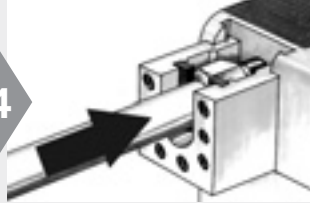
- EOMAT ECO/UNI: Adjustment according to pressure on machine (see instructions shipped with product box)
- EOMAT PRO: Automatic tool recognition
- EO-KARRYMAT: Refer to chart on machine
- Non-EOMAT-machines: check suitability

**2**  **Ok?**


- ⚠ Use genuine Parker assembly cone "MOKEO2"
- Check according to MOK checking instructions
- For EOMAT PRO use assembly cone "MOK...PRO" with transponder chip.
- Advantages: easy and safe assembly

**3** 


- Insert proper tools
- 2-piece tube backing plates for 35-L and 42-L
- EO-KARRYMAT: Close valve on handpump

**4** 

- Place tube with functional nut into the die
- Press tube-end firmly into the assembly cone
- Hold back nut for easy tube insertion


**5** 

- Hold tube firmly
- EOMAT: Press and hold start button
- Use support and foot switch for long tubes
- EO-KARRYMAT: Operate handpump until assembly pressure is reached. Then open valve on handpump

**6** 


**Assembly check:**

- Gap between sealing ring and retaining ring must be closed
- A little relaxation (approx. 0.2 mm) is allowed

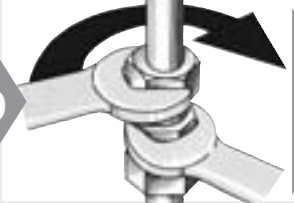
**7** 

**Gap not closed:**

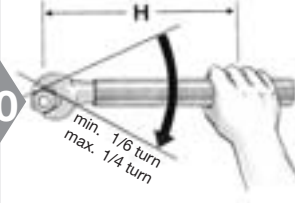
- ⚠ Check all components, tube, machine, tools and pressure setting
- ⚠ Repeat assembly with increased pressure if necessary

**8** 

- ⚠ Threads of stainless steel fittings must be lubricated
- ⚠ Use EO-NIROMONT special high-performance lubricant for stainless steel fittings

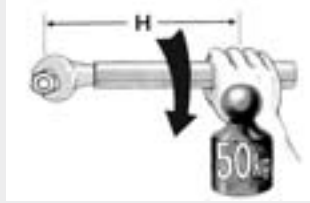
**9** 

- Assemble fitting until wrench-tight (without spanner extension)

**10** 

- ⚠ Then tighten fitting firmly by min 1/6 (max. 1/4) turn (1 to 1 1/2 flats)
- ⚠ Recommended to use spanner extension for sizes over 20 mm O.D. (see chart)

**Spanner length**

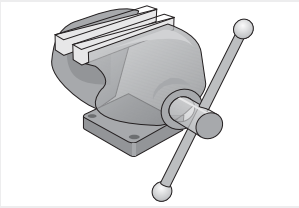


Size	Spanner length H [mm]
22-L	400
28-L 20-S	500
35-L 25-S	800
42-L 30-S	1000
38-S	1200





EO-2 assembly instructions



**Assembly in vice**

- Reliable method
- Only economic for assembly of small quantities



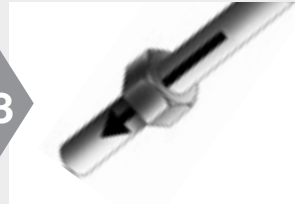
1

- ⚠ Threads on stainless steel fittings must be lubricated
- ⚠ Use EO-NIROMONT special high-performance lubricant for stainless steel fittings



2

- Check according to VOMO checking instructions
- Use pre-assembly tool VOMO
- Fitting body may be used one time only and components must stay together



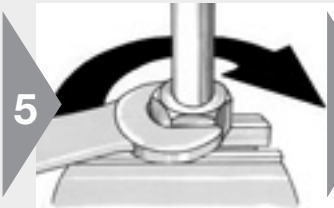
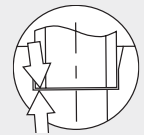
3

- Push functional nut onto tube-end
- Advantage: Easy tube insertion, particularly large dimensions



4

- ⚠ Press tube-end firmly into the assembly cone
- Screw on nut until finger-tight



5

- Tighten until sharp increase of resistance (approx. 1 to 1½ turns)
- ⚠ Recommended to use spanner extension for sizes over 20 mm O.D. (see chart)



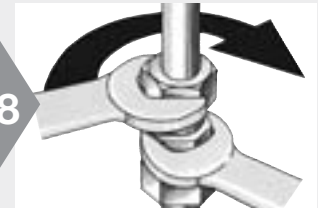
6

- Assembly check:**
- Gap between sealing ring and retaining ring must be closed
  - A little relaxation (approx. 0.2 mm) is allowed



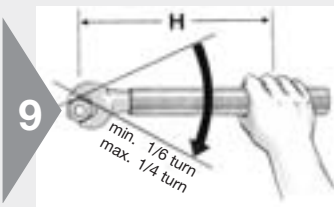
7

- ⚠ **Gap not closed:** Repeat assembly with increased torque. Check gap again.



8

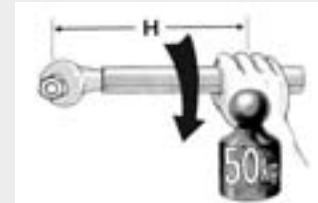
- Assemble fitting until wrench-tight (without spanner extension)



9

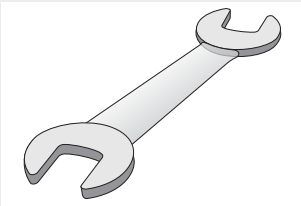
- ⚠ Then tighten fitting firmly by min 1/6 (max. 1/4) turn (1 to 1½ flats)
- ⚠ Recommended to use spanner extension for sizes over 20 mm O.D. (see chart)

**Spanner length**



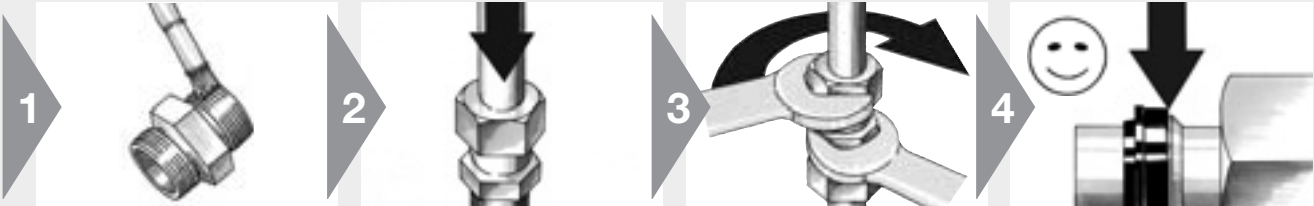
Size	Spanner length H [mm]
22-L	400
28-L 20-S	500
35-L 25-S	800
42-L 30-S	1000
38-S	1200

## EO-2 assembly instructions



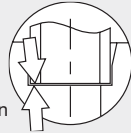
### Direct assembly

- Simple procedure for single assemblies of small dimensions
- Not economic for series assemblies
- ⚠ Tubes  $\varnothing$  30, 35, 38 and 42 mm must be pre-assembled in vice



- ⚠ Threads on stainless steel fittings must be lubricated
- ⚠ EO-NIROMONT is a special high-performance lubricant for stainless steel fittings

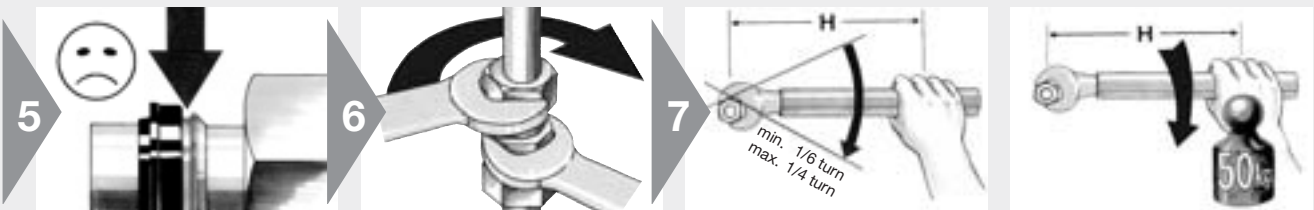
- ⚠ Press tube-end firmly into the assembly cone
- Push back nut for easy tube insertion



- Tighten until sharp increase of resistance (approx. 1 to 1½ turns)
- ⚠ Recommended to use spanner extension for sizes over 20 mm O.D. (see chart)

#### Assembly check:

- Gap between sealing ring and retaining ring must be closed
- A little relaxation (approx. 0.2 mm) is allowed



- ⚠ **Gap not closed:** Check all components including tube

- Assemble fitting until wrench-tight (without spanner extension)

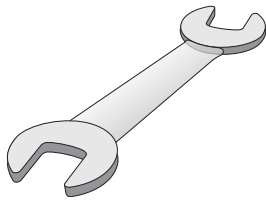
- ⚠ Then tighten fitting firmly by min 1/6 (max 1/4) turn (1 to 1½ flats)
- ⚠ Recommended to use spanner extension for sizes over 20 mm O.D. (see chart)

#### Spanner length

Size	Spanner length H [mm]
22-L	400
28-L 20-S	500
35-L 25-S	800
42-L 30-S	1000
38-S	1200



## Checking instructions for EO assembly tools



### VOMO tools for manual pre-assembly in vice MOK for use in EO assembly machines

- ⚠ Use of damaged, worn or non-suitable tooling may result in fitting failure or machine damage
- ⚠ Tools must be checked regularly, at least after 50 assemblies
- ⚠ Worn tools must be replaced ⚠ Use only genuine Parker tools
- ⚠ Tools must be kept clean and lubricated

1



- Clean cone surface for checking

2



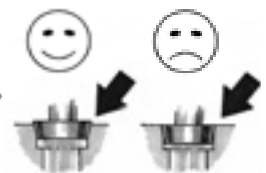
- Visual checks:  
Cone must be free of wear, damage or cracks

3



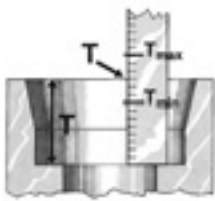
- Check for deformation of geometry
- ⚠ Special cone template KONU must be used
- KONU cone templates are precision measuring devices and must be handled accordingly

4

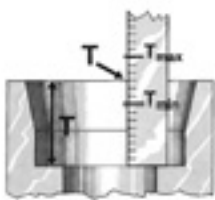


- Check contour:  
The rear of the template must protrude slightly above the top face of the cone or may be flush

5



- Check insertion depth
- ⚠ Deviations from the insertion depth can cause leakages



- Insertion depth T

Table: Tool for presetting tool (MOK and VOMO)

Type	T <sub>min</sub>	T <sub>max</sub>	Typ	T <sub>min</sub>	T <sub>max</sub>
6-L	6.95	7.05	6-S	6.95	7.05
8-L	6.95	7.05	8-S	6.95	7.05
10-L	6.95	7.05	10-S	7.45	7.55
12-L	6.95	7.05	12-S	7.45	7.55
15-L	6.95	7.05	14-S	7.95	8.05
18-L	7.45	7.55	16-S	8.45	8.55
22-L	7.45	7.55	20-S	10.45	10.55
28-L	7.45	7.55	25-S	11.95	12.05
35-L	10.45	10.55	30-S	13.45	13.55
42-L	10.95	11.05	38-S	15.95	16.05

## EO2-FORM assembly instructions



### Material combinations

- Select suitable materials
- See catalogue for exact tube specifications

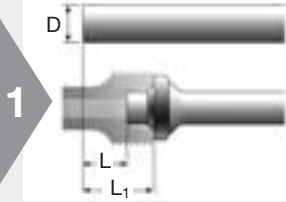
### Material selection chart

Tube material	Fitting and nut material	Sealing material
Steel	Steel	Steel/NBR or Steel/FKM
Stainless Steel	Stainless Steel	Stainless/Steel FKM/NBR
Stainless Steel	Steel	Steel/NBR or Steel/FKM

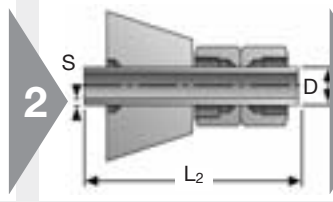


### Tube preparation

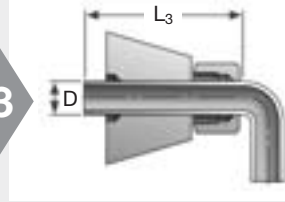
- Cut and deburr thoroughly
- Cut and bend tubes exactly



- 1
- Take extra length into account (see tube preparation chart)



- 2
- Minimum lengths  $L_2$  of straight tubes (see chart)



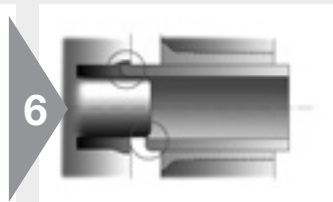
- 3
- Minimum lengths  $L_3$  of straight tube-ends before bend (see chart)



- 4
- Cut tube squarely
  - max  $\pm 1^\circ$  deviation
  - ⚠ Do not use pipe cutters
  - EO tube-cutting tool (AV) for manual cutting



- 5
- Remove internal and external burrs
  - max. chamfer  $0.3 \text{ mm} \times 45^\circ$
  - Recommendation: In-Ex Tube Deburring Tool 226

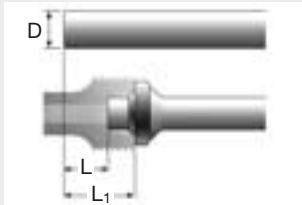


- 6
- Chips, dirt, internal or external burrs and paint prevent correct tube insertion
  - ⚠ Dirty tubes result in worn-out or damaged tools

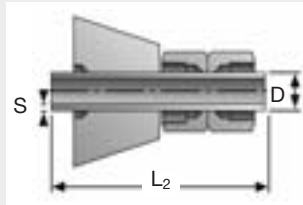


**EO2-FORM assembly instructions**

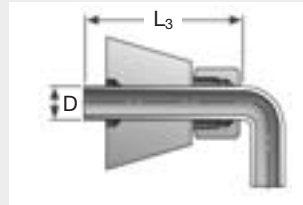
**Tube preparation chart – Series L**



● Extra length



● Minimum tube length



● Minimum straight length before bend

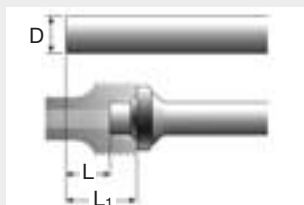


● Minimum clearance of U-shape bends

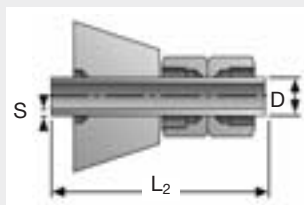
Tube-OD Series	S Wall thickness	L Steel ± 0.5	L Stainless Steel ± 0.5	L <sub>1</sub> Steel	L <sub>1</sub> Stainless Steel	L <sub>2</sub>	L <sub>3</sub>
<b>6L</b>	1.0	6.0	6.0	13.0	13.0	90	63
	1.5	6.0	6.0	13.0	13.0		
<b>8L</b>	1.0	5.5	5.5	12.5	12.0	92	65
	1.5	5.5	5.5	12.5	12.5		
	2.0	5.0		12.0	12.5		
<b>10L</b>	1.0	5.5	5.5	12.5	12.5	95	68
	1.5	5.0	6.0	12.0	13.0		
	2.0	5.0	6.0	12.0	13.0		
<b>12L</b>	1.0	4.5	5.0	11.5	12.0	95	70
	1.5	5.5	5.5	12.5	12.5		
	2.0	5.0	5.5	12.0	12.5		
<b>15L</b>	1.5	5.5	7.0	12.5	14.0	102	75
	2.0	5.5	6.5	12.5	13.5		
	2.5	5.5		12.5			
<b>18L</b>	1.5	5.5	7.0	13.0	14.5	110	80
	2.0	5.5	7.0	13.0	14.5		
	2.5	6.0		13.5			
	3.0	6.0		13.5			
<b>22L</b>	1.5	6.0	7.5	13.5	15.0	120	90
	2.0	6.5	7.5	13.5	15.0		
	2.5	7.0	7.5	14.5	15.0		
	3.0	7.0		14.5			
<b>28L</b>	1.5	5.5	6.5	13.0	14.0	140	98
	2.0	6.5	7.5	14.0	15.0		
	2.5	7.0	8.0	14.5	15.5		
	3.0	7.0		14.5			
<b>35L</b>	2.0	7.0	8.5	17.5	19.0	170	115
	3.0	8.5	10.5	19.0	21.0		
	4.0						
	5.0						
<b>42L</b>	2.0	7.5	8.0	18.5	19.0	190	125
	3.0	9.0	10.5	20.0	21.5		
	4.0	9.0		20.0			

EO2-FORM assembly instructions

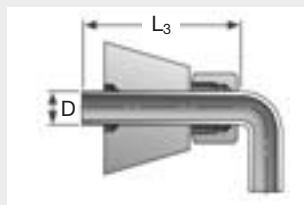
Tube preparation chart – Series S



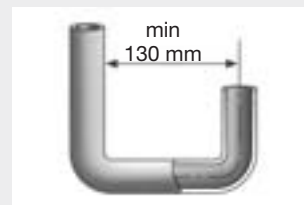
● Extra length



● Minimum tube length



● Minimum straight length before bend



● Minimum clearance of U-shape bends



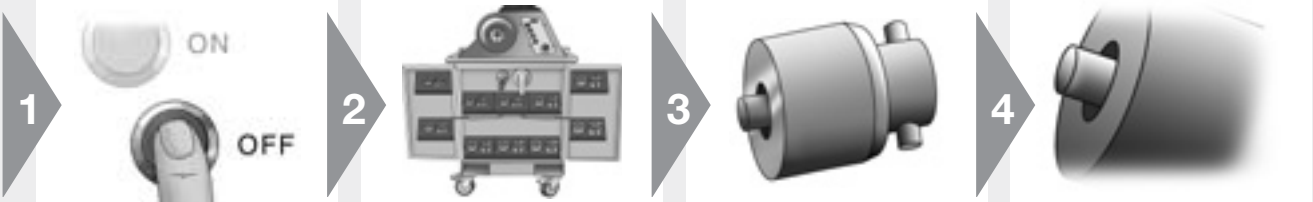
Tube-OD Series	S Wall thickness	L Steel ± 0.5	L Stainless Steel ± 0.5	L <sub>1</sub> Steel	L <sub>1</sub> Stainless Steel	L <sub>2</sub>	L <sub>3</sub>
6S	1.0	6.0	6.0	13.0	13.0	92	65
	1.5	6.0	6.0	13.0	13.0		
	2.0	5.5		12.5			
8S	1.0	5.5	5.5	12.5	12.5	95	68
	1.5	5.5	5.5	12.5	12.5		
	2.0	5.0		12.0			
10S	1.5	5.0	6.0	12.5	13.5	100	70
	2.0	5.0	6.0	12.5	13.5		
12S	1.5	5.0	6.5	12.5	14.0	100	72
	2.0	5.0	6.0	12.5	13.5		
16S	1.5	5.0	6.5	13.0	14.5	108	78
	2.0	5.5	6.5	13.5	14.5		
	2.5	5.5	6.5	13.5	14.5		
	3.0	5.0	6.0	13.0	14.0		
20S	2.0	7.0	8.5	17.5	19.0	135	98
	2.5	7.0	8.5	17.5	19.0		
	3.0	7.0	8.5	17.5	19.0		
	3.5	7.0		17.5			
25S	2.0	8.5	10.0	20.5	22.5	155	112
	2.5	8.5	10.0	20.5	22.5		
	3.0	8.5	10.5	20.5	23.0		
	4.0	8.5		20.5			
30S	3.0	8.5	10.5	22.0	24.0	165	122
	4.0	9.5	11.0	23.0	24.5		
	5.0	8.5		22.0			
38S	2.5		10.0		26.0	190	135
	3.0	10.0	10.0	26.0	26.0		
	3.5	10.0		26.0			
	4.0	10.0	12.0	26.0	28.0		
	5.0	11.0	13.0	27.0	29.0		
	6.0	11.5		27.5			
	7.0	11.5		27.5			

**EO2-FORM assembly instructions**



**Tube forming with EO2-FORM F3**

- Reliable forming method
- Reliable process



1

2

3

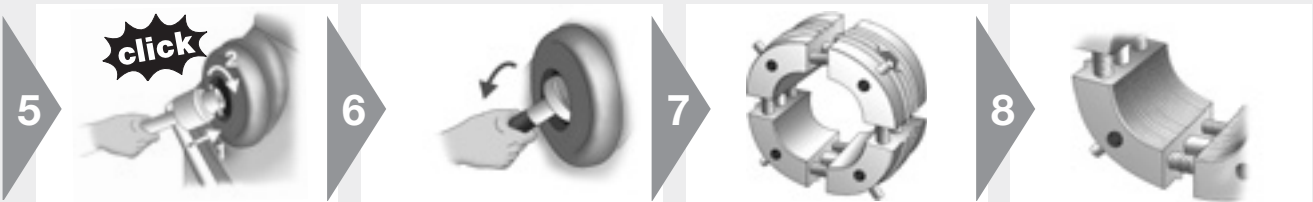
4

- ⚠ Change tool only when drive switched off (button OFF)
- ⚠ Obey safety instructions
- ⚠ Do not operate machine without tooling

- Open doors to access tools and handling devices
- Tool handling devices are stored in middle on top

- Select suitable forming pin according to tube material, outer diameter and wall thickness

- Check forming pin for dirt, wear and damage



5

6

7

8

- Use magnetic holder to insert forming pin
- Turn clockwise to lock bayonet fixture

- Tilt magneto holder to remove handle

- Select suitable clamping die set according to tube outer diameter
- ⚠ Keep stainless tube clamping dies separate from other tube materials to prevent contact corrosion

- Check clamping dies for dirt, wear and damage
- Use wire-brush to remove metal particles from grip surface



9

10

11

12

- Use pistol to handle clamping die set
- Pull and hold handle to grab die set

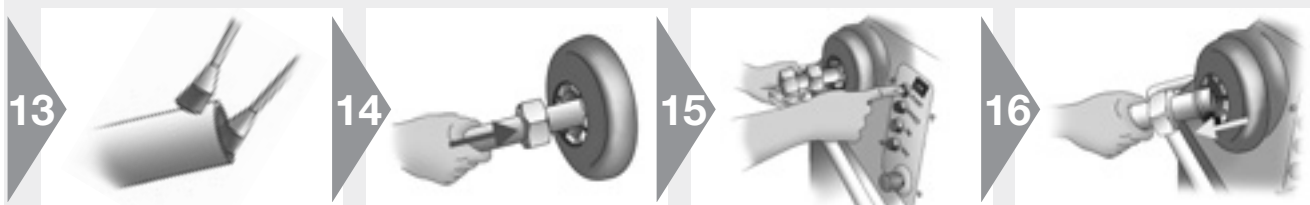
- Insert clamping die set until it bottoms up (twist pistol for easy insertion)
- Release handle to fix die set
- ⚠ Never operate machine while pistol is inserted

- ⚠ Front surfaces must be completely flat
- ⚠ Die segments must fit without gaps

- Switch on drive (button ON)
- Each time the drive is switched on, the reset button (RESET) must be pressed first
- The automatic tool recognition is initiated
- ⚠ Clamping dies will close, reset button (RESET) must be held until it lights up
- Lighten of reset button (RESET) indicates "ready to start"



## EO2-FORM assembly instructions

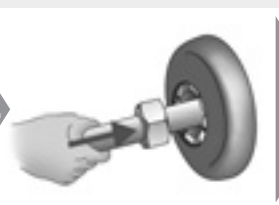


13



- ⚠ Make sure tube-end is free of burrs, chips and dirt
- ⚠ Lubricate inside and outside of tube-end
- Use EO-NIROMONT for best performance

14



- Insert tube-end with nut into open tool until it firmly touches the stop at the end
- ⚠ Press tube-end firmly into the tube stop
- ⚠ Do not turn tube-end anti-clockwise to prevent unlocking forming-pin



15



- Press and hold start button (Ⓢ START) until tube is clamped
- Instead of start-button (Ⓢ START), footswitch can be used
- ⚠ Hold tube firmly until clamping dies are closed
- Use support for long tubes
- ⚠ Do not reach into tool area while machine is working

16



- Tube can be taken out after the clamping dies are open
- Reset button (RESET) lights up and the machine is ready for the next operation
- Check tools regularly (approx. 50 assemblies) for dirt and wear
- Remove tools for cleaning
- Clean clamping dies with wire brush
- Clean forming die using compressed air
- Replace worn-out tooling

E

## EO2-FORM assembly instructions



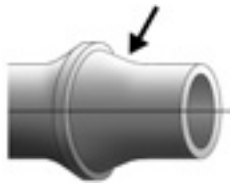
### Assembly check

- Check assembly result
- ⚠ Incorrect assemblies must be scrapped

### Tube OD check

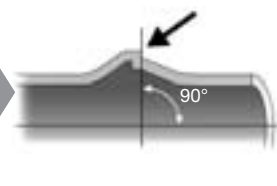
Tube Ø-Series	min Ø [mm]	max Ø [mm]
<b>6-L/S</b>	8.4	10.3
<b>8-L/S</b>	10.5	12.3
<b>10-L</b>	12.8	14.3
<b>12-L</b>	14.8	16.3
<b>15-L</b>	18.5	20.3
<b>18-L</b>	21.5	24.0
<b>22-L</b>	26.0	27.8
<b>28-L</b>	32.0	33.8
<b>35-L</b>	39.5	42.5
<b>42-L</b>	46.5	49.5
<b>10-S</b>	13.5	15.5
<b>12-S</b>	15.5	17.5
<b>16-S</b>	19.5	21.5
<b>20-S</b>	24.5	27.5
<b>25-S</b>	30.0	34.0
<b>30-S</b>	35.0	39.0
<b>38-S</b>	43.0	47.0

1



- Sealing surface (arrow) must be free of scratches and damage

2

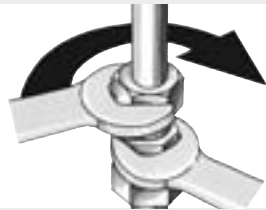


- Check contour: Contact surface for sealing ring (arrow) must be flat, at right angle to tube

3



- Check outer diameter Ø ... (see chart)
- ⚠ Incorrect tube-ends must be scrapped. Tools must be cleaned and checked



### Installation

- ⚠ Tube must fit without tension

1



- Place sealing ring (DOZ) onto tube-end

2



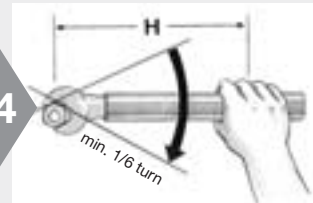
- Threads of stainless steel fittings must be lubricated
- EO-NIROMONT is a special high-performance lubricant for stainless steel fittings

3



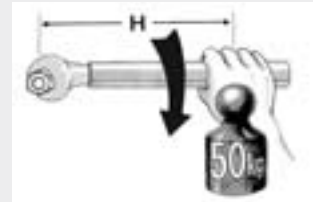
- Tube must fit without tension
- Assemble fitting until wrench-tight (without spanner extension)

4



- ⚠ Then tighten fitting firmly by 1/6 turn (1 flat)
- ⚠ Recommended to use spanner extension for sizes over 20 mm O.D. (see chart)
- ⚠ Incorrect assembly reduces performance and reliability of the connection

### Spanner length



Size	Spanner length H [mm]
22-L	400
28-L 20-S	500
35-L 25-S	800
42-L 30-S	1000
38-S	1200

## Checking instructions for EO2-FORM tools



### Forming pin and clamping dies for EO2-FORM machine

- ⚠ Use of damaged, worn or non-suitable tooling may result in fitting failure and damage of machine
- ⚠ Tools must be checked regularly, at least after 50 assemblies
- ⚠ Worn tools must be replaced
- ⚠ Use only genuine Parker tools
- ⚠ Tools must always be kept clean and lubricated

1



- Clean forming pin for checking
- Do not disassemble

2



- Visual check:  
Surface must be free of wear and damage
- Use air blowgun to remove chips and dirt

3



- Clean clamping pin for checking
- Do not disassemble
- Pins must not be loose or damaged

4



- Visual check:  
Grip surface must be clean and free of wear
- Use wire-brush to remove metal particles from grip surface



## Weld fitting



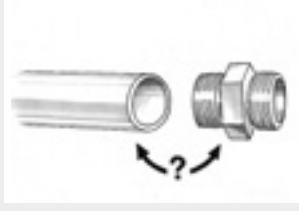
### Weld fitting assembly

- EO weld nipple and weld fitting
- ⚠ Use weldable material
- ⚠ Depending on application or project specification, special requirements may apply for: Tube preparation, welding process, operator qualification, inspection of welding connection and surface finish



### Tube preparation

- Cut and deburr thoroughly
- Do not assemble under tension
- Clamp onto rigid fixtures



### Material combinations

- Select suitable tube material

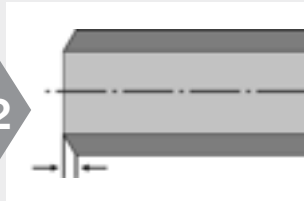
Fitting material	Tube specification
Steel	Weldable Steel
Stainless Steel	Weldable Stainless Steel

1



- Cut tube squarely
- max  $\pm 1^\circ$  deviation
- ⚠ Do not use pipe cutters
- EO tube-cutting tool (AV) for manual cutting

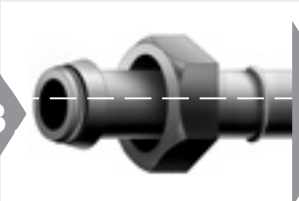
2



- Bevel tube-end similar to weld nipple bevel

## Assembly

3



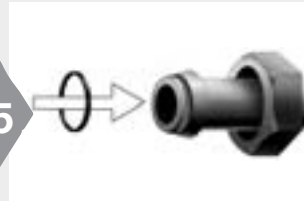
- Slide nut onto tube-end
- Weld fitting onto tube-end
- Fitting and tube must be aligned
- ⚠ Remove all elastomeric seals before welding

4



- Clean weld
- Calibrate inner diameter
- Check welding quality
- Surface protection if necessary

5



- Assemble O-ring
- Lubricate O-ring for easy assembly
- Avoid damage or twisting of O-ring

6



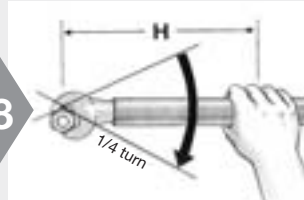
- ⚠ Threads of stainless steel fittings must be lubricated
- ⚠ Use EO-NIROMONT special high-performance lubricant for stainless steel fittings

7



- Assemble fitting until wrench-tight (without spanner extension)

8



- ⚠ Then tighten fitting firmly by  $\frac{1}{4}$  turn ( $1\frac{1}{2}$  flats)

## O-Lok® assembly instructions



### Tube selection

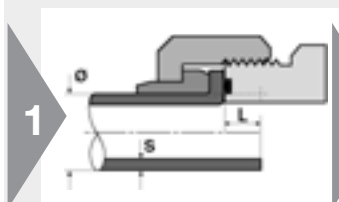
- Select suitable tube material

Steel tube		Stainless Steel tube	
Cold drawn seamless	Welded & redrawn	Cold drawn seamless	
NF A 49330	NF A 49341		
ISO 3304 R	DIN 2393	NF A 49341	
DIN 2391C pt 1	BS 3602/2	DIN 17458 DA/T3	
BS 3602 pt1	SAE J525	ASTM A 269	1.4571 on request
SAE J524			



### Tube preparation

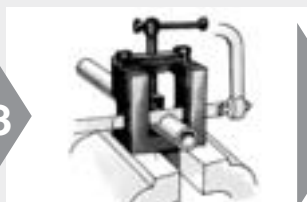
- Cut and deburr thoroughly



- Calculate tube length before cutting
- Add extra length "L"



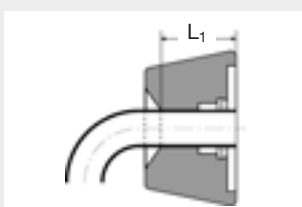
- Minimum length of straight tube ends (see chart below)



- Cut tube squarely
- max. ±1° deviation
- ⚠ Do not use pipe cutters
- Use tube-cutting tool AV for manual cutting



- Remove internal and external burrs
- max. chamfer 0.3 mm × 45°
- Recommendation: In-Ex Tube Deburring Tool 226
- ⚠ Proper deburring and cleaning of inner diameter essential for sealing surface quality



Metric tube [mm]		Minimum straight length to start to bend L1 [mm]	Extra length ~ L [mm] for Tube Wall thickness								
Tube Ø	Wall thickness		1	1.5	2	2.5	3	3.5	4	5	
6	1.0 - 1.5	40	4.5	5.5							
8	1.0 - 2.0	40	5.0	5.0							
10	1.0 - 2.0	40	2.5	4.0	3.5						
12	1.0 - 3.0	50	3.5	4.5	4.5	4.0	4.0				
14	1.5 - 2.0	50			5.0						
15	1.0 - 2.0	50		4.5	5.0						
16	1.5 - 3.0	50		3.0	3.0	3.0	2.5				
18	1.5 - 2.0	50		6.0	5.5						
20	2.0 - 3.5	50			3.5	4.0	4.0	3.5			
22	1.5 - 2.5	50			6.5	7.0					
25	2.0 - 4.0	50				4.0	4.5		4.0		
28	1.5 - 3.0	50			6.0	7.0					
30	2.0 - 4.0	50			5.0		5.0		5.0		
32	2.0 - 4.0	50					3.5		3.5		
35	2.0 - 3.0	50					7.0				
38	2.0 - 5.0	50					5.0		5.0	4.5	
50	3.0	50					4.0				

Inch tube [inch]		Minimum straight length to start to bend L1 [mm]	Extra length ~ L [mm] Tube Wall thickness										
Tube Ø	Wall thickness		0.028"	0.035"	0.049"	0.065"	0.083"	0.095"	0.109"	0.120"	0.134"	0.156"	0.188"
1/4"	0.020 - 0.065	40	4.5	5.0	4.0								
3/8"	0.020 - 0.095	40		3.5	3.5	4.0	4.0	4.0					
1/2"	0.028 - 0.095	50		3.5	3.5	3.5	3.5	3.5					
5/8"	0.035 - 0.120	50			4.0	4.0	3.0	4.5	4.0	4.5			
3/4"	0.035 - 0.156	50			4.0	4.0	3.0	2.5	3.5	4.0	4.5		
1"	0.035 - 0.188	50				3.5	3.5	2.5	4.5	4.5	5.0		
1 1/4"	0.049 - 0.188	50					4.0	3.0	3.0	3.0	4.0	4.5	4.5
1 1/2"	0.049 - 0.220	50					4.5	4.5	5.0	5.0	5.0	6.0	5.5
2"	0.083 - 0.120	50						4.0	4.0		5.0		

## O-Lok® assembly instructions



Parflange® 50



Parflange® 1025

### O-Lok® machine flanging and assembly

- Preferred method
- Most efficient method
- Parflange® recommended

1



#### Parflange® machines:

- Select flaring pin according to tube dimensions
- Use special "SS" pin for stainless steel tube
- Pin must be clean and free of wear, damage and metal particles
- Keep flaring pin clean and lubricate regularly

2



- Select flanging dies according to tube dimensions
- Use special "SS" dies for stainless steel tube to avoid contact corrosion
- Grip surface must be clean and free of wear
- Use only genuine Parker tooling for flanging O-Lok®

3



- Load pin into machine
- Ensure lubricating system is filled with EO-NIROMONT (LUBSS)

4



- Place sleeve in lower die half
- Locate upper die half onto lower half

5



- Place the dies in the die housing
- 50: Close safety cover

6



- Slide nut onto tube before flanging!
- Open threads towards machine

7



- ⚠ Press tube firmly into the die against the tube stop

8



- Pull down the handle to clamp the tube in the dies (1025)
- 1040/50 die clamping automatic in cycle
- Press button to start flanging cycle
- ⚠ Keep hands clear off the working area

9

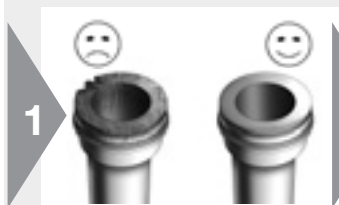


- Parflange® 1025: Unclamp the dies
- Remove tube from machine
- Use die separator to free tube
- Parflange® 1040/50: Die unclamping is automatic

## O-Lok® assembly instructions



### Checking of flange



- Clean flange for inspection
- ⚠ Check sealing surface for cracks, burrs, scratches and pitting

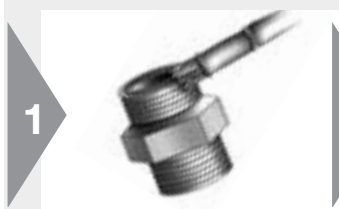


- Dimensional check of the flare
- Flare O.D. should not exceed outside sleeve diameter
- Flare O.D. should not be less than smaller diameter of front of sleeve
- When in doubt, measure



Tube O.D.		Ø D	
mm	In.	min. [mm]	max. [mm]
6	1/4"	12.10	12.75
8		14.85	15.75
10	3/8"	14.85	15.75
12	1/2"	18.00	18.90
14		22.20	23.45
15		22.20	23.45
16	5/8"	22.20	23.45
18		26.60	27.85
20	3/4"	26.60	27.85
22		32.95	34.20
25	1"	32.95	34.20
28		39.35	40.55
30		39.35	40.55
32	1 1/4"	39.35	40.55
35		47.25	48.50
38	1 1/2"	47.25	48.50
50	2"	58.90	60.60

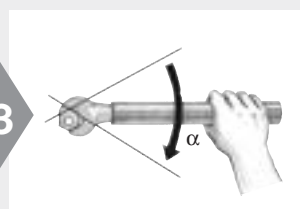
### Installation in fitting



- Lubricate O-ring
- ⚠ Steel fittings: No thread lubrication
- ⚠ Stainless steel fittings: Lubrication required
- EO-NIROMONT is a special high-performance lubricant for stainless steel fittings



- Thread nut onto body
- Tighten to full metal contact
- Mark body and nut as quality check



- Tighten to recommended torque level
- Recommended: Tighten with spanner the number of flats indicated α
- 1 flat = 60°

#### Tightening recommendation

Metric tube [mm]	Inch tube [inch]	SAE dash size	SAE thread	Assembly torque Nm -0% + 10%		α flats from wrench resistance method*	
				Steel	Stainless Steel	Tube	Swivel nut
6	1/4"	-4	9/16-18	25	32	1/4 - 1/2	1/2 - 3/4
8	5/16"	-6	11/16-16	40	50	1/4 - 1/2	1/2 - 3/4
10	3/8"	-6	11/16-16	40	50	1/4 - 1/2	1/2 - 3/4
12	1/2"	-8	13/16-16	65	70	1/4 - 1/2	1/2 - 3/4
14		-10	1-14	80	100	1/4 - 1/2	1/2 - 3/4
15		-10	1-14	80	100	1/4 - 1/2	1/2 - 3/4
16	5/8"	-10	1-14	80	100	1/4 - 1/2	1/2 - 3/4
18		-12	1 3/16-12	115	145	1/4 - 1/2	1/3 - 1/2
20	3/4"	-12	1 3/16-12	115	145	1/4 - 1/2	1/3 - 1/2
22		-16	1 7/16-12	150	190	1/4 - 1/2	1/3 - 1/2
25	1"	-16	1 7/16-12	150	190	1/4 - 1/2	1/3 - 1/2
28		-20	1 11/16-12	190	235	1/4 - 1/2	1/3 - 1/2
30		-20	1 11/16-12	190	235	1/4 - 1/2	1/3 - 1/2
32	1 1/4"	-20	1 11/16-12	190	235	1/4 - 1/2	1/3 - 1/2
35		-24	2-12	245	305	1/4 - 1/2	1/3 - 1/2
38	1 1/2"	-24	2-12	245	305	1/4 - 1/2	1/3 - 1/2
50	2"	-32	2 1/2-12	-	490	-	-

\* "Flats From Wrench Resistance" Method for steel and stainless steel



## O-Lok® assembly instructions



### O-Lok®: Replacement of O-ring

- Parker CORG assembly tool should be used for O-Lok® fitting with captive O-ring groove (O-Lok®)



1

- Insert the O-ring into the slot located on the side of the tool



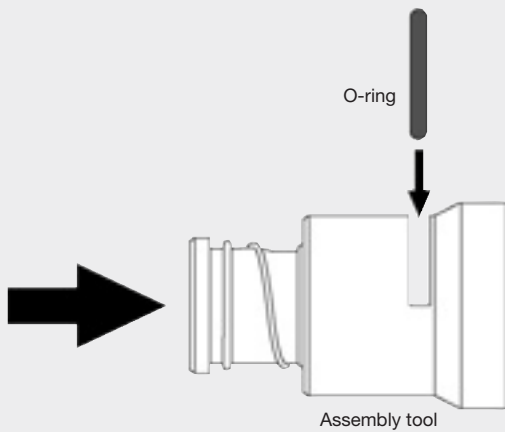
2

- Position the open end of the tool over the tube-end of the fitting



3

- Push the piston of the tool until the O-ring is released into the fitting groove



- Function of Parker CORG assembly tool

## Triple-Lok® assembly instructions



### Tube selection

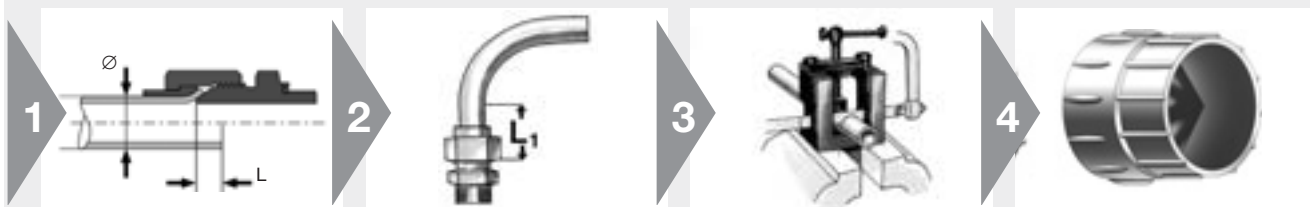
- Select suitable tube material

Steel tube		Stainless steel tube
Cold drawn seamless	Welded & redrawn	Cold drawn seamless
NF A 49330	NF A 49341	
ISO 3304 R	DIN 2393	NF A 49341
DIN 2391C pt 1	BS 3602/2	DIN 17458 DA/T3
BS 3602 pt1	SAE J525	ASTM A 269
SAE J524		



### Tube preparation

- Cut and deburr thoroughly

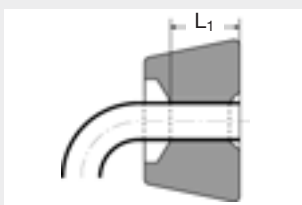


- Calculate tube length before cutting
- Add extra length "L"

- Minimum length L<sub>1</sub> of straight tube-ends (see chart below)

- Cut tube squarely
- max. ±1° deviation
- ⚠ Do not use pipe cutters
- Use tube cutting tool AV for manual cutting

- Remove internal and external burrs
- max. chamfer 0.3 mm × 45°
- Recommendation: In-Ex Tube Deburring Tool 226
- ⚠ Proper deburring and cleaning of inner diameter essential for sealing surface quality



### Tube preparation chart

Metric tube [mm]		Inch tube [inch]		Extra length ~ L [mm]	Minimum straight length to start to bend L <sub>1</sub> [mm]	Flare Ø Ø D [mm]
Tube Ø	Wall thickness	Tube Ø	Wall thickness			
6	1.0 – 1.5	1/4"	0.020 – 0.065	2.0	40	8.6 – 9.7
8	1.0 – 1.5	5/16"	0.020 – 0.065	2.0	40	10.2 – 11.3
10	1.0 – 1.5	3/8"	0.020 – 0.065	2.0	42	11.7 – 12.7
12	1.0 – 2.0	1/2"	0.028 – 0.083	2.5	43	16.0 – 17.3
14	1.5 – 2.0			2.5	52	19.3 – 20.2
15	1.0 – 2.5			2.5	52	19.3 – 20.2
16	1.5 – 2.5	5/8"	0.035 – 0.095	2.5	52	19.3 – 20.2
18	1.5 – 3.0			3.0	56	23.4 – 24.7
20	2.0 – 3.0	3/4"	0.035 – 0.109	3.0	57	23.4 – 24.7
22	1.5 – 3.0			3.0	58	26.5 – 27.8
25	2.0 – 3.0	1"	0.035 – 0.120	3.0	58	29.7 – 31.0
28	1.5 – 3.0			4.0	65	37.6 – 38.9
30	2.0 – 3.0			4.0	65	37.6 – 38.9
32	2.0 – 3.0	1 1/4"	0.049 – 0.120	4.0	65	37.6 – 38.9
35	2.0 – 3.0			4.0	70	43.2 – 45.3
38	2.0 – 4.0	1 1/2"	0.049 – 0.120	4.0	70	43.2 – 45.3
42*	2.0 – 3.0			5.0	80	52.0 – 54.8
50	2.0 – 3.5	2"	0.058 – 0.134	5.0		59.2 – 61.2

- \* Tube OD 42 mm:
- 1015: not suitable
- KARRYFLARE: special flaring pin KARRYFLARE/FPIN42 required

## Triple-Lok® assembly instructions

### 37° Flaring Parflange®-Process

- Preferred method
- Most efficient method
- Parflange® recommended



- Select flaring pin according to tube dimensions
- Use special "SS" pin for stainless steel tube
- Pin must be clean and free of wear and damage
- Load tooling into machine
- Keep flaring pin clean and lubricate regularly



- Select flaring dies according to tube dimensions
- Use special "SS" dies for stainless steel tube
- Grip surface must be clean and free of wear
- Use only genuine Parker tooling for flaring Triple-Lok®



- Load tooling into machine
- Keep sliding surfaces clean and lubricated
- 50: Close safety cover
- Ensure lubricant system is filled with EO-NIROMONT (LUBSS)



- Slide nut and sleeve as shown onto the tube-end



- ⚠ Press tube firmly into the die against the tube stop
- Parflange® 1025: Operate clamping lever
- Parflange® 1040/50: Automatic tube clamping



- Hold tube firmly
- Press start button
- ⚠ Keep hands clear off the working area



- Parflange® 1025: Unclamp the dies
- Parflange® 1040/50: Die unclamping is automatic
- Remove tube from machine
- Use die separator to free tube

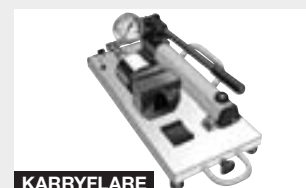
## Triple-Lok® assembly instructions

### 37° Flaring with EOMAT/KARRYFLARE

- Preferred method
- Most efficient method
- Parflange® recommended



EOMAT UNI



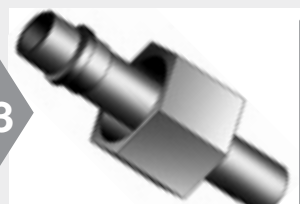
KARRYFLARE



- 1
- Flaring pin is integrated in flaring block
  - Pin must be clean and free of wear and damage
  - Keep flaring pin clean
  - KARRYFLARE: Flaring pin for 42 mm tube O.D. must be fitted with flat face on top



- 2
- Select flaring dies according to tube O.D.
  - Grip surface must be clean and free of wear
  - Use only genuine Parker tooling for flaring Triple-Lok®
  - Keep sliding surfaces clean and lubricated



- 3
- Slide nut and sleeve as shown onto the tube-end



- 4
- Lubricate tube-end inside
  - Lubricant EO-NIROMONT recommended



- 5
- ⚠ Press tube firmly into the die against the tube stop
  - KARRYFLARE: Close valve on handpump
  - KARRYFLARE: Keep lid closed



- 6
- EOMAT UNI: Adjustment according to pressure on machine
  - EOMAT III/A: Menu selection (FLARE)
  - KARRYFLARE: Refer to chart on machine
  - Non-EOMAT-machines: check suitability



- 7
- Hold tube firmly
  - EOMAT: Press and hold start button
  - KARRYFLARE: Operate hand-pump until assembly pressure is reached
  - ⚠ Keep hands clear off the working area
  - ⚠ KARRYFLARE: Do not exceed max pressure 400 bar



- 8
- KARRYFLARE: Open valve on handpump
  - Remove tube from machine
  - Use die separator to free tube

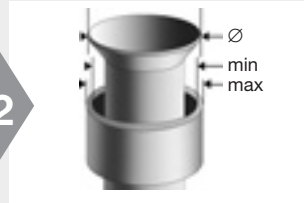


## Triple-Lok® assembly instructions

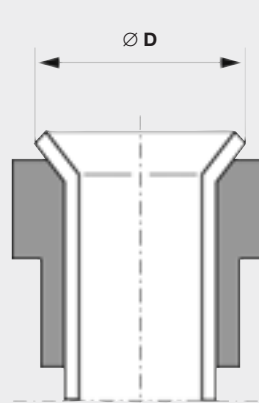
### Checking the flare



- 1**
- Clean flare for inspection
  - ⚠ Visual check sealing surface for cracks, burrs, scratches and pitting



- 2**
- Dimensional check of the flare
  - Flare O.D. should not exceed outside sleeve diameter
  - Flare O.D. should not be less than smaller diameter of front of sleeve
  - When in doubt, measure



Tube O.D.		Ø D	
mm	inch	Min.	Max.
6	1/4"	8.6	9.7
8	5/16"	10.2	11.3
10	3/8"	11.7	12.7
12	1/2"	16.0	17.3
14		19.3	20.2
15		19.3	20.2
16	5/8"	19.3	20.2
18		23.4	24.7
20	3/4"	23.4	24.7
22	7/8"	26.5	27.8
25	1"	29.7	31.0
28		37.6	38.9
30		37.6	38.9
32	1 1/4"	37.6	38.9
35		43.2	45.3
38	1 1/2"	43.2	45.3
42		52.0	54.8
50	2"	59.2	61.2

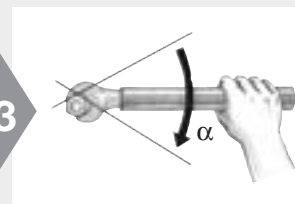
### Installation



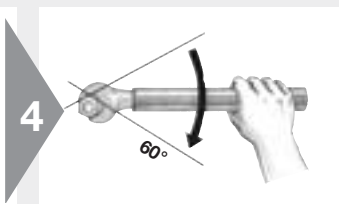
- 1**
- Steel fittings: No lubrication
  - ⚠ Stainless steel fittings: Lubrication required
  - Use EO-NIROMONT special high-performance lubricant for stainless steel fittings



- 2**
- Thread nut onto body
  - Tighten to full metal contact (finger tight)
  - Mark body and nut as quality check
  - Tighten with spanner the number of flats indicated



- 3**
- Use spanner extension for larger fittings (28 mm)



- 4**
- 1 flat = 60°

#### Tightening recommendation

Metric Tube [mm]	Inch tube [inch]	SAE thread	α flats from finger tight method*		Assembly torque Nm -0% + 10%	
			finger tight tube	Swivel nut	Steel	Stainless steel
6	1/4"	7/16-20	2"	2"	15	30
8	5/16"	1/2-20	2"	2"	20	40
10	3/8"	9/16-18	1 1/2"	1 1/4"	30	60
12	1/2"	3/4-16	1 1/2"	1"	60	115
14		7/8-14	1 1/2"	1"	75	145
15		7/8-14	1 1/2"	1"	75	145
16	5/8"	7/8-14	1 1/2"	1"	75	145
18		1 1/16-12	1 1/4"	1"	110	180
20	3/4"	1 1/16-12	1 1/4"	1"	110	180
22	7/8"	1 3/16-12	1"	1"	135	225
25	1"	1 5/16-12	1"	1"	175	255
28		1 5/8-12	1"	1"	260	295
30		1 5/8-12	1"	1"	260	295
32	1 1/4"	1 5/8-12	1"	1"	260	295
35		1 7/8-12	1"	1"	340	345
38	1 1/2"	1 7/8-12	1"	1"	340	345
42		2 1/4-12	1"	1"	380	400

\* "Flats From Finger Tight" Method for steel and stainless steel

## Checking instructions for O-Lok®/Triple-Lok® tools



### Tools for Parflange® machines

- ⚠ Use of damaged, worn or non-suitable tooling may result in fitting failure and damage of machine
- ⚠ Tools must be checked regularly, at least after 50 assemblies
- ⚠ Worn tools must be replaced
- ⚠ Use only genuine Parker tools
- ⚠ Tools must always be kept clean and lubricated

1



- Clean pin for checking

2



- Visual check:  
Surface must be free of wear and damage

3



- Clean die halves for checking
- ⚠ Do not disassemble
- Fixing pins must not be loose or damaged

4



- Visual check:  
Grip surface must be clean and free of wear
- Use wire-brush to remove metal particles from grip surface



### Adjustment of Parflange® dies

- Parflange® dies can be adjusted to correct deviations of flare diameter
- ⚠ Re-adjustment of dies will not help if general machine setting is incorrect or components are damaged (worn tube-stop, lose screw connections)

1



- To reduce the flare diameter, turn the screws anti-clockwise
- ⚠ Re-adjust both screws simultaneously

2



- To increase the flare diameter, turn the screws clockwise
- ⚠ Re-adjust both screws simultaneously
- 1 click  $\triangle$  approx. 0.05 mm  $\varnothing$

3



- Adjust the screws in small stages
- Then check flare diameter
- ⚠ Lock screws to prevent misadjustment

## Flange-Seal assembly instructions



### Tube selection

- Select suitable tube material

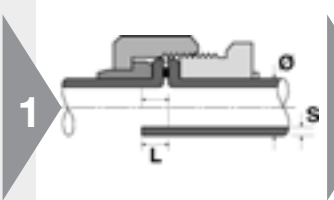
#### Steel tube

Cold drawn seamless	Welded & drawn
NF A 49330	NF A 49341
ISO 3304 R	DIN 2393
DIN 2391C pt 1	BS 3602/2
BS 3602 pt1	SAE J525
SAE J524	



### Tube preparation

- Cut and deburr thoroughly



1

- Calculate tube length before cutting
- Add extra length "L" (see chart below)



2

- Minimum length of straight tube-ends (see chart below)



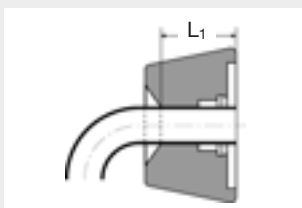
3

- Cut tube squarely
- max.  $\pm 1^\circ$  deviation
- ⚠ Do not use pipe cutters
- Use tube-cutting tool AV for manual cutting



4

- Remove internal and external burrs
- max. chamfer  $0.3 \text{ mm} \times 45^\circ$
- Recommendation: In-Ex Tube Deburring Tool 226
- ⚠ Proper deburring and cleaning of inner diameter essential for sealing surface quality



Metric tube [mm]		Minimum straight length to start to bend L1 [mm]	Extra length – L [mm] for tube wall thickness								
Tube Ø	Wall thickness		1	1.5	2	2.5	3	3.5	4	5	
6	1.0 – 1.5	50	4.5	5.5							
8	1.0 – 2.0	50	5.0	5.0							
10	1.0 – 2.0	50	2.5	4.0	3.5						
12	1.0 – 2.5	50	3.5	4.5	4.5	4.0					
16	1.5 – 3.0	50		3.0	3.0	3.0	2.5				
20	2.0 – 3.5	65			3.5	4.0	4.0	3.5			

Inch tube [inch]		Minimum straight length to start to bend L1 [mm]	Extra length – L [mm] for tube wall thickness [inch]										
Tube Ø	Wall thickness		0.028"	0.035"	0.049"	0.065"	0.083"	0.095"	0.109"	0.120"	0.134"	0.156"	0.188"
1/4"	0.020 – 0.065	40	4.5	5.0	4.0								
3/8"	0.020 – 0.095	40		3.5	3.5	4.0	4.0	4.0					
1/2"	0.028 – 0.095	50		3.5	3.5	3.5	3.5	3.5					
5/8"	0.035 – 0.120	50			4.0	4.0	3.0	4.5	4.0	4.5			
3/4"	0.035 – 0.134	50			4.0	4.0	3.0	2.5	3.5	4.0	4.5		



## Flange-Seal assembly instructions



Parflange® 50



Parflange® 1025

### Flange-Seal machine flanging and assembly

- Preferred method
- Most efficient method
- Parflange® recommended

1



- Parflange® machines:
- Select flaring pin according to tube dimensions
  - Use standard O-Lok® pins
  - Pin must be clean and free of wear, damage and metal particles
  - Keep flaring pin clean and lubricate regularly

2



- Select flanging dies according to tube dimensions
  - Use special Flange-Seal dies
  - Grip surface must be clean and free of wear
  - Use only genuine Parker tooling for flanging
- ⚠ Note limitation on wall thickness for tube-tube connections

3



- Load pin into machine
- Ensure lubricating system is filled with EO-NIROMONT (LUBSS)
- 50: Close safety cover

4



- Place threaded sleeve (LHP) in lower die half
- Locate upper die half onto lower half

5



- Place the dies in the die housing

6



- ⚠ Press tube firmly into the die against the tube stop

7



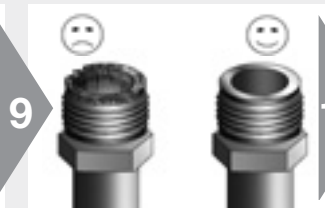
- Pull down the handle to clamp the tube in the dies (1025)
  - 50 die clamping automatic in cycle
  - Press button to start flanging cycle
- ⚠ Keep hands clear off the working area



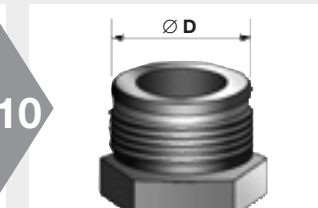
## Flange-Seal assembly instructions



- 8**
- Parflange® 1025:  
Unclamp the dies
  - Remove tube from machine
  - Use die separator to free tube
  - Parflange® 1040/50:  
Die unclamping is automatic

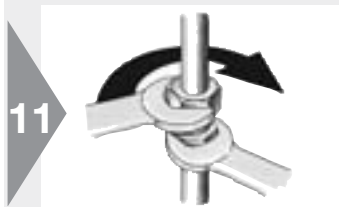


- 9**
- Clean flange for inspection
  - ⚠ Check sealing surface for cracks, burrs, scratches and pitting



- 10**
- Dimensional check of the flare

Tube O.D.		Ø D	
mm	inch	min. [mm]	max. [mm]
6	1/4"	12.10	12.75
8		14.85	15.75
10	3/8"	14.85	15.75
12	1/2"	18.00	18.90
16	5/8"	22.20	23.45
20	3/4"	26.60	27.85



- 11**
- Place seal into loose tube nut
  - Tighten to full metal contact
  - Tighten to recommended torque level

### Tightening recommendation

Metric tube [mm]	Inch tube [inch]	SAE dash size	SAE thread UN/UNF-2A	Assembly torque Nm -0% + 10% Steel
6	1/4"	-4	9/16-18	25
8	5/16"	-6	11/16-16	40
10	3/8"	-6	11/16-16	40
12	1/2"	-8	13/16-16	65
16	5/8"	-10	1-14	80
20	3/4"	-12	1 3/16-12	115

### System component guide – Flange-Seal system Metric tubes

Tube O.D. (mm)	Con. dash size	Flange-Seal fitting	Seal element	Die tool*	Pin tool
6	4	LHMPS6	4PLS	M4018006XxxxMLHP	B3018006XxxxM
8	6	LHMPS8	6PLS	M4018008XxxxMLHP	B3018008XxxxM
10	6	LHMPS10	6PLS	M4018010XxxxMLHP	B3018010XxxxM
12	8	LHMPS12	8PLS	M4018012XxxxMLHP	B3018012XxxxM
16	10	LHMPS16	10PLS	M4018016XxxxMLHP	B3018016XxxxM
20	12	LHMPS20	12PLS	M4018020XxxxMLHP	B3018020XxxxM

\*xxx: Insert tube wall thickness according to tooling list  
 \*Example 1: Metric tube tooling for 8x1.5 mm  
 Die: M4018008x1.5MLHP  
 Pin: B3018008x1.5M

### System component guide – Flange-Seal system Inch tubes

Tube O.D. (inch)	Con. dash size	Flange-Seal fitting	Seal element	Die tool*	Pin tool
1/4"	4	4LHP-S	4PLS	M4004Xxxx180LHP	B4004Xxxx180
3/8"	6	6LHP-S	6PLS	M4006Xxxx180LHP	B4006Xxxx180
1/2"	8	8LHPS	8PLS	M4008Xxxx180LHP	B4008Xxxx180
5/8"	10	10LHP-S	10PLS	M4010Xxxx180LHP	B4010Xxxx180
3/4"	12	12LHP-S	12PLS	M4012Xxxx180LHP	B4012Xxxx180

\*xxx: Insert tube wall thickness according to tooling list  
 \*Example 2: Inch tube tooling for 1/2x0.083"  
 Die: M4008x083180LHP  
 Pin: B4008x083180



# ***Fitting assembly***





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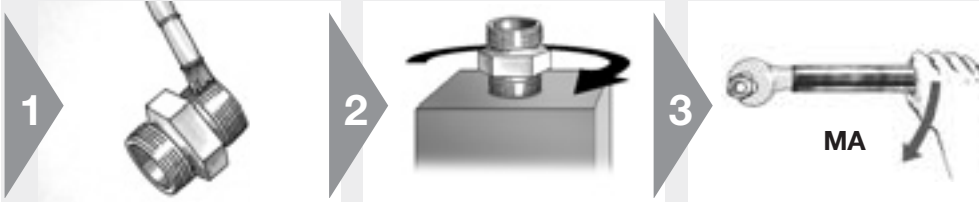


Port connections

Assembly of metric straight port connections



- Metric Thread  
DIN ISO 6149-2/3  
ISO 9974-2/3  
DIN 3859-T2



- ⚠ Threads of stainless steel fittings must be lubricated
- EO-NIROMONT is a special high-performance lubricant for stainless steel fittings
- Screw in until handtight
- Then tighten according to chart

Assembly torques for zinc plated steel fittings with metric thread in ports made of steel

Product Series	Tube O.D.	Thread size T mm	Straight male stud fittings with port tapping					O-ring with sealing and retaining ring	Non-return valves RHV/RHZ Form E with ED sealing Nm	EO Banjo fittings		Adjustable ends		Blanking plugs	
			Form A for sealing washer Nm	Form B with face Nm	Form E with ED sealing Nm	Form F with O-ring sealing Nm	Form E with ED sealing Nm			WH/TH Nm	SWVE Nm	O-ring and retaining ring Nm	O-ring Nm	VSTI-ED Form E mit ED sealing Nm Δ	VSTI-OR Form F with O-ring sealing Nm
EO L Triple-Lok®	6	M 10×1.0	9	18	18	15	18	18	18	18	18	15	12	20	
	8	M 12×1.5	20	30	25	25	35	25	45	35	35	25	25	35	
	10	M 14×1.5	35	45	45	35	45	35	55	50	45	35	35	45	
	12	M 16×1.5	45	65	55	40	55	50	80	60	55	40	50	55	
	15	M 18×1.5	55	80	70	45	70	70	100	80	70	45	65	70	
	18	M 22×1.5	65	140	125	60	160	125	140	120	180	60	90	100	
	22	M 26×1.5	90	190	180	100*	250	145	320	130	180	100	135		
	28	M 33×2.0	150	340	310	160	310	210	360		310	160	225	310	
	35	M 42×2.0	240	500	450	210	450	360	540		450	210	360	330	
	42	M 48×2.0	290	630	540	260	540	540	700		600	260	360	420	
EO S O-Lok®	6	M 12×1.5	20	35	40	35		35	45	35	35	35	25	35	
	8	M 14×1.5	35	55	40	45		45	55	50	60	45	35	45	
	10	M 16×1.5	45	70	70	55		55	80	60	95	55	50	55	
	12	M 18×1.5	55	110	90	70		70	100	80	120	90	65	70	
	14	M 20×1.5	55	150	125	80		100	125	110			80	80	
	16	M 22×1.5	65	170	135	100		125	135	120	190	100	90	100	
	20	M 27×2.0	90	270	180	170		135	320	135	190	170	120	170	
	25	M 33×2.0	150	410	310	310		210	360		500	310	225	310	
	30	M 42×2.0	240	540	450	330		360	540		600	330	360	330	
	38	M 48×2.0	290	700	540	420		540	700		600	420	360	420	

Tolerance of tightening torques listed in above table: +10 %  
Note: Lubricate stud with hydraulic oil before screwing in! \*Thread M 27×2

Δ Assembly in ports made of materials, which are strongly differing in strength and friction from steel, usually requires modified torques.

A reduction of torque is always required, when the turning angle from fingertight to the recommended torque is more than 30°!

In this case it is recommended to reduce the torque:

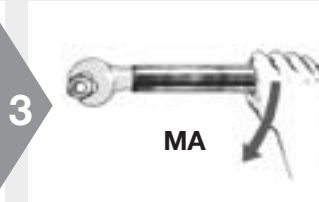
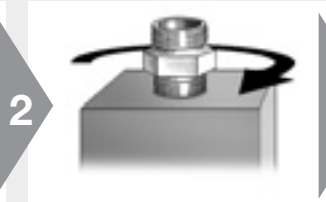
Port material	Hardness	Torque reduction by
Steel, with use of high performance lubrication (e.g. additive to hydraulic oil)	All	10 %
Ductile cast iron (e.g. GGG 50)	All	10 %
Aluminium	HB 150	15 %
	HB 125	20 %
	HB 100	30 %
	< HB 100	35 %

Port connections

Assembly of BSPP straight port connections



- BSPP Thread G  
ISO 1179-1  
DIN 3859-T2



F

- ⚠ Threads of stainless steel fittings must be lubricated
- EO-NIROMONT is a special high-performance lubricant for stainless steel fittings
- Screw in until handtight
- Then tighten according to chart

Assembly torques for zinc plated steel fittings with metric thread in ports made of steel

Product Series	Tube O.D.	Thread size T Inch	Straight male stud fittings with port tapping				Non-return valves RHV/RHZ Form E with ED-sealing	EO Banjo fittings		Adjustable ends O-ring and retaining-ring Nm	Blanking plugs VSTI-ED Form E with ED-sealing Nm Δ
			Form A for sealing washer Nm	Form B with cutting-face Nm	Form E with ED-sealing Nm	with O-ring sealing and retaining-ring		WH/TH Nm	SWVE Nm		
EO L Triple-Lok®	6	G 1/8 A	9	18	18	18	18	18	18	18	13
	8	G 1/4 A	35	35	35	35	35	45	40	35	30
	10	G 1/4 A	35	35	35	35	35	45	40	35	
	12	G 3/8 A	45	70	70	70	50	70	65	70	60
	15	G 1/2 A	65	140	90	90	85	120	90	110	80
	18	G 1/2 A	65	100	90	90	65	120	90	110	
	22	G 3/4 A	90	180	180	180	140	230	125	180	140
	28	G 1 A	150	330	310	310	190	320		310	200
	35	G 1 1/4 A	240	540	450	450	360	540		450	400
42	G 1 1/2 A	290	630	540	540	540	700		540	450	
EO S O-Lok®	6	G 1/8 A								25	13
	6	G 1/4 A	35	55	40		45	45	40	55	30
	8	G 1/4 A	35	55	40		45	45	40	55	(30)
	10	G 3/8 A	45	90	80		60	70	65	90	60
	12	G 3/8 A	45	90	80		60	70	65	90	(60)
	14	G 1/2 A	65	150	115		145	120	90	110	80
	16	G 1/2 A	65	130	115		100	120	90	110	(80)
	20	G 3/4 A	90	270	180		145	230	125	115	140
	25	G 1 A	150	340	310		260	320		420	200
	30	G 1 1/4 A	240	540	450		360	540		550	400
38	G 1 1/2 A	290	700	540		540	700		600	450	

Tolerance of tightening torques listed in above table: +10%  
Note: Lubricate stud with hydraulic oil before screwing in! \*Thread M 27x2

⚠ Assembly in ports made of materials, which are strongly differing in strength and friction from steel, usually requires modified torques.

A reduction of torque is always required, when the turning angle from fingertight to the recommended torque is more than 30°!

In this case it is recommended to reduce the torque:

Port material	Hardness	Torque reduction by
Steel, with use of high performance lubrication (e.g. additive to hydraulic oil)	All	10 %
Ductile cast iron (e.g. GGG 50)	All	10 %
Aluminium	HB 150	15 %
	HB 125	20 %
	HB 100	30 %
	< HB 100	35 %

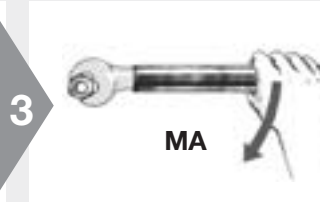
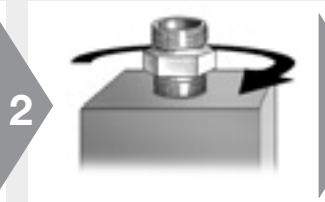


## Port connections



### Assembly of SAE straight port connections

- UN/UNF thread  
ISO 11926-2/3



- ⚠ Threads of stainless steel fittings must be lubricated
- EO-NIROMONT is a special high-performance lubricant for stainless steel fittings
- Screw in until handtight
- Then tighten according to chart

#### Assembly torques for zinc plated steel fittings with BSPP thread in ports made of steel

Product	Thread size T ISO 11296	Series	
		EO / Triple-Lok® and O-Lok®	
Series	inch	Assembly torque non-adjustable end Nm	Assembly torque adjustable end Nm
EO L Triple-Lok®	7/16-20 UN(F)	23	18
	1/2-20 UN(F)	28	28
	9/16-18 UN(F)	34	34
	3/4-16 UN(F)	60	55
	7/8-14 UN(F)	115	80
	1 1/16-12 UN(F)	140	100
	1 5/16-12 UN(F)	210	150
	1 5/8-12 UN(F)	290	290
EO S O-Lok®	1 7/8-12 UN(F)	325	325
	7/16-20 UN(F)	35	20
	1/2-20 UN(F)	40	40
	9/16-18 UN(F)	46	46
	3/4-16 UN(F)	80	80
	7/8-14 UN(F)	135	135
	1 1/16-12 UN(F)	185	185
	1 5/16-12 UN(F)	270	270
1 5/8-12 UN(F)	340	340	
1 7/8-12 UN(F)	415	415	

Tolerance of tightening torques listed in above table: + 10 %  
Note: Lubricate stud with hydraulic oil before screwing in!

⚠ Assembly in ports made of materials, which are strongly differing in strength and friction from steel, usually requires modified torques.

A reduction of torque is always required, when the turning angle from fingertight to the recommended torque is more than 30°!

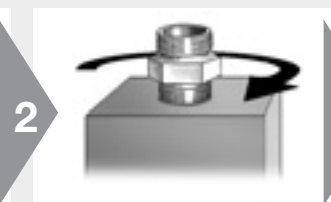
In this case it is recommended to reduce the torque:

Port material	Hardness	Torque reduction by
Steel, with use of high performance lubrication (e.g. additive to hydraulic oil)	All	10 %
Ductile cast iron (e.g. GGG 50)	All	10 %
Aluminium	HB 150	15 %
	HB 125	20 %
	HB 100	30 %
	< HB 100	35 %

## Port connections

### Assembly of tapered thread port connections

- NPT / NPTF thread  
ANSI / ASME B 1.20.1 – 1983



⚠ Threads of stainless steel fittings must be lubricated

- EO-NIROMONT is a special high-performance lubricant for stainless steel fittings

- Apply teflon tape (1,5 layer) to the taper stud end and screw in handtight

- Then tighten according to chart

#### Tightening of NPT / NPTF thread

Size	Thread T NPT/F	Assembly TFFT Turns
4	1/8-27 NPT/F	2.0–3.0
6	1/4-18 NPT/F	2.0–3.0
8	3/8-18 NPT/F	2.0–3.0
10	1/2-14 NPT/F	2.0–3.0
12	3/4-14 NPT/F	2.0–3.0
16	1-11.5 NPT/F	1.5–2.5
20	1 1/4-11.5 NPT/F	1.5–2.5
24	1 1/2-11.5 NPT/F	1.5–2.5

In the EO fitting range only **NPT** threads are manufactured.  
In the **Triple-Lok®** and **O-Lok®** fitting range for **steel** **NPTF** threads are used, and NPT for stainless steel components.

**F**

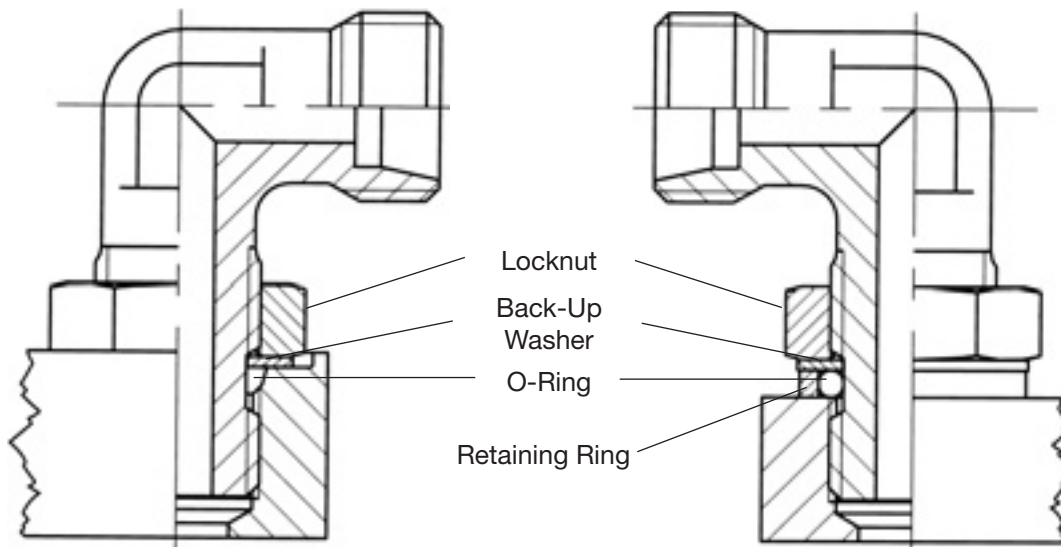
Adjustable fittings with locknut



**Assembly of the orientable joint**

(EO: e.g. WEE, VEE, TEE, LEE - Triple-Lok® / O-Lok®: C4, V4, S4, R4)

⚠ Assembly steps must be done in right order



● Fitting without Retaining Ring for ISO 6149 or UN/UNF ports

● Fitting with Retaining Ring for BSPP or Metric Parallel ports with wide or SMALL spot faces

1



● Screw back locknut as far as possible

⚠ O-ring and back-up washer in the non-threaded section should be placed nearest to the locknut

● Lubricate the O-ring  
● With BSPP and metric parallel version slip retaining ring over the O-ring



2



● Screw the fitting in the port by hand until retaining ring or back-up washers bottom



3



● To adjust direction, turn back to a maximum of one full turn

4



● Screw locknut handtight  
● Assemble locknut until wrenchtight  
● Hold body in desired position and tighten locknut



## EO swivels



### Assembly of EO swivel nut fittings

(e.g. EW, ET, EL, EGE, RED, VKA, SKA)

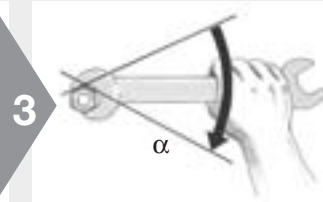
- Final assembly of swivel nut fittings must be made in appropriate fittings



- 1
- ⚠ Threads of stainless steel fittings must be lubricated
  - EO-NIROMONT is a special high-performance lubricant for stainless steel fittings



- 2
- Screw on nut by hand until handtight



- 3
- ⚠ Then tighten fitting firmly by 1/4 turn (1 1/2 flats)

F



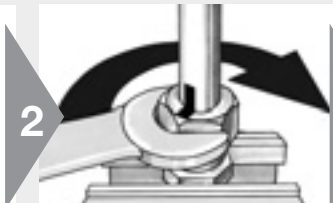
### Final assembly of factory pre-assembled EO-standpipe fittings

(e.g. EVW, EVT, EVL, EVGE, KOR)

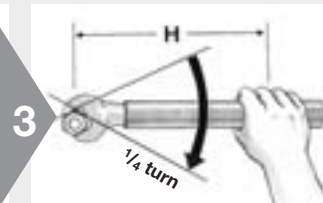
- For all fittings delivered pre-assembled from the factory the final assembly is performed in the appropriate fitting body



- 1
- ⚠ Threads of stainless steel fittings must be lubricated
  - EO-NIROMONT is a special high-performance lubricant for stainless steel fittings

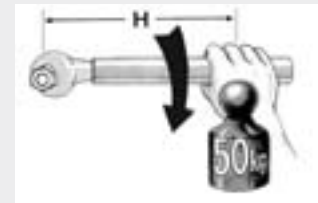


- 2
- Assemble fitting until wrench tight (without spanner extension)
  - ⚠ Mark position of nut



- 3
- ⚠ Then tighten fitting firmly by 1/4 turn (1 1/2 flats)
  - ⚠ Recommended to use spanner extension for sizes over 20 mm O.D. (see chart)

Spanner length



Size	Spanner length H [mm]
18-L 16-S	300
22-L 20-S	400
28-L 25-S	500
35-L 30-S	900
42-L 38-S	1200
	1500

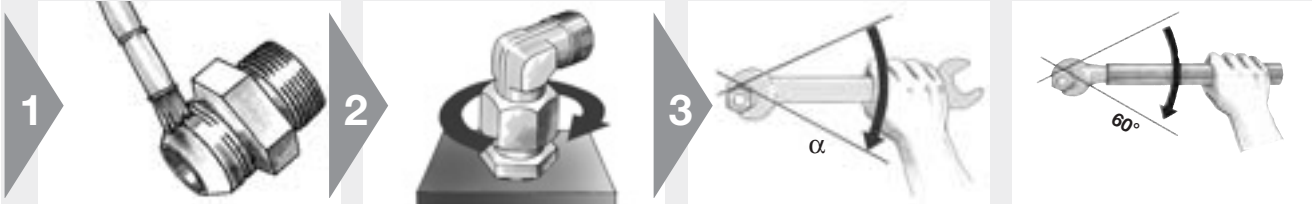
## Triple-Lok® / O-Lok® swivels



### Assembly of Triple-Lok® and O-Lok® swivel nut fittings

e.g.: Triple-Lok®: C6MX, V6MX, R6MX, S6MX, BBMTX  
 O-Lok®: C6MLO, V6MLO, S6MLO, R6MLO, A0EL6

- Final assembly of swivel nut fittings must be made in appropriate fittings



- ⚠ Threads of stainless steel fittings must be lubricated
- EO-NIROMONT is a special high-performance lubricant for stainless steel fittings

- Screw on nut by hand until handtight

- Then tighten according to chart

- one flat = 60°

#### Assembly torques for O-Lok® and Triple-Lok® swivel nut fittings

##### O-Lok®

Size	Metric tube mm	Inch tube inch	Thread UN/UNF	Nm	FFWR
4	6	1/4"	9/16-18	25	1/2
6	8	5/16"	11/16-16	40	1/2
6	10	5/16"	11/16-16	55	1/2
8	12	1/2"	13/16-16	55	1/2
10	14, 15, 16	5/8"	1-14	115	1/2
12	18, 20	3/4"	1 3/16-12	130	1/2
16	22, 25	1"	1 7/16-12	150	1/2
20	28, 30, 32	1 1/4"	1 11/16-12	190	1/2
24	35, 38	1 1/2"	2-12	245	1/2
32	50	2"	2 1/2-12	490	1/2

##### Triple-Lok®

Size	Metric tube mm	Inch tube inch	Thread UN/UNF	Nm	FFFT
4	6	1/4"	7/17-20	15	2
5	8	5/16"	1/2-20	20	2
6	10	3/8"	9/16-18	45	1 1/4
8	12	1/2"	3/4-16	60	1
10	14, 15, 16	5/8"	7/8-14	75	1
12	18, 20	3/4"	1 1/16-12	100	1
16	22, 25	7/8"	1 5/16-12	150	1
20	30, 32	1 1/4"	1 5/8-12	180	1
24	38	1 1/2"	1 7/8-12	200	1
28	42	2"	2 1/4-12	220	1
32		2"	2 1/2-12	250	1

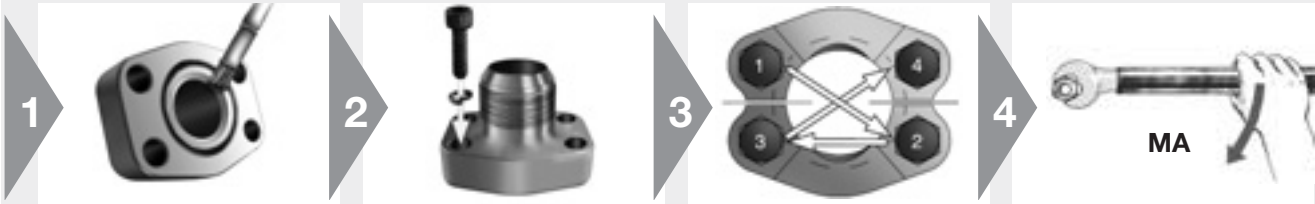
Assembly torques shown in chart are for **non-lubricated carbon steel zinc plated components**.  
 For stainless steel fittings, lubricate all mating surfaces and tighten to upper end of torque tolerance.  
 Recommended assembly torques are for connections consisting of all Parker manufactured components.

## Flanges



### Assembly of flanges

- SAE flange adapters
- SAE 4 bolt flanges
- Gear pump flanges
- CETOP square flanges



- Make sure sealing surfaces are free of burrs, nicks, scratches or any contamination
- Lubricate the O-ring with system fluid or compatible lubricant
- Position flange and clamp halves
- Place lock washers on bolts and bolt through clamp halves
- Hand tighten bolts
- Torque bolts in diagonal sequence in small increments to the appropriate torque level listed in chart
- Tighten bolts according to chart

#### 3000 PSI Series (Code 61) Flange recommend screw torque

Dash size	Flange size	Inch screws (J518)	Torque Nm <sup>1)</sup>	Metric screws (ISO 6162)	Torque Nm <sup>1)</sup>
13	1/2"	5/16-18	24	M8	24
19	3/4"	3/8-16	43	M10	50
25	1"	3/8-16	43	M10	50
32	1 1/4"	7/16-14	70	M10	50
38	1 1/2"	1/2-13	105	M12	92
51	2"	1/2-13	105	M12	92
64	2 1/2"	1/2-13	105	M12	92
76	3"	5/8-11	210	M16	210
89	3 1/2"	5/8-11	210	M16	210
102	4"	5/8-11	210	M16	210
127	5"	5/8-11	210	M16	210

#### 6000 PSI Series (Code 62) Flange recommend screw torque

Dash size	Flange size	Inch screws (J518)	Torque Nm <sup>1)</sup>	Metric screws (ISO 6162)	Torque Nm <sup>1)</sup>
13	1/2"	5/16-18	24	M8	24
19	3/4"	3/8-16	43	M10	50
25	1"	7/16-14	70	M12	92
32	1 1/4"	1/2-13	105	M14	130
38	1 1/2"	5/8-11	210	M16	210
51	2"	3/4-10	360	M20	400

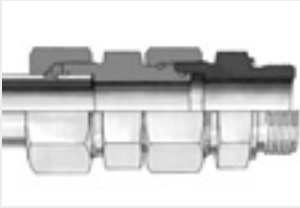
#### Hydraulic Flange recommend screw torque

Socket screw bolt circle (LK)	Socket head cap screws	Tightening torques Nm <sup>1)</sup>
LK30	M6	10
LK35	M6	10
LK40	M6	10
LK51	M10	49
LK55	M8	25
LK56	M10	49
LK62	M10	49
LK72.5	M12	85

1) Tolerances: max. 10 %  
min. 0 %

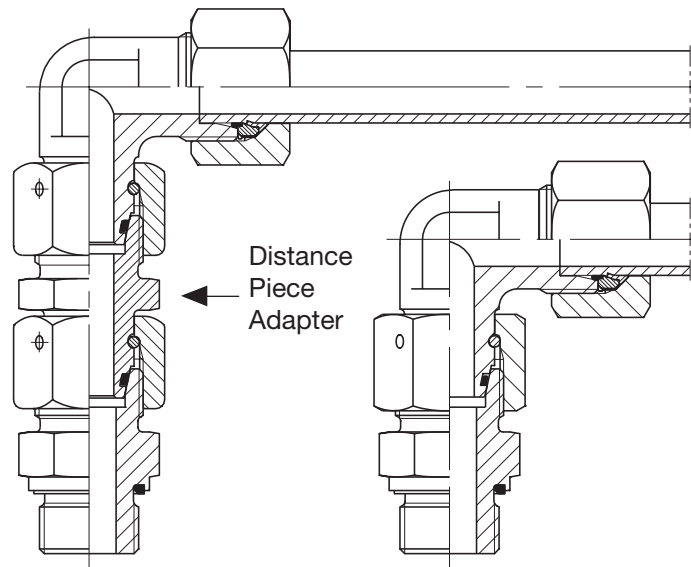
**F**

### Replacement of an EO Bite type connection

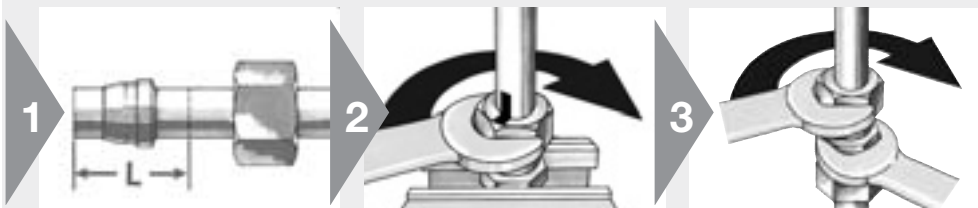


#### Distance piece adapter DA

- EO distance piece adapters allow replacement of bite type connections on existing pipework easily or retrofitting using EO-2
- The existing tubes can be re-used



- Use as an extension for stacked assemblies



- 1**
- Cut length L off tube-end (see "DA" chapter I)
  - Scrap obsolete nut

- 2**
- Assemble new EO-2 functional nut or EO PSR/DPR and nut

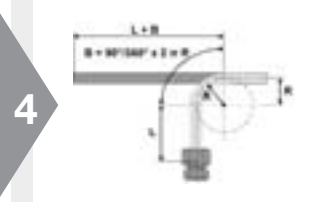
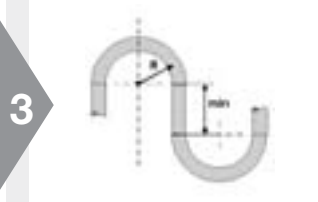
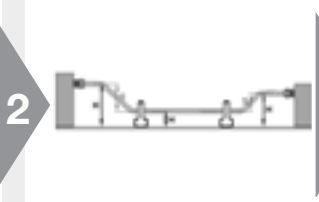
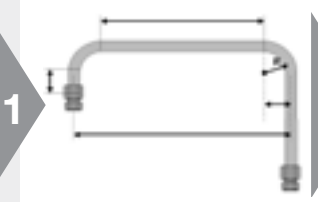
- 3**
- Thread on
  - Then tighten distance piece adapter onto tube-end



## Tube bending

### Instructions for EO hand bending equipment

- For on-site piping jobs
- Not for mass production

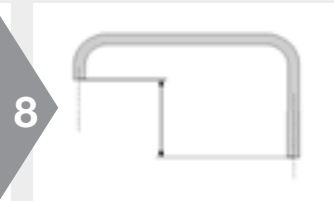
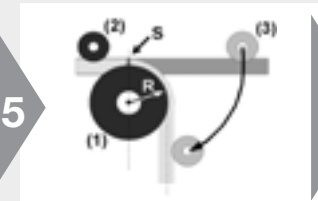


- 1
- ⚠ Think the whole process through and plan each individual step before starting
  - ⚠ First bend and then cut ends to length
  - Gather all dimensions like minimum straight lengths, extra length for flaring, bending radius, tube lengths for bows, etc.

- 2
- Consider steps
  - Plan for clamping

- 3
- Check bending equipment specifications for limitations

- 4
- Start with first elbow
  - Leave tube-end longer if in doubt



- 5
- ⚠ Mark start of bend on tube (S)
  - Adjust tube between bending roll (1), clamping roll (2) and pressure roll (3)
  - Bend tube by pulling lever

- 6
- Check bend angle
  - Correct angle if necessary
  - Gather all dimensions for next bending operation

- 7
- ⚠ Mark start of bend on tube
  - Continue bending
  - Check and correct each result before starting next bend

- 8
- After the last bend, check tube for angles and dimensions
  - Now cut both tube-ends to correct length
  - Make sure that tube fits without tension

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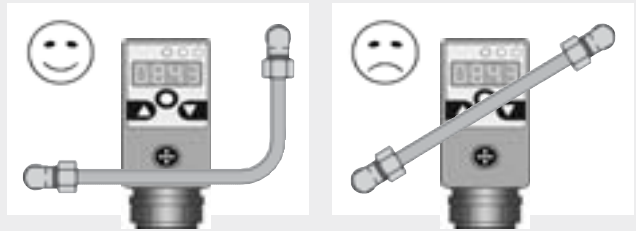
### Tube line fabrication guide for leak free systems

**Every hydraulic, pneumatic and lubrication system requires some form of tube fabrication and fitting installation for completion. Proper fabrication and installation are essential for the overall efficiency, leak free performance, and general appearance of any system.**

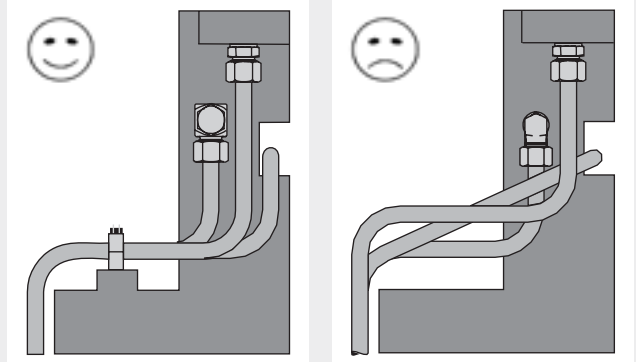
After sizing the tube lines and selecting the appropriate style of fitting, consider the following in the design of your system:

1. Accessibility of joints
2. Proper routing of lines
3. Adequate tube line supports
4. Available fabricating tools

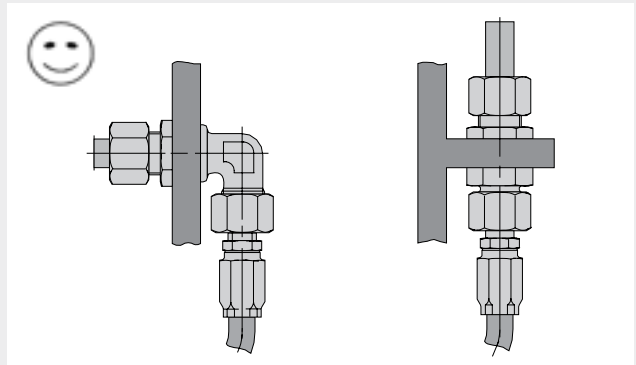
- Keep tube lines away from components that require regular maintenance:



- Right-angled – parallel – clear
- Have a neat appearance and allow for easy trouble-shooting, maintenance and repair:

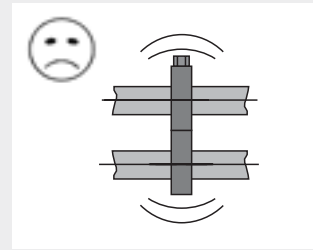
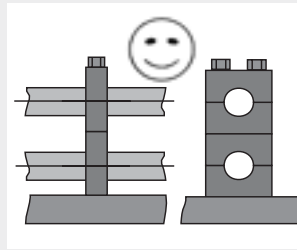


- Example for tube to hose connection:

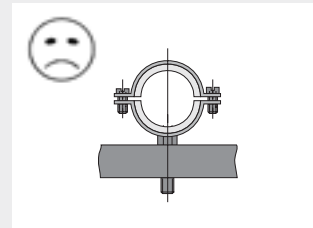
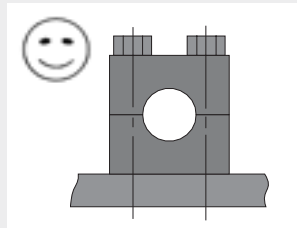


## Tube line fabrication guide for leak free systems

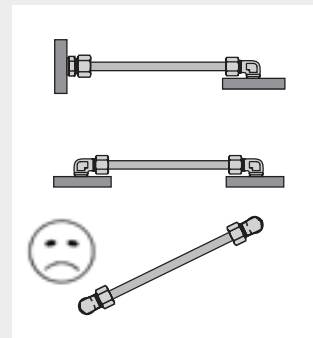
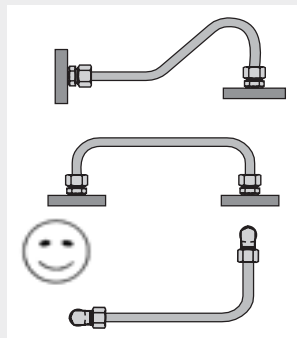
- Do not use tube lines to support other tubes
- Always fix tubes onto a rigid point with tube clamps
- Do not use cable channels to support tubes



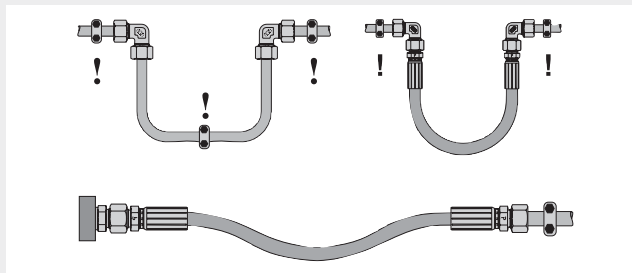
- Use appropriate tube clamps:



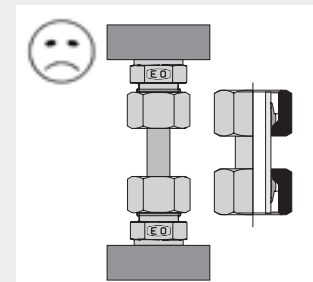
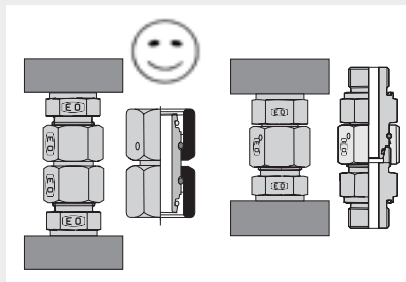
- Avoid excessive strain on joint:  
A strained joint will eventually leak



- Allow for expansion effects



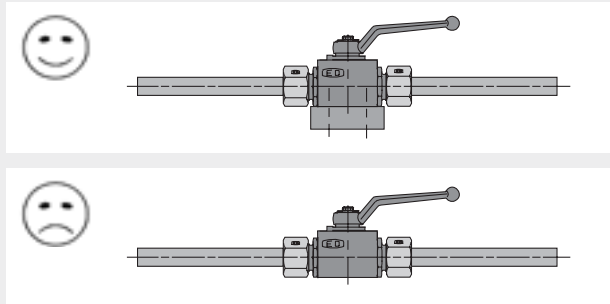
- Avoid short tube length:
- ⚠ Short tube lengths increase chance of fatigue fractures
- Use adapter GZR or swivel connector for swivel fittings instead of short tube lengths



F

**Tube line fabrication guide for leak free systems**

● Support against actuating forces:



**Recommended tools for tube line fabrication:**

Cutting:

EO Tube cutting tool AV

EO Combined tube bending and cutting tool BAV

Tube cutters:

Steel: Type Kloskut;

Stainless Steel: Type 635 B-EX,

Type 218 B-SS Tru-Kut Sawing Vice

Deburring:

Parker deburring tool no. 226 DEBURR

Bending:

EO Combined tube bending and cutting tool BAV

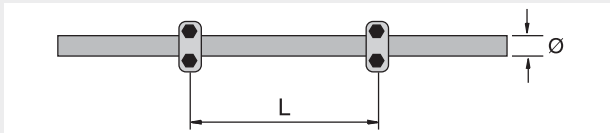
EO Tube bending tool BV 6/18, BV 20/25

EO Tube bending tool BVP (programmable)

Tube lines have to be supported in certain distances:

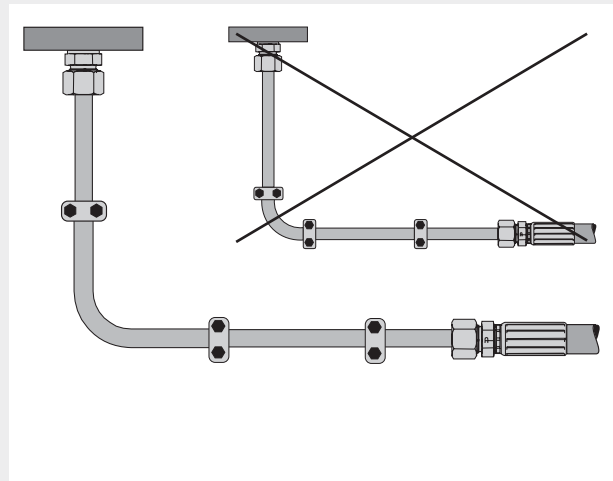
Use sufficient tube clamps to support weight

Use sufficient tube clamps to protect joints from vibration

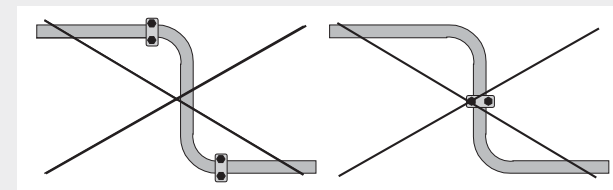
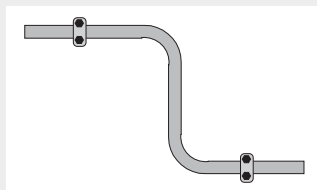


Ø [mm]	L [m]
6.0 – 12.7	1.0
12.7 – 22.0	1.2
22.0 – 32.0	1.5
32.0 – 38.0	2.0
38.0 – 57.0	2.7
57.0 – 75.0	3.0
75.0 – 76.1	3.5
76.1 – 88.9	3.7
88.9 – 102.0	4.0
102.0 – 114.0	4.5
114.0 – 168.0	5.0
168.0 – 219.0	6.0

Vibration has to be eliminated near by the connectors:



Allow expansion and contraction. Do not hamper expansion and contraction near by tube bends.





# ***Trouble shooting guide***

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## Trouble shooting

<b>DPR/PSR Problem</b>	<b>Probable cause</b>	<b>Suggested solution</b>
Leak	Insufficiently tightened, shallow bite	Tighten the nut according to correct number of turns, direct assembly only for maintenance/repair
		Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings, use of recommended pre-assembly machines
		Mark nut and body to indicate correct assembly
		Use recommended lubrication
		Use of pre-assembly machines e.g. EO-KARRYMAT, EOMAT ECO, EOMAT UNI
		Pre-assemble joints away from installation to ensure proper bite
		Check visible collar
	Tube not bottomed into fitting shoulder	Cut tube to correct length
		Observe min. straight length before tube bend
		Use hacksaw and guide not a plumbing – style tube cutter
		Carefully deburr tube end – no heavy chamfers
		Push tube firmly into cone
		Check visible collar
		Make sure tube is lubricated at assembly
	Damaged fitting	Check for damage, replace damaged parts
		Handle all components carefully
	Contamination between sealing surfaces	Keep all components clean
Hidden crack	Check for cracks, replace if necessary	
Mismatch of components	Select all components according to system application and product specification	
	Use genuine Parker components	
Phantom leak, from assembly lubricant	Carefully identify proper source of leak	
	Don't over use lubricant	
Tube fractured behind the nut	Fatigue failure of tube under vibration	Review final tightening process, undertightening reduces vibration resistance
		Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
		Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks ...) do not exceed fitting performance
Crack	Insufficiently tightened, shallow bite	Tighten the nut according to correct number of turns
		Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
		Mark nut and body to indicate correct assembly
		Use recommended lubrication
		Pre-assemble joints away from installation to ensure proper bite
		Check visible collar

<b>DPR/PSR Problem</b>	<b>Probable cause</b>	<b>Suggested solution</b>
Crack	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks, ...) do not exceed fitting performance
Tube blow out	Standpipe fitting, improper final assembly	Use swivel nut fitting
	Cold welded threads on stainless steel fittings	Use "EODUR" stainless steel fittings from Parker (with silver plated nut threads) and always lubricate threads with EO Niromont fluid (not hydraulic oil)
	Use of worn or unsuitable pre-assembly tools	Check tools regularly and replace worn tools
		Keep tooling clean and oiled plus check cone regularly with "KONU" cone templates every 50 assemblies
	Tube not bottomed into fitting shoulder	Cut tube to correct length
		Observe min. straight length before tube bend
		Use hacksaw and guide not a plumbing – style tube cutter
		Carefully deburr tube end – no heavy chamfers
	Severe working conditions	Push tube firmly into cone
		Check visible collar
		Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks, flow rate, ...) do not exceed fitting performance
	Ring installed in wrong direction	Check visible collar
Install ring in proper orientation		
Use pre-assembled fitting or EO-2		
Steel ring used on stainless steel tube	Always check assembly before final installation	
	Use stainless steel bite rings for stainless steel tube, <b>preassembly necessary</b>	
Stainless steel fitting not pre-assembled	Use specified preassembly tools/machines	
	Pre-assemble joint away from installation	
Fitting body used as preassembly tool	Use specified preassembly tools, machine preset preferred	
Short tube end fracture	Fatigue failure	Use swivel nut adapter (GZ ...)

<b>EO-2 Problem</b>	<b>Probable cause</b>	<b>Suggested solution</b>
Leak	Insufficiently tightened, shallow bite	Use of pre-assembly machines e.g. EO-KARRYMAT, EOMAT ECO, EOMAT UNI
		Insufficiently tightened
	Insufficiently tightened	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
		Use recommended lubrication
		Pre-assemble joints away from installation to ensure proper bite
		Use original EO pre-assembly tools
	Tube not bottomed into fitting shoulder	Check closed gap
Cut tube to correct length		
Observe min. straight length before tube bend		



## Trouble shooting

<b>EO-2 Problem</b>	<b>Probable cause</b>	<b>Suggested solution</b>
Leak	Tube not bottomed into fitting shoulder	Use hacksaw and guide not a plumbing – style tube cutter
		Use EO-2 MOK for big sizes
		Carefully deburr tube end – no heavy chamfers
		Push tube firmly into cone
	Damaged fitting	Check for damage
		Handle all components carefully
	Damage to fitting cone	Make sure tube is bottomed at assembly
	Contamination between sealing surfaces	Keep all components clean
	Hidden crack	Check for cracks, replace if necessary
	Mismatch of components	Select all components according to system application and product specification
Use genuine Parker components		
Phantom leak from assembly lubricant	Carefully identify proper source of leak	
	Don't over use lubricant	
Sealing ring (DOZ) missing	Use plugs for transport of preassembled tubes. Check assembly before final installation	
Tube fractured behind the nut	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks ...) do not exceed fitting performance
Crack	Insufficiently tightened	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
		Use recommended lubrication
		Pre-assemble joints away from installation to ensure proper bite
		Use original EO preassembly tools
		Check closed gap
Tube blow out	Cold welded threads on stainless steel fittings	Use "EODUR" stainless fittings from Parker (with silver plated nut threads) and always lubricate threads with EO Niromont fluid (not hydraulic oil)
	Tube not bottomed into fitting shoulder	Cut tube to correct length
		Observe min. straight length before tube bend
		Use hacksaw and guide not a plumbing – style tube cutter
		Carefully deburr tube end – no heavy chamfers
		Push tube firmly into cone
		Use EO-2 MOK for big sizes
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks, flow rate ...) do not exceed fitting performance
	Fitting undertightened	Tighten the nut until cap between retaining and sealing ring is closed
		Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings

<b>EO-2 Problem</b>	<b>Probable cause</b>	<b>Suggested solution</b>
Tube blow out	Fitting undertightened	Mark nut and body to indicate correct assembly
		Use recommended lubrication
		Pre-assemble joints away from installation to assure proper bite
	FM ... steel is used	Use exclusively FM stainless steel with stainless steel on stainless steel tube, for combination of steel fitting/ stainless steel tube use FM... SSA nut
Short tube end fracture	Fatigue failure	Use swivel nut adapter (GZ...)

<b>EO-2-FORM Problem</b>	<b>Probable cause</b>	<b>Suggested solution</b>
Leak	Insufficiently tightened, shallow bite	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
	Damaged fitting	Check for damage
		Handle all components carefully
	Damage of fitting cone	Make sure tube is bottomed at assembly
	Contamination between sealing surfaces	Keep all components clean
	Hidden crack	Check for cracks, replace if necessary
	Mismatch of components	Select all components according to system application and product specification
		Use genuine Parker components
	Phantom leak from assembly lubricant	Carefully identify proper source of leak
		Don't over use lubricant
	Sealing ring (DOZ) missing	Use plugs for transport of preassembled tubes. Check assembly before final installation
Incorrect tube forming	Check assembly before installation	
	Use correct tool according to tube diameter, wall thickness and material	
	Regularly check tools for wear and damage	
	Replace damaged tooling	
	Use specified lubricant LUBSS on forming process	
Misalignment	Stress free installation. Flanged tube end needs contact to stud ends before final tightening. Check length and bends of tubing to ensure this	
Crack	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks ...) do not exceed fitting performance



## Trouble shooting

<b>O-Lok® Problem</b>	<b>Probable cause</b>	<b>Suggested solution</b>
Leak	Damaged Trap-Seal	Hold sealing surfaces together until nut is firmly tightened
	Missing Trap-Seal	Use genuine Parker O-Lok® fittings with Trap-Seal groove (CORG)
	Extruded Trap-Seal	Ensure proper alignment
		Tightened to proper torque
		Use genuine Parker O-Lok® fittings with Trap-Seal groove (CORG)
	Pinched Trap-Seal due to air bleeding	Use bleed valves (PNLOBA/FNLBA) or test points EMA and hose for bleeding
	Phantom leak from assembly lubricant	Carefully identify proper source of leak
		Don't over use lubricant
	Uvertightening	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings. Use recommended torque or FFFT method
Damaged fitting	Check for damage	
	Handle all components carefully	
Poor surface quality of flange	Spiral marks can be avoided by proper deburring of tubes, particular the tube I.D.	
	Clean tools, remove metal particles from pin	
Hidden crack	Check for cracks, replace if necessary	
Tube fractured behind the nut	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks ...) do not exceed fitting performance	
Crack	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks ...) do not exceed fitting performance

<b>Triple-Lok® Problem</b>	<b>Probable cause</b>	<b>Suggested solution</b>
Leak	Damaged fitting	Check for damage
		Handle all components carefully
	Contamination between sealing surfaces	Keep all components clean
	Hidden crack	Check for cracks, replace if necessary
	Mismatch of components	Select all components according to system application and product specification
		Use genuine Parker components
Phantom leak from assembly lubricant	Carefully identify proper source of leak	
	Don't over use lubricant	

<b>Triple-Lok® Problem</b>	<b>Probable cause</b>	<b>Suggested solution</b>
Leak	Undertightening	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings. Use recommended torque or FFFT method
	Scratches in Tube ID and flare area	Use Parflange process to improve surface quality
Tube fractured behind the nut	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
Crack	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks ...) do not exceed fitting performance



<b>Weld nipples Problem</b>	<b>Probable cause</b>	<b>Suggested solution</b>
Leak	Misalignment	Stress free installation
		Fix weld nipple to tube in application before finishing the welding
	Damaged O-ring	Inspect O-ring before final installation. Make sure that O-ring is not twisted at installation lubricate O-ring
	Missing O-ring	Assemble proper O-ring
	Extruded O-ring	Ensure proper alignment
	Pinched O-ring due to air bleeding	Use bleed valves (PNLOBA/FNLBA) or test points EMA and hose for bleeding
	Phantom leak from assembly lubricant	Carefully identify proper source of leak
		Don't over use lubricant
Undertightening	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings	
Damaged fitting	Check for damage	
	Handle all components carefully	
Tube fractured behind the nut	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks ...) do not exceed fitting performance
Crack	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks ...) do not exceed fitting performance

## Trouble shooting

<b>Flanges connection Problem</b>	<b>Probable cause</b>	<b>Suggested solution</b>
Leak	Misalignment	Stress free installation
	Damaged O-ring	Inspect O-ring before final installation. Make sure that O-ring is not twisted at installation lubricate O-ring
	Missing O-ring	Assemble proper O-ring
	Extruded O-ring	Ensure proper alignment
		Tightened bolts to recommended torque
	Pinched O-ring due to air bleeding	Use bleed valves (PNLOBA/FNLBA) or test points EMA and hose for bleeding
	Phantom leak from assembly lubricant	Carefully identify proper source of leak
		Don't over use lubricant
	Undertightening	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
Unequal tightening	For flanges with more than 2 screws: see assembly instruction in what order the screws need to be tightened	
Damaged fitting	Check for damage	
	Handle all components carefully	
Tube fractured behind the nut	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks ...) do not exceed fitting performance	
Crack	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks ...) do not exceed fitting performance

<b>Leaks from ports Problem</b>	<b>Probable cause</b>	<b>Suggested solution</b>
Leak	O-ring sealing is missing/damaged	Replace with new O-ring
	Fitting not tightened properly, Undertightening	Retighten to appropriate specification
		Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
	Undertightened at initial assembly	Use recommended lubrication
		Repeat with appropriate assembly torque
	Adjustable stud not assembled properly	Proper assembly procedure
	O-ring pinched	Redesign system
	Fitting vibrates loose	Clamping/Check the assembly torque
		Stressed joints
Threads damaged	Replace fitting	
Use of tapered threads (NPT/BSPT/+++)	Use fittings with soft sealing O-ring/ED sealing	

<b>Leaks from ports Problem</b>	<b>Probable cause</b>	<b>Suggested solution</b>
Leak	Port stud end <b>Form B</b>	Sealing edge Form B is damaged replace fitting
	Sealing surface is damaged	Rework sealing surface
Fitting vibrates loose	Undertightened at initial assembly	Tighten the nut according to correct torque
		Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
	Torsion forces on assembly	Use clamps or bulkhead fittings to isolate twisting hose Avoid stress at initial assembly
Fractured stud	Severe overtightening	Do not exceed specified tightening instructions
	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks ...) do not exceed fitting performance	



<b>Triple-Lok® 1025/50 Problem</b>	<b>Probable cause</b>	<b>Suggested solution</b>
Tube slips in die during flanging or flaring	Tube undersized	Use tube within tolerance
	Die grip surface dirty	Clean with solvent
	Die grip surface worn	(do not use any wire brush) Replace Die
Flange/flare diameter too small	Tube slipped in die	See problem "Tube slips in die ..."
	Incorrect pin	Use correct pin for tube size
	Die needs adjustment/incorrect die.	Contact Parker Rep./Use correct die
	Tube was not inserted to tube stop	Insert tube to tube stop
Flange/flare diameter too large	Tube forced against tube stop	Do not force tube against tube stop
	Die needs adjustment/incorrect die	Contact Parker Rep./Use correct die
	Incorrect pin and/or tube wall	Use correct pin for tube size
Flange/flare out of round	Tube not cut squarely	Cut tube squarely, within $\pm 1^\circ$
	Tube not supported properly	Support tube in line with dies
	Obstruction in die holder	Clean and remove debris
	Tube wall thickness varies	Use good quality tube
	Incorrect pin and/or tube wall	Use correct pin for tube size
Cracked flange/flare	Poor tube quality	Use recommended quality tube
	Too hard tube	Use recommended quality tube
	Heavy chatter during deburring	Eliminate chatter in deburring
Scored, pitted flange/ flare surface	Improper/lack of lubrication on pin	Use recommended lubricant
	Tube not properly deburred	Deburr and remove filings
	Tube not properly cleaned	Clean to remove filings
	Pin not cleaned	Keep pin clean but lubricated

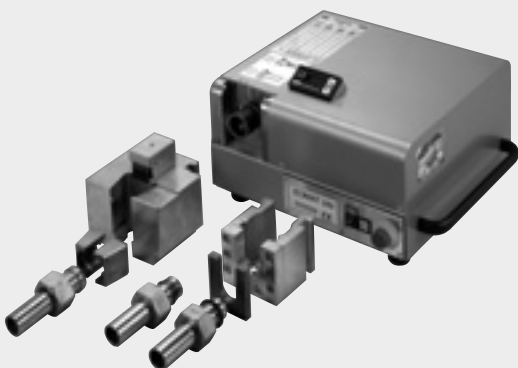
## Trouble shooting

O-Lok® 1025/50 Problem	Probable cause	Suggested solution
Flange/flare diameter too large	Tube forced against tube stop	Do not force tube against Tube stop
	Die needs adjustment/	Contact Parker
	Incorrect die	Use correct die
	Incorrect pin and/or tube wall	Use correct pin for tube size
	Sleeve not located properly in die	Locate sleeve in die cavity correctly
Flange/flare not round	Tube not cut squarely	Cut tube squarely, within $\pm 1^\circ$
	Tube not supported properly	Support tube in line with dies
	Obstruction in die holder	Clean and remove debris
	Tube wall thickness varies	Use good quality tube
	Incorrect pin and/or tube wall	Use correct pin for tube size
Cracked flange/flare	Poor tube quality	Use recommended quality tube
	Tube too hard	Use recommended quality tube
	Heavy chatter during deburring	Eliminate chatter in deburring
Scored, pitted flange/flare surface	Improper/lack of lubrication on pin	Use recommended lubricant
	Tube not properly deburred	Deburr tube and remove filings
	Tube not properly cleaned	Clean tube to remove filings
	Pin not cleaned	Keep pin clean and lubricated
Flange pin breaks during flanging	Incorrect pin and/or tube wall/ or wrong pin for tube material	Use correct pin for tube size/material









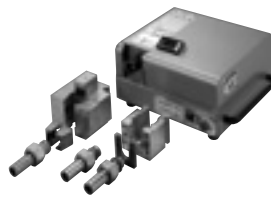












# Assembly tooling


















## Assembly tooling

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### Parker tube fabricating equipment

Equipment described in this section is designed to make strong, accurate tubing systems easier and more dependable. Every time you make up a tubing circuit, you want to be sure you get strong dependable joints, accurate kink-free bends and a neat system that will stand up to years of hard service. You want to fabricate the system with the least effort and risk of errors. Parker tube fabricating equipment is designed to help you get all these benefits. Parker has been leading the way in use of tubing and in fittings design for over 60 years. All this experience has shown Parker engineers a host of ways to make tube fabricating equipment more efficient and trouble free. You'll find them all in the equipment featured here – from improvements that help you make accurate concentric flares, to bender designs that make kink-free bending easier. They'll all help you get better tubing systems with less work and less risk of mistakes in fabrication.

#### Machine selection

Parker offers a variety of assembly devices and machines for different products and different applications. Refer to overview in chapter E for machine recommendation.

#### Disposal of old equipment

The TFDE electrically driven assembly machines are large stationary industrial tools within the meaning of the Electrical and Electronic Equipment Act (EC Directive 2002/96/EC/"WEEE Directive"). This equipment is not usually used in private households but in industry. Within the scope of the Electrical Act, industrial users are responsible for the professional disposal of old equipment.

#### Service

Assembly machines and standard tooling for TFDE connectors are available from stock for immediate service. Both purchasing and leasing are possible depending on machine type and volume of business. For limited projects, assembly equipment can be provided on a rental basis via our certified distributor network. Special "demo"-equipment is available for sales presentations and fairs.

#### Technical support

TFDE machine service procedures ensure that reliable machine function and fitting performance is achieved when using genuine Parker assembly equipment. All machines come with detailed operating manuals. Parker distributors and sales representatives are trained to give advice on operation and application. Experienced application engineers at TFDE are available when it comes to special application of TFDE assembly equipment. In case of machine malfunction, spare machines can be provided on short notice so that production can continue. In the meantime, damaged machinery is checked and repaired at the TFDE machine repair facility. Well trained and experienced engineers take personal care that the machines return properly repaired and tested.

TFDE also offers a machine maintenance and calibration service. Standard spare parts like oil filters can be ordered from stock.

#### Repair procedure

Please contact your Parker Service Center for problem solving/repair. Your correspondent will organise the repair and arrange a spare machine if required. Please do not send in machines without notice to your sales correspondent. To assure optimum service, all machine shipments must include a documentation with information about: Machine type, serial number, purchase data, problem description, contact name, phone number and complete address for return.



Experienced engineers support proper operation of TFDE assembly machinery

#### Tool lifetime

Assembly tools are subject of wear and must be regularly (max. 50 assemblies) cleaned and checked (Checking instructions see chapter E). Worn out tools can cause dangerous assembly failures and must be replaced in time. Average tool lifetime is approx. 5000 cycles when properly used. Maximum lifetime can be achieved by following factors:

- Regular cleaning and checking
- Clean and corrosion-protected storage
- Proper de-burring and cleaning of tube end
- Proper tool selection and operation
- Use of specified lubricant

# Manual assembly tools for EO/EO-2

## VOMO – Pre-assembly tools for EO/EO-2 tube connections

Simple but essential tool for the manual presetting of EO-fittings.

The use of a VOMO assures that the bite ring securely cuts into the tube without damage on the inner fitting cone.

Pre-assembly using VOMO or EOMAT must be done for all connections of:

- EO-2 with large tube dimensions (Tube O.D. 30 mm and above)
- EO-Progressive Stop Ring/Progressive Ring with stainless steel tube or standpipe fittings (E.g.: “BE”-type hose fitting).

For proper use, see EO assembly instructions. VOMO tools wear out and then may cause assembly failures. VOMO’s must be checked regularly with “KONU” cone-templates (max. after 50 assemblies) and replaced when damaged or worn out.

### Specifications:

Material: hardened tool steel  
 Sizes: 4 LL – 12 LL,  
 6 L – 42 L,  
 6 S – 38 S

Pre-assembly of: EO-2 and Progressive Stop Ring PSR/EO progressive Ring DPR

Economic production qty: Max. 10 assemblies per day.

### Features, advantages and benefits of pre-assembly tools:

1. **Marking notch** – A special ridge engraves a circular mark onto the tube end to verify that it was properly bottomed at assembly. Failures caused by improper tube cutting or bottoming in VOMO can be recognised before final installation.
2. **Flexible** – A VOMO can be used anywhere to assure safe fitting assembly – even at assembly sites where EOMAT machines are not available.
3. **Safe** – Hazardous blowout of incorrect assembled standpipe hose fittings or stainless steel tube can be avoided by VOMO-assembly.



4. **Efficient** – There is no doubt that VOMO-presetting contributes to save time and effort in bite-type assembly. The small investment pays back immediately.
5. **Special** – VOMO tools are specifically designed and manufactured to match EO-fitting standards.
6. **Tool lifetime** – Assembly tools are subject of wear and must be regularly (max. 50 assemblies) cleaned and checked (Checking instructions see chapter E). Worn out tools can cause dangerous

assembly failures and must be replaced in time. Average tool lifetime is approx. 5000 cycles when properly used. Maximum lifetime can be achieved by following factors:

- Regular cleaning and checking
- Clean and corrosion-protected storage
- Proper de-burring and cleaning of tube end
- Proper tool selection and operation
- Use of specified lubricant



Series	Tube O.D. mm	Pre-assembly tools Order code	Cone-templates Order code
LL	04	VOMO04LLX	KONU04LL
	06	VOMO06LLX	KONU06LL
	08	VOMO08LLX	KONU08LL
	10	VOMO10LLX	KONU10LL
	12	VOMO12LLX	KONU12LL
L	06	VOMO06LX	KONU06L <sup>1)</sup>
	08	VOMO08LX	KONU08L <sup>1)</sup>
	10	VOMO10LX	KONU10L <sup>1)</sup>
	12	VOMO12LX	KONU12L <sup>1)</sup>
	15	VOMO15LX	KONU15L
	18	VOMO18LX	KONU18L
	22	VOMO22LX	KONU22L
	28	VOMO28LX	KONU28L
	35	VOMO35LX	KONU35L
	42	VOMO42LX	KONU42L
S	06	VOMO06SX	KONU06L <sup>1)</sup>
	08	VOMO08SX	KONU08L <sup>1)</sup>
	10	VOMO10SX	KONU10L <sup>1)</sup>
	12	VOMO12SX	KONU12L <sup>1)</sup>
	14	VOMO14SX	KONU14S
	16	VOMO16SX	KONU16S
	20	VOMO20SX	KONU20S
	25	VOMO25SX	KONU25S
	30	VOMO30SX	KONU30S
	38	VOMO38SX	KONU38S

1) Cone-templates for tube O.D.6 to 12 mm are identical in series L and S.



### KONU – Cone-template for tools VOMO/MOK/MOSI

Cone-templates are essential for monitoring wear on pre-assembly tools like VOMO, MOK or MOS.

KONU must be regularly used to prevent fitting failures caused by worn out or damaged tools (DIN 3859-2: max. each 50th assembly).

For proper use see EO assembly instructions, Chapter E.

#### Specifications:

Material: hardened tool steel

Sizes: 4 LL – 12 LL,  
6 L – 42 L,  
6 S – 38 S  
(Sizes 6 L – 12 L  
are identical to 6 S – 12 S)



#### Features, advantages and benefits of cone-templates:

- 1. Special** – KONU are high precision cone-templates specifically designed and manufactured to match EO standards.
- 2. Maintenance tool** – A leaking fitting can be easily checked and replaced if worn-out.

Tube O.D. mm	Cone gauges Order code
04-LL	KONU04LL
06-LL	KONU06LL
08-LL	KONU08LL
10-LL	KONU10LL
12-LL	KONU12LL
06-L	KONU06L <sup>1)</sup>
08-L	KONU08L <sup>1)</sup>
10-L	KONU10L <sup>1)</sup>
12-L	KONU12L <sup>1)</sup>
15-L	KONU15L
18-L	KONU18L
22-L	KONU22L
28-L	KONU28L
35-L	KONU35L
42-L	KONU42L
06-S	KONU06L <sup>1)</sup>
08-S	KONU08L <sup>1)</sup>
10-S	KONU10L <sup>1)</sup>
12-S	KONU12L <sup>1)</sup>
14-S	KONU14S
16-S	KONU16S
20-S	KONU20S
25-S	KONU25S
30-S	KONU30S
38-S	KONU38S

<sup>1)</sup> Cone-templates for tube o.d. 6 to 12 are identical in series L and S.

### Selection guide: Checking equipment for EO assembly

Performance of EO tube connections is depending on perfect condition of pre-assembly tools and proper assembly process.

Cone-templates KONU for monitoring MOK/VOMO tool wear and AKL gauges for checking result of PSR preassembly are available.

#### KONU – Cone-template for EO pre-assembly tools

##### Limitations

Cone-template KONU detect wear and deformation of pre-assembly tools like VOMO, MOK or MOS. But it does not indicate failures on completed assemblies.

Cone-template KONU will not detect all possible failures of pre-assembly tools. Pre-assembly tools must be scrapped when they show visual wear or cracks, even if KONU check is OK.

	KONU	AKL
Function	Checking of preassembly tools	Checking of PSR assemblies
Will detect: Deformed <b>MOK/VOMO</b>	Yes, compared to template	Yes, if relevant for PSR performance
Will detect: Visual damage and cracks of <b>MOK/VOMO</b>	No	Yes, if relevant for PSR performance
Will detect: Assembly failures like: tube end not bottomed, underassembly of PSR	No	Yes, if relevant for PSR performance
Will detect: Insufficient bite of <b>PSR</b>	No Visual check required	No Visual check required
<b>Application</b>	Expert template for trained and experienced engineers in workshop	Gauge for production of PSR assemblies

##### Application

KONU is expert tooling for trained and experienced engineers. For practical

monitoring of assembly result in production, distance gauge AKL are recommended.

## Distance Gauge for Assembly AKL



### Distance Gauges AKL

Distance gauges AKL are suitable for checking the pre-assembly result of Progressive Rings PSR. They are used on pre-assembled tubes before final installation. The green LED lights up, when none of the following failures is detected:

- Excessive wear of preassembly tools MOK
- Excessive assembly force / pressure setting
- Tube end by far not bottomed in assembly tool MOK.

Therefore, assembly check by cone-template KONU can be void. Use of distance gauges AKL does not replace the check of the bite (visible collar in front of Progressive Ring).

### Specification

Function:	Distance gauge with LED indication
For checking of:	Machine pre-assembly of Parker EO Progressive Ring PSR
Series:	LL/L/S
Tube-OD:	4–38/42 mm
Dimensions:	Length: approx. 130–160 mm Front diameter: approx. 30–52 mm
Power:	2 × Battery AA – Mignon – LR6 (included)
Scope of supply:	Distance gauge with LED indication, batteries, master piece and instructions in a plastic case

### Ordering

Size	Order code	Size	Order code	Size	Order code
04-LL	AKL04LL	10-L	AKL10L	10-S	AKL10S
06-LL	AKL06LL	12-L	AKL12L	12-S	AKL12S
08-LL	AKL08LL	15-L	AKL15L	14-S	AKL14S
10-LL	AKL10LL	18-L	AKL18L	16-S	AKL16S
12-LL	AKL12LL	22-L	AKL22L	20-S	AKL20S
06-L/S	AKL06LS	28-L	AKL28L	25-S	AKL25S
08-L/S	AKL08LS	35-L	AKL35L	30-S	AKL30S
		42-L	AKL42L	38-S	AKL38S

### Features, Advantages & Benefits of distance gauge AKL

1. Clear – In contrast to the visual evaluation, the simple good/bad decision is obvious, even for less experienced operators.
2. Economical – The distance gauges AKL are fast in application. The production process is not slowed down noticeably compared with other testing methods.
3. Result-oriented – In the comparison to examining the tools with the AKL teachings the assembly result is examined. Thus also the failure opportunity “Tube by far not bottomed” is detected.
4. Practical – The gauges are light, handy, easy, and can be fastened with an eye. Standard batteries are used, so that a long life span is reached.
5. Safe – The measuring head consists of high-grade steel and is not adjustable or detachable. A master piece for regular functional testing is shipped with each AKL gauge.
6. Innovative – For customers of prefabricated hydraulic tubes, so far it was not easy to inspect the assembly quality of incoming goods. Thus incorrect assemblies, which are caused by use of worn pre-assembly tools, remained often undiscovered. With the distance gauges AKL an efficient and effective inspection of incoming goods can be accomplished, allowing pro-active quality management together with the tube supplier.

### Limitations

- Distance gauges AKL are suitable only for the inspection of machine pre-assembly. After final tightening of the connection, a failure might be indicated, even if the Progressive Ring was properly assembled by the pre-assembly machine.
- Distance gauges AKL are designed for the use with Progressive Rings PSR. Parker does not take responsibility for the function with other bite type fittings. Distance gauges AKL are not suitable for

checking EO-2 and EO2-FORM connections.

- Use of distance gauges AKL does not replace the check of the bite (visible collar in front of Progressive Ring).

### Function

Distance gauges AKL are suitable for checking the effect of worn tools on pre-assembly result of Progressive Rings PSR. They are used on pre-assembled tubes before final installation. The distance gauges AKL particularly detects the position of the Progressive Ring PSR in relation to the tube end. Shining of the green LED indicates that the assembly cone can be further used. Flicker of the green LED is quite possible, since the installed tube in the gauge can have some clearance. If the wear of the assembly tool reaches 0,1 mm on the cone, the LED shines no longer and indicates that the tool is worn. These defective tube assemblies must not be installed and the worn assembly tool must be replaced. The inspection has to take place regularly, at the latest after 50 assemblies. Then, assembly tool check by cone-template KONU can be void.

### Operation

- Shining of the green LED indicates that the assembly cone can be further used
- If the LED doesn't shine, the assembly must not be used



### Applications

- Mass production of hydraulic tube assemblies for mobile hydraulics, automotive and agricultural vehicles
- Commercial tube manipulators for hydraulic tube assemblies
- Inspection of incoming tube assemblies at the final installation plant



# Manual assembly devices for EO/EO-2 tube connections

## Machine selection guide

Manual assembly devices are available to reduce assembly time and effort. High assembly quality and consistency assures reliable fitting performance. EO assembly devices are manually operated and do not need any external power supply.

Due to the low weight, easy handling and simple but reliable design, the EO assembly devices are the ideal tool for tube preparation of small quantities.

For efficient mass production, manual devices are not suitable, therefore EOMAT machines are recommended.



### Features, advantages and benefits

- 1. Flexible** – Manual assembly devices are portable and do not need any power supply. Therefore they are ideal for on-site tube assembly, repair and plant maintenance.
- 2. Economic** – Manual assembly devices close the gap in between manual fitting pre-assembly in a vice and the EOMAT technology. The devices contribute to save time and effort in bite type assembly. The little investment pays back immediately.
- 3. Controlled assembly** – After pre-assembly, the tube joint can be easily inspected before final installation. Therefore, this manda-

tory step in fitting assembly is less likely to be forgotten.

- 4. Special** – Each device has been especially developed for the efficient use in a certain application. The HVM-B is a handy tool for the quick pre-assembly of EO Progressive rings onto soft steel tube. The EO-KARRYMAT is a real problem solver when it comes to on-site assembly of medium to large EO-Progressive rings and EO-2 fittings onto steel and stainless steel tube.

### How to select the ideal assembly device for your application:

	HVM-B 	EO-KARRYMAT 
<b>Assembly method</b> EO-2: PSR/DPR/D: Triple-Lok®:	not suitable Stroke controlled not suitable	Pressure controlled Pressure controlled not suitable
<b>Tube specification</b> Material: Outside diameter/mm: Min. U-bend: Wall thickness:	Steel 4–15 mm 25 mm no limitation	Steel, Stainless Steel 6–42 mm 66 mm no limitation
<b>Tool specification</b>	Special assembly cones MOSI and plates HL	Standard assembly cones MOK and plates GHP
<b>Operation drive</b>	Lever with eccentric cam	Handpump
<b>Process control</b>	Assembly stroke determined by tool geometry	Pressure control according to selection chart
<b>Preassembly</b> is equal to EO-2: PSR: D/DPR:	– 1 turn 1 turn	Gap closed 1½ turn 1¼ turn
<b>Performance</b> Overall cycle time: Economic production quantity:	10 secs. max. 50 assemblies per day	30–60 secs. max. 20 assemblies per day
<b>Application</b>	Simple tool for quick pre-assembly of small dimension EO-Progressive rings onto steel tubes	Most efficient for one-site assembly of medium to large DPR- and EO-2 connections onto any suitable tube material. Repair jobs and hydraulic services

## HVM-B Pre-assembly tool

This pre-installation tool is a simple tool for a quick and safe pre-assembly of EO-Progressive Stop Ring/Progressive ring. The tool is very handy and can be used at any site provided a vice is available. Suitable for LL, L and S series and tube sizes from 4 to 15 mm O.D.

**Attention:**

- ⚠ **Not suitable for EO-2 assembly.**
- ⚠ **Not suitable for stainless steel progressive ring assembly.**
- ⚠ **Final assembly of ½ turn in fitting body required.**
- ⚠ **Not suitable for tube OD larger 15 mm**

**Specifications:**

For pre-assembly of: EO Progressive Stop Ring (PSR)/Progressive Ring (DPR)

Pre-assembly equals: 1 turn of nut

**For assembly check and fitting installation see assembly instructions chapter E.**

Tube O.D.: 4 to 15 mm

Min. U-bend: 25 mm

Series: LL, L and S

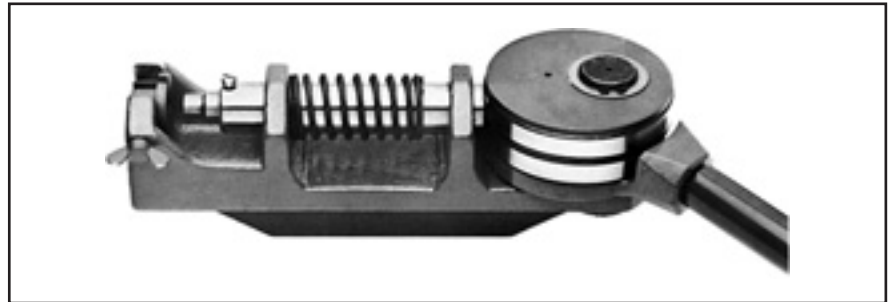
Tube and

fitting material: Steel

Weight: approx. 7.0 kg (without tools)

**Features, advantages and benefits of pre-assembly tool:**

1. **Special** – HVM-B is designed and manufactured to match EO-DPR standards.
2. **Vice mounted** – For easy workshop use, the HVM-B can be clamped into any vice.
3. **Flexible** – A HVM-B can be used anywhere to assure safe fitting assembly – even at assembly sites where EOMAT technology is not available.
4. **Efficient** – There is no doubt that HVM-B-presetting contributes to save time and effort in bite-type assembly. The small investment pays back immediately.



Type	Order code
HVM-B pre-assembly tool device for mount in vice, without tools	HVMBKPLX

Series	Tube O.D. mm	Tube location plate Order code	Assembly cone Order code	Cone-template Order code
LL	4	HL04X	MOSI04LLX	KONU04LL
	6	HL06X	MOSI06LLX	KONU06LL
	8	HL08X	MOSI08LLX	KONU08LL
	10	HL10X	MOSI10LLX	KONU10LL
	12	HL12X	MOSI12LLX	KONU12LL
L	6	HL06X	MOSI06LX	KONU06L <sup>1)</sup>
	8	HL08X	MOSI08LX	KONU08L <sup>1)</sup>
	10	HL10X	MOSI10LX	KONU10L <sup>1)</sup>
	12	HL12X	MOSI12LX	KONU12L <sup>1)</sup>
	15	HL15X	MOSI15LX	KONU15L
S	6	HL06X	MOSI06SX	KONU06L <sup>1)</sup>
	8	HL08X	MOSI08SX	KONU08L <sup>1)</sup>
	10	HL10X	MOSI10SX	KONU10L <sup>1)</sup>
	12	HL12X	MOSI12SX	KONU12L <sup>1)</sup>
	14	HL14X	MOSI14SX	KONU14S

1) Cone-templates for tube o.d. 6 to 12 are identical in series L and S.



### HVM-B Pre-assembly tool

1



2



3



4



5



#### How to use

- Clamp HVM-B into vice.
- Select required assembly cone (MOSI) and insert.
- The assembly cones are marked with tube O.D. and series (e.g. 10-L).

- Insert the tube location plate – HL – of corresponding size and fasten with screw.
- The tube location plates are marked with tube O.D. (e.g. “10”).

- Slip nut “M” and Progressive Stop Ring PSR/Progressive ring “DPR” (or cutting ring “D”) over tube end and insert into pre-assembly tool.
- Nut position must be in front of tube location plate – HL – !

- Hold tube against stop in the assembly cone.

- Pull lever to turn the eccentric cam (Pre-assembly).

#### Attention

⚠ For assembly check and final assembly see PSR/DPR instructions.

#### Attention:

⚠ At final assembly nut must be tightened by ½ turn.

## EO-KARRYMAT portable pre-assembly device for EO tube connections



Type	Order code
EO-KARRYMAT assembly device complete device including handpump and carrying case, including operation manual. Tools (assembly cone MOK and backing plate GHP) must be ordered separately.	EOKARRYMAT
Promotion leaflet UK/DE	4044-DE/UK
Separate operating manual UK/DE/FR/IT	4044-T
<b>Spare parts</b>	
Handpump	82C-2HP
Pressure gauge	EOKARRYMAT/MANO
Pressure chart sticker	EOKARRYMAT/CHART
Cover hinge	EOKARRYMAT/HINGE
Assembly head	EOKARRYMAT/BLOCK

The EO-KARRYMAT is a dependable device for safe and efficient bite-type presetting. It allows pre-assembly of even large dimension steel and stainless steel tube at assembly sites where EOMAT technology is not available.

The EO-KARRYMAT consists of a hydraulic drive and a handpump. The hydraulic assembly pressure can be read on a gauge. The EO-KARRYMAT comes as one unit with all components firmly attached to a practical carrying frame.

### Specifications:

For pre-assembly of: EO PSR/DPR and EO-2

Pre-assembly equals:

EO Progressive Stop Ring (PSR): 1½ turns of nut

EO Progressive ring (DPR): 1¼ turns of nut

EO-2 "Gap closed"

▲ **For assembly check and fitting installation see assembly instructions chapter E.**

Tube O.D.: 6 to 42 mm

Min. U-bend: 66 mm

Series: L and S

Tube and fitting material: Steel and stainless steel

Total cycle time: approx 30–60 sec.

Weight: approx. 28 kg

Economic production quantity: max. 20 assemblies per day

Oil: HLP23–1.22 (filled before delivery)



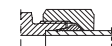



### Features, advantages and benefits of EO-KARRYMAT:

- 1. Ideal** – Weighing 28 kg, the EO-KARRYMAT is portable and does not need any power supply. Therefore the EO-KARRYMAT is the ideal tool for on-site tube assembly, repair and plant maintenance.
- 2. Economic** – The EO-KARRYMAT closes the gap in between manual fitting pre-assembly in a vice and the EOMAT technology. EO-KARRYMAT assembly is far less hard work as manual assembly but it achieves the dependent assembly result of the EOMAT assembly machine.
- 3. "Must" for stainless steel** – As direct assembly of stainless steel tubes in bite type fittings results in failure, a special pre-assembly process is mandatory according to ISO 8483 / DIN 3859 and all manufacturers instructions. The EO-KARRYMAT fulfills this requirement.
- 4. Dependable** – The use of the EO-KARRYMAT is far less demanding than manual fitting assembly using wrenches. It helps to prevent failures caused by insufficient fitting assembly which is most critical on large dimension steel and stainless steel tube.
- 5. Controlled assembly** – After pre-assembly, the tube joint can be easily inspected before final assembly. Therefore, this mandatory step in fitting assembly is less likely to be forgotten.
- 6. Special** – The EO-KARRYMAT has been especially developed for the efficient on-site assembly of EO Progressive ring and EO-2 fittings. The

tools are designed to allow safe assembly of even large dimension steel and stainless steel tubes without excessive hard work.

### The applications:

- Repair workshops
- Mobile repair service
- Plant maintenance in process engineering, paper production, power plants, offshore exploration, industrial production
- On-site assembly of tubing systems

Tube O.D.	EO-2	PSR/DPR
 Ø [mm]	 P [bar]	 P [bar]
6	45	30
8	55	40
10	65	50
12	75	60
14	95	70
15	95	70
16	110	90
18	110	90
20	160	120
22	120	110
25	210	160
28	160	140
30	300	200
35	250	180
38	350	280
42	300	230
 Installation	 min. 60° max. 90°	 ~ 30°



# Assembly machines for EO/EO-2 and Triple-Lok®

## Machine selection guide

EOMAT assembly is much more cost efficient than manual assembly of EO-fittings. Assembly time and effort are greatly reduced. Proper and consistent pre-assembly support safe and leakfree fitting performance.

EOMAT machines are specifically designed to match EO-2, EO PSR/DPR rings and Triple Lok® standards. Assembly is achieved with high precision and repeatability.

EOMAT machines are available in several versions to serve individual applications. All machines are designed for reliable workshop use even under severe construction site working conditions. Tool handling and machine operation are simple.




How to select the ideal EOMAT machine for your application:

### Features, advantage and benefits:

- Universal** – Assembly of EO-2, EO PSR/DPR rings and 37° flaring for Triple-Lok® can be done with just 1 machine.
- Efficient** – With a cycle time of some 12 to 15 seconds the EOMAT machine greatly saves assembly time and effort. The investment pays back quickly.
- Safe** – Proper pre-assembly greatly reduces the danger of leaking fittings or even hazardous tube blow out.

- Strong** – Even 37° flaring of larger sized stainless steel tube is done within few seconds.
- Flexible** – All tube dimensions from 6 to 42 mm can be used. All common tube materials are covered, even plastic tube (EO-2 and PSR/DPR only).
- Marking notch** – A special ridge makes a circular mark onto the tube end to verify that it was properly bottomed at assembly. Failures caused by improper tube cutting or bottoming in MOK can be recognised before final installation.
- Reliable** – For more than 20 years, hundreds of EOMAT machines have operated under heavy duty workshop conditions.

## Selection chart EOMAT Pre assembly and Flaring machines

	<b>EOMAT ECO</b> 	<b>EOMAT UNI</b> 	<b>EOMAT PRO</b> 
<b>Assembly method:</b> EO-2 D/PSR/DPR Triple-Lok®	Pressure controlled Pressure controlled –	Pressure controlled Pressure controlled Conventional 37° flaring	Pressure controlled Stroke controlled
<b>Tube specification:</b> <b>Material</b> <b>Outside diameter</b> <b>Min. U-bend</b>	Steel, Stainless Steel 6–42 mm 75 mm	Steel, Stainless Steel 6–42 mm 65 mm	Steel, Stainless Steel, copper, nylon PRO22 / PRO42: 4–22/4–42 mm PRO22 / PRO42: approx. 35/70 mm
<b>Wall thickness:</b> EO-2/PSR/DPR Triple Lok®	No limitation not applicable	No limitation 6×1 to 38×4 or 42×3 mm (Tube O.D. × wall thickness)	No limitation –
<b>Operation:</b> <b>Setting</b>	Manual pressure adjustment according to selection chart Depending on: Assembly type; Tube dimension; Tube material	Manual pressure adjustment according to selection chart Depending on: Assembly type; Tube dimension; Tube material	Tool detection and automatic adjustment Manual adjustment of pressure is possible
<b>Process control</b>	Pressure gauge	Pressure gauge	PLC with display
<b>Error detection:</b>	No	No	Warning light and message displayed if deviations in assembly process occur
<b>Memory function</b>	No	No	Memory options for custom application on MOK transponderchip
<b>Oil temperature control</b>	No	No	Warning light and message displayed
<b>Foot operating switch</b>	Not available	Not available	Available
<b>Performance</b>	1 Phase/230 V	1 Phase/230 V	400 V, 50 Hz, 3-phase
<b>Overall cycle time (sec.):</b> EO-2 presetting PSR/DPR presetting 37° flaring	20 25 –	12 15 15	PRO22 / PRO42: approx. 8/10 seconds PRO22 / PRO42: approx. 10/12 seconds –
<b>Economic production quantity:</b>	max. 50 assemblies per day	max. 300 assemblies per day	100 or more assemblies per day
<b>Continuous operating:</b>	80 %	80 %	100 %
<b>Weight</b>	approx. 30 kg	approx. 66 kg	approx. 90 kg
<b>Application</b>	<b>Portable machine for repair and workshops</b>	<b>Universal assembly machine for workshop</b>	<b>Cost-effective commercial production</b>



**EOMAT ECO Mobile assembly machine for EO-2 and PSR hydraulic fittings**



**The EOMAT ECO is a portable machine for the assembly of EO-2 and EO Progressive Ring fittings.**

This electro-hydraulic unit is simple to operate; the assembly pressure is set on the digital display. The equipment is simple to use, robust and easy to move.

The EOMAT ECO is an ideal piece of equipment for hydraulic service engineers.

**Technical data**

- Application: assembly of Parker EO-2 and PSR Progressive Ring fittings  
assembly of cutting ring fittings to DIN EN ISO 8434-1
- Process: pressure-controlled press operation through assembly tools
- Drive: electro-hydraulic
- Assembly corresponds to: EO-2: gap closed  
PSR: 11/2 turns of the nut
- Tube material: steel and stainless steel

- Tube diameters: 6 to 42 mm
- Series: L and S
- Min. U-bend: 75 mm
- Speed: working stroke 15 to 20 secs, total cycle time approx. 20 to 25 secs
- Dimensions: 750 x 360 x 300 mm
- Weight: 30 kg
- Electrical: 230V 1-phase  
power rating: 50 Hz 700 W

**Operation:**

for detailed assembly instructions, see our fittings technology technical handbook, chapter E. For safety information, see machine operating manual.

1. Install assembly cone and backing plate


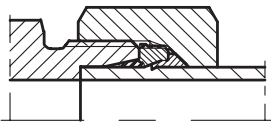
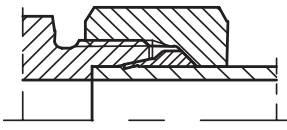

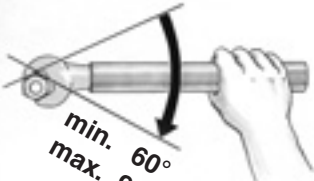
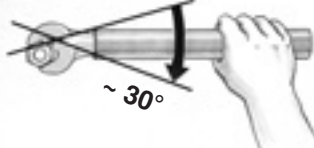
2. Set the setting pressure on the display in accordance with the chart
3. Insert tube complete with nut and ring
4. Operate START button and keep pressed
5. Hold the tube firmly during the assembly operation and press against the stop
6. The assembly operation is complete when the cylinder has travelled back to its starting position
7. Assembly inspection and final assembly should proceed in accordance with the operating manual.

**Performance:**

Economic production quantity: max. 100 assemblies per day.

Type	Order code
EOMAT ECO basic machine Ready to operate, including operating manual Without tools, no separate assembly fixture required	EOMATECO230V
Bulletin	4046 via Parker catalogue service EMDC
Operating manual UK/DE/FR/IT/ES	EOMATECO/MANUAL
Pressure chart sticker	EOMATECO/CHART
Standard preventive maintenance	EOMATECO/INSPECTION

Setting pressures

EO	EOMAT ECO		Parker
Tube-O.D.	EO-2	PSR/DPR	
			
Ø (mm)	P (bar)	P (bar)	
6	25	20	
8	35	25	
10	40	35	
12	45	40	
14	60	45	
15	60	45	
16	70	60	
18	70	60	
20	105	75	
22	75	70	
25	135	105	
28	105	90	
30	190	130	
35	160	115	
38	210	180	
42	190	145	
	<p>Installation</p>  <p>min. 60° max. 90°</p>	<p>Installation</p>  <p>~ 30°</p>	

The stated values are guidelines. The results of pre-assembly should therefore be thoroughly checked.



## EOMAT UNI assembly and flaring machine

### General

The EOMAT UNI is an electro-hydraulic machine for the assembly of:

### EO-2 EO PSR/DPR and Triple-Lok® 37° flared tube fittings.

Compared to manual assembly it greatly reduces assembly time, effort and cost and also guarantees leakfree performance of constant high-quality fitting assemblies.

Common tube materials such as steel (ST 37.4 NBK, ST 52.4 NBK), stainless steel (1.4571/1.4541/316Ti or similar) and copper can be pre-assembled.

The tool range covers all metric tube sizes from 4 to 42 mm outer diameter. The required operating pressure is variable and set at the LED-Display. The unit may therefore be used for a variety of different applications. The tooling for either EO-2/PSR/DPR pre-assembly or tube flaring may be manually replaced, without the use of tools.

### Technical data

Tube diameters: 6–42 mm

Min. U-bend: 65 mm

Series: L and S

Oil:

Esso Nuto H 32 or equal, 3.5L  
(Reference oil change, see label on unit)

Operating pressure:

Variable from 15 to 200 bar

Dimensions:

Width 535 mm, height 285 mm, depth 515 mm

### Performance:

Overall cycletime: 12–15 sec.

Economic production quantity:  
max. 300 assemblies per day

Hydraulic pump:

1.2 kW – 3.7 l/min

Electrical connection:

220–240 V/ 1~ / 50 Hz / 9.5 A

Connection cable:

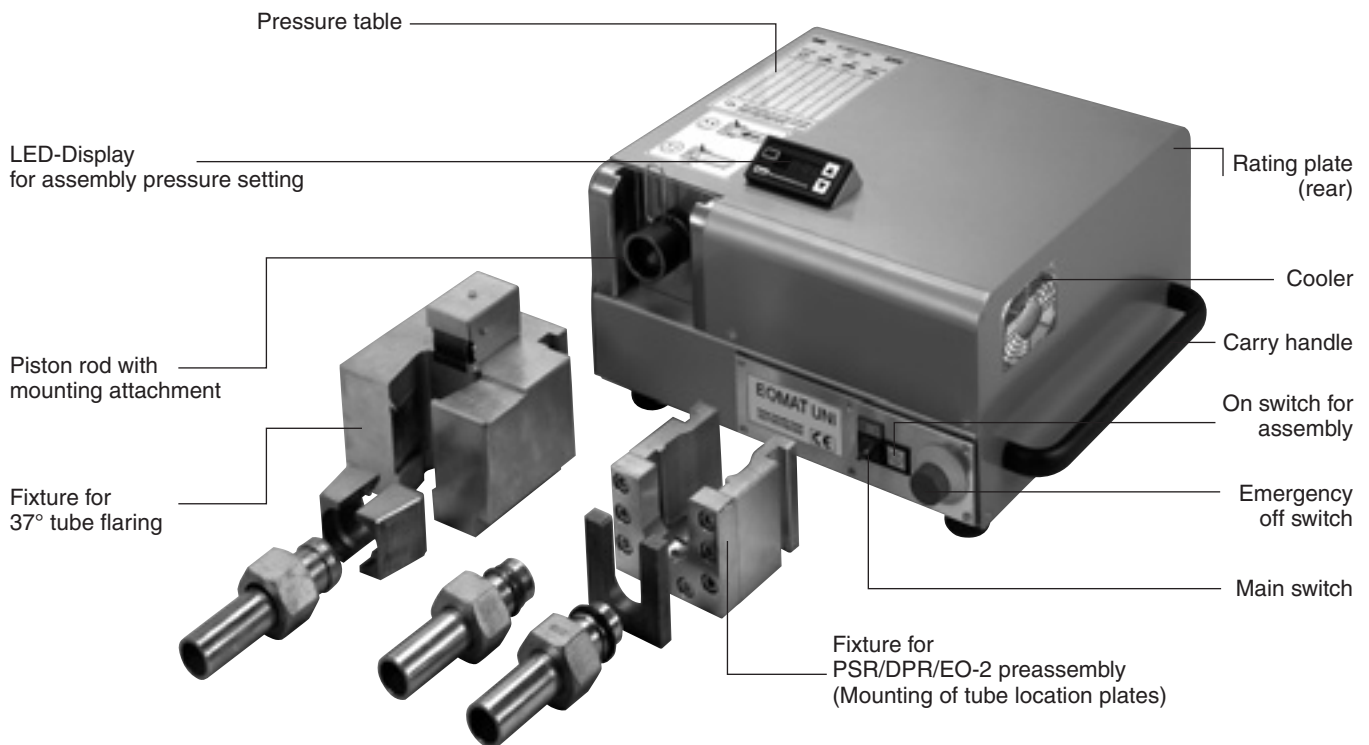
5 m – Earth plug

Weight: 66 kg

We reserve the right to make modifications in the course of further technical development.

### Features, advantages and benefits:

- Universal** – Assembly of EO-2, EO-PSR/DPR and 37° flaring for Triple-Lok® can be done with just 1 machine.
- Efficient** – With a cycle time of some 15 seconds the EOMAT UNI greatly saves assembly time and effort. The investment pays back quickly.
- Safe** – Proper pre-assembly greatly reduces the danger of leaking fittings or even hazardous tube blow out.
- Strong** – Even 37° flaring of larger sized stainless steel tube is done within few seconds.
- Flexible** – All tube dimensions from 4 to 42 mm can be pre-assembled. All common tube materials are covered.
- Workshop tool** – At 66 kg, the EOMAT UNI can be brought to an assembly site.
- Marking ridge** – All MOK tools feature a special ridge in the bottom surface which is designed to make a circular groove into the tube-end at assembly. No mark indicates that the tube-end has not been properly bottomed at assembly.
- Reliable** – For more than 20 years, hundreds of machines are operated under heavy duty workshop conditions.



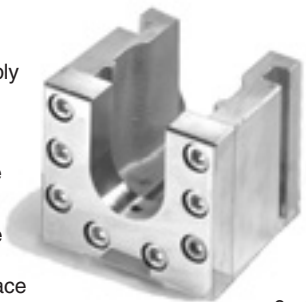
### EOMAT UNI assembly and flaring machine

#### Basic operation for EO-2

##### Functional nuts

See EO-2 instructions for fitting assembly

1. Adjust EO-2 pressure according to chart (A)
2. Insert the pre-assembly fixture in the tool mounting (weight approx. 5.5 kg).
3. Select the assembly cone (MOK) and backing plate (GHP) in accordance with the tube size and type.
4. Place and lock the assembly cone in the tool holder. Place the backing plate in the slot in the fixture.
5. Slide the EO-2 functional nut onto the tube, which has been cut off square and deburred.
6. Place the tube with the EO-2 functional nut in the pre-assembly fixture between backing plate and assembly cone.
7. Press the tube against the stop in the assembly cone. Hold the tube in this position. Press and hold the start button until the pre-assembly process is complete.
8. Take the assembled tube connection out of the location plate. See EO-2 assembly instruction (chapter E) for assembly check and installation instructions.
9. Check assembly result before final installation.



#### Basic operation for EO PSR/DPR ferrules

See PSR/DPR instructions for fitting assembly

1. Adjust PSR/DPR pressure according to chart (A)
2. Insert the pre-assembly fixture in the tool mounting (weight approx. 5.5 kg).
3. Select the assembly cone (MOK) and backing plate (GHP) in accordance with the tube size and type. Check the assembly cone using a cone-template.
4. Place the assembly cone in the tool holder. Place the backing plate in the slot in the fixture.
5. Oil the ring, nut and assembly cone.
6. Slide the nut and ring onto the tube, which has been cut off square and deburred.
7. Place the tube with nut and progressive ring or cutting ring in the pre-assembly fixture between backing plate and assembly cone.
8. Press the tube against the stop in the assembly cone. Hold the tube in this position. Press and hold the start button until the pre-assembly process is completed.
9. Take the pre-assembled tube out of the backing plate. See EO PSR/DPR assembly instruction (chapter E) for assembly check and installation instructions.
10. Check assembly result before final installation.

#### Basic operation for 37° tube flaring

See Triple-Lok® instructions for fitting assembly

1. Adjust Triple-Lok® pressure according to chart (A)
2. Insert the tube flaring fixture in the toolmounting (weight approx. 19.5 kg).
3. Lubricate the flaring pin.
4. Insert the flaring die set corresponding to the tube size.
5. Push the nut and support sleeve onto the tube.
6. Push the tube through the flaring die hole to the stop plate. To prevent misalignment, longer tubes are to be supported during the flaring process.
7. Press and hold START button until flaring process is completed.
8. Lift the tube with the flaring die upwards out of the fixture.
9. To release the tube, place the flaring die set in the opening provided in the fixture and tilt the tube to one side.
10. Check assembly result before final installation.



#### Important!

Only proceed with pre-assembly when a tube with nut and cutting ring has been placed in the fixture (failure to observe this can result in damage to the tools). Longer tubes are to be suitably supported during pre-assembly. The assembly cones are to be regularly checked for correct dimensions using the cone-template and should be replaced when necessary.

**Caution: do not reach into the working area of the pre-assembly fixture while it is operating!**





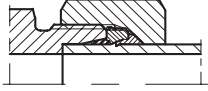
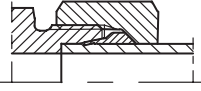
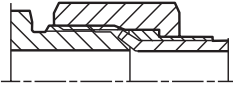

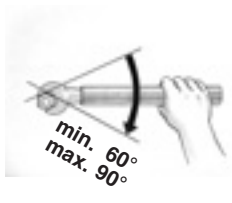
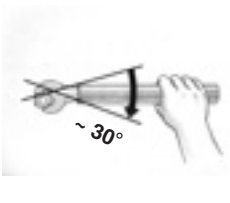
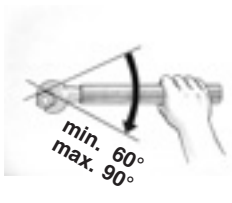

#### Important!

Do not drive the flaring pin into the flaring die without a tube in position. The roughened surface of the flaring die must be absolutely free of oil and grease to prevent the tube from slipping.

**Caution: do not reach into the working area of the flaring fixture while it is operating!**

**EOMAT UNI assembly and flaring machine**

Pressure setting chart A

		<h1>EOMAT UNI</h1> 			
Tube-O.D.	EO-2	PSR/DPR	Triple-Lok®		
					
Ø (mm)	P (bar)	P (bar)	P (bar)		
6	30	25	20		
8	35	30	25		
10	45	35	35		
12	50	40	35		
14	60	50	45		
15	60	50	60		
16	70	55	60		
18	70	55	70		
20	100	80	95		
22	80	75	95		
25	130	100	105		
28	100	90	125		
30	180	125	135		
35	150	110	155		
38	200	170	165		
42	180	140	185		
	 min. 60° max. 90°	 ~ 30°	 min. 60° max. 90°	Installation	
	<b>Steel (ST 37.4 NBK, ST 52.4 NBK, ...)</b> <b>Stainless Steel (ST 1.4571, 1.4541, 1.4301, 316 Ti, ...)</b>				

The given values are a guide. The results of pre-assembly and/or tube flaring are therefore always to be checked. For detailed instructions on tube preparation, tool selection, assembly check and final installation see chapter E.



## Assembly tooling

### EOMAT UNI assembly and flaring machine

#### Ordering

Type	Order code
EOMAT UNI Basic machine Ready to use, including operation manual Filled with hydraulic oil Without EO assembly fixture/Flaring fixture Without tools for EO-assembly/37° flaring Basic machine 230 V, 1 Phase, 50 Hz	EOMATUNI230V
Fixture for PSR/DPR/EO-2 assembly	EOMATSCHNEIDRX
37° Flaring fixture for Triple-Lok® including flaring pin	EOMATBOERDELBX
EOMAT UNI promotion leaflet UK	4042/UK
EOMAT UNI promotion leaflet DE	4042/DE
EOMAT UNI operating manual UK/DE/FR/IT	EOMATUNI/MANUAL
Standard preventive maintenance	EOMATUNI/INSPECTION

Assembly fixtures, tools, cone-templates, and lubricant must be ordered separately

**Assembly tools for PSR/DPR/EO-2 see page H19–H20.**

**37° flaring tools for Triple-Lok® see page H30.**

#### Spare parts

Type	Order code
Fixing clip for MOK	EOMAT/CLIP
37° flaring pin	EOMAT/FLAREPIN
O-ring for flaring pin	EOMAT/0212500
Tube stop assembly for flaring block	EOMAT/0213800
Pressure chart sticker	EOMATUNI/CHART
Spring for flaring block	EOMAT/0213500
LED Display for pressure adjustment	SCE-025-01

EO PSR/DPR and EO-2 assembly tools for EOMAT/EO-KARRYMAT



Assembly cone MOK



Tube locating plate GHP



Cone-template KONU for MOK



Assembly fixture must be installed on EOMAT UNI II/III

Size		Order code				
Series	Tube-O.D.	Assembly cones for EO PSR/DPR MOK	Assembly cones for EO-2 <sup>4)</sup> MOK	Backing plates GHP	Distance control gauges AKL	Cone-templates KONU
<b>LL<sup>3)</sup></b>	4	MOK04LLX	as MOK for PSR/DPR	GHP04X		KONU04LL
	6	MOK06LLX		GHP06X		KONU06LL
	8	MOK08LLX		GHP08X		KONU08LL
	10	MOK10LLX		GHP10X		KONU10LL
	12	MOK12LLX		GHP12X		KONU12LL
<b>L</b>	6	MOK06LX	MOKEO206L	GHP06X <sup>1)</sup>	AKL06LS	KONU06L <sup>1)</sup>
	8	MOK08LX	MOKEO208L	GHP08X <sup>1)</sup>	AKL08LS	KONU08L <sup>1)</sup>
	10	MOK10LX	MOKEO210L	GHP10X <sup>1)</sup>	AKL10L	KONU10L <sup>1)</sup>
	12	MOK12LX	MOKEO212L	GHP12X <sup>1)</sup>	AKL12L	KONU12L <sup>1)</sup>
	15	MOK15LX	MOKEO215L	GHP15X	AKL15L	KONU15L
	18	MOK18LX	MOKEO218L	GHP18X	AKL18L	KONU18L
	22	MOK22LX	MOKEO222L	GHP22X	AKL22L	KONU22L
	28	MOK28LX	MOKEO228L	GHP28X	AKL28L	KONU28L
	35	MOK35LX	MOKEO235L	GHP35X <sup>2)</sup>	AKL35L	KONU35L
	42	MOK42LX	MOKEO242L	GHP42X <sup>2)</sup>	AKL42L	KONU42L
<b>S</b>	6	MOK06SX	MOKEO206S	GHP06X <sup>1)</sup>	AKL06LS	KONU06L <sup>1)</sup>
	8	MOK08SX	MOKEO208S	GHP08X <sup>1)</sup>	AKL08LS	KONU08L <sup>1)</sup>
	10	MOK10SX	MOKEO210S	GHP10X <sup>1)</sup>	AKL10S	KONU10L <sup>1)</sup>
	12	MOK12SX	MOKEO212S	GHP12X <sup>1)</sup>	AKL12S	KONU12L <sup>1)</sup>
	14	MOK14SX	MOKEO214S	GHP14X	AKL14S	KONU14S
	16	MOK16SX	MOKEO216S	GHP16X	AKL16S	KONU16S
	20	MOK20SX	MOKEO220S	GHP20X	AKL20S	KONU20S
	25	MOK25SX	MOKEO225S	GHP25X	AKL25S	KONU25S
	30	MOK30SX	MOKEO230S	GHP30X	AKL30S	KONU30S
	38	MOK38SX	MOKEO238S	GHP38X	AKL38S	KONU38S

Flaring tools see KARRYFLARE

- 1) Backing plates, cone-templates and flaring die sets for series L and S for tube outer diameter 6, 8, 10 and 12 are the same.
- 2) **Note:** Two-part backing plates for tube OD 35 and 42.
- 3) Assembly tools for LL-series for EOMAT UNI on request.
- 4) Special MOK for easy tube insertion. MOK for EO-2 are marked with groove.

**Tool mounting rack**

Practical rack for storing 10 pieces each assembly cone MOK and backing plate GHP.

Type	Order code
Tool mounting rack for GHP and MOK	EOMATWERKZGAUFN.X



**Tool lifetime**

Assembly tools are subject of wear and must be regularly (max. 50 assemblies) cleaned and checked (Checking instructions see chapter E). Worn out tools can cause dangerous assembly failures and must be replaced in time. Average tool lifetime is approx. 5000 cycles when properly used. Maximum lifetime can be achieved by following factors:

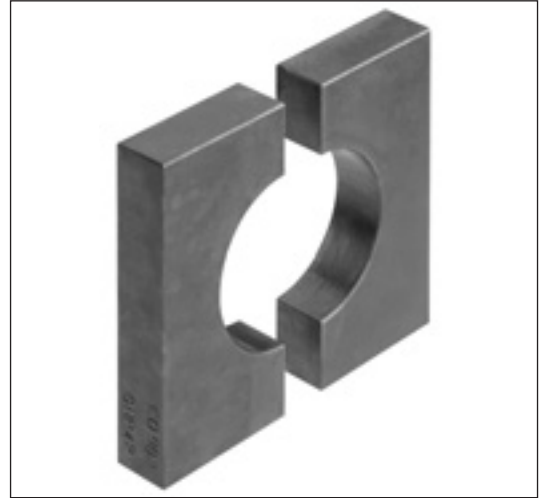
- Regular cleaning and checking
- Clean and corrosion-protected storage
- Proper de-burring and cleaning of tube end
- Proper tool selection and operation
- Use of specified lubricant
- MOK EO-2 don't wear out

## Assembly tooling

### Ferulok assembly tools for EOMAT/EO-KARRYMAT



Assembly cone



Back-up plate

Size		Order code	
Dash size	Tube-O.D. inch	Back-up plate	Assembly cone
4	1/4	975867-4	976521-4
6	3/8	975867-6	976521-6
8	1/2	975867-8	976521-8
10	5/8	975867-10	976521-10
12	3/4	975867-12	976521-12
14	7/8	975867-14	976521-14
16	1	975867-16	976521-16
20	1 1/4	975867-20	976521-20
24	1 1/2	975867-24	976521-24
32	2	975867-32	976521-32

Assembly tools for inch tube bite type FERULOK.  
FERULOK fittings see TFD US-Catalogue 4300.  
Machine setting according to correspondant size EO DPR.



## EOMAT PRO – Economic assembly machine for EO-2 and progressive ring fittings



The EOMAT PRO is a powerful machine for economical and safe tube installations. The device is designed for installation of Parker EO-2 and progressive ring fittings to DIN EN ISO 8483-1 (DIN 2352) with common tube materials (steel, stainless steel, copper, nylon). The EOMAT PRO is fast and quiet. It permits the assembly of very tight and complex tube bends. Automatic tool detection guarantees short set-up times and prevents errors due to setting the device incorrectly. Unlike conventional cutting ring assembly devices, the EOMAT PRO is stroke-controlled and produces accurate and reproducible assembly results.

The EOMAT PRO can be used in automatic or manual mode. In automatic mode, the settings are read from a transponder chip in the tool. The operator cannot change the device settings in automatic mode.

In the display the tube diameter and the type of installation (EO-2 or progressive ring) will be shown.

There is also a useful piece counter which can be reset by the operator.

Other messages can appear about the assembly cones – for example, notifications about routine checks and tool lifetime.

If there is a significant, implausible variation, the display will show an error message. If universal MOK tools are used with universal parameters, this means that only implausible gross deviations will be displayed.

Adaptive assembly cones (MOK-RW) permit the operator to control and set the installation parameters and limits in a few simple steps. In this way the tool is optimized for the specific installation. These individual parameters deliver the best results for the tube material, wall thickness and lubricant used. The device will show slight deviations from the nominal values with a red warning light and a prompt in the display to check the installation. It is therefore possible to detect connections that have been incorrectly installed, check them and remove from the process if needed (e.g. the ring was mounted the wrong way around).

Automatic tool detection, the stored installation values and the display of error messages (red warning light and display) cannot be deactivated in automatic mode by the operator.

In manual mode, different installation values can be set. Manual mode is activated using a key switch. The key is supplied with every device.

### The device comes in two versions:

- The quick EOMAT PRO22 for tube sizes up to 20-S/22-L. It has a compact assembly head for tight tube bends.
- The powerful EOMAT PRO42 with a robust assembly head for all sizes up to 38-S/42-L.

### Technical data

Application:	Economical mass production of Parker EO tube connections Installation of Parker EO-2 and progressive stop ring (PSR) fittings Installation of cutting ring fittings in accordance with DIN EN ISO 8434-1
Process:	Automatic mode PSR: Stroke-controlled assembly with plausibility check Manual mode and EO-2: Pressure-controlled assembly without error detection
Installation requires:	EO-2: Gap to be closed PSR: 1½ turns of the union nut Other products: See the manufacturer's documentation
Tube material:	Steel, stainless steel, copper, nylon
Tube specification:	All permitted tubes for use with Parker EO couplings
Tube diameter:	EOMAT PRO22: 4 to 22 mm (except for EO-2 – 20-S) EOMAT PRO42: 4 to 42 mm
Range:	LL, L and S
Min. U-bend:	EOMAT PRO22: approx. 35 mm EOMAT PRO42: approx. 70 mm
Tool Identification:	Uses RFID technology, the transponder is in the MOK assembly cone
Error detection:	Plausibility check of the installation parameters after installation
Display:	Text messages and warning light
Available languages:	German, English, French, Spanish, Italian
Display:	Automatic mode: Type of fitting, tube diameter and range Manual mode: Pressure set Piece counter (resettable)
Error messages:	“Check installation result” in the case of non-plausible installation parameters. Reminder to check the tool after every 50 uses. Reminder to change the tool when the end of its lifetime is reached. Warnings about critical hydraulic oil level and temperature.





## Assembly tooling

Speed:	EOMAT PRO 22: ca 1.0 s stroke distance, ca 8–10 s total cycle time EOMAT PRO 42: ca 2.0 s stroke distance, ca 10–12 s total cycle time
Economic production quantity:	around 100 assemblies per day
Operating duration:	100%
Noise:	Less than 75 dB (A)
Ambient temperature:	0 °C to +40 °C
Storage temperature:	–25 °C to +60 °C
Parameters:	No condensing humidity
Dimensions:	L 620 mm×W 735 mm×H 340 mm
Weight:	approx. 90 kg
Operational resources:	Esso Hydraulic Oil Nuto H32 or equivalent (filled for delivery)
Electrical power:	400 V 3-phase 50 Hz 1100 W
Cable:	5 m cable with CEE 16 A phase-inverter plug
Tools:	EOMAT PRO 22: MOK PRO assembly cones and MOS compact rear supports EOMAT PRO 42: MOK PRO assembly cones and GHP standard backing plates
Lubricant:	EO-NIROMONT
Test equipment:	AKL distance gauges

- Press and hold the START button
- Hold the tube securely through the whole assembly process and push it into the limit stop
- The assembly process is finished when the cylinder moves back to the starting position
- Assembly inspection and final assembly is done according to the assembly instructions (see chapter E)

### Tool lifetime

Assembly tools are subject to wear, and must be periodically (at least every 50 assemblies) cleaned and inspected (inspection instructions, see chapter E) Worn tools can cause dangerous assembly failures, and need to be replaced in good time. High tool life can be achieved by:

- Regular cleaning and lubrication
- Store protected from dirt and corrosion
- Careful trimming and cleaning of the tube ends
- Proper tool selection and operation
- Use of the recommended lubricant

The MOK PRO assembly cones are made from wear-resistant tool steel, and are therefore suited to mass production. If used properly, they should have an average lifespan of approximately 10,000 assemblies. After this lifespan is reached, the display will show that a tool change is needed. The worn tool should be **replaced**, it will no longer work in automatic mode. Worn assembly cones can be used after the end of their expected lifespan in manual mode with care.

### EOMAT PRO – features, advantages and benefits

- Low unit costs due to its fast and efficient hydraulic drive
- Compact assembly head for tight and complex bends
- Long lifespan of the assembly tools
- Settings are automatically read from the tool
- Stroke-control achieves a consistently good fitting result
- In automatic mode the operator cannot adjust the installation parameters
- A display showing the number of pieces processed and any error messages
- Adaptive tools for optimal installation parameters and the best possible error detection
- Oil volume and the heat capacity is designed to cope with mass assembly under continuous or shift working patterns
- The foot switch allows the operator a high degree of flexibility

### Operation

Detailed installation instructions and safety information can be found in the operation manual

- Insert the assembly cone and backing plate
- In automatic mode, the display shows the mounting type and dimensions
- Fit the tube with the union nut and ring

Machine/Item	Order code
<b>EOMAT PRO machine</b> , ready to use, with key for selection switch Auto/Manual, with operation manual, filled with hydraulic oil, without tooling and accessories	
<b>EOMAT PRO22</b> Tube-OD 4–22 mm 400 V, 50 Hz, 3 Phase Renting (monthly rate) Leasing (2 year hire purchase)	EOMATPRO22400V  EOMATPRO/RENTFEE EOMATPRO/LEASEFEE
<b>EOMAT PRO42</b> Tube-OD 4–42 mm 400 V, 50 Hz, 3 Phase Renting (monthly hire rate) Leasing (2 year hire purchase)	EOMATPRO42400V  EOMATPRO/RENTFEE EOMATPRO/LEASEFEE
<b>Accessoires/Item</b>	
lubricant for assembly cone 250 ccm bottle	EONIROMONTFLUCESSX
Foot switch	FOOTSWITCHSAFETYKIT
Fixing clamp for MOK	EOMATPRO/CLIP
Spare key for selection switch	EOMATPRO/KEY
EOMAT PRO promotion leaflet UK	4043 via Parker Catalogueservice EMDC
Operation manual UK/DE/FR/IT/ES	EOMATPRO/MANUAL
Standard preventive maintenance	EOMATPRO/INSPECTION

Assembly tools for EO fittings

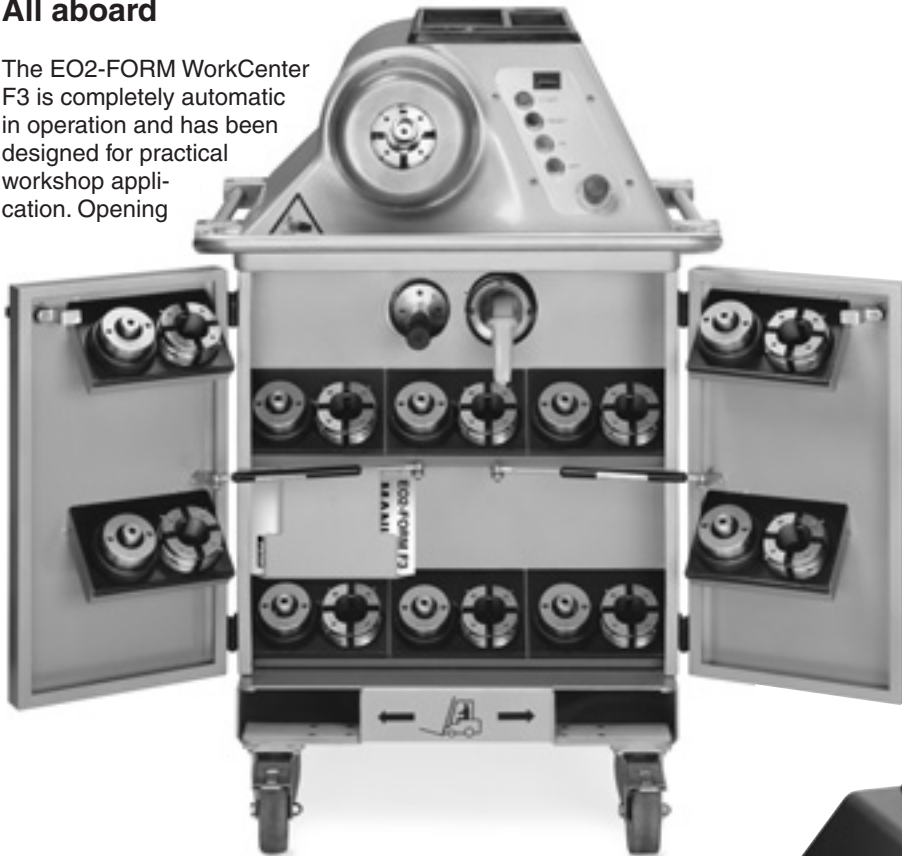
Size		Tool order code						
Series	Pipe OD (mm)	Adaptive assembly cone for progressive ring	Standard assembly cone for progressive ring	Standard assembly cone for EO-2	Backing plate for EOMAT PRO42	Compact backing plate for EOMAT PRO22	Distance gauge only for progressive ring	Cone template for assembly cone
<b>LL</b>	04	MOK04LLPRORW	MOK04LLPRO	–	GHP04X	GHP04PRO	AKL04LL	KONU04LL
	06	MOK06LLPRORW	MOK06LLPRO	–	GHP06X	GHP06PRO	AKL06LL	KONU06LL
	08	MOK08LLPRORW	MOK08LLPRO	–	GHP08X	GHP08PRO	AKL08LL	KONU08LL
	10	MOK10LLPRORW	MOK10LLPRO	–	GHP10X	GHP10PRO	AKL10LL	KONU10LL
	12	MOK12LLPRORW	MOK12LLPRO	–	GHP12X	GHP12PRO	AKL12LL	KONU12LL
<b>L</b>	06	MOK06LPRORW	MOK06LPRO	MOKEO206LPRO	GHO06X	GHP06PRO	AKL06LS	KONU06L
	08	MOK08LPRORW	MOK08LPRO	MOKEO208LPRO	GHP08X	GHP08PRO	AKL08LS	KONU08L
	10	MOK10LPRORW	MOK10LPRO	MOKEO210LPRO	GHP10X	GHP10PRO	AKL10LL	KONU10L
	12	MOK12LPRORW	MOK12LPRO	MOKEO212LPRO	GHP12X	GHP12PRO	AKL12LL	KONU12L
	15	MOK15LPRORW	MOK15LPRO	MOKEO215LPRO	GHP15X	GHP15PRO	AKL15L	KONU15L
	18	MOK18LPRORW	MOK18LPRO	MOKEO218LPRO	GHP18X	GHP18PRO	AKL18L	KONU18L
	22	MOK22LPRORW	MOK22LPRO	MOKEO222LPRO	GHP22X	GHP22PRO	AKL22L	KONU22L
	28	MOK28LPRORW	MOK28LPRO	MOKEO228LPRO	GHP28X	–	AKL28L	KONU28L
	35	MOK35LPRORW	MOK35LPRO	MOKEO235LPRO	GHP35X	–	AKL35L	KONU35L
42	MOK42LPRORW	MOK42LPRO	MOKEO242LPRO	GHP42X	–	AKL42L	KONU42L	
<b>S</b>	06	MOK06SPRORW	MOK06SPRO	MOKEO206SPRO	GHP06X	GHP06PRO	AKL06LS	KONU06L
	08	MOK08SPRORW	MOK08SPRO	MOKEO208SPRO	GHP08X	GHP08PRO	AKL08LS	KONU08L
	10	MOK10SPRORW	MOK10SPRO	MOKEO210SPRO	GHP10X	GHP10PRO	AKL10S	KONU10L
	12	MOK12SPRORW	MOK12SPRO	MOKEO212SPRO	GHP12X	GHP12PRO	AKL12S	KONU12L
	14	MOK14SPRORW	MOK14SPRO	MOKEO214SPRO	GHP14X	GHP14PRO	AKL14S	KONU14S
	16	MOK16SPRORW	MOK16SPRO	MOKEO216SPRO	GHP16X	GHP16PRO	AKL16S	KONU16S
	20	MOK20SPRORW	MOK20SPRO	MOKEO220SPRO	GHP20X	GHP20PRO	AKL20S	KONU20S
	25	MOK25SPRORW	MOK25SPRO	MOKEO225SPRO	GHP25X	–	AKL25S	KONU25S
30	MOK30SPRORW	MOK30SPRO	MOKEO230SPRO	GHP30X	–	AKL30S	KONU30S	
38	MOK38SPRORW	MOK38SPRO	MOKEO238SPRO	GHP38X	–	AKL38S	KONU38S	
		Programmable with individual parameters for plausibility checks	Programmed with universal parameters without effective error detection	Programmed with universal parameters without effective error detection	Also suitable for EO-KARRYMAT and all EOMAT devices from Parker	Only suitable for the EOMAT PRO 22 device from Parker	To check the assembly result of Parker EO Progressive rings (not for EO-2)	To check wear of MOK assembly cones for progressive rings (not MOK EO-2)



### The EO2-FORM WorkCenter F3

#### All aboard

The EO2-FORM WorkCenter F3 is completely automatic in operation and has been designed for practical workshop application. Opening



the doors turns the machine into a totally equipped WorkCenter. The tool storage area is located in the front – the tools are neatly laid out and easily viewed. No other workbenches or tool racks are required. Special convenient-to-handle tools make the machine setups and tool changes easier. Thanks to automatic tool recognition, the operator has only to press the start button, whereupon the tube is formed into the correct shape in one pass. This means that EO2-FORM connections are extremely simple to manufacture. The EO2-FORM F3 is so reliable because of its powerful hydraulic drive and robust forming tools.

- Workshop machine for universal use
- 6 to 38/42 mm tube OD
- Cycle time approx. 20 seconds
- Especially advantageous for: Hydraulic presses, cranes and lifts, heavy machinery, shipbuilding, offshore and hydraulic steelworks

### The EO2-FORM WorkCenter PRO22

#### Mass production without tears

The EO2-FORM WorkCenter PRO22 is based on proven EO2-FORM technology and was specially designed for the economic production of EO2-FORM tube fittings. Compared with the EO2-FORM F3 WorkCenter, the PRO22 production machine works considerably more efficiently and can machine tighter tube bends. Because of its powerful drive and efficient cooling, continuous mass production on a shift-work basis is provided for. In addition, the machine is especially quiet and vibration-free in operation.

Small to medium tubes from 6 to 22 mm can be accommodated on the new machine. The compact assembly head enables even tight tube bends to be machined.

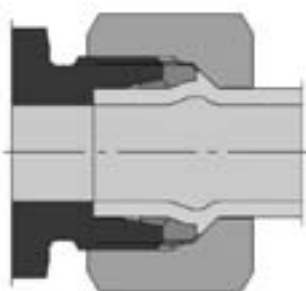
- Production machine for economical and fail-safe manufacturing
- 6 to 22 mm tube OD
- Cycle time approx. 6 seconds
- Advantageous for applications such as: manufacturers of agricultural machinery, construction machines, trucks, fork lift trucks and other mass-produced hydraulic equipment



Technical Data	
<b>Machine</b>	<b>EO2-FORM F3 and PRO22</b>
Designated use	Cold forming of tube ends for tube connections
Method	Axial swaging
Suitable for	EO tube fittings to DIN EN ISO 8434-1 Hose Connections to DIN 71550
<b>Tube specification</b>	
Steel tubing	E235 / ST37.4; E355 / ST52.4
Stainless steel tubing	1.4571
Other materials	CuNiFe, duplex and others on request
Boiler tube	Tubes for turbine construction on request
<b>Tools</b>	Interchangeable
Forming die sets	"MF3" single part forming die sets, one type for each tube OD
Forming pin	"BF3" forming pin with inner mandrel, one type each per tube OD, wall thickness and material
<b>Function</b>	
Tool change	Manual
Setting	Automatic tool recognition and pressure setting
Tube clamping	Hydraulic
Forming	Hydraulic
Controls	Automatic sequence: after pressing START button: Clamp – form – withdraw – unclamp
<b>Environmental conditions</b>	
Working temperature	+10 ... +50°C
Relative humidity	Msc. 90%, non-condensing



## EO2-FORM F3 WorkCenter



Type	EO2-FORM F3	EO2-FORM PRO22
<b>Specifications</b>		
Type	Universal workshop machine	Powerful production machine
Design	WorkCenter	WorkCenter
Application	Alternative to welding	Efficient mass production
Weight	Approx. 330 kg	Approx. 375 kg
Dimensions (BxLxH)	800 (open: 1,300)x660x1,150	800 (open: 1,300)x1,130x1,200
Electrical supply	400 V, 50 Hz, 3 phase 230 V, 50 Hz, 3 phase 440 V, 60 Hz, 3 phase	400 V, 50 Hz, 3 phase
Electric motor drive rating	4 kW	4 kW
Oil cooler	Optional	Standard
<b>Performance data</b>		
Steel tube	6x1 ... 38x7/42x4	6x1 ... 20x2/22x2
Stainless steel tube	6x1 ... 38x5/42x3	6x1 ... 20x2/22x2
Minimum width U-bend	Approx. 135 mm	Approx. 100 mm
Cycle time	15–20 sec.	Ca. 6 sec.
Economic production quantity	Max. 100 formings/hour Max. 200 forming/hour (with oil cooler)	Max. 600 formings/hour
<b>Applications</b>	Ideal for project and workshop tasks, small batches and on-site installations. Tubes of all sizes.	Economic mass production of small to medium tube dimensions

### Features, advantages and benefits

- 1. Process / Product concept** – The EO2-FORM technology is not a stand-alone machine or a new fitting system. It is a product extension of the EO-2 range which has existed since 1993. Exactly the same, proven seal elements are used.
- 2. Workcenter concept** – All tools, handling devices, lubricants and the operator manual are well organised inside the machine. Once the doors are opened, the machine turns into a stand-alone workcenter for tube preparation. On the top shelf, there are practical compartments for rules, pens, lubricant and standard EO-boxes with nuts and sealing rings. No additional workbenches or shelves for tooling are required.
- 3. Easy operation** – One single START-button is all that needs to be operated to run a forming cycle completely. No “zero position” or “reset” activities have to be performed in-between two forming cycles. For efficient mass production, a foot switch is available. A label on the machine head shows all operation steps in pictograms and all important dimensions in charts.
- 4. Easy tool change** – An ergonomic, pistol-like device allows quick and easy change of the one-piece clamping die set without opening the forming head or even touching the tools. Another handle speeds up the setup process of the forming pin in the bayonet mechanism.
- 5. Easy handling** – Standard tools and one set of EO-2 sealing rings are suitable for all common hydraulic tube dimensions. No special sleeves are required for thin wall or small diameter tube.
- 6. Well organised** – All tools and accessories are well organised in a practical compartment inside the machine housing. Nothing gets dirty, lost or confused.
- 7. Easy transport** – The machine is equipped with heavy duty wheels so that it can be moved around by one person without hard work or additional equipment. Special attachments for crane and forklift truck transport are standard. A reeling serves as handle, protection and attachment for fixing belts when transported by truck. Tools and all accessories are safely and cleanly stored inside.
- 8. Easy logistics** – EO2-FORM uses the same components as EO-2. Special sets of nuts and sealing rings can be ordered with one part number (FORM ...). This reduces ordering effort and contributes to achieve availability with optimum inventory.
- 9. Stainless steel capabilities** – Forming pins for stainless steel tubes are specially designed for optimum forming results and surface coated for maximum lifetime. All forming pins for stainless steel tube are marked with a blue dot. Clamping dies can be used for both, steel and stainless steel tube.
- 10. Approved functional system** – EO2-FORM has been on market for years. It is approved for use in shipbuilding, offshore industry, hydraulic water lock systems, press and crane manufacturing, heavy mobile equipment and general machine building. EO2-FORM is tested and approved from authorities like German Lloyd, DNV or from end-users like Daimler-Chrysler.
- 11. Cost saving** – Compared to welding or brazing, EO2-FORM is much less time consuming. Special tube preparation and finishing are not necessary. Cold forming uses only a fraction of the energy needed for brazing or welding.
- 12. Superior vibration resistance** – The EO2-FORM process achieves a smooth structural transformation of the tube wall. There are no sharp edges or notches to reduce the vibration resistance.
- 13. Superior mechanical strength** – The working contact area of the EO2-FORM connection is the flat front surface of the metal support ring which is made of heat-treated, high-strength steel or stainless steel.
- 14. Universal** – The EO2-FORM machine can cold-form all common steel and stainless steel tube materials for hydraulic pipework. Even exotic materials such as Cu-NiFe or Duplex can be formed. EO2-FORM tools cover metric tube sizes from 6 to 42 mm OD.
- 15. Short tube ends** – The compact clamping device and special dies are suitable for machining complex tube bends.
- 16. Noise/energy loss reduction** – The EO2-FORM process results in a smooth inner contour of the tube. Minimum pressure drop, heat and noise is created. No hidden corners allow the accumulation of air, dirt or other sources of trouble.
- 17. Clean** – The EO2-FORM process is environmental clean and safe. As no heat is used, hazards from fumes or heat do not occur.
- 18. Zinc plated tubing** – The EO2-FORM process allows the use of zinc-plated tubing. The costs of cleaning or painting are saved.
- 19. Quality** – Tube clamping and tool functions are fully automated. Proper joint geometry and seal dimensions are achieved by using standard EO-2 sealing rings. Therefore high and consistent quality is achieved without manual adjustment.
- 20. Proven Technology** – Since 1993, millions of EO-2 fittings have operated worldwide under heavy duty conditions, providing leak-free hydraulic systems.
- 21. No restrictions** – The process allows to use EO-2 elastomeric sealing technology even for applications where bite-type connectors are not permitted by safety standards, for example hydraulic presses, cranes, lifts or ship canal systems locks.



## F3 Forming machine for EO2-FORM high pressure tube connections

Machine Type	Order code F3	Order code PRO22
EO2-FORM basic unit for forming tube ends, ready to operate with magnetic gripper, holder and operator's handbook, but without tools, packed in a special transportation box		
Universal EO2-FORM F3 machine Tube OD 6-38/42 mm 400 V, 50 Hz, 3 phase 230 V, 50 Hz, 3 phase 440 V, 60 Hz, 3 phase Rental (monthly usage) Leasing (24 leasing rate)	EO2FORMF3400V EO2FORMF3230V EO2FORMF3440V EO2FORMF3RENTFEE EO2FORMF3LEASEFEE	
Production machine EO2-FORM PRO22 Tube OD 6-20/22 mm 400 V, 50 Hz, 3 phase Rental (monthly usage) Leasing (24 leasing rate)		EO2FORM400VPRO EO2FORMPRORENTFEE EO2FORMPROLEASEFEE
Accessories Type	Order code F3	Order code PRO22
Lubrication for forming pin: 0.25 L bottle EO-NIROMONT 1L re-fill pack EO-NIROMONT	EONIROMONTFLUCESSX LUBSS	EONIROMONTFLUCESSX LUBSS
Oil cooler kit	F3/COOLERKIT	included
Foot switch	F3/FOOTSWITCH	F3/FOOTSWITCH
Magnetic gripper for forming pin	F3/PINHOLDER	F3/PINHOLDER
Holder for forming die set	F3/DIEHOLDER	F3/DIEHOLDER
Clamping segments for die set	F3/DIECLAMP	F3/DIECLAMP
Clamping segment spring $\varnothing$ 8 mm	F3/DIECLAMPSRING8	F3/DIECLAMPSRING8
Clamping segment spring $\varnothing$ 12 mm	F3/DIECLAMPSRING12	F3/DIECLAMPSRING12
Operation manual: UK, DE, FR, IT, SWE	4033	EO2FORMPRO/MANUAL
Standard preventive maintenance	EO2FORMF3/INSPECTION	EO2FORMF3/INSPECTION

EO2-FORM F3 machines are shipped in special containers which should be kept for future transports to avoid damage. Please don't dispose the transport boxes!

Machine housing Type	Order code F3	Order code PRO22
Top machine cover	F3/HEADCOVER	F3PRO/08836014
Top tray	F3/TOPTRAY	F3/TOPTRAY
Door lock for tool compartment	F3/DOORLOCK	F3/DOORLOCK
Door hinge	F3/DOORHINGE	F3/DOORHINGE
Shock absorber for doors	F3/DOORSRING	F3/DOORSRING
Tool tray for inner tool compartment (top), 6x	F3/TOOLTRAYIN	F3/TOOLTRAYIN
Tool tray for inner tool compartment (bottom), 6x	F3/0883611	F3/0883611
Tool tray for tool compartment in doors, 2x	F3/TOOLTRAYDOOR	F3/TOOLTRAYDOOR
Die insert for tool tray (use screw M6)	F3/TOOLTRAYDIE	F3/TOOLTRAYDIE
Holder for magnetic gripper	F3/PINHOLDERTRAY	F3/PINHOLDERTRAY
Holder for holder	F3/DIEHOLDERTRAY	F3/DIEHOLDERTRAY
Plastic guide for forklift (use screw M6)	F3/FORKGUIDE	F3/FORKGUIDE
Front wheel with lock	F3/FRONTWHEEL	F3/FRONTWHEEL
Rear wheel	F3/BACKWHEEL	F3/BACKWHEEL



Foot switch



Magnetic gripper for forming pin



Holder for forming die set



Oil cooler kit

## Assembly tooling

Sticker Type	Order code F3	Order code PRO22
EO2-FORM door label	F3/STICKERPARKER	F3PRO/STICKERPARKER
Short instructions on side	F3/STICKERINSTRUC	F3PRO/STICKERINSTRUC
Lubrication on front	F3/STICKERLUB	F3/STICKERLUB
Crane attachment (1 piece)	F3/STICKERCRANE	F3/STICKERCRANE
Forklift on front	F3/STICKERFORK	F3/STICKERFORK



Pin for forming pin

Operation panel Type	Order code F3	Order code PRO22
Front panel counter	F3/FRONTCOUNTER	F3/FRONTCOUNTER
“START” switch (black with symbol)	F3/STARTSWITCH	F3/STARTSWITCH
“RESET” switch (blue)	F3/RESETSWITCH	F3/RESETSWITCH
“ON” switch (green)	F3/ONSWITCH	F3/ONSWITCH
“OFF” switch (red)	F3/OFFSWITCH	F3/OFFSWITCH
Emergency stop switch (red)	F3/STOPSWITCH	F3/STOPSWITCH



Pin for clamping die set

Tool Components Type	Order code F3	Order code PRO22
Bayonet bolt for forming pin	F2/PINBOLT	F2/PINBOLT
Screw for clamping die segments	F3/DIESCREW	F3/DIESCREW
Spare part kit for clamping die set (4x Pin Ø4, 4x Spring Ø8, 4x Spring Ø12, 4x Screws)	F3/DIEKIT	F3/DIEKIT

## F3 Forming machine for EO2-FORM high pressure tube connections

Clamping die set MF3EO-2			Forming pin BF3EO-2	
Tube O.D. Ø	Clamping dies for steel and stainless steel tubes Order code	Ø x s	Forming pin for steel tubes Order code	Forming pin for stainless steel tubes Order code <sup>1)2)</sup>
06-L/S	MF3EO206	06x1.0 06x1.5 06x2.0	BF3EO206X1S BF3EO206X1.5S BF3EO206X2S	BF3EO206X1SS BF3EO206X1.5SS
08-L/S	MF3EO208	08x1.0 08x1.5 08x2.0 08x2.5	BF3EO208X1S BF3EO208X1.5S BF3EO208X2S BF3EO208X2.5S	BF3EO208X1SS BF3EO208X1.5SS
10-L	MF3EO210	10x1.0 10x1.5 10x2.0	BF3EO210LX1S BF3EO210LX1.5S BF3EO210LX2S	BF3EO210LX1SS BF3EO210LX1.5SS BF3EO210LX2SS
10-S	MF3EO210	10x1.5 10x2.0 10x3.0	BF3EO210SX1.5S BF3EO210SX2S BF3EO210SX3S	BF3EO210SX1.5SS BF3EO210SX2SS
12-L	MF3EO212	12x1.5 12x2.0	BF3EO212LX1.5S BF3EO212LX2S	BF3EO212LX1.5SS BF3EO212LX2SS
12-S	MF3EO212	12x1.5 12x2.0 12x3.0	BF3EO212SX1.5S BF3EO212SX2S BF3EO212SX3S	BF3EO212SX1.5SS BF3EO212SX2SS
15-L	MF3EO215	15x1.0 15x1.5 15x2.0	BF3EO215X1S BF3EO215X1.5S BF3EO215X2S	BF3EO215X1.5SS BF3EO215X2SS
16-S	MF3EO216	16x2.0 16x2.5 16x3.0	BF3EO216X2S BF3EO216X2.5S BF3EO216X3S	BF3EO216X2SS BF3EO216X2.5SS BF3EO216X3SS



## F3 Forming machine for EO2-FORM high pressure tube connections

Tube O.D. ∅	Clamping dies for steel and stainless steel tubes Order code	∅ x s	Forming pin for steel tubes Order code	Forming pin for stainless steel tubes Order code <sup>1)2)</sup>
18-L	MF3EO218	18x1.5 18x2.0	BF3EO218X1.5S BF3EO218X2S	BF3EO218X1.5SS BF3EO218X2SS
20-S	MF3EO220	20x2.0 20x2.5 20x3.0 20x3.5	BF3EO220X2S BF3EO220X2.5S BF3EO220X3S BF3EO220X3.5S	BF3EO220X2SS BF3EO220X2.5SS BF3EO220X3SS
22-L	MF3EO222	22x1.5 22x2.0	BF3EO222X1.5S BF3EO222X2S	BF3EO222X1.5SS BF3EO222X2SS
25-S	MF3EO225	25x2.0 25x2.5 25x3.0 25x4.0	BF3EO225X2S BF3EO225X2.5S BF3EO225X3S BF3EO225X4S	BF3EO225X2SS BF3EO225X2.5SS BF3EO225X3SS
28-L	MF3EO228	28x2.0	BF3EO228X2S	BF3EO228X2SS
30-S	MF3EO230	30x3.0 30x4.0 30x5.0	BF3EO230X3S BF3EO230X4S BF3EO230X5S	BF3EO230X3SS BF3EO230X4SS
35-L	MF3EO238	35x2.0 35x3.0	BF3EO235X2S BF3EO235X3S	BF3EO235X2SS BF3EO235X3SS
38-S	MF3EO242	38x3.0 38x4.0 38x5.0 38x6/7	BF3EO238X3S BF3EO238X4S BF3EO238X5S BF3EO238X6+7S	BF3EO238X3SS BF3EO238X4SS BF3EO238X5SS
42-L		42x2.0 42x3.0	BF3EO242X2S BF3EO242X3S	BF3EO242X2SS BF3EO242X3SS



## Tools for hose connection DIN 71550

Tube O.D. ∅	Clamping dies for steel and stainless steel tubes Order code	∅ x s	Forming pin for steel tubes Order code	Forming pin for stainless steel tubes Order code <sup>1)2)</sup>
10	MF3EO210	10x1.5	BF3DIN7155010X1.5S	
12	MF3EO212	12x1.5	BF3DIN7155012X1.5S	BF3DIN7155012X1.5SS
15	MF3EO215	15x2.0	BF3DIN7155015X2S	
18	MF3EO218	18x1.5	BF3DIN7155018X1.5S	
20	MF3EO220	20x2.5	BF3DIN7155020X2.5S	
22	MF3EO222	22x1.5	BF3DIN7155022X1.5S	BF3DIN7155022X1.5SS
25	MF3EO225	25x2.0	BF3DIN7155025X2S	BF3DIN7155025X2SS
28	MF3EO228	28x1.5 28x2.0	BF3DIN7155028X1.5S	BF3DIN7155028X1.5SS BF3DIN7155028X2SS
30	MF3EO230	30x1.5		BF3DIN7155030X1.5SS
32	MF3EO232	32x1.5	BF3DIN7155032X1.5S	
35	MF3EO235	35x2.0		BF3DIN7155035X2SS

Tool compatibility: *Italic* = Tools for EO2-FORM F3 WorkCenter  
Regular = Tools for EO2-FORM F3 and PRO22 WorkCenter

Please select clamping die and forming pin according to tube dimension and material.

1) All forming pins for stainless steel tubing are marked with a blue dot on front surface.

2) Stainless steel tools are TiN coated.

Clamping die sets which are only used for stainless steel tubes should be marked with the blue dot sticker to avoid use with steel tube.

### Tool lifetime

Assembly tools are subject of wear and must be regularly (max. 50 assemblies) cleaned and checked (Checking instructions see chapter E). Worn out tools can cause dangerous assembly failures and must be replaced in time. Average tool lifetime is approx. 5000 cycles when properly used. Maximum lifetime can be achieved by following factors:

- Regular cleaning and checking
- Clean and corrosion-protected storage
- Proper de-burring and cleaning of tube end
- Proper tool selection and operation
- Use of specified lubricant

# Flaring tools for Triple-Lok® tubes

## Flaring tool selection guide





Manual flaring devices are available for on-site assembly and field repair of Triple-Lok® tube connections.

Manual flaring tools range from simple impact flarers to handpump-operated workshop devices. Flaring result and fitting performance depends strongly on the skill and effort of operator. Hand flaring tools are not recommended for efficient industrial production.

### Features, advantages and benefits of hand flaring tools

- 1. Flexible** – Manual flaring tools are portable and do not need any power supply. Therefore they are ideal for on-site assembly and field repair.
- 2. Special** – Each device has been especially developed to match Parker Triple-Lok® standards. The tube connections will fit properly without rework.

How to select the ideal flaring device for your application:

	Hand flaring tools 1004/210A	Impact flaring tool	EO-KARRYFLARE	Parflare ECO
				
<b>Assembly method</b> Triple-Lok® O-Lok®	impact flaring not suitable	impact flaring not suitable	conventional flaring not suitable	conventional flaring not suitable
<b>Tube specification</b> Material	copper, steel	copper, steel, stainless steel	steel, stainless steel	steel, stainless steel
Dimension metric tube	6 to 16 mm (1004)	6 to 38 mm	6 to 38/42 mm	6 to 38/42 mm
Dimension inch tube	1/8" to 5/8" (210A)	1/4" to 1 1/2"	1/4" to 1 1/2"	1/4" to 1 1/2"
Min. U-bend	depending on vice	depending on vice	65 mm	70 mm
<b>Tools</b> Clamping dies	one device	vice block	Flaring die M15 ... (same dies used EOMAT)	Flaring die M15 ... (same dies used EOMAT)
Flaring pin	integral part of device	pin plus hammer	integral part of device	integral part of device
<b>Operation</b> Flaring	hammer impact	hammer impact	handpump	electro-hydraulic
Process control	manual	manual	pressure according to chart	pressure according to chart
Tube clamping	manual clamping	manual	automatic clamping	automatic clamping
<b>Specifications</b> Design	flaring device for use in vice	Hand tools for use in vice	portable desktop	portable desktop
Weight	approx. 1.5 kg	–	approx. 29 kg	approx. 30 kg
Dimension (WxLxH)	–	–	750x360x260 mm	750x360x300 mm
<b>Performance</b> Overall cycle time	approx. 1–3 min	approx. 1–3 min	approx. 30–60 sec.	approx. 15–20 sec.
Economic production quantity:	10 flarings per week	10 flarings per week	max. 50 flarings per day	max. 100 flarings per day
Quality	dependant on operator	dependant on operator	controlled process	controlled process
<b>Application</b>	on-site repair jobs only; Limited to small dimensions. Limited to single assemblies, not for industrial production, emergency repairs until industrial flared tube is available for replacement.		Efficient for on-site flaring of small quantities not for mass production	portable machine for repair and workshop

## Manual flaring tools for Triple-Lok® tubes

These 37° flaring tools are for use with copper, aluminum alloy, and thin wall steel or stainless steel tubes. A vice block is clamped together with the tube end into a vicener. Flaring pin is used with a hammer. Separate tooling sets for each tube size in metric and inch dimensions are available.

These hand tools are suitable for small on-site repair jobs. They are not suitable for thick-wall tubing and industrial production. A rigid vice must be available at the assembly site.

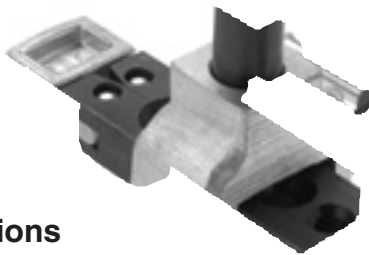
### Features, advantages and benefits

1. **Light** – Hand flaring tools can be used at any assembly site where a proper workshop is not available
2. **Quick** – Hand flaring tools can be used for temporary repair until a proper spare tube has been made by machine

### Applications

- Field repair of agricultural and construction vehicles
- Small, local repair workshops
- Mobile repair service

## Combination impact flarer 1004 for small dimension metric tube



### Specifications

**Design:** Hand flaring tool for small on-site repair jobs  
**Operation:** Flaring pin Impact  
 37° Flaring: Triple-Lok® connection – ISO 8434-2/ SAE J514  
 Tube material: copper, aluminum and low carbon steel  
 Tube diameter: 6 to 16 mm metric tube  
 Wall thickness: max 15% of tube O.D.  
 Requirements: Rigid vice and hammer  
 Performance: Overall cycle time 1–3 min  
 Economic production quantity: 10 flarings per week

### Operation

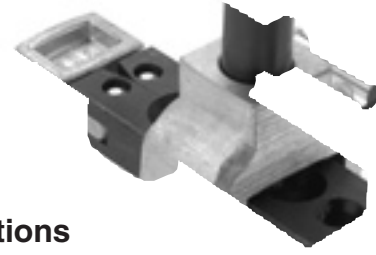
1. Clamp tube end flush in block halves
2. Clean and lubricate tube end and flaring pin
3. Form the flare by a few sharp hammer blows
4. Release vice and unclamp tube

See chapter E for detailed instructions on Triple-Lok® assembly

### Ordering

Type	Order code
Combination impact flarer Complete device including Combination dies and pin	1004-74M
Tool lubricant 0.25L bottle	EONIROMONTFLUOSSX

## Combination impact flarer 210A for small dimension inch tube



### Specifications

**Design:** Hand flaring tools for small on-site repair jobs  
**Operation:** Flaring pin Impact  
 37° Flaring: Triple-Lok® connection – ISO 8434-2/ SAE J514  
 Tube material: copper, aluminum and low carbon steel  
 Tube diameter: 1/8" to 5/8" inch  
 Wall thickness: max 15% of tube-O.D.  
 Requirements: Rigid vice and hammer  
 Performance: Overall cycle time 1–3 min  
 Economic production quantity: 10 flarings per week

### Operation

1. Clamp tube end flush in block halves
2. Clean and lubricate tube end and flaring pin
3. Form the flare by a few sharp hammer blows
4. Release vice and unclamp tube

See chapter E for detailed instructions on Triple-Lok® assembly

### Ordering

Type	Order code
Combination impact flarer Complete device including Combination dies and pin	210A
Tool lubricant 0.25L bottle	EONIROMONTFLUOSSX



### Impact flaring tools for metric and inch tube



#### Specifications

**Design:** Hand flaring tools for small on-site repair jobs

**Operation:** Impact flaring pin

37° Flaring: Triple-Lok® connection – ISO 8434-2/ SAE J514

Tube material: copper, aluminum, steel and stainless steel tube

Tube diameter: 6 to 38 mm/1/4" to 1 1/2"

Wall thickness: max 15% of tube-O.D., max 10% of tube O.D. for tubes larger 20 mm tube O.D.

Requirements: Rigid vice and hammer

Performance: Overall cycle time 1–3 min

Economic production quantity: 10 flarings per week

#### Operation

1. Clamp tube end flush in block halves
2. Clean and lubricate tube end and flaring pin
3. Form the flare by a few sharp hammer blows
4. Use pre-flaring pin for tube O.D. 20 mm/3/4" and larger
5. Release vice and unclamp tube

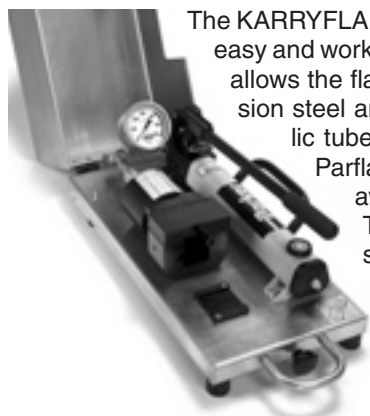
**See chapter E for detailed instructions on Triple-Lok® assembly**

Tools for metric tube			
Tube-O.D. mm	Pre-flaring pin Order code	Flaring Order code	Vice block Order code
06		P17408	M27406
08		P17408	M05742
10		P17408	M27410
12		P17414	M27412
14		P17414	M27414
15		P17414	M27415
16		P17414	M27416
18		P17418	M27418
20	P1E	P17418	M27420
22	P1E	P17422	M14742
25	P1E	P17422	M27425
30	P1E	P17432	M27430
32	P1E	P17432	M27432
38	P1E	P17438	M24742

Tools for inch tube			
Tube-O.D. inch	Pre-flaring pin Order code	Flaring Order code	Vice block Order code
1/4"		P17408	M04742
5/16"		P17408	M05742
3/8"		P17408	M06742
1/2"		P17414	M08742
5/8"		P17414	M10742
3/4"	P1E	P17418	M12742
7/8"	P1E	P17422	M14742
1"	P1E	P17422	M16742
1 1/4"	P1E	P17432	M20742
1 1/2"	P1E	P17438	M24742

Type	Order code
Tool lubricant 0.25L bottle	EONIROMONTFLUESSX

## KARRYFLARE Portable flaring device for Triple-Lok®



The KARRYFLARE is a portable device for easy and workmanlike 37° tube flaring. It allows the flaring of even large dimension steel and stainless steel hydraulic tube at assembly sites where Parflange® technology is not available.

The KARRYFLARE consists of a hydraulic flaring unit and a hand pump. The hydraulic assembly pressure can be read on a gauge which is ergonomically located. The KARRYFLARE is ideal for

tube flaring of small quantities and on-site tube installation.

It is practical, simple to operate, reliable and easy to transport. The KARRYFLARE comes as one unit with all components firmly attached to a practical carrying frame.

### Technical data

37° flaring of hydraulic tube

Flare dimensions and geometry according to ISO 8434 / SAE J514

For Parker Triple-Lok® hydraulic fittings

Tube outer diameter 6 to 38 mm / ¼ to 1 ½"

Maximum capacity: 38 × 4 mm / 1 ½ × 0.120"

With special flaring pin up to 42 mm tube O.D.

Tube material: steel and stainless steel

Weight: approx. 29 kg

Dimensions: approx. L 750 mm × W 360 mm × H 260 mm

Hydraulic oil: H-LP32-1.2 liter

### Ordering

KARRYFLARE device and accessories

Description	Order code
<b>KARRYFLARE</b> Manual flaring device KarryFlare including handpump, carrying case and manual tank filled with hydraulic oil, 37° flaring pin installed. Flaring dies "M15" must be ordered separately.	KARRYFLARE
<b>Accessoires</b>	
Tool lubricant 0.25L bottle	EONIROMONTFLUCESSX
Tool lubricant 1 L refill	LUBSS
Promotion leaflet	LEAF/4049-D1/UK/DE
<b>Spare parts</b>	
Flaring bloc, complete	KARRYFLARE/BLOC
Standard Flaring pin 6–38 mm, with O-ring	KARRYFLARE/FPIN
Special Flaring pin 42 mm, with O-ring	KARRYFLARE/FPIN42
Tube stop with guide	KARRYFLARE/TSTOPKPL
Pressure chart sticker	KARRYFLARE/CHART
Operating manual	OM/4047-T1

### Performance

Cycle time: 30–60 sec.


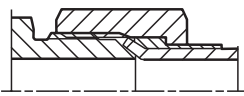
Economic production quantity: max 50 flarings per day

### Features, advantages and benefits

1. Flexible on-site tube flaring
2. Simple operation
3. KARRYFLARE is portable and does not require any power supply
4. Flaring quality is comparable to EOMAT
5. Saves time and effort compared to manual impact flaring
6. Safe and consistent result
7. All elements are ergonomically located
8. Robust, light metal transport box
9. Telescopic handle and wheels for convenient trolley transport
10. Uses "M15" flaring dies (EOMAT/1015)

### Applications

- Assembly of 37° flare fittings in small quantities
- On-site repair of agricultural vehicles and mobile construction equipment
- Repair workshops and plant maintenance
- Mobile repair service

KARRYFLARE		
		
6	1/4	35
8	5/16	45
10	3/8	60
12	1/2	60
14		80
15		100
16	5/8	100
18		120
20	3/4	160
22		160
25	1	180
28		215
30	1 1/4	230
35		270
38	1 1/2	280
42		320

### Parflare ECO

Mobile flaring machine for Triple-Lok® hydraulic fittings



#### Parflare ECO Economical – Simple – Safe

A full fledged Triple-Lok® fitting flaring machine at an economical price. The Parflare ECO is a mobile machine that flares tubes to 37° for Parker Triple-Lok® hydraulic fittings. This electro-hydraulic machine is simple to operate, with the flaring pressure being set via a digital display. The machine is simple to use, rugged and easy to transport. Because of these features, the Parflare ECO is the ideal machine for hydraulic service technicians.

#### Application areas:

For the repair and maintenance of hydraulic tubing systems in both workshop and field operations.

#### Advantages for the service technician:

- professional flaring
- energy and time savings due to the electric drive
- simple operation
- portable and light
- rugged and mobile

#### Purchasing advantages:

- inexpensive
- economical mode of operation
- existing tooling can be used
- unbeatable price-to-performance ratio

The machine is perfectly suited to regular use, but not to high volume production.

Technical Data	
Application:	Flaring tubes for Parker Triple-Lok® hydraulic connectors
Procedure:	Axial forming with flaring pin
Flaring:	37° to DIN EN ISO 8434-2
Tube material:	Steel and stainless steel tubing
Tube diameter:	6 to 42 mm / ¼" to 1 ½"
Minimum width U-bend:	70 mm
Speed:	15 to 20 sec. cycle time/approx. 20 to 30 sec. total cycle time
Economical production quantity:	max. 100 assemblies per day
Dimensions:	750x360x300 mm
Weight:	30 kg
Electrical power rating:	EU Version: 230 V single phase 50 Hz 700 W US Version: 110 V single phase 60 Hz 700 W

Type	Order code
Parflare ECO basic machine, ready to operate, including operator's handbook, without tools	EU Version: PARFLAREECO230V US Version: PARFLAREECO110V
Brochure	BUL/4048/DE via Parker catalogue Service EMDC
Operator's handbook UK/DE/FR/IT/ES	PARFLAREECO/MANUAL
Standard preventive maintenance	PARFLAREECO/INSP
Pressure chart sticker	PARFLAREECO/CHART
Standard flaring pin 6–38 mm, with O-ring	KARRYFLARE/FPIN
Special flaring pin 42 mm, with O-ring	KARRYFLARE/FPIN42

#### Operation:

For detailed assembly instructions, see our fittings technology handbook, chapter E. For safety information, see machine operating manual.

1. Insert die valves and close cover
2. Set the recommended flaring pressure in accordance with the chart on the display
3. Insert tube with retaining nut and sleeve
4. Push START button and keep depressed
5. Keep a firm hold of the tube throughout the complete flaring procedure
6. The flaring procedure is finished when the cylinder has returned back to its start position
7. Flaring inspection and final assembly should be in accordance with the assembly handbook




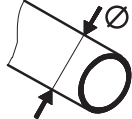
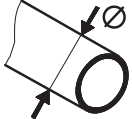
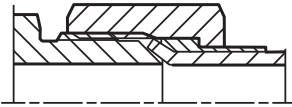
#### Tool lifetime

Assembly tools are subject to wear and must be regularly (max. 50 assemblies) cleaned and checked (Checking instructions see chapter E). Worn out tools can cause dangerous assembly failures and must be replaced in time. Average tool lifetime is approx. 5000 cycles when properly used. Maximum lifetime can be achieved by following factors:

- Regular cleaning and checking
- Clean and corrosion-protected storage
- Proper de-burring and cleaning of tube end
- Proper tool selection and operation
- Use of specified lubricant

**Parflare ECO mobile flaring machine for Triple-Lok® hydraulic fittings**

Pressure chart

 <b>Parflare ECO</b> 		
		
<b>Tube-O.D.</b>  Ø (mm)	<b>Tube-O.D.</b>  Ø (inch)	<b>Triple-Lok®</b>  P (bar)
6	1/4	20
8	5/16	25
10	3/8	35
12	1/2	35
14		45
15		60
16	5/8	60
18	3/4	70
20		95
22	1	95
25	1 1/4	110
28		130
30	1 1/2	140
35		165
38		180
42		200





## Assembly tooling

### 37° flaring tools for KARRYFLARE device and PARFLARE ECO, EOMAT UNI, II and III



Flaring die set M1574



Flaring fixture must be installed on EOMAT UNI II/III

Flaring dies for metric tube	
Tube O.D. mm	Order code
6	M157406-1
8	M157408-1
10	M157410-1
12	M157412
14	M157414
15	M157415
16	M157416
18	M157418
20	M157420
22	M157422
25	M157425
28	M157428
30	M157430
32	M157432
35	M157435
38	M157438
42	M157442

Flaring dies for inch tube	
Tube O.D. inch	Order code
3/16"	M037415-1
1/4"	M047415-1
5/16"	M157408-1
3/8"	M067415-1
1/2"	M087415
5/8"	M107415
3/4"	M127415
7/8"	M147415
1"	M167415
1 1/4"	M207415
1 1/2"	M157438

Flaring diameters acc. to ISO 8434-2/SAE J514 for Triple-Lok®. Not suitable for metric flare adapters.

The flaring pin for the KARRYFLARE and Parflare ECO is integrated in the device. For the EOMAT UNI the flaring pins are in the EOMAT flaring fixture (EOMATBOERDEL BX).

Flaring dies are **not** interchangeable with Parflange® tools for 1025/1040/50-machines.

#### Tool lifetime

Assembly tools are subject of wear and must be regularly (max. 50 assemblies) cleaned and checked (Checking instructions see chapter E). Worn out tools can cause dangerous assembly failures and must be replaced in time. Average tool lifetime is approx. 5000 cycles when properly used. Maximum lifetime can be achieved by following factors:

- Regular cleaning and checking
- Clean and corrosion-protected storage
- Proper de-burring and cleaning of tube end
- Proper tool selection and operation
- Use of specified lubricant

# Assembly machines for O-Lok® and Triple-Lok®

## Parflange® machine selection guide

Parflange® 1025 and Parflange® 50 are orbital flaring machines designed to cold-form high pressure tube connections. The unique feature of the Parflange® process is that the deformation of the tube end is achieved by rolling rather than by just pushing a tool into the tube end. The Parflange® machine smoothly compresses the tube material and achieves a high strength joint with a polished surface of the tube end. O-Lok® sleeves are firmly fixed onto the tube end, resulting in a very rigid high-pressure tube connection.



### Features, advantages and benefits

- 1. Superior sealing performance** – The Parflange® process achieves a sealing surface of unique surface quality and mechanical strength.
- 2. Superior vibration resistance** – Unlike conventional flaring, the Parflange® process results in a rigid connection of the O-Lok® sleeve on the tube-end. Parflange®/O-Lok® connections perform much better under reversed bending stress conditions.
- 3. Easy to use** – No programming or adjustments necessary. High quality results are consistently achieved without manual adjustments.
- 4. Cost saving** – Compared to brazing or welding, orbital flanging is much less time consuming. Special tube preparation and finishing are not necessary.

Flanging uses only a fraction of the energy needed for brazing or welding.

- 5. Clean** – The Parflange® process is environmental clean and safe. As no heat or chemicals are used, hazards from fumes or heat do not occur.
- 6. Zinc plated tubing.** The Parflange® process allows the use of zinc-plated tubing. The cost for cleaning, post process plating or painting is saved.
- 7. Process/Product concept** – Parflange® machines are especially designed to match Parker O-Lok® and Triple-Lok® standards. Machine, tools and products are fine-tuned for reliable performance.
- 8. Proven technology** – For more than 10 years, hundreds of Parflange® machines have operated worldwide under heavy duty workshop conditions.

How to select the ideal Parflange® Machine for your application:

Machine selection chart	Parflange® 1025		Parflange® 50	
				
<b>Assembly method</b> Triple-Lok® O-Lok®	Orbital flaring 37° Orbital flanging 180°		Orbital flaring 37° Orbital flanging 180°	
<b>Tube specification</b> Material Dimension metric tube Dimension inch tube Min. U-bend	Steel, Stainless Steel 6 to 25 mm 1/4" to 1" 140 mm		Steel, Stainless Steel 6 to 50 mm 1/4" to 2" 120 mm	
<b>Tools</b> Clamping dies Flaring/flanging pin	special Parflange® tools M40 ... (old: M30 ...) B30 ...		special Parflange® tools M40 ... B30 ...	
<b>Operation</b> Setting Standard sleeve feeding Optional sleeve feeding Tube clamping Flanging/Flaring Process control	automatic adjustment manual loading not available manual clamping automatic drive semi automatic		automatic adjustment manual loading O-Lok® sleeve feeder hydraulic clamping automatic drive fully automatic	
			<b>BASIC</b>	<b>PRO</b>
<b>Specifications</b> Design Weight Dimension (W x L x H)	desktop approx. 85 kg 390x670x460 mm		stand-alone approx. 380 kg 700x840x1035 mm	stand-alone approx. 410 kg 700x840x2030 mm
<b>Performance</b> Version Voltage Overall cycle time Economic production quantity	1.5 kW 400 V 3 Phase approx. 50 secs. max. 100 per day	1.1 kW 230 V 1 Phase approx. 60 secs. max. 50 per day	4.5 kW 400 V 3 Phase approx. 15 secs. max. 500 per day	4.5 kW 400 V 3 Phase approx. 15 secs. max. 1200 per day
<b>Application</b>	Ideal for projects and workshop use and maintenance High quality result No mass production	on-site repair jobs where 3phase power supply is not available	Efficient production machine for low-cost and high-quality assembly	Efficient mass production machine for low-cost and high-quality assembly



**Parflange® 1025 workshop machine for O-Lok® and Triple-Lok®**



The Parflange® 1025 machine is designed to cold-form high pressure tube connections for O-Lok® and Triple-Lok® connection. It uses the Parflange® orbital flaring process. The Parflange® 1025 machine smoothly compresses the tube material and achieves a high strength joint with a polished surface of the tube end. O-Lok® and SAE flange sleeves are firmly fixed onto the tube end, resulting in a very rigid high-pressure tube connection.

The 1025 is the smallest machine of the Parflange® machine programme. It is recommended for low-volume assembly jobs of small to medium tube dimensions. Maximum tube capacity is 25 x 4 mm/1" (steel tube) and 25 x 2.5 mm/1" stainless steel tube (3 Phase version). Its advantage is the quick and easy change of tooling and the simple operation without manual adjustments or programming. The machine is transportable so that it can be moved to any assembly site with electrical power supply.

The Parflange® 1025 comes ready to be used. Parflange® tools are purchased separately. For each tube dimension, special clamping dies and Parflange® pins are required.

**Specifications**

Purpose: 180° flanging for O-Lok® and 37° flaring for Triple-Lok®  
 Process: Orbital flaring and flanging according to Parflange® process

Design: Desktop machine for workshop use  
 Tube material: steel and stainless steel tube  
 Tube diameter: metric: 6 to 25 mm Inch: ¼ to 1"  
 Maximum capacity: Steel tube 25x4/1"x0.120 (tube O.D. x wall thickness)  
 Stainless steel tube 25x2/1"x0.095  
 Min. U-bend: 140 mm  
 Tube specification: fully annealed seamless cold drawn or welded precision tube  
 Performance: Overall cycle time 1.5 kW: 50 sec; 1.1 kW: 60 sec  
 Economic production quantity 1.5 kW: max. 100; 1.1 kW: max. 50  
 Operation: Manual clamping, automatic flanging/flaring  
 Cycle time: approx. 15 to 20 secs.  
 Tools: Flaring pin B30 ... and clamping dies M40 ...  
 Tool clamping: Manual, by eccentric lever  
 Tool lubrication: Automatic lubrication device  
 Lubricant: EO-NIROMONT LUBSS (filled when delivered)  
 Hydraulic oil: HLP 23 0.5L (filled when delivered)  
 Installation: rigid workbench and electrical power supply required  
 Dimensions: 390x670x460 mm  
 Weight: 85 kg

## Features, advantages and benefits

1. **Superior sealing performance** – The Parflange® process achieves a sealing surface of unique surface quality and mechanical strength.
2. **Superior vibration resistance** – Unlike conventional flaring, the Parflange® process results in a rigid connection of the O-Lok® sleeve on the tube-end. Parflange®/O-Lok® connections perform much better under reversed bending stress conditions.
3. **Easy to use** – No programming or adjustments necessary. High quality results are consistently achieved without manual adjustments.
4. **Quality** – Machine setting, tool control and even lubrication are fully automated so that high and consistent quality results are achieved without manual adjustments.
5. **Small bending radii** – The compact clamping device and special dies are suitable for flanging short tube ends.
6. **Cost saving** – Compared to brazing or welding, orbital flanging is much less time consuming. Special tube preparation and finishing are not necessary. Flanging uses only a fraction of the energy needed for brazing or welding.
7. **Clean** – The Parflange® process is environmental clean and safe. As no heat or chemicals are used, hazards from fumes or heat do not occur.
8. **Zinc plated tubing** – The Parflange® process allows the use of zinc-plated tubing. The cost for cleaning or painting can be saved.
9. **High tool lifetime** – The Parflange® 1025 machine is equipped with an automatic lubrication device. The tools will not wear rapidly if the operator does not lubricate regularly.
10. **Process/Product concept** – Parflange® machines are especially designed to match Parker O-Lok® and Triple-Lok® standards. Machine, tools and products are fine-tuned for reliable performance.
11. **Proven technology** – Since more than 10 years, hundreds of Parflange® machines have operated worldwide under heavy duty workshop conditions.

## Applications

Workshop use, project work, plant maintenance, on-site assembly.

Not for efficient mass production

## Ordering

Type	Order code
Parflange® 1025 Basic machine Ready to use, Including operating manual, Filled with hydraulic oil and lubricant Without Parflange® tools	
Basic machine 400 V, 3 Phase, 50 Hz	1025-380VTRI50
Basic machine 230 V, 1 Phase, 50 Hz	1025-220VMONO50
1025 promotion leaflet UK	4390/UK
1025 promotion leaflet DE	4390/DE
1025 operating manual UK/DE/FR/IT	1025/MANUAL
Standard preventive maintenance	1025/INSPECTION

Parflange® machines are shipped in a special container which should be kept for all transports to avoid damage.

## Spare parts

Type	Order code
Tool lubricant qty: 1L EO-NIROMONT	LUBSS
Drive belt	1025/028Polyv
Came guide and with screw	1025/0281031
Hydraulic tank seal kit	1025/0281042
Lubrication kit	1025/0281200



### Parflange® 50 WorkCenter



Bins can be stored on top platforms



Easy refill of tool lubricant

The Parflange® 50 WorkCenter is the top-of-the-range machine for orbital flaring & flanging of O-Lok® and Triple-Lok® tube assemblies. It combines the practical EO2-FORM F3 WorkCenter concept with the proven Parflange® technology.

Due to the robust design and the precise process control, the Parflange® 50 WorkCenter achieves consistent high quality results and high productivity. Machine housing, cycle programming and all operating elements are designed for good ergonomics, optimum workflow and highest security. The compact Parflange unit and the compact housing allow the forming of small and complex tube bends. Maximum tool lifetime is achieved by the automatic lubrication system as well as easy visibility and accessibility of the tooling area. The integrated tool compartments and designated space for bins for nuts and sleeves make it comfortable and efficient to work with the Parflange® 50.

#### Parflange® advantages over brazing or welding

**Faster and lower cost** – 9 to 12 times the speed of comparable induction brazing.

**Flexibility** – Small batch quantities are practical due to short tool change times.

**Simple tube preparation** – The Parflange® process does not require any special pre- or post-flange cleaning of the tube and sleeve.

**Safety** – Unlike brazing, the Parflange® process does not require any flux, braze alloy, post braze cleaner or rust inhibitor. An environmentally safe lubricant applied to the flanging pin is the only additive associated with the Parflange®.

**Environment** – The Parflange® process is environmentally clean and safe. It does not require open flame or any form of heating. Additionally, there is no emission of hazardous fumes, as is typical with welding and brazing.

**Energy** – The Parflange® process uses only a fraction of the energy needed for welding or brazing.

**Corrosion resistance** – The Parflange® process accommodates the use of plated or unplated components (i.e. tube and sleeve). Thus, the high costs of electro-plating assemblies after fabrication is eliminated by using pre-plated tube.

**Excellent surface quality** – The Parflange® process eliminates the potential leak path present at the braze or weld joint.

#### Features and benefits

1. **Cost saving** – Compared to welding or brazing, orbital flanging is much less time consuming. Special tube preparation and finishing are not necessary. Flanging uses only a fraction of the energy needed for brazing or welding.
2. **Zinc plated tubing** – The Parflange® process allows the use of zinc-plated tubing. The cost for cleaning post process plating, or painting can be saved.
3. **High tool lifetime** – The Parflange® 50 machine is equipped with an automatic lubrication device. The operator does not have to lubricate the tools ensure long pin life.
4. **Use of existing tools** – All existing Parflange® tools (M40 dies and B30/B40 pins) fit into the new machine generation.

5. **WorkCenter concept** – When the doors are opened, the machine body turns into a WorkCenter for production of O-Lok® and Triple-Lok® tube assemblies. All tools are available for rapid and convenient machine setup and tool change.

6. **Low-cost mass production** – The machine can be ordered with an automated sleeve feeder. The Parflange® 50 then is the perfect solution for low-cost mass production.

7. **Universal** – The Parflange® 50 can do 37° flaring for Triple-Lok® connectors and flange tubes for O-Lok® fittings (ORFS). Parflange® tools cover metric tube from 6 to 50 mm O.D. and inch tube from 1/4 to 2" O.D.

8. **Flange Seal** – The Parflange® 50 is also capable for the innovative Flange Seal connection, which contributes to reduce component cost and assembly time.

9. **Heavy duty** – The rigid machine design allows use for mass production of even large stainless steel tube connections.

10. **Process/Product concept** – Parflange® machines are especially designed to match O-Lok®, Triple-Lok® and SAE-flange standards. Machine, tools and products are fine-tuned for reliable performance.

11. **Superior sealing performance** – The Parflange® process achieves a sealing surface of unique surface quality and mechanical strength.

12. **Superior vibration resistance** – Unlike conventional flaring, the Parflange® process results in a rigid connection of the O-Lok® sleeve on the tube-end. Parflange®/O-Lok® connections perform much better under reversed bending stress conditions.

13. **Efficient** – The short cycle time and the automatic process allow efficient mass production.

14. **Quality** – Tube clamping, tool control and even lubrication is fully automated so that high and consistent quality results are achieved without manual adjustments.

15. **Easy to use** – The clamping and flanging process is fully automated. Manual tool manipulation is not required. The process is initiated by pushing the tube end into the tooling.

16. **Bin holder** – The top surface is designed to store two standard bins for fitting nuts and Parflange® sleeves. Everything is easy to reach for the operator.

17. **Illuminated tooling area** – Insertion of Parflange® sleeves and condition monitoring of tools is easy.

18. **Practical lubricant refill** – The container for tool lubricant is easily accessible by a hatch on the machine side.

19. **Side drawer** – Chips, dirt and dropped components like Parflange® sleeves can be removed by a small drawer. This allows to keep the working area clear and avoid jamming of moving parts.

20. **Clean** – The Parflange® process is environmentally clean and safe. As no heat or chemicals are used, hazards from fumes or heat do not occur.

21. **Perfect for project work** – After finishing a piping project, the machine can be put aside. Tools don't get lost and dirty. For the next project, the machine just needs to be transported to the new side and unfolded into the WorkCenter. This is particularly useful for piping projects in shipyards, paper mills, offshore platforms or steel mills.

22. **Ready to go** – The Parflange® WorkCenter is delivered including all necessary details like electrical plug, operator manual, short instruction pictograms on machine housing and dimensional charts for tube preparation.

23. **New Generation** – The Parflange® 50 WorkCenter replaces the Parflange® 1040 machine, which has been successful in the market for more than 12 years.



## Parflange® 50 BASIC WorkCenter

### Technical description 50 BASIC WorkCenter:

The Parflange® 50 is a production WorkCenter for orbital flaring and flanging of high pressure tube connections. The unique feature of the Parflange® process is that the deformation of the tube end is achieved by rolling rather than by just pushing a tool into the tube end.

The Parflange® machine smoothly compresses the tube material and achieves a high strength joint with a polished surface of the tube end.

O-Lok® sleeves are firmly fixed onto the tube end, resulting in a robust and vibration-resistant tube connection.

The Parflange® 50 is the heavy-duty, mass production WorkCenter of the Parflange® machine programme.

It is recommended for industrial production of all sizes Triple-Lok® and O-Lok® tube connections.

Maximum tube capacity is 50 mm/2" tube O.D.

The powerful drive and the fast, automatic process allow short cycle times for efficient production. Its advantage is the quick and easy change of tooling and the simple operation without manual adjustments or programming. Tube clamping and tool lubrication are done automatically.

The Parflange® 50 comes ready to be used. Parflange® tools have to be purchased separately. For each tube dimension, special clamping dies and Parflange® pins are required. The machine can be moved on wheels, by forklift truck and crane. For basic use, just an electrical power supply is required.



### Machine specification 50 BASIC WorkCenter:

Purpose:	180° Flanging for O-Lok® and 37° Flaring for Triple-Lok®
Process:	Orbital flaring and flanging according to Parflange® process
Design:	WorkCenter for industrial production
Tube material:	Steel and stainless steel tube
Tube diameter:	Metric: 6 to 50 mm Inch: 1/4" to 2"
Min. U-bend:	120 mm
Maximum capacity:	Steel tube (ST 37, ST 52, ...) Metric: 38x5/50x3 mm (tube O.D. x wall thickness) Inch: 2"x0.120 Stainless steel tube (1.4571, 316, ...) Metric: 38x4 mm Inch: 1 1/2"x0.156
Tube specification:	Fully annealed seamless cold drawn or welded and redrawn precision tube
Operation:	Automatic clamping, automatic flanging/flaring

Speed:	5–8 sec. flanging time/15–20 sec. total cycle time
Economic production quantity:	max. 500 flarings per day
Tools:	Flaring pin B30 ... or B40 ... Clamping dies M40 ...
Tool compartments:	10 die sets, 10 pins
Tool clamping:	Automatic
Tool lubrication:	Automatic lubrication device
Lubricant:	EO-NIROMONT (filled when delivered)
Hydraulic oil:	HLP 46 (filled when delivered)
Installation:	Electrical power
Dimensions:	700x840x1035 mm
Platform for bins:	2 platforms, 300x500 mm, max. 5 kg each
Weight:	380 kg
Electrical power:	400 V, 3 Phase, 50 Hz, 4.5 kW
Transport options:	On wheels, by forklift truck, lifting attachments

### Parflange® 50 PRO WorkCenter

#### Technical description 50 Pro WorkCenter:

For industrial mass production of O-Lok® connections, special machines Parflange® 50 PRO with O-Lok® sleeve feeder are available. This sleeve feeding device increases the productivity, particularly of high volume – single tube dimension jobs.

In “Feeder ON – mode”, O-Lok® sleeves just need to be inserted into feeder rails. First cycle start is initiated by manually closing the safety cover. Then, all following cycles are started by pushing the tube into the pre-clamped dies. All other machine activities, like tube clamping, flanging, tube release, insertion of O-Lok® sleeves into dies, pre-clamping of dies and the operation of safety cover run fully automatic. The operator just is handling the tubes and refilling the sleeve-feeder from times to times with O-Lok® sleeves.

In “Feeder OFF – mode”, the Parflange® 50 PRO operates like the Parflange® 50 BASIC without O-Lok® sleeve feeder. This mode is useful for maximum size flexibility and Triple-Lok® assembly. For quick changeover and safety reasons, the O-Lok® sleeve feeder is just switched OFF but not be removed from the Parflange® 50 PRO WorkCenter.

For operation of O-Lok® PRO machines, compressed air supply is required, even when sleeve feeder is not used.



#### Machine specification 50 PRO WorkCenter:

##### Specific differences of Parflange® 50 Pro versus Parflange® 50 Basic

Design:	Parflange® 50 with additional O-Lok® sleeve feeder	Feeder:	Feeder is delivered in separate box and must be firmly attached to machine. Feeder can be switched ON and OFF but must not be removed.
Normal Operation:	Same as Parflange® 50 Basic when feeder is switched off	Feeder rails:	Feeder rail kits must be ordered separately for each O-Lok® sleeve size.
Feeder Operation:	Work-cycle is initiated by inserting tube end Automatic clamping, automatic flanging/flaring Automatic insertion of O-Lok® sleeves into dies Automatic operation of safety cover Automatic pre-clamping of dies	Feeder setup:	Installation of matching rail kit by knurled nuts and adjustment of scale wheel according to chart
Manual operation:	like Parflange® 50 Basic	Installation:	Electrical power, for feeder type machines: compressed air supply (6 bar)
Cycle time:	5–8 sec. flanging time/approx. 15 to 20 sec. total cycle time	Dimensions:	700x840x2030 mm
Economic production quantity:	max. 1200 flarings per day	Weight:	410 kg
Tools:	Same tools as Parflange® 50 BASIC		



## Parflange® 50 Ordering

Type	Order code
Parflange® 50 Basic machine Ready to use, including operation manual, filled with hydraulic oil and lubricant Without Parflange® tools Basis machine Europe version (not prepared for O-Lok® sleeve feeder)	
Purchase: EU-Version US-Version	1050EU400VBASIC 1050US440V60HZBASIC
Leasing (2 year hire purchase)	1050BASICLEASEFEE
Rent (monthly)	1050BASICRENTFEE



Parflange®  
50 BASIC

Type	Order code
Parflange® 50 Pro machine Europe version including O-Lok® sleeve feeder without feeder rails	
Purchase: EU-Version US-Version	1050EU400VPRO 1050US440V60HZPRO
Leasing (2 year hire purchase)	1050PROLEASEFEE
Rent (monthly)	not available

Parflange®  
50 PRO for mass  
production  
of O-Lok®  
assemblies



Sleeve feeder rails for Parflange® 50 Pro	Tube O.D.	Order code
O-Lok® sleeve feeding rail	6 mm/¼"	1050/RAIL04
O-Lok® sleeve feeding rail	8, 10 mm/⅜"	1050/RAIL06
O-Lok® sleeve feeding rail	12 mm/½"	1050/RAIL08
O-Lok® sleeve feeding rail	14, 15, 16 mm/⅝"	1050/RAIL10
O-Lok® sleeve feeding rail	18, 20 mm/¾"	1050/RAIL12
O-Lok® sleeve feeding rail	22, 25 mm/1"	1050/RAIL16
O-Lok® sleeve feeding rail	28, 30, 32 mm/1¼"	1050/RAIL20
O-Lok® sleeve feeding rail	35, 38 mm/1½"	1050/RAIL24



Feeder rail kits are  
available for each  
O-Lok® size

50 promotion leaflet	4391-1 via Parker catalogue service EMDC
50 operating manual UK/DE/FR/IT/ES	1050/MANUAL
Standard preventive maintenance	1050/INSPECTION

Tool lubricant refill qty: 1L EO-NIROMONT	LUBSS
Replacement cartridge for spindle lubrication	1050/22900001801



High-Performance lubricant  
for Parflange®

Parflange® machines and feeders are shipped in special containers which should be kept for future transports to avoid damage. Please don't dispose the transport boxes!!!

### Tooling for Parflange® machines

#### Machine and tool selection



Parflange® 1025



Parflange® 50

#### Parflange® 1025 machines flanging capacity for O-Lok®

Tube material	220 V 1.1 kW	380 V 1.5 kW
	Max. tube size mm (inch)	
Steel ST37	25x4 (1"×0.120)	25x4 (1"×0.120)
Stainless steel 304L/316L*	25x2.5 (1"×0.95)	25x2.5 (1"×0.95)
Steel ST52	25x4 (1"×0.120)	25x4 (1"×0.120)

#### Parflange® 50 machines flanging capacity for O-Lok®

Tube material	Max. tube size mm (inch)
Steel ST37	38x5/50x3 (2×0.120)
Steel ST52	38x4 (1 1/2×0.156)
Stainless steel 304L/316L*	38x4 (1 1/2×0.156)

#### Parflange® 1025 machines flaring capacity for Triple-Lok®

Tube material	Elect. power of machine	
	220 V 1.1 kW	380 V 1.5 kW
Max. tube size mm (inch)		
Steel ST37	25x3 (1"×0.120)	25x3 (1"×0.120)
Stainless steel 304L/316L* Steel TU 52 B	25x3 (1"×0.120)	25x3 (1"×0.120)
Stainless steel Duplex (or PW 400)	Not recommended	25x2.5 (1×.095)

#### Parflange® 50 machines flaring capacity for Triple-Lok®

Tube material	Elect. power of machine
	220/380 V 4.5 kW
Max. tube size mm (inch)	
Steel TU 37 B	38x4/42x3 (1 1/2×0.120)
Steel TU 52 B	38x4/42x3 (1 1/2×0.120)
Stainless steel 304L/316L*	38x4/42x3 (1 1/2×0.120)
Stainless steel Duplex (or PW 400)	38x3.6

\* Parflange® tools for stainless steel tubes have different dimensions and are specially coated. These tools are marked with suffix "SS".

**Parflange® tool identification**



Parflange® tools for O-Lok®

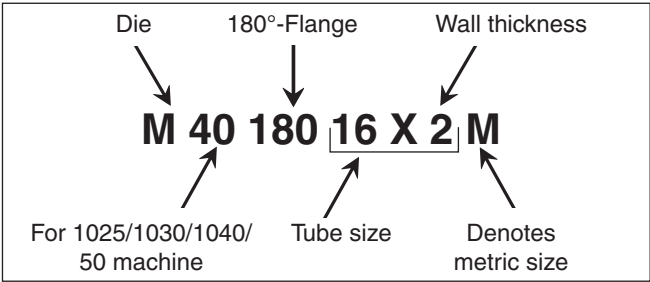


Parflange® tools for Triple-Lok®

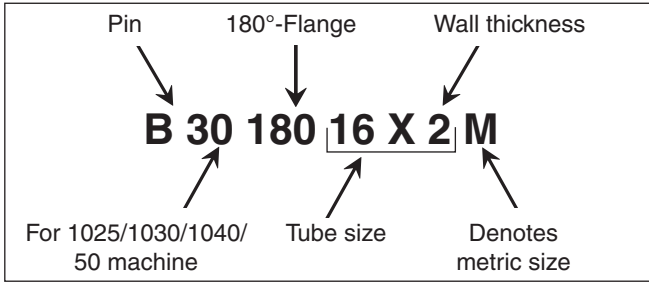


**Tooling for metric tubing**

**Metric die numbering system**

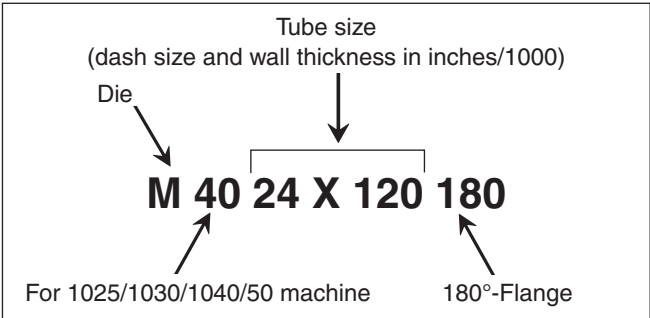


**Metric pin numbering system**

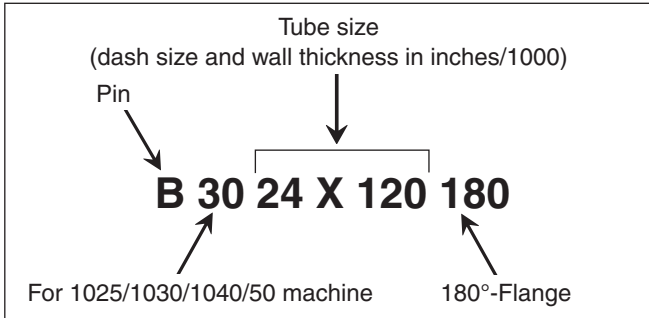


**Tooling for inch tubing**

**Die numbering system**



**Pin numbering system**



Parflange® tools for stainless steel tubes have different dimensions and are specially coated. These tools are marked with suffix "SS".

**Tool lifetime**

Assembly tools are subject of wear and must be regularly (max. 50 assemblies) cleaned and checked (Checking instructions see chapter E). Worn out tools can cause dangerous assembly failures and must be replaced in time. Average tool lifetime is approx. 5000 cycles when properly used. Maximum lifetime can be achieved by following factors:

- Regular cleaning and checking
- Clean and corrosion-protected storage
- Proper de-burring and cleaning of tube end
- Proper tool selection and operation
- Use of specified lubricant

### Parflange® tools for O-Lok®

Parflange® tooling – Order codes for Parflange® 50/1040/1030/1025

#### 90°-Flange-tool-selection (Metric tube)

Tube size mm	Steel tube		Stainless steel tube	
	Flange pin Order code	Flange die Order code	Flange pin Order code	Flange die Order code
06×1.0	<b>B3018006X1M</b>	<b>M4018006X1M</b>		
06×1.5	B3018006X1.5M	M4018006X1.5M		
08×1.0	<b>B3018008X1M</b>	<b>M4018008X1M</b>	B3018008X1MSS	M4018008X1MSS
08×1.5	<b>B3018008X1.5M</b>	<b>M4018008X1.5M</b>	B3018008X1.5MSS	M4018008X1.5MSS
10×1.0	<b>B3018010X1M</b>	<b>M4018010X1M</b>	B3018010X1MSS	M4018010X1MSS
10×1.5	<b>B3018010X1.5M</b>	<b>M4018010X1.5M</b>	B3018010X1.5MSS	M4018010X1.5MSS
10×2.0	<b>B3018010X2M</b>	<b>M4018010X2M</b>		
12×1.0	<b>B3018012X1M</b>	<b>M4018012X1M</b>	B3018012X1MSS	M4018012X1MSS
12×1.5	<b>B3018012X1.5M</b>	<b>M4018012X1.5M</b>	B3018012X1.5MSS	M4018012X1.5MSS
12×2.0	<b>B3018012X2M</b>	<b>M4018012X2M</b>		
15×1.0			B3018015X1MSS	M4018015X1MSS
15×1.5	<b>B3018015X1.5M</b>	<b>M4018015X1.5M</b>		
15×2.0	B3018015X2M	M4018015X2M		
16×1.5	<b>B3018016X1.5M</b>	<b>M4018016X1.5M</b>	B3018016X1.5MSS	M4018016X1.5MSS
16×2.0	<b>B3018016X2M</b>	<b>M4018016X2M</b>	B3018016X2MSS	M4018016X2MSS
16×2.5	B3018016X2.5M	M4018016X2.5M		
18×1.5	<b>B3018018X1.5M</b>	<b>M4018018X1.5M</b>		
18×2.0	<b>B3018018X2M</b>	<b>M4018018X2M</b>		
20×2.0	<b>B3018020X2M</b>	<b>M4018020X2M</b>	B3018020X2MSS	M4018020X2MSS
20×2.5	<b>B3018020X2.5M</b>	<b>M4018020X2.5M</b>		
20×3.0	B3018020X3M	M4018020X3M		
22×2.0	B3018022X2M	M4018022X2M		
22×2.5	B3018022X2.5M	M4018022X2.5M		
25×2.5	<b>B3018025X2.5M</b>	<b>M4018025X2.5M</b>	B3018025X2.5MSS	M4018025X2.5MSS
25×3.0	<b>B3018025X3M</b>	<b>M4018025X3M</b>		
28×2.0	B3018028X2M	M4018028X2M		
28×2.5	B3018028X2.5M	M4018028X2.5M		
30×2.0	B3018030X2M	M4018030X2M		
30×3.0	<b>B3018030X3M</b>	<b>M4018030X3M</b>	B3018030X3MSS	M4018030X3MSS
30×4.0	<b>B3018030X4M</b>	<b>M4018030X4M</b>		
32×3.0	B3018032X3M	M4018032X3M		
32×4.0	B3018032X4M	M4018032X4M		
35×3.0	B3018035X3M	M4018035X3M		
38×3.0	<b>B3018038X3M</b>	<b>M4018038X3M</b>		
38×4.0	<b>B3018038X4M</b>	<b>M4018038X4M</b>		

Tools for tube dimensions which are not listed must be inquired at Parker.

**Bold** = Standard dimensions  
Regular = Non standard dimensions

#### 90°-Flange-tool-selection (Inch tube)

Tube size inch	Steel tube	
	Flange pin Order code	Flange die Order code
1/4×0.035	B3004X035180	M4004X035180
1/4×0.049	B3004X049180	M4004X049180
3/8×0.035	B3006X035180	M4006X035180
3/8×0.049	B3006X049180	M4006X049180
3/8×0.065	B3006X065180	M4006X065180
1/2×0.035	B3008X035180	M4008X035180
1/2×0.049	B3008X049180	M4008X049180
1/2×0.065	B3008X065180	M4008X065180
5/8×0.065	B3010X065180	M4010X065180
5/8×0.083	B3010X083180	M4010X083180
3/4×0.065	B3012X065180	M4012X065180
3/4×0.083	B3012X083180	M4012X083180
3/4×0.095	B3012X095180	M4012X095180
3/4×0.120	B3012X120180	M4012X120180
1×0.065	B3016X065180	M4016X065180
1×0.095	B3016X095180	M4016X095180
1 1/4×0.120	B3020X120180	M4020X120180

Further tools for Inch tubing are available from Parker TFD Columbus!

#### Tool lifetime

Assembly tools are subject of wear and must be regularly (max. 50 assemblies) cleaned and checked (Checking instructions see chapter E). Worn out tools can cause dangerous assembly failures and must be replaced in time. Average tool lifetime is approx. 5000 cycles when properly used. Maximum lifetime can be achieved by following factors:

- Regular cleaning and checking
- Clean and corrosion-protected storage
- Proper de-burring and cleaning of tube end
- Proper tool selection and operation
- Use of specified lubricant

Parflange® tools for Triple-Lok®

Metric tube

Tube size mm	Steel tube		Stainless steel tube	
	Flare pin Order code	Flare die Order code	Flare pin Order code	Flare die Order code
06x1.0 06x1.5	<b>B3007406X1M</b> <b>B3007406X1.5M</b>	<b>M4007406M</b> <b>M4007406M</b>	B3007406X1MSS	<b>M4007406M</b>
08x1.0 08x1.5	<b>B3007408X1M</b> <b>B3007408X1.5M</b>	<b>M4007408M</b> <b>M4007408M</b>	B3007408X1MSS B3007408X1.5MSS	<b>M4007408M</b> <b>M4007408M</b>
10x1.0 10x1.5	<b>B3007410X1M</b> <b>B3007410X1.5M</b>	<b>M4007410M</b> <b>M4007410M</b>	B3007410X1MSS B3007410X1.5MSS	<b>M4007410M</b> <b>M4007410M</b>
12x1.0 12x1.5 12x2.0	<b>B3007412X1M</b> <b>B3007412X1.5M</b> <b>B3007412X2M</b>	<b>M4007412M</b> <b>M4007412M</b> <b>M4007412M</b>	B3007412X1.5MSS	<b>M4007412M</b>
15x1.5 15x2.0	<b>B3007415X1.5M</b> B3007415X2M1	<b>M4007415M</b> <b>M4007415M</b>	B3007415X1.5MSS	<b>M4007415M</b>
16x1.5 16x2.0	<b>B3007416X1.5M</b> <b>B3007416X2M</b>	<b>M4007416M</b> <b>M4007416M</b>	B3007416X2MSS	<b>M4007416M</b>
18x1.5 18x2.0	<b>B3007418X1.5M</b> B3007418X2M	<b>M4007418M</b> <b>M4007418M</b>	B3007418X1.5MSS	<b>M4007418M</b>
20x2.0 20x2.5	<b>B3007420X2M</b> <b>B3007420X2.5M</b>	<b>M4007420M</b> <b>M4007420M</b>	B3007420X2MSS B3007420X2.5MSS	<b>M4007420M</b> <b>M4007420M</b>
22x1.5 22x2.0 22x2.5	B3007422X1.5M B3007422X2M B3007422X2.5M	<b>M4007422M</b> <b>M4007422M</b> <b>M4007422M</b>	B3007422X1.5MSS	M4007422M
25x2.0 25x3.0	B3007425X2M <b>B3007425X3M</b>	<b>M4007425M</b> <b>M4007425M</b>	B3007425X2.5MSS	<b>M4007425M</b>
28x2.0 28x2.5	B3007428X2M B3007428X2.5M	M4007428M M4007428M		
30x3.0 32x3.0	<b>B3007430X3M</b> B3007432X3M	<b>M4007430M</b> <b>M4007432M</b>	B3007430X3MSS	<b>M4007430M</b>
35x3.0	B3007435X3M	M4007435M		
38x3.0 38x4.0	<b>B3007438X3M</b> <b>B3007438X4M</b>	<b>M4007438M</b> <b>M4007438M</b>	B3007438X4MSS	<b>M4007438M</b>
42x3.0 42x4.0	B3007442X3M B3007442X4M	M4007442M M4007442M		

Tools for tube dimensions which are not listed must be inquired at Parker.

**Bold** = Standard dimensions  
Regular = Non standard dimensions

Inch tube

Tube size inch	Steel tube	
	Flange pin Order code	Flange die Order code
1/4x0.049	B3004X049074	M4004074
3/8x0.049 3/8x0.065	B3006X049074 B3006X065074	M4006074 M4006074
1/2x0.065	B3008X065074	M4008074
5/8x0.065 5/8x0.095	B3010X065074 B3010X095074	M4010074 M4010074
3/4x0.095	B3012X095074	M4012074
1x0.109	B3016X109074	M4016074
1 1/4x0.120	B3020X120074	M4020074

Further tools for Inch tubing are available from Parker TFD Columbus!

Tool lifetime

Assembly tools are subject of wear and must be regularly (max. 50 assemblies) cleaned and checked (Checking instructions see chapter E). Worn out tools can cause dangerous assembly failures and must be replaced in time. Average tool lifetime is approx. 5000 cycles when properly used. Maximum lifetime can be achieved by following factors:

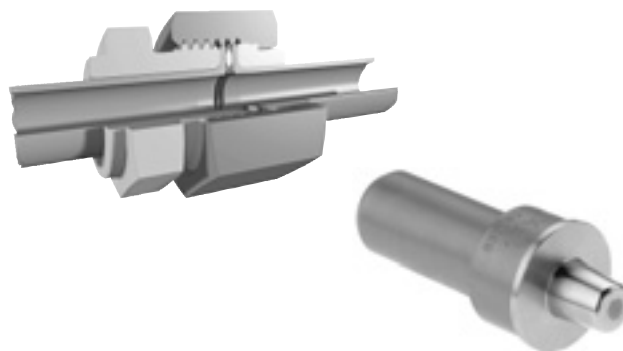
- Regular cleaning and checking
- Clean and corrosion-protected storage
- Proper de-burring and cleaning of tube end
- Proper tool selection and operation
- Use of specified lubricant

### Parflange® tools for Flange Seal

Flange dies and Parflange® pins for machines 50/1040/1030/1025 steel tube



Clamping die set M ... 180



Parflange® pin B ... 180

#### Metric tube

Tube size (O.D. x wall thickness) mm	Flange pin Order code	Flange die Order code
06x1.0	B3018006X1M	M4018006X1MLHP
08x1.0 08x1.5	B3018008X1M B3018008X1.5M	M4018008X1MLHP M4018008X1.5MLHP
10x1.0 10x1.5 10x2.0	B3018010X1M B3018010X1.5M B3018010X2M	M4018010X1MLHP M4018010X1.5MLHP M4018010X2MLHP
12x1.0 12x1.5	B3018012X1M B3018012X1.5M	M4018012X1MLHP M4018012X1.5MLHP
16x2.0	B3018016X2M	M4018016X2MLHP
20x2.5	B3018020X2.5M	M4018020X2.5MLHP
25x2.5 25x3.0	B3018025X2.5M B3018025X3M	M4018025X2.5MLHP M4018025X3MLHP

Tools for tube dimensions which are not listed must be inquired at Parker.

#### Inch tube

Tube size (O.D. x wall thickness) Inch	Flange pin Order code	Flange die Order code
1/4x0.035 1/4x0.049	B3004X035180 B3004X049180	M4004X035180LHP M4004X049180LHP
3/8x0.049 3/8x0.065	B3006X049180 B3006X065180	M4006X049180LHP M4006X065180LHP
1/2x0.049 1/2x0.065 1/2x0.083	B3008X049180 B3008X065180 B300810X083180	M4008X049180LHP M4008X065180LHP M4008X083180LHP
5/8x0.065	B301010X065180	M4010X065180LHP
5/8x0.083	B301010X083180	M4010X083180LHP
3/4x0.065 3/4x0.083	B3012X065180 B3012X083180	M4012X065180LHP M4012X083180LHP
1x0.095	B3016X095180	M4016X095180LHP

#### Tool lifetime

Assembly tools are subject of wear and must be regularly (max. 50 assemblies) cleaned and checked (Checking instructions see chapter E). Worn out tools can cause dangerous assembly failures and must be replaced in time. Average tool lifetime is approx. 5000 cycles when properly used. Maximum lifetime can be achieved by following factors:

- Regular cleaning and checking
- Clean and corrosion-protected storage
- Proper de-burring and cleaning of tube end
- Proper tool selection and operation
- Use of specified lubricant



## Lubricants

### EO-NIROMONT lubricant for fitting assembly

### EO-NIROMONT lubricant for flaring and forming tools

EO-NIROMONT are high performance lubricants specifically designed for the assembly of tube connections. They facilitate tightening using a low-torque when assembling joints by hand. In machine assembly, the use of EO-NIROMONT ensures that maximum tool-life is achieved. In forming processes, such as Parflange® or EO2-FORM, smooth and error-free sealing surfaces can be produced. Special additives prevent cold welding when working with stainless steel.

As opposed to when using Parker high performance lubricants, experience shows that the use of standard commercially available lubricants tend to lead to problems such as cold welding of forming tools, particularly when processing stainless steel tube.

Parker high performance lubricants – EO-NIROMONT – are offered in different containers and viscosities so that you can purchase the appropriate product in a suitable container to meet your needs:

#### Liquid lubricant, plastic bottle (item: EONIROMONTFLUESSX)

Parker high performance lubricant for the lubrication of threads, progressive rings and for all cold forming processes like Parflange® or EO2-FORM. The handy plastic bottle means that it can be applied directly where the lubrication is needed. EO-NIROMONT liquid should always be available at every assembly point where hydraulic connections are being made.

#### Liquid lubricant, refill package (item: LUBSS)

Parker high performance lubricant for all cold forming processes like Parflange® or EO2-FORM. Its viscosity means that it is for use in automatic lubrication devices installed in Par-

flange machines. Absolutely essential for mechanical cold forming of stainless steel tubes.

#### Paste lubricant, tin (item: EONIROMONTPASTX)

Parker high performance lubricant for the lubrication of the threads of the pre-assembly tool VOMO. The paste is economical and provides durable thread lubrication. Not suited for use with forming tools, as dust and swarf will stick to it.

#### Features, advantages and benefits of NIROMONT lubricant:

1. **Highly effective** – EO-NIROMONT dramatically reduces assembly effort. This helps to prevent fitting failure resulting from insufficient assembly.
2. **Cost saving** – Tools in assembly machines will last much longer, resulting in high-quality tube forming with excellent sealing surface.
3. **No cold welding** – Cold welding of stainless steel threads is impossible when EO-Niromont is properly applied.
4. **Liquid** – Penetrates even small gaps.
5. **Paste** – Stays in place for a while. Ideal for application on pre-assembly tools.
6. **Compatible** – EO-NIROMONT and LUBSS do not effect fitting surfaces or seal materials.



EO-NIROMONT



LUBSS

#### Ordering

Type	Order code
EO-NIROMONT Assembly lubricant paste (130 g)	EONIROMONTPASTX
EO-NIROMONT Assembly lubricant liquid (250 cc)	EONIROMONTFLUESSX
EO-NIROMONT Forming tool lubricant refill (1 L)	LUBSS



# Cutting and bending tools

## AV 6/42 – Tube saw square

Provides a neat and quick method of cutting tube at right angles. The exact cut is achieved by hardened guides. We recommend using deeper-section sawblades that cut in both directions for best results. The AV 6/42 can be used in a vice or just be clamped onto the tube for cutting.

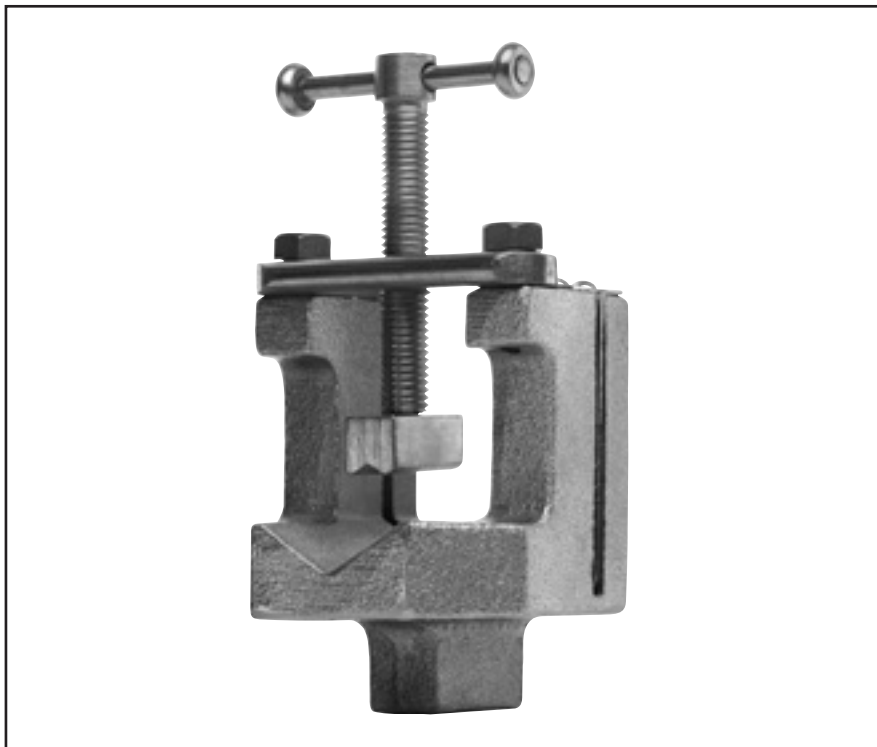
### Specifications:

Tube. O.D.: 6–42 mm  
Weight: approx. 0.7 kg

Type	Order code
Tube cutting tool without saw	AV06/42KPLX
Spare hardened guides	AV06/4208X

### Features, advantages and benefits of tube saw square:

1. **Square cut** – Exact tube preparation greatly reduces leakage caused by assembly failures.
2. **Contour clamping** – Tube is not distorted by clamping.
3. **No vice required** – For workshop application AV 6/42 can simply be clamped onto the tube without using a vice or other attachment.
4. **Replaceable guides** – Worn out guides can easily be replaced to maintain neat cutting result.
5. **Light** – At only 0.7 kg, the AV 6/42 should be carried in the toolbox of every hydraulic tube fitter.



## Cutting and bending tools

### BAV 6/12 – Combined tube bending and cutting tool

The BAV 6/12 is a workshop device for neat tube cutting and simple but exact bending of small dimension EO-tube. Relatively small bending radii can be achieved.

The exact cut is achieved with hardened guides and using sawblades which are notched on both sides. The BAV 6/12 can be used in a vice or just be clamped onto a workbench.

#### Specifications:

Tube. OD: 6–12 mm  
Weight: approx. 2 kg

Type	Order code
Combined tube bending and cutting tool including 3 bending rolls for 6 to 12 mm tube and bending lever	BAV06/12KPLX
<b>Spare Parts</b>	
Spare hardened guide	BAV06/1206X
Bending roll 6/8 mm	BAV06/1209X
Bending roll 10 mm	BAV06/1210X
Bending roll 12 mm	BAV06/1211X
Bending pin	BAV06/1207X
Lever complete	BAV06/1220KPLX

Bending dimensions in mm			
Rolls for tube O.D.	6/8	10	12
Bending radius	19/20	25	26



#### Features, advantages and benefits of combined tube bending and cutting tool:

- Bending and cutting** – The BAV 6/12 is a light multi-purpose tool for all small dimension tube assemblies.
- Square cut** – Exact tube preparation greatly reduces leakage caused by assembly failures.

- No vice required** – For workshop application BAV 6/12 can simply be clamped onto a workbench.
- Small bending radii** – Compact tube bends allow tight assemblies.
- Light** – At only 2 kg, the BAV 6/12 can be easily brought to the assembly site.
- Optimised bending roller contour** – Special shape of bending roller allows small bends without tube flattening.

### In-Ex tube deburring tool 226

Material: Aluminum with hardened steel blades  
Tube-O.D.: 4 to 42 mm  
Weight: 0.12 kg

Type	Order code
Tube deburrer	226A
Replacement blades	226A Blades

#### Features, advantages and benefits of In-Ex tube deburring tool 226:

- Proper deburring** – Exact tube preparation greatly reduces leakage caused by assembly failures.
- Replaceable blades** – Worn out blades can easily be replaced to maintain neat deburring result.
- Light** – At only 0.12 kg, the In-Ex tube deburring tool should be carried in the toolbox of every hydraulic tube fitter.



## Cutting and bending tools

### BV 6/18 – Tube bending tool

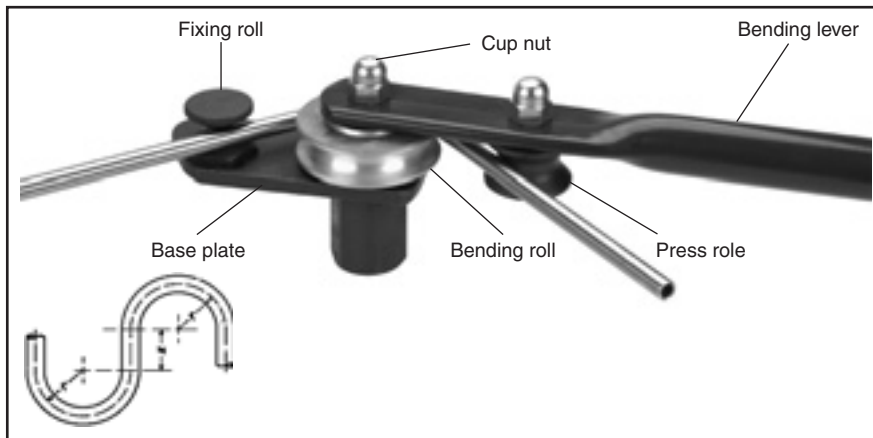
The BV 6/18 is a flexible bending device for simple but exact bending of EO-tube up to 18 mm tube O.D. The high quality bending results are achieved by 6 interchangeable bending rollers.

The fixing roller can be individually adjusted to produce a precise bend transition.

**Specifications:**

Tube-O.D.: 6–18 mm

Weight: approx. 4 kg



Type	Order code
Tube bending tool complete device including 6 bending rolls for 6 to 18 mm tube and bending lever	BV06/18KPLX
<b>Spare Parts</b>	
Bending roll 6/8 mm	BV06/1812X
Bending roll 10/12 mm	BV06/1803X
Bending roll 14 mm	BV06/1804X
Bending roll 15 mm	BV06/1805X
Bending roll 16 mm	BV06/1806X
Bending roll 18 mm	BV06/1807X
Fixing roll	BV06/1802X
Lever complete	BV06/1808KPLX

Bending dimensions in mm		
Rolls for tube O.D.	r	≈ X
6	33.0	35
8	34.0	35
10	35.5	35
12	36.5	35
14	36.5	35
15	44.0	38
16	44.0	38
18	51.5	42

**Features, advantages and benefits of tube-bending tool:**

1. **Vice mounted** – For easy workshop use, the BV can be clamped into a vice.
2. **Small bending radii** – Compact tube bends allow tight assemblies.
3. **Light** – At only 4 kg, the BV 6/18 can be easily brought to each assembly site.
4. **Optimised bending roller contour** – Special shape of bending roller allows small bends without tube flattening.

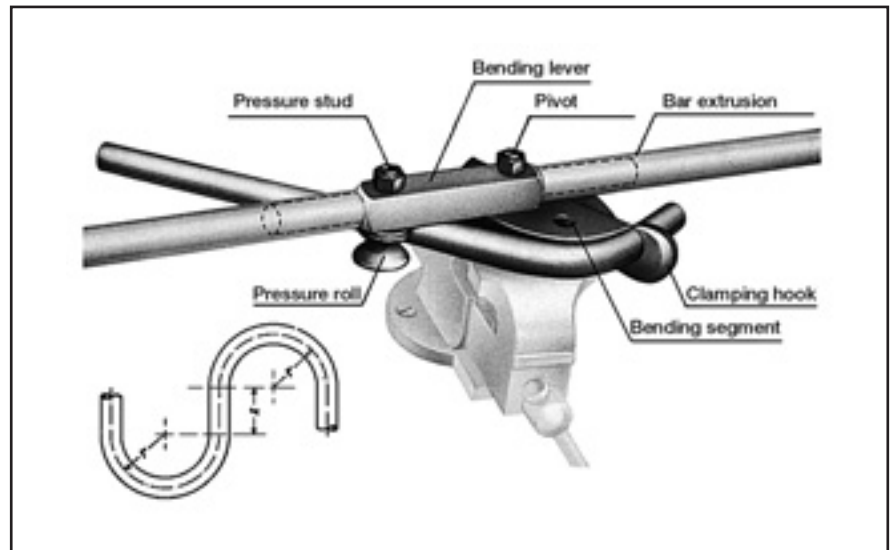
## BV 20/25 – Tube bending tool

The BV 20/25 allows bending of medium size tube at the assembly site. The bending lever shows two universal studs. A bar extension can either be ordered or locally made.

### Specifications:

Tube-O.D.: 20–25 mm  
 3 bending segments: 20, 22, 25 mm  
 Bending radius:  $r = 86,5$  mm  
 $x = 52$  mm  
 Weight: approx. 15 kg (with-out bar extension)

Type	Order code
BV 20/25 Tube bending tool bending device including 3 bending segments for tube O.D. 20 to 25 mm including bending lever without bar extension tube	BV20/25KPLX
<b>Spare Parts</b>	
Bending segment 20 mm	BV20/2501X
Bending segment 22 mm	BV20/2502X
Bending segment 25 mm	BV20/2503X
Fixing arm	BV20/2505X
Lever complete	BV20/2506KPLX
Bar extension tube	BV20/2510X



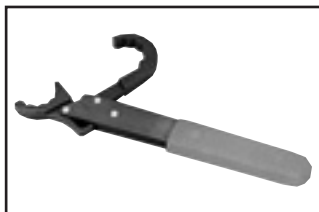
### Features, advantages and benefits of tube-bending tool:

- Rigid design** – The solid design and the bar extension allow manual bending without heating the tube.
- Optimised bending roller contour** – Special shape of bending roller allows small bends without tube flattening.
- Shaped clamping** – Tube is not distorted by clamping.
- Small bending radii** – Compact tube bends allow for compact assemblies.
- Vice mounted** – For easy workshop use, the BV can be clamped into a vice.

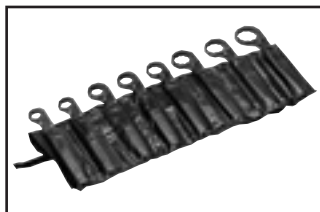


# Hand-tools

## Par-Lok wrench



Par-Lok wrench



Par-Lok wrench kit



O-Lok® wrench kit



Triple-Lok® & Ferulok wrench kit

360° Snap-action ratchet wrench for hex sizes from 10 mm to 41 mm and inch sizes from 3/8" to 2 1/4" across flats. Inch sizes meet US government specifications and are listed as NSN-5120-00-474-7227.

### Easy fitting assembly

Easy access ratchet wrench speeds fittings installation in tight locations. Rugged, snap-action jaws can be opened over tube lines, locked onto fitting hex and ratcheted within 1/8 turn. Full six point contact prevents fitting distortion common with wrench slippage. Ideal for tube line installations where compact runs required multiple fittings make-up, disassembly and remakes.

### Specifications

Par-Lok wrenches are available individually or in different kit combinations. Par-Lok jaws are constructed from drop-forged, high carbon steel material with a black conversion coat finish. Par-Lok handles are made from heavy gauge steel material, heat treated and with a corrosion resistant black finish. Solid stainless steel rivets and tempered jaw springs are designed into every wrench for maximum strength.

### O-Lok® wrench kit

Six piece wrench set for use with O-Lok® body and nut sizes -4, -6, -8. Kit contains wrenches for hex sizes 5/8", 1 1/16", 3/4", 13/16", 7/8" and 15/16".

### Triple-Lok® & Ferulok wrench kit

Five piece wrench set for use with Triple-Lok® and Ferulok body and nut sizes -4, -6, -8, -10, -12. Kit contains wrenches for hex sizes 9/16", 1 1/16", 7/8", and 1" and 1 1/4".

### Features, advantages and benefits of Par-Lok wrench:

1. **360°** – No slipping and hexagon damage.
2. **Snap-mechanism** – Ideal for tube fitting assembly.
3. **Light** – Par-Lok wrenches belong in the standard toolbox of each fitting engineer.

Inch Sizes				Metric Sizes		
Hex Size	Order code	Hex Size	Order code	Hex Size	Max. torque Nm	Order code
3/8	860062-6	1 1/8	860062-18	10 mm	35	860063-10
7/16	860062-7	1 1/4	860062-20	11 mm	37	860063-11
1/2	860062-8	1 3/8	860062-22	12 mm	42	860063-12
9/16	860062-9	1 1/2	860062-24	13 mm	45	860063-13
5/8	860062-10	1 5/8	860062-26	14 mm	57	860063-14
1 1/16	860062-11	1 7/8	860062-30	16 mm	88	860063-16
3/4	860062-12	2	860062-32	17 mm	107	860063-17
1 3/16	860062-13	2 1/4	860062-36	19 mm	125	860063-19
7/8	860062-14	Full kit of all	860062-KIT2	21 mm	149	860063-21
1 5/16	860062-15	eight wrenches		22 mm	178	860063-22
1	860062-16	O-Lok® kit	860062-LKIT	24 mm	209	860063-24
Full kit	860062-KIT	(six wrenches)		27 mm	100	860063-27
of all eleven sizes		Triple-Lok®/Ferulok kit	860062-XUKIT	30 mm	100	860063-30
		(five wrenches)		32 mm	170	860063-32
				36 mm	170	860063-36
				41 mm	310	860063-41
				Full kit		860063-KIT
				of all ten sizes		
				10 to 22 mm		

## WZK – Tool boxes

Tools which are regularly used for tube preparation and bending are available in organized tool boxes. Two sets are available:

### Features, advantages and benefits:

1. **Well organised** – Nothing gets dirty, damaged, lost or forgotten.
2. **Practical** – In one box you take everything to the assembly site.
3. **Rigid** – The solid metal box is suitable for daily workshop use.

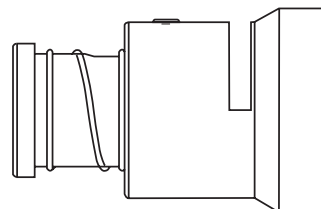


Type	Content	Order code
Toolbox WZK1	BV6/18 tube bending tool	WZK1KOMPLX
Toolbox WZK2	BV6/18 tube Bending tool, AV6/42 tube saw square, Hacksaw, Flat file, Deburring tool, fixture for assembly cones VOMO and cone-template KONU	WZK2KOMPLX



## O-ring assembly tools

### CORG O-ring installation tool for O-Lok®



Parker's CORG Assembly Tools are designed to facilitate the installation of the O-ring into the half-dovetail groove of the O-ring face seal fitting. They are available in sizes –4 to –32 (6 mm to 50 mm/1/4" to 2" tube).

#### Ordering

CORG tool Order code	Fitting size	O-ring size
CORG-4	– 4	2-011
CORG-6	– 6	2-012
CORG-8	– 8	2-014
CORG-10	–10	2-016
CORG-12	–12	2-018
CORG-16	–16	2-021
CORG-20	–20	2-025
CORG-24	–24	2-029
CORG-32	–32	2-135

#### Operation

See chapter F “Fitting assembly” for detailed instructions

The CORG assembly tool is easy to use and can be operated in just a few steps:

1. Insert the O-ring into the slot located on the side of the tool.
2. Position the open end of the tool over the ORFS end of the fitting.
3. With the fitting end bottomed inside the tool, push the piston of the tool until the O-ring is released into the fitting groove.

### O-ring pick for O-Lok®



O-ring pick

A plastic O-ring pick to allow easy removal of O-rings without causing damage to the fitting.

#### Ordering

Type	Order code
Plastic O-ring pick device	O-RINGPICK

#### Features, advantages and benefits of O-Ring installation tools

1. **Special** – O-ring installation tools are especially designed for O-Lok® fittings with CORG groove. O-rings are not torn or damaged at assembly.
2. **Cost saving** – O-ring installation tools are easy to use and save time and cost when O-rings need to be assembled.



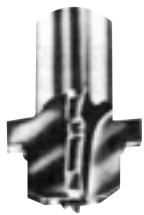
## Port cutting tools

### Counterbore tools and thread taps for metric ports

For manufacturing metric ports to ISO 6149 (Details see chapter D).

These tools allow correct manufacturing of metric port connections. Counterbore tools and thread taps are made of high speed tool steel (HSS).

#### Ordering counterbore tools



ISO 6149 Port size	Order code	
	Large Spot face <sup>1)</sup>	Small Spot face <sup>2)</sup>
M 08×1.0	R1449A	R1449B
M 10×1.0	R1450A	R1450B
M 12×1.5	R1451A	R1451B
M 14×1.5	R1452A	R1452B
M 16×1.5	R1453A	R1453B
M 18×1.5	R1454A	R1454B
M 22×1.5	R1455A	R1455B
M 27×2.0	R1456A	R1456B
M 33×2.0	R1457A	R1457B
M 42×2.0	R1458A	R1458B
M 48×2.0	R1459A	R1459B

1) with ID-groove

2) without ID-groove

#### Ordering thread taps



ISO 6149 Port size	Order code
M08	M08×1-6H-TAP
M10	M10×1-6H-TAP
M12	M12×1.5-6H-TAP
M14	M14×1.5-6H-TAP
M16	M16×1.5-6H-TAP
M18	M18×1.5-6H-TAP
M22	M22×1.5-6H-TAP
M27	M27×2-6H-TAP
M33	M33×2-6H-TAP
M42	M42×2-6H-TAP
M48	M48×2-6H-TAP

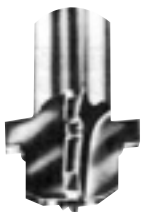


### Counterbore tools and thread taps for straight SAE thread ports

For manufacturing UNF ports to SAE J 1926-1 (details see chapter D)

These tools allow correct manufacturing of UNF port connections. Counterbore tools and thread taps are made of high speed tool steel (HSS).

#### counterbore tools



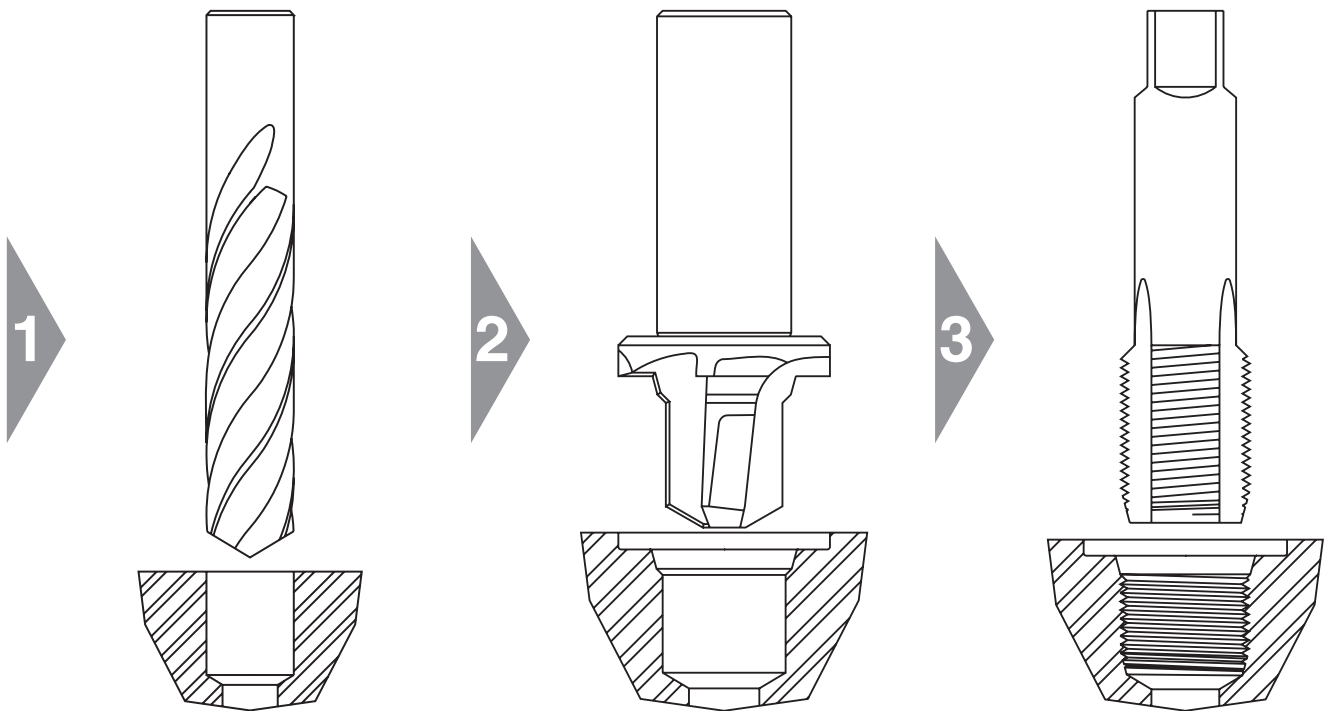
Use with UNF thread size	SAE dash size	Order code
5/16-24	2	Y-34730
3/8-24	3	Y-34731
7/16-20	4	Y-34732
1/2-20	5	Y-34733
9/16-18	6	Y-34734
3/4-16	8	Y-34735
7/8-14	10	Y-34736
1 1/16-12	12	Y-34737
1 3/16-12	14	Y-34738
1 5/16-12	16	Y-34739
1 5/8-12	29	Y-34740
1 7/8-12	24	Y-34741
2 1/2-12	32	Y-34743

#### thread taps



Use with UNF thread size	SAE dash size	Order code
5/16-24	2	5/16X24 UNF-2B
3/8-24	3	3/8X24 UNF-2B
7/16-20	4	7/16X20 UNF-2B
1/2-20	5	1/2X20 UNF-2B
9/16-18	6	9/16X18 UNF-2B
3/4-16	8	3/4X16 UNF-2B
7/8-14	10	7/8X14 UNF-2B
1 1/16-12	12	1 1/16X12 UNF-2B
1 3/16-12	14	1 3/16X12 UNF-2B
1 5/16-12	16	1 5/16X12 UNF-2B
1 5/8-12	29	1 5/8X12 UNF-2B
1 7/8-12	24	1 7/8X12 UNF-2B
2 1/2-12	32	2 1/2X12 UNF-2B

### Operation of port cutting tools



1. Pilot hole drilling

2. Port counterboring

3. Thread tapping

**Note:**

All dimensions must be according to relevant standards. See chapter D for details.

It is necessary to create a spotface surface which is flat and perpendicular to the port. Smooth finish to prevent leakage or O-ring extrusion.

Parker counterbore tools are made from high speed tool steel (HSS). Regular HSS port tapping tools are intended for workshop use and repair.

Maximum lifetime of Parker counterbores can be achieved by:

- use for cutting mild steel or aluminium only
- staying within recommended cutting speed for HSS / port material
- sufficient lubrication and cooling
- workshop use and repair only

For serial production of hydraulic ports, these Parker workshop tools are not suitable.

For production, Parker generally recommends to use hard carbide alloy.

## Thread identification

### Thread identification kit

The thread identification tools are beneficial in the assistance of the identification of international threads such as:

- European threads (Metric, BSPP, BSPT threads) and
- U.S. threads (NPT and SAE straight threads UNF)

The Thread Identification Kit is equipped with a set of calipers, thread profiles, and an instruction booklet.

The components of the thread ID Kit are no high precision gauges but simple instruments for workshop use.



#### Ordering

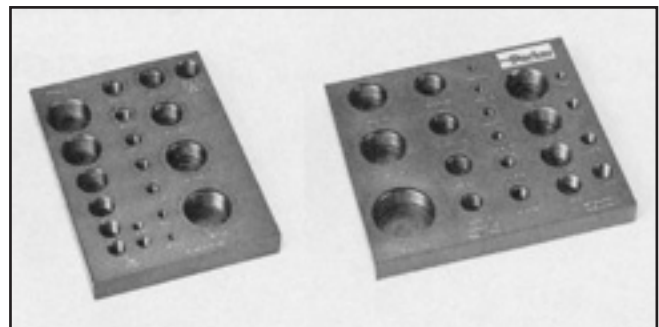
Type	Order code
Thread identification kit	MIK-1

**Attention: The kit is only available in english!**

### Portboard

Portboards are suitable for thread identification of male stud connectors. The two portboards are machined with female threads for quick and easy identification by simply screwing the appropriate male port end.

- European (Metric, BSPP/BSPT threads)
- U.S. (NPT and SAE straight threads UNF)



#### Ordering

Type	Order code
Portboard for NPT and SAE straight threads	PORTBOARD A
Portboard for Metric and BSPP/BSPT threads	Portboard B

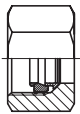
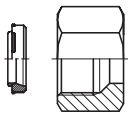
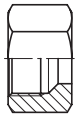

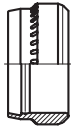

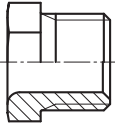
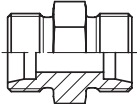
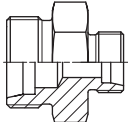
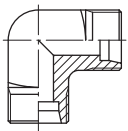
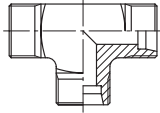
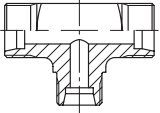
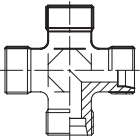
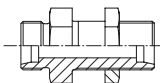
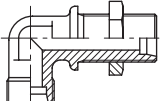
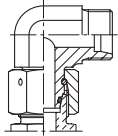
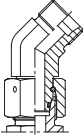
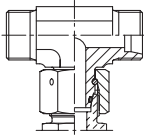

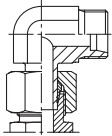
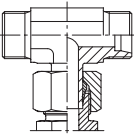
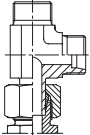
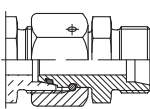
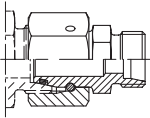
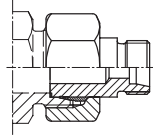
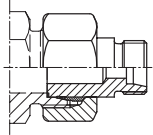
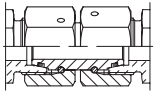
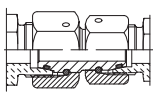
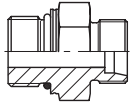
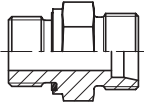
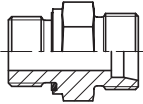
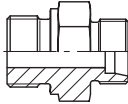
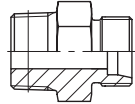
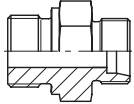




**EO<sup>®</sup> Ermeto Original**  
***DIN fittings***

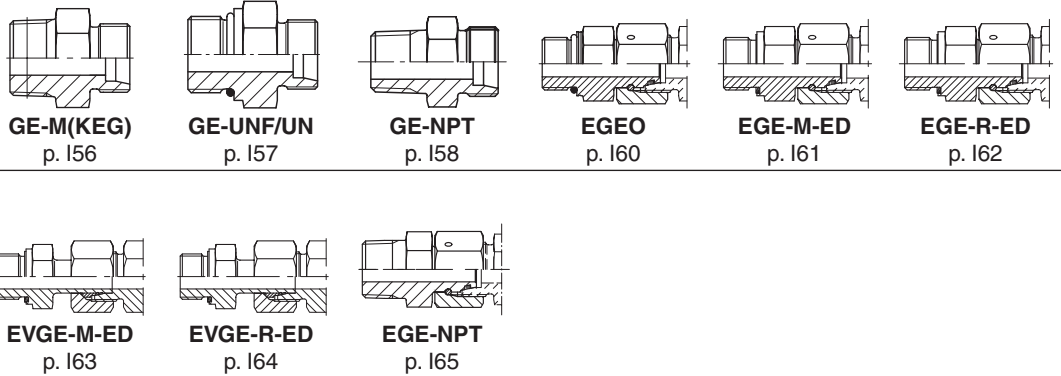


## Visual index

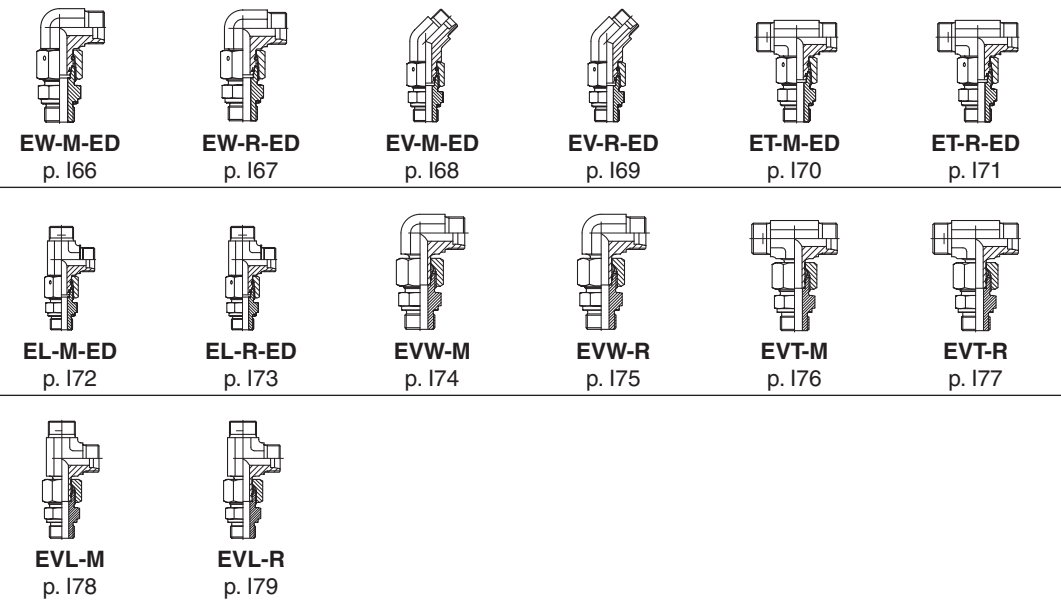
<p>Fitting components</p>	<div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;"> <b>FM</b> p. 110</div> <div style="text-align: center;"> <b>FORM</b> p. 112</div> <div style="text-align: center;"> <b>M</b> p. 114</div> <div style="text-align: center;"> <b>D</b> p. 115</div> <div style="text-align: center;"> <b>PSR</b> p. 115</div> <div style="text-align: center;"> <b>DPR</b> p. 116</div> </div> <div style="text-align: center; margin-top: 20px;"> <b>S</b> p. 117</div>
<p>Tube to tube</p>	<div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;"> <b>G</b> p. 118</div> <div style="text-align: center;"> <b>GR</b> p. 119</div> <div style="text-align: center;"> <b>W</b> p. 120</div> <div style="text-align: center;"> <b>T</b> p. 119</div> <div style="text-align: center;"> <b>TR</b> p. 122</div> <div style="text-align: center;"> <b>K</b> p. 124</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;"> <b>SV</b> p. 125</div> <div style="text-align: center;"> <b>WSV</b> p. 126</div> </div>
<p>Tube to swivel</p>	<div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;"> <b>EW</b> p. 127</div> <div style="text-align: center;"> <b>EV</b> p. 128</div> <div style="text-align: center;"> <b>ET</b> p. 129</div> <div style="text-align: center;"> <b>EL</b> p. 130</div> <div style="text-align: center;"> <b>EVW</b> p. 131</div> <div style="text-align: center;"> <b>EVT</b> p. 132</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;"> <b>EVL</b> p. 133</div> <div style="text-align: center;"> <b>DA</b> p. 134</div> <div style="text-align: center;"> <b>RED</b> p. 135</div> <div style="text-align: center;"> <b>KOR (Steel/Brass)</b> p. 139</div> <div style="text-align: center;"> <b>KOR (Stainless steel)</b> p. 143</div> </div>
<p>Swivel to swivel</p>	<div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;"> <b>GZ</b> p. 145</div> <div style="text-align: center;"> <b>GZR</b> S.46</div> </div>
<p>Male stud connector</p>	<div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;"> <b>GEO</b> p. 148</div> <div style="text-align: center;"> <b>GE-M-ED</b> p. 149</div> <div style="text-align: center;"> <b>GE-R-ED</b> p. 150</div> <div style="text-align: center;"> <b>GE-R</b> p. 152</div> <div style="text-align: center;"> <b>GE-R(KEG)</b> p. 154</div> <div style="text-align: center;"> <b>GE-M</b> p. 155</div> </div>

Visual index

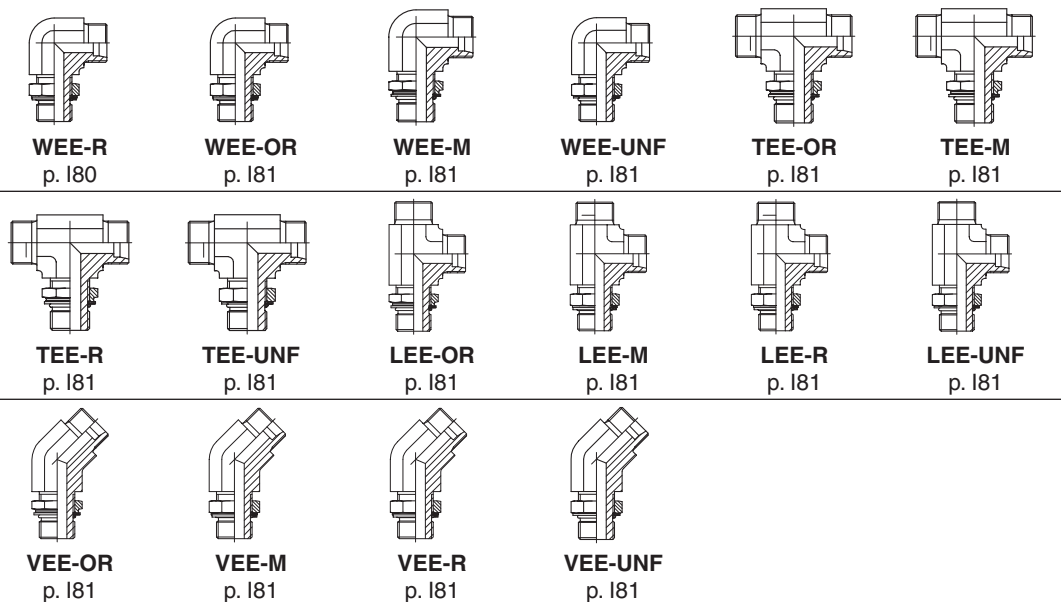
Male stud connector



Swivel adjustable



Locknut adjustable



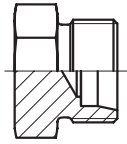


Visual index

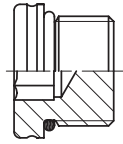
Banjo fittings	<p><b>WH-M-KDS</b> p. 182</p>	<p><b>WH-M</b> p. 181</p>	<p><b>WH-R-KDS</b> p. 184</p>	<p><b>WH-R</b> p. 185</p>	<p><b>TH-M-KDS</b> p. 186</p>	<p><b>TH-M</b> p. 187</p>
	<p><b>TH-R-KDS</b> p. 188</p>	<p><b>TH-R</b> p. 189</p>	<p><b>SWVE-M/KDS</b> p. 190</p>	<p><b>SWVE-R/KDS</b> p. 191</p>	<p><b>DSVW-M</b> p. 192</p>	<p><b>DSVW-R</b> p. 193</p>
Non adjustable	<p><b>WE-NPT</b> p. 194</p>	<p><b>WE-M(KEG)</b> p. 195</p>	<p><b>WE-M</b> p. 196</p>	<p><b>WE-R</b> p. 197</p>	<p><b>WE-R(KEG)</b> p. 198</p>	<p><b>TE-M</b> p. 199</p>
	<p><b>TE-R</b> p. 1100</p>	<p><b>TE-R(KEG)</b> p. 1101</p>	<p><b>TE-M(KEG)</b> p. 1102</p>	<p><b>LE-M</b> p. 1103</p>	<p><b>LE-R</b> p. 1104</p>	<p><b>LE-R(KEG)</b> p. 1105</p>
	<p><b>LE-M(KEG)</b> p. 1106</p>					
Tube to female	<p><b>GAI-M</b> p. 1107</p>	<p><b>GAI-R</b> p. 1108</p>	<p><b>GAI-NPT</b> p. 1109</p>			
Port reducers	<p><b>RI-ED</b> p. 1110</p>	<p><b>RI</b> p. 1111</p>				
Pressure gauge adapter	<p><b>MAV</b> p. 1112</p>	<p><b>MAVE</b> p. 1113</p>				

Visual index

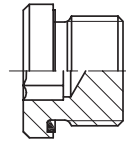
Plugs



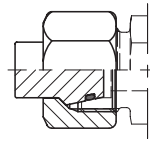
**ROV**  
p. 1114



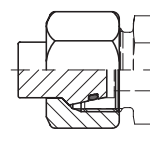
**VSTI M-OR**  
p. 1115



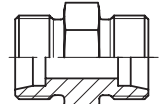
**VSTI M/R-ED**  
p. 1116



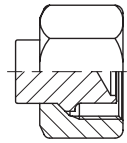
**VKA**  
p. 1117



**VKAM**  
p. 1118



**BUZ**  
p. 1119

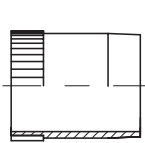


**BUZM**  
p. 1120

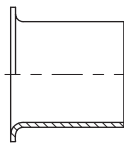
Components



**GM**  
p. 1121



**VH**  
p. 1122



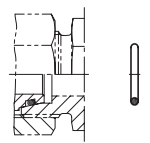
**E**  
p. 1123



**DOZ**  
p. 1124



**ED**  
p. 1125



**OR**  
p. 126



**DKI**  
p. 1128



**KDS**  
p. 1129



**KD**  
p. 1130



**DKAZ**  
p. 1131



**DKA**  
p. 1132

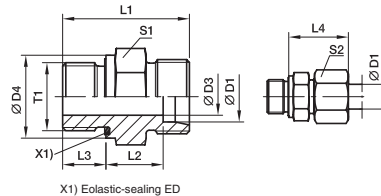
# How to order



DIN fittings

## GE-R-ED Male stud connector

Male BSPF thread – ED-seal (ISO 1179) / EO 24° cone end



X1) Elastic-sealing ED

Series	D1	T1	D3	D4	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar <sup>1)</sup> )		
													CF	71	MS
S <sup>4)</sup>	06	G 1/4 A	4	19	32.0	13.0	12	28	19	17	35	<b>GE06SREDOMD</b>	800	630	400
	06	G 1/8 A	4	14	27.5	12.5	8	27	14	17	21	<b>GE06SR1/8EDOMD</b>	500	315	
06	G 3/8 A	4	22	34.5	15.5	12	30	22	17	52	<b>GE06SR3/8EDOMD</b>	630	630		
06	G 1/2 A	4	27	39.0	18.0	14	33	27	17	83	<b>GE06SR1/2EDOMD</b>	630	400		
08	G 1/4 A	5	19	34.0	15.0	12	30	19	19	41	<b>GE08SREDOMD</b>	800	630	400	
08	G 3/8 A	5	22	34.5	15.5	12	30	22	19	57	<b>GE08SR3/8EDOMD</b>	800	630		
08	G 1/2 A	5	27	39.0	18.0	14	33	27	19	89	<b>GE08SR1/2EDOMD</b>	630	400		
10	G 3/8 A	7	22	34.5	15.0	12	31	22	22	55	<b>GE10SREDOMD</b>	800	630	400	
10	G 1/4 A	5	19	34.0	14.5	12	31	19	22	42	<b>GE10SR1/4EDOMD</b>	800	630		
10	G 1/2 A	7	27	39.0	17.5	14	34	27	22	97	<b>GE10SR1/2EDOMD</b>	630	630		
12	G 3/8 A	8	22	36.5	17.0	12	33	22	24	62	<b>GE12SREDOMD</b>	630	630	400	
12	G 1/4 A	5	19	36.0	16.5	12	33	22	24	61	<b>GE12SR3/8EDOMD</b>	630	630		
12	G 1/2 A	8	27	39.0	17.5	14	34	27	24	99	<b>GE12SR3/4EDOMD</b>	630	630		
14	G 1/2 A	10	27	41.0	19.0	14	37	27	27	96	<b>GE14SREDOMD</b>	630	630	400	
14	G 3/8 A	8	22	38.5	18.5	12	36	24	27	77	<b>GE14SR3/8EDOMD</b>	630	630		
14	G 3/4 A	10	32	45.0	21.0	16	39	32	27	157	<b>GE14SR3/4EDOMD</b>	630	630		
16	G 1/2 A	12	27	41.0	18.5	14	37	27	30	119	<b>GE16SREDOMD</b>	400	400	250	
16	G 3/8 A	8	22	38.5	18.0	12	36	27	30	115	<b>GE16SR3/8EDOMD</b>	400	400		
16	G 3/4 A	12	32	45.0	20.5	16	39	32	30	151	<b>GE16SR3/4EDOMD</b>	400	400		
20	G 3/4 A	16	32	47.0	20.5	16	42	32	36	142	<b>GE20SREDOMD</b>	400	400	250	
20	G 1/2 A	12	27	45.0	20.5	14	42	32	36	142	<b>GE20SR1/2EDOMD</b>	420	400		
20	G 1 A	16	40	51.0	22.5	18	44	41	36	265	<b>GE20SR1/4EDOMD</b>	420	400		
20	G 1 1/4 A	16	50	53.0	22.5	20	44	50	36	404	<b>GE20SR1/2EDOMD</b>	420	400		
25	G 1 A	20	40	53.0	23.0	18	47	41	46	266	<b>GE25SREDOMD</b>	420	400	250	
25	G 1/2 A	12	27	49.0	23.0	14	47	41	46	228	<b>GE25SR1/2EDOMD</b>	420	400		
25	G 3/4 A	16	32	51.0	23.0	16	47	41	46	255	<b>GE25SR3/4EDOMD</b>	420	400		
25	G 1 1/4 A	20	50	55.0	23.0	20	47	50	46	411	<b>GE25SR11/4EDOMD</b>	420	400		
25	G 1 1/2 A	20	55	60.0	26.0	22	50	55	46	549	<b>GE25SR11/2EDOMD</b>	315	315		
30	G 1 1/4 A	25	50	57.0	23.5	20	50	50	50	418	<b>GE30SREDOMD</b>	420	400	250	
30	G 1 A	20	40	55.0	23.5	18	50	46	50	344	<b>GE30SR1EDOMD</b>	420	400		
30	G 1 1/2 A	25	55	62.0	26.5	22	53	55	50	530	<b>GE30SR11/2EDOMD</b>	315	315		
38	G 1 1/2 A	32	55	64.0	26.0	22	57	55	60	563	<b>GE38SREDOMD</b>	420	400	200	
38	G 1 1/4 A	25	50	62.0	26.0	20	57	55	60	575	<b>GE38SR11/4EDOMD</b>	420	315		

<sup>1)</sup> Pressure shown = item deliverable

<sup>4)</sup> S = heavy series

PN (bar) = PN (MPa) / 10

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the suffixes below according to the material/surface required

Material	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	
Stainless Steel	NBR
Brass	VIT
	NBR

## The right way to order made easy!

### Step 1 Selecting order code

- 1.1 All fitting sizes available in our fitting program are clearly listed in the index at the front of this catalogue.
- 1.2 Open the catalogue at the corresponding page containing detailed information of the product of your choice.
- 1.3 Select the required fitting size! The basic order code is printed in bold type on the right-hand side of the table of dimensions.

Example: **GE16SREDOMD**

### Step 2 Selecting material, surface and sealing-material

Now simply add the corresponding code for the surface and material variant of the product you require to the basic order code. This code is contained in the table printed at the bottom of every page.

#### 2.1 Alternative sealing material

Example: Cr(VI)-free steel fitting with ED-seal in FKM material.

**GE16SRED+OMD+VIT+CF**  
= **GE16SREDVITOMDCF**

Example: Stainless steel fitting with ED-seal in NBR material (e. g. Perbunan).

**GE16SREDOMD+NBR+71**  
= **GE16SREDNBROMD71**

### Step 3 When ordering fittings complete with nuts and rings

3.1. Metal sealed cutting rings PSR/DPR/D: For these types please delete the 'OMD' or 'X' suffixes.  
Example: **GE16SREDCF**

3.2. Soft sealed EO-2 functional nut: For these types please delete the 'OMD' or 'X' suffixes and add a 'Z' before the series suffix (LL, L, S)

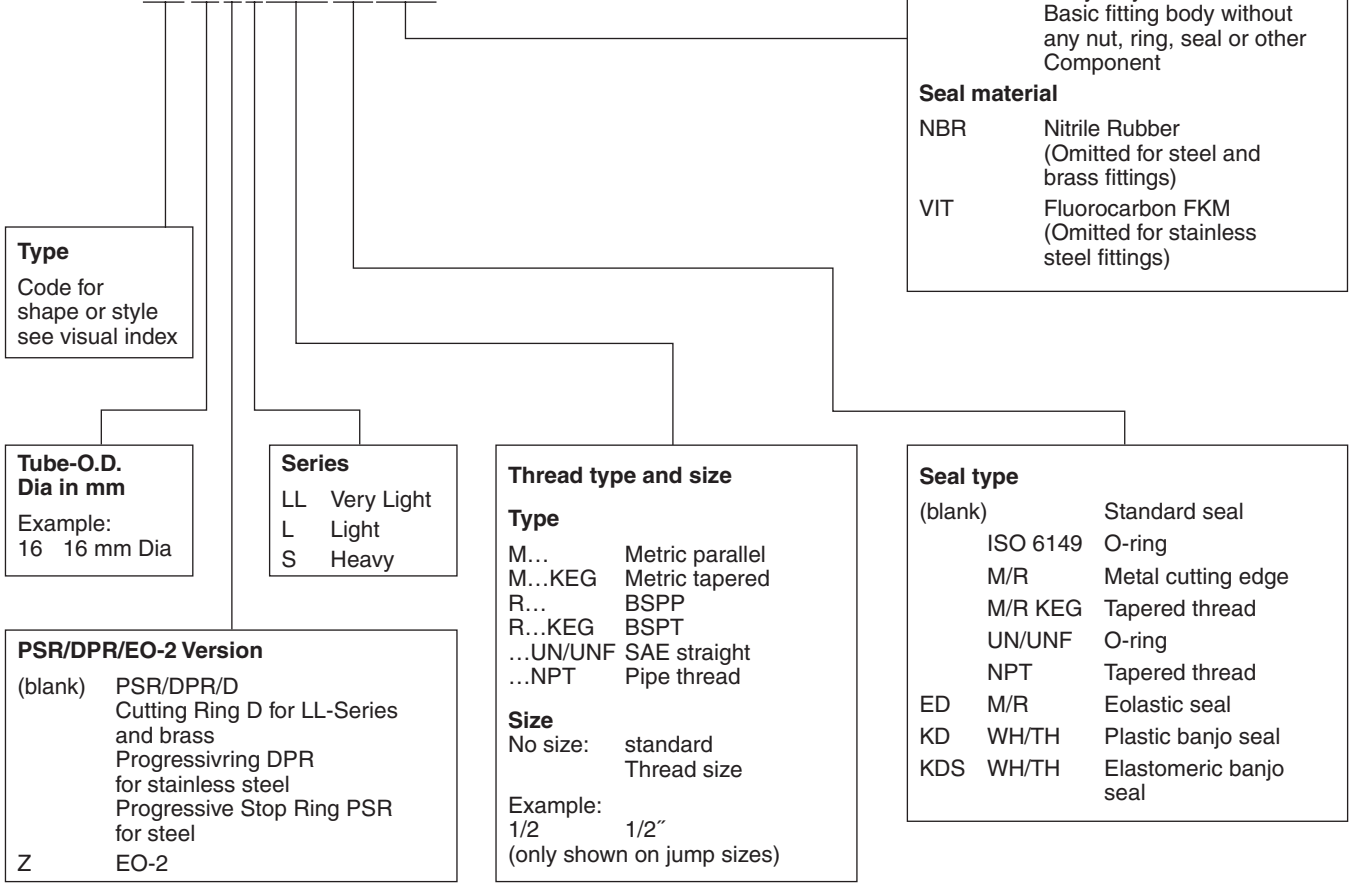
Example: **order with EO-2 functional nut**  
**GE16(+Z)SREDCF**  
= **GE16ZSREDCF**

Perbunan = registered trademark of Bayer



## How to order EO-Fittings:

**Nomenclature**  
 Example: **GE16ZSR3/8EDCF**



Examples		Examples	
Order code	Description	Order code	Description
GE12ZSR1/2EDCF	Straight male stud, EO-2, 20 mm tube O.D., heavy series, G 1/2 BSPP, Eolastic seal, complete with nut and ring, Cr(VI)-free steel fitting, all seals NBR	EVT08LOMDMS	Adjustable standpipe branch tee, 8 mm tube O.D., light series, brass fitting without nut and ring, standpipe preassembled with nut and ring.
GE12LR71X	Straight male stud, 12 mm tube O.D., light series, G 3/8 BSPP, metal seal type B, stainless steel fitting, body only	EL38VITOMDCF	Adjustable swivel nut run tee 38 mm tube O.D., heavy series, zinc-plated steel fitting without nut and ring. Swivel nut end with FKM seal
		DOZ04LL	Spare seal for EO-2 joints, 4 mm O.D., very light series, steel with nitrile rubber seal

Perbunan = registered trademark of Bayer

## Codes for fittings/styles shapes

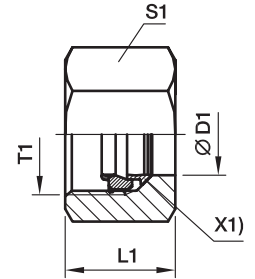
BUZ	Blanking plug for cones
BUZM	Blanking plug with nut for cones
D	Cutting ring – EO 24° cone end
DA	Distance piece adapter – EO 24° DKO swivel/EO 24° cone end
DKA	Sealing ring for banjo fittings WH/TH and SWVE
DKAZ	Sealing ring for low pressure banjos DSVW
DKI	Sealing ring for pressure gauge connectors
DOZ	EO-2 Soft sealing ring
DPR	Progressive ring – EO 24° cone end
DSVW-M	Low pressure banjo elbow – EO 24° cone end/Male metric thread
DSVW-R	Low pressure banjo elbow – EO 24° cone end/Male BSPP thread
E	Tube/hose insert for plastic tubing
ED	Eolastic soft seal (for BSPP and metric parallel threads)
EGE-M-ED	Swivel connector – Male metric thread – ED-seal (ISO 9974)/EO 24° DKO swivel
EGE-NPT	Swivel connector – Male NPT thread (SAE J476)/EO 24° DKO swivel
EGEO	Swivel connector – Male metric thread – O-ring (ISO 6149)/EO 24° DKO swivel
EGE-R-ED	Swivel connector – Male BSPP thread – ED-seal (ISO 1179)/EO 24° DKO swivel
EL	Swivel nut run tee – EO 24° cone end/EO 24° DKO swivel
EL-M-ED	Assembled adjustable swivel run tee – EO 24° cone end/Male metric thread – ED-seal (ISO 9974)
EL-R-ED	Assembled adjustable swivel run tee – EO 24° cone end/Male BSPP thread – ED-seal (ISO 1179)
ET	Swivel nut branch tee – EO 24° cone end/EO 24° DKO swivel
ET-M-ED	Assembled adjustable swivel branch tee – EO 24° cone end/Male metric thread – ED-seal (ISO 9974)
ET-R-ED	Assembled adjustable swivel branch tee – EO 24° cone end/Male BSPP thread – ED-seal (ISO 1179)
EV	Swivel nut 45° elbow – EO 24° cone end/EO 24° DKO swivel
EVGE-M-ED	Standpipe connector – Male metric thread – ED (ISO 9974)/EO standpipe adjustable
EVGE-R-ED	Standpipe connector – Male BSPP thread – ED-seal (ISO 1179)/EO standpipe adjustable
EVL	Standpipe run tee – EO 24° cone end/EO stand pipe adjustable
EVL-M	Assembled adjustable standpipe run tee – EO 24° cone end/Male metric thread – metal sealing edge (ISO 9974)
EVL-R	Assembled adjustable standpipe run tee – EO 24° cone end/Male BSPP thread – metal sealing edge (ISO 1179)
EV-M-ED	Assembled adjustable swivel 45° elbow – EO 24° cone end/Male metric thread – ED-seal (ISO 9974)
EV-R-ED	Assembled adjustable swivel 45° elbow – EO 24° cone end/Male BSPP thread – ED-seal (ISO 1179)
EVT	Standpipe branch tee – EO 24° cone end/EO stand pipe adjustable
EVT-M	Assembled adjustable standpipe branch tee – EO 24° cone end/Male metric thread – metal sealing edge (ISO 9974)
EVT-R	Assembled adjustable standpipe branch tee – EO 24° cone end/Male BSPP thread – metal sealing edge (ISO 1179)
EVW	Standpipe elbow – EO 24° cone end/EO stand pipe adjustable
EVW-M	Assembled adjustable standpipe elbow – EO 24° cone end/Male metric thread – metal sealing edge (ISO 9974)
EVW-R	Assembled adjustable standpipe elbow – EO 24° cone end/Male BSPP thread – metal sealing edge (ISO 1179)
EW	Swivel nut elbow – EO 24° cone end/EO 24° DKO swivel
EW-M-ED	Assembled adjustable swivel elbow – EO 24° cone end/Male metric thread – ED-seal (ISO 9974)
EW-R-ED	Assembled adjustable swivel elbow – EO 24° cone end/Male BSPP thread – ED-seal (ISO 1179)
FM	EO2 Functional nut
FORM	EO2-FORM Set
G	Union – EO 24° cone end
GAI-M	Female connector – Female metric thread (ISO 9974-1)/EO 24° cone end
GAI-NPT	Female connector – Female NPT thread (SAE 476)/EO 24° cone end
GAI-R	Female connector – Female BSPP thread (ISO 1179-1)/EO 24° cone end
GE-M	Male stud connector – Male metric thread – metal sealing edge (ISO 9974)/EO 24° cone end
GE-M (KEG)	Male stud connector – Male short metric taper thread (DIN 3852-1, type C)/EO 24° cone end
GE-M-ED	Male stud connector – Male metric thread – ED (ISO 9974)/EO 24° cone end
GE-NPT	Male stud connector – Male NPT thread (SAE J476)/EO 24° cone end
GEO	Male stud connector – Male metric thread – O-ring (ISO 6149)/EO 24° cone end
GE-R	Male stud connector – Male BSPP thread – metal sealing edge (ISO 1179)/EO 24° cone end
GE-R (KEG)	Male stud connector – Male short BSP taper thread (DIN 3852-2, type C)/EO 24° cone end
GE-R-ED	Male stud connector – Male BSPP thread – ED-seal (ISO 1179)/EO 24° cone end
GE-UNF/UN	Male stud connector – Male UNF/UN thread – O-ring (ISO 11926)/EO 24° cone end
GM	Locknut for bulkheads SV and WSV

## Codes for fittings/styles shapes

GR	Straight reducer – EO 24° cone end
GZ	Swivel union – EO 24° DKO swivel
GZR	Swivel reducer – EO 24° DKO swivel
K	Union cross – EO 24° cone end
KD	Soft sealing ring for banjo fittings WH/TH from stainless steel
KDS	Soft sealing ring for banjo fittings SWVE, WH and TH from steel
KOR	Tube end reducer – Steel and Brass – EO stand pipe adjustable/EO 24° cone end
LEE	Adjustable locknut run tee – EO 24° cone end/Adjustable thread
LE-M	Male stud run tee – EO 24° cone end/Male metric thread – metal sealing edge (ISO 9974)
LE-M (KEG)	Male stud run tee – EO 24° cone end/Male short metric taper thread (DIN 3852-1, Form C)
LE-R	Male stud run tee – EO 24° cone end/Male BSPP thread – metal sealing edge (ISO 1179)
LE-R (KEG)	Male stud run tee – EO 24° cone end/Male short BSP taper thread (DIN 3852-2, type C)
M	Nut- EO 24° Cone end
MAV	Pressure gauge connector – Female BSPP thread/EO 24° cone end
MAVE	Pressure gauge swivel connector – Female BSPP thread/EO 24° DKO swivel
OR	O-ring
PSR	Progressive stop ring – EO 24° cone end
RED	Tube end reducer – EO 24° DKO swivel/EO 24° cone end
RI	Thread reducer/expander – Male BSPP thread – metal sealing edge (ISO 1179)/Female BSPP thread (ISO 1179-1)
RI-ED	Thread reducer/expander – Male BSPP thread – ED-seal (ISO 1179)/Female BSPP thread (ISO 1179-1)
ROV	Blanking plug for tube ends – EO 24° cone end
S	Sleeve screw – for threaded ports according to DIN 3854
SV	Bulkhead union – EO 24° cone end
SWVE-M	Metric male stud banjo elbow – EO 24° cone end/Metric male stud with metal seal ring
SWVE-M-KDS	Metric male stud banjo elbow – EO 24° cone end/Metric male stud with soft seal ring
SWVE-R	BSPP male stud banjo elbow – EO 24° cone end/BSPP male stud with metal seal ring
SWVE-R-KDS	BSPP male stud banjo elbow – EO 24° cone end/BSPP male stud with soft seal ring
T	Union T – EO 24° cone end
TEE	Adjustable locknut branch tee – EO 24° cone end/Adjustable thread
TE-M	Male stud branch tee – EO 24° cone end/Male metric thread – metal sealing edge (ISO 9974)
TE-M (KEG)	Male stud branch tee – EO 24° cone end/Male short metric taper thread (DIN 3852-1, type C)
TE-R	Male stud branch tee – EO 24° cone end/Male BSPP thread – metal sealing edge (ISO 1179)
TE-R (KEG)	Male stud branch tee – EO 24° cone end/Male short BSP taper thread (DIN 3852-2, type C)
TH-M	High pressure banjo tee – EO 24° cone end/Male metric thread with metal sealing ring
TH-M-KDS	High pressure banjo tee – EO 24° cone end/Male metric thread with soft seal ring
TH-R	High pressure banjo tee – EO 24° cone end/Male BSPP thread with metal sealing ring
TH-R-KDS	High pressure banjo tee – EO 24° cone end/Male BSPP thread with soft seal ring
TR	Tee Reducer – EO 24° cone end
VEE	Adjustable locknut 45° elbow – EO 24° cone end/Adjustable thread
VH	Support sleeve for thin-walled metal tubing
VKA	Blanking plug for cones – EO 24° DKO swivel
VKAM	Blanking plug with nut for cone – EO 24° DKO swivel
VSTI M/R-ED	Blanking plug for ports – Male metric thread – ED-seal (ISO 9974) – Male BSPP thread – ED-seal (ISO 1179)
VSTI M-OR	Blanking plug for ports – Male metric thread – O-ring (ISO 6149)
W	Union elbow – EO 24° cone end
WEE	Adjustable locknut elbow – EO 24° cone end/Adjustable thread
WE-M	Male stud elbow – EO 24° cone end/Male metric thread – metal sealing edge (ISO 9974)
WE-M (KEG)	Male stud elbow – EO 24° cone end/Male short metric taper thread (DIN 3852-1, type C)
WE-NPT	Male stud elbow – EO 24° cone end/Male NPT thread (SAE J476)
WE-R	Male stud elbow – EO 24° cone end/Male BSPP thread – metal sealing edge (ISO 1179)
WE-R (KEG)	Male stud elbow – EO 24° cone end/Male short BSP taper thread (DIN 3852-2, type C)
WH-M	High pressure banjo elbow – EO 24° cone end/Male metric thread with metal sealing ring
WH-M-KDS	High pressure banjo elbow – EO 24° cone end/Male metric thread with soft seal ring
WH-R	High pressure banjo elbow – EO 24° cone end/Male BSPP thread with metal sealing ring
WH-R-KDS	High pressure banjo elbow – EO 24° cone end/Male BSPP thread with soft seal ring
WSV	Bulkhead elbow – EO 24° cone end

## FM EO2-Functional nut

for steel tubes



X1) Retaining ring

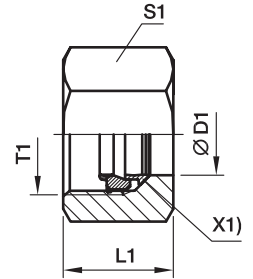
Series	D1 	T1	L1	S1	Order code				Weight g/1 piece
					FM...CF Steel, zinc plated Cr(VI) free passiv. +Sealing Sealing NBR	PN (bar)	FM...VITCF Steel, zinc plated Cr(VI) free passiv. +Sealing Sealing FKM	PN (bar)	
LL	04	M 08×1.0	11.0	10	<b>FM04LLCF</b>	100	—	100	5
	06	M 10×1.0	11.5	12	—	—	—	—	6
L	06	M 12×1.5	14.5	14	<b>FM06LCF</b>	500	<b>FM06LVITCF</b>	500	12
	08	M 14×1.5	14.5	17	<b>FM08LCF</b>	500	<b>FM08LVITCF</b>	500	17
	10	M 16×1.5	15.5	19	<b>FM10LCF</b>	500	<b>FM10LVITCF</b>	500	22
	12	M 18×1.5	15.5	22	<b>FM12LCF</b>	400	<b>FM12LVITCF</b>	400	30
	15	M 22×1.5	17.0	27	<b>FM15LCF</b>	400	<b>FM15LVITCF</b>	400	48
	18	M 26×1.5	18.0	32	<b>FM18LCF</b>	400	<b>FM18LVITCF</b>	400	70
	22	M 30×2.0	20.0	36	<b>FM22LCF</b>	250	<b>FM22LVITCF</b>	250	94
	28	M 36×2.0	21.0	41	<b>FM28LCF</b>	250	<b>FM28LVITCF</b>	250	106
	35	M 45×2.0	24.0	50	<b>FM35LCF</b>	250	<b>FM35LVITCF</b>	250	160
	42	M 52×2.0	24.0	60	<b>FM42LCF</b>	250	<b>FM42LVITCF</b>	250	244
S	06	M 14×1.5	16.5	17	<b>FM06SCF</b>	800	<b>FM06SVITCF</b>	800	20
	08	M 16×1.5	16.5	19	<b>FM08SCF</b>	800	<b>FM08SVITCF</b>	800	23
	10	M 18×1.5	17.5	22	<b>FM10SCF</b>	800	<b>FM10SVITCF</b>	800	37
	12	M 20×1.5	17.5	24	<b>FM12SCF</b>	630	<b>FM12SVITCF</b>	630	39
	14	M 22×1.5	20.5	27	<b>FM14SCF</b>	630	<b>FM14SVITCF</b>	630	60
	16	M 24×1.5	20.5	30	<b>FM16SCF</b>	630	<b>FM16SVITCF</b>	630	72
	20	M 30×2.0	24.0	36	<b>FM20SCF</b>	420	<b>FM20SVITCF</b>	420	121
	25	M 36×2.0	27.0	46	<b>FM25SCF</b>	420	<b>FM25SVITCF</b>	420	221
	30	M 42×2.0	29.0	50	<b>FM30SCF</b>	420	<b>FM30SVITCF</b>	420	248
	38	M 52×2.0	32.5	60	<b>FM38SCF</b>	420	<b>FM38SVITCF</b>	420	367

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$



## FM EO2-Functional nut

for stainless steel tubes



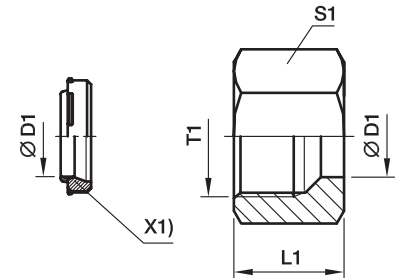
X1) Retaining ring

Series	D1 	T1	L1	S1	Order code								Weight g/1 piece	
					FM...71 Stainless Steel		FM...NBR71 Stainless Steel		FM...SSA Steel, zinc plated Cr(VI) free passiv. +Sealing, Retaining ring: Stainless Steel		FM...VITSSA Steel, zinc plated Cr(VI) free passiv. +Sealing, Retaining ring: Stainless Steel			
					Sealing FKM	PN (bar)	Sealing NBR	PN (bar)	Sealing NBR	PN (bar)	Sealing FKM	PN (bar)		
LL	04	M 08×1.0	11.0	10	—	—	—	—	<b>FM04LLSSA</b>	100	—	—	5	
	06	M 10×1.0	11.5	12	—	—	—	—	<b>FM06LLSSA</b>	100	—	—	6	
L	06	M 12×1.5	14.5	14	<b>FM06L71</b>	315	<b>FM06LNBR71</b>	315	<b>FM06LSSA</b>	315	<b>FM06LVITSSA</b>	315	12	
	08	M 14×1.5	14.5	17	<b>FM08L71</b>	315	<b>FM08LNBR71</b>	315	<b>FM08LSSA</b>	315	<b>FM08LVITSSA</b>	315	17	
	10	M 16×1.5	15.5	19	<b>FM10L71</b>	315	<b>FM10LNBR71</b>	315	<b>FM10LSSA</b>	315	<b>FM10LVITSSA</b>	315	22	
	12	M 18×1.5	15.5	22	<b>FM12L71</b>	315	<b>FM12LNBR71</b>	315	<b>FM12LSSA</b>	315	<b>FM12LVITSSA</b>	315	30	
	15	M 22×1.5	17.0	27	<b>FM15L71</b>	315	<b>FM15LNBR71</b>	315	<b>FM15LSSA</b>	315	<b>FM15LVITSSA</b>	315	48	
	18	M 26×1.5	18.0	32	<b>FM18L71</b>	315	<b>FM18LNBR71</b>	315	<b>FM18LSSA</b>	315	<b>FM18LVITSSA</b>	315	70	
	22	M 30×2.0	20.0	36	<b>FM22L71</b>	160	<b>FM22LNBR71</b>	160	<b>FM22LSSA</b>	160	<b>FM22LVITSSA</b>	160	94	
	28	M 36×2.0	21.0	41	<b>FM28L71</b>	160	<b>FM28LNBR71</b>	160	<b>FM28LSSA</b>	160	<b>FM28LVITSSA</b>	160	106	
	35	M 45×2.0	24.0	50	<b>FM35L71</b>	160	<b>FM35LNBR71</b>	160	<b>FM35LSSA</b>	160	<b>FM35LVITSSA</b>	160	160	
	42	M 52×2.0	24.0	60	<b>FM42L71</b>	160	<b>FM42LNBR71</b>	160	<b>FM42LSSA</b>	160	<b>FM42LVITSSA</b>	160	244	
	S	06	M 14×1.5	16.5	17	<b>FM06S71</b>	630	<b>FM06SNBR71</b>	630	<b>FM06SSSA</b>	630	<b>FM06SVITSSA</b>	630	20
		08	M 16×1.5	16.5	19	<b>FM08S71</b>	630	<b>FM08SNBR71</b>	630	<b>FM08SSSA</b>	630	<b>FM08SVITSSA</b>	630	23
10		M 18×1.5	17.5	22	<b>FM10S71</b>	630	<b>FM10SNBR71</b>	630	<b>FM10SSSA</b>	630	<b>FM10SVITSSA</b>	630	37	
12		M 20×1.5	17.5	24	<b>FM12S71</b>	630	<b>FM12SNBR71</b>	630	<b>FM12SSSA</b>	630	<b>FM12SVITSSA</b>	630	39	
14		M 22×1.5	20.5	27	<b>FM14S71</b>	630	<b>FM14SNBR71</b>	630	<b>FM14SSSA</b>	630	<b>FM14SVITSSA</b>	630	60	
16		M 24×1.5	20.5	30	<b>FM16S71</b>	400	<b>FM16SNBR71</b>	400	<b>FM16SSSA</b>	400	<b>FM16SVITSSA</b>	400	72	
20		M 30×2.0	24.0	36	<b>FM20S71</b>	400	<b>FM20SNBR71</b>	400	<b>FM20SSSA</b>	400	<b>FM20SVITSSA</b>	400	121	
25		M 36×2.0	27.0	46	<b>FM25S71</b>	400	<b>FM25SNBR71</b>	400	<b>FM25SSSA</b>	400	<b>FM25SVITSSA</b>	400	221	
30		M 42×2.0	29.0	50	<b>FM30S71</b>	400	<b>FM30SNBR71</b>	400	<b>FM30SSSA</b>	400	<b>FM30SVITSSA</b>	400	248	
38		M 52×2.0	32.5	60	<b>FM38S71</b>	315	<b>FM38SNBR71</b>	315	<b>FM38SSSA</b>	315	<b>FM38SVITSSA</b>	315	367	

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

## EO2-FORM Set

for steel tubes

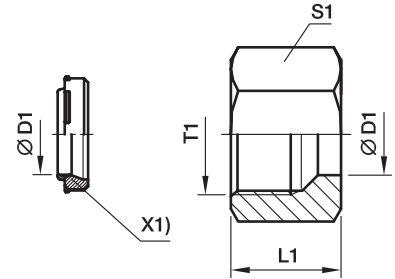


X1) Sealing (DOZ)

Series	D1 	T1	L1	S1	Order code		PN (bar)	Weight g/1 piece
					FORM...CF Steel, zinc plated Cr(VI) free +Seal  NBR	FORM...VITCF Steel, zinc plated Cr(VI) free +Seal  FKM		
L	06	M 12×1.5	14.5	14	<b>FORM06LCF</b>	<b>FORM06LVITCF</b>	500	11
	08	M 14×1.5	14.5	17	<b>FORM08LCF</b>	<b>FORM08LVITCF</b>	500	16
	10	M 16×1.5	15.5	19	<b>FORM10LCF</b>	<b>FORM10LVITCF</b>	500	20
	12	M 18×1.5	15.5	22	<b>FORM12LCF</b>	<b>FORM12LVITCF</b>	400	27
	15	M 22×1.5	17.0	27	<b>FORM15LCF</b>	<b>FORM15LVITCF</b>	400	45
	18	M 26×1.5	18.0	32	<b>FORM18LCF</b>	<b>FORM18LVITCF</b>	400	67
	22	M 30×2.0	20.0	36	<b>FORM22LCF</b>	<b>FORM22LVITCF</b>	250	88
	28	M 36×2.0	21.0	41	<b>FORM28LCF</b>	<b>FORM28LVITCF</b>	250	99
	35	M 45×2.0	24.0	50	<b>FORM35LCF</b>	<b>FORM35LVITCF</b>	250	162
	42	M 52×2.0	24.0	60	<b>FORM42LCF</b>	<b>FORM42LVITCF</b>	250	233
S	06	M 14×1.5	16.5	17	<b>FORM06SCF</b>	<b>FORM06SVITCF</b>	800	19
	08	M 16×1.5	16.5	19	<b>FORM08SCF</b>	<b>FORM08SVITCF</b>	800	22
	10	M 18×1.5	17.5	22	<b>FORM10SCF</b>	<b>FORM10SVITCF</b>	800	34
	12	M 20×1.5	17.5	24	<b>FORM12SCF</b>	<b>FORM12SVITCF</b>	630	38
	14	M 22×1.5	20.5	27	<b>FORM14SCF</b>	<b>FORM14SVITCF</b>	630	57
	16	M 24×1.5	20.5	30	<b>FORM16SCF</b>	<b>FORM16SVITCF</b>	630	71
	20	M 30×2.0	24.0	36	<b>FORM20SCF</b>	<b>FORM20SVITCF</b>	420	115
	25	M 36×2.0	27.0	46	<b>FORM25SCF</b>	<b>FORM25SVITCF</b>	420	216
	30	M 42×2.0	29.0	50	<b>FORM30SCF</b>	<b>FORM30SVITCF</b>	420	242
	38	M 52×2.0	32.5	60	<b>FORM38SCF</b>	<b>FORM38SVITCF</b>	420	366

**EO2-FORM Set**

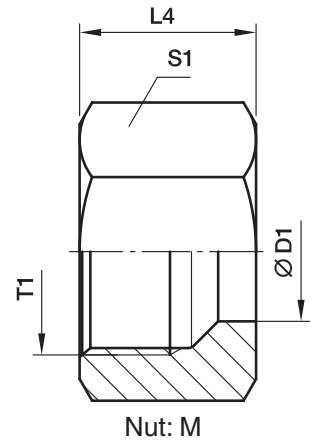
for stainless steel tubes



X1) Sealing (DOZ)

Series	D1 	T1	L1	S1	Order code				PN (bar)	Weight g/1 piece	
					FORM...71 Stainless Steel  Sealing FKM	FORM...NBR71 Stainless Steel  Sealing NBR	FORM...CF Steel, zinc plated Cr(VI) free +Seal  NBR	FORM...VITCF Steel, zinc Cr(VI) free +Seal  FKM			
L	06	M 12x1.5	14.5	14	<b>FORM06L71</b>	<b>FORM06LNBR71</b>	<b>FORM06LCF</b>	<b>FORM06LVITCF</b>	315	11	
	08	M 14x1.5	14.5	17	<b>FORM08L71</b>	<b>FORM08LNBR71</b>	<b>FORM08LCF</b>	<b>FORM08LVITCF</b>	315	16	
	10	M 16x1.5	15.5	19	<b>FORM10L71</b>	<b>FORM10LNBR71</b>	<b>FORM10LCF</b>	<b>FORM10LVITCF</b>	315	21	
	12	M 18x1.5	15.5	22	<b>FORM12L71</b>	<b>FORM12LNBR71</b>	<b>FORM12LCF</b>	<b>FORM12LVITCF</b>	315	27	
	15	M 22x1.5	17.0	27	<b>FORM15L71</b>	<b>FORM15LNBR71</b>	<b>FORM15LCF</b>	<b>FORM15LVITCF</b>	315	46	
	18	M 26x1.5	18.0	32	<b>FORM18L71</b>	<b>FORM18LNBR71</b>	<b>FORM18LCF</b>	<b>FORM18LVITCF</b>	315	68	
	22	M 30x2.0	20.0	36	<b>FORM22L71</b>	<b>FORM22LNBR71</b>	<b>FORM22LCF</b>	<b>FORM22LVITCF</b>	160	89	
	28	M 36x2.0	21.0	41	<b>FORM28L71</b>	<b>FORM28LNBR71</b>	<b>FORM28LCF</b>	<b>FORM28LVITCF</b>	160	101	
	35	M 45x2.0	24.0	50	<b>FORM35L71</b>	<b>FORM35LNBR71</b>	<b>FORM35LCF</b>	<b>FORM35LVITCF</b>	160	165	
	42	M 52x2.0	24.0	60	<b>FORM42L71</b>	<b>FORM42LNBR71</b>	<b>FORM42LCF</b>	<b>FORM42LVITCF</b>	160	237	
	S	06	M 14x1.5	16.5	17	<b>FORM06S71</b>	<b>FORM06SNBR71</b>	<b>FORM06SCF</b>	<b>FORM06SVITCF</b>	630	19
		08	M 16x1.5	16.5	19	<b>FORM08S71</b>	<b>FORM08SNBR71</b>	<b>FORM08SCF</b>	<b>FORM08SVITCF</b>	630	22
10		M 18x1.5	17.5	22	<b>FORM10S71</b>	<b>FORM10SNBR71</b>	<b>FORM10SCF</b>	<b>FORM10SVITCF</b>	630	35	
12		M 20x1.5	17.5	24	<b>FORM12S71</b>	<b>FORM12SNBR71</b>	<b>FORM12SCF</b>	<b>FORM12SVITCF</b>	630	39	
14		M 22x1.5	20.5	27	<b>FORM14S71</b>	<b>FORM14SNBR71</b>	<b>FORM14SCF</b>	<b>FORM14SVITCF</b>	630	58	
16		M 24x1.5	20.5	30	<b>FORM16S71</b>	<b>FORM16SNBR71</b>	<b>FORM16SCF</b>	<b>FORM16SVITCF</b>	400	71	
20		M 30x2.0	24.0	36	<b>FORM20S71</b>	<b>FORM20SNBR71</b>	<b>FORM20SCF</b>	<b>FORM20SVITCF</b>	400	117	
25		M 36x2.0	27.0	46	<b>FORM25S71</b>	<b>FORM25SNBR71</b>	<b>FORM25SCF</b>	<b>FORM25SVITCF</b>	400	219	
30		M 42x2.0	29.0	50	<b>FORM30S71</b>	<b>FORM30SNBR71</b>	<b>FORM30SCF</b>	<b>FORM30SVITCF</b>	400	246	
38		M 52x2.0	32.5	60	<b>FORM38S71</b>	<b>FORM38SNBR71</b>	<b>FORM38SCF</b>	<b>FORM38SVITCF</b>	315	372	

M Nut · EO 24° Cone end



Series	D1 	T1	L4	S1	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
							CF	71	MS
LL <sup>2)</sup>	04	M 08×1.0	11.0	10	4	<b>M04LL</b>	100	100	63
	06	M 10×1.0	11.5	12	6	<b>M06LL</b>	100	100	63
	08	M 12×1.0	12.0	14	7	<b>M08LL</b>	100	100	63
	10	M 14×1.0	12.5	17	11	<b>M10LL</b>	100	100	63
	12	M 16×1.0	13.0	19	13	<b>M12LL</b>	100	100	63
L <sup>3)</sup>	06	M 12×1.5	14.5	14	10	<b>M06L</b>	500	315	200
	08	M 14×1.5	14.5	17	15	<b>M08L</b>	500	315	200
	10	M 16×1.5	15.5	19	18	<b>M10L</b>	500	315	200
	12	M 18×1.5	15.5	22	25	<b>M12L</b>	400	315	200
	15	M 22×1.5	17.0	27	42	<b>M15L</b>	400	315	200
	18	M 26×1.5	18.0	32	62	<b>M18L</b>	400	315	200
	22	M 30×2.0	20.0	36	82	<b>M22L</b>	250	160	100
	28	M 36×2.0	21.0	41	89	<b>M28L</b>	250	160	100
	35	M 45×2.0	24.0	50	137	<b>M35L</b>	250	160	100
	42	M 52×2.0	24.0	60	216	<b>M42L</b>	250	160	100
S <sup>4)</sup>	06	M 14×1.5	16.5	17	17	<b>M06S</b>	800	630	400
	08	M 16×1.5	16.5	19	20	<b>M08S</b>	800	630	400
	10	M 18×1.5	17.5	22	31	<b>M10S</b>	800	630	400
	12	M 20×1.5	17.5	24	34	<b>M12S</b>	630	630	400
	14	M 22×1.5	20.5	27	53	<b>M14S</b>	630	630	400
	16	M 24×1.5	20.5	30	66	<b>M16S</b>	630	400	250
	20	M 30×2.0	24.0	36	102	<b>M20S</b>	420	400	250
	25	M 36×2.0	27.0	46	202	<b>M25S</b>	420	400	250
	30	M 42×2.0	29.0	50	219	<b>M30S</b>	420	400	250
	38	M 52×2.0	32.5	60	339	<b>M38S</b>	420	315	200

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

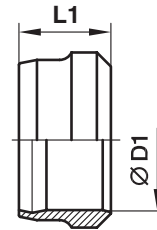
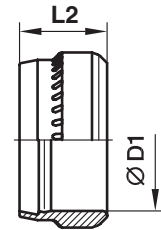
$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	M16SCFX
Stainless Steel	EODURX	M16SEODURX
Brass	MSX	M16SMSX

## D Cutting ring · PSR Progressive stop ring

for EO 24° cone end

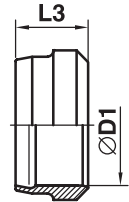

 Cutting ring:  
D

 Progressive stop ring:  
PSR

Series	D1 	Cutting ring <b>D</b> Order code							Progressive stop ring <b>PSR</b> Order code			Weight g/1 pc.	
		L1	Steel, zinc plated Cr(VI) free	PN (bar)	Stainless Steel	PN (bar)	Brass	PN (bar)	L2	Steel, zinc plated Cr(VI) free	PN (bar)		
LL	04	6.0	<b>D04LLX</b>	100	<b>D04LL71X</b>	100	<b>D04LLMSX</b>	63	—	—	—	0.3	
	06	7.0	<b>D06LLX</b>	100	<b>D06LL71X</b>	100	<b>D06LLMSX</b>	63	—	—	—	0.8	
	08	7.0	<b>D08LLX</b>	100	<b>D08LL71X</b>	100	<b>D08LLMSX</b>	63	—	—	—	1.0	
	10	7.0	<b>D10LLX</b>	100	<b>D10LL71X</b>	100	<b>D10LLMSX</b>	63	—	—	—	1.3	
	12	7.5	<b>D12LLX</b>	100	<b>D12LL71X</b>	100	<b>D12LLMSX</b>	63	—	—	—	1.6	
	L	06	9.5	—	—	—	—	<b>D06LMSX</b>	200	9.5	<b>PSR06LX</b>	500	1.7
08		9.0	—	—	—	—	<b>D08LMSX</b>	200	9.5	<b>PSR08LX</b>	500	2.2	
10		10.0	—	—	—	—	<b>D10LMSX</b>	200	10.0	<b>PSR10LX</b>	500	3.1	
12		10.0	—	—	—	—	<b>D12LMSX</b>	200	10.0	<b>PSR12LX</b>	400	3.5	
15		10.0	—	—	—	—	<b>D15LMSX</b>	200	10.0	<b>PSR15LX</b>	400	4.5	
18		10.0	—	—	—	—	<b>D18LMSX</b>	200	10.0	<b>PSR18LX</b>	400	5.5	
22		10.5	—	—	—	—	<b>D22LMSX</b>	100	10.5	<b>PSR22LX</b>	250	7.3	
28		10.5	—	—	—	—	<b>D28LMSX</b>	100	10.5	<b>PSR28LX</b>	250	9.4	
35		13.0	—	—	—	—	<b>D35LMSX</b>	100	13.0	<b>PSR35LX</b>	250	20.0	
42		13.5	—	—	—	—	<b>D42LMSX</b>	100	13.0	<b>PSR42LX</b>	250	23.0	
S		06	9.5	—	—	—	—	<b>D06LMSX</b>	400	9.5	<b>PSR06LX</b>	800	1.7
		08	9.0	—	—	—	—	<b>D08LMSX</b>	400	9.5	<b>PSR08LX</b>	800	3.2
	10	10.0	—	—	—	—	<b>D10LMSX</b>	400	10.0	<b>PSR10LX</b>	800	3.1	
	12	10.0	—	—	—	—	<b>D12LMSX</b>	400	10.0	<b>PSR12LX</b>	630	3.5	
	14	10.0	—	—	—	—	<b>D14SMSX</b>	400	10.0	<b>PSR14SX</b>	630	3.9	
	16	10.5	—	—	—	—	<b>D16SMSX</b>	250	10.0	<b>PSR16SX</b>	630	5.6	
	20	12.5	—	—	—	—	<b>D20SMSX</b>	250	13.0	<b>PSR20SX</b>	420	11.4	
	25	12.5	—	—	—	—	<b>D25SMSX</b>	250	13.0	<b>PSR25SX</b>	420	13.3	
	30	13.0	—	—	—	—	<b>D30SMSX</b>	250	13.0	<b>PSR30SX</b>	420	19.3	
	38	13.5	—	—	—	—	<b>D38SMSX</b>	200	13.0	<b>PSR38SX</b>	420	22.5	

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

## DPR Progressive ring

for EO 24° cone end



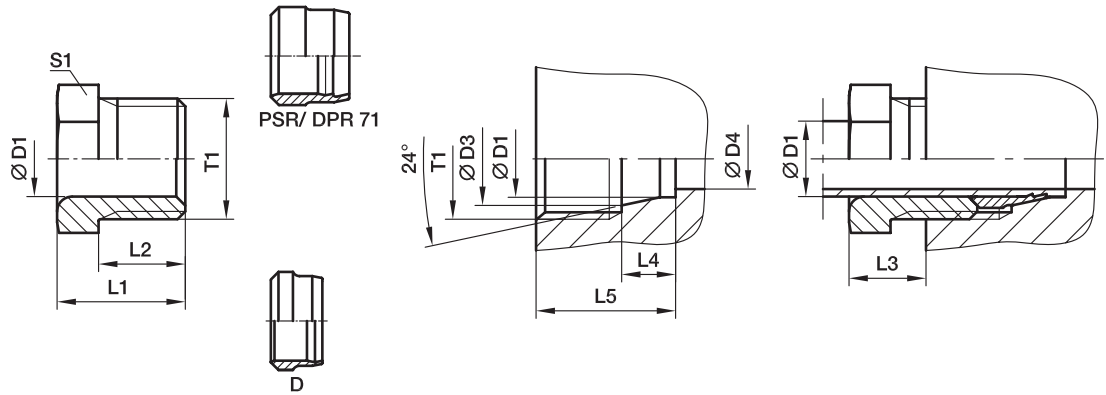
Progressive ring: DPR

Series	D1 	L3	Progressive ring DPR Order code		PN (bar)	Weight g/1 piece
			Stainless Steel	Stainless Steel SPH		
L	06	9.0	DPR06L71X	DPR06LSPH71X	315	1.7
	08	9.0	DPR08L71X	DPR08LSPH71X	315	2.2
	10	9.5	DPR10L71X	DPR10LSPH71X	315	3.1
	12	9.8	DPR12L71X	DPR12LSPH71X	315	3.5
	15	9.5	DPR15L71X	DPR15LSPH71X	315	4.5
	18	9.5	DPR18L71X	DPR18LSPH71X	315	5.5
	22	10.5	DPR22L71X	DPR22LSPH71X	160	7.3
	28	11.0	DPR28L71X	DPR28LSPH71X	160	9.4
	35	13.5	DPR35L71X	DPR35LSPH71X	160	20.0
	42	13.5	DPR42L71X	DPR42LSPH71X	160	23.0
S	06	9.0	DPR06L71X	DPR06LSPH71X	630	1.7
	08	9.0	DPR08L71X	DPR08LSPH71X	630	3.2
	10	9.5	DPR10L71X	DPR10LSPH71X	630	3.1
	12	9.8	DPR12L71X	DPR12LSPH71X	630	3.5
	14	9.5	DPR14S71X	DPR14SSPH71X	630	3.9
	16	9.5	DPR16S71X	DPR16SSPH71X	400	5.6
	20	12.5	DPR20S71X	DPR20SSPH71X	400	11.4
	25	12.5	DPR25S71X	DPR25SSPH71X	400	13.3
	30	12.5	DPR30S71X	DPR30SSPH71X	400	19.3
	38	13.0	DPR38S71X	DPR38SSPH71X	315	22.5

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

## S Sleeve screw

for threaded ports according to DIN 3854



Series	D1 	T1	D3	D4	L1	L2	L3	L4	L5	S1	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
													CF	71
LL <sup>2)</sup>	04	M 08×1.0	5.0	3.0	12	8.0	6	4.0	12.5	8	3	<b>S04LL</b>	100	100
	06	M 10×1.0	7.5	4.5	13	9.0	7	5.5	14.5	10	4	<b>S06LL</b>	100	100
	08	M 12×1.0	9.5	6.0	14	9.5	7	5.5	14.5	12	6	<b>S08LL</b>	100	100
L <sup>3)</sup>	06	M 12×1.5	8.1	4.0	16	11.5	10	7.0	18.5	12	9	<b>S06L</b>	315	315
	08	M 14×1.5	10.1	6.0	16	11.5	10	7.0	18.5	14	11	<b>S08L</b>	315	315
	10	M 16×1.5	12.3	8.0	17	11.5	10	7.0	18.5	17	15	<b>S10L</b>	315	315
	12	M 18×1.5	14.3	10.0	18	12.0	10	7.0	19.0	19	19	<b>S12L</b>	315	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series

$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

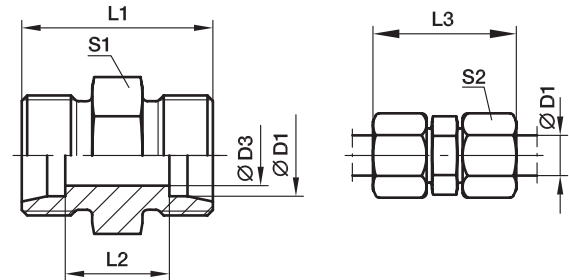
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	S10LCFX
Stainless Steel	71X	S10L71X



## G Union

EO 24° cone end



Series	D1 	D3	L1	L2	L3	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
										CF	71	MS
LL <sup>2)</sup>	04	3.0	20	12	31	9	10	5	<b>G04LL</b>	100	100	63
	06	4.5	20	9	32	11	12	7	<b>G06LL</b>	100	100	63
	08	6.0	23	12	35	12	14	10	<b>G08LL</b>	100	100	63
	10	8.0	23	12	35	14	17	13	<b>G10LL</b>	100	100	63
	12	10.0	23	11	35	17	19	16	<b>G12LL</b>	100	100	63
L <sup>3)</sup>	06	4.0	24	10	39	12	14	12	<b>G06L</b>	500	315	200
	08	6.0	25	11	40	14	17	16	<b>G08L</b>	500	315	200
	10	8.0	27	13	42	17	19	23	<b>G10L</b>	500	315	200
	12	10.0	28	14	43	19	22	28	<b>G12L</b>	400	315	200
	15	12.0	30	16	46	24	27	51	<b>G15L</b>	400	315	200
	18	15.0	31	16	48	27	32	69	<b>G18L</b>	400	315	200
	22	19.0	35	20	52	32	36	90	<b>G22L</b>	250	160	100
	28	24.0	36	21	54	41	41	137	<b>G28L</b>	250	160	100
	35	30.0	41	20	63	46	50	214	<b>G35L</b>	250	160	100
	42	36.0	43	21	66	55	60	296	<b>G42L</b>	250	160	100
S <sup>4)</sup>	06	4.0	30	16	45	14	17	26	<b>G06S</b>	800	630	400
	08	5.0	32	18	47	17	19	37	<b>G08S</b>	800	630	400
	10	7.0	32	17	49	19	22	44	<b>G10S</b>	800	630	400
	12	8.0	34	19	51	22	24	60	<b>G12S</b>	630	630	400
	14	10.0	38	22	57	24	27	77	<b>G14S</b>	630	630	400
	16	12.0	38	21	57	27	30	90	<b>G16S</b>	630	400	250
	20	16.0	44	23	66	32	36	143	<b>G20S</b>	420	400	250
	25	20.0	50	26	74	41	46	251	<b>G25S</b>	420	400	250
	30	25.0	54	27	80	46	50	330	<b>G30S</b>	420	400	250
	38	32.0	61	29	90	55	60	545	<b>G38S</b>	420	315	200

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

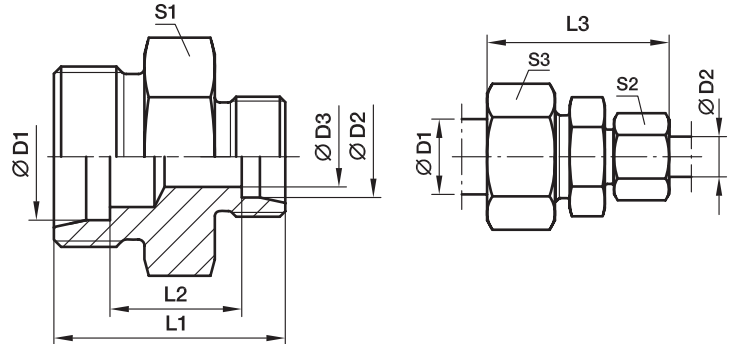
Delivery without nut and ring. Information on ordering complete fittings see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	G16SCFX
Stainless Steel	71X	G16S71X
Brass	MSX	G16SMSX

## GR Straight reducer

EO 24° cone end



Series	D1	D2	D3	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>			
												CF	71	MS	
LL <sup>2)</sup>	06	04	3.0	20	10.5	32	11	10	12	7	<b>GR06/04LL</b>	100	100	63	
	08	04	3.0	22	12.5	34	12	10	14	9	<b>GR08/04LL</b>	100	100	63	
	08	06	4.5	22	11.0	34	12	12	14	11	<b>GR08/06LL</b>	100	100	63	
L <sup>3)</sup>	08	06	4.0	25	11.0	40	14	14	17	16	<b>GR08/06L</b>	500	315	200	
	10	06	4.0	26	12.0	41	17	14	19	21	<b>GR10/06L</b>	500	315	200	
	10	08	6.0	26	12.0	41	17	17	19	21	<b>GR10/08L</b>	500	315	200	
	12	06	4.0	27	13.0	42	19	14	22	26	<b>GR12/06L</b>	400	315	200	
	12	08	6.0	27	13.0	42	19	17	22	26	<b>GR12/08L</b>	400	315	200	
	12	10	8.0	28	14.0	43	19	19	22	29	<b>GR12/10L</b>	400	315	200	
	15	10	8.0	29	15.0	45	24	19	27	46	<b>GR15/10L</b>	400	315	200	
	15	12	10.0	29	15.0	45	24	22	27	45	<b>GR15/12L</b>	400	315	200	
	18	10	8.0	30	15.5	46	27	19	32	65	<b>GR18/10L</b>	400	315	200	
	18	12	10.0	30	15.5	46	27	22	32	64	<b>GR18/12L</b>	400	315	200	
	18	15	12.0	31	16.5	48	27	27	32	65	<b>GR18/15L</b>	400	315	200	
	22	12	10.0	32	17.5	48	32	22	36	80	<b>GR22/12L</b>	250	160	100	
	22	15	12.0	33	18.5	50	32	27	36	89	<b>GR22/15L</b>	250	160	100	
	22	18	15.0	33	18.0	50	32	32	36	89	<b>GR22/18L</b>	250	160	100	
	28	18	15.0	34	19.0	52	41	32	41	142	<b>GR28/18L</b>	250	160	100	
	28	22	19.0	36	21.0	54	41	36	41	139	<b>GR28/22L</b>	250	160	100	
	35	22	19.0	39	21.0	59	46	36	50	202	<b>GR35/22L</b>	250	160	100	
	35	28	24.0	39	21.0	59	46	41	50	206	<b>GR35/28L</b>	250	160	100	
	42	35	30.0	43	21.5	66	55	50	60	330	<b>GR42/35L</b>	250	160	100	
	S <sup>4)</sup>	08	06	4.0	32	18.0	47	17	17	19	35	<b>GR08/06S</b>	800	630	400
		10	06	4.0	32	17.5	48	19	17	22	41	<b>GR10/06S</b>	800	630	400
10		08	5.0	32	17.5	48	19	19	22	42	<b>GR10/08S</b>	800	630	400	
12		06	4.0	34	19.5	50	22	17	24	56	<b>GR12/06S</b>	630	630	400	
12		08	5.0	34	19.5	50	22	19	24	57	<b>GR12/08S</b>	630	630	400	
12		10	7.0	34	19.0	51	22	22	24	59	<b>GR12/10S</b>	630	630	400	
14		10	7.0	36	20.5	54	24	22	27	70	<b>GR14/10S</b>	630	630	400	
14		12	8.0	36	20.5	54	24	24	27	72	<b>GR14/12S</b>	630	630	400	
16		10	7.0	36	20.0	54	27	22	30	80	<b>GR16/10S</b>	630	400	250	
16		12	8.0	36	20.0	54	27	24	30	87	<b>GR16/12S</b>	630	400	250	
16		14	10.0	36	21.5	57	27	27	30	79	<b>GR16/14S</b>	630	400	250	
20		10	7.0	40	22.0	60	32	22	36	129	<b>GR20/10S</b>	420	400	250	
20		12	8.0	40	22.0	60	32	24	36	131	<b>GR20/12S</b>	420	400	250	
20		16	12.0	42	23.0	63	32	30	36	134	<b>GR20/16S</b>	420	400	250	
25		16	12.0	46	25.5	68	41	30	46	236	<b>GR25/16S</b>	420	400	250	
25		20	16.0	48	25.5	71	41	36	46	235	<b>GR25/20S</b>	420	400	250	
30		20	16.0	50	26.0	74	46	36	50	299	<b>GR30/20S</b>	420	400	250	
30		25	20.0	52	26.5	77	46	46	50	317	<b>GR30/25S</b>	420	400	250	
38	30	25.0	59	29.5	87	55	50	60	522	<b>GR38/30S</b>	420	315	200		

1) Pressure shown = item deliverable

2) LL = very light series; 3) L = light series; 4) S = heavy series

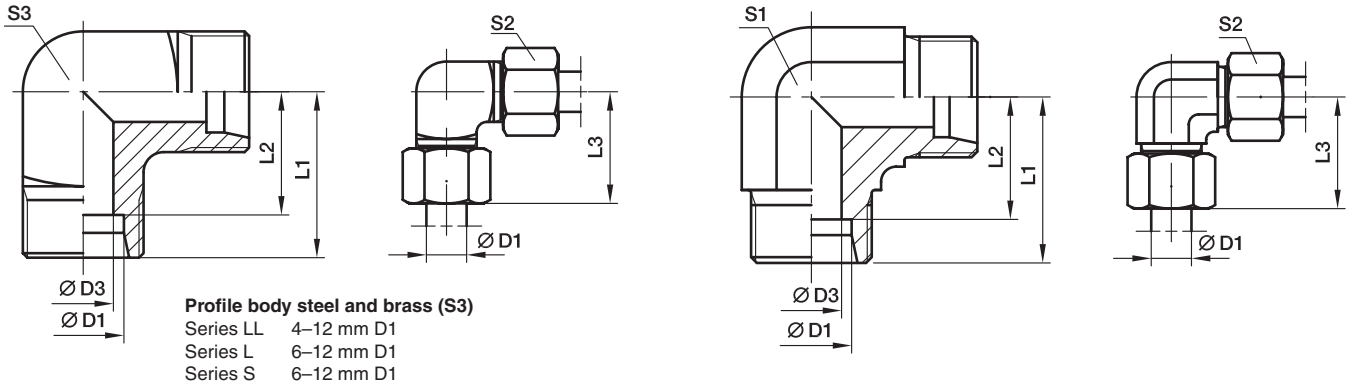
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$
**Delivery without nut and ring. Information on ordering complete fittings see page I7.**

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	GR16/12SCFX
Stainless Steel	71X	GR16/12S71X
Brass	MSX	GR16/12SMSX

## W Union elbow

EO 24° cone end



Series	D1	D3	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
											CF	71	MS
LL <sup>2)</sup>	04	3.0	15	11.0	21	9	10	9	13	<b>W04LL</b>	100	100	63
	06	4.5	15	9.5	21	9	12	11	15	<b>W06LL</b>	100	100	63
	08	6.0	17	11.5	23	12	14	12	23	<b>W08LL</b>	100	100	63
	10	8.0	18	12.5	24	12	17	14	32	<b>W10LL</b>	100	100	63
	12	10.0	19	13.0	25	14	19	17	41	<b>W12LL</b>	100	100	63
L <sup>3)</sup>	06	4.0	19	12.0	27	12	14	12	29	<b>W06L</b>	500	315	200
	08	6.0	21	14.0	29	12	17	14	43	<b>W08L</b>	500	315	200
	10	8.0	22	15.0	30	14	19	17	54	<b>W10L</b>	500	315	200
	12	10.0	24	17.0	32	19	22		80	<b>W12L</b>	400	315	200
	15	12.0	28	21.0	36	19	27		81	<b>W15L</b>	400	315	200
	18	15.0	31	23.5	40	24	32		140	<b>W18L</b>	400	315	200
	22	19.0	35	27.5	44	27	36		178	<b>W22L</b>	250	160	100
	28	24.0	38	30.5	47	36	41		340	<b>W28L</b>	250	160	100
	35	30.0	45	34.5	56	41	50		458	<b>W35L</b>	250	160	100
	42	36.0	51	40.0	63	50	60		776	<b>W42L</b>	250	160	100
S <sup>4)</sup>	06	4.0	23	16.0	31	12	17	14	52	<b>W06S</b>	800	630	400
	08	5.0	24	17.0	32	14	19	17	74	<b>W08S</b>	800	630	400
	10	7.0	25	17.5	34	19	22		97	<b>W10S</b>	800	630	400
	12	8.0	29	21.5	38	17	24	22	137	<b>W12S</b>	630	630	400
	14	10.0	30	22.0	40	19	27		145	<b>W14S</b>	630	630	400
	16	12.0	33	24.5	43	24	30		162	<b>W16S</b>	630	400	250
	20	16.0	37	26.5	48	27	36		221	<b>W20S</b>	420	400	250
	25	20.0	42	30.0	54	36	46		424	<b>W25S</b>	420	400	250
	30	25.0	49	35.5	62	41	50		603	<b>W30S</b>	420	400	250
	38	32.0	57	41.0	72	50	60		1010	<b>W38S</b>	420	315	200

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	W16SCFX
Stainless Steel	71X	W16S71X
Brass	MSX	W16SMSX

## T Union tee

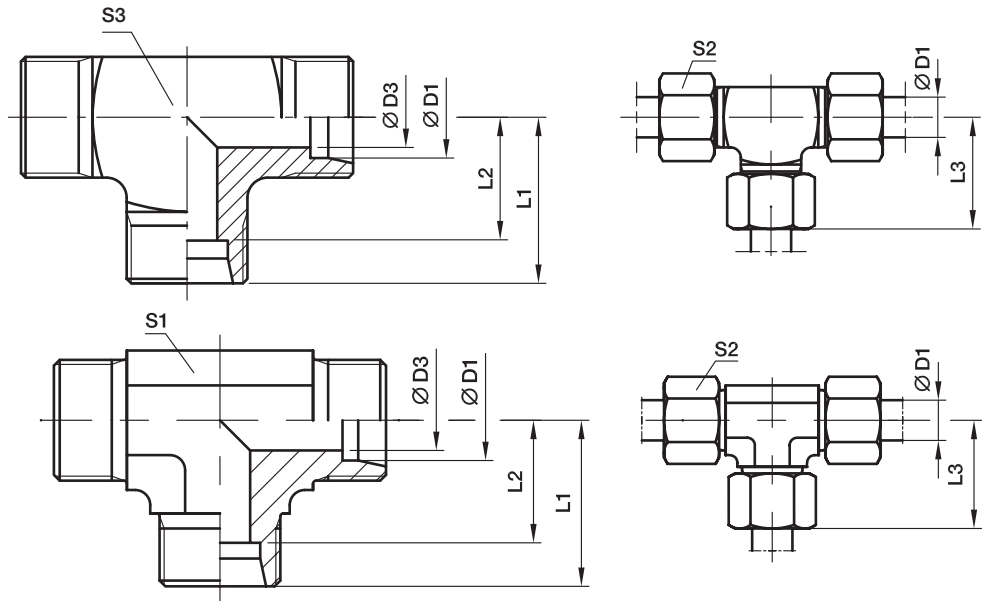
### EO 24° cone end

profile body steel and brass (S3)

Series LL4–10 mm D1

Series L 6+ 8 mm D1

Series S 6 mm D1



Series	D1	D3	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
											CF	71	MS
LL <sup>2)</sup>	04	3.0	15	11.0	21	9	10	9	19	<b>T04LL</b>	100	100	63
	06	4.5	15	9.5	21	9	12	11	20	<b>T06LL</b>	100	100	63
	08	6.0	17	11.5	23	12	14	12	27	<b>T08LL</b>	100	100	63
	10	8.0	18	12.5	24	12	17	14	39	<b>T10LL</b>	100	100	63
	12	10.0	21	15.0	27	14	19		45	<b>T12LL</b>	100	100	63
L <sup>3)</sup>	06	4.0	19	12.0	27	12	14	12	37	<b>T06L</b>	500	315	200
	08	6.0	21	14.0	29	12	17	14	53	<b>T08L</b>	500	315	200
	10	8.0	22	15.0	30	14	19		48	<b>T10L</b>	500	315	200
	12	10.0	24	17.0	32	17	22		65	<b>T12L</b>	400	315	200
	15	12.0	28	21.0	36	19	27		106	<b>T15L</b>	400	315	200
	18	15.0	31	23.5	40	24	32		179	<b>T18L</b>	400	315	200
	22	19.0	35	27.5	44	27	36		225	<b>T22L</b>	250	160	100
	28	24.0	38	30.5	47	36	41		396	<b>T28L</b>	250	160	100
	35	30.0	45	34.5	56	41	50		567	<b>T35L</b>	250	160	100
	42	36.0	51	40.0	63	50	60		905	<b>T42L</b>	250	160	100
S <sup>4)</sup>	06	4.0	23	16.0	31	12	17	14	68	<b>T06S</b>	800	630	400
	08	5.0	24	17.0	32	14	19		70	<b>T08S</b>	800	630	400
	10	7.0	25	17.5	34	17	22		91	<b>T10S</b>	800	630	400
	12	8.0	29	21.5	38	17	24		117	<b>T12S</b>	630	630	400
	14	10.0	30	22.0	40	19	27		136	<b>T14S</b>	630	630	400
	16	12.0	33	24.5	43	24	30		202	<b>T16S</b>	630	400	250
	20	16.0	37	26.5	48	27	36		289	<b>T20S</b>	420	400	250
	25	20.0	42	30.0	54	36	46		545	<b>T25S</b>	420	400	250
	30	25.0	49	35.5	62	41	50		758	<b>T30S</b>	420	400	250
	38	32.0	57	41.0	72	50	60		1264	<b>T38S</b>	420	315	200

1) Pressure shown = item deliverable

2) LL = very light series; 3) L = light series; 4) S = heavy series

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Delivery without nut and ring. Information on ordering complete fittings see page 17.

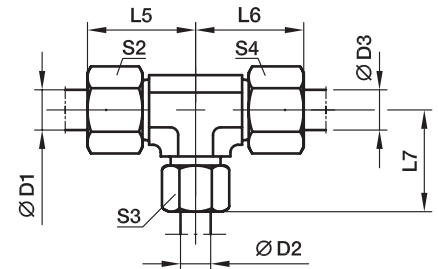
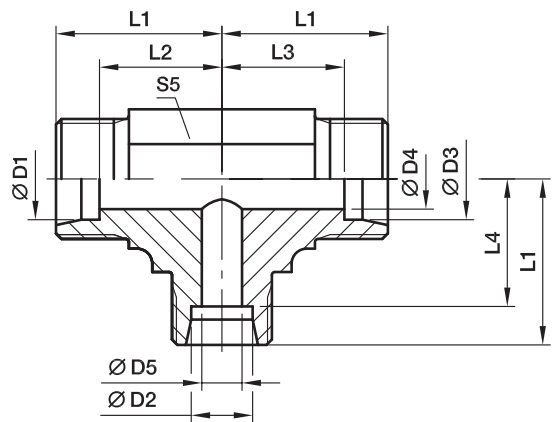
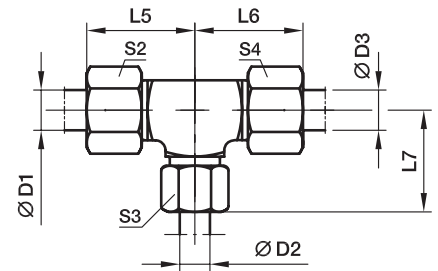
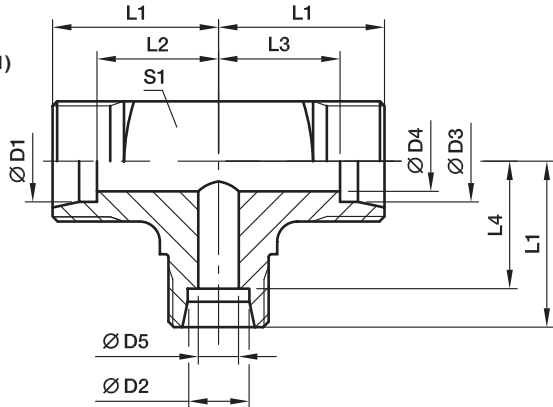
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	T16SCFX
Stainless Steel	71X	T16S71X
Brass	MSX	T16SMSX

## TR Tee Reducer

EO 24° cone end

Profile body steel and brass (S1)  
 Series LL 4-8 mm D1, D2, D3  
 Series L 6+8 mm D1, D2, D3



Series	D1, D2, D3			D4	D5	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	S4	S5	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
	CF	71	MS																			
LL <sup>2)</sup>	04	08	04	3.0	6	17	13.0	13.0	11.5	23	23	23	12	10	14	10	12	27	TR04/08/04LL	100	100	63
	06	04	06	4.5	3	15	9.5	9.5	11.0	21	21	21	11	12	10	12	9	18	TR06/04/06LL	100	100	63
L <sup>3)</sup>	06	08	06	4.0	6	21	14.0	14.0	14.0	29	29	29	14	14	17	14	12	54	TR06/08/06L	500	315	200
	08	06	08	6.0	4	21	14.0	14.0	14.0	29	29	29	14	17	14	17	12	53	TR08/06/08L	500	315	200
	06	10	06	4.0	8	22	15.0	15.0	15.0	30	30	30	14	19	14	14	14	53	TR06/10/06L	500	315	200
	08	10	08	6.0	8	22	15.0	15.0	15.0	30	30	30	17	19	17	14	14	50	TR08/10/08L	500	315	200
	10	06	10	8.0	4	22	15.0	15.0	15.0	30	30	30	19	14	19	14	14	46	TR10/06/10L	500	315	200
	10	08	10	8.0	6	22	15.0	15.0	15.0	30	30	30	19	17	19	14	14	43	TR10/08/10L	500	315	200
	10	10	06	4.0	8	22	15.0	15.0	15.0	30	30	30	19	19	14	14	14	49	TR10/10/06L	500	315	200
	08	12	08	6.0	10	24	17.0	17.0	17.0	32	32	32	17	22	17	17	17	67	TR08/12/08L	400	315	200
	12	06	12	10.0	4	24	17.0	17.0	17.0	32	32	32	22	14	22	17	17	66	TR12/06/12L	400	315	200
	12	08	08	6.0	6	24	17.0	17.0	17.0	32	32	32	22	17	17	17	17	66	TR12/08/08L	400	315	200
	12	08	12	10.0	6	24	17.0	17.0	17.0	32	32	32	22	17	22	17	17	68	TR12/08/12L	400	315	200
	12	10	10	8.0	8	24	17.0	17.0	17.0	32	32	32	22	19	19	17	17	67	TR12/10/10L	400	315	200
	12	10	12	10.0	8	24	17.0	17.0	17.0	32	32	32	22	19	22	17	17	67	TR12/10/12L	400	315	200
	12	12	10	8.0	10	24	17.0	17.0	17.0	32	32	32	22	22	19	17	17	64	TR12/12/10L	400	315	200
	10	15	10	8.0	12	28	21.0	21.0	21.0	36	36	36	19	27	19	19	19	105	TR10/15/10L	400	315	200
	12	15	12	10.0	12	28	21.0	21.0	21.0	36	36	36	22	27	22	19	19	102	TR12/15/12L	400	315	200
	15	06	15	12.0	4	28	21.0	21.0	21.0	36	36	36	27	14	27	19	19	107	TR15/06/15L	400	315	200
	15	10	15	12.0	8	28	21.0	21.0	21.0	36	36	36	27	19	27	19	19	105	TR15/10/15L	400	315	200
	15	12	12	10.0	10	28	21.0	21.0	21.0	36	36	36	27	22	22	19	19	101	TR15/12/12L	400	315	200
	15	12	15	12.0	10	28	21.0	21.0	21.0	36	36	36	27	22	27	19	19	105	TR15/12/15L	400	315	200
15	15	12	10.0	12	28	21.0	21.0	21.0	36	36	36	27	27	22	19	19	103	TR15/15/12L	400	315	200	
12	18	12	10.0	15	31	24.0	24.0	23.5	39	39	40	22	32	22	24	24	177	TR12/18/12L	400	315	200	
18	10	10	8.0	8	31	23.5	24.0	24.0	40	39	39	32	19	19	24	24	173	TR18/10/10L	400	315	200	
18	10	18	15.0	8	31	23.5	23.5	24.0	40	40	39	32	19	32	24	24	182	TR18/10/18L	400	315	200	
18	12	18	15.0	10	31	23.5	23.5	24.0	40	40	39	32	22	32	24	24	174	TR18/12/18L	400	315	200	

## TR Tee Reducer

EO 24° cone end

Series	D1	D2	D3	D4	D5	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	S4	S5	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
																				CF	71	MS
L <sup>3)</sup>	18	15	18	15.0	12	31	23.5	23.5	24.0	40	40	39		32	27	32	24	179	TR18/15/18L	400	315	200
	18	18	10	8.0	15	31	23.5	24.0	23.5	40	39	40		32	32	19	24	171	TR18/18/10L	400	315	200
	22	10	22	19.0	8	35	27.5	27.5	28.0	44	44	43		36	19	36	27	232	TR22/10/22L	250	160	100
	22	12	22	19.0	10	35	27.5	27.5	28.0	44	44	43		36	22	36	27	229	TR22/12/22L	250	160	100
	22	15	15	12.0	12	35	27.5	28.0	28.0	44	43	43		36	27	27	27	240	TR22/15/15L	250	160	100
	22	15	22	19.0	12	35	27.5	27.5	28.0	44	44	43		36	27	36	27	233	TR22/15/22L	250	160	100
	22	18	18	15.0	15	35	27.5	27.5	27.5	44	44	44		36	32	32	27	236	TR22/18/18L	250	160	100
	22	18	22	19.0	15	35	27.5	27.5	27.5	44	44	44		36	32	36	27	239	TR22/18/22L	250	160	100
	22	22	18	15.0	19	35	27.5	27.5	27.5	44	44	44		36	36	32	27	228	TR22/22/18L	250	160	100
	28	10	28	24.0	8	38	30.5	30.5	31.0	47	47	46		41	19	41	36	412	TR28/10/28L	250	160	100
	28	12	28	24.0	10	38	30.5	30.5	31.0	47	47	46		41	22	41	36	408	TR28/12/28L	250	160	100
	28	15	28	24.0	12	38	30.5	30.5	31.0	47	47	46		41	27	41	36	423	TR28/15/28L	250	160	100
	28	18	28	24.0	15	38	30.5	30.5	30.5	47	47	47		41	32	41	36	421	TR28/18/28L	250	160	100
	28	22	22	19.0	19	38	30.5	30.5	30.5	47	47	47		41	36	36	36	412	TR28/22/22L	250	160	100
	28	22	28	24.0	19	38	30.5	30.5	30.5	47	47	47		41	36	41	36	415	TR28/22/28L	250	160	100
	S <sup>4)</sup>	10	06	10	7.0	4	25	17.5	17.5	18.0	34	34	33		22	17	22	17	103	TR10/06/10S	800	630
12		08	08	5.0	5	29	21.5	22.0	22.0	38	37	37		24	19	19	17	107	TR12/08/08S	630	630	400
12		08	12	8.0	5	29	21.5	21.5	22.0	38	38	37		24	19	24	17	105	TR12/08/12S	630	630	400
12		10	12	8.0	7	29	21.5	21.5	21.5	38	38	38		24	22	24	17	114	TR12/10/12S	630	630	400
12		16	12	8.0	12	33	25.5	25.5	24.5	42	42	43		24	30	24	24	190	TR12/16/12S	630	400	250
16		06	16	12.0	4	33	24.5	24.5	26.0	43	43	41		30	17	30	24	176	TR16/06/16S	630	400	250
16		08	16	12.0	5	33	24.5	24.5	26.0	43	43	41		30	19	30	24	208	TR16/08/16S	630	400	250
16		10	16	12.0	7	33	24.5	24.5	25.5	43	43	42		30	22	30	24	210	TR16/10/16S	630	400	250
16		12	16	12.0	8	33	24.5	24.5	25.5	43	43	42		30	24	30	24	386	TR16/12/16S	630	400	250
16		20	16	12.0	16	37	28.5	28.5	26.5	47	47	48		30	36	30	27	296	TR16/20/16S	420	400	250
20		10	20	16.0	7	37	26.5	26.5	29.5	48	48	46		36	22	36	27	553	TR20/10/20S	420	400	250
20		12	20	16.0	8	37	26.5	26.5	29.5	48	48	46		36	24	36	27	306	TR20/12/20S	420	400	250
20		16	20	16.0	12	37	26.5	26.5	28.5	48	48	47		36	30	36	27	285	TR20/16/20S	420	400	250
20		25	20	16.0	20	42	31.5	31.5	30.0	53	53	54		36	46	36	36	544	TR20/25/20S	420	400	250
25		16	25	20.0	12	42	30.0	30.0	33.5	54	54	52		46	30	46	36	556	TR25/16/25S	420	400	250
25		20	25	20.0	16	42	30.0	30.0	31.5	54	54	53		46	36	46	36	544	TR25/20/25S	420	400	250
25	30	25	20.0	25	49	37.0	37.0	35.5	61	61	62		46	50	46	41	791	TR25/30/25S	420	400	250	

1) Pressure shown = item deliverable

2) LL = very light series; 3) L = light series; 4) S = heavy series

PN (bar) = PN (MPa)  
10

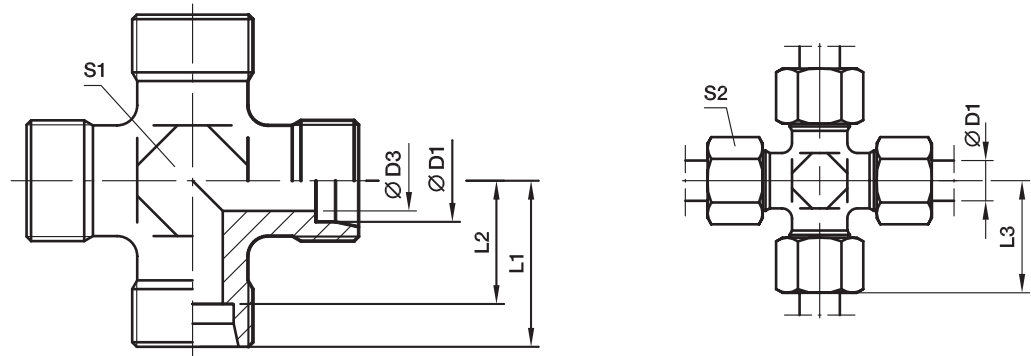
Delivery without nut and ring. Information on ordering complete fittings see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	TR16/12/16SCFX
Stainless Steel	71X	TR16/12/16S71X
Brass	MSX	TR16/12/16SMSX

## K Union cross

EO 24° cone end



Series	D1	D3	L1	L2	L3	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
										CF	71	MS
LL <sup>2)</sup>	04	3.0	15	11.0	21	9	10	13	<b>K04LL</b>	100	100	63
	06	4.5	15	9.5	21	9	12	14	<b>K06LL</b>	100	100	63
	08	6.0	17	11.5	23	12	14	24	<b>K08LL</b>	100	100	63
L <sup>3)</sup>	06	4.0	19	12.0	27	12	14	35	<b>K06L</b>	315	315	200
	08	6.0	21	14.0	29	12	17	40	<b>K08L</b>	315	315	200
	10	8.0	22	15.0	30	14	19	52	<b>K10L</b>	315	315	200
	12	10.0	24	17.0	32	17	22	69	<b>K12L</b>	315	315	200
	15	12.0	28	21.0	36	19	27	130	<b>K15L</b>	315	315	200
	18	15.0	31	23.5	40	24	32	188	<b>K18L</b>	315	315	200
	22	19.0	35	27.5	44	27	36	251	<b>K22L</b>	160	160	100
	28	24.0	38	30.5	47	36	41	392	<b>K28L</b>	160	160	100
	35	30.0	45	34.5	56	41	50	618	<b>K35L</b>	160	160	100
	42	36.0	51	40.0	63	50	60	905	<b>K42L</b>	160	160	100
S <sup>4)</sup>	06	4.0	23	16.0	31	12	17	58	<b>K06S</b>	630	630	400
	08	5.0	24	17.0	32	14	19	82	<b>K08S</b>	630	630	400
	10	7.0	25	17.5	34	17	22	97	<b>K10S</b>	630	630	400
	12	8.0	29	21.5	38	17	24	146	<b>K12S</b>	630	630	400
	14	10.0	30	22.0	40	19	27	176	<b>K14S</b>	400	400	250
	16	12.0	33	24.5	43	24	30	220	<b>K16S</b>	400	400	250
	20	16.0	37	26.5	48	27	36	339	<b>K20S</b>	315	315	200
	25	20.0	42	30.0	54	36	46	576	<b>K25S</b>	315	315	200
	30	25.0	49	35.5	62	41	50	843	<b>K30S</b>	315	315	200
	38	32.0	57	41.0	72	50	60	1350	<b>K38S</b>	315	315	200

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings see page 17.

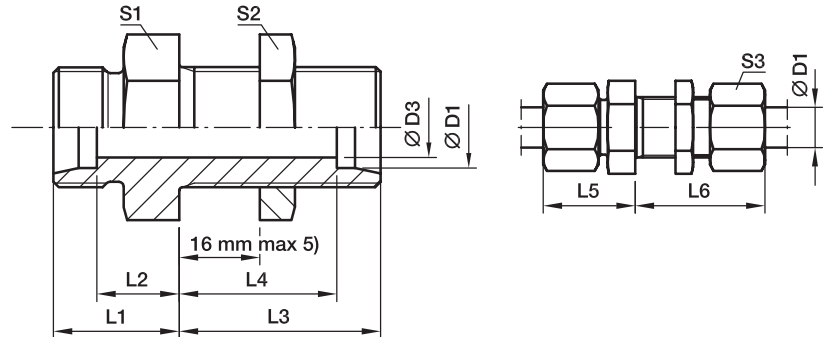
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	K16SCFX
Stainless Steel	71X	K16S71X
Brass	MSX	K16SMSX



## SV Bulkhead union

EO 24° cone end



Series	D1	D3	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>			
														CF	71	MS	
L <sup>3)</sup>	06	4	14	7.0	34	27.0	22	42	17	17	14	39	<b>SV06LOMD</b>	500	315	200	
	08	6	15	8.0	34	27.0	23	42	19	19	17	50	<b>SV08LOMD</b>	500	315	200	
	10	8	17	10.0	35	28.0	25	43	22	22	19	67	<b>SV10LOMD</b>	500	315	200	
	12	10	17	10.0	36	29.0	25	44	24	24	22	78	<b>SV12LOMD</b>	400	315	200	
	15	12	19	12.0	38	31.0	27	46	27	30	27	128	<b>SV15LOMD</b>	400	315	200	
	18	15	21	13.5	40	32.5	30	49	32	36	32	198	<b>SV18LOMD</b>	400	315	200	
	22	19	24	16.5	42	34.5	33	51	36	41	36	254	<b>SV22LOMD</b>	250	160	100	
	28	24	26	18.5	43	35.5	35	52	41	46	41	335	<b>SV28LOMD</b>	250	160	100	
	35	30	29	18.5	47	36.5	40	58	50	55	50	546	<b>SV35LOMD</b>	250	160	160	
	42	36	30	19.0	47	36.0	42	59	60	65	60	758	<b>SV42LOMD</b>	250	160	160	
	S <sup>4)</sup>	06	4	19	12.0	36	29.0	27	44	19	19	17	65	<b>SV06SOMD</b>	800	630	400
		08	5	20	13.0	36	29.0	28	44	22	22	19	87	<b>SV08SOMD</b>	800	630	400
		10	7	22	14.5	37	29.5	31	46	24	24	22	112	<b>SV10SOMD</b>	800	630	400
		12	8	22	14.5	38	30.5	31	47	27	27	24	141	<b>SV12SOMD</b>	630	630	400
14		10	25	17.0	40	32.0	35	50	30	30	27	180	<b>SV14SOMD</b>	630	630		
16		12	25	16.5	40	31.5	35	50	32	32	30	201	<b>SV16SOMD</b>	630	400	250	
20		16	28	17.5	44	33.5	39	55	41	41	36	462	<b>SV20SOMD</b>	420	400	250	
25		20	32	20.0	47	35.0	44	59	46	46	46	492	<b>SV25SOMD</b>	420	400	250	
30		25	35	21.5	51	37.5	48	64	50	50	50	631	<b>SV30SOMD</b>	420	400	250	
38		32	38	22.0	53	37.0	53	68	65	65	60	1083	<b>SV38SOMD</b>	420	315		

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

<sup>5)</sup> Bulkhead thickness min.

06–18 L and 06–16 S = 3 mm

22–42 L and 20–38 S = 4 mm

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

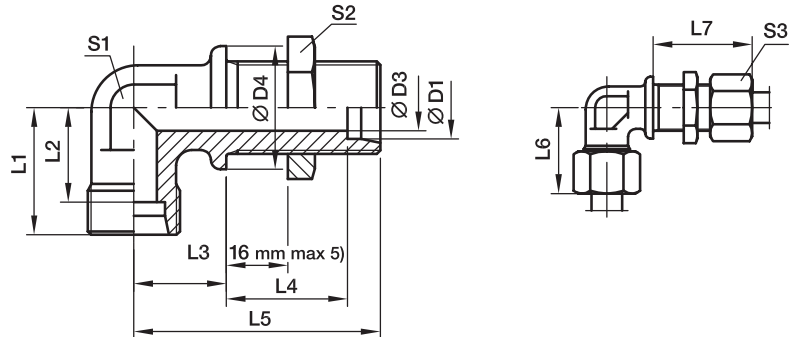
Delivery without nut and ring. Information on ordering complete fittings see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	SV16SOMDCF
Stainless Steel	71	SV16SOMD71
Brass	MS	SV16SOMDMS

## WSV Bulkhead elbow

EO 24° cone end



Series	D1	D3	D4	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
																CF	71	MS
L <sup>3)</sup>	06	4	17	19	12.0	14	27.0	48	27	42	12	17	14	51	WSV06LOMD	315	315	200
	08	6	19	21	14.0	17	27.0	51	29	42	12	19	17	61	WSV08LOMD	315	315	200
	10	8	22	22	15.0	18	28.0	53	30	43	14	22	19	78	WSV10LOMD	315	315	200
	12	10	24	24	17.0	20	29.0	56	32	44	17	24	22	85	WSV12LOMD	315	315	200
	15	12	27	28	21.0	23	31.0	61	36	46	19	30	27	150	WSV15LOMD	315	315	200
	18	15	32	31	23.5	24	32.5	64	40	49	24	36	32	238	WSV18LOMD	315	315	200
	22	19	36	35	27.5	30	34.5	72	44	51	27	41	36	327	WSV22LOMD	160	160	
	28	24	42	38	30.5	34	35.5	77	47	52	36	46	41	482	WSV28LOMD	160	160	
	35	30	50	45	34.5	39	36.5	86	56	58	41	55	50	729	WSV35LOMD	160	160	
	42	36	60	51	40.0	43	36.0	90	63	59	50	65	60	1091	WSV42LOMD	160	160	
S <sup>4)</sup>	06	4	19	23	16.0	17	29.0	53	31	44	12	19	17	72	WSV06SOMD	630	630	
	08	5	22	24	17.0	18	29.0	54	32	44	14	22	19	99	WSV08SOMD	630	630	
	10	7	24	25	17.5	20	29.5	57	34	46	17	24	22	128	WSV10SOMD	630	630	
	12	8	27	29	21.5	21	30.5	59	38	47	17	27	24	168	WSV12SOMD	630	630	
	14	10	27	30	22.0	23	32.0	63	40	50	19	30	27	194	WSV14SOMD	630	630	
	16	12	30	33	24.5	24	31.5	64	43	50	24	32	30	249	WSV16SOMD	400	400	
	20	16	36	37	26.5	30	33.5	74	48	55	27	41	36	390	WSV20SOMD	400	400	
	25	20	42	42	30.0	34	35.0	81	54	59	36	46	46	618	WSV25SOMD	400	400	
	30	25	50	49	35.5	39	37.5	90	62	64	41	50	50	889	WSV30SOMD	400	400	
	38	32	60	57	41.0	43	37.0	96	72	68	50	65	60	1337	WSV38SOMD	315	315	

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

<sup>5)</sup> Bulkhead thickness min.  
06-18 L and 06-16 S = 3 mm  
22-42 L and 20-38 S = 4 mm

PN (bar) = PN (MPa) / 10

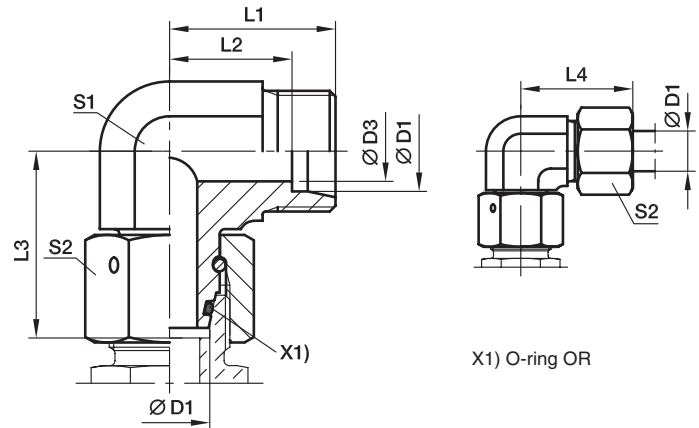
Delivery without nut and ring. Information on ordering complete fittings see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	WSV16SOMDCF
Stainless Steel	71	WSV16SOMD71
Brass	MS	WSV18LOMDMS

## EW Swivel nut elbow

EO 24° cone end / EO 24° DKO swivel



Series	D1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
											CF	71
L <sup>3)</sup>	06	4	19	12.0	26.0	27	12	14	34	<b>EW06LOMD</b>	500	315
	08	6	21	14.0	27.5	29	12	17	43	<b>EW08LOMD</b>	500	315
	10	8	22	15.0	29.0	30	14	19	58	<b>EW10LOMD</b>	500	315
	12	10	24	17.0	29.5	32	17	22	81	<b>EW12LOMD</b>	400	315
	15	12	28	21.0	32.5	36	19	27	128	<b>EW15LOMD</b>	400	315
	18	15	31	23.5	35.5	40	24	32	197	<b>EW18LOMD</b>	400	315
	22	19	35	27.5	38.5	44	27	36	258	<b>EW22LOMD</b>	250	160
	28	24	38	30.5	41.5	47	36	41	370	<b>EW28LOMD</b>	250	160
	35	30	45	34.5	51.0	56	41	50	593	<b>EW35LOMD</b>	250	160
	42	36	51	40.0	56.0	63	50	60	993	<b>EW42LOMD</b>	250	160
S <sup>4)</sup>	06	4	23	16.0	27.0	31	12	17	48	<b>EW06SOMD</b>	800	630
	08	5	24	17.0	27.5	32	14	19	65	<b>EW08SOMD</b>	800	630
	10	6	25	17.5	30.0	34	17	22	92	<b>EW10SOMD</b>	800	630
	12	8	29	21.5	31.0	38	17	24	107	<b>EW12SOMD</b>	630	630
	14	9	30	22.0	35.0	40	19	27	146	<b>EW14SOMD</b>	630	630
	16	12	33	24.5	36.5	43	24	30	212	<b>EW16SOMD</b>	630	400
	20	16	37	26.5	44.5	48	27	36	309	<b>EW20SOMD</b>	420	400
	25	20	42	30.0	50.0	54	36	46	547	<b>EW25SOMD</b>	420	400
	30	25	49	35.5	55.0	62	41	50	744	<b>EW30SOMD</b>	420	400
	38	32	57	41.0	63.0	72	50	60	1222	<b>EW38SOMD</b>	420	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

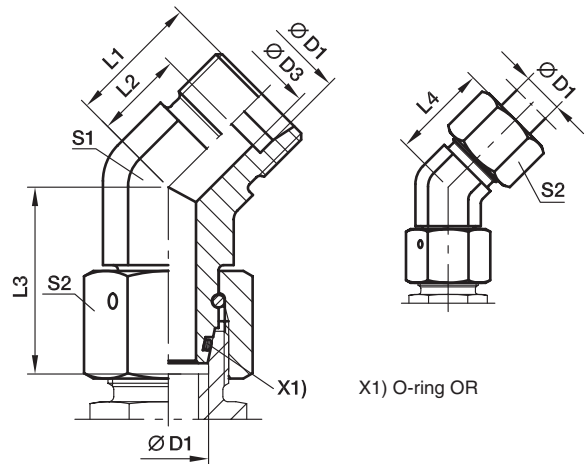
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	EW16SOMDCF	NBR
Stainless Steel	71	EW16SOMD71	VIT

## EV Swivel nut 45° elbow

EO 24° cone end / EO 24° DKO swivel



Series	D1 	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
											CF	71
L <sup>3)</sup>	06	4	16.0	9.0	26.0	24	14	14	37	<b>EV06LOMD</b>	315	315
	08	6	19.0	12.0	27.5	27	14	17	49	<b>EV08LOMD</b>	315	315
	10	8	19.0	12.0	29.0	27	19	19	77	<b>EV10LOMD</b>	315	315
	12	10	21.0	14.0	29.5	29	19	22	86	<b>EV12LOMD</b>	315	315
	15	12	24.0	17.0	32.5	32	22	27	144	<b>EV15LOMD</b>	315	315
	18	15	24.0	16.5	35.5	33	27	32	210	<b>EV18LOMD</b>	315	315
	22	19	26.0	18.5	38.5	35	30	36	270	<b>EV22LOMD</b>	160	160
	28	24	30.5	23.0	41.5	40	36	41	385	<b>EV28LOMD</b>	160	160
	35	30	37.0	26.5	51.0	48	50	50	805	<b>EV35LOMD</b>	160	160
	42	36	37.0	26.0	56.0	49	50	60	887	<b>EV42LOMD</b>	160	160
S <sup>4)</sup>	06	4	16.0	9.0	27.0	24	14	17	50	<b>EV06SOMD</b>	630	630
	08	5	19.0	12.0	27.5	27	19	19	80	<b>EV08SOMD</b>	630	630
	10	7	21.0	13.5	30.0	30	19	22	95	<b>EV10SOMD</b>	630	630
	12	8	24.0	16.5	31.0	33	22	24	137	<b>EV12SOMD</b>	630	630
	16	12	24.0	15.5	36.5	34	27	30	217	<b>EV16SOMD</b>	400	400
	20	16	26.5	16.0	44.5	38	30	36	313	<b>EV20SOMD</b>	400	400
	25	20	30.5	18.5	50.0	43	36	46	529	<b>EV25SOMD</b>	400	400
	30	25	37.0	23.5	55.0	50	50	50	940	<b>EV30SOMD</b>	400	400
	38	32	37.0	21.0	63.0	52	50	60	1055	<b>EV38SOMD</b>	315	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

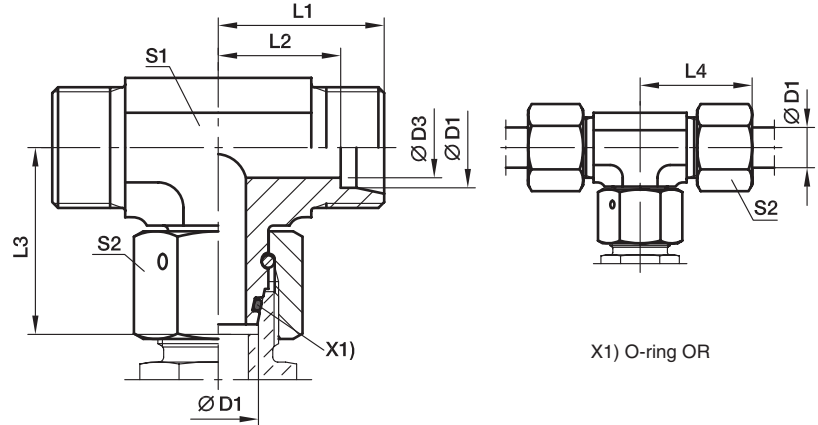
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	EV16SOMDCF	NBR
Stainless Steel	71	EV16SOMD71	VIT

## ET Swivel nut branch tee

EO 24° cone end / EO 24° DKO swivel



Series	D1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
											CF	71
L <sup>3)</sup>	06	4	19	12.0	26.0	27	12	14	42	<b>ET06LOMD</b>	500	315
	08	6	21	14.0	27.5	29	12	17	53	<b>ET08LOMD</b>	500	315
	10	8	22	15.0	29.0	30	14	19	71	<b>ET10LOMD</b>	500	315
	12	10	24	17.0	29.5	32	17	22	97	<b>ET12LOMD</b>	400	315
	15	12	28	21.0	32.5	36	19	27	159	<b>ET15LOMD</b>	400	315
	18	15	31	23.5	35.5	40	24	32	239	<b>ET18LOMD</b>	400	315
	22	19	35	27.5	38.5	44	27	36	308	<b>ET22LOMD</b>	250	160
	28	24	38	30.5	41.5	47	36	41	449	<b>ET28LOMD</b>	250	160
	35	30	45	34.5	51.0	56	41	50	679	<b>ET35LOMD</b>	250	160
	42	36	51	40.0	56.0	63	50	60	1131	<b>ET42LOMD</b>	250	160
S <sup>4)</sup>	06	4	23	16.0	27.0	31	12	17	63	<b>ET06SOMD</b>	800	630
	08	5	24	17.0	27.5	32	14	19	79	<b>ET08SOMD</b>	800	630
	10	6	25	17.5	30.0	34	17	22	113	<b>ET10SOMD</b>	800	630
	12	8	29	21.5	31.0	38	17	24	136	<b>ET12SOMD</b>	630	630
	14	9	30	22.0	35.0	40	19	27	173	<b>ET14SOMD</b>	630	630
	16	12	33	24.5	36.5	43	24	30	239	<b>ET16SOMD</b>	630	400
	20	16	37	26.5	44.5	48	27	36	388	<b>ET20SOMD</b>	420	400
	25	20	42	30.0	50.0	54	36	46	652	<b>ET25SOMD</b>	420	400
	30	25	49	35.5	55.0	62	41	50	905	<b>ET30SOMD</b>	420	400
	38	32	57	41.0	63.0	72	50	60	1462	<b>ET38SOMD</b>	420	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

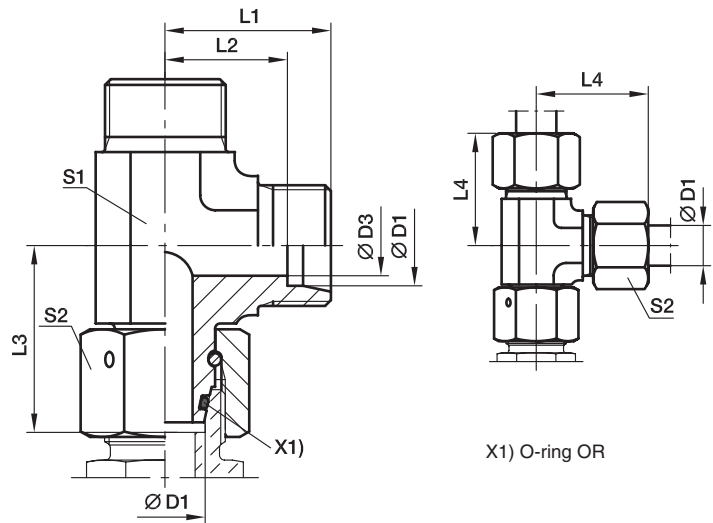
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	ET16SOMDCF	NBR
Stainless Steel	71	ET16SOMD71	VIT

## EL Swivel nut run tee

EO 24° cone end / EO 24° DKO swivel



Series	D1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
											CF	71
L <sup>3)</sup>	06	4	19	12.0	26.0	27	12	14	44	<b>EL06LOMD</b>	500	315
	08	6	21	14.0	27.5	29	12	17	53	<b>EL08LOMD</b>	500	315
	10	8	22	15.0	29.0	30	14	19	68	<b>EL10LOMD</b>	500	315
	12	10	24	17.0	29.5	32	17	22	95	<b>EL12LOMD</b>	400	315
	15	12	28	21.0	32.5	36	19	27	151	<b>EL15LOMD</b>	400	315
	18	15	31	23.5	35.5	40	24	32	233	<b>EL18LOMD</b>	400	315
	22	19	35	27.5	38.5	44	27	36	309	<b>EL22LOMD</b>	250	160
	28	24	38	30.5	41.5	47	36	41	436	<b>EL28LOMD</b>	250	160
	35	30	45	34.5	51.0	56	41	50	666	<b>EL35LOMD</b>	250	160
	42	36	51	40.0	56.0	63	50	60	1163	<b>EL42LOMD</b>	250	160
S <sup>4)</sup>	06	4	23	16.0	27.0	31	12	17	65	<b>EL06SOMD</b>	800	630
	08	5	24	17.0	27.5	32	14	19	84	<b>EL08SOMD</b>	800	630
	10	6	25	17.5	30.0	34	17	22	118	<b>EL10SOMD</b>	800	630
	12	8	29	21.5	31.0	38	17	24	136	<b>EL12SOMD</b>	630	630
	14	9	30	22.0	35.0	40	19	27	173	<b>EL14SOMD</b>	630	630
	16	12	33	24.5	36.5	43	24	30	260	<b>EL16SOMD</b>	630	400
	20	16	37	26.5	44.5	48	27	36	375	<b>EL20SOMD</b>	420	400
	25	20	42	30.0	50.0	54	36	46	655	<b>EL25SOMD</b>	420	400
	30	25	49	35.5	55.0	62	41	50	906	<b>EL30SOMD</b>	420	400
	38	32	57	41.0	63.0	72	50	60	1472	<b>EL38SOMD</b>	420	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

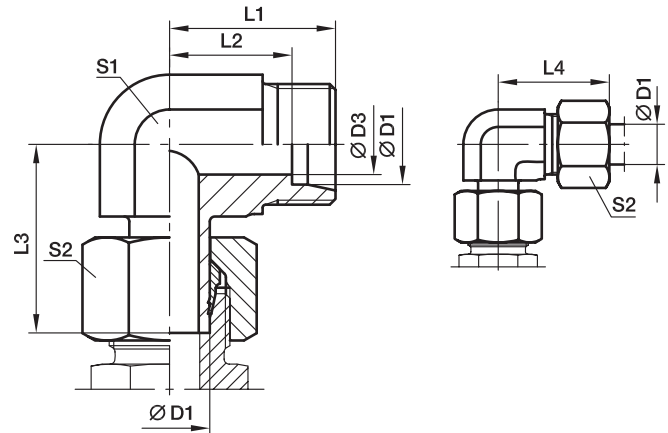
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	EL16SOMDCF	NBR
Stainless Steel	71	EL16SOMD71	VIT

## EVW Standpipe elbow

EO 24° cone end / EO stand pipe adjustable



With pre-assembled nut and progressive ring for connection.  
Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	D3	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
											CF	71	MS
L <sup>3)</sup>	06	4	19	12.0	26.0	27	12	14	32	EVW06LOMD	315	315	200
	08	6	21	14.0	27.5	29	12	17	40	EVW08LOMD	315	315	200
	10	8	22	15.0	29.0	30	14	19	54	EVW10LOMD	315	315	200
	12	10	24	17.0	29.5	32	17	22	76	EVW12LOMD	315	315	200
	15	12	28	21.0	32.5	36	19	27	119	EVW15LOMD	315	315	200
	18	15	31	23.5	35.5	40	24	32	192	EVW18LOMD	315	315	200
	22	19	35	27.5	38.5	44	27	36	355	EVW22LOMD	160	160	100
	28	24	38	30.5	42.0	47	36	41	514	EVW28LOMD	160	160	100
	35	30	45	34.5	51.0	56	41	50	536	EVW35LOMD	160	160	100
	42	36	51	40.0	60.0	63	50	60	977	EVW42LOMD	160	160	100
S <sup>4)</sup>	06	4	23	16.0	27.0	31	12	17	44	EVW06SOMD	630	630	400
	08	5	24	17.0	27.5	32	14	19	63	EVW08SOMD	630	630	400
	10	7	25	17.5	31.0	34	17	22	95	EVW10SOMD	630	630	400
	12	8	29	21.5	31.0	38	17	24	110	EVW12SOMD	630	630	400
	14	10	30	22.0	35.0	40	19	27	137	EVW14SOMD	400	400	250
	16	12	33	24.5	37.5	43	24	30	211	EVW16SOMD	400	400	250
	20	16	37	26.5	44.5	48	27	36	306	EVW20SOMD	400	400	250
	25	20	42	30.0	50.0	54	36	46	558	EVW25SOMD	400	400	250
	30	25	49	35.5	55.0	62	41	50	724	EVW30SOMD	400	400	250
	38	32	57	41.0	66.5	72	50	60	1307	EVW38SOMD	315	315	200

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings see page 17.

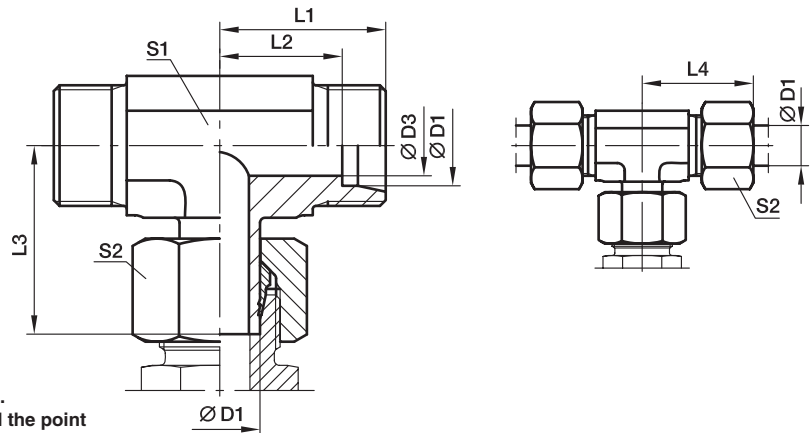
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	EVW16SOMDCF
Stainless Steel	71	EVW16SOMD71
Brass	MS	EVW16SOMDMS



## EVT Standpipe branch tee

EO 24° cone end / EO stand pipe adjustable



With pre-assembled nut and progressive ring for connection.  
Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1 	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
											CF	71	MS
L <sup>3)</sup>	06	4	19	12.0	26.0	27	12	14	37	<b>EVT06LOMD</b>	315	315	200
	08	6	21	14.0	27.5	29	12	17	49	<b>EVT08LOMD</b>	315	315	200
	10	8	22	15.0	29.0	30	14	19	66	<b>EVT10LOMD</b>	315	315	200
	12	10	24	17.0	30.5	32	17	22	93	<b>EVT12LOMD</b>	315	315	200
	15	12	28	21.0	32.5	36	19	27	146	<b>EVT15LOMD</b>	315	315	200
	18	15	31	23.5	35.5	40	24	32	201	<b>EVT18LOMD</b>	315	315	200
	22	19	35	27.5	38.5	44	27	36	274	<b>EVT22LOMD</b>	160	160	
	28	24	38	30.5	43.5	47	36	41	441	<b>EVT28LOMD</b>	160	160	
	35	30	45	34.5	54.5	56	41	50	633	<b>EVT35LOMD</b>	160	160	
	42	36	51	40.0	60.0	63	50	60	1129	<b>EVT42LOMD</b>	160	160	
S <sup>4)</sup>	06	4	23	16.0	27.0	31	12	17	61	<b>EVT06SOMD</b>	630	630	
	08	5	24	17.0	29.0	32	14	19	44	<b>EVT08SOMD</b>	630	630	
	10	7	25	17.5	31.0	34	17	22	84	<b>EVT10SOMD</b>	630	630	
	12	8	29	21.5	33.0	38	17	24	131	<b>EVT12SOMD</b>	630	630	
	14	10	30	22.0	35.0	40	19	27	173	<b>EVT14SOMD</b>	400	400	
	16	12	33	24.5	37.5	43	24	30	240	<b>EVT16SOMD</b>	400	400	
	20	16	37	26.5	44.5	48	27	36	345	<b>EVT20SOMD</b>	400	400	
	25	20	42	30.0	50.5	54	36	46	647	<b>EVT25SOMD</b>	400	400	
	30	25	49	35.5	56.5	62	41	50	873	<b>EVT30SOMD</b>	400	400	
	38	32	57	41.0	66.5	72	50	60	1361	<b>EVT38SOMD</b>	315	315	

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

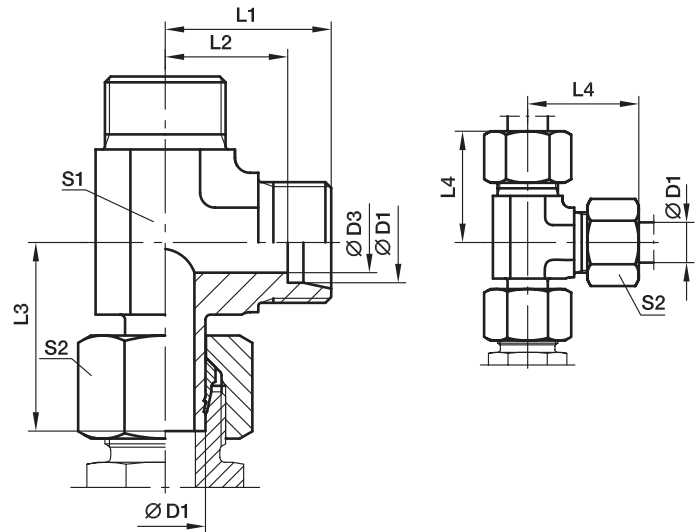
Delivery without nut and ring. Information on ordering complete fittings see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	EVT16SOMDCF
Stainless Steel	71	EVT16SOMD71
Brass	MS	EVT18LOMDMS

## EVL standpipe run tee

EO 24° cone end / EO stand pipe adjustable



With pre-assembled nut and progressive ring for connection.  
Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
											CF	71	MS
L <sup>3)</sup>	06	4	19	12.0	26.0	27	12	14	40	<b>EVL06LOMD</b>	315	315	200
	08	6	21	14.0	27.5	29	12	17	50	<b>EVL08LOMD</b>	315	315	200
	10	8	22	15.0	29.0	30	14	19	64	<b>EVL10LOMD</b>	315	315	200
	12	10	24	17.0	30.5	32	17	22	93	<b>EVL12LOMD</b>	315	315	200
	15	12	28	21.0	32.5	36	19	27	147	<b>EVL15LOMD</b>	315	315	200
	18	15	31	23.5	35.5	40	24	32	229	<b>EVL18LOMD</b>	315	315	200
	22	19	35	27.5	39.0	44	27	36	296	<b>EVL22LOMD</b>	160	160	
	28	24	38	30.5	43.5	47	36	41	416	<b>EVL28LOMD</b>	160	160	
	35	30	45	34.5	54.5	56	41	50	661	<b>EVL35LOMD</b>	160	160	
	42	36	51	40.0	60.0	63	50	60	1105	<b>EVL42LOMD</b>	160	160	
S <sup>4)</sup>	06	4	23	16.0	27.0	31	12	17	57	<b>EVL06SOMD</b>	630	630	
	08	5	24	17.0	29.0	32	14	19	84	<b>EVL08SOMD</b>	630	630	
	10	7	25	17.5	32.0	34	17	22	116	<b>EVL10SOMD</b>	630	630	
	12	8	29	21.5	33.0	38	17	24	137	<b>EVL12SOMD</b>	630	630	
	14	10	30	22.0	35.0	40	19	27	175	<b>EVL14SOMD</b>	400	400	
	16	12	33	24.5	37.5	43	24	30	259	<b>EVL16SOMD</b>	400	400	
	20	16	37	26.5	44.5	48	27	36	371	<b>EVL20SOMD</b>	400	400	
	25	20	42	30.0	50.5	54	36	46	647	<b>EVL25SOMD</b>	400	400	
	30	25	49	35.5	56.5	62	41	50	906	<b>EVL30SOMD</b>	400	400	
	38	32	57	41.0	66.5	72	50	60	1549	<b>EVL38SOMD</b>	315	315	

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

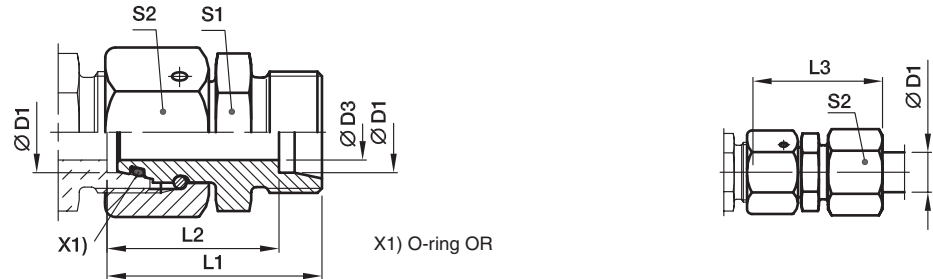
Delivery without nut and ring. Information on ordering complete fittings see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	EVL16SOMDCF
Stainless Steel	71	EVL16SOMD71
Brass	MS	EVL18LOMDMS

## DA Distance piece adapter

EO 24° DKO swivel / EO 24° cone end



Series	D1	D3	L1	L2	L3	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
										CF	71	MS
L <sup>3)</sup>	06	2.5	43.0	36	51	12	14	33	<b>DA06LOMD</b>	500	315	200
	08	4.0	43.0	36	51	14	17	46	<b>DA08LOMD</b>	500	315	200
	10	6.0	43.0	36	51	17	19	60	<b>DA10LOMD</b>	500	315	200
	12	8.0	43.0	36	51	19	22	75	<b>DA12LOMD</b>	400	315	200
	15	10.0	43.0	36	51	24	27	118	<b>DA15LOMD</b>	400	315	200
	18	13.0	43.5	36	52	27	32	153	<b>DA18LOMD</b>	400	315	200
	22	17.0	47.5	40	56	32	36	210	<b>DA22LOMD</b>	250	160	100
	28	22.0	47.5	40	57	41	41	279	<b>DA28LOMD</b>	250	160	100
	35	28.0	60.5	50	72	46	50	468	<b>DA35LOMD</b>	250	160	100
	42	34.0	71.0	60	83	55	60	802	<b>DA42LOMD</b>	250	160	100
S <sup>4)</sup>	06	2.5	43.0	36	51	14	17	48	<b>DA06SOMD</b>	800	630	400
	08	4.0	43.0	36	51	17	19	64	<b>DA08SOMD</b>	800	630	400
	10	6.0	43.5	36	52	19	22	81	<b>DA10SOMD</b>	800	630	400
	12	8.0	43.5	36	52	22	24	97	<b>DA12SOMD</b>	630	630	400
	14	9.0	48.0	40	58	24	27	133	<b>DA14SOMD</b>	630	630	400
	16	11.0	48.5	40	58	27	30	166	<b>DA16SOMD</b>	630	400	250
	20	14.0	56.5	46	68	32	36	265	<b>DA20SOMD</b>	420	400	250
	25	18.0	62.0	50	74	41	46	466	<b>DA25SOMD</b>	420	400	250
	30	23.0	69.5	56	83	46	50	601	<b>DA30SOMD</b>	420	400	250
	38	30.0	76.0	60	91	55	60	871	<b>DA38SOMD</b>	420	315	200

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

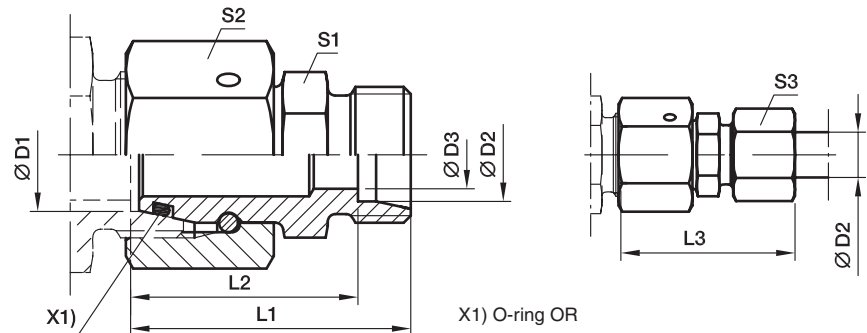
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	DA16SOMDCF	NBR
Stainless Steel	71	DA16SOMD71	VIT
Brass	MS	DA16SOMDMS	NBR

## RED Tube end reducer

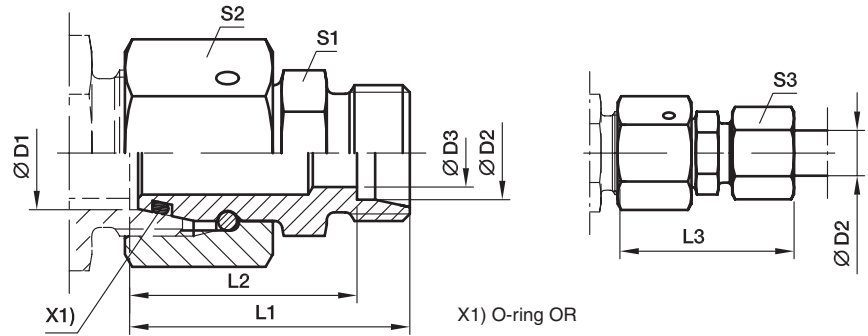
EO 24° DKO swivel / EO 24° cone end



Series 2) 3) 4)	D1	D2	D3	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
												CF	71
L/LL	06	04	2.5	28.5	24.5	34.0	9	14	10	17	<b>RED06L/04LLOMD</b>	100	100
L	08	06	4.0	30.5	23.5	38.0	12	17	14	29	<b>RED08/06LOMD</b>	500	315
L	10	06	4.0	32.0	25.0	40.0	14	19	14	36	<b>RED10/06LOMD</b>	500	315
L	10	08	6.0	32.0	25.0	40.0	14	19	17	38	<b>RED10/08LOMD</b>	500	315
L	12	06	4.0	32.0	25.0	40.0	17	22	14	49	<b>RED12/06LOMD</b>	400	315
L	12	08	6.0	32.0	25.0	40.0	17	22	17	49	<b>RED12/08LOMD</b>	400	315
L	12	10	8.0	33.0	26.0	41.0	17	22	19	51	<b>RED12/10LOMD</b>	400	315
L	15	06	4.0	35.5	28.5	43.0	19	27	14	81	<b>RED15/06LOMD</b>	400	315
L	15	08	6.0	35.5	28.5	43.0	19	27	17	85	<b>RED15/08LOMD</b>	400	315
L	15	10	8.0	36.5	29.5	44.0	19	27	19	83	<b>RED15/10LOMD</b>	400	315
L	15	12	10.0	36.5	29.5	44.0	19	27	22	83	<b>RED15/12LOMD</b>	400	315
L	18	06	4.0	35.0	28.0	43.0	24	32	14	109	<b>RED18/06LOMD</b>	400	315
L	18	08	6.0	35.0	28.0	43.0	24	32	17	111	<b>RED18/08LOMD</b>	400	315
L	18	10	8.0	36.0	29.0	44.0	24	32	19	110	<b>RED18/10LOMD</b>	400	315
L	18	12	10.0	36.0	29.0	44.0	24	32	22	110	<b>RED18/12LOMD</b>	400	315
L	18	15	12.0	37.0	30.0	45.0	24	32	27	115	<b>RED18/15LOMD</b>	400	315
L/S	18	16	12.0	40.0	31.5	49.5	27	32	30	138	<b>RED18L/16SOMD</b>	400	315
L	22	06	4.0	39.0	32.0	47.0	27	36	14	158	<b>RED22/06LOMD</b>	250	160
L	22	08	6.0	39.0	32.0	47.0	27	36	17	158	<b>RED22/08LOMD</b>	250	160
L	22	10	8.0	40.0	33.0	48.0	27	36	19	159	<b>RED22/10LOMD</b>	250	160
L	22	12	10.0	40.0	33.0	48.0	27	36	22	157	<b>RED22/12LOMD</b>	250	160
L	22	15	12.0	41.0	34.0	49.0	27	36	27	164	<b>RED22/15LOMD</b>	250	160
L/S	22	16	12.0	43.0	34.5	52.5	27	36	30	173	<b>RED22L/16SOMD</b>	250	160
L	22	18	15.0	41.0	33.5	50.0	27	36	32	167	<b>RED22/18LOMD</b>	250	160
L/S	22	20	16.0	45.0	34.5	56.0	32	36	36	203	<b>RED22L/20SOMD</b>	250	160
L	28	06	4.0	41.0	34.0	49.0	32	41	14	219	<b>RED28/06LOMD</b>	250	160
L	28	08	6.0	41.0	34.0	49.0	32	41	17	221	<b>RED28/08LOMD</b>	250	160
L	28	10	8.0	42.0	35.0	50.0	32	41	19	213	<b>RED28/10LOMD</b>	250	160
L	28	12	10.0	42.0	35.0	50.0	32	41	22	213	<b>RED28/12LOMD</b>	250	160
L	28	15	12.0	43.0	36.0	51.0	32	41	27	218	<b>RED28/15LOMD</b>	250	160
L/S	28	16	12.0	45.0	36.5	54.5	32	41	30	227	<b>RED28L/16SOMD</b>	250	160
L	28	18	15.0	43.0	35.5	52.0	32	41	32	220	<b>RED28/18LOMD</b>	250	160
L	28	22	19.0	45.0	37.5	54.0	32	41	36	222	<b>RED28/22LOMD</b>	250	160
L/S	28	25	20.0	50.0	38.0	62.0	41	41	46	300	<b>RED28L/25SOMD</b>	250	160
L	35	06	4.0	44.0	37.0	52.0	41	50	14	318	<b>RED35/06LOMD</b>	250	160
L	35	08	6.0	44.0	37.0	52.0	41	50	17	318	<b>RED35/08LOMD</b>	250	160
L	35	10	8.0	45.0	38.0	53.0	41	50	19	318	<b>RED35/10LOMD</b>	250	160
L	35	12	10.0	45.0	38.0	53.0	41	50	22	324	<b>RED35/12LOMD</b>	250	160
L	35	15	12.0	46.0	39.0	54.0	41	50	27	328	<b>RED35/15LOMD</b>	250	160
L	35	18	15.0	46.0	38.5	55.0	41	50	32	328	<b>RED35/18LOMD</b>	250	160
L	35	22	19.0	48.0	40.5	57.0	41	50	36	331	<b>RED35/22LOMD</b>	250	160

## RED Tube end reducer

EO 24° DKO swivel / EO 24° cone end



Series <sup>2) 3) 4)</sup>	D1	D2	D3	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
												CF	71
L/S	35	25	20.0	52.0	40.0	64.0	41	50	46	366	<b>RED35L/25SOMD</b>	250	160
L	35	28	24.0	48.0	40.5	57.0	41	50	41	327	<b>RED35/28LOMD</b>	250	160
L/S	35	30	25.0	55.0	41.5	68.0	46	50	50	435	<b>RED35L/30SOMD</b>	250	160
L	42	10	8.0	48.5	41.5	56.0	50	60	19	537	<b>RED42/10LOMD</b>	250	160
L	42	12	10.0	48.5	41.5	56.0	50	60	22	538	<b>RED42/12LOMD</b>	250	160
L	42	15	12.0	49.5	42.5	58.0	50	60	27	534	<b>RED42/15LOMD</b>	250	160
L	42	18	15.0	49.5	42.0	58.0	50	60	32	544	<b>RED42/18LOMD</b>	250	160
L	42	22	19.0	51.5	44.0	60.0	50	60	36	543	<b>RED42/22LOMD</b>	250	160
L	42	28	24.0	51.5	44.0	61.0	50	60	41	539	<b>RED42/28LOMD</b>	250	160
L/S	42	30	25.0	57.5	44.0	70.5	50	60	50	588	<b>RED42L/30SOMD</b>	250	160
L	42	35	30.0	53.5	43.0	65.0	50	60	50	541	<b>RED42/35LOMD</b>	250	160
L/S	42	38	32.0	61.5	45.5	76.0	55	60	60	701	<b>RED42L/38SOMD</b>	250	160

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

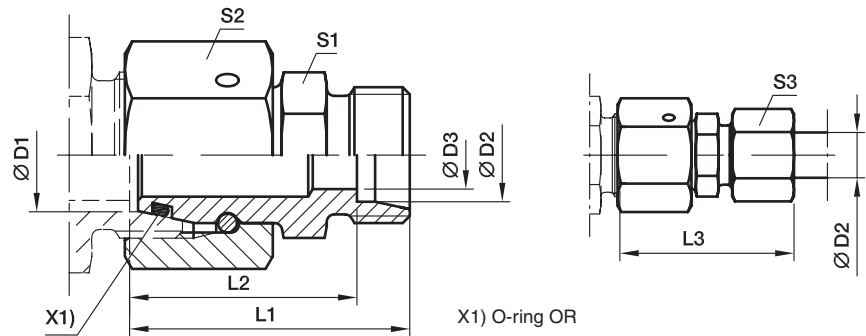
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	RED18/15LOMDCF	NBR
Stainless Steel	71	RED18/15LOMD71	VIT

## RED Tube end reducer

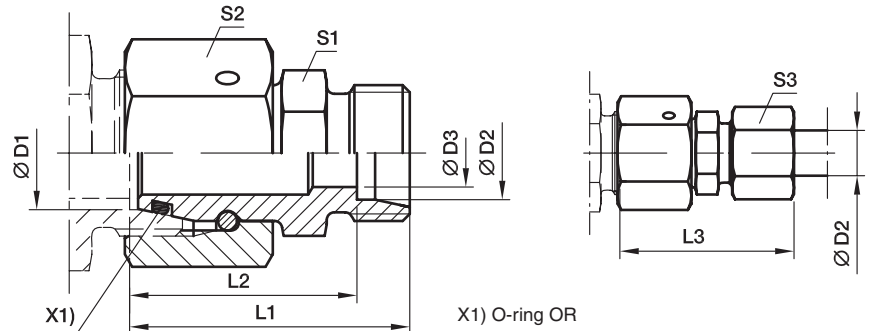
EO 24° DKO swivel / EO 24° cone end



Series <sup>3) 4)</sup>	D1	D2	D3	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
												CF	71
S	08	06	4	34.0	27.0	42	14	19	17	42	RED08/06SOMD	800	630
S	10	06	4	34.5	27.5	42	17	22	17	55	RED10/06SOMD	800	630
S	10	08	5	34.5	27.5	42	17	22	19	58	RED10/08SOMD	800	630
S	12	06	4	36.0	29.0	44	17	24	17	66	RED12/06SOMD	630	630
S	12	08	5	36.0	29.0	44	17	24	19	68	RED12/08SOMD	630	630
S	12	10	7	37.0	29.5	46	19	24	22	75	RED12/10SOMD	630	630
S	14	06	4	38.5	31.5	46	19	27	17	88	RED14/06SOMD	630	630
S	14	08	5	38.5	31.5	46	19	27	19	90	RED14/08SOMD	630	630
S	14	10	7	38.5	31.0	47	19	27	22	91	RED14/10SOMD	630	630
S	14	12	8	38.5	31.0	47	22	27	24	100	RED14/12SOMD	630	630
S	16	06	4	39.0	32.0	47	22	30	17	112	RED16/06SOMD	630	400
S	16	08	5	39.0	32.0	47	22	30	19	114	RED16/08SOMD	630	400
S	16	10	7	39.0	31.5	48	22	30	22	115	RED16/10SOMD	630	400
S	16	12	8	39.0	31.5	48	22	30	24	118	RED16/12SOMD	630	400
S	16	14	10	41.0	33.0	51	24	30	27	128	RED16/14SOMD	630	400
S/L	16	15	11	39.0	32.0	47	24	30	27	120	RED16S/15LOMD	400	315
S	20	06	4	43.0	36.0	51	27	36	17	172	RED20/06SOMD	420	400
S	20	08	5	43.0	36.0	51	27	36	19	174	RED20/08SOMD	420	400
S	20	10	7	43.0	35.5	52	27	36	22	174	RED20/10SOMD	420	400
S	20	12	8	43.0	35.5	52	27	36	24	177	RED20/12SOMD	420	400
S	20	14	10	45.0	37.0	55	27	36	27	182	RED20/14SOMD	420	400
S/L	20	15	12	43.0	36.0	51	27	36	27	173	RED20S/15LOMD	400	315
S	20	16	12	45.0	36.5	55	27	36	30	182	RED20/16SOMD	420	400
S/L	20	18	14	43.0	35.5	51	27	36	32	178	RED20S/18LOMD	400	315
S	25	06	4	45.5	38.5	53	32	46	17	294	RED25/06SOMD	420	400
S	25	08	5	45.5	38.5	53	32	46	19	295	RED25/08SOMD	420	400
S	25	10	7	45.5	38.0	54	32	46	22	296	RED25/10SOMD	420	400
S	25	12	8	45.5	38.0	54	32	46	24	299	RED25/12SOMD	420	400
S	25	14	10	47.5	39.5	57	32	46	27	303	RED25/14SOMD	420	400
S	25	16	12	47.5	39.0	57	32	46	30	304	RED25/16SOMD	420	400
S/L	25	18	15	45.5	38.0	54	32	46	32	299	RED25S/18LOMD	400	315
S	25	20	16	49.5	39.0	61	32	46	36	315	RED25/20SOMD	420	400
S/L	25	22	18	47.5	40.0	56	32	46	36	304	RED25S/22LOMD	250	160
S	30	06	4	51.0	44.0	59	41	50	17	412	RED30/06SOMD	420	400
S	30	08	5	51.0	44.0	59	41	50	19	404	RED30/08SOMD	420	400
S	30	10	7	51.0	43.5	60	41	50	22	405	RED30/10SOMD	420	400
S	30	12	8	51.0	43.5	60	41	50	24	405	RED30/12SOMD	420	400
S	30	14	10	53.0	45.0	63	41	50	27	408	RED30/14SOMD	420	400
S	30	16	12	53.0	44.5	63	41	50	30	412	RED30/16SOMD	420	400
S	30	20	16	55.0	44.5	66	41	50	36	421	RED30/20SOMD	420	400

## RED Tube end reducer

EO 24° DKO swivel / EO 24° cone end



Series <sup>3) 4)</sup>	D1	D2	D3	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
												CF	71
S/L	30	22	19	53.0	45.5	61	41	50	36	406	RED30S/22LOMD	250	160
S	30	25	20	57.0	45.0	69	41	50	46	439	RED30/25SOMD	420	400
S/L	30	28	23	53.0	45.5	62	41	50	41	406	RED30S/28LOMD	250	160
S	38	06	4	54.5	47.5	62	50	60	17	556	RED38/06SOMD	420	315
S	38	08	5	54.5	47.5	62	50	60	19	581	RED38/08SOMD	420	315
S	38	10	7	54.5	47.0	63	50	60	22	579	RED38/10SOMD	420	315
S	38	12	8	54.5	47.0	63	50	60	24	577	RED38/12SOMD	420	315
S	38	14	10	56.5	48.5	66	50	60	27	579	RED38/14SOMD	420	315
S	38	16	12	56.5	48.0	66	50	60	30	580	RED38/16SOMD	420	315
S	38	20	16	58.5	48.0	70	50	60	36	601	RED38/20SOMD	420	315
S	38	25	20	60.5	48.5	73	50	60	46	615	RED38/25SOMD	420	315
S/L	38	28	24	56.5	49.0	65	50	60	41	573	RED38S/28LOMD	250	160
S	38	30	25	62.5	49.0	76	50	60	50	625	RED38/30SOMD	420	315
S/L	38	35	30	58.5	48.0	69	50	60	50	588	RED38S/35LOMD	250	160

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

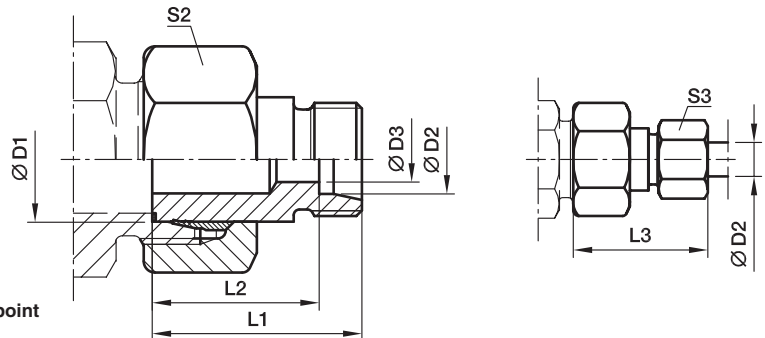
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	RED16/12SOMDCF	NBR
Stainless Steel	71	RED16/12SOMD71	VIT



## KOR Tube end reducer – Steel and Brass

EO stand pipe adjustable / EO 24° cone end

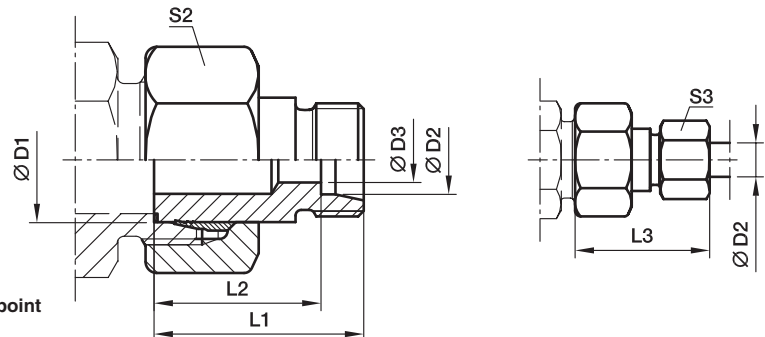


With pre-assembled nut and progressive ring for connection.  
Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series 2) 3)	D1	D2	D3	L1	L2	L3	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
											CF	MS
LL	06	04	3.0	28.5	24.5	34	12	10	16	KOR06/04LLOMD	100	
LL	08	04	3.0	28.5	24.5	34	14	10	16	KOR08/04LLOMD	100	
LL	08	06	4.5	23.0	17.5	29	14	12	14	KOR08/06LLOMD	100	
L/LL	06	04	3.0	28.5	24.5	34	14	10	16	KOR06L/04LLOMD	100	
L/LL	08	04	3.0	28.5	24.5	34	17	10	16	KOR08L/04LLOMD	100	
L	08	06	4.0	30.5	23.5	38	17	14	27	KOR08/06LOMD	315	200
L/LL	10	04	3.0	28.5	24.5	34	19	10	32	KOR10L/04LLOMD	100	
L	10	06	4.0	30.5	23.5	38	19	14	34	KOR10/06LOMD	315	200
L	10	08	6.0	30.5	23.5	38	19	17	35	KOR10/08LOMD	315	200
L/LL	12	04	3.0	28.5	24.5	34	22	10	41	KOR12L/04LLOMD	100	
L	12	06	4.0	30.5	23.5	38	22	14	45	KOR12/06LOMD	315	200
L	12	08	6.0	30.5	23.5	38	22	17	45	KOR12/08LOMD	315	200
L	12	10	8.0	31.5	24.5	39	22	19	46	KOR12/10LOMD	315	200
L	15	06	4.0	30.5	23.5	38	27	14	68	KOR15/06LOMD	315	200
L	15	08	6.0	30.5	23.5	38	27	17	69	KOR15/08LOMD	315	200
L	15	10	8.0	31.5	24.5	39	27	19	70	KOR15/10LOMD	315	200
L	15	12	10.0	31.5	24.5	39	27	22	70	KOR15/12LOMD	315	200
L	18	06	4.0	31.5	24.5	39	32	14	100	KOR18/06LOMD	315	200
L	18	08	6.0	31.5	24.5	39	32	17	102	KOR18/08LOMD	315	200
L	18	10	8.0	32.5	25.5	40	32	19	102	KOR18/10LOMD	315	200
L	18	12	10.0	32.5	25.5	40	32	22	101	KOR18/12LOMD	315	200
L	18	15	12.0	33.5	26.5	42	32	27	106	KOR18/15LOMD	315	200
L	22	06	4.0	32.5	25.5	40	36	14	137	KOR22/06LOMD	160	100
L	22	08	6.0	32.5	25.5	40	36	17	136	KOR22/08LOMD	160	100
L	22	10	8.0	33.5	26.5	41	36	19	138	KOR22/10LOMD	160	100
L	22	12	10.0	33.5	26.5	41	36	22	138	KOR22/12LOMD	160	100
L	22	15	12.0	34.5	27.5	43	36	27	143	KOR22/15LOMD	160	100
L	22	18	15.0	34.5	27.0	43	36	32	143	KOR22/18LOMD	160	100
L	28	06	4.0	33.5	26.5	41	41	14	177	KOR28/06LOMD	160	100
L	28	08	6.0	33.5	26.5	41	41	17	179	KOR28/08LOMD	160	100
L	28	10	8.0	34.5	27.5	42	41	19	180	KOR28/10LOMD	160	100
L	28	12	10.0	34.5	27.5	42	41	22	180	KOR28/12LOMD	160	100
L	28	15	12.0	35.5	28.5	44	41	27	185	KOR28/15LOMD	160	100
L	28	18	15.0	35.5	28.0	44	41	32	184	KOR28/18LOMD	160	100
L	28	22	19.0	37.5	30.0	46	41	36	188	KOR28/22LOMD	160	100
L	35	06	4.0	38.5	31.5	46	50	14	302	KOR35/06LOMD	160	
L	35	08	6.0	38.5	31.5	46	50	17	306	KOR35/08LOMD	160	
L	35	10	8.0	39.5	32.5	47	50	19	305	KOR35/10LOMD	160	100
L	35	12	10.0	39.5	32.5	47	50	22	304	KOR35/12LOMD	160	100
L	35	15	12.0	40.5	33.5	49	50	27	308	KOR35/15LOMD	160	100
L	35	18	15.0	40.5	33.0	49	50	32	316	KOR35/18LOMD	160	100
L	35	22	19.0	42.5	35.0	51	50	36	310	KOR35/22LOMD	160	100
L	35	28	24.0	42.5	35.0	52	50	41	305	KOR35/28LOMD	160	100

## KOR Tube end reducer – Steel and Brass

EO stand pipe adjustable / EO 24° cone end



With pre-assembled nut and progressive ring for connection.  
Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series <sup>2) 3)</sup>	D1	D2	D3	L1	L2	L3	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
											CF	MS
L	42	10	8.0	40.5	33.5	48	60	19	455	<b>KOR42/10LOMD</b>	160	
L	42	12	10.0	40.5	33.5	48	60	22	438	<b>KOR42/12LOMD</b>	160	
L	42	15	12.0	41.5	34.5	50	60	27	438	<b>KOR42/15LOMD</b>	160	100
L	42	18	15.0	41.5	34.0	50	60	32	449	<b>KOR42/18LOMD</b>	160	100
L	42	22	19.0	43.5	36.0	52	60	36	461	<b>KOR42/22LOMD</b>	160	100
L	42	28	24.0	43.5	36.0	53	60	41	443	<b>KOR42/28LOMD</b>	160	100
L	42	35	30.0	45.5	35.0	57	60	50	444	<b>KOR42/35LOMD</b>	160	100

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

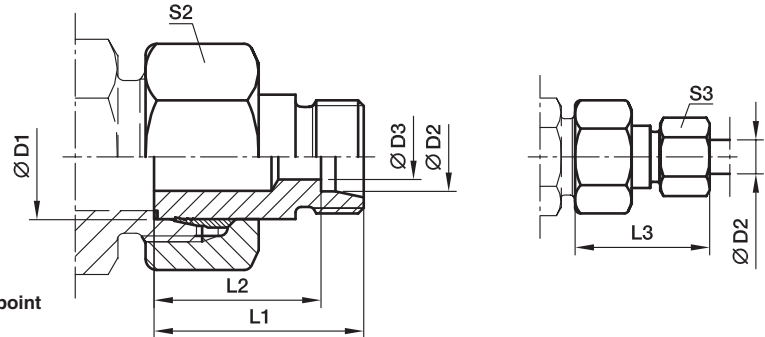
Delivery without nut and ring. Information on ordering complete fittings see page I7.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	KOR18/15LOMDCF
Brass	MS	KOR18/15LOMDMS

\*Please add the **suffixes** below according to the material/surface required.

## KOR Tube end reducer – Steel and Brass

EO stand pipe adjustable / EO 24° cone end

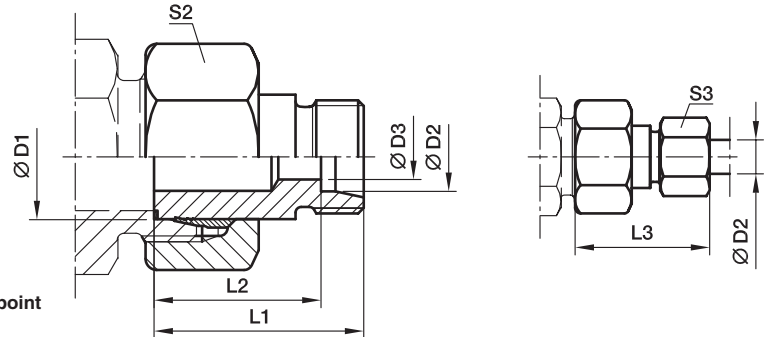


With pre-assembled nut and progressive ring for connection.  
Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	D2	D3	L1	L2	L3	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
											CF	MS
S <sup>4)</sup>	08	06	4	32	25.0	40	19	17	37	KOR08/06SOMD	630	400
	10	06	4	33	26.0	41	22	17	53	KOR10/06SOMD	630	400
	10	08	5	33	26.0	41	22	19	55	KOR10/08SOMD	630	400
	12	06	4	34	27.0	42	24	17	61	KOR12/06SOMD	630	400
	12	08	5	34	27.0	42	24	19	63	KOR12/08SOMD	630	400
	12	10	7	34	26.5	43	24	22	64	KOR12/10SOMD	630	400
	14	06	4	36	29.0	44	27	17	88	KOR14/06SOMD	630	400
	14	08	5	36	29.0	44	27	19	89	KOR14/08SOMD	630	400
	14	10	7	36	28.5	45	27	22	91	KOR14/10SOMD	630	400
	14	12	8	36	28.5	45	27	24	92	KOR14/12SOMD	630	400
	16	06	4	36	29.0	44	30	17	106	KOR16/06SOMD	400	250
	16	08	5	36	29.0	44	30	19	108	KOR16/08SOMD	400	250
	16	10	7	36	28.5	45	30	22	114	KOR16/10SOMD	400	250
	16	12	8	36	28.5	45	30	24	115	KOR16/12SOMD	400	250
	16	14	10	38	30.0	48	30	27	116	KOR16/14SOMD	400	250
	20	06	4	41	34.0	49	36	17	175	KOR20/06SOMD	400	250
20	08	5	41	34.0	49	36	19	177	KOR20/08SOMD	400	250	
20	10	7	41	33.5	50	36	22	178	KOR20/10SOMD	400	250	
20	12	8	41	33.5	50	36	24	180	KOR20/12SOMD	400	250	
20	14	10	41	33.0	51	36	27	180	KOR20/14SOMD	400	250	
20	16	12	43	34.5	53	36	30	182	KOR20/16SOMD	400	250	
25	06	4	44	37.0	52	46	17	306	KOR25/06SOMD	400		
25	08	5	44	37.0	52	46	19	311	KOR25/08SOMD	400	250	
25	10	7	44	36.5	53	46	22	313	KOR25/10SOMD	400	250	
25	12	8	44	36.5	53	46	24	317	KOR25/12SOMD	400	250	
25	14	10	45	37.0	55	46	27	312	KOR25/14SOMD	400	250	
25	16	12	45	36.5	55	46	30	315	KOR25/16SOMD	400	250	
25	20	16	48	37.5	59	46	36	328	KOR25/20SOMD	400	250	
30	06	4	46	39.0	54	50	17	373	KOR30/06SOMD	400		
30	08	5	46	39.0	54	50	19	376	KOR30/08SOMD	400		
30	10	7	46	38.5	55	50	22	376	KOR30/10SOMD	400	250	
30	12	8	46	38.5	55	50	24	377	KOR30/12SOMD	400	250	
30	14	10	48	40.0	58	50	27	379	KOR30/14SOMD	400	250	
30	16	12	48	39.5	58	50	30	381	KOR30/16SOMD	400	250	
30	20	16	50	39.5	61	50	36	386	KOR30/20SOMD	400	250	
30	25	20	52	40.0	64	50	46	406	KOR30/25SOMD	400	250	
38	06	4	50	43.0	58	60	17	571	KOR38/06SOMD	315		
38	08	5	50	43.0	58	60	19	567	KOR38/08SOMD	315		
38	10	7	50	42.5	59	60	22	571	KOR38/10SOMD	315	200	
38	12	8	50	42.5	59	60	24	571	KOR38/12SOMD	315	200	

## KOR Tube end reducer – Steel and Brass

EO stand pipe adjustable / EO 24° cone end



With pre-assembled nut and progressive ring for connection.  
Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	D2	D3	L1	L2	L3	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
											CF	MS
S <sup>4)</sup>	38	14	10	52	44.0	62	60	27	575	<b>KOR38/14SOMD</b>	315	200
	38	16	12	52	43.5	62	60	30	580	<b>KOR38/16SOMD</b>	315	200
	38	20	16	54	43.5	65	60	36	593	<b>KOR38/20SOMD</b>	315	200
	38	25	20	56	44.0	68	60	46	605	<b>KOR38/25SOMD</b>	315	200
	38	30	25	58	44.5	71	60	50	614	<b>KOR38/30SOMD</b>	315	200

<sup>1)</sup> Pressure shown = item deliverable

<sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

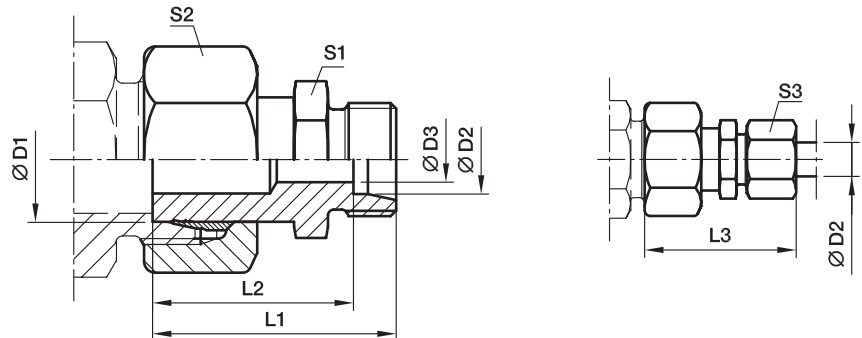
Delivery without nut and ring. Information on ordering complete fittings see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	KOR16/10SOMDCF
Brass	MS	KOR16/10SOMDMS

## KOR Tube end reducer – Stainless steel

EO stand pipe adjustable / EO 24° cone end



With pre-assembled nut and progressive ring for connection.  
Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	D2	D3	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
												71	71
L <sup>3)</sup>	08	06	4	33.5	26.5	41	12	17	14	32	KOR08/06LOMD71	315	
	10	06	4	34.5	27.5	42	12	19	14	39	KOR10/06LOMD71	315	
	10	08	6	35.5	28.5	43	14	19	17	40	KOR10/08LOMD71	315	
	12	06	4	36.5	29.5	44	14	22	14	49	KOR12/06LOMD71	315	
	12	08	6	36.5	29.5	44	14	22	17	53	KOR12/08LOMD71	315	
	12	10	8	37.5	30.5	45	17	22	19	55	KOR12/10LOMD71	315	
	15	06	4	37.0	30.0	45	17	27	14	79	KOR15/06LOMD71	315	
	15	08	6	37.0	30.0	45	17	27	17	78	KOR15/08LOMD71	315	
	15	10	8	38.0	31.0	46	17	27	19	85	KOR15/10LOMD71	315	
	15	12	10	39.0	32.0	47	19	27	22	84	KOR15/12LOMD71	315	
	18	06	4	37.5	30.5	45	19	32	14	112	KOR18/06LOMD71	315	
	18	08	6	37.5	30.5	45	19	32	17	113	KOR18/08LOMD71	315	
	18	10	8	38.5	31.5	46	19	32	19	113	KOR18/10LOMD71	315	
	18	12	10	38.5	31.5	46	19	32	22	122	KOR18/12LOMD71	315	
	18	15	12	39.5	32.5	48	24	32	27	131	KOR18/15LOMD71	315	
	22	06	4	38.5	31.5	46	24	36	14	154	KOR22/06LOMD71	160	
	22	08	6	38.5	31.5	46	24	36	17	155	KOR22/08LOMD71	160	
	22	10	8	39.5	32.5	47	24	36	19	156	KOR22/10LOMD71	160	
	22	12	10	39.5	32.5	47	24	36	22	157	KOR22/12LOMD71	160	
	22	15	12	40.5	33.5	49	24	36	27	160	KOR22/15LOMD71	160	
22	18	15	41.5	34.0	50	27	36	32	173	KOR22/18LOMD71	160		
28	06	4	41.0	34.0	49	30	41	14	220	KOR28/06LOMD71	160		
28	08	6	41.0	34.0	49	30	41	17	217	KOR28/08LOMD71	160		
28	10	8	42.0	35.0	50	30	41	19	211	KOR28/10LOMD71	160		
28	12	10	42.0	35.0	50	30	41	22	219	KOR28/12LOMD71	160		
28	15	12	43.0	36.0	51	30	41	27	188	KOR28/15LOMD71	160		
28	18	15	43.0	35.5	52	30	41	32	218	KOR28/18LOMD71	160		
28	22	19	45.0	37.5	54	32	41	36	228	KOR28/22LOMD71	160		
35	06	4	48.5	41.5	56	36	50	14	307	KOR35/06LOMD71	160		
35	08	6	48.5	41.5	56	36	50	17	313	KOR35/08LOMD71	160		
35	10	8	49.5	42.5	57	36	50	19	370	KOR35/10LOMD71	160		
35	12	10	49.5	42.5	57	36	50	22	371	KOR35/12LOMD71	160		
35	15	12	50.5	43.5	59	36	50	27	380	KOR35/15LOMD71	160		
35	18	15	50.5	43.0	59	36	50	32	382	KOR35/18LOMD71	160		
35	22	19	52.5	45.0	61	36	50	36	380	KOR35/22LOMD71	160		
35	28	24	52.5	45.0	62	41	50	41	400	KOR35/28LOMD71	160		
42	10	8	52.5	45.5	60	46	60	19	551	KOR42/10LOMD71	160		
42	12	10	52.5	45.5	60	46	60	22	551	KOR42/12LOMD71	160		
42	15	12	53.5	46.5	62	46	60	27	687	KOR42/15LOMD71	160		
42	18	15	53.5	46.0	62	46	60	32	555	KOR42/18LOMD71	160		
42	22	19	55.5	48.0	64	46	60	36	568	KOR42/22LOMD71	160		
42	28	24	55.5	48.0	65	46	60	41	559	KOR42/28LOMD71	160		
42	35	30	57.5	47.0	69	46	60	50	588	KOR42/35LOMD71	160		

<sup>1)</sup> Pressure shown = item deliverable

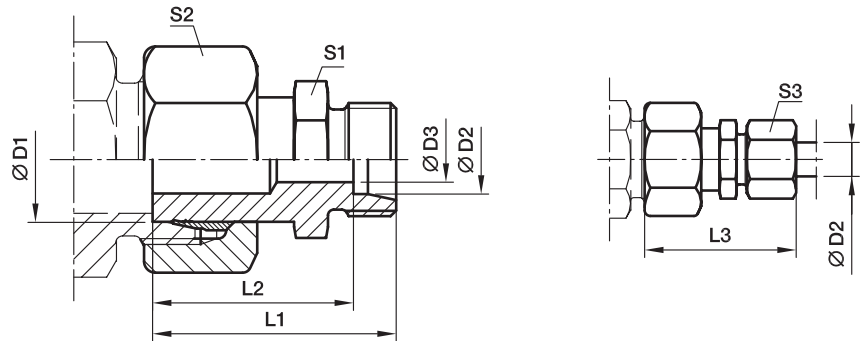
<sup>3)</sup> L = light series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings see page I7.

## KOR Tube end reducer – Stainless steel

EO stand pipe adjustable / EO 24° cone end



With pre-assembled nut and progressive ring for connection.  
Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	D2	D3	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup> 71
S <sup>4)</sup>	08	06	4	36.5	29.5	44	14	19	17	16	KOR08/06SOMD71	630
	10	06	4	38.5	31.5	46	14	22	17	16	KOR10/06SOMD71	630
	10	08	5	38.5	31.5	46	17	22	19	14	KOR10/08SOMD71	630
	12	06	4	38.5	31.5	46	14	24	17	16	KOR12/06SOMD71	630
	12	08	5	38.5	31.5	46	17	24	19	16	KOR12/08SOMD71	630
	12	10	7	39.5	32.0	48	19	24	22	27	KOR12/10SOMD71	630
	14	06	4	40.5	33.5	48	17	27	17	32	KOR14/06SOMD71	630
	14	08	5	40.5	33.5	48	17	27	19	34	KOR14/08SOMD71	630
	14	10	7	41.5	34.0	50	19	27	22	35	KOR14/10SOMD71	630
	14	12	8	41.5	34.0	50	22	27	24	41	KOR14/12SOMD71	630
	16	06	4	41.0	34.0	49	17	30	17	44	KOR16/06SOMD71	400
	16	08	5	41.0	34.0	49	17	30	19	45	KOR16/08SOMD71	400
	16	10	7	42.0	34.5	51	19	30	22	46	KOR16/10SOMD71	400
	16	12	8	42.0	34.5	51	22	30	24	68	KOR16/12SOMD71	400
	16	14	10	44.0	36.0	54	24	30	27	69	KOR16/14SOMD71	400
	20	06	4	46.0	39.0	54	22	36	17	70	KOR20/06SOMD71	400
	20	08	5	46.0	39.0	54	22	36	19	70	KOR20/08SOMD71	400
	20	10	7	46.0	38.5	55	22	36	22	100	KOR20/10SOMD71	400
	20	12	8	46.0	38.5	55	22	36	24	101	KOR20/12SOMD71	400
	20	14	10	48.0	40.0	58	24	36	27	101	KOR20/14SOMD71	400
	20	16	12	49.0	40.5	59	27	36	30	101	KOR20/16SOMD71	400
	25	06	4	50.5	43.5	58	27	46	17	106	KOR25/06SOMD71	400
	25	08	5	50.5	43.5	58	27	46	19	136	KOR25/08SOMD71	400
	25	10	7	50.5	43.0	59	27	46	22	136	KOR25/10SOMD71	400
	25	12	8	50.5	43.0	59	27	46	24	138	KOR25/12SOMD71	400
	25	14	10	52.5	44.5	62	27	46	27	138	KOR25/14SOMD71	400
	25	16	12	52.5	44.0	62	27	46	30	143	KOR25/16SOMD71	400
	25	20	16	54.5	44.0	66	32	46	36	143	KOR25/20SOMD71	400
	30	06	4	53.0	46.0	61	32	50	17	177	KOR30/06SOMD71	400
	30	08	5	53.0	46.0	61	32	50	19	179	KOR30/08SOMD71	400
	30	10	7	53.0	45.5	62	32	50	22	180	KOR30/10SOMD71	400
	30	12	8	53.0	45.5	62	32	50	24	180	KOR30/12SOMD71	400
	30	14	10	55.0	47.0	65	32	50	27	185	KOR30/14SOMD71	400
	30	16	12	55.0	46.5	65	32	50	30	184	KOR30/16SOMD71	400
	30	20	16	57.0	46.5	68	32	50	36	188	KOR30/20SOMD71	400
	30	25	20	60.0	48.0	72	41	50	46	302	KOR30/25SOMD71	400
	38	06	4	60.0	53.0	68	41	60	17	306	KOR38/06SOMD71	315
	38	08	5	60.0	53.0	68	41	60	19	305	KOR38/08SOMD71	315
	38	10	7	60.0	52.5	69	41	60	22	304	KOR38/10SOMD71	315
	38	12	8	60.0	52.5	69	41	60	24	308	KOR38/12SOMD71	315
	38	14	10	62.0	54.0	72	41	60	27	316	KOR38/14SOMD71	315
	38	16	12	62.0	53.5	72	41	60	30	310	KOR38/16SOMD71	315
	38	20	16	64.0	53.5	75	41	60	36	305	KOR38/20SOMD71	315
	38	25	20	66.0	54.0	78	41	60	46	455	KOR38/25SOMD71	315
	38	30	25	69.0	55.5	82	46	60	50	438	KOR38/30SOMD71	315

1) Pressure shown = item deliverable

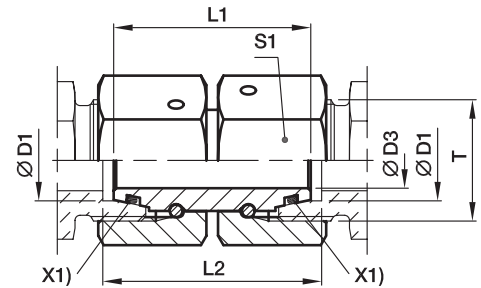
4) S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings see page 17.

## GZ Swivel union

EO 24° DKO swivel



X1) O-ring OR

Series	D1 	T	D3	L1	L2	S1	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
									CF	71
L <sup>3)</sup>	06	M 12×1.5	2.5	32	33	14	28	<b>GZ06L</b>	500	315
	08	M 14×1.5	4.0	32	33	17	41	<b>GZ08L</b>	500	315
	10	M 16×1.5	6.0	33	34	19	53	<b>GZ10L</b>	500	315
	12	M 18×1.5	8.0	33	34	22	71	<b>GZ12L</b>	400	315
	15	M 22×1.5	10.0	38	39	27	129	<b>GZ15L</b>	400	315
	18	M 26×1.5	13.0	36	38	32	165	<b>GZ18L</b>	400	315
	22	M 30×2.0	17.0	42	44	36	243	<b>GZ22L</b>	250	160
	28	M 36×2.0	22.0	46	48	41	319	<b>GZ28L</b>	250	160
S <sup>4)</sup>	06	M 14×1.5	2.5	32	33	17	41	<b>GZ06S</b>	800	630
	08	M 16×1.5	4.0	33	34	19	54	<b>GZ08S</b>	800	630
	10	M 18×1.5	6.0	33	35	22	74	<b>GZ10S</b>	800	630
	12	M 20×1.5	8.0	36	38	24	95	<b>GZ12S</b>	630	630
	14	M 22×1.5	9.0	39	41	27	131	<b>GZ14S</b>	630	630
	16	M 24×1.5	11.0	39	42	30	172	<b>GZ16S</b>	630	400
	20	M 30×2.0	14.0	44	48	36	261	<b>GZ20S</b>	420	400
	25	M 36×2.0	18.0	46	53	46	477	<b>GZ25S</b>	420	400
	30	M 42×2.0	23.0	52	62	50	605	<b>GZ30S</b>	420	400
	38	M 52×2.0	30.0	52	67	60	826	<b>GZ38S</b>	420	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Information on ordering complete fittings or alternative sealing materials see page I7.

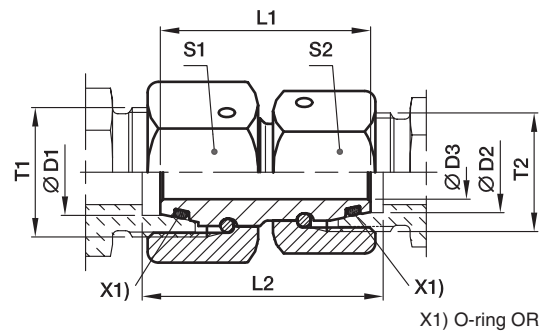
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	GZ16SCF	NBR
Stainless Steel	71	GZ16S71	VIT



## GZR Swivel reducer

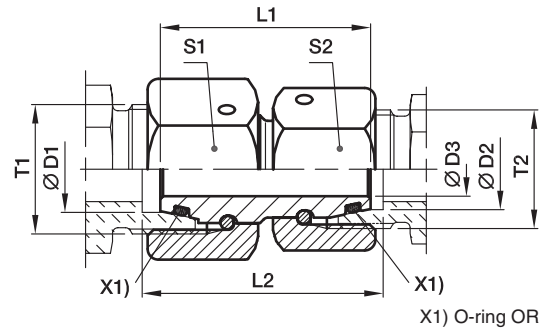
EO 24° DKO swivel



Series 3) 4)	D1	D2	T1	T2	D3	L1	L2	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup> CF
L/S	06	06	M 14×1.5	M 12×1.5	2.5	32	33.0	17	14	34	<b>GZR06L/06S</b>	500
L	08	06	M 14×1.5	M 12×1.5	2.5	32	33.0	17	14	36	<b>GZR08/06L</b>	500
L/S	08	08	M 16×1.5	M 14×1.5	4.0	33	34.0	19	17	48	<b>GZR08L/08S</b>	500
L	10	06	M 16×1.5	M 12×1.5	2.5	33	34.0	19	14	44	<b>GZR10/06L</b>	500
L	10	08	M 16×1.5	M 14×1.5	4.0	33	34.0	19	17	50	<b>GZR10/08L</b>	500
L/S	10	10	M 18×1.5	M 16×1.5	6.0	33	34.5	22	19	63	<b>GZR10L/10S</b>	500
L	12	06	M 18×1.5	M 12×1.5	2.5	33	34.0	22	14	56	<b>GZR12/06L</b>	400
L	12	08	M 18×1.5	M 14×1.5	4.0	33	34.0	22	17	62	<b>GZR12/08L</b>	400
L	12	10	M 18×1.5	M 16×1.5	6.0	33	34.0	22	19	65	<b>GZR12/10L</b>	400
L/S	12	12	M 20×1.5	M 18×1.5	8.0	36	37.5	24	22	85	<b>GZR12L/12S</b>	400
L	15	08	M 22×1.5	M 14×1.5	4.0	38	39.0	27	17	98	<b>GZR15/08L</b>	400
L	15	10	M 22×1.5	M 16×1.5	6.0	38	39.0	27	19	101	<b>GZR15/10L</b>	400
L	15	12	M 22×1.5	M 18×1.5	8.0	38	39.0	27	22	108	<b>GZR15/12L</b>	400
L	18	10	M 26×1.5	M 16×1.5	6.0	36	37.5	32	19	125	<b>GZR18/10L</b>	400
L	18	12	M 26×1.5	M 18×1.5	8.0	36	37.5	32	22	132	<b>GZR18/12L</b>	400
L	18	15	M 26×1.5	M 22×1.5	10.0	38	39.5	32	27	155	<b>GZR18/15L</b>	400
L/S	18	16	M 26×1.5	M 24×1.5	11.0	39	41.5	32	30	177	<b>GZR18L/16S</b>	400
L	22	12	M 30×2.0	M 18×1.5	8.0	42	43.5	36	22	195	<b>GZR22/12L</b>	250
L	22	15	M 30×2.0	M 22×1.5	10.0	42	43.5	36	27	215	<b>GZR22/15L</b>	250
L	22	18	M 30×2.0	M 26×1.5	13.0	42	44.0	36	32	228	<b>GZR22/18L</b>	250
L/S	22	20	M 30×2.0	M 30×2.0	14.0	44	47.0	36	36	266	<b>GZR22L/20S</b>	250
L	28	15	M 36×2.0	M 22×1.5	10.0	46	47.5	41	27	143	<b>GZR28/15L</b>	250
L	28	18	M 36×2.0	M 26×1.5	13.0	46	48.0	41	32	311	<b>GZR28/18L</b>	250
L	28	22	M 36×2.0	M 30×2.0	17.0	46	46.0	41	36	309	<b>GZR28/22L</b>	250
L/S	28	25	M 36×2.0	M 36×2.0	18.0	46	50.5	41	46	419	<b>GZR28L/25S</b>	250
L	35	18	M 45×2.0	M 26×1.5	13.0	48	51.0	50	32	430	<b>GZR35/18L</b>	250
L	35	22	M 45×2.0	M 30×2.0	17.0	48	51.0	50	36	429	<b>GZR35/22L</b>	250
L	35	28	M 45×2.0	M 36×2.0	22.0	48	51.0	50	41	415	<b>GZR35/28L</b>	250
L/S	35	30	M 45×2.0	M 42×2.0	23.0	52	59.0	50	50	577	<b>GZR35L/30S</b>	250
L	42	22	M 52×2.0	M 30×2.0	17.0	52	55.5	60	36	653	<b>GZR42/22L</b>	250
L	42	28	M 52×2.0	M 36×2.0	22.0	52	55.5	60	41	648	<b>GZR42/28L</b>	250
L	42	35	M 52×2.0	M 45×2.0	28.0	52	56.5	60	50	662	<b>GZR42/35L</b>	250
L/S	42	38	M 52×2.0	M 52×2.0	30.0	52	62.0	60	60	822	<b>GZR42L/38S</b>	250
S	08	06	M 16×1.5	M 14×1.5	2.5	33	34.0	19	17	49	<b>GZR08/06S</b>	800
S	10	06	M 18×1.5	M 14×1.5	2.5	33	34.5	22	17	60	<b>GZR10/06S</b>	800
S	10	08	M 18×1.5	M 16×1.5	4.0	33	34.5	22	19	66	<b>GZR10/08S</b>	800
S	12	06	M 20×1.5	M 14×1.5	2.5	36	37.5	24	17	77	<b>GZR12/06S</b>	630
S	12	08	M 20×1.5	M 16×1.5	4.0	36	37.5	24	19	82	<b>GZR12/08S</b>	630
S	12	10	M 20×1.5	M 18×1.5	6.0	36	38.0	24	22	89	<b>GZR12/10S</b>	630
S	16	10	M 24×1.5	M 18×1.5	6.0	39	41.5	30	22	138	<b>GZR16/10S</b>	630
S	16	12	M 24×1.5	M 20×1.5	8.0	39	41.5	30	24	143	<b>GZR16/12S</b>	630
S/L	16	15	M 24×1.5	M 22×1.5	10.0	39	41.0	30	27	153	<b>GZR16S/15L</b>	400
S	20	12	M 30×2.0	M 20×1.5	8.0	44	47.0	36	24	204	<b>GZR20/12S</b>	420

## GZR Swivel reducer

EO 24° DKO swivel



Series 3) 4)	D1	D2	T1	T2	D3	L1	L2	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup> CF
S	20	16	M 30×2.0	M 24×1.5	11.0	44	47.5	36	30	232	<b>GZR20/16S</b>	420
S/L	20	18	M 30×2.0	M 26×1.5	13.0	44	47.0	36	32	224	<b>GZR20S/18L</b>	400
S	25	16	M 36×2.0	M 24×1.5	11.0	46	51.0	46	30	224	<b>GZR25/16S</b>	420
S	25	20	M 36×2.0	M 30×2.0	14.0	46	51.5	46	36	364	<b>GZR25/20S</b>	420
S/L	25	22	M 36×2.0	M 30×2.0	17.0	46	50.5	46	36	475	<b>GZR25S/22L</b>	250
S	30	16	M 42×2.0	M 24×1.5	11.0	52	58.5	50	30	475	<b>GZR30/16S</b>	420
S	30	20	M 42×2.0	M 30×2.0	14.0	52	59.0	50	36	500	<b>GZR30/20S</b>	420
S	30	25	M 42×2.0	M 36×2.0	18.0	52	60.5	50	46	589	<b>GZR30/25S</b>	420
S/L	30	28	M 42×2.0	M 36×2.0	22.0	52	58.0	50	41	476	<b>GZR30S/28L</b>	250
S	38	20	M 52×2.0	M 30×2.0	14.0	52	61.5	60	36	671	<b>GZR38/20S</b>	420
S	38	25	M 52×2.0	M 36×2.0	18.0	52	63.0	60	46	759	<b>GZR38/25S</b>	420
S	38	30	M 52×2.0	M 42×2.0	23.0	52	64.5	60	50	767	<b>GZR38/30S</b>	420
S/L	38	35	M 52×2.0	M 45×2.0	28.0	52	61.5	60	50	662	<b>GZR38S/35L</b>	250

1) Pressure shown = item deliverable

3) L = light series; 4) S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

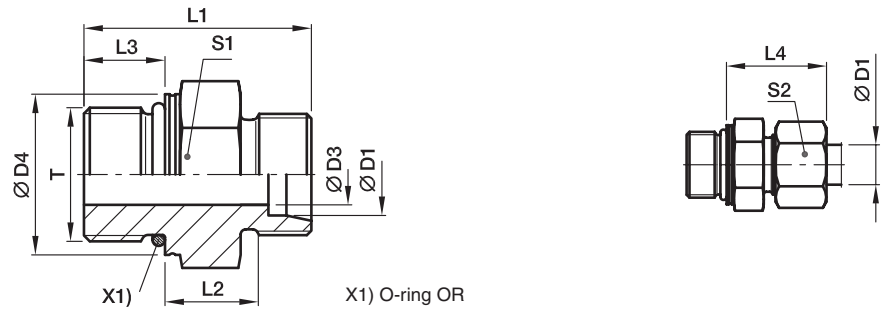
Information on ordering complete fittings or alternative sealing materials see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	GZR16/12SCF	NBR

## GEO Male stud connector

Male metric thread – O-ring (ISO 6149) / EO 24° cone end



Series	D1	T	D3	D4	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
													CF	71
LL <sup>2)</sup>	04	M 08x1.0	3.0	10.8	20.0	9.5	6.5	19.0	11	10	8	<b>GEO04LLMOMD</b>	100	
	04	M 10x1.0	3.0	12.8	20.0	9.5	6.5	19.0	13	10	11	<b>GEO04LLM10X1OMD</b>	100	
	06	M 10x1.0	4.5	12.8	20.0	8.0	6.5	19.5	13	12	10	<b>GEO06LLMOMD</b>	100	
L <sup>3)</sup>	06	M 10x1.0	4.5	14.0	24.0	8.5	8.5	23.0	14	14	15	<b>GEO06LMOMD</b>	500	315
	08	M 12x1.5	6.0	17.0	28.0	10.0	11.0	25.0	17	17	23	<b>GEO08LMOMD</b>	500	315
	10	M 14x1.5	7.5	19.0	29.0	11.0	11.0	26.0	19	19	28	<b>GEO10LMOMD</b>	500	315
	12	M 16x1.5	9.0	22.0	31.0	12.5	11.5	27.0	22	22	40	<b>GEO12LMOMD</b>	400	315
	15	M 18x1.5	11.0	24.0	33.0	13.5	12.5	29.0	24	27	56	<b>GEO15LMOMD</b>	400	315
	18	M 22x1.5	14.0	27.0	35.0	14.5	13.0	31.0	27	32	80	<b>GEO18LMOMD</b>	400	315
	22	M 27x2.0	18.0	32.0	40.0	16.5	16.0	33.0	32	36	104	<b>GEO22LM27X2OMD</b>	250	160
	28	M 33x2.0	23.0	41.0	41.0	17.5	16.0	34.0	41	41	171	<b>GEO28LMOMD</b>	250	160
	35	M 42x2.0	30.0	50.0	44.0	17.5	16.0	39.0	50	50	278	<b>GEO35LMOMD</b>	250	160
	42	M 48x2.0	36.0	55.0	47.5	19.0	17.5	42.0	55	60	340	<b>GEO42LMOMD</b>	250	160
S <sup>4)</sup>	06	M 12x1.5	4.0	17.0	31.0	13.0	11.0	28.0	17	17	29	<b>GEO06SMOMD</b>	800	630
	08	M 14x1.5	6.0	19.0	33.0	15.0	11.0	30.0	19	19	41	<b>GEO08SMOMD</b>	800	630
	10	M 16x1.5	7.0	22.0	35.0	15.0	12.5	31.0	22	22	55	<b>GEO10SMOMD</b>	800	630
	12	M 18x1.5	9.0	24.0	38.5	17.0	14.0	33.0	24	24	73	<b>GEO12SMOMD</b>	630	630
	16	M 22x1.5	12.0	27.0	42.0	18.5	15.0	37.0	27	30	102	<b>GEO16SMOMD</b>	630	400
	20	M 27x2.0	15.0	32.0	49.5	20.5	18.5	42.0	32	36	169	<b>GEO20SMOMD</b>	420	400
	25	M 33x2.0	20.0	41.0	53.5	23.0	18.5	47.0	41	46	274	<b>GEO25SMOMD</b>	420	400
	30	M 42x2.0	26.0	50.0	56.0	23.5	19.0	50.0	50	50	412	<b>GEO30SMOMD</b>	420	400
	38	M 48x2.0	32.0	55.0	63.5	26.0	21.5	57.0	55	60	580	<b>GEO38SMOMD</b>	420	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

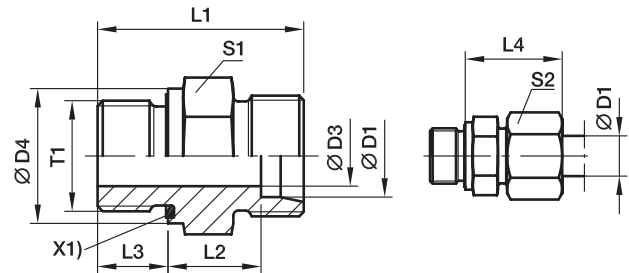
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	GEO16SMOMDCF	NBR
Stainless Steel	71	GEO16SMOMD71	VIT

## GE-M-ED Male stud connector

Male metric thread – ED (ISO 9974) / EO 24° cone end



X1) Eolastic-sealing ED

Series	D1	T1	D3	D4	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
													CF	71
L <sup>3)</sup>	06	M 10×1.0	4	14	23.5	8.5	8	23	14	14	13	GE06LMEDOMD	500	315
	08	M 12×1.5	6	17	29.0	10.0	12	25	17	17	22	GE08LMEDOMD	500	315
	10	M 14×1.5	7	19	30.0	11.0	12	26	19	19	29	GE10LMEDOMD	500	315
	10	M 12×1.5	6	17	30.0	11.0	12	26	17	19	23	GE10LM12X1.5EDOMD	315	315
	10	M 16×1.5	8	22	31.5	12.5	12	24	22	19	40	GE10LM16X1.5EDOMD	420	315
	10	M 18×1.5	8	24	31.5	12.5	12	27	24	19	50	GE10LM18X1.5EDOMD	400	315
	10	M 22×1.5	8	27	35.0	14.0	14	29	27	19	80	GE10LM22X1.5EDOMD	400	315
	12	M 16×1.5	9	22	31.5	12.5	12	27	22	22	40	GE12LMEDOMD	400	315
	12	M 14×1.5	7	19	30.0	11.0	12	26	19	22	30	GE12LM14X1.5EDOMD	400	315
	12	M 18×1.5	10	24	31.5	12.5	12	27	24	22	47	GE12LM18X1.5EDOMD	400	315
	12	M 22×1.5	10	27	35.0	14.0	14	29	27	22	75	GE12LM22X1.5EDOMD	400	315
	15	M 18×1.5	11	24	32.5	13.5	12	29	24	27	51	GE15LMEDOMD	400	315
	15	M 16×1.5	9	22	32.0	13.0	12	28	24	27	64	GE15LM16X1.5EDOMD	400	315
	15	M 22×1.5	12	27	36.0	15.0	14	30	27	27	77	GE15LM22X1.5EDOMD	400	315
	18	M 22×1.5	14	27	36.0	14.5	14	31	27	32	74	GE18LMEDOMD	400	315
	18	M 18×1.5	11	24	33.5	14.0	12	30	27	32	68	GE18LM18X1.5EDOMD	400	315
	22	M 26×1.5	18	32	40.0	16.5	16	33	32	36	103	GE22LMEDOMD	250	160
	22	M 22×1.5	14	32	38.0	16.5	14	33	32	36	97	GE22LM22X1.5EDOMD	250	160
	28	M 33×2.0	23	40	43.0	17.5	18	34	41	41	168	GE28LMEDOMD	250	160
	35	M 42×2.0	30	50	48.0	17.5	20	39	50	50	281	GE35LMEDOMD	250	160
42	M 48×2.0	36	55	52.0	19.0	22	42	55	60	356	GE42LMEDOMD	250	160	
S <sup>4)</sup>	06	M 12×1.5	4	17	32.0	13.0	12	28	17	17	30	GE06SMEDOMD	800	630
	08	M 14×1.5	5	19	34.0	15.0	12	30	19	19	42	GE08SMEDOMD	800	630
	10	M 16×1.5	7	22	34.5	15.0	12	31	22	22	54	GE10SMEDOMD	800	630
	12	M 18×1.5	8	24	36.5	17.0	12	33	24	24	71	GE12SMEDOMD	630	630
	12	M 14×1.5	5	19	36.0	16.5	12	33	22	24	60	GE12SM14X1.5EDOMD	630	630
	12	M 22×1.5	8	27	39.0	17.5	14	34	27	24	102	GE12SM22X1.5EDOMD	630	400
	14	M 20×1.5	10	26	41.0	19.0	14	37	27	27	98	GE14SMEDOMD	630	630
	16	M 22×1.5	12	27	41.0	18.5	14	37	27	30	95	GE16SMEDOMD	630	400
	16	M 18×1.5	8	24	38.5	18.0	12	36	27	30	88	GE16SM18X1.5EDOMD	630	400
	20	M 27×2.0	16	32	47.0	20.5	16	42	32	36	150	GE20SMEDOMD	420	400
	25	M 33×2.0	20	40	53.0	23.0	18	47	41	46	264	GE25SMEDOMD	420	400
	30	M 42×2.0	25	50	57.0	23.5	20	50	50	50	422	GE30SMEDOMD	420	400
	38	M 48×2.0	32	55	64.0	26.0	22	57	55	60	569	GE38SMEDOMD	420	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

PN (bar) = PN (MPa)  
10

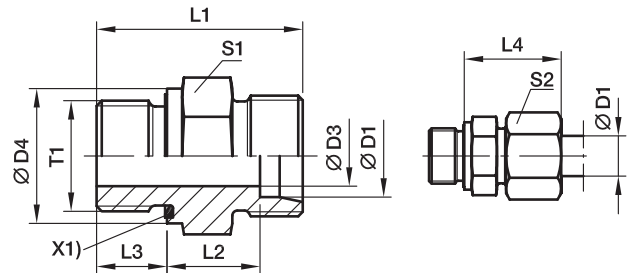
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	GE16SMEDOMDCF	NBR
Stainless Steel	71	GE16SMEDOMD71	VIT

## GE-R-ED Male stud connector

Male BSPP thread – ED-seal (ISO 1179) / EO 24° cone end



X1) Eolastic-sealing ED

Series	D1	T1	D3	D4	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
													CF	71	MS
LL <sup>2)</sup>	04	G 1/8 A	3	14	20.0	9.5	6.5	19	14	10	10	GE04LLREDOMD	100	100	63
	06	G 1/8 A	4	14	20.0	8.0	6.5	20	14	12	11	GE06LLREDOMD	100	100	63
L <sup>3)</sup>	06	G 1/8 A	4	14	23.5	8.5	8.0	23	14	14	13	GE06LREDOMD	500	315	200
	06	G 1/4 A	4	19	29.0	10.0	12.0	25	19	14	28	GE06LR1/4EDOMD	500	315	200
	06	G 3/8 A	4	22	30.5	11.5	12.0	26	22	14	44	GE06LR3/8EDOMD	420	315	200
	06	G 1/2 A	4	27	33.0	12.0	14.0	27	27	14	61	GE06LR1/2EDOMD	400	315	200
	08	G 1/4 A	6	19	29.0	10.0	12.0	25	19	17	27	GE08LREDOMD	500	315	200
	08	G 1/8 A	4	14	24.5	9.5	8.0	24	14	17	16	GE08LR1/8EDOMD	500	315	200
	08	G 3/8 A	6	22	30.5	11.5	12.0	26	22	17	45	GE08LR3/8EDOMD	420	315	200
	08	G 1/2 A	6	27	33.0	12.0	14.0	27	27	17	74	GE08LR1/2EDOMD	400	315	200
	10	G 1/4 A	6	19	30.0	11.0	12.0	26	19	19	29	GE10LREDOMD	500	315	200
	10	G 1/8 A	4	14	25.5	10.5	8.0	25	17	19	21	GE10LR1/8EDOMD	500	315	200
	10	G 3/8 A	8	22	31.5	12.5	12.0	27	22	19	43	GE10LR3/8EDOMD	420	315	200
	10	G 1/2 A	8	27	34.0	13.0	14.0	28	27	19	71	GE10LR1/2EDOMD	400	315	200
	12	G 3/8 A	9	22	31.5	12.5	12.0	27	22	22	41	GE12LREDOMD	420	315	200
	12	G 1/8 A	4	14	26.5	11.5	8.0	26	19	22	26	GE12LR1/8EDOMD	420	315	200
	12	G 1/4 A	6	19	31.0	12.0	12.0	27	19	22	31	GE12LR1/4EDOMD	400	315	200
	12	G 1/2 A	10	27	34.0	13.0	14.0	28	27	22	67	GE12LR1/2EDOMD	400	315	200
	12	G 3/4 A	10	32	37.0	14.0	16.0	29	32	22	118	GE12LR3/4EDOMD	250	160	100
	15	G 1/2 A	11	27	35.0	14.0	14.0	29	27	27	72	GE15LREDOMD	400	315	200
	15	G 3/8 A	9	22	32.5	13.5	12.0	29	24	27	54	GE15LR3/8EDOMD	400	315	200
	15	G 3/4 A	12	32	38.0	15.0	16.0	30	32	27	116	GE15LR3/4EDOMD	250	160	100
	18	G 1/2 A	14	27	36.0	14.5	14.0	31	27	32	71	GE18LREDOMD	400	315	200
	18	G 3/8 A	9	22	33.5	14.0	12.0	30	27	32	66	GE18LR3/8EDOMD	400	315	200
	18	G 3/4 A	15	32	38.0	14.5	16.0	31	32	32	110	GE18LR3/4EDOMD	250	160	100
	22	G 3/4 A	18	32	40.0	16.5	16.0	33	32	36	102	GE22LREDOMD	250	160	100
	22	G 1/2 A	14	27	38.0	16.5	14.0	33	32	36	91	GE22LR1/2EDOMD	250	160	100
	22	G 1 A	19	40	43.0	17.5	18.0	34	41	36	189	GE22LR1EDOMD	250	160	100
	28	G 1 A	23	40	43.0	17.5	18.0	34	41	41	170	GE28LREDOMD	250	160	100
	28	G 3/4 A	18	32	41.0	17.5	16.0	34	41	41	159	GE28LR3/4EDOMD	250	160	100
	28	G 1 1/4 A	24	50	46.0	18.5	20.0	35	50	41	316	GE28LR11/4EDOMD	250	160	100
	35	G 1 1/4 A	30	50	48.0	17.5	20.0	39	50	50	272	GE35LREDOMD	250	160	100
	35	G 1 A	23	40	46.0	17.5	18.0	39	46	50	226	GE35LR1EDOMD	250	160	100
	35	G 1 1/2 A	30	55	52.0	19.5	22.0	41	55	50	423	GE35LR11/2EDOMD	250	160	100
42	G 1 1/2 A	36	55	52.0	19.0	22.0	42	55	60	343	GE42LREDOMD	250	160	100	
42	G 1 A	23	40	48.0	19.0	18.0	42	55	60	324	GE42LR1EDOMD	250	160	100	
42	G 1 1/4 A	30	50	50.0	19.0	20.0	42	55	60	348	GE42LR11/4EDOMD	250	160	100	

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

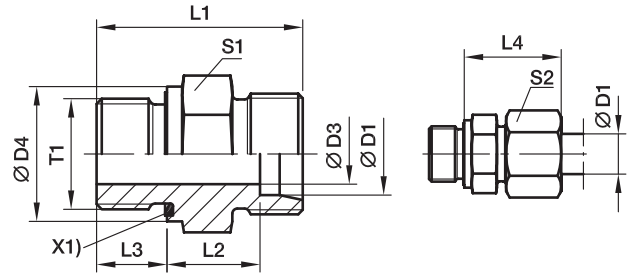
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	GE18LREDOMDCF	NBR
Stainless Steel	71	GE18LREDOMD71	VIT
Brass	MS	GE18LREDOMDMS	NBR

## GE-R-ED Male stud connector

Male BSPP thread – ED-seal (ISO 1179) / EO 24° cone end



X1) Eolastic-sealing ED

Series	D1	T1	D3	D4	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
													CF	71	MS
S <sup>4)</sup>	06	G 1/4 A	4	19	32.0	13.0	12	28	19	17	35	<b>GE06SREDOMD</b>	800	630	400
	06	G 1/8 A	4	14	27.5	12.5	8	27	14	17	21	<b>GE06SR1/8EDOMD</b>	500	315	
	06	G 3/8 A	4	22	34.5	15.5	12	30	22	17	52	<b>GE06SR3/8EDOMD</b>	630	630	
	06	G 1/2 A	4	27	39.0	18.0	14	33	27	17	83	<b>GE06SR1/2EDOMD</b>	630	400	
	08	G 1/4 A	5	19	34.0	15.0	12	30	19	19	41	<b>GE08SREDOMD</b>	800	630	400
	08	G 3/8 A	5	22	34.5	15.5	12	30	22	19	57	<b>GE08SR3/8EDOMD</b>	800	630	
	08	G 1/2 A	5	27	39.0	18.0	14	33	27	19	89	<b>GE08SR1/2EDOMD</b>	630	400	
	10	G 3/8 A	7	22	34.5	15.0	12	31	22	22	55	<b>GE10SREDOMD</b>	800	630	400
	10	G 1/4 A	5	19	34.0	14.5	12	31	19	22	42	<b>GE10SR1/4EDOMD</b>	800	630	
	10	G 1/2 A	7	27	39.0	17.5	14	34	27	22	97	<b>GE10SR1/2EDOMD</b>	630	630	
	12	G 3/8 A	8	22	36.5	17.0	12	33	22	24	62	<b>GE12SREDOMD</b>	630	630	400
	12	G 1/4 A	5	19	36.0	16.5	12	33	22	24	61	<b>GE12SR1/4EDOMD</b>	630	630	
12	G 1/2 A	8	27	39.0	17.5	14	34	27	24	99	<b>GE12SR1/2EDOMD</b>	630	630		
14	G 1/2 A	10	27	41.0	19.0	14	37	27	27	96	<b>GE14SREDOMD</b>	630	630	400	
14	G 3/8 A	8	22	38.5	18.5	12	36	24	27	74	<b>GE14SR3/8EDOMD</b>	630	630		
14	G 3/4 A	10	32	45.0	21.0	16	39	32	27	138	<b>GE14SR3/4EDOMD</b>	420	400		
16	G 1/2 A	12	27	41.0	18.5	14	37	27	30	91	<b>GE16SREDOMD</b>	630	400	250	
16	G 3/8 A	8	22	38.5	18.0	12	36	27	30	83	<b>GE16SR3/8EDOMD</b>	630	400		
16	G 3/4 A	12	32	45.0	20.5	16	39	32	30	152	<b>GE16SR3/4EDOMD</b>	420	400		
20	G 3/4 A	16	32	47.0	20.5	16	42	32	36	149	<b>GE20SREDOMD</b>	420	400	250	
20	G 1/2 A	12	27	45.0	20.5	14	42	32	36	142	<b>GE20SR1/2EDOMD</b>	420	400		
20	G 1 A	16	40	51.0	22.5	18	44	41	36	265	<b>GE20SR1EDOMD</b>	420	400		
20	G 1 1/4 A	16	50	53.0	22.5	20	44	50	36	404	<b>GE20SR11/4EDOMD</b>	420	400		
25	G 1 A	20	40	53.0	23.0	18	47	41	46	266	<b>GE25SREDOMD</b>	420	400	250	
25	G 1/2 A	12	27	49.0	23.0	14	47	41	46	228	<b>GE25SR1/2EDOMD</b>	420	400		
25	G 3/4 A	16	32	51.0	23.0	16	47	41	46	255	<b>GE25SR3/4EDOMD</b>	420	400		
25	G 1 1/4 A	20	50	55.0	23.0	20	47	50	46	411	<b>GE25SR11/4EDOMD</b>	420	400		
25	G 1 1/2 A	20	55	60.0	26.0	22	50	55	46	549	<b>GE25SR11/2EDOMD</b>	315	315		
30	G 1 1/4 A	25	50	57.0	23.5	20	50	50	50	418	<b>GE30SREDOMD</b>	420	400	250	
30	G 1 A	20	40	55.0	23.5	18	50	46	50	344	<b>GE30SR1EDOMD</b>	420	400		
30	G 1 1/2 A	25	55	62.0	26.5	22	53	55	50	530	<b>GE30SR11/2EDOMD</b>	315	315		
38	G 1 1/2 A	32	55	64.0	26.0	22	57	55	60	563	<b>GE38SREDOMD</b>	420	315	200	
38	G 1 1/4 A	25	50	62.0	26.0	20	57	55	60	575	<b>GE38SR11/4EDOMD</b>	420	315		

1) Pressure shown = item deliverable

4) S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

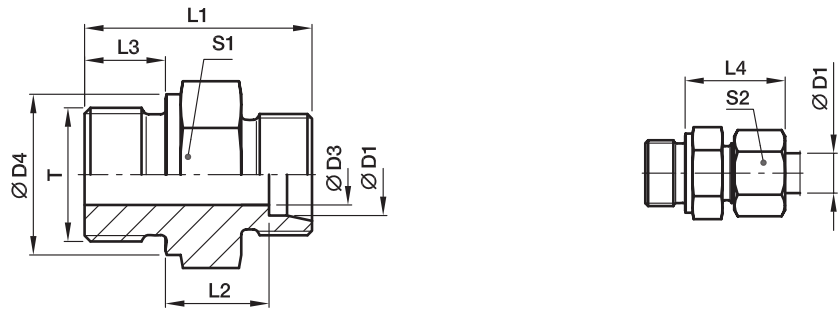
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the suffixes below according to the material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	GE16SREDOMDCF	NBR
Stainless Steel	71	GE16SREDOMD71	VIT
Brass	MS	GE16SREDOMDMS	NBR

## GE-R Male stud connector

Male BSPP thread – metal sealing edge (ISO 1179) / EO 24° cone end



Series	D1	T	D3	D4	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
													CF	71	MS
L <sup>3)</sup>	06	G 1/8 A	4	14	23.5	8.5	8	23.0	14	14	14	GE06LR	315	315	200
	06	G 1/4 A	4	18	29.0	10.0	12	25.0	19	14	60	GE06LR1/4	315	315	200
	06	G 3/8 A	4	22	30.5	11.5	12	26.0	22	14	45	GE06LR3/8	315	315	200
	06	G 1/2 A	4	26	33.0	12.0	14	27.0	27	14	60	GE06LR1/2	315	315	
	08	G 1/4 A	6	18	29.0	10.0	12	25.0	19	17	26	GE08LR	315	315	200
	08	G 1/8 A	4	14	24.5	8.5	8	23.0	14	17	16	GE08LR1/8	315	315	
	08	G 3/8 A	6	22	30.5	11.5	12	26.0	22	17	44	GE08LR3/8	315	315	200
	08	G 1/2 A	6	26	33.0	12.0	14	27.0	27	17	74	GE08LR1/2	315	315	200
	10	G 1/4 A	6	18	30.0	11.0	12	26.0	19	19	31	GE10LR	315	315	200
	10	G 1/8 A	4	14	25.5	10.5	8	25.0	17	19	21	GE10LR1/8	315	315	
	10	G 3/8 A	8	22	31.5	12.5	12	27.0	22	19	44	GE10LR3/8	315	315	200
	10	G 1/2 A	8	26	34.0	13.0	14	28.0	27	19	72	GE10LR1/2	315	315	200
12	G 3/8 A	9	22	31.5	12.5	12	27.0	22	22	43	GE12LR	315	315	200	
12	G 1/8 A	4	14	26.5	11.5	8	26.0	19	22	27	GE12LR1/8	315	315		
12	G 1/4 A	6	18	31.0	12.0	12	27.0	19	22	32	GE12LR1/4	315	315	200	
12	G 1/2 A	10	26	34.0	13.0	14	28.0	27	22	67	GE12LR1/2	315	315	200	
12	G 3/4 A	10	32	37.0	14.0	16	29.0	32	22	120	GE12LR3/4	315	315		
15	G 1/2 A	11	26	35.0	14.0	14	29.0	27	27	72	GE15LR	250	250	160	
15	G 3/8 A	9	22	32.5	13.5	12	29.0	24	27	56	GE15LR3/8	250	250	160	
15	G 3/4 A	12	32	38.0	15.0	16	30.0	32	27	118	GE15LR3/4	250	250		
18	G 1/2 A	14	26	36.0	14.5	14	31.0	27	32	72	GE18LR	250	250	160	
18	G 3/8 A	9	22	33.5	14.0	12	29.5	27	32	69	GE18LR3/8	250	250		
18	G 3/4 A	15	32	38.0	14.5	16	30.0	32	32	112	GE18LR3/4	250	250		
22	G 3/4 A	18	32	40.0	16.5	16	33.0	32	36	103	GE22LR	160	160	100	
22	G 1/2 A	14	26	38.0	16.5	14	33.0	32	36	91	GE22LR1/2	160	160	100	
22	G 1 A	19	39	43.0	17.5	18	33.5	41	36	184	GE22LR1	160	160		
28	G 1 A	23	39	43.0	17.5	18	34.0	41	41	168	GE28LR	160	160	100	
28	G 1/2 A	14	26	39.0	17.5	14	34.0	41	41	141	GE28LR1/2	160	160		
28	G 3/4 A	18	32	41.0	17.5	16	34.0	41	41	156	GE28LR3/4	160	160		
28	G 1 1/4 A	24	50	46.0	18.3	20	35.0	50	41	314	GE28LR11/4	160	160		
35	G 1 1/4 A	30	49	48.0	17.5	20	39.0	50	50	276	GE35LR	160	160	100	
35	G 1/2 A	14	26	42.0	17.5	14	39.0	46	50	194	GE35LR1/2	160	160		
35	G 3/4 A	18	32	44.0	17.5	16	39.0	46	50	202	GE35LR3/4	160	160		
35	G 1 A	23	39	46.0	17.5	18	39.0	46	50	234	GE35LR1	160	160		
35	G 1 1/2 A	30	55	52.0	19.5	22	41.0	55	50	355	GE35LR11/2	160	160		
42	G 1 1/2 A	36	55	52.0	19.0	22	42.0	55	60	349	GE42LR	160	160	100	
42	G 1 A	23	39	48.0	19.0	18	42.0	55	60	327	GE42LR1	160	160		
42	G 1 1/4 A	30	49	50.0	19.0	20	42.0	55	60	336	GE42LR11/4	160	160		

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings see page I7.

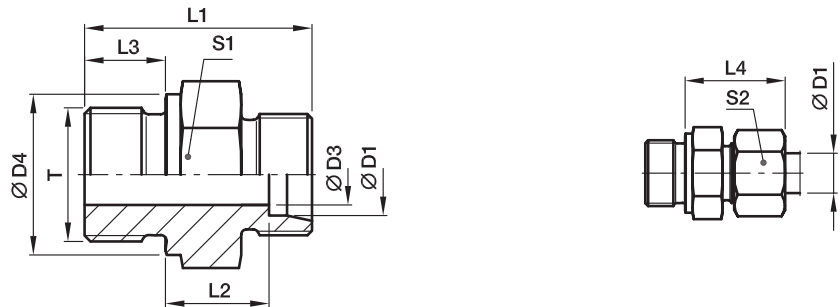
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	GE18LR CFX
Stainless Steel	71X	GE18LR 71X
Brass	MSX	GE18LR MSX



## GE-R Male stud connector

Male BSPP thread – metal sealing edge (ISO 1179) / EO 24° cone end



Series	D1	T	D3	D4	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
													CF	71	MS
S <sup>4)</sup>	06	G 1/4 A	4	18	32.0	13.0	12	28	19	17	35	<b>GE06SR</b>	400	400	250
	06	G 1/8 A	3	14	27.5	12.5	8	27	14	17	22	<b>GE06SR1/8</b>	400	400	
	06	G 3/8 A	4	22	34.5	15.5	12	30	22	17	57	<b>GE06SR3/8</b>	400	400	
	06	G 1/2 A	4	26	39.0	18.0	14	33	27	17	83	<b>GE06SR1/2</b>	400	400	
	08	G 1/4 A	5	18	34.0	15.0	12	30	19	19	41	<b>GE08SR</b>	400	400	250
	08	G 3/8 A	5	22	34.5	15.5	12	30	22	19	59	<b>GE08SR3/8</b>	400	400	
	08	G 1/2 A	5	26	39.0	18.0	14	33	27	19	100	<b>GE08SR1/2</b>	400	400	
	10	G 3/8 A	7	22	34.5	15.0	12	31	22	22	56	<b>GE10SR</b>	400	400	250
	10	G 1/4 A	5	18	34.0	14.5	12	31	19	22	43	<b>GE10SR1/4</b>	400	400	
	10	G 1/2 A	7	26	39.0	17.5	14	34	27	22	97	<b>GE10SR1/2</b>	400	400	
	12	G 3/8 A	8	22	36.5	17.0	12	33	22	24	62	<b>GE12SR</b>	400	400	250
	12	G 1/4 A	5	18	36.0	16.5	12	33	22	24	57	<b>GE12SR1/4</b>	400	400	
	12	G 1/2 A	8	26	39.0	17.5	14	34	27	24	57	<b>GE12SR1/2</b>	400	400	
	14	G 1/2 A	10	26	41.0	19.0	14	37	27	27	96	<b>GE14SR</b>	400	400	250
	14	G 3/8 A	8	22	38.5	18.5	12	36	24	27	74	<b>GE14SR3/8</b>	400	400	
	16	G 1/2 A	12	26	41.0	18.5	14	37	27	30	92	<b>GE16SR</b>	400	400	250
16	G 3/8 A	8	22	38.5	18.0	12	36	27	30	83	<b>GE16SR3/8</b>	400	400		
16	G 3/4 A	12	32	45.0	20.5	16	39	32	30	157	<b>GE16SR3/4</b>	400	400		
20	G 3/4 A	16	32	47.0	20.5	16	42	32	36	151	<b>GE20SR</b>	400	400	250	
20	G 1/2 A	12	26	45.0	20.5	14	42	32	36	142	<b>GE20SR1/2</b>	400	400		
20	G 1 A	16	39	51.0	22.5	18	44	41	36	273	<b>GE20SR1</b>	250	250	160	
20	G 1 1/4 A	16	49	53.0	22.5	20	44	50	36	387	<b>GE20SR11/4</b>	160	160		
25	G 1 A	20	39	53.0	23.0	18	47	41	46	267	<b>GE25SR</b>	250	250		
25	G 3/4 A	16	32	51.0	23.0	16	47	41	46	245	<b>GE25SR3/4</b>	250	250		
25	G 1 1/4 A	20	49	55.0	23.0	20	47	50	46	422	<b>GE25SR11/4</b>	160	160		
30	G 1 1/4 A	25	49	57.0	23.5	20	50	50	50	422	<b>GE30SR</b>	160	160	100	
30	G 1 A	20	39	55.0	23.5	18	50	46	50	337	<b>GE30SR1</b>	160	160		
38	G 1 1/2 A	32	55	64.0	26.0	22	57	55	60	560	<b>GE38SR</b>	160	160	100	
38	G 1 1/4 A	25	49	62.0	26.0	20	57	55	60	578	<b>GE38SR11/4</b>	160	160		

1) Pressure shown = item deliverable

4) S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

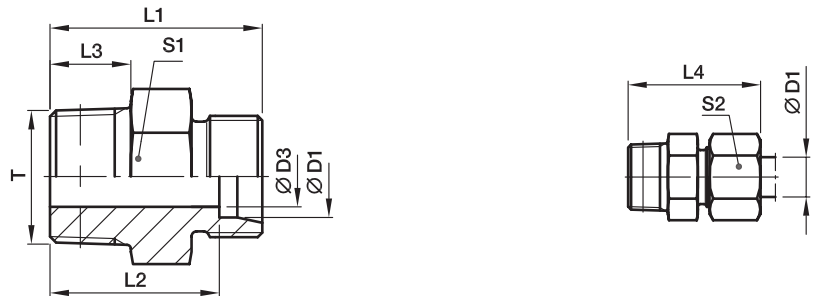
Delivery without nut and ring. Information on ordering complete fittings see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	GE16SRCFX
Stainless Steel	71X	GE16SR71X
Brass	MSX	GE16SRMSX

## GE-R(KEG) Male stud connector

Male short BSPT taper thread (DIN 3852-2, type C) / EO 24° cone end



Series	D1	T	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
												CF	71	MS
LL <sup>2)</sup>	04	R 1/8 tap.	3.0	20	16.0	8	26	11*	10	8	GE04LLR	100	100	63
	06	R 1/8 tap.	4.5	20	14.5	8	26	11*	12	8	GE06LLR	100	100	63
	08	R 1/8 tap.	6.0	22	16.5	8	28	12	14	10	GE08LLR	100	100	63
	08	R 1/4 tap.	6.0	26	20.5	12	32	14	14	18	GE08LLR1/4	100	100	63
	10	R 1/4 tap.	8.0	26	20.5	12	32	14	17	15	GE10LLR	100		63
	12	R 1/4 tap.	8.0	26	20.0	12	32	17	19	18	GE12LLR	100		63
	12	R 3/8 tap.	10.0	26	20.0	12	32	17	19	23	GE12LLR3/8	100		63
L <sup>3)</sup>	06	R 1/8 tap.	4.0	22	15.0	8	30	12	14	11	GE06LR1/8KEG	315	315	
	06	R 1/4 tap.	4.0	27	20.0	12	35	17	14	24	GE06LR1/4KEG	315	315	200
	08	R 1/8 tap.	4.0	23	16.0	8	31	14	17	15	GE08LR1/8KEG	315	315	200
	08	R 1/4 tap.	6.0	27	20.0	12	35	17	17	22	GE08LR1/4KEG	315	315	
	10	R 1/4 tap.	7.0	28	21.0	12	36	17	19	24	GE10LR1/4KEG	315	315	
	12	R 1/4 tap.	7.0	29	22.0	12	37	19	22	53	GE12LR1/4KEG	315	315	200
	12	R 3/8 tap.	9.0	29	22.0	12	37	19	22	33	GE12LR3/8KEG	315	315	
	12	R 1/2 tap.	10.0	31	24.0	14	39	24	22	53	GE12LR1/2KEG	315	315	200
	15	R 3/8 tap.	9.0	30	23.0	12	38	24	27	49	GE15LR3/8KEG	315	315	200
	15	R 1/2 tap.	11.0	32	25.0	14	40	24	27	59	GE15LR1/2KEG	315	315	
	18	R 1/2 tap.	14.0	33	25.5	14	42	27	32	64	GE18LR1/2KEG	315	315	
	22	R 3/4 tap.	17.0	37	29.5	16	46	32	36	99	GE22LR3/4KEG	160	160	
	28	R 1 tap.	23.0	40	32.5	18	49	41	41	154	GE28LR1KEG	160	160	
	35	R 1 1/4 tap.	30.0	45	34.5	20	56	46	50	238	GE35LR11/4KEG	160	160	
42	R 1 1/2 tap.	36.0	49	38.0	22	61	55	60	335	GE42LR11/2KEG	160	160		

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings see page I7.

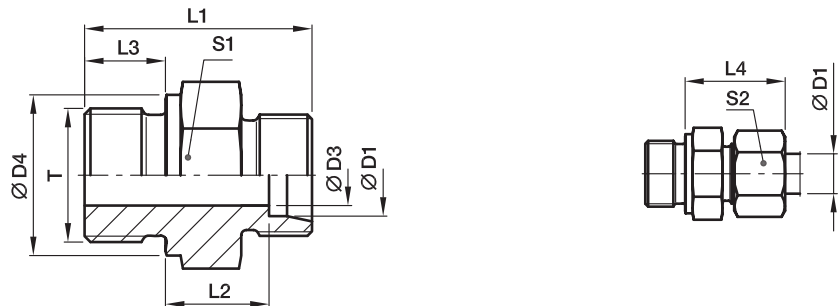
<sup>\*</sup>) S1 = 12 for 1.4571

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	GE06LR1/4KEGCFX
Stainless Steel	71X	GE06LR1/4KEG71X
Brass	MSX	GE06LR1/4KEGMSX

\*Please add the **suffixes** below according to the material/surface required.

## GE-M Male stud connector

Male metric thread – metal sealing edge (ISO 9974) / EO 24° cone end



Series	D1	T	D3	D4	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
													CF	71	MS
L <sup>3)</sup>	06	M 10×1.0	4	14	23.5	8.5	8	23	14	14	13	GE06LM	315	315	200
	08	M 12×1.5	6	17	29.0	10.0	12	25	17	17	22	GE08LM	315	315	200
	10	M 14×1.5	7	19	30.0	11.0	12	26	19	19	31	GE10LM	315	315	200
	10	M 10×1.0	4	14	25.5	10.5	8	25	17	19	20	GE10LM10X1	315	315	
	10	M 12×1.5	6	17	30.0	11.0	12	26	17	19	25	GE10LM12X1.5	315	315	
	10	M 16×1.5	8	21	31.5	12.0	12	27	22	19	41	GE10LM16X1.5	315	315	
	10	M 18×1.5	8	23	31.5	12.5	12	27	24	19	50	GE10LM18X1.5	315	315	
	10	M 22×1.5	8	27	35.0	14.0	14	29	27	19	72	GE10LM22X1.5	315	315	
	12	M 14×1.5	7	19	30.0	11.0	12	26	19	22	30	GE12LM14X1.5	315	315	
	12	M 16×1.5	9	21	31.5	12.5	12	27	22	22	40	GE12LM	315	315	
	12	M 18×1.5	10	23	31.5	12.5	12	27	24	22	47	GE12LM18X1.5	315	315	
	12	M 22×1.5	10	27	35.0	14.0	14	29	27	22	76	GE12LM22X1.5	315	315	
	15	M 16×1.5	9	21	32.0	13.0	12	28	24	27	50	GE15LM16X1.5	250	250	
	15	M 18×1.5	11	23	32.5	13.5	12	29	24	27	52	GE15LM	250	250	160
	15	M 22×1.5	12	27	36.0	15.0	14	30	27	27	77	GE15LM22X1.5	250	250	
	18	M 18×1.5	11	23	33.5	14.0	12	30	27	32	68	GE18LM18X1.5	250	250	
	18	M 22×1.5	14	27	36.0	14.5	14	31	27	32	77	GE18LM	250	250	160
	22	M 22×1.5	14	27	38.0	16.5	14	33	32	36	92	GE22LM22X1.5	160	160	
	22	M 26×1.5	18	31	40.0	16.5	16	33	32	36	102	GE22LM	160	160	100
	28	M 33×2.0	23	39	43.0	17.5	18	34	41	41	168	GE28LM	160	160	100
35	M 42×2.0	30	49	48.0	17.5	20	39	50	50	280	GE35LM	160	160	100	
42	M 48×2.0	36	55	52.0	19.0	22	42	55	60	354	GE42LM	160	160	100	
S <sup>4)</sup>	06	M 12×1.5	4	17	32.0	13.0	12	28	17	17	30	GE06SM	400	400	250
	06	M 14×1.5	4	19	34.0	15.0	12	30	19	17	42	GE06SM14X1.5	400	400	
	08	M 14×1.5	5	19	34.0	15.0	12	30	19	19	43	GE08SM	400	400	250
	10	M 16×1.5	7	21	34.5	15.0	12	31	22	22	54	GE10SM	400	400	250
	12	M 18×1.5	8	23	36.5	17.0	12	33	24	24	72	GE12SM	400	400	250
	12	M 14×1.5	5	19	36.0	16.5	12	33	22	24	60	GE12SM14X1.5	400	400	
	12	M 22×1.5	8	27	39.0	17.5	14	34	27	24	103	GE12SM22X1.5	400	400	
	14	M 20×1.5	10	25	41.0	19.0	14	37	27	27	95	GE14SM	400	400	250
	16	M 18×1.5	8	23	38.5	18.0	12	36	27	30	88	GE16SM18X1.5	400	400	
	16	M 22×1.5	12	27	41.0	18.5	14	37	27	30	97	GE16SM	400	400	250
	20	M 27×2.0	16	32	47.0	20.5	16	42	32	36	155	GE20SM	400	400	250
	25	M 33×2.0	20	39	53.0	23.0	18	47	41	46	268	GE25SM	250	250	160
	30	M 42×2.0	25	49	57.0	23.5	20	50	50	50	421	GE30SM	160	160	100
	38	M 48×2.0	32	55	64.0	26.0	22	57	55	60	568	GE38SM	160	160	100

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$\frac{PN(\text{bar})}{10} = PN(\text{MPa})$

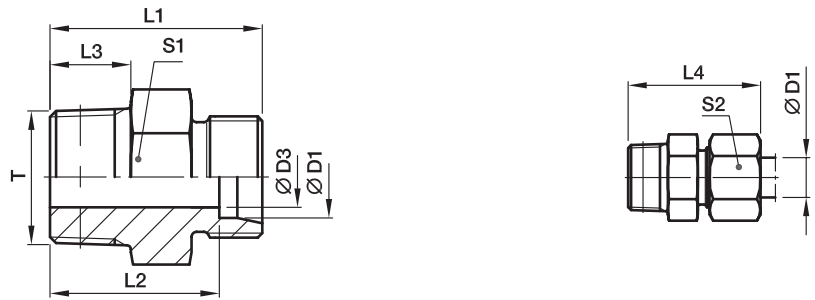
Delivery without nut and ring. Information on ordering complete fittings see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	GE16SMCFX
Stainless Steel	71X	GE16SM71X
Brass	MSX	GE16SMMSX

## GE-M(KEG) Male stud connector

Male short metric taper thread (DIN 3852-1, type C) / EO 24° cone end



Series	D1	T	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
												CF	71	MS
LL <sup>2)</sup>	04	M 06×1.0 tap.	2.0	20	16.0	8	26	9	10	5	<b>GE04LLM6X1KEG</b>	100		
	04	M 08×1.0 tap.	3.0	20	16.0	8	26	10	10	7	<b>GE04LLM</b>	100	100	63
	06	M 10×1.0 tap.	4.5	20	14.5	8	26	11	12	9	<b>GE06LLM</b>	100	100	63
	06	M 08×1.0 tap.	3.5	20	14.5	8	26	11	12	9	<b>GE06LLM8X1KEG</b>	100		
	08	M 10×1.0 tap.	6.0	22	16.5	8	28	12	14	10	<b>GE08LLM</b>	100	100	63

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

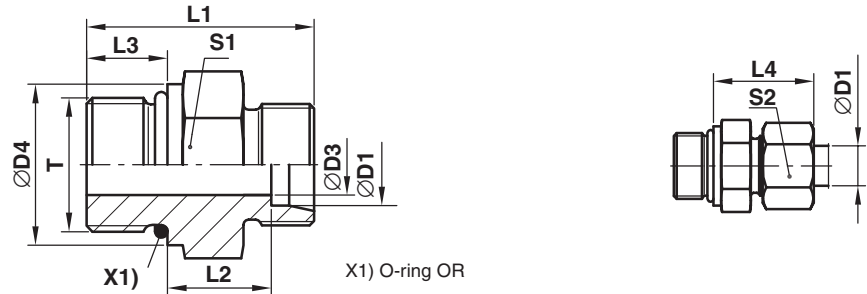
Delivery without nut and ring. Information on ordering complete fittings see page 17.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	GE06LLMCFX
Stainless Steel	71X	GE06LLM71X
Brass	MSX	GE06LLMMSX

\*Please add the **suffixes** below according to the material/surface required.

## GE-UNF/UN Male stud connector

Male UNF/UN thread – O-ring (ISO 11926) / EO 24° cone end



Series	D1	T	D3	D4	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
													CF	71
L <sup>3)</sup>	08	7/16-20UNF-2A	5.0	–	26	10.0	9.0	25	17	17	21	<b>GE08L7/16UNFOMD</b>	315	315
	10	7/16-20UNF-2A	5.0	–	27	11.0	9.0	26	17	19	23	<b>GE10L7/16UNFOMD</b>	315	315
	12	9/16-18UNF-2A	7.0	–	28	11.0	10.0	26	19	22	32	<b>GE12L9/16UNFOMD</b>	315	315
	12	3/4-16UNF-2A	10.0	–	31	13.0	11.0	28	24	22	52	<b>GE12L3/4UNFOMD</b>	315	315
	12	7/8-14UNF-2A	10.0	–	34	14.3	12.7	29	27	22	77	<b>GE12L7/8UNFOMD</b>	315	315
	15	3/4-16UNF-2A	11.0	–	32	14.0	11.0	29	24	27	57	<b>GE15L3/4UNFOMD</b>	315	315
	15	7/8-14UNF-2A	12.0	–	35	15.3	12.7	30	27	27	81	<b>GE15L7/8UNFOMD</b>	315	315
	18	3/4-16UNF-2A	11.0	23.9	33	14.5	11.0	31	27	32	68	<b>GE18L3/4UNFOMD</b>	315	315
	18	7/8-14UNF-2A	14.0	–	35	14.8	12.7	31	27	32	72	<b>GE18L7/8UNFOMD</b>	315	315
	22	7/8-14UNF-2A	14.0	26.9	37	16.8	12.7	33	32	36	94	<b>GE22L7/8UNFOMD</b>	160	160
	22	1 1/16-12UN-2A	18.0	–	39	16.5	15.0	33	32	36	103	<b>GE22L11/16UNOMD</b>	160	160
	22	1 5/16-12UN-2A	19.0	–	40	17.5	15.0	34	41	36	163	<b>GE22L15/16UNOMD</b>	160	160
	28	1 1/16-12UN-2A	18.0	33.3	40	17.5	15.0	34	41	41	152	<b>GE28L11/16UNOMD</b>	160	160
	28	1 5/16-12UN-2A	23.0	–	40	17.5	15.0	34	41	41	163	<b>GE28L15/16UNOMD</b>	160	160
35	1 5/16-12UN-2A	23.0	39.6	43	17.5	15.0	39	46	50	222	<b>GE35L15/16UNOMD</b>	160	160	
35	1 5/8-12UN-2A	29.0	–	43	17.5	15.0	39	50	50	257	<b>GE35L15/8UNOMD</b>	160	160	
42	1 5/8-12UN-2A	29.0	47.7	45	19.0	15.0	42	55	60	339	<b>GE42L15/8UNOMD</b>	160	160	
S <sup>4)</sup>	08	7/16-20UNF-2A	4.0	–	31	13.0	11.0	30	17	19	33	<b>GE08S7/16UNFOMD</b>	630	630
	10	9/16-18UNF-2A	6.0	–	32	12.5	12.0	31	19	22	42	<b>GE10S9/16UNFOMD</b>	630	630
	12	9/16-18UNF-2A	6.0	19.0	32	12.5	12.0	31	22	24	50	<b>GE12S9/16UNFOMD</b>	630	630
	12	3/4-16UNF-2A	8.0	–	36	14.5	14.0	34	24	24	73	<b>GE12S3/4UNFOMD</b>	630	630
	16	3/4-16UNF-2A	10.0	–	35	12.5	14.0	34	24	30	90	<b>GE16S3/4UNFOMD</b>	400	400
	16	7/8-14UNF-2A	12.0	–	40	15.5	16.0	37	27	30	95	<b>GE16S7/8UNFOMD</b>	400	400
	20	3/4-16UNF-2A	10.0	23.9	42	17.5	14.0	42	32	36	132	<b>GE20S3/4UNFOMD</b>	400	400
	20	7/8-14UNF-2A	12.0	26.9	44	17.5	16.0	42	32	36	141	<b>GE20S7/8UNFOMD</b>	400	400
	20	1 1/16-12UN-2A	16.0	–	46	17.0	18.5	42	32	36	163	<b>GE20S11/16UNOMD</b>	400	400
	25	1 1/16-12UN-2A	16.0	33.3	50	19.5	18.5	47	36	46	206	<b>GE25S11/16UNOMD</b>	400	400
	25	1 5/16-12UN-2A	20.0	–	50	19.5	18.5	47	41	46	258	<b>GE25S15/16UNOMD</b>	400	400
	30	1 5/16-12UN-2A	20.0	39.6	52	20.0	18.5	50	46	50	327	<b>GE30S15/16UNOMD</b>	400	400
	30	1 5/8-12UN-2A	24.0	–	52	20.0	18.5	50	50	50	422	<b>GE30S15/8UNOMD</b>	400	400
	38	1 5/8-12UN-2A	24.0	47.7	57	22.5	18.5	57	55	60	554	<b>GE38S15/8UNOMD</b>	315	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

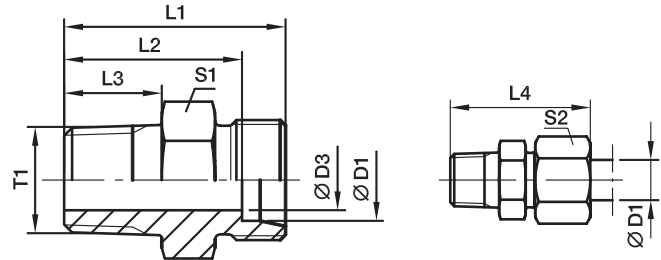
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	GE16S3/4UNFOMDCF	NBR
Stainless Steel	71	GE16S3/4UNFOMD71	VIT

## GE-NPT Male stud connector

Male NPT thread (SAE J476) / EO 24° cone end



Series	D1	T1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
												CF	71	MS
LL <sup>2)</sup>	04	1/8-27 NPT	3.0	22.0	18.0	10.0	28	11	10	9	GE04LL1/8NPT	100	100	
	06	1/8-27 NPT	4.5	22.0	16.5	10.0	28	11	12	9	GE06LL1/8NPT	100	100	63
	08	1/8-27 NPT	5.0	24.0	18.5	10.0	30	12	14	11	GE08LL1/8NPT	100	100	63
L <sup>3)</sup>	06	1/8-27 NPT	4.0	24.0	17.0	10.0	32	12	14	12	GE06L1/8NPT	315	315	200
	06	1/4-18 NPT	4.0	30.0	23.0	14.5	38	17	14	27	GE06L1/4NPT	315	315	200
	06	3/8-18 NPT	4.0	30.0	23.0	14.5	38	19	14	32	GE06L3/8NPT	315	315	
	06	1/2-14 NPT	4.0	36.0	29.0	19.5	44	22	14	53	GE06L1/2NPT	315	315	
	08	1/8-27 NPT	4.0	25.0	18.0	10.0	33	14	17	16	GE08L1/8NPT	315	315	
	08	1/4-18 NPT	6.0	30.0	23.0	14.5	38	17	17	25	GE08L1/4NPT	315	315	200
	08	3/8-18 NPT	6.0	30.0	23.0	14.5	38	19	17	34	GE08L3/8NPT	315	315	
	08	1/2-14 NPT	6.0	36.0	29.0	19.5	44	22	17	54	GE08L1/2NPT	315	315	
	10	1/8-27 NPT	4.0	25.0	18.0	10.0	33	17	19	19	GE10L1/8NPT	315	315	
	10	1/4-18 NPT	7.0	31.0	24.0	14.5	39	17	19	25	GE10L1/4NPT	315	315	200
	10	3/8-18 NPT	7.0	32.0	25.0	14.5	40	19	19	40	GE10L3/8NPT	315	315	
	10	1/2-14 NPT	8.0	37.0	30.0	19.5	45	22	19	54	GE10L1/2NPT	315	315	
	10	3/4-14 NPT	8.0	38.0	31.0	19.5	46	30	19	93	GE10L3/4NPT	315	315	
	12	1/8-27 NPT	4.0	26.0	19.0	10.0	34	19	22	52	GE12L1/8NPT	315	315	
	12	1/4-18 NPT	7.0	32.0	25.0	14.5	40	19	22	31	GE12L1/4NPT	315	315	200
	12	3/8-18 NPT	8.0	32.0	25.0	14.5	40	19	22	37	GE12L3/8NPT	315	315	200
	12	1/2-14 NPT	10.0	37.0	30.0	19.5	45	22	22	62	GE12L1/2NPT	315	315	200
	15	3/8-18 NPT	8.0	33.0	26.0	14.5	41	24	27	53	GE15L3/8NPT	315	315	
	15	1/2-14 NPT	12.0	38.0	31.0	19.5	46	24	27	63	GE15L1/2NPT	315	315	200
	15	3/4-14 NPT	12.0	39.0	32.0	19.5	47	30	27	112	GE15L3/4NPT	315	315	
	15	1-11.5 NPT	12.0	45.0	38.0	24.5	53	36	27	158	GE15L1NPT	315	315	
	18	3/8-18 NPT	8.0	34.0	26.5	14.5	43	27	32	69	GE18L3/8NPT	315	315	
	18	1/2-14 NPT	12.0	39.0	31.5	19.5	48	27	32	79	GE18L1/2NPT	315	315	200
	18	3/4-14 NPT	15.0	39.0	31.5	19.5	48	30	32	104	GE18L3/4NPT	315	315	
	18	1-11.5 NPT	15.0	45.0	37.5	24.5	54	36	32	159	GE18L1NPT	315	315	
	22	3/8-18 NPT	8.0	36.5	29.0	14.5	45	32	36	91	GE22L3/8NPT	160	160	
	22	1/2-14 NPT	12.0	41.0	33.5	19.5	50	32	36	96	GE22L1/2NPT	160	160	
	22	3/4-14 NPT	16.0	41.0	33.5	19.5	50	32	36	108	GE22L3/4NPT	160	160	100
	22	1-11.5 NPT	19.0	47.0	39.5	24.5	56	36	36	174	GE22L1NPT	160	160	
	28	3/4-14 NPT	16.0	42.0	34.5	19.5	51	41	41	157	GE28L3/4NPT	160	160	
	28	1-11.5 NPT	21.0	47.0	39.5	24.5	56	41	41	197	GE28L1NPT	160	160	100
	28	1 1/4-11.5 NPT	24.0	49.0	41.5	25.0	58	46	41	266	GE28L11/4NPT	160	160	
	35	1-11.5 NPT	22.0	50.0	39.5	24.5	61	46	50	280	GE35L1NPT	160	160	
	35	1 1/4-11.5 NPT	28.0	51.0	40.5	25.0	62	46	50	285	GE35L11/4NPT	160	160	
	42	1 1/4-11.5 NPT	28.0	53.0	42.0	25.0	65	55	60	382	GE42L11/4NPT	160	160	
	42	1 1/2-11.5 NPT	36.0	53.0	42.0	26.0	65	55	60	377	GE42L11/2NPT	160	160	

1) Pressure shown = item deliverable

2) LL = very light series; 3) L = light series

$$\frac{PN(\text{bar})}{10} = PN(\text{MPa})$$

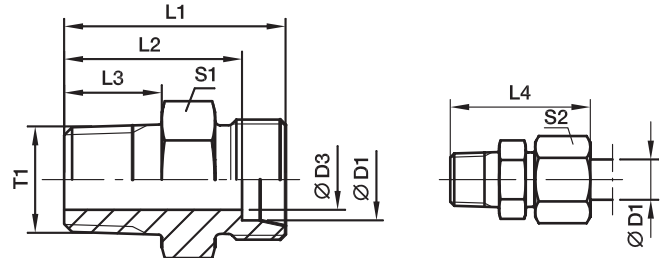
Delivery without nut and ring. Information on ordering complete fittings see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	GE18L1/2NPTCFX
Stainless Steel	71X	GE18L1/2NPT71X
Brass	MSX	GE18L1/2NPTMSX

## GE-NPT Male stud connector

Male NPT thread (SAE J476) / EO 24° cone end



Series	D1	T1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
												CF	71	MS
S <sup>4)</sup>	06	1/8-27 NPT	4	28	21.0	10.0	36	14	17	21	GE06S1/8NPT	630	630	
	06	1/4-18 NPT	4	35	28.0	14.5	43	17	17	37	GE06S1/4NPT	630	630	400
	06	3/8-18 NPT	4	33	26.0	14.5	41	19	17	40	GE06S3/8NPT	630	630	
	06	1/2-14 NPT	4	42	35.0	19.5	50	22	17	71	GE06S1/2NPT	630	630	
	08	1/4-18 NPT	5	35	28.0	14.5	43	17	19	38	GE08S1/4NPT	630	630	400
	08	3/8-18 NPT	5	35	28.0	14.5	43	19	19	46	GE08S3/8NPT	630	630	
	08	1/2-14 NPT	5	42	35.0	19.5	50	22	19	73	GE08S1/2NPT	630	630	400
	10	1/4-18 NPT	5	35	27.5	14.5	44	19	22	45	GE10S1/4NPT	630	630	
	10	3/8-18 NPT	7	35	27.5	14.5	44	19	22	49	GE10S3/8NPT	630	630	400
	10	1/2-14 NPT	7	42	34.5	19.5	51	22	22	73	GE10S1/2NPT	630	630	400
10	3/4-14 NPT	7	44	36.5	19.5	53	30	22	125	GE10S3/4NPT	630	630		
12	1/4-18 NPT	5	37	29.5	14.5	46	22	24	57	GE12S1/4NPT	630	630		
12	3/8-18 NPT	8	37	29.5	14.5	46	22	24	62	GE12S3/8NPT	630	630	400	
12	1/2-14 NPT	8	42	34.5	19.5	51	22	24	83	GE12S1/2NPT	630	630	400	
12	3/4-14 NPT	8	44	36.5	19.5	53	30	24	126	GE12S3/4NPT	630	630		
14	3/8-18 NPT	8	39	31.0	14.5	49	24	27	77	GE14S3/8NPT	630	630		
14	1/2-14 NPT	10	44	36.0	19.5	54	24	27	89	GE14S1/2NPT	630	630	400	
14	3/4-14 NPT	10	46	38.0	19.5	56	30	27	130	GE14S3/4NPT	630	630		
14	1-11.5 NPT	10	51	43.0	24.5	61	36	27	180	GE14S1NPT	630	630		
16	3/8-18 NPT	8	39	30.5	14.5	49	27	30	84	GE16S3/8NPT	400	400		
16	1/2-14 NPT	12	48	39.5	19.5	58	32	30	97	GE16S1/2NPT	400	400	250	
16	3/4-14 NPT	12	46	37.5	19.5	56	30	30	130	GE16S3/4NPT	400	400		
16	1-11.5 NPT	12	51	42.5	24.5	61	36	30	178	GE16S1NPT	400	400		
20	1/2-14 NPT	12	48	37.5	19.5	59	32	36	144	GE20S1/2NPT	400	400		
20	3/4-14 NPT	16	48	37.5	19.5	59	32	36	149	GE20S3/4NPT	400	400	250	
20	1-11.5 NPT	16	55	44.5	24.5	66	36	36	243	GE20S1NPT	400	400		
25	3/4-14 NPT	16	52	40.0	19.5	64	41	46	240	GE25S3/4NPT	400	400		
25	1-11.5 NPT	20	57	45.0	24.5	69	41	46	278	GE25S1NPT	400	400		
25	1 1/4-11.5 NPT	20	58	46.0	25.0	70	46	46	396	GE25S11/4NPT	400	400		
25	1 1/2-11.5 NPT	20	61	49.0	26.0	73	50	46	469	GE25S11/2NPT	400	400		
30	3/4-14 NPT	16	54	40.5	19.5	67	46	50	307	GE30S3/4NPT	400	400		
30	1-11.5 NPT	20	59	45.5	24.5	72	46	50	343	GE30S1NPT	400	400	100	
30	1 1/4-11.5 NPT	25	60	46.5	25.0	73	46	50	397	GE30S11/4NPT	400	400		
30	1 1/2-11.5 NPT	25	60	46.5	26.0	73	50	50	440	GE30S11/2NPT	400	400		
38	1-11.5 NPT	22	64	48.0	24.5	79	55	60	510	GE38S1NPT	315	315		
38	1 1/4-11.5 NPT	25	65	49.0	25.0	80	55	60	535	GE38S11/4NPT	315	315		
38	1 1/2-11.5 NPT	32	65	49.0	26.0	80	55	60	571	GE38S11/2NPT	315	315		

<sup>1)</sup> Pressure shown = item deliverable

<sup>4)</sup> S = heavy series

PN (bar) = PN (MPa)  
10

Delivery without nut and ring. Information on ordering complete fittings see page I7.

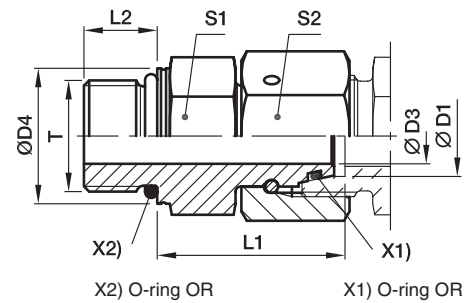
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	GE16S1/2NPTCFX
Stainless Steel	71X	GE16S1/2NPT71X
Brass	MSX	GE16S1/2NPTMSX



## EGEO Swivel connector

Male metric thread – O-ring (ISO 6149) / EO 24° DKO swivel



Series	D1 	T	D3	D4	L1	L2	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup> CF
L <sup>3)</sup>	06	M 10×1.0	2.5	13.8	24.5	8.5	14	14	29	<b>EGEO06LM</b>	500
	08	M 12×1.5	4.0	16.8	26.5	11.0	17	17	43	<b>EGEO08LM</b>	500
	10	M 14×1.5	6.0	18.8	27.5	11.0	19	19	57	<b>EGEO10LM</b>	500
	12	M 16×1.5	8.0	21.8	30.5	11.5	22	22	85	<b>EGEO12LM</b>	400
	15	M 18×1.5	10.0	23.8	31.5	12.5	24	27	115	<b>EGEO15LM</b>	400
	18	M 22×1.5	13.0	26.8	31.5	13.0	27	32	152	<b>EGEO18LM</b>	400
	22	M 27×2.0	17.0	31.8	32.5	16.0	32	36	207	<b>EGEO22LM27X2</b>	250
	28	M 33×2.0	22.0	40.8	35.0	16.0	41	41	294	<b>EGEO28LM</b>	250
	35	M 42×2.0	28.0	49.8	42.5	16.0	50	50	516	<b>EGEO35LM</b>	250
	42	M 48×2.0	34.0	54.8	46.5	17.5	55	60	718	<b>EGEO42LM</b>	250
S <sup>4)</sup>	06	M 12×1.5	2.5	16.8	27.0	11.0	17	17	49	<b>EGEO06SM</b>	800
	08	M 14×1.5	4.0	18.8	29.5	11.0	19	19	69	<b>EGEO08SM</b>	800
	10	M 16×1.5	6.0	21.8	32.0	12.5	22	22	96	<b>EGEO10SM</b>	800
	12	M 18×1.5	8.0	23.8	34.0	14.0	24	24	116	<b>EGEO12SM</b>	630
	16	M 22×1.5	11.0	26.8	37.0	15.0	27	30	179	<b>EGEO16SM</b>	630
	20	M 27×2.0	14.0	31.8	43.0	18.5	32	36	280	<b>EGEO20SM</b>	420
	25	M 33×2.0	18.0	40.8	48.0	18.5	41	46	502	<b>EGEO25SM</b>	420
	30	M 42×2.0	23.0	49.8	51.0	19.0	50	50	697	<b>EGEO30SM</b>	420
	38	M 48×2.0	30.0	54.8	60.0	21.5	55	60	965	<b>EGEO38SM</b>	420

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

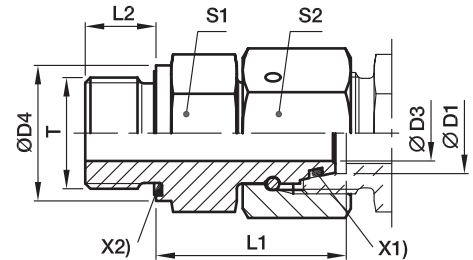
Information on ordering alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	EGEO16SMCF	NBR

## EGE-M-ED Swivel connector

Male metric thread – ED-seal (ISO 9974) / EO 24° DKO swivel



X2) Elastic-sealing ED X1) O-ring OR

Series	D1 	T	D3	D4	L1	L2	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
											CF	71
L <sup>3)</sup>	06	M 10x1.0	2.5	14	24.5	8	14	14	27	<b>EGE06LMED</b>	500	315
	08	M 12x1.5	4.0	17	26.5	12	17	17	45	<b>EGE08LMED</b>	500	315
	10	M 14x1.5	6.0	19	27.5	12	19	19	57	<b>EGE10LMED</b>	500	315
	12	M 16x1.5	8.0	22	30.5	12	22	22	82	<b>EGE12LMED</b>	400	315
	12	M 22x1.5	8.0	27	27.0	14	27	22	92	<b>EGE12LM22X1.5ED</b>	400	315
	15	M 18x1.5	10.0	24	31.5	12	24	27	113	<b>EGE15LMED</b>	400	315
	15	M 22x1.5	10.0	27	32.0	14	27	27	142	<b>EGE15LM22X1.5ED</b>	400	315
	18	M 22x1.5	13.0	27	31.5	14	27	32	148	<b>EGE18LMED</b>	400	315
	22	M 26x1.5	17.0	32	32.5	16	32	36	203	<b>EGE22LMED</b>	250	160
	28	M 33x2.0	22.0	40	35.0	18	41	41	289	<b>EGE28LMED</b>	250	160
S <sup>4)</sup>	35	M 42x2.0	28.0	50	42.5	20	50	50	511	<b>EGE35LMED</b>	250	160
	42	M 48x2.0	34.0	55	46.5	22	55	60	711	<b>EGE42LMED</b>	250	160
	06	M 12x1.5	2.5	17	27.0	12	17	17	47	<b>EGE06SMED</b>	800	630
	08	M 14x1.5	4.0	19	29.5	12	19	19	65	<b>EGE08SMED</b>	800	630
	10	M 16x1.5	6.0	22	32.0	12	22	22	91	<b>EGE10SMED</b>	800	630
	12	M 18x1.5	8.0	24	34.0	12	24	24	112	<b>EGE12SMED</b>	630	630
	14	M 20x1.5	9.0	26	36.5	14	27	27	153	<b>EGE14SMED</b>	630	630
	16	M 22x1.5	11.0	27	37.0	14	27	30	174	<b>EGE16SMED</b>	630	400
	20	M 27x2.0	14.0	32	43.0	16	32	36	274	<b>EGE20SMED</b>	420	400
	25	M 33x2.0	18.0	40	48.0	18	41	46	497	<b>EGE25SMED</b>	420	400
30	M 42x2.0	23.0	50	51.0	20	50	50	691	<b>EGE30SMED</b>	420	400	
38	M 48x2.0	30.0	55	60.0	22	55	60	957	<b>EGE38SMED</b>	420	315	

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

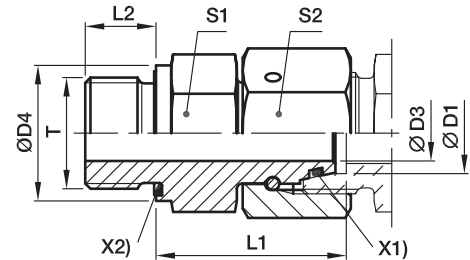
Information on ordering alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	EGE16SMEDCF	NBR
Stainless Steel	71	EGE16SMED71	VIT

## EGE-R-ED Swivel connector

Male BSPP thread – ED-seal (ISO 1179) / EO 24° DKO swivel



X2) Elastic-sealing ED X1) O-ring OR

Series	D1	T	D3	D4	L1	L2	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
											CF	71
L <sup>3)</sup>	06	G 1/8 A	2.5	14	24.5	8	14	14	27	<b>EGE06LRED</b>	500	315
	08	G 1/4 A	4.0	19	29.5	12	19	17	28	<b>EGE08LRED</b>	500	315
	10	G 1/4 A	6.0	19	27.5	12	19	19	54	<b>EGE10LRED</b>	500	315
	10	G 3/8 A	6.0	22	29.0	12	22	19	70	<b>EGE10LR3/8ED</b>	400	
	12	G 3/8 A	8.0	22	34.0	12	22	22	95	<b>EGE12LRED</b>	400	315
	12	G 1/4 A	6.0	19	27.5	12	19	22	65	<b>EGE12LR1/4ED</b>	400	
	12	G 1/2 A	8.0	27	29.5	14	27	22	114	<b>EGE12LR1/2ED</b>	400	
	15	G 1/2 A	10.0	27	32.0	14	27	27	137	<b>EGE15LRED</b>	400	315
	18	G 1/2 A	13.0	27	31.5	14	27	32	143	<b>EGE18LRED</b>	400	315
	18	G 3/4 A	13.0	32	29.5	16	32	32	182	<b>EGE18LR3/4ED</b>	250	
	22	G 3/4 A	17.0	32	32.5	16	32	36	200	<b>EGE22LRED</b>	250	160
	28	G 1 A	22.0	40	35.0	18	41	41	289	<b>EGE28LRED</b>	250	160
	35	G 1 1/4 A	28.0	50	42.5	20	50	50	500	<b>EGE35LRED</b>	250	160
	42	G 1 1/2 A	34.0	55	46.5	22	55	60	718	<b>EGE42LRED</b>	250	160
S <sup>4)</sup>	06	G 1/4 A	2.5	19	27.0	12	19	17	53	<b>EGE06SRED</b>	800	630
	08	G 1/4 A	4.0	19	29.5	12	19	19	64	<b>EGE08SRED</b>	800	630
	10	G 3/8 A	6.0	22	32.0	12	22	22	93	<b>EGE10SRED</b>	800	630
	12	G 3/8 A	8.0	22	34.0	12	22	24	100	<b>EGE12SRED</b>	630	630
	12	G 1/4 A	5.0	19	31.5	12	19	24	140	<b>EGE12SR1/4ED</b>	630	
	12	G 1/2 A	8.0	27	35.0	14	27	24	140	<b>EGE12SR1/2ED</b>	630	630
	14	G 1/2 A	9.0	27	36.5	14	27	27	157	<b>EGE14SRED</b>	630	630
	16	G 1/2 A	11.0	27	37.0	14	27	30	170	<b>EGE16SRED</b>	630	400
	20	G 3/4 A	14.0	32	43.0	16	32	36	273	<b>EGE20SRED</b>	420	400
	25	G 1 A	18.0	40	48.0	18	41	46	493	<b>EGE25SRED</b>	420	400
	30	G 1 1/4 A	23.0	50	51.0	20	50	50	691	<b>EGE30SRED</b>	420	
	38	G 1 1/2 A	30.0	55	60.0	22	55	60	934	<b>EGE38SRED</b>	420	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

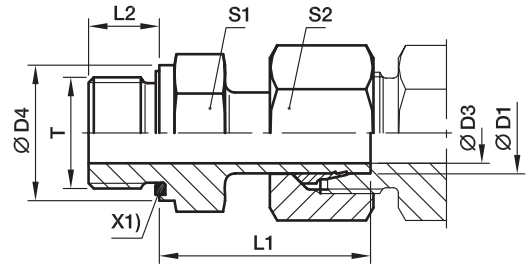
Information on ordering alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	EGE16SREDCF	NBR
Stainless Steel	71	EGE16SRED71	VIT

## EVGE-M-ED Standpipe connector

Male metric thread – ED (ISO 9974) / EO standpipe adjustable



Pre-assembled nut and ring.  
Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

X1) Eolastic-sealing ED

Series	D1 	T	D3	D4	L1	L2	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
											CF	71
L <sup>3)</sup>	06	M 10×1.0	3.5	14	24.5	8	14	14	24	<b>EVGE06LMED</b>	315	315
	08	M 12×1.5	5.5	17	26.5	12	17	17	38	<b>EVGE08LMED</b>	315	315
	10	M 14×1.5	7.0	19	27.5	12	19	19	49	<b>EVGE10LMED</b>	315	315
	12	M 16×1.5	9.0	22	30.0	12	22	22	67	<b>EVGE12LMED</b>	315	315
	15	M 18×1.5	11.0	24	30.5	12	24	27	95	<b>EVGE15LMED</b>	315	315
	18	M 22×1.5	14.0	27	31.5	14	27	32	137	<b>EVGE18LMED</b>	315	315
	22	M 26×1.5	18.0	32	32.5	16	32	36	183	<b>EVGE22LMED</b>	160	160
	28	M 33×2.0	23.0	40	35.0	18	41	41	264	<b>EVGE28LMED</b>	160	160
	35	M 42×2.0	29.5	50	42.5	20	50	50	444	<b>EVGE35LMED</b>	160	160
	42	M 48×2.0	35.5	55	46.5	22	55	60	614	<b>EVGE42LMED</b>	160	160
S <sup>4)</sup>	06	M 12×1.5	3.5	17	27.0	12	17	17	43	<b>EVGE06SMED</b>	630	630
	08	M 14×1.5	4.5	19	29.5	12	19	19	59	<b>EVGE08SMED</b>	630	630
	10	M 16×1.5	6.5	22	32.0	12	22	22	82	<b>EVGE10SMED</b>	630	630
	12	M 18×1.5	7.5	24	34.0	12	24	24	104	<b>EVGE12SMED</b>	630	630
	14	M 20×1.5	9.5	26	36.5	14	27	27	144	<b>EVGE14SMED</b>	630	630
	16	M 22×1.5	11.5	27	37.0	14	27	30	162	<b>EVGE16SMED</b>	400	400
	20	M 27×2.0	15.5	32	43.0	16	32	36	254	<b>EVGE20SMED</b>	400	400
	25	M 33×2.0	18.0	40	48.0	18	41	46	493	<b>EVGE25SMED</b>	400	400
	30	M 42×2.0	23.5	50	51.0	20	50	50	654	<b>EVGE30SMED</b>	400	400
	38	M 48×2.0	29.0	55	60.0	22	55	60	962	<b>EVGE38SMED</b>	315	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

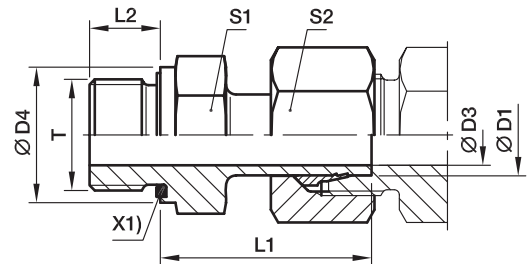
Information on ordering alternative sealing materials see page 17.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	EGE16SMEDCF	NBR
Stainless Steel	71	EGE16SMED71	VIT

\*Please add the **suffixes** below according to the material/surface required.

## EVGE-R-ED Standpipe connector

Male BSPP thread – ED-seal (ISO 1179) / EO standpipe adjustable



X1) Eolastic-sealing ED

Pre-assembled nut and ring.  
Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	T	D3	D4	L1	L2	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
											CF	71	MS
L <sup>3)</sup>	06	G 1/8 A	3.5	14	24.5	8	14	14	24	<b>EVGE06LRED</b>	315	315	200
	08	G 1/4 A	4.5	19	29.5	12	19	17	52	<b>EVGE08LRED</b>	315	315	200
	10	G 1/4 A	7.0	19	27.5	12	19	19	47	<b>EVGE10LRED</b>	315	315	200
	12	G 3/8 A	7.5	22	34.0	12	22	22	87	<b>EVGE12LRED</b>	315	315	200
	12	G 1/4 A	7.0	19	28.5	12	19	22	61	<b>EVGE12LR1/4ED</b>	315		
	12	G 1/2 A	7.5	27	34.5	14	27	22	121	<b>EVGE12LR1/2ED</b>	315	315	
	15	G 1/2 A	11.0	27	31.0	14	27	27	114	<b>EVGE15LRED</b>	315	315	200
	18	G 1/2 A	14.0	27	31.5	14	27	32	132	<b>EVGE18LRED</b>	315	315	200
	22	G 3/4 A	18.0	32	32.5	16	32	36	183	<b>EVGE22LRED</b>	160	160	100
	28	G 1 A	23.0	40	35.0	18	41	41	262	<b>EVGE28LRED</b>	160	160	
S <sup>4)</sup>	35	G 1 1/4 A	29.5	50	42.5	20	50	50	436	<b>EVGE35LRED</b>	160	160	
	42	G 1 1/2 A	35.5	55	46.5	22	55	60	615	<b>EVGE42LRED</b>	160	160	
	06	G 1/4 A	3.5	19	27.0	12	19	17	48	<b>EVGE06SRED</b>	630	630	
	08	G 1/4 A	4.5	19	29.5	12	19	19	57	<b>EVGE08SRED</b>	630	630	
	10	G 3/8 A	6.5	22	32.0	12	22	22	84	<b>EVGE10SRED</b>	630	630	
	12	G 3/8 A	7.5	22	34.0	12	22	24	95	<b>EVGE12SRED</b>	630	630	
	12	G 1/2 A	7.5	27	34.5	14	27	24	130	<b>EVGE12SR1/2ED</b>	630	630	
	14	G 1/2 A	9.5	27	36.5	14	27	27	149	<b>EVGE14SRED</b>	630	630	
	16	G 1/2 A	11.5	27	37.0	14	27	30	158	<b>EVGE16SRED</b>	400	400	
	16	G 3/4 A	11.5	32	39.0	16	32	30	222	<b>EVGE16SR3/4ED</b>	400		
	20	G 3/4 A	15.5	32	43.0	16	32	36	254	<b>EVGE20SRED</b>	400	400	
	25	G 1 A	18.0	40	48.0	18	41	46	485	<b>EVGE25SRED</b>	400	400	
	30	G 1 1/4 A	23.5	50	51.0	20	50	50	661	<b>EVGE30SRED</b>	400	400	
	38	G 1 1/2 A	29.0	55	60.0	22	55	60	962	<b>EVGE38SRED</b>	315	315	

1) Pressure shown = item deliverable

3) L = light series; 4) S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

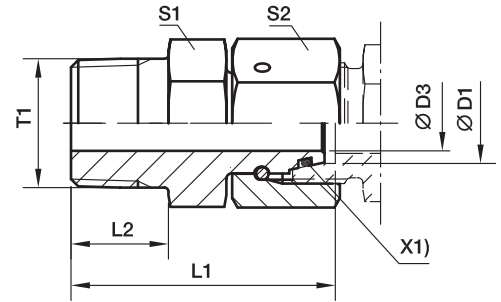
Information on ordering alternative sealing materials see page 17.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	EVGE16SREDCF	NBR
Stainless Steel	71	EVGE16SRED71	VIT
Brass	MS	EVGE16SREDMS	NBR

\*Please add the **suffixes** below according to the material/surface required.

## EGE-NPT Swivel connector

Male NPT thread (SAE J476) / EO 24° DKO swivel



X1) O-ring OR

Series	D1	T1	D3	L1	L2	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup> CF
L <sup>3)</sup>	06	1/8-27 NPT	2.5	31.5	10.0	11	14	23	EGE06L1/8NPT	315
	08	1/4-18 NPT	4.0	37.5	14.5	14	17	41	EGE08L1/4NPT	315
	10	1/4-18 NPT	6.0	38.0	14.5	14	19	44	EGE10L1/4NPT	315
	12	3/8-18 NPT	8.0	40.0	14.5	19	22	69	EGE12L3/8NPT	315
	15	1/2-14 NPT	10.0	49.5	19.5	22	27	127	EGE15L1/2NPT	315
	18	1/2-14 NPT	12.0	49.0	19.5	24	32	142	EGE18L1/2NPT	315
	22	3/4-14 NPT	16.0	52.0	19.5	27	36	200	EGE22L3/4NPT	160
	28	1-11.5 NPT	22.0	61.0	24.5	36	41	306	EGE28L1NPT	160
	35	1 1/4-11.5 NPT	28.0	65.5	25.0	46	50	486	EGE35L11/4NPT	160
	42	1 1/2-11.5 NPT	34.0	68.5	26.0	50	60	662	EGE42L11/2NPT	160
S <sup>4)</sup>	06	1/4-18 NPT	2.5	37.5	14.5	14	17	42	EGE06S1/4NPT	630
	08	1/4-18 NPT	4.0	38.0	14.5	14	19	47	EGE08S1/4NPT	630
	10	3/8-18 NPT	6.0	40.5	14.5	19	22	75	EGE10S3/8NPT	630
	12	3/8-18 NPT	8.0	42.0	14.5	19	24	81	EGE12S3/8NPT	630
	14	1/2-14 NPT	9.0	50.5	19.5	22	27	131	EGE14S1/2NPT	630
	16	1/2-14 NPT	11.0	51.0	19.5	22	30	145	EGE16S1/2NPT	400
	20	3/4-14 NPT	14.0	54.0	19.5	27	36	221	EGE20S3/4NPT	400
	25	1-11.5 NPT	18.0	63.5	24.5	36	46	422	EGE25S1NPT	400
	30	1 1/4-11.5 NPT	23.0	70.5	25.0	46	50	628	EGE30S11/4NPT	400
	38	1 1/2-11.5 NPT	30.0	73.5	26.0	50	60	770	EGE38S11/2NPT	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

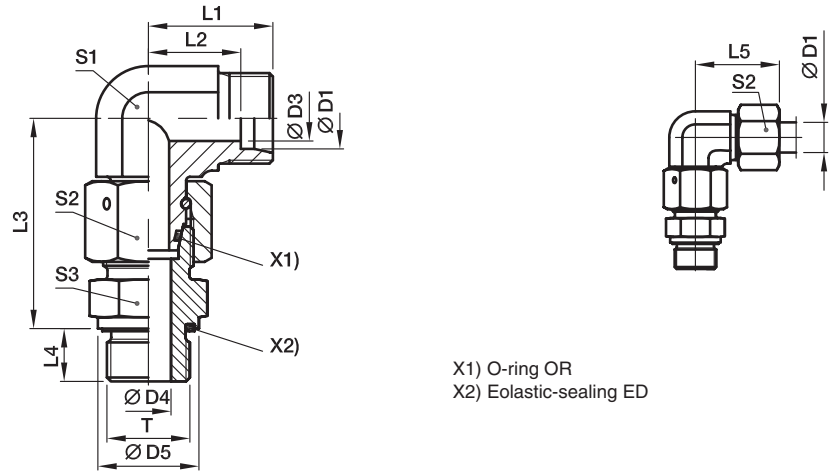
Information on ordering alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	EGE16S1/2NPTCF	NBR

## EW-M-ED Assembled adjustable swivel elbow

EO 24° cone end / Male metric thread – ED-seal (ISO 9974)



X1) O-ring OR  
X2) Eolastic-sealing ED

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																CF	71
L <sup>3)</sup>	06	M 10×1.0	4	4	14	19	12.0	34.5	8	27	12	14	14	47	EW06LMEDOMD	500	315
	08	M 12×1.5	6	6	17	21	14.0	37.5	12	29	12	17	17	69	EW08LMEDOMD	500	315
	10	M 14×1.5	8	7	19	22	15.0	40.0	12	30	14	19	19	87	EW10LMEDOMD	500	315
	12	M 16×1.5	10	9	22	24	17.0	42.0	12	32	17	22	22	111	EW12LMEDOMD	400	315
	15	M 18×1.5	12	11	24	28	21.0	46.0	12	36	19	27	24	179	EW15LMEDOMD	400	315
	18	M 22×1.5	15	14	27	31	23.5	50.0	14	40	24	32	27	272	EW18LMEDOMD	400	315
	22	M 26×1.5	19	18	32	35	27.5	55.0	16	44	27	36	32	360	EW22LMEDOMD	250	160
	28	M 33×2.0	24	23	40	38	30.5	59.0	18	47	36	41	41	538	EW28LMEDOMD	250	160
	35	M 42×2.0	30	30	50	45	34.5	68.5	20	56	41	50	50	843	EW35LMEDOMD	250	160
	42	M 48×2.0	36	36	55	51	40.0	75.0	22	63	50	60	55	1353	EW42LMEDOMD	250	160
S <sup>4)</sup>	06	M 12×1.5	4	4	17	23	16.0	40.0	12	31	12	17	17	77	EW06SMEDOMD	800	630
	08	M 14×1.5	5	5	19	24	17.0	42.5	12	32	14	19	19	107	EW08SMEDOMD	800	630
	10	M 16×1.5	6	7	22	25	17.5	45.0	12	34	17	22	22	146	EW10SMEDOMD	800	630
	12	M 18×1.5	8	8	24	29	21.5	48.0	12	38	17	24	24	178	EW12SMEDOMD	630	630
	14	M 20×1.5	9	10	26	30	22.0	54.0	14	40	19	27	27	203	EW14SMEDOMD	630	630
	16	M 22×1.5	12	12	27	33	24.5	55.0	14	43	24	30	27	307	EW16SMEDOMD	630	400
	20	M 27×2.0	16	16	32	37	26.5	65.0	16	48	27	36	32	459	EW20SMEDOMD	420	400
	25	M 33×2.0	20	20	40	42	30.0	73.0	18	54	36	46	41	812	EW25SMEDOMD	420	400
	30	M 42×2.0	25	25	50	49	35.5	78.5	20	62	41	50	50	1167	EW30SMEDOMD	420	400
	38	M 48×2.0	32	32	55	57	41.0	89.0	22	72	50	60	55	1790	EW38SMEDOMD	420	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

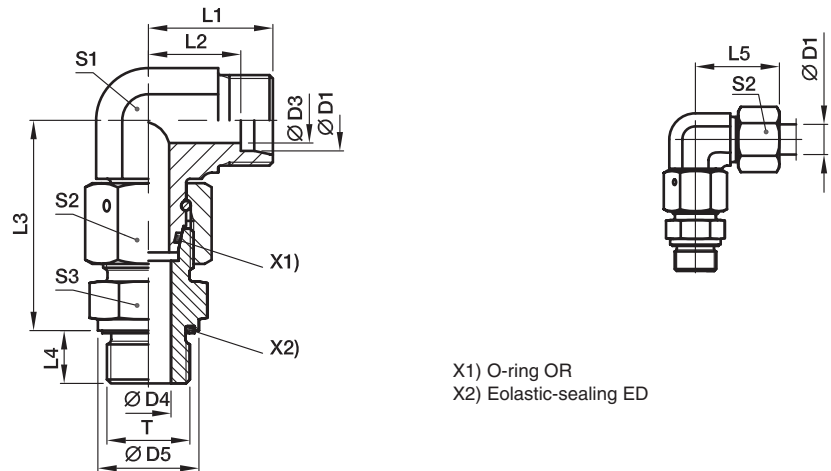
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	EW16SMEDOMDCF	NBR
Stainless Steel	71	EW16SMEDOMD71	VIT



## EW-R-ED Assembled adjustable swivel elbow

EO 24° cone end / Male BSPP thread – ED-seal (ISO 1179)



X1) O-ring OR  
X2) Eolastic-sealing ED

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																CF	71
L3)	06	G 1/8 A	4	4	14	19	12.0	34.5	8	27	12	14	14	47	EW06LREDOMD	500	315
	08	G 1/4 A	6	6	19	21	14.0	37.5	12	29	12	17	19	69	EW08LREDOMD	500	315
	10	G 1/4 A	8	6	19	22	15.0	40.0	12	30	14	19	19	87	EW10LREDOMD	500	315
	12	G 3/8 A	10	9	22	24	17.0	42.0	12	32	17	22	22	122	EW12LREDOMD	400	315
	15	G 1/2 A	12	11	27	28	21.0	46.5	14	36	19	27	27	199	EW15LREDOMD	400	315
	18	G 1/2 A	15	14	27	31	23.5	50.0	14	40	24	32	27	268	EW18LREDOMD	400	315
	22	G 3/4 A	19	18	32	35	27.5	55.0	16	44	27	36	32	360	EW22LREDOMD	250	160
	28	G 1 A	24	23	40	38	30.5	59.0	18	47	36	41	41	539	EW28LREDOMD	250	160
	35	G 1 1/4 A	30	30	50	45	34.5	68.5	20	56	41	50	50	834	EW35LREDOMD	250	160
	42	G 1 1/2 A	36	36	55	51	40.0	75.0	22	63	50	60	55	1341	EW42LREDOMD	250	160
S4)	06	G 1/4 A	4	4	19	23	16.0	40.0	12	31	12	17	19	83	EW06SREDOMD	800	630
	08	G 1/4 A	5	5	19	24	17.0	42.5	12	32	14	19	19	106	EW08SREDOMD	800	630
	10	G 3/8 A	6	7	22	25	17.5	45.0	12	34	17	22	22	148	EW10SREDOMD	800	630
	12	G 3/8 A	8	8	22	29	21.5	48.0	12	38	17	24	22	170	EW12SREDOMD	630	630
	14	G 1/2 A	9	10	27	30	22.0	54.0	14	40	19	27	27	242	EW14SREDOMD	630	630
	16	G 1/2 A	12	12	27	33	24.5	55.0	14	43	24	30	27	303	EW16SREDOMD	630	400
	20	G 3/4 A	16	16	32	37	26.5	65.0	16	48	27	36	32	458	EW20SREDOMD	420	400
	25	G 1 A	20	20	40	42	30.0	73.0	18	54	36	46	41	813	EW25SREDOMD	420	400
	30	G 1 1/4 A	25	25	50	49	35.5	78.5	20	62	41	50	50	1163	EW30SREDOMD	420	400
	38	G 1 1/2 A	32	32	55	57	41.0	89.0	22	72	50	60	55	1784	EW38SREDOMD	420	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

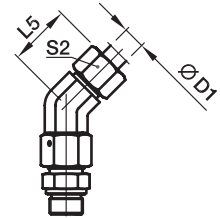
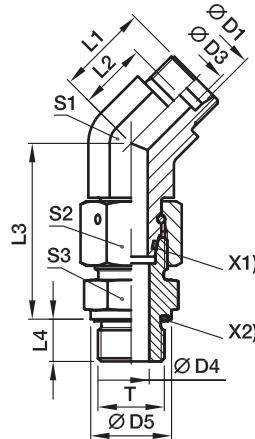
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	EW16SREDOMDCF	NBR
Stainless Steel	71	EW16SREDOMD71	VIT

## EV-M-ED Assembled adjustable swivel 45° elbow

EO 24° cone end / Male metric thread – ED-seal (ISO 9974)



X1) O-ring OR  
X2) Eolastic-sealing ED

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																CF	71
L <sup>3)</sup>	06	M 10×1.0	4	4	14	16.0	9.0	34.5	8	24	14	14	14	44	EV06LMEDOMD	315	315
	08	M 12×1.5	6	6	17	19.0	12.0	37.5	12	27	14	17	17	62	EV08LMEDOMD	315	315
	10	M 14×1.5	8	7	19	19.0	12.0	40.0	12	27	19	19	19	80	EV10LMEDOMD	315	315
	12	M 16×1.5	10	9	22	21.0	14.0	42.0	12	29	19	22	22	110	EV12LMEDOMD	315	315
	15	M 18×1.5	12	11	24	24.0	17.0	46.0	12	32	22	27	24	171	EV15LMEDOMD	315	315
	18	M 22×1.5	15	14	27	24.0	16.5	50.0	14	33	27	32	27	245	EV18LMEDOMD	315	315
	22	M 26×1.5	19	18	32	26.0	18.5	55.0	16	35	30	36	32	339	EV22LMEDOMD	160	160
	28	M 33×2.0	24	23	40	30.5	23.0	59.0	18	40	36	41	41	517	EV28LMEDOMD	160	160
	35	M 42×2.0	30	30	50	37.0	26.5	68.5	20	48	50	50	50	810	EV35LMEDOMD	160	160
	42	M 48×2.0	36	36	55	37.0	26.0	75.0	22	49	50	60	55	1193	EV42LMEDOMD	160	160
S <sup>4)</sup>	06	M 12×1.5	4	4	17	16.0	9.0	40.0	12	24	14	17	17	72	EV06SMEDOMD	630	630
	08	M 14×1.5	5	5	19	19.0	12.0	42.5	12	27	19	19	19	102	EV08SMEDOMD	630	630
	10	M 16×1.5	7	7	22	21.0	13.5	45.0	12	30	19	22	22	132	EV10SMEDOMD	630	630
	12	M 18×1.5	8	8	24	24.0	16.5	48.0	12	33	22	24	24	173	EV12SMEDOMD	630	630
	16	M 22×1.5	12	12	27	24.0	15.5	55.0	14	34	27	30	27	284	EV16SMEDOMD	400	400
	20	M 27×2.0	16	16	32	26.5	16.0	65.0	16	38	30	36	32	435	EV20SMEDOMD	400	400
	25	M 33×2.0	20	20	40	30.5	18.5	73.0	18	43	36	46	41	790	EV25SMEDOMD	400	400
	30	M 42×2.0	25	25	50	37.0	23.5	78.5	20	50	50	50	50	1132	EV30SMEDOMD	400	400
	38	M 48×2.0	32	32	55	37.0	21.0	89.0	22	52	50	60	55	1631	EV38SMEDOMD	315	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

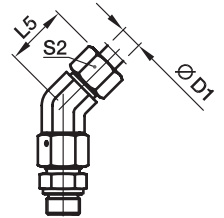
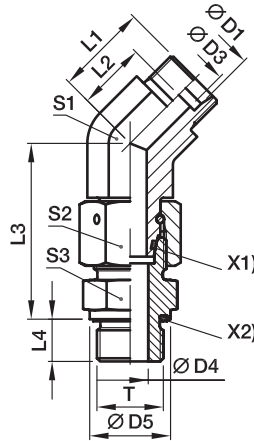
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	EV16SMEDOMDCF	NBR
Stainless Steel	71	EV16SMEDOMD71	VIT

**EV-R-ED Assembled adjustable swivel 45° elbow**

EO 24° cone end / Male BSPP thread – ED-seal (ISO 1179)



X1) O-ring OR  
X2) Eolastic-sealing ED

Series	D1 	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																CF	71
L <sup>3)</sup>	06	G 1/8 A	4	4	14	16.0	9.0	34.5	8	24	14	14	14	44	EV06LREDOMD	315	315
	08	G 1/4 A	6	6	19	19.0	12.0	37.5	12	27	14	17	19	67	EV08LREDOMD	315	315
	10	G 1/4 A	8	6	19	19.0	12.0	40.0	12	27	19	19	19	78	EV10LREDOMD	315	315
	12	G 3/8 A	10	9	22	21.0	14.0	42.0	12	29	19	22	22	112	EV12LREDOMD	315	315
	15	G 1/2 A	12	11	27	24.0	17.0	46.5	14	32	22	27	27	192	EV15LREDOMD	315	315
	18	G 1/2 A	15	14	27	24.0	16.5	50.0	14	33	27	32	27	242	EV18LREDOMD	315	315
	22	G 3/4 A	19	18	32	26.0	18.5	55.0	16	35	30	36	32	338	EV22LREDOMD	160	160
	28	G 1 A	24	23	40	30.5	23.0	59.0	18	40	36	41	41	518	EV28LREDOMD	160	160
	35	G 1 1/4 A	30	30	50	37.0	26.5	68.5	20	48	50	50	50	801	EV35LREDOMD	160	160
	42	G 1 1/2 A	36	36	55	37.0	26.0	75.0	22	49	50	60	55	1181	EV42LREDOMD	160	160
S <sup>4)</sup>	06	G 1/4 A	4	4	19	16.0	9.0	40.0	12	24	14	17	19	78	EV06SREDOMD	630	630
	08	G 1/4 A	5	5	19	19.0	12.0	42.5	12	27	19	19	19	101	EV08SREDOMD	630	630
	10	G 3/8 A	7	7	22	21.0	13.5	45.0	12	30	19	22	22	134	EV10SREDOMD	630	630
	12	G 3/8 A	8	8	22	24.0	16.5	48.0	12	33	22	24	22	165	EV12SREDOMD	630	630
	16	G 1/2 A	12	12	27	24.0	15.5	55.0	14	34	27	30	27	280	EV16SREDOMD	400	400
	20	G 3/4 A	16	16	32	26.5	16.0	65.0	16	38	30	36	32	434	EV20SREDOMD	400	400
	25	G 1 A	20	20	40	30.5	18.5	73.0	18	43	36	46	41	792	EV25SREDOMD	400	400
	30	G 1 1/4 A	25	25	50	37.0	23.5	78.5	20	50	50	50	50	1128	EV30SREDOMD	400	400
38	G 1 1/2 A	32	32	55	37.0	21.0	89.0	22	52	50	60	55	1625	EV38SREDOMD	315	315	

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

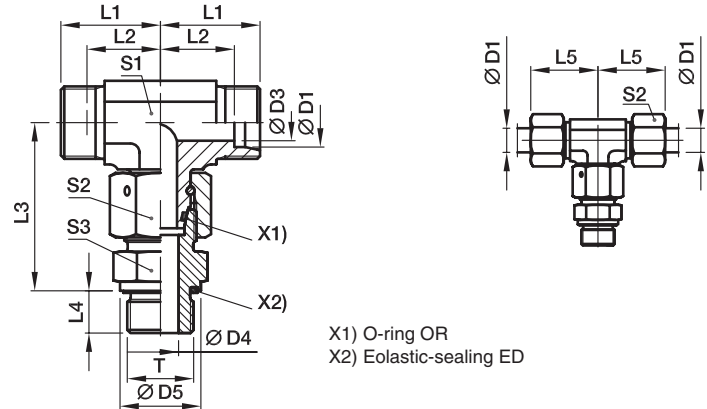
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	EV16SREDOMDCF	NBR
Stainless Steel	71	EV16SREDOMD71	VIT

## ET-M-ED Assembled adjustable swivel branch tee

EO 24° cone end / Male metric thread – ED-seal (ISO 9974)



Series	D1 	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																CF	71
L <sup>3)</sup>	06	M 10×1.0	4	4	14	19	12.0	34.5	8	27	12	14	14	55	ET06LMEDOMD	500	315
	08	M 12×1.5	6	6	17	21	14.0	37.5	12	29	12	17	17	75	ET08LMEDOMD	500	315
	10	M 14×1.5	8	7	19	22	15.0	40.0	12	30	14	19	19	98	ET10LMEDOMD	500	315
	12	M 16×1.5	10	9	22	24	17.0	42.0	12	32	17	22	22	135	ET12LMEDOMD	400	315
	15	M 18×1.5	12	11	24	28	21.0	46.0	12	36	19	27	24	203	ET15LMEDOMD	400	315
	18	M 22×1.5	15	14	27	31	23.5	50.0	14	40	24	32	27	310	ET18LMEDOMD	400	315
	22	M 26×1.5	19	18	32	35	27.5	55.0	16	44	27	36	32	377	ET22LMEDOMD	250	160
	28	M 33×2.0	24	23	40	38	30.5	59.0	18	47	36	41	41	607	ET28LMEDOMD	250	160
	35	M 42×2.0	30	30	50	45	34.5	68.5	20	56	41	50	50	929	ET35LMEDOMD	250	160
	42	M 48×2.0	36	36	55	51	40.0	75.0	22	63	50	60	55	1478	ET42LMEDOMD	250	160
S <sup>4)</sup>	06	M 12×1.5	4	4	17	23	16.0	40.0	12	31	12	17	17	92	ET06SMEDOMD	800	630
	08	M 14×1.5	5	5	19	24	17.0	42.5	12	32	14	19	19	126	ET08SMEDOMD	800	630
	10	M 16×1.5	6	7	22	25	17.5	45.0	12	34	17	22	22	167	ET10SMEDOMD	800	630
	12	M 18×1.5	8	8	24	29	21.5	48.0	12	38	17	24	24	207	ET12SMEDOMD	630	630
	14	M 20×1.5	9	10	26	30	22.0	54.0	14	40	19	27	27	287	ET14SMEDOMD	630	630
	16	M 22×1.5	12	12	27	33	24.5	55.0	14	43	24	30	27	352	ET16SMEDOMD	630	400
	20	M 27×2.0	16	16	32	37	26.5	65.0	16	48	27	36	32	498	ET20SMEDOMD	420	400
	25	M 33×2.0	20	20	40	42	30.0	73.0	18	54	36	46	41	916	ET25SMEDOMD	420	400
	30	M 42×2.0	25	25	50	49	35.5	78.5	20	62	41	50	50	1328	ET30SMEDOMD	420	400
	38	M 48×2.0	32	32	55	57	41.0	89.0	22	72	50	60	55	2031	ET38SMEDOMD	420	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

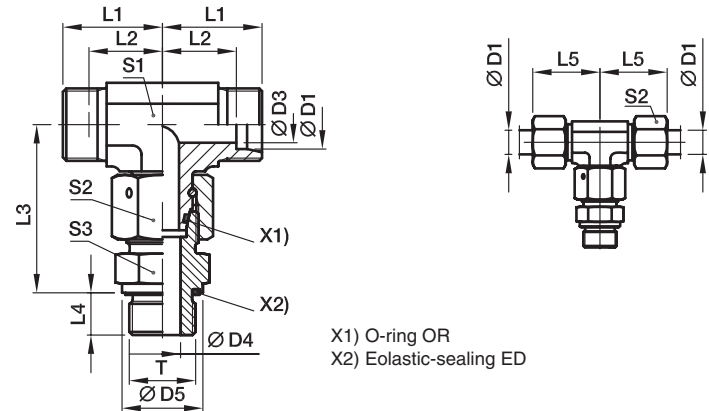
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	ET16SMEDOMDCF	NBR
Stainless Steel	71	ET16SMEDOMD71	VIT

## ET-R-ED Assembled adjustable swivel branch tee

EO 24° cone end / Male BSPP thread – ED-seal (ISO 1179)



Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																CF	71
L <sup>3)</sup>	06	G 1/8 A	4	4	14	19	12.0	34.5	8	27	12	14	14	55	ET06LREDOMD	500	315
	08	G 1/4 A	6	6	19	21	14.0	37.5	12	29	12	17	19	80	ET08LREDOMD	500	315
	10	G 1/4 A	8	6	19	22	15.0	40.0	12	30	14	19	19	98	ET10LREDOMD	500	315
	12	G 3/8 A	10	9	22	24	17.0	42.0	12	32	17	22	22	136	ET12LREDOMD	400	315
	15	G 1/2 A	12	11	27	28	21.0	46.5	14	36	19	27	27	224	ET15LREDOMD	400	315
	18	G 1/2 A	15	14	27	31	23.5	50.0	14	40	24	32	27	306	ET18LREDOMD	400	315
	22	G 3/4 A	19	18	32	35	27.5	55.0	16	44	27	36	32	423	ET22LREDOMD	250	160
	28	G 1 A	24	23	40	38	30.5	59.0	18	47	36	41	41	608	ET28LREDOMD	250	160
	35	G 1 1/4 A	30	30	50	45	34.5	68.5	20	56	41	50	50	920	ET35LREDOMD	250	160
	42	G 1 1/2 A	36	36	55	51	40.0	75.0	22	63	50	60	55	1466	ET42LREDOMD	250	160
S <sup>4)</sup>	06	G 1/4 A	4	4	19	23	16.0	40.0	12	31	12	17	19	98	ET06SREDOMD	800	630
	08	G 1/4 A	5	5	19	24	17.0	42.5	12	32	14	19	19	125	ET08SREDOMD	800	630
	10	G 3/8 A	6	7	22	25	17.5	45.0	12	34	17	22	22	169	ET10SREDOMD	800	630
	12	G 3/8 A	8	8	22	29	21.5	48.0	12	38	17	24	22	198	ET12SREDOMD	630	630
	14	G 1/2 A	9	10	27	30	22.0	54.0	14	40	19	27	27	287	ET14SREDOMD	630	630
	16	G 1/2 A	12	12	27	33	24.5	55.0	14	43	24	30	27	348	ET16SREDOMD	630	400
	20	G 3/4 A	16	16	32	37	26.5	65.0	16	48	27	36	32	498	ET20SREDOMD	420	400
	25	G 1 A	20	20	40	42	30.0	73.0	18	54	36	46	41	918	ET25SREDOMD	420	400
	30	G 1 1/4 A	25	25	50	49	35.5	78.5	20	62	41	50	50	1324	ET30SREDOMD	420	400
	38	G 1 1/2 A	32	32	55	57	41.0	89.0	22	72	50	60	55	2025	ET38SREDOMD	420	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

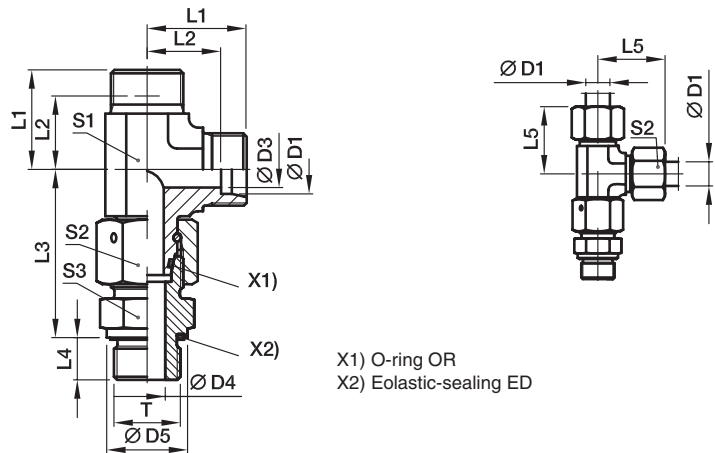
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	ET16SREDOMDCF	NBR
Stainless Steel	71	ET16SREDOMD71	VIT

## EL-M-ED Assembled adjustable swivel run tee

EO 24° cone end / Male metric thread – ED-seal (ISO 9974)



Series	D1 	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																CF	71
L <sup>3)</sup>	06	M 10x1.0	4	4	14	19	12.0	34.5	8	27	12	14	14	55	EL06LMEDOMD	500	315
	08	M 12x1.5	6	6	17	21	14.0	37.5	12	29	12	17	17	75	EL08LMEDOMD	500	315
	10	M 14x1.5	8	7	19	22	15.0	40.0	12	30	14	19	19	97	EL10LMEDOMD	500	315
	12	M 16x1.5	10	9	22	24	17.0	42.0	12	32	17	22	22	135	EL12LMEDOMD	400	315
	15	M 18x1.5	12	11	24	28	21.0	46.0	12	36	19	27	24	201	EL15LMEDOMD	400	315
	18	M 22x1.5	15	14	27	31	23.5	50.0	14	40	24	32	27	308	EL18LMEDOMD	400	315
	22	M 26x1.5	19	18	32	35	27.5	55.0	16	44	27	36	32	404	EL22LMEDOMD	250	160
	28	M 33x2.0	24	23	40	38	30.5	59.0	18	47	36	41	41	605	EL28LMEDOMD	250	160
	35	M 42x2.0	30	30	50	45	34.5	68.5	20	56	41	50	50	947	EL35LMEDOMD	250	160
	42	M 48x2.0	36	36	55	51	40.0	75.0	22	63	50	60	55	1497	EL42LMEDOMD	250	160
S <sup>4)</sup>	06	M 12x1.5	4	4	17	23	16.0	40.0	12	31	12	17	17	91	EL06SMEDOMD	800	630
	08	M 14x1.5	5	5	19	24	17.0	42.5	12	32	14	19	19	126	EL08SMEDOMD	800	630
	10	M 16x1.5	6	7	22	25	17.5	45.0	12	34	17	22	22	169	EL10SMEDOMD	800	630
	12	M 18x1.5	8	8	24	29	21.5	48.0	12	38	17	24	24	206	EL12SMEDOMD	630	630
	14	M 20x1.5	9	10	26	30	22.0	54.0	14	40	19	27	27	275	EL14SMEDOMD	630	630
	16	M 22x1.5	12	12	27	33	24.5	55.0	14	43	24	30	27	354	EL16SMEDOMD	630	400
	20	M 27x2.0	16	16	32	37	26.5	65.0	16	48	27	36	32	526	EL20SMEDOMD	420	400
	25	M 33x2.0	20	20	40	42	30.0	73.0	18	54	36	46	41	919	EL25SMEDOMD	420	400
	30	M 42x2.0	25	25	50	49	35.5	78.5	20	62	41	50	50	1328	EL30SMEDOMD	420	400
	38	M 48x2.0	32	32	55	57	41.0	89.0	22	72	50	60	55	2039	EL38SMEDOMD	420	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

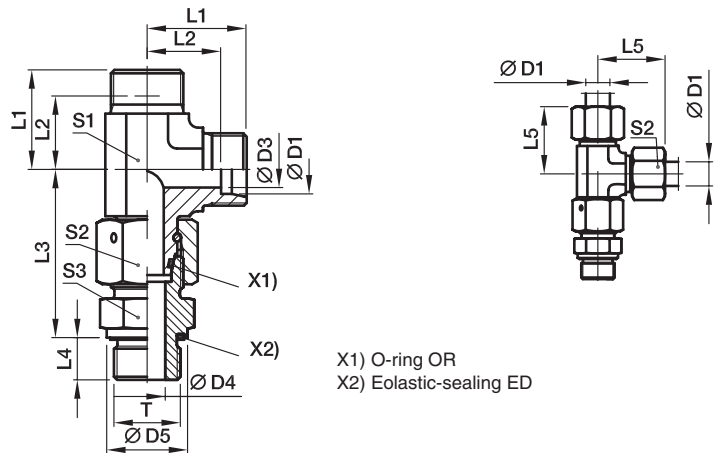
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	EL16SMEDOMDCF	NBR
Stainless Steel	71	EL16SMEDOMD71	VIT

## EL-R-ED Assembled adjustable swivel run tee

EO 24° cone end / Male BSPP thread – ED-seal (ISO 1179)



Series	D1 	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																CF	71
L <sup>3)</sup>	06	G 1/8 A	4	4	14	19	12.0	34.5	8	27	12	14	14	55	EL06LREDOMD	500	315
	08	G 1/4 A	6	6	19	21	14.0	37.5	12	29	12	17	19	80	EL08LREDOMD	500	315
	10	G 1/4 A	8	6	19	22	15.0	40.0	12	30	14	19	19	97	EL10LREDOMD	500	315
	12	G 3/8 A	10	9	22	24	17.0	42.0	12	32	17	22	22	137	EL12LREDOMD	400	315
	15	G 1/2 A	12	11	27	28	21.0	46.5	14	36	19	27	27	222	EL15LREDOMD	400	315
	18	G 1/2 A	15	14	27	31	23.5	50.0	14	40	24	32	27	304	EL18LREDOMD	400	315
	22	G 3/4 A	19	18	32	35	27.5	55.0	16	44	27	36	32	404	EL22LREDOMD	250	160
	28	G 1 A	24	23	40	38	30.5	59.0	18	47	36	41	41	606	EL28LREDOMD	250	160
	35	G 1 1/4 A	30	30	50	45	34.5	68.5	20	56	41	50	50	938	EL35LREDOMD	250	160
	42	G 1 1/2 A	36	36	55	51	40.0	75.0	22	63	50	60	55	1485	EL42LREDOMD	250	160
S <sup>4)</sup>	06	G 1/4 A	4	4	19	23	16.0	40.0	12	31	12	17	19	97	EL06SREDOMD	800	630
	08	G 1/4 A	5	5	19	24	17.0	42.5	12	32	14	19	19	125	EL08SREDOMD	800	630
	10	G 3/8 A	6	7	22	25	17.5	45.0	12	34	17	22	22	171	EL10SREDOMD	800	630
	12	G 3/8 A	8	8	22	29	21.5	48.0	12	38	17	24	22	198	EL12SREDOMD	630	630
	14	G 1/2 A	9	10	27	30	22.0	54.0	14	40	19	27	27	269	EL14SREDOMD	630	630
	16	G 1/2 A	12	12	27	33	24.5	55.0	14	43	24	30	27	350	EL16SREDOMD	630	400
	20	G 3/4 A	16	16	32	37	26.5	65.0	16	48	27	36	32	524	EL20SREDOMD	420	400
	25	G 1 A	20	20	40	42	30.0	73.0	18	54	36	46	41	921	EL25SREDOMD	420	400
	30	G 1 1/4 A	25	25	50	49	35.5	78.5	20	62	41	50	50	1324	EL30SREDOMD	420	400
	38	G 1 1/2 A	32	32	55	57	41.0	89.0	22	72	50	60	55	2033	EL38SREDOMD	420	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

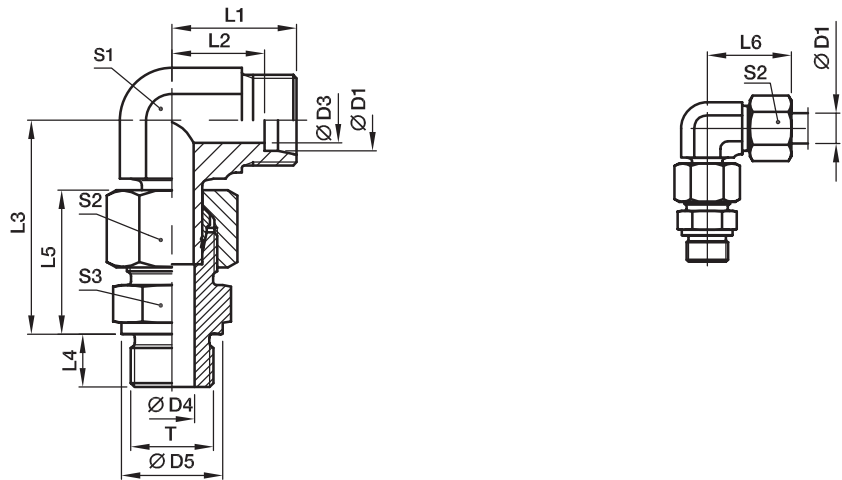
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	EL16SREDOMDCF	NBR
Stainless Steel	71	EL16SREDOMD71	VIT



## EVW-M Assembled adjustable standpipe elbow

EO 24° cone end / Male metric thread – metal sealing edge (ISO 9974)



Pre-assembled, complete with straight male stud connector (with cutting face DIN 3852, type B). Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1 	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																	CF	71
L <sup>3)</sup>	06	M 10x1.0	4	4	14	19	12.0	34.5	8	23	27	12	14	14	41	EVW06LMOMD	315	315
	08	M 12x1.5	6	6	17	21	14.0	37.5	12	25	29	12	17	17	63	EVW08LMOMD	315	315
	10	M 14x1.5	8	7	19	22	15.0	40.0	12	26	30	14	19	19	83	EVW10LMOMD	315	315
	12	M 16x1.5	10	9	21	24	17.0	42.0	12	27	32	17	22	22	107	EVW12LMOMD	315	315
	15	M 18x1.5	12	11	23	28	21.0	46.0	12	29	36	19	27	24	170	EVW15LMOMD	250	250
	18	M 22x1.5	15	14	27	31	23.5	50.0	14	31	40	24	32	27	265	EVW18LMOMD	250	250
	22	M 26x1.5	19	18	31	35	27.5	55.0	16	33	44	27	36	32	355	EVW22LMOMD	160	160
	28	M 33x2.0	24	23	39	38	30.5	59.5	18	34	47	36	41	41	514	EVW28LMOMD	160	160
	35	M 42x2.0	30	30	49	45	34.5	68.5	20	39	56	41	50	50	791	EVW35LMOMD	160	160
	42	M 48x2.0	36	36	55	51	40.0	79.0	22	42	63	50	60	55	1153	EVW42LMOMD	160	160
S <sup>4)</sup>	06	M 12x1.5	4	4	17	23	16.0	40.0	12	28	31	12	17	17	73	EVW06SMOMD	400	400
	08	M 14x1.5	5	5	19	24	17.0	42.5	12	30	32	14	19	19	100	EVW08SMOMD	400	400
	10	M 16x1.5	7	7	21	25	17.5	46.0	12	31	34	17	22	22	133	EVW10SMOMD	400	400
	12	M 18x1.5	8	8	23	29	21.5	48.0	12	33	38	17	24	24	174	EVW12SMOMD	400	400
	14	M 20x1.5	10	10	25	30	22.0	54.0	14	37	40	19	27	27	229	EVW14SMOMD	400	400
	16	M 22x1.5	12	12	27	33	24.5	56.0	14	37	43	24	30	27	309	EVW16SMOMD	400	400
	20	M 27x2.0	16	16	32	37	26.5	65.0	16	42	48	27	36	32	429	EVW20SMOMD	400	400
	25	M 33x2.0	20	20	39	42	30.0	73.0	18	47	54	36	46	41	826	EVW25SMOMD	250	250
	30	M 42x2.0	25	25	49	49	35.5	78.5	20	50	62	41	50	50	1132	EVW30SMOMD	160	160
	38	M 48x2.0	32	32	55	57	41.0	92.5	22	57	72	50	60	55	1874	EVW38SMOMD	160	160

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

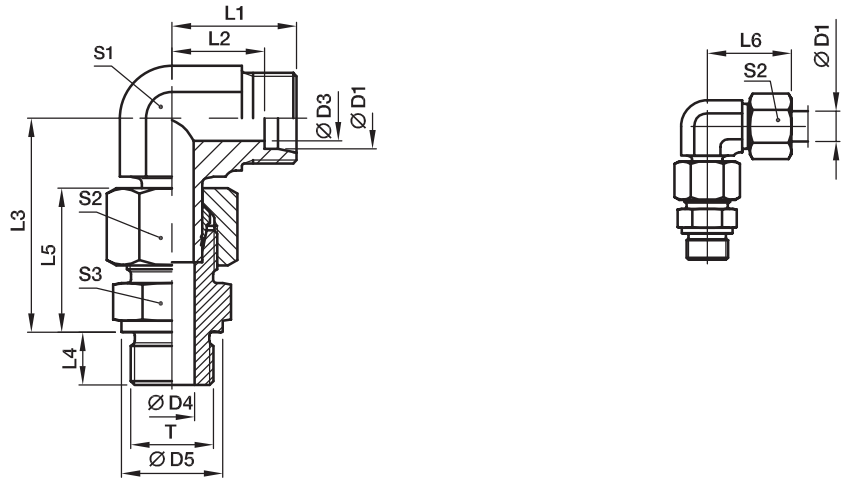
Delivery without nut and ring. Information on ordering complete fittings see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	EVW16SMOMDCF
Stainless Steel	71	EVW16SMOMD71

## EVW-R Assembled adjustable standpipe elbow

EO 24° cone end / Male BSPP thread – metal sealing edge (ISO 1179)



Pre-assembled, complete with straight male stud connector (with cutting face DIN 3852, type B). Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																	CF	71
L <sup>3)</sup>	06	G 1/8 A	4	4	14	19	12.0	34.5	8	23	27	12	14	14	47	EVW06LROMD	315	315
	08	G 1/4 A	6	6	18	21	14.0	37.5	12	25	29	12	17	19	68	EVW08LROMD	315	315
	10	G 1/4 A	8	6	18	22	15.0	40.0	12	26	30	14	19	19	84	EVW10LROMD	315	315
	12	G 3/8 A	10	9	22	24	17.0	42.0	12	27	32	17	22	22	118	EVW12LROMD	315	315
	15	G 1/2 A	12	11	26	28	21.0	46.5	14	29	36	19	27	27	191	EVW15LROMD	250	250
	18	G 1/2 A	15	14	26	31	23.5	50.0	14	31	40	24	32	27	260	EVW18LROMD	250	250
	22	G 3/4 A	19	18	32	35	27.5	55.0	16	33	44	27	36	32	355	EVW22LROMD	160	160
	28	G 1 A	24	23	39	38	30.5	59.5	18	34	47	36	41	41	542	EVW28LROMD	160	160
	35	G 1 1/4 A	30	30	49	45	34.5	68.5	20	39	56	41	50	50	832	EVW35LROMD	160	160
	42	G 1 1/2 A	36	36	55	51	40.0	79.0	22	42	63	50	60	55	1303	EVW42LROMD	160	160
S <sup>4)</sup>	06	G 1/4 A	4	4	18	23	16.0	40.0	12	28	31	12	17	19	79	EVW06SROMD	400	400
	08	G 1/4 A	5	5	18	24	17.0	42.5	12	30	32	14	19	19	98	EVW08SROMD	400	400
	10	G 3/8 A	7	7	22	25	17.5	46.0	12	31	34	17	22	22	148	EVW10SROMD	400	400
	12	G 3/8 A	8	8	22	29	21.5	48.0	12	33	38	17	24	22	169	EVW12SROMD	400	400
	14	G 1/2 A	10	10	26	30	22.0	54.0	14	37	40	19	27	27	230	EVW14SROMD	400	400
	16	G 1/2 A	12	12	26	33	24.5	56.0	14	37	43	24	30	27	304	EVW16SROMD	400	400
	20	G 3/4 A	16	16	32	37	26.5	65.0	16	42	48	27	36	32	428	EVW20SROMD	400	400
	25	G 1 A	20	20	39	42	30.0	73.0	18	47	54	36	46	41	825	EVW25SROMD	250	250
	30	G 1 1/4 A	25	25	49	49	35.5	78.5	20	50	62	41	50	50	1134	EVW30SROMD	160	160
	38	G 1 1/2 A	32	32	55	57	41.0	92.5	22	57	72	50	60	55	1713	EVW38SROMD	160	160

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

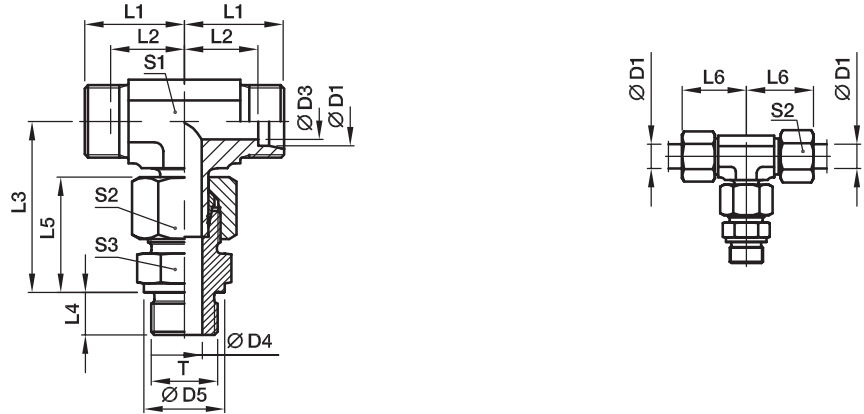
Delivery without nut and ring. Information on ordering complete fittings see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	EVW16SROMDCF
Stainless Steel	71	EVW16SROMD71

## EVT-M Assembled adjustable standpipe branch tee

EO 24° cone end / Male metric thread – metal sealing edge (ISO 9974)



Pre-assembled, complete with straight male stud connector (with cutting face). Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1 	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																	CF	71
L <sup>3)</sup>	06	M 10x1.0	4	4	14	19	12.0	34.5	8	23	27	12	14	14	48	EVT06LMOMD	315	315
	08	M 12x1.5	6	6	17	21	14.0	37.5	12	25	29	12	17	17	68	EVT08LMOMD	315	315
	10	M 14x1.5	8	7	19	22	15.0	40.0	12	26	30	14	19	19	88	EVT10LMOMD	315	315
	12	M 16x1.5	10	9	21	24	17.0	43.0	12	27	32	17	22	22	116	EVT12LMOMD	315	315
	15	M 18x1.5	12	11	23	28	21.0	46.0	12	29	36	19	27	24	185	EVT15LMOMD	250	250
	18	M 22x1.5	15	14	27	31	23.5	50.0	14	31	40	24	32	27	272	EVT18LMOMD	250	250
	22	M 26x1.5	19	18	31	35	27.5	55.5	16	33	44	27	36	32	367	EVT22LMOMD	160	160
	28	M 33x2.0	24	23	39	38	30.5	61.0	18	34	47	36	41	41	565	EVT28LMOMD	160	160
	35	M 42x2.0	30	30	49	45	34.5	72.0	20	39	56	41	50	50	905	EVT35LMOMD	160	160
	42	M 48x2.0	36	36	55	51	40.0	79.0	22	42	63	50	60	55	1282	EVT42LMOMD	160	160
S <sup>4)</sup>	06	M 12x1.5	4	4	17	23	16.0	40.0	12	28	31	12	17	17	85	EVT06SMOMD	400	400
	08	M 14x1.5	5	5	19	24	17.0	44.0	12	30	32	14	19	19	118	EVT08SMOMD	400	400
	10	M 16x1.5	7	7	21	25	17.5	47.0	12	31	34	17	22	22	149	EVT10SMOMD	400	400
	12	M 18x1.5	8	8	23	29	21.5	50.0	12	33	38	17	24	24	200	EVT12SMOMD	400	400
	14	M 20x1.5	10	10	25	30	22.0	54.0	14	37	40	19	27	27	264	EVT14SMOMD	400	400
	16	M 22x1.5	12	12	27	33	24.5	55.0	14	37	43	24	30	27	327	EVT16SMOMD	400	400
	20	M 27x2.0	16	16	32	37	26.5	65.0	16	42	48	27	36	32	482	EVT20SMOMD	400	400
	25	M 33x2.0	20	20	39	42	30.0	73.5	18	47	54	36	46	41	906	EVT25SMOMD	250	250
	30	M 42x2.0	25	25	49	49	35.5	80.0	20	50	62	41	50	50	1274	EVT30SMOMD	160	160
	38	M 48x2.0	32	32	55	57	41.0	92.5	22	57	72	50	60	55	1928	EVT38SMOMD	160	160

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

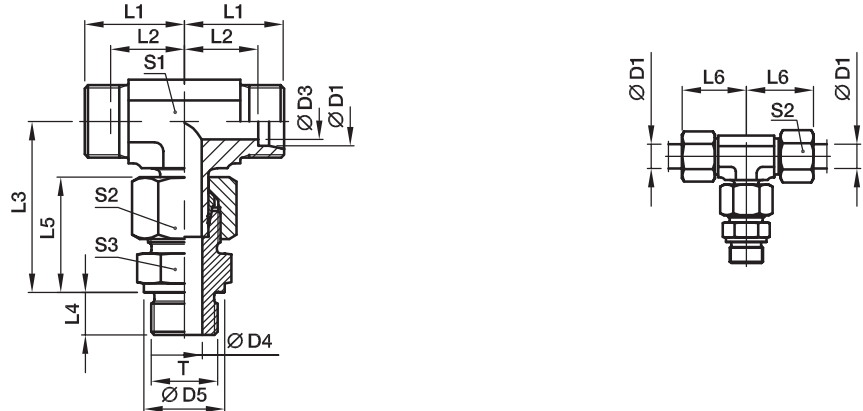
Delivery without nut and ring. Information on ordering complete fittings see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	EVT16SMOMDCF
Stainless Steel	71	EVT16SMOMD71

## EVT-R Assembled adjustable standpipe branch tee

EO 24° cone end / Male BSPP thread – metal sealing edge (ISO 1179)



Pre-assembled, complete with straight male stud connector (with cutting face). Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1 	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																	CF	71
L <sup>3)</sup>	06	G 1/8 A	4	4	14	19	12.0	34.5	8	23	27	12	14	14	48	EVT06LROMD	315	315
	08	G 1/4 A	6	6	18	21	14.0	37.5	12	25	29	12	17	19	73	EVT08LROMD	315	315
	10	G 1/4 A	8	6	18	22	15.0	40.0	12	26	30	14	19	19	85	EVT10LROMD	315	315
	12	G 3/8 A	10	9	22	24	17.0	43.0	12	27	32	17	22	22	118	EVT12LROMD	315	315
	15	G 1/2 A	12	11	26	28	21.0	46.5	14	29	36	19	27	27	206	EVT15LROMD	250	250
	18	G 1/2 A	15	14	26	31	23.5	50.0	14	31	40	24	32	27	267	EVT18LROMD	250	250
	22	G 3/4 A	19	18	32	35	27.5	55.5	16	33	44	27	36	32	367	EVT22LROMD	160	160
	28	G 1 A	24	23	39	38	30.5	61.0	18	34	47	36	41	41	565	EVT28LROMD	160	160
	35	G 1 1/4 A	30	30	49	45	34.5	72.0	20	39	56	41	50	50	901	EVT35LROMD	160	160
	42	G 1 1/2 A	36	36	55	51	40.0	79.0	22	42	63	50	60	55	1277	EVT42LROMD	160	160
S <sup>4)</sup>	06	G 1/4 A	4	4	18	23	16.0	40.0	12	28	31	12	17	19	90	EVT06SROMD	400	400
	08	G 1/4 A	5	5	18	24	17.0	44.0	12	30	32	14	19	19	116	EVT08SROMD	400	400
	10	G 3/8 A	7	7	22	25	17.5	47.0	12	31	34	17	22	22	151	EVT10SROMD	400	400
	12	G 3/8 A	8	8	22	29	21.5	50.0	12	33	38	17	24	22	190	EVT12SROMD	400	400
	14	G 1/2 A	10	10	26	30	22.0	54.0	14	37	40	19	27	27	265	EVT14SROMD	400	400
	16	G 1/2 A	12	12	26	33	24.5	55.0	14	37	43	24	30	27	322	EVT16SROMD	400	400
	20	G 3/4 A	16	16	32	37	26.5	65.0	16	42	48	27	36	32	500	EVT20SROMD	400	400
	25	G 1 A	20	20	39	42	30.0	73.5	18	47	54	36	46	41	905	EVT25SROMD	250	250
	30	G 1 1/4 A	25	25	49	49	35.5	80.0	20	50	62	41	50	50	1275	EVT30SROMD	160	160
	38	G 1 1/2 A	32	32	55	57	41.0	92.5	22	57	72	50	60	55	1920	EVT38SROMD	160	160

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

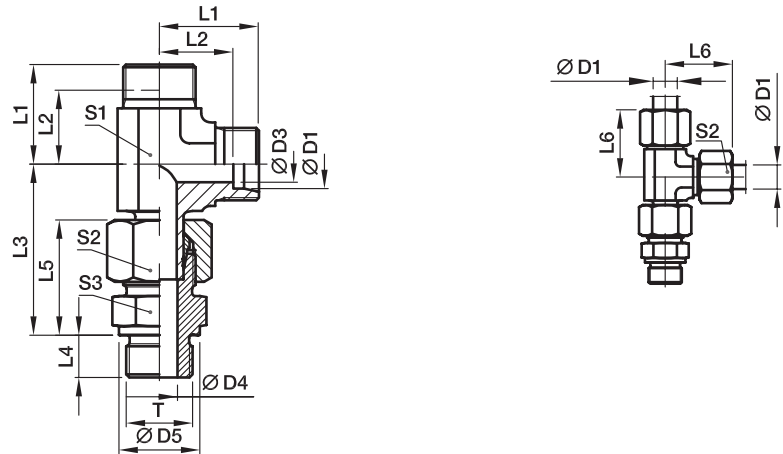
Delivery without nut and ring. Information on ordering complete fittings see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	EVT16SROMDCF
Stainless Steel	71	EVT16SROMD71

## EVL-M Assembled adjustable standpipe run tee

EO 24° cone end / Male metric thread – metal sealing edge (ISO 9974)



Pre-assembled, complete with straight male stud connector (with cutting face). Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1 	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																	CF	71
L <sup>3)</sup>	06	M 10x1.0	4	4	14	19	12.0	34.5	8	23	27	12	14	14	48	<b>EVL06LMOMD</b>	315	315
	08	M 12x1.5	6	6	17	21	14.0	37.5	12	25	29	12	17	17	73	<b>EVL08LMOMD</b>	315	315
	10	M 14x1.5	8	7	19	22	15.0	40.0	12	26	30	14	19	19	89	<b>EVL10LMOMD</b>	315	315
	12	M 16x1.5	10	9	21	24	17.0	43.0	12	27	32	17	22	22	118	<b>EVL12LMOMD</b>	315	315
	15	M 18x1.5	12	11	23	28	21.0	46.0	12	29	36	19	27	24	186	<b>EVL15LMOMD</b>	250	250
	18	M 22x1.5	15	14	27	31	23.5	50.0	14	31	40	24	32	27	269	<b>EVL18LMOMD</b>	250	250
	22	M 26x1.5	19	18	31	35	27.5	55.5	16	33	44	27	36	32	364	<b>EVL22LMOMD</b>	160	160
	28	M 33x2.0	24	23	39	38	30.5	61.0	18	34	47	36	41	41	556	<b>EVL28LMOMD</b>	160	160
	35	M 42x2.0	30	30	49	45	34.5	72.0	20	39	56	41	50	50	900	<b>EVL35LMOMD</b>	160	160
	42	M 48x2.0	36	36	55	51	40.0	79.0	22	42	63	50	60	55	1323	<b>EVL42LMOMD</b>	160	160
S <sup>4)</sup>	06	M 12x1.5	4	4	17	23	16.0	40.0	12	28	31	12	17	17	85	<b>EVL06SMOMD</b>	400	400
	08	M 14x1.5	5	5	19	24	17.0	44.0	12	30	32	14	19	19	119	<b>EVL08SMOMD</b>	400	400
	10	M 16x1.5	7	7	21	25	17.5	47.0	12	31	34	17	22	22	151	<b>EVL10SMOMD</b>	400	400
	12	M 18x1.5	8	8	23	29	21.5	50.0	12	33	38	17	24	24	202	<b>EVL12SMOMD</b>	400	400
	14	M 20x1.5	10	10	25	30	22.0	54.0	14	37	40	19	27	27	264	<b>EVL14SMOMD</b>	400	400
	16	M 22x1.5	12	12	27	33	24.5	56.0	14	37	43	24	30	27	326	<b>EVL16SMOMD</b>	400	400
	20	M 27x2.0	16	16	32	37	26.5	65.0	16	42	48	27	36	32	481	<b>EVL20SMOMD</b>	400	400
	25	M 33x2.0	20	20	39	42	30.0	73.5	18	47	54	36	46	41	904	<b>EVL25SMOMD</b>	250	250
	30	M 42x2.0	25	25	49	49	35.5	80.0	20	50	62	41	50	50	1263	<b>EVL30SMOMD</b>	160	160
	38	M 48x2.0	32	32	55	57	41.0	92.5	22	57	72	50	60	55	1936	<b>EVL38SMOMD</b>	160	160

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

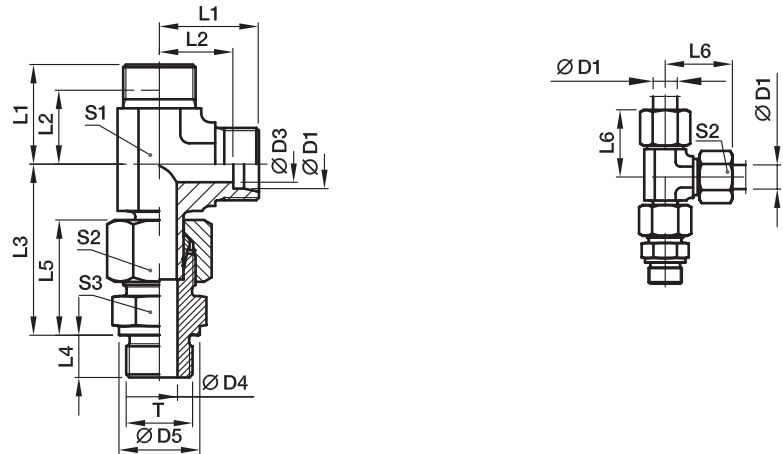
Delivery without nut and ring. Information on ordering complete fittings see page I7.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	EVL16SMOMDCF
Stainless Steel	71	EVL16SMOMD71

\*Please add the **suffixes** below according to the material/surface required.

## EVL-R Assembled adjustable standpipe run tee

EO 24° cone end / Male BSPP thread – metal sealing edge (ISO 1179)



Pre-assembled, complete with straight male stud connector (with cutting face). Final assembly (in appropriate body) at least 1/4 turn beyond the point of clearly perceptible resistance.

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																	CF	71
L3)	06	G 1/8 A	4	4	14	19	12.0	34.5	8	23	27	12	14	14	48	<b>EVL06LROMD</b>	315	315
	08	G 1/4 A	6	6	18	21	14.0	37.5	12	25	29	12	17	19	73	<b>EVL08LROMD</b>	315	315
	10	G 1/4 A	8	6	18	22	15.0	40.0	12	26	30	14	19	19	87	<b>EVL10LROMD</b>	315	315
	12	G 3/8 A	10	9	22	24	17.0	43.0	12	27	32	17	22	22	120	<b>EVL12LROMD</b>	315	315
	15	G 1/2 A	12	11	26	28	21.0	46.5	14	29	36	19	27	27	207	<b>EVL15LROMD</b>	250	250
	18	G 1/2 A	15	14	26	31	23.5	50.0	14	31	40	24	32	27	264	<b>EVL18LROMD</b>	250	250
	22	G 3/4 A	19	18	32	35	27.5	55.5	16	33	44	27	36	32	365	<b>EVL22LROMD</b>	160	160
	28	G 1 A	24	23	39	38	30.5	61.0	18	34	47	36	41	41	556	<b>EVL28LROMD</b>	160	160
	35	G 1 1/4 A	30	30	49	45	34.5	72.0	20	39	56	41	50	50	895	<b>EVL35LROMD</b>	160	160
	42	G 1 1/2 A	36	36	55	51	40.0	79.0	22	42	63	50	60	55	1318	<b>EVL42LROMD</b>	160	160
S4)	06	G 1/4 A	4	4	18	23	16.0	40.0	12	28	31	12	17	19	90	<b>EVL06SROMD</b>	400	400
	08	G 1/4 A	5	5	18	24	17.0	44.0	12	30	32	14	19	19	117	<b>EVL08SROMD</b>	400	400
	10	G 3/8 A	7	7	22	25	17.5	47.0	12	31	34	17	22	22	153	<b>EVL10SROMD</b>	400	400
	12	G 3/8 A	8	8	22	29	21.5	50.0	12	33	38	17	24	22	192	<b>EVL12SROMD</b>	400	400
	14	G 1/2 A	10	10	26	30	22.0	54.0	14	37	40	19	27	27	266	<b>EVL14SROMD</b>	400	400
	16	G 1/2 A	12	12	26	33	24.5	56.0	14	37	43	24	30	27	321	<b>EVL16SROMD</b>	400	400
	20	G 3/4 A	16	16	32	37	26.5	65.0	16	42	48	27	36	32	480	<b>EVL20SROMD</b>	400	400
	25	G 1 A	20	20	39	42	30.0	73.5	18	47	54	36	46	41	903	<b>EVL25SROMD</b>	250	250
	30	G 1 1/4 A	25	25	49	49	35.5	80.0	20	50	62	41	50	50	1265	<b>EVL30SROMD</b>	160	160
	38	G 1 1/2 A	32	32	55	57	41.0	92.5	22	57	72	50	60	55	1928	<b>EVL38SROMD</b>	160	160

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

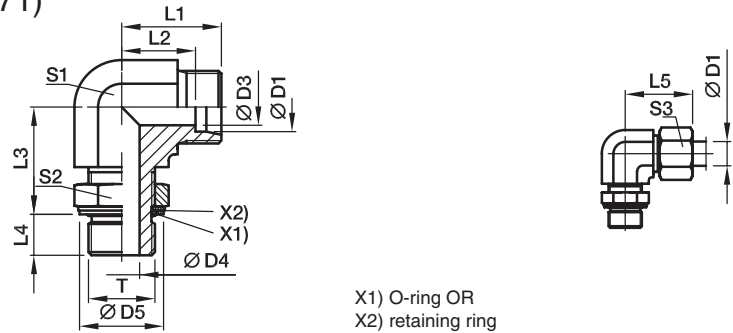
Delivery without nut and ring. Information on ordering complete fittings see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	EVL16SROMDCF
Stainless Steel	71	EVL16SROMD71

## WEE-R Adjustable locknut elbow

EO 24° cone end / Adjustable BSPP thread – O-ring + retaining ring (ISO 1179)  
 for ports with small or wide spot face;  
 differences in D5 in Stainless Steel are only for ports with wide spot face  
 (e.g. WEE16SRBOMD71)



Series	D1	T	D3	D4	D5 <sup>5)</sup>	D5 <sup>6)</sup>	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																	CF	71
LL <sup>2)</sup>	04	G 1/8 A	3.0	4.5	15		15	11.3	20	7.1	21	11	14	10	27	<b>WEE04LLROMD</b>	250	
	06	G 1/8 A	4.5	4.5	15		15	11.3	20	7.1	21	11	14	12	27		<b>WEE06LLROMD</b>	250
L <sup>3)</sup>	06	G 1/8 A	4.0	4.5	15	15.0	21	14.0	19	7.0	29	14	14	14	40	<b>WEE06LROMD</b>	315	315
	08	G 1/4 A	6.0	7.5	20	19.5	23	16.0	23	9.0	31	14	19	17	59	<b>WEE08LROMD</b>	315	315
	10	G 1/4 A	8.0	7.5	20	19.5	24	17.0	25	9.0	32	19	19	19	82	<b>WEE10LROMD</b>	315	315
	12	G 3/8 A	10.0	10.0	23	23.5	26	19.0	28	9.0	34	19	22	22	96	<b>WEE12LROMD</b>	250	250
	15	G 1/2 A	12.0	12.5	28	28.5	28	21.0	30	13.0	36	22	27	27	149	<b>WEE15LROMD</b>	250	250
	18	G 1/2 A	15.0	12.5	28	28.5	31	24.0	36	13.0	40	27	27	32	221	<b>WEE18LROMD</b>	250	250
	22	G 3/4 A	19.0	15.5	33	34.5	35	28.0	36	13.0	44	30	36	36	310	<b>WEE22LROMD</b>	160	160
	28	G 1 A	24.0	21.5	41	43.5	38	31.0	44	15.0	47	36	41	41	455	<b>WEE28LROMD</b>	160	160
	35	G 1 1/4 A	30.0	27.5	51	52.5	48	38.0	50	15.0	59	50	50	50	1043	<b>WEE35LROMD</b>	160	160
	42	G 1 1/2 A	36.0	33.0	56	60.0	49	38.0	52	15.0	61	50	55	60	994	<b>WEE42LROMD</b>	160	160
S <sup>4)</sup>	06	G 1/4 A	4.0	7.5	20	19.5	22	15.0	23	9.0	30	14	19	17	56	<b>WEE06SROMD</b>	315	315
	08	G 1/4 A	5.0	7.5	20	19.5	24	17.0	27	9.0	32	19	19	19	88	<b>WEE08SROMD</b>	315	315
	10	G 3/8 A	7.0	10.0	23	23.5	25	18.0	29	9.0	34	19	22	22	98	<b>WEE10SROMD</b>	250	250
	12	G 3/8 A	8.0	10.0	23	23.5	29	22.0	29	9.0	38	22	22	24	128	<b>WEE12SROMD</b>	250	250
	16	G 1/2 A	12.0	12.5	28	28.5	33	25.0	36	13.0	43	27	27	30	234	<b>WEE16SROMD</b>	250	250
	20	G 3/4 A	16.0	15.5	33	34.5	38	28.0	39	12.0	49	30	36	36	344	<b>WEE20SROMD</b>	250	250
	25	G 1 A	20.0	21.5	41	43.5	42	30.0	44	14.0	54	36	41	46	533	<b>WEE25SROMD</b>	250	250
	30	G 1 1/4 A	25.0	27.5	51	52.5	49	36.0	49	15.0	62	50	50	50	1085	<b>WEE30SROMD</b>	160	160
	38	G 1 1/2 A	32.0	33.0	56	60.0	50	34.0	55	15.0	65	50	55	60	1116	<b>WEE38SROMD</b>	160	160

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

<sup>5)</sup> Steel; <sup>6)</sup> Stainless Steel

\*Please add the **suffixes** below according to the material/surface required.

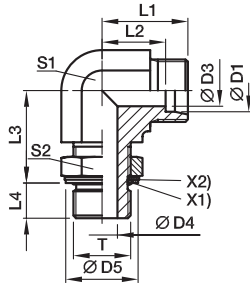
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	WEE16SROMDCF	NBR
Stainless Steel	71	WEE16SRBOMD71	VIT



## Adjustable locknut elbow, branch tee, run tee or 45° elbow

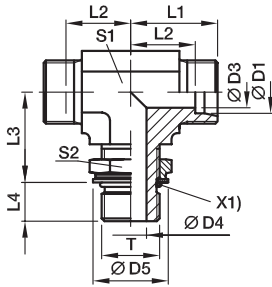
On customer request!

### WEE Adjustable locknut elbow EO 24° cone end/Adjustable thread



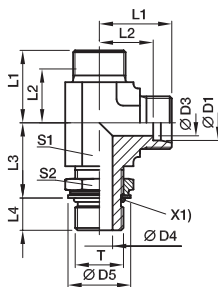
T	Order code	Surface
metric thread – O-ring + retaining ring	WEE...MOMD	CF
metric thread – O-ring (ISO 6149)	WEE...MOROMD	CF
UN/UNF thread – O-ring (ISO 11926)	WEE...UNFOMD	CF

### TEE Adjustable locknut branch tee EO 24° cone end/Adjustable thread



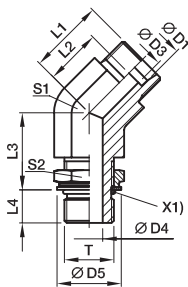
T	Order code	Surface
metric thread – O-ring + retaining ring	TEE...MOMD	CF
metric thread – O-ring (ISO 6149)	TEE...MOROMD	CF
UN/UNF thread – O-ring (ISO 11926)	TEE...UNFOMD	CF
BSPP thread – O-ring + retaining ring (ISO 1179)	TEE...ROMD	CF

### LEE Adjustable locknut run tee EO 24° cone end/Adjustable thread



T	Order code	Surface
metric thread – O-ring + retaining ring	LEE...MOMD	CF
metric thread – O-ring (ISO 6149)	LEE...MOROMD	CF
UN/UNF thread – O-ring (ISO 11926)	LEE...UNFOMD	CF
BSPP thread – O-ring + retaining ring (ISO 1179)	LEE...ROMD	CF

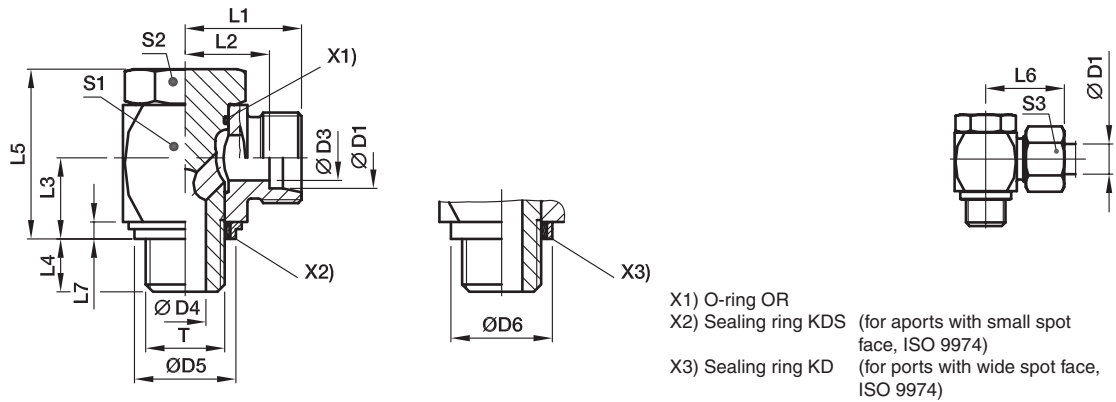
### VEE Adjustable locknut 45° elbow EO 24° cone end/Adjustable thread



T	Order code	Surface
metric thread – O-ring + retaining ring	VEE...MOMD	CF
metric thread – O-ring (ISO 6149)	VEE...MOROMD	CF
UN/UNF thread – O-ring (ISO 11926)	VEE...UNFOMD	CF
BSPP thread – O-ring + retaining ring (ISO 1179)	VEE...ROMD	CF

## WH-M-KDS High pressure banjo elbow

EO 24° cone end / Male metric thread with soft seal ring



Series	D1	T	D3	D4	D5 KDS	D6 KD	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																			CF	71
L <sup>3)</sup>	06	M 10×1.0	4	4.5	14.9	17.0	19.0	12.0	10.5	8	24.0	27	2.5	17	17	14	54	WH06LMKDSOMD	315	315
	08	M 12×1.5	6	6.0	17.0	22.0	21.5	14.5	14.0	12	30.0	29	3.0	22	19	17	97	WH08LMKDSOMD	315	315
	10	M 14×1.5	8	6.0	18.9	22.5	22.5	15.5	14.0	12	30.0	30	3.0	22	19	19	104	WH10LMKDSOMD	315	315
	12	M 16×1.5	10	7.5	21.9	27.0	25.0	18.0	16.5	12	36.0	33	3.0	27	24	22	180	WH12LMKDSOMD	315	315
	15	M 18×1.5	11	9.0	23.9	29.0	27.5	21.5	18.5	12	39.5	37	3.0	30	30	27	244	WH15LMKDSOMD	315	315
	18	M 22×1.5	15	12.0	26.9	32.0	28.5	21.0	21.5	14	45.0	37	4.5	32	30	32	327	WH18LMKDSOMD	315	315
	22	M 26×1.5	19	17.0	31.9	41.0	35.0	27.5	24.0	16	53.0	44	3.5	41	36	36	573	WH22LMKDSOMD	160	160
	28	M 33×2.0	24	21.0	39.9	46.0	39.5	32.0	30.5	18	66.0	49	3.5	50	46	41	1017	WH28LMKDSOMD	160	160
	35	M 42×2.0	30	27.0	49.9	57.0	46.5	36.0	35.5	20	76.0	58	3.5	60	55	50	1512	WH35LMKDSOMD	160	160
	42	M 48×2.0	36	34.0	55.9	64.0	51.5	40.5	40.5	22	87.0	63	3.5	70	60	60	2217	WH42LMKDSOMD	160	160
S <sup>4)</sup>	06	M 12×1.5	4	6.0	17.0	22.0	23.5	16.5	14.0	12	30.0	31	3.0	22	19	17	104	WH06SMKDSOMD	400	400
	08	M 14×1.5	5	6.0	18.9	22.5	23.5	16.5	14.0	12	30.0	31	3.0	22	19	19	110	WH08SMKDSOMD	400	400
	10	M 16×1.5	7	7.5	21.9	27.0	26.0	18.5	16.5	12	36.0	35	3.0	27	24	22	186	WH10SMKDSOMD	400	400
	12	M 18×1.5	8	9.0	23.9	29.0	27.5	20.0	18.5	12	39.5	36	3.0	27	27	24	246	WH12SMKDSOMD	400	400
	14	M 20×1.5	10	10.0		32.0	30.5	22.5	20.0	14	43.5	40	3.0	32	30	27	322	WH14SMKDSOMD		400
	16	M 22×1.5	12	12.0	26.9	32.0	30.5	22.0	21.5	14	45.0	40	4.5	32	30	30	327	WH16SMKDSOMD	315	315
	20	M 27×2.0	16	16.0	32.9	41.0	37.0	26.5	24.0	16	53.0	48	3.5	41	36	36	598	WH20SMKDSOMD	315	315
	25	M 33×2.0	20	21.0	39.9	46.0	43.5	31.5	30.5	18	66.0	56	3.5	50	46	46	1055	WH25SMKDSOMD	250	250
	30	M 42×2.0	25	27.0	49.9	57.0	50.5	37.0	35.5	20	76.0	64	3.5	60	55	50	1572	WH30SMKDSOMD	160	160
	38	M 48×2.0	32	34.0	55.9	64.0	57.5	41.5	40.5	22	87.0	72	3.5	70	60	60	2317	WH38SMKDSOMD	160	160

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{PN(\text{bar})}{10} = PN(\text{MPa})$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

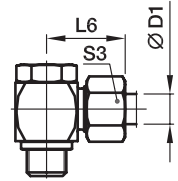
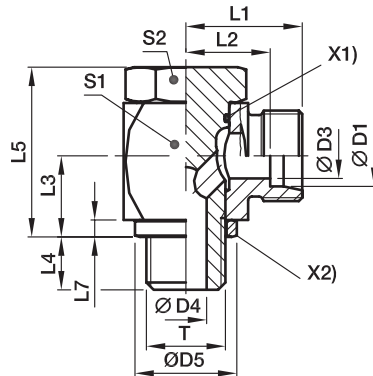
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	WH16SMKDSOMDCF	NBR
Stainless Steel	71	WH16SMKDOMD71	VIT/PTFE

Stainless Steel only with sealing ring KD available!  
Replace KDS by KD in the order code.

## WH-M High pressure banjo elbow

EO 24° cone end / Male metric thread with metal sealing ring



X1) O-ring OR  
X2) Sealing ring DKA

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																		CF	71
L <sup>3)</sup>	06	M 10×1.0	4	4.5	14	19.0	12.0	10.5	8	24.0	27	2.5	17	17	14	54	WH06LMOMD	250	250
	08	M 12×1.5	6	6.0	17	21.5	14.5	14.0	12	30.0	29	3.0	22	19	17	97	WH08LMOMD	250	250
	10	M 14×1.5	8	6.0	19	22.5	15.5	14.0	12	30.0	30	3.0	22	19	19	104	WH10LMOMD	250	250
	12	M 16×1.5	10	7.5	21	25.0	18.0	16.5	12	36.0	33	3.0	27	24	22	180	WH12LMOMD	250	250
	15	M 18×1.5	11	9.0	23	27.5	21.5	18.5	12	39.5	37	3.0	30	27	27	243	WH15LMOMD	250	250
	18	M 22×1.5	15	12.0	27	28.5	21.0	21.5	14	45.0	37	4.5	32	30	32	326	WH18LMOMD	250	250
	22	M 26×1.5	19	17.0	31	35.0	27.5	24.0	16	53.0	44	3.5	41	36	36	574	WH22LMOMD	160	160
	28	M 33×2.0	24	21.0	39	39.5	32.0	30.5	18	66.0	49	3.5	50	46	41	1016	WH28LMOMD	160	160
	35	M 42×2.0	30	27.0	49	46.5	36.0	35.5	20	76.0	58	3.5	60	55	50	1512	WH35LMOMD	160	160
	42	M 48×2.0	36	34.0	55	51.5	40.5	40.5	22	87.0	63	3.5	70	60	60	2216	WH42LMOMD	160	160
S <sup>4)</sup>	06	M 12×1.5	4	6.0	17	23.5	16.5	14.0	12	30.0	31	3.0	22	19	17	104	WH06SMOMD	315	315
	08	M 14×1.5	5	6.0	19	23.5	16.5	14.0	12	30.0	31	3.0	22	19	19	111	WH08SMOMD	315	315
	10	M 16×1.5	7	7.5	21	26.0	18.5	16.5	12	36.0	35	3.0	27	24	22	186	WH10SMOMD	315	315
	12	M 18×1.5	8	9.0	23	27.5	20.0	18.5	12	39.5	36	3.0	27	27	24	246	WH12SMOMD	315	315
	14	M 20×1.5	10	10.0	25	30.5	22.5	20.0	14	43.5	40	3.0	32	30	27	320	WH14SMOMD	315	315
	16	M 22×1.5	12	12.0	27	30.5	22.0	21.5	14	45.0	40	4.5	32	30	30	326	WH16SMOMD	315	315
	20	M 27×2.0	16	16.0	32	37.0	26.5	24.0	16	53.0	48	3.5	41	36	36	596	WH20SMOMD	160	160
	25	M 33×2.0	20	21.0	39	43.5	31.5	30.5	18	66.0	56	3.5	50	46	46	1055	WH25SMOMD	160	160
	30	M 42×2.0	25	27.0	49	50.5	37.0	35.5	20	76.0	64	3.5	60	55	50	1572	WH30SMOMD	160	160
	38	M 48×2.0	32	34.0	55	57.5	41.5	40.5	22	87.0	72	3.5	70	60	60	2316	WH38SMOMD	160	160

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

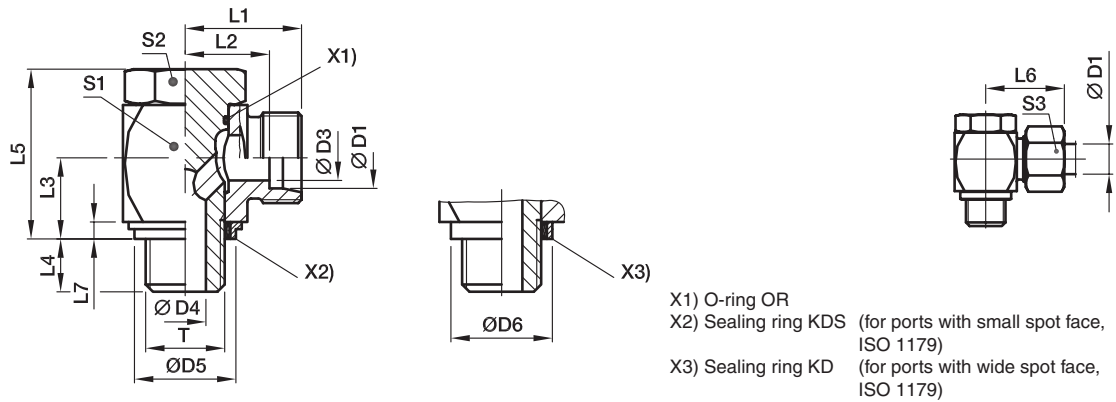
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	WH16SMOMDCF	NBR
Stainless Steel	71	WH16SMOMD71	VIT

## WH-R-KDS High pressure banjo elbow

EO 24° cone end / Male BSPP thread with soft seal ring



X1) O-ring OR  
 X2) Sealing ring KDS (for ports with small spot face, ISO 1179)  
 X3) Sealing ring KD (for ports with wide spot face, ISO 1179)

Series	D1 	T	D3	D4	D5 KDS	D6 KD	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																			CF	71
L <sup>3)</sup>	06	G 1/8 A	4	4.5	14.9	17	19.0	12.0	10.5	8	24	27	2.5	17	17	14	53	WH06LRKDSOMD	315	315
	08	G 1/4 A	6	6.0	18.9	22	21.5	14.5	14.0	12	30	29	3.0	22	19	17	101	WH08LRKDSOMD	315	315
	10	G 1/4 A	8	6.0	18.9	22	22.5	15.5	14.0	12	30	30	3.0	22	19	19	102	WH10LRKDSOMD	315	315
	12	G 3/8 A	10	7.5	21.9	27	25.0	18.0	16.5	12	36	33	3.0	27	24	22	181	WH12LRKDSOMD	315	315
	15	G 1/2 A	12	11.0	26.9	32	28.5	21.5	21.5	14	45	37	4.5	32	30	27	312	WH15LRKDSOMD	315	315
	18	G 1/2 A	15	11.0	26.9	32	28.5	21.0	21.5	14	45	37	4.5	32	30	32	319	WH18LRKDSOMD	315	315
	22	G 3/4 A	19	17.0	32.9	41	35.0	27.5	24.0	16	53	44	3.5	41	36	36	578	WH22LRKDSOMD	160	160
	28	G 1 A	24	21.0	39.9	46	39.5	32.0	30.5	18	66	49	3.5	50	46	41	1035	WH28LRKDSOMD	160	160
	35	G 1 1/4 A	30	27.0	49.9	57	46.5	36.0	35.5	20	76	58	3.5	60	55	50	1499	WH35LRKDSOMD	160	160
	42	G 1 1/2 A	36	34.0	55.9	64	51.5	40.5	40.5	22	87	63	3.5	70	60	60	2196	WH42LRKDSOMD	160	160
S <sup>4)</sup>	06	G 1/4 A	4	6.0	18.9	22	23.5	16.5	14.0	12	30	31	3.0	22	19	17	107	WH06SRKDSOMD	400	400
	08	G 1/4 A	5	6.0	18.9	22	23.5	16.5	14.0	12	30	31	3.0	22	19	19	107	WH08SRKDSOMD	400	400
	10	G 3/8 A	7	7.5	21.9	27	26.0	18.5	16.5	12	36	35	3.0	27	24	22	188	WH10SRKDSOMD	400	400
	12	G 3/8 A	8	7.5	21.9	27	26.0	18.5	16.5	12	36	35	3.0	27	24	24	190	WH12SRKDSOMD	400	400
	14	G 1/2 A	10	11.0	26.9	32	30.5	22.5	21.5	15	45	40	4.5	32	30	27	320	WH14SRKDSOMD	400	400
	16	G 1/2 A	12	11.0	26.9	32	30.5	22.0	21.5	14	45	40	4.5	32	30	30	324	WH16SRKDSOMD	315	315
	20	G 3/4 A	16	17.0	32.9	41	37.0	26.5	24.0	16	53	48	3.5	41	36	36	588	WH20SRKDSOMD	315	315
	25	G 1 A	20	21.0	39.9	46	43.5	31.5	30.5	18	66	56	3.5	50	46	46	1073	WH25SRKDSOMD	250	250
	30	G 1 1/4 A	25	27.0	49.9	57	50.5	37.0	35.5	20	76	64	3.5	60	55	50	1559	WH30SRKDSOMD	160	160
	38	G 1 1/2 A	32	34.0	55.9	64	57.5	41.5	40.5	22	87	72	3.5	70	60	60	2296	WH38SRKDSOMD	160	160

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{PN(\text{bar})}{10} = PN(\text{MPa})$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

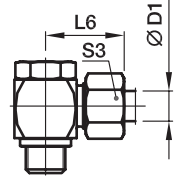
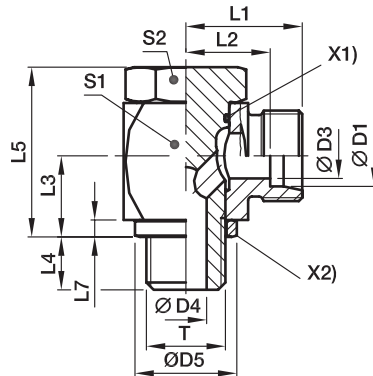
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	WH16SRKDSOMDCF	NBR
Stainless Steel	71	WH16SRKDOMD71	VIT/PTFE

Stainless Steel only with sealing ring KD available!  
 Replace KDS by KD in the order code.

## WH-R High pressure banjo elbow

EO 24° cone end / Male BSPP thread with metal sealing ring



X1) O-ring OR  
X2) Sealing ring DKA

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
																		CF	71	MS
L <sup>3)</sup>	06	G 1/8 A	4	4.5	14	19.0	12.0	10.5	8	24	27	2.5	17	17	14	53	WH06LROMD	250	250	160
	08	G 1/4 A	6	6.0	18	21.5	14.5	14.0	12	30	29	3.0	22	19	17	101	WH08LROMD	250	250	160
	10	G 1/4 A	8	6.0	18	22.5	15.5	14.0	12	30	30	3.0	22	19	19	102	WH10LROMD	250	250	160
	12	G 3/8 A	10	7.5	22	25.0	18.0	16.5	12	36	33	3.0	27	24	22	181	WH12LROMD	250	250	160
	15	G 1/2 A	12	11.0	26	28.5	21.5	21.5	14	45	37	4.5	32	30	27	311	WH15LROMD	250	250	160
	18	G 1/2 A	15	11.0	26	28.5	21.0	21.5	14	45	37	4.5	32	30	32	319	WH18LROMD	250	250	160
	22	G 3/4 A	19	17.0	32	35.0	27.5	24.0	16	53	44	3.5	41	36	36	577	WH22LROMD	160	160	
	28	G 1 A	24	21.0	39	39.5	32.0	30.5	18	66	49	3.5	50	46	41	1034	WH28LROMD	160	160	
	35	G 1 1/4 A	30	27.0	57	46.5	36.0	35.5	20	76	58	3.5	60	55	50	1500	WH35LROMD	160	160	
	42	G 1 1/2 A	36	34.0	55	51.5	40.5	40.5	22	87	63	3.5	70	60	60	2195	WH42LROMD	160	160	
S <sup>4)</sup>	06	G 1/4 A	4	6.0	18	23.5	16.5	14.0	12	30	31	3.0	22	19	17	107	WH06SROMD	315	315	200
	08	G 1/4 A	5	6.0	18	23.5	16.5	14.0	12	30	31	3.0	22	19	19	107	WH08SROMD	315	315	200
	10	G 3/8 A	7	7.5	22	26.0	18.5	16.5	12	36	35	3.0	27	24	22	188	WH10SROMD	315	315	200
	12	G 3/8 A	8	7.5	22	26.0	18.5	16.5	12	36	35	3.0	27	24	24	190	WH12SROMD	315	315	200
	14	G 1/2 A	10	11.0	26	30.5	22.5	21.5	14	45	40	4.5	32	30	27	320	WH14SROMD	315	315	
	16	G 1/2 A	12	11.0	26	30.5	22.0	21.5	14	45	40	4.5	32	30	30	317	WH16SROMD	315	315	
	20	G 3/4 A	16	17.0	32	37.0	26.5	24.0	16	53	48	3.5	41	36	36	587	WH20SROMD	160	160	
	25	G 1 A	20	21.0	39	43.5	31.5	30.5	18	66	56	3.5	50	46	46	1072	WH25SROMD	160	160	
	30	G 1 1/4 A	25	27.0	49	50.5	37.0	35.5	20	76	64	3.5	60	55	50	1560	WH30SROMD	160	160	
	38	G 1 1/2 A	32	34.0	55	57.5	41.5	40.5	22	87	72	3.5	70	60	60	2295	WH38SROMD	160	160	

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

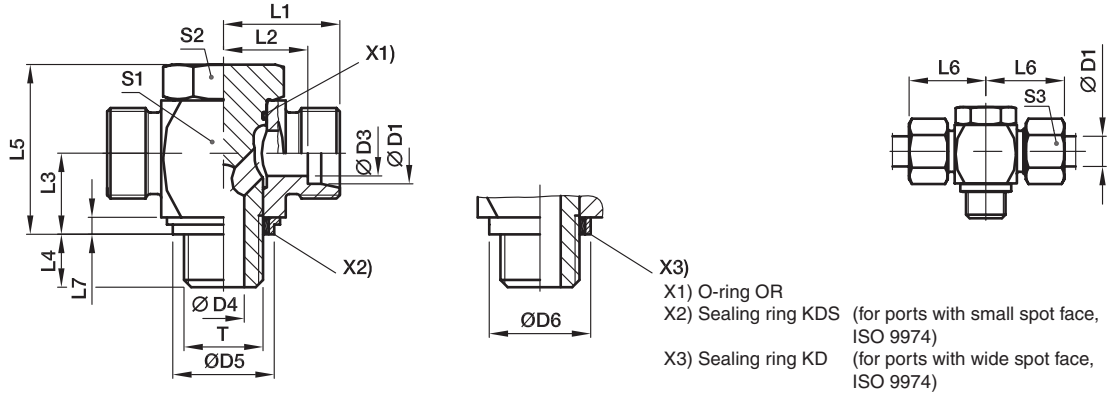
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	WH16SROMDCF	NBR
Stainless Steel	71	WH16SROMD71	VIT
Brass	MS	WH18LROMDMS	NBR

## TH-M-KDS High pressure banjo tee

EO 24° cone end / Male metric thread with soft seal ring



Series	D1	T	D3	D4	D5 KDS	D6 KD	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																			CF	71
L <sup>3)</sup>	06	M 10×1.0	4	4.5	14.9	17.0	19.0	12.0	10.5	8	24.0	27	2.5	17	17	14	59	TH06LMKDSOMD	315	315
	08	M 12×1.5	6	6.0	17.0	22.0	21.5	14.5	14.0	12	30.0	29	3.0	22	19	17	104	TH08LMKDSOMD	315	315
	10	M 14×1.5	8	6.0	18.9	22.5	22.5	15.5	14.0	12	30.0	30	3.0	22	19	19	112	TH10LMKDSOMD	315	315
	12	M 16×1.5	10	7.5	21.9	27.0	25.0	18.0	16.5	12	36.0	33	3.0	27	24	22	192	TH12LMKDSOMD	315	315
	15	M 18×1.5	11	9.0	23.9	29.0	27.5	21.5	18.5	12	39.5	37	3.0	30	27	27	258	TH15LMKDSOMD	315	315
	18	M 22×1.5	15	12.0	26.9	32.0	28.5	21.0	21.5	14	45.0	37	4.5	32	30	32	337	TH18LMKDSOMD	315	315
	22	M 26×1.5	19	17.0	31.9	41.0	35.0	27.5	24.0	16	53.0	44	3.5	41	36	36	589	TH22LMKDSOMD	160	160
	28	M 33×2.0	24	21.0	39.9	46.0	39.5	32.0	30.5	18	66.0	49	3.5	50	46	41	1072	TH28LMKDSOMD	160	160
	35	M 42×2.0	30	27.0	49.9	57.0	46.5	36.0	35.5	20	76.0	58	3.5	60	55	50	1778	TH35LMKDSOMD	160	160
	42	M 48×2.0	36	34.0	55.9	64.0	51.5	40.5	40.5	22	87.0	63	3.5	70	60	60	2566	TH42LMKDSOMD	160	160
S <sup>4)</sup>	06	M 12×1.5	4	6.0	17.0	22.0	23.5	16.5	14.0	12	30.0	31	3.0	22	19	17	112	TH06SMKDSOMD	400	400
	08	M 14×1.5	5	6.0	18.9	22.5	23.5	16.5	14.0	12	30.0	31	3.0	22	19	19	123	TH08SMKDSOMD	400	400
	10	M 16×1.5	7	7.5	21.9	27.0	26.0	18.5	16.5	12	36.0	35	3.0	27	24	22	200	TH10SMKDSOMD	400	400
	12	M 18×1.5	8	9.0	23.9	29.0	27.5	20.0	18.5	12	39.5	36	3.0	27	27	24	261	TH12SMKDSOMD	400	400
	14	M 20×1.5	10	10.0		32.0	30.5	22.5	20.0	14	43.5	40	3.0	32	30	27	334	TH14SMKDSOMD		400
	16	M 22×1.5	12	12.0	26.9	32.0	30.5	22.0	21.5	14	45.0	40	4.5	32	30	30	351	TH16SMKDSOMD	315	315
	20	M 27×2.0	16	16.0	32.9	41.0	37.0	26.5	24.0	16	53.0	48	3.5	41	36	36	629	TH20SMKDSOMD	315	315
	25	M 33×2.0	20	21.0	39.9	46.0	43.5	31.5	30.5	18	66.0	56	3.5	50	46	46	1106	TH25SMKDSOMD	250	250
	30	M 42×2.0	25	27.0	49.9	57.0	50.5	37.0	35.5	20	76.0	64	3.5	60	55	50	1843	TH30SMKDSOMD	160	160
	38	M 48×2.0	32	34.0	55.9	64.0	57.5	41.5	40.5	22	87.0	72	3.5	70	60	60	2744	TH38SMKDSOMD	160	160

1) Pressure shown = item deliverable

3) L = light series; 4) S = heavy series

$$\frac{PN(\text{bar})}{10} = PN(\text{MPa})$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

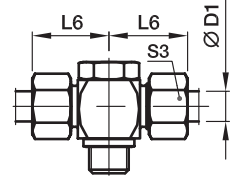
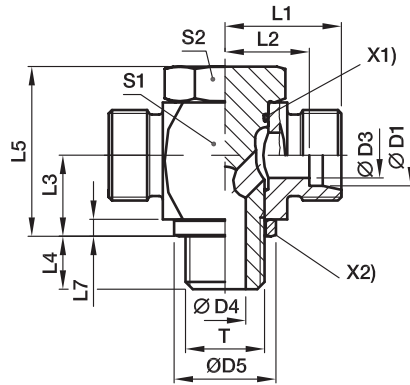
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	TH16SMKDSOMDCF	NBR
Stainless Steel	71	TH16SMKDSOMD71	VIT/PTFE

Stainless Steel only with sealing ring KD available!  
Replace KDS by KD in the order code.

## TH-M High pressure banjo tee

EO 24° cone end / Male metric thread with metal sealing ring



X1) O-ring OR  
X2) Sealing ring DKA

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																		CF	71
L <sup>3)</sup>	06	M 10×1.0	4	4.5	14	19.0	12.0	10.5	8	24.0	27	2.5	17	17	14	58	TH06LMOMD	250	250
	08	M 12×1.5	6	6.0	17	21.5	14.5	14.0	12	30.0	29	3.0	22	19	17	104	TH08LMOMD	250	250
	10	M 14×1.5	8	6.0	19	22.5	15.5	14.0	12	30.0	30	3.0	22	19	19	112	TH10LMOMD	250	250
	12	M 16×1.5	10	7.5	21	25.0	18.0	16.5	12	36.0	33	3.0	27	24	22	191	TH12LMOMD	250	250
	15	M 18×1.5	11	9.0	23	27.5	21.5	18.5	12	39.5	37	3.0	30	27	27	258	TH15LMOMD	250	250
	18	M 22×1.5	15	12.0	27	28.5	21.0	21.5	14	45.0	37	4.5	32	30	32	337	TH18LMOMD	250	250
	22	M 26×1.5	19	17.0	31	35.0	27.5	24.0	16	53.0	44	3.5	41	36	36	590	TH22LMOMD	160	160
	28	M 33×2.0	24	21.0	39	39.5	32.0	30.5	18	66.0	49	3.5	50	46	41	1072	TH28LMOMD	160	160
	35	M 42×2.0	30	27.0	49	46.5	36.0	35.5	20	76.0	58	3.5	60	55	50	1778	TH35LMOMD	160	160
	42	M 48×2.0	36	34.0	55	51.5	40.5	40.5	22	87.0	63	3.5	70	60	60	2565	TH42LMOMD	160	160
S <sup>4)</sup>	06	M 12×1.5	4	6.0	17	23.5	16.5	14.0	12	30.0	31	3.0	22	19	17	112	TH06SMOMD	315	315
	08	M 14×1.5	5	6.0	19	23.5	16.5	14.0	12	30.0	31	3.0	22	19	19	124	TH08SMOMD	315	315
	10	M 16×1.5	7	7.5	21	26.0	18.5	16.5	12	36.0	35	3.0	27	24	22	200	TH10SMOMD	315	315
	12	M 18×1.5	8	9.0	23	27.5	20.0	18.5	12	39.5	36	3.0	27	27	24	261	TH12SMOMD	315	315
	14	M 20×1.5	10	10.0	25	30.5	22.5	20.0	14	43.5	40	3.0	32	30	27	334	TH14SMOMD	315	315
	16	M 22×1.5	12	12.0	27	30.5	22.0	21.5	14	45.0	40	4.5	32	30	30	350	TH16SMOMD	315	315
	20	M 27×2.0	16	16.0	32	37.0	26.5	24.0	16	53.0	48	3.5	41	36	36	628	TH20SMOMD	160	160
	25	M 33×2.0	20	21.0	39	43.5	31.5	30.5	18	66.0	56	3.5	50	46	46	1106	TH25SMOMD	160	160
	30	M 42×2.0	25	27.0	49	50.5	37.0	35.5	20	76.0	64	3.5	60	55	50	1843	TH30SMOMD	160	160
	38	M 48×2.0	32	34.0	55	57.5	41.5	40.5	22	87.0	72	3.5	70	60	60	2741	TH38SMOMD	160	160

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

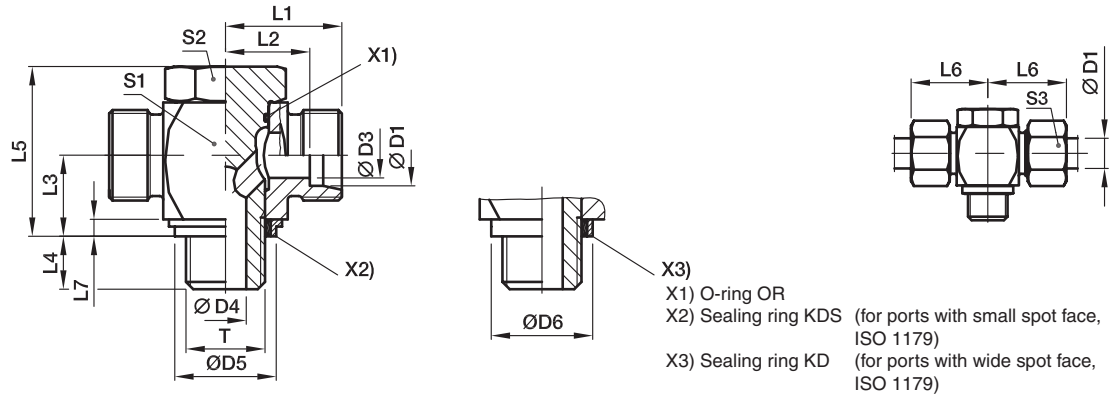
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	TH16SMOMDCF	NBR
Stainless Steel	71	TH16SMOMD71	VIT



## TH-R-KDS High pressure banjo tee

EO 24° cone end / Male BSPP thread with soft seal ring



Series	D1	T	D3	D4	D5 KDS	D6 KD	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																			CF	71
L <sup>3)</sup>	06	G 1/8 A	4	4.5	14.9	17	19.0	12.0	10.5	8	24	27	2.5	17	17	14	58	TH06LRKDSOMD	315	315
	08	G 1/4 A	6	6.0	18.9	22	21.5	14.5	14.0	12	30	29	3.0	22	19	17	108	TH08LRKDSOMD	315	315
	10	G 1/4 A	8	6.0	18.9	22	22.5	15.5	14.0	12	30	30	3.0	22	19	19	110	TH10LRKDSOMD	315	315
	12	G 3/8 A	10	7.5	21.9	27	25.0	18.0	16.5	12	36	33	3.0	27	24	22	193	TH12LRKDSOMD	315	315
	15	G 1/2 A	12	11.0	26.9	32	28.5	21.5	21.5	14	45	37	4.5	32	30	27	321	TH15LRKDSOMD	315	315
	18	G 1/2 A	15	11.0	26.9	32	28.5	21.0	21.5	14	45	37	4.5	32	30	32	329	TH18LRKDSOMD	315	315
	22	G 3/4 A	19	17.0	32.9	41	35.0	27.5	24.0	16	53	44	3.5	41	36	36	585	TH22LRKDSOMD	160	160
	28	G 1 A	24	21.0	39.9	46	39.5	32.0	30.5	18	66	49	3.5	50	46	41	1090	TH28LRKDSOMD	160	160
	35	G 1 1/4 A	30	27.0	49.9	57	46.5	36.0	35.5	20	76	58	3.5	60	55	50	1765	TH35LRKDSOMD	160	160
	42	G 1 1/2 A	36	34.0	55.9	64	51.5	40.5	40.5	22	87	63	3.5	70	60	60	2545	TH42LRKDSOMD	160	160
S <sup>4)</sup>	06	G 1/4 A	4	6.0	18.9	22	23.5	16.5	14.0	12	30	31	3.0	22	19	17	116	TH06SRKDSOMD	400	400
	08	G 1/4 A	5	6.0	18.9	22	23.5	16.5	14.0	12	30	31	3.0	22	19	19	121	TH08SRKDSOMD	400	400
	10	G 3/8 A	7	7.5	21.9	27	26.0	18.5	16.5	12	36	35	3.0	27	24	22	201	TH10SRKDSOMD	400	400
	12	G 3/8 A	8	7.5	21.9	27	26.0	18.5	16.5	12	36	35	3.0	27	24	24	207	TH12SRKDSOMD	400	400
	14	G 1/2 A	10	11.0	26.9	32	30.5	22.5	21.5	15	45	40	4.5	32	30	27	338	TH14SRKDSOMD	400	400
	16	G 1/2 A	12	11.0	26.9	32	30.5	22.0	21.5	14	45	40	4.5	32	30	30	350	TH16SRKDSOMD	315	315
	20	G 3/4 A	16	17.0	32.9	41	37.0	26.5	24.0	16	53	48	3.5	41	36	36	620	TH20SRKDSOMD	315	315
	25	G 1 A	20	21.0	39.9	46	43.5	31.5	30.5	18	66	56	3.5	50	46	46	1124	TH25SRKDSOMD	250	250
	30	G 1 1/4 A	25	27.0	49.9	57	50.5	37.0	35.5	20	76	64	3.5	60	55	50	1830	TH30SRKDSOMD	160	160
	38	G 1 1/2 A	32	34.0	55.9	64	57.5	41.5	40.5	22	87	72	3.5	70	60	60	2721	TH38SRKDSOMD	160	160

1) Pressure shown = item deliverable

3) L = light series; 4) S = heavy series

$$\frac{PN(\text{bar})}{10} = PN(\text{MPa})$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

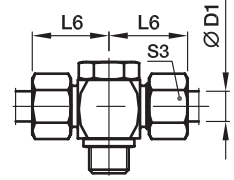
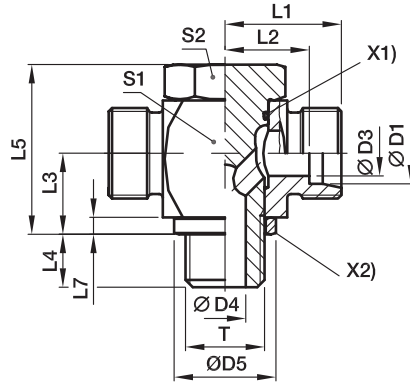
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	TH16SRKDSOMDCF	NBR
Stainless Steel	71	TH16SRKDOMD71	VIT/PTFE

Stainless Steel only with sealing ring KD available!  
Replace KDS by KD in the order code.

## TH-R High pressure banjo tee

EO 24° cone end / Male BSPP thread with metal sealing ring



X1) O-ring OR  
X2) Sealing ring DKA

Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																		CF	71
L <sup>3)</sup>	06	G 1/8 A	4	4.5	14	19.0	12.0	10.5	8	24	27	2.5	17	17	14	58	<b>TH06LROMD</b>	250	250
	08	G 1/4 A	6	6.0	18	21.5	14.5	14.0	12	30	29	3.0	22	19	17	108	<b>TH08LROMD</b>	250	250
	10	G 1/4 A	8	6.0	18	22.5	15.5	14.0	12	30	30	3.0	22	19	19	110	<b>TH10LROMD</b>	250	250
	12	G 3/8 A	10	7.5	22	25.0	18.0	16.5	12	36	33	3.0	27	24	22	193	<b>TH12LROMD</b>	250	250
	15	G 1/2 A	12	11.0	26	28.5	21.5	21.5	14	45	37	4.5	32	30	27	321	<b>TH15LROMD</b>	250	250
	18	G 1/2 A	15	11.0	26	28.5	21.0	21.5	14	45	37	4.5	32	30	32	329	<b>TH18LROMD</b>	250	250
	22	G 3/4 A	19	17.0	32	35.0	27.5	24.0	16	53	44	3.5	41	36	36	584	<b>TH22LROMD</b>	160	160
	28	G 1 A	24	21.0	39	39.5	32.0	30.5	18	66	49	3.5	50	46	41	1090	<b>TH28LROMD</b>	160	160
	35	G 1 1/4 A	30	27.0	57	46.5	36.0	35.5	20	76	58	3.5	60	55	50	1766	<b>TH35LROMD</b>	160	160
	42	G 1 1/2 A	36	34.0	55	51.5	40.5	40.5	22	87	63	3.5	70	60	60	2544	<b>TH42LROMD</b>	160	160
S <sup>4)</sup>	06	G 1/4 A	4	6.0	18	23.5	16.5	14.0	12	30	31	3.0	22	19	17	116	<b>TH06SROMD</b>	315	315
	08	G 1/4 A	5	6.0	18	23.5	16.5	14.0	12	30	31	3.0	22	19	19	121	<b>TH08SROMD</b>	315	315
	10	G 3/8 A	7	7.5	22	26.0	18.5	16.5	12	36	35	3.0	27	24	22	201	<b>TH10SROMD</b>	315	315
	12	G 3/8 A	8	7.5	22	26.0	18.5	16.5	12	36	35	3.0	27	24	24	207	<b>TH12SROMD</b>	315	315
	14	G 1/2 A	10	11.0	26	30.5	22.5	21.5	14	45	40	4.5	32	30	27	343	<b>TH14SROMD</b>	315	315
	16	G 1/2 A	12	11.0	26	30.5	22.0	21.5	14	45	40	4.5	32	30	30	350	<b>TH16SROMD</b>	315	315
	20	G 3/4 A	16	17.0	32	37.0	26.5	24.0	16	53	48	3.5	41	36	36	618	<b>TH20SROMD</b>	160	160
	25	G 1 A	20	21.0	39	43.5	31.5	30.5	18	66	56	3.5	50	46	46	1124	<b>TH25SROMD</b>	160	160
	30	G 1 1/4 A	25	27.0	49	50.5	37.0	35.5	20	76	64	3.5	60	55	50	1831	<b>TH30SROMD</b>	160	160
	38	G 1 1/2 A	32	34.0	55	57.5	41.5	40.5	22	87	72	3.5	70	60	60	2720	<b>TH38SROMD</b>	160	160

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

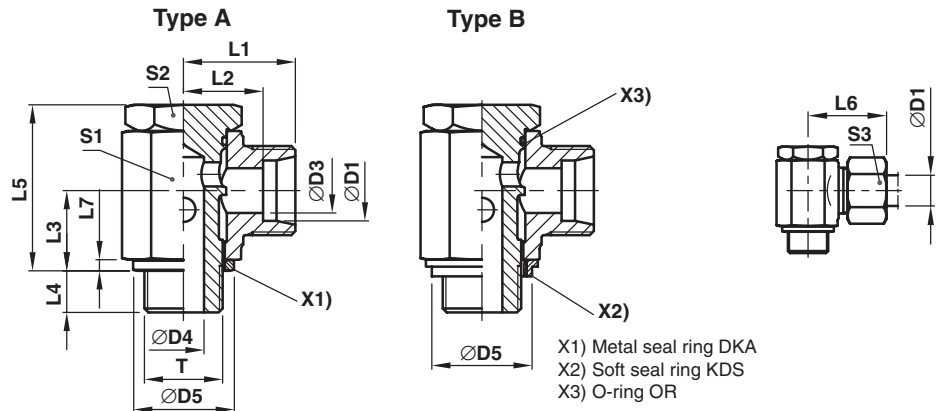
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	TH16SROMDCF	NBR
Stainless Steel	71	TH16SROMD71	VIT

## SWVE Metric male stud banjo elbow

SWVE-M EO 24° cone end / Metric male stud with metal seal ring

SWVE-M-KDS EO 24° cone end / Metric male stud with soft seal ring



Series	D1	T	D3	D4	DKA D5	KDS D5	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Type A Order code* metal sealed	Type B Order code* soft sealed	PN (bar) <sup>1)</sup> CF
LL <sup>2)</sup>	04	M 08×1.0	3.0	3.0	12.5		14.5	10.5	8.0	6	17.0	20	2.5	12	12	10	18	SWVE04LLMOMD	—	63
	06	M 10×1.0	4.5	5.0	14.0	15	15.5	10.0	10.0	6	21.0	22	2.5	14	14	12	29	SWVE06LLMOMD	SWVE06LLMKDSOMD	63
	08	M 10×1.0	6.0	5.0	14.0	15	16.5	11.0	10.0	6	21.0	23	2.5	14	14	14	31	SWVE08LLMOMD	SWVE08LLMKDSOMD	63
L <sup>3)</sup>	06	M 10×1.0	4.5	5.0	14.0	15	15.5	10.5	10.0	6	21.5	25	2.5	14	14	14	31	SWVE06LMOMD	SWVE06LMKDSOMD	160
	08	M 12×1.5	6.0	6.0	17.0	17	19.0	12.0	12.0	9	25.0	27	3.0	17	17	17	51	SWVE08LMOMD	SWVE08LMKDSOMD	160
	10	M 14×1.5	8.0	6.5	19.0	19	21.0	14.0	13.0	9	27.0	29	3.0	19	19	19	68	SWVE10LMOMD	SWVE10LMKDSOMD	160
	12	M 16×1.5	10.0	8.5	21.0	22	22.5	15.5	15.0	9	32.0	30	3.0	22	21	22	100	SWVE12LMOMD	SWVE12LMKDSOMD	100
	15	M 18×1.5	12.0	11.0	23.0	24	24.5	17.5	18.0	9	37.5	33	3.0	24	24	27	138	SWVE15LMOMD	SWVE15LMKDSOMD	100
	18	M 22×1.5	15.0	13.0	27.0	27	28.0	20.5	21.5	11	44.5	37	4.5	30	27	32	241	SWVE18LMOMD	SWVE18LMKDSOMD	100
	22	M 26×1.5	19.0	18.0	31.0	32	33.0	25.5	24.0	13	49.0	42	3.5	36	32	36	351	SWVE22LMOMD	SWVE22LMKDSOMD	100
	28	M 33×2.0	24.0	22.0	39.0	40	39.5	32.0	30.5	14	66.5	49	3.5	50	46	41		SWVE28LMOMD	SWVE28LMKDSOMD	100
	35	M 42×2.0	30.0	29.0	49.0	50	46.5	36.0	35.5	16	76.0	58	3.5	60	55	50		SWVE35LMOMD	SWVE35LMKDSOMD	100
	42	M 48×2.0	36.0	35.0	55.0	56	51.5	40.5	40.5	18	86.0	63	3.5	70	60	60		SWVE42LMOMD	SWVE42LMKDSOMD	100
S <sup>4)</sup>	06	M 12×1.5	4.0	6.0	17.0	17	21.0	14.0	12.0	9	25.0	29	3.0	17	17	17	55	SWVE06SMOMD	SWVE06SMKDSOMD	160
	08	M 14×1.5	5.0	6.5	19.0	19	22.0	15.0	13.0	9	27.0	30	3.0	19	19	19	75	SWVE08SMOMD	SWVE08SMKDSOMD	160
	10	M 16×1.5	7.0	8.5	21.0	22	23.5	16.0	15.0	9	32.0	32	3.0	22	22	22	106	SWVE10SMOMD	SWVE10SMKDSOMD	100
	12	M 18×1.5	8.0	11.0	23.0	24	24.5	17.0	18.0	9	37.0	33	3.0	24	24	24	134	SWVE12SMOMD	SWVE12SMKDSOMD	100
	14	M 20×1.5	10.0	10.0	25.0		28.0	20.0	18.0	11	37.0	38	3.0	27	27	27	179	SWVE14SMOMD	—	100
	16	M 22×1.5	12.0	13.0	27.0	27	30.0	21.5	21.5	11	44.5	40	4.5	30	27	30	252	SWVE16SMOMD	SWVE16SMKDSOMD	100
	20	M 27×2.0	16.0	18.0	32.0	33	35.0	24.5	24.0	13	49.0	46	3.5	36	32	36	363	SWVE20SMOMD	SWVE20SMKDSOMD	100
	25	M 33×2.0	20.0	22.0	39.0	40	43.5	31.5	30.5	14	66.5	56	3.5	50	46	46		SWVE25SMOMD	SWVE25SMKDSOMD	100
	30	M 42×2.0	25.0	29.0	49.0	50	50.5	37.0	35.5	16	76.0	64	3.5	60	55	50		SWVE30SMOMD	SWVE30SMKDSOMD	100
	38	M 48×2.0	32.0	35.0	55.0	56	57.5	41.5	40.5	18	86.0	72	3.5	70	60	60		SWVE38SMOMD	SWVE38SMKDSOMD	100

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

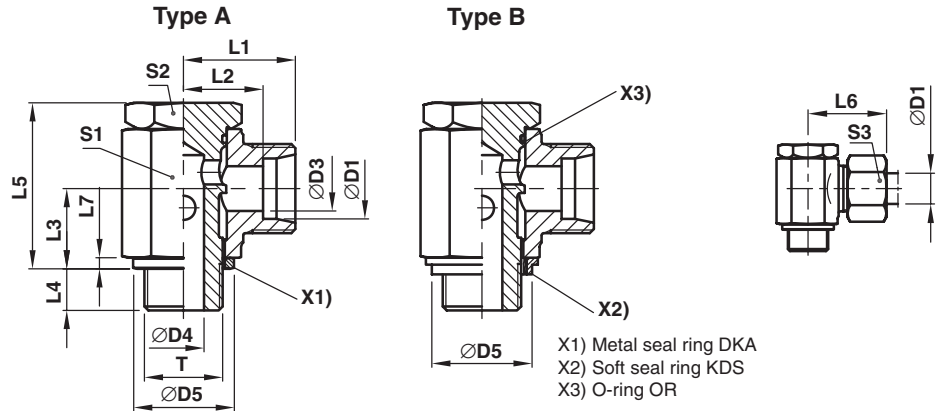
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	SWVE16SMOMDCF	NBR
Steel, zinc plated, Cr(VI)-free	CF	SWVE16SMKDSOMDCF	NBR

## SWVE BSPP male stud banjo elbow

SWVE-R EO 24° cone end / BSPP male stud with metal seal ring

SWVE-R-KDS EO 24° cone end / BSPP male stud with soft seal ring



Series	D1	T	D3	D4	DKA D5	KDS D5	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Type A Order code* metal sealed	Type B Order code* soft sealed	PN (bar) <sup>1)</sup> CF
LL <sup>2)</sup>	04	G 1/8 A	3.0	5.0	14	15	15.5	11.5	10.0	6	21.0	21	2.5	14	14	10	28	SWVE04LLROMD	SWVE04LLRKDSOMD	63
	06	G 1/8 A	4.5	5.0	14	15	15.5	10.0	10.0	6	21.5	22	2.5	14	14	12	28	SWVE06LLROMD	SWVE06LLRKDSOMD	63
	08	G 1/8 A	6.0	5.0	14	15	16.5	11.0	10.0	6	21.0	23	2.5	14	14	14	30	SWVE08LLROMD	SWVE08LLRKDSOMD	63
L <sup>3)</sup>	06	G 1/8 A	4.0	5.0	14	15	17.5	10.5	10.0	6	21.0	25	2.5	14	14	14	31	SWVE06LROMD	SWVE06LRKDSOMD	160
	08	G 1/4 A	6.0	6.5	18	19	20.0	13.0	13.0	9	27.0	28	3.0	19	19	17	65	SWVE08LROMD	SWVE08LRKDSOMD	160
	10	G 1/4 A	8.0	6.5	18	19	21.0	14.0	13.0	9	27.0	29	3.0	19	19	19	66	SWVE10LROMD	SWVE10LRKDSOMD	160
	12	G 3/8 A	10.0	8.5	22	22	22.5	15.5	15.0	9	32.0	30	3.0	22	22	22	102	SWVE12LROMD	SWVE12LRKDSOMD	100
	15	G 1/2 A	12.0	11.0	26	27	26.0	19.0	18.0	11	37.5	34	4.5	27	27	27	171	SWVE15LROMD	SWVE15LRKDSOMD	100
	18	G 1/2 A	15.0	13.0	26	27	28.0	20.5	21.5	11	44.5	37	4.5	30	27	32	249	SWVE18LROMD	SWVE18LRKDSOMD	100
	22	G 3/4 A	19.0	18.0	32	33	33.0	25.5	24.0	13	49.0	42	3.5	36	32	36	349	SWVE22LROMD	SWVE22LRKDSOMD	100
	28	G 1 A	24.0	22.0	39	40	39.5	32.0	30.5	14	66.5	49	3.5	50	46	41		SWVE28LROMD	SWVE28LRKDSOMD	100
	35	G 1 1/4 A	30.0	29.0	49	50	46.5	36.0	35.5	16	76.0	58	3.5	60	55	50		SWVE35LROMD	SWVE35LRKDSOMD	100
	42	G 1 1/2 A	36.0	35.0	55	56	51.5	40.5	40.5	18	86.0	63	3.5	70	60	60		SWVE42LROMD	SWVE42LRKDSOMD	100
S <sup>4)</sup>	06	G 1/4 A	4.0	6.5	18	19	22.0	15.0	13.0	9	27.0	30	3.0	19	19	17	69	SWVE06SROMD	SWVE06SRKDSOMD	160
	08	G 1/4 A	5.0	6.5	18	19	22.0	15.0	13.0	9	27.0	30	3.0	19	19	19	73	SWVE08SROMD	SWVE08SRKDSOMD	160
	10	G 3/8 A	7.0	8.5	22	22	23.5	16.0	15.0	9	32.0	32	3.0	22	22	22	108	SWVE10SROMD	SWVE10SRKDSOMD	100
	12	G 3/8 A	8.0	8.0	22	22	24.5	17.0	18.0	9	37.0	33	3.0	24	24	24	147	SWVE12SROMD	SWVE12SRKDSOMD	100
	14	G 1/2 A	10.0	11.0	26	27	28.0	20.0	18.0	11	37.5	38	4.5	27	27	27	177	SWVE14SROMD	SWVE14SRKDSOMD	100
	16	G 1/2 A	12.0	13.0	26	27	30.0	21.5	21.5	11	44.5	40	4.5	30	27	30	249	SWVE16SROMD	SWVE16SRKDSOMD	100
	20	G 3/4 A	16.0	18.0	32	33	35.0	24.5	24.0	13	49.0	46	3.5	36	32	36	359	SWVE20SROMD	SWVE20SRKDSOMD	100
	25	G 1 A	20.0	22.0	39	40	43.5	31.5	30.5	14	66.5	56	3.5	50	46	46		SWVE25SROMD	SWVE25SRKDSOMD	100
	30	G 1 1/4 A	25.0	29.0	49	50	50.5	37.0	35.5	16	76.0	64	3.5	60	55	50		SWVE30SROMD	SWVE30SRKDSOMD	100
	38	G 1 1/2 A	32.0	35.0	55	56	57.5	41.5	40.5	18	86.0	72	3.5	70	60	60		SWVE38SROMD	SWVE38SRKDSOMD	100

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

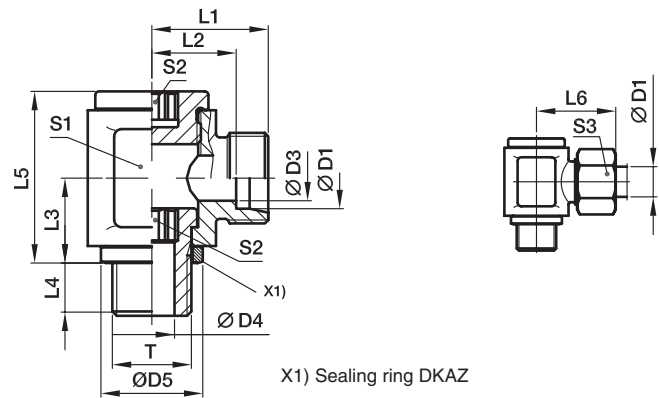
Delivery without nut and ring. Information on ordering complete fittings see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	SWVE16SROMDCF	NBR
Steel, zinc plated, Cr(VI)-free	CF	SWVE16SRKDSOMDCF	NBR

## DSVW-M Low pressure banjo elbow

EO 24° cone end / Male metric thread



Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup> 71
L <sup>3)</sup>	06	M 10×1.0	4	4.0	14	19.5	12.5	12	8	24	27	18	6	14	51	DSVW06LMOMD	160
	08	M 12×1.5	6	5.5	17	21.5	14.5	15	12	30	29	22	6	17	86	DSVW08LMOMD	160
	10	M 14×1.5	8	7.0	19	22.5	15.5	16	12	30	30	22	8	19	87	DSVW10LMOMD	100
	12	M 16×1.5	10	8.0	21	25.0	18.0	18	12	37	33	27	10	22	145	DSVW12LMOMD	100
	15	M 18×1.5	12	10.0	23	28.0	21.0	20	12	40	36	30	12	27	197	DSVW15LMOMD	100
	18	M 22×1.5	15	14.0	27	29.0	21.5	23	14	46	38	36	14	32	264	DSVW18LMOMD	100
	22	M 26×1.5	19	17.5	31	33.5	26.0	25	16	51	42	41	17	36	379	DSVW22LMOMD	100
	28	M 33×2.0	24	22.0	39	39.0	31.5	32	18	64	48	50	22	41	682	DSVW28LMOMD	100
	35	M 42×2.0	30	27.5	49	46.0	35.5	37	20	76	57	60	27	50	1146	DSVW35LMOMD	63
	42	M 48×2.0	36	32.5	55	51.0	40.0	42	22	85	63	70	32	60	1706	DSVW42LMOMD	63
S <sup>4)</sup>	06	M 12×1.5	4	5.5	17	23.5	16.5	15	12	30	31	22	6	17	90	DSVW06SMOMD	160
	08	M 14×1.5	5	7.0	19	23.5	16.5	16	12	30	31	22	8	19	90	DSVW08SMOMD	160
	10	M 16×1.5	7	8.0	21	26.0	18.5	18	12	37	35	27	10	22	154	DSVW10SMOMD	100
	12	M 18×1.5	8	10.0	23	28.0	20.5	20	12	41	37	30	12	24	199	DSVW12SMOMD	100
	14	M 20×1.5	10	12.0	25	31.0	23.0	21	14	42	41	32	12	27	239	DSVW14SMOMD	100
	16	M 22×1.5	12	14.0	27	31.0	22.5	23	14	46	41	36	14	30	268	DSVW16SMOMD	100
	20	M 27×2.0	16	17.5	32	38.0	27.5	28	16	58	49	46	17	36	532	DSVW20SMOMD	100
	25	M 33×2.0	20	22.0	39	43.0	31.0	32	18	64	55	50	22	46	728	DSVW25SMOMD	100
	30	M 42×2.0	25	27.5	49	50.0	36.5	37	20	76	63	60	27	50	1222	DSVW30SMOMD	63
	38	M 48×2.0	32	32.5	55	56.0	41.0	42	22	85	72	70	32	60	1820	DSVW38SMOMD	63

1) Pressure shown = item deliverable

3) L = light series; 4) S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

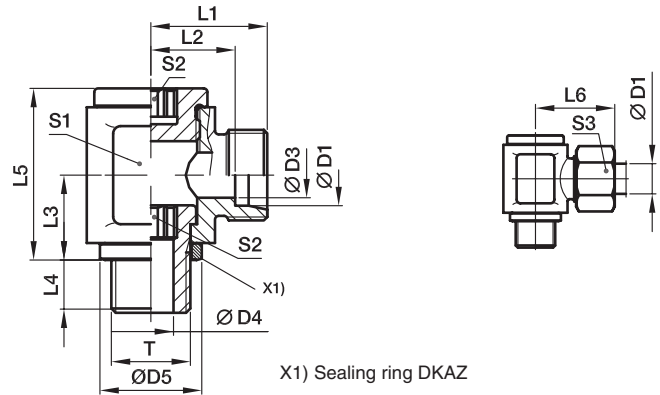
Delivery without nut and ring. Information on ordering complete fittings see page 17.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	DSVW16SMOMDCF

\*Please add the **suffixes** below according to the material/surface required.

## DSVW-R Low pressure banjo elbow

EO 24° cone end / Male BSPP thread



Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup> CF
L <sup>3)</sup>	06	G 1/8 A	4	4.0	14	19.5	12.5	12	8	24	27	18	6	14	51	DSVW06LROMD	160
	08	G 1/4 A	6	6.0	18	21.5	14.5	16	12	30	29	22	8	17	85	DSVW08LROMD	160
	10	G 1/4 A	8	6.0	18	22.5	15.5	16	12	30	30	22	8	19	88	DSVW10LROMD	100
	12	G 3/8 A	10	8.5	22	25.0	18.0	18	12	37	33	27	10	22	147	DSVW12LROMD	100
	15	G 1/2 A	12	12.0	26	29.0	22.0	21	14	42	37	32	12	27	228	DSVW15LROMD	100
	18	G 1/2 A	15	12.0	26	29.0	21.5	23	14	46	38	36	12	32	276	DSVW18LROMD	100
	22	G 3/4 A	19	17.5	32	36.0	28.5	28	16	58	45	46	17	36	516	DSVW22LROMD	100
	28	G 1 A	24	22.0	39	39.0	31.5	32	18	64	48	50	22	41	688	DSVW28LROMD	100
	35	G 1 1/4 A	30	27.5	49	46.0	35.5	37	20	76	57	60	27	50	1147	DSVW35LROMD	63
	42	G 1 1/2 A	36	32.5	55	51.5	40.0	42	22	85	63	70	32	60	1696	DSVW42LROMD	63
S <sup>4)</sup>	06	G 1/4 A	4	6.0	18	23.5	16.5	16	12	30	31	22	8	17	89	DSVW06SROMD	160
	08	G 1/4 A	5	6.0	18	23.5	16.5	16	12	30	31	22	8	19	92	DSVW08SROMD	160
	10	G 3/8 A	7	8.5	22	26.0	18.5	18	12	37	35	27	10	22	150	DSVW10SROMD	100
	12	G 3/8 A	8	8.5	22	26.0	18.5	18	12	37	35	27	10	24	156	DSVW12SROMD	100
	14	G 1/2 A	10	12.0	26	31.0	23.0	21	14	42	41	32	12	27	235	DSVW14SROMD	100
	16	G 1/2 A	12	12.0	26	31.0	22.5	23	14	46	41	36	12	30	275	DSVW16SROMD	100
	20	G 3/4 A	16	17.5	32	38.0	27.5	28	16	58	49	46	17	36	530	DSVW20SROMD	100
	25	G 1 A	20	22.0	39	43.0	31.0	32	18	64	55	50	22	46	734	DSVW25SROMD	100
	30	G 1 1/4 A	25	27.5	49	50.0	36.5	37	20	76	63	60	27	50	1224	DSVW30SROMD	63
	38	G 1 1/2 A	32	32.5	55	57.5	41.0	42	22	85	72	70	32	60	1810	DSVW38SROMD	63

1) Pressure shown = item deliverable

3) L = light series; 4) S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

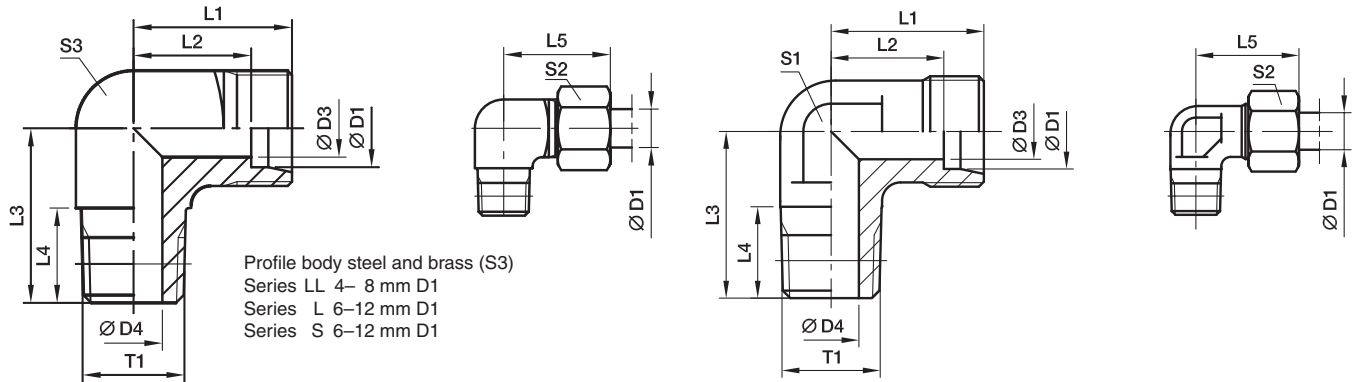
Delivery without nut and ring. Information on ordering complete fittings see page 17.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	DSVW16SROMDCF

\*Please add the **suffixes** below according to the material/surface required.

## WE-NPT Male stud elbow

EO 24° cone end / Male NPT thread (SAE J476)



Series	D1	T1	D3	D4	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
															CF	71	MS
LL <sup>2)</sup>	04	1/8-27 NPT	3.0	4.0	15	11.0	17	10.0	21	9	10	11	18	WE04LL1/8NPT	100		
	06	1/8-27 NPT	4.5	4.5	15	9.5	17	10.0	21	9	12	11	17	WE06LL1/8NPT	100		
	08	1/8-27 NPT	6.0	5.0	17	11.5	20	10.0	23	12	14	12	25	WE08LL1/8NPT	100		
L <sup>3)</sup>	06	1/8-27 NPT	4.0	4.0	19	12.0	20	10.0	27	12	14	12	29	WE06L1/8NPT	315	315	200
	06	1/4-18 NPT	4.0	7.0	21	14.0	26	14.5	29	12	14	14	44	WE06L1/4NPT	315	315	200
	06	3/8-18 NPT	4.0	8.0	25	18.0	28	14.5	33	17	14	19	55	WE06L3/8NPT	315	315	200
	08	1/8-27 NPT	6.0	4.0	21	14.0	26	10.0	29	12	17	14	48	WE08L1/8NPT	315	315	200
	08	1/4-18 NPT	6.0	6.0	21	14.0	26	14.5	29	12	17	14	47	WE08L1/4NPT	315	315	200
	10	1/4-18 NPT	8.0	7.0	22	15.0	27	14.5	30	14	19	17	61	WE10L1/4NPT	315	315	200
	10	3/8-18 NPT	8.0	8.0	24	17.0	28	14.5	32	17	19	19	92	WE10L3/8NPT	315	315	200
	12	1/4-18 NPT	10.0	7.0	24	17.0	28	14.5	32	17	22	19	82	WE12L1/4NPT	315	315	200
	12	3/8-18 NPT	10.0	8.0	24	17.0	28	14.5	32	17	22	19	92	WE12L3/8NPT	315	315	200
	12	1/2-14 NPT	10.0	11.0	28	21.0	34	19.5	36	19	22		90	WE12L1/2NPT	315	315	200
	15	1/2-14 NPT	12.0	11.0	28	21.0	34	19.5	36	19	27		89	WE15L1/2NPT	315	315	200
	18	1/2-14 NPT	15.0	12.0	31	23.5	36	19.5	40	24	32		150	WE18L1/2NPT	315	315	200
	22	3/4-14 NPT	19.0	16.0	35	27.5	42	19.5	44	27	36		176	WE22L3/4NPT	160	160	100
	28	1-11.5 NPT	24.0	21.0	38	30.5	48	24.5	47	36	41		314	WE28L1NPT	160	160	100
	35	1 1/4-11.5 NPT	30.0	28.0	45	34.5	54	25.0	56	41	50		465	WE35L11/4NPT	160	160	100
42	1 1/2-11.5 NPT	36.0	34.0	51	40.0	61	26.0	63	50	60		849	WE42L11/2NPT	160	160	100	
S <sup>4)</sup>	06	1/4-18 NPT	4.0	4.0	23	16.0	26	14.5	31	12	17	14	56	WE06S1/4NPT	630	630	400
	08	1/4-18 NPT	5.0	5.0	24	17.0	27	14.5	32	14	19	17	73	WE08S1/4NPT	630	630	400
	08	3/8-18 NPT	5.0	8.0	25	18.0	28	14.5	33	17	19	19	77	WE08S3/8NPT	630	630	400
	08	1/2-14 NPT	5.0	10.0	30	23.0	34	19.5	38	19	19		75	WE08S1/2NPT	630	630	400
	10	1/4-18 NPT	7.0	5.0	25	17.5	28	14.5	34	17	22	19	96	WE10S1/4NPT	630	630	400
	10	3/8-18 NPT	7.0	7.0	25	17.5	28	14.5	34	17	22	19	98	WE10S3/8NPT	630	630	400
	12	1/4-18 NPT	8.0	5.0	29	21.5	29	14.5	38	17	24	22	73	WE12S1/4NPT	630	630	400
	12	3/8-18 NPT	8.0	8.0	29	22.5	28	14.5	38	17	24	22	123	WE12S3/8NPT	630	630	400
	12	1/2-14 NPT	8.0	10.0	30	22.5	34	19.5	39	19	24		107	WE12S1/2NPT	630	630	400
	14	1/2-14 NPT	10.0	10.0	30	22.0	34	19.5	40	19	27		103	WE14S1/2NPT	630	630	400
	16	1/2-14 NPT	12.0	12.0	33	24.5	36	19.5	43	24	30		157	WE16S1/2NPT	400	400	250
	20	3/4-14 NPT	16.0	16.0	37	26.5	42	19.5	48	27	36		205	WE20S3/4NPT	400	400	250
	25	1-11.5 NPT	20.0	20.0	42	30.0	48	24.5	54	36	46		381	WE25S1NPT	400	400	250
	30	1 1/4-11.5 NPT	25.0	25.0	49	35.5	54	25.0	62	41	50		598	WE30S11/4NPT	400	400	250
	38	1 1/2-11.5 NPT	32.0	32.0	57	41.0	61	26.0	72	50	60		1029	WE38S11/2NPT	315	315	200

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings see page I7.

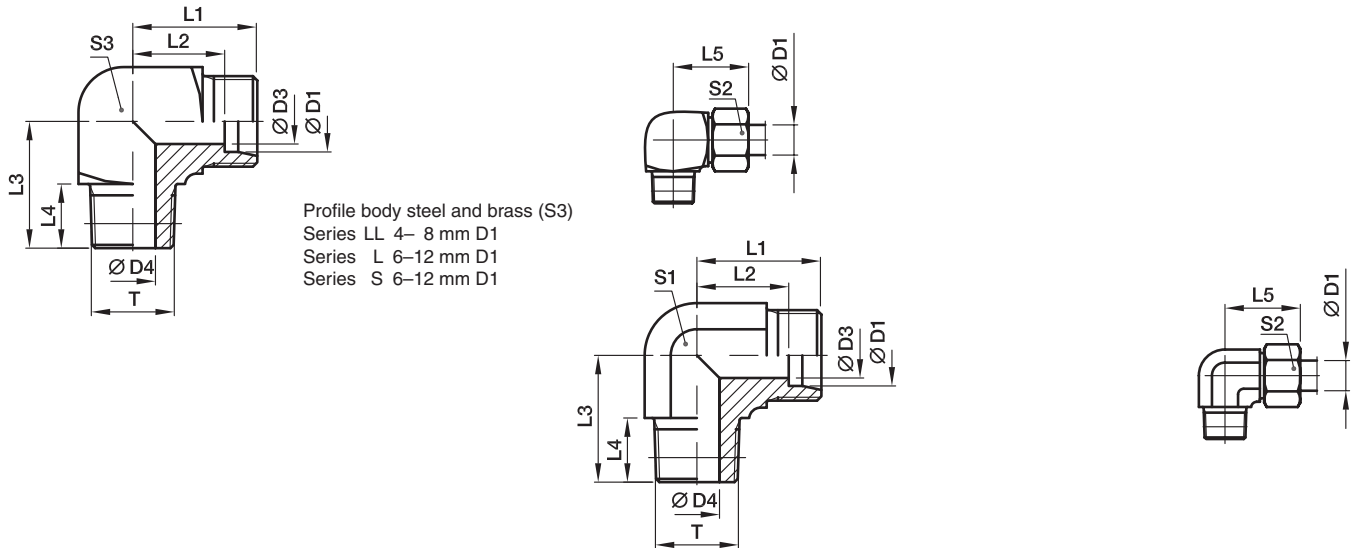
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	WE16S1/2NPTCFX
Stainless Steel	71X	WE16S1/2NPT71X
Brass	MSX	WE16S1/2NPTMSX



## WE-M(KEG) Male stud elbow

EO 24° cone end / Male metric taper thread (DIN 3852-1, type C)



Series	D1	T	D3	D4	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
															CF	71	MS
LL <sup>2)</sup>	04	M 08×1.0 tap.	3.0	3.5	15	11.0	17	8	21	9	10	9	14	<b>WE04LLM</b>	100	100	63
	06	M 10×1.0 tap.	4.5	4.5	15	9.5	17	8	21	9	12	11	17	<b>WE06LLM</b>	100	100	63
	08	M 10×1.0 tap.	6.0	6.0	17	11.5	20	8	23	12	14	12	25	<b>WE08LLM</b>	100	100	63
L <sup>3)</sup>	06	M 10×1.0 tap.	4.0	4.0	19	12.0	20	8	27	12	14	12	29	<b>WE06LM</b>	315	315	200
	08	M 12×1.5 tap.	6.0	6.0	21	14.0	26	12	29	12	17	14	46	<b>WE08LM</b>	315	315	200
	10	M 14×1.5 tap.	8.0	7.0	22	15.0	27	12	30	14	19	17	62	<b>WE10LM</b>	315	315	200
	12	M 16×1.5 tap.	10.0	9.0	24	17.0	28	12	32	17	22	19	89	<b>WE12LM</b>	315	315	200
	15	M 18×1.5 tap.	12.0	11.0	28	21.0	32	12	36	19	27		78	<b>WE15LM</b>	315	315	200
	18	M 22×1.5 tap.	15.0	14.0	31	23.0	36	14	40	24	32		148	<b>WE18LM</b>	315	315	200
S <sup>4)</sup>	06	M 12×1.5 tap.	4.0	4.0	23	16.0	26	12	31	12	17	14	53	<b>WE06SM</b>	400	400	250
	08	M 14×1.5 tap.	5.0	5.0	24	17.0	27	12	32	14	19	17	78	<b>WE08SM</b>	400	400	250
	10	M 16×1.5 tap.	7.0	7.0	25	17.5	28	12	34	17	22	19	102	<b>WE10SM</b>	400	400	250
	12	M 18×1.5 tap.	8.0	8.0	29	21.5	28	12	38	17	24	22	134	<b>WE12SM</b>	400	400	250
	14	M 20×1.5 tap.	10.0	10.0	30	22.0	32	14	40	19	27		99	<b>WE14SM</b>	400	400	
	16	M 22×1.5 tap.	12.0	12.0	33	24.5	32	14	43	24	30		161	<b>WE16SM</b>	400	400	250

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

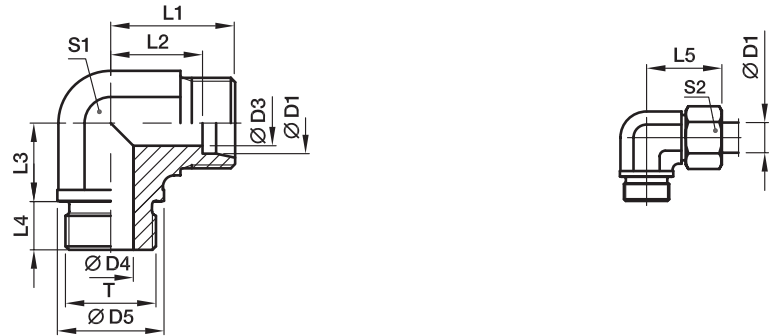
Delivery without nut and ring. Information on ordering complete fittings see page I7.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	WE16SMCFX
Stainless Steel	71X	WE16SM71X
Brass	MSX	WE16SMMSX

\*Please add the **suffixes** below according to the material/surface required.

## WE-M Male stud elbow

EO 24° cone end / Male metric thread – metal sealing edge (ISO 9974)



Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
															CF	71
L <sup>3)</sup>	22	M 26×1.5	19	18	31	35	27.5	26	16	44	27	36	173	<b>WE22LM</b>	160	160
	28	M 33×2.0	24	23	39	38	30.5	30	18	47	36	41	303	<b>WE28LM</b>	160	160
	35	M 42×2.0	30	30	49	45	34.5	34	20	56	41	50	469	<b>WE35LM</b>	160	160
	42	M 48×2.0	36	36	55	51	40.0	39	22	63	50	60	661	<b>WE42LM</b>	160	160
S <sup>4)</sup>	20	M 27×2.0	16	16	32	37	26.5	26	16	48	27	36	208	<b>WE20SM</b>	400	400
	25	M 33×2.0	20	20	39	42	30.0	30	18	54	36	46	396	<b>WE25SM</b>	250	250
	30	M 42×2.0	25	25	49	49	35.5	34	20	62	41	50	632	<b>WE30SM</b>	160	160
	38	M 48×2.0	32	32	55	57	41.0	39	22	72	50	60	907	<b>WE38SM</b>	160	160

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

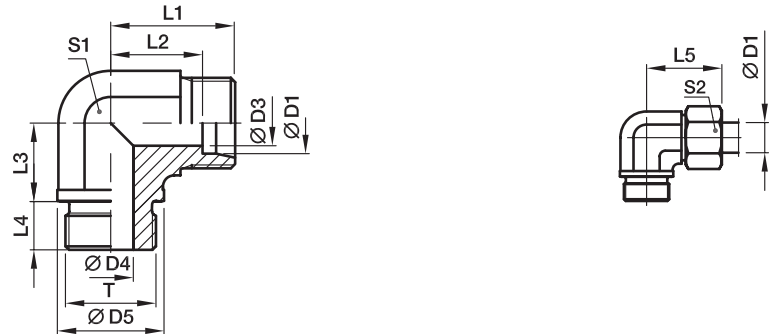
Delivery without nut and ring. Information on ordering complete fittings see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	WE20SMCFX
Stainless Steel	71X	WE20SM71X

**WE-R Male stud elbow**

EO 24° cone end / Male BSPP thread – metal sealing edge (ISO 1179)



Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
															CF	71	MS
L <sup>3)</sup>	22	G 3/4 A	19	18	32	35	27.5	26	16	44	27	36	168	<b>WE22LR</b>	160	160	100
	28	G 1 A	24	23	39	38	30.5	30	18	47	36	41	305	<b>WE28LR</b>	160	160	100
	35	G 1 1/4 A	30	30	49	45	34.5	34	20	56	41	50	465	<b>WE35LR</b>	160	160	100
	42	G 1 1/2 A	36	36	55	51	40.0	39	22	63	50	60	706	<b>WE42LR</b>	160	160	100
S <sup>4)</sup>	20	G 3/4 A	16	16	32	37	26.5	26	16	48	27	36	210	<b>WE20SR</b>	400	400	250
	25	G 1 A	20	20	39	42	30.0	30	18	54	36	46	388	<b>WE25SR</b>	250	250	160
	30	G 1 1/4 A	25	25	49	49	35.5	34	20	62	41	50	630	<b>WE30SR</b>	160	160	100
	38	G 1 1/2 A	32	32	55	57	41.0	39	22	72	50	60	888	<b>WE38SR</b>	160	160	100

1) Pressure shown = item deliverable

3) L = light series; 4) S = heavy series

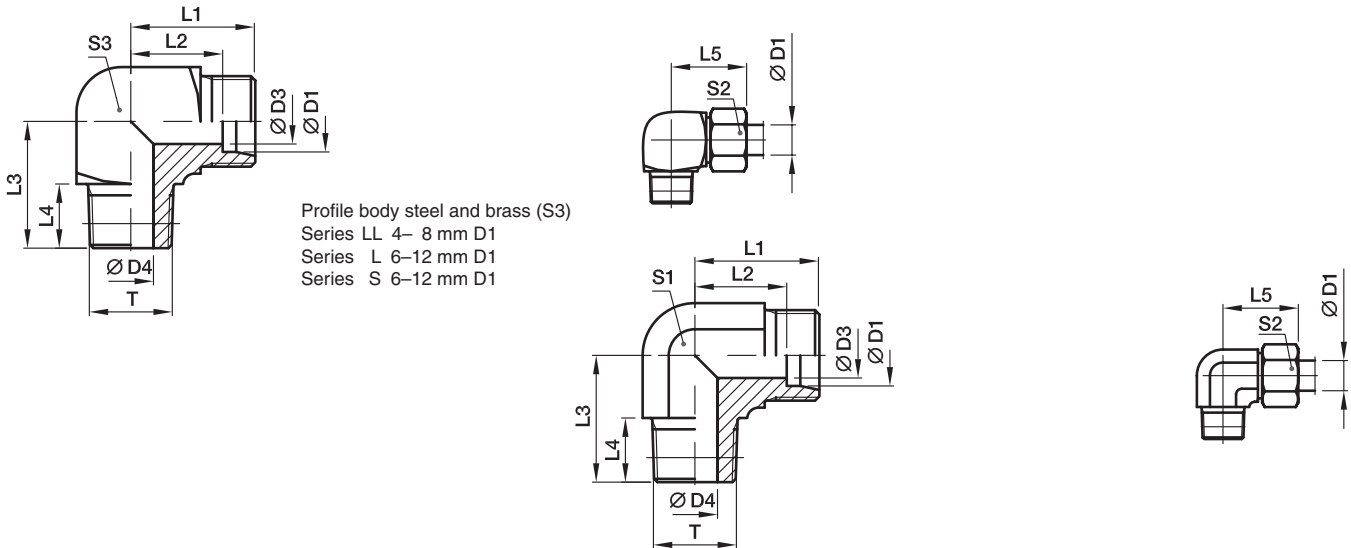
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$
**Delivery without nut and ring. Information on ordering complete fittings see page 17.**

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	WE20SRCFX
Stainless Steel	71X	WE20SR71X
Brass	MSX	WE20SRMSX

 \*Please add the **suffixes** below according to the material/surface required.

## WE-R (KEG) Male stud elbow

EO 24° cone end / Male short BSP taper thread (DIN 3852-2, type C)



Series	D1	T	D3	D4	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
															CF	71	MS
LL <sup>2)</sup>	04	R 1/8 tap.	3.0	4.0	15	11.0	17	8	21	9	10	11	17	WE04LLR	100	100	63
	06	R 1/8 tap.	4.5	4.5	15	9.5	17	8	21	9	12	11	17	WE06LLR	100	100	63
	08	R 1/8 tap.	6.0	6.0	17	11.5	20	8	23	12	14	12	24	WE08LLR	100	100	63
	10	R 1/4 tap.	8.0	7.0	18	12.5	23	12	24	12	17	14	36	WE10LLR	100		
	12	R 1/4 tap.	10.0	7.0	19	13.0	23	12	25	14	19	17	46	WE12LLR	100		
L <sup>3)</sup>	06	R 1/8 tap.	4.0	4.0	19	12.0	20	8	27	12	14	12	30	WE06LR	315	315	200
	06	R 1/4 tap.	4.0	6.0	21	14.0	26	12	29	12	14	14	47	WE06LR1/4	315	315	
	08	R 1/4 tap.	6.0	6.0	21	14.0	26	12	29	12	17	14	46	WE08LR	315	315	200
	08	R 1/8 tap.	6.0	4.0	21	14.0	26	8	29	12	17	14	49	WE08LR1/8	315	315	
	08	R 3/8 tap.	6.0	9.0	24	17.0	28	12	32	17	17	19	94	WE08LR3/8	315	315	
	10	R 1/4 tap.	8.0	7.0	22	15.0	27	12	30	14	19	17	61	WE10LR	315	315	200
	10	R 3/8 tap.	8.0	9.0	24	17.0	28	12	32	17	19	19	87	WE10LR3/8	315	315	
	12	R 3/8 tap.	10.0	9.0	24	17.0	28	12	32	17	22	19	88	WE12LR	315	315	200
	12	R 1/4 tap.	10.0	7.0	24	17.0	27	12	32	17	22	19	80	WE12LR1/4	315	315	
	12	R 1/2 tap.	10.0	11.0	28	21.0	34	14	36	19	22		89	WE12LR1/2	315	315	
	15	R 1/2 tap.	12.0	11.0	28	21.0	34	14	36	19	27		94	WE15LR	315	315	200
	18	R 1/2 tap.	15.0	14.0	31	23.5	36	14	40	24	32		141	WE18LR	315	315	200
S <sup>4)</sup>	06	R 1/4 tap.	4.0	4.0	23	16.0	26	12	31	12	17	14	56	WE06SR	400	400	250
	06	R 3/8 tap.	4.0	7.0	25	18.0	28	12	33	17	17	19	61	WE06SR3/8	400	400	
	08	R 1/4 tap.	5.0	5.0	24	17.0	27	12	32	14	19	17	73	WE08SR	400	400	250
	08	R 3/8 tap.	5.0	7.0	25	18.0	28	12	33	17	19	19	63	WE08SR3/8	400	400	
	10	R 3/8 tap.	7.0	7.0	25	17.5	28	12	34	17	22	19	104	WE10SR	400	400	250
	10	R 1/4 tap.	7.0	5.0	25	17.5	28	12	34	17	22	19	59	WE10SR1/4	400	400	
	10	R 1/2 tap.	7.0	10.0	30	22.5	32	14	39	19	22		98	WE10SR1/2	400	400	
	12	R 3/8 tap.	8.0	8.0	29	21.5	28	12	38	17	24	22	126	WE12SR	400	400	250
	12	R 1/2 tap.	8.0	11.0	30	22.5	32	14	39	19	24		97	WE12SR1/2	400	400	
	14	R 1/2 tap.	10.0	10.0	30	22.0	32	14	40	19	27		101	WE14SR	400	400	250
	16	R 1/2 tap.	12.0	12.0	33	24.5	32	14	43	24	30		150	WE16SR	400	400	250

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

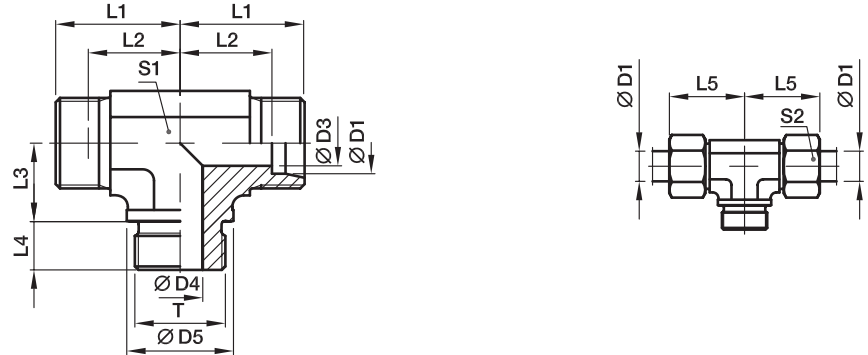
Delivery without nut and ring. Information on ordering complete fittings see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	WE16SRCFX
Stainless Steel	71X	WE16SR71X
Brass	MSX	WE16SRMSX

### TE-M Male stud branch tee

EO 24° cone end / Male metric thread – metal sealing edge (ISO 9974)



Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
															CF	71
L <sup>3)</sup>	22	M 26×1.5	19	18	31	35	27.5	26	16	44	27	36	208	<b>TE22LM</b>	160	160
	28	M 33×2.0	24	23	39	38	30.5	30	18	47	36	41	352	<b>TE28LM</b>	160	160
	35	M 42×2.0	30	30	49	45	34.5	34	20	56	41	50	554	<b>TE35LM</b>	160	160
	42	M 48×2.0	36	36	55	51	40.0	39	22	63	50	60	847	<b>TE42LM</b>	160	160
S <sup>4)</sup>	20	M 27×2.0	16	16	32	37	26.5	26	16	48	27	36	265	<b>TE20SM</b>	400	400
	25	M 33×2.0	20	20	39	42	30.0	30	18	54	36	46	482	<b>TE25SM</b>	250	250
	30	M 42×2.0	25	25	49	49	35.5	34	20	62	41	50	772	<b>TE30SM</b>	160	160
	38	M 48×2.0	32	32	55	57	41.0	39	22	72	50	60	1121	<b>TE38SM</b>	160	160

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

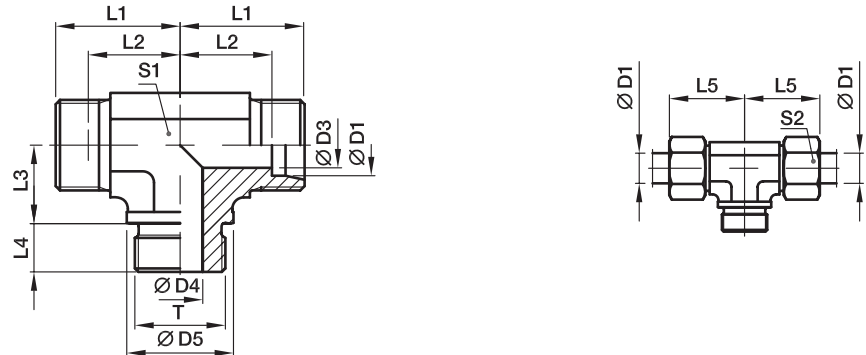
Delivery without nut and ring. Information on ordering complete fittings see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	TE20SMCFX
Stainless Steel	71X	TE20SM71X

## TE-R Male stud branch tee

EO 24° cone end / Male BSPP thread – metal sealing edge (ISO 1179)



Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
															CF	71	MS
L <sup>3)</sup>	22	G 3/4 A	19	18	32	35	27.5	26	16	44	27	36	208	<b>TE22LR</b>	160	160	100
	28	G 1 A	24	23	39	38	30.5	30	18	47	36	41	378	<b>TE28LR</b>	160	160	100
	35	G 1 1/4 A	30	30	49	45	34.5	34	20	56	41	50	554	<b>TE35LR</b>	160	160	100
	42	G 1 1/2 A	36	36	55	51	40.0	39	22	63	50	60	847	<b>TE42LR</b>	160	160	100
S <sup>4)</sup>	20	G 3/4 A	16	16	32	37	26.5	26	16	48	27	36	267	<b>TE20SR</b>	400	400	250
	25	G 1 A	20	20	39	42	30.0	30	18	54	36	46	485	<b>TE25SR</b>	250	250	
	30	G 1 1/4 A	25	25	49	49	35.5	34	20	62	41	50	762	<b>TE30SR</b>	160	160	
	38	G 1 1/2 A	32	32	55	57	41.0	39	22	72	50	60	1121	<b>TE38SR</b>	160	160	

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

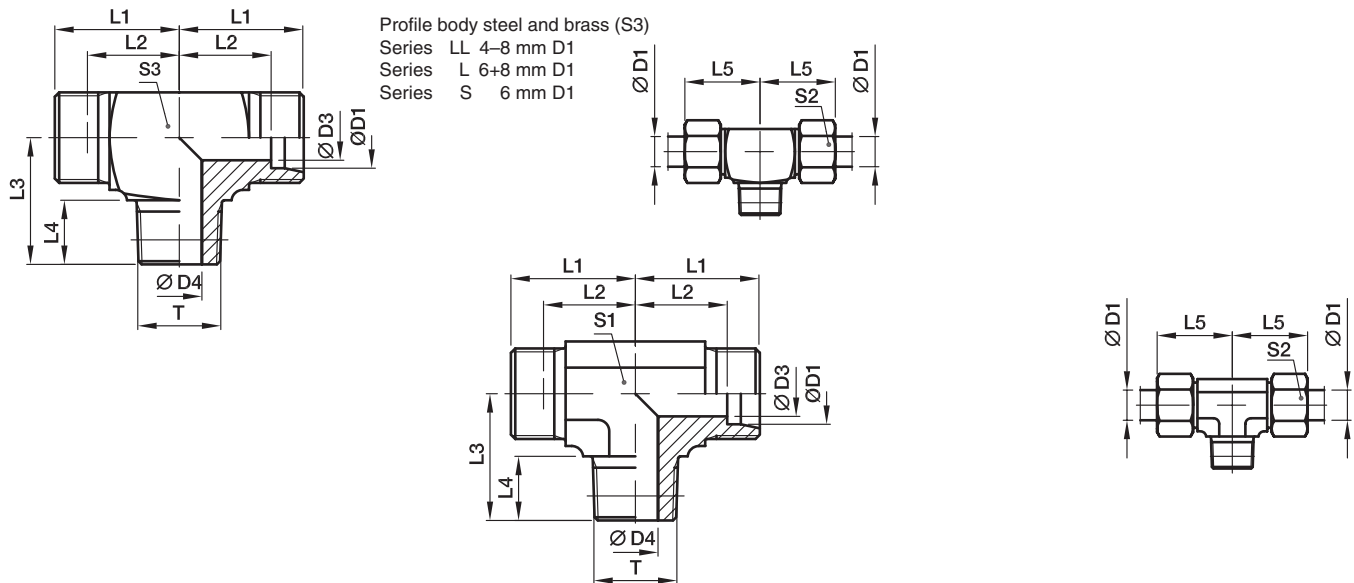
Delivery without nut and ring. Information on ordering complete fittings see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	TE20SRCFX
Stainless Steel	71X	TE20SR71X
Brass	MSX	TE20SRMSX

## TE-R (KEG) Male stud branch tee

EO 24° cone end / Male short BSP taper thread (DIN 3852-2, type C)



Series	D1	T	D3	D4	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
															CF	71	MS
LL <sup>2)</sup>	04	R 1/8 tap.	3.0	4.0	15	11.0	17	8	21	9	10	11	21	<b>TE04LLR</b>	100	100	63
	06	R 1/8 tap.	4.5	4.5	15	9.5	17	8	21	9	12	11	21	<b>TE06LLR</b>	100	100	63
	08	R 1/8 tap.	6.0	6.0	17	11.5	20	8	23	12	14	12	29	<b>TE08LLR</b>	100	100	63
L <sup>3)</sup>	06	R 1/8 tap.	4.0	4.0	19	12.0	20	8	27	12	14	12	38	<b>TE06LR</b>	315	315	200
	08	R 1/4 tap.	6.0	6.0	21	14.0	26	12	29	12	17	14	58	<b>TE08LR</b>	315	315	200
	10	R 1/4 tap.	8.0	7.0	22	15.0	27	12	30	14	19		43	<b>TE10LR</b>	315	315	200
	12	R 3/8 tap.	10.0	9.0	24	17.0	28	12	32	17	22		61	<b>TE12LR</b>	315	315	200
	15	R 1/2 tap.	12.0	11.0	28	21.0	34	14	36	19	27		113	<b>TE15LR</b>	315	315	200
	18	R 1/2 tap.	15.0	14.0	31	23.5	36	14	40	24	32		149	<b>TE18LR</b>	315	315	200
S <sup>4)</sup>	06	R 1/4 tap.	4.0	4.0	23	16.0	26	12	31	12	17	14	73	<b>TE06SR</b>	400	400	250
	08	R 1/4 tap.	5.0	5.0	24	17.0	27	12	32	14	19		61	<b>TE08SR</b>	400	400	250
	10	R 3/8 tap.	7.0	7.0	25	17.5	28	12	34	17	22		82	<b>TE10SR</b>	400	400	250
	12	R 3/8 tap.	8.0	8.0	29	21.5	28	12	38	17	24		105	<b>TE12SR</b>	400	400	250
	14	R 1/2 tap.	10.0	10.0	30	22.0	32	14	40	19	27		134	<b>TE14SR</b>	400	400	250
	16	R 1/2 tap.	12.0	12.0	33	24.5	32	14	43	24	30		175	<b>TE16SR</b>	400	400	250

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings see page 17.

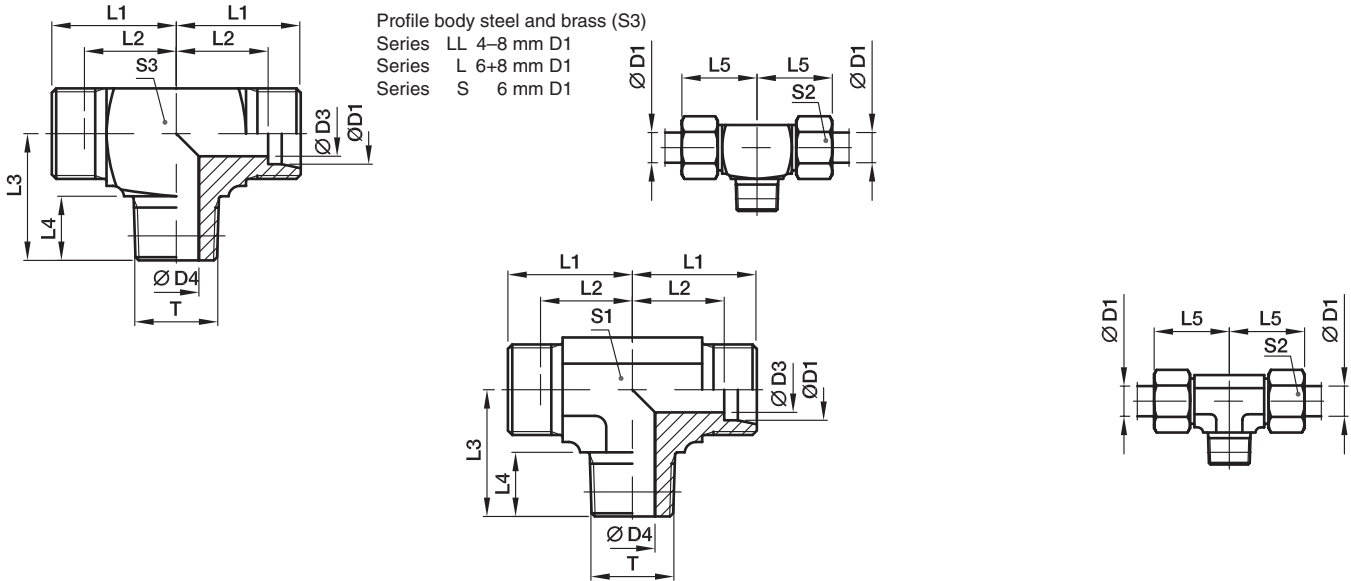
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	TE16SRCFX
Stainless Steel	71X	TE16SR71X
Brass	MSX	TE16SRMSX



## TE-M(KEG) Male stud branch tee

EO 24° cone end / Male short metric taper thread (DIN 3852-1, type C)



Series	D1	T	D3	D4	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
															CF	71
LL <sup>2)</sup>	04	M 08×1.0 tap.	3.0	3.5	15	11.0	17	8	21	9	10	9	17	<b>TE04LLM</b>	100	100
	06	M 10×1.0 tap.	4.5	4.5	15	9.5	17	8	21	9	12	11	20	<b>TE06LLM</b>	100	100
	08	M 10×1.0 tap.	6.0	6.0	17	11.5	20	8	23	12	14	12	29	<b>TE08LLM</b>	100	100
L <sup>3)</sup>	06	M 10×1.0 tap.	4.0	4.0	19	12.0	20	8	27	12	14	12	38	<b>TE06LM</b>	315	315
	08	M 12×1.5 tap.	6.0	6.0	21	14.0	26	12	29	12	17	14	54	<b>TE08LM</b>	315	315
	10	M 14×1.5 tap.	8.0	7.0	22	15.0	27	12	30	14	19		45	<b>TE10LM</b>	315	315
	12	M 16×1.5 tap.	10.0	9.0	24	17.0	28	12	32	17	22		60	<b>TE12LM</b>	315	315
	15	M 18×1.5 tap.	12.0	11.0	28	21.0	32	12	36	19	27		100	<b>TE15LM</b>	315	315
	18	M 22×1.5 tap.	15.0	14.0	31	23.5	36	14	40	24	32		149	<b>TE18LM</b>	315	315
S <sup>4)</sup>	06	M 12×1.5 tap.	4.0	4.0	23	16.0	26	12	31	12	17	14	69	<b>TE06SM</b>	400	400
	08	M 14×1.5 tap.	5.0	5.0	24	17.0	27	12	32	14	19		98	<b>TE08SM</b>	400	400
	10	M 16×1.5 tap.	7.0	7.0	25	17.5	28	12	34	17	22		82	<b>TE10SM</b>	400	400
	12	M 18×1.5 tap.	8.0	8.0	29	21.5	28	12	38	17	24		106	<b>TE12SM</b>	400	400
	14	M 20×1.5 tap.	10.0	10.0	30	22.0	32	14	40	19	27		126	<b>TE14SM</b>	400	400
	16	M 22×1.5 tap.	12.0	12.0	33	24.5	32	14	43	24	30		177	<b>TE16SM</b>	400	400

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

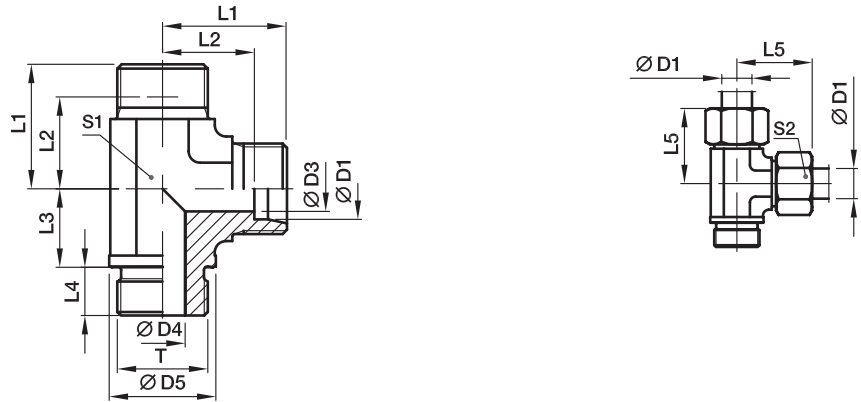
Delivery without nut and ring. Information on ordering complete fittings see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	TE16SMCFX
Stainless Steel	71X	TE16SM71X

## LE-M Male stud run tee

EO 24° cone end / Male metric thread – metal sealing edge (ISO 9974)



Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
															CF	71
L <sup>3)</sup>	22	M 26×1.5	19	18	31	35	27.5	26	16	44	27	36	225	<b>LE22LM</b>	160	160
	28	M 33×2.0	24	23	39	38	30.5	30	18	47	36	41	382	<b>LE28LM</b>	160	160
	35	M 42×2.0	30	30	49	45	34.5	34	20	56	41	50	583	<b>LE35LM</b>	160	160
	42	M 48×2.0	36	36	55	51	40.0	39	22	63	50	60	821	<b>LE42LM</b>	160	160
S <sup>4)</sup>	20	M 27×2.0	16	16	32	37	26.5	26	16	48	27	36	264	<b>LE20SM</b>	400	400
	25	M 33×2.0	20	20	39	42	30.0	30	18	54	36	46	497	<b>LE25SM</b>	250	250
	30	M 42×2.0	25	25	49	49	35.5	34	20	62	41	50	744	<b>LE30SM</b>	160	160
	38	M 48×2.0	32	32	55	57	41.0	39	22	72	50	60	1111	<b>LE38SM</b>	160	160

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

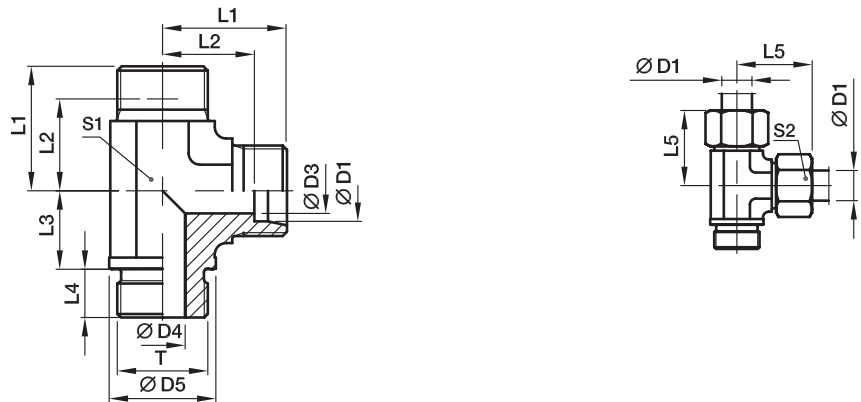
Delivery without nut and ring. Information on ordering complete fittings see page I7.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	LE20SMCFX
Stainless Steel	71X	LE20SM71X

\*Please add the **suffixes** below according to the material/surface required.

## LE-R Male stud run tee

EO 24° cone end / Male BSPP thread – metal sealing edge (ISO 1179)



Series	D1	T	D3	D4	D5	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
															CF	71
L <sup>3)</sup>	22	G 3/4 A	19	18	32	35	27.5	26	16	44	27	36	225	<b>LE22LR</b>	160	160
	28	G 1 A	24	23	39	38	30.5	30	18	47	36	41	358	<b>LE28LR</b>	160	160
	35	G 1 1/4 A	30	30	49	45	34.5	34	20	56	41	50	583	<b>LE35LR</b>	160	160
	42	G 1 1/2 A	36	36	55	51	40.0	39	22	63	50	60	821	<b>LE42LR</b>	160	160
S <sup>4)</sup>	20	G 3/4 A	16	16	32	37	26.5	26	16	48	27	36	259	<b>LE20SR</b>	400	400
	25	G 1 A	20	20	39	42	30.0	30	18	54	36	46	495	<b>LE25SR</b>	250	250
	30	G 1 1/4 A	25	25	49	49	35.5	34	20	62	41	50	744	<b>LE30SR</b>	160	160
	38	G 1 1/2 A	32	32	55	57	41.0	39	22	72	50	60	1111	<b>LE38SR</b>	160	160

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

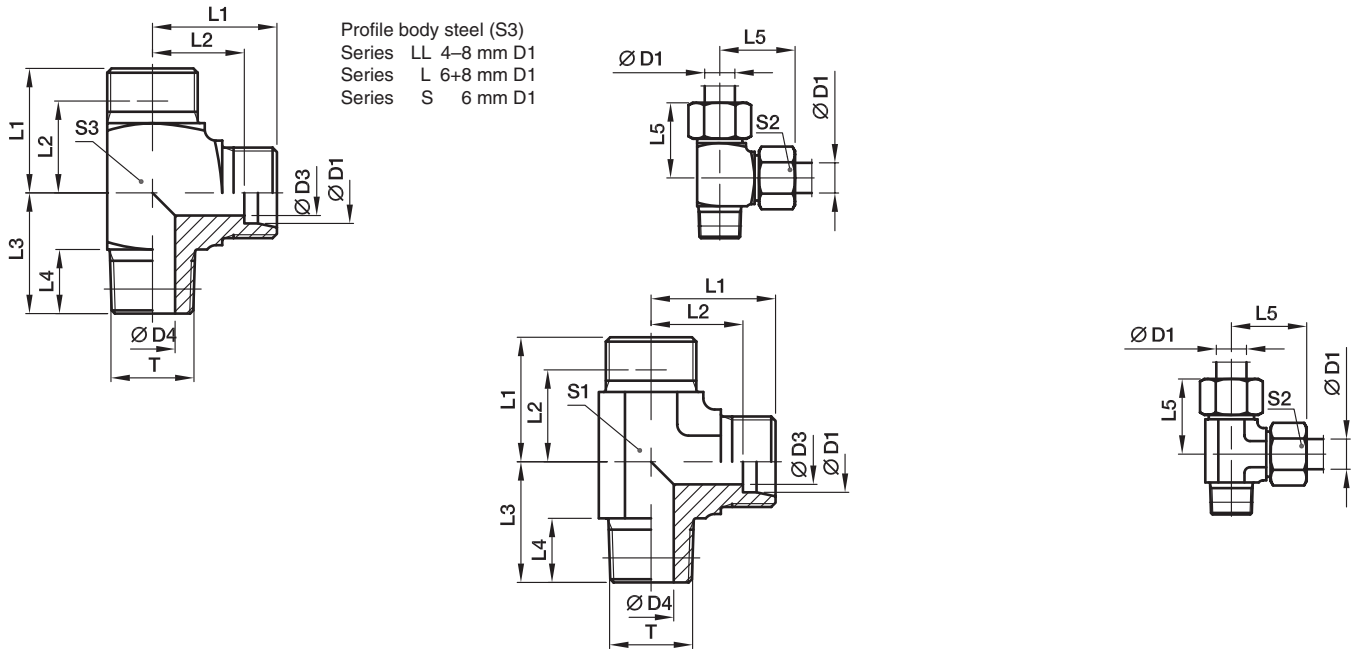
Delivery without nut and ring. Information on ordering complete fittings see page I7.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	LE20SRCFX
Stainless Steel	71X	LE20SR71X

\*Please add the **suffixes** below according to the material/surface required.

## LE-R (KEG) Male stud run tee

EO 24° cone end / Male short BSP taper thread (DIN 3852-2, type C)



Series	D1	T	D3	D4	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
															CF	71
LL <sup>2)</sup>	04	R 1/8 tap.	3.0	4.0	15	11.0	17	8	21	9	10	11	20	LE04LLR	100	100
	06	R 1/8 tap.	4.5	4.5	15	9.5	17	8	21	9	12	11	21	LE06LLR	100	100
	08	R 1/8 tap.	6.0	6.0	17	11.5	20	8	23	12	14	12	28	LE08LLR	100	100
L <sup>3)</sup>	06	R 1/8 tap.	4.0	4.0	19	12.0	20	8	27	12	14	12	40	LE06LR	315	315
	08	R 1/4 tap.	6.0	6.0	21	14.0	26	12	29	12	17	14	57	LE08LR	315	315
	10	R 1/4 tap.	8.0	7.0	22	15.0	27	12	30	14	19		50	LE10LR	315	315
	12	R 3/8 tap.	10.0	9.0	24	17.0	28	12	32	17	22		60	LE12LR	315	315
	15	R 1/2 tap.	12.0	11.0	28	21.0	34	14	36	19	27		115	LE15LR	315	315
	18	R 1/2 tap.	15.0	14.0	31	23.5	36	14	40	24	32		145	LE18LR	315	315
S <sup>4)</sup>	06	R 1/4 tap.	4.0	4.0	23	16.0	26	12	31	12	17	14	71	LE06SR	400	400
	08	R 1/4 tap.	5.0	5.0	24	17.0	27	12	32	14	19		62	LE08SR	400	400
	10	R 3/8 tap.	7.0	7.0	25	17.5	28	12	34	17	22		82	LE10SR	400	400
	12	R 3/8 tap.	8.0	8.0	29	21.5	28	12	38	17	24		102	LE12SR	400	400
	14	R 1/2 tap.	10.0	10.0	30	22.0	32	14	40	19	27		130	LE14SR	400	400
	16	R 1/2 tap.	12.0	12.0	33	24.5	32	14	43	24	30		193	LE16SR	400	400

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{PN(\text{bar})}{10} = PN(\text{MPa})$$

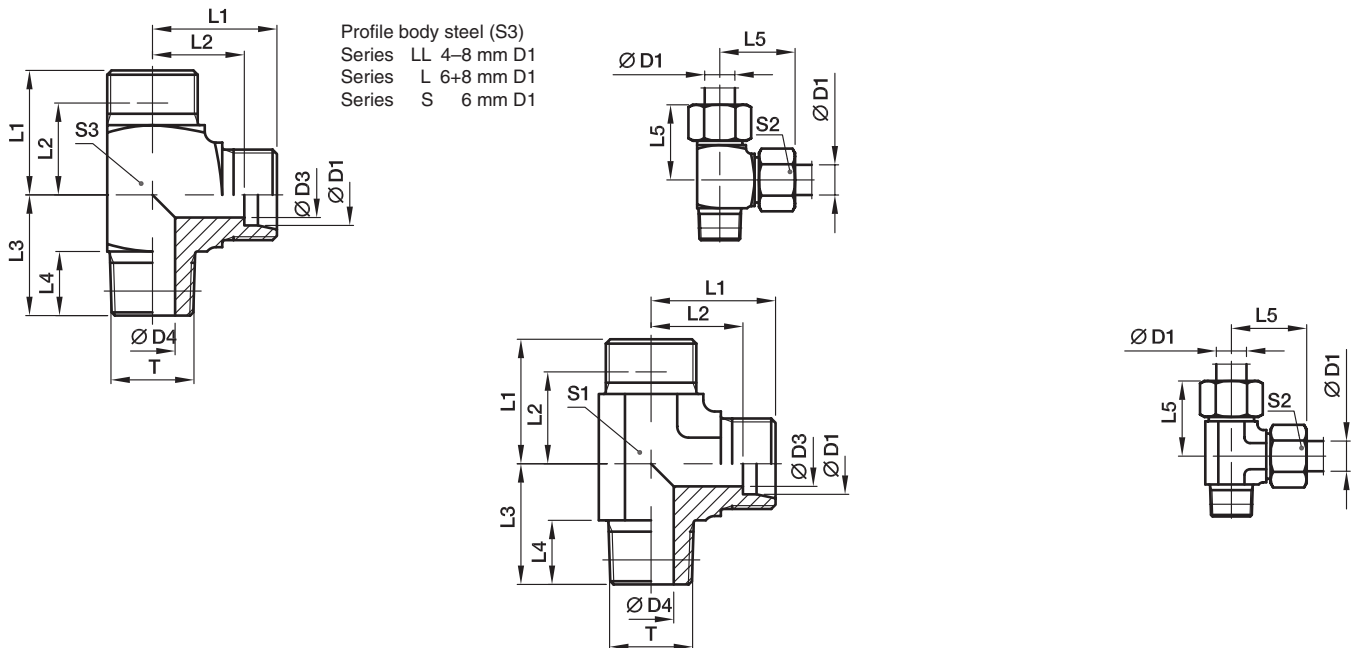
Delivery without nut and ring. Information on ordering complete fittings see page 17.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	LE16SRCFX
Stainless Steel	71X	LE16SR71X

\*Please add the **suffixes** below according to the material/surface required.

## LE-M(KEG) Male stud run tee

EO 24° cone end / Male short metric taper thread (DIN 3852-1, Form C)



Series	D1	T	D3	D4	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
															CF	71
LL <sup>2)</sup>	04	M 08×1.0 tap.	3.0	3.5	15	11.0	17	8	21	9	10	9	17	LE04LLM	100	100
	06	M 10×1.0 tap.	4.5	4.5	15	9.5	17	8	21	9	12	11	21	LE06LLM	100	100
	08	M 10×1.0 tap.	6.0	6.0	17	11.5	20	8	23	12	14	12	29	LE08LLM	100	100
L <sup>3)</sup>	06	M 10×1.0 tap.	4.0	4.0	19	12.0	20	8	27	12	14	12	38	LE06LM	315	315
	08	M 12×1.5 tap.	6.0	6.0	21	14.0	26	12	29	12	17	14	56	LE08LM	315	315
	10	M 14×1.5 tap.	8.0	7.0	22	15.0	27	12	30	14	19		47	LE10LM	315	315
	12	M 16×1.5 tap.	10.0	9.0	24	17.0	28	12	32	17	22		58	LE12LM	315	315
	15	M 18×1.5 tap.	12.0	11.0	28	21.0	32	12	36	19	27		98	LE15LM	315	315
	18	M 22×1.5 tap.	15.0	14.0	31	23.5	36	14	40	24	32		156	LE18LM	315	315
S <sup>4)</sup>	06	M 12×1.5 tap.	4.0	4.0	23	16.0	26	12	31	12	17	14	70	LE06SM	400	400
	08	M 14×1.5 tap.	5.0	5.0	24	17.0	27	12	32	14	19		66	LE08SM	400	400
	10	M 16×1.5 tap.	7.0	7.0	25	17.5	28	12	34	17	22		123	LE10SM	400	400
	12	M 18×1.5 tap.	8.0	8.0	29	21.5	28	12	38	17	24		169	LE12SM	400	400
	14	M 20×1.5 tap.	10.0	10.0	30	22.0	32	14	40	19	27		174	LE14SM	400	400
	16	M 22×1.5 tap.	12.0	12.0	33	24.5	32	14	43	24	30		178	LE16SM	400	400

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{PN(\text{bar})}{10} = PN(\text{MPa})$$

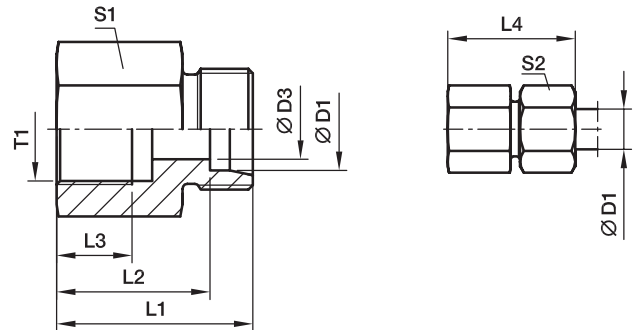
Delivery without nut and ring. Information on ordering complete fittings see page 17.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	LE16SMCFX
Stainless Steel	71X	LE16SM71X

\*Please add the **suffixes** below according to the material/surface required.

## GAI-M Female connector

Female metric thread (ISO 9974-1) / EO 24° cone end



Series	D1	T1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
												CF	71
L <sup>3)</sup>	06	M 10×1.0	4	26.5	19.5	8.0	34	14	14	18	<b>GAI06LM</b>	315	315
	08	M 12×1.5	6	31.0	24.0	12.0	39	17	17	32	<b>GAI08LM</b>	315	315
	10	M 14×1.5	8	32.0	25.0	12.0	40	19	19	39	<b>GAI10LM</b>	315	315
	12	M 16×1.5	10	33.0	26.0	12.0	41	22	22	52	<b>GAI12LM</b>	315	315
	15	M 18×1.5	12	35.0	28.0	12.0	43	24	27	68	<b>GAI15LM</b>	315	315
	18	M 22×1.5	15	37.0	29.5	14.0	46	30	32	111	<b>GAI18LM</b>	315	315
	22	M 26×1.5	19	42.0	34.5	16.0	51	32	36	123	<b>GAI22LM</b>	160	160
	28	M 33×2.0	24	45.0	37.5	18.0	54	41	41	211	<b>GAI28LM</b>	160	160
	35	M 42×2.0	30	51.0	40.5	20.0	62	55	50	459	<b>GAI35LM</b>	160	160
	42	M 48×2.0	36	53.0	42.0	22.0	65	60	60	522	<b>GAI42LM</b>	160	160
S <sup>4)</sup>	06	M 12×1.5	4	33.0	26.0	12.0	41	17	17	35	<b>GAI06SM</b>	400	400
	08	M 14×1.5	5	33.0	26.0	12.0	41	17	19	42	<b>GAI08SM</b>	400	400
	10	M 16×1.5	7	34.0	26.5	12.0	43	22	22	58	<b>GAI10SM</b>	400	400
	12	M 18×1.5	8	35.0	27.5	12.0	44	24	24	70	<b>GAI12SM</b>	400	400
	14	M 20×1.5	10	39.0	31.0	14.0	49	27	27	95	<b>GAI14SM</b>	400	400
	16	M 22×1.5	12	39.0	30.5	14.0	49	30	30	114	<b>GAI16SM</b>	400	400
	20	M 27×2.0	16	45.0	34.5	16.0	56	36	36	189	<b>GAI20SM</b>	315	315
	25	M 33×2.0	20	49.0	37.0	18.0	61	41	46	235	<b>GAI25SM</b>	315	315
	30	M 42×2.0	25	55.0	41.5	20.0	68	55	50	490	<b>GAI30SM</b>	315	315
	38	M 48×2.0	32	59.0	43.0	22.0	74	60	60	597	<b>GAI38SM</b>	250	250

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

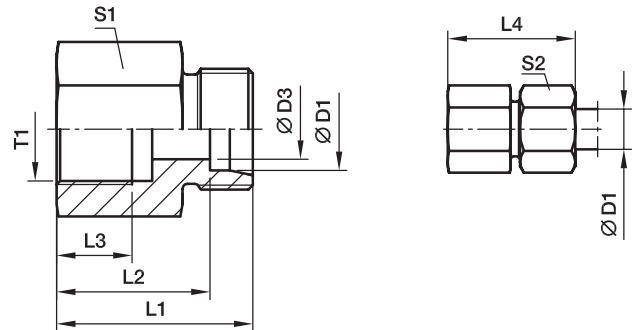
Delivery without nut and ring. Information on ordering complete fittings see page 17.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	GAI16SMCFX
Stainless Steel	71X	GAI16SM71X

\*Please add the **suffixes** below according to the material/surface required.

## GAI-R Female connector

Female BSP thread (ISO 1179-1) / EO 24° cone end



Series	D1	T1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
												CF	71	MS
L <sup>3)</sup>	06	G 1/8	4	26.0	19.0	8.0	34	14	14	18	<b>GAI06LR</b>	315	315	200
	06	G 1/4	4	31.0	24.0	12.0	39	19	14	39	<b>GAI06LR1/4</b>	315	315	200
	08	G 1/4	6	31.0	24.0	12.0	39	19	17	39	<b>GAI08LR</b>	315	315	200
	08	G 3/8	6	32.0	25.0	12.0	40	24	17	61	<b>GAI08LR3/8</b>	315	315	200
	08	G 1/2	6	36.0	29.0	14.0	44	27	17	80	<b>GAI08LR1/2</b>	315	315	200
	10	G 1/4	8	32.0	25.0	12.0	40	19	19	40	<b>GAI10LR</b>	315	315	200
	10	G 3/8	8	33.0	26.0	12.0	41	24	19	63	<b>GAI10LR3/8</b>	315	315	200
	10	G 1/2	8	37.0	30.0	14.0	45	27	19	81	<b>GAI10LR1/2</b>	315	315	200
	12	G 3/8	10	33.0	26.0	12.0	41	24	22	64	<b>GAI12LR</b>	315	315	200
	12	G 1/2	10	37.0	30.0	14.0	45	27	22	83	<b>GAI12LR1/2</b>	315	315	200
	15	G 1/2	12	38.0	31.0	14.0	46	27	27	87	<b>GAI15LR</b>	315	315	200
	18	G 1/2	15	38.0	30.5	14.0	47	27	32	89	<b>GAI18LR</b>	315	315	200
	18	G 3/8	15	34.0	26.5	12.0	43	27	32	95	<b>GAI18LR3/8</b>	315	315	200
	22	G 3/4	19	43.0	35.5	16.0	52	36	36	173	<b>GAI22LR</b>	160	160	100
	28	G 1	24	45.5	38.0	18.0	55	41	41	211	<b>GAI28LR</b>	160	160	100
	35	G 1 1/4	30	51.5	41.0	20.0	63	55	50	469	<b>GAI35LR</b>	160	160	100
42	G 1 1/2	36	53.5	42.5	22.0	65	60	60	540	<b>GAI42LR</b>	160	160	100	
S <sup>4)</sup>	06	G 1/4	4	33.0	26.0	12.0	41	19	17	43	<b>GAI06SR</b>	400	400	
	08	G 1/4	5	33.0	26.0	12.0	41	19	19	47	<b>GAI08SR</b>	400	400	
	10	G 3/8	7	34.0	26.5	12.0	43	24	22	68	<b>GAI10SR</b>	400	400	
	12	G 3/8	8	34.0	26.5	12.0	43	24	24	71	<b>GAI12SR</b>	400	400	
	12	G 1/2	8	38.0	30.5	14.0	47	30	24	121	<b>GAI12SR1/2</b>	400	400	
	14	G 1/2	10	40.0	32.0	14.0	50	30	27	125	<b>GAI14SR</b>	400	400	
	16	G 1/2	12	40.0	31.5	14.0	50	30	30	126	<b>GAI16SR</b>	400	400	
	20	G 3/4	16	45.0	34.5	16.0	56	36	36	196	<b>GAI20SR</b>	315	315	
	25	G 1	20	49.5	37.5	18.0	62	41	46	246	<b>GAI25SR</b>	315	315	
	30	G 1 1/4	25	55.5	42.0	22.0	69	55	50	537	<b>GAI30SR</b>	315	315	
	38	G 1 1/2	32	59.5	43.5	22.0	74	60	60	649	<b>GAI38SR</b>	250	250	

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings see page I7.

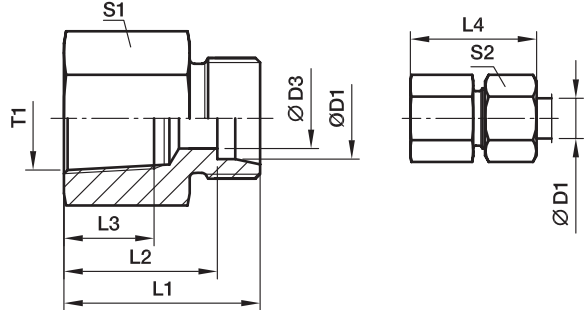
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	GAI16SRCFX
Stainless Steel	71X	GAI16SR71X
Brass	MSX	GAI16SRMSX



## GAI-NPT Female connector

Female NPT thread (SAE 476) / EO 24° cone end



Series	D1	T1	D3	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
												CF	71
L <sup>3)</sup>	06	1/8-27 NPT	4	26.0	19.0	11.6	34	14	14	19	<b>GAI06L1/8NPT</b>	315	315
	06	1/4-18 NPT	4	30.5	23.5	16.4	38	19	14	38	<b>GAI06L1/4NPT</b>	315	315
	08	1/4-18 NPT	6	30.5	23.5	16.4	38	19	17	39	<b>GAI08L1/4NPT</b>	315	315
	10	1/4-18 NPT	8	31.0	24.0	16.4	39	19	19	40	<b>GAI10L1/4NPT</b>	315	315
	12	3/8-18 NPT	10	34.0	27.0	17.4	42	24	22	69	<b>GAI12L3/8NPT</b>	315	315
	12	1/2-14 NPT	10	39.0	32.0	22.6	47	27	22	91	<b>GAI12L1/2NPT</b>	315	315
	15	1/2-14 NPT	12	40.0	33.0	22.6	48	27	27	96	<b>GAI15L1/2NPT</b>	315	315
	18	1/2-14 NPT	15	40.0	32.5	22.6	49	27	32	99	<b>GAI18L1/2NPT</b>	315	315
	22	3/4-14 NPT	19	43.0	35.5	23.1	52	36	36	184	<b>GAI22L3/4NPT</b>	160	160
	28	1-11.5 NPT	24	48.0	40.5	27.8	57	41	41	238	<b>GAI28L1NPT</b>	160	160
	35	1 1/4-11.5 NPT	30	51.0	40.5	28.3	62	55	50	424	<b>GAI35L11/4NPT</b>	160	160
	42	1 1/2-11.5 NPT	36	53.0	42.0	28.3	65	60	60	547	<b>GAI42L11/2NPT</b>	160	160
S <sup>4)</sup>	06	1/8-27 NPT	4	29.0	22.0	11.6	36	14	17	25	<b>GAI06S1/8NPT</b>	400	400
	06	1/4-18 NPT	4	33.0	26.0	16.4	41	19	17	41	<b>GAI06S1/4NPT</b>	400	400
	08	1/4-18 NPT	5	33.0	26.0	16.4	41	19	19	42	<b>GAI08S1/4NPT</b>	400	400
	10	3/8-18 NPT	7	35.0	27.0	17.4	44	24	22	74	<b>GAI10S3/8NPT</b>	400	400
	12	1/4-18 NPT	8	32.5	25.0	16.4	41	22	24	81	<b>GAI12S1/4NPT</b>	400	400
	12	3/8-18 NPT	8	35.0	27.5	17.4	44	24	24	76	<b>GAI12S3/8NPT</b>	400	400
	12	1/2-14 NPT	8	41.0	33.5	22.6	50	27	24	101	<b>GAI12S1/2NPT</b>	400	400
	14	1/2-14 NPT	10	43.0	35.0	22.6	53	27	27	108	<b>GAI14S1/2NPT</b>	400	400
	16	1/2-14 NPT	12	43.0	34.5	22.6	50	27	30	111	<b>GAI16S1/2NPT</b>	400	400
	20	1/2-14 NPT	16	44.0	33.5	22.6	55	32	36	129	<b>GAI20S1/2NPT</b>	315	315
	20	3/4-14 NPT	16	46.0	35.5	23.1	57	36	36	214	<b>GAI20S3/4NPT</b>	315	315
	25	1-11.5 NPT	20	53.0	41.0	27.8	65	41	46	288	<b>GAI25S1NPT</b>	315	315
	30	1 1/4-11.5 NPT	25	57.0	43.5	28.3	70	55	50	559	<b>GAI30S11/4NPT</b>	315	315
	38	1 1/2-11.5 NPT	32	59.0	43.0	28.3	74	60	60	632	<b>GAI38S11/2NPT</b>	250	250

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$\frac{PN(\text{bar})}{10} = PN(\text{MPa})$

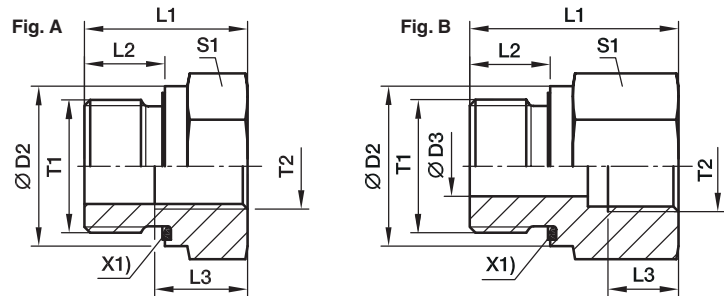
Delivery without nut and ring. Information on ordering complete fittings see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	GAI16S1/2NPTCFX
Stainless Steel	71X	GAI16S1/2NPT71X

## RI-ED Thread reducer/expander

Male BSPP thread – ED-seal (ISO 1179) / Female BSPP thread (ISO 1179-1)



X1) Eolastic-sealing ED

Male Stud T1	Female Stud T2	D2	D3	L1	L2	L3	S1	Fig.	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
											CF	71
G 1/8 A	G 1/4	14	4	31.0	8	12.0	19	B	41	RI1/8EDX1/4	400	400
G 1/8 A	G 3/8	14	4	32.0	8	12.0	24	B	63	RI1/8EDX3/8	400	400
G 1/4 A	G 1/8	19	5	29.0	12	8.0	19	B	41	RI1/4EDX1/8	400	400
G 1/4 A	G 3/8	19	5	36.0	12	12.0	24	B	69	RI1/4EDX3/8	400	400
G 1/4 A	G 1/2	19	5	40.0	12	14.0	30	B	120	RI1/4EDX1/2	400	400
G 1/4 A	G 3/4	19	5	43.0	12	16.0	36	B	171	RI1/4EDX3/4	400	400
G 3/8 A	G 1/8	22		22.5	12	8.0	22	A	38	RI3/8EDX1/8	400	400
G 3/8 A	G 1/4	22	8	36.0	12	12.0	22	B	68	RI3/8EDX1/4	400	400
G 3/8 A	G 1/2	22	8	41.0	12	14.0	30	B	124	RI3/8EDX1/2	400	400
G 3/8 A	G 3/4	22	8	44.0	12	16.0	36	B	182	RI3/8EDX3/4	315	315
G 1/2 A	G 1/8	27		24.0	14	8.0	27	A	65	RI1/2EDX1/8	400	400
G 1/2 A	G 1/4	27		24.0	14	12.0	27	A	56	RI1/2EDX1/4	400	400
G 1/2 A	G 3/8	27	12	37.0	14	12.0	27	B	95	RI1/2EDX3/8	400	400
G 1/2 A	G 3/4	27	12	46.0	14	16.0	36	B	183	RI1/2EDX3/4	315	315
G 1/2 A	G 1	27	12	49.0	14	18.0	41	B	232	RI1/2EDX1	315	315
G 1/2 A	G 1 1/4	27	10	53.0	14	20.0	55	B	481	RI1/2EDX11/4	315	315
G 3/4 A	G 1/4	32		26.0	16	12.0	32	A	103	RI3/4EDX1/4	315	315
G 3/4 A	G 3/8	32		26.0	16	12.0	32	A	86	RI3/4EDX3/8	315	315
G 3/4 A	G 1/2	32	16	43.0	16	14.0	32	B	156	RI3/4EDX1/2	315	315
G 3/4 A	G 1	32	16	51.0	16	18.0	41	B	237	RI3/4EDX1	315	315
G 3/4 A	G 1 1/4	32	16	55.0	16	20.0	55	B	486	RI3/4EDX11/4	315	315
G 3/4 A	G 1 1/2	32	16	57.0	16	22.0	60	B	561	RI3/4EDX11/2	250	250
G 1 A	G 1/4	40		29.0	18	12.0	41	A	197	RI1EDX1/4	315	315
G 1 A	G 3/8	40		29.0	18	12.0	41	A	179	RI1EDX3/8	315	315
G 1 A	G 1/2	40		29.0	18	14.0	41	A	153	RI1EDX1/2	315	315
G 1 A	G 3/4	40	20	49.0	18	16.0	41	B	290	RI1EDX3/4	315	315
G 1 A	G 1 1/4	40	20	57.0	18	20.0	55	B	503	RI1EDX11/4	315	315
G 1 A	G 1 1/2	40	20	59.0	18	22.0	60	B	585	RI1EDX11/2	250	250
G 1 1/4 A	G 1/2	50		32.0	20	14.0	50	A	313	RI11/4EDX1/2	315	315
G 1 1/4 A	G 3/4	50		32.0	20	16.0	50	A	393	RI11/4EDX3/4	315	315
G 1 1/4 A	G 1	50	25	52.0	20	18.0	50	B	469	RI11/4EDX1	315	315
G 1 1/4 A	G 1 1/2	50	25	60.0	20	22.0	60	B	624	RI11/4EDX11/2	250	250
G 1 1/2 A	G 1/2	55		36.0	22	14.0	55	A	470	RI11/2EDX1/2	250	250
G 1 1/2 A	G 3/4	55		36.0	22	16.0	55	A	415	RI11/2EDX3/4	250	250
G 1 1/2 A	G 1	55		36.0	22	18.0	55	A	338	RI11/2EDX1	250	250
G 1 1/2 A	G 1 1/4	55	32	58.0	22	20.0	55	B	542	RI11/2EDX11/4	250	250
G 2 A	G 1 1/2	75	40	65.0	24	22.0	75	B	1309	RI2EDX11/2	160	

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

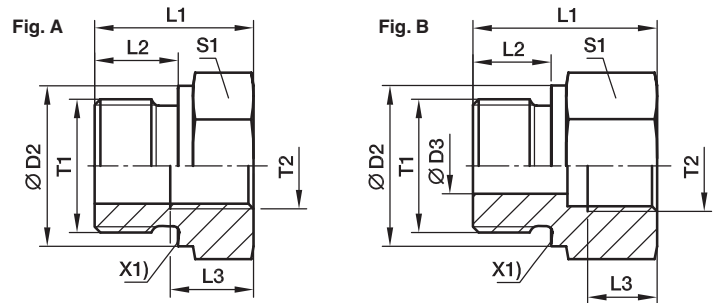
Information on ordering alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	RI1EDX1/2CF	NBR
Stainless Steel	71	RI1EDX1/271	VIT

## RI Thread reducer/expander

Male BSPP thread – metal sealing edge (ISO 1179) / Female BSPP thread (ISO 1179-1)



X1) metal sealing edge

Male Stud T1	Female Stud T2	D2	D3	L1	L2	L3	S1	Fig.	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
											CF	71	MS
G 1/8 A	G 1/4	14	4	31.0	8	12.0	19	B	42	RI1/8X1/4	400	400	250
G 1/8 A	G 3/8	14	4	32.0	8	12.0	24	B	63	RI1/8X3/8	400	400	250
G 1/4 A	G 1/8	18	5	28.0	12	8.0	19	B	38	RI1/4X1/8	400	400	250
G 1/4 A	G 3/8	18	5	36.0	12	12.0	24	B	69	RI1/4X3/8	400	400	250
G 1/4A	G 1/2	18	5	40.0	12	14.0	30	B	116	RI1/4X1/2	400	400	250
G 1/4 A	G 3/4	18	5	43.0	12	16.0	36	B	170	RI1/4X3/4	315	315	200
G 3/8 A	G 1/8	22		22.5	12	8.0	22	A	39	RI3/8X1/8	400	400	250
G 3/8 A	G 1/4	22	8	36.0	12	12.0	22	B	68	RI3/8X1/4	400	400	250
G 3/8 A	G 1/2	22	8	41.0	12	14.0	30	B	125	RI3/8X1/2	400	400	250
G 3/8 A	G 3/4	22	8	44.0	12	16.0	36	B	183	RI3/8X3/4	315	315	200
G 1/2 A	G 1/8	26		24.0	14	8.0	27	A	66	RI1/2X1/8	400	400	250
G 1/2 A	G 1/4	26		24.0	14	12.0	27	A	56	RI1/2X1/4	315	315	200
G 1/2 A	G 3/8	26	12	37.0	14	12.0	27	B	94	RI1/2X3/8	315	315	200
G 1/2 A	G 3/4	26	12	46.0	14	16.0	36	B	182	RI1/2X3/4	315	315	200
G 1/2 A	G 1	26	12	49.0	14	18.0	41	B	221	RI1/2X1	315	315	200
G 1/2 A	G 1 1/4	26	10	53.0	14	20.0	55	B	482	RI1/2X11/4	160	160	
G 3/4 A	G 1/4	32		26.0	16	12.0	32	A	103	RI3/4X1/4	315	315	200
G 3/4 A	G 3/8	32		26.0	16	12.0	32	A	87	RI3/4X3/8	315	315	200
G 3/4 A	G 1/2	32	16	40.0	16	14.0	32	B	143	RI3/4X1/2	315	315	200
G 3/4 A	G 1	32	16	51.0	16	18.0	41	B	235	RI3/4X1	315	315	200
G 3/4 A	G 1 1/4	32	16	55.0	16	20.0	55	B	481	RI3/4X11/4	160	160	
G 3/4 A	G 1 1/2	32	16	57.0	16	22.0	60	B	560	RI3/4X11/2	160	160	
G 1 A	G 1/4	39		29.0	18	12.0	41	A	195	RI1X1/4	315	315	
G 1 A	G 3/8	39		29.0	18	12.0	41	A	179	RI1X3/8	315	315	200
G 1 A	G 1/2	39		29.0	18	14.0	41	A	157	RI1X1/2	315	315	200
G 1 A	G 3/4	39	20	47.0	18	16.0	41	B	278	RI1X3/4	315	315	200
G 1 A	G 1 1/4	39	20	57.0	18	20.0	55	B	530	RI1X11/4	160	160	100
G 1 A	G 1 1/2	39	20	59.0	18	22.0	60	B	585	RI1X11/2	160	160	100
G 1 1/4 A	G 1/2	49		32.0	20	14.0	50	A	308	RI11/4X1/2	160	160	100
G 1 1/4 A	G 3/4	49		32.0	20	16.0	50	A	267	RI11/4X3/4	160	160	100
G 1 1/4 A	G 1	49	25	52.0	20	18.0	50	B	458	RI11/4X1	160	160	100
G 1 1/4 A	G 1 1/2	49	25	60.0	20	22.0	60	B	616	RI11/4X11/2	160	160	100
G 1 1/2 A	G 1/2	55		36.0	22	14.0	55	A	477	RI11/2X1/2	160	160	100
G 1 1/2 A	G 3/4	55		36.0	22	16.0	55	A	402	RI11/2X3/4	160	160	100
G 1 1/2 A	G 1	55		36.0	22	18.0	55	A	337	RI11/2X1	160	160	100
G 1 1/2 A	G 1 1/4	55	32	58.0	22	20.0	55	B	542	RI11/2X11/4	160	160	100
G 2 A	G 1 1/2	68	40	62.0	24	22.0	70	B	990	RI2X11/2	160		

<sup>1)</sup> Pressure shown = item deliverable

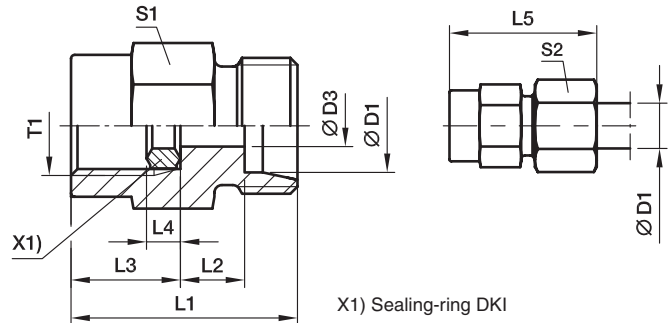
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	RI1X1/2CFX
Stainless Steel	71X	RI1X1/271X
Brass	MSX	RI1X1/2MSX

## MAV Pressure gauge connector

Female BSP thread / EO 24° cone end



Series	D1 	T1	D3	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
													CF	71	MS
LL <sup>2)</sup>	04	G 1/4	2.5	27	8.5	14.5	4.5	33	19	10	33	<b>MAV04LLROMD</b>	100		
L <sup>3)</sup>	06	G 1/4	2.5	29	7.5	14.5	4.5	37	19	14	37	<b>MAV06LROMD</b>	315	315	200
	08	G 1/4	5.5	29	7.5	14.5	4.5	37	19	17	38	<b>MAV08LROMD</b>	315	315	200
	10	G 1/4	5.5	30	8.5	14.5	4.5	38	19	19	41	<b>MAV10LROMD</b>	315	315	200
	12	G 1/4	5.5	30	8.5	14.5	4.5	38	19	22	43	<b>MAV12LROMD</b>	315	315	200
S <sup>4)</sup>	06	G 1/2	3.5	38	11.0	20.0	5.0	46	27	17	86	<b>MAV06SROMD</b>	630	630	400
	08	G 1/2	3.5	38	11.0	20.0	5.0	46	27	19	86	<b>MAV08SROMD</b>	630	630	400
	10	G 1/2	7.5	38	10.5	20.0	5.0	47	27	22	88	<b>MAV10SROMD</b>	630	630	400
	12	G 1/2	7.5	38	10.5	20.0	5.0	47	27	24	93	<b>MAV12SROMD</b>	630	630	400

<sup>1)</sup> Pressure shown = item deliverable

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

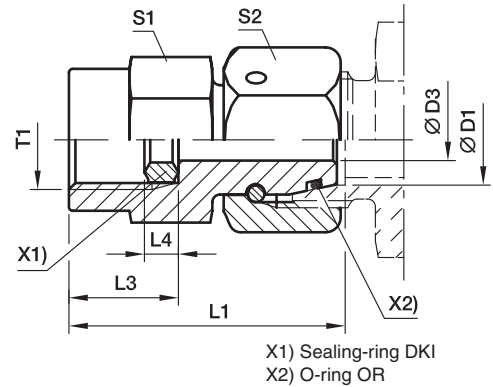
Delivery without nut and ring. Information on ordering complete fittings see page I7.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	MAV10SROMDCF
Stainless Steel	71	MAV10SROMD71
Brass	MS	MAV10SROMDMS

\*Please add the **suffixes** below according to the material/surface required.

## MAVE Pressure gauge swivel connector

Female BSP thread / EO 24° DKO swivel



Series	D1 	T1	D3	L1	L3	L4	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
											CF	71
L <sup>3)</sup>	06	G 1/4	2.5	35.5	14.5	4.5	19	14	46	<b>MAVE06LR</b>	315	315
	08	G 1/4	4.0	35.5	14.5	4.5	19	17	52	<b>MAVE08LR</b>	315	315
	10	G 1/4	5.5	36.0	14.5	4.5	19	19	59	<b>MAVE10LR</b>	315	315
	12	G 1/4	5.5	36.0	14.5	4.5	19	22	70	<b>MAVE12LR</b>	315	315
S <sup>4)</sup>	06	G 1/2	2.5	42.5	20.0	5.0	27	17	95	<b>MAVE06SR</b>	630	630
	06	G 1/4	2.5	35.5	14.5	4.5	19	17	52	<b>MAVE06SR1/4</b>	630	630
	08	G 1/2	4.0	43.0	20.0	5.0	27	19	100	<b>MAVE08SR</b>	630	630
	08	G 1/4	4.0	35.5	14.5	4.5	19	19	58	<b>MAVE08SR1/4</b>	630	630
	10	G 1/2	6.0	43.5	20.0	5.0	27	22	109	<b>MAVE10SR</b>	630	630
	10	G 1/4	7.0	39.0	14.5	4.5	19	22	67	<b>MAVE10SR1/4</b>	630	630
	12	G 1/2	7.0	45.0	20.0	5.0	27	24	125	<b>MAVE12SR</b>	630	630
	12	G 1/4	7.0	39.0	14.5	4.5	19	24	83	<b>MAVE12SR1/4</b>	630	630

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

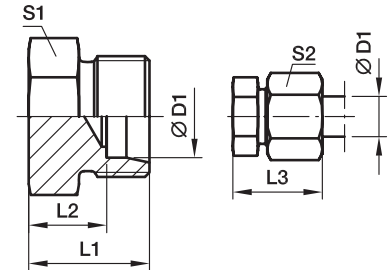
Information on ordering alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	MAVE10SRCF	NBR
Stainless Steel	71	MAVE10SR71	VIT

## ROV Blanking plug for tube ends

EO 24° cone end



Series	D1 	L1	L2	L3	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
									CF	71
L <sup>3)</sup>	06	14	7.0	22	12	14	8	ROV06L	315	315
	08	15	8.0	23	14	17	13	ROV08L	315	315
	10	16	9.0	24	17	19	17	ROV10L	315	315
	12	17	10.0	25	19	22	24	ROV12L	315	315
	15	18	11.0	26	24	27	41	ROV15L	315	315
	18	19	11.5	28	27	32	56	ROV18L	315	315
	22	21	13.5	30	32	36	84	ROV22L	160	160
	28	22	14.5	31	41	41	138	ROV28L	160	160
	35	25	14.5	36	46	50	203	ROV35L	160	160
	42	27	16.0	39	55	60	318	ROV42L	160	160
S <sup>4)</sup>	06	18	11.0	26	14	17	17	ROV06S	630	630
	08	20	13.0	28	17	19	28	ROV08S	630	630
	10	20	12.5	29	19	22	33	ROV10S	630	630
	12	22	14.5	31	22	24	50	ROV12S	630	630
	14	24	16.0	34	24	27	62	ROV14S	630	630
	16	24	15.5	34	27	30	75	ROV16S	400	400
	20	28	17.5	39	32	36	125	ROV20S	400	400
	25	32	20.0	44	41	46	229	ROV25S	400	400
	30	34	20.5	47	46	50	310	ROV30S	400	400
	38	39	23.0	54	55	60	508	ROV38S	315	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

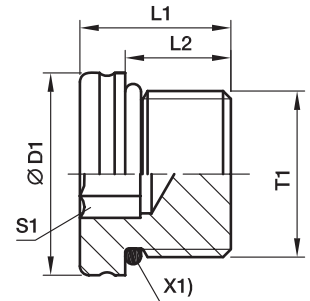
Delivery without nut and ring. Information on ordering complete fittings see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	ROV16SCFX
Stainless Steel	71X	ROV16S71X

## VSTI M-OR Blanking plug for ports

Male metric thread – O-ring (ISO 6149)



X1) O-ring OR

T1	D1	L1	L2	S1	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup> CF
M 08×1.0	12	13.0	9.5	4	6	VSTI8X1OR	630
M 10×1.0	13	13.5	9.5	5	8	VSTI10X1OR	630
M 12×1.5	17	15.0	11.0	6	14	VSTI12X1.5OR	630
M 14×1.5	19	16.0	11.0	6	20	VSTI14X1.5OR	630
M 16×1.5	21	17.5	12.5	8	26	VSTI16X1.5OR	630
M 18×1.5	23	19.0	14.0	8	37	VSTI18X1.5OR	630
M 22×1.5	27	20.0	15.0	10	58	VSTI22X1.5OR	630
M 26×1.5	31	21.0	16.0	12	77	VSTI26X1.5OR	400
M 27×2.0	32	23.5	18.5	12	95	VSTI27X2OR	400
M 33×2.0	38	25.0	18.5	14	148	VSTI33X2OR	400
M 42×2.0	48	25.5	19.0	22	233	VSTI42X2OR	400
M 48×2.0	55	28.0	21.5	24	336	VSTI48X2OR	400

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Information on ordering alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

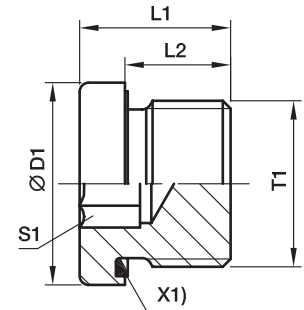
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	VSTI18X1.5ORCF	NBR



## VSTI M/R-ED Blanking plug for ports

Male metric thread – ED-seal (ISO 9974)

Male BSPP thread – ED-seal (ISO 1179)



X1) Eolastic-sealing ED

Male metric parallel thread T1	Male stud BSP thread T1	D1	L1	L2	S1	Weight g/1 piece	Order code*	Order code*	PN (bar) <sup>1)</sup>	
									CF	71
M 10×1.0	G 1/8 A	14.0	12.3	8	5	8	VSTI10X1ED	VSTI1/8ED	400	400
M 12×1.5		17.0	17.3	12	6	14	VSTI12X1.5ED		400	400
M 14×1.5	G 1/4 A	19.0	17.3	12	6	20	VSTI14X1.5ED	VSTI1/4ED	400	400
M 16×1.5	G 3/8 A	22.0	17.3	12	8	25	VSTI16X1.5ED	VSTI3/8ED	400	400
M 18×1.5		24.0	17.3	12	8	32	VSTI18X1.5ED		400	400
M 20×1.5		26.0	19.3	14	10	42	VSTI20X1.5ED		400	400
M 22×1.5	G 1/2 A	27.0	19.3	14	10	51	VSTI22X1.5ED	VSTI1/2ED	400	400
M 26×1.5		32.0	21.3	16	12	78	VSTI26X1.5ED		400	400
M 27×2.0	G 3/4 A	32.0	21.3	16	12	79	VSTI27X2ED	VSTI3/4ED	400	400
M 33×2.0	G 1 A	40.0	22.8	16	17	130	VSTI33X2ED	VSTI1ED	400	400
M 42×2.0	G 1 1/4 A	50.0	22.8	16	22	198	VSTI42X2ED	VSTI11/4ED	315	315
M 48×2.0	G 1 1/2 A	55.0	22.8	16	24	263	VSTI48X2ED	VSTI11/2ED	315	315

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

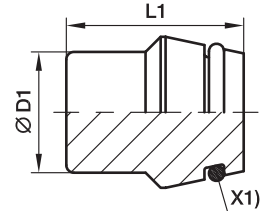
Information on ordering alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	VSTI1/2EDCF	NBR
Stainless Steel	71	VSTI1/2ED71	VIT

## VKA Blanking plug for cones

EO 24° DKO swivel



X1) O-ring OR

Series	D1 	L1	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
					CF	71	MS
L <sup>3)</sup>	06	18.5	6	<b>VKA06</b>	500	315	200
	08	18.5	9	<b>VKA08</b>	500	315	200
	10	20.0	15	<b>VKA10</b>	500	315	200
	12	20.5	21	<b>VKA12</b>	400	315	200
	15	20.5	32	<b>VKA15</b>	400	315	200
	18	22.5	49	<b>VKA18</b>	400	315	200
	22	25.0	80	<b>VKA22</b>	250	160	100
	28	25.5	131	<b>VKA28</b>	250	160	100
	35	30.0	240	<b>VKA35</b>	250	160	100
	42	30.0	343	<b>VKA42</b>	250	160	100
S <sup>4)</sup>	06	18.5	6	<b>VKA06</b>	800	630	400
	08	18.5	9	<b>VKA08</b>	800	630	400
	10	20.0	15	<b>VKA10</b>	800	630	400
	12	20.5	21	<b>VKA12</b>	630	630	400
	14	22.5	30	<b>VKA14</b>	630	630	400
	16	23.5	40	<b>VKA16</b>	630	400	250
	20	28.5	78	<b>VKA20</b>	420	400	250
	25	29.0	120	<b>VKA25</b>	420	400	250
	30	30.5	180	<b>VKA30</b>	420	400	250
	38	33.0	309	<b>VKA38</b>	420	315	200

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

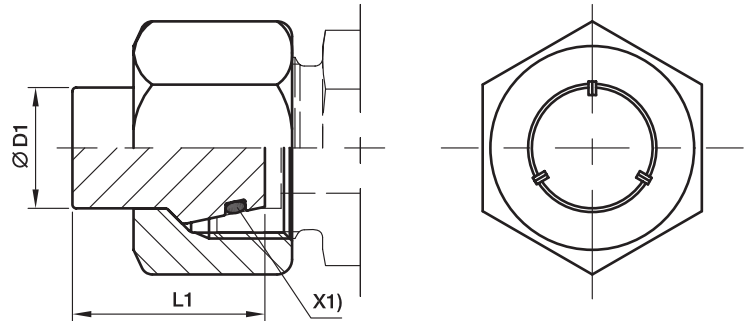
Information on ordering alternative sealing materials see page 17.

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	VKA16CF	NBR
Stainless Steel	71	VKA1671	VIT
Brass	MS	VKA16MS	NBR

## VKAM Blanking plug with nut for cone

EO 24° DKO swivel



X1) O-ring OR

Series	D1 	L1	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
					CF	71
L <sup>3)</sup>	06	18.5	15	VKAM06L	500	315
	08	18.5	24	VKAM08L	500	315
	10	20.0	33	VKAM10L	500	315
	12	20.5	46	VKAM12L	400	315
	15	20.5	73	VKAM15L	400	315
	18	22.5	111	VKAM18L	400	315
	22	25.0	162	VKAM22L	250	160
	28	25.5	220	VKAM28L	250	160
	35	30.0	376	VKAM35L	250	160
	42	30.0	558	VKAM42L	250	160
S <sup>4)</sup>	06	18.5	23	VKAM06S	800	630
	08	18.5	29	VKAM08S	800	630
	10	20.0	46	VKAM10S	800	630
	12	20.5	55	VKAM12S	630	630
	14	22.5	83	VKAM14S	630	630
	16	23.5	106	VKAM16S	630	400
	20	28.5	180	VKAM20S	420	400
	25	29.0	322	VKAM25S	420	400
	30	30.5	398	VKAM30S	420	400
	38	33.0	647	VKAM38S	420	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

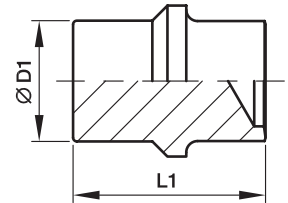
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Information on ordering alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	VKAM16SCF	NBR
Stainless Steel	71	VKAM16S71	VIT

## BUZ Blanking plug for cones



Series	D1 	L1	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		
					CF	71	MS
L <sup>3)</sup>	06	19.5	5	<b>BUZ06L</b>	315	315	200
	08	19.5	8	<b>BUZ08L</b>	315	315	200
	10	21.0	13	<b>BUZ10L</b>	315	315	200
	12	21.8	20	<b>BUZ12L</b>	315	315	200
	15	22.0	30	<b>BUZ15L</b>	315	315	200
	18	24.0	45	<b>BUZ18L</b>	315	315	200
	22	26.0	74	<b>BUZ22L</b>	160	160	100
	28	26.5	117	<b>BUZ28L</b>	160	160	100
	35	32.0	217	<b>BUZ35L</b>	160	160	100
	42	32.5	308	<b>BUZ42L</b>	160	160	100
S <sup>4)</sup>	06	19.5	5	<b>BUZ06L</b>	630	630	400
	08	19.5	8	<b>BUZ08L</b>	630	630	400
	10	21.0	13	<b>BUZ10L</b>	630	630	400
	12	21.8	20	<b>BUZ12L</b>	630	630	400
	14	23.5	28	<b>BUZ14S</b>	630	630	400
	16	25.5	39	<b>BUZ16S</b>	400	400	250
	20	30.5	73	<b>BUZ20S</b>	400	400	250
	25	32.5	119	<b>BUZ25S</b>	400	400	250
	30	35.5	181	<b>BUZ30S</b>	400	400	250
	38	40.0	325	<b>BUZ38S</b>	315	315	200

<sup>1)</sup> Pressure shown = item deliverable

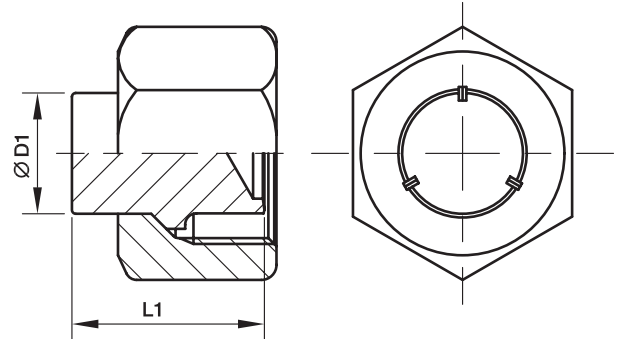
<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CFX	BUZ16SCFX
Stainless Steel	71X	BUZ16S71X
Brass	MSX	BUZ16SMSX

## BUZM Blanking plug with nut for cones



Series	D1 	L1	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
					CF	71
L <sup>3)</sup>	06	19.5	15	<b>BUZM06L</b>	315	315
	08	19.5	23	<b>BUZM08L</b>	315	315
	10	21.0	31	<b>BUZM10L</b>	315	315
	12	21.8	45	<b>BUZM12L</b>	315	315
	15	22.0	71	<b>BUZM15L</b>	315	315
	18	24.0	107	<b>BUZM18L</b>	315	315
	22	26.0	156	<b>BUZM22L</b>	160	160
	28	26.5	206	<b>BUZM28L</b>	160	160
	35	32.0	354	<b>BUZM35L</b>	160	160
	42	32.5	524	<b>BUZM42L</b>	160	160
S <sup>4)</sup>	06	19.5	23	<b>BUZM06S</b>	630	630
	08	19.5	28	<b>BUZM08S</b>	630	630
	10	21.0	44	<b>BUZM10S</b>	630	630
	12	21.8	54	<b>BUZM12S</b>	630	630
	14	23.5	81	<b>BUZM14S</b>	630	630
	16	25.5	105	<b>BUZM16S</b>	400	400
	20	30.5	176	<b>BUZM20S</b>	400	400
	25	32.5	321	<b>BUZM25S</b>	400	400
	30	35.5	399	<b>BUZM30S</b>	400	400
	38	40.0	664	<b>BUZM38S</b>	315	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

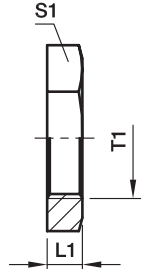
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel, zinc plated, Cr(VI)-free	CF	BUZM16SCF
Stainless Steel	71	BUZM16S71

## GM Locknut for bulk heads

For bulkhead SV and WSV

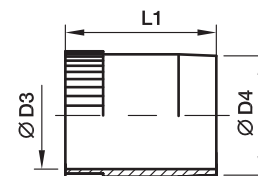


Series	Tube O.D.	T1	L1	S1	Weight g/1 piece	Order code		
						Steel CF	Stainless Steel 71	Brass MS
L <sup>3)</sup>	06	M 12×1.5	6	17	7	GM06LCFX	GM06L71X	GM06LMSX
	08	M 14×1.5	6	19	8	GM08LCFX	GM08L71X	GM08LMSX
	10	M 16×1.5	6	22	11	GM10LCFX	GM10L71X	GM10LMSX
	12	M 18×1.5	6	24	12	GM12LCFX	GM12L71X	GM12LMSX
	15	M 22×1.5	7	30	23	GM15LCFX	GM15L71X	GM15LMSX
	18	M 26×1.5	8	36	37	GM18LCFX	GM18L71X	GM18LMSX
	22	M 30×2.0	8	41	46	GM22LCFX	GM22L71X	GM22LMSX
	28	M 36×2.0	9	46	58	GM28LCFX	GM28L71X	GM28LMSX
	35	M 45×2.0	9	55	71	GM35LCFX	GM35L71X	GM35LMSX
	42	M 52×2.0	10	65	123	GM42LCFX	GM42L71X	GM42LMSX
S <sup>4)</sup>	06	M 14×1.5	6	19	8	GM08LCFX	GM08L71X	GM06LMSX
	08	M 16×1.5	6	22	11	GM10LCFX	GM10L71X	GM10LMSX
	10	M 18×1.5	6	24	12	GM12LCFX	GM12L71X	GM12LMSX
	12	M 20×1.5	6	27	15	GM12SCFX	GM12S71X	GM12SMSX
	14	M 22×1.5	7	30	23	GM15LCFX	GM15L71X	GM15LMSX
	16	M 24×1.5	7	32	24	GM16SCFX	GM16S71X	GM16SMSX
	20	M 30×2.0	8	41	46	GM22LCFX	GM22L71X	GM22LMSX
	25	M 36×2.0	9	46	58	GM28LCFX	GM28L71X	GM28LMSX
	30	M 42×2.0	9	50	58	GM30SCFX	GM30S71X	GM30SMSX
	38	M 52×2.0	10	65	123	GM42LCFX	GM42L71X	GM42LMSX

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

## VH Support sleeve

for thin-walled metal tubing

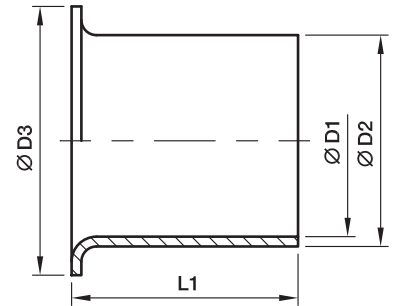


Tube I.D.	D3	D4	L1	Weight g/1 piece	Order code		
					Steel CF	Stainless Steel 71	Brass MS
4.00	2.6	3.8	14.0	0.7	VH04CFX	VH0471X	VH04MSX
4.50	3.1	4.3	14.0	0.8	VH04.5CFX	VH04.571X	VH04.5MSX
5.00	3.6	4.8	14.0	0.8	VH05CFX	VH0571X	VH05MSX
6.00	4.6	5.8	14.0	1.0	VH06CFX	VH0671X	VH06MSX
6.50	5.1	6.3	14.0	1.0	VH06.5CFX	VH06.571X	VH06.5MSX
7.00	5.6	6.8	15.5	1.3	VH07CFX	VH0771X	VH07MSX
8.00	6.6	7.8	15.5	1.6	VH08CFX	VH0871X	VH08MSX
9.00	7.6	8.8	15.5	1.8	VH09CFX	VH0971X	VH09MSX
10.00	8.6	9.8	15.5	2.1	VH10CFX	VH1071X	VH10MSX
10.05	8.6	9.8	15.5	2.1	VH10.05CFX	VH10.0571X	VH10.05MSX
10.50	9.1	10.3	15.5	2.3	VH10.5CFX	VH10.571X	VH10.5MSX
11.00	9.6	10.8	15.5	2.6	VH11CFX	VH1171X	VH11MSX
12.00	10.2	11.8	17.0	3.7	VH12CFX	VH1271X	VH12MSX
12.95	11.2	12.8	17.0	3.9	VH12.95CFX	VH12.9571X	VH12.95MSX
13.00	11.2	12.8	17.0	3.9	VH13CFX	VH1371X	VH13MSX
14.00	12.2	13.8	17.0	4.3	VH14CFX	VH1471X	VH14MSX
15.00	13.2	14.8	20.0	5.7	VH15CFX	VH1571X	VH15MSX
16.00	14.2	15.8	20.0	5.8	VH16.00CFX	VH16.0071X	VH16.00MSX
16.20	14.2	15.8	20.0	5.8	VH16CFX	VH1671X	VH16MSX
17.00	15.2	16.8	20.0	6.3	VH17CFX	VH1771X	VH17MSX
18.00	16.2	17.8	20.0	6.3	VH18CFX	VH1871X	VH18MSX
19.00	17.2	18.8	16.0	5.8	VH19CFX	VH1971X	VH19MSX
19.90	18.2	19.8	21.5	7.9	VH19.90CFX	VH19.9071X	VH19.90MSX
20.00	18.2	19.8	21.5	7.9	VH20CFX	VH2071X	VH20MSX
21.00	19.2	20.8	21.5	8.0	VH21CFX	VH2171X	VH21MSX
22.00	20.2	21.8	23.5	9.7	VH22CFX	VH2271X	VH22MSX
23.00	21.2	22.8	23.5	10.6	VH23CFX	VH2371X	VH23MSX
24.00	22.2	23.8	23.5	11.1	VH24CFX	VH2471X	VH24MSX
24.90	23.3	24.8	23.5	10.8	VH24.90CFX	VH24.9071X	VH2490MSX
25.00	23.2	24.8	23.5	10.8	VH25CFX	VH2571X	VH25MSX
26.00	24.2	25.8	23.5	12.7	VH26CFX	VH2671X	VH26MSX
27.00	25.2	26.8	23.5	12.2	VH27CFX	VH2771X	VH27MSX
30.00	27.8	29.8	26.5	18.7	VH30CFX	VH3071X	VH30MSX
31.00	28.8	30.8	26.5	20.7	VH31CFX	VH3171X	VH31MSX
32.00	29.8	31.8	26.5	19.2	VH32CFX	VH3271X	VH32MSX
32.10	29.8	31.8	26.5	19.2	VH32.10CFX	VH32.1071X	VH32.10MSX
33.00	30.8	32.8	26.5	19.9	VH33CFX	VH3371X	VH33MSX
34.00	31.8	33.8	26.5	26.5	VH34CFX	VH3471X	VH34MSX
37.80	35.8	37.7	31.0	19.5	VH37.8CFX	VH37.871X	VH37.8MSX
38.00	35.8	37.8	21.0	19.7	VH38CFX	VH3871X	VH38MSX
39.00	36.8	38.8	21.0	19.5	VH39CFX	VH3971X	VH39MSX



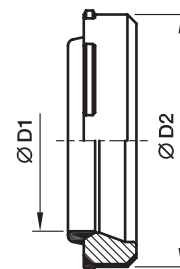
## E Tube/hose insert

for plastic tubing



Tube O.D.	Tube I.D.	D1	D2	D3	L1	Weight g/1 piece	Order code Brass
04	2.0	1.3	2.0	3.5	8	1	<b>E04/02X</b>
04	2.5	1.7	2.5	4.0	8	1	<b>E04/2.5X</b>
05	3.0	2.2	3.0	5.0	14	1	<b>E0506/03X</b>
06	3.0	2.2	3.0	5.0	14	1	<b>E0506/03X</b>
05	4.0	3.2	4.0	5.0	14	1	<b>E0506/04X</b>
06	4.0	3.2	4.0	5.0	14	1	<b>E0506/04X</b>
08	4.0	3.2	4.0	6.6	14	1	<b>E08/04X</b>
06	5.0	4.0	5.0	6.0	14	1	<b>E06/05X</b>
08	5.0	4.0	5.0	6.0	14	1	<b>E08/05X</b>
10	6.0	5.0	6.0	8.0	15	1	<b>E0810/06X</b>
08	6.0	5.0	6.0	8.0	15	1	<b>E0810/06X</b>
10	8.0	6.7	8.0	10.0	15	1	<b>E10/08X</b>
12	8.0	6.7	8.0	12.0	15	2	<b>E12/08X</b>
12	9.0	7.7	9.0	12.0	15	2	<b>E12/09X</b>
12	10.0	8.7	10.0	12.0	15	2	<b>E1215/10X</b>
15	12.0	10.7	12.0	14.8	15	3	<b>E15/12X</b>
15	12.5	11.2	12.5	14.8	15	3	<b>E1516/12.5X</b>
16	12.5	11.2	12.5	14.8	15	3	<b>E1516/12.5X</b>
18	14.0	12.7	14.0	17.8	15	4	<b>E18/14X</b>
18	16.0	14.7	16.0	17.8	20	4	<b>E1820/16X</b>
20	16.0	14.7	16.0	17.8	20	4	<b>E1820/16X</b>
22	18.0	16.7	18.0	21.8	16	5	<b>E22/18X</b>

## DOZ EO-2 Soft sealing ring



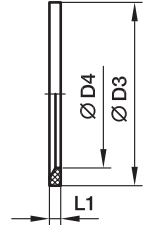
**Assembly direction:**  
Sealing lip shows to the tube end

Series	D1 	D2	Weight g/1 piece	Order code			
				Steel NBR	Steel FKM	Stainless Steel FKM	Stainless Steel NBR
LL <sup>2)</sup>	04	6.8	1	<b>DOZ04LL</b>	—	—	—
	06	8.8	1	<b>DOZ06LL</b>	—	—	—
L <sup>3)</sup>	06	10.3	1	<b>DOZ06L</b>	<b>DOZ06LVIT</b>	<b>DOZ06L71</b>	<b>DOZ06LNBR71</b>
	08	12.3	1	<b>DOZ08L</b>	<b>DOZ08LVIT</b>	<b>DOZ08L71</b>	<b>DOZ08LNBR71</b>
	10	14.3	2	<b>DOZ10L</b>	<b>DOZ10LVIT</b>	<b>DOZ10L71</b>	<b>DOZ10LNBR71</b>
	12	16.3	2	<b>DOZ12L</b>	<b>DOZ12LVIT</b>	<b>DOZ12L71</b>	<b>DOZ12LNBR71</b>
	15	20.3	3	<b>DOZ15L</b>	<b>DOZ15LVIT</b>	<b>DOZ15L71</b>	<b>DOZ15LNBR71</b>
	18	24.3	5	<b>DOZ18L</b>	<b>DOZ18LVIT</b>	<b>DOZ18L71</b>	<b>DOZ18LNBR71</b>
	22	27.7	6	<b>DOZ22L</b>	<b>DOZ22LVIT</b>	<b>DOZ22L71</b>	<b>DOZ22LNBR71</b>
	28	33.7	7	<b>DOZ28L</b>	<b>DOZ28LVIT</b>	<b>DOZ28L71</b>	<b>DOZ28LNBR71</b>
	35	42.7	14	<b>DOZ35L</b>	<b>DOZ35LVIT</b>	<b>DOZ35L71</b>	<b>DOZ35LNBR71</b>
	42	49.7	17	<b>DOZ42L</b>	<b>DOZ42LVIT</b>	<b>DOZ42L71</b>	<b>DOZ42LNBR71</b>
S <sup>4)</sup>	06	12.3	2	<b>DOZ06S</b>	<b>DOZ06SVIT</b>	<b>DOZ06S71</b>	<b>DOZ06SNBR71</b>
	08	14.3	2	<b>DOZ08S</b>	<b>DOZ08SVIT</b>	<b>DOZ08S71</b>	<b>DOZ08SNBR71</b>
	10	16.3	3	<b>DOZ10S</b>	<b>DOZ10SVIT</b>	<b>DOZ10S71</b>	<b>DOZ10SNBR71</b>
	12	18.3	4	<b>DOZ12S</b>	<b>DOZ12SVIT</b>	<b>DOZ12S71</b>	<b>DOZ12SNBR71</b>
	14	20.3	4	<b>DOZ14S</b>	<b>DOZ14SVIT</b>	<b>DOZ14S71</b>	<b>DOZ14SNBR71</b>
	16	22.3	5	<b>DOZ16S</b>	<b>DOZ16SVIT</b>	<b>DOZ16S71</b>	<b>DOZ16SNBR71</b>
	20	27.7	9	<b>DOZ20S</b>	<b>DOZ20SVIT</b>	<b>DOZ20S71</b>	<b>DOZ20SNBR71</b>
	25	33.7	13	<b>DOZ25S</b>	<b>DOZ25SVIT</b>	<b>DOZ25S71</b>	<b>DOZ25SNBR71</b>
	30	39.7	18	<b>DOZ30S</b>	<b>DOZ30SVIT</b>	<b>DOZ30S71</b>	<b>DOZ30SNBR71</b>
	38	49.7	27	<b>DOZ38S</b>	<b>DOZ38SVIT</b>	<b>DOZ38S71</b>	<b>DOZ38SNBR71</b>

<sup>2)</sup> LL = very light series; <sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

**ED Eolastic soft seal (for BSPP and metric parallel threads)**

For Type: GE...ED, EGE...ED, EVGE...ED, EW...ED, EV...ED, ET...ED, EL...ED, VSTI...ED, RI...ED

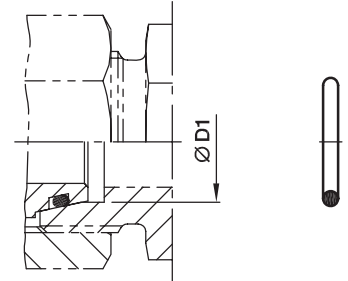


Male stud metric thread T1	Male stud BSP thread T1	D3	D4	L1	Weight g/1 piece	Order code NBR	Order code FKM
M 08×1.0		9.9	6.5	1.0	0.1	<b>ED8X1X</b>	<b>ED8X1VITX</b>
M 10×1.0	G 1/8 A	11.9	8.4	1.0	0.1	<b>ED10X1X</b>	<b>ED10X1VITX</b>
M 12×1.5		14.4	9.8	1.5	0.2	<b>ED12X1.5X</b>	<b>ED12X1.5VITX</b>
M 14×1.5	G 1/4 A	16.5	11.6	1.5	0.2	<b>ED14X1.5X</b>	<b>ED14X1.5VITX</b>
M 16×1.5		18.9	13.8	1.5	0.1	<b>ED16X1.5X</b>	<b>ED16X1.5VITX</b>
	G 3/8 A	18.9	14.7	1.5	0.2	<b>ED3/8X</b>	<b>ED3/8VITX</b>
M 18×1.5		20.9	15.7	1.5	0.1	<b>ED18X1.5X</b>	<b>ED18X1.5VITX</b>
M 20×1.5		22.9	17.8	1.5	0.2	<b>ED20X1.5X</b>	<b>ED20X1.5VITX</b>
	G 1/2 A	23.9	18.5	1.5	0.3	<b>ED1/2X</b>	<b>ED1/2VITX</b>
M 22×1.5		24.3	19.6	1.5	0.2	<b>ED22X1.5X</b>	<b>ED22X1.5VITX</b>
M 26×1.5	G 3/4 A	29.2	23.9	1.5	0.4	<b>ED26X1.5X</b>	<b>ED26X1.5VITX</b>
M 27×2.0	G 3/4 A	29.2	23.9	1.5	0.4	<b>ED26X1.5X</b>	<b>ED26X1.5VITX</b>
M 33×2.0	G 1 A	35.7	29.7	2.0	0.7	<b>ED33X2X</b>	<b>ED33X2VITX</b>
M 42×2.0	G 1 1/4 A	45.8	38.8	2.0	0.9	<b>ED42X2X</b>	<b>ED42X2VITX</b>
M 48×2.0	G 1 1/2 A	50.7	44.7	2.0	1.0	<b>ED48X2X</b>	<b>ED48X2VITX</b>

## OR O-Ring for fittings with EO 24° DKO swivel

For Type:

DA, EGE, EGEO, MAVE, EW, EV, ET, EL, RED, GZ, GZR, VKA, VKAM

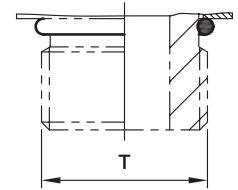


Series	D1 	O-ring NBR Shore-hardness approx. 90	O-ring FKM Shore-hardness approx. 90
L <sup>3)</sup>	6	OR4.5X1.5X	OR4.5X1.5VITX
	8	OR6.5X1.5X	OR6.5X1.5VITX
	10	OR8.5X1.5X	OR8X1.5VITX
	12	OR10.5X1.5X	OR10X1.5VITX
	15	OR12.5X2X	OR12X2VITX
	18	OR16X2X	OR15X2VITX
	22	OR20X2X	OR20X2VITX
	28	OR26X2X	OR26X2VITX
	35	OR32X2.5X	OR32X2.5VITX
	42	OR39X2.5X	OR38X2.5VITX
S <sup>4)</sup>	6	OR4.5X1.5X	OR4.5X1.5VITX
	8	OR6.5X1.5X	OR6.5X1.5VITX
	10	OR8.5X1.5X	OR8X1.5VITX
	12	OR10.5X1.5X	OR10X1.5VITX
	14	OR12X2X	OR12X2VITX
	16	OR14X2X	OR13X2VITX
	20	OR17X2.5X	OR16.3X2.4VITX
	25	OR22X2.5X	OR20.3X2.4VITX
	30	OR27X2.5X	OR25.3X2.4VITX
	38	OR35X2.5X	OR33.3X2.4VITX

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

## OR O-rings for male stud ends

Male metric thread – O-ring (ISO 6149)  
Male UN/UNF thread – O-ring (ISO 11926)



Types with metric thread:  
VSTI-OR, GEO, EGEO

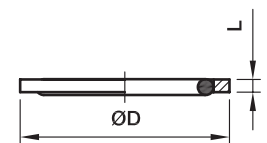
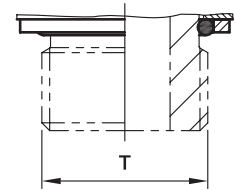
Thread T	O-ring NBR	O-ring FKM
M 08×1.0	<b>OR6.1X1.6</b>	<b>OR6.1X1.6VITX</b>
M 10×1.0	<b>OR8.1X1.6</b>	<b>OR8.1X1.6VITX</b>
M 12×1.5	<b>OR9.3X2.2</b>	<b>OR9.3X2.2VITX</b>
M 14×1.5	<b>OR11.3X2.2</b>	<b>OR11.3X2.2VITX</b>
M 16×1.5	<b>OR13.3X2.2</b>	<b>OR13.3X2.2VITX</b>
M 18×1.5	<b>OR15.3X2.2</b>	<b>OR15.3X2.2VITX</b>
M 22×1.5	<b>OR19.3X2.2</b>	<b>OR19.3X2.2VITX</b>
M 27×2.0	<b>OR23.6X2.9</b>	<b>OR23.6X2.9VITX</b>
M 33×2.0	<b>OR29.6X2.9</b>	<b>OR29.6X2.9VITX</b>
M 42×2.0	<b>OR38.6X2.9</b>	<b>OR38.6X2.9VITX</b>
M 48×2.0	<b>OR44.6X2.9</b>	<b>OR44.6X2.9VITX</b>

Types with UN/UNF thread:  
GE-UNF

Thread T	O-ring NBR	O-ring FKM
7/16-20 UNF	<b>OR8.92X1.83</b>	<b>OR8.92X1.83VITX</b>
9/16-18 UNF	<b>OR11.89X1.98</b>	<b>OR11.89X1.98VITX</b>
3/4-16 UNF	<b>OR16.36X2.21</b>	<b>OR16.36X2.21VITX</b>
7/8-14 UNF	<b>OR19.18X2.46</b>	<b>OR19X2.5VITX</b>
1 1/16-12 UN	<b>OR23.47X2.95</b>	<b>OR23.47X2.95VITX</b>
1 5/16-12 UN	<b>OR29.74X2.95</b>	<b>OR29.74X2.95VITX</b>
1 5/8-12 UN	<b>OR37.46X3</b>	<b>OR37.46X3VITX</b>
1 7/8-12 UN	<b>OR43.69X3</b>	<b>OR43.69X3VITX</b>

## OR O-rings and retaining rings for male stud ends

Adjustable BSPP thread – O-ring + retaining ring (ISO 1179)



Types with BSPP thread: WEE-R

Thread T	O-ring NBR	Steel			O-ring FKM	Stainless Steel		
		D	L	Order code Retaining ring CF		D	L	Order code Retaining ring Stainless Steel
G 1/8 A	<b>OR8X1.88X</b>	14.8	1.4	<b>RRS1/8CF</b>	same like steel	15.0	1.4	<b>8207SS1/8</b>
G 1/4 A	<b>OR10.77X2.62X</b>	19.8	1.9	<b>RRS1/4CF</b>	<b>OR10.77X2.62VITX</b>	19.5	1.9	<b>8207SS1/4A</b>
G 3/8 A	<b>OR13.94X2.62X</b>	22.8	2.0	<b>RRS3/8CF</b>	same like steel	23.5	1.9	<b>8207SS3/8A</b>
G 1/2 A	<b>OR18X3.15X</b>	27.8	2.6	<b>RRS1/2CF</b>	<b>OR17.96X2.62VITX</b>	28.5	1.9	<b>8207SS1/2</b>
G 3/4 A	<b>OR23X3X</b>	32.8	2.5	<b>RRS3/4CF</b>	<b>OR23.47X2.62VITX</b>	34.5	1.9	<b>8207SS3/4</b>
G 1 A	<b>OR29.74X3.53X</b>	40.8	2.5	<b>RRS1CF</b>	same like steel	43.5	2.6	<b>8207SS1A</b>
G 1 1/4 A	<b>OR37.69X3.53X</b>	50.8	2.6	<b>RRS11/4CF</b>	same like steel	52.5	2.6	<b>8207SS11/4</b>
G 1 1/2 A	<b>OR44.04X3.53X</b>	55.8	2.6	<b>RRS11/2CF</b>	same like steel	60.0	2.6	<b>8207SS11/2</b>

Order code suffixes	
Material	Example
NBR	OR10.77X2.62X
FKM	OR10.77X2.62VITX

## OR O-Rings for banjo fittings WH/TH

For WH / TH	For WH / TH	O-ring NBR	O-ring FKM
06LM/LR		<b>OR9.3X1.5X</b>	<b>OR9.3X1.5VITX</b>
08LM/LR	06SM/SR	<b>OR12.5X1.5X</b>	<b>OR12.5X1.5VITX</b>
10LM/LR	08SM/SR	<b>OR12.5X1.5X</b>	<b>OR12.5X1.5VITX</b>
12LM/LR	10SM/SR	<b>OR16X1.5X</b>	<b>OR16X1.5VITX</b>
	12SR	<b>OR16X1.5X</b>	<b>OR16X1.5VITX</b>
15LM	12SM	<b>OR18X1.5X</b>	<b>OR18X1.5VITX</b>
15LR	14SM/SR	<b>OR20X1.5X</b>	<b>OR20X1.5VITX</b>
18LM/LR	16SM/SR	<b>OR20X1.5X</b>	<b>OR20X1.5VITX</b>
22LM/LR	20SM/SR	<b>OR25X2X</b>	<b>OR25X2VITX</b>
28LM/LR	25SM/SR	<b>OR33X2.5X</b>	<b>OR33X2.5VITX</b>
35LM/LR	30SM/SR	<b>OR41X2.5X</b>	<b>OR41X2.5VITX</b>
42LM/LR	38SM/SR	<b>OR46X3X</b>	<b>OR46X3VITX</b>

## OR O-Rings for banjo elbows SWVE..M/R KDSOMD

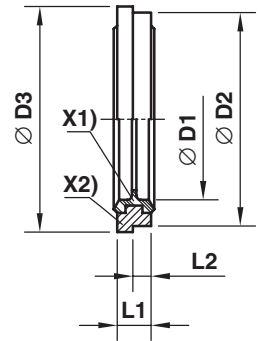
For SWVE..M/R KDSOMD	O-ring NBR
04LLR/-   06LLR/LLM   08LLR/LLM   06LR/LM	<b>OR9X1.2X</b>
08LM   06SM	<b>OR10X1.5X</b>
08LR   06SR   10LR/LM   08SR/LM	<b>OR12.5X1.5X</b>
12LR/LM   10SR/LM   12SR	<b>OR15X1.5X</b>
15LM   12SM	<b>OR16X1.5X</b>
15LR   14SR/-	<b>OR19X1.5X</b>
18LR/LM   16SR/SM	<b>OR20X1.5X</b>
22LR/LM   20SR/SM	<b>OR25.12X1.78X</b>
28LR/LM   25SR/SM	<b>OR33X2.5X</b>
35LR/LM   30SR/SM	<b>OR41X2.5X</b>
42LR/LM   38SR/SM	<b>OR46X3.0X</b>

## DKI Sealing ring for pressure gauge connectors

Female thread	D1	D2	L1	Weight g/1 piece	Order code	
					Steel CF	Stainless Steel 71
G 1/4	6	11.3	4.5	2.5	<b>DKI1/4CFX</b>	<b>DKI1/471X</b>
G 1/2	12	18.5	5.0	5.0	<b>DKI1/2CFX</b>	<b>DKI1/271X</b>

## KDS Soft sealing ring for banjo fittings SWVE, WH and TH from steel

for small and wide spot faces of ports



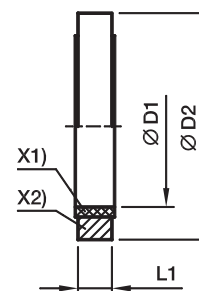
X1) NBR sealing  
X2) Supporting-ring (Steel)

Male stud metric thread	Male stud BSPP thread	D1	D2	D3	L1	L2	Weight g/1 piece	Order code	
								Steel/NBR	Steel/FKM
M 10×1.0	G 1/8 A	10.3	14.9	16.0	2.5	1.1	2	<b>KDS10X</b>	<b>KDS10VITX</b>
M 12×1.5		12.3	17.0	18.0	3.0	1.6	2	<b>KDS12X</b>	<b>KDS12VITX</b>
M 14×1.5	G 1/4 A	14.3	18.9	20.0	3.0	1.6	2	<b>KDS14X</b>	<b>KDS14VITX</b>
M 16×1.5	G 3/8 A	17.0	21.9	24.0	3.0	2.1	3	<b>KDS16X</b>	<b>KDS16VITX</b>
M 18×1.5		18.3	23.9	23.9	3.0		4	<b>KDS18X</b>	<b>KDS18VITX</b>
M 22×1.5	G 1/2 A	22.3	26.9	30.0	4.5	2.6	7	<b>KDS22X</b>	<b>KDS22VITX</b>
M 26×1.5		26.3	31.9	35.0	3.5	2.6	7	<b>KDS26X</b>	<b>KDS26VITX</b>
M 27×2.0	G 3/4 A	27.3	32.9	38.0	3.5	2.6	8	<b>KDS27X</b>	<b>KDS27VITX</b>
M 33×2.0	G 1 A	33.6	39.9	42.0	3.5	2.6	10	<b>KDS33X</b>	<b>KDS33VITX</b>
M 42×2.0	G 1 1/4 A	42.4	49.9	49.9	3.5		12	<b>KDS42X</b>	<b>KDS42VITX</b>
M 48×2.0	G 1 1/2 A	48.4	55.9	60.0	3.5	2.6	16	<b>KDS48X</b>	<b>KDS48VITX</b>



## KD Soft sealing ring for banjo fittings WH/TH from stainless steel

for wide spot faces of ports

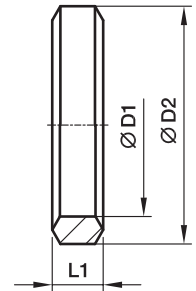


X1) PTFE sealing  
X2) Supporting-ring (Stainless Steel)

For WH and TH	For thread	D1	D2	L1	Weight g/1 piece	Order code
06LRKD71	G 1/8 A	10.0	17.0	2.5	2	<b>KD1/871</b>
08LR/06SRKD71	G 1/4 A	13.5	22.0	3.0	4	<b>KD1/471</b>
10LR/08SRKD71	G 1/4 A	13.5	22.0	3.0	4	<b>KD1/471</b>
12LR/10SRKD71	G 3/8 A	17.1	27.0	3.0	6	<b>KD3/871</b>
12SRKD71	G 3/8 A	17.1	27.0	3.0	6	<b>KD3/871</b>
15LR/14SRKD71	G 1/2 A	21.4	32.0	4.5	12	<b>KD1/271</b>
18LR/16SRKD71	G 1/2 A	21.4	32.0	4.5	12	<b>KD1/271</b>
22LR/20SRKD71	G 3/4 A	26.8	41.0	3.5	17	<b>KD3/471</b>
28LR/25SRKD71	G 1 A	33.5	46.0	3.5	17	<b>KD171</b>
35LR/30SRKD71	G 1 1/4 A	42.4	57.0	3.5	26	<b>KD11/471</b>
42LR/38SRKD71	G 1 1/2 A	48.4	64.0	3.5	35	<b>KD11/271</b>
06LMKD71	M 10×1.0	10.3	17.0	2.5	2	<b>KD1071</b>
08LM/06SMKD71	M 12×1.5	12.3	22.0	3.0	5	<b>KD1271</b>
10LM/08SMKD71	M 14×1.5	14.3	22.5	3.0	5	<b>KD1471</b>
12LM/10SMKD71	M 16×1.5	16.4	27.0	3.0	9	<b>KD1671</b>
15LM/12SMKD71	M 18×1.5	18.4	29.0	3.0	9	<b>KD1871</b>
14SMKD71	M 20×1.5	20.4	32.0	3.0	9	<b>KD2071</b>
18LM/16SMKD71	M 22×1.5	22.4	32.0	4.5	12	<b>KD2271</b>
22LMKD71	M 26×1.5	26.4	41.0	3.5	18	<b>KD2671</b>
20SMKD71	M 27×2.0	27.4	41.0	3.5	18	<b>KD2771</b>
28LM/25SMKD71	M 33×2.0	33.5	46.0	3.5	17	<b>KD171</b>
35LM/30SMKD71	M 42×2.0	42.4	57.0	3.5	26	<b>KD11/471</b>
42LM/38SMKD71	M 48×2.0	48.4	64.0	3.5	35	<b>KD11/271</b>

## DKAZ Sealing ring

for low pressure banjos DSVW



For DSVW		Metric thread parallel	D1	D2	L1	Weight g/1 piece	Order code Steel CF
06LM		M 10×1.0	10.1	14	3.2	2	<b>DKAZ10CFX</b>
08LM	06SM	M 12×1.5	12.1	17	4.2	3	<b>DKAZ12CFX</b>
10LM	08SM	M 14×1.5	14.1	19	4.5	4	<b>DKAZ14CFX</b>
12LM	10SM	M 16×1.5	16.1	21	4.5	4	<b>DKAZ16CFX</b>
15LM	12SM	M 18×1.5	18.1	23	4.5	5	<b>DKAZ18CFX</b>
	14SM	M 20×1.5	20.1	25	4.5	5	<b>DKAZ20CFX</b>
18LM	16SM	M 22×1.5	22.1	27	4.5	6	<b>DKAZ22CFX</b>
22LM		M 26×1.5	26.1	31	4.5	7	<b>DKAZ26CFX</b>
	20SM	M 27×2.0	27.1	32	5.0	8	<b>DKAZ27CFX</b>
28LM	25SM	M 33×2.0	33.1	39	6.0	15	<b>DKAZ33CFX</b>
35LM	30SM	M 42×2.0	42.1	49	6.5	22	<b>DKAZ11/4CFX</b>
42LM	38SM	M 48×2.0	48.1	55	6.5	25	<b>DKAZ11/2CFX</b>

For DSVW		BSPP thread parallel	D1	D2	L1	Weight g/1 piece	Order code Steel CF
06LR		G 1/8 A	9.8	14	3.2	2	<b>DKAZ1/8CFX</b>
08LR/10LR	06SR/08SR	G 1/4 A	13.3	18	4.5	4	<b>DKAZ1/4CFX</b>
12LR	10SR/12SR	G 3/8 A	16.8	22	4.5	5	<b>DKAZ3/8CFX</b>
15LR/18LR	14SR/16SR	G 1/2 A	21.1	26	5.0	6	<b>DKAZ1/2CFX</b>
22LR	20SR	G 3/4 A	26.6	32	5.0	11	<b>DKAZ3/4CFX</b>
28LR	25SR	G 1 A	33.4	39	6.0	14	<b>DKAZ1CFX</b>
35LR	30SR	G 1 1/4 A	42.1	49	6.5	22	<b>DKAZ11/4CFX</b>
42LR	38SR	G 1 1/2 A	48.1	55	6.5	25	<b>DKAZ11/2CFX</b>

## DKA Sealing ring

for banjo fittings WH/TH and SWVE



BSPP thread	D1	D2	L1	Weight g/1 piece	Order code	
					Steel CF	Stainless Steel 71
G 1/8 A	9.8	14	2.5	1	DKA1/8CFX	DKA1/871X
G 1/4 A	13.3	18	3.0	3	DKA1/4CFX	DKA1/471X
G 3/8 A	16.8	22	3.0	3	DKA3/8CFX	DKA3/871X
G 1/2 A	21.1	26	4.5	6	DKA1/2X4.5CFX	DKA1/2X4.571X
G 3/4 A	26.6	32	3.5	6	DKA3/4CFX	DKA3/471X
G 1 A	33.4	39	3.5	8	DKA1CFX	DKA171X
G 1 1/4 A	42.1	49	3.5	12	DKA11/4CFX	DKA11/471X
G 1 1/2 A	48.1	55	3.5	15	DKA11/2CFX	DKA11/271X



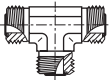
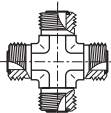
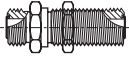
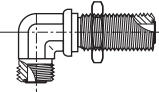
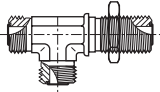
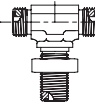
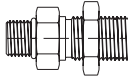
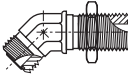

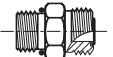
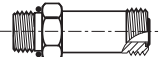
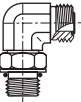


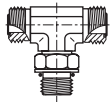
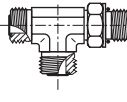

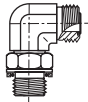
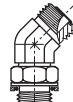
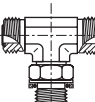
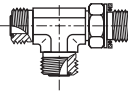
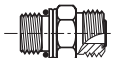
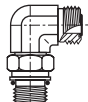
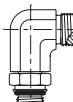

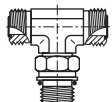
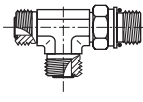
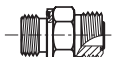
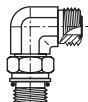
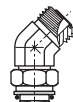
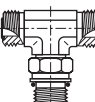
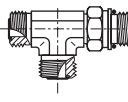
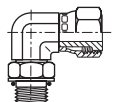
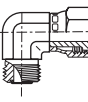
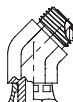
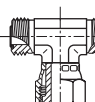
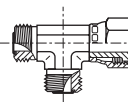
Male stud metric thread	D1	D2	L1	Weight g/1 piece	Order code	
					Steel CF	Stainless Steel 71
M 08x1.0	8.1	12	2.5	1	DKA08CFX	
M 10x1.0	10.1	14	3.0	1	DKA10CFX	DKA1071X
M 12x1.5	12.1	17	3.0	2	DKA12CFX	DKA1271X
M 14x1.5	14.1	19	3.0	3	DKA14CFX	DKA1471X
M 16x1.5	16.1	21	3.0	3	DKA16CFX	DKA1671X
M 18x1.5	18.1	23	3.0	3	DKA18CFX	DKA1871X
M 20x1.5	20.1	25	3.0	4	DKA20CFX	DKA2071X
M 22x1.5	22.1	27	4.5	6	DKA22X4.5CFX	DKA22X4.571X
M 26x1.5	26.1	31	3.5	6	DKA26X3.5CFX	DKA26X3.571X
M 27x2.0	27.1	32	3.5	6	DKA27CFX	DKA2771X
M 33x2.0	33.1	39	3.5	8	DKA33CFX	DKA3371X
M 42x2.0	42.1	49	3.5	12	DKA11/4CFX	DKA11/471X
M 48x2.0	48.1	55	3.5	15	DKA11/2CFX	DKA11/271X



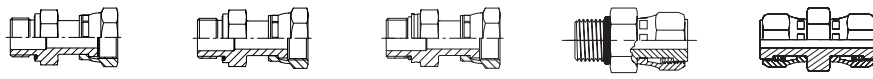
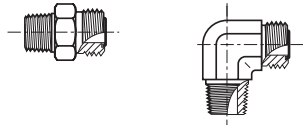

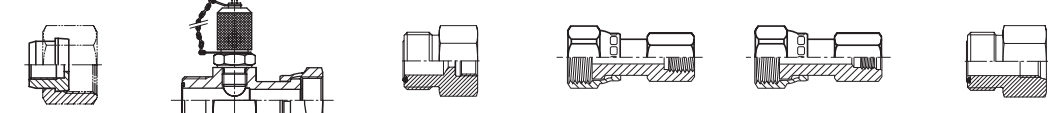
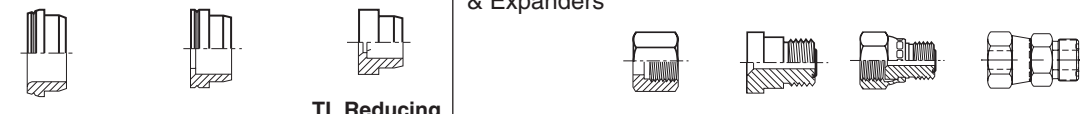
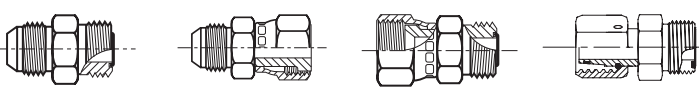
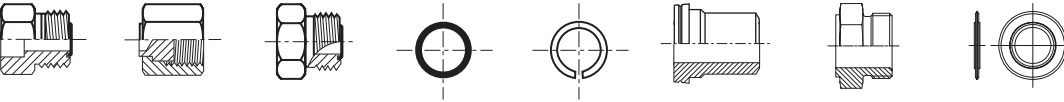
**O-Lok<sup>®</sup>**  
*O-Ring face seal tube fittings*



## Visual index

<p>Tube- Tube unions</p>	 <b>HMLO</b> p. J9	 <b>EMLO</b> p. J10	 <b>JMLO</b> p. J11	 <b>KLO</b> p. J12			
<p>Bulkhead unions</p>	 <b>WMLO</b> p. J13	 <b>WEMLO</b> p. J14	 <b>WJJLO</b> p. J17	 <b>WJLO</b> p. J16	 <b>WF5OLO</b> p. J29	 <b>WNLO</b> p. J15	 <b>WLNML</b> p. J72
<p>Tube to UNF thread</p>	 <b>F5OMLO</b> p. J27	 <b>FF5OMLO</b> p. J28	 <b>C5OMLO</b> p. J39	 <b>CC5OLO</b> p. J40	 <b>V5OMLO</b> p. J45	 <b>S5OMLO</b> p. J49	 <b>R5OMLO</b> p. J53
<p>Tube to BSP thread</p>	 <b>F42EDMLO</b> p. J30	 <b>C4OMLO</b> p. J41	 <b>V4OMLO</b> p. J46	 <b>S4OMLO</b> p. J50	 <b>R4OMLO</b> p. J54		
<p>Tube to metric ISO 6149-2 thread</p>	 <b>F87OMLO</b> p. J26	 <b>C87OMLO</b> p. J37	 <b>CC87OMLO</b> p. J38	 <b>V87OMLO</b> p. J44	 <b>S87OMLO</b> p. J48	 <b>R87OMLO</b> p. J52	
<p>Tube to metric thread</p>	 <b>F82EDMLO</b> p. J31	 <b>C8OMLO</b> p. J42	 <b>V8OMLO</b> p. J47	 <b>S8OMLO</b> p. J51	 <b>R8OMLO</b> p. J55		
<p>Swivel fittings</p>	 <b>AOEL6</b> p. J18	 <b>C6MLO</b> p. J19	 <b>V6LO</b> p. J20	 <b>S6MLO</b> p. J21	 <b>R6MLO</b> p. J22		

## Visual index

Swivel nut to straight thread	 <p><b>BSPP F642EDML</b> p. J35</p> <p><b>Metric F682EDML</b> p. J36</p> <p><b>ISO Metric F687OML</b> p. J33</p> <p><b>UNF F65OL</b> p. J34</p> <p><b>HL6</b> p. J25</p>
Tube to NPTF thread	 <p><b>FLO</b> p. J32</p> <p><b>CLO</b> p. J43</p> <p>Taper threads should not be used for new projects or designs. Parker Hannifin recommends elastomerically sealed components.</p>
Bleed adapters	 <p><b>FNLBA</b> p. J69</p> <p><b>PNLOBA</b> p. J70</p> <p><b>NPTF HPBA</b> p. J71</p> <p><b>UNF P5ONBA</b> p. J71</p>
Test point and gauge adapters	 <p><b>TTP4ML</b> p. J60</p> <p><b>R6P4MLO</b> p. J61</p> <p><b>G4MLOSOMO</b> p. J57</p> <p><b>TT4ML</b> p. J58</p> <p><b>TT8ML</b> p. J59</p> <p><b>G87MLO</b> p. J56</p>
Sleeves for metric and inch tube	 <p><b>TPL</b> p. J6</p> <p><b>TL</b> p. J7</p> <p><b>TL Reducing Braze Sleeve</b> p. J8</p> <p><b>BML/BL</b> p. J5</p> <p><b>TRMLO</b> p. J23</p> <p><b>LOHL6</b> p. J24</p> <p>Nuts, Reducers &amp; Expanders</p>
Conversion adapters	 <p><b>XHML0</b> p. J65</p> <p><b>XHML6</b> p. J66</p> <p><b>LOHMX6</b> p. J67</p> <p><b>LOHU86</b> p. J68</p>
Accessories	 <p><b>LOHB3</b> p. J62</p> <p><b>FNML</b> p. J63</p> <p><b>PNMLO</b> p. J64</p> <p><b>O-ring</b> p. J73–74</p> <p><b>SBR Braze ring</b> p. J75</p> <p><b>TW3L</b> p. J72</p> <p><b>LHP</b> p. J76</p> <p><b>PLS</b> p. J76</p> <p>Flange Seal Components</p>

J

## How to order O-Lok® fittings

Example Order code **6-8 C 5 O M L O S**

1      2      3      4      5      6      7      8

### 1 Order codes for tube and port thread ends

Dash Size	Tube Size (Inch)	Tube Size (mm)	Port Thread Size (Inch) BSPP/BSPT/NPT	Port Thread Size UN / UNF
4	1/4	6	1/4	7/16-20
5				1/2-20
6	3/8	8,10	3/8	9/16-18
8	1/2	12	1/2	3/4-16
10	5/8	14,15,16	5/8	7/8-14
12	3/4	18,20	3/4	1 1/6-12
14				1 3/6-12
16	1	25	1	1 5/6-12
20	1 1/4	28,30,32	1 1/4	1 5/8-12
24	1 1/2	35,38	1 1/2	1 7/8-12
32	2	50	2	2 1/2-12

Metric port threads are shown as per example 4M12C87OMLOS

### 2 Codes for fitting styles/shapes

Code	Description
AE6	Straight Thread Swivel
B	Nut
C	Male Stud elbow
CC	Extended Male Stud elbow
C6	Swivel Nut Elbow
E	Union elbow
F	Male Stud connector
FF	Extended Male Stud connector
F6	Male Stud Swivel
FN	Cap
FNLBAS	Bleed Adapter Cap
G	Female Connector
H	Straight union
H6	Swivel/Swivel Adapter
J	Union Tee
K	Union Cross
LOHB3	Braze Adapter
LOHX6	Triple-Lok® Swivel/O-Lok® adaptor
M	Female Run Tee
O	Female Branch Tee
PN	Plug
PNLOBA	Bleed Adapter Plug
R	Male Stud Run Tee
R6	Swivel Run Tee
S	Male Stud Branch Tee
S6	Swivel Branch Tee
SBR	Braze Ring
TPL	Parflange® sleeve
TL	Brazed sleeve
TR	Tube End Reducer
TT	Test Point Adapter
TW3	Weld Nipple
V	45° male stud elbow
V6	Swivel Nut 45° Elbow
W	Bulkhead Union
WE	Bulkhead Union Elbow
WJJ	Bulkhead Run Tee
WJT	Bulkhead Branch Tee
WLNML	Bulkhead Locknut
WN	Bulkhead 45° union elbow
XHL6	Triple Lok®/Swivel O-Lok® adaptor
XHLO	Triple Lok®/O-Lok® male adaptor

### 3 Threads and sealing methods

Code	Description
None	NPT/NPTF Thread
3	BSPT Thread
4	BSPP Thread O-Ring & Retainer Ring
42	BSPP Thread EOLASTIC seal 'ED'
5	UN/UNF Thread (O-Ring Seal)
8	Metric Thread O-Ring & Retainer Ring
82	Metric Thread EOLASTIC seal 'ED'
87	Metric ISO 6149 Thread (O-Ring Seal)
63	Swivel Connector BSPT end
64	Swivel Connector BSPP end (O-Ring & Retainer Ring)
642	Swivel Connector BSPP end (EOLASTIC Seal 'ED')
65	Swivel Connector UN/UNF end (O-Ring seal)
68	Swivel Connector Metric end (O-Ring & Retainer Ring)
682	Swivel Connector Metric end (EOLASTIC Seal 'ED')
687	Swivel Connector Metric ISO 6149 end

### 4 Stud connector seal

Code	Description
O	O-Ring Seal (Assembled on fitting)
ED	Captive EOLASTIC Seal (Assembled on fitting)
No Code	No Seal (O-Ring not assembled on fitting)

### 5 Hexagon/ Across flats style

Code	Description
M	Metric Hexagon Dimension
No Code	Inch Hexagon Dimension

### 6 Fitting type

Code	Description
L	Parker O-Lok®

### 7 Tube connection seal ORFS

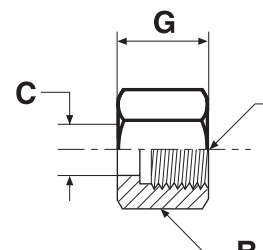
Code	Description
O	O-Ring Seal (Assembled on Fitting)
No Code	No Seal/O-Ring

### 8 Fitting material

Code	Description
S	Steel
SS	Stainless Steel
B	Brass

## BML Nut

O-Lok® ORFS tube nut  
SAE 52M0110 ISO 8434-3 NA

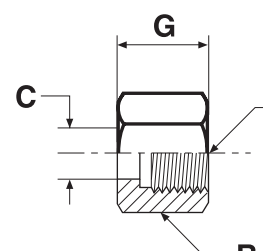


Tube O.D.		Thread UN/UNF-2B T	B mm	C mm	G mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
mm	in.							
6	1/4	9/16-18	17	11	15	14	<b>4BMLS</b>	<b>4BMLSS</b>
8, 10	5/16, 3/8	11/16-16	22	14	17	17	<b>6BMLS</b>	<b>6BMLSS</b>
12	1/2	13/16-16	24	17	20	29	<b>8BMLS</b>	<b>8BMLSS</b>
14, 15, 16	5/8	1-14	30	21	24	46	<b>10BMLS</b>	<b>10BMLSS</b>
18, 20	3/4	1 3/16-12	36	24	27	69	<b>12BMLS</b>	<b>12BMLSS</b>
22, 25	1	1 7/16-12	41	29	28	109	<b>16BMLS</b>	<b>16BMLSS</b>
28, 30, 32	1 1/4	1 11/16-12	50	36	28	126	<b>20BMLS</b>	<b>20BMLSS</b>
35, 38	1 1/2	2-12	60	44	28	195	<b>24BMLS</b>	<b>24BMLSS</b>
50	2	2 1/2-12	75	56	33	800	<b>32BMLS</b>	<b>32BMLSS</b>

Part numbers shown are part of our current manufacturing programme.

## BL Nut

O-Lok® ORFS tube nut  
SAE 520110



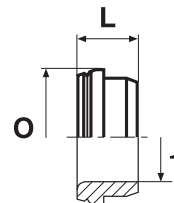
Tube O.D.		Thread UN/UNF-2B T	B in.	C mm	G mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
mm	in.							
6	1/4	9/16-18	11/16	10	15	16	<b>4 BL-S</b>	<b>4 BL-SS</b>
8, 10	5/16, 3/8	11/16-16	13/16	14	17	24	<b>6 BL-S</b>	<b>6 BL-SS</b>
12	1/2	13/16-16	15/16	17	21	37	<b>8 BL-S</b>	<b>8 BL-SS</b>
14, 15, 16	5/8	1-14	1 1/8	21	24	52	<b>10 BL-S</b>	<b>10 BL-SS</b>
18, 20	3/4	1 3/16-12	1 3/8	24	26	89	<b>12 BL-S</b>	<b>12 BL-SS</b>
22, 25	1	1 7/16-12	1 5/8	29	28	119	<b>16 BL-S</b>	<b>16 BL-SS</b>
28, 30, 32	1 1/4	1 11/16-12	1 7/8	36	28	132	<b>20 BL-S</b>	<b>20 BL-SS</b>
35, 38	1 1/2	2-12	2 1/4	44	28	220	<b>24 BL-S</b>	<b>24 BL-SS</b>
50	2	2 1/2-12	2 7/8	56	33	700	<b>32 BL-S</b>	<b>32 BL-SS</b>

Part numbers shown are part of our current manufacturing programme.



## TPL Sleeve metric tubing

O-Lok® ORFS Parflange® tube sleeve

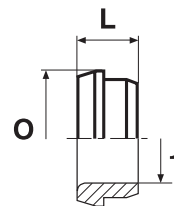


Tube O.D. 1 mm	L mm	O mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
6	7.5	13	4	<b>TPLS6</b>	<b>TPLSS6</b>
8	8.5	16	4	<b>TPLS8</b>	<b>TPLSS8</b>
10	8.5	16	5	<b>TPLS10</b>	<b>TPLSS10</b>
10	10.5	19	6	<b>TPLS12-10</b>	<b>TPLSS12-10</b>
12	10.5	19	6	<b>TPLS12</b>	<b>TPLSS12</b>
14	10.5	23	10	<b>TPLS14</b>	<b>TPLSS14</b>
15	10.5	23	9	<b>TPLS15</b>	<b>TPLSS15</b>
16	10.5	23	8	<b>TPLS16</b>	<b>TPLSS16</b>
18	12.0	28	14	<b>TPLS18</b>	<b>TPLSS18</b>
20	12.0	28	15	<b>TPLS20</b>	<b>TPLSS20</b>
22	13.5	34	20	<b>TPLS22</b>	<b>TPLSS22</b>
25	13.5	34	23	<b>TPLS25</b>	<b>TPLSS25</b>
28	13.0	41	24	<b>TPLS28</b>	<b>TPLSS28</b>
30	13.0	41	25	<b>TPLS30</b>	<b>TPLSS30</b>
32	13.0	41	26	<b>TPLS32</b>	<b>TPLSS32</b>
35	12.5	48	36	<b>TPLS35</b>	<b>TPLSS35</b>
38	12.5	48	44	<b>TPLS38</b>	<b>TPLSS38</b>
50	14.0	61	180	<b>TPLS50</b>	<b>TPLSS50</b>

Part numbers shown are part of our current manufacturing programme.

## TPL Sleeve inch tubing

O-Lok® ORFS Parflange® tube sleeve

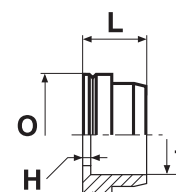


Tube O.D. 1 in.	L mm	O mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
1/4	8	13	4	<b>4 TPL-S</b>	<b>4 TPL-SS</b>
3/8	9	16	5	<b>6 TPL-S</b>	<b>6 TPL-SS</b>
1/2	11	19	6	<b>8 TPL-S</b>	<b>8 TPL-SS</b>
5/8	11	23	11	<b>10 TPL-S</b>	<b>10 TPL-SS</b>
3/4	12	28	19	<b>12 TPL-S</b>	<b>12 TPL-SS</b>
7/8	14	34	19	<b>14 TPL-S</b>	<b>14 TPL-SS</b>
1	14	34	22	<b>16 TPL-S</b>	<b>16 TPL-SS</b>
1 1/4	13	41	28	<b>20 TPL-S</b>	<b>20 TPL-SS</b>
1 1/2	13	48	44	<b>24 TPL-S</b>	<b>24 TPL-SS</b>
2	14	61	180	<b>32 TPL-S</b>	<b>32 TPL-SS</b>

Part numbers shown are part of our current manufacturing programme.

## TL\* Braze sleeve metric tubing

O-Lok® ORFS silver braze tube sleeve  
SAE 52M0115 ISO 8434-3 BRSL  
(\*Parts delivered oil dipped finish only – steel)

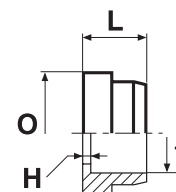


ORFS dash size	Tube O.D. 1 mm	H mm	L mm	O mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
4	6	1	10	13	5	<b>TLS6</b>	<b>TLSS6</b>
4	8	1	10	13	5	<b>TLS6-8</b>	<b>TLSS6-8</b>
6	8	2	10	16	7	<b>TLS10-8</b>	<b>TLSS10-8</b>
6	10	1	10	16	7	<b>TLS10</b>	<b>TLSS10</b>
8	12	1	10	19	10	<b>TLS12</b>	<b>TLSS12</b>
10	15	2	11	23	16	<b>TLS16-15</b>	<b>TLSS16-15</b>
10	16	2	11	23	16	<b>TLS16</b>	<b>TLSS16</b>
12	18	2	14	28	26	<b>TLS20-18</b>	<b>TLSS20-18</b>
12	20	2	14	28	21	<b>TLS20</b>	<b>TLSS20</b>
16	22	2	16	34	33	<b>TLS25-22</b>	<b>TLSS25-22</b>
16	25	2	16	34	30	<b>TLS25</b>	<b>TLSS25</b>
20	28	2	16	41	41	<b>TLS32-28</b>	<b>TLSS32-28</b>
20	30	2	16	41	42	<b>TLS32-30</b>	<b>TLSS32-30</b>
20	32	2	16	41	40	<b>TLS32</b>	<b>TLSS32</b>
24	35	2	16	49	48	<b>TLS38-35</b>	<b>TLSS38-35</b>
24	38	2	16	49	63	<b>TLS38</b>	<b>TLSS38</b>
32	50	2	16	60	210	<b>TLS50</b>	<b>TLSS50</b>

Part numbers shown are part of our current manufacturing programme.

## TL\* Braze sleeve inch tubing

O-Lok® ORFS silver braze tube sleeve  
SAE 520115  
(\*Parts delivered oil dipped finish only – steel)

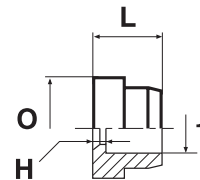


Tube O.D. 1 in.	H mm	L mm	O mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
1/4	1	10	13	5	<b>4 TL-S</b>	<b>4 TL-SS</b>
3/8	1	10	16	6	<b>6 TL-S</b>	<b>6 TL-SS</b>
1/2	1	10	19	10	<b>8 TL-S</b>	<b>8 TL-SS</b>
5/8	2	11	23	18	<b>10 TL-S</b>	<b>10 TL-SS</b>
3/4	2	14	28	26	<b>12 TL-S</b>	<b>12 TL-SS</b>
1	2	16	34	33	<b>16 TL-S</b>	<b>16 TL-SS</b>
1 1/4	2	16	41	42	<b>20 TL-S</b>	<b>20 TL-SS</b>
1 1/2	2	16	49	63	<b>24 TL-S</b>	<b>24 TL-SS</b>
2	2	17	61	210	<b>32 TL-S</b>	<b>32 TL-SS</b>

Part numbers shown are part of our current manufacturing programme.

**TL\* Reducing braze sleeve inch tubing**

O-Lok® ORFS silver braze tube sleeve  
 SAE 520115  
 (\*Parts delivered oil dipped finish only – steel)

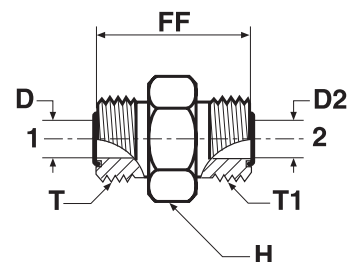


ORFS dash size	Tube O.D. 1 in.	H mm	L mm	O mm	Weight (Steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
6	1/4	2	10	16	10	<b>6-4 TL-S</b>	<b>6-4 TL-SS</b>
8	1/4	4	12	19	17	<b>8-4 TL-S</b>	<b>8-4 TL-SS</b>
8	3/8	4	12	19	17	<b>8-6 TL-S</b>	<b>8-6 TL-SS</b>
10	1/4	5	14	23	37	<b>10-4 TL-S</b>	<b>10-4 TL-SS</b>
10	3/8	5	14	23	32	<b>10-6 TL-S</b>	<b>10-6 TL-SS</b>
10	1/2	5	14	23	28	<b>10-8 TL-S</b>	<b>10-8 TL-SS</b>
12	1/4	6	15	28	54	<b>12-4 TL-S</b>	<b>12-4 TL-SS</b>
12	3/8	6	15	28	49	<b>12-6 TL-S</b>	<b>12-6 TL-SS</b>
12	1/2	6	15	28	44	<b>12-8 TL-S</b>	<b>12-8 TL-SS</b>
12	5/8	6	15	28	39	<b>12-10 TL-S</b>	<b>12-10 TL-SS</b>
12	7/8	2	17	28	25	<b>12-14 TL-S</b>	<b>12-14 TL-SS</b>
16	1/2	7	16	34	76	<b>16-8 TL-S</b>	<b>16-8 TL-SS</b>
16	5/8	7	16	34	71	<b>16-10 TL-S</b>	<b>16-10 TL-SS</b>
16	3/4	5	17	34	66	<b>16-12 TL-S</b>	<b>16-12 TL-SS</b>
16	7/8	3	17	34	50	<b>16-14 TL-S</b>	<b>16-14 TL-SS</b>
20	3/4	7	20	41	102	<b>20-12 TL-S</b>	<b>20-12 TL-SS</b>
20	1	7	21	41	79	<b>20-16 TL-S</b>	<b>20-16 TL-SS</b>
24	1	7	21	49	141	<b>24-16 TL-S</b>	<b>24-16 TL-SS</b>
24	1 1/4	7	21	49	107	<b>24-20 TL-S</b>	<b>24-20 TL-SS</b>

Part numbers shown are part of our current manufacturing programme.

## HMLO Union

O-Lok® ORFS tube ends  
SAE 520101



Tube 1 O.D.		Tube 2 O.D.		Thread UN/UNF-2A T	Thread UN/UNF-2A T1	D	D2	FF	H	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.	mm	in.			mm	mm	mm	mm				S	SS
6	1/4	6	1/4	9/16-18	9/16-18	5	5	27	17	26	<b>4 HLO-S</b>	<b>4HMLOSS</b>	630	630
8, 10	5/16, 3/8	8, 10	5/16, 3/8	11/16-16	11/16-16	7	7	31	19	49	<b>6HMLOS</b>	<b>6HMLOSS</b>	630	630
10	3/8	6	1/4	11/16-16	9/16-18	7	5	30	19	45	<b>6-4HMLOS</b>	<b>6-4HMLOSS</b>	630	630
12	1/2	12	1/2	13/16-16	13/16-16	10	10	35	22	77	<b>8HMLOS</b>	<b>8HMLOSS</b>	630	630
12	1/2	10	3/8	13/16-16	11/16-16	10	7	34	22	67	<b>8-6 HLO-S</b>	<b>8-6HMLOSS</b>	630	630
14, 15, 16	5/8	14, 15, 16	5/8	1-14	1-14	13	13	43	27	129	<b>10HMLOS</b>	<b>10HMLOSS</b>	420	420
16	5/8	12	1/2	1-14	13/16-16	13	10	40	27	112	<b>10-8 HLO-S</b>	<b>10-8HMLOSS</b>	420	420
18, 20	3/4	18, 20	3/4	1 3/16-12	1 3/16-12	16	16	47	32	204	<b>12HMLOS</b>	<b>12HMLOSS</b>	420	420
20	3/4	16	5/8	1 3/16-12	1-14	16	13	46	32	186	<b>12-10HMLOS</b>	<b>12-10HMLOSS</b>	420	420
22, 25	1	22, 25	1	1 7/16-12	1 7/16-12	21	21	49	41	291	<b>16HMLOS</b>	<b>16HMLOSS</b>	420	420
25	1	18, 20	3/4	1 7/16-12	1 3/16-12	21	16	49	41	285	<b>16-12HMLOS</b>	<b>16-12HMLOSS</b>	420	420
28, 30, 32	1 1/4	28, 30, 32	1 1/4	1 11/16-12	1 11/16-12	26	26	51	46	299	<b>20 HLO-S</b>	<b>20HMLOSS</b>	420	280
28, 30, 32	1 1/4	22, 25	1	1 11/16-12	1 7/16-12	26	21	51	46	280	<b>20-16HMLOS</b>	<b>20-16HMLOSS</b>	420	280
35, 38	1 1/2	35, 38	1 1/2	2-12	2-12	32	32	53	55	552	<b>24 HLO-S</b>	<b>24HMLOSS</b>	350	280
35, 38	1 1/2	28, 30, 32	1 1/4	2-12	1 11/16-12	32	26	53	55	530	<b>24-20HMLOS</b>	<b>24-20HMLOSS</b>	350	280
50	2	50	2	2 1/2-12	2 1/2-12	45	45	73	70	990	<b>32 HLO-S</b>	<b>32HMLOSS</b>	200	200

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

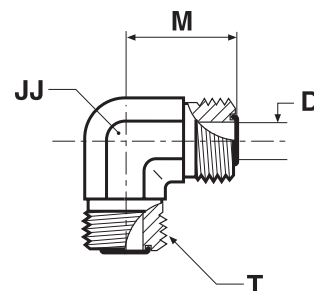
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



## EMLO Union elbow

O-Lok® ORFS tube ends  
SAE 520201



Tube O.D.		Thread UN/UNF-2A T	D mm	JJ mm	M mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.								S	SS
6	1/4	9/16-18	5	14	22	47	<b>4 ELO-S</b>	<b>4EMLOSS</b>	630	630
8, 10	5/16, 3/8	11/16-16	7	19	25	109	<b>6 ELO-S</b>	<b>6EMLOSS</b>	630	630
12	1/2	13/16-16	10	19	28	123	<b>8 ELO-S</b>	<b>8EMLOSS</b>	630	630
14, 15, 16	5/8	1-14	13	27	33	183	<b>10 ELO-S</b>	<b>10EMLOSS</b>	420	420
18, 20	3/4	1 3/16-12	16	30	37	255	<b>12 ELO-S</b>	<b>12EMLOSS</b>	420	420
22, 25	1	1 7/16-12	21	37	42	457	<b>16 ELO-S</b>	<b>16EMLOSS</b>	420	420
28, 30, 32	1 1/4	1 11/16-12	26	41	45	530	<b>20 ELO-S</b>	<b>20EMLOSS</b>	350	280
35, 38	1 1/2	2-12	32	48	49	687	<b>24 ELO-S</b>	<b>24EMLOSS</b>	280	280
50	2	2 1/2-12	45	64	70	1500	<b>32 ELO-S</b>		200	—

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

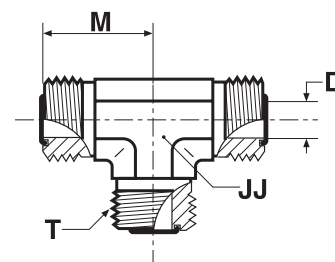
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## JMLO Union tee

O-Lok® ORFS tube ends  
SAE 520401



Tube O.D.		Thread UN/UNF-2A T	D mm	JJ mm	M mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.								S	SS
6	1/4	9/16-18	5	14	22	66	<b>4JMLOS</b>	<b>4JMLOSS</b>	630	630
8, 10	5/16, 3/8	11/16-16	7	19	25	114	<b>6 JLO-S</b>	<b>6JMLOSS</b>	630	630
12	1/2	13/16-16	10	19	28	199	<b>8JMLOS</b>	<b>8JMLOSS</b>	630	630
14, 15, 16	5/8	1-14	13	27	33	239	<b>10 JLO-S</b>	<b>10JMLOSS</b>	420	420
18, 20	3/4	1 3/16-12	16	30	37	321	<b>12 JLO-S</b>	<b>12JMLOSS</b>	420	420
22, 25	1	1 7/16-12	21	36	42	488	<b>16 JLO-S</b>	<b>16JMLOSS</b>	420	420
28, 30, 32	1 1/4	1 11/16-12	26	41	45	768	<b>20 JLO-S</b>	<b>20JMLOSS</b>	350	280
35, 38	1 1/2	2-12	32	48	49	866	<b>24 JLO-S</b>	<b>24JMLOSS</b>	280	280
50	2	2 1/2-12	45	64	70	2250	<b>32 JLO-S</b>	<b>32JMLOSS</b>	200	200

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

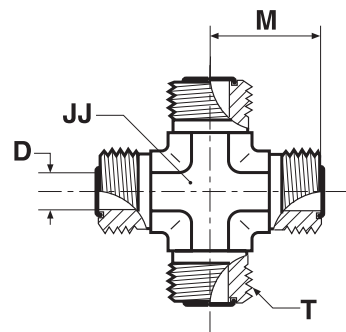
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



## KLO Union cross

O-Lok® ORFS tube ends  
SAE 520501



Tube O.D.		Thread UN/UNF-2A T	D mm	JJ mm	M mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.								S	SS
6	1/4	9/16-18	5	14	22	72	<b>4 KLO-S</b>	<b>4 KLO-SS</b>	630	630
8, 10	5/16, 3/8	11/16-16	7	19	25	140	<b>6 KLO-S</b>	<b>6 KLO-SS</b>	630	630
12	1/2	13/16-16	10	19	28	225	<b>8 KLO-S</b>	<b>8 KLO-SS</b>	630	630
14, 15, 16	5/8	1-14	13	27	33	288	<b>10 KLO-S</b>	<b>10 KLO-SS</b>	420	420
18, 20	3/4	1 3/16-12	16	30	37	415	<b>12 KLO-S</b>	<b>12 KLO-SS</b>	420	420
22, 25	1	1 7/16-12	21	37	42	967	<b>16 KLO-S</b>	<b>16 KLO-SS</b>	420	420
28, 30, 32	1 1/4	1 11/16-12	26	41	45	1247	<b>20 KLO-S</b>	<b>20 KLO-SS</b>	350	280
35, 38	1 1/2	2-12	32	48	49	1592	<b>24 KLO-S</b>	<b>24 KLO-SS</b>	280	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

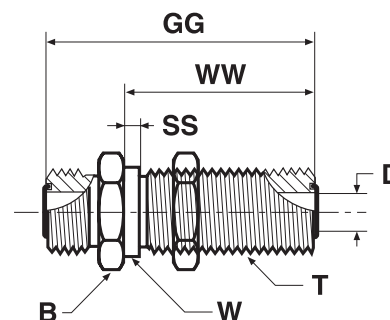
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## WMLO Bulkhead union

O-Lok® ORFS tube ends  
SAE 520601 ISO 8434-3 BHS



Tube O.D.		Thread UN/UNF-2A T	B mm	D mm	GG mm	SS mm	W mm	WW mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.											S	SS
6	1/4	9/16-18	22	5	48	2	14	32	65	<b>4 WLO-WLNL-S</b>	<b>4WMLOWLNMLSS</b>	630	630
8, 10	5/16, 3/8	11/16-16	27	7	53	2	17	34	104	<b>6WMLOWLNMLS</b>	<b>6WMLOWLNMLSS</b>	630	630
12	1/2	13/16-16	30	10	58	3	20	37	141	<b>8WMLOWLNMLS</b>	<b>8WMLOWLNMLSS</b>	630	630
14, 15, 16	5/8	1-14	32	13	67	3	25	41	285	<b>10WMLOWLNMLS</b>	<b>10WMLOWLNMLSS</b>	420	420
18, 20	3/4	1 3/16-12	41	16	69	3	30	42	322	<b>12WMLOWLNMLS</b>	<b>12WMLOWLNMLSS</b>	420	420
22, 25	1	1 7/16-12	46	21	70	3	36	42	436	<b>16WMLOWLNMLS</b>	<b>16WMLOWLNMLSS</b>	420	420
28, 30, 32	1 1/4	1 11/16-12	51	26	70	2	43	42	510	<b>20 WLO-WLNL-S</b>	<b>20WMLOWLNMLSS</b>	420	280
35, 38	1 1/2	2-12	60	32	70	2	51	42	674	<b>24 WLO-WLNL-S</b>	<b>24WMLOWLNMLSS</b>	350	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove "WLNL" (e.g. 16WMLO)

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

### Maximum bulkhead wallthickness

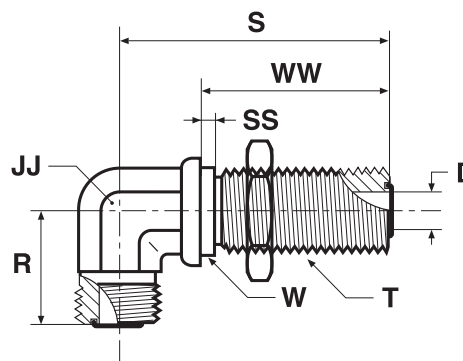
Size	Tube O.D.		Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
	inch	metric		
4	1/4	6	13.5	13.5
6	3/8	10	13.5	13.5
8	1/2	12	13.5	13.5
10	5/8	14–16	13.2	13.2
12	3/4	18–20	12.7	12.7
16	1	22–25	13.0	13.0
20	1 1/4	28–32	13.0	13.0
24	1 1/2	35–38	13.0	13.0





## WEMLO Bulkhead union elbow

O-Lok® ORFS tube end/O-Lok® ORFS tube end  
SAE520701/SAE 520701 ISO 8434-3 BHE



Tube O.D.		Thread UN/UNF-2A T	D mm	JJ mm	R mm	S mm	SS mm	W mm	WW mm	Weight (steel) g/1 piece	O-Lok®		PN (bar)	
mm	in.										Steel	Stainless Steel	S	SS
6	1/4	9/16-18	5	14	23	46	2	14	32	78	<b>4 WELO-WLNL-S</b>	<b>4 WELO-WLNL-SS</b>	630	630
8, 10	5/16, 3/8	11/16-16	7	19	26	52	2	17	34	146	<b>6WEMLOWLNMLS</b>	<b>6 WELO-WLNL-SS</b>	630	630
12	1/2	13/16-16	10	19	29	56	3	20	37	252	<b>8WEMLOWLNMLS</b>	<b>8 WELO-WLNL-SS</b>	630	630
14, 15, 16	5/8	1-14	13	27	35	63	3	25	41	287	<b>10WEMLOWLNMLS</b>	<b>10 WELO-WLNL-SS</b>	420	420
18, 20	3/4	1 3/16-12	16	30	39	67	3	30	42	445	<b>12 WELO-WLNL-S</b>	<b>12 WELO-WLNL-SS</b>	420	420
22, 25	1	1 7/16-12	21	37	42	71	2	37	42	639	<b>16 WELO-WLNL-S</b>	<b>16 WELO-WLNL-SS</b>	420	420
28, 30, 32	1 1/4	1 11/16-12	26	41	45	75	2	43	42	718	<b>20 WELO-WLNL-S</b>	<b>20 WELO-WLNL-SS</b>	350	280
35, 38	1 1/2	2-12	32	48	50	80	2	51	42	945	<b>24 WELO-WLNL-S</b>	<b>24 WELO-WLNL-SS</b>	280	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove "WLNML" (e.g. 16WEMLO)

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

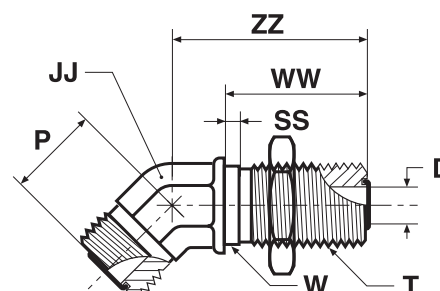
### Maximum bulkhead wallthickness

Size	Tube O.D.		Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
	inch	metric		
4	1/4	6	13.5	13.5
6	3/8	10	13.5	13.5
8	1/2	12	13.5	13.5
10	5/8	14–16	13.2	13.2
12	3/4	18–20	12.7	12.7
16	1	22–25	13.0	13.0
20	1 1/4	28–32	13.0	13.0
24	1 1/2	35–38	13.0	13.0

## WNLO Bulkhead union 45° elbow

O-Lok® ORFS tube ends

SAE 520801 ISO 8434-3 BHE 45



Tube O.D.		Thread UN/UNF-2A T	D mm	JJ mm	P mm	SS mm	W mm	WW mm	ZZ mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
mm	in.											
6	1/4	9/16-18	5	14	16	2	14	32	44	65	<b>4 WNLO-WLNL-S</b>	630
8, 10	5/16, 3/8	11/16-16	7	19	19	2	18	34	49	123	<b>6 WNLO-WLNL-S</b>	630
12	1/2	13/16-16	10	19	20	2	21	37	51	163	<b>8 WNLO-WLNL-S</b>	630
14, 15, 16	5/8	1-14	13	27	23	2	25	41	57	252	<b>10 WNLO-WLNL-S</b>	420
18, 20	3/4	1 3/16-12	16	30	26	2	30	42	61	386	<b>12 WNLO-WLNL-S</b>	420
22, 25	1	1 7/16-12	21	37	30	2	37	42	65	465	<b>16 WNLO-WLNL-S</b>	420
28, 30, 32	1 1/4	1 11/16-12	26	41	32	2	43	42	67	578	<b>20 WNLO-WLNL-S</b>	350
35, 38	1 1/2	2-12	32	48	37	2	51	42	67	770	<b>24 WNLO-WLNL-S</b>	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove "WLNL" (e.g. 16 WNLO)

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

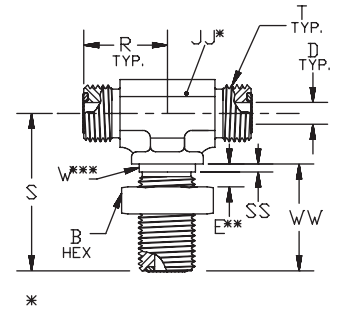
### Maximum bulkhead wallthickness

Size	Tube O.D.		Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
	inch	metric		
4	1/4	6	13.5	13.5
6	3/8	10	13.5	13.5
8	1/2	12	13.5	13.5
10	5/8	14-16	13.2	13.2
12	3/4	18-20	12.7	12.7
16	1	22-25	13.0	13.0
20	1 1/4	28-32	13.0	13.0
24	1 1/2	35-38	13.0	13.0



## WJLO Bulkhead branch tee

O-Lok® ORFS tube ends



Tube O.D.		Thread UN/UNF-2A T	B mm	D mm	E mm	JJ mm	R mm	S mm	SS mm	W mm	WW mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
mm	in.													
6	1/4	9/16-18	18	5	14	14	23	47	2	14	32	100	4 WJLO-WLNL-S	630
8, 10	5/16, 3/8	11/16-16	21	7	14	19	26	52	2	18	34	178	6 WJLO-WLNL-S	630
12	1/2	13/16-16	24	10	14	19	29	55	2	21	37	270	8 WJLO-WLNL-S	630
14, 15, 16	5/8	1-14	29	13	14	27	35	63	2	25	41	370	10 WJLO-WLNL-S	420
18, 20	3/4	1 3/16-12	35	16	14	30	39	67	2	30	42	520	12 WJLO-WLNL-S	420
22, 25	1	1 7/16-12	42	21	14	36	42	71	2	37	42	680	16 WJLO-WLNL-S	420

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove "WLNL" (e.g. 16 WJLO)

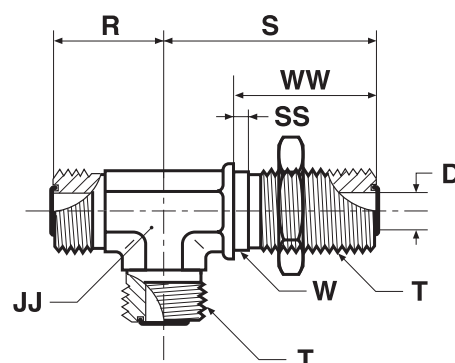
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

### Maximum bulkhead wallthickness

Size	Tube O.D.		Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
	inch	metric		
4	1/4	6	13.5	13.5
6	3/8	10	13.5	13.5
8	1/2	12	13.5	13.5
10	5/8	14-16	13.2	13.2
12	3/4	18-20	12.7	12.7
16	1	22-25	13.0	13.0
20	1 1/4	28-32	13.0	13.0
24	1 1/2	35-38	13.0	13.0

## WJJLO Bulkhead run tee

O-Lok® ORFS tube ends  
SAE 520958 ISO 8434-3 BHRT



Tube O.D.		Thread UN/UNF-2A T	D mm	JJ mm	R mm	S mm	SS mm	W mm	WW mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
mm	in.											
6	1/4	9/16-18	5	14	23	46	2	14	32	99	4 WJJLO-WLNL-S	630
8, 10	5/16, 3/8	11/16-16	7	19	26	52	2	18	34	178	6 WJJLO-WLNL-S	630
12	1/2	13/16-16	10	19	29	55	2	21	36	270	8 WJJLO-WLNL-S	630
14, 15, 16	5/8	1-14	13	27	35	63	2	25	41	368	10 WJJLO-WLNL-S	420
18, 20	3/4	1 3/16-12	16	30	39	67	2	30	42	516	12 WJJLO-WLNL-S	420
22, 25	1	1 7/16-12	21	37	42	71	2	37	42	678	16 WJJLO-WLNL-S	420
28, 30, 32	1 1/4	1 11/16-12	26	41	45	75	2	43	42	980	20 WJJLO-WLNL-S	350
35, 38	1 1/2	2-12	32	48	50	80	2	51	42	1900	24 WJJLO-WLNL-S	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove "WLNL" (e.g. 16 WJJLO)

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

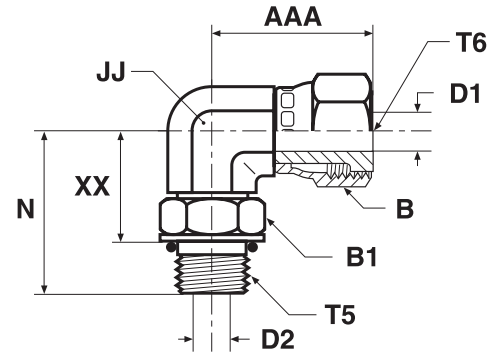


### Maximum bulkhead wallthickness

Size	Tube O.D.		Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
	inch	metric		
4	1/4	6	13.5	13.5
6	3/8	10	13.5	13.5
8	1/2	12	13.5	13.5
10	5/8	14-16	13.2	13.2
12	3/4	18-20	12.7	12.7
16	1	22-25	13.0	13.0
20	1 1/4	28-32	13.0	13.0
24	1 1/2	35-38	13.0	13.0

## AOEL6 Swivel nut stud elbow

O-Lok® ORFS Female swivel end / Male UN/UNF thread – O-ring (ISO 11926)  
SAE 520281



Tube O.D.		Thread UN/UNF-2A T5	Thread UN/UNF-2B T6	AAA	B	B1	D1	D2	JJ	N	XX	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.			mm	mm	mm	mm	mm	mm	mm	mm				S	SS
6	1/4	7/16-20	9/16-18	27	18	14	4	4	14	33	22	47	<b>4 AOEL6-S</b>	<b>4 AOEL6-SS</b>	420	420
8, 10	5/16, 3/8	9/16-18	11/16-16	30	21	19	7	7	19	37	25	97	<b>6 AOEL6-S</b>	<b>6 AOEL6-SS</b>	420	420
12	1/2	3/4-16	13/16-16	38	24	24	9	10	19	41	27	104	<b>8 AOEL6-S</b>	<b>8 AOEL6-SS</b>	420	420
14, 15, 16	5/8	7/8-14	1-14	42	29	27	12	13	27	50	34	199	<b>10 AOEL6-S</b>	<b>10 AOEL6-SS</b>	420	420
18, 20	3/4	1 1/16-12	1 3/16-12	46	35	35	14	16	27	55	37	162	<b>12 AOEL6-S</b>	<b>12 AOEL6-SS</b>	420	420
22, 25	1	1 5/16-12	1 7/16-12	53	41	41	20	21	33	60	42	365	<b>16 AOEL6-S</b>	<b>16 AOEL6-SS</b>	380	380
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	58	48	48	26	26	41	62	44	480	<b>20 AOEL6-S</b>	<b>20 AOEL6-SS</b>	280	280
35, 38	1 1/2	1 7/8-12	2-12	61	57	54	32	32	48	66	47	933	<b>24 AOEL6-S</b>	<b>24 AOEL6-SS</b>	280	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

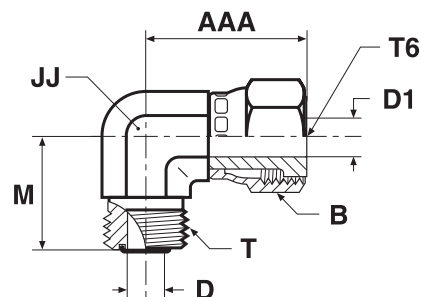
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## C6MLO Swivel nut elbow

O-Lok® ORFS Female swivel end / O-Lok® ORFS tube end  
SAE 52M0221 ISO 8434-3 SWE



Tube O.D.		Thread UN/UNF-2A T	Thread UN/UNF-2B T6	AAA mm	B mm	D mm	D1 mm	JJ mm	M mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.												S	SS
6	1/4	9/16-18	9/16-18	26	17	5	4	14	22	45	<b>4C6MLOS</b>	<b>4C6MLOSS</b>	500	420
8, 10	5/16, 3/8	11/16-16	11/16-16	29	22	7	9	19	25	84	<b>6C6MLOS</b>	<b>6C6MLOSS</b>	630	420
12	1/2	13/16-16	13/16-16	38	24	10	9	19	28	126	<b>8C6MLOS</b>	<b>8C6MLOSS</b>	630	420
14, 15, 16	5/8	1-14	1-14	41	30	13	12	27	33	221	<b>10C6MLOS</b>	<b>10C6MLOSS</b>	420	420
	3/4	1 3/16-12	1 3/16-12	46	36	16	14	30	37	284	<b>12C6MLOS</b>	<b>12C6MLOSS</b>	420	420
22, 25	1	1 7/16-12	1 7/16-12	53	41	21	20	36	42	541	<b>16C6MLOS</b>	<b>16C6MLOSS</b>	420	420
28, 30, 32	1 1/4	1 11/16-12	1 11/16-12	58	48	26	26	41	45	557	<b>20 C6LO-S</b>	<b>20C6MLOSS</b>	350	280
35, 38	1 1/2	2-12	2-12	61	57	32	32	48	49	706	<b>24 C6LO-S</b>	<b>24C6MLOSS</b>	280	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

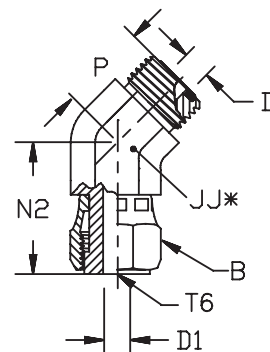
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



## V6LO 45° Swivel nut elbow

O-Lok® ORFS female swivel end / O-Lok® ORFS tube end



\*JJ – Across wrench flats

Tube O.D.		Thread UN/UNF-2A T	Thread UN/UNF-2B T6	B mm	D mm	D1 mm	JJ mm	N2 mm	P mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
6	1/4	9/16-18	9/16-18	18	5	4	14	25	16	44	<b>4 V6LO-S</b>	500
8, 10	5/16, 3/8	11/16-16	11/16-16	21	7	7	19	28	19	82	<b>6 V6LO-S</b>	630
12	1/2	13/16-16	13/16-16	24	10	9	19	38	20	110	<b>8 V6LO-S</b>	630
14, 15, 16	5/8	1-14	1-14	29	13	12	27	39	23	190	<b>10 V6LO-S</b>	420
18, 20	3/4	1 3/16-12	1 3/16-12	35	16	14	30	44	26	288	<b>12 V6LO-S</b>	420
22, 25	1	1 7/16-12	1 7/16-12	42	21	20	36	48	30	300	<b>16 V6LO-S</b>	420
28, 30, 32	1 1/4	1 11/16-12	1 11/16-12	48	26	26	41	50	32	444	<b>20 V6LO-S</b>	350
35, 38	1 1/2	2-12	2-12	58	32	32	48	52	37	568	<b>24 V6LO-S</b>	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

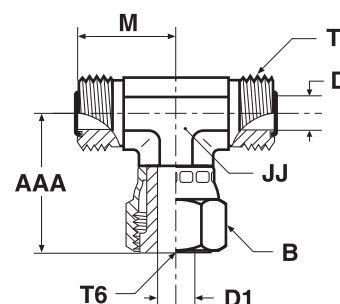
Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

## S6MLO Swivel nut branch tee

O-Lok® ORFS female swivel end / O-Lok® ORFS tube ends  
SAE 52M0433 ISO 8434-3 SWBT



Tube O.D.		Thread UN/UNF-2A T	Thread UN/UNF-2B T6	AAA mm	B mm	D mm	D1 mm	JJ mm	M mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.												S	SS
6	1/4	9/16-18	9/16-18	26	17	5	4	14	22	66	<b>4S6MLOS</b>	<b>4S6MLOSS</b>	500	420
8, 10	5/16, 3/8	11/16-16	11/16-16	29	22	7	7	19	25	125	<b>6S6MLOS</b>	<b>6S6MLOSS</b>	630	420
12	1/2	13/16-16	13/16-16	38	24	10	9	19	28	150	<b>8S6MLOS</b>	<b>8S6MLOSS</b>	630	420
14, 15, 16	5/8	1-14	1-14	41	30	13	12	27	33	233	<b>10S6MLOS</b>	<b>10S6MLOSS</b>	420	420
18, 20	3/4	1 3/16-12	1 3/16-12	46	35	16	14	30	37	383	<b>12 S6LO-S</b>	<b>12S6MLOSS</b>	420	420
22, 25	1	1 7/16-12	1 7/16-12	53	41	21	20	37	42	518	<b>16 S6LO-S</b>	<b>16S6MLOSS</b>	420	420
28, 30, 32	1 1/4	1 11/16-12	1 11/16-12	58	48	26	26	41	45	775	<b>20 S6LO-S</b>	<b>20S6MLOSS</b>	350	280
35, 38	1 1/2	2-12	2-12	61	57	32	32	48	49	933	<b>24 S6LO-S</b>	<b>24S6MLOSS</b>	280	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

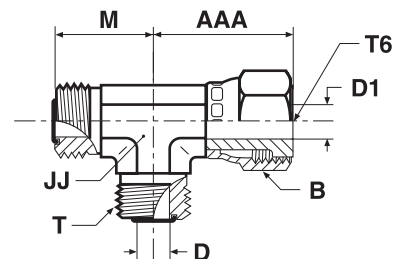
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

**J**



## R6MLO Swivel nut run tee

O-Lok® ORFS female swivel end / O-Lok® ORFS tube ends  
 SAE 52M0432 ISO 8434-3 SWRT



Tube O.D.		Thread UN/UNF-2A T	Thread UN/UNF-2B T6	AAA mm	B mm	D mm	D1 mm	JJ mm	M mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.												S	SS
6	1/4	9/16-18	9/16-18	26	17	5	4	14	22	66	<b>4R6MLOS</b>	<b>4R6MLOSS</b>	500	420
8, 10	5/16, 3/8	11/16-16	11/16-16	29	22	7	7	19	25	125	<b>6R6MLOS</b>	<b>6R6MLOSS</b>	630	420
12	1/2	13/16-16	13/16-16	38	24	10	9	19	28	150	<b>8R6MLOS</b>	<b>8R6MLOSS</b>	630	420
14, 15, 16	5/8	1-14	1-14	41	30	13	12	27	33	233	<b>10R6MLOS</b>	<b>10R6MLOSS</b>	420	420
18, 20	3/4	1 3/16-12	1 3/16-12	46	35	16	14	30	37	383	<b>12 R6LO-S</b>	<b>12R6MLOSS</b>	420	420
22, 25	1	1 7/16-12	1 7/16-12	53	41	21	20	37	42	518	<b>16 R6LO-S</b>	<b>16R6MLOSS</b>	420	420
28, 30, 32	1 1/4	1 11/16-12	1 11/16-12	58	48	26	26	41	45	775	<b>20 R6LO-S</b>	<b>20R6MLOSS</b>	350	280
35, 38	1 1/2	2-12	2-12	61	57	32	32	48	49	933	<b>24 R6LO-S</b>	<b>24R6MLOSS</b>	280	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

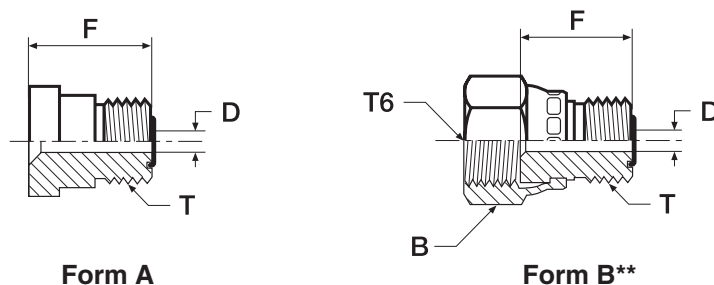
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## TRMLO Tube end reducer

O-Lok® ORFS tube end / O-Lok® ORFS swivel female end  
SAE 520123 /A



Tube O.D.		Thread UN/UNF-2A T	Thread UN/UNF-2B T6	B	D	F	Weight (steel)	Form	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.			mm	mm	mm	g/1 piece					S
10	3/8	9/16-18	11/16-16	22	5	20	21	B	<b>6-4TRMLONS</b>	<b>6-4TRMLONSS</b>	630	420
12	1/2	9/16-18	—	—	5	22	30	A	<b>8-4 TRLO-S</b>	<b>8-4TRMLOSS</b>	630	420
12	1/2	11/16-16	13/16-16	24	7	22	33	B	<b>8-6TRMLONS</b>	<b>8-6TRMLONSS</b>	630	420
16	5/8	9/16-18	—	—	5	23	37	A	<b>10-4 TRLO-S</b>	<b>10-4TRMLOSS</b>	420	420
16	5/8	11/16-16	—	—	7	24	48	A	<b>10-6 TRLO-S</b>	<b>10-6TRMLOSS</b>	420	420
16	5/8	13/16-16	—	—	10	26	50	A	<b>10-8 TRLO-S</b>	<b>10-8TRMLOSS</b>	420	420
20	3/4	9/16-18	—	—	5	25	63	A	<b>12-4 TRLO-S</b>	<b>12-4TRMLOSS</b>	420	420
20	3/4	11/16-16	—	—	7	26	66	A	<b>12-6 TRLO-S</b>	<b>12-6TRMLOSS</b>	420	420
20	3/4	13/16-16	—	—	10	28	71	A	<b>12-8 TRLO-S</b>	<b>12-8TRMLOSS</b>	420	420
20	3/4	1-14	1 3/16-12	36	13	30	85	B	<b>12-10TRMLONS</b>	<b>12-10TRMLONSS</b>	420	420
25	1	13/16-16	—	—	10	29	103	A	<b>16-8 TRLO-S</b>	<b>16-8TRMLOSS</b>	420	420
25	1	1-14	—	—	13	32	118	A	<b>16-10 TRLO-S</b>	<b>16-10TRMLOSS</b>	420	420
25	1	1 3/16-12	1 7/16-12	41	16	33	133	B	<b>16-12 TRLO-S</b>	<b>16-12TRMLONSS</b>	420	420
32	1 1/4	1 3/16-12	—	—	16	34	169	A	<b>20-12 TRLO-S</b>	<b>20-12TRMLOSS</b>	420	280
32	1 1/4	1 7/16-12	1 11/16-12	48	21	38	183	B	<b>20-16 TRLO-S</b>	<b>20-16TRMLONSS</b>	350	280
38	1 1/2	1 7/16-12	—	—	21	31	205	A	<b>24-16 TRLO-S</b>	<b>24-16TRMLOSS</b>	350	280
38	1 1/2	1 11/16-12	—	—	26	34	209	A	<b>24-20 TRLO-S</b>	<b>24-20TRMLOSS</b>	350	280
50	2	1 11/16-12	—	—	26	36	420	A	<b>32-20 TRLO-S</b>	<b>32-20TRMLOSS</b>	200	200
50	2	2-12	—	—	32	36	420	A	<b>32-24 TRLO-S</b>	<b>32-24TRMLOSS</b>	200	200

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

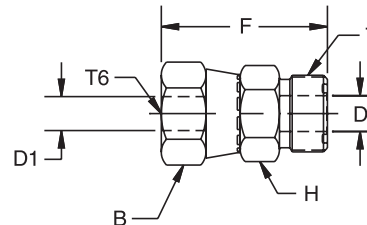
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

\*\*These size come assembled with a crimp style nut (Form B).

## LOHL6 Tube end expander

O-Lok® ORFS tube end / O-Lok® ORFS female swivel end



Tube O.D.		Thread UN/UNF-2A T	Thread UN/UNF-2B T6	B mm	D mm	D1 mm	H mm	F mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
mm	in.										
8, 10	5/16, 3/8	11/16-16	9/16-18	18	7	4	19	35	33	<b>6-4LOHL6</b>	630
12	1/2	13/16-16	11/16-16	21	10	7	22	39	52	<b>8-6LOHL6</b>	630
14, 15, 16	5/8	1-14	13/16-16	24	13	9	27	46	92	<b>10-8LOHL6</b>	420
18, 20	3/4	1 3/16-12	1-14	29	16	12	32	51	146	<b>12-10LOHL6</b>	420
22, 25	1	1 7/16-12	1 3/16-12	35	21	14	41	55	205	<b>16-12LOHL6</b>	420
28, 30, 32	1 1/4	1 11/16-12	1 7/16-12	42	26	20	46	58	260	<b>20-16LOHL6</b>	350
35, 38	1 1/2	2-12	1 11/16-12	48	26	26	55	60	315	<b>24-20LOHL6</b>	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

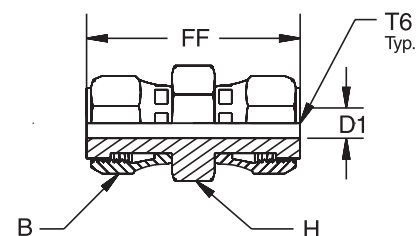
Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

## HL6 Swivel nut union

O-Lok® ORFS female swivel ends



Tube O.D.		Thread UN/UNF-2B T6	B mm	D1 mm	FF mm	H mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
mm	in.								
6	1/4	9/16-18	18	4.0	40.4	17	53	<b>4 HL6-S</b>	500
8, 10	5/16, 3/8	11/16-16	21	6.5	45.0	19	66	<b>6 HL6-S</b>	630
12	1/2	13/16-16	24	9.0	53.8	22	110	<b>8 HL6-S</b>	630
14, 15, 16	5/8	1-14	29	11.5	61.5	27	173	<b>10 HL6-S</b>	420
18, 20	3/4	1 3/16-12	35	14.0	69.6	32	275	<b>12 HL6-S</b>	420

Part numbers shown are part of our current manufacturing programme.

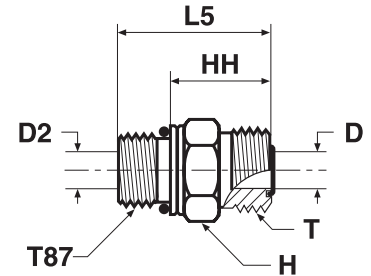
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

**J**

## F87OMLO Male stud connector

O-Lok® ORFS tube end / Male metric thread – O-ring (ISO 6149-2)  
 SAE 52M0187 ISO 8434-3 SDS



Tube O.D.		Thread metric T87	Thread UN/UNF-2A T	D mm	D2 mm	H mm	HH mm	L5 mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.											S	SS
6	1/4	M 10×1.0	9/16-18	5	3	17	18	27	20	4M10F87OMLOS	4M10F87OMLOSS	630	630
6	1/4	M 12×1.5	9/16-18	5	4	17	18	29	24	4M12F87OMLOS	4M12F87OMLOSS	630	630
6	1/4	M 14×1.5	9/16-18	5	5	19	19	30	30	4M14F87OMLOS	4M14F87OMLOSS	630	630
8, 10	5/16, 3/8	M 12×1.5	11/16-16	6	4	19	21	32	40	6M12F87OMLOS	6M12F87OMLOSS	630	630
8, 10	5/16, 3/8	M 14×1.5	11/16-16	7	6	19	20	31	43	6M14F87OMLOS	6M14F87OMLOSS	630	630
8, 10	5/16, 3/8	M 16×1.5	11/16-16	7	7	22	21	34	43	6M16F87OMLOS	6M16F87OMLOSS	630	630
8, 10	5/16, 3/8	M 18×1.5	11/16-16	7	7	24	21	35	45	6M18F87OMLOS	6M18F87OMLOSS	630	630
8, 10	5/16, 3/8	M 22×1.5	11/16-16	7	7	27	23	38	52	6M22F87OMLOS	6M22F87OMLOSS	420	420
12	1/2	M 14×1.5	13/16-16	10	6	22	24	35	40	8M14F87OMLOS	8M14F87OMLOSS	630	630
12	1/2	M 16×1.5	13/16-16	10	7	22	20	37	58	8M16F87OMLOS	8M16F87OMLOSS	630	630
12	1/2	M 18×1.5	13/16-16	10	9	24	23	37	55	8M18F87OMLOS	8M18F87OMLOSS	630	630
12	1/2	M 22×1.5	13/16-16	10	10	27	24	39	60	8M22F87OMLOS	8M22F87OMLOSS	420	420
12	1/2	M 27×2.0	13/16-16	10	10	32	26	44	70	8M27F87OMLOS	8M27F87OMLOSS	420	420
14, 15, 16	5/8	M 18×1.5	1-14	13	9	27	27	41	120	10M18F87OMLOS	10M18F87OMLOSS	420	420
14, 15, 16	5/8	M 22×1.5	1-14	13	12	27	27	42	127	10M22F87OMLOS	10M22F87OMLOSS	420	420
18, 20	3/4	M 22×1.5	1 3/16-12	16	12	32	35	50	170	12M22F87OMLOS	12M22F87OMLOSS	420	420
18, 20	3/4	M 27×2.0	1 3/16-12	16	15	32	30	49	187	12M27F87OMLOS	12M27F87OMLOSS	420	420
18, 20	3/4	M 33×2.0	1 3/16-12	16	16	41	31	50	200	12M33F87OMLOS	12M33F87OMLOSS	420	420
22, 25	1	M 27×2.0	1 7/16-12	21	15	41	36	54	230	16M27F87OMLOS	16M27F87OMLOSS	420	420
22, 25	1	M 33×2.0	1 7/16-12	21	20	41	34	52	270	16M33F87OMLOS	16M33F87OMLOSS	420	280
28, 30, 32	1 1/4	M 33×2.0	1 11/16-12	26	20	46	36	54	370	20M33F87OMLOS	20M33F87OMLOSS	420	280
28, 30, 32	1 1/4	M 42×2.0	1 11/16-12	26	26	50	36	55	390	20M42F87OMLOS	20M42F87OMLOSS	420	280
35, 38	1 1/2	M 42×2.0	2-12	32	26	55	41	60	400	24M42F87OMLOS	24M42F87OMLOSS	350	280
35, 38	1 1/2	M 48×2.0	2-12	32	32	55	36	57	412	24M48F87OMLOS	24M48F87OMLOSS	350	280
50	2	M 60×2.0	2 1/2-12	40	40	65	41	65	800	32M60F87OMLOS	32M60F87OMLOSS	200	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

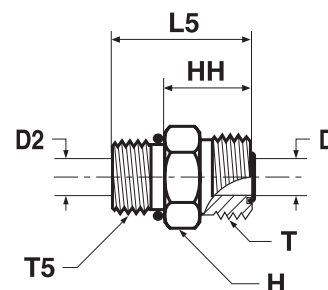
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## F5OMLO Male stud connector

O-Lok® ORFS tube end / Male UN/UNF thread – O-ring (ISO 11926)  
SAE 520120



Tube O.D.		Thread UN/UNF-2A T5	Thread UN/UNF-2A T	D	D2	H	HH	L5	Weight (steel)	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.			mm	mm	mm	mm	mm	g/1 piece			S	SS
6	1/4	7/16-20	9/16-18	5	5	17	18	29	21	<b>4F5OMLOS</b>	<b>4F5OMLOSS</b>	630	630
6	1/4	1/2-20	9/16-18	5	6	17	19	29	30	<b>4-5 F5OLO-S</b>	<b>4-5F5OMLOSS</b>	630	630
6	1/4	9/16-18	9/16-18	5	5	19	19	31	36	<b>4-6F5OMLOS</b>	<b>4-6F5OMLOSS</b>	630	630
6	1/4	3/4-16	9/16-18	5	5	22	20	34	67	<b>4-8 F5OLO-S</b>	<b>4-8F5OMLOSS</b>	630	630
8, 10	5/16, 3/8	9/16-18	11/16-16	7	7	19	20	32	45	<b>6F5OMLOS</b>	<b>6F5OMLOSS</b>	630	630
8, 10	5/16, 3/8	7/16-20	11/16-16	7	5	19	23	34	47	<b>6-4F5OMLOS</b>	<b>6-4F5OMLOSS</b>	630	630
8, 10	5/16, 3/8	1/2-20	11/16-16	7	6	19	21	31	50	<b>6-5 F5OLO-S</b>	<b>6-5F5OMLOSS</b>	630	630
8, 10	5/16, 3/8	3/4-16	11/16-16	7	7	22	21	35	51	<b>6-8F5OMLOS</b>	<b>6-8F5OMLOSS</b>	630	630
8, 10	5/16, 3/8	7/8-14	11/16-16	7	7	27	23	39	89	<b>6-10F5OMLOS</b>	<b>6-10F5OMLOSS</b>	420	420
10	1/2	3/4-16	13/16-16	10	10	22	23	37	56	<b>8F5OMLOS</b>	<b>8F5OMLOSS</b>	630	630
12	1/2	9/16-18	13/16-16	10	8	22	26	38	69	<b>8-6F5OMLOS</b>	<b>8-6F5OMLOSS</b>	630	630
12	1/2	7/8-14	13/16-16	10	10	27	24	40	105	<b>8-10F5OMLOS</b>	<b>8-10F5OMLOSS</b>	420	420
12	1/2	1 1/16-12	13/16-16	10	10	32	26	44	169	<b>8-12F5OMLOS</b>	<b>8-12F5OMLOSS</b>	420	420
12	1/2	1 5/16-12	13/16-16	10	10	38	27	46	227	<b>8-16F5OMLOS</b>	<b>8-16F5OMLOSS</b>	420	420
14, 15, 16	5/8	7/8-14	1-14	13	13	27	27	43	137	<b>10F5OMLOS</b>	<b>10F5OMLOSS</b>	420	420
14, 15, 16	5/8	3/4-16	1-14	13	10	27	31	45	120	<b>10-8F5OMLOS</b>	<b>10-8F5OMLOSS</b>	420	420
14, 15, 16	5/8	1 1/16-12	1-14	13	13	32	29	47	170	<b>10-12F5OMLOS</b>	<b>10-12F5OMLOSS</b>	420	420
18, 20	3/4	1 1/16-12	1 3/16-12	16	16	32	30	49	189	<b>12F5OMLOS</b>	<b>12F5OMLOSS</b>	420	420
18, 20	3/4	3/4-16	1 3/16-12	16	10	32	35	49	167	<b>12-8 F5OLO-S</b>	<b>12-8F5OMLOSS</b>	420	420
18, 20	3/4	7/8-14	1 3/16-12	16	13	32	35	51	177	<b>12-10F5OMLOS</b>	<b>12-10F5OMLOSS</b>	420	420
18, 20	3/4	1 5/16-12	1 3/16-12	16	16	41	31	50	280	<b>12-16F5OMLOS</b>	<b>12-16F5OMLOSS</b>	420	420
18, 20	3/4	1 5/8-12	1 3/16-12	16	16	46	32	51	350	<b>12-20F5OMLOS</b>	<b>12-20F5OMLOSS</b>	420	420
22, 25	1	1 5/16-12	1 7/16-12	21	21	41	32	50	271	<b>16 F5OLO-S</b>	<b>16F5OMLOSS</b>	420	420
22, 25	1	1 1/16-12	1 7/16-12	21	16	41	36	55	275	<b>16-12 F5OLO-S</b>	<b>16-12F5OMLOSS</b>	420	420
22, 25	1	1 5/8-12	1 7/16-12	21	21	46	34	52	428	<b>16-20 F5OLO-S</b>	<b>16-20F5OMLOSS</b>	420	280
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	26	26	46	34	52	391	<b>20F5OMLOS</b>	<b>20F5OMLOSS</b>	420	280
28, 30, 32	1 1/4	1 5/16-12	1 11/16-12	26	21	48	39	58	401	<b>20-16 F5OLO-S</b>	<b>20-16F5OMLOSS</b>	420	280
28, 30, 32	1 1/4	1 7/8-12	1 11/16-12	26	32	54	36	54	557	<b>20-24 F5OLO-S</b>	<b>20-24F5OMLOSS</b>	350	280
35, 38	1 1/2	1 7/8-12	2-12	32	32	54	36	54	412	<b>24 F5OLO-S</b>	<b>24F5OMLOSS</b>	350	280
35, 38	1 1/2	1 5/8-12	2-12	32	26	54	41	60	581	<b>24-20 F5OLO-S</b>	<b>24-20F5OMLOSS</b>	350	280
50	2	2 1/2-12	2 1/2-12	45	40	70	40	59	900	<b>32 F5OLO-S</b>	<b>32F5OMLOSS</b>	200	200

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

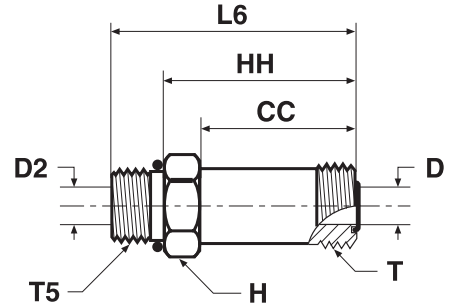
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## FF5OMLO Extended male stud connector

O-Lok® ORFS tube end / Male UN/UNF thread – O-ring (ISO 11926)  
SAE 521720 (Previously 520122)



Tube O.D.		Thread UN/UNF-2A T5	Thread UN/UNF-2A T	CC mm	D mm	D2 mm	H mm	HH mm	L6 mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.												S	SS
6	1/4	7/16-20	9/16-18	34	5	5	16	42	53	51	<b>4 FF5OLO-S</b>	<b>4FF5OMLOSS</b>	630	630
8, 10	5/16, 3/8	9/16-18	11/16-16	37	7	7	19	46	58	79	<b>6 FF5OLO-S</b>	<b>6FF5OMLOSS</b>	630	630
12	1/2	3/4-16	13/16-16	44	10	10	22	54	68	125	<b>8 FF5OLO-S</b>	<b>8FF5OMLOSS</b>	630	630
14, 15, 16	5/8	7/8-14	1-14	52	13	13	27	64	80	212	<b>10 FF5OLO-S</b>	<b>10FF5OMLOSS</b>	420	420
18, 20	3/4	1 1/16-12	1 3/16-12	64	16	16	33	77	96	309	<b>12 FF5OLO-S</b>	<b>12FF5OMLOSS</b>	420	420
22, 25	1	1 5/16-12	1 7/16-12	72	21	21	38	87	105	435	<b>16 FF5OLO-S</b>	<b>16FF5OMLOSS</b>	420	420
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	86	26	26	48	102	121	818	<b>20 FF5OLO-S</b>	<b>20FF5OMLOSS</b>	420	280
35, 38	1 1/2	1 7/8-12	2-12	97	32	32	54	115	134	1430	<b>24 FF5OLO-S</b>	<b>24FF5OMLOSS</b>	350	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

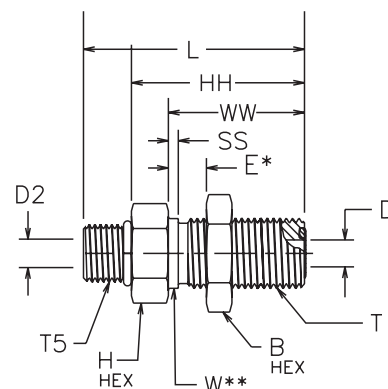
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## WF5OLO Bulkhead male connector

O-Lok® ORFS tube end / Male UN/UNF – O-ring (ISO 11926)



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF-2A T5	B mm	D mm	D2 mm	E mm	H mm	HH mm	L mm	SS mm	W mm	WW mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
6	1/4	9/16-18	7/16-20	21	5	5	14	21	43	54	2	14	32	75	<b>4 WF5OLO-WLNL-S</b>	630
6	1/4	9/16-18	9/16-18	21	5	8	14	21	43	55	2	14	32	88	<b>4-6 WF5OLO-WLNL-S</b>	630
8, 10	5/16, 3/8	11/16-16	9/16-18	25	7	8	14	25	46	58	2	18	34	112	<b>6 WF5OLO-WLNL-S</b>	630
12	1/2	13/16-16	3/4-16	29	10	10	14	29	52	65	2	21	37	147	<b>8 WF5OLO-WLNL-S</b>	630
14, 15, 16	5/8	1-14	7/8-14	33	13	13	13	33	51	67	2	25	41	295	<b>10 WF5OLO-WLNL-S</b>	420
18, 20	3/4	1 3/16-12	1 1/16-12	38	16	16	13	38	52	71	2	30	42	330	<b>12 WF5OLO-WLNL-S</b>	420

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove "WLNL" (e.g. 12 WF5OLO)

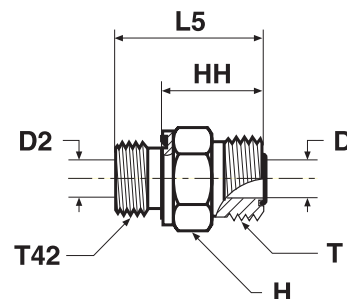
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$





## F42EDMLO Male stud connector

O-Lok® ORFS tube end / Male BSPP thread – ED seal (ISO 1179)



Tube O.D.		BSPP male thread T42	Thread UN/UNF-2A T	D mm	D2 mm	H mm	HH mm	L5 mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.											S	SS
6	1/4	1/8-28	9/16-18	5	4	17	18	26	29	4F42EDMLOS	4F42EDMLOSS	630	630
6	1/4	1/4-19	9/16-18	5	5	19	18	31	42	4-4F42EDMLOS	4-4F42EDMLOSS	630	630
6	1/4	3/8-19	9/16-18	5	5	22	20	32	61	4-6F42EDMLOS	4-6F42EDMLOSS	630	630
6	1/4	1/2-14	9/16-18	5	5	27	21	35	119	4-8F42EDMLOS	4-8F42EDMLOSS	420	420
8, 10	5/16, 3/8	1/4-19	11/16-16	7	5	19	20	32	45	6F42EDMLOS	6F42EDMLOSS	630	630
8, 10	5/16, 3/8	1/8-28	11/16-16	7	4	19	23	31	44	6-2F42EDMLOS	6-2F42EDMLOSS	630	630
8, 10	5/16, 3/8	3/8-19	11/16-16	7	7	22	21	33	63	6-6F42EDMLOS	6-6F42EDMLOSS	630	630
8, 10	5/16, 3/8	1/2-14	11/16-16	7	7	27	23	37	122	6-8F42EDMLOS	6-8F42EDMLOSS	420	420
8, 10	5/16, 3/8	3/4-14	11/16-16	7	7	32	24	40	192	6-12F42EDMLOS	6-12F42EDMLOSS	420	420
12	1/2	3/8-19	13/16-16	10	8	22	23	35	196	8F42EDMLOS	8F42EDMLOSS	630	630
12	1/2	1/4-19	13/16-16	10	5	22	25	38	193	8-4F42EDMLOS	8-4F42EDMLOSS	630	630
12	1/2	1/2-14	13/16-16	10	10	27	24	38	198	8-8F42EDMLOS	8-8F42EDMLOSS	420	420
12	1/2	3/4-14	13/16-16	10	10	32	26	42	205	8-12F42EDMLOS	8-12F42EDMLOSS	420	420
14, 15, 16	5/8	1/2-14	1-14	13	13	27	27	41	332	10F42EDMLOS	10F42EDMLOSS	420	420
14, 15, 16	5/8	3/8-19	1-14	13	8	27	31	43	315	10-6F42EDMLOS	10-6F42EDMLOSS	420	420
14, 15, 16	5/8	3/4-14	1-14	13	13	32	29	45	348	10-12F42EDMLOS	10-12F42EDMLOSS	420	420
14, 15, 16	5/8	1-11	1-14	13	13	41	30	48	360	10-16F42EDMLOS	10-16F42EDMLOSS	420	420
18, 20	3/4	3/4-14	1 3/16-12	16	16	32	30	46	200	12F42EDMLOS	12F42EDMLOSS	420	420
18, 20	3/4	1/2-14	1 3/16-12	16	12	32	34	49	183	12-8F42EDMLOS	12-8F42EDMLOSS	420	420
18, 20	3/4	1-11	1 3/16-12	16	16	41	31	49	362	12-16F42EDMLOS	12-16F42EDMLOSS	420	420
18, 20	3/4	1 1/4-11	1 3/16-12	16	16	50	33	53	505	12-20F42EDMLOS	12-20F42EDMLOSS	420	420
22, 25	1	1-11	1 7/16-12	21	20	41	32	50	343	16F42EDMLOS	16F42EDMLOSS	420	420
22, 25	1	1/2-14	1 7/16-12	21	12	41	36	50	380	16-8F42EDMLOS	16-8F42EDMLOSS	420	420
22, 25	1	3/4-14	1 7/16-12	21	16	41	36	52	411	16-12F42EDMLOS	16-12F42EDMLOSS	420	420
22, 25	1	1 1/4-11	1 7/16-12	21	21	50	34	54	487	16-20F42EDMLOS	16-20F42EDMLOSS	420	420
22, 25	1	1 1/2-11	1 7/16-12	21	21	55	36	58	715	16-24F42EDMLOS	16-24F42EDMLOSS	350	280
28, 30, 32	1 1/4	1 1/4-11	1 11/16-12	25	25	50	34	54	454	20F42EDMLOS	20F42EDMLOSS	420	280
28, 30, 32	1 1/4	1-11	1 11/16-12	26	20	46	39	57	412	20-16F42EDMLOS	20-16F42EDMLOSS	420	280
28, 30, 32	1 1/4	1 1/2-11	1 11/16-12	26	26	55	36	58	532	20-24F42EDMLOS	20-24F42EDMLOSS	350	280
35, 38	1 1/2	1 1/2-11	2-12	32	32	55	36	58	585	24F42EDMLOS	24F42EDMLOSS	350	280
35, 38	1 1/2	1 1/4-11	2-12	32	25	55	41	61	540	24-20F42EDMLOS	24-20F42EDMLOSS	350	280
50	2	2-11	2 1/2-12	40	40	75	41	65	900	32F42EDMLOS	32F42EDMLOSS	200	200

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

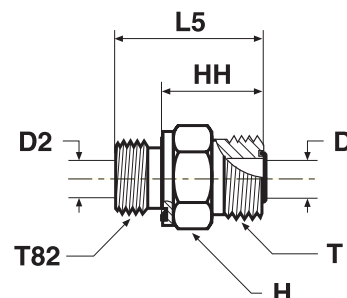
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## F82EDMLO Male stud connector

O-Lok® ORFS tube end / Male metric thread – ED seal (ISO 9974)



Tube O.D.		Thread metric T82	Thread UN/UNF-2A T	D mm	D2 mm	H mm	HH mm	L5 mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.											S	SS
6	1/4	M 10×1.0	9/16-18	5	4	17	18	26	20	4M10F82EDMLOS	4M10F82EDMLOSS	630	630
6	1/4	M 12×1.5	9/16-18	5	4	17	18	30	24	4M12F82EDMLOS	4M12F82EDMLOSS	630	630
6	1/4	M 14×1.5	9/16-18	5	5	19	19	31	29	4M14F82EDMLOS	4M14F82EDMLOSS	630	630
6	1/4	M 16×1.5	9/16-18	5	7	22	19	31	33	4M16F82EDMLOS	4M16F82EDMLOSS	630	630
8, 10	5/16, 3/8	M 12×1.5	11/16-16	7	4	19	23	35	35	6M12F82EDMLOS	6M12F82EDMLOSS	630	630
8, 10	5/16, 3/8	M 14×1.5	11/16-16	7	5	19	20	32	40	6M14F82EDMLOS	6M14F82EDMLOSS	630	630
8, 10	5/16, 3/8	M 16×1.5	11/16-16	7	7	22	20	32	43	6M16F82EDMLOS	6M16F82EDMLOSS	630	630
12	1/2	M 16×1.5	13/16-16	10	7	22	26	38	49	8M16F82EDMLOS	8M16F82EDMLOSS	630	630
12	1/2	M 18×1.5	13/16-16	10	8	24	23	35	55	8M18F82EDMLOS	8M18F82EDMLOSS	630	630
14, 15, 16	5/8	M 16×1.5	1-14	13	7	27	30	42	70	10M16F82EDMLOS	10M16F82EDMLOSS	420	420
14, 15, 16	5/8	M 18×1.5	1-14	13	8	27	31	43	85	10M18F82EDMLOS	10M18F82EDMLOSS	420	420
14, 15, 16	5/8	M 22×1.5	1-14	13	12	27	27	41	127	10M22F82EDMLOS	10M22F82EDMLOSS	420	420
18, 20	3/4	M 27×2.0	1 3/16-12	16	16	32	30	46	187	12M27F82EDMLOS	12M27F82EDMLOSS	420	420
22, 25	1	M 33×2.0	1 7/16-12	20	20	41	32	50	270	16M33F82EDMLOS	16M33F82EDMLOSS	420	420
28, 30, 32	1 1/4	M 42×2.0	1 11/16-12	26	25	50	34	54	390	20M42F82EDMLOS	20M42F82EDMLOSS	420	280
35, 38	1 1/2	M 48×2.0	2-12	32	32	55	36	58	412	24M48F82EDMLOS	24M48F82EDMLOSS	350	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

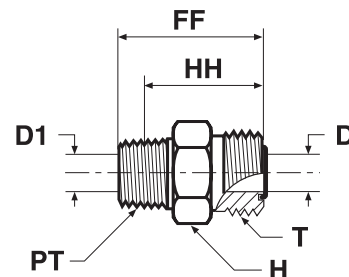
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## FLO Male stud connector

O-Lok® ORFS tube end / Male NPTF\* thread (SAE J476)

\*Stainless Steel = NPT to prevent galling



Tube O.D.		Thread NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	FF mm	H mm	HH mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.											S	SS
6	1/4	1/8-27	9/16-18	5	5	27	16	21.0	26	<b>4 FLO-S</b>	<b>4 FLO-SS</b>	420	420
6	1/4	1/4-18	9/16-18	5	7	32	16	23.0	34	<b>4-4 FLO-S</b>	<b>4-4 FLO-SS</b>	420	420
6	1/4	3/8-18	9/16-18	5	5	36	19	25.0	47	<b>4-6 FLO-S</b>	<b>4-6 FLO-SS</b>	420	420
8, 10	5/16, 3/8	1/4-18	11/16-16	7	7	32	19	23.0	39	<b>6 FLO-S</b>	<b>6 FLO-SS</b>	420	420
8, 10	5/16, 3/8	3/8-18	11/16-16	7	7	34	19	25.0	52	<b>6-6 FLO-S</b>	<b>6-6 FLO-SS</b>	420	420
8, 10	5/16, 3/8	1/2-14	11/16-16	7	13	39	22	28.0	82	<b>6-8 FLO-S</b>	<b>6-8 FLO-SS</b>	420	420
12	1/2	3/8-18	13/16-16	10	10	38	22	29.0	83	<b>8 FLO-S</b>	<b>8 FLO-SS</b>	420	420
12	1/2	1/2-14	13/16-16	10	13	42	22	30.0	84	<b>8-8 FLO-S</b>	<b>8-8 FLO-SS</b>	420	420
12	1/2	3/4-14	13/16-16	10	18	43	29	31.0	166	<b>8-12 FLO-S</b>	<b>8-12 FLO-SS</b>	380	350
14, 15, 16	5/8	1/2-14	1-14	13	13	46	27	35.0	115	<b>10 FLO-S</b>	<b>10 FLO-SS</b>	420	420
14, 15, 16	5/8	3/4-14	1-14	13	18	46	29	34.0	138	<b>10-12 FLO-S</b>	<b>10-12 FLO-SS</b>	380	350
18, 20	3/4	3/4-14	1 3/16-12	15	18	49	32	37.0	179	<b>12 FLO-S</b>	<b>12 FLO-SS</b>	380	350
18, 20	3/4	1/2-14	1 3/16-12	15	13	49	32	37.0	165	<b>12-8 FLO-S</b>	<b>12-8 FLO-SS</b>	420	420
18, 20	3/4	1-11.5	1 3/16-12	15	24	54	35	40.0	225	<b>12-16 FLO-S</b>	<b>12-16 FLO-SS</b>	310	210
22, 25	1	1-11.5	1 7/16-12	21	24	56	38	41.0	271	<b>16 FLO-S</b>	<b>16 FLO-SS</b>	310	210
22, 25	1	3/4-14	1 7/16-12	21	18	51	38	39.0	238	<b>16-12 FLO-S</b>	<b>16-12 FLO-SS</b>	380	350
28, 30, 32	1 1/4	1 1/4-11.5	1 11/16-12	26	32	58	48	43.5	424	<b>20 FLO-S</b>	<b>20 FLO-SS</b>	210	210
35, 38	1 1/2	1 1/2-11.5	2-12	32	38	61	54	46.0	534	<b>24 FLO-S</b>	<b>24 FLO-SS</b>	200	175

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

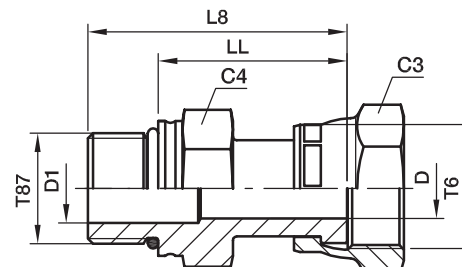
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## F687OML Swivel male stud

O-Lok® ORFS Female swivel end / Male metric thread – O-ring (ISO 6149-2)



Tube O.D.	Thread metric T87	Thread UN/UNF-2B T6	C3 mm	C4 mm	D mm	D1 mm	L8 mm	LL mm	Weight (steel) g/1 piece	O-Lok®		PN (bar)	
										Steel	Stainless Steel	S	SS
6	1/4	M 12×1.5	17	17	4	4	38	27	53	<b>4M12F687OMLS</b>	<b>4M12F687OMLSS</b>	500	420
6	5/16	M 12×1.5	22	17	7	4	40	29	66	<b>6M12F687OMLS</b>	<b>6M12F687OMLSS</b>	630	420
8	3/8	M 14×1.5	22	19	7	6	40	29	72	<b>6M14F687OMLS</b>	<b>6M14F687OMLSS</b>	630	420
8, 10	5/16, 3/8	M 16×1.5	22	22	7	7	42	29	85	<b>6M16F687OMLS</b>	<b>6M16F687OMLSS</b>	630	420
12	1/2	M 16×1.5	24	22	9	7	49	36	110	<b>8M16F687OMLS</b>	<b>8M16F687OMLSS</b>	630	420
14, 15, 16	5/8	M 22×1.5	30	27	12	12	53	38	173	<b>10M22F687OMLS</b>	<b>10M22F687OMLSS</b>	420	400
18, 20	3/4	M 22×1.5	36	30	14	12	57	42	230	<b>12M22F687OMLS</b>	<b>12M22F687OMLSS</b>	420	400
18, 20	3/4	M 27×2.0	36	32	14	14	61	42	275	<b>12M27F687OMLS</b>	<b>12M27F687OMLSS</b>	420	400
22, 25	1	M 27×2.0	41	36	20	15	68	49	420	<b>16M27F687OMLS</b>	<b>16M27F687OMLSS</b>	420	400
22, 25	1	M 33×2.0	41	41	20	20	68	49	462	<b>16M33F687OMLS</b>	<b>16M33F687OMLSS</b>	420	400
28, 30, 32	1 1/4	M 42×2.0	50	50	26	26	68	49	622	<b>20M42F687OMLS</b>	<b>20M42F687OMLSS</b>	350	280
35, 38	1 1/2	M 48×2.0	60	55	32	32	71	50	885	<b>24M48F687OMLS</b>	<b>24M48F687OMLSS</b>	280	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

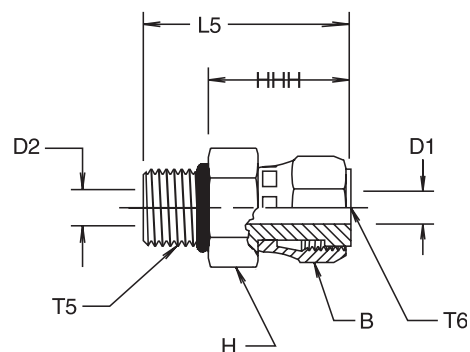
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

J

## F65OL Swivel male stud

O-Lok® ORFS female swivel end / Male UN/UNF thread – O-ring (ISO 11926)  
SAE 520181



Tube O.D.		Thread UN/UNF-2A T5	Thread UN/UNF-2B T6	B mm	D1 mm	D2 mm	H mm	HHH mm	L5 mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
mm	in.											
6	1/4	7/16-20	9/16-18	18	4	5	17	26	37	53	<b>4 F65OL-S</b>	500
8, 10	5/16, 3/8	9/16-18	11/16-16	21	7	7	19	28	40	66	<b>6 F65OL-S</b>	630
12	1/2	3/4-16	13/16-16	24	9	10	22	35	50	110	<b>8 F65OL-S</b>	630
14, 15, 16	5/8	7/8-14	1-14	29	12	13	27	38	54	173	<b>10 F65OL-S</b>	420
18, 20	3/4	1 1/16-12	1 3/16-12	35	14	16	32	41	59	275	<b>12 F65OL-S</b>	420
22, 25	1	1 5/16-12	1 7/16-12	42	20	21	41	49	68	462	<b>16 F65OL-S</b>	420
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	48	26	26	48	50	68	622	<b>20 F65OL-S</b>	350

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

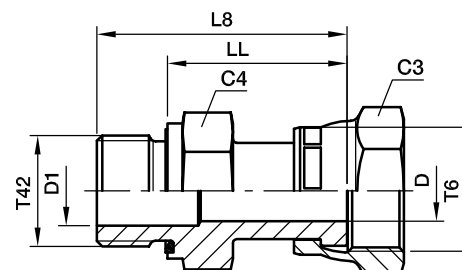
Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

## F642EDML Swivel male stud

O-Lok® ORFS Swivel female end / Male BSPP thread – ED seal (ISO 1179)



Tube O.D.		Thread BSPP T42	Thread UN/UNF-2B T6	C3 mm	C4 mm	D mm	D1 mm	L8 mm	LL mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.												S	SS
6	1/4	1/8-28	9/16-18	17	14	4	4	34	26	43	<b>4F642EDMLS</b>	<b>4F642EDMLSS</b>	500	420
6	1/4	1/4-19	9/16-18	17	19	4	4	38	26	59	<b>4-4F642EDMLS</b>	<b>4-4F642EDMLSS</b>	500	420
8, 10	5/16, 3/8	1/4-19	11/16-16	22	19	7	5	40	28	72	<b>6F642EDMLS</b>	<b>6F642EDMLSS</b>	630	420
8, 10	5/16, 3/8	3/8-19	11/16-16	22	22	7	7	40	28	86	<b>6-6F642EDMLS</b>	<b>6-6F642EDMLSS</b>	630	420
8, 10	5/16, 3/8	1/2-14	11/16-16	22	27	7	7	42	28	92	<b>6-8F642EDMLS</b>	<b>6-8F642EDMLSS</b>	420	420
12	1/2	3/8-19	13/16-16	24	22	9	8	47	35	104	<b>8F642EDMLS</b>	<b>8F642EDMLSS</b>	630	420
12	1/2	1/4-19	13/16-16	24	22	9	5	47	35	98	<b>8-4F642EDMLS</b>	<b>8-4F642EDMLSS</b>	630	420
12	1/2	1/2-14	13/16-16	24	27	9	9	49	35	142	<b>8-8F642EDMLS</b>	<b>8-8F642EDMLSS</b>	420	420
14, 15, 16	5/8	1/2-14	1-14	30	27	12	12	52	38	165	<b>10F642EDMLS</b>	<b>10F642EDMLSS</b>	420	420
14, 15, 16	5/8	3/4-14	1-14	30	32	12	12	54	38	185	<b>10-12F642EDMLS</b>	<b>10-12F642EDMLSS</b>	420	420
18, 20	3/4	3/4-14	1 3/16-12	36	32	14	14	57	41	266	<b>12F642EDMLS</b>	<b>12F642EDMLSS</b>	420	420
18, 20	3/4	1/2-14	1 3/16-12	36	30	14	12	55	41	220	<b>12-8F642EDMLS</b>	<b>12-8F642EDMLSS</b>	420	420
22, 25	1	1-11	1 7/16-12	41	41	20	20	67	49	414	<b>16F642EDMLS</b>	<b>16F642EDMLSS</b>	420	420
28, 30, 32	1 1/4	1 1/4-11	1 11/16-12	50	50	26	25	69	49	623	<b>20F642EDMLS</b>	<b>20F642EDMLSS</b>	350	280
35, 38	1 1/2	1 1/2-11	2-12	60	55	32	32	72	50	885	<b>24F642EDMLS</b>	<b>24F642EDMLSS</b>	280	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

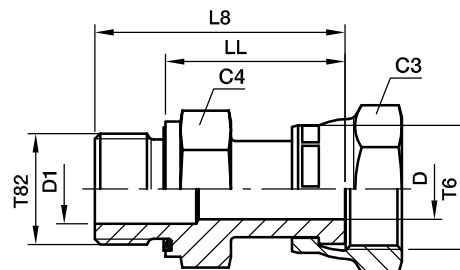
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## F682EDML Swivel male stud

O-Lok® ORFS Swivel female end / Male metric thread – ED seal (ISO 9974)



Tube O.D.		Thread metric T82	Thread UN/UNF-2B T6	C3 mm	C4 mm	D mm	D1 mm	L8 mm	LL mm	Weight (steel) g/1 piece	O-Lok®		PN (bar)	
mm	in.										Steel	Stainless Steel	S	SS
6	1/4	M 12×1.5	9/16-18	17	17	4	4	39	27	56	<b>4M12F682EDMLS</b>	<b>4M12F682EDMLSS</b>	500	420
8, 10	5/16, 3/8	M 14×1.5	11/16-16	22	19	7	5	41	29	73	<b>6M14F682EDMLS</b>	<b>6M14F682EDMLSS</b>	630	420
8, 10	5/16, 3/8	M 16×1.5	11/16-16	24	22	7	7	41	29	85	<b>6M16F682EDMLS</b>	<b>6M16F682EDMLSS</b>	630	420
12	1/2	M 16×1.5	13/16-16	24	22	9	7	48	36	109	<b>8M16F682EDMLS</b>	<b>8M16F682EDMLSS</b>	630	420
14, 15, 16	5/8	M 22×1.5	1-14	30	27	12	12	53	39	165	<b>10M22F682EDMLS</b>	<b>10M22F682EDMLSS</b>	420	420
18, 20	3/4	M 27×2.0	1 3/16-12	36	32	14	14	58	42	282	<b>12M27F682EDMLS</b>	<b>12M27F682EDMLSS</b>	420	420
22, 25	1	M 33×2.0	1 7/16-12	41	41	20	20	68	50	467	<b>16M33F682EDMLS</b>	<b>16M33F682EDMLSS</b>	420	420
28, 30, 32	1 1/4	M 42×2.0	1 11/16-12	50	50	26	25	70	50	635	<b>20M42F682EDMLS</b>	<b>20M42F682EDMLSS</b>	350	280
35, 38	1 1/2	M 48×2.0	2-12	60	55	32	32	72	50	885	<b>24M48F682EDMLS</b>	<b>24M48F682EDMLSS</b>	280	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

Part numbers shown are part of our current manufacturing programme.

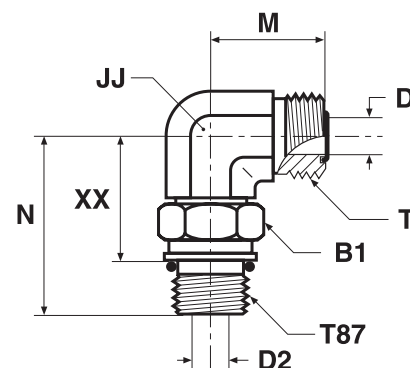
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## C87OMLO Male stud elbow

O-Lok® ORFS tube end / Male metric thread – O-ring (ISO 6149-2)  
SAE 52M0287 ISO 8434-3 SDE



Tube O.D.	mm	in.	Thread metric T87	Thread UN/UNF-2B T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok®		PN (bar)	
													Steel	Stainless Steel	S	SS
6		1/4	M 10×1.0	9/16-18	14	5	3	14	22	31	21	50	4M10C87OMLOS	4M10C87OMLOSS	420	420
6		1/4	M 12×1.5	9/16-18	17	5	4	14	22	33	22	52	4M12C87OMLOS	4M12C87OMLOSS	420	420
6		1/4	M 14×1.5	9/16-18	19	5	6	14	24	36	25	55	4M14C87OMLOS	4M14C87OMLOSS	420	420
8, 10		5/16, 3/8	M 12×1.5	11/16-16	17	7	4	19	25	36	25	60	6M12C87OMLOS	6M12C87OMLOSS	420	420
8, 10		5/16, 3/8	M 14×1.5	11/16-16	19	7	6	19	25	36	25	60	6M14C87OMLOS	6M14C87OMLOSS	420	420
8, 10		5/16, 3/8	M 16×1.5	11/16-16	22	7	7	19	25	38	27	65	6M16C87OMLOS	6M16C87OMLOSS	420	420
12		1/2	M 14×1.5	13/16-16	19	10	6	19	28	36	25	150	8M14C87OMLOS	8M14C87OMLOSS	420	420
12		1/2	M 16×1.5	13/16-16	22	10	7	19	28	38	27	92	8M16C87OMLOS	8M16C87OMLOSS	420	420
12		1/2	M 18×1.5	13/16-16	24	10	9	19	28	41	27	161	8M18C87OMLOS	8M18C87OMLOSS	420	420
12		1/2	M 22×1.5	13/16-16	27	10	12	27	31	49	35	200	8M22C87OMLOS	8M22C87OMLOSS	420	420
14, 15, 16		5/8	M 18×1.5	1-14	24	13	9	27	33	48	36	190	10M18C87OMLOS	10M18C87OMLOSS	420	420
14, 15, 16		5/8	M 22×1.5	1-14	27	13	12	27	33	49	34	214	10M22C87OMLOS	10M22C87OMLOSS	420	420
18, 20		3/4	M 22×1.5	1 3/16-12	27	16	12	30	37	50	35	390	12M22C87OMLOS	12M22C87OMLOSS	420	420
18, 20		3/4	M 27×2.0	1 3/16-12	32	16	15	30	37	56	40	440	12M27C87OMLOS	12M27C87OMLOSS	420	420
22, 25		1	M 33×2.0	1 7/16-12	41	21	20	36	42	59	43	501	16M33C87OMLOS	16M33C87OMLOSS	420	420
28, 30, 32		1 1/4	M 33×2.0	1 11/16-12	41	26	20	41	45	62	46	530	20M33C87OMLOS	20M33C87OMLOSS	350	280
28, 30, 32		1 1/4	M 42×2.0	1 11/16-12	50	26	26	41	45	63	46	561	20M42C87OMLOS	20M42C87OMLOSS	280	280
35, 38		1 1/2	M 48×2.0	2-12	55	32	32	50	49	72	53	684	24M48C87OMLOS	24M48C87OMLOSS	280	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

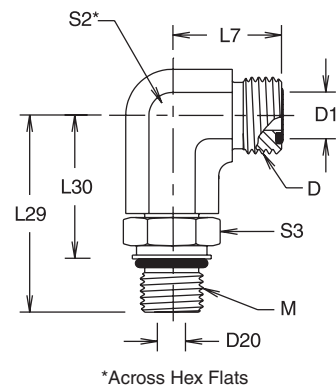
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



## CC87OMLO Extended male stud elbow

O-Lok® ORFS tube end / Male metric thread – O-ring (ISO 6149-2)  
 SAE 52M1587 ISO 8434-3 SDEL



Tube O.D.		Thread metric M	Thread UN/UNF-2A D	D1 mm	D20 mm	L7 mm	L29 mm	L30 mm	S2 mm	S3 mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
mm	in.												
6	1/4	M 12×1.5	9/16-18	5	4	21	56	45	14	17	44	<b>4M12CC87OMLOS</b>	420
8, 10	5/16, 3/8	M 14×1.5	11/16-16	7	6	25	56	45	17	19	51	<b>6M14CC87OMLOS</b>	420
8, 10	5/16, 3/8	M 16×1.5	11/16-16	7	7	25	67	54	17	22	51	<b>6M16CC87OMLOS</b>	420
12	1/2	M 18×1.5	13/16-16	10	9	28	75	61	19	24	150	<b>8M18CC87OMLOS</b>	420
12	1/2	M 22×1.5	13/16-16	10	12	31	88	73	27	27	150	<b>8M22CC87OMLOS</b>	420
14, 15, 16	5/8	M 22×1.5	1-14	13	12	34	88	73	27	27	160	<b>10M22CC87OMLOS</b>	420
18, 20	3/4	M 27×2.0	1 3/16-12	16	15	38	101	82	27	32	290	<b>12M27CC87OMLOS</b>	420
22, 25	1	M 33×2.0	1 7/16-12	21	20	42	115	96	36	41	480	<b>16M33CC87OMLOS</b>	420
28, 30, 32	1 1/4	M 42×2.0	1 11/16-12	26	26	45	127	108	41	50	630	<b>20M42CC87OMLOS</b>	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

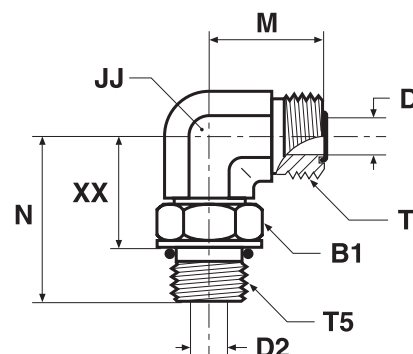
Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

## C50MLO Male stud elbow

O-Lok® ORFS tube end / Male UN/UNF thread – O-ring (ISO 11926)  
SAE 520220



Tube O.D.		Thread UN/UNF-2A T5	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.													S	SS
6	1/4	7/16-20	9/16-18	16	5	5	14	22	33	22	53	<b>4 C50LO-S</b>	<b>4C50MLOSS</b>	420	420
6	1/4	9/16-18	9/16-18	19	5	8	19	24	37	25	66	<b>4-6C50MLOS</b>	<b>4-6C50MLOSS</b>	420	420
6	1/4	3/4-16	9/16-18	24	5	10	19	25	41	27	67	<b>4-8 C50LO-S</b>	<b>4-8C50MLOSS</b>	420	420
8, 10	5/16, 3/8	9/16-18	11/16-16	19	7	8	19	25	37	25	68	<b>6C50MLOS</b>	<b>6C50MLOSS</b>	420	420
8, 10	5/16, 3/8	7/16-20	11/16-16	16	7	5	19	25	35	24	57	<b>6-4 C50LO-S</b>	<b>6-4C50MLOSS</b>	420	420
8, 10	5/16, 3/8	3/4-16	11/16-16	24	7	10	19	27	41	27	105	<b>6-8C50MLOS</b>	<b>6-8C50MLOSS</b>	420	420
8, 10	5/16, 3/8	7/8-14	11/16-16	27	7	12	22	29	50	34	196	<b>6-10 C50LO-S</b>	<b>6-10C50MLOSS</b>	420	420
8, 10	5/16, 3/8	1 1/16-12	11/16-16	36	7	16	27	33	55	37	250	<b>6-12 C50LO-S</b>	<b>6-12C50MLOSS</b>	420	420
12	1/2	3/4-16	13/16-16	24	10	10	19	28	41	27	164	<b>8C50MLOS</b>	<b>8C50MLOSS</b>	420	420
12	1/2	9/16-18	13/16-16	19	10	7	19	28	37	25	81	<b>8-6 C50LO-S</b>	<b>8-6C50MLOSS</b>	420	420
12	1/2	7/8-14	13/16-16	27	10	13	27	31	50	34	187	<b>8-10C50MLOS</b>	<b>8-10C50MLOSS</b>	420	420
12	1/2	1 1/16-12	13/16-16	36	10	15	30	36	55	37	201	<b>8-12 C50LO-S</b>	<b>8-12C50MLOSS</b>	420	420
14, 15, 16	5/8	7/8-14	1-14	27	13	13	27	33	50	34	214	<b>10C50MLOS</b>	<b>10C50MLOSS</b>	420	420
14, 15, 16	5/8	3/4-16	1-14	24	13	10	27	33	46	32	175	<b>10-8 C50LO-S</b>	<b>10-8C50MLOSS</b>	420	420
14, 15, 16	5/8	1 1/16-12	1-14	35	13	16	30	36	55	37	248	<b>10-12 C50LO-S</b>	<b>10-12C50MLOSS</b>	420	420
18, 20	3/4	1 1/16-12	1 3/16-12	36	16	16	30	37	55	37	442	<b>12C50MLOS</b>	<b>12C50MLOSS</b>	420	420
18, 20	3/4	3/4-16	1 3/16-12	24	16	10	30	37	47	33	325	<b>12-8C50MLOS</b>	<b>12-8C50MLOSS</b>	420	420
18, 20	3/4	7/8-14	1 3/16-12	27	16	13	30	37	51	35	296	<b>12-10C50MLOS</b>	<b>12-10C50MLOSS</b>	420	420
18, 20	3/4	1 5/16-12	1 3/16-12	41	16	22	36	41	60	41	346	<b>12-16 C50LO-S</b>	<b>12-16C50MLOSS</b>	380	380
22, 25	1	1 5/16-12	1 7/16-12	41	21	21	37	42	60	38	502	<b>16 C50LO-S</b>	<b>16C50MLOSS</b>	380	380
22, 25	1	1 1/16-12	1 7/16-12	35	21	16	37	42	59	40	473	<b>16-12 C50LO-S</b>	<b>16-12C50MLOSS</b>	420	420
22, 25	1	1 5/8-12	1 7/16-12	48	21	26	41	45	62	44	580	<b>16-20 C50LO-S</b>	<b>16-20C50MLOSS</b>	280	280
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	48	26	26	41	45	62	44	563	<b>20 C50LO-S</b>	<b>20C50MLOSS</b>	280	280
28, 30, 32	1 1/4	1 5/16-12	1 11/16-12	41	26	22	41	45	62	43	563	<b>20-16C50MLOS</b>	<b>20-16C50MLOSS</b>	380	280
28, 30, 32	1 1/4	1 7/8-12	1 11/16-12	54	26	32	48	49	66	47	764	<b>20-24 C50LO-S</b>	<b>20-24C50MLOSS</b>	280	280
35, 38	1 1/2	1 7/8-12	2-12	54	32	32	48	49	66	47	689	<b>24 C50LO-S</b>	<b>24C50MLOSS</b>	280	280
35, 38	1 1/2	1 5/8-12	2-12	48	32	26	48	49	66	47	644	<b>24-20 C50LO-S</b>	<b>24-20C50MLOSS</b>	280	280
50	2	2 1/2-12	2 1/2-12	70	45	40	64	70	78	59	2200	<b>32 C50LO-S</b>	<b>32C50MLOSS</b>	170	170

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

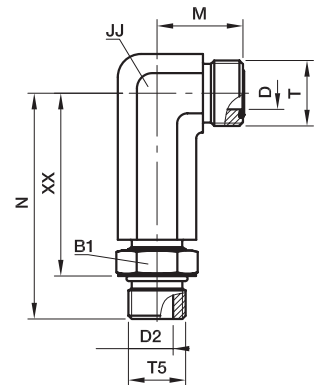
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## CC5OLO Extended male stud elbow

O-Lok® ORFS tube end / Male UN/UNF thread – O-ring (ISO 11926)  
SAE 521520



Tube O.D.		Thread UN/UNF-2A T5	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
mm	in.												
6	1/4	7/16-20	9/16-18	16	5	5	14	22	57	46	44	<b>4 CC5OLO-S</b>	420
8, 10	5/16, 3/8	9/16-18	11/16-16	19	7	7	19	25	66	54	51	<b>6 CC5OLO-S</b>	420
12	1/2	3/4-16	13/16-16	24	10	10	19	28	75	61	146	<b>8 CC5OLO-S</b>	420
14, 15, 16	5/8	7/8-14	1-14	27	13	13	27	33	90	73	159	<b>10 CC5OLO-S</b>	420
18, 20	3/4	1 1/16-12	1 3/16-12	36	16	16	30	37	101	82	291	<b>12 CC5OLO-S</b>	420
22, 25	1	1 5/16-12	1 7/16-12	38	21	21	36	42	115	96	481	<b>16 CC5OLO-S</b>	380

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

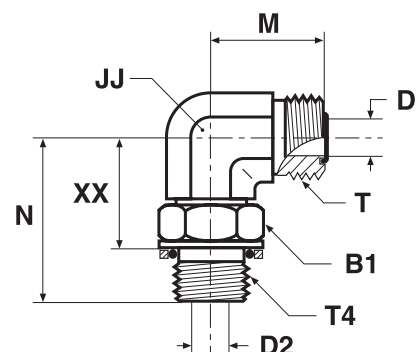
Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

## C4OMLO Male stud elbow

O-Lok® ORFS tube end / Male BSPP thread O-ring + retaining ring (ISO 1179)



Tube O.D.		Thread BSPP T4	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.													S	SS
6	1/4	1/8-28	9/16-18	14	5	4	14	22	30	22	49	<b>4C4OMLOS</b>	<b>4C4OMLOSS</b>	250	250
6	1/4	1/4-19	9/16-18	19	5	8	19	24	36	25	93	<b>4-4C4OMLOS</b>	<b>4-4C4OMLOSS</b>	250	200
6	1/4	3/8-19	9/16-18	22	5	10	19	25	38	27	99	<b>4-6C4OMLOS</b>	<b>4-6C4OMLOSS</b>	250	200
8, 10	5/16, 3/8	1/4-19	11/16-16	19	7	8	19	25	36	25	97	<b>6C4OMLOS</b>	<b>6C4OMLOSS</b>	250	200
8, 10	5/16, 3/8	1/8-28	11/16-16	14	7	5	19	25	32	24	62	<b>6-2C4OMLOS</b>	<b>6-2C4OMLOSS</b>	250	200
8, 10	5/16, 3/8	3/8-19	11/16-16	22	7	10	19	27	38	27	106	<b>6-6C4OMLOS</b>	<b>6-6C4OMLOSS</b>	250	200
8, 10	5/16, 3/8	1/2-14	11/16-16	27	7	13	27	29	49	34	120	<b>6-8C4OMLOS</b>	<b>6-8C4OMLOSS</b>	250	200
12	1/2	3/8-19	13/16-16	22	10	10	19	28	38	27	108	<b>8C4OMLOS</b>	<b>8C4OMLOSS</b>	250	200
12	1/2	1/4-19	13/16-16	19	10	8	19	28	36	25	99	<b>8-4C4OMLOS</b>	<b>8-4C4OMLOSS</b>	250	200
12	1/2	1/2-14	13/16-16	27	10	12	27	31	49	34	239	<b>8-8C4OMLOS</b>	<b>8-8C4OMLOSS</b>	250	200
12	1/2	3/4-14	13/16-16	36	10	16	30	34	52	37	258	<b>8-12C4OMLOS</b>	<b>8-12C4OMLOSS</b>	250	200
14, 15, 16	5/8	1/2-14	1-14	27	13	12	27	33	49	34	274	<b>10C4OMLOS</b>	<b>10C4OMLOSS</b>	250	200
14, 15, 16	5/8	3/8-19	1-14	22	13	10	27	33	43	31	235	<b>10-6C4OMLOS</b>	<b>10-6C4OMLOSS</b>	250	200
14, 15, 16	5/8	3/4-14	1-14	36	13	16	30	36	52	37	352	<b>10-12C4OMLOS</b>	<b>10-12C4OMLOSS</b>	250	200
14, 15, 16	5/8	1-11	1-14	41	13	22	36	40	58	41	382	<b>10-16C4OMLOS</b>	<b>10-16C4OMLOSS</b>	250	200
18, 20	3/4	3/4-14	1 3/16-12	36	16	16	30	37	52	37	355	<b>12C4OMLOS</b>	<b>12C4OMLOSS</b>	250	200
18, 20	3/4	1/2-14	1 3/16-12	27	16	12	30	37	50	35	297	<b>12-8C4OMLOS</b>	<b>12-8C4OMLOSS</b>	250	200
18, 20	3/4	1-11	1 3/16-12	41	16	22	36	41	58	41	362	<b>12-16C4OMLOS</b>	<b>12-16C4OMLOSS</b>	250	200
22, 25	1	1-11	1 7/16-12	41	21	22	36	42	58	41	551	<b>16C4OMLOS</b>	<b>16C4OMLOSS</b>	250	200
22, 25	1	3/4-14	1 7/16-12	36	21	16	36	42	55	41	533	<b>16-12C4OMLOS</b>	<b>16-12C4OMLOSS</b>	250	200
22, 25	1	1 1/4-11	1 7/16-12	50	21	28	41	45	61	44	758	<b>16-20C4OMLOS</b>	<b>16-20C4OMLOSS</b>	210	160
28, 30, 32	1 1/4	1 1/4-11	1 11/16-12	50	26	28	41	45	61	44	752	<b>20C4OMLOS</b>	<b>20C4OMLOSS</b>	210	160
28, 30, 32	1 1/4	1-11	1 11/16-12	41	26	22	41	45	61	44	712	<b>20-16C4OMLOS</b>	<b>20-16C4OMLOSS</b>	250	200
28, 30, 32	1 1/4	1 1/2-11	1 11/16-12	55	26	33	50	49	65	47	821	<b>20-24C4OMLOS</b>	<b>20-24C4OMLOSS</b>	140	140
35, 38	1 1/2	1 1/2-11	2-12	55	32	33	50	49	65	47	953	<b>24C4OMLOS</b>	<b>24C4OMLOSS</b>	140	140

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

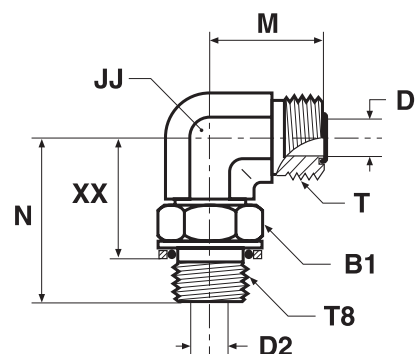
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



## C8OMLO Male stud elbow

O-Lok® ORFS tube end / Male metric thread – O-ring + retaining ring



Tube O.D.		Thread metric T8	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
mm	in.												
6	1/4	M 12×1.5	9/16-18	17	5	4	14	22	33	23	52	<b>4M12C8OMLOS</b>	250
6	1/4	M 14×1.5	9/16-18	17	5	6	14	24	36	24	58	<b>4M14C8OMLOS</b>	250
8, 10	5/16, 3/8	M 14×1.5	11/16-16	17	7	6	19	25	36	24	62	<b>6M14C8OMLOS</b>	250
8, 10	5/16, 3/8	M 16×1.5	11/16-16	19	7	7	19	25	38	26	65	<b>6M16C8OMLOS</b>	250
12	1/2	M 16×1.5	13/16-16	19	10	7	19	28	38	26	82	<b>8M16C8OMLOS</b>	250
12	1/2	M 18×1.5	13/16-16	22	10	9	19	28	41	29	161	<b>8M18C8OMLOS</b>	250
14, 15, 16	5/8	M 18×1.5	1-14	22	13	9	27	33	48	33	185	<b>10M18C8OMLOS</b>	250
14, 15, 16	5/8	M 22×1.5	1-14	27	13	12	27	33	49	35	214	<b>10M22C8OMLOS</b>	250
18, 20	3/4	M 27×2.0	1 3/16-12	32	16	15	30	37	56	39	440	<b>12M27C8OMLOS</b>	250
22, 25	1	M 33×2.0	1 7/16-12	38	21	20	36	42	59	43	501	<b>16M33C8OMLOS</b>	140
28, 30, 32	1 1/4	M 42×2.0	1 11/16-12	50	26	26	41	45	63	46	561	<b>20M42C8OMLOS</b>	140
35, 38	1 1/2	M 48×2.0	2-12	55	32	32	50	49	72	49	684	<b>24M48C8OMLOS</b>	140

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

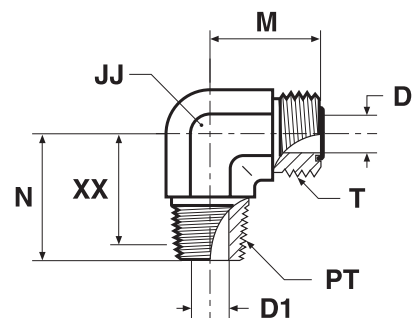
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

## CLO Male stud elbow

O-Lok® ORFS tube end / Male NPTF\* thread (SAE J476)

\*Stainless Steel = NPT to prevent galling



Tube O.D.		Thread NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.												S	SS
6	1/4	1/8-27	9/16-18	5	5	14	22	20	15	39	<b>4 CLO-S</b>	<b>4 CLO-SS</b>	420	420
6	1/4	1/4-18	9/16-18	5	7	14	22	29	20	50	<b>4-4 CLO-S</b>	<b>4-4 CLO-SS</b>	420	420
8, 10	5/16, 3/8	1/4-18	11/16-16	7	7	19	25	28	19	75	<b>6 CLO-S</b>	<b>6 CLO-SS</b>	420	420
8, 10	5/16, 3/8	3/8-18	11/16-16	7	10	19	25	31	22	81	<b>6-6 CLO-S</b>	<b>6-6 CLO-SS</b>	420	420
8, 10	5/16, 3/8	1/2-14	11/16-16	7	13	22	29	37	26	84	<b>6-8 CLO-S</b>	<b>6-8 CLO-SS</b>	420	420
12	1/2	3/8-18	13/16-16	10	10	19	28	31	22	89	<b>8 CLO-S</b>	<b>8 CLO-SS</b>	420	420
12	1/2	1/2-14	13/16-16	10	13	22	28	37	26	125	<b>8-8 CLO-S</b>	<b>8-8 CLO-SS</b>	420	420
12	1/2	3/4-14	13/16-16	10	18	27	34	40	28	168	<b>8-12 CLO-S</b>	<b>8-12 CLO-SS</b>	280	280
14, 15, 16	5/8	1/2-14	1-14	13	13	27	33	37	26	154	<b>10 CLO-S</b>	<b>10 CLO-SS</b>	420	420
14, 15, 16	5/8	3/4-14	1-14	13	18	30	36	40	28	237	<b>10-12 CLO-S</b>	<b>10-12 CLO-SS</b>	280	280
18, 20	3/4	3/4-14	1 3/16-12	16	18	30	37	40	28	246	<b>12 CLO-S</b>	<b>12 CLO-SS</b>	280	280
18, 20	3/4	1/2-14	1 3/16-12	16	13	30	37	40	29	257	<b>12-8 CLO-S</b>	<b>12-8 CLO-SS</b>	420	420
18, 20	3/4	1-11.5	1 3/16-12	16	24	33	41	50	36	363	<b>12-16 CLO-S</b>	<b>12-16 CLO-SS</b>	210	210
22, 25	1	1-11.5	1 7/16-12	21	24	37	42	50	36	387	<b>16 CLO-S</b>	<b>16 CLO-SS</b>	210	210
22, 25	1	3/4-14	1 7/16-12	21	18	37	42	45	33	401	<b>16-12 CLO-S</b>	<b>16-12 CLO-SS</b>	280	280
28, 30, 32	1 1/4	1 1/4-11.5	1 11/16-12	26	32	41	45	61	46	469	<b>20 CLO-S</b>	<b>20 CLO-SS</b>	175	175
35, 38	1 1/2	1 1/2-11.5	2-12	32	38	48	49	67	52	603	<b>24 CLO-S</b>	<b>24 CLO-SS</b>	175	175

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

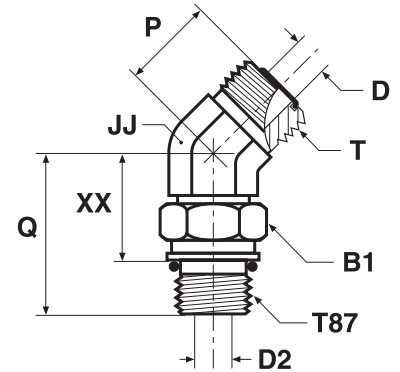
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



## V87OMLO 45° male stud elbow

O-Lok® ORFS tube end / Male metric thread – O-ring (ISO 6149-2)  
 SAE 52M0387 ISO 8434-3 SDE45



Tube O.D.	Thread metric T87	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	P mm	Q mm	XX mm	Weight (steel) g/1 piece	O-Lok®		PN (bar)		
											Steel	Stainless Steel	S	SS	
6	1/4	M 12×1.5	9/16-18	17	5	4	14	16	30	19	44	<b>4M12V87OMLOS</b>	<b>4M12V87OMLOSS</b>	420	420
8, 10	5/16, 3/8	M 16×1.5	11/16-16	22	7	7	19	19	33	19	82	<b>6M16V87OMLOS</b>	<b>6M16V87OMLOSS</b>	420	420
12	1/2	M 18×1.5	13/16-16	24	10	9	19	20	37	23	110	<b>8M18V87OMLOS</b>	<b>8M18V87OMLOSS</b>	420	420
14, 15, 16	5/8	M 22×1.5	1-14	27	13	12	27	23	43	29	190	<b>10M22V87OMLOS</b>	<b>10M22V87OMLOSS</b>	420	420
18, 20	3/4	M 27×2.0	1 3/16-12	32	16	15	30	26	50	32	288	<b>12M27V87OMLOS</b>	<b>12M27V87OMLOSS</b>	420	420
22, 25	1	M 33×2.0	1 7/16-12	41	21	20	36	30	52	34	300	<b>16M33V87OMLOS</b>	<b>16M33V87OMLOSS</b>	420	420
28, 30, 32	1 1/4	M 42×2.0	1 11/16-12	50	26	26	41	32	54	35	444	<b>20M42V87OMLOS</b>	<b>20M42V87OMLOSS</b>	280	280
35, 38	1 1/2	M 48×2.0	2-12	55	32	32	50	37	56	35	569	<b>24M48V87OMLOS</b>		280	—

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

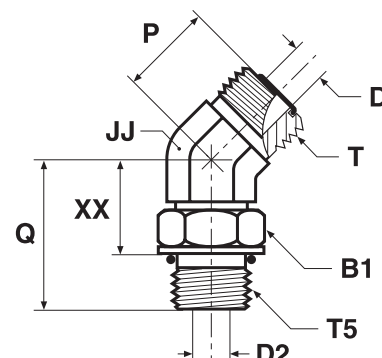
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## V50MLO 45° male stud elbow

O-Lok® ORFS tube end / Adjustable UN/UNF thread O-ring (ISO 11926)  
SAE 520320



Tube O.D.		Thread UN/UNF-2A T5	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	P mm	Q mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.													S	SS
6	1/4	7/16-20	9/16-18	17	5	5	14	16	30	19	45	<b>4V50MLOS</b>	<b>4V50MLOSS</b>	630	420
6	1/4	9/16-18	9/16-18	19	5	8	19	17	33	21	76	<b>4-6 V50LO-S</b>	<b>4-6V50MLOSS</b>	630	420
8, 10	5/16, 3/8	9/16-18	11/16-16	19	7	8	19	19	33	21	83	<b>6 V50LO-S</b>	<b>6V50MLOSS</b>	630	420
8, 10	5/16, 3/8	7/16-20	11/16-16	16	7	5	19	19	31	20	64	<b>6-4 V50LO-S</b>	<b>6-4V50MLOSS</b>	630	420
8, 10	5/16, 3/8	3/4-16	11/16-16	24	7	10	19	19	36	23	96	<b>6-8 V50LO-S</b>	<b>6-8V50MLOSS</b>	630	420
12	1/2	3/4-16	13/16-16	24	10	10	19	20	36	23	117	<b>8V50MLOS</b>	<b>8V50MLOSS</b>	630	420
12	1/2	9/16-18	13/16-16	19	10	7	19	20	32	20	71	<b>8-6 V50LO-S</b>	<b>8-6V50MLOSS</b>	630	420
12	1/2	7/8-14	13/16-16	27	10	13	27	21	45	29	147	<b>8-10 V50LO-S</b>	<b>8-10V50MLOSS</b>	420	420
14, 15, 16	5/8	7/8-14	1-14	27	13	13	27	23	45	29	194	<b>10 V50LO-S</b>	<b>10V50MLOSS</b>	420	420
14, 15, 16	5/8	3/4-16	1-14	24	12	10	27	23	40	27	192	<b>10-8 V50LO-S</b>	<b>10-8V50MLOSS</b>	420	420
14, 15, 16	5/8	1 1/16-12	1-14	36	12	16	30	24	50	32	207	<b>10-12 V50LO-S</b>	<b>10-12V50MLOSS</b>	420	420
18, 20	3/4	1 1/16-12	1 3/16-12	35	16	16	30	26	50	32	294	<b>12 V50LO-S</b>	<b>12V50MLOSS</b>	420	420
18, 20	3/4	7/8-14	1 3/16-12	27	16	12	30	26	46	30	219	<b>12-10 V50LO-S</b>	<b>12-10V50MLOSS</b>	420	420
18, 20	3/4	1 5/16-12	1 3/16-12	41	16	21	37	30	52	34	322	<b>12-16 V50LO-S</b>	<b>12-16V50MLOSS</b>	420	380
22, 25	1	1 5/16-12	1 7/16-12	38	21	21	37	30	52	34	394	<b>16 V50LO-S</b>	<b>16V50MLOSS</b>	420	380
22, 25	1	1 1/16-12	1 7/16-12	36	21	16	36	30	52	33	337	<b>16-12V50MLOS</b>	<b>16-12V50MLOSS</b>	420	420
22, 25	1	1 5/8-12	1 7/16-12	48	21	31	41	32	54	35	511	<b>16-20 V50LO-S</b>	<b>16-20V50MLOSS</b>	420	280
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	48	26	26	41	32	54	35	447	<b>20 V50LO-S</b>	<b>20V50MLOSS</b>	350	280
35, 38	1 1/2	1 7/8-12	2-12	54	32	32	48	37	54	35	571	<b>24 V50LO-S</b>	<b>24V50MLOSS</b>	280	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

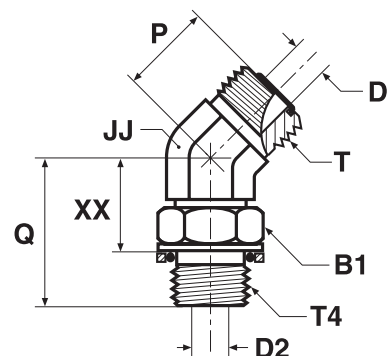
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.





## V4OMLO 45° male stud elbow

O-Lok® ORFS tube end / Adjustable BSPP thread O-ring + retaining ring (ISO 1179)



Tube O.D.		Thread BSPP T4	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	P mm	Q mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.													S	SS
6	1/4	1/8-28	9/16-18	14	5	4	14	16	28	19	38	<b>4V4OMLOS</b>	<b>4V4OMLOSS</b>	250	250
6	1/4	1/4-19	9/16-18	19	5	8	19	17	33	21	43	<b>4-4V4OMLOS</b>	<b>4-4V4OMLOSS</b>	250	200
8, 10	5/16, 3/8	1/4-19	11/16-16	19	7	8	19	19	32	21	83	<b>6V4OMLOS</b>	<b>6V4OMLOSS</b>	250	200
8, 10	5/16, 3/8	3/8-19	11/16-16	22	7	10	19	19	34	23	95	<b>6-6V4OMLOS</b>	<b>6-6V4OMLOSS</b>	250	200
8, 10	5/16, 3/8	1/2-14	11/16-16	27	7	12	27	19	43	28	107	<b>6-8V4OMLOS</b>	<b>6-8V4OMLOSS</b>	250	200
12	1/2	3/8-19	13/16-16	22	10	10	19	20	34	23	117	<b>8V4OMLOS</b>	<b>8V4OMLOSS</b>	250	200
14, 15, 16	5/8	1/2-14	1-14	27	13	12	27	23	43	29	191	<b>10V4OMLOS</b>	<b>10V4OMLOSS</b>	250	200
14, 15, 16	5/8	3/4-14	1-14	36	13	16	30	24	46	31	227	<b>10-12V4OMLOS</b>	<b>10-12V4OMLOSS</b>	250	200
18, 20	3/4	3/4-14	1 3/16-12	36	16	16	30	26	46	31	294	<b>12V4OMLOS</b>	<b>12V4OMLOSS</b>	250	200
18, 20	3/4	1-11	1 3/16-12	41	16	22	36	30	51	34	325	<b>12-16V4OMLOS</b>	<b>12-16V4OMLOSS</b>	250	200
22, 25	1	1-11	1 7/16-12	41	21	22	36	30	51	34	394	<b>16V4OMLOS</b>	<b>16V4OMLOSS</b>	250	200
28, 30, 32	1 1/4	1 1/4-11	1 11/16-12	50	26	28	41	32	52	35	430	<b>20V4OMLOS</b>	<b>20V4OMLOSS</b>	210	160
35, 38	1 1/2	1 1/2-11	2-12	55	32	33	50	37	52	35	551	<b>24V4OMLOS</b>	<b>24V4OMLOSS</b>	140	140

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

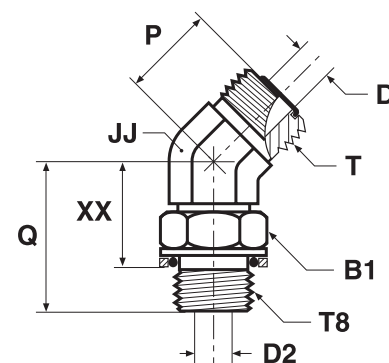
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## V8OMLO 45° male stud elbow

O-Lok® ORFS tube end / Male metric thread – O-ring + retaining ring



Tube O.D.		Thread metric T8	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	P mm	Q mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
mm	in.												
6	1/4	M 12×1.5	9/16-18	17	5	4	14	16	30	20	44	4M12V8OMLOS	250
10	3/8	M 16×1.5	11/16-16	19	7	7	19	19	33	22	82	6M16V8OMLOS	250
12	1/2	M 14×1.5	13/16-16	17	10	6	19	20	31	20	92	8M14V8OMLOS	250
12	1/2	M 18×1.5	13/16-16	22	10	9	19	20	37	25	110	8M18V8OMLOS	250
14, 15, 16	5/8	M 18×1.5	1-14	27	13	9	27	24	43	30	160	10M18V8OMLOS	250
14, 15, 16	5/8	M 22×1.5	1-14	27	13	12	27	23	43	30	190	10M22V8OMLOS	250
18, 20	3/4	M 27×2.0	1 3/16-12	32	16	15	30	26	50	34	288	12M27V8OMLOS	250
22, 25	1	M 33×2.0	1 7/16-12	38	21	20	36	30	52	36	300	16M33V8OMLOS	140
28, 30, 32	1 1/4	M 42×2.0	1 11/16-12	50	26	26	41	32	54	37	444	20M42V8OMLOS	140
35, 38	1 1/2	M 48×2.0	2-12	55	32	32	50	37	56	37	568	24M48V8OMLOS	140

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

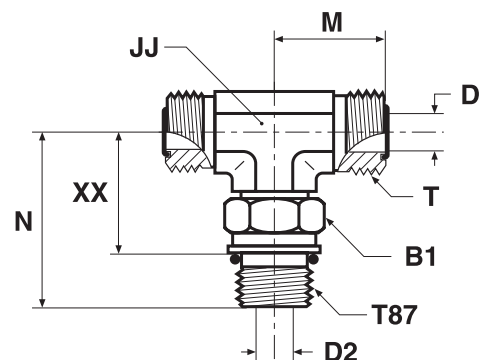
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

J

## S87OMLO Male stud branch tee

O-Lok® ORFS tube ends / Adjustable metric thread – O-ring (ISO 6149)  
 SAE 52M0489 ISO 8434-3 SDBT



Tube O.D. mm	Tube O.D. in.	Thread metric T87	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok®		PN (bar)	
												Steel	Stainless Steel	S	SS
6	1/4	M 12×1.5	9/16-18	17	5	4	14	22	33	22	66	<b>4M12S87OMLOS</b>	<b>4M12S87OMLOSS</b>	420	420
8, 10	5/16, 3/8	M 16×1.5	11/16-16	22	7	7	19	25	37	27	131	<b>6M16S87OMLOS</b>	<b>6M16S87OMLOSS</b>	420	420
12	1/2	M 18×1.5	13/16-16	24	10	9	19	28	41	27	187	<b>8M18S87OMLOS</b>	<b>8M18S87OMLOSS</b>	420	420
14, 15, 16	5/8	M 22×1.5	1-14	27	13	12	27	33	49	34	283	<b>10M22S87OMLOS</b>	<b>10M22S87OMLOSS</b>	420	420
18, 20	3/4	M 27×2.0	1 3/16-12	32	16	15	30	37	55	37	549	<b>12M27S87OMLOS</b>	<b>12M27S87OMLOSS</b>	420	420
22, 25	1	M 33×2.0	1 7/16-12	41	21	20	36	42	59	41	565	<b>16M33S87OMLOS</b>	<b>16M33S87OMLOSS</b>	420	420
28, 30, 32	1 1/4	M 42×2.0	1 11/16-12	50	26	26	41	45	62	44	824	<b>20M42S87OMLOS</b>	<b>20M42S87OMLOSS</b>	280	280
35, 38	1 1/2	M 48×2.0	2-12	55	32	32	48	49	69	48	940	<b>24M48S87OMLOS</b>		280	—

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

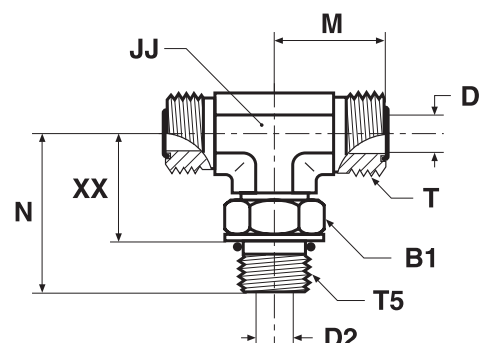
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## S50MLO Male stud branch tee

O-Lok® ORFS tube end / Adjustable UN/UNF thread O-ring (ISO 11926)  
SAE 520429



Tube O.D.		Thread UN/UNF-2A T5	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok®		PN (bar)	
mm	in.											Steel	Stainless Steel	S	SS
6	1/4	7/16-20	9/16-18	16	5	5	14	22	33	22	67	<b>4 S50LO-S</b>	<b>4 S50LO-SS</b>	420	420
8, 10	5/16, 3/8	9/16-18	11/16-16	19	7	8	19	25	37	25	131	<b>6S50MLOS</b>	<b>6 S50LO-SS</b>	420	420
8, 10	5/16, 3/8	3/4-16	11/16-16	24	10	10	19	26	41	27	160	<b>6-6-8 S50LO-S</b>	<b>6-6-8 S50LO-SS</b>	420	420
12	1/2	3/4-16	13/16-16	24	10	10	19	28	41	27	187	<b>8 S50LO-S</b>	<b>8 S50LO-SS</b>	420	420
14, 15, 16	5/8	7/8-14	1-14	27	13	12	27	33	50	34	279	<b>10 S50LO-S</b>	<b>10 S50LO-SS</b>	420	420
18, 20	3/4	1 1/16-12	1 3/16-12	36	16	16	30	37	55	37	441	<b>12 S50LO-S</b>	<b>12 S50LO-SS</b>	420	420
18, 20	3/4	1 5/16-12	1 3/16-12	42	18	21	37	42	60	41	500	<b>12-12-16 S50LO-S</b>	<b>12-12-16 S50LO-SS</b>	380	380
22, 25	1	1 5/16-12	1 7/16-12	41	21	21	37	42	60	41	539	<b>16 S50LO-S</b>	<b>16 S50LO-SS</b>	380	380
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	48	26	26	41	45	62	44	851	<b>20 S50LO-S</b>		280	—
35, 38	1 1/2	1 7/8-12	2-12	54	32	32	48	49	66	47	942	<b>24 S50LO-S</b>		280	—

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

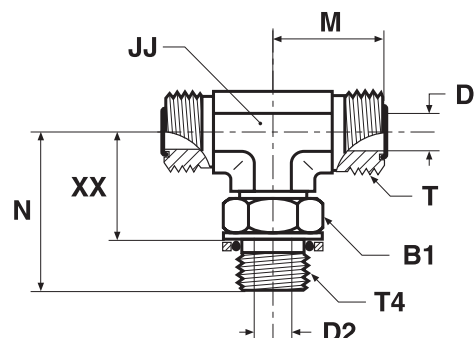
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

**J**

## S4OMLO Male stud branch tee

O-Lok® ORFS tube end / Adjustable BSPP thread O-ring + retaining ring (ISO 1179)



Tube O.D.		Thread BSPP T4	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok®		PN (bar)	
mm	in.											Steel	Stainless Steel	S	SS
6	1/4	1/8-28	9/16-18	14	5	4	14	22	30	22	69	<b>4S4OMLOS</b>	<b>4S4OMLOSS</b>	250	250
6	1/4	1/4-19	9/16-18	19	5	8	19	24	36	25	97	<b>4-4-4S4OMLOS</b>	<b>4-4-4S4OMLOSS</b>	250	200
8, 10	5/16, 3/8	1/4-19	11/16-16	19	7	8	19	25	36	25	127	<b>6S4OMLOS</b>	<b>6S4OMLOSS</b>	250	200
8, 10	5/16, 3/8	3/8-19	11/16-16	22	7	10	19	27	38	27	126	<b>6-6-6S4OMLOS</b>	<b>6-6-6S4OMLOSS</b>	250	200
12	1/2	3/8-19	13/16-16	22	10	10	19	28	38	27	146	<b>8S4OMLOS</b>	<b>8S4OMLOSS</b>	250	200
12	1/2	1/2-14	13/16-16	27	10	12	27	31	49	34	174	<b>8-8-8S4OMLOS</b>	<b>8-8-8S4OMLOSS</b>	250	200
14, 15, 16	5/8	1/2-14	1-14	27	13	12	27	33	49	34	288	<b>10S4OMLOS</b>	<b>10S4OMLOSS</b>	250	200
14, 15, 16	5/8	3/4-14	1-14	36	13	16	30	36	52	37	314	<b>10-10-12S4OMLOS</b>	<b>10-10-12S4OMLOSS</b>	250	200
18, 20	3/4	3/4-14	1 3/16-12	36	16	16	30	37	52	37	531	<b>12S4OMLOS</b>	<b>12S4OMLOSS</b>	250	200
22, 25	1	1-11	1 7/16-12	41	21	22	36	42	58	41	600	<b>16S4OMLOS</b>	<b>16S4OMLOSS</b>	250	200
28, 30, 32	1 1/4	1 1/4-11	1 11/16-12	50	26	28	41	45	61	44	850	<b>20S4OMLOS</b>	<b>20S4OMLOSS</b>	210	160
35, 38	1 1/2	1 1/2-11	2-12	55	32	33	50	49	65	47	940	<b>24S4OMLOS</b>	<b>24S4OMLOSS</b>	140	—

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

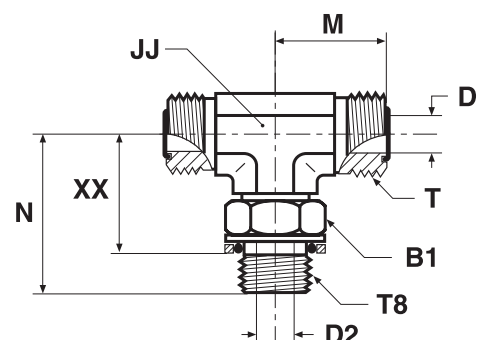
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## S8OMLO Male stud branch tee

O-Lok® ORFS tube end / Adjustable metric thread – O-ring + retaining ring



Tube O.D.		Thread metric T8	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
mm	in.												
6	1/4	M 12×1.5	9/16-18	17	5	4	14	22	33	23	66	<b>4M12S8OMLOS</b>	250
8, 10	5/16, 3/8	M 16×1.5	11/16-16	19	7	7	19	25	37	26	131	<b>6M16S8OMLOS</b>	250
12	1/2	M 18×1.5	13/16-16	22	10	9	19	28	41	29	187	<b>8M18S8OMLOS</b>	250
14, 15, 16	5/8	M 22×1.5	1-14	27	13	12	27	33	49	35	283	<b>10M22S8OMLOS</b>	250
18, 20	3/4	M 27×2.0	1 3/16-12	32	16	15	30	37	55	39	550	<b>12M27S8OMLOS</b>	250
22, 25	1	M 33×2.0	1 7/16-12	38	21	20	36	42	59	43	566	<b>16M33S8OMLOS</b>	140
28, 30, 32	1 1/4	M 42×2.0	1 11/16-12	50	26	26	41	45	62	46	824	<b>20M42S8OMLOS</b>	140
35, 38	1 1/2	M 48×2.0	2-12	55	32	32	48	49	69	49	940	<b>24M48S8OMLOS</b>	140

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

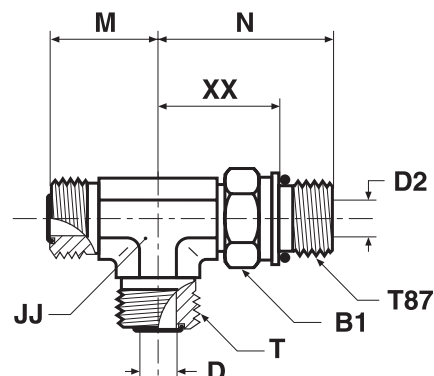
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

**J**

## R87OMLO Male stud run tee

O-Lok® ORFS tube ends / Adjustable metric thread – O-ring (ISO 6149)  
 SAE 52M0488 ISO 8434-3 SDRT



Tube O.D. mm	Tube O.D. in.	Thread metric T87	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok®		PN (bar)	
												Steel	Stainless Steel	S	SS
6	1/4	M 12×1.5	9/16-18	17	5	4	14	22	33	22	66	<b>4M12R87OMLOS</b>	<b>4M12R87OMLOSS</b>	420	420
8, 10	5/16, 3/8	M 16×1.5	11/16-16	22	7	7	19	25	38	27	131	<b>6M16R87OMLOS</b>	<b>6M16R87OMLOSS</b>	420	420
12	1/2	M 18×1.5	13/16-16	24	10	9	19	28	41	27	187	<b>8M18R87OMLOS</b>	<b>8M18R87OMLOSS</b>	420	420
14, 15, 16	5/8	M 22×1.5	1-14	27	13	12	27	33	49	34	283	<b>10M22R87OMLOS</b>	<b>10M22R87OMLOSS</b>	420	420
18, 20	3/4	M 27×2.0	1 3/16-12	32	16	15	30	37	55	37	549	<b>12M27R87OMLOS</b>	<b>12M27R87OMLOSS</b>	420	420
22, 25	1	M 33×2.0	1 7/16-12	41	21	20	36	42	59	41	565	<b>16M33R87OMLOS</b>	<b>16M33R87OMLOSS</b>	420	420
28, 30, 32	1 1/4	M 42×2.0	1 11/16-12	50	26	26	41	45	63	44	824	<b>20M42R87OMLOS</b>	<b>20M42R87OMLOSS</b>	280	280
35, 38	1 1/2	M 48×2.0	2-12	55	32	32	48	49	69	47	940	<b>24M48R87OMLOS</b>		280	—

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

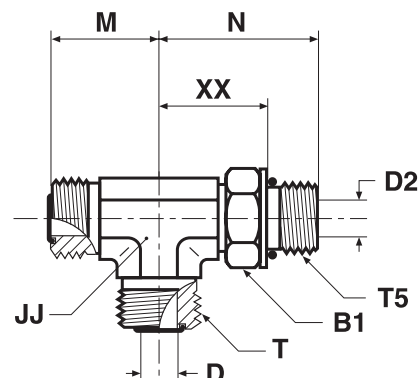
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## R5OMLO Male stud run tee

O-Lok® ORFS tube end / Adjustable UN/UNF thread O-ring (ISO 11926)  
SAE 520428



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T5	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok®		PN (bar)	
												Steel	Stainless Steel	S	SS
6	1/4	7/16-20	9/16-18	16	5	5	14	22	33	22	67	<b>4 R5OLO-S</b>	<b>4 R5OLO-SS</b>	420	420
8, 10	5/16, 3/8	9/16-18	11/16-16	19	7	8	19	25	37	25	131	<b>6R5OMLOS</b>	<b>6 R5OLO-SS</b>	420	420
12	1/2	3/4-16	13/16-16	24	10	10	19	28	41	27	187	<b>8 R5OLO-S</b>	<b>8 R5OLO-SS</b>	420	420
14, 15, 16	5/8	7/8-14	1-14	27	13	13	27	33	50	34	288	<b>10 R5OLO-S</b>	<b>10 R5OLO-SS</b>	420	420
18, 20	3/4	1 1/16-12	1 3/16-12	35	16	16	30	37	55	37	558	<b>12 R5OLO-S</b>	<b>12 R5OLO-SS</b>	420	420
18, 20	3/4	1 5/16-12	1 3/16-12	41	16	21	37	41	60	41	560	<b>12-16-12 R5OLO-S</b>	<b>12-16-12 R5OLO-SS</b>	380	380
22, 25	1	1 5/16-12	1 7/16-12	41	21	21	37	42	60	41	566	<b>16 R5OLO-S</b>	<b>16 R5OLO-SS</b>	380	380
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	48	26	26	41	45	62	44	825	<b>20 R5OLO-S</b>	<b>20 R5OLO-SS</b>	280	280
35, 38	1 1/2	1 7/8-12	2-12	54	32	32	48	49	66	47	942	<b>24 R5OLO-S</b>	<b>24 R5OLO-SS</b>	280	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

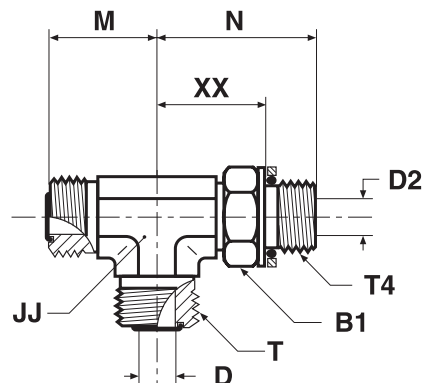
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.





## R4OMLO Male stud run tee

O-Lok® ORFS tube ends / Adjustable BSPP thread O-ring + retaining ring (ISO 1179)



Tube O.D.		Thread BSPP T4	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok®		PN (bar)	
mm	in.											Steel	Stainless Steel	S	SS
6	1/4	1/8-28	9/16-18	14	5	4	14	22	30	22	69	<b>4R4OMLOS</b>	<b>4R4OMLOSS</b>	250	250
6	1/4	1/4-19	9/16-18	19	5	8	19	24	36	25	97	<b>4-4-4R4OMLOS</b>	<b>4-4-4R4OMLOSS</b>	250	200
8, 10	5/16, 3/8	1/4-19	11/16-16	19	7	8	19	25	36	25	127	<b>6R4OMLOS</b>	<b>6R4OMLOSS</b>	250	200
8, 10	5/16, 3/8	3/8-19	11/16-16	22	7	10	19	27	38	27	126	<b>6-6-6R4OMLOS</b>	<b>6-6-6R4OMLOSS</b>	250	200
12	1/2	3/8-19	13/16-16	22	10	10	19	28	38	27	146	<b>8R4OMLOS</b>	<b>8R4OMLOSS</b>	250	200
12	1/2	1/2-14	13/16-16	27	10	12	27	31	49	34	174	<b>8-8-8R4OMLOS</b>	<b>8-8-8R4OMLOSS</b>	250	200
14, 15, 16	5/8	1/2-14	1-14	27	13	12	27	33	49	34	288	<b>10R4OMLOS</b>	<b>10R4OMLOSS</b>	250	200
16		3/4-14	1-14	36	13	16	30	36	52	37	314	<b>10-12-10R4OMLOS</b>	<b>10-12-10R4OMLOSS</b>	250	200
18, 20	3/4	3/4-14	1 3/16-12	36	16	16	30	37	52	37	531	<b>12R4OMLOS</b>	<b>12R4OMLOSS</b>	250	200
18, 20	3/4	1-11	1 3/16-12	41	16	22	36	41	58	41	559	<b>12-16-12R4OMLOS</b>	<b>12-16-12R4OMLOSS</b>	250	200
22, 25	1	1-11	1 7/16-12	41	21	22	36	42	58	41	553	<b>16R4OMLOS</b>	<b>16R4OMLOSS</b>	250	200
28, 30, 32	1 1/4	1 1/4-11	1 11/16-12	50	26	28	41	45	61	44	824	<b>20R4OMLOS</b>	<b>20R4OMLOSS</b>	210	160
35, 38	1 1/2	1 1/2-11	2-12	55	32	32	50	49	65	47	940	<b>24R4OMLOS</b>		140	—

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

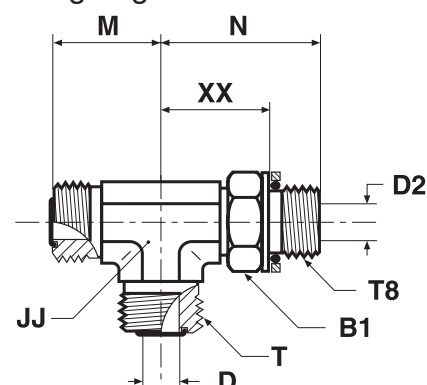
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## R8OMLO Male stud run tee

O-Lok® ORFS tube end / Adjustable metric thread – O-ring + retaining ring



Tube O.D.		Thread metric T8	Thread UN/UNF-2A T	B1 mm	D mm	D2 mm	JJ mm	M mm	N mm	XX mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
mm	in.												
6	1/4	M 12×1.5	9/16-18	17	5	4	14	22	33	23	66	<b>4M12R8OMLOS</b>	250
8, 10	5/16, 3/8	M 16×1.5	11/16-16	19	7	7	19	25	38	26	131	<b>6M16R8OMLOS</b>	250
12	1/2	M 18×1.5	13/16-16	22	10	9	19	28	41	29	187	<b>8M18R8OMLOS</b>	250
14, 15, 16	5/8	M 22×1.5	1-14	27	13	12	27	33	49	35	283	<b>10M22R8OMLOS</b>	250
18, 20	3/4	M 27×2.0	1 3/16-12	32	16	15	30	37	55	39	550	<b>12M27R8OMLOS</b>	250
22, 25	1	M 33×2.0	1 7/16-12	38	21	20	36	42	59	43	566	<b>16M33R8OMLOS</b>	140
28, 30, 32	1 1/4	M 42×2.0	1 11/16-12	50	26	26	41	45	63	46	824	<b>20M42R8OMLOS</b>	140
35, 38	1 1/2	M 48×2.0	2-12	55	32	32	48	49	69	49	940	<b>24M48R8OMLOS</b>	140

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

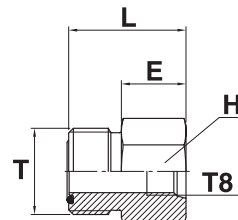
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

**J**

## G87MLO Pressure gauge connector

O-Lok® ORFS tube end / Female metric thread – O-ring (ISO 6149-1) suitably for EMA link



Tube O.D.	Thread metric T8	Thread UN/UNF-2A T	E mm	H mm	L mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
									S	SS
6	1/4	M 14×1.5	19	19	29	20	<b>4M14G87MLOS</b>	<b>4M14G87MLOSS</b>	630	630
8, 10	5/16, 3/8	M 14×1.5	19	19	30	44	<b>6M14G87MLOS</b>	<b>6M14G87MLOSS</b>	630	630
12	1/2	M 14×1.5	19	22	32	66	<b>8M14G87MLOS</b>	<b>8M14G87MLOSS</b>	630	630
14, 15, 16	5/8	M 14×1.5	19	27	35	82	<b>10M14G87MLOS</b>	<b>10M14G87MLOSS</b>	420	420
18, 20	3/4	M 14×1.5	19	32	36	104	<b>12M14G87MLOS</b>	<b>12M14G87MLOSS</b>	420	420

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

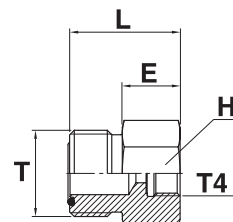
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## G4MLOSMO Pressure gauge connector

O-Lok® ORFS tube end / Female BSPP gauge thread (ISO 1179-1)



mm	Tube O.D.		Thread BSPP T4	Thread UN/UNF-2A T	E mm	H mm	L mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
	in.										S	SS
6	1/4		1/4-19	9/16-18	19	17	27	32	4-4G4MLOSMO	4-4G4MLOSSMO	400	400
6	1/4		1/2-14	9/16-18	27	30	37	80	4-8G4MLOSMO	4-8G4MLOSSMO	400	400
8, 10	5/16, 3/8		1/4-19	11/16-16	17	19	28	49	6G4MLOSMO	6G4MLOSSMO	400	400
8, 10	5/16, 3/8		1/2-14	11/16-16	27	30	38	107	6-8G4MLOSMO	6-8G4MLOSSMO	400	400
12	1/2		1/4-19	13/16-16	17	22	30	60	8-4G4MLOSMO	8-4G4MLOSSMO	280	280
12	1/2		1/2-14	13/16-16	27	30	40	80	8-8G4MLOSMO	8-8G4MLOSSMO	280	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

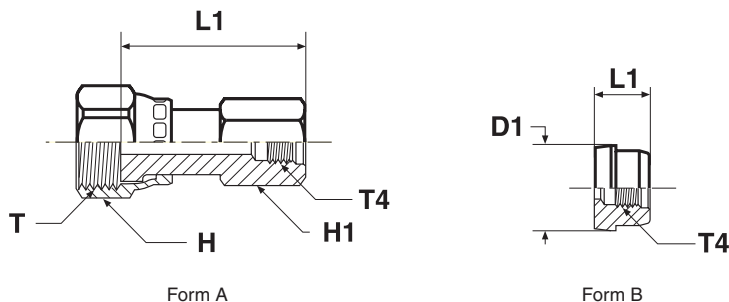
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

J

## TT4ML Test point connector

O-Lok® ORFS swivel female end / Female BSPP thread (ISO 1179-1)  
for EMA3 test point



Form B has to be assembled with a nut BMLS/BLS.

Thread UN/UNF-2B T	Thread BSPP T4	D1 mm	H mm	H1 mm	L1 mm	Weight (steel) g/1 piece	Form	O-Lok®		PN (bar)	
								Steel	Stainless Steel	S	SS
9/16-18	1/4-19	—	17	19	38	60	A	<b>4TT4MLS</b>	<b>4TT4MLSS</b>	420	420
11/16-16	1/4-19	—	22	19	41	74	A	<b>6TT4MLS</b>	<b>6TT4MLSS</b>	420	420
13/16-16	1/4-19	—	24	19	43	91	A	<b>8TT4MLS</b>	<b>8TT4MLSS</b>	420	420
—	1/4-19	23	—	—	18	30	B	<b>10TT4LS</b>	<b>10TT4MLSS</b>	420	420
—	1/4-19	28	—	—	18	48	B	<b>12TT4LS</b>	<b>12TT4MLSS</b>	420	420
—	1/4-19	34	—	—	18	95	B	<b>16TT4LS</b>	<b>16TT4MLSS</b>	420	420
—	1/4-19	41	—	—	18	130	B	<b>20TT4LS</b>	<b>20TT4MLSS</b>	280	280
—	1/4-19	49	—	—	18	189	B	<b>24TT4LS</b>	<b>24TT4MLSS</b>	280	280

Part numbers shown are part of our current manufacturing programme.

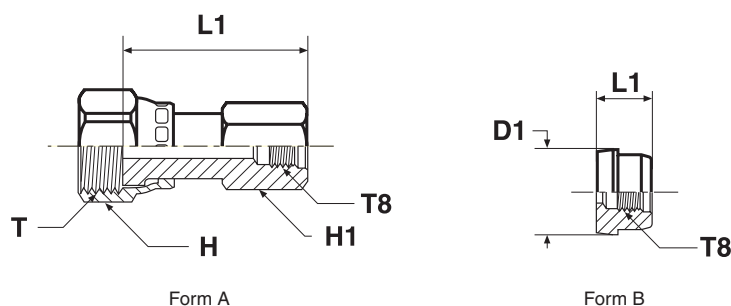
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## TT8ML Test point connector

O-Lok® ORFS female swivel end / Metric female thread  
(Metric female thread designed for use with EMA3 connections only)



Form B has to be assembled with a nut BMLS/BLS.

Thread UN/UNF-2B T	Thread metric T8	D1 mm	H mm	H1 mm	L1 mm	Weight (steel) g/1 piece	Form	O-Lok® Steel	O-Lok® Stainless Steel		PN (bar)		
									S	SS	S	SS	
9/16-18	M 10×1.0	—	17	19	37	86	A	<b>4TT8MLS</b>	<b>4TT8MLSS</b>	420	420	420	420
11/16-16	M 10×1.0	—	22	19	39	86	A	<b>6TT8MLS</b>	<b>6TT8MLSS</b>	420	420	420	420
13/16-16	M 10×1.0	—	24	19	43	123	A	<b>8TT8MLS</b>	<b>8TT8MLSS</b>	420	420	420	420
—	M 10×1.0	23	—	—	16	40	B	<b>10TT8LS</b>	<b>10TT8LSS</b>	420	420	420	420
—	M 10×1.0	28	—	—	16	60	B	<b>12TT8LS</b>	<b>12TT8LSS</b>	420	420	420	420
—	M 10×1.0	34	—	—	16	85	B	<b>16TT8LS</b>	<b>16TT8LSS</b>	420	420	420	420
—	M 10×1.0	41	—	—	16	133	B	<b>20TT8LS</b>	<b>20TT8LSS</b>	280	280	280	280
—	M 10×1.0	48	—	—	16	193	B	<b>24TT8LS</b>	<b>24TT8LSS</b>	280	280	280	280

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

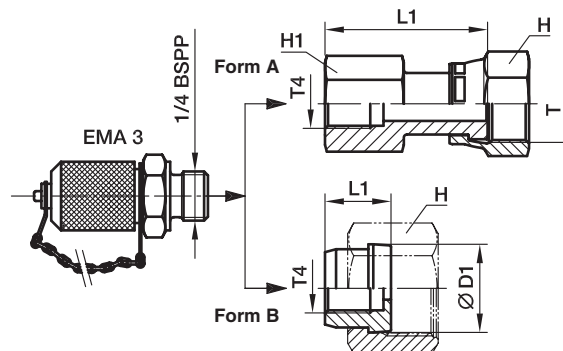
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

J

## TTP4ML Test point connector

O-Lok® ORFS female swivel end / EMA3 test point



Form B versions delivered complete with BMLS nut.

Thread UN/UNF-2B T	Thread BSPP T4	D1 mm	H mm	H1 mm	L1 mm	Weight (steel) g/1 piece	Form	O-Lok® Steel	PN (bar)
9/16-18	1/4-19	—	17	19	38	150	A	<b>4TTP4MLS</b>	420
11/16-16	1/4-19	—	22	19	41	164	A	<b>6TTP4MLS</b>	420
13/16-16	1/4-19	—	24	19	43	181	A	<b>8TTP4MLS</b>	420
—	1/4-19	23	30	—	18	120	B	<b>10TTP4LS</b>	420
—	1/4-19	28	36	—	18	138	B	<b>12TTP4LS</b>	420
—	1/4-19	34	41	—	18	185	B	<b>16TTP4LS</b>	420
—	1/4-19	41	50	—	18	200	B	<b>20TTP4LS</b>	280
—	1/4-19	49	60	—	18	279	B	<b>24TTP4LS</b>	280

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

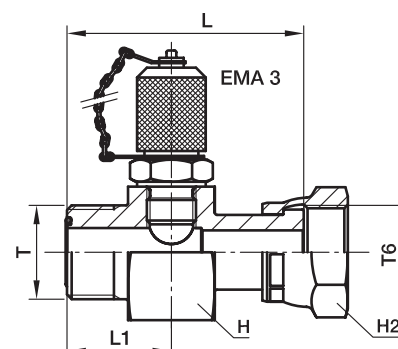
Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

## R6P4MLO Test point connector

O-Lok® ORFS end / O-Lok® ORFS female swivel end / EMA3 test point



Tube O.D.		Thread UN/UNF-2A T	Thread UN/UNF-2B T6	L	L1	H	H2	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
mm	in.			mm	mm	mm	mm			
6	1/4	9/16-18	9/16-18	50	22	36	17	270	<b>4-4R6P4MLOS</b>	420
8, 10	5/16, 3/8	11/16-16	11/16-16	53	23	36	22	300	<b>6-4R6P4MLOS</b>	420
12	1/2	13/16-16	13/16-16	58	25	36	24	308	<b>8-4R6P4MLOS</b>	420
14, 15, 16	5/8	1-14	1-14	64	27	36	30	337	<b>10-4R6P4MLOS</b>	420
18, 20	3/4	1 3/16-12	1 3/16-12	68	29	41	36	416	<b>12-4R6P4MLOS</b>	420
25	1	1 7/16-12	1 7/16-12	71	29	46	41	506	<b>16-4R6P4MLOS</b>	420
28, 30, 32	1 1/4	1 11/16-12	1 11/16-12	73	29	50	50	691	<b>20-4R6P4MLOS</b>	280
35, 38	1 1/2	2-12	2-12	74	29	60	60	995	<b>24-4R6P4MLOS</b>	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

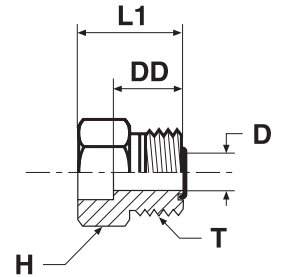
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

J



## LOHB3\* Braze connector

O-Lok® ORFS tube end / Braze socket  
 SAE 520104 / SAE 52M0104 ISO 8434-3 BRS  
 (\*Parts delivered oil dipped finish only – steel)



Tube O.D.		Thread UN/UNF-2A T	D mm	DD mm	H in.	H mm	L1 mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.										S	SS
6	1/4 3/8 1/2 5/8	9/16-18	5	14	—	17	22	23	4-6MMLOHB3S		420	—
		9/16-18	5	13	5/8	—	22	24	4 LOHB3-S	4 LOHB3-SS	420	420
		9/16-18	5	13	5/8	—	22	23	4-6 LOHB3-S	4-6 LOHB3-SS	420	420
		11/16-16	7	14	3/4	—	23	36	6 LOHB3-S	6 LOHB3-SS	420	420
		11/16-16	7	14	3/4	—	23	42	6-4 LOHB3-S	6-4 LOHB3-SS	420	420
		11/16-16	7	14	3/4	—	23	36	6-8 LOHB3-S	6-8 LOHB3-SS	420	420
		11/16-16	7	15	—	19	23	30	6-10 LOHB3-S	6-10 LOHB3-SS	420	420
12	1/2 3/4	13/16-16	10	16	—	22	25	42	8-12MMLOHB3S		420	—
		13/16-16	10	16	7/8	—	25	44	8 LOHB3-S	8 LOHB3-SS	420	420
		13/16-16	10	16	7/8	—	25	58	8-4 LOHB3-S	8-4 LOHB3-SS	420	420
		13/16-16	10	16	7/8	—	25	43	8-6 LOHB3-S	8-6 LOHB3-SS	420	420
		13/16-16	10	16	7/8	—	25	42	8-10 LOHB3-S	8-10 LOHB3-SS	420	420
		13/16-16	10	17	1 1/16	—	30	74	8-12 LOHB3-S	8-12 LOHB3-SS	420	420
		16	5/8 3/4	1-14	13	19	—	27	27	101	10-16MMLOHB3S	
1-14	13			19	1 1/16	—	27	104	10 LOHB3-S	10 LOHB3-SS	420	420
1-14	13			19	1 1/16	—	27	99	10-6 LOHB3-S	10-6 LOHB3-SS	420	420
1-14	13			19	1 1/16	—	27	96	10-8 LOHB3-S	10-8 LOHB3-SS	420	420
1-14	13			19	1 1/16	—	31	97	10-12 LOHB3-S	10-12 LOHB3-SS	420	420
20	3/4 1/2 5/8 1	1 3/16-12	16	21	—	32	34	144	12-20MMLOHB3S		420	—
		1 3/16-12	16	21	1 1/4	—	34	149	12 LOHB3-S	12 LOHB3-SS	420	420
		1 3/16-12	16	21	1 1/4	—	30	174	12-8 LOHB3-S	12-8 LOHB3-SS	420	420
		1 3/16-12	16	21	1 1/4	—	30	171	12-10 LOHB3-S	12-10 LOHB3-SS	420	420
		1 3/16-12	16	21	1 1/2	—	35	220	12-16 LOHB3-S	12-16 LOHB3-SS	420	420
25	1 1/2 3/4 1 1/4	1 7/16-12	21	25	—	41	39	218	16-25MMLOHB3S		420	—
		1 7/16-12	21	25	1 1/2	—	39	225	16 LOHB3-S	16 LOHB3-SS	420	420
		1 7/16-12	21	25	1 1/2	—	33	237	16-8 LOHB3-S	16-8 LOHB3-SS	420	420
		1 7/16-12	21	25	1 1/2	—	37	228	16-12 LOHB3-S	16-12 LOHB3-SS	420	420
		1 7/16-12	21	25	1 3/4	—	39	276	16-20 LOHB3-S	16-20 LOHB3-SS	420	420
30	1 1/4 1 1 1/2	1 11/16-12	26	25	—	46	39	269	20-30MMLOHB3S		280	—
		1 11/16-12	26	25	1 3/4	—	39	278	20 LOHB3-S	20 LOHB3-SS	280	280
		1 11/16-12	26	25	1 3/4	—	39	278	20-16 LOHB3-S	20-16 LOHB3-SS	280	280
		1 11/16-12	26	25	2 1/8	—	39	371	20-24 LOHB3-S	20-24 LOHB3-SS	280	280
38	1 1/2 1 1/4	2-12	32	25	—	55	39	374	24-38MMLOHB3S		280	—
		2-12	32	25	2 1/8	—	39	384	24 LOHB3-S	24 LOHB3-SS	280	280
		2-12	32	25	2 1/8	—	39	442	24-20 LOHB3-S	24-20 LOHB3-SS	280	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

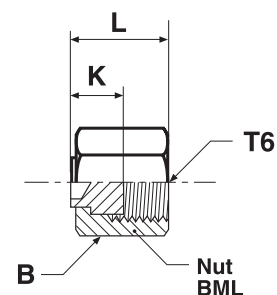
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## FNML Cap

O-Lok® ORFS Female swivel cap end  
SAE 520112



Thread UN/UNF-2B T6	B mm	K mm	L mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
							S	SS
9/16-18	17	9	17	6	<b>4 FNL-S</b>	<b>4FNMLSS</b>	630	630
11/16-16	22	11	18	10	<b>6FNMLS</b>	<b>6FNMLSS</b>	630	630
13/16-16	24	12	22	11	<b>8FNMLS</b>	<b>8FNMLSS</b>	630	630
1-14	30	14	25	31	<b>10 FNL-S</b>	<b>10FNMLSS</b>	420	420
1 3/16-12	36	15	27	52	<b>12FNMLS</b>	<b>12FNMLSS</b>	420	420
1 7/16-12	41	16	29	81	<b>16FNMLS</b>	<b>16FNMLSS</b>	420	420
1 11/16-12	48	15	29	129	<b>20 FNL-S</b>	<b>20FNMLSS</b>	280	280
2-12	57	15	29	189	<b>24 FNL-S</b>	<b>24FNMLSS</b>	280	280
2 1/2-12	73	20	37	390	<b>32 FNL-S</b>		200	—

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

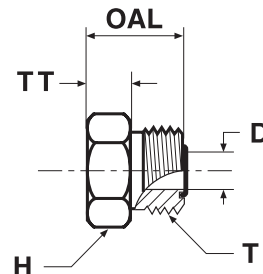
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

**J**

## PNMLO Plug

O-Lok® ORFS tube end plug  
SAE 520109



Tube O.D.	Thread UN/UNF-2A T	D mm	H mm	OAL mm	TT mm	Weight (steel) g/1 piece	O-Lok®		PN (bar)	
							Steel	Stainless Steel	S	SS
6	9/16-18	5	16	17	5	18	<b>4 PNLO-S</b>	<b>4PNMLOSS</b>	630	630
8, 10	11/16-16	7	19	19	8	34	<b>6PNMLOS</b>	<b>6PNMLOSS</b>	630	630
12	13/16-16	10	22	22	9	45	<b>8PNMLOS</b>	<b>8PNMLOSS</b>	630	630
14, 15, 16	1-14	13	27	26	10	91	<b>10 PNLO-S</b>	<b>10PNMLOSS</b>	420	420
18, 20	1 3/16-12	16	32	27	10	138	<b>12 PNLO-S</b>	<b>12PNMLOSS</b>	420	420
22, 25	1 7/16-12	21	38	28	10	203	<b>16 PNLO-S</b>	<b>16PNMLOSS</b>	420	420
28, 30, 32	1 11/16-12	26	45	28	10	266	<b>20 PNLO-S</b>	<b>20PNMLOSS</b>	420	280
35, 38	2-12	32	54	28	10	369	<b>24 PNLO-S</b>	<b>24PNMLOSS</b>	350	280
50	2 1/2-12	45	70	35	13	580	<b>32 PNLO-S</b>	<b>32PNMLOSS</b>	200	200

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

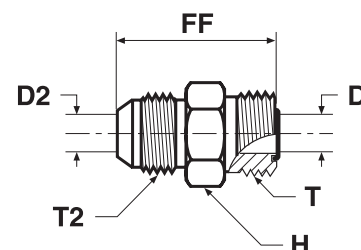
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## XHMLO Conversion union

Triple-Lok® 37° flare tube end / O-Lok® ORFS tube end



Tube O.D.		Thread UN/UNF-2A T	Thread UN/UNF-2A T2	D mm	D2 mm	FF mm	H mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.										S	SS
6	1/4	9/16-18	7/16-20	5	5	32	16	29	<b>4 XHLO-S</b>	<b>4XHMLOSS</b>	500	350
8, 10	5/16, 3/8	11/16-16	9/16-18	7	7	34	19	45	<b>6 XHLO-S</b>	<b>6XHMLOSS</b>	420	350
12	1/2	13/16-16	3/4-16	10	10	39	22	70	<b>8 XHLO-S</b>	<b>8XHMLOSS</b>	420	350
14, 15, 16	5/8	1-14	7/8-14	13	13	47	27	119	<b>10 XHLO-S</b>	<b>10XHMLOSS</b>	350	350
18, 20	3/4	1 3/16-12	1 1/16-12	16	16	52	32	181	<b>12 XHLO-S</b>	<b>12XHMLOSS</b>	350	350
22, 25	1	1 7/16-12	1 5/16-12	21	21	55	38	265	<b>16 XHLO-S</b>	<b>16XHMLOSS</b>	280	280
28, 30, 32	1 1/4	1 11/16-12	1 5/8-12	26	26	58	45	383	<b>20 XHLO-S</b>	<b>20XHMLOSS</b>	280	210
35, 38	1 1/2	2-12	1 7/8-12	32	32	63	54	562	<b>24 XHLO-S</b>	<b>24XHMLOSS</b>	210	140

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

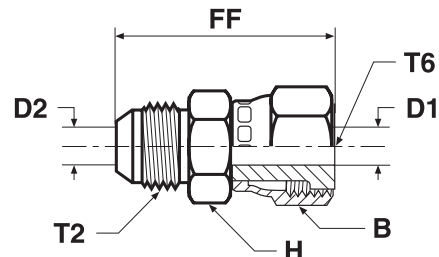
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

**J**

## XHML6 Conversion swivel nut connector

Triple-Lok® 37° flare tube end / O-Lok® ORFS female swivel end



Tube O.D.		Thread UN/UNF-2A T2	Thread UN/UNF-2B T6	B	D1	D2	FF	H	Weight (steel)	O-Lok® Steel	O-Lok® Stainless Steel	PN (bar)	
mm	in.			mm	mm	mm	mm	mm	g/1 piece			S	SS
6	1/4	7/16-20	9/16-18	17	4	4	38	16	29	<b>4 XHL6-S</b>	<b>4XHML6SS</b>	500	350
8, 10	5/16, 3/8	9/16-18	11/16-16	21	7	7	41	19	46	<b>6 XHL6-S</b>	<b>6XHML6SS</b>	420	350
12	1/2	3/4-16	13/16-16	24	9	9	48	22	73	<b>8 XHL6-S</b>	<b>8XHML6SS</b>	420	350
14, 15, 16	5/8	7/8-14	1-14	29	12	12	56	27	126	<b>10 XHL6-S</b>	<b>10XHML6SS</b>	350	350
18, 20	3/4	1 1/16-12	1 3/16-12	35	14	14	64	32	205	<b>12 XHL6-S</b>	<b>12XHML6SS</b>	350	350
22, 25	1	1 5/16-12	1 7/16-12	41	20	20	68	38	285	<b>16 XHL6-S</b>	<b>16XHML6SS</b>	280	280
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	48	26	26	71	43	623	<b>20 XHL6-S</b>	<b>20XHML6SS</b>	280	210

Part numbers shown are part of our current manufacturing programme.

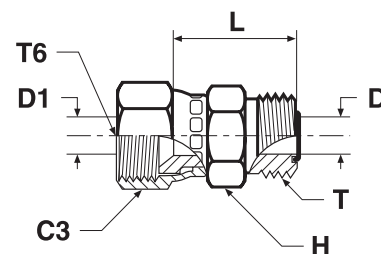
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## LOHMX6 Conversion swivel nut connector

Triple-Lok® 37 flare female swivel end / O-Lok® ORFS male end



Tube O.D.	Thread	Thread	C3	D	D1	H	L	Weight (steel) g/1 piece	O-Lok®		PN (bar)	
									Steel	Stainless Steel	S	SS
6	1/4	9/16-18	14	5	5	16	26	26	4 LOHX6-S	4LOHMX6SS	500	350
8, 10	5/16, 3/8	11/16-16	18	7	7	19	29	40	6 LOHX6-S	6LOHMX6SS	350	350
12	1/2	13/16-16	22	10	10	22	34	63	8 LOHX6-S	8LOHMX6SS	350	350
14, 15, 16	5/8	1-14	25	13	13	27	39	103	10 LOHX6-S	10LOHMX6SS	350	350
18, 20	3/4	1 3/16-12	32	16	16	32	41	162	12 LOHX6-S	12LOHMX6SS	350	350
22, 25	1	1 7/16-12	38	21	21	38	46	229	16 LOHX6-S	16LOHMX6SS	250	250

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

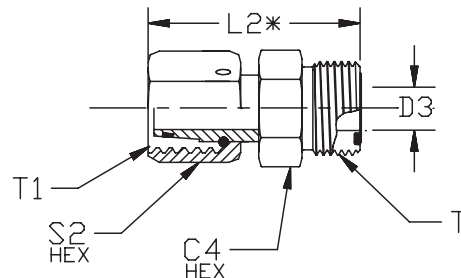
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

J

## LOHU86 EO swivel adapter

O-Lok® ORFS tube end / EO 24° DKO swivel



Tube O.D.		EO Swivel Size	Thread UN/UNF-2A T	Thread metric T1	C4 mm	D3 mm	L2 mm	S2 mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
mm	in.										
6	1/4	6L	9/16-18	M 12×1.5	17	3	34	14	30	<b>4-6L LOHU86-S</b>	500
6	1/4	8L	9/16-18	M 14×1.5	17	4	34	17	50	<b>4-8L LOHU86-S</b>	500
10	3/8	10L	11/16-16	M 16×1.5	19	6	37	19	75	<b>6-10L LOHU86-S</b>	500
12	1/2	12L	13/16-16	M 18×1.5	22	8	39	22	145	<b>8-12L LOHU86-S</b>	400
16	5/8	15L	1-14	M 22×1.5	27	10	46	27	180	<b>10-15L LOHU86-S</b>	400
20	3/4	18L	1 3/16-12	M 26×1.5	32	13	48	32	250	<b>12-18L LOHU86-S</b>	400
25	1	22L	1 7/16-12	M 30×2.0	41	17	53	36	305	<b>16-22L LOHU86-S</b>	250
6	1/4	6S	9/16-18	M 14×1.5	17	3	34	17	30	<b>4-6S LOHU86-S</b>	630
6	1/4	8S	9/16-18	M 16×1.5	17	4	34	19	50	<b>4-8S LOHU86-S</b>	630
10	3/8	10S	11/16-16	M 18×1.5	19	5	37	22	75	<b>6-10S LOHU86-S</b>	630
12	1/2	12S	13/16-16	M 20×1.5	22	8	40	24	145	<b>8-12S LOHU86-S</b>	630
16	5/8	14S	1-14	M 22×1.5	27	9	47	27	180	<b>10-14S LOHU86-S</b>	420
16	5/8	16S	1-14	M 24×1.5	27	11	47	30	185	<b>10-16S LOHU86-S</b>	420
20	3/4	20S	1 3/16-12	M 30×2.0	32	14	52	36	260	<b>12-20S LOHU86-S</b>	420
25	1	25S	1 7/16-12	M 36×2.0	41	18	55	46	308	<b>16-25S LOHU86-S</b>	420

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

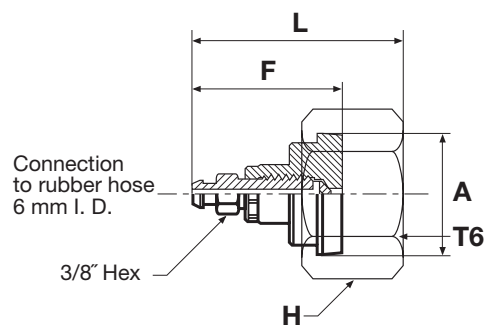
Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

## FNLBA Bleed adaptor

O-Lok® ORFS female end



Thread UN/UNF-2B T6	A (mm)	F (mm)	H (mm)	L (mm)	Weight (steel) g/1 piece	O-Lok®		PN (bar)	
						Steel	Stainless Steel	S	SS
13/16-16	19	41	24	53	49	<b>8 FNLBA-S</b>	<b>8 FNLBA-SS</b>	420	420
1-14	23	41	30	55	77	<b>10 FNLBA-S</b>	<b>10 FNLBA-SS</b>	420	420
1 3/16-12	27	41	36	56	111	<b>12 FNLBA-S</b>	<b>12 FNLBA-SS</b>	420	420
1 7/16-12	33	41	41	56	113	<b>16 FNLBA-S</b>	<b>16 FNLBA-SS</b>	420	420
1 11/16-12	40	41	50	56	151	<b>20 FNLBA-S</b>	<b>20 FNLBA-SS</b>	280	280
2-12	48	41	60	56	161	<b>24 FNLBA-S</b>	<b>24 FNLBA-SS</b>	280	280

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

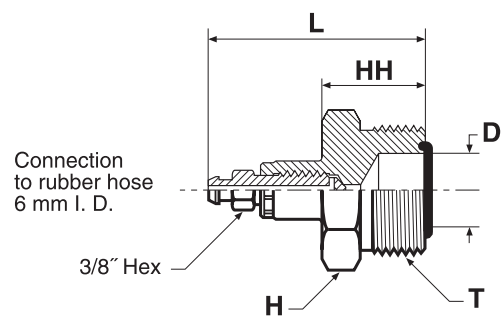
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.





## PNLOBA Bleed adaptor

O-Lok® ORFS female end



Tube O.D.		Thread UN/UNF-2A T	D mm	H mm	HH mm	L mm	Weight (steel) g/1 piece	O-Lok® Steel	PN (bar)
mm	in.								
6	1/4	9/16-18	5	17	20	48	57	<b>4 PNLOBA-S</b>	420
8, 10	5/16, 3/8	11/16-16	7	19	22	50	64	<b>6 PNLOBA-S</b>	420
12	1/2	13/16-16	10	22	23	53	93	<b>8 PNLOBA-S</b>	420
14, 15, 16	5/8	1-14	13	27	26	56	127	<b>10 PNLOBA-S</b>	420
18, 20	3/4	1 3/16-12	16	32	27	58	220	<b>12 PNLOBA-S</b>	420
22, 25	1	1 7/16-12	21	38	28	60	266	<b>16 PNLOBA-S</b>	420
28, 30, 32	1 1/4	1 11/16-12	26	45	28	61	304	<b>20 PNLOBA-S</b>	280
35, 38	1 1/2	2-12	32	54	28	63	422	<b>24 PNLOBA-S</b>	280

Product delivered with NBR TRAP seal. Replacement of TRAP seal is with a standard NBR O-ring – see page J73.

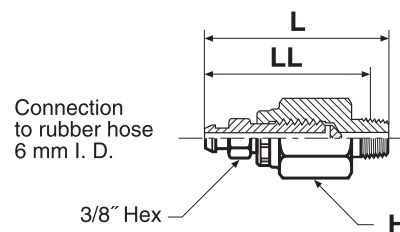
Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

## HPBA Bleed adaptor

Bleed hose connection / Male NPTF thread (SAE J476)



Thread NPTF	H mm	L mm	LL mm	O-Lok® Steel	PN (bar)
1/4-18	18	56	47	<b>1/4 HPBA-S</b>	420

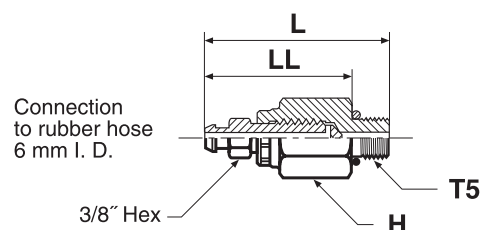
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

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## P5ONBA Bleed adaptor

Bleed hose connection/Male UN/UNF thread – O-ring (ISO 11926)



Thread UN/UNF-2A T5	H mm	L mm	LL mm	O-Lok® Steel	PN (bar)
7/16-20	18	52	41	<b>4 P5ONBA-S</b>	420

O-Lok® is delivered with NBR elastomeric seals as standard. For more details on other seal materials see page J73–J74.

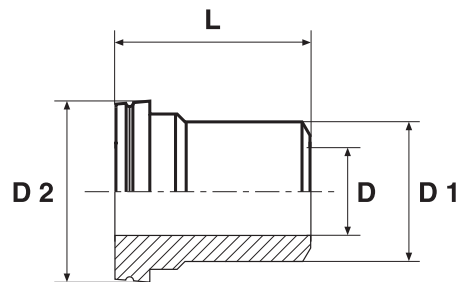
Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

## TW3L Weld nipple

O-Lok® ORFS female end / Butt weld end

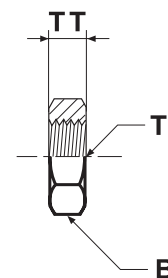


Tube O.D. mm	D mm	D1 mm	D2 mm	L mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
6	2	6	13	25	10	<b>TW3LS6</b>	<b>TW3LSS6</b>
8	3	8	13	25	12	<b>TW3LS8</b>	<b>TW3LSS8</b>
10	4	10	16	26	15	<b>TW3LS10</b>	<b>TW3LSS10</b>
12	5	12	19	26	18	<b>TW3LS12</b>	<b>TW3LSS12</b>
16	10	16	23	32	25	<b>TW3LS16</b>	<b>TW3LSS16</b>
20	13	20	28	37	30	<b>TW3LS20</b>	<b>TW3LSS20</b>
25	16	25	34	42	37	<b>TW3LS25</b>	<b>TW3LSS25</b>
30	22	30	41	44	43	<b>TW3LS30</b>	<b>TW3LSS30</b>
38	28	38	48	49	70	<b>TW3LS38</b>	<b>TW3LSS38</b>

Part numbers shown are part of our current manufacturing programme.

## WLNML Bulkhead locknut

SAE 520118/SAE 52M0118 ISO 8434-3 BHLN

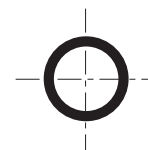


Thread UN/UNF-2B T	B mm	TT mm	Weight (steel) g/1 piece	O-Lok® Steel	O-Lok® Stainless Steel
9/16-18	22	7	11	<b>4WLNMLS</b>	<b>4WLNMLSS</b>
11/16-16	27	8	23	<b>6WLNMLS</b>	<b>6WLNMLSS</b>
13/16-16	30	9	26	<b>8WLNMLS</b>	<b>8WLNMLSS</b>
1-14	36	11	38	<b>10WLNMLS</b>	<b>10WLNMLSS</b>
1 3/16-12	41	11	44	<b>12WLNMLS</b>	<b>12WLNMLSS</b>
1 7/16-12	46	11	54	<b>16WLNMLS</b>	<b>16WLNMLSS</b>
1 11/16-12	51	10	73	<b>20 WLNML-S</b>	<b>20WLNMLSS</b>
2-12	60	10	102	<b>24 WLNML-S</b>	<b>24WLNMLSS</b>

Part numbers shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

## Spare parts guide – O-Lok® retaining rings and seals



## Face seal end O-rings SAE J1453/ISO 8434-3

Dash size	Thread UN/UNF	O-ring order code		O-ring ID × section mm
		NBR	FKM	
4	9/16-18	2-011-N552-9	2-011-V894-9	7.65 × 1.78
6	11/16-16	2-012-N552-9	2-012-V894-9	9.25 × 1.78
8	13/16-16	2-014-N552-9	2-014-V894-9	12.42 × 1.78
10	1-14	2-016-N552-9	2-016-V894-9	15.60 × 1.78
12	1 3/16-12	2-018-N552-9	2-018-V894-9	18.77 × 1.78
16	1 7/16-12	2-021-N552-9	2-021-V894-9	23.52 × 1.78
20	1 11/16-12	2-025-N552-9	2-025-V894-9	29.87 × 1.78
24	2-12	2-029-N552-9	2-029-V894-9	37.82 × 1.78
32	2 1/2-12	2-135-N552-9	2-135-V894-9	48.90 × 2.62

## BSPP male threads – ISO 1179

Thread BSPP	ED seal order code		O-ring order code*		O-ring ID × section mm	Retainer ring Order code Steel	Retainer ring Order code Stainless Steel
	NBR	FKM	NBR	FKM			
1/8	ED10X1X	ED10X1VITX	6-002-N552-9	6-002-V894-9	8.00 × 2.00	8207-1/8	8207SS1/8
1/4	ED14X1.5X	ED14X1.5VITX	2-111-N552-9	2-111-V894-9	10.77 × 2.62	8207-1/4	8207SS1/4A
3/8	ED3/8X	ED3/8VITX	2-113-N552-9	2-113-V894-9	13.94 × 2.62	8207-3/8	8207SS3/8A
1/2	ED1/2X	ED1/2VITX	5-256-N552-9	5-256-V894-9	17.96 × 2.62	8207-1/2	8207SS1/2
3/4	ED26X1.5X	ED26X1.5VITX	2-119-N552-9	2-119-V894-9	23.47 × 2.62	8207-3/4	8207SS3/4
1	ED33X2X	ED33X2VITX	2-217-N552-9	2-217-V894-9	29.74 × 3.53	8207-1	8207SS1A
1 1/4	ED42X2X	ED42X2VITX	2-222-N552-9	2-222-V894-9	37.69 × 3.53	8207-1-1/4	8207SS1 1/4
1 1/2	ED48X2X	ED48X2VITX	2-224-N552-9	2-224-V894-9	44.04 × 3.53	8207-1-1/2	8207SS1 1/2

Typical fittings using these parts: F42EDMLO/C4OMLO/V4OMLO etc.

\*Must be used with correct retainer ring.

## Metric male threads – ISO 9974

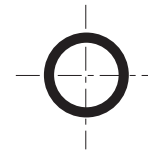
Thread metric	ED seal order code		O-ring order code*		O-ring ID × section mm	Retainer ring Order code Steel	Retainer ring Order code Stainless Steel
	NBR	FKM	NBR	FKM			
M 10×1.0	ED10X1/R1/8	ED10X1R1/8VIT	6-074-N552-9	6-074-V894-9	8.00 × 1.50	M10RR	RRM10X1SS
M 12×1.5	ED12X1.5	ED14X1.5/VIT	2-012-N552-9	2-012-V894-9	9.25 × 1.78	M12RR	RRM12X1.5SS
M 14×1.5	ED14X1.5/R1/4	ED14X1.5/R1/4VIT	2-013-N552-9	2-013-V894-9	10.82 × 1.78	M14RR	RRM14X1.5SS
M 16×1.5	ED16X1.5	ED16X1.5/VIT	3-907-N552-9	3-907-V894-9	13.46 × 2.08	M16RR	RRM16X1.5SS
M 18×1.5	ED18X1.5	ED18X1.5/VIT	2-114-N552-9	2-114-V894-9	15.54 × 2.62	M18RR	RRM18X1.5SS
M 22×1.5	ED22X1.5	ED22X1.5VIT	2-018-N552-9	2-018-V894-9	18.77 × 1.78	M22RR	RRM22X1.5SS
M 27×2.0	ED26X1.5X**	ED26X1.5VITX	2-119-N552-9	2-119-V894-9	23.47 × 2.62	M27RR	RRM27X2SS
M 33×2.0	ED33X2R1	ED33X2R1VIT	2-122-N552-9	2-122-V894-9	28.24 × 2.62	M33RR	RRM33X2SS
M 42×2.0	ED42X2R1.1/4	ED42X2R1.1/4VIT	2-128-N552-9	2-128-V894-9	37.77 × 2.62	M42RR	RRM42X2SS
M 48×2.0	ED48X2R1.1/2	ED48X2R1.1/2VIT	2-132-N552-9	2-132-V894-9	44.12 × 2.62	M48RR	RRM48X2SS

Typical fittings using these parts: F82EDMLO/C8OMLO/V8OMLO etc.

\*Must be used with correct retainer ring.

\*\*Same seal used for M 26×1.5 and M 27×2.0

## Spare parts guide – O-Lok® retaining rings and seals



### UN / UNF male threads – ISO 11926

Dash size	Thread UN/UNF	O-ring order code		O-ring ID × section mm
		NBR	FKM	
2	5/16-24	<b>3-902-N552-9</b>	<b>3-902-V894-9</b>	6.07 × 1.63
3	3/8-24	<b>3-903-N552-9</b>	<b>3-903-V894-9</b>	7.65 × 1.63
4	7/16-20	<b>3-904-N552-9</b>	<b>3-904-V894-9</b>	8.92 × 1.83
5	1/2-20	<b>3-905-N552-9</b>	<b>3-905-V894-9</b>	10.52 × 1.83
6	9/16-18	<b>3-906-N552-9</b>	<b>3-906-V894-9</b>	11.89 × 1.98
8	3/4-16	<b>3-908-N552-9</b>	<b>3-908-V894-9</b>	16.36 × 2.21
10	7/8-14	<b>3-910-N552-9</b>	<b>3-910-V894-9</b>	19.18 × 2.46
12	1 1/16-12	<b>3-912-N552-9</b>	<b>3-912-V894-9</b>	23.47 × 2.95
14	1 3/16-12	<b>3-914-N552-9</b>	<b>3-914-V894-9</b>	26.59 × 2.95
16	1 5/16-12	<b>3-916-N552-9</b>	<b>3-916-V894-9</b>	29.74 × 2.95
20	1 5/8-12	<b>3-920-N552-9</b>	<b>3-920-V894-9</b>	37.47 × 3.00
24	1 7/8-12	<b>3-924-N552-9</b>	<b>3-924-V894-9</b>	43.69 × 3.00
32	2 1/2-12	<b>3-932-N552-9</b>	<b>3-932-V894-9</b>	59.36 × 3.00

Typical fittings using these parts: F5OMLO/C5OMLO/R5OMLO etc.

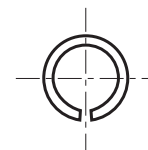
### Metric male threads – ISO 6149

Thread metric	O-ring order code		O-ring ID × section mm
	NBR	FKM	
M 10×1.0	<b>6-345-N552-9</b>	<b>6-345-V894-9</b>	8.20 × 1.50
M 12×1.5	<b>6-346-N552-9</b>	<b>6-346-V894-9</b>	9.40 × 2.10
M 14×1.5	<b>6-347-N552-9</b>	<b>6-347-V894-9</b>	11.40 × 2.10
M 16×1.5	<b>6-348-N552-9</b>	<b>6-348-V894-9</b>	13.40 × 2.10
M 18×1.5	<b>6-349-N552-9</b>	<b>6-349-V894-9</b>	15.40 × 2.10
M 22×1.5	<b>6-350-N552-9</b>	<b>6-350-V894-9</b>	19.40 × 2.10
M 27×2.0	<b>6-351-N552-9</b>	<b>6-351-V894-9</b>	23.70 × 2.80
M 33×2.0	<b>6-352-N552-9</b>	<b>6-352-V894-9</b>	29.70 × 2.80
M 42×2.0	<b>6-353-N552-9</b>	<b>6-353-V894-9</b>	38.70 × 2.80
M 48×2.0	<b>6-354-N552-9</b>	<b>6-354-V894-9</b>	46.70 × 2.80

Typical fittings using these parts: F87OMLO/S87OMLO etc.

Other seal compounds available on request for alternative applications.

## SBR Braze ring



### For metric tubing

Tube O.D. mm	Order code
6	<b>SBR 6</b>
8	<b>SBR 8</b>
10	<b>SBR 10</b>
12	<b>SBR 12</b>
14	<b>SBR 14</b>
15	<b>SBR 15</b>
16	<b>SBR 16</b>
18	<b>SBR 18</b>
20	<b>SBR 20</b>
22	<b>SBR 22</b>
25	<b>SBR 25</b>
28	<b>SBR 28</b>
30	<b>SBR 30</b>
32	<b>SBR 32</b>
35	<b>SBR 35</b>
38	<b>SBR 38</b>
50	<b>SBR 50</b>

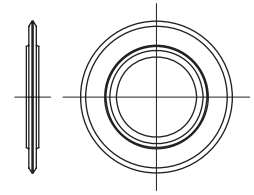
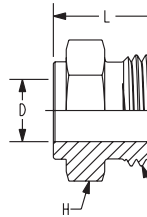
### For inch tubing

Tube O.D. in.	Order code
1/4	<b>4SBR</b>
3/8	<b>6SBR</b>
1/2	<b>8SBR</b>
5/8	<b>10SBR</b>
3/4	<b>12SBR</b>
1	<b>16SBR</b>
1 1/4	<b>20SBR</b>
1 1/2	<b>24SBR</b>
2	<b>32SBR</b>

Part numbers shown are part of our current manufacturing programme.

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## Flange-Seal components



Flange-Seal fitting  
LHP

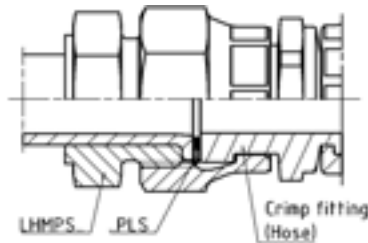
Tube O.D. mm	Thread T UN/UNF-2A	H mm	L mm	Weight (steel) g/1 piece	Order code
1/4	9/16-18	16	15.0	15	<b>4 LHP-S</b>
3/8	11/16-16	19	17.5	22	<b>6 LHP-S</b>
1/2	13/16-16	22	20.0	33	<b>8 LHP-S</b>
5/8	1-14	27	24.0	59	<b>10 LHP-S</b>
3/4	1 3/16-12	32	25.5	85	<b>12 LHP-S</b>

Bonded Seal element  
PLS

Fitting dash size	Tube O.D. mm	Tube O.D. inch	I.D. mm	W mm	Weight (steel) g/1 piece	Seal Order code
4	6	1/4	6	2	1	<b>4 PL-S N0702</b>
6	8, 10	3/8	9	2	1	<b>6 PL-S N0702</b>
8	12	1/2	12	2	1	<b>8 PL-S N0702</b>
10	16	5/8	16	2	2	<b>10 PL-S N0702</b>
12	20	3/4	20	2	2	<b>12 PL-S N0702</b>

Tube O.D. mm	Thread T UN/UNF-2A	H mm	L mm	Weight (steel) g/1 piece	Order code
6	9/16-18	17	15.0	15	<b>LHMPS6</b>
8	11/16-16	17	17.5	25	<b>LHMPS8</b>
10	11/16-16	19	17.5	22	<b>LHMPS10</b>
12	13/16-16	22	20.0	33	<b>LHMPS12</b>
16	1-14	27	24.0	59	<b>LHMPS16</b>
20	1 3/16-12	32	25.5	85	<b>LHMPS20</b>

## Pressure ratings and tube limitations

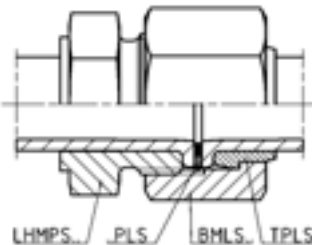


Tube to hose

Order code	Dash size	Tube O.D. mm	max. wall thickness tube to hose	PN
<b>LHMPS6</b>	4	6	1.5	420
<b>LHMPS8</b>	6	8	2.0	420
<b>LHMPS10</b>	6	10	2.0	420
<b>LHMPS12</b>	8	12	2.5	420
<b>LHMPS16</b>	10	16	3.0	420
<b>LHMPS20</b>	12	20	3.5	420

Tube to hose

Order code	Dash size	Tube O.D. inch	max. wall thickness tube to hose	PN
<b>4 LHP-S</b>	4	1/4	0.065	420
<b>6 LHP-S</b>	6	3/8	0.095	420
<b>9 LHP-S</b>	8	1/2	0.095	420
<b>10 LHP-S</b>	10	5/8	0.120	420
<b>12 LHP-S</b>	12	3/4	0.134	420



Tube to tube

Order code	Dash size	Tube O.D. mm	max. wall thckn. Tube to tube	Example PN for St 37 NBK*
<b>LHMPS6</b>	4	6	1.0	370
<b>LHMPS8</b>	6	8	1.5	410
<b>LHMPS10</b>	6	10	1.5	360
<b>LHMPS12</b>	8	12	2.0	390
<b>LHMPS16</b>	10	16	2.0	300
<b>LHMPS20</b>	12	20	2.5	300

Tube to tube

Order code	Dash size	Tube O.D. inch	max. wall thckn. Tube to tube	Example PN for St 37 NBK*
<b>4 LHP-S</b>	4	1/4	0.049	400
<b>6 LHP-S</b>	6	3/8	0.065	345
<b>8 LHP-S</b>	8	1/2	0.095	385
<b>10 LHP-S</b>	10	5/8	0.120	385
<b>12 LHP-S</b>	12	3/4	0.120	320

\*For higher strenght tube, connection PN may be increased to maximum shown in Tube to hose table 420 bar.

\*For higher strenght tube, connection PN may be increased to maximum shown in Tube to hose table 420 bar.



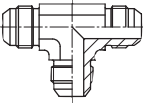





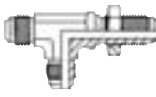






















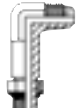


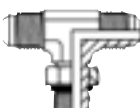
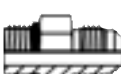










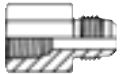
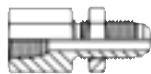



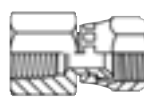


**Triple-Lok<sup>®</sup>**  
*The universal  
37° flared fitting*

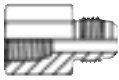



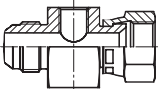

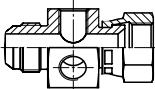
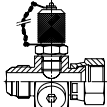
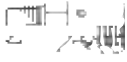

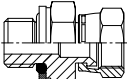



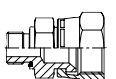





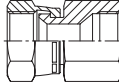
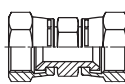
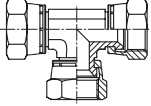



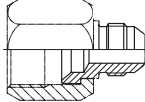
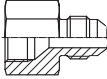

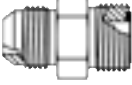
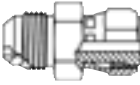
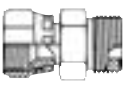





Visual index

Tube to tube	 <b>HMTX</b> p. K9	 <b>EMTX</b> p. K10	 <b>JMTX</b> p. K11	 <b>KTX</b> p. K12			
Bulkhead union	 <b>WMTX</b> p. K13	 <b>WEMTX</b> p. K14	 <b>WNTX</b> p. K15	 <b>WJTX</b> p. K16	 <b>WJJTX</b> p. K17	 <b>WLNM</b> p. K90	
Tube to male NPTF	 <b>FMTX</b> p. K34	 <b>CMTX</b> p. K49	 <b>CCTX</b> p. K50	 <b>CCCTX</b> p. K51	 <b>VMTX</b> p. K57	 <b>RMTX</b> p. K69	 <b>SMTX</b> p. K63
Tube to male BSPT	 <b>F3MX</b> p. K35	 <b>C3MX</b> p. K52	 <b>V3MX</b> p. K58	 <b>R3MX</b> p. K70	 <b>S3MX</b> p. K64		
Tube to male BSPP	 <b>F4OMX</b> p. K31	 <b>F42EDMX</b> p. K30	 <b>C4OMX</b> p. K47	 <b>V4OMX</b> p. K55	 <b>R4OMX</b> p. K67	 <b>S4OMX</b> p. K61	
Tube to straight thread UNF	 <b>F5OMX</b> p. K27	 <b>FF5OMX</b> p. K29	 <b>C5OMX</b> p. K45	 <b>CC5OX</b> p. K46	 <b>V5OMX</b> p. K54	 <b>R5OMX</b> p. K66	 <b>S5OMX</b> p. K60
Tube to male metric ISO 6149-3	 <b>F87OMX</b> p. K26	 <b>C87OMX</b> p. K44	 <b>V87OMX</b> p. K53	 <b>R87OMX</b> p. K65	 <b>S87OMX</b> p. K59		
Tube to male metric DIN 3852-1	 <b>F8OMX</b> p. K33	 <b>F82EDMX</b> p. K32	 <b>C8OMX</b> p. K48	 <b>V8OMX</b> p. K56	 <b>R8OMX</b> p. K68	 <b>S8OMX</b> p. K62	
Tube to female NPTF	 <b>GMTX</b> p. K72	 <b>WGMTX</b> p. K73	 <b>DMTX</b> p. K74	 <b>OTX</b> p. K75	 <b>MTX</b> p. K76	 <b>G6X</b> p. K77	

Visual index

Pressure gauge connectors	 <p><b>G4MX</b> p. K71</p>	 <p><b>G4MXMO</b> p. K78</p>	 <p><b>TT4MX</b> p. K79</p>	 <p><b>TTP4MX</b> p. K80</p>			
	 <p><b>R604MX</b> p. K81</p>	 <p><b>R6P4MX</b> p. K82</p>	 <p><b>K6OO4MX</b> p. K83</p>	 <p><b>K6PP4MX</b> p. K84</p>			
Triple-Lok® swivel nut male pipe	 <p><b>F6MX</b> p. K42</p>	 <p><b>F63MX</b> p. K43</p>					
Triple-Lok® swivel nut straight thread	 <p><b>F64OMX</b> p. K39</p>	 <p><b>F642EDMX</b> p. K38</p>	 <p><b>F65OMX</b> p. K37</p>	 <p><b>F68OMX</b> p. K41</p>	 <p><b>F682EDMX</b> p. K40</p>	 <p><b>F687OMX</b> p. K36</p>	
Tube to Triple-Lok® swivel nut	 <p><b>C6MX</b> p. K18</p>	 <p><b>V6MX</b> p. K19</p>	 <p><b>R6MX</b> p. K21</p>	 <p><b>S6MX</b> p. K20</p>	 <p><b>BBMTX</b> p. K22</p>	 <p><b>HMX6</b> p. K24</p>	 <p><b>JX6</b> p. K25</p>
Nuts & Sleeves	 <p><b>BMTX</b> p. K6</p>	 <p><b>BTX</b> p. K5</p>	 <p><b>TX</b> p. K7</p>				
Tube end reducers Plug Caps	 <p><b>TRMTX</b> p. K23</p>	 <p><b>FNMTX</b> p. K85</p>	 <p><b>PNMTX</b> p. K86</p>				
Conversion Adapters Triple-Lok®/ O-Lok®	 <p><b>XHML0</b> p. K87</p>	 <p><b>XHML6</b> p. K88</p>	 <p><b>LOHMX6</b> p. K89</p>				
Seals Retaining ring and Tooling	 <p><b>Triple-Lok® Components</b> p. K91</p>						



## How to order Triple-Lok® fittings

Example Order code **6-8 C 5 O M X S**

1      2      3      4      5      6      7

### 1 Order codes for tube and port thread ends

Dash Size	Tube Size (Inch)	Tube Size (mm)	Port Thread Size (Inch) BSPP/BSPT/NPT	Port Thread Size UN / UNF
2	1/8		1/8	5/16-24
3	3/16			3/8-24
4	1/4	6	1/4	7/16-20
5				1/2-20
6	3/8	8,10	3/8	9/16-18
8	1/2	12	1/2	3/4-16
10	5/8	14,15,16	5/8	7/8-14
12	3/4	18,20	3/4	1 1/6-12
14				1 3/6-12
16	1	25	1	1 5/6-12
20	1 1/4	28,30,32	1 1/4	1 5/8-12
24	1 1/2	35,38	1 1/2	1 7/8-12
28		42		2 1/4-12
32	2	50	2	2 1/2-12

Metric port threads are shown as per example 4M12C87OMXS

### 3 Threads and sealing methods

Code	Description
None	NPT/NPTF Thread
3	BSPT Thread
4	BSPP Thread O-Ring & Retainer Ring
42	BSPP Thread EOLASTIC seal 'ED'
5	UN/UNF Thread (O-Ring Seal)
8	Metric Thread O-Ring & Retainer Ring
82	Metric Thread EOLASTIC seal 'ED'
87	Metric ISO 6149 Thread (O-Ring Seal)
63	Swivel Connector BSPT end
64	Swivel Connector BSPP end (O-Ring & Retainer Ring)
642	Swivel Connector BSPP end (EOLASTIC Seal 'ED')
65	Swivel Connector UN/UNF end (O-Ring seal)
68	Swivel Connector Metric end (O-Ring & Retainer Ring)
682	Swivel Connector Metric end (EOLASTIC Seal 'ED')
687	Swivel Connector Metric ISO 6149 end

### 2 Codes for fitting styles/shapes

Code	Description
AE6	Straight Thread Swivel
B	Nut
C	Male Stud elbow
CC	Long Male Stud elbow
CCC	Extra Long Male Stud elbow
C6	Swivel Nut Elbow
D	Female Elbow
E	Union elbow
F	Male Stud connector
FF	Long Male Stud connector
F6	Male Stud Swivel
FN	Cap
G	Female Connector
G-MO	Gauge Adapter Fitting
G6	Female Connector Swivel
H	Straight union
H6	Swivel/Swivel Adapter
J	Union Tee
J6	Swivel Tee
K	Union Cross
LOHX6	Triple-Lok® Swivel/O-Lok® Adapter
M	Female Run Tee
O	Female Branch Tee
PN	Plug
R	Male Stud Run Tee
R6	Swivel Run Tee
S	Male Stud Branch Tee
S6	Swivel Branch Tee
T	Sleeve
TR	Tube End Reducer
TT	Test Point Adapter
V	45° male stud elbow
V6	Swivel Nut 45° Elbow
W	Bulkhead Union
WE	Bulkhead Union Elbow
WG	Female Bulkhead connector
WJJ	Bulkhead Run Tee
WJT	Bulkhead Branch Tee
WLN	Bulkhead Locknut
WN	Bulkhead 45° union elbow
XHL	Triple Lok® / O-Lok® Adaptor
XHL6	Triple Lok® / O-Lok® Swivel Adaptor

### 4 Stud connector seal

Code	Description
O	O-Ring Seal (Assembled on fitting)
ED	Captive EOLASTIC Seal (Assembled on fitting)
No Code	No Seal (O-Ring not assembled on fitting)

### 5 Hexagon/ Across flats style

Code	Description
M	Metric Hexagon Dimension
No Code	Inch Hexagon Dimension

### 6 Fitting type

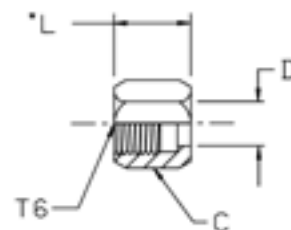
Code	Description
X	Parker Triple-Lok®

### 7 Fitting material

Code	Description
S	Steel
SS	Stainless Steel
B	Brass

## BTX Nut

Triple-Lok® 37° Flare end nut  
SAE 070110 MS51531



Tube O.D.	Thread UN/UNF-2B T6	C in.	D mm	L mm	Weight (steel) g/1 piece	Triple-Lok®		
						Steel	Stainless Steel	Brass
6	1/8	3/8	5	14	6	<b>2 BTX-S</b>	<b>2 BTX-SS</b>	<b>2 BTX-B</b>
	3/16	7/16	6	16	8	<b>3 BTX-S</b>	<b>3 BTX-SS</b>	<b>3 BTX-B</b>
	1/4	9/16	8	16	11	<b>4 BTX-S</b>	<b>4 BTX-SS</b>	<b>4 BTX-B</b>
	5/16	5/8	10	17	14	<b>5 BTX-S</b>	<b>5 BTX-SS</b>	<b>5 BTX-B</b>
	3/8	11/16	11	18	18	<b>6 BTX-S</b>	<b>6 BTX-SS</b>	<b>6 BTX-B</b>
14, 15, 16	1/2	7/8	15	22	29	<b>8 BTX-S</b>	<b>8 BTX-SS</b>	<b>8 BTX-B</b>
	5/8	1	18	25	54	<b>10 BTX-S</b>	<b>10 BTX-SS</b>	<b>10 BTX-B</b>
	3/4	1 1/4	21	26	73	<b>12 BTX-S*</b>	<b>12 BTX-SS*</b>	<b>12 BTX-B*</b>
	7/8	1 3/8	24	28	100	<b>14 BTX-S</b>	<b>14 BTX-SS</b>	<b>14 BTX-B</b>
	1	1 1/2	28	29	104	<b>16 BTX-S</b>	<b>16 BTX-SS</b>	<b>16 BTX-B</b>
28, 30, 32 35, 38	1 1/4	2	34	31	240	<b>20 BTX-S</b>	<b>20 BTX-SS</b>	<b>20 BTX-B</b>
	1 1/2	2 1/4	41	36	325	<b>24 BTX-S</b>	<b>24 BTX-SS</b>	<b>24 BTX-B</b>
	2	2 7/8	55	45	549	<b>32 BTX-S</b>	<b>32 BTX-SS</b>	<b>32 BTX-B</b>

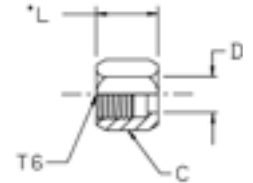
Order codes shown are part of our current manufacturing programme.

**\*Size 12 BTX-S cannot be used with the metric tube sleeve TXS20 or 20 mm tubes.  
This applies to steel, stainless steel and brass.**



## BMTX Nut

Triple-Lok® 37° Flare end nut  
SAE 070110



Tube O.D.		Thread UN/UNF-2B T6	C mm	D mm	L mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel
mm	in.							
6	1/4	7/16-20	14	8	16	11	<b>4BMTXS</b>	<b>4BMTXSS</b>
8	5/16	1/2-20	17	10	17	14	<b>5BMTXS</b>	<b>5BMTXSS</b>
10	3/8	9/16-18	19	11	18	18	<b>6BMTXS</b>	<b>6BMTXSS</b>
12	1/2	3/4-16	22	15	21	29	<b>8BMTXS</b>	<b>8BMTXSS</b>
14, 15, 16	5/8	7/8-14	27	18	25	42	<b>10BMTXS</b>	<b>10BMTXSS</b>
18, 20	3/4	1 1/16-12	32	22	26	73	<b>12BMTXS</b>	<b>12BMTXSS</b>
25	1	1 5/16-12	41	28	28	104	<b>16BMTXS</b>	<b>16BMTXSS</b>
28, 30, 32	1 1/4	1 5/8-12	50	34	31	240	<b>20BMTXS</b>	<b>20BMTXSS</b>
35, 38	1 1/2	1 7/8-12	60	41	36	325	<b>24BMTXS</b>	<b>24BMTXSS</b>
42		2 1/4	65	48	40	437	<b>28BMTXS</b>	<b>28BMTXSS</b>

Order codes shown are part of our current manufacturing programme.

## TX Sleeve

Triple-Lok® 37° Flare tube end sleeve for metric tubes  
SAE 070105



Tube O.D. mm	L mm	X mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass
6	10	10	2	<b>TXS6</b>	<b>TXSS6</b>	<b>TXB6</b>
8	11	11	2	<b>TXS8</b>	<b>TXSS8</b>	<b>TXB8</b>
10	13	13	2	<b>TXS10</b>	<b>TXSS10</b>	<b>TXB10</b>
12	14	17	7	<b>TXS12</b>	<b>TXSS12</b>	<b>TXB12</b>
14	17	20	13	<b>TXS14</b>	<b>TXSS14</b>	<b>TXB14</b>
15	17	20	10	<b>TXS15</b>	<b>TXSS15</b>	<b>TXB15</b>
16	17	20	7	<b>TXS16</b>	<b>TXSS16</b>	<b>TXB16</b>
18	17	25	16	<b>TXS18</b>	<b>TXSS18</b>	<b>TXB18</b>
20	17	25	12	<b>TXS20</b>	<b>TXSS20</b>	<b>TXB20</b>
22	19	28	25	<b>TXS22</b>	<b>TXSS22</b>	<b>TXB22</b>
25	20	31	21	<b>TXS25</b>	<b>TXSS25</b>	<b>TXB25</b>
28	23	39	40	<b>TXS28</b>	<b>TXSS28</b>	<b>TXB28</b>
30	23	39	45	<b>TXS30</b>	<b>TXSS30</b>	<b>TXB30</b>
32	23	39	30	<b>TXS32</b>	<b>TXSS32</b>	<b>TXB32</b>
35	28	45	60	<b>TXS35</b>	<b>TXSS35</b>	<b>TXB35</b>
38	28	45	51	<b>TXS38</b>	<b>TXSS38</b>	<b>TXB38</b>
42	29	55	149	<b>TXS42</b>	<b>TXSS42</b>	<b>TXB42</b>

Order codes shown are part of our current manufacturing programme.

**K**

**TX Sleeve**

Triple-Lok® 37° Flare tube sleeve  
SAE 070105 MS51533

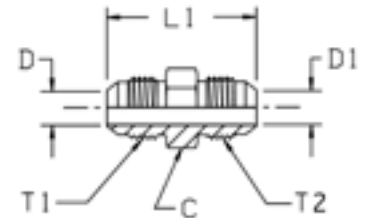


Tube O.D. in.	L mm	X mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass
1/8	9	7	2	<b>2 TX-S</b>	<b>2 TX-SS</b>	<b>2 TX-B</b>
3/16	9	8	2	<b>3 TX-S</b>	<b>3 TX-SS</b>	<b>3 TX-B</b>
1/4	10	10	2	<b>4 TX-S</b>	<b>4 TX-SS</b>	<b>4 TX-B</b>
5/16	11	11	2	<b>5 TX-S</b>	<b>5 TX-SS</b>	<b>5 TX-B</b>
3/8	13	13	3	<b>6 TX-S</b>	<b>6 TX-SS</b>	<b>6 TX-B</b>
1/2	14	17	6	<b>8 TX-S</b>	<b>8 TX-SS</b>	<b>8 TX-B</b>
5/8	17	20	8	<b>10 TX-S</b>	<b>10 TX-SS</b>	<b>10 TX-B</b>
3/4	17	25	13	<b>12 TX-S</b>	<b>12 TX-SS</b>	<b>12 TX-B</b>
7/8	19	28	18	<b>14 TX-S</b>	<b>14 TX-SS</b>	<b>14 TX-B</b>
1	20	31	23	<b>16 TX-S</b>	<b>16 TX-SS</b>	<b>16 TX-B</b>
1 1/4	23	39	30	<b>20 TX-S</b>	<b>20 TX-SS</b>	<b>20 TX-B</b>
1 1/2	28	45	51	<b>24 TX-S</b>	<b>24 TX-SS</b>	<b>24 TX-B</b>
2	30	61	156	<b>32 TX-S</b>	<b>32 TX-SS</b>	<b>32 TX-B</b>

Order codes shown are part of our current manufacturing programme.

## HMTX Union

Triple-Lok® 37° Flare ends  
SAE 070101 MS51501



Tube 1 O.D.		Tube 2 O.D.		Thread UN/UNF-2A T1	Thread UN/UNF-2A T2	C	D	D1	L1	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar)		
mm	in.	mm	in.			mm	mm	mm	mm					S	SS	
6	1/8	6	1/8	5/16-24	5/16-24	11	2	2	30	9	<b>2 HTX-S</b>			500	—	
	3/16		3/16	3/8-24	3/8-24	11	3	3	31	10	<b>3 HTX-S</b>			500	—	
	1/4		1/4	7/16-20	7/16-20	13	4	4	35	16	<b>4HMTXS</b>	<b>4HMTXSS</b>	<b>4HMTXB</b>	500	350	
	1/4		1/8	7/16-20	5/16-24	13	5	2	32	12	<b>4-2 HTX-S</b>	<b>4-2HMTXSS</b>	<b>4-2HMTXB</b>	500	350	
6	1/4	6	3/16	7/16-20	3/8-24	13	5	3	33	14	<b>4-3 HTX-S</b>	<b>4-3HMTXSS</b>	<b>4-3HMTXB</b>	500	350	
8	5/16		8	5/16	1/2-20	14	6	6	35	18	<b>5HMTXS</b>	<b>5HMTXSS</b>	<b>5HMTXB</b>	420	350	
8	5/16		6	1/4	1/2-20	7/16-20	14	6	5	35	18	<b>5-4 HTX-S</b>	<b>5-4HMTXSS</b>	<b>5-4HMTXB</b>	420	350
10	3/8		10	3/8	9/16-18	9/16-18	17	8	8	36	25	<b>6HMTXS</b>	<b>6HMTXSS</b>	<b>6HMTXB</b>	420	350
10	3/8	6	1/4	9/16-18	7/16-20	17	8	4	36	22	<b>6-4HMTXS</b>	<b>6-4HMTXSS</b>	<b>6-4HMTXB</b>	420	350	
10	3/8		8	5/16	9/16-18	1/2-20	17	8	6	36	25	<b>6-5 HTX-S</b>	<b>6-5HMTXSS</b>	<b>6-5HMTXB</b>	420	350
12	1/2		12	1/2	3/4-16	3/4-16	19	10	10	41	52	<b>8HMTXS</b>	<b>8HMTXSS</b>	<b>8HMTXB</b>	420	350
12	1/2		6	1/4	3/4-16	7/16-20	21	10	5	39	45	<b>8-4 HTX-S</b>	<b>8-4HMTXSS</b>	<b>8-4HMTXB</b>	420	350
12	1/2	14, 15,16	3/8	3/4-16	9/16-18	19	10	8	39	45	<b>8-6HMTXS</b>	<b>8-6HMTXSS</b>	<b>8-6HMTXB</b>	420	350	
14, 15,16	5/8		5/8	7/8-14	7/8-14	24	12	12	48	80	<b>10HMTXS</b>	<b>10HMTXSS</b>	<b>10HMTXB</b>	350	350	
14, 15,16	5/8		10	3/8	7/8-14	9/16-18	24	13	8	43	60	<b>10-6HMTXS</b>	<b>10-6HMTXSS</b>	<b>10-6HMTXB</b>	350	350
14, 15,16	5/8		12	1/2	7/8-14	3/4-16	24	12	10	45	68	<b>10-8HMTXS</b>	<b>10-8HMTXSS</b>	<b>10-8HMTXB</b>	350	350
18, 20	3/4	18, 20	3/4	1 1/16-12	1 1/16-12	27	16	16	55	125	<b>12HMTXS</b>	<b>12HMTXSS</b>	<b>12HMTXB</b>	350	350	
18, 20	3/4		12	1/2	1 1/16-12	3/4-16	29	16	10	50	101	<b>12-8 HTX-S</b>	<b>12-8HMTXSS</b>	<b>12-8HMTXB</b>	350	350
20	3/4		14, 15,16	5/8	1 1/16-12	7/8-14	27	16	12	52	113	<b>12-10HMTXS</b>	<b>12-10HMTXSS</b>	<b>12-10HMTXB</b>	350	350
22	7/8		22	7/8	1 3/16-12	1 3/16-12	32	18	18	56	156	<b>14 HTX-S</b>	<b>14HMTXSS</b>	<b>14HMTXB</b>	280	280
25	1	28, 30, 32	1	1 5/16-12	1 5/16-12	36	22	22	57	131	<b>16HMTXS</b>	<b>16HMTXSS</b>	<b>16HMTXB</b>	280	280	
25	1		20	3/4	1 5/16-12	1 1/16-12	36	22	16	56	169	<b>16-12HMTXS</b>	<b>16-12HMTXSS</b>	<b>16-12HMTXB</b>	280	280
28, 30, 32	1 1/4		1 1/4	1 1/4	1 5/8-12	1 5/8-12	46	28	28	62	271	<b>20HMTXS</b>	<b>20HMTXSS</b>	<b>20HMTXB</b>	280	210
28, 30, 32	1 1/4		25	1	1 5/8-12	1 5/16-12	46	28	22	61	235	<b>20-16HMTXS</b>	<b>20-16HMTXSS</b>	<b>20-16HMTXB</b>	280	210
35, 38	1 1/2	42	35, 38	1 1/2	1 7/8-12	1 7/8-12	50	33	33	70	382	<b>24HMTXS</b>	<b>24HMTXSS</b>	<b>24HMTXB</b>	210	210
42	2		42	2	2 1/4-12	2 1/4-12	60	39	39	71	469	<b>28HMTXS</b>	<b>28HMTXSS</b>	<b>28HMTXB</b>	140	150
42			2	2	2 1/2-12	2 1/2-12	67	45	45	87	785	<b>32 HTX-S</b>	<b>32HMTXSS</b>	<b>32HMTXB</b>	140	150

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

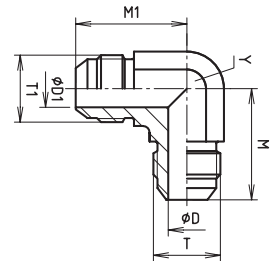
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

For Brass parts reduce pressures by 35%.



## EMTX Union elbow

Triple-Lok® 37° Flare ends  
SAE 070201 MS51505



Tube O.D.		Thread UN/UNF-2A T	Thread UN/UNF-2A T1	D mm	D1 mm	M mm	M1 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar)	
mm	in.												S	SS
6	1/8	5/16-24	5/16-24	2	2	20	20	11	18	<b>2 ETX-S</b>			500	—
	3/16	3/8-24	3/8-24	3	3	21	21	11	20	<b>3 ETX-S</b>			500	—
	1/4	7/16-20	7/16-20	4	4	23	23	11	25	<b>4EMTXS</b>	<b>4EMTXSS</b>	<b>4 ETX-B</b>	500	350
	5/16	1/2-20	1/2-20	6	6	24	24	13	32	<b>5EMTXS</b>	<b>5EMTXSS</b>	<b>5 ETX-B</b>	420	350
8	3/8	9/16-18	9/16-18	8	8	27	27	14	44	<b>6EMTXS</b>	<b>6EMTXSS</b>	<b>6 ETX-B</b>	420	350
10	3/8	9/16-18	7/16-20	8	4	27	27	14	40	<b>6-4 ETX-S</b>	<b>6-4EMTXSS</b>	<b>6-4 ETX-B</b>	420	350
12	1/2	3/4-16	3/4-16	10	10	32	32	19	88	<b>8EMTXS</b>	<b>8EMTXSS</b>	<b>8 ETX-B</b>	420	350
12	1/2	3/4-16	3/8-24	10	8	32	29	19	75	<b>8-6 ETX-S</b>	<b>8-6EMTXSS</b>		420	—
14, 15, 16	5/8	7/8-14	7/8-14	12	12	37	37	22	139	<b>10EMTXS</b>	<b>10EMTXSS</b>	<b>10 ETX-B</b>	350	350
14, 15, 16	5/8	7/8-14	3/4-16	12	10	37	34	22	120	<b>10-8 ETX-S</b>	<b>10-8EMTXSS</b>	<b>10-8 ETX-B</b>	350	350
18, 20	3/4	1 1/16-12	1 1/16-12	16	16	42	42	27	258	<b>12EMTXS</b>	<b>12EMTXSS</b>	<b>12 ETX-B</b>	350	350
18, 20	3/4	1 1/16-12	3/4-16	16	10	42	46	27	220	<b>12-8 ETX-S</b>	<b>12-8EMTXSS</b>		350	—
18, 20	3/4	1 1/16-12	7/8-14	16	12	42	39	27	240	<b>12-10 ETX-S</b>	<b>12-10EMTXSS</b>		350	—
22	7/8	1 3/16-12	1 3/16-12	18	18	44	44	30	273	<b>14 ETX-S</b>	<b>14EMTXSS</b>		280	—
22, 25	1	1 5/16-12	1 5/16-12	22	22	46	46	33	333	<b>16EMTXS</b>	<b>16EMTXSS</b>	<b>16 ETX-B</b>	280	280
22, 25	1	1 5/16-12	1 1/16-12	22	16	46	45	33	310	<b>16-12 ETX-S</b>	<b>16-12EMTXSS</b>	<b>16-12 ETX-B</b>	280	280
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	28	28	52	52	41	586	<b>20EMTXS</b>	<b>20EMTXSS</b>	<b>20 ETX-B</b>	280	210
35, 38	1 1/2	1 7/8-12	1 7/8-12	33	33	59	59	48	778	<b>24EMTXS</b>	<b>24EMTXSS</b>	<b>24 ETX-B</b>	210	140
42	1 3/4	2 1/4-12	2 1/4-12	39	39	74	74	63	1100	<b>28 ETX-S</b>			140	—
	2	2 1/2-12	2 1/2-12	45	45	78	78	64	1680	<b>32 ETX-S</b>			140	—

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

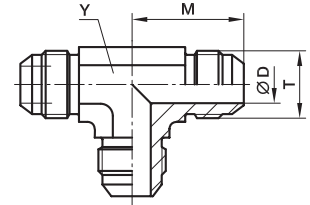
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

For Brass parts reduce pressures by 35%.

## JMTX Union tee

Triple-Lok® 37° Flare end (three ends)  
SAE 070401 MS51510



Tube O.D. mm	in.	Thread UN/UNF-2A T	D mm	M mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar)	
										S	SS
6	1/8	5/16-24	2	20	8	25	<b>2 JTX-S</b>			500	—
	3/16	3/8-24	3	21	11	30	<b>3 JTX-S</b>			500	—
	1/4	7/16-20	4	23	11	33	<b>4JMTXS</b>	<b>4JMTXSS</b>	<b>4 JTX-B</b>	500	350
	5/16	1/2-20	6	24	13	42	<b>5JMTXS</b>	<b>5JMTXSS</b>	<b>5 JTX-B</b>	420	350
8	3/8	9/16-18	8	27	14	53	<b>6JMTXS</b>	<b>6JMTXSS</b>	<b>6 JTX-B</b>	420	350
14, 15, 16	1/2	3/4-16	10	32	19	118	<b>8JMTXS</b>	<b>8JMTXSS</b>	<b>8 JTX-B</b>	420	350
	5/8	7/8-14	12	37	22	182	<b>10JMTXS</b>	<b>10JMTXSS</b>	<b>10 JTX-B</b>	350	350
	3/4	1 1/16-12	16	42	27	291	<b>12JMTXS</b>	<b>12JMTXSS</b>	<b>12 JTX-B</b>	350	350
	7/8	1 3/16-12	18	44	33	403	<b>14 JTX-S</b>	<b>14JMTXSS</b>	<b>14 JTX-B</b>	280	245
	1	1 5/16-12	22	46	33	415	<b>16JMTXS</b>	<b>16JMTXSS</b>	<b>16 JTX-B</b>	280	280
28, 30, 32	1 1/4	1 5/8-12	28	52	41	706	<b>20JMTXS</b>	<b>20JMTXSS</b>	<b>20 JTX-B</b>	280	210
	1 1/2	1 7/8-12	33	59	48	990	<b>24 JTX-S</b>	<b>24JMTXSS</b>	<b>24 JTX-B</b>	210	140
	3/4	2 1/4-12	39	74	63	2270	<b>28 JTX-S</b>			140	—
	2	2 1/2-12	45	78	66	2450	<b>32 JTX-S</b>			140	—

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

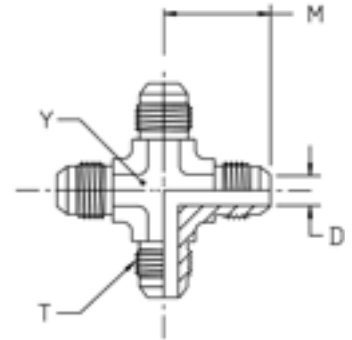
For Brass parts reduce pressures by 35%.

Union tee reducing up on request.



## KTX Union cross

Triple-Lok® 37° Flare end (four ends)  
SAE 070501 MS51517



Tube O.D. mm	in.	Thread UN/UNF-2A T	D mm	M mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar)	
										S	SS
6	1/4	7/16-20	4	23	11	41	<b>4 KTX-S</b>	<b>4 KTX-SS</b>	<b>4 KTX-B</b>	500	350
8	5/16	1/2-20	6	24	14	50	<b>5 KTX-S</b>	<b>5 KTX-SS</b>	<b>5 KTX-B</b>	420	350
10	3/8	9/16-18	8	27	14	68	<b>6 KTX-S</b>	<b>6 KTX-SS</b>	<b>6 KTX-B</b>	420	350
12	1/2	3/4-16	10	32	19	144	<b>8 KTX-S</b>	<b>8 KTX-SS</b>	<b>8 KTX-B</b>	420	350
14, 15, 16	5/8	7/8-14	12	37	22	220	<b>10 KTX-S</b>	<b>10 KTX-SS</b>	<b>10 KTX-B</b>	350	350
18, 20	3/4	1 1/16-12	16	42	27	345	<b>12 KTX-S</b>	<b>12 KTX-SS</b>	<b>12 KTX-B</b>	350	350
25	1	1 5/16-12	22	46	33	588	<b>16 KTX-S</b>	<b>16 KTX-SS</b>	<b>16 KTX-B</b>	280	280

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

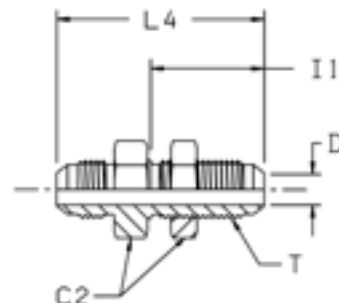
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

For Brass parts reduce pressures by 35%.

## WMTX Bulkhead union

Triple-Lok® 37° Flare ends  
SAE 070601 MS51520



Tube O.D.		Thread UN/UNF-2A T	C2 mm	D mm	I1 mm	L4 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar)	
mm	in.										S	SS
6	1/4	7/16-20	17	4	31	53	41	4WMTXWLNMS	4WMTXWLNMS	4WMTXWLNMB	500	350
8	5/16	1/2-20	19	6	31	53	49	5WMTXWLNMS	5WMTXWLNMS	5WMTXWLNMB	420	350
10	3/8	9/16-18	22	8	33	55	64	6WMTXWLNMS	6WMTXWLNMS	6WMTXWLNMB	420	350
12	1/2	3/4-16	24	10	37	62	111	8WMTXWLNMS	8WMTXWLNMS	8WMTXWLNMB	420	350
14, 15, 16	5/8	7/8-14	30	12	40	70	157	10WMTXWLNMS	10WMTXWLNMS	10WMTXWLNMB	350	350
18, 20	3/4	1 1/16-12	36	16	44	79	254	12WMTXWLNMS	12WMTXWLNMS	12WMTXWLNMB	350	350
22	7/8	1 3/16-12	38	18	45	80	296	14 WTX-WLN-S	14WMTXWLNMS	14WMTXWLNMB	280	280
25	1	1 5/16-12	41	22	44	80	337	16WMTXWLNMS	16WMTXWLNMS	16WMTXWLNMB	280	280
28, 30, 32	1 1/4	1 5/8-12	50	28	46	84	462	20WMTXWLNMS	20WMTXWLNMS	20WMTXWLNMB	280	210
35, 38	1 1/2	1 7/8-12	55	33	46	89	695	24WMTXWLNMS	24WMTXWLNMS	24WMTXWLNMB	210	140

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove "WLNMS" (e. g. 16WMTX)

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

For Brass parts reduce pressures by 35%.

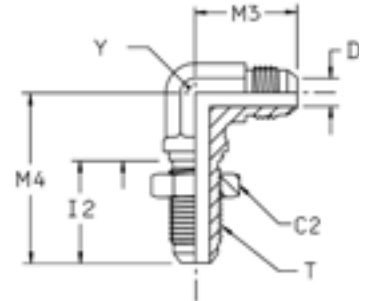
### Maximum bulkhead wallthickness

Size	Tube O.D.		Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
	inch	metric		
4	1/4	6	8.4	5.3
5	5/16	8	8.4	5.3
6	3/8	10	10.7	7.1
8	1/2	12	11.2	8.4
10	5/8	14–16	10.9	8.1
12	3/4	18–20	11.2	8.6
14	7/8		10.4	7.9
16	1	22–25	9.9	7.4
20	1 1/4	28–32	10.2	7.4
24	1 1/2	35–38	7.1	—
32	2		7.1	—



## WEMTX Bulkhead union elbow

Triple-Lok® 37° Flare ends  
SAE 070701 MS51507



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	C2 mm	D mm	I2 mm	M3 mm	M4 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar)	
													S	SS
6	1/4	7/16-20	17	4	26	25	40	11	44	4 WETX-WLN-S	4 WETX-WLN-SS	4 WETX-WLN-B	500	350
8	5/16	1/2-20	19	6	26	27	44	13	59	5 WETX-WLN-S	5 WETX-WLN-SS	5 WETX-WLN-B	420	350
10	3/8	9/16-18	22	8	28	28	46	14	72	6WEMTXWLNMS	6 WETX-WLN-SS	6 WETX-WLN-B	420	350
12	1/2	3/4-16	24	10	32	36	54	19	145	8WEMTXWLNMS	8 WETX-WLN-SS	8 WETX-WLN-B	420	350
14, 15, 16	5/8	7/8-14	30	12	35	40	61	22	212	10WEMTXWLNMS	10 WETX-WLN-SS	10 WETX-WLN-B	350	350
18, 20	3/4	1 1/16-12	36	16	40	45	68	27	345	12WEMTXWLNMS	12 WETX-WLN-SS	12 WETX-WLN-B	350	350
22	7/8	1 3/16-12	38	18	40	49	71	33	370	14 WETX-WLN-S	14 WETX-WLN-SS		280	—
25	1	1 5/16-12	41	22	40	49	71	33	474	16 WETX-WLN-S	16 WETX-WLN-SS		280	—
28, 30, 32	1 1/4	1 5/8-12	48	28	41	55	80	41	753	20 WETX-WLN-S	20 WETX-WLN-SS		280	—

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove "WLNMS" (e. g. 16WETX)

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

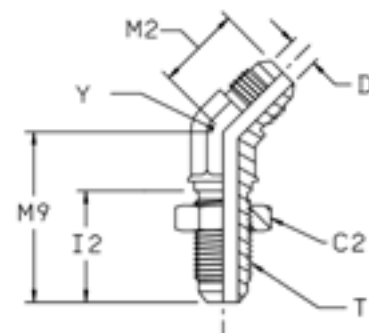
For Brass parts reduce pressures by 35%.

### Maximum bulkhead wallthickness

Size	Tube O.D.		Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
	inch	metric		
4	1/4	6	8.4	5.3
5	5/16	8	8.4	5.3
6	3/8	10	10.7	7.1
8	1/2	12	11.2	8.4
10	5/8	14–16	10.9	8.1
12	3/4	18–20	11.2	8.6
14	7/8		10.4	7.9
16	1	22–25	9.9	7.4
20	1 1/4	28–32	10.2	7.4
24	1 1/2	35–38	7.1	—
32	2		7.1	—

## WNTX 45° Bulkhead union elbow

Triple-Lok® 37° Flare ends  
SAE 070801 MS51509



Tube O.D.		Thread UN/UNF-2A T	C2 mm	D mm	I2 mm	M2 mm	M9 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.											S	SS
6	1/4	7/16-20	17	4	26	18	39	11	32	<b>4 WNTX-WLN-S</b>	<b>4 WNTX-WLN-SS</b>	500	350
8	5/16	1/2-20	19	6	26	20	42	14	41	<b>5 WNTX-WLN-S</b>		420	—
10	3/8	9/16-18	21	8	28	21	42	14	48	<b>6 WNTX-WLN-S</b>	<b>6 WNTX-WLN-SS</b>	420	350
12	1/2	3/4-16	25	10	32	25	49	19	105	<b>8 WNTX-WLN-S</b>	<b>8 WNTX-WLN-SS</b>	420	350
14, 15, 16	5/8	7/8-14	29	12	35	28	55	22	152	<b>10 WNTX-WLN-S</b>	<b>10 WNTX-WLN-SS</b>	350	350
18, 20	3/4	1 1/16-12	35	16	40	33	62	27	245	<b>12 WNTX-WLN-S</b>	<b>12 WNTX-WLN-SS</b>	350	350
22, 25	1	1 5/16-12	41	22	40	37	65	33	355	<b>16 WNTX-WLN-S</b>	<b>16 WNTX-WLN-SS</b>	280	280
28, 30, 32	1 1/4	1 5/8-12	48	28	41	40	67	41	465	<b>20 WNTX-WLN-S</b>		280	—

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove "WLN" (e.g. 16 WNTX)

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

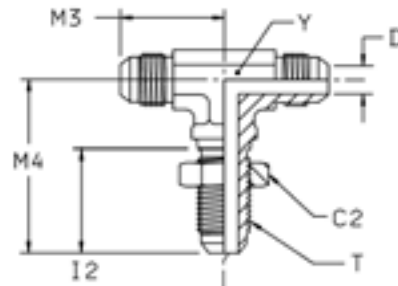


### Maximum bulkhead wallthickness

Size	Tube O.D.		Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
	inch	metric		
4	1/4	6	8.4	5.3
5	5/16	8	8.4	5.3
6	3/8	10	10.7	7.1
8	1/2	12	11.2	8.4
10	5/8	14–16	10.9	8.1
12	3/4	18–20	11.2	8.6
14	7/8		10.4	7.9
16	1	22–25	9.9	7.4
20	1 1/4	28–32	10.2	7.4
24	1 1/2	35–38	7.1	—
32	2		7.1	—

## WJTX Bulkhead branch tee

Triple-Lok® 37° Flare ends  
SAE 070959 MS51515



Tube O.D.		Thread UN/UNF-2A T	C2 mm	D mm	l2 mm	M3 mm	M4 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel		PN (bar)		
mm	in.										S	SS	S	SS	
6	1/4	7/16-20	17	4	26	25	40	11	45	<b>4 WJTX-WLN-S</b>	<b>4 WJTX-WLN-SS</b>	500	350		
10	3/8	9/16-18	21	8	28	28	46	14	71	<b>6 WJTX-WLN-S</b>	<b>6 WJTX-WLN-SS</b>	420	350		
12	1/2	3/4-16	25	10	32	35	54	19	158	<b>8 WJTX-WLN-S</b>	<b>8 WJTX-WLN-SS</b>	420	350		
14, 15, 16	5/8	7/8-14	29	12	35	40	61	22	297	<b>10 WJTX-WLN-S</b>	<b>10 WJTX-WLN-SS</b>	350	350		
18, 20	3/4	1 1/16-12	35	16	40	45	68	27	379	<b>12 WJTX-WLN-S</b>	<b>12 WJTX-WLN-SS</b>	350	350		
22, 25	1	1 5/16-12	42	22	40	49	71	33	420	<b>16 WJTX-WLN-S</b>		280	—		
28, 30, 32	1 1/4	1 5/8-12	48	28	41	55	79	41	500	<b>20 WJTX-WLN-S</b>		280	—		

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove "WLN" (e.g. 16 WJTX)

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

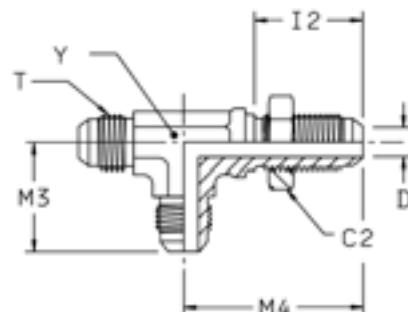
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

### Maximum bulkhead wallthickness

Size	Tube O.D.		Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
	inch	metric		
4	1/4	6	8.4	5.3
5	5/16	8	8.4	5.3
6	3/8	10	10.7	7.1
8	1/2	12	11.2	8.4
10	5/8	14–16	10.9	8.1
12	3/4	18–20	11.2	8.6
14	7/8		10.4	7.9
16	1	22–25	9.9	7.4
20	1 1/4	28–32	10.2	7.4
24	1 1/2	35–38	7.1	—
32	2		7.1	—

## WJJT<sub>X</sub> Bulkhead run tee

Triple-Lok® 37° Flare ends  
SAE 070958 MS51516



Tube O.D.		Thread UN/UNF-2A T	C2 mm	D mm	I2 mm	M3 mm	M4 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
mm	in.										
6	1/4	7/16-20	17	4	26	25	40	11	58	<b>4 WJJT<sub>X</sub>-WLN-S</b>	500
10	3/8	9/16-18	21	8	28	28	46	14	75	<b>6 WJJT<sub>X</sub>-WLN-S</b>	420
12	1/2	3/4-16	25	10	32	35	54	19	158	<b>8 WJJT<sub>X</sub>-WLN-S</b>	420
14, 15, 16	5/8	7/8-14	29	12	35	40	61	22	309	<b>10 WJJT<sub>X</sub>-WLN-S</b>	350
18, 20	3/4	1 1/16-12	35	16	40	45	68	27	340	<b>12 WJJT<sub>X</sub>-WLN-S</b>	350
22, 25	1	1 5/16-12	42	22	40	49	71	36	390	<b>16 WJJT<sub>X</sub>-WLN-S</b>	280
28, 30, 32	1 1/4	1 5/8-12	48	28	41	55	79	41	450	<b>20 WJJT<sub>X</sub>-WLN-S</b>	280

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove "WLN" (e.g. 16 WJJT<sub>X</sub>)

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$



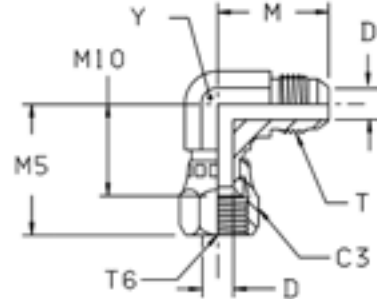
### Maximum bulkhead wallthickness

Size	Tube O.D.		Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
	inch	metric		
4	1/4	6	8.4	5.3
5	5/16	8	8.4	5.3
6	3/8	10	10.7	7.1
8	1/2	12	11.2	8.4
10	5/8	14-16	10.9	8.1
12	3/4	18-20	11.2	8.6
14	7/8		10.4	7.9
16	1	22-25	9.9	7.4
20	1 1/4	28-32	10.2	7.4
24	1 1/2	35-38	7.1	—
32	2		7.1	—



## C6MX Swivel nut elbow

Triple-Lok® 37° Flare end / Triple-Lok® 37° Flare female swivel end  
SAE 070221 MS51521



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF-2B T6	C3 mm	D mm	M mm	M5 mm	M10 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel		PN (bar)		
												S	SS	S	SS	
6	3/16	3/8-24	3/8-24	13	3	21	25	16	11	27	<b>3 C6X-S</b>		500	—		
	1/4	7/16-20	7/16-20	16	4	23	25	17	11	37	<b>4C6MXS</b>	<b>4C6MXSS</b>	500	350		
	8	5/16	1/2-20	1/2-20	17	6	24	27	13	43	<b>5C6MXS</b>	<b>5C6MXSS</b>	420	350		
	10	3/8	9/16-18	9/16-18	19	8	27	32	22	54	<b>6C6MXS</b>	<b>6C6MXSS</b>	350	350		
	12	1/2	3/4-16	3/4-16	22	10	32	35	24	105	<b>8C6MXS</b>	<b>8C6MXSS</b>	350	350		
14, 15, 16	5/8	7/8-14	7/8-14	27	12	37	41	28	22	162	<b>10C6MXS</b>	<b>10C6MXSS</b>	350	350		
	3/4	1 1/16-12	1 1/16-12	32	16	42	44	30	27	260	<b>12C6MXS</b>	<b>12C6MXSS</b>	350	350		
	22	7/8	1 3/16-12	1 3/16-12	35	18	46	45	34	293	<b>14 C6X-S</b>		250	—		
	25	1	1 5/16-12	1 5/16-12	38	22	46	51	36	420	<b>16C6MXS</b>	<b>16C6MXSS</b>	250	250		
	28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	50	28	52	59	43	41	679	<b>20 C6X-S</b>	<b>20C6MXSS</b>	250	210	
35, 38	1 1/2	1 7/8-12	1 7/8-12	57	33	59	66	47	48	747	<b>24 C6X-S</b>	<b>24C6MXSS</b>	170	140		
	2	2 1/2-12	2 1/2-12	73	45	78	89	62	66	920	<b>32 C6X-S</b>		110	—		

Order codes shown are part of our current manufacturing programme.

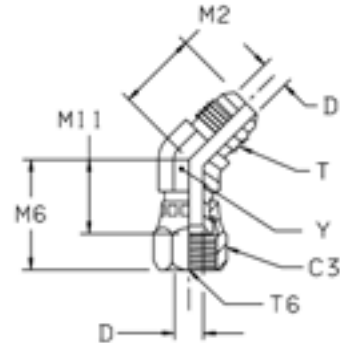
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## V6MX 45° Swivel nut elbow

Triple-Lok® 37° Flare end / Triple-Lok® 37° Flare female swivel end  
SAE 070321 MS51522



Tube O.D. mm	in.	Thread UN/UNF-2A T	Thread UN/UNF-2B T6	C3 mm	D mm	M2 mm	M6 mm	M11 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
													S	SS
6	1/4	7/16-20	7/16-20	14	4	18	24	15	11	30	<b>4 V6X-S</b>	<b>4 V6X-SS</b>	500	350
8	5/16	1/2-20	1/2-20	16	6	20	25	16	14	45	<b>5 V6X-S</b>	<b>5 V6X-SS</b>	420	350
10	3/8	9/16-18	9/16-18	19	8	21	28	19	14	47	<b>6 V6X-S</b>	<b>6 V6X-SS</b>	350	350
12	1/2	3/4-16	3/4-16	22	10	25	33	22	19	89	<b>8V6MXS</b>	<b>8 V6X-SS</b>	350	350
14, 15, 16	5/8	7/8-14	7/8-14	27	12	28	37	24	22	131	<b>10 V6X-S</b>	<b>10 V6X-SS</b>	350	350
18, 20	3/4	1 1/16-12	1 1/16-12	32	16	33	38	24	27	203	<b>12 V6X-S</b>	<b>12 V6X-SS</b>	350	350
22	7/8	1 3/16-12	1 3/16-12	35	18	35	41	28	30	291	<b>14 V6X-S</b>		250	—
25	1	1 5/16-12	1 5/16-12	38	22	37	44	29	33	335	<b>16 V6X-S</b>	<b>16 V6X-SS</b>	250	250
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	51	27	40	52	36	41	572	<b>20 V6X-S</b>	<b>20 V6X-SS</b>	250	210
35, 38	1 1/2	1 7/8-12	1 7/8-12	57	33	45	58	39	48	715	<b>24 V6X-S</b>	<b>24 V6X-SS</b>	170	140
	2	2 1/2-12	2 1/2-12	72	45	56	70	50	66	960	<b>32 V6X-S</b>	<b>32 V6X-SS</b>	110	110

Order codes shown are part of our current manufacturing programme.

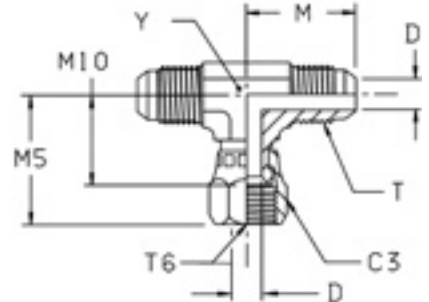
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## S6MX Swivel nut branch tee

Triple-Lok® 37° Flare ends / Triple-Lok® 37° Flare female swivel end  
 SAE 070433 MS51524



Tube O.D.		Thread UN/UNF-2A T	Thread UN/UNF-2B T6	C3 mm	D mm	M mm	M5 mm	M10 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.												S	SS
6	1/4	7/16-20	7/16-20	16	4	23	25	17	11	44	<b>4 S6X-S</b>	<b>4 S6X-SS</b>	500	350
8	5/16	1/2-20	1/2-20	17	6	24	27	17	13	58	<b>5S6MXS</b>	<b>5 S6X-SS</b>	420	350
10	3/8	9/16-18	9/16-18	19	8	27	32	22	14	71	<b>6S6MXS</b>	<b>6 S6X-SS</b>	350	350
12	1/2	3/4-16	3/4-16	22	10	32	35	24	19	133	<b>8S6MXS</b>	<b>8 S6X-SS</b>	350	350
14, 15, 16	5/8	7/8-14	7/8-14	27	12	37	41	28	22	203	<b>10S6MXS</b>	<b>10 S6X-SS</b>	350	350
18, 20	3/4	1 1/16-12	1 1/16-12	32	16	42	44	30	27	328	<b>12S6MXS</b>	<b>12 S6X-SS</b>	350	350
25	1	1 5/16-12	1 5/16-12	38	22	46	51	36	33	483	<b>16S6MXS</b>	<b>16 S6X-SS</b>	250	250
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	50	28	52	59	43	41	708	<b>20 S6X-S</b>	<b>20 S6X-SS</b>	250	210
35, 38	1 1/2	1 7/8-12	1 7/8-12	57	33	59	68	49	48	1100	<b>24 S6X-S</b>	<b>24 S6X-SS</b>	170	170

Order codes shown are part of our current manufacturing programme.

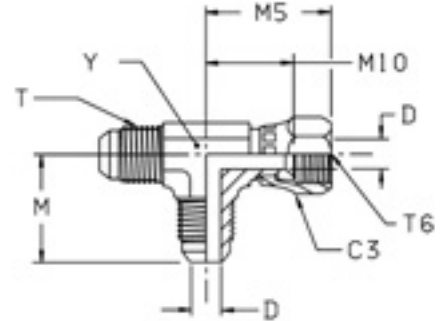
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## R6MX Swivel nut run tee

Triple-Lok® 37° Flare ends / Triple-Lok® 37° Flare female swivel end  
SAE 070432



Tube O.D.		Thread UN/UNF-2A T	Thread UN/UNF-2B T6	C3 mm	D mm	M mm	M5 mm	M10 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.												S	SS
6	1/4	7/16-20	7/16-20	16	4	23	25	17	11	44	<b>4 R6X-S</b>	<b>4 R6X-SS</b>	500	350
8	5/16	1/2-20	1/2-20	17	6	24	27	17	13	56	<b>5R6MXS</b>	<b>5 R6X-SS</b>	420	350
10	3/8	9/16-18	9/16-18	19	8	27	32	22	14	69	<b>6R6MXS</b>	<b>6 R6X-SS</b>	350	350
12	1/2	3/4-16	3/4-16	22	10	32	35	24	19	136	<b>8R6MXS</b>	<b>8 R6X-SS</b>	350	350
14, 15, 16	5/8	7/8-14	7/8-14	27	12	37	41	28	22	207	<b>10R6MXS</b>	<b>10 R6X-SS</b>	350	350
18, 20	3/4	1 1/16-12	1 1/16-12	32	16	42	44	30	27	319	<b>12R6MXS</b>	<b>12 R6X-SS</b>	350	350
22	7/8	1 3/16-12	1 3/16-12	35	18	46	45	34	33	622	<b>14 R6X-S</b>	<b>14 R6X-SS</b>	250	250
25	1	1 5/16-12	1 5/16-12	38	22	46	51	36	33	489	<b>16R6MXS</b>	<b>16 R6X-SS</b>	250	250
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	50	28	52	59	43	41	712	<b>20R6MXS</b>	<b>20 R6X-SS</b>	250	210
35, 38	1 1/2	1 7/8-12	1 7/8-12	57	33	59	66	47	48	1100	<b>24 R6X-S</b>	<b>24 R6X-SS</b>	170	170

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

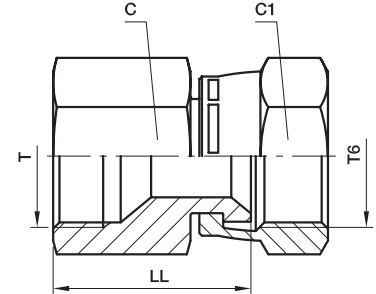
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



## BBMTX Swivel nut female connector

Triple-Lok® 37° Flare fixed female end / Triple-Lok® 37° Flare female swivel end



Tube O.D. mm	Tube O.D. in.	Thread UN/UNF-2A T	Thread UN/UNF-2B T6	C mm	C1 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
										S	SS
6	1/4	7/16-20	7/16-20	14	16	23	25	<b>4BBMTXS</b>	<b>4BBMTXSS</b>	500	350
8	5/16	1/2-20	1/2-20	17	17	26	32	<b>5BBMTXS</b>	<b>5BBMTXSS</b>	420	350
10	3/8	9/16-20	9/16-20	19	19	26	60	<b>6BBMTXS</b>	<b>6BBMTXSS</b>	350	350
12	1/2	3/4-16	3/4-16	22	22	32	87	<b>8BBMTXS</b>	<b>8BBMTXSS</b>	350	350
14, 15, 16	5/8	7/8-14	7/8-14	27	27	36	150	<b>10BBMTXS</b>	<b>10BBMTXSS</b>	350	350
18, 20	3/4	1 1/16-12	1 1/16-12	32	32	37	221	<b>12BBMTXS</b>	<b>12BBMTXSS</b>	350	350
25	1	1 5/16-12	1 5/16-12	41	38	42	348	<b>16BBMTXS</b>	<b>16BBMTXSS</b>	250	250
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	50	50	47	955	<b>20BBMTXS</b>	<b>20BBMTXSS</b>	250	210
35, 38	1 1/2	1 7/8-12	1 7/8-12	60	60	54	1031	<b>24BBMTXS</b>	<b>24BBMTXSS</b>	170	140

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

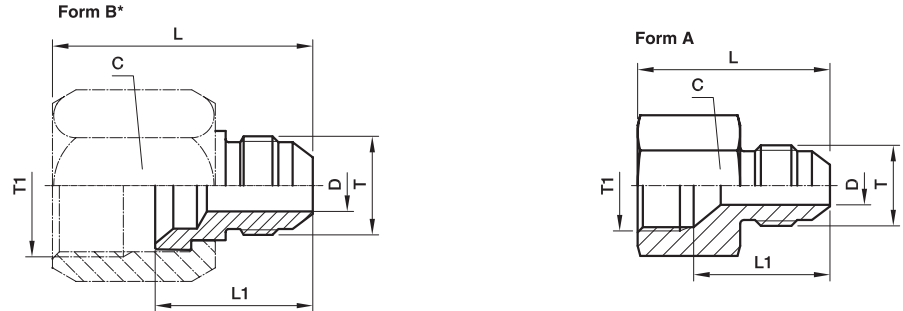
$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## TRMTX Tube end reducer

Triple-Lok® 37° Flare end / Triple-Lok® 37° Flare female swivel\* end  
SAE 070123 MS51534

\*Form A Fixed Female Style



\* For Form B, a BTX- or BTMX-nut is required (to be ordered separately)

Tube Metric T1 O.D.	Tube Metric T O.D.	Tube in. T1 O.D.	Tube in. T O.D.	Thread UN/UNF-2B T1	Thread UN/UNF-2A T	Typ	C mm	D mm	L mm	L1 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar) S SS
8	6	1/4	1/8	7/16-20	5/16-24	B	14	2	31	19	16	4-2TRTXS	4-2TRMTXSS		500 350
10	6	5/16	1/4	1/2-20	7/16-20	A	17	4	29	24	21	5-4TRMTXS	5-4TRMTXSS		420 350
10	8	3/8	1/4	9/16-18	7/16-20	B	19	4	36	23	35	6-4TRTXS	6-4TRMTXSS	6-4 TRTX-B	420 350
12	8	3/8	5/16	9/16-18	1/2-20	A	19	6	29	26	29	6-5TRMTXS	6-5TRMTXSS		420 350
12	6	1/2	1/4	3/4-16	7/16-20	B	22	4	38	23	38	8-4TRTXS	8-4TRMTXSS	8-4 TRTX-B	420 350
12	8	1/2	5/16	3/4-16	1/2-20	B	22	6	38	23	35	8-5TRTXS	8-5TRMTXSS		420 350
12	10	1/2	3/8	3/4-16	9/16-18	B	22	8	38	23	32	8-6TRTXS	8-6TRMTXSS	8-6 TRTX-B	420 350
14, 15, 16	6	5/8	1/4	7/8-14	7/16-20	B	27	4	45	26	83	10-4TRTXS	10-4TRMTXSS		350 350
14, 15, 16	8	5/8	5/16	7/8-14	1/2-20	B	27	6	41	26	80	10-5TRTXS	10-5TRMTXSS		350 350
14, 15, 16	10	5/8	3/8	7/8-14	9/16-20	B	27	8	41	29	78	10-6TRTXS	10-6TRMTXSS	10-6 TRTX-B	350 350
14, 15, 16	12	5/8	1/2	7/8-14	3/4-16	A	27	10	37	22	73	10-8TRMTXS	10-8TRMTXSS		350 350
18, 20	6	3/4	1/4	1 1/16-12	7/16-20	B	32	4	47	28	120	12-4TRTXS	12-4TRMTXSS	12-4 TRTX-B	350 350
18, 20	8	3/4	5/16	1 1/16-12	1/2-20	B	32	6	45	26	118	12-5TRTXS	12-5TRMTXSS		350 350
18, 20	10	3/4	3/8	1 1/16-12	9/16-20	B	32	8	47	25	115	12-6TRTXS	12-6TRMTXSS	12-6 TRTX-B	350 350
18, 20	12	3/4	1/2	1 1/16-12	3/4-16	B	32	10	50	27	128	12-8TRTXS	12-8TRMTXSS	12-8 TRTX-B	350 350
18, 20	14, 15, 16	3/4	5/8	1 1/16-12	7/8-14	A	32	12	42	26	119	12-10TRMTXS	12-10TRMTXSS		350 350
22	10	7/8	3/8	1 3/16-12	9/16-20	B	35	8	50	29	102	14-6TRTXS	14-6TRMTXSS		350 350
22	14, 15, 16	7/8	5/8	1 3/16-12	7/8-14	B	35	12	55	34	120	14-10TRTXS	14-10TRMTXSS		350 350
22	18, 20	7/8	3/4	1 3/16-12	1 1/16-12	A	35	16	47	33	166	14-12 TRTXN-S	14-12TRMTXSS		350 350
25	6	1	1/4	1 5/16-12	7/16-20	B	41	4	53	31	205	16-4TRTXS	16-4TRMTXSS		310 350
25	10	1	3/8	1 5/16-12	9/16-18	B	41	8	48	31	215	16-6TRTXS	16-6TRMTXSS		310 350
25	12	1	1/2	1 5/16-12	3/4-16	B	41	10	49	29	228	16-8TRTXS	16-8TRMTXSS		310 350
25	14, 15, 16	1	5/8	1 5/16-12	7/8-14	B	41	12	52	30	239	16-10TRTXS	16-10TRMTXSS		310 350
25	18, 20	1	3/4	1 5/16-12	1 1/16-12	B	41	16	55	35	252	16-12TRTXS	16-12TRMTXSS		310 280
25	22	1	7/8	1 5/16-12	1 3/16-12	A	38	18	60	38	224	16-14 TRTXN-S	16-14TRMTXSS		310 280
28, 30, 32	14, 15, 16	1 1/4	5/8	1 5/8-12	7/8-14	B	50	12	59	32	380	20-10TRTXS	20-10TRMTXSS		280 280
28, 30, 32	18, 20	1 1/4	3/4	1 5/8-12	1 1/16-12	B	50	16	62	39	370	20-12TRTXS	20-12TRMTXSS		280 280
28, 30, 32	25	1 1/4	1	1 5/8-12	1 5/16-12	B	50	21	64	40	355	20-16TRTXS	20-16TRMTXSS		280 280
35, 38	20	1 1/2	3/4	1 7/8-12	1 1/16-12	B	60	16	63	41	520	24-12TRTXS	24-12TRMTXSS		210 280
35, 38	25	1 1/2	1	1 7/8-12	1 5/16-12	B	60	22	63	41	570	24-16TRTXS	24-16TRMTXSS		210 140
35, 38	28, 30, 32	1 1/2	1 1/4	1 7/8-12	1 5/8-12	B	60	27	70	43	614	24-20TRTXS	24-20TRMTXSS		210 140
42	35, 38			2 1/4-12	1 7/8-12	B	65	33	72	42	839	28-24TRTXS	28-24TRMTXSS		140 140
50	38	2	1 1/2	2 1/2-12	1 7/8-12	B	70	34	75	49	900	32-24TRTXS			140 —

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

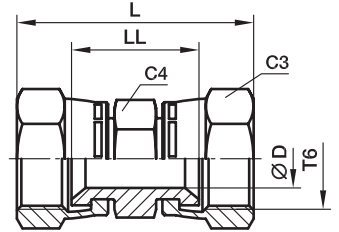
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

For Brass parts reduce pressures by 35 %



## HMX6 Swivel nut union

Triple-Lok® 37° Flare female swivel ends



Tube O.D.		Thread UN/UNF-2B T6	C3 mm	C4 mm	D mm	L mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.										S	SS
6	1/4	7/16-20	14	14	5	38	20	27	<b>4 HX6-S</b>	<b>4HMX6SS</b>	500	500
8, 10	5/16, 3/8	9/16-18	18	18	8	45	26	35	<b>6 HX6-S</b>	<b>6HMX6SS</b>	350	350
12	1/2	3/4-16	22	22	10	51	30	64	<b>8 HX6-S</b>	<b>8HMX6SS</b>	350	350
14, 15, 16	5/8	7/8-14	25	25	13	57	32	115	<b>10 HX6-S</b>	<b>10HMX6SS</b>	350	350
18, 20	3/4	1 1/16-12	32	32	16	62	33	185	<b>12 HX6-S</b>	<b>12HMX6SS</b>	350	350
25	1	1 5/16-12	41	41	22	68	38	235	<b>16 HX6-S</b>	<b>16HMX6SS</b>	250	250

Order codes shown are part of our current manufacturing programme.

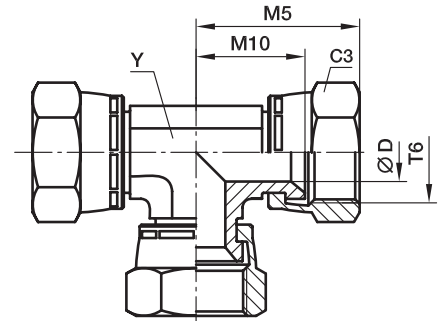
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## JX6 Swivel nut union tee

Triple-Lok® 37° Flare female swivel ends



Tube O.D.		Thread UN/UNF-2B T6	C3 mm	D mm	M5 mm	M10 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
mm	in.									
6	1/4	7/16-20	14	5	25	17	11	55	<b>4 JX6-S</b>	500
8, 10	5/16, 3/8	9/16-18	18	8	32	22	14	85	<b>6 JX6-S</b>	350
12	1/2	3/4-16	22	10	35	24	19	150	<b>8 JX6-S</b>	350
14, 15, 16	5/8	7/8-14	25	13	41	29	19	220	<b>10 JX6-S</b>	350
18, 20	3/4	1 1/16-12	32	16	45	30	27	345	<b>12 JX6-S</b>	350
25	1	1 5/16-12	41	22	51	36	30	510	<b>16 JX6-S</b>	250

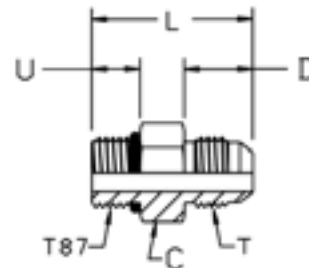
Order codes shown are part of our current manufacturing programme.  
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$



## F87OMX Male stud connector

Triple-Lok® 37° Flare end / Male metric thread – O-ring (ISO 6149)



Tube O.D.		Thread Metric T87	Thread UN/UNF-2A T	L mm	D mm	C mm	U mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.										S	SS
6	1/4	M 10×1.0	7/16-20	30	14	14	9	25	4M10F87OMXS	4M10F87OMXSS	500	350
8	5/16	M 10×1.0	1/2-20	30	14	14	9	30	5M10F87OMXS	5M10F87OMXSS	420	350
8	5/16	M 12×1.5	1/2-20	33	14	19	11	37	5M12F87OMXS	5M12F87OMXSS	420	350
8	5/16	M 14×1.5	1/2-20	34	14	19	11	40	5M14F87OMXS	5M14F87OMXSS	420	350
10	3/8	M 14×1.5	9/16-18	34	14	19	11	44	6M14F87OMXS	6M14F87OMXSS	420	350
10	3/8	M 16×1.5	9/16-18	36	14	22	12	53	6M16F87OMXS	6M16F87OMXSS	420	350
10	3/8	M 18×1.5	9/16-18	37	14	24	13	60	6M18F87OMXS	6M18F87OMXSS	350	350
12	1/2	M 14×1.5	3/4-16	36	17	19	11	41	8M14F87OMXS	8M14F87OMXSS	420	350
12	1/2	M 16×1.5	3/4-16	38	17	22	12	57	8M16F87OMXS	8M16F87OMXSS	420	350
12	1/2	M 18×1.5	3/4-16	39	17	24	13	71	8M18F87OMXS	8M18F87OMXSS	350	350
14, 15, 16	5/8	M 14×1.5	7/8-14	41	19	24	11	73	10M14F87OMXS	10M14F87OMXSS	350	350
14, 15, 16	5/8	M 18×1.5	7/8-14	43	19	24	13	75	10M18F87OMXS	10M18F87OMXSS	350	350
14, 15, 16	5/8	M 22×1.5	7/8-14	44	19	27	13	98	10M22F87OMXS	10M22F87OMXSS	350	350
14, 15, 16	5/8	M 27×2.0	7/8-14	46	19	32	16	75	10M27F87OMXS	10M27F87OMXSS	350	350
18, 20	3/4	M 22×1.5	1 1/16-12	48	22	27	13	104	12M22F87OMXS	12M22F87OMXSS	350	350
18, 20	3/4	M 27×2.0	1 1/16-12	51	22	32	16	158	12M27F87OMXS	12M27F87OMXSS	350	350
25	1	M 27×2.0	1 5/16-12	51	23	36	16	206	16M27F87OMXS	16M27F87OMXSS	280	280
25	1	M 33×2.0	1 5/16-12	53	23	41	16	273	16M33F87OMXS	16M33F87OMXSS	280	280
28, 30, 32	1 1/4	M 42×2.0	1 5/8-12	55	24	50	16	431	20M42F87OMXS	20M42F87OMXSS	280	210
35, 38	1 1/2	M 48×2.0	1 7/8-12	59	28	55	18	564	24M48F87OMXS	24M48F87OMXSS	210	140

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

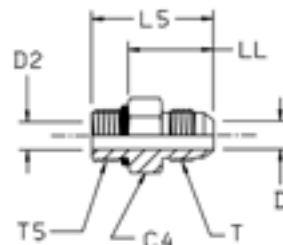
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## F5OMX Male stud connector

Triple-Lok® 37° Flare end / Male UN/UNF thread – O-ring (ISO 11926)  
SAE 070120 MS51525

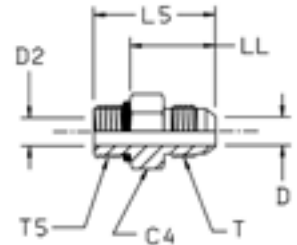


Tube O.D.	Thread UN/UNF-2A T5	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	L5 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
											S	SS
6	1/8	5/16-24	11	2	2	27	19	8	2 F5OX-S	4F5OMXS 4-3 F5OX-S	500	—
	3/16	3/8-24	13	3	3	28	20	10	3 F5OX-S		500	—
6	3/16	5/16-24	13	3	2	28	20	9	3-2 F5OX-S	4F5OMXS 4-3 F5OX-S	500	—
	1/4	7/16-20	14	4	4	31	22	15	4F5OMXS		500	350
6	1/4	3/8-24	14	5	3	30	23	12	4-3 F5OX-S	4F5OMXS 4-3 F5OX-S	500	350
6	1/4	1/2-20	16	4	6	31	22	25	4-5 F5OX-S	4-5F5OMXS 4-6F5OMXS	420	350
6	1/4	9/16-18	17	4	4	33	23	27	4-6F5OMXS	4-6F5OMXS 4-8F5OMXS	420	350
6	1/4	3/4-16	22	4	10	35	24	35	4-8 F5OX-S	4-8F5OMXS 4-10F5OMXS	420	350
6	1/4	7/8-14	25	5	5	38	25	60	4-10 F5OX-S	4-10F5OMXS 5F5OMXS	350	350
8	5/16	1/2-20	16	6	6	31	22	18	5F5OMXS	5F5OMXS 5-4F5OMXS	420	350
8	5/16	7/16-20	14	6	5	31	22	18	5-4 F5OX-S	5-4F5OMXS 5-6F5OMXS	420	350
8	5/16	9/16-18	17	6	6	33	23	25	5-6 F5OX-S	5-6F5OMXS 5-8F5OMXS	420	350
8	5/16	3/4-16	22	6	6	35	24	40	5-8 F5OX-S	5-8F5OMXS 6F5OMXS	420	350
10	3/8	9/16-18	17	8	8	33	23	25	6F5OMXS	6F5OMXS 6-4F5OMXS	420	350
10	3/8	7/16-20	16	8	4	32	23	40	6-4 F5OX-S	6-4F5OMXS 6-5F5OMXS	420	350
10	3/8	1/2-20	16	8	6	32	23	56	6-5 F5OX-S	6-5F5OMXS 6-8F5OMXS	420	350
10	3/8	3/4-16	22	8	8	35	24	44	6-8F5OMXS	6-8F5OMXS 6-10F5OMXS	420	350
10	3/8	7/8-14	25	8	12	38	25	85	6-10 F5OX-S	6-10F5OMXS 6-12F5OMXS	350	350
10	3/8	1 1/16-12	32	8	16	42	27	100	6-12 F5OX-S	6-12F5OMXS 8F5OMXS	350	350
12	1/2	3/4-16	22	10	10	38	27	58	8F5OMXS	8F5OMXS 8-4F5OMXS	420	350
12	1/2	7/16-20	21	10	5	38	29	40	8-4 F5OX-S	8-4F5OMXS 8-6F5OMXS	420	350
12	1/2	9/16-18	19	10	10	37	27	44	8-6F5OMXS	8-6F5OMXS 8-10F5OMXS	420	350
12	1/2	7/8-14	27	10	10	41	28	73	8-10F5OMXS	8-10F5OMXS 8-12F5OMXS	350	350
12	1/2	1 1/16-12	32	10	10	45	30	126	8-12F5OMXS	8-12F5OMXS 8-16F5OMXS	350	350
12	1/2	1 5/16-12	41	10	10	45	30	160	8-16 F5OX-S	8-16F5OMXS	310	310
14, 15, 16	5/8	7/8-14	27	12	12	43	31	75	10F5OMXS	10F5OMXS 10-6F5OX-S	350	350
14, 15, 16	5/8	9/16-18	24	13	8	43	34	60	10-6 F5OX-S	10-6F5OMXS 10-8F5OMXS	350	350
14, 15, 16	5/8	3/4-16	24	12	10	42	31	65	10-8F5OMXS	10-8F5OMXS 10-12F5OMXS	350	350
14, 15, 16	5/8	1 1/16-12	32	12	12	47	32	132	10-12F5OMXS	10-12F5OMXS 10-16F5OMXS	350	350
14, 15, 16	5/8	1 5/16-12	41	13	13	48	33	170	10-16 F5OX-S	10-16F5OMXS	310	310
18, 20	3/4	1 1/16-12	32	16	16	50	35	134	12F5OMXS	12F5OMXS 12-8F5OX-S	350	350
18, 20	3/4	3/4-16	29	16	10	49	38	104	12-8 F5OX-S	12-8F5OMXS 12-10F5OMXS	350	350
18, 20	3/4	7/8-14	27	16	12	48	35	108	12-10F5OMXS	12-10F5OMXS 12-14F5OMXS	350	350
18, 20	3/4	1 3/16-12	35	16	16	50	35	170	12-14 F5OX-S	12-14F5OMXS 12-16F5OMXS	310	310
18, 20	3/4	1 5/16-12	41	16	16	51	35	197	12-16F5OMXS	12-16F5OMXS	310	310
18, 20	3/4	1 5/8-12	48	16	16	53	38	230	12-20 F5OX-S	12-20F5OMXS 14F5OMXS	280	280
22	7/8	1 3/16-12	35	18	18	51	36	174	14 F5OX-S	14F5OMXS 14-16F5OMXS	280	280
22	7/8	1 5/16-12	41	18	22	51	36	223	14-16 F5OX-S	14-16F5OMXS 16F5OMXS	280	280
25	1	1 5/16-12	41	22	22	52	37	203	16F5OMXS	16F5OMXS 16-8F5OX-S	280	280
25	1	3/4-16	35	22	10	45	34	160	16-8 F5OX-S	16-8F5OMXS	280	280

Continued on page K28

## F5OMX Male stud connector

Triple-Lok® 37° Flare end / Male UN/UNF thread – O-ring (ISO 11926)  
SAE 070120 MS51525



Tube O.D.		Thread UN/UNF-2A T5	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	L5 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.											S	SS
25	1	7/8-14	1 5/16-12	35	22	12	53	40	183	<b>16-10 F5OX-S</b>	<b>16-10F5OMXSS</b>	280	280
25	1	1 1/16-12	1 5/16-12	36	22	16	52	37	204	<b>16-12F5OMXS</b>	<b>16-12F5OMXSS</b>	280	280
25	1	1 3/16-12	1 5/16-12	35	22	18	52	37	198	<b>16-14 F5OX-S</b>	<b>16-14F5OMXSS</b>	280	280
25	1	1 5/8-12	1 5/16-12	48	22	28	54	39	270	<b>16-20 F5OX-S</b>	<b>16-20F5OMXSS</b>	280	280
25	1	1 7/8-12	1 5/16-12	55	22	22	56	41	310	<b>16-24 F5OX-S</b>	<b>16-24F5OMXSS</b>	210	210
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	50	28	28	55	40	274	<b>20F5OMXS</b>	<b>20F5OMXSS</b>	280	210
28, 30, 32	1 1/4	1 1/16-12	1 5/8-12	43	28	16	58	43	250	<b>20-12 F5OX-S</b>	<b>20-12F5OMXSS</b>	280	210
28, 30, 32	1 1/4	1 5/16-12	1 5/8-12	43	28	22	59	44	280	<b>20-16 F5OX-S</b>	<b>20-16F5OMXSS</b>	280	210
35, 38	1 1/2	1 7/8-12	1 7/8-12	55	33	33	60	45	355	<b>24F5OMXS</b>	<b>24F5OMXSS</b>	210	140
35, 38	1 1/2	1 5/8-12	1 7/8-12	51	33	28	64	49	340	<b>24-20 F5OX-S</b>	<b>24-20F5OMXSS</b>	210	140
35, 38	1 1/2	2 1/2-12	1 7/8-12	70	34	34	64	49	400	<b>24-32 F5OX-S</b>		140	—
	2	2 1/2-12	2 1/2-12	70	45	45	71	56	650	<b>32 F5OX-S</b>		140	—
	2	1 7/8-12	2 1/2-12	68	45	34	75	60	600	<b>32-24 F5OX-S</b>		140	—

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

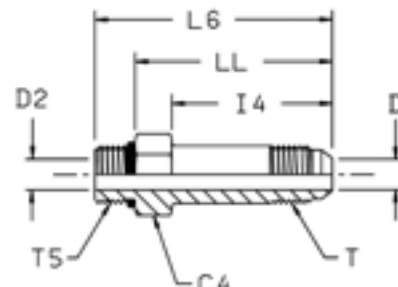
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## FF50MX Extended male stud connector

Triple-Lok® 37° Flare end / Male UN/UNF thread – O-ring (ISO 11926)  
SAE 070122 MS51526



Tube O.D.		Thread UN/UNF-2A T5	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	I4 mm	L6 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.												S	SS
6	1/4	7/16-20	7/16-20	14	4	4	35	53	44	33	<b>4 FF50X-S</b>	<b>4 FF50X-SS</b>	500	500
10	3/8	9/16-18	9/16-18	17	8	8	40	59	49	53	<b>6 FF50X-S</b>	<b>6 FF50X-SS</b>	420	420
12	1/2	3/4-16	3/4-16	22	10	10	48	69	57	104	<b>8 FF50X-S</b>	<b>8 FF50X-SS</b>	420	420
14, 15, 16	5/8	7/8-14	7/8-14	25	12	12	53	77	64	151	<b>10 FF50X-S</b>	<b>10 FF50X-SS</b>	350	350
18, 20	3/4	1 1/16-12	1 1/16-12	32	16	16	64	92	77	277	<b>12 FF50X-S</b>	<b>12 FF50X-SS</b>	350	350
18, 20	3/4	7/8-14	1 1/16-12	27	16	12	64	89	76	236	<b>12-10FF50MXS</b>		350	—
25	1	1 5/16-12	1 5/16-12	41	21	21	72	101	86	458	<b>16 FF50X-S</b>	<b>16 FF50X-SS</b>	280	280
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	48	27	27	88	119	104	862	<b>20 FF50X-S</b>	<b>20 FF50X-SS</b>	280	280

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

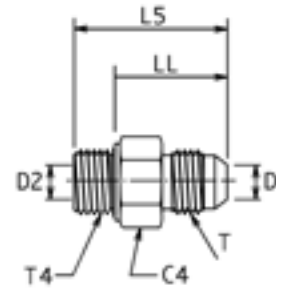
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



## F42EDMX Male stud connector

Triple-Lok® 37° Flare end / Male BSPP thread – ED seal (ISO 1179)



Tube O.D.		Thread BSPP T4	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	L5 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.											S	SS
6	1/4	1/8-28	7/16-20	14	4	4	30	22	20	4F42EDMXS	4F42EDMXSS	500	350
6	1/4	1/4-19	7/16-20	19	4	4	35	23	34	4-4F42EDMXS	4-4F42EDMXSS	420	350
6	1/4	3/8-19	7/16-20	22	4	4	36	24	47	4-6F42EDMXS	4-6F42EDMXSS	420	350
6	1/4	1/2-14	7/16-20	27	4	4	39	25	99	4-8F42EDMXS	4-8F42EDMXSS	350	350
6	1/4	3/4-14	7/16-20	32	4	18	43	27	88	4-12F42EDMXS	4-12F42EDMXSS	350	350
8	5/16	1/8-28	1/2-20	14	6	4	30	22	20	5F42EDMXS	5F42EDMXSS	420	350
8	5/16	1/4-19	1/2-20	19	6	6	35	23	30	5-4F42EDMXS	5-4F42EDMXSS	420	350
8	5/16	3/8-19	1/2-20	22	6	6	36	24	47	5-6F42EDMXS	5-6F42EDMXSS	420	350
10	3/8	1/4-19	9/16-18	19	8	6	35	23	28	6F42EDMXS	6F42EDMXSS	420	350
10	3/8	1/8-28	9/16-18	17	8	4	31	23	27	6-2F42EDMXS	6-2F42EDMXSS	420	350
10	3/8	3/8-19	9/16-18	22	8	8	36	24	40	6-6F42EDMXS	6-6F42EDMXSS	420	350
10	3/8	1/2-14	9/16-18	27	8	8	40	25	95	6-8F42EDMXS	6-8F42EDMXSS	350	350
10	3/8	3/4-14	9/16-18	32	8	18	42	26	100	6-12F42EDMXS	6-12F42EDMXSS	350	350
12	1/2	3/8-19	3/4-16	22	10	10	39	27	50	8F42EDMXS	8F42EDMXSS	420	350
12	1/2	1/4-19	3/4-16	19	10	6	39	27	40	8-4F42EDMXS	8-4F42EDMXSS	420	350
12	1/2	1/2-14	3/4-16	27	10	10	42	28	100	8-8F42EDMXS	8-8F42EDMXSS	350	350
12	1/2	3/4-14	3/4-16	32	10	10	46	30	100	8-12F42EDMXS	8-12F42EDMXSS	350	350
12	1/2	1-11	3/4-16	41	10	23	53	35	150	8-16F42EDMXS	8-16F42EDMXSS	280	280
14, 15, 16	5/8	1/2-14	7/8-14	27	12	12	45	31	103	10F42EDMXS	10F42EDMXSS	350	350
14, 15, 16	5/8	1/4-19	7/8-14	24	13	6	41	29	110	10-4F42EDMXS	10-4F42EDMXSS	350	350
14, 15, 16	5/8	3/8-19	7/8-14	24	12	9	43	31	65	10-6F42EDMXS	10-6F42EDMXSS	350	350
14, 15, 16	5/8	3/4-14	7/8-14	32	12	12	48	32	160	10-12F42EDMXS	10-12F42EDMXSS	350	350
14, 15, 16	5/8	1-11	7/8-14	41	13	13	51	33	205	10-16F42EDMXS	10-16F42EDMXSS	280	280
18, 20	3/4	3/4-14	1 1/16-12	32	16	16	51	35	165	12F42EDMXS	12F42EDMXSS	350	350
18, 20	3/4	3/8-19	1 1/16-12	27	16	9	50	38	105	12-6F42EDMXS	12-6F42EDMXSS	350	350
18, 20	3/4	1/2-14	1 1/16-12	27	16	14	49	35	118	12-8F42EDMXS	12-8F42EDMXSS	350	350
18, 20	3/4	1-11	1 1/16-12	41	16	16	54	35	292	12-16F42EDMXS	12-16F42EDMXSS	280	280
18, 20	3/4	1 1/4-11	1 1/16-12	50	16	30	62	42	220	12-20F42EDMXS	12-20F42EDMXSS	280	210
22	7/8	3/4-14	1 3/16-12	32	18	18	51	35	173	14F42EDMXS	14F42EDMXSS	280	280
25	1	1-11	1 5/16-12	41	22	22	55	37	262	16F42EDMXS	16F42EDMXSS	280	280
25	1	1/2-14	1 5/16-12	41	22	14	51	37	145	16-8F42EDMXS	16-8F42EDMXSS	280	280
25	1	3/4-14	1 5/16-12	36	22	18	53	37	217	16-12F42EDMXS	16-12F42EDMXSS	280	280
25	1	1 1/4-11	1 5/16-12	50	22	22	59	39	386	16-20F42EDMXS	16-20F42EDMXSS	280	280
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	50	28	28	60	40	375	20F42EDMXS	20F42EDMXSS	280	210
28, 30, 32	1 1/4	3/4-14	1 5/8-12	46	28	18	59	40	220	20-12F42EDMXS	20-12F42EDMXSS	280	210
28, 30, 32	1 1/4	1-11	1 5/8-12	46	28	23	62	44	255	20-16F42EDMXS	20-16F42EDMXSS	280	210
28, 30, 32	1 1/4	1 1/2-11	1 5/8-12	55	28	28	64	42	420	20-24F42EDMXS	20-24F42EDMXSS	210	140
35, 38	1 1/2	1 1/2-11	1 7/8-12	55	33	33	67	45	480	24F42EDMXS	24F42EDMXSS	210	140
35, 38	1 1/2	1-11	1 7/8-12	50	33	23	63	45	390	24-16F42EDMXS	24-16F42EDMXSS	210	210
35, 38	1 1/2	1 1/4-11	1 7/8-12	50	33	30	62	42	420	24-20F42EDMXS	24-20F42EDMXSS	210	210
42		1 1/2-11	2 1/4-12	60	39	36	71	49	746	28-24F42EDMXS	28-24F42EDMXSS	140	105

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

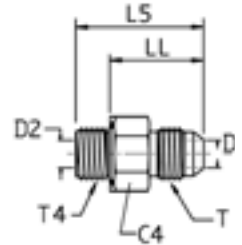
Order codes shown are part of our current manufacturing programme. Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## F4OMX Male stud connector

Triple-Lok® 37° Flare end / Male BSPP thread – O-ring + retaining ring (ISO 1179)



Tube O.D.		Thread BSPP T4	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	L5 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.											S	SS
6	1/4	1/8-28	7/16-20	17	4	4	28	22	20	<b>4F4OMXS</b>	<b>4F4OMXS</b>	350	350
6	1/4	1/4-19	7/16-20	19	4	4	32	23	34	<b>4-4F4OMXS</b>	<b>4-4F4OMXS</b>	350	350
6	1/4	3/8-19	7/16-20	22	4	4	33	24	47	<b>4-6F4OMXS</b>	<b>4-6F4OMXS</b>	350	350
6	1/4	1/2-14	7/16-20	30	4	4	39	26	99	<b>4-8F4OMXS</b>	<b>4-8F4OMXS</b>	350	350
8	5/16	1/8-28	1/2-20	17	6	4	28	22	25	<b>5F4OMXS</b>	<b>5F4OMXS</b>	350	350
8	5/16	1/4-19	1/2-20	19	6	6	32	23	30	<b>5-4F4OMXS</b>	<b>5-4F4OMXS</b>	350	350
8	5/16	3/8-19	1/2-20	22	6	6	33	24	47	<b>5-6F4OMXS</b>	<b>5-6F4OMXS</b>	350	350
10	3/8	1/4-19	9/16-18	19	8	6	33	23	28	<b>6F4OMXS</b>	<b>6F4OMXS</b>	350	350
10	3/8	1/8-28	9/16-18	17	8	4	29	23	27	<b>6-2F4OMXS</b>	<b>6-2F4OMXS</b>	350	350
10	3/8	3/8-19	9/16-18	22	8	8	33	24	40	<b>6-6F4OMXS</b>	<b>6-6F4OMXS</b>	350	350
10	3/8	1/2-14	9/16-18	30	8	8	38	25	25	<b>6-8F4OMXS</b>	<b>6-8F4OMXS</b>	350	350
10	3/8	3/4-14	9/16-18	36	8	8	40	25	100	<b>6-12F4OMXS</b>	<b>6-12F4OMXS</b>	280	280
12	1/2	3/8-19	3/4-16	22	10	10	36	27	50	<b>8F4OMXS</b>	<b>8F4OMXS</b>	350	350
12	1/2	1/4-19	3/4-16	19	10	6	35	26	40	<b>8-4F4OMXS</b>	<b>8-4F4OMXS</b>	350	350
12	1/2	1/2-14	3/4-16	30	10	10	41	29	100	<b>8-8F4OMXS</b>	<b>8-8F4OMXS</b>	350	350
12	1/2	3/4-14	3/4-16	36	10	10	42	30	100	<b>8-12F4OMXS</b>	<b>8-12F4OMXS</b>	280	250
12	1/2	1-11	3/4-16	46	10	10	47	29	150	<b>8-16F4OMXS</b>	<b>8-16F4OMXS</b>	280	250
14, 15, 16	5/8	1/2-14	7/8-14	30	12	12	43	31	103	<b>10F4OMXS</b>	<b>10F4OMXS</b>	350	350
14, 15, 16	5/8	1/4-19	7/8-14	24	12	6	39	28	110	<b>10-4F4OMXS</b>	<b>10-4F4OMXS</b>	350	350
14, 15, 16	5/8	3/8-19	7/8-14	24	12	9	39	30	65	<b>10-6F4OMXS</b>	<b>10-6F4OMXS</b>	350	350
14, 15, 16	5/8	3/4-14	7/8-14	36	12	12	45	32	160	<b>10-12F4OMXS</b>	<b>10-12F4OMXS</b>	280	250
18, 20	3/4	3/4-14	1 1/16-12	36	16	16	48	35	165	<b>12F4OMXS</b>	<b>12F4OMXS</b>	280	250
18, 20	3/4	3/8-19	1 1/16-12	27	16	9	44	34	97	<b>12-6F4OMXS</b>	<b>12-6F4OMXS</b>	350	250
18, 20	3/4	1/2-14	1 1/16-12	30	16	12	47	34	118	<b>12-8F4OMXS</b>	<b>12-8F4OMXS</b>	350	350
18, 20	3/4	1-11	1 1/16-12	46	16	16	53	37	292	<b>12-16F4OMXS</b>	<b>12-16F4OMXS</b>	280	250
18, 20	3/4	1 1/4-11	1 1/16-12	50	16	16	53	34	220	<b>12-20F4OMXS</b>	<b>12-20F4OMXS</b>	250	175
25	1	1-11	1 5/16-12	46	22	22	54	38	262	<b>16F4OMXS</b>	<b>16F4OMXS</b>	280	250
25	1	1/2-14	1 5/16-12	36	22	12	49	34	145	<b>16-8F4OMXS</b>	<b>16-8F4OMXS</b>	280	250
25	1	3/4-14	1 5/16-12	36	22	16	49	36	173	<b>16-12F4OMXS</b>	<b>16-12F4OMXS</b>	280	250
25	1	1 1/4-11	1 5/16-12	50	22	22	55	39	386	<b>16-20F4OMXS</b>	<b>16-20F4OMXS</b>	250	175
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	50	28	28	56	40	325	<b>20F4OMXS</b>	<b>20F4OMXS</b>	250	175
28, 30, 32	1 1/4	3/4-14	1 5/8-12	46	28	16	51	36	220	<b>20-12F4OMXS</b>	<b>20-12F4OMXS</b>	280	175
28, 30, 32	1 1/4	1-11	1 5/8-12	46	28	22	55	39	330	<b>20-16F4OMXS</b>	<b>20-16F4OMXS</b>	280	210
28, 30, 32	1 1/4	1 1/2-11	1 5/8-12	55	28	28	57	41	480	<b>20-24F4OMXS</b>	<b>20-24F4OMXS</b>	210	140
35, 38	1 1/2	1 1/2-11	1 7/8-12	55	33	33	61	45	480	<b>24F4OMXS</b>	<b>24F4OMXS</b>	210	140
35, 38	1 1/2	1 1/4-11	1 7/8-12	50	33	28	60	44	420	<b>24-20F4OMXS</b>	<b>24-20F4OMXS</b>	210	140
42	1 1/2	1 1/2-11	2 1/4	60	39	33	68	52	740	<b>28-24F4OMXS</b>	<b>28-24F4OMXS</b>	140	105

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

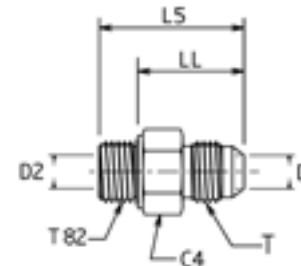
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## F82EDMX Male stud connector

Triple-Lok® 37° Flare end / Male metric thread – ED seal (ISO 9974)



Tube O.D. mm	in.	Thread Metric T82	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	L5 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok®		PN (bar)	
										Steel	Stainless Steel	S	SS
6	1/4	M 10×1.0	7/16-20	14	4	4	30	22	19	4M10F82EDMXS	4M10F82EDMXSS	500	350
6	1/4	M 12×1.5	7/16-20	17	4	4	34	22	30	4M12F82EDMXS	4M12F82EDMXSS	420	350
8	5/16	M 10×1.0	1/2-20	14	6	4	30	22	17	5M10F82EDMXS	5M10F82EDMXSS	420	350
8	5/16	M 12×1.5	1/2-20	17	6	5	34	22	28	5M12F82EDMXS	5M12F82EDMXSS	420	350
8	5/16	M 14×1.5	1/2-20	19	6	7	36	24	35	5M14F82EDMXS	5M14F82EDMXSS	420	350
10	3/8	M 12×1.5	9/16-18	17	8	5	35	23	33	6M12F82EDMXS	6M12F82EDMXSS	420	350
10	3/8	M 14×1.5	9/16-18	19	8	7	35	23	38	6M14F82EDMXS	6M14F82EDMXSS	420	350
10	3/8	M 16×1.5	9/16-18	22	8	8	36	24	53	6M16F82EDMXS	6M16F82EDMXSS	420	350
10	3/8	M 18×1.5	9/16-18	24	8	8	36	24	60	6M18F82EDMXS	6M18F82EDMXSS	350	350
10	3/8	M 22×1.5	9/16-18	27	8	8	39	25	68	6M22F82EDMXS	6M22F82EDMXSS	350	350
12	1/2	M 14×1.5	3/4-16	19	10	7	39	27	41	8M14F82EDMXS	8M14F82EDMXSS	420	350
12	1/2	M 16×1.5	3/4-16	22	10	9	39	27	57	8M16F82EDMXS	8M16F82EDMXSS	420	350
12	1/2	M 18×1.5	3/4-16	24	10	10	39	27	71	8M18F82EDMXS	8M18F82EDMXSS	350	350
12	1/2	M 22×1.5	3/4-16	27	10	10	42	28	70	8M22F82EDMXS	8M22F82EDMXSS	350	350
14, 15, 16	5/8	M 18×1.5	7/8-14	24	12	11	43	31	104	10M18F82EDMXS	10M18F82EDMXSS	350	350
14, 15, 16	5/8	M 20×1.5	7/8-14	27	11	11	46	32	90	10M20F82EDMXS	10M20F82EDMXSS	350	350
14, 15, 16	5/8	M 22×1.5	7/8-14	27	12	12	45	31	161	10M22F82EDMXS	10M22F82EDMXSS	350	350
18, 20	3/4	M 18×1.5	1 1/16-12	27	16	11	46	34	85	12M18F82EDMXS	12M18F82EDMXSS	350	350
18, 20	3/4	M 22×1.5	1 1/16-12	27	16	14	49	35	273	12M22F82EDMXS	12M22F82EDMXSS	350	350
18, 20	3/4	M 26×1.5	1 1/16-12	32	16	16	51	35	135	12M26F82EDMXS	12M26F82EDMXSS	350	350
18, 20	3/4	M 27×2.0	1 1/16-12	32	16	16	51	35	431	12M27F82EDMXS	12M27F82EDMXSS	350	350
25	1	M 26×1.5	1 5/16-12	41	22	18	55	39	350	16M26F82EDMXS	16M26F82EDMXSS	280	280
25	1	M 27×2.0	1 5/16-12	36	16	16	53	37	360	16M27F82EDMXS	16M27F82EDMXSS	280	280
25	1	M 33×2.0	1 5/16-12	41	22	22	55	37	431	16M33F82EDMXS	16M33F82EDMXSS	280	280
28, 30, 32	1 1/4	M 42×2.0	1 5/8-12	50	28	28	60	40	431	20M42F82EDMXS	20M42F82EDMXSS	280	210
35, 38	1 1/2	M 48×2.0	1 7/8-12	55	33	33	67	45	580	24M48F82EDMXS	24M48F82EDMXSS	210	140

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

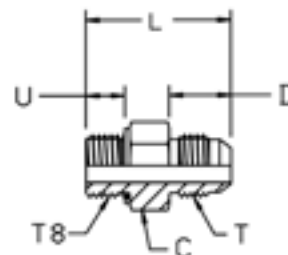
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



## F8OMX Male stud connector

Triple-Lok® 37° Flare end / Male metric thread – O-ring + retainer ring



Tube O.D.		Thread Metric T8	Thread UN/UNF-2A T	L mm	D mm	C mm	U mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.										S	SS
6	1/4	M 10×1.0	7/16-20	30	14	14	9	25	4M10F8OMXS	4M10F8OMXSS	350	350
6	1/4	M 12×1.5	7/16-20	33	14	17	11	35	4M12F8OMXS	4M12F8OMXSS	420	350
8	5/16	M 10×1.0	1/2-20	30	14	14	9	25	5M10F8OMXS	5M10F8OMXSS	350	350
8	5/16	M 12×1.5	1/2-20	33	14	19	11	35	5M12F8OMXS	5M12F8OMXSS	420	350
8	5/16	M 14×1.5	1/2-20	34	14	19	11	35	5M14F8OMXS	5M14F8OMXSS	350	350
10	3/8	M 12×1.5	9/16-18	34	14	17	11	35	6M12F8OMXS	6M12F8OMXSS	420	350
10	3/8	M 14×1.5	9/16-18	34	14	19	11	35	6M14F8OMXS	6M14F8OMXSS	350	350
10	3/8	M 16×1.5	9/16-18	36	14	22	12	51	6M16F8OMXS	6M16F8OMXSS	350	350
10	3/8	M 18×1.5	9/16-18	37	14	24	13	60	6M18F8OMXS	6M18F8OMXSS	250	350
12	1/2	M 14×1.5	3/4-16	36	17	19	11	38	8M14F8OMXS	8M14F8OMXSS	350	350
12	1/2	M 16×1.5	3/4-16	38	17	22	12	55	8M16F8OMXS	8M16F8OMXSS	350	350
12	1/2	M 18×1.5	3/4-16	39	17	24	13	66	8M18F8OMXS	8M18F8OMXSS	250	250
12	1/2	M 22×1.5	3/4-16	41	17	27	13	70	8M22F8OMXS	8M22F8OMXSS	250	250
14, 15, 16	5/8	M 18×1.5	7/8-14	43	19	24	13	71	10M18F8OMXS	10M18F8OMXSS	250	250
14, 15, 16	5/8	M 20×1.5	7/8-14	45	19	27	14	90	10M20F8OMXS	10M20F8OMXSS	250	250
14, 15, 16	5/8	M 22×1.5	7/8-14	44	19	27	13	98	10M22F8OMXS	10M22F8OMXSS	250	250
18, 20	3/4	M 18×1.5	1 1/16-12	51	22	27	13	85	12M18F8OMXS	12M18F8OMXSS	250	250
18, 20	3/4	M 22×1.5	1 1/16-12	48	22	27	13	104	12M22F8OMXS	12M22F8OMXSS	250	250
18, 20	3/4	M 24×1.5	1 1/16-12	45	22	30	12	120	12M24F8OMXS	12M24F8OMXSS	210	210
18, 20	3/4	M 27×2.0	1 1/16-12	51	22	32	16	154	12M27F8OMXS	12M27F8OMXSS	210	210
25	1	M 22×1.5	1 5/16-12	48	23	36	13	180	16M22F8OMXS	16M22F8OMXSS	250	250
25	1	M 26×1.5	1 5/16-12	52	23	36	17	202	16M26F8OMXS	16M26F8OMXSS	210	210
25	1	M 27×2.0	1 5/16-12	51	23	36	16	202	16M27F8OMXS	16M27F8OMXSS	210	210
25	1	M 33×2.0	1 5/16-12	53	23	41	16	267	16M33F8OMXS	16M33F8OMXSS	210	210
28, 30, 32	1 1/4	M 42×2.0	1 5/8-12	55	24	50	16	427	20M42F8OMXS	20M42F8OMXSS	210	210
35, 38	1 1/2	M 48×2.0	1 7/8-12	59	28	55	18	545	24M48F8OMXS	24M48F8OMXSS	140	140

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

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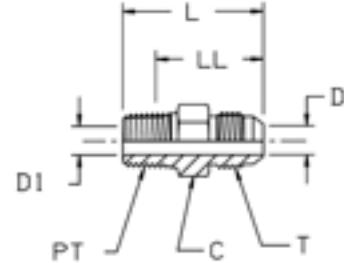


## FMTX Male stud connector

Triple-Lok® 37° Flare end / Male NPTF\* thread (SAE 476)

SAE 070102 MS51500

\*Stainless Steel = NPT to prevent galling



Tube O.D.		Thread NPT/NPTF PT	Thread UN/UNF-2A T	C mm	D mm	D1 mm	L mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar)	
mm	in.												S	SS
5	1/8	1/8-27	5/16-24	11	2	5	28	22	10	2 FTX-S			420	—
	3/16	1/8-27	3/8-24	11	3	5	29	23	12	3 FTX-S			420	—
	1/4	1/8-27	7/16-20	13	4	4	31	23	14	4FMTXS	4FMTXSS	4FMTXB	420	350
	1/4	1/4-18	7/16-20	14	4	4	36	24	26	4-4FMTXS	4-4FMTXSS	4-4FMTXB	420	350
	1/4	3/8-18	7/16-20	19	4	10	37	28	26	4-6 FTX-S	4-6FMTXSS	4-6FMTXB	420	350
	1/4	1/2-14	7/16-20	22	4	14	43	31	26	4-8 FTX-S	4-8FMTXSS	4-8FMTXB	420	350
8	5/16	1/8-27	1/2-20	14	6	5	31	23	17	5FMTXS	5FMTXSS	5FMTXB	420	350
	5/16	1/4-18	1/2-20	14	6	6	36	24	25	5-4FMTXS	5-4FMTXSS	5-4FMTXB	420	350
	5/16	3/8-18	1/2-20	19	6	6	36	26	30	5-6FMTXS	5-6FMTXSS	5-6FMTXB	420	350
	3/8	1/4-18	9/16-18	17	8	8	36	25	25	6FMTXS	6FMTXSS	6FMTXB	420	350
	3/8	1/8-27	9/16-18	16	8	5	32	26	21	6-2 FTX-S	6-2FMTXSS	6-2FMTXB	420	350
10	3/8	3/8-18	9/16-18	19	8	8	36	25	39	6-6FMTXS	6-6FMTXSS	6-6FMTXB	420	350
	3/8	1/2-14	9/16-18	22	8	8	43	28	47	6-8FMTXS	6-8FMTXSS	6-8FMTXB	420	350
	1/2	3/8-18	3/4-16	19	10	10	39	27	45	8FMTXS	8FMTXSS	8FMTXB	420	350
	1/2	1/4-18	3/4-16	19	10	7	39	27	42	8-4FMTXS	8-4FMTXSS	8-4FMTXB	420	350
	1/2	1/2-14	3/4-16	22	10	10	46	30	74	8-8FMTXS	8-8FMTXSS	8-8FMTXB	420	350
12	1/2	3/4-14	3/4-16	27	10	10	47	31	121	8-12FMTXS	8-12FMTXSS	8-12FMTXB	380	350
	5/8	1/2-14	7/8-14	24	12	12	48	33	77	10FMTXS	10FMTXSS	10FMTXB	350	350
	5/8	3/8-18	7/8-14	24	12	10	43	31	63	10-6FMTXS	10-6FMTXSS	10-6FMTXB	350	350
	5/8	3/4-14	7/8-14	27	12	12	50	34	122	10-12FMTXS	10-12FMTXSS	10-12FMTXB	350	350
	3/4	3/4-14	1 1/16-12	27	16	16	52	37	123	12 FTX-S	12FMTXSS	12FMTXB	350	350
18, 20	3/4	3/8-18	1 1/16-12	29	16	10	48	39	90	12-6 FTX-S	12-6FMTXSS	12-6FMTXB	350	350
	3/4	1/2-14	1 1/16-12	27	16	14	52	37	103	12-8 FTX-S	12-8FMTXSS	12-8FMTXB	350	350
	3/4	1-11.5	1 1/16-12	36	16	16	57	38	176	12-16 FTX-S	12-16FMTXSS	12-16FMTXB	310	280
	7/8	3/4-14	1 3/16-12	32	18	18	53	41	137	14 FTX-S	14FMTXSS	14FMTXB	280	245
	1	1-11.5	1 5/16-12	36	22	22	58	39	189	16FMTXS	16FMTXSS	16FMTXB	280	280
25	1	1/2-14	1 5/16-12	35	22	14	54	42	110	16-8 FTX-S	16-8FMTXSS	16-8FMTXB	280	280
	1	3/4-14	1 5/16-12	36	22	18	54	38	149	16-12FMTXS	16-12FMTXSS	16-12FMTXB	280	280
	1 1/4	1 1/4-11.5	1 5/8-12	46	28	28	62	42	315	20FMTXS	20FMTXSS	20FMTXB	210	210
	1 1/4	1-11.5	1 5/8-12	46	28	24	61	42	248	20-16 FTX-S	20-16FMTXSS	20-16FMTXB	280	210
	1 1/2	1 1/2-11.5	1 7/8-12	50	33	33	68	48	430	24FMTXS	24FMTXSS	24FMTXB	210	140
35, 38	1 1/2	1-11.5	1 7/8-12	50	33	24	67	52	310	24-16 FTX-S	24-16FMTXSS	24-16FMTXB	210	140
	1 1/2	1 1/4-11.5	1 7/8-12	50	33	32	67	47	359	24-20FMTXS	24-20FMTXSS	24-20FMTXB	210	140
	1 1/2	2-11.5	1 7/8-12	68	33	33	73	57	720	24-32 FTX-S	24-32FMTXSS	24-32FMTXB	140	140
	2	2-11.5	2 1/2-12	67	45	49	79	64	858	32 FTX-S	32FMTXSS	32FMTXB	140	105
	2	1 1/2-11.5	2 1/2-12	68	45	38	78	63	720	32-24 FTX-S	32-24FMTXSS	32-24FMTXB	140	105

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

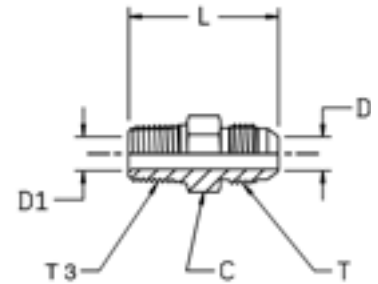
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

For Brass parts reduce pressures by 35%.

## F3MX Male stud connector

Triple-Lok® 37° Flare end / Male BSPT thread (ISO 7)



Tube O.D.		Thread BSPT T3	Thread UN/UNF-2A T	C mm	D mm	D1 mm	L mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.										S	SS
6	1/4	1/8-28	7/16-20	13	4	4	31	13	<b>4F3MXS</b>	<b>4F3MXSS</b>	315	315
6	1/4	1/4-19	7/16-20	14	4	4	36	25	<b>4-4F3MXS</b>	<b>4-4F3MXSS</b>	315	315
8	5/16	1/8-28	1/2-20	14	6	5	31	17	<b>5F3MXS</b>	<b>5F3MXSS</b>	315	315
8	5/16	1/4-19	1/2-20	14	6	6	36	24	<b>5-4F3MXS</b>	<b>5-4F3MXSS</b>	315	315
10	3/8	1/4-19	9/16-18	17	8	8	36	25	<b>6F3MXS</b>	<b>6F3MXSS</b>	315	315
10	3/8	3/8-19	9/16-18	19	8	8	36	37	<b>6-6F3MXS</b>	<b>6-6F3MXSS</b>	315	315
10	3/8	1/2-14	9/16-18	22	8	8	43	45	<b>6-8F3MXS</b>	<b>6-8F3MXSS</b>	315	315
12	1/2	3/8-19	3/4-16	19	10	10	39	43	<b>8F3MXS</b>	<b>8F3MXSS</b>	315	315
12	1/2	1/4-19	3/4-16	19	10	7	39	41	<b>8-4F3MXS</b>	<b>8-4F3MXSS</b>	315	315
12	1/2	1/2-14	3/4-16	22	10	10	46	71	<b>8-8F3MXS</b>	<b>8-8F3MXSS</b>	315	315
14, 15, 16	5/8	1/2-14	7/8-14	24	12	12	48	74	<b>10F3MXS</b>	<b>10F3MXSS</b>	315	315
14, 15, 16	5/8	3/8-19	7/8-14	24	12	10	43	61	<b>10-6F3MXS</b>	<b>10-6F3MXSS</b>	315	315
14, 15, 16	5/8	3/4-14	7/8-14	27	12	12	50	117	<b>10-12F3MXS</b>	<b>10-12F3MXSS</b>	160	160
18, 20	3/4	3/4-14	1 1/16-12	27	16	16	52	119	<b>12F3MXS</b>	<b>12F3MXSS</b>	160	160
18, 20	3/4	1/2-14	1 1/16-12	27	16	14	52	100	<b>12-8F3MXS</b>	<b>12-8F3MXSS</b>	315	315
18, 20	3/4	1-11	1 1/16-12	36	16	16	57	214	<b>12-16F3MXS</b>	<b>12-16F3MXSS</b>	160	160
25	1	1-11	1 5/16-12	36	22	22	58	185	<b>16F3MXS</b>	<b>16F3MXSS</b>	160	160
25	1	3/4-14	1 5/16-12	36	22	18	54	146	<b>16-12F3MXS</b>	<b>16-12F3MXSS</b>	160	160
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	46	28	28	62	309	<b>20F3MXS</b>	<b>20F3MXSS</b>	160	160
28, 30, 32	1 1/4	1-11	1 5/8-12	46	28	24	61	243	<b>20-16F3MXS</b>	<b>20-16F3MXSS</b>	160	160
35, 38	1 1/2	1 1/2-11	1 7/8-12	50	33	33	68	421	<b>24F3MXS</b>	<b>24F3MXSS</b>	160	140
35, 38	1 1/2	1 1/4-11	1 7/8-12	50	33	32	67	352	<b>24-20F3MXS</b>	<b>24-20F3MXSS</b>	160	140

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

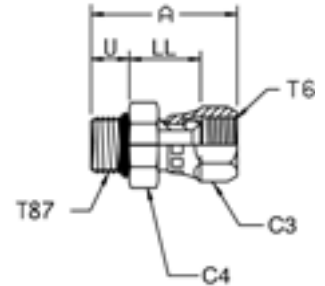
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



## F687OMX Swivel male stud

Triple-Lok® 37° Flare female swivel end / Male metric thread – O-ring (ISO 6149)



Tube O.D. mm	Tube O.D. in.	Thread Metric T87	Thread UN/UNF-2B T6	A mm	LL mm	U mm	C3 mm	C4 mm	Weight (steel) g/1 piece	Triple-Lok®		PN (bar)	
										Steel	Stainless Steel	S	SS
6	1/4	M 10×1.0	7/16-20	34	15	9	16	14	25	<b>4M10F687OMXS</b>	<b>4M10F687OMXSS</b>	500	350
6	1/4	M 12×1.5	7/16-20	38	15	11	16	17	30	<b>4M12F687OMXS</b>	<b>4M12F687OMXSS</b>	420	350
8	5/16	M 10×1.0	1/2-20	39	18	9	17	17	40	<b>5M10F687OMXS</b>	<b>5M10F687OMXSS</b>	420	350
8	5/16	M 12×1.5	1/2-20	44	17	11	17	17	64	<b>5M12F687OMXS</b>	<b>5M12F687OMXSS</b>	420	350
10	3/8	M 14×1.5	9/16-18	45	18	11	19	19	65	<b>6M14F687OMXS</b>	<b>6M14F687OMXSS</b>	350	350
10	3/8	M 16×1.5	9/16-18	46	19	12	19	22	75	<b>6M16F687OMXS</b>	<b>6M16F687OMXSS</b>	350	350
12	1/2	M 16×1.5	3/4-16	46	21	12	22	22	80	<b>8M16F687OMXS</b>	<b>8M16F687OMXSS</b>	350	350
12	1/2	M 18×1.5	3/4-16	47	21	13	22	24	90	<b>8M18F687OMXS</b>	<b>8M18F687OMXSS</b>	350	350
14, 15, 16	5/8	M 18×1.5	7/8-14	47	23	13	27	24	108	<b>10M18F687OMXS</b>	<b>10M18F687OMXSS</b>	350	350
14, 15, 16	5/8	M 22×1.5	7/8-14	49	23	13	27	27	115	<b>10M22F687OMXS</b>	<b>10M22F687OMXSS</b>	350	350
18, 20	3/4	M 22×1.5	1 1/16-12	53	25	13	32	27	183	<b>12M22F687OMXS</b>	<b>12M22F687OMXSS</b>	350	350
18, 20	3/4	M 27×2.0	1 1/16-12	54	24	16	32	32	197	<b>12M27F687OMXS</b>	<b>12M27F687OMXSS</b>	350	350
25	1	M 27×2.0	1 5/16-12	56	25	16	38	32	230	<b>16M27F687OMXS</b>	<b>16M27F687OMXSS</b>	250	280
25	1	M 33×2.0	1 5/16-12	58	27	16	38	41	250	<b>16M33F687OMXS</b>	<b>16M33F687OMXSS</b>	250	280
28, 30, 32	1 1/4	M 42×2.0	1 5/8-12	73	31	16	50	50	500	<b>20M42F687OMXS</b>	<b>20M42F687OMXSS</b>	250	210
35, 38	1 1/2	M 48×2.0	1 7/8-12	72	33	18	60	55	688	<b>24M48F687OMXS</b>	<b>24M48F687OMXSS</b>	170	140

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

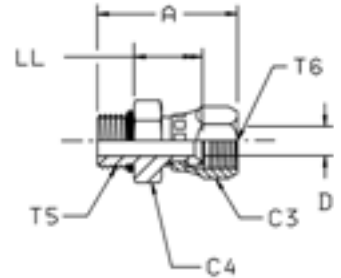
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

**F65OMX Swivel male stud**

Triple-Lok® 37° Flare female swivel end / Male UN/UNF thread – O-ring (ISO 11926)



Tube O.D.		Thread UNF T5	Thread UN/UNF-2B T6	A mm	C3 mm	C4 mm	D mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
mm	in.										
6	1/4	7/16-20	7/16-20	34	16	14	4	15	27	<b>4F65OMXS</b>	500
8	5/16	1/2-20	1/2-20	34	17	17	6	17	30	<b>5F65OMXS</b>	420
10	3/8	9/16-18	9/16-18	36	19	17	8	16	35	<b>6F65OMXS</b>	350
12	1/2	3/4-16	3/4-16	42	22	22	10	21	64	<b>8 F65OX-S</b>	350
14, 15, 16	5/8	7/8-14	7/8-14	47	27	27	12	23	112	<b>10 F65OX-S</b>	350
18, 20	3/4	1 1/16-12	1 1/16-12	52	32	32	16	24	183	<b>12F65OMXS</b>	350
25	1	1 5/16-12	1 5/16-12	55	38	41	22	27	234	<b>16F65OMXS</b>	250
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	63	50	50	28	32	500	<b>20 F65OX-S</b>	250

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

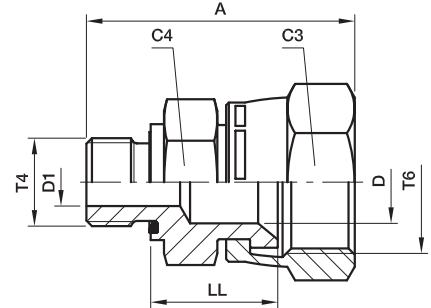
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

**K**

## F642EDMX Swivel male stud

Triple-Lok® 37° Flare female swivel end / Male BSPP thread – ED seal (ISO 1179)



Tube O.D.		Thread BSPP T4	Thread UN/UNF-2B T6	A mm	C3 mm	C4 mm	D mm	D1 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok®		PN (bar)	
mm	in.										Steel	Stainless Steel	S	SS
6	1/4	1/8-28	7/16-20	32	16	14	4	4	15	30	<b>4F642EDMXS</b>	<b>4F642EDMXSS</b>	500	350
6	1/4	1/4-19	7/16-20	37	16	19	4	4	16	30	<b>4-4F642EDMXS</b>	<b>4-4F642EDMXSS</b>	420	350
8	5/16	1/8-28	1/2-20	34	17	14	6	4	17	28	<b>5F642EDMXS</b>	<b>5F642EDMXSS</b>	420	350
8	5/16	1/4-19	1/2-20	39	17	19	6	6	18	37	<b>5-4F642EDMXS</b>	<b>5-4F642EDMXSS</b>	420	350
10	3/8	1/4-19	9/16-18	40	19	19	8	6	18	41	<b>6F642EDMXS</b>	<b>6F642EDMXSS</b>	350	350
10	3/8	3/8-19	9/16-18	40	19	22	8	8	19	57	<b>6-6F642EDMXS</b>	<b>6-6F642EDMXSS</b>	350	350
12	1/2	3/8-19	3/4-16	44	22	22	10	9	21	62	<b>8F642EDMXS</b>	<b>8F642EDMXSS</b>	350	350
12	1/2	1/4-19	3/4-16	44	22	19	10	6	21	60	<b>8-4F642EDMXS</b>	<b>8-4F642EDMXSS</b>	350	350
12	1/2	1/2-14	3/4-16	48	22	27	10	10	23	75	<b>8-8F642EDMXS</b>	<b>8-8F642EDMXSS</b>	350	350
14, 15, 16	5/8	1/2-14	7/8-14	50	27	27	12	12	23	127	<b>10F642EDMXS</b>	<b>10F642EDMXSS</b>	350	350
14, 15, 16	5/8	3/8-19	7/8-14	48	27	22	12	9	23	84	<b>10-6F642EDMXS</b>	<b>10-6F642EDMXSS</b>	350	350
18, 20	3/4	3/4-14	1 1/16-12	55	32	32	16	16	24	183	<b>12F642EDMXS</b>	<b>12F642EDMXSS</b>	350	350
18, 20	3/4	1/2-14	1 1/16-12	53	32	27	16	14	25	170	<b>12-8F642EDMXS</b>	<b>12-8F642EDMXSS</b>	350	350
25	1	1-11	1 5/16-12	61	38	41	22	22	27	296	<b>16F642EDMXS</b>	<b>16F642EDMXSS</b>	250	250
25	1	3/4-14	1 5/16-12	59	38	36	22	18	27	254	<b>16-12F642EDMXS</b>	<b>16-12F642EDMXSS</b>	250	250
28, 30, 33	1 1/4	1 1/4-11	1 5/8-12	68	50	50	28	28	32	500	<b>20F642EDMXS</b>	<b>20F642EDMXSS</b>	250	210
28, 30, 32	1 1/4	1-11	1 5/8-12	70	50	41	28	23	36	440	<b>20-16F642EDMXS</b>	<b>20-16F642EDMXSS</b>	250	210
35, 38	1 1/2	1 1/2-11	1 7/8-12	77	60	55	33	33	36	739	<b>24F642EDMXS</b>	<b>24F642EDMXSS</b>	170	140
35, 38	1 1/2	1 1/4-11	1 7/8-12	72	60	50	33	30	33	627	<b>24-20F642EDMXS</b>	<b>24-20F642EDMXSS</b>	170	140

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

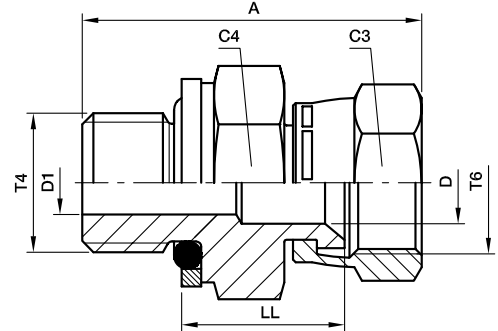
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## F64OMX Swivel male stud

Triple-Lok® 37° Flare female swivel end /  
Male BSPP thread – O-ring + retainer ring (ISO 1179)



Tube O.D. mm	in.	Thread BSPP T4	Thread UN/UNF-2B T6	A mm	C3 mm	C4 mm	D mm	D1 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok®	Triple-Lok®	PN (bar)	
											Steel	Stainless Steel	S	SS
6	1/4	1/8-28	7/16-20	32	16	17	4	4	17	30	<b>4F64OMXS</b>	<b>4F64OMXSS</b>	350	350
6	1/4	1/4-19	7/16-20	34	16	19	4	4	16	30	<b>4-4F64OMXS</b>	<b>4-4F64OMXSS</b>	350	350
8	5/16	1/8-28	1/2-20	32	17	17	6	4	17	28	<b>5F64OMXS</b>	<b>5F64OMXSS</b>	350	350
8	5/16	1/4-19	1/2-20	36	17	19	6	6	18	37	<b>5-4F64OMXS</b>	<b>5-4F64OMXSS</b>	350	350
10	3/8	1/4-19	9/16-18	37	19	19	8	6	18	41	<b>6F64OMXS</b>	<b>6F64OMXSS</b>	350	350
10	3/8	3/8-19	9/16-18	38	19	22	8	8	19	57	<b>6-6F64OMXS</b>	<b>6-6F64OMXSS</b>	350	350
12	1/2	3/8-19	3/4-16	41	22	22	10	10	21	62	<b>8F64OMXS</b>	<b>8F64OMXSS</b>	350	350
12	1/2	1/4-19	3/4-16	40	22	19	10	6	20	57	<b>8-4F64OMXS</b>	<b>8-4F64OMXSS</b>	350	350
12	1/2	1/2-14	3/4-16	46	22	30	10	10	21	75	<b>8-8F64OMXS</b>	<b>8-8F64OMXSS</b>	350	350
14, 15, 16	5/8	1/2-14	7/8-14	49	27	30	12	12	24	127	<b>10F64OMXS</b>	<b>10F64OMXSS</b>	350	350
14, 15, 16	5/8	3/8-19	7/8-14	44	27	22	12	9	22	84	<b>10-6F64OMXS</b>	<b>10-6F64OMXSS</b>	350	350
18, 20	3/4	3/4-14	1 1/16-12	52	32	36	16	16	26	183	<b>12F64OMXS</b>	<b>12F64OMXSS</b>	280	280
18, 20	3/4	1/2-14	1 1/16-12	50	32	30	16	12	24	169	<b>12-8F64OMXS</b>	<b>12-8F64OMXSS</b>	350	350
25	1	1-11	1 5/16-12	59	38	46	22	22	28	296	<b>16F64OMXS</b>	<b>16F64OMXSS</b>	250	250
25	1	3/4-14	1 5/16-12	54	38	36	22	16	27	253	<b>16-12F64OMXS</b>	<b>16-12F64OMXSS</b>	250	250
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	64	50	50	28	28	32	500	<b>20F64OMXS</b>	<b>20F64OMXSS</b>	250	175
28, 30, 32	1 1/4	1-11	1 5/8-12	62	50	46	28	22	31	420	<b>20-16F64OMXS</b>	<b>20-16F64OMXSS</b>	250	175
35, 38	1 1/2	1 1/2-11	1 7/8-12	71	60	55	33	33	36	739	<b>24F64OMXS</b>	<b>24F64OMXSS</b>	170	140
35, 38	1 1/2	1 1/4-11	1 7/8-12	70	60	50	33	28	35	627	<b>24-20F64OMXS</b>	<b>24-20F64OMXSS</b>	170	140

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

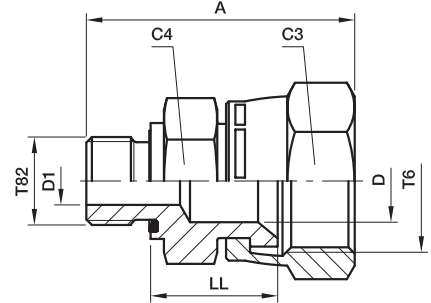
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



## F682EDMX Swivel male stud

Triple-Lok® 37° Flare female swivel end / Male metric thread – ED seal (ISO 9974)



Tube O.D. mm	Tube O.D. in.	Thread Metric T82	Thread UN/UNF-2B T6	A mm	C4 mm	C3 mm	D mm	D1 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok®		PN (bar)	
											Steel	Stainless Steel	S	SS
6	1/4	M 10×1.0	7/16-20	32	14	16	4	4	15	28	<b>4M10F682EDMXS</b>	<b>4M10F682EDMXSS</b>	500	350
8	5/16	M 12×1.5	1/2-20	38	17	17	6	6	17	32	<b>5M12F682EDMXS</b>	<b>5M12F682EDMXSS</b>	420	350
10	3/8	M 14×1.5	9/16-18	40	19	19	8	7	18	42	<b>6M14F682EDMXS</b>	<b>6M14F682EDMXSS</b>	350	350
12	1/2	M 16×1.5	3/4-16	44	22	22	10	9	21	62	<b>8M16F682EDMXS</b>	<b>8M16F682EDMXSS</b>	350	350
12	1/2	M 18×1.5	3/4-16	44	24	22	10	11	21	70	<b>8M18F682EDMXS</b>	<b>8M18F682EDMXSS</b>	350	350
14, 15, 16	5/8	M 18×1.5	7/8-14	48	24	27	12	11	23	125	<b>10M18F682EDMXS</b>	<b>10M18F682EDMXSS</b>	350	350
14, 15, 16	5/8	M 22×1.5	7/8-14	50	27	27	12	14	23	155	<b>10M22F682EDMXS</b>	<b>10M22F682EDMXSS</b>	350	350
18, 20	3/4	M 22×1.5	1 1/16-12	53	27	32	16	14	25	160	<b>12M22F682EDMXS</b>	<b>12M22F682EDMXSS</b>	350	350
18, 20	3/4	M 27×2.0	1 1/16-12	55	32	32	16	16	24	172	<b>12M27F682EDMXS</b>	<b>12M27F682EDMXSS</b>	350	350
25	1	M 33×2.0	1 5/16-12	61	41	38	22	23	27	259	<b>16M33F682EDMXS</b>	<b>16M33F682EDMXSS</b>	250	250
28, 30, 32	1 1/4	M 42×2.0	1 5/8-12	68	50	50	28	30	32	484	<b>20M42F682EDMXS</b>	<b>20M42F682EDMXSS</b>	250	210

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

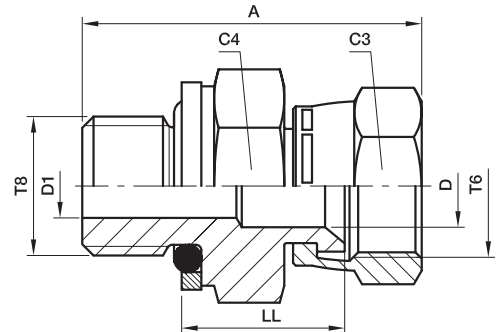
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

**F68OMX Swivel male stud**

Triple-Lok® 37° Flare female swivel end / Male metric thread O-ring + retaining ring



Tube O.D. mm	in.	Thread Metric T8	Thread UN/UNF-2B T6	A mm	C3 mm	C4 mm	D mm	D1 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	M 10×1.0	7/16-20	34	16	14	4	4	16	28	<b>4M10F68OMXS</b>	350
8	5/16	M 12×1.5	1/2-20	38	17	17	6	6	18	32	<b>5M12F68OMXS</b>	420
10	3/8	M 14×1.5	9/16-18	39	19	19	8	8	20	42	<b>6M14F68OMXS</b>	350
12	1/2	M 16×1.5	3/4-16	42	22	22	10	8	22	62	<b>8M16F68OMXS</b>	350
12	1/2	M 18×1.5	3/4-16	44	22	24	10	10	23	62	<b>8M18F68OMXS</b>	250
14, 15, 16	5/8	M 18×1.5	7/8-14	47	27	24	12	11	25	127	<b>10M18F68OMXS</b>	250
14, 15, 16	5/8	M 22×1.5	7/8-14	48	27	27	12	12	24	155	<b>10M22F68OMXS</b>	250
18, 20	3/4	M 27×2.0	1 1/16-12	52	32	32	16	16	26	172	<b>12M27F68OMXS</b>	210
25	1	M 33×2.0	1 5/16-12	57	38	41	22	22	29	259	<b>16M33F68OMXS</b>	210
28, 30, 32	1 1/4	M 42×2.0	1 5/8-12	62	50	50	28	28	33	484	<b>20M42F68OMXS</b>	210

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

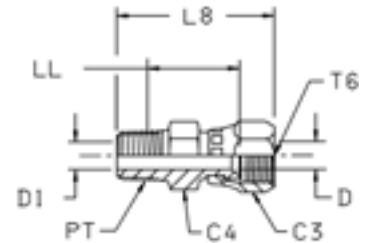
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## F6MX Swivel male stud

Triple-Lok® 37° Flare female swivel end / Male NPT\* thread (SAE 476)

\*Stainless Steel = NPT to prevent galling



Tube O.D.		Thread NPT/NPTF PT	Thread UN/UNF-2B T6	C3 mm	C4 mm	D mm	D1 mm	L8 mm	LL mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.												S	SS
6	1/4	1/8-27	7/16-20	14	14	4	4	29	16	18	<b>4 F6X-S</b>	<b>4F6MXSS</b>	420	350
6	1/4	1/4-18	7/16-20	14	14	4	4	39	22	19	<b>4-4 F6X-S</b>	<b>4-4F6MXSS</b>	420	350
8	5/16	1/8-27	1/2-20	17	14	6	5	35	16	26	<b>5F6MXS</b>	<b>5F6MXSS</b>	420	350
8	5/16	1/4-18	1/2-20	16	16	6	7	40	22	37	<b>5-4 F6X-S</b>	<b>5-4F6MXSS</b>	420	350
10	3/8	1/4-18	9/16-18	17	17	8	8	40	24	30	<b>6 F6X-S</b>	<b>6F6MXSS</b>	350	350
10	3/8	3/8-18	9/16-18	17	19	7	7	40	24	48	<b>6-6 F6X-S</b>	<b>6-6F6MXSS</b>	350	350
12	1/2	3/8-18	3/4-16	22	22	10	10	43	24	50	<b>8 F6X-S</b>	<b>8F6MXSS</b>	350	350
12	1/2	1/4-18	3/4-16	22	19	10	7	44	27	46	<b>8-4F6MXS</b>	<b>8-4F6MXSS</b>	350	350
12	1/2	1/2-14	3/4-16	22	22	10	10	50	28	69	<b>8-8F6MXS</b>	<b>8-8F6MXSS</b>	350	350
14, 15, 16	5/8	1/2-14	7/8-14	25	25	12	12	52	27	75	<b>10 F6X-S</b>	<b>10F6MXSS</b>	350	350
14, 15, 16	5/8	3/8-18	7/8-14	27	22	12	10	47	25	67	<b>10-6F6MXS</b>	<b>10-6F6MXSS</b>	350	350
18, 20	3/4	3/4-14	1 1/16-12	32	27	16	16	55	29	125	<b>12 F6X-S</b>	<b>12F6MXSS</b>	350	350
18, 20	3/4	1/2-14	1 1/16-12	32	27	16	14	55	30	124	<b>12-8 F6X-S</b>	<b>12-8F6MXSS</b>	350	350
25	1	1-11.5	1 5/16-12	38	36	22	22	64	48	204	<b>16 F6X-S</b>	<b>16F6MXSS</b>	250	250
25	1	3/4-14	1 5/16-12	38	32	22	18	59	31	169	<b>16-12 F6X-S</b>	<b>16-12F6MXSS</b>	250	250
28, 30, 32	1 1/4	1 1/4-11.5	1 5/8-12	50	46	28	28	70	38	496	<b>20 F6X-S</b>	<b>20F6MXSS</b>	210	210
35, 38	1 1/2	1 1/2-11.5	1 7/8-12	58	58	34	34	78	43	750	<b>24 F6X-S</b>	<b>24F6MXSS</b>	170	170

Order codes shown are part of our current manufacturing programme.

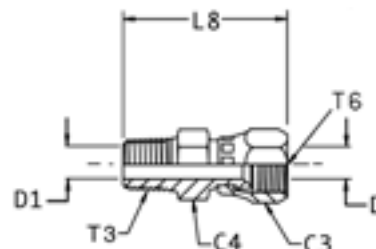
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## F63MX Swivel male stud

Triple-Lok® 37° Flare female swivel end / Male BSPT thread (ISO 7)



Tube O.D. mm	in.	Thread BSPT T3	Thread UN/UNF-2B T6	C3 mm	C4 mm	D mm	D1 mm	L8 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
												S	SS
6	1/4	1/8-28	7/16-20	16	13	4	4	34	18	<b>4F63MXS</b>	<b>4F63MXSS</b>	315	315
6	1/4	1/4-19	7/16-20	16	14	4	4	38	19	<b>4-4F63MXS</b>	<b>4-4F63MXSS</b>	315	315
8	5/16	1/4-19	1/2-20	17	14	6	6	39	37	<b>5-4F63MXS</b>	<b>5-4F63MXSS</b>	315	315
10	3/8	1/4-19	9/16-18	19	14	8	8	40	30	<b>6F63MXS</b>	<b>6F63MXSS</b>	315	315
10	3/8	3/8-19	9/16-18	19	19	8	8	41	48	<b>6-6F63MXS</b>	<b>6-6F63MXSS</b>	315	315
12	1/2	3/8-19	3/4-16	22	19	10	10	43	50	<b>8F63MXS</b>	<b>8F63MXSS</b>	315	315
12	1/2	1/4-19	3/4-16	22	19	10	7	41	46	<b>8-4F63MXS</b>	<b>8-4F63MXSS</b>	315	315
14, 15, 16	5/8	1/2-14	7/8-14	27	22	12	12	51	75	<b>10F63MXS</b>	<b>10F63MXSS</b>	315	315
14, 15, 16	5/8	3/8-19	7/8-14	27	22	12	10	46	67	<b>10-6F63MXS</b>	<b>10-6F63MXSS</b>	315	315
18, 20	3/4	3/4-14	1 1/16-12	32	30	16	16	55	125	<b>12F63MXS</b>	<b>12F63MXSS</b>	160	160
18, 20	3/4	1/2-14	1 1/16-12	32	27	16	14	55	120	<b>12-8F63MXS</b>	<b>12-8F63MXSS</b>	315	315
25	1	1-11	1 5/16-12	38	36	22	22	64	204	<b>16F63MXS</b>	<b>16F63MXSS</b>	160	160
25	1	3/4-14	1 5/16-12	38	32	22	18	59	165	<b>16-12F63MXS</b>	<b>16-12F63MXSS</b>	160	160
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	50	46	28	28	69	496	<b>20F63MXS</b>	<b>20F63MXSS</b>	160	160

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

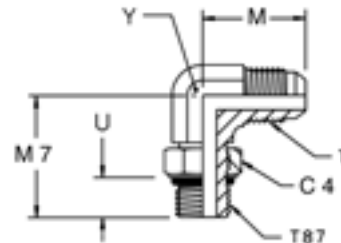
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



## C87OMX Male stud elbow

Triple-Lok® 37° Flare end /  
Adjustable metric thread – O-ring (ISO 6149)



Tube O.D.		Thread Metric T87	Thread UN/UNF-2A T	C4 mm	M mm	M7 mm	U mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.											S	SS
6	1/4	M 10×1.0	7/16-20	14	23	27	9	11	17	<b>4M10C87OMXS</b>	<b>4M10C87OMXSS</b>	420	350
6	1/4	M 12×1.5	7/16-20	17	24	31	11	13	20	<b>4M12C87OMXS</b>	<b>4M12C87OMXSS</b>	420	350
8	5/16	M 10×1.0	1/2-20	14	24	26	9	13	22	<b>5M10C87OMXS</b>	<b>5M10C87OMXSS</b>	420	350
8	5/16	M 12×1.5	1/2-20	17	24	31	11	13	25	<b>5M12C87OMXS</b>	<b>5M12C87OMXSS</b>	420	350
10	3/8	M 14×1.5	9/16-18	19	27	34	11	14	31	<b>6M14C87OMXS</b>	<b>6M14C87OMXSS</b>	420	350
10	3/8	M 16×1.5	9/16-18	22	29	38	12	19	55	<b>6M16C87OMXS</b>	<b>6M16C87OMXSS</b>	350	350
10	1/2	M 16×1.5	3/4-16	22	32	38	12	19	65	<b>8M16C87OMXS</b>	<b>8M16C87OMXSS</b>	350	350
12	1/2	M 18×1.5	3/4-16	24	32	38	13	19	66	<b>8M18C87OMXS</b>	<b>8M18C87OMXSS</b>	350	350
14, 15, 16	5/8	M 18×1.5	7/8-14	24	37	42	13	22	99	<b>10M18C87OMXS</b>	<b>10M18C87OMXSS</b>	350	350
14, 15, 16	5/8	M 22×1.5	7/8-14	27	37	43	13	22	99	<b>10M22C87OMXS</b>	<b>10M22C87OMXSS</b>	350	350
18, 20	3/4	M 22×1.5	1 1/16-12	27	42	45	13	27	164	<b>12M22C87OMXS</b>	<b>12M22C87OMXSS</b>	350	350
18, 20	3/4	M 27×2.0	1 1/16-12	32	42	50	16	27	173	<b>12M27C87OMXS</b>	<b>12M27C87OMXSS</b>	350	350
25	1	M 27×2.0	1 5/16-12	32	46	53	16	33	287	<b>16M27C87OMXS</b>	<b>16M27C87OMXSS</b>	280	280
25	1	M 33×2.0	1 5/16-12	41	46	53	16	33	287	<b>16M33C87OMXS</b>	<b>16M33C87OMXSS</b>	280	280
28, 30, 32	1 1/4	M 42×2.0	1 5/8-12	50	52	58	16	41	575	<b>20M42C87OMXS</b>	<b>20M42C87OMXSS</b>	210	210
35, 38	1 1/2	M 48×2.0	1 7/8-12	55	59	64	17	48	874	<b>24M48C87OMXS</b>	<b>24M48C87OMXSS</b>	140	140

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

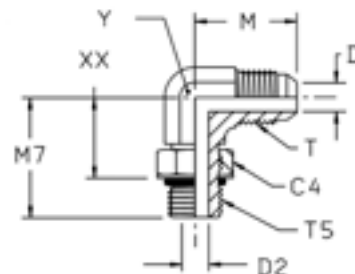
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

### C5OMX Male stud elbow

Triple-Lok® 37° Flare end /  
Adjustable UN/UNF thread – O-ring (ISO 11926)  
SAE 070220 MS51527



Tube O.D.	Thread UN/UNF-2A T5	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M7 mm	XX mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)		
													S	SS	
6	1/8	5/16-24	5/16-24	11	2	2	20	24	15	11	25	2 C50X-S		350	—
	3/16	3/8-24	3/8-24	13	3	3	21	24	16	11	30	3 C50X-S		350	—
	1/4	7/16-20	7/16-20	14	4	4	23	26	16	11	37	4C50MXS	4C50MXSS	420	350
	5/16	9/16-18	7/16-20	17	4	8	27	32	21	14	43	4-6 C50X-S	4-6C50MXSS	420	350
8	1/2	1/2-20	1/2-20	17	6	6	24	29	18	13	47	5C50MXS	5C50MXSS	420	350
	5/16	7/16-20	1/2-20	14	6	5	24	29	19	14	55	5-4 C50X-S	5-4C50MXSS	420	350
	5/16	9/16-18	1/2-20	17	6	8	24	32	20	14	62	5-6 C50X-S	5-6C50MXSS	420	350
	3/8	9/16-18	9/16-18	17	8	8	27	32	21	14	63	6C50MXS	6C50MXSS	420	350
10	3/8	7/16-20	9/16-18	14	8	4	27	30	20	14	99	6-4 C50X-S	6-4C50MXSS	420	350
	3/8	1/2-20	9/16-18	16	8	6	27	30	18	14	99	6-5 C50X-S	6-5C50MXSS	420	350
	3/8	3/4-16	9/16-18	22	8	10	29	37	24	19	125	6-8C50MXS	6-8C50MXSS	420	350
	3/8	7/8-14	9/16-18	25	8	12	31	43	32	22	145	6-10 C50X-S	6-10C50MXSS	350	350
12	1/2	3/4-16	3/4-16	22	10	10	32	37	24	19	160	8C50MXS	8C50MXSS	420	350
	1/2	7/16-20	3/4-16	14	10	5	32	32	22	19	150	8-4 C50X-S	8-4C50MXSS	420	350
	1/2	9/16-18	3/4-16	17	10	8	32	34	23	19	130	8-6 C50X-S	8-6C50MXSS	420	350
	1/2	7/8-14	3/4-16	27	10	13	34	43	29	22	180	8-10C50MXS	8-10C50MXSS	350	350
14, 15, 16	5/8	1 1/16-12	3/4-16	32	10	16	36	49	33	27	210	8-12C50MXS	8-12C50MXSS	350	350
	5/8	1 5/16-12	3/4-16	41	10	22	39	52	36	33	380	8-16 C50X-S	8-16C50MXSS	280	280
	5/8	7/8-14	7/8-14	27	12	13	37	43	29	22	186	10C50MXS	10C50MXSS	350	350
	5/8	9/16-18	7/8-14	18	13	8	37	36	25	22	130	10-6 C50X-S	10-6C50MXSS	350	350
14, 15, 16	5/8	3/4-16	7/8-14	22	12	10	37	39	27	22	157	10-8 C50X-S	10-8C50MXSS	350	350
	5/8	1 1/16-12	7/8-14	32	12	16	39	49	33	27	331	10-12 C50X-S	10-12C50MXSS	350	350
	5/8	1 5/16-12	7/8-14	41	13	22	42	52	36	33	400	10-16 C50X-S	10-16C50MXSS	280	280
	3/4	1 1/16-12	1 1/16-12	32	16	16	42	49	33	27	301	12C50MXS	12C50MXSS	350	350
18, 20	3/4	3/4-16	1 1/16-12	22	16	10	42	41	30	27	297	12-8 C50X-S	12-8C50MXSS	350	350
	3/4	7/8-14	1 1/16-12	27	16	13	42	45	31	27	297	12-10C50MXS	12-10C50MXSS	350	350
	3/4	1 3/16-12	1 1/16-12	35	16	18	45	51	34	33	350	12-14 C50X-S		280	—
	3/4	1 5/16-12	1 1/16-12	38	16	22	46	52	36	33	421	12-16 C50X-S	12-16C50MXSS	280	280
22	7/8	1 3/16-12	1 3/16-12	35	18	18	44	51	34	33	417	14 C50X-S		280	—
	1	1 5/16-12	1 5/16-12	41	22	22	46	52	36	33	426	16C50MXS	16C50MXSS	280	280
	1	1 1/16-12	1 5/16-12	32	22	16	46	52	36	33	418	16-12 C50X-S	16-12C50MXSS	280	280
	1	1 3/16-12	1 5/16-12	35	22	18	46	53	36	33	450	16-14 C50X-S		280	—
25	1	1 5/8-12	1 5/16-12	48	22	28	51	57	41	41	546	16-20 C50X-S	16-20C50MXSS	280	210
	1	1 7/8-12	1 5/16-12	55	22	34	55	61	44	48	600	16-24 C50X-S	16-24C50MXSS	210	210
	1 1/4	1 5/8-12	1 5/8-12	50	28	28	52	57	41	41	674	20 C50X-S	20C50MXSS	280	210
	1 1/4	1 5/16-12	1 5/8-12	41	28	22	52	57	41	41	650	20-16 C50X-S	20-16C50MXSS	280	280
28, 30, 32	1 1/4	1 7/8-12	1 5/8-12	55	28	34	56	61	44	48	920	20-24 C50X-S	20-24C50MXSS	210	210
	1 1/2	1 7/8-12	1 7/8-12	55	33	33	59	61	44	48	917	24 C50X-S	24C50MXSS	210	140
	1 1/2	1 5/8-12	1 7/8-12	48	34	28	59	61	44	48	920	24-20 C50X-S	24-20C50MXSS	210	140

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

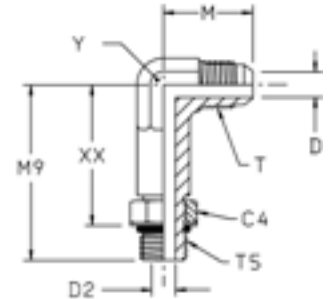
$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



## CC50X Extended male stud elbow

Triple-Lok® 37° Flare end / Male UNF thread – O-ring (ISO 11926)



Tube O.D.		Thread UN/UNF-2A T5	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M9 mm	XX mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
mm	in.												
6	1/4	7/16-20	7/16-20	14	4	4	25	44	34	14	44	<b>4 CC50X-S</b>	420
10	3/8	9/16-18	9/16-18	18	8	8	27	53	42	14	51	<b>6 CC50X-S</b>	420
12	1/2	3/4-16	3/4-16	22	10	10	32	64	51	22	146	<b>8 CC50X-S</b>	420
14, 15, 16	5/8	7/8-14	7/8-14	25	12	12	37	73	59	22	169	<b>10 CC50X-S</b>	350
18, 20	3/4	1 1/16-12	1 1/16-12	32	16	16	42	85	68	27	291	<b>12 CC50X-S</b>	350
25	1	1 5/16-12	1 5/16-12	38	21	21	46	95	78	33	481	<b>16 CC50X-S</b>	280

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

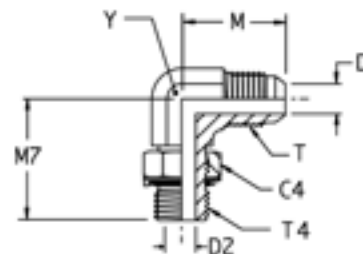
Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

## C4OMX Male stud elbow

Triple-Lok® 37° Flare end / Adjustable BSPP thread O-ring + retaining ring (ISO 1179)



Tube O.D.	in.	Thread BSPP T4	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M7 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok®		PN (bar)	
											Steel	Stainless Steel	S	SS
6	1/4	1/8-28	7/16-20	14	4	4	23	27	11	37	<b>4C4OMXS</b>	<b>4C4OMXS</b>	250	250
6	1/4	1/4-19	7/16-20	19	4	8	27	32	14	43	<b>4-4C4OMXS</b>	<b>4-4C4OMXS</b>	250	200
6	1/4	3/8-19	7/16-20	22	4	10	29	37	19	50	<b>4-6C4OMXS</b>	<b>4-6C4OMXS</b>	250	200
8	5/16	1/8-28	1/2-20	14	6	4	24	27	13	47	<b>5C4OMXS</b>	<b>5C4OMXS</b>	250	250
8	5/16	1/4-19	1/2-20	19	6	8	27	32	14	55	<b>5-4C4OMXS</b>	<b>5-4C4OMXS</b>	250	200
8	5/16	3/8-19	1/2-20	22	6	10	29	37	19	57	<b>5-6C4OMXS</b>	<b>5-6C4OMXS</b>	250	200
10	3/8	1/4-19	9/16-18	19	8	8	27	32	14	61	<b>6C4OMXS</b>	<b>6C4OMXS</b>	250	200
10	3/8	1/8-28	9/16-18	14	8	4	27	28	14	52	<b>6-2C4OMXS</b>	<b>6-2C4OMXS</b>	250	200
10	3/8	3/8-19	9/16-18	22	8	10	29	37	19	95	<b>6-6C4OMXS</b>	<b>6-6C4OMXS</b>	250	200
10	3/8	1/2-14	9/16-18	27	8	12	31	43	22	80	<b>6-8C4OMXS</b>	<b>6-8C4OMXS</b>	250	200
12	1/2	3/8-19	3/4-16	22	10	10	32	37	19	102	<b>8C4OMXS</b>	<b>8C4OMXS</b>	250	200
12	1/2	1/4-19	3/4-16	19	10	8	32	37	19	91	<b>8-4C4OMXS</b>	<b>8-4C4OMXS</b>	250	200
12	1/2	1/2-14	3/4-16	27	10	12	34	43	22	155	<b>8-8C4OMXS</b>	<b>8-8C4OMXS</b>	250	200
12	1/2	3/4-14	3/4-16	36	10	16	36	50	27	205	<b>8-12C4OMXS</b>	<b>8-12C4OMXS</b>	250	200
14, 15, 16	5/8	1/2-14	7/8-14	27	12	12	37	43	22	164	<b>10C4OMXS</b>	<b>10C4OMXS</b>	250	200
14, 15, 16	5/8	3/8-19	7/8-14	22	12	10	37	36	22	190	<b>10-6C4OMXS</b>	<b>10-6C4OMXS</b>	250	200
14, 15, 16	5/8	3/4-14	7/8-14	36	12	16	39	50	27	217	<b>10-12C4OMXS</b>	<b>10-12C4OMXS</b>	250	200
18, 20	3/4	3/4-14	1 1/16-12	36	16	16	42	50	27	295	<b>12C4OMXS</b>	<b>12C4OMXS</b>	250	200
18, 20	3/4	1/2-14	1 1/16-12	27	16	12	42	50	27	245	<b>12-8C4OMXS</b>	<b>12-8C4OMXS</b>	250	200
18, 20	3/4	1-11	1 1/16-12	41	16	22	45	52	33	317	<b>12-16C4OMXS</b>	<b>12-16C4OMXS</b>	250	200
25	1	1-11	1 5/16-12	41	22	22	46	52	33	425	<b>16C4OMXS</b>	<b>16C4OMXS</b>	250	200
25	1	3/4-14	1 5/16-12	36	22	16	46	47	33	405	<b>16-12C4OMXS</b>	<b>16-12C4OMXS</b>	250	200
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	50	28	28	52	57	41	697	<b>20C4OMXS</b>	<b>20C4OMXS</b>	210	160
28, 30, 32	1 1/4	1-11	1 5/8-12	41	28	22	52	57	41	650	<b>20-16C4OMXS</b>	<b>20-16C4OMXS</b>	250	160
35, 38	1 1/2	1 1/2-11	1 7/8-12	55	33	33	59	61	48	953	<b>24C4OMXS</b>	<b>24C4OMXS</b>	140	140
35, 38	1 1/2	1 1/4-11	1 7/8-12	50	33	28	59	61	48	964	<b>24-20C4OMXS</b>	<b>24-20C4OMXS</b>	210	140

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

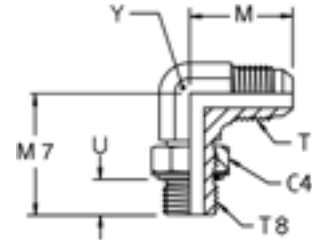
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

**K**

## C8OMX Male stud elbow

Triple-Lok® 37° Flare end / Male metric thread – O-ring + retainer ring



Tube O.D.		Thread Metric T8	Thread UN/UNF-2A T	M mm	Y mm	U mm	C4 mm	M7 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
mm	in.										
6	1/4	M 10×1.0	7/16-20	23	11	8	14	27	23	<b>4M10C8OMXS</b>	250
6	1/4	M 12×1.5	7/16-20	24	13	10	17	31	28	<b>4M12C8OMXS</b>	250
8	5/16	M 10×1.0	1/2-20	24	13	8	13	26	29	<b>5M10C8OMXS</b>	250
8	5/16	M 12×1.5	1/2-20	24	13	10	17	31	29	<b>5M12C8OMXS</b>	250
10	3/8	M 14×1.5	9/16-18	27	14	10	17	34	36	<b>6M14C8OMXS</b>	250
10	3/8	M 16×1.5	9/16-18	29	19	10	19	38	74	<b>6M16C8OMXS</b>	250
12	1/2	M 16×1.5	3/4-16	32	19	10	19	38	77	<b>8M16C8OMXS</b>	250
12	1/2	M 18×1.5	3/4-16	32	19	11	22	38	78	<b>8M18C8OMXS</b>	250
14, 15, 16	5/8	M 18×1.5	7/8-14	37	22	11	22	42	104	<b>10M18C8OMXS</b>	250
14, 15, 16	5/8	M 20×1.5	7/8-14	37	22	11	24	41	110	<b>10M20C8OMXS</b>	250
14, 15, 16	5/8	M 22×1.5	7/8-14	37	22	12	27	43	119	<b>10M22C8OMXS</b>	250
18, 20	3/4	M 22×1.5	1 1/16-12	42	27	12	27	45	198	<b>12M22C8OMXS</b>	250
18, 20	3/4	M 27×2.0	1 1/16-12	42	27	14	32	50	208	<b>12M27C8OMXS</b>	175
25	1	M 27×2.0	1 5/16-12	46	33	14	32	53	333	<b>16M27C8OMXS</b>	175
25	1	M 33×2.0	1 5/16-12	46	33	14	38	53	333	<b>16M33C8OMXS</b>	140
28, 30, 32	1 1/4	M 42×2.0	1 5/8-12	52	41	14	50	58	575	<b>20M42C8OMXS</b>	140
35, 38	1 1/2	M 48×2.0	1 7/8-12	59	48	15	55	64	872	<b>24M48C8OMXS</b>	140

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

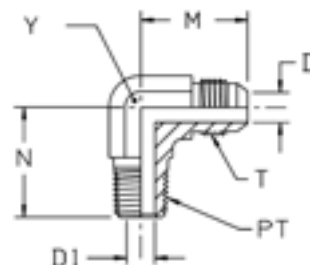
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

## CMTX Male stud elbow

Triple-Lok® 37° Flare end / Male NPTF\* thread (SAE 476)

SAE 070202 MS51504

\*Stainless Steel = NPT to prevent galling



Tube O.D.		Thread NPT/NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	M mm	N mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.											S	SS
6	1/8	1/8-27	5/16-24	2	5	20	18	8	12	<b>2 CTX-S</b>		420	—
	3/16	1/8-27	3/8-24	3	5	21	18	10	15	<b>3 CTX-S</b>		420	—
	1/4	1/8-27	7/16-20	4	5	23	20	11	23	<b>4CMTXS</b>	<b>4CMTXSS</b>	420	350
	1/4	1/4-18	7/16-20	4	7	27	28	14	42	<b>4-4CMTXS</b>	<b>4-4CMTXSS</b>	420	350
	1/4	3/8-18	7/16-20	4	10	29	31	19	26	<b>4-6 CTX-S</b>	<b>4-6CMTXSS</b>	420	350
6	1/4	1/2-14	7/16-20	4	14	31	37	22	30	<b>4-8 CTX-S</b>	<b>4-8CMTXSS</b>	420	350
8	5/16	1/8-27	1/2-20	6	5	24	20	13	29	<b>5CMTXS</b>	<b>5CMTXSS</b>	420	350
8	5/16	1/4-18	1/2-20	6	7	27	28	14	42	<b>5-4 CTX-S</b>	<b>5-4CMTXSS</b>	420	350
8	5/16	3/8-18	1/2-20	6	10	29	31	19	45	<b>5-6 CTX-S</b>	<b>5-6CMTXSS</b>	420	350
10	3/8	1/4-18	9/16-18	8	7	27	28	14	45	<b>6CMTXS</b>	<b>6CMTXSS</b>	420	350
10	3/8	1/8-27	9/16-18	8	5	27	23	14	55	<b>6-2 CTX-S</b>	<b>6-2CMTXSS</b>	420	350
10	3/8	3/8-18	9/16-18	8	10	29	31	19	76	<b>6-6CMTXS</b>	<b>6-6CMTXSS</b>	420	350
10	3/8	1/2-14	9/16-18	8	14	31	37	22	117	<b>6-8CMTXS</b>	<b>6-8CMTXSS</b>	420	350
12	1/2	3/8-18	3/4-16	10	10	32	31	19	86	<b>8CMTXS</b>	<b>8CMTXSS</b>	420	350
12	1/2	1/4-18	3/4-16	10	7	32	31	19	82	<b>8-4CMTXS</b>	<b>8-4CMTXSS</b>	420	350
12	1/2	1/2-14	3/4-16	10	14	34	37	22	125	<b>8-8CMTXS</b>	<b>8-8CMTXSS</b>	420	350
12	1/2	3/4-14	3/4-16	10	18	36	40	27	190	<b>8-12 CTX-S</b>	<b>8-12CMTXSS</b>	280	280
14, 15,16	5/8	1/2-14	7/8-14	12	14	37	37	22	129	<b>10CMTXS</b>	<b>10CMTXSS</b>	350	350
14, 15,16	5/8	3/8-18	7/8-14	12	10	37	33	22	127	<b>10-6 CTX-S</b>	<b>10-6CMTXSS</b>	350	350
14, 15,16	5/8	3/4-14	7/8-14	12	18	39	40	27	192	<b>10-12CMTXS</b>	<b>10-12CMTXSS</b>	280	280
18, 20	3/4	3/4-14	1 1/16-12	16	18	42	40	27	198	<b>12 CTX-S</b>	<b>12CMTXSS</b>	280	280
18, 20	3/4	1/2-14	1 1/16-12	16	14	42	40	27	204	<b>12-8 CTX-S</b>	<b>12-8CMTXSS</b>	350	350
18, 20	3/4	1-11.5	1 1/16-12	16	24	45	50	33	318	<b>12-16CMTXS</b>	<b>12-16CMTXSS</b>	210	210
22	7/8	3/4-14	1 3/16-12	18	18	46	43	31	260	<b>14 CTX-S</b>	<b>14CMTXSS</b>	280	245
25	1	1-11.5	1 5/16-12	22	24	46	50	33	328	<b>16 CTX-S</b>	<b>16CMTXSS</b>	210	210
25	1	3/4-14	1 5/16-12	22	18	46	45	33	318	<b>16-12 CTX-S</b>	<b>16-12CMTXSS</b>	280	280
25	1	1 1/4-11.5	1 5/16-12	22	32	54	61	45	477	<b>16-20 CTX-S</b>	<b>16-20CMTXSS</b>	170	170
28, 30, 32	1 1/4	1 1/4-11.5	1 5/8-12	28	32	52	61	45	549	<b>20 CTX-S</b>	<b>20CMTXSS</b>	170	170
28, 30, 32	1 1/4	1-11.5	1 5/8-12	28	24	52	60	41	536	<b>20-16CMTXS</b>	<b>20-16CMTXSS</b>	210	210
28, 30, 32	1 1/4	1 1/2-11.5	1 7/8-12	28	38	56	67	48	630	<b>20-24 CTX-S</b>	<b>20-24CMTXSS</b>	170	140
35, 38	1 1/2	1 1/2-11.5	1 7/8-12	33	38	59	67	48	747	<b>24 CTX-S</b>	<b>24CMTXSS</b>	170	140
35, 38	1 1/2	1 1/4-11.5	1 7/8-12	33	32	59	57	48	715	<b>24-20 CTX-S</b>	<b>24-20CMTXSS</b>	170	140
	2	2-11.5	2 1/2-12	45	49	78	76	64	1644	<b>32 CTX-S</b>		140	—
	2	1 1/2-11.5	2 1/2-12	45	38	78	75	66	1450	<b>32-24 CTX-S</b>		140	—

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

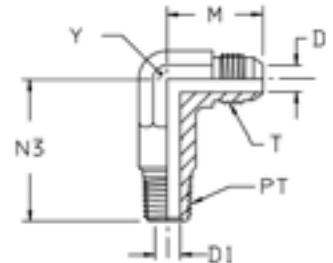


## CCTX Extended male stud elbow

Triple-Lok® 37° Flare end / Male NPTF\* thread (SAE 476)

SAE 070202 MS51504

\*Stainless Steel = NPT to prevent galling



Tube O.D.		Thread NPT/NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	M mm	N3 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.											S	SS
6	1/4	1/8-27	7/16-20	5	5	23	30	11	28	<b>4 CCTX-S</b>	<b>4 CCTX-SS</b>	420	350
6	1/4	1/4-18	7/16-20	5	7	27	37	14	28	<b>4-4 CCTX-S</b>	<b>4-4 CCTX-SS</b>	420	350
8	5/16	1/8-27	1/2-20	6	5	24	30	14	35	<b>5 CCTX-S</b>	<b>5 CCTX-SS</b>	420	350
10	3/8	1/4-16	9/16-18	8	7	27	40	14	58	<b>6 CCTX-S</b>	<b>6 CCTX-SS</b>	420	350
10	3/8	3/8-18	9/16-18	8	11	29	46	19	58	<b>6-6 CCTX-S</b>	<b>6-6 CCTX-SS</b>	420	350
12	1/2	3/8-18	3/4-16	10	10	32	45	19	111	<b>8 CCTX-S</b>	<b>8 CCTX-SS</b>	420	350
12	1/2	1/2-14	3/4-16	10	14	34	55	22	136	<b>8-8 CCTX-S</b>	<b>8-8 CCTX-SS</b>	420	350
14, 15, 16	5/8	1/2-14	7/8-14	13	14	37	55	22	183	<b>10 CCTX-S</b>	<b>10 CCTX-SS</b>	350	350
18, 20	3/4	3/4-14	1 1/16-12	16	18	42	61	27	253	<b>12 CCTX-S</b>	<b>12 CCTX-SS</b>	280	280
25	1	1-11.5	1 5/16-12	21	24	46	76	33	435	<b>16 CCTX-S</b>	<b>16 CCTX-SS</b>	210	210
28, 30, 32	1 1/4	1 1/4-11.5	1 5/8-12	28	32	52	93	41	1021	<b>20 CCTX-S</b>	<b>20 CCTX-SS</b>	170	170

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

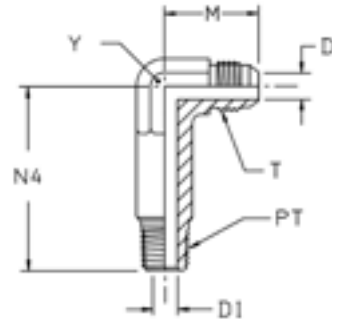
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## CCCTX Extended male stud elbow

Triple-Lok® 37° Flare end / Male NPTF\* thread (SAE 476)  
SAE 071602

\*Stainless Steel = NPT to prevent galling



Tube O.D.		Thread NPT/NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	M mm	N4 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
mm	in.										
6	1/4	1/8-27	7/16-20	5	5	23	40	11	32	<b>4 CCCTX-S</b>	420
6	1/4	1/4-18	7/16-20	5	7	27	52	14	32	<b>4-4 CCCTX-S</b>	420
8	5/16	1/8-27	1/2-20	6	5	25	41	14	39	<b>5 CCCTX-S</b>	420
10	3/8	1/4-16	9/16-18	8	7	27	53	14	72	<b>6 CCCTX-S</b>	420
10	3/8	3/8-18	9/16-18	8	11	29	59	19	72	<b>6-6 CCCTX-S</b>	420
12	1/2	3/8-18	3/4-16	10	10	32	59	19	130	<b>8 CCCTX-S</b>	420
12	1/2	1/2-14	3/4-16	10	14	34	72	22	163	<b>8-8 CCCTX-S</b>	420
14, 15, 16	5/8	1/2-14	7/8-14	13	14	37	72	22	212	<b>10 CCCTX-S</b>	350
18, 20	3/4	3/4-14	1 1/16-12	16	18	42	82	27	356	<b>12 CCCTX-S</b>	280
25	1	1-11.5	1 5/16-12	21	24	46	101	33	520	<b>16 CCCTX-S</b>	210
28, 30, 32	1 1/4	1 1/4-11.5	1 5/8-12	28	32	52	126	41	1196	<b>20 CCCTX-S</b>	170

Order codes shown are part of our current manufacturing programme.

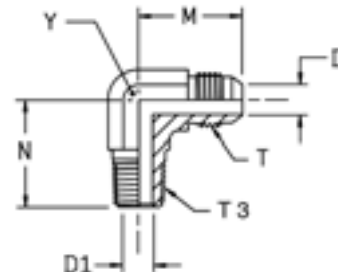
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

**K**

## C3MX Male stud elbow

Triple-Lok® 37° Flare end / Male BSPT thread (ISO 7)



Tube O.D.		Thread BSPT T3	Thread UN/UNF-2A T	D mm	D1 mm	M mm	N mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.											S	SS
6	1/4	1/8-28	7/16-20	4	5	23	20	11	23	<b>4C3MXS</b>	<b>4C3MXSS</b>	315	315
6	1/4	1/4-19	7/16-20	4	7	27	28	14	42	<b>4-4C3MXS</b>	<b>4-4C3MXSS</b>	315	315
8	5/16	1/8-28	1/2-20	6	5	24	20	13	29	<b>5C3MXS</b>	<b>5C3MXSS</b>	315	315
8	5/16	1/4-19	1/2-20	6	7	27	28	14	42	<b>5-4C3MXS</b>	<b>5-4C3MXSS</b>	315	315
10	3/8	1/4-19	9/16-18	8	7	27	28	14	45	<b>6C3MXS</b>	<b>6C3MXSS</b>	315	315
10	3/8	3/8-19	9/16-18	8	10	29	31	19	76	<b>6-6C3MXS</b>	<b>6-6C3MXSS</b>	315	315
10	3/8	1/2-14	9/16-18	8	14	31	37	22	117	<b>6-8C3MXS</b>	<b>6-8C3MXSS</b>	315	315
12	1/2	3/8-19	3/4-16	10	10	32	31	19	86	<b>8C3MXS</b>	<b>8C3MXSS</b>	315	315
12	1/2	1/4-19	3/4-16	10	7	32	31	19	82	<b>8-4C3MXS</b>	<b>8-4C3MXSS</b>	315	315
12	1/2	1/2-14	3/4-16	10	14	34	37	22	125	<b>8-8C3MXS</b>	<b>8-8C3MXSS</b>	315	315
14, 15, 16	5/8	1/2-14	7/8-14	12	14	37	37	22	129	<b>10C3MXS</b>	<b>10C3MXSS</b>	315	315
14, 15, 16	5/8	3/8-19	7/8-14	12	10	37	33	22	127	<b>10-6C3MXS</b>	<b>10-6C3MXSS</b>	315	315
14, 15, 16	5/8	3/4-14	7/8-14	12	18	39	40	27	192	<b>10-12C3MXS</b>	<b>10-12C3MXSS</b>	160	160
18, 20	3/4	3/4-14	1 1/16-12	16	18	42	40	27	198	<b>12C3MXS</b>	<b>12C3MXSS</b>	160	160
18, 20	3/4	1/2-14	1 1/16-12	16	14	42	40	27	204	<b>12-8C3MXS</b>	<b>12-8C3MXSS</b>	315	315
18, 20	3/4	1-11	1 1/16-12	16	24	45	50	33	251	<b>12-16C3MXS</b>	<b>12-16C3MXSS</b>	160	160
25	1	1-11	1 5/16-12	22	24	46	50	33	328	<b>16C3MXS</b>	<b>16C3MXSS</b>	160	160
25	1	3/4-14	1 5/16-12	22	18	46	45	33	318	<b>16-12C3MXS</b>	<b>16-12C3MXSS</b>	160	160
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	28	32	52	61	41	549	<b>20C3MXS</b>	<b>20C3MXSS</b>	160	160
28, 30, 32	1 1/4	1-11	1 5/8-12	28	24	52	60	41	536	<b>20-16C3MXS</b>	<b>20-16C3MXSS</b>	160	160
35, 38	1 1/2	1 1/2-11	1 7/8-12	33	38	59	67	48	747	<b>24C3MXS</b>	<b>24C3MXSS</b>	160	140

Order codes shown are part of our current manufacturing programme.

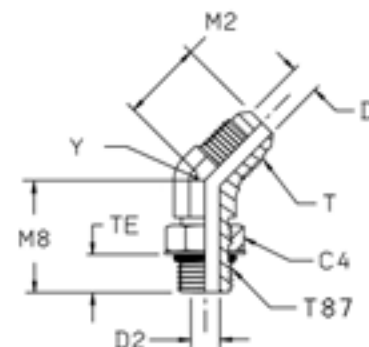
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

**V87OMX 45° Male stud elbow**

Triple-Lok® 37° Flare end / Male metric thread O-ring (ISO 6149)



Tube O.D. mm	Tube O.D. in.	Thread Metric T87	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M2 mm	M8 mm	TE mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	M 10×1.0	7/16-20	14	4	5	18	27	9	11	17	<b>4M10V87OMXS</b>	420
4	1/4	M 12×1.0	7/16-20	17	4	6	20	28	11	13	25	<b>4M12V87OMXS</b>	420
8	5/16	M 10×1.0	1/2-20	14	6	5	18	27	9	13	31	<b>5M10V87OMXS</b>	420
8	5/16	M 12×1.5	1/2-20	17	6	6	20	28	11	13	25	<b>5M12V87OMXS</b>	420
10	3/8	M 14×1.5	9/16-18	19	8	8	21	28	11	14	31	<b>6M14V87OMXS</b>	420
10	3/8	M 16×1.5	9/16-18	22	8	9	22	32	12	19	58	<b>6M16V87OMXS</b>	350
10	3/8	M 18×1.5	9/16-18	24	8	11	22	33	13	19	66	<b>6M18V87OMXS</b>	350
12	1/2	M 16×1.5	3/4-16	22	10	9	25	33	12	19	65	<b>8M16V87OMXS</b>	350
12	1/2	M 18×1.5	3/4-16	24	10	11	25	33	13	19	66	<b>8M18V87OMXS</b>	350
14, 15, 16	5/8	M 18×1.5	7/8-14	24	12	11	28	37	13	22	99	<b>10M18V87OMXS</b>	350
14, 15, 16	5/8	M 22×1.5	7/8-14	27	12	14	28	38	13	22	99	<b>10M22V87OMXS</b>	350
18, 20	3/4	M 22×1.5	1 1/16-12	27	16	14	33	40	13	27	164	<b>12M22V87OMXS</b>	350
18, 20	3/4	M 27×2.0	1 1/16-12	32	16	18	33	46	16	27	173	<b>12M27V87OMXS</b>	350
25	1	M 33×2.0	1 5/16-12	41	22	23	37	46	16	33	287	<b>16M33V87OMXS</b>	280

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

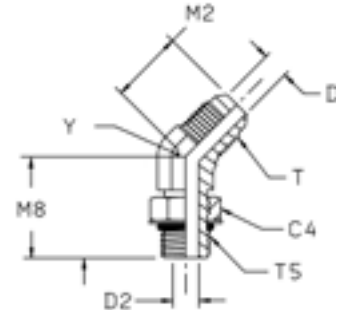
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$



**V5OMX 45° Male stud elbow**

Triple-Lok® 37° Flare end / Male UNF thread O-ring (ISO 11926)  
 SAE 070320 MS51528



Tube O.D.		Thread UN/UNF-2A T5	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M2 mm	M8 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.												S	SS
6	1/4	7/16-20	7/16-20	14	4	5	18	27	11	34	<b>4 V5OX-S</b>	<b>4 V5OX-SS</b>	420	350
8	5/16	1/2-20	1/2-20	16	6	6	20	27	13	42	<b>5 V5OX-S</b>	<b>5 V5OX-SS</b>	420	350
10	3/8	9/16-18	9/16-18	17	8	8	21	29	14	52	<b>6 V5OX-S</b>	<b>6 V5OX-SS</b>	420	350
10	3/8	3/4-16	9/16-19	22	8	10	22	33	19	104	<b>6-8 V5OX-S</b>	<b>6-8 V5OX-SS</b>	420	350
12	1/2	3/4-16	3/4-16	22	10	10	25	33	19	104	<b>8 V5OX-S</b>	<b>8 V5OX-SS</b>	420	350
12	1/2	9/16-18	3/4-16	17	10	8	25	30	19	98	<b>8-6 V5OX-S</b>	<b>8-6 V5OX-SS</b>	420	350
12	1/2	7/8-14	3/4-16	25	10	12	25	39	22	148	<b>8-10 V5OX-S</b>	<b>8-10 V5OX-SS</b>	350	350
14, 15, 16	5/8	7/8-14	7/8-14	27	12	13	28	39	22	157	<b>10V5OMXS</b>	<b>10 V5OX-SS</b>	350	350
14, 15, 16	5/8	3/4-16	7/8-14	22	12	10	28	35	22	157	<b>10-8V5OMXS</b>	<b>10-8 V5OX-SS</b>	350	350
18, 20	3/4	1 1/16-12	1 1/16-12	32	16	16	33	44	27	258	<b>12 V5OX-S</b>	<b>12 V5OX-SS</b>	350	350
18, 20	3/4	7/8-14	1 1/16-12	25	16	12	33	40	27	227	<b>12-10 V5OX-S</b>	<b>12-10 V5OX-SS</b>	350	350
22	7/8	1 3/16-12	1 3/16-12	35	18	18	37	47	33	275	<b>14 V5OX-S</b>		280	—
25	1	1 5/16-12	1 5/16-12	38	22	22	37	47	33	375	<b>16 V5OX-S</b>	<b>16 V5OX-SS</b>	280	280
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	48	28	28	40	49	41	570	<b>20 V5OX-S</b>	<b>20 V5OX-SS</b>	280	210
35, 38	1 1/2	1 7/8-12	1 7/8-12	54	33	33	45	49	48	706	<b>24 V5OX-S</b>	<b>24 V5OX-SS</b>	210	140

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

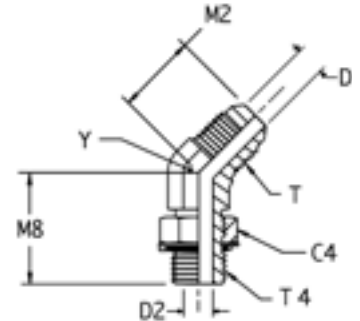
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

**V4OMX 45° Male stud elbow**

Triple-Lok® 37° Flare end / Male BSPP thread O-ring + retaining ring (ISO 1179)



Tube O.D.		Thread BSPP T4	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M2 mm	M8 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
mm	in.											
6	1/4	1/8-28	7/16-20	14	4	4	18	27	11	35	<b>4V4OMXS</b>	250
6	1/4	1/4-19	7/16-20	19	4	8	21	29	14	48	<b>4-4V4OMXS</b>	250
8	5/16	1/8-28	1/2-20	14	6	4	20	27	13	44	<b>5V4OMXS</b>	250
8	5/16	1/4-19	1/2-20	19	6	8	21	27	14	51	<b>5-4V4OMXS</b>	250
10	3/8	1/4-19	9/16-18	19	8	8	21	29	14	55	<b>6V4OMXS</b>	250
10	3/8	3/8-19	9/16-18	22	8	10	22	33	19	70	<b>6-6V4OMXS</b>	250
10	3/8	1/2-14	9/16-18	27	8	12	22	39	22	92	<b>6-8V4OMXS</b>	250
12	1/2	3/8-19	3/4-16	22	10	10	25	33	19	104	<b>8V4OMXS</b>	250
12	1/2	1/2-14	3/4-16	27	10	12	25	39	22	148	<b>8-8V4OMXS</b>	250
14, 15, 16	5/8	1/2-14	7/8-14	27	10	12	28	39	22	165	<b>10V4OMXS</b>	250
14, 15, 16	5/8	3/4-14	7/8-14	36	12	16	30	44	27	235	<b>10-12V4OMXS</b>	250
18, 20	3/4	3/4-14	1 1/16-12	36	16	16	33	44	27	270	<b>12V4OMXS</b>	250
25	1	1-11	1 5/16-12	41	22	22	37	47	33	394	<b>16V4OMXS</b>	250
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	50	28	28	40	48	41	599	<b>20V4OMXS</b>	210
35, 38	1 1/2	1 1/2-11	1 7/8-12	55	33	33	45	48	48	750	<b>24V4OMXS</b>	140

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

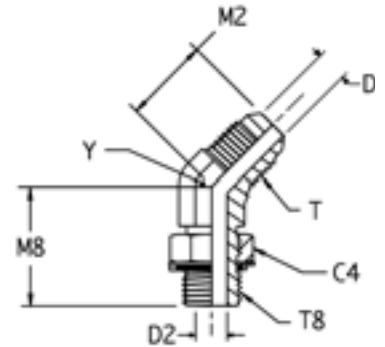
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

**K**

## V8OMX 45° Male stud elbow

Triple-Lok® 37° Flare end / Male metric thread – O-ring + retaining ring



Tube O.D. mm	Tube O.D. in.	Thread Metric T8	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M2 mm	M8 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	M 10×1.0	7/16-20	14	4	5	18	27	11	23	<b>4M10V8OMXS</b>	250
6	1/4	M 12×1.5	7/16-20	17	4	6	20	27	13	25	<b>4M12V8OMXS</b>	250
8	5/16	M 12×1.5	1/2-20	17	6	6	20	28	13	28	<b>5M12V8OMXS</b>	250
10	3/8	M 14×1.5	9/16-18	17	8	8	21	28	14	36	<b>6M14V8OMXS</b>	250
12	1/2	M 16×1.5	3/4-16	19	10	9	25	33	19	68	<b>8M16V8OMXS</b>	250
12	1/2	M 18×1.5	3/4-16	22	10	11	25	33	19	78	<b>8M18V8OMXS</b>	250
14, 15, 16	5/8	M 22×1.5	7/8-14	27	12	14	28	38	22	119	<b>10M22V8OMXS</b>	250
18, 20	3/4	M 27×2.0	1 1/16-12	32	16	18	33	46	27	208	<b>12M27V8OMXS</b>	175
25	1	M 33×2.0	1 5/16-12	38	22	23	37	46	33	333	<b>16M33V8OMXS</b>	140

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

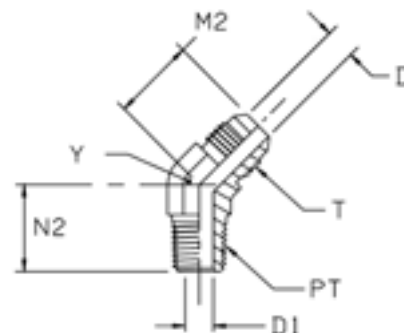
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

**VMTX 45° Male stud elbow**

Triple-Lok® 37° Flare end / Male NPTF\* thread (SAE 476)

SAE 070302 MS51508

\*Stainless Steel = NPT to prevent galling



Tube O.D.		Thread NPT/NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	M2 mm	N2 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar)	
mm	in.												S	SS
6	3/16	1/8-27	3/8-24	3	5	18	14	11	15	3 VTX-S	3 VTX-SS	3 VTX-B	420	350
	1/4	1/8-27	7/16-20	4	5	18	16	11	18	4 VTX-S	4 VTX-SS	4 VTX-B	420	350
	1/4	1/4-18	7/16-20	4	7	21	22	14	30	4-4 VTX-S	4-4 VTX-SS	4-4 VTX-B	420	350
	5/16	1/8-27	1/2-20	6	5	20	16	13	22	5VMTXS	5 VTX-SS	5 VTX-B	420	350
8	5/16	1/4-18	1/2-20	6	7	21	22	14	31	5-4 VTX-S	5-4 VTX-SS	5-4 VTX-B	420	350
10	3/8	1/4-16	9/16-18	8	7	21	22	14	27	6 VTX-S	6 VTX-SS	6 VTX-B	420	350
10	3/8	1/8-27	9/16-18	8	5	21	17	14	23	6-2 VTX-S	6-2 VTX-SS	6-2 VTX-B	420	350
10	3/8	3/8-18	9/16-18	8	10	22	24	19	52	6-6 VTX-S	6-6 VTX-SS	6-6 VTX-B	420	350
10	3/8	1/2-14	9/16-18	8	14	22	30	22	74	6-8VMTXS	6-8 VTX-SS	6-8 VTX-B	420	350
12	1/2	1/4-16	3/4-16	10	7	25	24	19	62	8-4 VTX-S	8-4 VTX-SS	8-4 VTX-B	420	350
12	1/2	3/8-18	3/4-16	10	10	25	24	19	61	8 VTX-S	8 VTX-SS	8 VTX-B	420	350
12	1/2	1/2-14	3/4-18	10	14	25	30	22	92	8-8 VTX-S	8-8 VTX-SS	8-8 VTX-B	420	350
12	1/2	3/4-14	3/4-18	10	18	26	31	27	144	8-12 VTX-S	8-12 VTX-SS	8-12 VTX-B	280	280
14, 15, 16	5/8	1/2-14	7/8-14	12	14	28	30	22	92	10 VTX-S	10 VTX-SS	10 VTX-B	350	350
14, 15, 16	5/8	3/8-18	7/8-14	12	10	28	25	22	94	10-6 VTX-S	10-6 VTX-SS	10-6 VTX-B	350	350
14, 15, 16	5/8	3/4-14	7/8-14	12	18	30	31	27	156	10-12VMTXS	10-12 VTX-SS		280	280
18, 20	3/4	3/4-14	1 1/16-12	16	18	33	31	27	148	12 VTX-S	12 VTX-SS	12 VTX-B	280	280
18, 20	3/4	1/2-14	1 1/16-12	16	14	36	31	27	144	12-8VMTXS	12-8 VTX-SS	12-8 VTX-B	350	350
18, 20	3/4	1-11.5	1 1/16-12	16	24	36	38	33	169	12-16 VTX-S	12-16 VTX-SS	12-16 VTX-B	210	210
22	7/8	3/4-14	1 3/16-12	18	18	35	32	33	197	14 VTX-S	14 VTX-SS		280	280
25	1	1-11.5	1 5/16-12	22	24	37	38	33	239	16 VTX-S	16 VTX-SS	16 VTX-B	210	210
25	1	3/4-14	1 5/16-12	22	18	37	33	33	213	16-12 VTX-S	16-12 VTX-SS	16-12 VTX-B	280	280
28, 30, 32	1 1/4	1 1/4-11.5	1 5/8-12	28	32	40	42	41	385	20VMTXS	20 VTX-SS	20 VTX-B	170	170
35, 38	1 1/2	1 1/2-11.5	1 7/8-12	33	38	45	45	48	495	24 VTX-S	24 VTX-SS	24 VTX-B	170	140

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

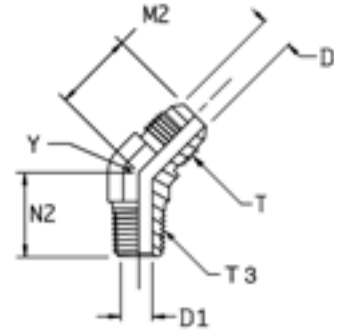
For Brass parts reduce pressures by 35%.

K



## V3MX 45° Male stud elbow

Triple-Lok® 37° Flare end / Male BSPT thread (ISO 7)



Tube O.D.		Thread BSPT T3	Thread UN/UNF-2A T	D mm	D1 mm	M2 mm	N2 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
mm	in.										
6	1/4	1/8-27	7/16-20	4	5	18	16	11	18	<b>4V3MXS</b>	315
6	1/4	1/4-18	7/16-20	4	7	21	22	14	30	<b>4-4V3MXS</b>	315
8	5/16	1/8-27	1/2-20	6	5	20	16	13	22	<b>5V3MXS</b>	315
8	5/16	1/4-18	1/2-20	6	7	21	22	14	31	<b>5-4V3MXS</b>	315
10	3/8	1/4-16	9/16-18	8	7	21	22	14	27	<b>6V3MXS</b>	315
10	3/8	3/8-18	9/16-18	8	10	22	24	19	52	<b>6-6V3MXS</b>	315
10	3/8	1/2-14	9/16-18	8	14	22	30	22	74	<b>6-8V3MXS</b>	315
12	1/2	3/8-18	3/4-16	10	10	25	24	19	61	<b>8V3MXS</b>	315
12	1/2	1/2-14	3/4-16	10	14	25	30	22	92	<b>8-8V3MXS</b>	315
14, 15, 16	5/8	1/2-14	7/8-14	12	14	28	30	22	92	<b>10V3MXS</b>	315
18, 20	3/4	3/4-14	1 1/16-12	16	18	33	31	27	148	<b>12V3MXS</b>	160
25	1	1-11	1 5/16-12	22	24	37	38	33	239	<b>16V3MXS</b>	160
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	28	32	40	42	41	385	<b>20V3MXS</b>	160
35, 38	1 1/2	1 1/2-11	1 7/8-12	33	38	45	45	48	495	<b>24V3MXS</b>	160

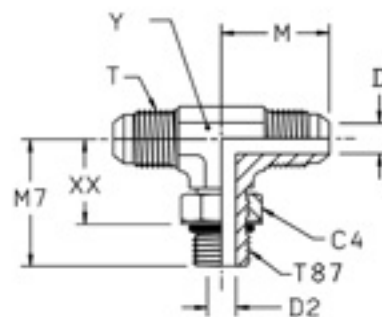
Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

**S87OMX Male stud branch tee**

Triple-Lok® 37° Flare ends / Male metric thread O-ring (ISO 6149)



Tube O.D. mm	in.	Thread Metric T87	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M7 mm	XX mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	M 10×1.0	7/16-20	14	4	5	23	27	16	11	27	<b>4M10S87OMXS</b>	420
8	5/16	M 12×1.5	1/2-20	17	6	6	24	31	19	13	42	<b>5M12S87OMXS</b>	420
10	3/8	M 14×1.5	9/16-18	19	8	8	27	34	21	14	53	<b>6M14S87OMXS</b>	420
12	1/2	M 16×1.5	3/4-16	22	10	9	32	38	24	19	113	<b>8M16S87OMXS</b>	350
12	1/2	M 18×1.5	3/4-16	24	10	11	32	38	24	19	114	<b>8M18S87OMXS</b>	350
14, 15, 16	5/8	M 18×1.5	7/8-14	24	12	11	37	42	28	22	174	<b>10M18S87OMXS</b>	350
14, 15, 16	5/8	M 22×1.5	7/8-14	27	12	14	37	43	29	22	175	<b>10M22S87OMXS</b>	350
18, 20	3/4	M 22×1.5	1 1/16-12	27	16	14	42	45	32	27	295	<b>12M22S87OMXS</b>	350
18, 20	3/4	M 27×2.0	1 1/16-12	32	16	18	42	48	33	27	304	<b>12M27S87OMXS</b>	350
25	1	M 27×2.0	1 5/16-12	32	22	18	46	53	36	33	491	<b>16M27S87OMXS</b>	280
25	1	M 33×2.0	1 5/16-12	41	22	23	46	53	38	33	530	<b>16M33S87OMXS</b>	280

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

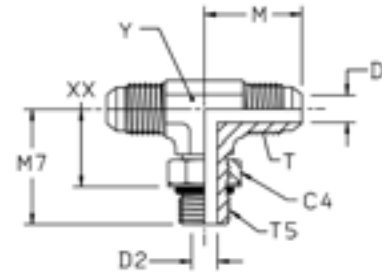
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$



## S50MX Male stud branch tee

Triple-Lok® 37° Flare ends / Male UNF thread O-ring (ISO 11926)  
SAE 070429 MS51529



Tube O.D.		Thread UN/UNF-2A T5	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M7 mm	XX mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.													S	SS
6	1/4	7/16-20	7/16-20	14	4	5	23	26	16	11	46	<b>4S50MXS</b>	<b>4 S50X-SS</b>	420	350
8	5/16	1/2-20	1/2-20	16	6	6	25	29	18	14	66	<b>5 S50X-S</b>	<b>5 S50X-SS</b>	420	350
10	3/8	9/16-18	9/16-18	17	8	8	27	32	21	14	76	<b>6S50MXS</b>	<b>6 S50X-SS</b>	420	350
12	1/2	3/4-16	3/4-16	22	10	10	32	37	24	19	150	<b>8S50MXS</b>	<b>8 S50X-SS</b>	420	350
14, 15, 16	5/8	7/8-14	7/8-14	27	12	13	37	43	29	22	224	<b>10S50MXS</b>	<b>10 S50X-SS</b>	350	350
18, 20	3/4	1 1/16-12	1 1/16-12	32	16	16	42	49	33	27	367	<b>12 S50X-S</b>	<b>12 S50X-SS</b>	350	350
25	1	1 5/16-12	1 5/16-12	38	22	22	46	52	36	33	506	<b>16 S50X-S</b>	<b>16 S50X-SS</b>	280	280
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	48	28	28	52	57	41	42	1053	<b>20 S50X-S</b>	<b>20 S50X-SS</b>	280	280
35, 38	1 1/2	1 7/8-12	1 7/8-12	55	34	34	59	61	44	48	1296	<b>24 S50X-S</b>		210	—
	2	2 1/2-12	2 1/2-12	70	45	45	78	73	57	66	2000	<b>32 S50X-S</b>		140	—

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

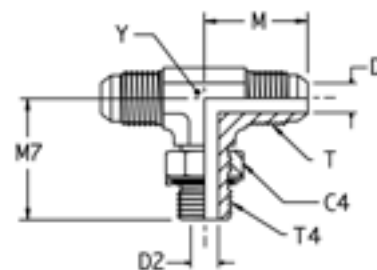
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## S4OMX Male stud branch tee

Triple-Lok® 37° Flare end / Adjustable BSPP thread O-ring + retaining ring (ISO 1179)



Tube O.D.		Thread BSPP T4	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M7 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.												S	SS
6	1/4	1/8-28	7/16-20	14	4	4	23	27	11	47	<b>4S4OMXS</b>	<b>4S4OMXSS</b>	250	250
10	3/8	1/4-19	9/16-18	19	8	8	27	32	14	78	<b>6S4OMXS</b>	<b>6S4OMXSS</b>	250	200
12	1/2	3/8-19	3/4-16	22	10	10	32	37	19	154	<b>8S4OMXS</b>	<b>8S4OMXSS</b>	250	200
12	1/2	1/2-14	3/4-16	27	10	12	34	44	22	186	<b>8-8-8S4OMXS</b>	<b>8-8-8S4OMXSS</b>	250	200
14, 15, 16	5/8	1/2-14	7/8-14	27	12	12	37	43	22	231	<b>10S4OMXS</b>	<b>10S4OMXSS</b>	250	200
18, 20	3/4	3/4-14	1 1/16-12	36	16	16	42	50	27	379	<b>12S4OMXS</b>	<b>12S4OMXSS</b>	250	200
25	1	1-11	1 5/16-12	41	22	22	46	52	33	569	<b>16S4OMXS</b>	<b>16S4OMXSS</b>	250	200
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	50	28	28	52	57	41	1075	<b>20S4OMXS</b>	<b>20S4OMXSS</b>	210	160

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

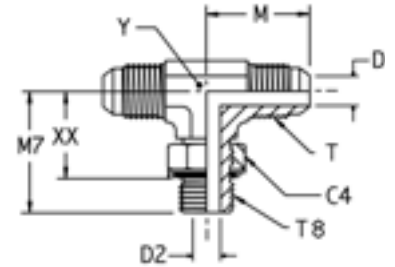
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



## S8OMX Male stud branch tee

Triple-Lok® 37° Flare ends / Male metric thread – O-ring + retaining ring



Tube O.D.		Thread Metric T8	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M7 mm	XX mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
mm	in.												
6	1/4	M 10×1.0	7/16-20	14	4	5	23	27	19	11	27	<b>4M10S8OMXS</b>	250
8	5/16	M 12×1.5	1/2-20	17	6	6	24	31	21	13	42	<b>5M12S8OMXS</b>	250
10	3/8	M 14×1.5	9/16-18	17	8	8	27	34	24	14	53	<b>6M14S8OMXS</b>	250
12	1/2	M 16×1.5	3/4-16	19	10	9	32	38	28	19	95	<b>8M16S8OMXS</b>	250
12	1/2	M 18×1.5	3/4-16	22	10	11	32	38	27	19	114	<b>8M18S8OMXS</b>	250
14, 15, 16	5/8	M 22×1.5	7/8-14	27	12	14	37	43	31	22	175	<b>10M22S8OMXS</b>	250
18, 20	3/4	M 27×2.0	1 1/16-12	32	16	18	42	50	36	27	304	<b>12M27S8OMXS</b>	175
25	1	M 33×2.0	1 5/16-12	38	22	23	46	53	39	33	491	<b>16M33S8OMXS</b>	140

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

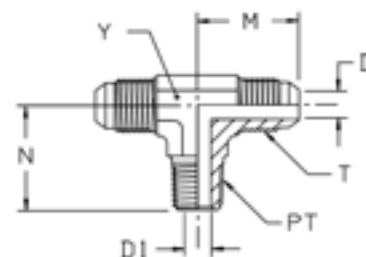
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

## SMTX Male stud branch tee

Triple-Lok® 37° Flare ends / Male NPTF\* thread (SAE 476)

SAE 070425 MS51512

\*Stainless Steel = NPT to prevent galling



Tube O.D.		Thread NPT/NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	M mm	N mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar)	
mm	in.												S	SS
6	3/16	1/8-27	3/8-24	3	5	21	18	11	25	3 STX-S	3 STX-SS	3 STX-B	420	350
	1/4	1/8-27	7/16-20	4	5	23	20	11	31	4 STX-S	4 STX-SS	4 STX-B	420	350
6	1/4	1/4-18	7/16-20	4	7	27	28	14	49	4-4-4 STX-S	4-4-4 STX-SS	4-4-4 STX-B	420	350
8	5/16	1/8-27	1/2-20	6	5	24	20	14	37	5 STX-S	5 STX-SS	5 STX-B	420	350
10	3/8	1/4-16	9/16-18	8	7	27	28	14	57	6SMTXS	6 STX-SS	6 STX-B	420	350
10	3/8	3/8-18	9/16-18	8	10	29	31	19	77	6-6-6 STX-S	6-6-6 STX-SS	6-6-6 STX-B	420	350
12	1/2	3/8-18	3/4-16	10	10	32	31	19	113	8 STX-S	8 STX-SS	8 STX-B	420	350
12	1/2	1/2-14	3/4-16	10	14	34	37	22	164	8-8-8 STX-S	8-8-8 STX-SS	8-8-8 STX-B	420	350
14, 15, 16	5/8	1/2-14	7/8-14	12	14	37	37	22	173	10 STX-S	10 STX-SS	10 STX-B	350	350
	3/4	3/4-14	1 1/16-12	16	18	42	40	27	272	12 STX-S	12 STX-SS	12 STX-B	280	280
22	7/8	3/4-14	1 3/16-12	18	18	46	43	33	323	14 STX-S	14 STX-SS	14 STX-B	280	—
25	1	1-11.5	1 5/16-12	21	24	46	50	33	413	16 STX-S	16 STX-SS	16 STX-B	210	210
28, 30, 32	1 1/4	1 1/4-11.5	1 5/8-12	27	32	52	61	41	681	20 STX-S	20 STX-SS	20 STX-B	170	170
	2	1 1/2-11.5	1 7/8-12	33	38	34	67	48	905	24 STX-S	24 STX-SS	24 STX-B	170	170

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

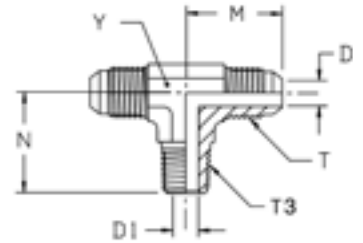
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

For Brass parts reduce pressures by 35 %.



## S3MX Male stud branch tee

Triple-Lok® 37° Flare ends / Male BSPT thread (ISO 7)



Tube O.D.		Thread BSPT T3	Thread UN/UNF-2A T	D mm	D1 mm	M mm	N mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.											S	SS
6	1/4	1/8-28	7/16-20	4	5	23	20	11	30	<b>4S3MXS</b>	<b>4S3MXSS</b>	315	315
10	3/8	1/4-19	9/16-18	8	7	27	28	14	55	<b>6S3MXS</b>	<b>6S3MXSS</b>	315	315
12	1/2	3/8-19	3/4-16	10	10	32	31	19	111	<b>8S3MXS</b>	<b>8S3MXSS</b>	315	315
14, 15, 16	5/8	1/2-14	7/8-14	12	14	37	37	22	169	<b>10S3MXS</b>	<b>10S3MXSS</b>	315	315
18, 20	3/4	3/4-14	1 1/16-12	16	18	42	40	27	267	<b>12S3MXS</b>	<b>12S3MXSS</b>	160	160
25	1	1-11	1 5/16-12	22	24	46	50	33	407	<b>16S3MXS</b>	<b>16S3MXSS</b>	160	160

Order codes shown are part of our current manufacturing programme.

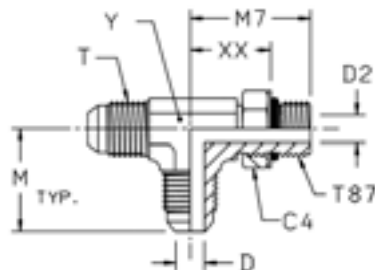
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

**R87OMX Male stud run tee**

Triple-Lok® 37° Flare ends / Male metric thread – O-ring (ISO 6149)



Tube O.D. mm	Tube O.D. in.	Thread Metric T87	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M7 mm	XX mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
6	1/4	M 10×1.0	7/16-20	14	4	5	23	27	16	11	27	<b>4M10R87OMXS</b>	420
10	3/8	M 14×1.5	9/16-18	19	8	8	27	34	21	14	53	<b>6M14R87OMXS</b>	420
10	3/8	M 18×1.5	9/16-18	24	8	11	29	38	24	19	90	<b>6M18R87OMXS</b>	350
12	1/2	M 16×1.5	3/4-16	22	10	9	32	38	24	19	113	<b>8M16R87OMXS</b>	350
12	1/2	M 18×1.5	3/4-16	24	10	11	32	37	24	19	114	<b>8M18R87OMXS</b>	350
14, 15, 16	5/8	M 18×1.5	7/8-14	24	12	11	37	42	29	22	174	<b>10M18R87OMXS</b>	350
14, 15, 16	5/8	M 22×1.5	7/8-14	27	12	14	37	43	29	22	175	<b>10M22R87OMXS</b>	350
18, 20	3/4	M 22×1.5	1 1/16-12	27	16	14	42	45	32	27	295	<b>12M22R87OMXS</b>	350
18, 20	3/4	M 27×2.0	1 1/16-12	32	16	18	42	51	33	27	315	<b>12M27R87OMXS</b>	350
25	1	M 33×2.0	1 5/16-12	41	22	23	46	53	40	33	495	<b>16M33R87OMXS</b>	280

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

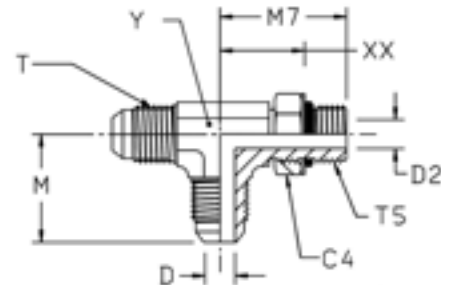
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$





## R5OMX Male stud run tee

Triple-Lok® 37° Flare ends / Male UNF thread O-ring (ISO 11926)  
 SAE 070428 MS51530



Tube O.D.		Thread UN/UNF-2A T5	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M7 mm	XX mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.													S	SS
6	1/4	7/16-20	7/16-20	14	4	4	23	26	16	11	46	<b>4 R5OX-S</b>	<b>4 R5OX-SS</b>	420	350
8	5/16	1/2-20	1/2-20	16	6	6	25	29	18	14	66	<b>5 R5OX-S</b>	<b>5 R5OX-SS</b>	420	350
10	3/8	9/16-18	9/16-18	17	8	8	27	32	21	14	76	<b>6R5OMXS</b>	<b>6 R5OX-SS</b>	420	350
12	1/2	3/4-16	3/4-16	22	10	10	32	37	24	19	151	<b>8R5OMXS</b>	<b>8 R5OX-SS</b>	420	350
14, 15, 16	5/8	7/8-14	7/8-14	25	12	12	37	43	29	22	226	<b>10 R5OX-S</b>	<b>10 R5OX-SS</b>	350	350
18, 20	3/4	1 1/16-12	1 1/16-12	32	16	16	42	49	33	27	372	<b>12 R5OX-S</b>	<b>12 R5OX-SS</b>	350	350
25	1	1 5/16-12	1 5/16-12	38	22	22	46	52	36	33	557	<b>16 R5OX-S</b>	<b>16 R5OX-SS</b>	280	280
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	48	28	28	52	57	41	41	1053	<b>20 R5OX-S</b>	<b>20 R5OX-SS</b>	280	280
35, 38	1 1/2	1 7/8-12	1 7/8-12	54	33	33	59	61	44	48	1296	<b>24 R5OX-S</b>	<b>24 R5OX-SS</b>	210	210
	2	2 1/2-12	2 1/2-12	70	45	45	78	73	57	66	2000	<b>32 R5OX-S</b>	<b>32 R5OX-SS</b>	140	140

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

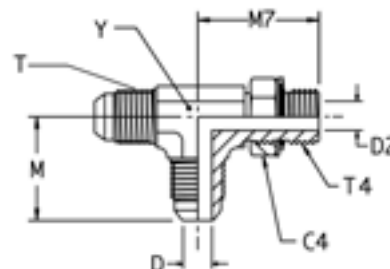
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## R4OMX Male stud run tee

Triple-Lok® 37° Flare end / Adjustable BSPP thread O-ring + retaining ring (ISO 1179)



Tube O.D.		Thread BSPP T4	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M7 mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.												S	SS
6	1/4	1/8-28	7/16-20	14	4	4	23	27	11	47	<b>4R4OMXS</b>	<b>4R4OMXSS</b>	250	200
10	3/8	1/4-19	9/16-18	19	8	8	27	32	14	78	<b>6R4OMXS</b>	<b>6R4OMXSS</b>	250	200
12	1/2	3/8-19	3/4-16	22	10	10	32	37	19	154	<b>8R4OMXS</b>	<b>8R4OMXSS</b>	250	200
14, 15, 16	5/8	1/2-14	7/8-14	27	12	12	37	43	22	231	<b>10R4OMXS</b>	<b>10R4OMXSS</b>	250	200
18, 20	3/4	3/4-14	1 1/16-12	36	16	16	42	50	27	379	<b>12R4OMXS</b>	<b>12R4OMXSS</b>	250	200
25	1	1-11	1 5/16-12	41	22	22	46	52	33	569	<b>16R4OMXS</b>	<b>16R4OMXSS</b>	250	200
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	50	28	28	52	57	41	1075	<b>20R4OMXS</b>	<b>20R4OMXSS</b>	210	160

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

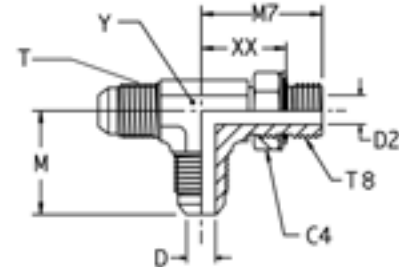
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



## R8OMX Male stud run tee

Triple-Lok® 37° Flare ends / Male metric thread – O-ring + retaining ring



Tube O.D.		Thread Metric T87	Thread UN/UNF-2A T	C4 mm	D mm	D2 mm	M mm	M7 mm	XX mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
mm	in.												
6	1/4	M 10×1.0	7/16-20	14	4	5	23	27	19	11	27	<b>4M10R8OMXS</b>	250
8	5/16	M 12×1.5	1/2-20	17	6	6	24	31	21	13	42	<b>5M12R8OMXS</b>	250
10	3/8	M 14×1.5	9/16-18	17	8	8	27	34	24	14	53	<b>6M14R8OMXS</b>	250
12	1/2	M 16×1.5	3/4-16	19	10	9	32	38	28	19	95	<b>8M16R8OMXS</b>	250
12	1/2	M 18×1.5	3/4-16	22	10	10	32	38	27	19	114	<b>8M18R8OMXS</b>	250
14, 15, 16	5/8	M 22×1.5	7/8-14	27	12	14	37	43	31	22	175	<b>10M22R8OMXS</b>	250
18, 20	3/4	M 27×2.0	1 1/16-12	32	16	18	42	50	36	27	304	<b>12M27R8OMXS</b>	175
25	1	M 33×2.0	1 5/16-12	38	22	23	46	53	39	33	491	<b>16M33R8OMXS</b>	140

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

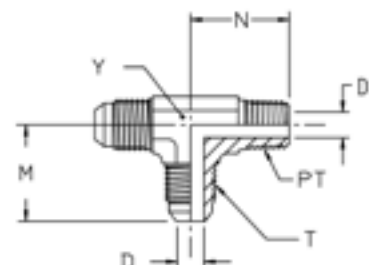
$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

## RMTX Male stud run tee

Triple-Lok® 37° Flare ends / Male NPTF\* thread (SAE 476)

SAE 070424 MS51511

\*Stainless Steel = NPT to prevent galling



Tube O.D.		Thread NPT/NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	M mm	N mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar)	
mm	in.												S	SS
6	3/16	1/8-27	3/8-24	3	5	21	18	11	25	3 RTX-S	3 RTX-SS		420	350
	1/4	1/8-27	7/16-20	4	5	23	20	11	31	4 RTX-S	4 RTX-SS	4 RTX-B	420	350
	1/4	1/4-18	7/16-20	4	7	27	28	14	49	4-4-4 RTX-S	4-4-4 RTX-SS	4-4-4 RTX-B	420	350
	5/16	1/8-27	1/2-20	6	5	25	21	14	37	5 RTX-S	5 RTX-SS	5 RTX-B	420	350
10	3/8	1/4-16	9/16-18	8	7	27	28	14	57	6 RTX-S	6 RTX-SS	6 RTX-B	420	350
10	3/8	3/8-18	9/16-18	8	10	29	31	19	77	6-6-6 RTX-S	6-6-6 RTX-SS	6-6-6 RTX-B	420	350
12	1/2	3/8-18	3/4-16	10	10	32	31	19	109	8 RTX-S	8 RTX-SS	8 RTX-B	420	350
12	1/2	1/2-14	3/4-16	10	14	34	37	22	163	8-8-8RMTXS	8-8-8 RTX-SS	8-8-8 RTX-B	420	350
14, 15, 16	5/8	1/2-14	7/8-14	12	14	37	37	22	172	10 RTX-S	10 RTX-SS	10 RTX-B	350	350
18, 20	3/4	3/4-14	1 1/16-12	16	18	42	40	27	268	12 RTX-S	12 RTX-SS	12 RTX-B	280	280
22	7/8	3/4-14	1 3/16-12	18	18	46	43	33	323	14 RTX-S			280	—
25	1	1-11.5	1 5/16-12	21	24	46	50	33	413	16 RTX-S	16 RTX-SS	16 RTX-B	210	210
28, 30, 32	1 1/4	1 1/4-11.5	1 5/8-12	27	32	52	61	41	681	20 RTX-S	20 RTX-SS	20 RTX-B	170	170
35, 38	1 1/2	1 1/2-11.5	1 7/8-12	33	38	59	67	48	905	24 RTX-S	24 RTX-SS		170	140

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

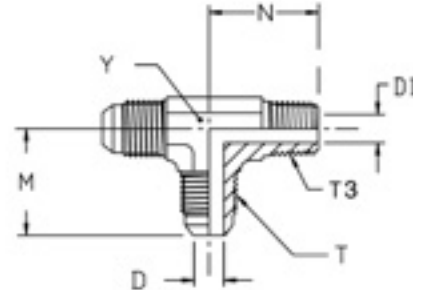
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

For Brass parts reduce pressures by 35 %.



## R3MX Male stud run tee

Triple-Lok® 37° Flare ends / Male BSPT thread (ISO 7)



Tube O.D.		Thread BSPT T3	Thread UN/UNF-2A T	D mm	D1 mm	M mm	N mm	Y mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.											S	SS
6	1/4	1/8-28	7/16-20	4	5	23	20	11	30	<b>4R3MXS</b>	<b>4R3MXSS</b>	315	315
8	5/16	1/8-28	1/2-20	6	5	24	20	13	36	<b>5R3MXS</b>	<b>5R3MXSS</b>	315	315
10	3/8	1/4-19	9/16-18	8	7	27	28	14	55	<b>6R3MXS</b>	<b>6R3MXSS</b>	315	315
12	1/2	3/8-19	3/4-16	10	10	32	31	19	107	<b>8R3MXS</b>	<b>8R3MXSS</b>	315	315
14, 15, 16	5/8	1/2-14	7/8-14	12	14	37	37	22	170	<b>10R3MXS</b>	<b>10R3MXSS</b>	315	315

Order codes shown are part of our current manufacturing programme.

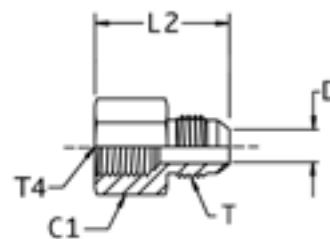
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## G4MX Female connector

Triple-Lok® 37° Flare end / Female BSPP thread (ISO 1179-1)



Tube O.D. mm	Tube O.D. in.	Thread BSPP T4	Thread UN/UNF-2A T	C1 mm	D mm	L2 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
										S	SS
6	1/4	1/8-28	7/16-20	17	4	30	15	<b>4G4MXS</b>	<b>4G4MXSS</b>	315	315
6	1/4	1/4-19	7/16-20	19	4	35	42	<b>4-4G4MXS</b>	<b>4-4G4MXSS</b>	400	350
8	5/16	1/8-28	1/2-20	17	6	30	22	<b>5G4MXS</b>	<b>5G4MXSS</b>	315	315
8	5/16	1/4-19	1/2-20	19	6	35	40	<b>5-4G4MXS</b>	<b>5-4G4MXSS</b>	400	350
10	3/8	1/4-19	9/16-18	19	8	36	40	<b>6G4MXS</b>	<b>6G4MXSS</b>	400	350
10	3/8	3/8-19	9/16-18	22	8	37	50	<b>6-6G4MXS</b>	<b>6-6G4MXSS</b>	350	350
12	1/2	3/8-19	3/4-16	22	10	40	64	<b>8G4MXS</b>	<b>8G4MXSS</b>	350	350
12	1/2	1/2-14	3/4-16	30	10	46	116	<b>8-8G4MXS</b>	<b>8-8G4MXSS</b>	400	350
14, 15, 16	5/8	1/2-14	7/8-14	30	12	48	121	<b>10G4MXS</b>	<b>10G4MXSS</b>	350	350
18, 20	3/4	3/4-14	1 1/16-12	36	16	52	188	<b>12G4MXS</b>	<b>12G4MXSS</b>	315	315
25	1	1 1/11	1 5/16-12	46	22	60	340	<b>16G4MXS</b>	<b>16G4MXSS</b>	280	280
28, 30, 32	1 1/4	1 1/4-11	1 5/8-12	50	28	63	438	<b>20G4MXS</b>	<b>20G4MXSS</b>	210	210
35, 38	1 1/2	1 1/2-11	1 7/8-12	55	33	67	526	<b>24G4MXS</b>	<b>24G4MXSS</b>	140	140

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

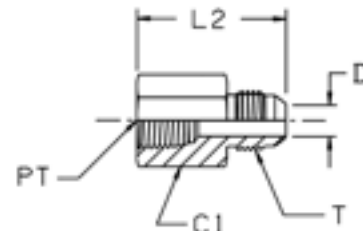


## GMTX Female connector

Triple-Lok® 37° Flare end / Female NPTF\* thread (SAE J476)

SAE 070103 MS51503

\*Stainless Steel = NPT to prevent galling



Tube O.D. mm	in.	Thread NPT/NPTF PT	Thread UN/UNF-2A T	C1 mm	D mm	L2 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
										S	SS
6	1/4	1/8-27	7/16-20	14	4	30	42	<b>4 GTX-S</b>	<b>4GMTXSS</b>	420	350
6	1/4	1/4-18	7/16-20	19	4	36	40	<b>4-4GMTXS</b>	<b>4-4GMTXSS</b>	420	350
6	1/4	3/8-18	7/16-20	22	5	37	40	<b>4-6 GTX-S</b>	<b>4-6GMTXSS</b>	420	350
6	1/4	1/2-14	7/16-20	29	5	37	42	<b>4-8 GTX-S</b>	<b>4-8GMTXSS</b>	350	350
8	5/16	1/8-27	1/2-20	14	6	30	40	<b>5 GTX-S</b>	<b>5GMTXSS</b>	420	350
8	5/16	1/4-18	1/2-20	19	6	35	42	<b>5-4 GTX-S</b>	<b>5-4GMTXSS</b>	420	350
10	3/8	1/4-18	9/16-18	19	8	36	40	<b>6GMTXS</b>	<b>6GMTXSS</b>	420	350
10	3/8	3/8-18	9/16-18	22	8	37	62	<b>6-6 GTX-S</b>	<b>6-6GMTXSS</b>	420	350
10	3/8	1/2-14	9/16-18	29	8	45	90	<b>6-8 GTX-S</b>	<b>6-8GMTXSS</b>	350	350
12	1/2	3/8-18	3/4-16	22	10	40	45	<b>8 GTX-S</b>	<b>8GMTXSS</b>	420	350
12	1/2	1/4-18	3/4-16	21	10	36	80	<b>8-4 GTX-S</b>	<b>8-4GMTXSS</b>	420	350
12	1/2	1/2-14	3/4-16	29	10	46	116	<b>8-8 GTX-S</b>	<b>8-8GMTXSS</b>	350	350
12	1/2	3/4-14	3/4-16	35	10	48	150	<b>8-12 GTX-S</b>	<b>8-12GMTXSS</b>	280	280
14, 15,16	5/8	1/2-14	7/8-14	29	12	48	121	<b>10 GTX-S</b>	<b>10GMTXSS</b>	350	350
14, 15,16	5/8	3/4-14	7/8-14	35	13	51	182	<b>10-12 GTX-S</b>	<b>10-12GMTXSS</b>	280	280
18, 20	3/4	3/4-14	1 1/16-12	35	16	52	188	<b>12 GTX-S</b>	<b>12GMTXSS</b>	280	280
18, 20	3/4	1/2-14	1 1/16-12	29	16	49	133	<b>12-8 GTX-S</b>	<b>12-8GMTXSS</b>	350	350
22	7/8	3/4-14	1 3/16-12	35	18	52	201	<b>14 GTX-S</b>	<b>14GMTXSS</b>	210	210
25	1	1-11.5	1 5/16-12	41	22	59	280	<b>16 GTX-S</b>	<b>16GMTXSS</b>	210	210
28, 30, 32	1 1/4	1 1/4-11.5	1 5/8-12	51	27	63	408	<b>20 GTX-S</b>	<b>20GMTXSS</b>	170	170
35, 38	1 1/2	1 1/2-11.5	1 7/8-12	60	33	67	370	<b>24 GTX-S</b>	<b>24GMTXSS</b>	140	140
	2	2-11.5	2 1/2-12	73	44	75	1262	<b>32 GTX-S</b>	<b>32GMTXSS</b>	140	—

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

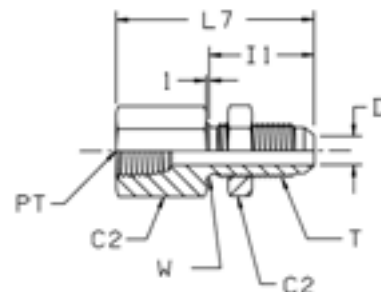
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## WGMTX Female bulkhead connector

Triple-Lok® 37° Flare end / Female NPTF\* thread (SAE J476)

\*Stainless Steel = NPT to prevent galling



Tube O.D.		Thread NPT/NPTF PT	Thread UN/UNF-2A T	C2 mm	D mm	I1 mm	L7 mm	W mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.											S	SS
6	1/4	1/8-27	7/16-20	17	4	31	47	11	42	<b>4 WGTX-WLN-S</b>	<b>4WGMTXWLNMS</b>	420	350
6	1/4	1/4-18	7/16-20	19	4	34	54	11	62	<b>4-4 WGTX-WLN-S</b>	<b>4-4WGMTXWLNMS</b>	420	350
10	3/8	1/4-18	9/16-18	21	8	33	52	14	72	<b>6 WGTX-WLN-S</b>	<b>6WGMTXWLNMS</b>	420	350
12	1/2	3/8-18	3/4-16	25	10	37	59	19	117	<b>8 WGTX-WLN-S</b>	<b>8WGMTXWLNMS</b>	420	350
14, 15, 16	5/8	1/2-14	7/8-14	29	12	40	68	22	179	<b>10 WGTX-WLN-S</b>	<b>10WGMTXWLNMS</b>	350	350
18, 20	3/4	3/4-14	1 1/16-12	35	16	45	74	27	284	<b>12 WGTX-WLN-S</b>	<b>12WGMTXWLNMS</b>	280	280
25	1	1-11.5	1 5/16-12	41	21	45	79	33	415	<b>16 WGTX-WLN-S</b>	<b>16WGMTXWLNMS</b>	210	210

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

For the version without the locknut remove "WLN" (e.g. 10 WGTX)

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



### Maximum bulkhead wallthickness

Size	Tube O.D.		Straight bulkhead union Max. thickness mm	Shape bulkhead union Max. thickness mm
	inch	metric		
4	1/4	6	8.4	5.3
5	5/16	8	8.4	5.3
6	3/8	10	10.7	7.1
8	1/2	12	11.2	8.4
10	5/8	14-16	10.9	8.1
12	3/4	18-20	11.2	8.6
14	7/8		10.4	7.9
16	1	22-25	9.9	7.4
20	1 1/4	28-32	10.2	7.4
24	1 1/2	35-38	7.1	—
32	2		7.1	—

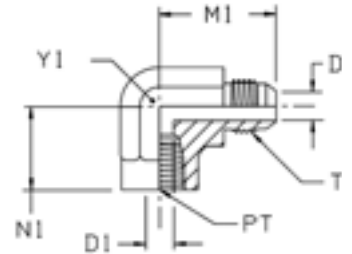


## DMTX Female elbow connector

Triple-Lok® 37° Flare end / Female NPTF\* thread (SAE J476)

SAE 070203 MS51506

\*Stainless Steel = NPT to prevent galling



Tube O.D.		Thread NPT/NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	M1 mm	N1 mm	Y1 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar)	
mm	in.												S	SS
6	1/4	1/8-27	7/16-20	4	8	27	17	14	33	<b>4 DTX-S</b>	<b>4 DTX-SS</b>	<b>4 DTX-B</b>	350	350
6	1/4	1/4-18	7/16-20	4	11	31	22	19	70	<b>4-4 DTX-S</b>	<b>4-4 DTX-SS</b>	<b>4-4 DTX-B</b>	350	350
8	5/16	1/8-27	1/2-20	6	8	27	17	14	33	<b>5 DTX-S</b>	<b>5 DTX-SS</b>	<b>5 DTX-B</b>	350	350
8	5/16	1/4-18	1/2-20	6	11	29	22	19	67	<b>5-4 DTX-S</b>	<b>5-4 DTX-SS</b>	<b>5-4 DTX-B</b>	350	350
10	3/8	1/4-18	9/16-18	8	11	31	22	19	67	<b>6 DTX-S</b>	<b>6 DTX-SS</b>	<b>6 DTX-B</b>	350	350
10	3/8	1/8-27	9/16-18	8	8	31	17	14	39	<b>6-2 DTX-S</b>	<b>6-2 DTX-SS</b>	<b>6-2 DTX-B</b>	350	350
10	3/8	3/8-18	9/16-18	8	14	33	26	22	103	<b>6-6 DTX-S</b>	<b>6-6 DTX-SS</b>	<b>6-6 DTX-B</b>	310	310
12	1/2	3/8-18	3/4-16	10	14	36	26	22	115	<b>8 DTX-S</b>	<b>8 DTX-SS</b>	<b>8 DTX-B</b>	310	310
12	1/2	1/4-18	3/4-16	10	11	36	26	19	190	<b>8-4 DTX-S</b>	<b>8-4 DTX-SS</b>	<b>8-4 DTX-B</b>	350	350
12	1/2	1/2-14	3/4-16	10	18	39	31	27	178	<b>8-8 DMTXS</b>	<b>8-8 DTX-SS</b>	<b>8-8 DTX-B</b>	210	210
14, 15, 16	5/8	1/2-14	7/8-14	12	18	42	31	27	180	<b>10 DTX-S</b>	<b>10 DTX-SS</b>	<b>10 DTX-B</b>	210	210
18, 20	3/4	3/4-14	1 1/16-12	16	23	48	35	33	315	<b>12 DMTXS</b>	<b>12 DTX-SS</b>	<b>12 DTX-B</b>	210	210
18, 20	3/4	1/2-14	1 1/16-12	16	18	48	34	27	175	<b>12-8 DTX-S</b>	<b>12-8 DTX-SS</b>	<b>12-8 DTX-B</b>	210	210
22	7/8	3/4-14	1 3/16-12	18	23	47	36	33	285	<b>14 DTX-S</b>	<b>14 DTX-SS</b>		125	125
25	1	1-11.5	1 5/16-12	21	29	55	41	41	506	<b>16 DTX-S</b>	<b>16 DTX-SS</b>	<b>16 DTX-B</b>	125	125
28, 30, 32	1 1/4	1 1/4-11.5	1 5/8-12	27	37	59	43	48	619	<b>20 DTX-S</b>	<b>20 DTX-SS</b>	<b>20 DTX-B</b>	100	100
35, 38	1 1/2	1 1/2-11.5	1 7/8-12	33	43	73	53	64	1725	<b>24 DTX-S</b>	<b>24 DTX-SS</b>		100	100

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

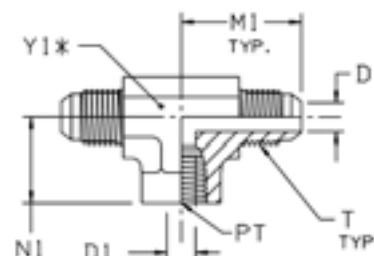
For Brass parts reduce pressures by 35 %.

## OTX Female branch tee

Triple-Lok® 37° Flare ends / Female NPTF\* thread (SAE J476)

SAE 070427 MS51513

\*Stainless Steel = NPT to prevent galling



Tube O.D.		Thread NPT/NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	M1 mm	N1 mm	Y1 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar)	
mm	in.												S	SS
6	1/4	1/8-27	7/16-20	4	8	27	17	14	53	<b>4 OTX-S</b>	<b>4 OTX-SS</b>	<b>4 OTX-B</b>	350	350
6	1/4	1/4-18	7/16-20	4	11	29	22	19	90	<b>4-4-4 OTX-S</b>	<b>4-4-4 OTX-SS</b>	<b>4-4-4 OTX-B</b>	350	350
8	5/16	1/8-27	1/2-20	6	8	27	17	14	53	<b>5 OTX-S</b>	<b>5 OTX-SS</b>	<b>5 OTX-B</b>	350	350
10	3/8	1/4-18	9/16-18	8	11	32	22	19	98	<b>6 OTX-S</b>	<b>6 OTX-SS</b>	<b>6 OTX-B</b>	350	350
12	1/2	3/8-18	3/4-16	10	14	36	26	22	145	<b>8 OTX-S</b>	<b>8 OTX-SS</b>	<b>8 OTX-B</b>	310	310
14, 15, 16	5/8	1/2-14	7/8-14	12	18	42	32	27	240	<b>10 OTX-S</b>	<b>10 OTX-SS</b>	<b>10 OTX-B</b>	210	210
18, 20	3/4	3/4-14	1 1/16-12	16	23	48	35	33	390	<b>12 OTX-S</b>	<b>12 OTX-SS</b>	<b>12 OTX-B</b>	210	210
25	1	1-11.5	1 5/16-12	21	29	55	41	41	745	<b>16 OTX-S</b>	<b>16 OTX-SS</b>	<b>16 OTX-B</b>	125	125
28, 30, 32	1 1/4	1 1/4-11.5	1 5/8-12	27	37	59	43	48	930	<b>20 OTX-S</b>	<b>20 OTX-SS</b>		100	100
35, 38	1 1/2	1 1/2-11.5	1 7/8-12	33	43	73	53	64	2255	<b>24 OTX-S</b>	<b>24 OTX-SS</b>		100	100

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

For Brass parts reduce pressures by 35%.

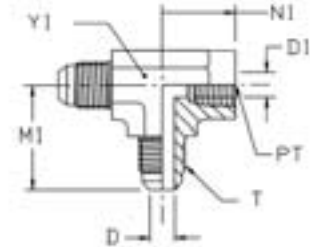


## MTX Female run tee

Triple-Lok® 37° Flare ends / Female NPTF\* thread (SAE J476)

SAE 070426 MS51514

\*Stainless Steel = NPT to prevent galling



Tube O.D.		Thread NPT/NPTF PT	Thread UN/UNF-2A T	D mm	D1 mm	M1 mm	N1 mm	Y1 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar)	
mm	in.												S	SS
6	1/4	1/8-27	7/16-20	4	8	27	17	14	45	<b>4 MTX-S</b>	<b>4 MTX-SS</b>	<b>4 MTX-B</b>	350	350
6	1/4	1/4-18	7/16-20	4	11	29	22	19	10	<b>4-4-4 MTX-S</b>	<b>4-4-4 MTX-SS</b>	<b>4-4-4 MTX-B</b>	350	350
10	3/8	1/4-18	9/16-18	8	11	32	22	19	88	<b>6 MTX-S</b>	<b>6 MTX-SS</b>	<b>6 MTX-B</b>	350	350
12	1/2	3/8-18	3/4-16	10	14	36	26	22	125	<b>8 MTX-S</b>	<b>8 MTX-SS</b>	<b>8 MTX-B</b>	310	310
14, 15, 16	5/8	1/2-14	7/8-14	12	18	42	32	27	210	<b>10 MTX-S</b>	<b>10 MTX-SS</b>	<b>10 MTX-B</b>	210	210
18, 20	3/4	3/4-14	1 1/16-12	16	23	48	35	33	280	<b>12 MTX-S</b>	<b>12 MTX-SS</b>	<b>12 MTX-B</b>	210	210
22	7/8	3/4-14	1 3/16-12	18	23	47	36	33	446	<b>14 MTX-S</b>			210	—
25	1	1-11.5	1 5/16-12	21	29	55	41	41	620	<b>16 MTX-S</b>	<b>16 MTX-SS</b>		125	125
28, 30, 32	1 1/4	1 1/4-11.5	1 5/8-12	27	37	59	43	48	805	<b>20 MTX-S</b>	<b>20 MTX-SS</b>		100	100

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

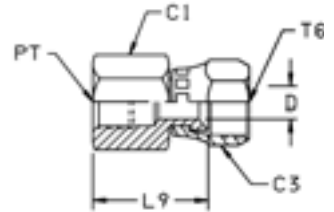
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

For Brass parts reduce pressures by 35%.

## G6X Swivel connector

Triple-Lok® 37° Flare female swivel end / Female NPTF\* thread (SAE J476)

\*Stainless Steel = NPT to prevent galling



Tube O.D.		Thread NPT/NPTF PT	Thread UN/UNF-2B T6	C1 mm	C3 mm	D mm	L9 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.										S	SS
6	1/4	1/8-27	7/16-20	14	14	5	23	29	<b>4 G6X-S</b>	<b>4 G6X-SS</b>	420	420
6	1/4	1/4-18	7/16-20	19	14	5	27	33	<b>4-4 G6X-S</b>	<b>4-4 G6X-SS</b>	420	420
10	3/8	1/4-18	9/16-18	19	17	8	27	38	<b>6 G6X-S</b>	<b>6 G6X-SS</b>	350	350
10	3/8	3/8-18	9/16-18	22	17	7	30	45	<b>6-6 G6X-S</b>	<b>6-6 G6X-SS</b>	350	350
12	1/2	3/8-18	3/4-16	22	22	10	31	47	<b>8 G6X-S</b>	<b>8 G6X-SS</b>	350	350
12	1/2	1/2-14	3/4-16	29	22	10	38	99	<b>8-8 G6X-S</b>	<b>8-8 G6X-SS</b>	350	350
14, 15, 16	5/8	1/2-14	7/8-14	29	25	12	37	99	<b>10 G6X-S</b>	<b>10 G6X-SS</b>	350	350
18, 20	3/4	3/4-14	1 1/16-12	35	32	16	38	147	<b>12 G6X-S</b>	<b>12 G6X-SS</b>	280	280
25	1	1-11.5	1 5/16-12	41	38	21	47	248	<b>16 G6X-S</b>	<b>16 G6X-SS</b>	210	210
28, 30, 32	1 1/4	1 1/4-11.5	1 5/8-12	50	50	28	55	370	<b>20 G6X-S</b>	<b>20 G6X-SS</b>	170	170
35, 38	1 1/2	1 1/2-11.5	1 7/8-12	60	58	34	57	510	<b>24 G6X-S</b>	<b>24 G6X-SS</b>	140	140

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

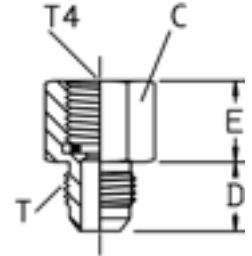
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

**K**

## G4MXMO Pressure gauge connector

Triple-Lok® 37° Flare end / Female BSPP gauge thread (ISO 1179-1)



Tube O.D.		Thread BSPP T4	Thread UN/UNF-2A T	D mm	E mm	C mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.									S	SS
6	1/4	1/4-19	7/16-20	14	17	17	86	4-4G4MXSMO	4-4G4MXSSMO	350	350
6	1/4	1/2-14	7/16-20	14	27	27	246	4-8G4MXSMO	4-8G4MXSSMO	315	315
8	5/16	1/4-19	1/2-20	14	14	17	49	5-4G4MXSMO	5-4G4MXSSMO	350	350
8	5/16	1/2-14	1/2-20	14	27	27	246	5-8G4MXSMO	5-8G4MXSSMO	315	315
10	3/8	1/4-19	9/16-18	14	14	17	49	6G4MXSMO	6G4MXSSMO	350	350
10	3/8	1/2-14	9/16-18	14	21	27	239	6-8G4MXSMO	6-8G4MXSSMO	315	315
12	1/2	1/4-19	3/4-16	17	14	19	74	8-4G4MXSMO	8-4G4MXSSMO	400	350
12	1/2	1/2-14	3/4-16	17	21	27	263	8-8G4MXSMO	8-8G4MXSSMO	315	315

This part requires a copper washer. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

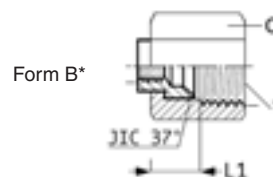
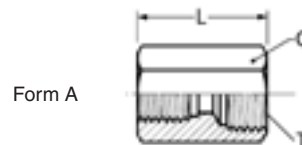
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## TT4MX Test point connector

Triple-Lok® 37° Flare female end / Female BSPP thread (ISO 1179-1)  
for EMA3 test point



\* Form B has to be assembled with a nut  
BMTX / BTX (not delivered).

Tube O.D. T		Thread BSPP	Thread UN/UNF-2B T	Form	L mm	L1 mm	C mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.										S	SS
6	1/4	1/4-19	7/16-20	A	29	–	19	42	<b>4TT4MXS</b>	<b>4TT4MXSS</b>	400	350
8	5/16	1/4-19	1/2-20	A	29	–	19	46	<b>5TT4MXS</b>	<b>5TT4MXSS</b>	400	350
10	3/8	1/4-19	9/16-18	A	29	–	19	43	<b>6TT4MXS</b>	<b>6TT4MXSS</b>	400	350
12	1/2	1/4-19	3/4-16	A	32	–	22	62	<b>8TT4MXS</b>	<b>8TT4MXSS</b>	400	350
14, 15, 16	5/8	1/4-19	7/8-14	A	32	–	27	102	<b>10TT4MXS</b>	<b>10TT4MXSS</b>	350	350
18, 20	3/4	1/4-19	1 1/16-12	B	–	13	32	42	<b>12TT4XS</b>	<b>12TT4XSS</b>	350	350
25	1	1/4-19	1 5/16-12	B	–	13	41	56	<b>16TT4XS</b>	<b>16TT4XSS</b>	280	280
28, 30, 32	1 1/4	1/4-19	1 5/8-12	B	–	15	50	98	<b>20TT4XS</b>	<b>20TT4XSS</b>	280	210
35, 38	1 1/2	1/4-19	1 7/8-12	B	–	18	60	185	<b>24TT4XS</b>	<b>24TT4XSS</b>	210	210

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

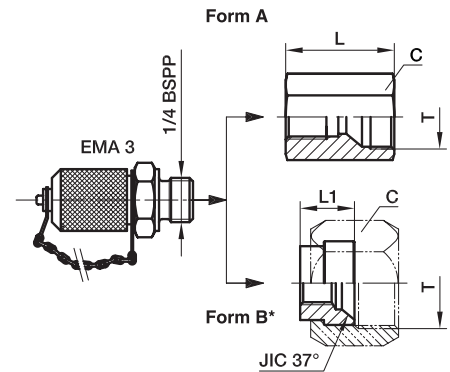
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



## TTP4MX Test point connection

Triple-Lok® 37° Flare female end / EMA3 test point



\* Form B versions delivered complete with BMTXS nut.

Tube O.D. T		Thread BSPP	Thread UN/UNF-2B T	Form	L mm	L1 mm	C mm	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
mm	in.									
6	1/4	1/4-19	7/16-20	A	29	–	19	132	<b>4TTP4MXS</b>	400
8	5/16	1/4-19	1/2-20	A	29	–	19	136	<b>5TTP4MXS</b>	400
10	3/8	1/4-19	9/16-18	A	29	–	19	133	<b>6TTP4MXS</b>	400
12	1/2	1/4-19	3/4-16	A	32	–	22	152	<b>8TTP4MXS</b>	400
14, 15, 16	5/8	1/4-19	7/8-14	A	32	–	27	192	<b>10TTP4MXS</b>	350
18, 20	3/4	1/4-19	1 1/16-12	B	–	13	32	132	<b>12TTP4XS</b>	350
25	1	1/4-19	1 5/16-12	B	–	13	41	146	<b>16TTP4XS</b>	280
28, 30, 32	1 1/4	1/4-19	1 5/8-12	B	–	15	50	188	<b>20TTP4XS</b>	280
35, 38	1 1/2	1/4-19	1 7/8-12	B	–	18	60	275	<b>24TTP4XS</b>	210

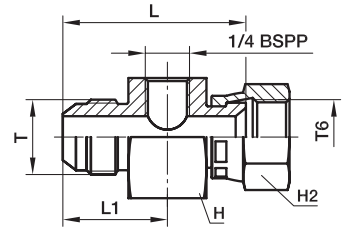
Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

## R6O4MX Test point connector

Male / Female swivel Triple-Lok® 37° flare end / Female BSPP thread (ISO 1179-1)



Tube O.D. T		Thread UN/UNF-2A T	Thread UN/UNF-2B T6	L	L1	H	H2	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
mm	in.			mm	mm	mm	mm			
6	1/4	7/16-20	7/16-20	45	26	36	16	180	<b>4-4R6O4MXS</b>	500
8	5/16	1/2-20	1/2-20	46	26	36	17	200	<b>5-4R6O4MXS</b>	420
10	3/8	9/16-18	9/16-18	47	26	36	19	210	<b>6-4R6O4MXS</b>	350
12	1/2	3/4-16	3/4-16	50	28	36	22	218	<b>8-4R6O4MXS</b>	350
14, 15, 16	5/8	7/8-14	7/8-14	54	31	36	27	247	<b>10-4R6O4MXS</b>	350
18, 20	3/4	1 1/16-12	1 1/16-12	56	34	41	32	326	<b>12-4R6O4MXS</b>	350
25	1	1 5/16-12	1 5/16-12	60	35	46	38	416	<b>16-4R6O4MXS</b>	250
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	64	36	50	50	601	<b>20-4R6O4MXS</b>	250
35, 38	1 1/2	1 7/8-12	1 7/8-12	69	39	60	60	905	<b>24-4R6O4MXS</b>	170

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

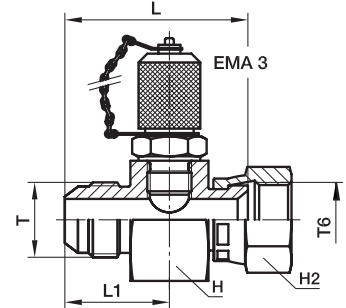
$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$





## R6P4MX Test point connector

Male / Female swivel Triple-Lok® 37° flare end / EMA3 test point



Tube O.D. T		Thread UN/UNF-2A T	Thread UN/UNF-2B T6	L	L1	H	H2	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
mm	in.			mm	mm	mm	mm			
6	1/4	7/16-20	7/16-20	45	26	36	16	270	<b>4-4R6P4MXS</b>	500
8	5/16	1/2-20	1/2-20	46	26	36	17	290	<b>5-4R6P4MXS</b>	420
10	3/8	9/16-18	9/16-18	47	26	36	19	300	<b>6-4R6P4MXS</b>	350
12	1/2	3/4-16	3/4-16	50	28	36	22	308	<b>8-4R6P4MXS</b>	350
14, 15, 16	5/8	7/8-14	7/8-14	54	31	36	27	337	<b>10-4R6P4MXS</b>	350
18, 20	3/4	1 1/16-12	1 1/16-12	56	34	41	32	416	<b>12-4R6P4MXS</b>	350
25	1	1 5/16-12	1 5/16-12	60	35	46	38	506	<b>16-4R6P4MXS</b>	250
28, 30, 32	1 1/4	1 5/8-12	1 5/8-12	64	36	50	50	691	<b>20-4R6P4MXS</b>	250
35, 38	1 1/2	1 7/8-12	1 7/8-12	69	39	60	60	995	<b>24-4R6P4MXS</b>	170

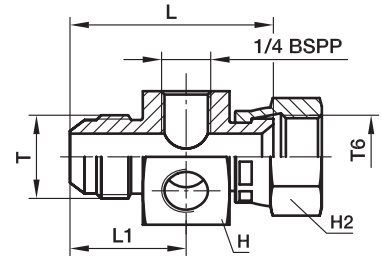
Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

## K6004MX Test point connector

Male / Female swivel Triple-Lok® 37° flare end / 2 BSPP female threads



Tube O.D. T		Thread UN/UNF-2A T	Thread UN/UNF-2B T6	L	L1	H	H2	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
mm	in.			mm	mm	mm	mm			
6	1/4	7/16-20	7/16-20	45	26	36	16	170	<b>4-4K6004MXS</b>	500
8	5/16	1/2-20	1/2-20	46	26	36	17	190	<b>5-4K6004MXS</b>	420
10	3/8	9/16-18	9/16-18	47	26	36	19	200	<b>6-4K6004MXS</b>	350
12	1/2	3/4-16	3/4-16	50	28	36	22	208	<b>8-4K6004MXS</b>	350
14, 15, 16	5/8	7/8-14	7/8-14	54	31	36	27	237	<b>10-4K6004MXS</b>	350
18, 20	3/4	1 1/16-12	1 1/16-12	56	34	41	32	316	<b>12-4K6004MXS</b>	350
25	1	1 5/16-12	1 5/16-12	60	35	46	38	406	<b>16-4K6004MXS</b>	250

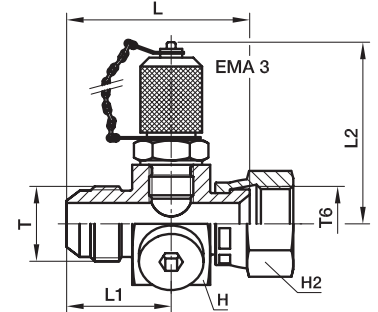
Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

## K6PP4MX Test point connector

Male / female swivel Triple-Lok® 37° flare end / EMA3 test point & blanking plug



Tube O.D. T		Thread UN/UNF-2A T	Thread UN/UNF-2B T6	L	L1	L2	H	H2	Weight (steel) g/1 piece	Triple-Lok® Steel	PN (bar)
mm	in.			mm	mm	mm	mm	mm			
6	1/4	7/16-20	7/16-20	45	26	54	36	16	270	<b>4-4K6PP4MXS</b>	500
8	5/16	1/2-20	1/2-20	46	26	54	36	17	290	<b>5-4K6PP4MXS</b>	420
10	3/8	9/16-18	9/16-18	47	26	54	36	19	300	<b>6-4K6PP4MXS</b>	350
12	1/2	3/4-16	3/4-16	50	28	54	36	22	308	<b>8-4K6PP4MXS</b>	350
14, 15, 16	5/8	7/8-14	7/8-14	54	31	54	36	27	337	<b>10-4K6PP4MXS</b>	350
18, 20	3/4	1 1/16-12	1 1/16-12	56	34	54	41	32	416	<b>12-4K6PP4MXS</b>	350
25	1	1 5/16-12	1 5/16-12	60	35	54	46	38	506	<b>16-4K6PP4MXS</b>	250

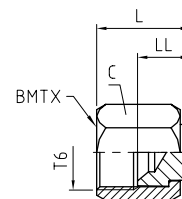
Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

## FNMTX Cap

Triple-Lok® 37° Flare female swivel cap end  
SAE 070112 MS51532



Tube O.D.	Thread UN/UNF-2B T6	C mm	LL mm	L mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass	PN (bar)	
									mm	in.
6	1/8	5/16-24	10	10	10	<b>2 FNTX-S</b>			500	—
	3/16	3/8-24	11	10	11	<b>3 FNTX-S</b>			500	—
	1/4	7/16-20	14	9	14	<b>4FNMTXS</b>	<b>4FNMTXSS</b>	<b>4 FNTX-B</b>	500	350
	5/16	1/2-20	17	10	19	<b>5FNMTXS</b>	<b>5FNMTXSS</b>	<b>5 FNTX-B</b>	420	350
8	3/8	9/16-18	19	12	21	<b>6FNMTXS</b>	<b>6FNMTXSS</b>	<b>6 FNTX-B</b>	420	350
12, 15, 16, 18, 20, 22, 25	1/2	3/4-16	22	14	24	<b>8FNMTXS</b>	<b>8FNMTXSS</b>	<b>8 FNTX-B</b>	420	350
	5/8	7/8-14	27	14	27	<b>10FNMTXS</b>	<b>10FNMTXSS</b>	<b>10 FNTX-B</b>	350	350
	3/4	1 1/16-12	32	17	32	<b>12FNMTXS</b>	<b>12FNMTXSS</b>	<b>12 FNTX-B</b>	350	350
	7/8	1 3/16-12	35	16	32	<b>14 FNTX-S</b>	<b>14FNMTXSS</b>	<b>14 FNTX-B</b>	310	280
	1	1 5/16-12	41	16	33	<b>16FNMTXS</b>	<b>16FNMTXSS</b>	<b>16 FNTX-B</b>	310	280
28, 30, 32, 35, 38	1 1/4	1 5/8-12	50	19	35	<b>20FNMTXS</b>	<b>20FNMTXSS</b>	<b>20 FNTX-B</b>	280	210
	1 1/2	1 7/8-12	60	24	43	<b>24FNMTXS</b>	<b>24FNMTXSS</b>	<b>24 FNTX-B</b>	210	140
	2	2 1/2-12	73	28	51	<b>32 FNTX-S</b>			140	—

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

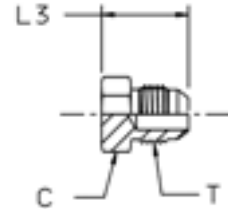
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

For Brass parts reduce pressures by 35 %.



## PNMTX Plug

Triple-Lok® 37° Flare end plug  
SAE 070109 MS51518



Tube O.D. mm	in.	Thread UN/UNF-2A T	C mm	L3 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
								S	SS
6	1/8	5/16-24	11	18	9	<b>2 PNTX-S</b>		500	—
	3/16	3/8-24	11	19	10	<b>3 PNTX-S</b>		500	—
	1/4	7/16-20	13	20	10	<b>4PNMTXS</b>	<b>4PNMTXSS</b>	500	350
	5/16	1/2-20	14	20	14	<b>5PNMTXS</b>	<b>5PNMTXSS</b>	420	350
8	3/8	9/16-18	17	21	19	<b>6PNMTXS</b>	<b>6PNMTXSS</b>	420	350
12, 15, 16, 18, 20, 22, 25	1/2	3/4-16	19	24	39	<b>8PNMTXS</b>	<b>8PNMTXSS</b>	420	350
	5/8	7/8-14	24	28	60	<b>10PNMTXS</b>	<b>10PNMTXSS</b>	350	350
	3/4	1 1/16-12	27	33	93	<b>12PNMTXS</b>	<b>12PNMTXSS</b>	350	350
	7/8	1 3/16-12	32	33	95	<b>14 PNTX-S</b>	<b>14PNMTXSS</b>	280	280
	1	1 5/16-12	36	34	98	<b>16 PNTX-S</b>	<b>16PNMTXSS</b>	280	280
28, 30, 32, 35, 38	1 1/4	1 5/8-12	46	37	269	<b>20 PNTX-S</b>	<b>20PNMTXSS</b>	280	210
	1 1/2	1 7/8-12	51	42	360	<b>24 PNTX-S</b>	<b>24PNMTXSS</b>	210	140
	2	2 1/2-12	67	52	470	<b>32 PNTX-S</b>		140	—

Order codes shown are part of our current manufacturing programme.

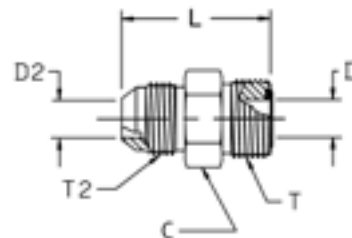
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## XHMLO Conversion union

Triple-Lok® 37° Flare End / O-Lok ORFS end



Tube O.D. T2/T		Thread UN/UNF-2A T2	Thread UN/UNF-2A T	D mm	D2 mm	L mm	C mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.										S	SS
6	1/4	7/16-20	9/16-18	5	5	32	16	29	<b>4 XHLO-S</b>	<b>4XHMLOSS</b>	500	350
8, 10	5/16, 3/8	9/16-18	11/16-16	7	7	34	19	45	<b>6 XHLO-S</b>	<b>6XHMLOSS</b>	420	350
12	1/2	3/4-16	13/16-16	10	10	39	22	70	<b>8 XHLO-S</b>	<b>8XHMLOSS</b>	420	350
14, 15, 16	5/8	7/8-14	1-14	13	13	47	27	119	<b>10 XHLO-S</b>	<b>10XHMLOSS</b>	350	350
18, 20	3/4	1 1/16-12	1 3/16-12	16	16	52	32	181	<b>12 XHLO-S</b>	<b>12XHMLOSS</b>	350	350
22, 25	1	1 5/16-12	1 7/16-12	21	21	55	38	265	<b>16 XHLO-S</b>	<b>16XHMLOSS</b>	280	280
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	26	26	58	45	383	<b>20 XHLO-S</b>	<b>20XHMLOSS</b>	280	210
35, 38	1 1/2	1 7/8-12	2-12	32	32	63	54	562	<b>24 XHLO-S</b>	<b>24XHMLOSS</b>	210	140

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

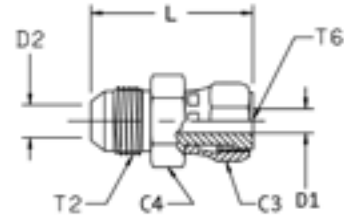
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



## XHML6 Conversion swivel nut connector

Triple-Lok® 37° Flare end / O-Lok ORFS female swivel end



Tube O.D. T2/T6		Thread UN/UNF-2A T2	Thread UN/UNF-2B T6	C3 mm	D1 mm	D2 mm	L mm	C4 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.											S	SS
6	1/4	7/16-20	9/16-18	17	4	4	38	16	29	<b>4 XHL6-S</b>	<b>4XHML6SS</b>	500	350
8, 10	5/16, 3/8	9/16-18	11/16-16	21	7	7	41	19	46	<b>6 XHL6-S</b>	<b>6XHML6SS</b>	420	350
12	1/2	3/4-16	13/16-16	24	9	9	48	22	73	<b>8 XHL6-S</b>	<b>8XHML6SS</b>	420	350
14, 15, 16	5/8	7/8-14	1-14	29	12	12	56	27	126	<b>10 XHL6-S</b>	<b>10XHML6SS</b>	350	350
18, 20	3/4	1 1/16-12	1 3/16-12	35	14	14	64	32	205	<b>12 XHL6-S</b>	<b>12XHML6SS</b>	350	350
22, 25	1	1 5/16-12	1 7/16-12	41	20	20	68	38	285	<b>16 XHL6-S</b>	<b>16XHML6SS</b>	280	280
28, 30, 32	1 1/4	1 5/8-12	1 11/16-12	48	26	26	71	43	360	<b>20 XHL6-S</b>	<b>20XHML6SS</b>	280	280

Order codes shown are part of our current manufacturing programme.

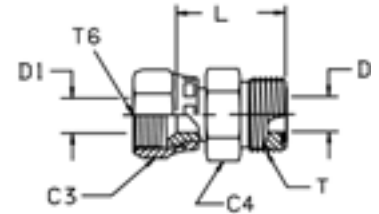
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## LOHMX6 Conversion swivel nut connector

Triple-Lok® 37° Flare female swivel end / O-Lok ORFS end



Tube O.D. T6/T		Thread UN/UNF-2B T6	Thread UN/UNF-2A T	C3	D	D1	C4	L	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	PN (bar)	
mm	in.			mm	mm	mm	mm	mm				S	SS
6	1/4	7/16-20	9/16-18	14	5	5	16	26	26	<b>4 LOHX6-S</b>	<b>4LOHMX6SS</b>	500	350
8, 10	5/16, 3/8	9/16-18	11/16-16	18	7	7	19	29	40	<b>6 LOHX6-S</b>	<b>6LOHMX6SS</b>	350	350
12	1/2	3/4-16	13/16-16	22	10	10	22	34	63	<b>8 LOHX6-S</b>	<b>8LOHMX6SS</b>	350	350
14, 15, 16	5/8	7/8-14	1-14	25	13	13	27	39	103	<b>10 LOHX6-S</b>	<b>10LOHMX6SS</b>	350	350
18, 20	3/4	1 1/16-12	1 3/16-12	32	16	16	32	41	162	<b>12 LOHX6-S</b>	<b>12LOHMX6SS</b>	350	350
22, 25	1	1 5/16-12	1 7/16-12	38	21	21	38	46	229	<b>16 LOHX6-S</b>	<b>16LOHMX6SS</b>	250	250

Steel, stainless steel and brass Triple-Lok® parts are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page K91.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

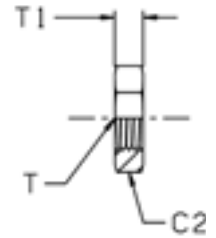
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



**WLNM Bulkhead locknut**

Bulkhead fitting locknut  
SAE 080118 MS51860



Thread UN/UNF-2B T	C2 mm	T1 mm	Weight (steel) g/1 piece	Triple-Lok® Steel	Triple-Lok® Stainless Steel	Triple-Lok® Brass
3/8-24	17	6	9	<b>3 WLN-S</b>		
7/16-20	17	7	9	<b>4WLNMS</b>	<b>4WLNMS</b>	<b>4WLNMB</b>
1/2-20	19	7	9	<b>5WLNMS</b>	<b>5WLNMS</b>	<b>5WLNMB</b>
9/16-18	22	7	11	<b>6WLNMS</b>	<b>6WLNMS</b>	<b>6WLNMB</b>
3/4-16	24	8	18	<b>8WLNMS</b>	<b>8WLNMS</b>	<b>8WLNMB</b>
7/8-14	30	9	24	<b>10WLNMS</b>	<b>10WLNMS</b>	<b>10WLNMB</b>
1 1/16-12	36	10	42	<b>12WLNMS</b>	<b>12WLNMS</b>	<b>12WLNMB</b>
1 3/16-12	38	10	45	<b>14 WLN-S</b>	<b>14WLNMS</b>	<b>14WLNMB</b>
1 5/16-12	41	10	49	<b>16WLNMS</b>	<b>16WLNMS</b>	<b>16WLNMB</b>
1 5/8-12	50	10	50	<b>20WLNMS</b>	<b>20WLNMS</b>	<b>20WLNMB</b>
1 7/8-12	55	10	68	<b>24WLNMS</b>	<b>24WLNMS</b>	<b>24WLNMB</b>
2 1/2-12	70	10	80	<b>32 WLN-S</b>		

Order codes shown are part of our current manufacturing programme.  
Imperial and metric parts may vary in hexagon dimensions.

## Spare parts guide – Triple-Lok® retaining rings and seals

### BSPP male threads – ISO 1179

BSPP Thread	ED seal Order code		O-ring order code*		O-ring ID × section mm	Retainer ring Order code Steel	Retainer ring Order code Stainless Steel	Copper washer Order code
	NBR	FKM	NBR	FKM				
1/8	ED10X1X	ED10X1VITX	6-002-N552-9	6-002-V894-9	8.00 × 2.00	8207-1/8	8207SS1/8	–
1/4	ED14X1.5X	ED14X1.5VITX	2-111-N552-9	2-111-V894-9	10.77 × 2.62	8207-1/4	8207SS1/4A	M25180
3/8	ED3/8X	ED3/8VITX	2-113-N552-9	2-113-V894-9	13.94 × 2.62	8207-3/8	8207SS3/8A	–
1/2	ED1/2X	ED1/2VITX	5-256-N552-9	5-256-V894-9	17.96 × 2.62	8207-1/2	8207SS1/2	M25182
3/4	ED26X1.5X	ED26X1.5VITX	2-119-N552-9	2-119-V894-9	23.47 × 2.62	8207-3/4	8207SS3/4	–
1	ED33X2X	ED33X2VITX	2-217-N552-9	2-217-V894-9	29.74 × 3.53	8207-1	8207SS1A	–
1 1/4	ED42X2X	ED42X2VITX	2-222-N552-9	2-222-V894-9	37.69 × 3.53	8207-1-1/4	8207SS1 1/4	–
1 1/2	ED48X2X	ED48X2VITX	2-224-N552-9	2-224-V894-9	44.04 × 3.53	8207-1-1/2	8207SS1 1/2	–

Typical fittings using these parts: F42EDMX / F4OMX / C4OMX / V4OMX etc.

\* Must be used with correct retainer ring

### Metric male threads – ISO 9974

Metric Thread	ED seal order code		O-ring Order code*		O-ring ID × section mm	Retainer ring Order code Steel	Retainer ring Order code Stainless Steel
	NBR	FKM	NBR	FKM			
M 10×1.0	ED10X1X	ED10X1VITX	6-074-N552-9	6-074-V894-9	8.00 × 1.50	M10RR	RRM10X1SS
M 12×1.5	ED12X1.5X	ED12x1.5VITX	2-012-N552-9	2-012-V894-9	9.25 × 1.78	M12RR	RRM12X1.5SS
M 14×1.5	ED14X1.5X	ED14X1.5VITX	2-013-N552-9	2-013-V894-9	10.82 × 1.78	M14RR	RRM14X1.5SS
M 16×1.5	ED16X1.5X	ED16X1.5VITX	3-907-N552-9	3-907-V894-9	13.46 × 2.08	M16RR	RRM16X1.5SS
M 18×1.5	ED18X1.5X	ED18X1.5VITX	2-114-N552-9	2-114-V894-9	15.54 × 2.62	M18RR	RRM18X1.5SS
M 22×2.0	ED22X1.5X	ED22X1.5VITX	2-018-N552-9	2-018-V894-9	18.77 × 1.78	M22RR	RRM22X1.5SS
M 27×2.0	ED26X1.5X**	ED26X1.5VITX	2-119-N552-9	2-119-V894-9	23.47 × 2.62	M27RR	RRM27X2SS
M 33×2.0	ED33X2X	ED33X2VITX	2-122-N552-9	2-122-V894-9	28.24 × 2.62	M33RR	RRM33X2SS
M 42×2.0	ED42X2X	ED42X2VITX	2-128-N552-9	2-128-V894-9	37.77 × 2.62	M42RR	RRM42X2SS
M 48×2.0	ED48X2X	ED48X2VITX	2-132-N552-9	2-132-V894-9	44.12 × 2.62	M48RR	RRM48X2SS

Typical fittings using these parts: F82EDMX / F8OMX / C8OMX / V8OMX etc.

\* Must be used with correct retainer ring

\*\* Same seal used for M 26×1.5 and M 27×2.0 Threads

### UN / UNF male threads – ISO 11926

UN / UNF Thread	Dash size	O-ring Order code		O-Ring ID × section (mm)
		NBR	FKM	
5/16-24	2	3-902-N552-9	3-902-V894-9	6.07 × 1.63
3/8-24	3	3-903-N552-9	3-903-V894-9	7.65 × 1.63
7/16-20	4	3-904-N552-9	3-904-V894-9	8.92 × 1.83
1/2-20	5	3-905-N552-9	3-905-V894-9	10.52 × 1.83
9/16-18	6	3-906-N552-9	3-906-V894-9	11.89 × 1.98
3/4-16	8	3-908-N552-9	3-908-V894-9	16.36 × 2.21
7/8-14	10	3-910-N552-9	3-910-V894-9	19.18 × 2.46
1 1/16-12	12	3-912-N552-9	3-912-V894-9	23.47 × 2.95
1 3/16-12	14	3-914-N552-9	3-914-V894-9	26.59 × 2.95
1 5/16-12	16	3-916-N552-9	3-916-V894-9	29.74 × 2.95
1 5/8-12	20	3-920-N552-9	3-920-V894-9	37.47 × 3.00
1 7/8-12	24	3-924-N552-9	3-924-V894-9	43.69 × 3.00
2 1/2-12	32	3-932-N552-9	3-932-V894-9	59.36 × 3.00

Typical fittings using these parts: F5OMX / C5OMX / R5OMX etc.

### Metric male threads – ISO 6149

Metric Thread	O-ring Order code		O-Ring ID × section (mm)
	NBR	FKM	
M 10×1.0	6-345-N552-9	6-345-V894-9	8.20 × 1.50
M 12×1.5	6-346-N552-9	6-346-V894-9	9.40 × 2.10
M 14×1.5	6-347-N552-9	6-347-V894-9	11.40 × 2.10
M 16×1.5	6-348-N552-9	6-348-V894-9	13.40 × 2.10
M 18×1.5	6-349-N552-9	6-349-V894-9	15.40 × 2.10
M 22×1.5	6-350-N552-9	6-350-V894-9	19.40 × 2.10
M 27×2.0	6-351-N552-9	6-351-V894-9	23.70 × 2.80
M 33×2.0	6-352-N552-9	6-352-V894-9	29.70 × 2.80
M 42×2.0	6-353-N552-9	6-353-V894-9	38.70 × 2.80
M 48×2.0	6-354-N552-9	6-354-V894-9	46.70 × 2.80

Typical fittings using these parts: F87OMX / S87OMX etc.

Other seal compounds available on request for alternative applications

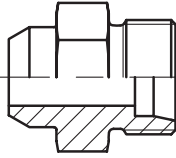
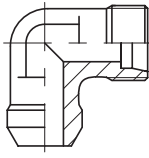
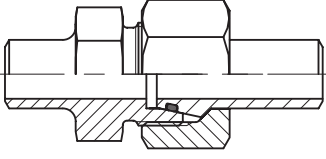
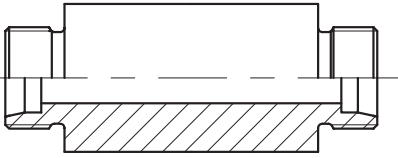
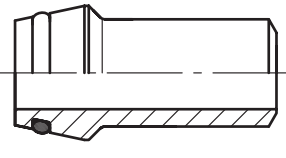
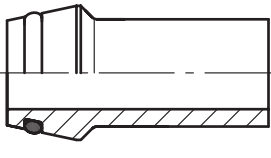

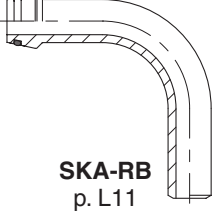
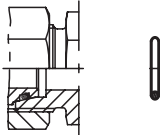




**EO<sup>®</sup> Ermeto Original**  
***Weld fittings***

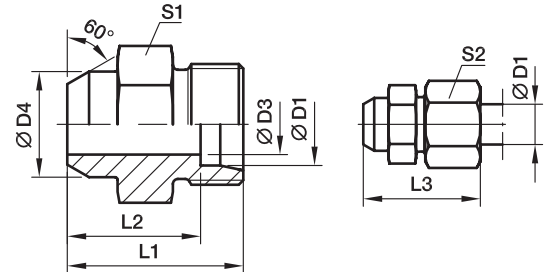


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## AS Weld connector

Butt weld / EO 24° cone end



Series	D1	D3	D4	L1	L2	L3	S1	S2	Weight g/1 piece	Order code	PN (bar) <sup>1)</sup>	
											Steel	Stainless Steel
L <sup>3)</sup>	06	4	10	21	14.0	29	12	14	11	<b>AS06L</b>	315	315
	08	6	12	23	16.0	31	14	17	15	<b>AS08L</b>	315	315
	10	8	14	25	18.0	33	17	19	22	<b>AS10L</b>	315	315
	12	10	16	25	18.0	33	19	22	25	<b>AS12L</b>	315	315
	15	12	19	29	22.0	37	22	27	44	<b>AS15L</b>	315	315
	18	15	22	31	23.5	40	27	32	67	<b>AS18L</b>	315	315
	22	19	27	36	28.5	45	32	36	98	<b>AS22L</b>	160	160
	28	24	32	38	30.5	47	41	41	165	<b>AS28L</b>	160	160
	35	30	40	43	32.5	54	46	50	232	<b>AS35L</b>	160	160
	42	36	46	46	35.0	58	55	60	342	<b>AS42L</b>	160	160
S <sup>4)</sup>	06	4	11	26	19.0	34	14	17	21	<b>AS06S</b>	630	630
	08	5	13	28	21.0	36	17	19	31	<b>AS08S</b>	630	630
	10	7	15	30	22.5	39	19	22	41	<b>AS10S</b>	630	630
	12	8	17	32	24.5	41	22	24	93	<b>AS12S</b>	630	630
	14	10	19	35	27.0	45	24	27	55	<b>AS14S</b>	630	630
	16	12	21	35	26.5	45	27	30	82	<b>AS16S</b>	400	400
	20	16	26	40	29.5	51	32	36	131	<b>AS20S</b>	400	400
	25	20	31	44	32.0	56	41	46	219	<b>AS25S</b>	400	400
	30	25	36	49	35.5	62	46	50	297	<b>AS30S</b>	400	400
	38	32	44	54	38.0	69	55	60	448	<b>AS38S</b>	315	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

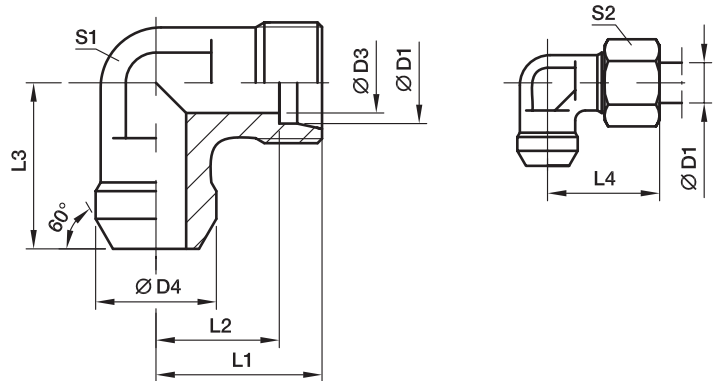
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel		AS16SX
Stainless Steel	71X	AS16S71X

## WAS Weld elbow

Butt weld / EO 24° cone end



Series	D1	D3	D4	L1	L2	L3	L4	S1	S2	Weight g/1 piece	Order code	PN (bar) <sup>1)</sup>	
												Steel	Stainless Steel
L <sup>3)</sup>	06	4	10	19	12.0	19	27	12	14	20	<b>WAS06L</b>	315	315
	08	6	12	21	14.0	23	29	12	17	25	<b>WAS08L</b>	315	315
	10	8	14	22	15.0	24	30	14	19	34	<b>WAS10L</b>	315	315
	12	10	16	24	17.0	25	32	17	22	45	<b>WAS12L</b>	315	315
	15	12	19	28	21.0	30	36	19	27	81	<b>WAS15L</b>	315	315
	18	15	22	31	23.5	33	40	24	32	113	<b>WAS18L</b>	315	315
	22	19	27	35	27.5	37	44	27	36	151	<b>WAS22L</b>	160	160
	28	24	32	38	30.5	42	47	36	41	271	<b>WAS28L</b>	160	160
	35	30	40	45	34.5	49	56	41	50	113	<b>WAS35L</b>	160	160
	42	36	46	51	40.0	57	63	50	60	420	<b>WAS42L</b>	160	160
S <sup>4)</sup>	06	4	11	23	16.0	23	31	12	17	31	<b>WAS06S</b>	630	630
	08	5	13	24	17.0	24	32	14	19	44	<b>WAS08S</b>	630	630
	10	7	15	25	17.5	25	34	17	22	59	<b>WAS10S</b>	630	630
	12	8	17	29	21.5	29	38	17	24	78	<b>WAS12S</b>	630	630
	14	10	19	30	22.0	30	40	19	27	98	<b>WAS14S</b>	630	630
	16	12	21	33	24.5	33	43	24	30	133	<b>WAS16S</b>	400	400
	20	16	26	37	26.5	37	48	27	36	192	<b>WAS20S</b>	400	400
	25	20	31	42	30.0	42	54	36	46	351	<b>WAS25S</b>	400	400
	30	25	36	49	35.5	49	62	41	50	525	<b>WAS30S</b>	400	400
	38	32	44	57	41.0	57	72	50	60	785	<b>WAS38S</b>	315	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

PN (bar) = PN (MPa)

10

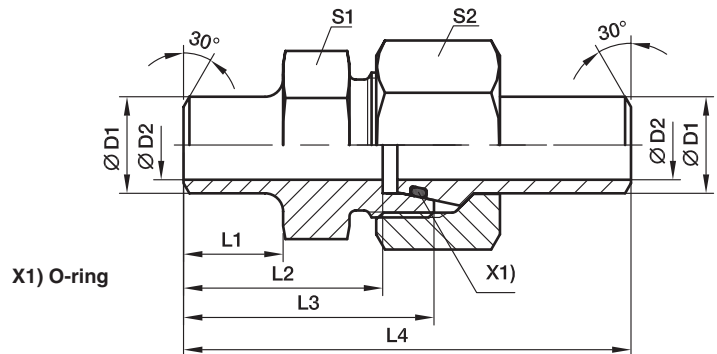
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel		WAS16SX
Stainless Steel	71X	WAS16S71X

## ASK Weld fitting for tubes

Butt weld / Butt weld



Series	D1 	D2	L1	L2	L3	L4	S1	S2	recommended tube	Weight g/1 piece	Order code	PN (bar) <sup>1)</sup>	
												Steel	Stainless Steel
S <sup>4)</sup>	10	8	10.0	24.5	32.0	58.0	19	22	10x1.0	75	<b>ASK610X1S</b>	249	242
	10	7	10.0	24.5	32.0	58.0	19	22	10x1.5	81	<b>ASK610X1.5S</b>	358	349
	10	6	10.0	24.5	32.0	58.0	19	22	10x2.0	86	<b>ASK610X2S</b>	460	447
	12	9	15.0	29.5	37.0	63.0	22	24	12x1.5	106	<b>ASK612X1.5S</b>	305	297
	12	8	15.0	29.5	37.0	63.0	22	24	12x2.0	107	<b>ASK612X2S</b>	393	383
	12	7	15.0	29.5	37.0	63.0	22	24	12x2.5	109	<b>ASK612X2.5S</b>	476	463
	16	13	16.5	33.0	41.5	73.5	27	30	16x1.5	166	<b>ASK616X1.5S</b>	234	228
	16	12	16.5	33.0	41.5	73.5	27	30	16x2.0	175	<b>ASK616X2S</b>	305	297
	16	11	16.5	33.0	41.5	73.5	27	30	16x2.5	184	<b>ASK616X2.5S</b>	372	362
	16	10	16.5	33.0	41.5	73.5	27	30	16x3.0	193	<b>ASK616X3S</b>	400	400
	20	16	19.0	36.5	47.0	83.5	32	36	20x2.0	301	<b>ASK620X2S</b>	249	242
	20	15	19.0	36.5	47.0	83.5	32	36	20x2.5	311	<b>ASK620X2.5S</b>	305	297
20	14	19.0	36.5	47.0	83.5	32	36	20x3.0	316	<b>ASK620X3S</b>	358	349	
20	12	19.0	36.5	47.0	83.5	32	36	20x4.0	322	<b>ASK620X4S</b>	400	400	
25	19	19.5	39.5	51.5	92.5	41	46	25x3.0	551	<b>ASK625X3S</b>	294	286	
25	17	19.5	39.5	51.5	92.5	41	46	25x4.0	559	<b>ASK625X4S</b>	379	369	
25	15	19.5	39.5	51.5	92.5	41	46	25x5.0	589	<b>ASK625X5S</b>	400	400	
30	24	23.0	44.5	58.0	101.5	46	50	30x3.0	671	<b>ASK630X3S</b>	249	242	
30	22	23.0	44.5	58.0	101.5	46	50	30x4.0	679	<b>ASK630X4S</b>	323	314	
30	20	23.0	44.5	58.0	101.5	46	50	30x5.0	726	<b>ASK630X5S</b>	393	383	
30	18	23.0	44.5	58.0	101.5	46	50	30x6.0	791	<b>ASK630X6S</b>	400	400	
38	30	22.0	44.0	60.0	108.0	55	60	38x4.0	988	<b>ASK638X4S</b>	261	254	
38	28	22.0	44.0	60.0	108.0	55	60	38x5.0	1044	<b>ASK638X5S</b>	315	311	
38	26	22.0	44.0	60.0	108.0	55	60	38x6.0	1108	<b>ASK638X6S</b>	315	315	
38	24	22.0	44.0	60.0	108.0	55	60	38x7.0	1205	<b>ASK638X7S</b>	315	315	

<sup>1)</sup> Pressure shown = item deliverable

<sup>4)</sup> S = heavy series

PN (bar) = PN (MPa)  
10

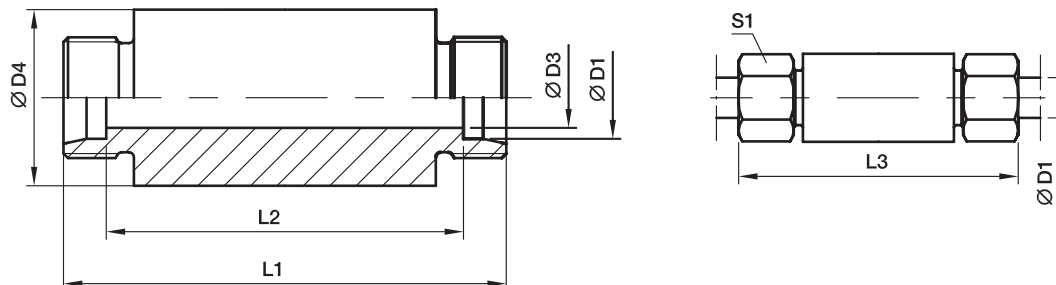
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel		ASK616X2S	NBR
Stainless Steel	71	ASK616X2S71	VIT



## ESV Weld bulkhead fitting

EO 24° cone end / EO 24° cone end



Series	D1	D3	D4	L1	L2	L3	S1	Weight g/1 piece	Order code	PN (bar) <sup>1)</sup>	
										Steel	Stainless Steel
L <sup>3)</sup>	06	4	18	70	56	85	14	103	<b>ESV06L</b>	500	315
	08	6	20	70	56	85	17	121	<b>ESV08L</b>	500	315
	10	8	22	72	58	87	19	142	<b>ESV10L</b>	500	315
	12	10	25	72	58	87	22	176	<b>ESV12L</b>	400	315
	15	12	28	84	70	100	27	262	<b>ESV15L</b>	400	315
	18	15	32	84	69	101	32	333	<b>ESV18L</b>	400	315
	22	19	36	88	73	105	36	394	<b>ESV22L</b>	250	160
	28	24	40	88	73	106	41	448	<b>ESV28L</b>	250	160
	35	30	50	92	71	114	50	713	<b>ESV35L</b>	250	160
	42	36	60	92	70	115	60	997	<b>ESV42L</b>	250	160
S <sup>4)</sup>	06	4	20	74	60	89	17	135	<b>ESV06S</b>	800	630
	08	5	22	74	60	89	19	163	<b>ESV08S</b>	800	630
	10	7	25	74	59	91	22	201	<b>ESV10S</b>	800	630
	12	8	28	74	59	91	24	249	<b>ESV12S</b>	630	630
	14	10	30	88	72	107	27	337	<b>ESV14S</b>	630	630
	16	12	35	88	71	107	30	441	<b>ESV16S</b>	630	400
	20	16	38	92	71	114	36	509	<b>ESV20S</b>	420	400
	25	20	45	96	72	120	46	720	<b>ESV25S</b>	420	400
	30	25	50	100	73	126	50	873	<b>ESV30S</b>	420	400
	38	32	60	104	72	133	60	1248	<b>ESV38S</b>	420	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

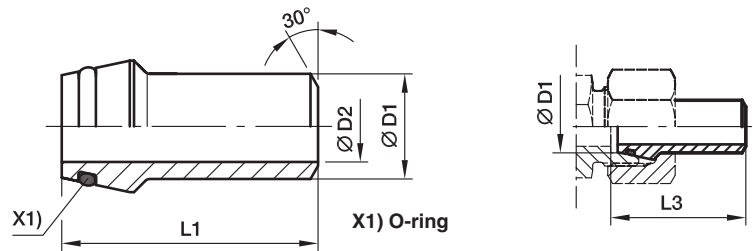
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes		
Material	Suffix surface and material	Example
Steel		ESV16SX
Stainless Steel	71X	ESV16S71X

## SKA Weld nipple

EO 24° O-ring weld nipple / butt weld



Series	D1 	D2	L1	L3	recommended tube	Weight g/1 piece	Order code	PN (bar) <sup>1)</sup>		
								Steel	Stainless Steel	
L <sup>3)</sup> /S <sup>4)</sup>	06	3.0	31.0	31.5	06x1.5	7	<b>SKA06X1.5</b>	528	539	
	08	4.5	31.0	31.5	08x1.5	11	<b>SKA08X1.5</b>	414	424	
	08	4.0	31.0	31.5	08x2.0	11	<b>SKA08X2</b>	528	539	
	10	8.0	32.5	33.5	10x1.0	13	<b>SKA10X1</b>	249	242	
	10	7.0	32.5	33.5	10x1.5	13	<b>SKA10X1.5</b>	358	349	
	10	6.0	32.5	33.5	10x2.0	16	<b>SKA10X2</b>	460	447	
	12	9.0	32.5	33.5	12x1.5	21	<b>SKA12X1.5</b>	305	297	
	12	8.0	32.5	33.5	12x2.0	20	<b>SKA12X2</b>	393	383	
	12	7.0	32.5	33.5	12x2.5	22	<b>SKA12X2.5</b>	476	463	
	L <sup>3)</sup>	15	11.0	34.0	34.5	15x2.0	29	<b>SKA15X2</b>	315	315
		15	10.0	34.0	34.5	15x2.5	31	<b>SKA15X2.5</b>	315	315
		18	13.0	35.5	36.5	18x2.5	40	<b>SKA18X2.5</b>	315	315
22		17.0	38.5	39.5	22x2.5	57	<b>SKA22X2.5</b>	160	160	
28		23.0	41.5	42.5	28x2.5	73	<b>SKA28X2.5</b>	160	160	
28		22.0	41.5	42.5	28x3.0	89	<b>SKA28X3</b>	160	160	
35		28.0	47.5	49.5	35x3.5	140	<b>SKA35X3.5</b>	160	160	
35		27.0	47.5	49.5	35x4.0	150	<b>SKA35X4</b>	160	160	
42		36.0	47.5	50.0	42x3.0	155	<b>SKA42X3</b>	160	160	
42		34.0	47.5	50.0	42x4.0	190	<b>SKA42X4</b>	160	160	
S <sup>4)</sup>		14	10.0	38.5	39.5	14x2.0	26	<b>SKA14X2</b>	343	334
		14	8.0	38.5	39.5	14x3.0	33	<b>SKA14X3</b>	487	474
	16	13.0	39.0	40.5	16x1.5	32	<b>SKA16X1.5</b>	234	228	
	16	12.0	39.0	40.5	16x2.0	31	<b>SKA16X2</b>	305	297	
	16	11.0	39.0	40.5	16x2.5	38	<b>SKA16X2.5</b>	372	362	
	16	10.0	39.0	40.5	16x3.0	41	<b>SKA16X3</b>	400	400	
	20	16.0	45.0	47.0	20x2.0	57	<b>SKA20X2</b>	249	242	
	20	15.0	45.0	47.0	20x2.5	57	<b>SKA20X2.5</b>	305	297	
	20	14.0	45.0	47.0	20x3.0	64	<b>SKA20X3</b>	358	349	
	20	13.0	45.0	47.0	20x3.5	71	<b>SKA20X3.5</b>	400	400	
	20	12.0	45.0	47.0	20x4.0	78	<b>SKA20X4</b>	400	400	
	25	19.0	49.5	53.0	25x3.0	89	<b>SKA25X3</b>	294	286	
	25	18.0	49.5	53.0	25x3.5	100	<b>SKA25X3.5</b>	337	328	
	25	17.0	49.5	53.0	25x4.0	111	<b>SKA25X4</b>	379	369	
	25	15.0	49.5	53.0	25x5.0	125	<b>SKA25X5</b>	400	400	
	30	24.0	52.0	57.0	30x3.0	113	<b>SKA30X3</b>	249	242	
	30	22.0	52.0	57.0	30x4.0	141	<b>SKA30X4</b>	323	314	
	30	20.0	52.0	57.0	30x5.0	166	<b>SKA30X5</b>	393	383	
	30	18.0	52.0	57.0	30x6.0	188	<b>SKA30X6</b>	400	400	
	38	32.0	56.5	64.0	38x3.0	163	<b>SKA38X3</b>	200	195	
	38	30.0	56.5	64.0	38x4.0	209	<b>SKA38X4</b>	261	254	
	38	28.0	56.5	64.0	38x5.0	247	<b>SKA38X5</b>	315	315	
	38	26.0	56.5	64.0	38x6.0	270	<b>SKA38X6</b>	315	315	
	38	24.0	56.5	64.0	38x7.0	270	<b>SKA38X7</b>	315	315	

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

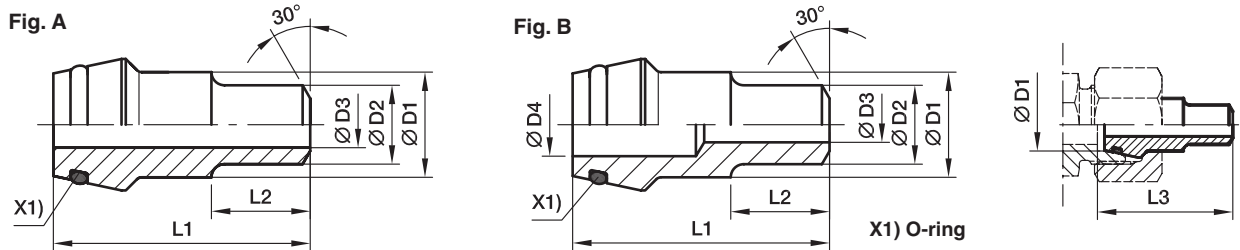
$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel		SKA16X2	NBR
Stainless Steel	71	SKA16X271	VIT

## SKAR Reducing weld nipple

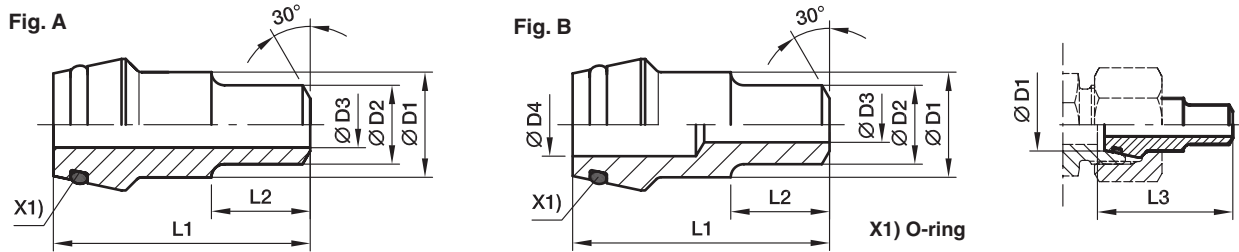
EO 24° O-ring weld nipple / butt weld



Series	D1	D2	D3	D4	L1	L2	L3	Fig.	Weight g/1 piece	Order code	PN (bar) <sup>1)</sup>		
											Steel	Stainless Steel	
L <sup>3</sup> /S <sup>4</sup> )	08	06	3	5	31.0	12	31.5	A	14	SKAR08/06X1.5	528	539	
	10	06	3		32.5	12	33.5	B	15	SKAR10/06X1.5	528	539	
	10	08	5		32.5	12	33.5	A	16	SKAR10/08X1.5	414	424	
	10	08	4	6	32.5	12	33.5	A	17	SKAR10/08X2	528	539	
	12	08	5		32.5	14	33.5	A	18	SKAR12/08X1.5	414	424	
	12	08	4		32.5	14	33.5	B	20	SKAR12/08X2	528	539	
	12	10	7		32.5	14	33.5	A	18	SKAR12/10X1.5	358	349	
S <sup>4</sup> )	16	10	6		39.0	15	40.5	A	43	SKAR16/10X2	400	400	
	16	12	9		39.0	15	40.5	A	45	SKAR16/12X1.5	305	297	
	16	12	8		39.0	15	40.5	A	47	SKAR16/12X2	393	383	
	16	12	7		39.0	15	40.5	A	49	SKAR16/12X2.5	400	400	
	20	12	9		45.0	17	47.0	A	76	SKAR20/12X1.5	305	297	
	20	12	8		45.0	17	47.0	A	78	SKAR20/12X2	393	383	
	20	12	7		45.0	17	47.0	A	80	SKAR20/12X2.5	400	400	
	20	12	6		45.0	17	47.0	A	86	SKAR20/12X3	400	400	
	20	16	12		45.0	17	47.0	A	74	SKAR20/16X2	305	297	
	20	16	11		45.0	17	47.0	A	76	SKAR20/16X2.5	372	362	
	20	16	10		45.0	17	47.0	A	78	SKAR20/16X3	400	400	
	25	12	9		49.5	20	53.0	A	117	SKAR25/12X1.5	305	297	
	25	12	8		49.5	20	53.0	A	121	SKAR25/12X2	393	383	
	25	12	7		49.5	20	53.0	A	125	SKAR25/12X2.5	400	400	
	25	12	6	15	49.5	20	53.0	B	129	SKAR25/12X3	400	400	
	25	16	12		49.5	20	53.0	A	115	SKAR25/16X2	305	297	
	25	16	11		49.5	20	53.0	A	120	SKAR25/16X2.5	372	362	
	25	16	10		49.5	20	53.0	A	123	SKAR25/16X3	400	400	
	25	20	16		49.5	20	53.0	A	94	SKAR25/20X2	249	242	
	25	20	15		49.5	20	53.0	A	104	SKAR25/20X2.5	305	297	
	25	20	14		49.5	20	53.0	A	114	SKAR25/20X3	358	349	
	25	20	12		49.5	20	53.0	A	124	SKAR25/20X4	400	400	
	30	12	9		22	52.0	22	57.0	B	135	SKAR30/12X1.5	305	297
	30	12	8		22	52.0	22	57.0	B	145	SKAR30/12X2	323	383
	30	12	6	22	52.0	22	57.0	B	155	SKAR30/12X3	400	400	
	30	16	12		52.0	22	57.0	A	166	SKAR30/16X2	305	297	
	30	16	11		52.0	22	57.0	A	176	SKAR30/16X2.5	323	362	
	30	20	16		52.0	22	57.0	A	149	SKAR30/20X2	249	242	
	30	20	15		52.0	22	57.0	A	159	SKAR30/20X2.5	305	297	
	30	20	14		52.0	22	57.0	A	169	SKAR30/20X3	358	349	
	30	20	12		52.0	22	57.0	A	184	SKAR30/20X4	400	400	
	30	25	20		52.0	22	57.0	A	141	SKAR30/25X2.5	249	242	
	30	25	19		52.0	22	57.0	A	156	SKAR30/25X3	294	286	
30	25	17	52.0		22	57.0	A	168	SKAR30/25X4	379	369		

## SKAR Reducing weld nipple

EO 24° O-ring weld nipple / butt weld



Series	D1	D2	D3	D4	L1	L2	L3	Fig.	Weight g/1 piece	Order code	PN (bar) <sup>1)</sup>	
											Steel	Stainless Steel
S <sup>4)</sup>	38	12	9	28	56.5	26	64.0	B	219	SKAR38/12X1.5	305	297
	38	12	8	28	56.5	26	64.0	B	234	SKAR38/12X2	315	315
	38	12	6	28	56.5	26	64.0	B	249	SKAR38/12X3	315	315
	38	16	12		56.5	26	64.0	A	279	SKAR38/16X2	305	297
	38	16	11		56.5	26	64.0	A	294	SKAR38/16X2.5	315	315
	38	16	10		56.5	26	64.0	A	309	SKAR38/16X3	315	315
	38	20	16		56.5	26	64.0	A	263	SKAR38/20X2	249	242
	38	20	15		56.5	26	64.0	A	278	SKAR38/20X2.5	305	297
	38	20	14		56.5	26	64.0	A	293	SKAR38/20X3	315	315
	38	20	12		56.5	26	64.0	A	299	SKAR38/20X4	315	315
	38	25	20		56.5	26	64.0	A	242	SKAR38/25X2.5	249	242
	38	25	19		56.5	26	64.0	A	262	SKAR38/25X3	294	286
	38	25	17		56.5	26	64.0	B	285	SKAR38/25X4	315	315
	38	30	24		56.5	26	64.0	A	256	SKAR38/30X3	249	242
	38	30	22		56.5	26	64.0	A	286	SKAR38/30X4	315	315
	38	30	20		56.5	26	64.0	A	316	SKAR38/30X5	315	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

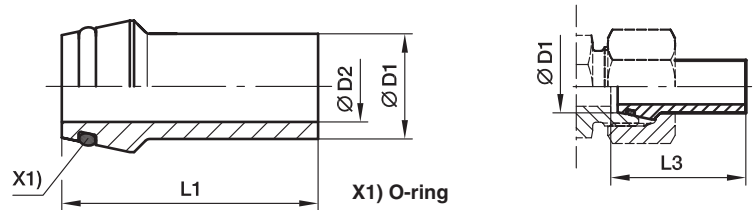
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel		SKAR16/12X2	NBR
Stainless Steel	71	SKAR16/12X271	VIT

## SKA-ORB Weld nipple (orbital)

EO 24° O-ring weld nipple / butt weld (orbital)



Series	D1	D2	L1	L3	recommended tube	Weight g/1 piece	Order code	PN (bar) <sup>1)</sup> Stainless Steel
L <sup>3)</sup> /S <sup>4)</sup>	10	6.0	37.5	38.5	10×1.5	13	<b>SKA10X1.5ORB</b>	358
	12	8.0	37.5	38.5	12×1.5	21	<b>SKA12X1.5ORB</b>	305
	12	8.0	37.5	38.5	12×2.0	255	<b>SKA12X2ORB</b>	393
L <sup>3)</sup>	18	13.0	38.0	39.0	18×2.0	43	<b>SKA18X2ORB</b>	290
	22	17.0	38.5	39.5	22×2.0	50	<b>SKA22X2ORB</b>	250
	28	22.0	41.5	42.5	28×2.0	69	<b>SKA28X2ORB</b>	204
	42	36.0	47.5	50.0	42×3.0	160	<b>SKA42X3ORB</b>	182
S <sup>4)</sup>	16	12.0	39.0	40.5	16×2.0	310	<b>SKA16X2ORB</b>	305
	20	14.0	45.0	47.0	20×3.0	640	<b>SKA20X3ORB</b>	358
	25	19.0	49.5	53.0	25×3.0	890	<b>SKA25X3ORB</b>	294

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

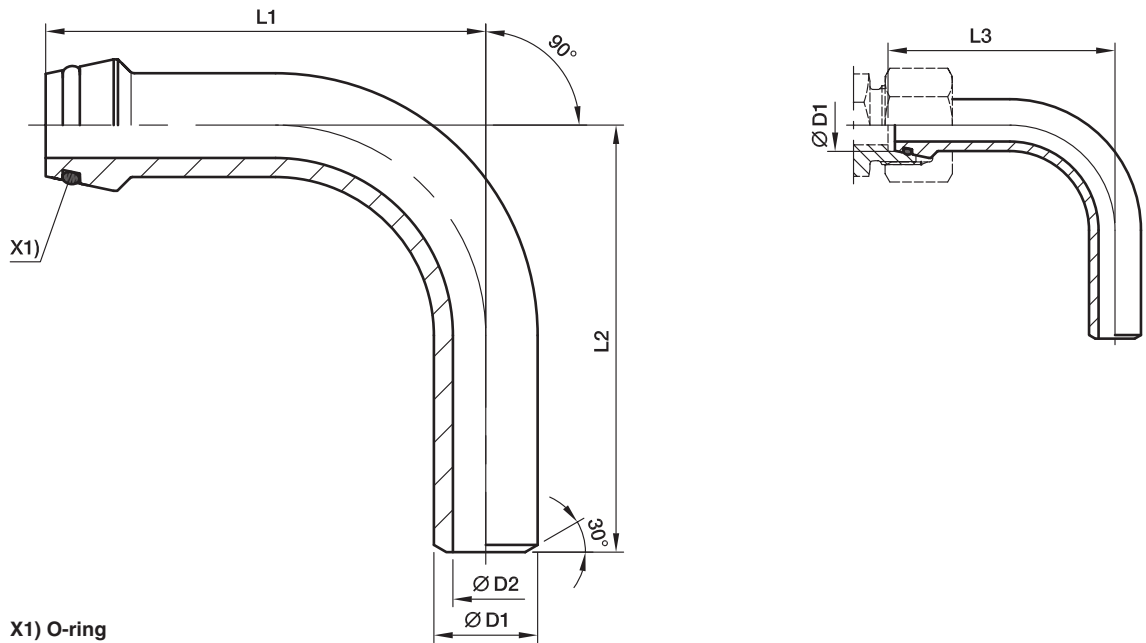
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Stainless Steel	71	SKA16X2ORB71	VIT

## SKA-RB Tube bend weld nipple

EO 24° O-ring weld nipple / butt weld



X1) O-ring

Series	D1	D2	L1	L2	L3	recommended tube	Weight g/1 piece	Order code	PN (bar) <sup>1)</sup>	
									Steel	Stainless Steel
S <sup>4)</sup>	10	6	49	45	50.0	10×2.0	38	<b>SKA10X2RB</b>	460	447
	12	7	51	50	52.0	12×2.5	50	<b>SKA12X2.5RB</b>	476	463
	16	10	67	60	68.5	16×3.0	105	<b>SKA16X3RB</b>	400	400
	20	12	85	65	87.0	20×4.0	217	<b>SKA20X4RB</b>	400	400
	25	17	85	85	88.5	25×4.0	295	<b>SKA25X4RB</b>	379	369
	25	15	85	85	88.5	25×5.0	353	<b>SKA25X5RB</b>	400	400
	30	22	111	110	116.0	30×4.0	469	<b>SKA30X4RB</b>	323	314
	30	20	111	110	116.0	30×5.0	568	<b>SKA30X5RB</b>	393	383
	38	28	136	130	143.5	38×5.0	876	<b>SKA38X5RB</b>	315	315
	38	26	136	130	143.5	38×6.0	1045	<b>SKA38X6RB</b>	315	315

<sup>1)</sup> Pressure shown = item deliverable

<sup>4)</sup> S = heavy series

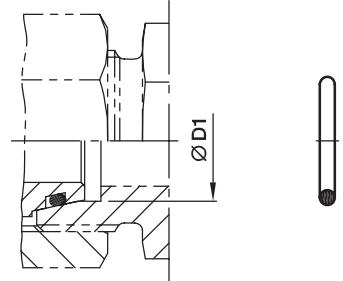
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

\*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel		SKA16X3RB	NBR
Stainless Steel	71	SKA16X3RB71	VIT

## OR O-ring for weld nipple

For Type: SKA, SKAR, SKA-RB



Series	D1 	O-ring NBR Shore-Hardness approx. 90	O-ring FKM Shore-Hardness approx. 90
L <sup>3)</sup>	06	OR4.5X1.5X	OR4.5X1.5VITX
	08	OR6.5X1.5X	OR6.5X1.5VITX
	10	OR8.5X1.5X	OR8X1.5VITX
	12	OR10.5X1.5X	OR10X1.5VITX
	15	OR12.5X1.5X	OR12X2VITX
	18	OR16X2X	OR15X2VITX
	22	OR20X2X	OR20X2VITX
	28	OR26X2X	OR26X2VITX
	35	OR32X2.5X	OR32X2.5VITX
	42	OR39X2.5X	OR38X2.5VITX
S <sup>4)</sup>	06	OR4.5X1.5X	OR4.5X1.5VITX
	08	OR6.5X1.5X	OR6.5X1.5VITX
	10	OR8.5X1.5X	OR8X1.5VITX
	12	OR10.5X1.5X	OR10X1.5VITX
	14	OR12X2X	OR12X2VITX
	16	OR14X2X	OR13X2VITX
	20	OR17X2.5X	OR16.3X2.4VITX
	25	OR22X2.5X	OR20.3X2.4VITX
	30	OR27X2.5X	OR25.3X2.4VITX
	38	OR35X2.5X	OR33.3X2.4VITX

<sup>3)</sup>L = light series; <sup>4)</sup>S = heavy series



**EO<sup>®</sup> Ermeto Original**  
***High Pressure***  
***Hydraulic Flanges***







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## Introduction

The 4 bolt flange connections conforming to SAE J518 and ISO 6162-1 and -2 are proven, leak-free connections, especially suited for larger sizes, high pressures and assembly in tight quarters. Threaded port connections such as SAE straight thread O-ring and ISO 6149 are reasonably easy to assemble and provide 6000 psi and higher pressure capability up to size 12 (M27). Beyond this size the pressure rating starts to decrease and assembly torques increase rapidly.

The 4 bolt flange port connections provide ability to connect larger sizes and achieve higher-pressure capability at reasonable assembly torques. Because of the lower assembly torques compared to an equivalent size threaded port, these connections are well suited for tight quarters where wrench clearances are limited.

## Design and construction

Parker 4 bolt flange products are designed to provide different methods of connecting a tube, hose, pipe or another fitting to the SAE standard 4-bolt flange port.

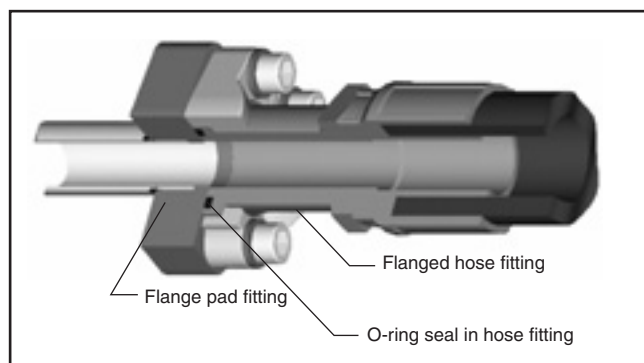
**Flange fittings** – All Parker flange fittings, except for those with square mounting hole pattern, are designed to conform to O-ring groove, bolt holes and bolt pattern dimensions of either Code 61 or Code 62 of SAE J518 and ISO 6162-1 or ISO 6162-2.

The flange adapters and 4 bolt flange block fittings have O-ring grooves conforming to dimensions in ISO 6162-1 and -2 (SAE J518). The 4 bolt flange block fittings have through holes for the mounting bolts, again conforming to ISO 6162-1 and -2 (SAE J518).

The counter fittings have a flat face (no O-ring groove) and the mounting holes are tapped. Where these fittings are used, the seal is in the mating part (flange adapter, flange hose fitting, flange block fitting, etc.) as shown in Fig. 1.

Dimensions other than the O-ring groove, bolt holes, bolt pattern, and the flange foot print are not governed by any industry standard. However, Parker product design follows common industry practice and sound engineering.

Fig. 1 – Flange pad fitting



**Flange clamps** – Clamps are used for providing the holding power to the 4 bolt flange connection. They are offered in split and captive (one-piece) versions. The captive ones are also offered with either drilled or tapped bolt holes. The captive flange clamp with tapped holes is used while connecting a tube to another tube or a hose.

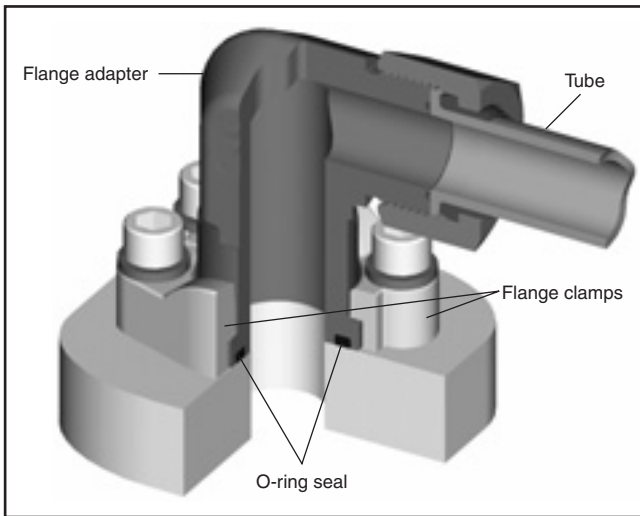
Parker flange clamps are forged for higher strength and durability. They meet all requirements of ISO 6162-1 and -2 (SAE J518). The split clamps make it easy to assemble the connection in close quarters. They also make removal of the flange head component, such as a hose assembly, easy by loosening all four bolts and removing one clamp half.

**Connector plate** – Connector plate is used as a middle plate to connect two flange heads with O-ring grooves, such as two hose assemblies with flange connection ends. The flat surface of the plate provides sealing surface on each side for the O-ring housed in the hose ends.

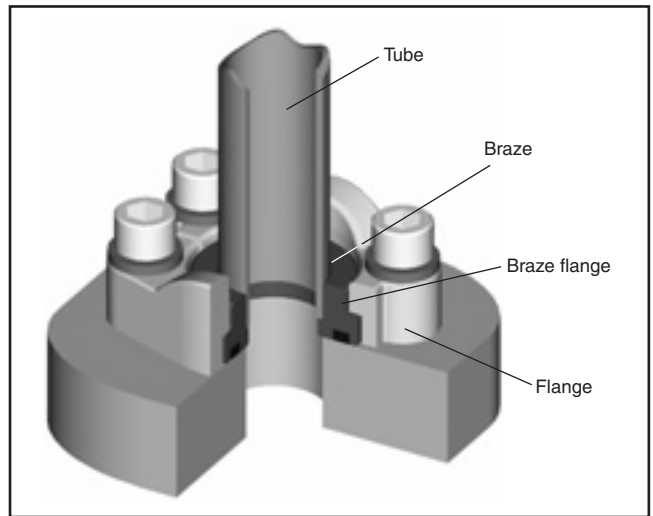
**Spacer plate** – Spacer plate provides access to the system fluid via the gage port on the side. The plate is sandwiched in the flange connection to provide this access.

**Plugs** – Plugs provide a means to block off the 4 bolt flange port with and without clamps, and to plug the end of a pipe (via welding).

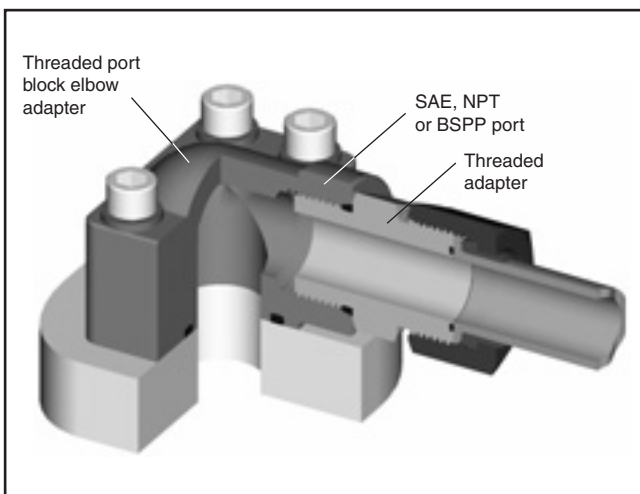
Methods of connection – Parker 4 bolt flange products



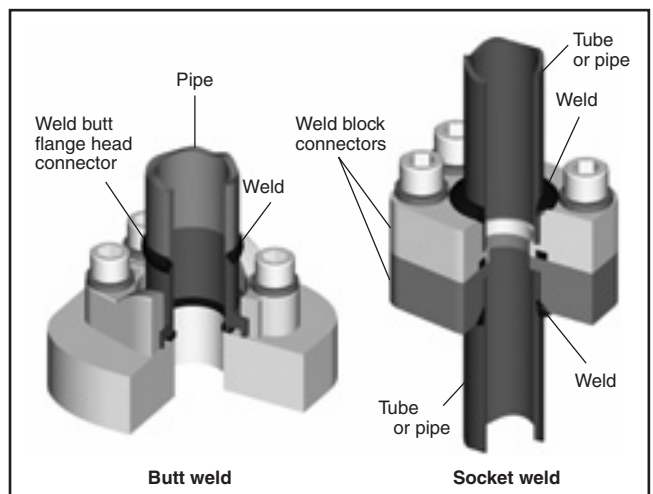
**Connecting tube and hose via a threaded tube/hose end connection:** The flange adapters provide means of connecting tubes or hoses to a 4 bolt flange port via threaded connection such as Seal-Lok (ORFS), Triple-Lok® (37° flare), etc.



**Connecting tubes via brazing.** The braze flange head fittings for Code 61 and Code 62 connections provide the means of connecting tubes directly to 4 bolt flange ports.



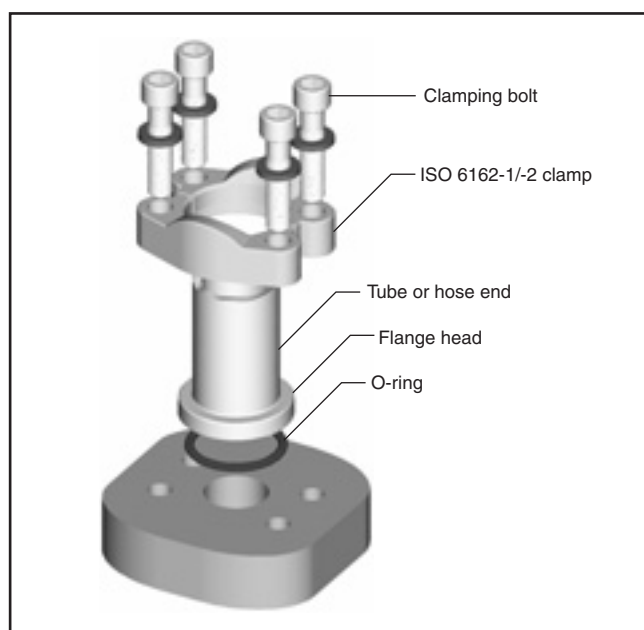
**Connecting tube, hose and pipe via threaded port connection.** The flange head and flange block conversion adapters provide the means of converting a 4 bolt flange port to either SAE, NPT or BSPP port. A user can then use appropriate threaded adapters to connect tube and hose, or connect threaded pipe directly into NPT and BSPP ports.



**Connecting tube and pipe via welding.** The flange head and flange block weld fittings provide the means of connecting tubes and pipes to 4 bolt flange port via socket welding for tubes and socket and butt welding for pipes.



## How flange connections work



**4 bolt flange connection ISO 6162-1 and -2 (SAE J518)** is a proven leak-free connection, especially suited for larger sizes. As a result, it has achieved worldwide acceptance.

The connection's success is in its simplicity. It is a static face seal using a high durometer O-ring for the seal and clamps and bolts for holding power as shown here.

The (O-ring) seal is compressed between the bottom of the groove in the flange head and the flat surface of the port or flange pad, providing a reliable soft seal. The alternate seal plate has a high durometer bonded rubber seal on the inside edge, which compresses between the two flat surfaces, providing a soft seal with the same reliability. A metal-to-metal contact at the outer face of the flange with the port face keeps the seal from extruding under pressure. This metal-to-metal contact is maintained by the clamping force provided by tightening of the bolts via the clamps.

This simple design provides several advantages over threaded port connections, such as NPT, SAE, BSPP, ISO 6149, etc., in larger sizes:

- Ability to connect up to 5 inch O.D. tube (ISO 6162-1 only)
- Much lower tightening torque required from the four bolts compared to that required for equivalent size threaded port.
- Less tightening torque means smaller wrenches and wrench swing clearances – providing ease of assembly in tight quarters.
- Up to 6000 psi capability through 2" size (ISO 6162-2 only)
- Single seal point between tube/pipe/hose assembly and the port
- Ease of disassembly through use of split clamps

The connection has one disadvantage – it requires a larger area (foot print) on the component than an equivalent threaded port.

## Flanges



### Assembly of flanges

- SAE flange adapters
- SAE 4 bolt flanges
- Gear pump flanges
- CETOP square flanges

1



- Make sure sealing surfaces are free of burrs, nicks, scratches or any contamination
- Lubricate the O-ring with system fluid or compatible lubricant

2



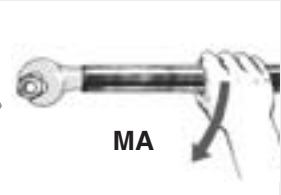
- Position flange and clamp halves
- Place lock washers on bolts and bolt through clamp halves

3



- Hand tighten bolts
- Torque bolts in diagonal sequence in small increments to the appropriate torque level listed in chart

4



- Tighten bolts according to chart

#### Serie 3000 PSI (Code 61) Flange recommend screw torque

Dash size	Flange size	Inch screws (J518)	Torque Nm <sup>1)</sup>	Metric screws (ISO 6162)	Torque Nm <sup>1)</sup>
13	1/2	5/16-18	24	M8	24
19	3/4	3/8-16	43	M10	50
25	1	3/8-16	43	M10	50
32	1 1/4	7/16-14	70	M10	50
38	1 1/2	1/2-13	105	M12	92
51	2	1/2-13	105	M12	92
64	2 1/2	1/2-13	105	M12	92
76	3	5/8-11	210	M16	210
89	3 1/2	5/8-11	210	M16	210
102	4	5/8-11	210	M16	210
127	5	5/8-11	210	M16	210

#### Serie 6000 PSI (Code 62) Flange recommend screw torque

Dash size	Flange size	Inch screws (J518)	Torque Nm <sup>1)</sup>	Metric screws (ISO 6162)	Torque Nm <sup>1)</sup>
13	1/2	5/16-18	24	M8	24
19	3/4	3/8-16	43	M10	50
25	1	7/16-14	70	M12	92
32	1 1/4	1/2-13	105	M12	130
38	1 1/2	5/8-11	210	M16	210
51	2	3/4-10	360	M20	400

#### Hydraulic Flange recommend screw torque

Socket screw bolt circle (LK)	Socket head cap screws	Tightening torques Nm <sup>1)</sup>
LK30	M6	10
LK35	M6	10
LK40	M6	10
LK51	M10	49
LK55	M8	25
LK56	M10	49
LK62	M10	49
LK72.5	M12	85

1) Tolerances: max. 10 %  
min. 0 %



## Technical data

### Flange screws

#### SAE Flanges according to ISO 6162-1 and -2 (SAE J518)

- metric screws according to  
DIN 912-8.8 (ISO 4762-8.8) or  
DIN 912-10.9 (ISO 4762-10.9)<sup>1</sup>
- UNC screws according to ASA B 18.3

#### Square flanges according to ISO 6164 (1994) and Cetop

- metric screws according to  
DIN 912-8.8 (ISO 4762-8.8) or  
DIN 912-10.9 (ISO 4762-10.9)<sup>1</sup>

#### Gear pump flanges

- metric screws according to  
DIN 912-8.8 (ISO 4762-8.8)

<sup>1</sup> Screws with grade 10.9/12.9 are to be used, when the material for the flanges is high tempered!

### Used Sealing

#### Materials

Flanges according **SAE J518 (ISO 6162-1 and -2)**, **ISO 6164**, **Cetop** and all **gear pump flanges** in this catalogue are sealed with an O-ring. The seals of our flanges are out of the following materials:

- NBR (e.g. perbunan) 90 durometer is our standard seal material for hydraulic **steel** flange applications.
- FKM 85 or 90 durometer is our standard seal material for hydraulic **stainless steel** flange applications.

Perbunan = registered trademark of Bayer

#### Dimensions

O-ring dimensions of ISO 6164 flanges, Cetop flanges and gear pump flanges are shown direct on the product catalogue page. For all flanges according to **SAE J518 (ISO 6162-1 and -2)** the O-ring dimension are according to the following table:

Nominal flange size	Nominal-inch tube size (in inches)	ISO 3601-1 O-ring	SAE J515 O-ring	SAE J515 O-ring size number
13	1/2	19.0×3.55	18.64×3.53	210
19	3/4	25.0×3.55	24.99×3.53	214
25	1	32.5×3.55	32.92×3.53	219
32	1 1/4	37.5×3.55	37.69×3.53	222
38	1 1/2	47.5×3.55	47.22×3.53	225
51	2	56.0×3.55	56.74×3.53	228
64	2 1/2	69.0×3.55	69.44×3.53	232
76	3	85.0×3.55	85.32×3.53	237
89	3 1/2	97.5×3.55	98.02×3.53	241
102	4	112.0×3.55	110.72×3.53	245
127	5	136.0×3.55	136.12×3.53	253

### Pressure ratings

The maximum recommended working pressure is indicated for each article.

Before using a part, please take notice of the pressure ratings.

All pressure indications are based on a working temperature from –20° celsius up to +100° celsius (resp. ambient temperature from –40° celsius up to +120° celsius). Outside of this temperature range the physical properties of the material is affected and the maximum recommended working pressure is reduced.

The indicated working pressures refer only to the flange itself.

For the tubes, fittings and connections the pressure ratings of the specific manufacturer must also be taken into account.

### Materials

#### SAE flanges according to ISO 6162-1 and -2 (SAE 518)

Flange clamps, flange adapter and forged 4 bolt flanges are made of the material ST 52.3 or compatible for **steel** construction. For **stainless steel** constructions we are using for flange clamps, flange adapters and 4 bolt forged flanges the material 1.4401 (316) or compatible. For special applications it is also possible to get the flange adapters made from the material 1.4571 (316Ti).

#### Square flanges according to ISO 6164 (1994) and Cetop

Steel construction: ST52.3, C40 or compatible

Stainless steel construction: 1.4571 (316Ti) or compatible

#### Gear pump flanges

Steel forged construction: GTW40 or compatible

Steel construction: ST52.3, 11SMnPb30 or compatible

If different materials are used for manufacturing, this will be shown on the catalogue product page.

### Surface protection

All surface order possibilities are described on each catalogue page!

Surface possibilities are:

1. Oil dipped
2. silver surface protection type A3K according to DIN EN ISO 4042
3. Cr(VI)-free surface protection type CF with better corrosion resistance than A3C surface protection

## Order codes screws and O-rings

### Screws for flanges

according ISO 6162-1 and -2 (SAE J518)

Nominal flange size			Screws for flange halves		Screws for full flanges	
Series	ISO	SAE	metr. Order code	UNC Order code	metr. Order code	UNC Order code
3000 PSI	13	1/2	ZYLS8X25VZX	UNC5/16-18X11/4	ZYLS8X30VZX	UNC5/16-18X11/4
3000 PSI	19	3/4	ZYLS10X30VZX	UNC3/8-16X11/4	ZYLS10X35VZX	UNC3/8-16X11/2
3000 PSI	25	1	ZYLS10X30VZX	UNC3/8-16X11/4	ZYLS10X35VZX	UNC3/8-16X11/2
3000 PSI	32	1 1/4	ZYLS10X30VZX	UNC7/16-14X11/2	ZYLS10X40VZX	UNC7/16-14X11/2
3000 PSI	32	1 1/4	ZYLS10X35VZX *	—	—	—
3000 PSI	32	1 1/4	ZYLS12X35VZX *	—	—	—
3000 PSI	38	1 1/2	ZYLS12X35VZX	UNC1/2-13X11/2	ZYLS12X45VZX	UNC1/2-13X13/4
3000 PSI	38	1 1/2	ZYLS14X35VZX *	—	—	—
3000 PSI	51	2	ZYLS12X35VZX	UNC1/2-13X11/2	ZYLS12X45VZX	UNC1/2-13X13/4
3000 PSI	51	2	ZYLS14X35VZX *	—	—	—
3000 PSI	64	2 1/2	ZYLS12X40VZX	UNC1/2-13X11/2 *	ZYLS12X45VZX	UNC1/2-13X13/4
3000 PSI	64	2 1/2	ZYLS14X35VZX *	UNC1/2-13X13/4	—	—
3000 PSI	76	3	ZYLS16X50VZX	UNC5/8-11X2 *	ZYLS16X55VZX	UNC5/8-11X21X4
3000 PSI	76	3	ZYLS16X45VZX *	UNC5/8-11X13/4	—	—
3000 PSI	89	3 1/2	ZYLS16X50VZX	UNC5/8-11X2 *	ZYLS16X55VZX	UNC5/8-11X21X4
3000 PSI	89	3 1/2	ZYLS16X45VZX *	—	—	—
3000 PSI	102	4	ZYLS16X50VZX	UNC5/8-11X2	ZYLS16X55VZX	UNC5/8-11X21X4
3000 PSI	102	4	ZYLS16X45VZX *	—	—	—
3000 PSI	127	5	ZYLS16X50VZX *	UNC5/8-11X21/4	ZYLS16X55VZX	UNC5/8-11X21X4
3000 PSI	127	5	ZYLS16X55VZX	UNC5/8-11X2 *	—	—
Serie	ISO	SAE	metr.	UNC	metr.	UNC
6000 PSI	13	1/2	ZYLS8X30VZX	UNC5/16-18X11/4	ZYLS8X30VZX	UNC5/16-18X11/4
6000 PSI	19	3/4	ZYLS10X35VZX	UNC3/8-16X11/2	ZYLS10X35VZX	UNC3/8-16X11/2
6000 PSI	25	1	ZYLS12X45VZX	UNC7/16-14X11/2 *	ZYLS12X45VZX	UNC7/16-14X11/2
6000 PSI	25	1	—	UNC7/16-14X13/4	—	—
6000 PSI	32	1 1/4	ZYLS14X50VZX *	UNC1/2-13X13/4	ZYLS14X50VZX	UNC1/2-13X13/4
6000 PSI	32	1 1/4	ZYLS12X45VZX	—	—	—
6000 PSI	38	1 1/2	ZYLS16X55VZX	UNC5/8-11X21/4	ZYLS16X55VZX	UNC5/8-11X21X4
6000 PSI	38	1 1/2	—	UNC5/8-11X2 *	—	—
6000 PSI	51	2	ZYLS20X65VZX	UNC3/4-10X23/4	ZYLS20X70VZX	UNC3/4-10X23X4
6000 PSI	51	2	ZYLS20X70VZ	UNC3/4-10X21/2 *	—	—
6000 PSI	64	2 1/2	ZYLS24X75VZX	—	ZYLS24X90VZX	—
6000 PSI	76	3	ZYLS30X90VZX	—	ZYLS30X110VZX	—

\* = are not implemented in the ISO 6162 -1 and ISO 6162-2.

### Screws for hydraulic flanges

(BFG, BFW)

Typ	Screws Order code	Description
BFG (10L-28L)	ZYLS6X22VZX	4 pieces
BFG (20S)	ZYLS8X25VZX	4 pieces

Type	LK	Screws		Description
		Order code	Order code	
BFW 10L	35	ZYLS6X22VZX	ZYLS6X35VZX	2 Pieces of each screws
BFW 12L	35	ZYLS6X22VZX	ZYLS6X35VZX	2 Pieces of each screws
BFW 15L	35	ZYLS6X22VZX	ZYLS6X35VZX	2 Pieces of each screws
BFW 16S	35	ZYLS6X22VZX	ZYLS6X40VZX	2 Pieces of each screws
BFW 20S	35	ZYLS6X22VZX	ZYLS6X45VZX	2 Pieces of each screws
BFW 15L	40	ZYLS6X22VZX	—	4 Pieces
BFW 18L	40	ZYLS6X22VZX	—	4 Pieces
BFW 22L	40	ZYLS6X22VZX	—	4 Pieces
BFW 28L	40	ZYLS6X20VZX	ZYLS6X50VZX	2 Pieces of each screws
BFW 35L	40	ZYLS6X22VZX	ZYLS6X60VZX	2 Pieces of each screws
BFW 20S	40	ZYLS6X22VZX	ZYLS6X45VZX	2 Pieces of each screws
BFW 35L	55	ZYLS8X25VZX	ZYLS8X60VZX	2 Pieces of each screws
BFW 42L	55	ZYLS8X25VZX	ZYLS8X70VZX	2 Pieces of each screws
BFW 20S	55	ZYLS8X25VZX	ZYLS8X50VZX	2 Pieces of each screws
BFW 25S	55	ZYLS8X25VZX	ZYLS8X55VZX	2 Pieces of each screws
BFW 30S	55	ZYLS8X25VZX	ZYLS8X50VZX	2 Pieces of each screws

### O-rings for flanges

SAE J518

ISO (DN)	SAE (Inch)	O-ring	
		NBR Order code	FKM Order code
13	1/2	OR18.64X3.53X	OR18.64X3.53VITX
19	3/4	OR25X3.53X	OR25X3.53VITX
25	1	OR32.92X3.53X	OR32.92X3.53VITX
32	1 1/4	OR37.69X3.53X	OR37.69X3.53VITX
38	1 1/2	OR47.22X3.53X	OR47.22X3.53VITX
51	2	OR56.75X3.53X	OR56.75X3.53VITX
64	2 1/2	OR69.44X3.53X	OR69.44X3.53VITX
76	3	OR85.32X3.53X	OR85.32X3.53VITX
89	3 1/2	OR98.02X3.53X	OR98.02X3.53VITX
102	4	OR110.72X3.53X	OR110.72X3.53VITX
127	5	OR136.12X3.53X	OR136.12X3.53VITX

### O-rings for hydraulic flanges

(BFG, BFW)

LK	O-ring size	Order code
35	20x2.5	OR20X2.5X
40	26x2.5	OR26X2.5X
55	32x2.5	OR32X2.5X



### Features, advantages and benefits

- 1. Manufacture** – Code 61/62 fittings conform to SAE J518 and ISO 6162. This specification controls dimensions and tolerances of Code 61/62 port connections.
- 2. Available configurations** – Over 60 different configurations are standard in a range of sizes. The breadth of product provides flexibility in plumbing to insure the best solution possible.
- 3. Materials** – All configurations are available as standard in steel, with commonly used styles available in stainless steel.
- 4. Available sizes** – Most configurations are available as standard in 1/2" through 2" with sizes as large as 5" available in some styles.
- 5. Construction** – Parker offers a completely forged steel product line to insure our products hold up in the most rigorous applications.
- 6. Envelope size** – Forged construction provides a compact design compared to flanges machined from block steel.
- 7. Pressure ratings** – Code 61/62 fittings and flanges have pressure ratings up to 6000 psi. The recommended working pressure can be found directly on each catalogue page. This is a quick and easy way to verify the part in question meets the application pressure requirements.
- 8. Flange kits** – To reduce ordering and assembly errors, kits that include mounting hardware (bolts, O-ring, and if needed flange halves) are available.
- 9. Mounting hardware** – Bolts used in mounting kits are designated at least grade 8.8 to provide long dependable use.

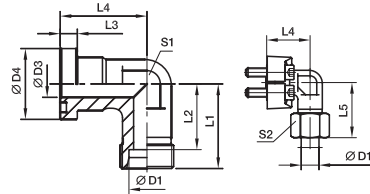
## How to order

### SAE Flange adapters



#### WFS SAE 90° Elbow flange adapter

SAE Flange / EO 24° cone end  
(ISO 6162-1/-2)



#### 3000 PSI Series

Nom. flange size SAE (in.)	ISO (DN)	D1 <sup>2)</sup> D1	D3	D4	L1	L2	L3	L4	L5	S1	S2	Screws		Weight (steel) kg/piece	Order code*	PN (bar <sup>1)</sup> )		
												(metr.)	(unc.)			CF	71	
1/2	13	12S	12	30.2	50	42.5	6.7	44	58.5	22	24	M 08x25	5/16x1 1/4	0.38	<b>WFS32/12S</b>	210	210	
1/2	13	15L	12	30.2	36	29.0	6.7	36	44.0	24	27	M 08x25	5/16x1 1/4	0.40	<b>WFS32/15L</b>	315	315	
1/2	13	16S	12	30.2	38	29.5	6.7	36	48.0	24	30	M 08x25	5/16x1 1/4	0.43	<b>WFS32/16S</b>	350	350	
1/2	13	18L	12	30.2	50	42.5	6.7	44	59.0	22	32	M 08x25	5/16x1 1/4	0.44	<b>WFS32/18L</b>	315	315	
3/4	19	16S	19	38.1	64	55.5	6.7	53	73.5	27	30	M 10x30	3/8x1 1/4	0.60	<b>WFS33/16S</b>	350	350	
3/4	19	18L	19	38.1	39	31.5	6.7	42	48.0	30	32	M 10x30	3/8x1 1/4	0.66	<b>WFS33/18L</b>	315	315	
3/4	19	22L	19	38.1	41	33.5	6.7	42	50.0	30	36	M 10x30	3/8x1 1/4	0.66	<b>WFS33/22L</b>	160	160	
3/4	19	20S	17	38.1	43	32.5	6.7	42	54.0	30	36	M 10x30	3/8x1 1/4	0.76	<b>WFS33/20S</b>	350	350	
3/4	19	25S	17	38.1	45	33.0	6.7	42	57.0	30	46	M 10x30	3/8x1 1/4	0.89	<b>WFS33/25S</b>	350	350	
3/4	1	25	20S	20	44.5	65	54.5	8.0	60	77.0	34	36	M 10x30	3/8x1 1/4	0.76	<b>WFS33/25</b>	350	350
1	25	22L	18	44.5	65	57.5	8.0	60	74.0	34	36	M 10x30	3/8x1 1/4	0.76	<b>WFS34/22L</b>	160	160	
1	25	28L	25	44.5	44	36.5	8.0	45	53.0	36	41	M 10x30	3/8x1 1/4	0.76	<b>WFS34/28L</b>	350	350	
1	25	25S	20	44.5	48	36.5	8.0	45	57.0	36	46	M 10x30	3/8x1 1/4	0.76	<b>WFS34/25S</b>	350	350	
1	25	30S	24	44.5	50	36.5	8.0	45	63.0	36	50	M 10x30	3/8x1 1/4	0.76	<b>WFS34/30S</b>	350	350	
1 1/4	32	35L	32	50.8	57	46.5	8.0	50	68.0	41	50	M 10x35	3/8x1 1/4	0.76	<b>WFS35/35L/10<sup>3)</sup></b>	160	160	
1 1/4	32	25S	27	50.8	55	43.0	8.0	60	67.0	41	46	M 10x35	3/8x1 1/4	0.76	<b>WFS35/25S/10</b>	200	200	
1 1/4	32	30S	28	50.8	57	43.5	8.0	50	70.0	41	50	M 10x35	3/8x1 1/4	0.76	<b>WFS35/30S/10</b>	200	200	
1 1/4	32	38S	28	50.8	59	43.0	8.0	50	74.0	46	60	M 10x35	3/8x1 1/4	1.15	<b>WFS35/38S/10</b>	160	160	
1 1/4	32	35L	32	50.8	57	46.5	8.0	50	68.0	41	50	M 12x40	7/16x1 1/2	1.35	<b>WFS35/35L/10<sup>3)</sup></b>	160	160	
1 1/4	32	25S	27	50.8	55	43.0	8.0	50	67.0	41	46	M 12x40	7/16x1 1/2	1.35	<b>WFS35/25S/10</b>	200	200	
1 1/4	32	30S	28	50.8	57	43.5	8.0	50	70.0	41	50	M 12x40	7/16x1 1/2	1.40	<b>WFS35/30S/10</b>	200	200	
1 1/4	32	38S	28	50.8	59	43.0	8.0	50	74.0	41	60	M 12x40	7/16x1 1/2	1.53	<b>WFS35/38S</b>	200	200	
1 1/2	38	35L	30	60.3	78	67.5	8.0	66	83.0	50	50	M 12x35	1/2x1 1/2	1.55	<b>WFS36/35L</b>	160	160	
1 1/2	38	42L	36	60.3	58	47.0	8.0	55	70.0	50	60	M 12x35	1/2x1 1/2	1.60	<b>WFS36/42L</b>	160	160	
1 1/2	38	38S	36	60.3	64	48.0	8.0	55	79.0	50	60	M 12x35	1/2x1 1/2	1.95	<b>WFS36/38S</b>	200	200	

<sup>1)</sup> Pressure shown = Item deliverable

<sup>2)</sup> L = light series; S = heavy series

PN (bar) = PN (MPa) / 10

Delivery without nut and ring.  
Information on ordering complete fittings  
or alternative sealing materials see page M11.

<sup>3)</sup> Order code for the elbow flange adapter assembled with FHS35/10CFX and M10x35 screws.

\*Please add the suffixes below  
to the material/surface required

Material	Order code	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	WFS32/16SCFX	MDCFU
Stainless steel	WFS32/16S71X	MD71U
	WFS32/16SOMDCF	VIT
	WFS32/16SOMD71	



Catalogue 4100-9/UK

## The right way to order made easy!

### Step 1 Selecting order code

1. All flange sizes available in our program of supply are clearly listed in the index at the front of this catalogue.
2. Open the catalogue at the corresponding page containing detailed information of the product of your choice.
3. Select the required flange size!  
The basic order code is printed in bold type on the right-hand side of the table of dimensions.

Example: **WFS34/30S**

### Step 2 Selecting material and surface ...

Now simply add the corresponding ID code for the surface and material variant of the product you require to the basic order code.

This ID code is contained in the table printed at the bottom of every page.

Example: WFS34/30S + CFX = **WFS34/30SCFX**

4. **Ordering single parts**  
Example: single part, Cr(VI)-free galvanized  
WFS34/30S + CFX = **WFS34/30SCFX**

5. **Ordering complete types**  
Example: order incl. splitflanges, metric-screw pack and O-ring  
WFS34/30S + OMDCF = **WFS34/30SOMDCF**

6. **Order containing nut and cutting ring**  
Example: flange incl. splitflanges, metric-screw pack, O-ring, nut and cutting ring  
WFS34/30S + CF = **WFS34/30SCF**

7. **Order with functional nut**  
Example: flange incl. splitflanges, metric-screw pack, O-ring, nut and functional nut  
WFS34/30 (+Z) S + CF = **WFS34/30ZSCF**

8. **Other sealing materials**  
Example: flange made of steel incl. splitflanges, metric-screw pack and O-ring made of FKM.  
WFS34/30S + VITOMDCF = **WFS34/30SVITOMDCF**

Example: flange made of stainless steel incl. splitflanges, metric-screw pack and O-ring made of NBR (for example, Perbunan).  
WFS34/30S + NBRMD71 = **WFS34/30SNBROMD71**

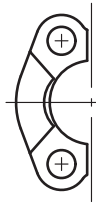
Perbunan = registered trademark of Bayer

The corresponding order variant is contained in the table printed at the bottom of every page in the catalogue.

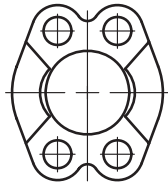


# Visual index

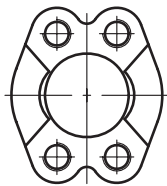
## SAE Flange clamps



FHS – p. M15



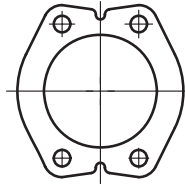
FUS – p. M16



FUSM – p. M17



FHSF – p. M18



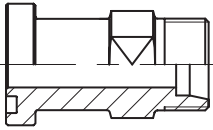
FUSF – p. M19

## SAE Flange adapters

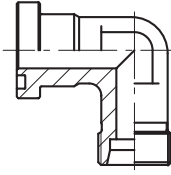
EO 24° cone end

BSPP 60° cone end

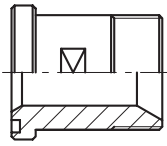
Male NPT thread



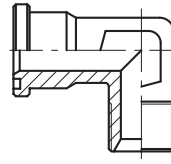
GFS – p. M20



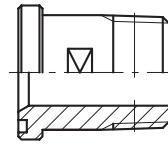
WFS – p. M22



GFS-G – p. M24



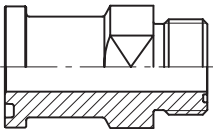
WFS-G – p. M25



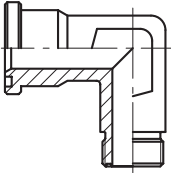
GFS-N – p. M26

O-Lok® ORFS end

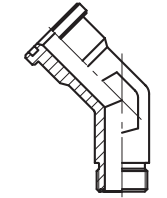
Triple-Lok® 37° flare end



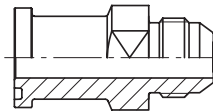
L(O)HQ – p. M27



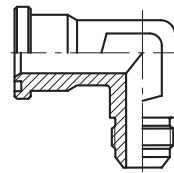
L(O)EMQ – p. M28



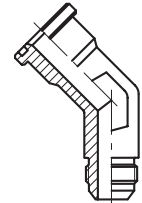
L(O)VQ – p. M29



XHQ – p. M30



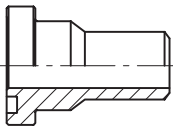
XEMQ – p. M31



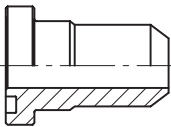
XVQ – p. M32

Butt weld end

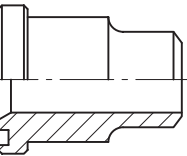
Socket weld end



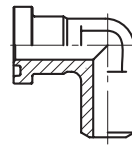
ASR – p. M33



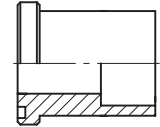
AS – p. M34



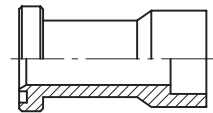
ASL – p. M36



WAS – p. M37



ES – p. M38

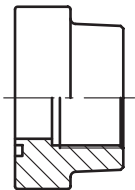


ESL – p. M40

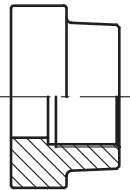
## SAE 4 bolt flanges

BSPP Female thread

Female NPT thread



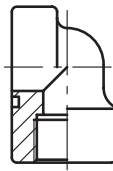
PFF-G – p. M41



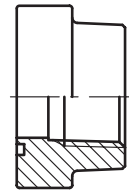
PCFF-G – p. M42



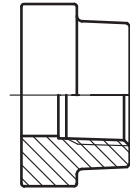
PAFSF-G – p. M43



PEFF-G – p. M44



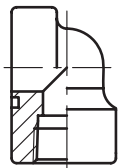
PFF-N – p. M45



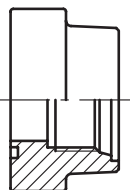
PCFF-N – p. M46

Female metric and UN/UNF thread

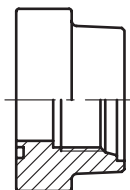
EO 24° cone end



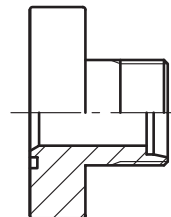
PEFF-N – p. M47



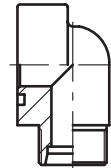
PAFS-M – p. M48



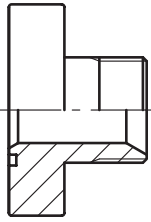
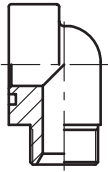
PAFS-U – p. M49

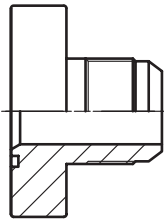
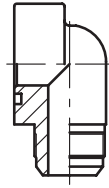


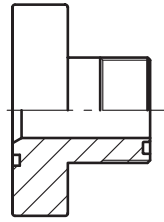
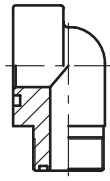
PFF-..S/L – p. M50

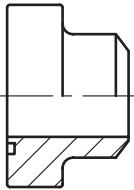
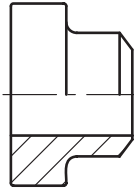
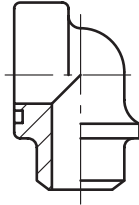


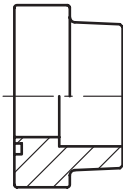
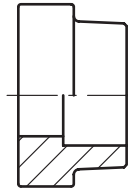
PAFG-90M – p. M51

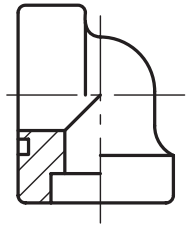
**BSPP 60° cone end**

**PAFG-G** – p. M52

**PAFG-90G** – p. M53

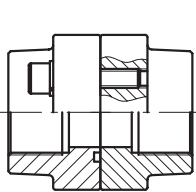
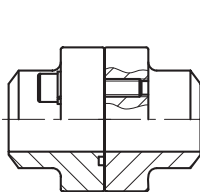
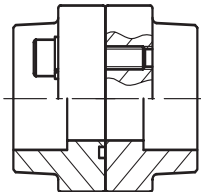
**Triple-Lok® 37° flare end**

**PAFG-X** – p. M54

**PAFG-90X** – p. M55

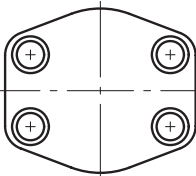
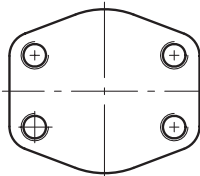
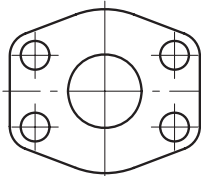
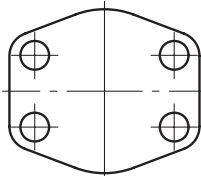
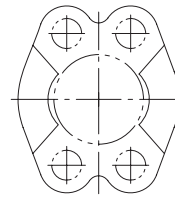
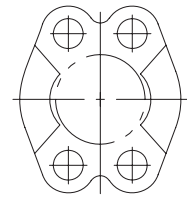
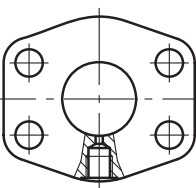
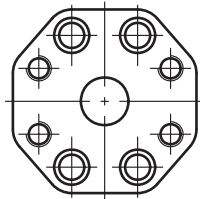
**O-Lok® ORFS end**

**PAFG-L** – p. M56

**PAFG-90L** – p. M57

**Butt weld end**

**PAFS-B** – p. M58

**PGFS-B** – p. M59

**PAFS-90B** – p. M60

**Socket weld end**

**PAFS-S** – p. M61

**PGFS-S** – p. M62

**PAFSF-S** – p. M63

**PAFS-90S** – p. M64

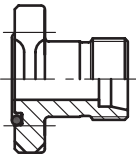
**Complete flange connections**

**PDFS-G** – p. M65

**PDFS-B** – p. M66

**PDFS-S** – p. M67

**SAE Flange accessories**

**PCFF** – p. M68

**PCCFF** – p. M69

**CPM** – p. M70

**AP** – p. M71

**PMQ flat** – p. M72

**PMQ** – p. M73

**PAGL-(G/M)** – p. M74

**PRF** – p. M75

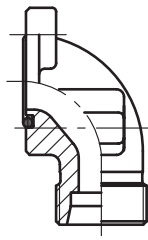
## Visual index

### Gear pump flanges

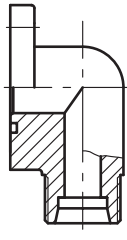
EO 24° cone end



**BFG** – p. M76

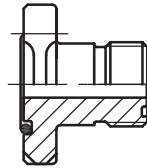


**BFW** – p. M77

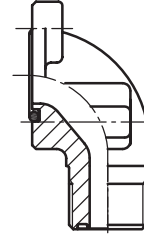


**BFW3** – p. M78

O-Lok® ORFS end

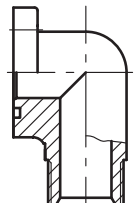


**BFG-L** – p. M79

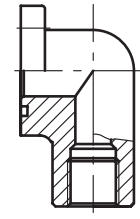


**BFW-L** – p. M80

Male/Female BSPP thread

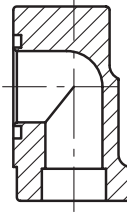


**BFW-G** – p. M81



**BFW-GI** – p. M82

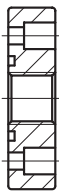
Socket weld end



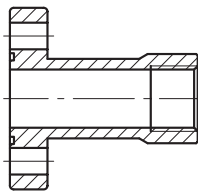
**BFW-S** – p. M83

### Gear pump flanges

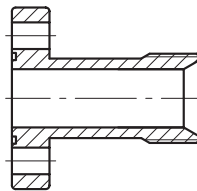
Special pump size flanges



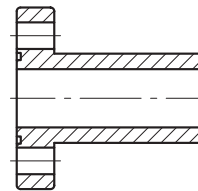
**PF** – p. M84



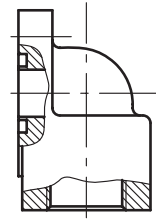
**PFL** – p. M84



**PFE** – p. M85

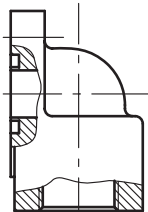


**PFB** – p. M85

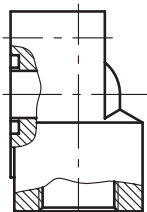


**BFW3-G** – p. M86

Aluminium flanges



**PWDS-G** – p. M87

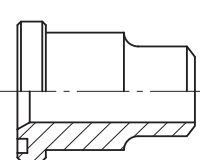


**PWDA** – p. M88

### ISO 6164 Square flanges



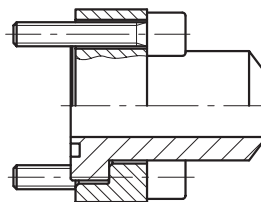
**PSFC** – p. M89



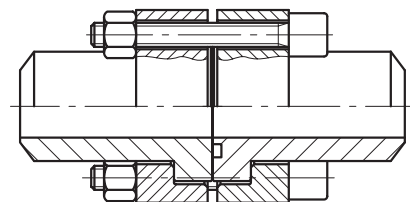
**PSFA-B** – p. M90



**PSFP** – p. M91

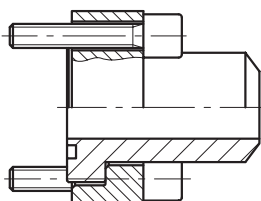


**PSF-B** – p. M92

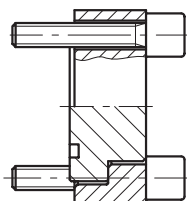


**PDSF-B** – p. M93

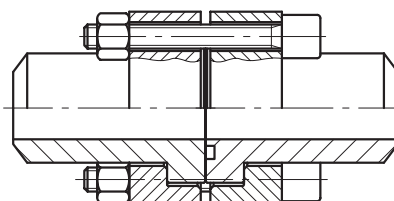
### Cetop square flanges



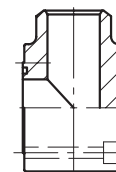
**PCF-B** – p. M94



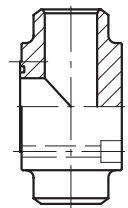
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**PDCF-B** – p. M96



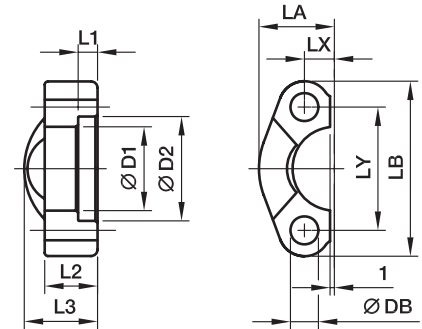
**PLCF-B** – p. M97



**PTCF-B** – p. M98

**FHS SAE Split flange halves**

ISO 6162-1/-2


**3000 PSI Series**

Nom. flange size		D1	D2	L1	L2	L3	LA	LB	LX	LY	DB	Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)											(metr.)	(unc.)			CF	SS
1/2	13	24.3	31.0	6.2	13	19	23.0	54.0	8.7	38.1	9.0	M 08x25	5/16x1 1/4	0.07	<b>FHS32</b>	345	345
3/4	19	32.2	38.9	6.2	14	22	25.9	65.0	11.1	47.6	11.0	M 10x30	3/8x1 1/4	0.09	<b>FHS33</b>	345	345
1	25	38.5	45.2	7.5	16	24	29.2	69.9	13.1	52.4	11.0	M 10x30	3/8x1 1/4	0.11	<b>FHS34</b>	345	345
1 1/4	32	43.7	51.6	7.5	16	22	36.3	79.4	15.1	58.7	11.0	M 10x35	–	0.15	<b>FHS35/10</b>	276	276
1 1/4	32	43.7	51.6	7.5	16	22	36.3	79.4	15.1	58.7	12.0	–	7/16x1 1/2	0.15	<b>FHS35/12</b>	276	276
1 1/4	32	43.7	51.6	7.5	16	22	36.3	79.4	15.1	58.7	12.5	M 12x35	–	0.15	<b>FHS35</b>	276	276
1 1/2	38	50.8	61.1	7.5	16	25	41.1	93.8	17.9	69.9	13.0	M 12x35	1/2x1 1/2	0.23	<b>FHS36</b>	207	207
1 1/2	38	50.8	61.1	7.5	16	25	41.1	93.8	17.9	69.9	14.5	M 14x35	–	0.23	<b>FHS36/14</b>	207	207
2	51	62.8	72.3	9.0	16	26	48.2	101.6	21.4	77.8	13.0	M 12x35	1/2x1 1/2	0.25	<b>FHS38/12</b>	207	207
2	51	62.8	72.3	9.0	16	26	48.2	101.6	21.4	77.8	14.5	M 14x35	–	0.25	<b>FHS38</b>	207	207
2 1/2	64	74.9	84.9	9.0	19	38	54.1	114.3	25.4	88.9	13.0	M 12x40	1/2x1 3/4	0.37	<b>FHS310</b>	172	172
2 1/2	64	74.9	84.9	9.0	19	38	54.1	114.3	25.4	88.9	14.5	M 14x40	–	0.37	<b>FHS310/14</b>	172	172
3	76	90.9	102.4	9.0	22	41	65.3	135.0	31.0	106.4	17.0	M 16x45	5/8x1 3/4	0.65	<b>FHS312</b>	138	138
3 1/2	89	102.4	115.0	10.7	22	28	68.6	152.4	34.9	120.7	17.0	M 16x45	5/8x2	0.75	<b>FHS314</b>	34	34
4	102	115.1	127.8	10.7	25	35	74.9	162.0	38.9	130.2	17.0	M 16x50	5/8x2	0.84	<b>FHS316</b>	34	34
5	127	140.5	153.2	10.7	28	41	89.4	184.2	46.0	152.4	17.0	M 16x50	5/8x2 1/4	1.25	<b>FHS320</b>	34	34

**6000 PSI Series**

1/2	13	24.6	32.5	7.2	16	22	24.0	56.4	9.1	40.5	9.0	M 08x30	5/16x1 1/4	0.08	<b>FHS62</b>	420	420
3/4	19	32.5	42.0	8.3	19	28	30.0	72.0	11.9	50.8	11.0	M 10x35	3/8x1 1/2	0.18	<b>FHS63</b>	420	420
1	25	38.8	48.4	9.0	24	33	34.8	81.0	13.9	57.2	13.0	M 12x45	–	0.27	<b>FHS64</b>	420	420
1	25	38.9	48.4	9.0	24	33	34.8	81.0	13.9	57.2	12.0	–	7/16x1 3/4	0.27	<b>FHS64/12</b>	420	420
1 1/4	32	44.5	54.8	9.8	27	38	38.6	95.3	15.9	66.6	15.0	M 14x50	–	0.27	<b>FHS65</b>	420	420
1 1/4	32	44.5	54.8	9.8	27	38	38.6	95.3	15.9	66.6	13.0	M 12x45	1/2x1 3/4	0.27	<b>FHS65/12</b>	420	420
1 1/2	38	51.6	64.3	12.1	30	43	47.5	112.8	18.3	79.3	17.0	M 16x55	5/8x2 1/4	0.40	<b>FHS66</b>	420	420
2	51	67.6	80.2	12.1	37	52	56.9	133.4	22.2	96.8	22.0	M 20x65	3/4x2 3/4	0.40	<b>FHS68</b>	420	420
2 1/2	64	90.0	108.0	20.0	45	45	75.1	180.0	29.4	123.8	25.0	M 24x75	–	0.68	<b>FHS610</b>	420	420
3	76	115.0	132.5	25.0	55	55	99.1	215.0	35.7	152.4	31.5	M 30x90	–	1.05	<b>FHS612</b>	420	420

<sup>1)</sup> Pressure shown = Item deliverable

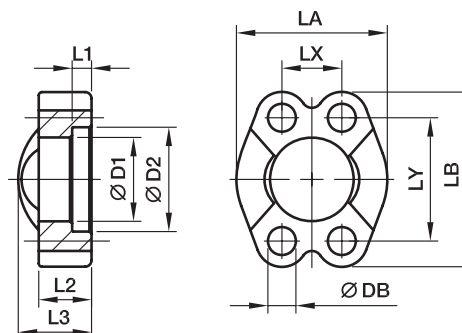
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, Cr(VI)-free	CF	FHS32CFX	only flange half
Stainless steel	SS	FHS32SSX	only flange half

**FUS SAE Flange clamps**

ISO 6162-1/-2


**3000 PSI Series**

Nom. flange size												Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)	D1	D2	L1	L2	L3	LA	LB	LX	LY	DB	(metr.)	(unc.)			CF	SS
1/2	13	24.3	31.0	6.2	13	19	46	54.0	17.5	38.1	8.8	M 08×25	5/16×1 1/4	0.15	<b>FUS32</b>	345	345
3/4	19	32.2	38.9	6.2	14	22	52	65.0	22.3	47.6	10.5	M 10×30	3/8×1 1/4	0.17	<b>FUS33</b>	345	345
1	25	38.5	45.2	7.5	16	24	59	69.9	26.2	52.4	10.5	M 10×30	3/8×1 1/4	0.22	<b>FUS34</b>	345	345
1 1/4	32	43.7	51.6	7.5	16	22	73	79.4	30.2	58.7	10.5	M 10×35	–	0.30	<b>FUS35/10</b>	276	276
1 1/4	32	43.7	51.6	7.5	16	22	73	79.4	30.2	58.7	12.0	–	7/16×1 1/2	0.29	<b>FUS35/12</b>	276	276
1 1/4	32	43.7	51.6	7.5	16	22	73	79.4	30.2	58.7	12.5	M 12×35	–	0.29	<b>FUS35</b>	276	276
1 1/2	38	50.8	61.1	7.5	16	25	83	93.8	35.8	69.9	13.5	M 12×35	1/2×1 1/2	0.45	<b>FUS36</b>	207	207
1 1/2	38	50.8	61.1	7.5	16	25	83	93.8	35.8	69.9	14.5	M 14×35	–	0.44	<b>FUS36/14</b>	207	207
2	51	62.8	72.3	9.0	16	26	97	101.6	42.8	77.8	13.5	M 12×35	1/2×1 1/2	0.50	<b>FUS38/12</b>	207	207
2	51	62.8	72.3	9.0	16	26	97	101.6	42.8	77.8	14.5	M 14×35	–	0.49	<b>FUS38</b>	207	207
2 1/2	64	74.9	84.9	9.0	19	38	109	114.3	50.8	88.9	13.5	M 12×40	1/2×1 3/4	0.74	<b>FUS310</b>	172	172
2 1/2	64	74.9	84.9	9.0	19	38	109	114.3	50.8	88.9	14.5	M 14×40	–	0.73	<b>FUS310/14</b>	172	172
3	76	90.9	102.4	9.0	22	41	131	135.0	61.9	106.4	17.0	M 16×45	5/8×1 3/4	1.30	<b>FUS312</b>	138	138
3 1/2	89	102.4	115.0	10.7	22	28	140	152.4	69.9	120.7	17.0	M 16×45	5/8×2	1.50	<b>FUS314</b>	34	34
4	102	115.1	127.8	10.7	25	35	150	162.0	77.8	130.2	17.0	M 16×50	5/8×2	1.65	<b>FUS316</b>	34	34
5	127	140.5	153.2	10.7	28	41	180	184.2	92.1	152.4	17.0	M 16×50	5/8×2 1/4	2.50	<b>FUS320</b>	34	34

**6000 PSI Series**

1/2	13	24.6	32.5	7.2	16	22	48	56.4	18.2	40.5	8.8	M 08×30	5/16×1 1/4	0.16	<b>FUS62</b>	420	420
3/4	19	32.5	42.0	8.3	19	28	60	71.4	23.8	50.8	10.5	M 10×35	3/8×1 1/2	0.35	<b>FUS63</b>	420	420
1	25	38.8	48.4	9.0	24	33	70	81.0	27.8	57.2	13.0	M 12×45	–	0.53	<b>FUS64</b>	420	420
1	25	38.9	48.4	9.0	24	33	70	81.0	27.8	57.2	12.0	–	7/16×1 3/4	0.53	<b>FUS64/12</b>	420	420
1 1/4	32	44.5	54.8	9.8	27	38	78	95.3	31.8	66.6	15.0	M 14×50	–	0.80	<b>FUS65</b>	420	420
1 1/4	32	44.5	54.8	9.8	27	38	78	95.3	31.8	66.6	13.5	M 12×45	1/2×1 3/4	0.80	<b>FUS65/12</b>	420	420
1 1/2	38	51.6	64.3	12.1	30	43	96	112.8	36.5	79.3	17.0	M 16×55	5/8×2 1/4	1.35	<b>FUS66</b>	420	420
2	51	67.6	80.2	12.1	37	52	114	133.4	44.5	96.8	21.0	M 20×65	3/4×2 3/4	2.10	<b>FUS68</b>	420	420
2 1/2	64	90.0	108.9	20.5	45	45	150	180.0	58.7	123.8	25.0	M 24×75	–	4.10	<b>FUS610</b>	420	420
3	76	115.0	132.5	25.5	55	55	178	215.0	71.4	152.4	32.0	M 30×90	–	8.60	<b>FUS612</b>	420	420

<sup>1)</sup> Pressure shown = Item deliverable

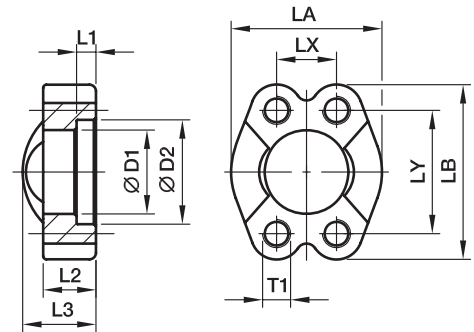
$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, Cr(VI)-free	CF	FUS32CFX	only flange clamp
Stainless steel	SS	FUS32SSX	only flange clamp

**FUSM SAE Flange clamps with metric tapped holes**

ISO 6162-1/-2


**3000 PSI Series**

Nom. flange size		D1	D2	L1	L2	L3	LA	LB	LX	LY	T1	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)													CF	SS
1/2	13	24.3	31.0	6.2	13	20	46	54.0	17.5	38.1	<b>M 8</b>	0.15	<b>FUSM32</b>	345	345
3/4	19	32.1	38.9	6.2	14	22	52	65.0	22.3	47.6	<b>M10</b>	0.17	<b>FUSM33</b>	345	345
1	25	38.5	45.2	7.5	16	24	59	69.9	26.2	52.4	<b>M10</b>	0.22	<b>FUSM34</b>	345	345
1 1/4	32	43.7	51.6	7.5	16	22	73	79.4	30.2	58.7	<b>M10</b>	0.30	<b>FUSM35/10</b>	276	276
1 1/4	32	43.7	51.6	7.5	16	22	73	79.4	30.2	58.7	<b>M12</b>	0.29	<b>FUSM35/12</b>	276	276
1 1/2	38	50.8	61.1	7.5	16	25	83	93.8	35.7	69.9	<b>M12</b>	0.45	<b>FUSM36</b>	207	207
1 1/2	38	50.8	61.1	7.5	16	25	83	93.8	35.7	69.9	<b>M14</b>	0.44	<b>FUSM36/14</b>	207	207
2	51	62.8	72.3	9.0	16	26	97	101.6	42.9	77.8	<b>M12</b>	0.50	<b>FUSM38/12</b>	207	207
2	51	62.8	72.3	9.0	16	26	97	101.6	42.9	77.8	<b>M14</b>	0.49	<b>FUSM38</b>	207	207
2 1/2	64	74.9	84.9	9.0	19	38	109	114.3	50.8	88.9	<b>M12</b>	0.74	<b>FUSM310</b>	172	172
2 1/2	64	74.9	84.9	9.0	19	38	109	114.3	50.8	88.9	<b>M14</b>	0.73	<b>FUSM310/14</b>	172	172
3	76	90.9	102.4	9.0	22	41	131	135.0	61.9	106.4	<b>M16</b>	1.30	<b>FUSM312</b>	138	138
3 1/2	89	102.4	115.0	10.7	23	28	140	152.4	69.9	120.7	<b>M16</b>	1.50	<b>FUSM314</b>	34	34
4	102	115.1	127.8	10.7	25	35	150	162.0	77.8	130.2	<b>M16</b>	1.65	<b>FUSM316</b>	34	34
5	127	140.5	153.2	10.7	28	41	180	184.2	92.1	152.4	<b>M16</b>	2.50	<b>FUSM320</b>	34	34

**6000 PSI Series**

1/2	13	24.6	32.5	7.2	16	22	48	56.4	18.2	40.5	<b>M 8</b>	0.16	<b>FUSM62</b>	420	420
3/4	19	32.5	42.0	8.2	19	28	60	71.4	23.8	50.8	<b>M10</b>	0.35	<b>FUSM63</b>	420	420
1	25	38.9	48.4	9.0	24	33	70	81.0	27.8	57.2	<b>M12</b>	0.53	<b>FUSM64</b>	420	420
1 1/4	32	44.5	54.8	9.8	27	38	78	95.3	31.8	66.6	<b>M14</b>	0.80	<b>FUSM65</b>	420	420
1 1/2	38	51.6	64.3	12.1	30	43	96	112.8	36.5	79.3	<b>M16</b>	1.35	<b>FUSM66</b>	420	420
2	51	67.6	80.2	12.1	37	52	114	133.4	44.5	96.8	<b>M20</b>	2.10	<b>FUSM68</b>	420	420
2 1/2	64	90.0	108.9	20.5	45	45	150	180.0	58.7	123.8	<b>M24</b>	4.10	<b>FUSM610</b>	420	420
3	76	115.0	132.5	25.5	55	55	178	215.0	71.4	152.4	<b>M30</b>	8.60	<b>FUSM612</b>	420	420

<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

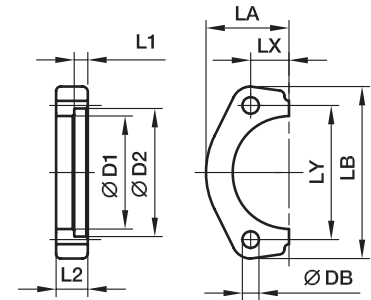
 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example only flange clamp with metr. threads	Description
Steel, zinc plated, Cr(VI)-free	CF	FUSM32CFM	only flange clamp
Stainless steel	SS	FUSM32SSM	only flange clamp



## FHSF SAE Flange halves flat

ISO 6162-1/-2



### 3000 PSI Series

Nom. flange size		D1	D2	L1	L2	LA	LB	LX	LY	DB	Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> CF
SAE (in.)	ISO (DN)										(metr.)	(unc.)			
1/2	13	24.3	31.0	6.2	13	22.8	56	8.7	38.1	9.0	M 08x25	5/16x1 1/4	0.06	<b>FHSF32</b>	345
3/4	19	32.1	38.9	6.2	14	25.9	65	11.1	47.6	11.0	M 10x30	3/8x1 1/4	0.07	<b>FHSF33</b>	345
1	25	38.5	45.3	7.5	16	29.2	70	13.1	52.4	11.0	M 10x30	3/8x1 1/4	0.10	<b>FHSF34</b>	345
1 1/4	32	43.7	51.6	7.5	16	36.6	79	15.1	58.7	11.0	M 10x35	–	0.15	<b>FHSF35/10</b>	276
1 1/4	32	43.7	51.6	7.5	16	36.6	79	15.1	58.7	12.5	M 12x35	7/16x1 1/2	0.14	<b>FHSF35/12</b>	276
1 1/2	38	50.8	61.1	7.5	16	41.1	94	17.9	69.9	13.0	M 12x35	1/2x1 1/2	0.18	<b>FHSF36</b>	207
1 1/2	38	50.8	61.1	7.5	16	41.1	94	17.9	69.9	14.5	M 14x35	–	0.17	<b>FHSF36/14</b>	207
2	51	62.8	72.3	9.0	16	48.2	104	21.4	77.8	13.0	M 12x35	1/2x1 1/2	0.22	<b>FHSF38</b>	207
2	51	62.8	72.3	9.0	16	48.2	104	21.4	77.8	14.5	M 14x35	–	0.21	<b>FHSF38/14</b>	207
2 1/2	64	74.9	84.9	9.0	19	53.0	114	25.4	88.9	13.5	M 12x40	1/2x1 3/4	0.58	<b>FHSF310</b>	172
2 1/2	64	74.9	84.9	9.0	19	53.0	114	25.4	88.9	14.5	M 14x40	–	0.57	<b>FHSF310/14</b>	172
3	76	90.9	102.4	9.0	22	64.3	135	31.0	106.4	17.0	M 16x45	5/8x1 3/4	0.98	<b>FHSF312</b>	138

### 6000 PSI Series

1/2	13	24.6	32.5	7.2	16	23.6	56	9.1	40.5	9.0	M 08x30	5/16x1 1/4	0.08	<b>FHSF62</b>	420
3/4	19	32.5	42.0	8.3	20	30.0	71	11.9	50.8	11.0	M 10x35	3/8x1 1/2	0.16	<b>FHSF63</b>	420
1	25	38.8	48.4	9.0	25	34.8	81	13.9	57.2	13.0	M 12x45	–	0.25	<b>FHSF64</b>	420
1 1/4	32	44.5	54.8	9.8	27	38.6	95	15.9	66.6	15.0	M 14x50	1/2x1 3/4	0.34	<b>FHSF65</b>	420
1 1/2	38	51.6	64.3	12.1	30	47.5	113	18.3	79.3	17.0	M 16x55	5/8x2 1/4	0.55	<b>FHSF66</b>	420
2	51	67.6	80.2	12.1	37	56.9	133	22.2	96.8	21.0	M 20x65	3/4x2 3/4	1.02	<b>FHSF68</b>	420

<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

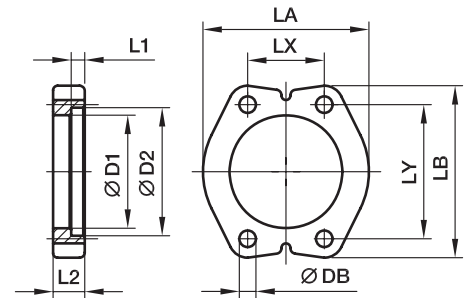
Material for steel: C60

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, Cr(VI)-free	CF	FHSF32CF	only flange half

**FUSF SAE Flange clamps flat**

ISO 6162-1/-2


**3000 PSI Series**

Nom. flange size											Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> CF
SAE (in.)	ISO (DN)	D1	D2	L1	L2	LA	LB	LX	LY	DB	(metr.)	(unc.)			
1/2	13	24.3	31.0	6.2	13	46	56	17.4	38.1	9.0	M 08x25	5/16x1 1/4	0.13	<b>FUSF32</b>	345
3/4	19	32.1	38.9	6.2	14	52	65	22.2	47.6	11.0	M 10x30	3/8x1 1/4	0.15	<b>FUSF33</b>	345
1	25	38.5	45.3	7.5	16	59	70	26.2	52.4	11.0	M 10x30	3/8x1 1/4	0.21	<b>FUSF34</b>	345
1 1/4	32	43.7	51.6	7.5	16	73	79	30.2	58.7	11.0	M 10x35	7/16x1 1/2	0.31	<b>FUSF35/10</b>	276
1 1/4	32	43.7	51.6	7.5	16	73	79	30.2	58.7	12.5	M 12x35	-	0.28	<b>FUSF35/12</b>	276
1 1/2	38	50.8	61.1	7.5	16	83	94	35.8	69.9	13.0	M 12x35	1/2x1 1/2	0.35	<b>FUSF36</b>	207
1 1/2	38	50.8	61.1	7.5	16	83	94	35.8	69.9	14.5	M 14x35	-	0.33	<b>FUSF36/14</b>	207
2	51	62.8	72.3	9.0	16	97	104	42.8	77.8	13.5	M 12x35	1/2x1 1/2	0.43	<b>FUSF38/12</b>	207
2	51	62.8	72.3	9.0	16	97	104	42.8	77.8	14.5	M 14x35	-	0.41	<b>FUSF38</b>	207
2 1/2	64	74.9	84.9	9.0	19	109	114	50.8	88.9	13.5	M 12x40	1/2x1 3/4	1.15	<b>FUSF310</b>	172
2 1/2	64	74.9	84.9	9.0	19	109	114	50.8	88.9	14.5	M 14x40	-	1.43	<b>FUSF310/14</b>	172
3	76	90.9	102.4	9.0	22	131	135	61.9	106.4	17.0	M 16x45	5/8x1 3/4	1.95	<b>FUSF312</b>	138

**6000 PSI Series**

1/2	13	24.6	32.5	7.2	16	48	56	18.2	40.5	9.0	M 08x30	5/16x1 1/4	0.15	<b>FUSF62</b>	420
3/4	19	32.5	42.0	8.3	20	60	71	23.8	50.8	11.0	M 10x35	3/8x1 1/2	0.31	<b>FUSF63</b>	420
1	25	38.8	48.4	9.0	25	70	81	27.8	57.2	13.0	M 12x45	-	0.49	<b>FUSF64</b>	420
1 1/4	32	44.5	54.8	9.8	27	78	95	31.8	66.6	15.0	M 14x50	1/2x1 3/4	0.67	<b>FUSF65</b>	420
1 1/2	38	51.6	64.3	12.1	30	95	113	36.5	79.3	17.0	M 16x55	5/8x2 1/4	1.08	<b>FUSF66</b>	420
2	51	67.6	80.2	12.1	37	114	133	44.5	96.8	21.0	M 20x65	3/4x2 3/4	2.03	<b>FUSF68</b>	420

<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

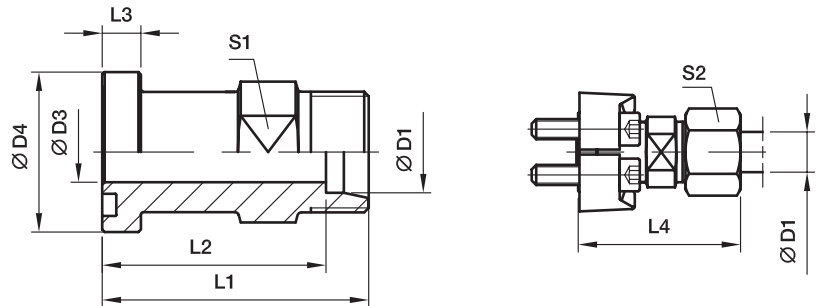
Material for steel: C60

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, Cr(VI)-free	CF	FUSF32CF	only flange clamp

## GFS SAE Straight flange adapter

SAE Flange / EO 24° cone end  
(ISO 6162-1/-2)



### 3000 PSI Series

Nom. flange size		D1 <sup>2)</sup>										Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)		D3	D4	L1	L2	L3	L4	S1	S2	(metr.)	(unc.)	CF			71	
1/2	13	15L	12.0	30.2	48.0	41.0	6.7	56.0	24	27	M 08x25	5/16x1 1/4	0.36	GFS32/15L	315	315	
1/2	13	16S	12.0	30.2	50.0	41.5	6.7	60.0	24	30	M 08x25	5/16x1 1/4	0.40	GFS32/16S	350	350	
1/2	13	18L	14.0	30.2	50.0	42.5	6.7	61.0	19	32	M 08x25	5/16x1 1/4	0.42	GFS32/18L	315	315	
3/4	19	16S	12.0	38.1	55.0	46.5	6.7	64.5	27	30	M 10x30	3/8x1 1/4	0.52	GFS33/16S	350	350	
3/4	19	18L	17.0	38.1	53.0	45.5	6.7	62.0	30	32	M 10x30	3/8x1 1/4	0.59	GFS33/18L	315	315	
3/4	19	22L	19.0	38.1	53.0	45.5	6.7	62.0	30	36	M 10x30	3/8x1 1/4	0.59	GFS33/22L	160	160	
3/4	19	28L	19.0	38.1	55.0	41.0	6.7	64.0	32	41	M 10x30	3/8x1 1/4	0.60	GFS33/28L	160	160	
3/4	19	20S	17.0	38.1	57.0	46.5	6.7	68.0	30	36	M 10x30	3/8x1 1/4	0.65	GFS33/20S	350	350	
3/4	19	25S	17.0	38.1	57.0	45.0	6.7	69.0	30	46	M 10x30	3/8x1 1/4	0.78	GFS33/25S	350	350	
1	25	20S	25.0	44.5	60.0	48.5	8.0	71.0	32	36	M 10x30	3/8x1 1/4	0.70	GFS34/20S	350	350	
1	25	28L	24.0	44.5	54.0	46.5	8.0	63.0	36	41	M 10x30	3/8x1 1/4	0.73	GFS34/28L	160	160	
1	25	25S	20.0	44.5	58.0	46.5	8.0	60.0	36	46	M 10x30	3/8x1 1/4	0.84	GFS34/25S	350	350	
1	25	30S	24.0	44.5	63.0	49.5	8.0	76.0	36	50	M 10x30	3/8x1 1/4	0.94	GFS34/30S	250	250	
1	25	42L	24.0	44.5	76.0	65.0	8.0	87.5	41	60	M 10x30	3/8x1 1/4	0.95	GFS34/42L	160	160	
1 1/4	32	35L	32.0	50.8	58.0	47.5	8.0	69.0	41	50	M 10x35	-	0.96	GFS35/35L/10 <sup>3)</sup>	160	160	
1 1/4	32	25S	27.0	50.8	60.0	48.0	8.0	72.0	41	46	M 10x35	-	1.11	GFS35/25S/10	200	200	
1 1/4	32	30S	28.5	50.8	62.0	48.5	8.0	75.0	41	50	M 10x35	-	1.13	GFS35/30S/10	200	200	
1 1/4	32	38S	28.0	50.8	66.0	50.0	8.0	81.0	46	60	M 10x35	-	1.36	GFS35/38S/10	200	200	
1 1/4	32	28L	23.0	50.8	60.0	52.5	8.0	67.0	36	41	M 12x40	7/16x1 1/2	1.12	GFS35/28L	160	160	
1 1/4	32	35L	32.0	50.8	58.0	47.5	8.0	69.0	41	50	M 12x40	7/16x1 1/2	1.02	GFS35/35L	160	160	
1 1/4	32	25S	27.0	50.8	60.0	48.0	8.0	72.0	41	46	M 12x40	7/16x1 1/2	1.17	GFS35/25S	200	200	
1 1/4	32	30S	28.5	50.8	62.0	48.5	8.0	75.0	41	50	M 12x40	7/16x1 1/2	1.20	GFS35/30S	200	200	
1 1/4	32	38S	28.0	50.8	66.0	50.0	8.0	81.0	46	60	M 12x40	7/16x1 1/2	1.41	GFS35/38S	200	200	
1 1/2	38	35L	30.0	60.3	65.0	54.5	8.0	76.0	46	50	M 12x35	1/2x1 1/2	1.20	GFS36/35L	160	160	
1 1/2	38	42L	36.0	60.3	64.0	53.0	8.0	76.0	46	60	M 12x35	1/2x1 1/2	1.36	GFS36/42L	160	160	
1 1/2	38	38S	32.0	60.3	70.0	54.0	8.0	85.0	46	60	M 12x35	1/2x1 1/2	1.63	GFS36/38S	200	200	

<sup>1)</sup> Pressure shown = Item deliverable

<sup>2)</sup> L = light series; S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring.

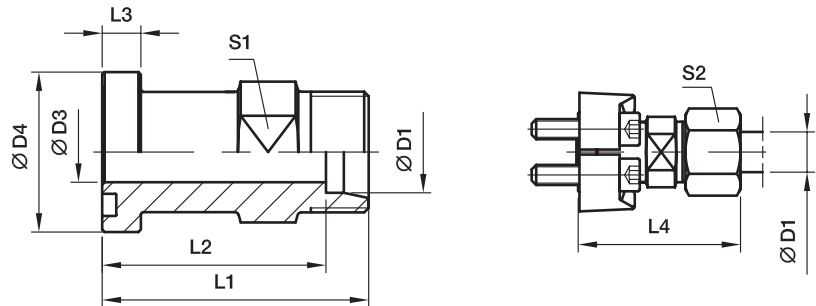
Information on ordering complete fittings or alternative sealing materials see page M11.

<sup>3)</sup> Order code for the flange adapter assembled with FHS35/10CFX and M10x35 screws.

\*Please add the suffixes below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	GFS32/16SCFX	GFS32/16SOMDCF	GFS32/16SOMDCFU	NBR
Stainless steel	71	GFS32/16S71X	GFS32/16SOMD71	-	VIT

**GFS SAE Straight flange adapter**

 SAE Flange / EO 24° cone end  
 (ISO 6162-1/-2)

**6000 PSI Series**

Nom. flange size		D1 <sup>2)</sup>									Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)		D3	D4	L1	L2	L3	L4	S1	S2	(metr.)	(unc.)			CF	71
1/2	13	12S	8	31.8	50.0	42.5	7.7	57.5	19	24	M 08x30	5/16x1 1/4	0.35	<b>GFS62/12S</b>	420	420
1/2	13	14S	10	31.8	50.0	42.0	7.7	59.5	19	27	M 08x30	5/16x1 1/4	0.39	<b>GFS62/14S</b>	420	420
1/2	13	16S	12	31.8	53.0	44.5	7.7	62.5	24	30	M 08x30	5/16x1 1/4	0.47	<b>GFS62/16S</b>	420	420
3/4	19	16S	17	41.3	59.0	50.5	8.7	68.5	30	30	M 10x35	3/8x1 1/2	0.79	<b>GFS63/16S</b>	420	420
3/4	19	20S	17	41.3	61.0	50.5	8.7	72.0	30	36	M 10x35	3/8x1 1/2	0.86	<b>GFS63/20S</b>	420	400
3/4	19	25S	17	41.3	63.0	51.0	8.7	75.0	30	46	M 10x35	3/8x1 1/2	0.97	<b>GFS63/25S</b>	420	400
3/4	19	30S	18	41.3	76.0	62.0	8.7	89.0	30	50	M 10x35	3/8x1 1/2	1.15	<b>GFS63/30S</b>	420	400
3/4	19	38S	18	41.3	85.0	69.0	8.7	99.5	41	60	M 10x35	3/8x1 1/2	1.15	<b>GFS63/38S</b>	315	315
1	25	20S	16	47.6	75.0	64.5	9.5	88.0	36	36	M 12x45	7/16x1 3/4	0.97	<b>GFS64/20S</b>	420	400
1	25	25S	20	47.6	72.0	60.0	9.5	84.0	36	46	M 12x45	7/16x1 3/4	1.42	<b>GFS64/25S</b>	420	400
1	25	30S	24	47.6	74.0	62.0	9.5	87.0	36	50	M 12x45	7/16x1 3/4	1.40	<b>GFS64/30S</b>	420	400
1	25	38S	24	47.6	84.5	68.0	9.5	99.0	46	60	M 12x45	7/16x1 3/4	1.40	<b>GFS64/38S</b>	315	315
1 1/4	32	25S	20	54.0	80.0	68.0	10.2	92.0	41	46	M 14x50	1/2x1 3/4	1.85	<b>GFS65/25S</b>	420	400
1 1/4	32	30S	30	54.0	79.0	65.5	10.2	92.0	41	50	M 12x45	–	1.95	<b>GFS65/30S/12<sup>3)</sup></b>	420	400
1 1/4	32	38S	30	54.0	83.0	67.0	10.2	97.5	46	60	M 12x45	–	2.16	<b>GFS65/38S/12</b>	315	315
1 1/4	32	30S	30	54.0	79.0	65.5	10.2	92.0	41	50	M 14x50	1/2x1 3/4	1.90	<b>GFS65/30S</b>	420	400
1 1/4	32	38S	30	54.0	83.0	67.0	10.2	97.5	46	60	M 14x50	1/2x1 3/4	2.10	<b>GFS65/38S</b>	315	315
1 1/2	38	30S	30	63.5	90.0	74.0	12.5	103.0	46	50	M 16x55	5/8x2 1/4	2.10	<b>GFS66/30S</b>	420	400
1 1/2	38	38S	30	63.5	89.0	73.0	12.5	103.5	46	60	M 16x55	5/8x2 1/4	3.06	<b>GFS66/38S</b>	315	315

1) Pressure shown = Item deliverable

2) S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

**Delivery without nut and ring.**
**Information on ordering complete fittings or alternative sealing materials see page M11.**

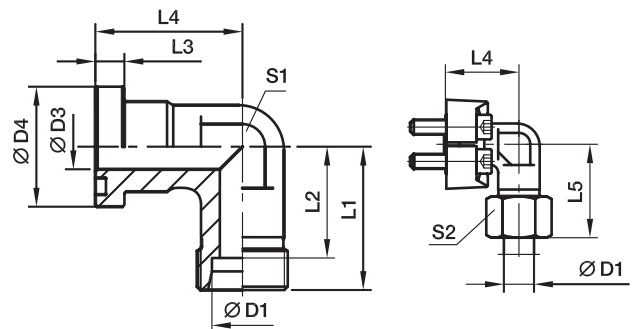
3) Order code for the flange adapter assembled with FHS65/12CFX and M12x45 screws.

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	GFS62/16SCFX	GFS62/16SOMDCF	GFS62/16SOMDCFU	NBR
Stainless steel	71	GFS62/16S71X	GFS62/16SOMD71	–	VIT



**WFS SAE 90° Elbow flange adapter**

 SAE Flange / EO 24° cone end  
 (ISO 6162-1/-2)

**3000 PSI Series**

Nom. flange size		D1 <sup>2)</sup>											Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)		D3	D4	L1	L2	L3	L4	L5	S1	S2	(metr.)	(unc.)	CF			71	
1/2	13	12S	12	30.2	50	42.5	6.7	44	58.5	22	24	M 08x25	5/16x1 1/4	0.38	<b>WFS32/12S</b>	210	210	
1/2	13	15L	12	30.2	36	29.0	6.7	36	44.0	24	27	M 08x25	5/16x1 1/4	0.40	<b>WFS32/15L</b>	315	315	
1/2	13	16S	12	30.2	38	29.5	6.7	36	48.0	24	30	M 08x25	5/16x1 1/4	0.43	<b>WFS32/16S</b>	350	350	
1/2	13	18L	12	30.2	50	42.5	6.7	44	59.0	22	32	M 08x25	5/16x1 1/4	0.44	<b>WFS32/18L</b>	315	315	
3/4	19	16S	19	38.1	64	55.5	6.7	53	73.5	27	30	M 10x30	3/8x1 1/4	0.60	<b>WFS33/16S</b>	350	350	
3/4	19	18L	19	38.1	39	31.5	6.7	42	48.0	30	32	M 10x30	3/8x1 1/4	0.66	<b>WFS33/18L</b>	315	315	
3/4	19	22L	19	38.1	41	33.5	6.7	42	50.0	30	36	M 10x30	3/8x1 1/4	0.66	<b>WFS33/22L</b>	160	160	
3/4	19	20S	17	38.1	43	32.5	6.7	42	54.0	30	36	M 10x30	3/8x1 1/4	0.76	<b>WFS33/20S</b>	350	350	
3/4	19	25S	17	38.1	45	33.0	6.7	42	57.0	30	46	M 10x30	3/8x1 1/4	0.89	<b>WFS33/25S</b>	350	350	
1	25	20S	20	44.5	65	54.5	8.0	60	77.0	34	36	M 10x30	3/8x1 1/4	0.78	<b>WFS34/20S</b>	350	350	
1	25	22L	18	44.5	65	57.5	8.0	60	74.0	34	36	M 10x30	3/8x1 1/4	0.81	<b>WFS34/22L</b>	160	160	
1	25	28L	25	44.5	44	36.5	8.0	45	53.0	36	41	M 10x30	3/8x1 1/4	0.85	<b>WFS34/28L</b>	160	160	
1	25	25S	20	44.5	48	36.5	8.0	45	57.0	36	46	M 10x30	3/8x1 1/4	0.95	<b>WFS34/25S</b>	350	350	
1	25	30S	24	44.5	50	36.5	8.0	45	63.0	36	50	M 10x30	3/8x1 1/4	1.06	<b>WFS34/30S</b>	250	250	
1 1/4	32	35L	32	50.8	57	46.5	8.0	50	68.0	41	50	M 10x35	3/8x1 1/4	1.15	<b>WFS35/35L/10<sup>3)</sup></b>	160	160	
1 1/4	32	25S	27	50.8	55	43.0	8.0	60	67.0	41	46	M 10x35	3/8x1 1/4	1.35	<b>WFS35/25S/10</b>	200	200	
1 1/4	32	30S	28	50.8	57	43.5	8.0	50	70.0	41	50	M 10x35	3/8x1 1/4	1.40	<b>WFS35/30S/10</b>	200	200	
1 1/4	32	38S	28	50.8	59	43.0	8.0	50	74.0	46	60	M 10x35	3/8x1 1/4	1.53	<b>WFS35/38S/10</b>	200	200	
1 1/4	32	35L	32	50.8	57	46.5	8.0	50	68.0	41	50	M 12x40	7/16x1 1/2	1.15	<b>WFS35/35L</b>	160	160	
1 1/4	32	25S	27	50.8	55	43.0	8.0	50	67.0	41	46	M 12x40	7/16x1 1/2	1.35	<b>WFS35/25S</b>	200	200	
1 1/4	32	30S	28	50.8	57	43.5	8.0	50	70.0	41	50	M 12x40	7/16x1 1/2	1.40	<b>WFS35/30S</b>	200	200	
1 1/4	32	38S	28	50.8	59	43.0	8.0	50	74.0	41	60	M 12x40	7/16x1 1/2	1.53	<b>WFS35/38S</b>	200	200	
1 1/2	38	35L	30	60.3	78	67.5	8.0	66	83.0	50	50	M 12x35	1/2x1 1/2	1.55	<b>WFS36/35L</b>	160	160	
1 1/2	38	42L	36	60.3	58	47.0	8.0	55	70.0	50	60	M 12x35	1/2x1 1/2	1.60	<b>WFS36/42L</b>	160	160	
1 1/2	38	38S	36	60.3	64	48.0	8.0	55	79.0	50	60	M 12x35	1/2x1 1/2	1.95	<b>WFS36/38S</b>	200	200	

<sup>1)</sup> Pressure shown = Item deliverable

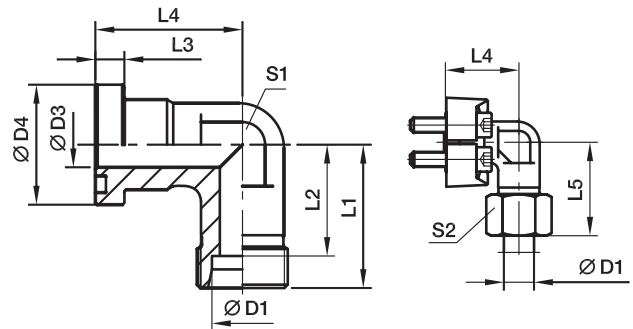
<sup>2)</sup> L = light series; S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$
**Delivery without nut and ring.**
**Information on ordering complete fittings  
or alternative sealing materials see page M11.**
<sup>3)</sup> Order code for the elbow flange adapter assembled with FHS35/10CFX and M10x35 screws.

 \*Please add the **suffixes** below according  
to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	WFS32/16SCFX	WFS32/16SOMDCF	WFS32/16SOMDCFU	NBR
Stainless steel	71	WFS32/16S71X	WFS32/16SOMD71	-	VIT

**WFS SAE 90° Elbow flange adapter**

 SAE Flange / EO 24° cone end  
 (ISO 6162-1/-2)

**6000 PSI Series**

Nom. flange size		D1 <sup>2)</sup>											Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)		D3	D4	L1	L2	L3	L4	L5	S1	S2	(metr.)	(unc.)	CF			71	
1/2	13	12S	12	31.8	50	42.5	7.7	44	58.5	22	24	M 08×30	5/16×1 1/4	0.37	<b>WFS62/12S</b>	420	420	
1/2	13	14S	12	31.8	50	42.0	7.7	44	59.5	22	27	M 08×30	5/16×1 1/4	0.39	<b>WFS62/14S</b>	420	420	
1/2	13	16S	12	31.8	38	29.5	7.7	39	48.0	24	30	M 08×30	5/16×1 1/4	0.49	<b>WFS62/16S</b>	420	420	
3/4	19	16S	17	41.3	45	36.5	8.7	48	55.0	32	30	M 10×35	3/8×1 1/2	0.92	<b>WFS63/16S</b>	420	420	
3/4	19	20S	17	41.3	46	35.5	8.7	48	57.0	32	36	M 10×35	3/8×1 1/2	0.97	<b>WFS63/20S</b>	420	400	
3/4	19	25S	17	41.3	48	36.0	8.7	48	60.0	32	46	M 10×35	3/8×1 1/2	1.19	<b>WFS63/25S</b>	420	400	
1	25	20S	16	47.6	65	54.5	9.5	62	75.0	34	36	M 12×45	7/16×1 3/4	1.69	<b>WFS64/20S</b>	420	400	
1	25	25S	20	47.6	53	44.0	9.5	60	65.0	41	46	M 12×45	7/16×1 3/4	1.67	<b>WFS64/25S</b>	420	400	
1	25	30S	25	47.6	55	41.5	9.5	60	68.0	41	50	M 12×45	7/16×1 3/4	1.63	<b>WFS64/30S</b>	420	400	
1 1/4	32	25S	25	54.0	64	52.0	10.2	55	76.0	42	46	M 12×45	7/16×1 1/2	2.23	<b>WFS65/25S/12<sup>3)</sup></b>	420	400	
1 1/4	32	30S	30	54.0	58	44.5	10.2	68	71.0	46	50	M 12×45	7/16×1 1/2	2.20	<b>WFS65/30S/12</b>	420	400	
1 1/4	32	38S	30	54.0	61	45.0	10.2	68	76.0	46	60	M 12×45	7/16×1 1/2	2.39	<b>WFS65/38S/12</b>	315	315	
1 1/4	32	25S	25	54.0	64	52.0	10.2	55	76.0	42	46	M 14×50	1/2×1 3/4	2.23	<b>WFS65/25S</b>	420	400	
1 1/4	32	30S	30	54.0	58	44.5	10.2	68	71.0	46	50	M 14×50	1/2×1 3/4	2.20	<b>WFS65/30S</b>	420	400	
1 1/4	32	38S	30	54.0	61	45.0	10.2	68	76.0	46	60	M 14×50	1/2×1 3/4	2.39	<b>WFS65/38S</b>	315	315	
1 1/2	38	30S	25	63.5	76	63.5	12.5	77	90.0	50	50	M 16×55	5/8×2 1/4	2.38	<b>WFS66/30S</b>	420	400	
1 1/2	38	38S	32	63.5	72	56.0	12.5	76	87.0	50	60	M 16×55	5/8×2 1/4	2.58	<b>WFS66/38S</b>	315	315	

<sup>1)</sup> Pressure shown = Item deliverable

<sup>2)</sup> S = heavy series

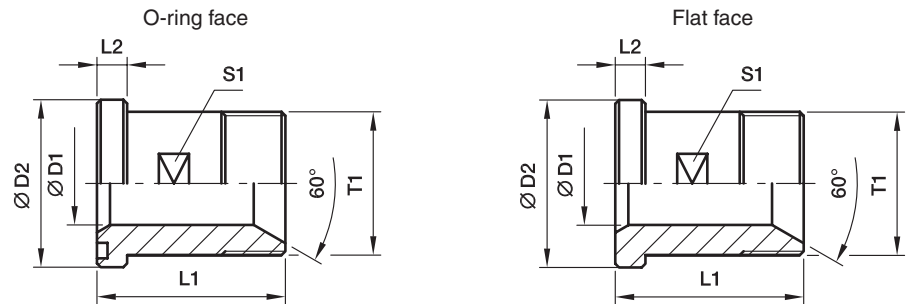
 $\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$ 
**Delivery without nut and ring.**
**Information on ordering complete fittings**
**or alternative sealing materials see page M11.**
<sup>3)</sup> Order code for the elbow flange adapter assembled with FHS65/12CFX and M12×45 screws.

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	WFS62/16SCFX	WFS62/16SOMDCF	WFS62/16SOMDCFU	NBR
Stainless steel	71	WFS62/16S71X	WFS62/16SOMD71	–	VIT

## GFS-G SAE Straight flange adapter

SAE Flange / BSPP 60° cone end  
(ISO 6162-1/-2) (ISO 8434-6)



### 3000 PSI Series

Nom. flange size		T1	D1	D2	L1	L2	S1	Weight (steel) kg/piece	O-ring face Order code*	Flat face Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)										CF	SS
1/2	13	G 1/2	12	30.2	50	6.7	19	0.08	GFS32/12G	GFSG32/12G	345	345
1/2	13	G 3/8	10	30.2	50	6.7	19	0.08	GFS32/38G	GFSG32/38G	345	345
3/4	19	G 3/4	17	38.1	55	6.7	27	0.16	GFS33/34G	GFSG33/34G	345	345
3/4	19	G 1/2	12	38.1	55	6.7	27	0.16	GFS33/12G	GFSG33/12G	345	345
1	25	G 1	22	44.4	60	8.0	32	0.23	GFS34/1G	GFSG34/1G	345	345
1	25	G 3/4	17	44.4	60	8.0	32	0.23	GFS34/34G	GFSG34/34G	345	345
1 1/4	32	G 1 1/4	27	50.8	65	8.0	41	0.30	GFS35/114G	GFSG35/114G	276	276
1 1/4	32	G 1	22	50.8	65	8.0	41	0.30	GFS35/1G	GFSG35/1G	276	276
1 1/2	38	G 1 1/2	32	60.3	70	8.0	46	0.40	GFS36/112G	GFSG36/112G	207	207
1 1/2	38	G 1 1/4	27	60.3	70	8.0	46	0.40	GFS36/114G	GFSG36/114G	207	207
2	51	G 2	40	71.4	75	9.5	55	0.50	GFS38/2G	GFSG38/2G	207	207
2	51	G 1 1/2	32	71.4	75	9.5	55	0.50	GFS38/112G	GFSG38/112G	207	207

### 6000 PSI Series

1/2	13	G 1/2	12	31.8	50	7.7	19	0.09	GFS62/12G	GFSG62/12G	420	420
1/2	13	G 3/8	10	31.8	50	7.7	19	0.09	GFS62/38G	GFSG62/38G	420	420
3/4	19	G 3/4	17	41.3	60	8.7	26	0.15	GFS63/34G	GFSG63/34G	420	420
3/4	19	G 1/2	12	41.3	60	8.7	26	0.15	GFS63/12G	GFSG63/12G	420	420
1	25	G 1	22	47.6	70	9.5	32	0.23	GFS64/1G	GFSG64/1G	420	420
1	25	G 3/4	17	47.6	70	9.5	32	0.23	GFS64/34G	GFSG64/34G	420	420
1 1/4	32	G 1 1/4	27	54.0	75	10.3	36	0.30	GFS65/114G	GFSG65/114G	420	420
1 1/4	32	G 1	22	54.0	75	10.3	36	0.30	GFS65/1G	GFSG65/1G	420	420
1 1/2	38	G 1 1/2	32	63.5	80	12.5	46	0.50	GFS66/112G	GFSG66/112G	420	420
1 1/2	38	G 1 1/4	27	63.5	80	12.5	46	0.50	GFS66/114G	GFSG66/114G	420	420
2	51	G 2	40	79.4	90	12.5	55	0.80	GFS68/2G	GFSG68/2G	420	420
2	51	G 1 1/2	32	79.4	90	12.5	55	0.80	GFS68/112G	GFSG68/112G	420	420

<sup>1)</sup> Pressure shown = Item deliverable

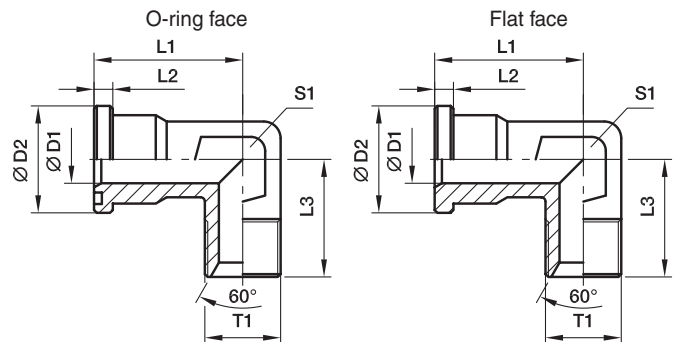
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	GFS32/12GCF	GFS32/12GCFM	GFS32/12GCFU	NBR
Stainless steel	SS	GFS32/12GSS	GFS32/12GSSM	–	VIT



**WFS-G SAE 90° Elbow flange adapter**

 SAE Flange / BSPP 60° cone end  
 (ISO 6162-1/-2) (ISO 8434-6)

**3000 PSI Series**

Nom. flange size		T1	D1	D2	L1	L2	L3	S1	Weight (steel) kg/piece	O-ring face Order code*	Flat face Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)											CF	SS
1/2	13	<b>G 1/2</b>	12	30.2	44	6.7	50	22	0.40	<b>WFS32/12G</b>	<b>WFSG32/12G</b>	345	345
1/2	13	<b>G 3/8</b>	10	30.2	44	6.7	50	22	0.34	<b>WFS32/38G</b>	<b>WFSG32/38G</b>	345	345
3/4	19	<b>G 1/2</b>	12	38.1	53	6.7	64	27	0.60	<b>WFS33/12G</b>	<b>WFSG33/12G</b>	345	345
3/4	19	<b>G 3/4</b>	17	38.1	53	6.7	64	27	0.63	<b>WFS33/34G</b>	<b>WFSG33/34G</b>	345	345
3/4	19	<b>G 1</b>	19	38.1	53	6.7	64	27	0.66	<b>WFS33/1G</b>	<b>WFSG33/1G</b>	345	345
1	25	<b>G 3/4</b>	17	44.4	60	8.0	65	34	0.80	<b>WFS34/34G</b>	<b>WFSG34/34G</b>	345	345
1	25	<b>G 1</b>	22	44.4	60	8.0	65	34	0.85	<b>WFS34/1G</b>	<b>WFSG34/1G</b>	345	345
1	25	<b>G 1 1/4</b>	25	44.4	60	8.0	65	34	0.89	<b>WFS34/114G</b>	<b>WFSG34/114G</b>	345	345
1 1/4	32	<b>G 1</b>	22	50.8	55	8.0	64	42	1.16	<b>WFS35/1G</b>	<b>WFSG35/1G</b>	276	276
1 1/4	32	<b>G 1 1/4</b>	28	50.8	55	8.0	64	42	1.27	<b>WFS35/114G</b>	<b>WFSG35/114G</b>	276	276
1 1/2	38	<b>G 1 1/4</b>	28	60.3	66	8.0	78	50	1.90	<b>WFS36/114G</b>	<b>WFSG36/114G</b>	207	207
1 1/2	38	<b>G 1 1/2</b>	34	60.3	66	8.0	78	50	2.05	<b>WFS36/112G</b>	<b>WFSG36/112G</b>	207	207

**6000 PSI Series**

1/2	13	<b>G 1/2</b>	12	31.8	44	7.7	50	22	0.45	<b>WFS62/12G</b>	<b>WFSG62/12G</b>	420	420
1/2	13	<b>G 3/8</b>	10	31.8	44	7.7	50	22	0.37	<b>WFS62/34G</b>	<b>WFSG62/34G</b>	420	420
3/4	19	<b>G 1/2</b>	14	41.3	53	8.7	64	27	0.88	<b>WFS63/12G</b>	<b>WFSG63/12G</b>	420	420
3/4	19	<b>G 3/4</b>	17	41.3	53	8.7	64	27	0.97	<b>WFS63/34G</b>	<b>WFSG63/34G</b>	420	420
3/4	19	<b>G 1</b>	19	41.3	53	8.7	64	27	1.02	<b>WFS63/1G</b>	<b>WFSG63/1G</b>	420	420
1	25	<b>G 3/4</b>	17	47.6	60	9.5	62	34	1.46	<b>WFS64/34G</b>	<b>WFSG64/34G</b>	420	420
1	25	<b>G 1</b>	22	47.6	60	9.5	62	34	1.57	<b>WFS64/1G</b>	<b>WFSG64/1G</b>	420	420
1	25	<b>G 1 1/4</b>	25	47.6	60	9.5	62	34	1.70	<b>WFS64/114G</b>	<b>WFSG64/114G</b>	420	420
1 1/4	32	<b>G 1</b>	22	54.0	70	10.3	72	42	2.20	<b>WFS65/1G</b>	<b>WFSG65/1G</b>	420	420
1 1/4	32	<b>G 1 1/4</b>	27	54.0	70	10.3	72	42	2.30	<b>WFS65/114G</b>	<b>WFSG65/114G</b>	420	420
1 1/2	38	<b>G 1 1/4</b>	27	63.5	80	12.5	84	50	3.08	<b>WFS66/114G</b>	<b>WFSG66/114G</b>	420	420
1 1/2	38	<b>G 1 1/2</b>	32	63.5	80	12.5	84	50	3.45	<b>WFS66/112G</b>	<b>WFSG 66/112G</b>	420	420

<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

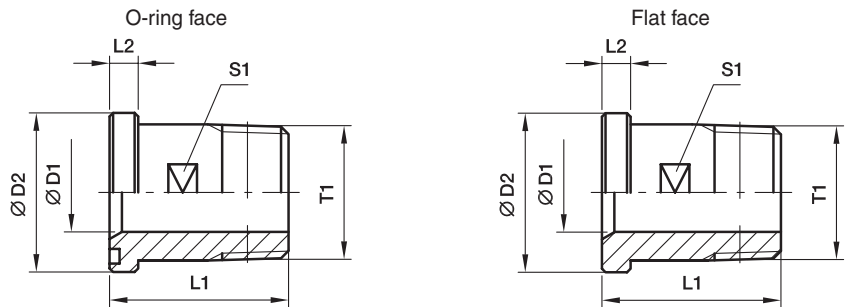
 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	WFS32/12GCF	WFS32/12GCFM	WFS32/12GCFU	NBR
Stainless steel	SS	WFS32/12GSS	WFS32/12GSSM	–	VIT



## GFS-N SAE Flange adapters straight

SAE Flange / Male NPT thread  
(ISO 6162-1/-2) (SAE J476)



### 3000 PSI Series

Nom. flange size		T1	D1	D2	L1	L2	S1	Weight (steel) kg/piece	O-ring face Order code*	Flat face Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)										CF	SS
1/2	13	1/2 NPT	12	30.2	50	6.7	19	0.08	GFS32/12N	GFSG32/12N	345	345
1/2	13	3/8 NPT	10	30.2	50	6.7	19	0.08	GFS32/38N	GFSG32/38N	345	345
3/4	19	3/4 NPT	17	38.1	55	6.7	27	0.16	GFS33/34N	GFSG33/34N	345	345
3/4	19	1/2 NPT	12	38.1	55	6.7	27	0.16	GFS33/12N	GFSG33/12N	345	345
1	25	1 NPT	22	44.4	60	8.0	32	0.23	GFS34/1N	GFSG34/1N	345	345
1	25	3/4 NPT	17	44.4	60	8.0	32	0.23	GFS34/34N	GFSG34/34N	345	345
1 1/4	32	1 1/4 NPT	27	50.8	65	8.0	41	0.30	GFS35/114N	GFSG35/114N	276	276
1 1/4	32	1 NPT	22	50.8	65	8.0	41	0.30	GFS35/1N	GFSG35/1N	276	276
1 1/2	38	1 1/2 NPT	32	60.3	70	8.0	46	0.40	GFS36/112N	GFSG36/112N	207	207
1 1/2	38	1 1/4 NPT	27	60.3	70	8.0	46	0.40	GFS36/114N	GFSG36/114N	207	207
2	51	2 NPT	40	71.4	75	9.5	55	0.50	GFS38/2N	GFSG38/2N	207	207
2	51	1 1/2 NPT	32	71.4	75	9.5	55	0.50	GFS38/112N	GFSG38/112N	207	207

### 6000 PSI Series

1/2	13	1/2 NPT	12	31.8	50	7.7	19	0.09	GFS62/12N	GFSG62/12N	420	420
1/2	13	3/8 NPT	10	31.8	50	7.7	19	0.09	GFS62/38N	GFSG62/38N	420	420
3/4	19	3/4 NPT	17	41.3	60	8.7	26	0.15	GFS63/34N	GFSG63/34N	420	420
3/4	19	1/2 NPT	12	41.3	60	8.7	26	0.15	GFS63/12N	GFSG63/12N	420	420
1	25	1 NPT	22	47.6	70	9.5	32	0.23	GFS64/1N	GFSG64/1N	420	420
1	25	3/4 NPT	17	47.6	70	9.5	32	0.23	GFS64/34N	GFSG64/34N	420	420
1 1/4	32	1 1/4 NPT	27	54.0	75	10.3	36	0.30	GFS65/114N	GFSG65/114N	420	420
1 1/4	32	1 NPT	22	54.0	75	10.3	36	0.30	GFS65/1N	GFSG65/1N	420	420
1 1/2	38	1 1/2 NPT	32	63.5	80	12.5	46	0.50	GFS66/112N	GFSG66/112N	420	420
1 1/2	38	1 1/4 NPT	27	63.5	80	12.5	46	0.50	GFS66/114N	GFSG66/114N	420	420
2	51	2 NPT	40	79.4	90	12.5	55	0.80	GFS68/2N	GFSG68/2N	420	420
2	51	1 1/2 NPT	32	79.4	90	12.5	55	0.80	GFS68/112N	GFSG68/112N	420	420

<sup>1)</sup> Pressure shown = Item deliverable

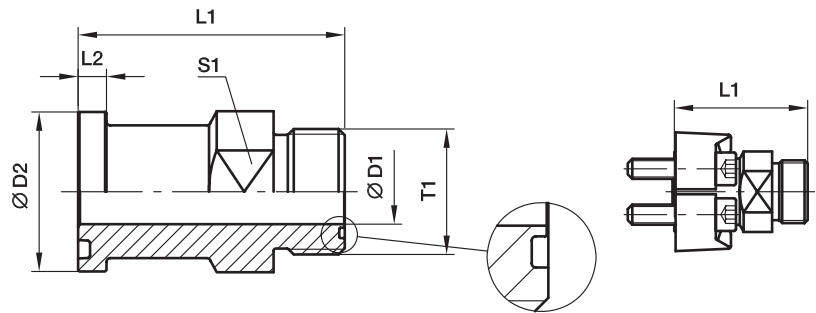
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	GFS32/12NCF	GFS32/12NCFM	GFS32/12NCFU	NBR
Stainless steel	SS	GFS32/12NSS	GFS32/12NSSM	–	VIT

## L(O)HQ SAE Straight flange adapter

SAE Flange / O-Lok® ORFS end  
(ISO 6162-1/-2)



### 3000 PSI Series

Nom. flange size		Tube		T1	D1	D2	L1	L2	Weight (steel) kg/piece	O-ring face without ORFS	O-ring face include ORFS	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)	(metr.)	(in.)							O-ring Order code*	O-ring Order code*	S	SS
3/4	19	18, 20	3/4	<b>1 3/16-12UN-2A</b>	15.5	38.1	69.6	6.7	0.21	<b>12LHQ1</b>	<b>12LOHQ1</b>	350	350
1	25	22, 25	7/8, 1	<b>1 7/16-12UN-2A</b>	20.6	44.5	71.4	8.0	0.30	<b>16LHQ1</b>	<b>16LOHQ1</b>	350	350
1 1/4	32	28, 30, 32	1 1/4	<b>1 11/16-12UN-2A</b>	26.0	50.8	81.5	8.0	0.31	<b>20LHQ1</b>	<b>20LOHQ1</b>	280	280
1 1/2	38	35, 38	1 1/2	<b>2-12UN-2A</b>	32.0	60.3	83.6	8.0	0.56	<b>24LHQ1</b>	<b>24LOHQ1</b>	210	210

### 6000 PSI Series

3/4	19	18, 20	3/4	<b>1 3/16-12UN-2A</b>	15.5	41.3	76.7	8.8	0.21	<b>12LHQ2</b>	<b>12LOHQ2</b>	420	420
1	25	18, 20	3/4	<b>1 3/16-12UN-2A</b>	15.5	47.6	84.8	9.5	0.26	<b>12-16LHQ2</b>	<b>12-16LOHQ2</b>	420	420
1	25	22, 27	3/4, 7/8	<b>1 7/16-12UN-2A</b>	20.6	47.6	85.3	9.5	0.30	<b>16LHQ2</b>	<b>16LOHQ2</b>	420	420
1 1/4	32	28, 30, 32	1 1/4	<b>1 11/16-12UN-2A</b>	26.0	54.0	88.4	10.3	0.31	<b>20LHQ2</b>	<b>20LOHQ2</b>	345	345
1 1/2	38	35, 38	1 1/2	<b>2-12UN-2A</b>	32.0	63.5	105.2	12.6	0.56	<b>24LHQ2</b>	<b>24LOHQ2</b>	310	310

<sup>1)</sup> Pressure shown = Item deliverable

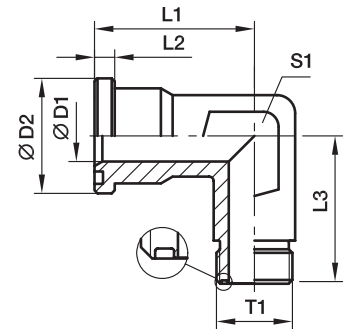
$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes				
Material	Suffix surface and material	Example only flange adapter without ORFS O-ring	Example only flange adapter incl. ORFS O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	12LHQ1-S	12LOHQ1-S	NBR
Stainless steel	SS	12LHQ1-SS	12LOHQ1-SS	VIT

## L(O)EMQ SAE 90° Elbow flange adapter

SAE Flange / O-Lok® ORFS end  
(ISO 6162-1/-2)



### 3000 PSI Series

Nom. flange size		Tube		T1	D1	D2	L1	L2	L3	S1	Weight (steel) kg/piece	O-ring face without ORFS O-ring	O-ring face include ORFS O-ring	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)	(metr.)	(in.)									Order code*	Order code*	CF	SS
1/2	13	8, 10	3/8	<b>11/16-16UN-2A</b>	6	30.2	44	6.7	50	22	0.40	<b>6-8LEMQ1</b>	<b>6-8LOEMQ1</b>	350	350
1/2	13	12	1/2	<b>13/16-16UN-2A</b>	9	30.2	44	6.7	50	22	0.36	<b>8LEMQ1</b>	<b>8LOEMQ1</b>	350	350
1/2	13	14, 15, 16	5/8	<b>1-14UN-2A</b>	12	30.2	44	6.7	50	22	0.32	<b>10-8LEMQ1</b>	<b>10-8LOEMQ1</b>	350	350
3/4	19	14, 15, 16	5/8	<b>1-14UN-2A</b>	12	38.1	53	6.7	64	27	0.47	<b>10-12LEMQ1</b>	<b>10-12LOEMQ1</b>	350	350
3/4	19	18, 20	3/4	<b>1 3/16-12UN-2A</b>	15	38.1	53	6.7	64	27	0.44	<b>12LEMQ1</b>	<b>12LOEMQ1</b>	350	350
1	25	18, 20	3/4	<b>1 3/16-12UN-2A</b>	15	44.4	60	8.0	65	34	0.52	<b>12-16LEMQ1</b>	<b>12-16LOEMQ1</b>	350	350
1	25	22, 25	7/8, 1	<b>1 7/16-12UN-2A</b>	20	44.4	60	8.0	65	34	0.50	<b>16LEMQ1</b>	<b>16LOEMQ1</b>	350	350
1 1/4	32	22, 25	7/8, 1	<b>1 7/16-12UN-2A</b>	20	50.8	55	8.0	64	42	0.48	<b>16-20LEMQ1</b>	<b>16-20LOEMQ1</b>	278	278
1 1/4	32	28, 30, 32	1 1/4	<b>1 11/16-12UN-2A</b>	26	50.8	55	8.0	64	42	0.56	<b>20LEMQ1</b>	<b>20LOEMQ1</b>	278	278
1 1/2	38	28, 30, 32	1 1/4	<b>1 11/16-12UN-2A</b>	26	60.3	66	8.0	78	50	0.73	<b>20-24LEMQ1</b>	<b>20-24LOEMQ1</b>	207	207
1 1/2	38	35, 38	1 1/2	<b>2-12UN-2A</b>	32	60.3	66	8.0	78	50	0.69	<b>24LEMQ1</b>	<b>24LOEMQ1</b>	207	207

### 6000 PSI Series

1/2	13	8, 10	3/8	<b>11/16-16UN-2A</b>	6	31.8	44	7.7	50	22	0.40	<b>6-8LEMQ2</b>	<b>6-8LOEMQ2</b>	420	420
1/2	13	12	1/2	<b>13/16-16UN-2A</b>	9	31.8	44	7.7	50	22	0.36	<b>8LEMQ2</b>	<b>8LOEMQ2</b>	420	420
1/2	13	14, 15, 16	5/8	<b>1-14UN-2A</b>	12	31.8	44	7.7	50	22	0.32	<b>10-8LEMQ2</b>	<b>10-8LOEMQ2</b>	420	420
3/4	19	14, 15, 16	5/8	<b>1-14UN-2A</b>	12	41.3	53	8.7	64	27	0.47	<b>10-12LEMQ2</b>	<b>10-12LOEMQ2</b>	420	420
3/4	19	18, 20	3/4	<b>1 3/16-12UN-2A</b>	15	41.3	53	8.7	64	27	0.44	<b>12LEMQ2</b>	<b>12LOEMQ2</b>	420	420
1	25	18, 20	3/4	<b>1 3/16-12UN-2A</b>	15	47.6	60	9.5	62	34	0.52	<b>12-16LEMQ2</b>	<b>12-16LOEMQ2</b>	420	420
1	25	22, 25	7/8, 1	<b>1 7/16-12UN-2A</b>	20	47.6	60	9.5	62	34	0.50	<b>16LEMQ2</b>	<b>16LOEMQ2</b>	420	420
1 1/4	32	22, 25	7/8, 1	<b>1 7/16-12UN-2A</b>	20	54.0	70	10.3	72	42	0.48	<b>16-20LEMQ2</b>	<b>16-20LOEMQ2</b>	420	420
1 1/4	32	28, 30, 32	1 1/4	<b>1 11/16-12UN-2A</b>	26	54.0	70	10.3	72	42	0.56	<b>20LEMQ2</b>	<b>20LOEMQ2</b>	345	345
1 1/2	38	28, 30, 32	1 1/4	<b>1 11/16-12UN-2A</b>	26	63.5	80	12.5	84	50	0.73	<b>20-24LEMQ2</b>	<b>20-24LOEMQ2</b>	345	345
1 1/2	38	35, 38	1 1/2	<b>2-12UN-2A</b>	32	63.5	80	12.5	84	50	0.69	<b>24LEMQ2</b>	<b>24LOEMQ2</b>	310	310

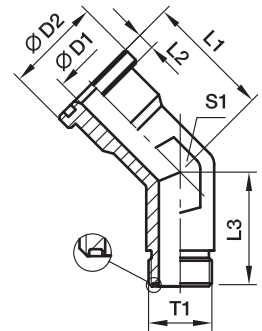
<sup>1)</sup> Pressure shown = Item deliverable

$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes				
Material	Suffix surface and material	Example only flange adapter without ORFS O-ring	Example only flange adapter incl. ORFS O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	12LEMQ1CF	12LOEMQ1CF	NBR
Stainless steel	SS	12LEMQ1SS	12LOEMQ1SS	VIT

**L(O)VQ SAE 45° Elbow flange adapter**

 SAE Flange / O-Lok® ORFS end  
 (ISO 6162-1/-2)

**3000 PSI Series**

Nom. flange size		Tube		T1	D1	D2	L1	L2		Weight (steel) kg/piece	O-ring face without ORFS	O-ring face include ORFS	PN (bar) <sup>1)</sup>		
SAE (in.)	ISO (DN)	(metr.)	(in.)								O-ring Order code*	O-ring Order code*	S	SS	
3/4	19	18, 20	3/4	<b>1 3/16-12UN-2A</b>	15.5	38.1	40	6.7	26	30	0.29	<b>12LVQ1</b>	<b>12LOVQ1</b>	350	350
1	25	22, 25	7/8, 1	<b>1 7/16-12UN-2A</b>	20.5	44.5	47	8.0	30	36	0.39	<b>16LVQ1</b>	<b>16LOVQ1</b>	350	350
1 1/4	32	28, 30, 32	1 1/4	<b>1 11/16-12UN-2A</b>	26.0	50.8	52	8.0	32	41	0.45	<b>20LVQ1</b>	<b>20LOVQ1</b>	280	280
1 1/2	38	35, 38	1 1/2	<b>2-12UN-2A</b>	32.0	60.3	60	8.0	37	48	0.57	<b>24LVQ1</b>	<b>24LOVQ1</b>	210	210

**6000 PSI Series**

3/4	19	18, 20	3/4	<b>1 3/16-12UN-2A</b>	15.5	41.3	40	8.8	26	30	0.29	<b>12LVQ2</b>	<b>12LOVQ2</b>	420	420
1	25	22, 25	7/8, 1	<b>1 7/16-12UN-2A</b>	20.5	47.6	47	9.5	30	36	0.39	<b>16LVQ2</b>	<b>16LOVQ2</b>	420	420
1 1/4	32	28, 30, 32	1 1/4	<b>1 11/16-12UN-2A</b>	26.0	54.0	52	10.3	32	41	0.45	<b>20LVQ2</b>	<b>20LOVQ2</b>	345	345
1 1/2	38	35, 38	1 1/2	<b>2-12UN-2A</b>	32.0	63.5	60	12.6	37	48	0.57	<b>24LVQ2</b>	<b>24LOVQ2</b>	310	310

<sup>1)</sup>Pressure shown = Item deliverable

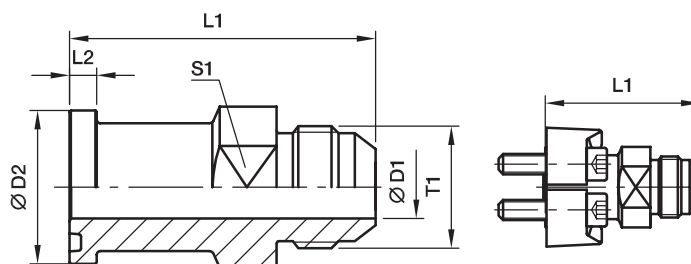
 $\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$ 

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes				
Material	Suffix surface and material	Example only flange adapter without ORFS O-ring	Example only flange adapter incl. ORFS O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	12LVQ1-S	12LOVQ1-S	NBR
Stainless steel	SS	12LVQ1-SS	12LOVQ1-SS	VIT

## XHQ SAE Straight flange adapter

SAE Flange / Triple-Lok® 37° flare end  
(ISO 6162-1/-2)



### 3000 PSI Series

Nom. flange size		Tube		T1	D1	D2	L1	L2	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)	(metr.)	(in.)								S	SS
3/4	19	18, 20	3/4	<b>1 1/16-12UN-2A</b>	15.5	38.1	70.4	6.7	0.21	<b>12XHQ1</b>	350	350
1	25	22, 25	7/8, 1	<b>1 5/16-12UN-2A</b>	21.5	44.5	73.9	8.0	0.30	<b>16XHQ1</b>	350	350
1 1/4	32	28, 30, 32	1 1/4	<b>1 5/8-12UN-2A</b>	27.5	50.8	85.3	8.0	0.31	<b>20XHQ1</b>	275	275
1 1/2	38	35, 38	1 1/2	<b>1 7/8-12UN-2A</b>	33.5	60.3	90.7	8.0	0.56	<b>24XHQ1</b>	210	210
2	51	50	2	<b>2 1/2-12UN-2A</b>	45.0	71.4	102.6	9.5	1.10	<b>32XHQ1</b>	210	210

### 6000 PSI Series

3/4	19	18.20	3/4	<b>1 1/16-12UN-2A</b>	15.5	41.3	78.2	8.8	0.21	<b>12XHQ2</b>	350	350
1	25	22.25	7/8, 1	<b>1 5/16-12UN-2A</b>	21.5	47.6	87.1	9.5	0.30	<b>16XHQ2</b>	350	350
1 1/4	32	28, 30, 32	1 1/4	<b>1 5/8-12UN-2A</b>	27.5	54.0	91.4	10.3	0.31	<b>20XHQ2</b>	275	275
1 1/2	38	35.38	1 1/2	<b>1 7/8-12UN-2A</b>	33.5	63.5	110.2	12.6	0.56	<b>24XHQ2</b>	210	210

<sup>1)</sup> Pressure shown = Item deliverable

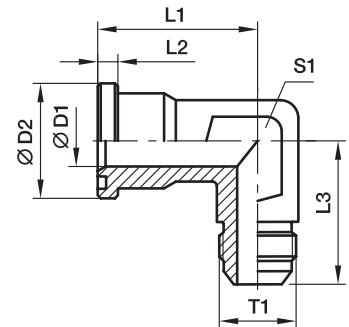
$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example only flange adapter	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	12XHQ1-S	NBR
Stainless steel	SS	12XHQ1-SS	VIT

## XEMQ SAE 90° Elbow flange adapter

SAE Flange / Triple-Lok® 37° flare end  
(ISO 6162-1/-2)



### 3000 PSI Series

Nom. flange size		Tube		T1	D1	D2	L1	L2	L3	S1	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)	(metr.)	(in.)										S	SS
1/2	13	12	1/2	<b>3/4-16UNF-2A</b>	10	30.2	44	6.7	50	22	0.20	<b>8XEMQ1</b>	350	350
1/2	13	14, 15, 16	5/8	<b>7/8-14UNF-2A</b>	12	30.2	44	6.7	50	22	0.20	<b>10-8XEMQ1</b>	350	350
3/4	19	14, 15, 16	5/8	<b>7/8-14UNF-2A</b>	19	38.1	53	6.7	64	27	0.29	<b>10-12XEMQ1</b>	350	350
3/4	19	18, 20	3/4	<b>1 1/16-12UN-2A</b>	19	38.1	53	6.7	64	27	0.29	<b>12XEMQ1</b>	350	350
3/4	19	25	1	<b>1 5/16-12UN-2A</b>	19	38.1	53	6.7	64	27	0.29	<b>16-12XEMQ1</b>	350	350
1	25	18, 20	3/4	<b>1 1/16-12UN-2A</b>	22	44.4	60	8.0	65	34	0.39	<b>12-16XEMQ1</b>	350	350
1	25	25	1	<b>1 5/16-12UN-2A</b>	22	44.4	60	8.0	65	34	0.39	<b>16XEMQ1</b>	350	350
1	25	30, 32	1 1/4	<b>1 5/8-12UN-2A</b>	22	44.4	60	8.0	65	34	0.39	<b>20-16XEMQ1</b>	275	275
1 1/4	32	25	1	<b>1 5/16-12UN-2A</b>	28	50.8	55	8.0	64	42	0.45	<b>16-20XEMQ1</b>	275	275
1 1/4	32	30, 32	1 1/4	<b>1 5/8-12UN-2A</b>	28	50.8	55	8.0	64	42	0.45	<b>20XEMQ1</b>	275	275
1 1/2	38	30, 32	1 1/4	<b>1 5/8-12UN-2A</b>	35	60.3	66	8.0	78	50	0.57	<b>20-24XEMQ1</b>	210	210
1 1/2	38	38	1 1/2	<b>1 7/8-12UN-2A</b>	35	60.3	66	8.0	78	50	0.57	<b>24XEMQ1</b>	210	210

### 6000 PSI Series

1/2	13	12	1/2	<b>3/4-16UNF-2A</b>	12	31.8	44	7.7	50	22	0.20	<b>8XEMQ2</b>	350	350
1/2	13	14, 15, 16	5/8	<b>7/8-14UNF-2A</b>	12	31.8	44	7.7	50	22	0.20	<b>10-8XEMQ2</b>	350	350
3/4	19	14, 15, 16	5/8	<b>7/8-14UNF-2A</b>	18	41.3	53	8.7	64	27	0.29	<b>10-12XEMQ2</b>	350	350
3/4	19	18, 20	3/4	<b>1 1/16-12UN-2A</b>	18	41.3	53	8.7	64	27	0.29	<b>12XEMQ2</b>	350	350
3/4	19	25	1	<b>1 5/16-12UN-2A</b>	18	41.3	53	8.7	64	27	0.29	<b>16-12XEMQ2</b>	350	350
1	25	18, 20	3/4	<b>1 1/16-12UN-2A</b>	22	47.6	60	9.5	62	34	0.39	<b>12-16XEMQ2</b>	350	350
1	25	25	1	<b>1 5/16-12UN-2A</b>	22	47.6	60	9.5	62	34	0.39	<b>16XEMQ2</b>	350	350
1	25	30, 32	1 1/4	<b>1 5/8-12UN-2A</b>	22	47.6	60	9.5	62	34	0.39	<b>20-16XEMQ2</b>	275	275
1 1/4	32	25	1	<b>1 5/16-12UN-2A</b>	27	54.0	70	10.3	70	42	0.45	<b>16-20XEMQ2</b>	350	350
1 1/4	32	30, 32	1 1/4	<b>1 5/8-12UN-2A</b>	27	54.0	70	10.3	72	42	0.45	<b>20XEMQ2</b>	275	275
1 1/2	38	30, 32	1 1/4	<b>1 5/8-12UN-2A</b>	32	63.5	80	12.5	87	50	0.57	<b>20-24XEMQ2</b>	275	275
1 1/2	38	38	1 1/2	<b>1 7/8-12UN-2A</b>	32	63.5	80	12.5	87	50	0.57	<b>24XEMQ2</b>	210	210

<sup>1)</sup> Pressure shown = Item deliverable

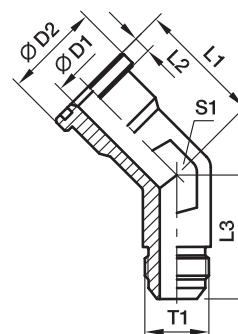
$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example only flange adapter	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	8XEMQ1CF	NBR
Stainless steel	SS	8XEMQ1SS	VIT

## XVQ SAE 45° Elbow flange adapter

SAE Flange / Triple-Lok® 37° flare end  
(ISO 6162-1/-2)



### 3000 PSI Series

Nom. flange size		Tube		T1	D1	D2	L1	L2	L3	S1	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)	(metr.)	(in.)										S	SS
3/4	19	18, 20	3/4	<b>1 1/16-12UN-2A</b>	15.5	38.1	40.1	6.7	32.5	1 1/16	0.29	<b>12XVQ1</b>	350	350
1	25	22, 25	7/8, 1	<b>1 5/16-12UN-2A</b>	21.4	44.5	47.0	8.0	37.3	1 5/16	0.39	<b>16XVQ1</b>	350	350
1 1/4	32	28, 30, 32	1 1/4	<b>1 5/8-12UN-2A</b>	27.4	50.8	51.8	8.0	40.4	1 5/8	0.45	<b>20XVQ1</b>	275	275
1 1/2	38	35, 38	1 1/2	<b>1 7/8-12UN-2A</b>	33.3	60.3	60.5	8.0	45.2	1 7/8	0.57	<b>24XVQ1</b>	210	210
2	51	50	2	<b>2 1/2-12UN-2A</b>	45.2	71.4	76.2	9.5	56.4	2 1/2	1.15	<b>32XVQ1</b>	210	210

### 6000 PSI Series

3/4	19	18, 20	3/4	<b>1 1/16-12UN-2A</b>	15.5	41.3	40.1	8.8	32.5	1 1/16	0.42	<b>12XVQ2</b>	350	350
1	25	22, 25	7/8, 1	<b>1 5/16-12UN-2A</b>	21.4	47.6	47.0	9.5	37.3	1 5/16	0.52	<b>16XVQ2</b>	350	350
1 1/4	32	28, 30, 32	1 1/4	<b>1 5/8-12UN-2A</b>	27.4	54.0	51.8	10.3	40.4	1 5/8	0.56	<b>20XVQ2</b>	275	275
1 1/2	38	35, 38	1 1/2	<b>1 7/8-12UN-2A</b>	33.3	63.5	60.5	12.6	45.2	1 7/8	0.69	<b>24XVQ2</b>	210	210

<sup>1)</sup> Pressure shown = Item deliverable

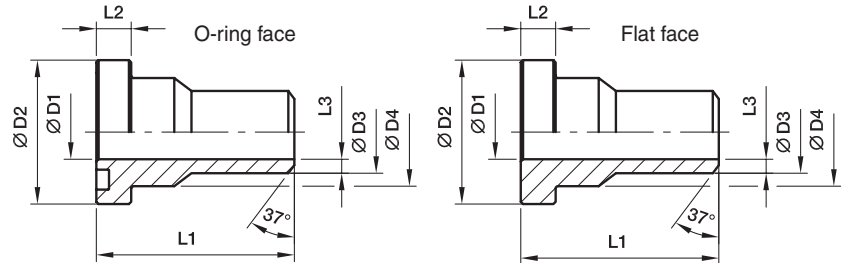
$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example only flange adapter	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	12XVQ1-S	NBR
Stainless steel	SS	12XVQ1-SS	VIT

## ASR SAE Straight flange adapter

SAE Flange / Butt weld reducer tube end  
(ISO 6162-1/-2)



### 3000 PSI Series

Nom. flange size		Tube	D1	D2	D3	D4	L1	L2	L3	Weight (steel) kg/piece	O-ring face	Flat face	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)										Order code*	Order code*	S	SS
1/2	13	18x4.5	10	30.2	18.0	24.0	45	6.7	4.0	0.30	<b>ASR32/18X4.5</b>	<b>ASRG32/18X4.5</b>	345	345
3/4	19	22x4.5	13	38.1	22.0	31.5	50	6.7	4.5	0.40	<b>ASR33/22X4.5</b>	<b>ASRG33/22X4.5</b>	345	345
1	25	28x4.5	19	44.4	28.0	38.0	55	8.0	4.5	0.49	<b>ASR34/28X4.5</b>	<b>ASRG34/28X4.5</b>	345	345
1 1/4	32	35x5.0	25	50.8	35.0	43.0	60	8.0	5.0	0.75	<b>ASR35/35X5</b>	<b>ASRG35/35X5</b>	276	276
1 1/2	38	43x6.0	31	60.3	43.0	50.0	65	8.0	6.0	1.01	<b>ASR36/43X6</b>	<b>ASRG36/43X6</b>	207	207
2	51	50x6.0	38	71.4	50.0	62.0	70	9.5	6.0	1.15	<b>ASR38/50X6</b>	<b>ASRG38/50X6</b>	207	207
2 1/2	64	62x7.5	47	84.1	62.0	74.0	75	9.5	7.5	1.40	<b>ASR310/62X7.5</b>	<b>ASRG310/62X7.5</b>	172	172
3	76	76x9.0	58	101.6	76.0	90.0	85	9.5	9.0	1.76	<b>ASR312/76X9</b>	<b>ASRG312/76X9</b>	138	138
3 1/2	89	90x10.0	70	114.3	90.0	102.0	90	11.2	10.0	2.15	<b>ASR314/90X10</b>	<b>ASRG314/90X10</b>	34	34
4	102	102x7.0	88	127.0	102.0	114.0	100	11.2	7.0	2.35	<b>ASR316/102X7</b>	<b>ASRG316/102X7</b>	34	34

### 6000 PSI Series

1/2	13	18x4.0	10	31.8	18.0	24.0	45	7.7	4.0	0.40	<b>ASR62/18X4</b>	<b>ASRG62/18X4</b>	420	420
3/4	19	22x4.5	13	41.3	22.0	32.0	50	8.7	4.5	0.50	<b>ASR63/22X4.5</b>	<b>ASRG63/22X4.5</b>	420	420
1	25	28x5.0	18	47.6	28.0	38.0	55	9.5	5.0	0.90	<b>ASR64/28X5</b>	<b>ASRG64/28X5</b>	420	420
1 1/4	32	35x6.5	22	54.0	35.0	44.0	60	10.3	6.5	1.35	<b>ASR65/35X6.5</b>	<b>ASRG65/35X6.5</b>	420	420
1 1/2	38	44x7.5	29	63.5	44.0	51.0	65	12.5	7.5	2.65	<b>ASR66/44X7.5</b>	<b>ASRG66/44X7.5</b>	420	420
2	51	51x8.0	35	79.4	51.0	67.0	70	12.5	8.0	3.90	<b>ASR68/51X8</b>	<b>ASRG68/51X8</b>	420	420

<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

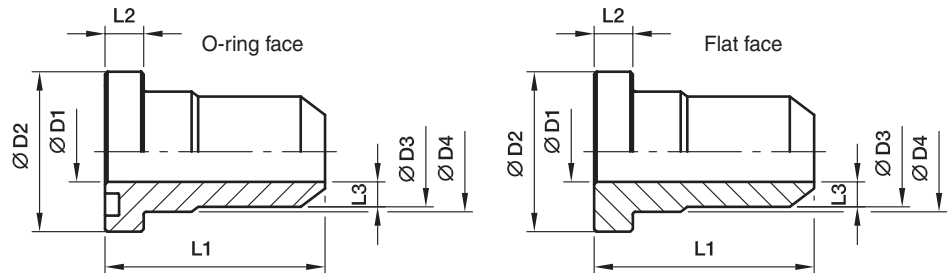
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	ASR32/18X4.5S	ASR32/18X4.5SM	ASR32/18X4.5SU	NBR
Stainless steel	SS	ASR32/18X4.5SS	ASR32/18X4.5SSM	–	VIT



## AS SAE Straight flange adapter

SAE Flange / Butt weld tube end  
(ISO 6162-1/-2)



### 3000 PSI Series

Nom. flange size		Tube	D1	D2	D3	D4	L1	L2	L3	Weight (steel) kg/piece	O-ring face	Flat face	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)										Order code*	Order code*	S	SS
1/2	13	15x2.0	11	30.2	15	23.9	45.0	6.8	2.0	0.26	AS32/15X2	ASG32/15X2	345	345
1/2	13	16x3.0	10	30.2	16	23.9	45.0	6.8	3.0	0.27	AS32/16X3	ASG32/16X3	345	345
1/2	13	21.3x2.6	13	30.2	22	23.9	45.0	6.8	4.5	0.29	AS32/21.3X2.6	ASG32/21.3X2.6	345	345
3/4	19	18x1.5	15	38.1	18	31.5	49.9	6.8	1.5	0.51	AS33/18X1.5	ASG33/18X1.5	345	345
3/4	19	22x2.0	18	38.1	22	31.5	49.9	6.8	2.0	0.49	AS33/22X2	ASG33/22X2	345	345
3/4	19	20x3.0	14	38.1	20	31.5	49.9	6.8	3.0	0.52	AS33/20X3	ASG33/20X3	345	345
3/4	19	25x4.0	17	38.1	25	31.5	49.9	6.8	4.0	0.49	AS33/25X4	ASG33/25X4	345	345
3/4	19	26.9x2.6	19	38.1	28	31.5	50.0	6.7	4.5	0.51	AS33/26.9X2.6	ASG33/26.9X2.6	345	345
1	25	20x2.5	15	44.5	20	38.0	55.0	8.0	2.5	0.59	AS34/20X2.5	ASG34/20X2.5	345	345
1	25	28x2.0	24	44.5	28	38.0	55.0	8.0	2.0	0.59	AS34/28X2	ASG34/28X2	345	345
1	25	30x4.5	21	44.5	30	38.0	55.0	8.0	4.5	0.62	AS34/30X4.5	ASG34/30X4.5	345	345
1	25	33.7x4.0	25	44.4	35	38.0	55.0	8.0	5.0	0.70	AS34/33.7X4	ASG34/33.7X4	345	345
1 1/4	32	35x2.0	31	50.8	35	43.0	60.0	8.0	2.0	0.75	AS35/35X2	ASG35/35X2	276	276
1 1/4	32	25x3.0	19	50.8	25	43.0	60.0	8.0	3.0	0.89	AS35/25X3	ASG35/25X3	276	276
1 1/4	32	30x4.0	22	50.8	30	43.0	60.0	8.0	4.0	0.88	AS35/30X4	ASG35/30X4	276	276
1 1/4	32	38x5.0	28	50.8	38	43.0	60.0	8.0	5.0	0.81	AS35/38X5	ASG35/38X5	276	276
1 1/4	32	42.4x6.0	31	50.8	43	43.0	60.0	8.0	6.0	0.92	AS35/42.4X6	ASG35/42.4X6	276	276
1 1/2	38	42x3.0	36	60.3	42	50.0	64.9	8.0	3.0	1.03	AS36/42X3	ASG36/42X3	207	207
1 1/2	38	38x4.0	30	60.3	38	50.0	64.9	8.0	4.0	1.17	AS36/38X4	ASG36/38X4	207	207
1 1/2	38	48.3x6.0	38	60.3	50	50.0	65.0	8.0	6.0	1.21	AS36/48.3X6	ASG36/48.3X6	207	207
2	51	50x6.0	38	71.4	50	62.0	70.0	9.6	6.0	1.49	AS38/50X6	ASG38/50X6	207	207
2	51	65x8.0	49	71.4	65	62.0	70.0	9.6	8.0	1.38	AS38/65X8	ASG38/65X8	207	207
2	51	60.3x7.5	47	71.4	62	62.0	70.0	9.5	7.5	1.25	AS38/62X7.5	ASG38/62X7.5	207	207
2 1/2	64	76.1x5.5	63	84.1	74	74.0	75.0	9.5	5.5	1.50	AS310/74X5.5	ASG310/74X5.5	172	172
3	76	88.9x10.0	70	101.6	90	90.0	85.0	9.5	10.0	2.11	AS312/90X10	ASG312/90X10	138	138
3 1/2	89	101.6x7.0	88	114.3	102	102.0	90.0	11.2	7.0	2.51	AS314/102X7	ASG314/102X7	34	34
4	102	114x8.0	98	127.0	114	114.0	100.0	11.2	8.0	2.75	AS316/115X8.5	ASG316/115X8.5	34	34
5	127	139.7x10.0	120	152.4	140	140.0	100.0	11.2	10.0	3.41	AS320/140X10	ASG320/140X10	34	34

<sup>1)</sup> Pressure shown = Item deliverable

PN (bar) / 10 = PN (MPa)

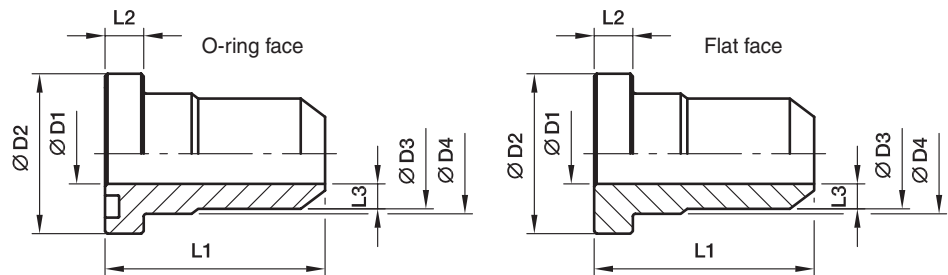
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	AS32/15X2S	AS32/15X2SM	AS32/15X2SU	NBR
Stainless steel	SS	AS32/15X2SS	AS32/15X2SSM	-	VIT

## AS SAE Straight flange adapter

SAE Flange / Butt weld tube end  
(ISO 6162-1/-2)



### 6000 PSI Series

Nom. flange size		Tube								Weight (steel) kg/piece	O-ring face	Flat face	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)		D1	D2	D3	D4	L1	L2	L3		Order code*	Order code*	S	SS
1/2	13	16×3.0	10	31.8	16	24.0	45	7.8	3.0	0.12	<b>AS62/16X3</b>	<b>ASG62/16X3</b>	420	420
1/2	13	21.3×3.2	13	31.8	22	24.0	45	7.8	4.5	0.12	<b>AS62/21.3X3.2</b>	<b>ASG62/21.3X3.2</b>	420	420
3/4	19	16×3.0	10	41.3	16	31.8	50	8.8	3.0	0.20	<b>AS63/16X3</b>	<b>ASG63/16X3</b>	420	420
3/4	19	20×4.0	12	41.3	20	31.8	50	8.8	4.0	0.22	<b>AS63/20X4</b>	<b>ASG63/20X4</b>	420	420
3/4	19	26.9×4.0	18	41.3	28	32.0	50	8.8	5.0	0.21	<b>AS63/26.9X4</b>	<b>ASG63/26.9X4</b>	420	420
3/4	19	25×5.0	15	41.3	25	31.8	50	8.8	5.0	0.21	<b>AS63/25X5</b>	<b>ASG63/25X5</b>	420	420
1	25	25×5.0	15	47.6	25	38.0	55	9.5	5.0	0.34	<b>AS64/25X5</b>	<b>ASG64/25X5</b>	420	420
1	25	30×4.0	22	47.6	30	38.0	55	9.5	4.0	0.30	<b>AS64/30X4</b>	<b>ASG64/30X4</b>	420	420
1	25	30×6.0	18	47.3	30	38.0	67	9.5	6.0	0.33	<b>AS64/30X6</b>	<b>ASG64/30X6</b>	420	420
1	25	33.7×6.3	22	47.6	35	38.0	55	9.5	6.5	0.33	<b>AS64/33.7X6.3</b>	<b>ASG64/33.7X6.3</b>	420	420
1 1/4	32	30×4.0	22	54.0	30	44.0	60	10.3	4.0	0.53	<b>AS65/30X4</b>	<b>ASG65/30X4</b>	420	420
1 1/4	32	30×6.0	18	54.0	30	44.0	60	10.3	6.0	0.63	<b>AS65/30X6</b>	<b>ASG65/30X6</b>	420	420
1 1/4	32	38×5.0	28	54.0	38	44.0	60	10.3	5.0	0.45	<b>AS65/38X5</b>	<b>ASG65/38X5</b>	420	420
1 1/4	32	38×8.0	22	54.0	38	44.0	60	10.3	8.0	0.55	<b>AS65/38X8</b>	<b>ASG65/38X8</b>	420	420
1 1/4	32	42.4×6.3	29	54.0	44	44.0	60	10.3	7.5	0.47	<b>AS65/42.4X6.3</b>	<b>ASG65/42.4X6.3</b>	420	420
1 1/2	38	38×5.0	28	63.5	38	50.8	65	12.6	5.0	0.71	<b>AS66/38X5</b>	<b>ASG66/38X5</b>	420	420
1 1/2	38	38×8.0	22	63.5	38	50.8	65	12.6	8.0	0.85	<b>AS66/38X8</b>	<b>ASG66/38X8</b>	420	420
1 1/2	38	48.3×8.0	35	63.5	51	51.0	65	12.6	8.0	0.66	<b>AS66/48.3X8</b>	<b>ASG66/48.3X8</b>	420	420
2	51	50×9.0	32	79.4	50	66.6	70	12.6	9.0	1.24	<b>AS68/50X9</b>	<b>ASG68/50X9</b>	420	420
2	51	65×8.0	49	79.4	65	66.6	70	12.6	8.0	0.98	<b>AS68/65X8</b>	<b>ASG68/65X8</b>	420	420
2	51	60.3×10.0	43	79.4	61	67.0	70	12.6	9.0	1.12	<b>AS68/60.3X10</b>	<b>ASG68/60.3X10</b>	420	420
2 1/2	64	73×14.0	45	107.8	74	88.9	90	20.6	14.5	6.41	<b>AS610/73X14</b>	<b>ASG610/73X14</b>	420	420
3	76	88.6×16.0	58	131.7	90	113.8	110	25.6	16.0	9.31	<b>AS612/88.6X16</b>	<b>ASG612/88.6X16</b>	420	420

<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

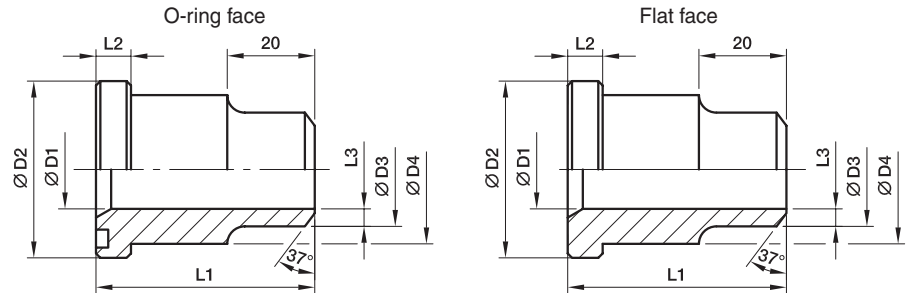
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	AS62/16X3S	AS62/16X3SM	AS62/16X3SU	NBR
Stainless steel	SS	AS62/16X3SS	AS62/16X3SSM	–	VIT

## ASL SAE Straight flange adapter

SAE Flange / Butt weld tube end  
(ISO 6162-1/-2)



### 3000 PSI Series

Nom. flange size		Tube	D1	D2	D3	D4	L1	L2	L3	Weight (steel) kg/piece	O-ring face Order code*	Flat face Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)												S	SS
1/2	13	16x2.0	12	30.2	17	23.9	41	6.7	2.5	0.26	ASL32/16X2	ASLG32/16X2	210	210
3/4	19	25x3.0	19	38.1	25	31.7	50	6.7	3.0	0.45	ASL33/25X3	ASLG33/25X3	210	210
1	25	30x4.0	22	44.4	30	38.0	50	8.0	4.0	0.59	ASL34/30X4	ASLG34/30X4	210	210
1 1/4	32	38x5.0	28	50.8	38	43.0	55	8.0	5.0	0.82	ASL35/38X5	ASLG35/38X5	210	210
1 1/2	38	45x5.0	35	60.3	45	50.0	57	8.0	5.0	1.10	ASL36/45X5	ASLG36/45X5	210	210
2	51	60x7.0	45	71.4	60	62.0	57	9.5	7.5	1.35	ASL38/60X7	ASLG38/60X7	210	210
2 1/2	64	70x7.5	55	84.1	70	74.0	58	9.5	7.5	1.52	ASL310/70X7.5	ASLG310/70X7.5	175	175
3	76	80x6.0	68	101.6	80	90.0	60	9.5	6.0	2.13	ASL312/80X6	ASLG312/80X6	138	138
3 1/2	89	100x6.0	88	114.3	100	102.0	60	11.2	6.0	2.41	ASL314/100X6	ASLG314/100X6	35	35
4	102	110x6.0	98	127.0	110	114.0	60	11.2	6.0	2.52	ASL316/110X6	ASLG316/110X6	35	35
5	127	133x6.5	120	152.4	133	140.0	60	11.2	6.5	3.12	ASL320/133X6.5	ASLG320/133X6.5	35	35

### 6000 PSI Series

1/2	13	16x2.0	12	31.8	16	24.0	34	7.7	2.0	0.32	ASL62/16X2	ASLG62/16X2	420	420
3/4	19	25x3.5	18	41.3	25	32.0	38	8.7	3.5	0.70	ASL63/25X3.5	ASLG63/25X3.5	420	420
1	25	30x4.0	22	47.6	30	38.5	40	9.5	4.0	1.10	ASL64/30X4	ASLG64/30X4	420	420
1 1/4	32	38x5.5	27	54.0	38	44.0	45	10.3	5.5	1.70	ASL65/38X5.5	ASLG65/38X5.5	420	420
1 1/2	38	45x6.5	32	63.5	45	51.0	50	12.5	6.5	2.85	ASL66/45X6.5	ASLG66/45X6.5	420	420
2	51	60x7.5	45	79.4	60	67.0	58	12.5	7.5	4.60	ASL68/60X7.5	ASLG68/60X7.5	420	420
2 1/2	64	74x14.5	45	107.8	74	88.9	90	20.6	14.5	6.50	ASL610/74X14.5	ASLG610/74X14.5	420	420
3	76	90x16.0	58	131.7	90	113.8	110	25.6	16.0	9.62	ASL612/90X16	ASLG612/90X16	420	420

<sup>4)</sup> Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

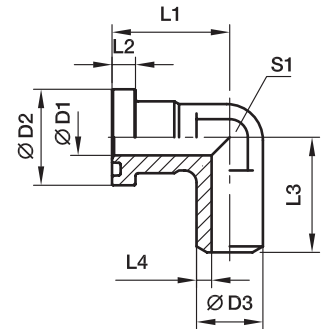
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	ASL32/16X2S	ASL32/16X2SM	ASL32/16X2SU	NBR
Stainless steel	SS	ASL32/16X2SS	ASL32/16X2SSM	–	VIT

## WAS SAE 90° Elbow flange adapter

SAE Flange / Butt weld tube end  
(ISO 6162-1/-2)



### 3000 PSI Series

Nom. flange size			D1	D2	D3	L1	L2	L3	L4	S1	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)												max.	S
1/2	13	21.3	13	30.2	21.6	44	6.7	50	4.3	22	0.38	<b>WAS32/21.6</b>	345	345
3/4	19	26.9	19	38.1	27.2	53	6.7	64	4.1	27	0.64	<b>WAS33/27.2</b>	345	345
1	25	33.7	25	44.4	34.5	60	8.0	65	4.7	34	1.13	<b>WAS34/34.5</b>	345	345
1 1/4	32	42.4	30	50.8	42.8	55	8.0	64	6.4	42	1.27	<b>WAS35/42.8</b>	276	276
1 1/2	38	48.3	38	60.3	48.6	66	8.0	78	5.3	50	2.04	<b>WAS36/48.6</b>	207	207

### 6000 PSI Series

1/2	13	21.3	13	31.8	21.6	44	7.7	50	4.3	22	0.48	<b>WAS62/21.6</b>	420	420
3/4	19	26.9	18	41.3	27.2	53	8.7	64	4.6	27	0.96	<b>WAS63/27.2</b>	420	420
1	25	33.7	22	47.6	34.5	60	9.5	62	6.3	34	1.42	<b>WAS64/34.5</b>	420	420
1 1/4	32	42.4	28	54.0	42.8	70	10.3	72	7.4	42	2.45	<b>WAS65/42.8</b>	420	420
1 1/2	38	48.3	32	63.5	48.6	80	12.5	84	8.3	50	3.25	<b>WAS66/48.6</b>	420	420

<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

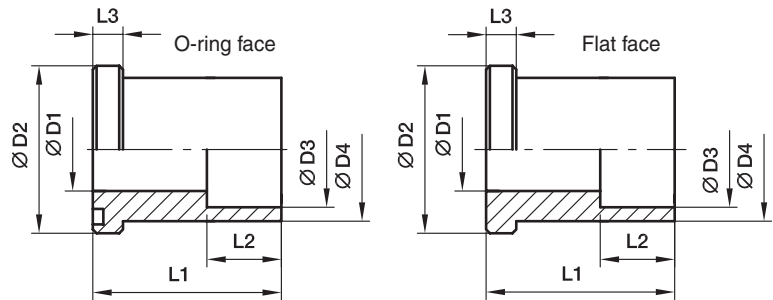


\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	WAS32/21.6S	WAS32/21.6SM	WAS32/21.6SU	NBR
Stainless steel	SS	WAS32/21.6SS	WAS32/21.6SSM	–	VIT

## ES SAE Straight flange adapter

SAE Flange / Socket weld tube end  
(ISO 6162-1/-2)



### 3000 PSI Series

Nom. flange size		Ø max.	D1	D2	D3	D4	L1	L2	L3	Weight (steel) kg/piece	O-ring face	Flat face	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)										Order code*	Order code*	S	SS
1/2	13	16.0	12.5	30.2	16.5	24.0	35	12	6.7	0.25	ES32/16.5	ESG32/16.5	345	345
1/2	13	17.3	12.5	30.2	17.6	24.0	35	12	6.7	0.23	ES32/17.6	ESG32/17.6	345	345
3/4	19	20.0	15.0	38.1	20.5	31.5	40	13	6.7	0.35	ES33/20.5	ESG33/20.5	345	345
3/4	19	21.3	15.0	38.1	21.7	31.5	40	13	6.7	0.32	ES33/21.7	ESG33/21.7	345	345
1	25	25.0	20.0	44.4	25.5	38.0	45	14	8.0	0.45	ES34/25.5	ESG34/25.5	345	345
1	25	26.9	20.0	44.4	27.3	38.0	45	14	8.0	0.41	ES34/27.3	ESG34/27.3	345	345
1 1/4	32	30.0	25.0	50.8	30.5	43.0	50	16	8.0	0.65	ES35/30.5	ESG35/30.5	276	276
1 1/4	32	32.0	25.0	50.8	32.5	43.0	50	16	8.0	0.63	ES35/32.5	ESG35/32.5	276	276
1 1/4	32	33.7	25.0	50.8	34.2	43.0	50	16	8.0	0.61	ES35/34.2	ESG35/34.2	276	276
1 1/2	38	38.0	32.0	60.3	38.5	50.0	55	18	8.0	0.89	ES36/38.5	ESG36/38.5	207	207
1 1/2	38	40.0	32.0	60.3	40.7	50.0	55	18	8.0	0.86	ES36/40.7	ESG36/40.7	207	207
1 1/2	38	42.4	32.0	60.3	43.0	50.0	55	18	8.0	0.95	ES36/43	ESG36/43	207	207
2	51	48.3	32.0	71.4	49.0	62.0	65	20	9.5	1.21	ES38/49	ESG38/49	207	207
2	51	50.0	38.0	71.4	50.7	62.0	65	20	9.5	1.17	ES38/50.7	ESG38/50.7	207	207
2 1/2	64	60.3	38.0	84.1	61.0	74.0	75	22	9.5	1.45	ES310/61	ESG310/61	172	172
2 1/2	64	63.5	47.0	84.1	64.0	74.0	75	22	9.5	1.41	ES310/64	ESG310/64	172	172
3	76	73.5	47.0	101.6	74.0	90.0	85	24	9.5	2.50	ES312/74	ESG312/74	138	138
3	76	76.1	58.0	101.6	77.0	90.0	85	24	9.5	2.45	ES312/77	ESG312/77	138	138
3	76	80.0	58.0	101.6	81.0	90.0	85	24	9.5	2.30	ES312/81	ESG312/81	138	138

<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

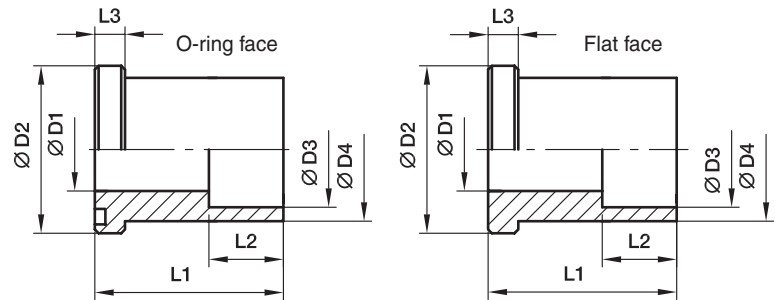
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	ES32/16.5S	ES32/16.5SM	ES32/16.5SU	NBR
Stainless steel	SS	ES32/16.5SS	ES32/16.5SSM	–	VIT

## ES SAE Straight flange adapter

SAE Flange / Socket weld tube end  
(ISO 6162-1/-2)



### 6000 PSI Series

Nom. flange size		⌀ max.	D1	D2	D3	D4	L1	L2	L3	Weight (steel) kg/piece	O-ring face Order code*	Flat face Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)												S	SS
1/2	13	16.0	11.0	31.8	16.5	24.0	35	13	7.7	0.26	<b>ES62/16.5</b>	<b>ESG62/16.5</b>	420	420
1/2	13	17.3	11.0	31.8	17.6	24.0	35	13	7.7	0.24	<b>ES62/17.6</b>	<b>ESG62/17.6</b>	420	420
3/4	13	20.0	15.0	41.3	20.5	31.8	40	13	8.7	0.37	<b>ES63/20.5</b>	<b>ESG63/20.5</b>	420	420
3/4	19	21.3	15.0	41.3	21.7	31.8	40	13	8.7	0.33	<b>ES63/21.7</b>	<b>ESG63/21.7</b>	420	420
1	25	25.0	20.0	47.6	25.5	38.0	45	13	9.5	0.48	<b>ES64/25.5</b>	<b>ESG64/25.5</b>	420	420
1	25	26.9	20.0	47.6	27.3	38.0	45	13	9.5	0.43	<b>ES64/27.3</b>	<b>ESG64/27.3</b>	420	420
1 1/4	32	30.0	24.0	54.0	30.5	44.0	50	16	10.3	0.68	<b>ES65/30.5</b>	<b>ESG65/30.5</b>	420	420
1 1/4	32	32.0	24.0	54.0	32.5	44.0	50	16	10.3	0.65	<b>ES65/32.5</b>	<b>ESG65/32.5</b>	420	420
1 1/4	32	33.7	24.0	54.0	34.2	44.0	50	16	10.3	0.64	<b>ES65/34.2</b>	<b>ESG65/34.2</b>	420	420
1 1/2	38	38.0	31.0	63.5	38.5	51.0	55	18	12.5	0.92	<b>ES66/38.5</b>	<b>ESG66/38.5</b>	420	420
1 1/2	38	40.0	31.0	63.5	40.7	51.0	55	18	12.5	0.88	<b>ES66/40.7</b>	<b>ESG66/40.7</b>	420	420
1 1/2	38	42.4	31.0	63.5	42.8	51.0	55	18	12.5	0.85	<b>ES66/42.8</b>	<b>ESG66/42.8</b>	420	420
2	51	48.3	38.0	79.4	49.0	67.0	65	20	12.5	1.25	<b>ES68/49</b>	<b>ESG68/49</b>	420	420
2	51	50.0	38.0	79.4	50.7	67.0	65	20	12.5	1.21	<b>ES68/50.7</b>	<b>ESG68/50.7</b>	420	420

<sup>1)</sup> Pressure shown = Item deliverable

PN (bar) = PN (MPa)  
10

The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

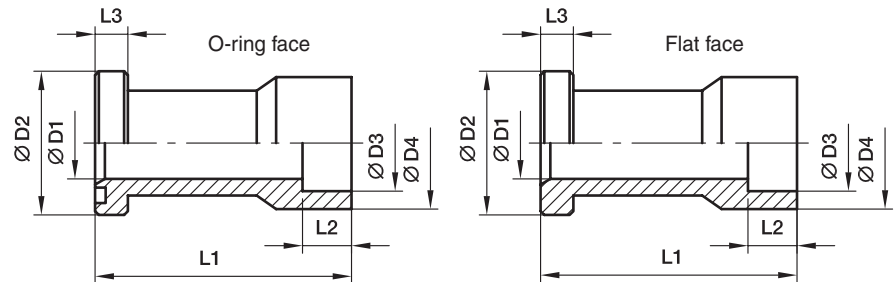


\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	ES62/16.5S	ES62/16.5SM	ES62/16.5SU	NBR
Stainless steel	SS	ES62/16.5SS	ES62/16.5SSM	–	VIT

## ESL SAE Straight flange adapter

SAE Flange / Socket weld tube end  
(ISO 6162-1/-2)



### 3000 PSI Series

Nom. flange size		⌀ max.	D1	D2	D3	D4	L1	L2	L3	Weight (steel) kg/piece	O-ring face Order code*	Flat face Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)												S	SS
1/2	13	20.0	15	30.2	20.5	30	60	13	6.7	0.45	ESL32/20.5	ESLG32/20.5	345	345
1/2	13	21.3	15	30.2	21.7	30	60	13	6.7	0.44	ESL32/21.7	ESLG32/21.7	345	345
3/4	19	25.0	19	38.1	25.5	35	68	13	6.7	0.60	ESL33/25.5	ESLG33/25.5	345	345
3/4	19	26.9	19	38.1	27.3	35	68	13	6.7	0.58	ESL33/27.3	ESLG33/27.3	345	345
1	25	30.0	23	44.4	30.5	44	75	16	8.0	0.75	ESL34/30.5	ESLG34/30.5	345	345
1	25	32.0	24	44.4	32.5	44	75	16	8.0	0.72	ESL34/32.5	ESLG34/32.5	345	345
1	25	33.7	25	44.4	34.0	44	75	16	8.0	0.70	ESL34/34	ESLG34/34	345	345
1	25	35.0	25	44.4	35.5	44	75	16	8.0	0.68	ESL34/35.5	ESLG34/35.5	345	345
1 1/4	32	38.0	32	50.8	38.5	55	95	18	8.0	0.87	ESL35/38.5	ESLG35/38.5	276	276
1 1/4	32	40.0	32	50.8	40.5	55	95	18	8.0	0.95	ESL35/40.5	ESLG35/40.5	276	276
1 1/4	32	42.4	32	50.8	43.0	55	95	18	8.0	0.93	ESL35/43	ESLG35/43	276	276
1 1/2	38	48.3	38	60.3	49.0	68	100	20	8.0	1.54	ESL36/49	ESLG36/49	207	207
1 1/2	38	50.0	38	60.3	50.4	68	100	20	8.0	1.50	ESL36/50.4	ESLG36/50.4	207	207
2	51	60.3	50	71.4	61.0	79	107	22	9.5	1.89	ESL38/61	ESLG38/61	207	207
2	51	65.0	50	71.4	65.8	79	107	22	9.5	1.80	ESL38/65.8	ESLG38/65.8	207	207
2 1/2	64	73.0	58	84.1	74.0	98	130	24	9.5	2.30	ESL310/74	ESLG310/74	172	172
2 1/2	64	76.1	58	84.1	77.0	98	130	24	9.5	2.25	ESL310/77	ESLG310/77	172	172
2 1/2	64	80.0	58	84.1	81.0	98	130	24	9.5	2.15	ESL310/81	ESLG310/81	172	172
3	76	88.9	70	101.6	90.5	116	150	28	9.5	3.00	ESL312/90.5	ESLG312/90.5	138	138

### 6000 PSI Series

1/2	13	20.0	15	31.8	20.5	32	60	13	7.7	0.45	ESL62/20.5	ESLG62/20.5	420	420
1/2	13	21.3	15	31.8	21.7	32	60	13	7.7	0.44	ESL62/21.7	ESLG62/21.7	420	420
1/2	13	22.0	15	31.8	22.5	32	60	13	7.7	0.65	ESL62/22.5	ESLG62/22.5	420	420
3/4	19	25.0	19	41.3	25.7	40	68	13	8.7	0.63	ESL63/25.7	ESLG63/25.7	420	420
3/4	19	26.9	19	41.3	27.3	40	68	13	8.7	0.61	ESL63/27.3	ESLG63/27.3	420	420
3/4	19	28.0	19	41.3	28.7	40	68	13	8.7	0.60	ESL63/28.7	ESLG63/28.7	420	420
1	25	33.7	25	47.6	34.0	48	75	16	9.5	0.75	ESL64/34	ESLG64/34	420	420
1	25	35.0	25	47.6	35.5	48	75	16	9.5	0.73	ESL64/35.5	ESLG64/35.5	420	420

<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

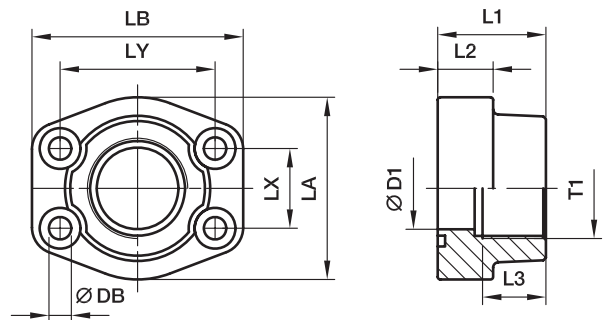
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only flange adapter	Example incl. splitflanges, metr. screws and O-ring	Example incl. splitflanges, UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	ESL32/20.5S	ESL32/20.5SM	ESL32/20.5SU	NBR
Stainless steel	SS	ESL32/20.5SS	ESL32/20.5SSM	–	VIT



**PFF-G SAE Straight 4 bolt flange with BSPP thread**

 SAE Flange / Female BSPP thread  
 (ISO 6162-1/-2) (ISO 1179-1)

**3000 PSI Series**

Nom. flange size		T1	D1	L1	L2	L3	LA	LB	LX	LY	DB	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)													S	SS
1/2	13	<b>G 3/8</b>	13	36	16	19	46	57	17.5	38.1	9.0	0.27	<b>PFF32G38</b>	345	345
1/2	13	<b>G 1/2</b>	13	36	16	19	46	57	17.5	38.1	9.0	0.25	<b>PFF32G</b>	345	345
3/4	19	<b>G 3/4</b>	19	36	18	19	50	65	22.3	47.6	11.0	0.37	<b>PFF33G</b>	345	345
3/4	13	<b>G 1/2</b>	13	36	18	19	50	65	22.3	47.6	11.0	0.40	<b>PFF33G12</b>	345	345
1	25	<b>G 1</b>	25	38	18	22	55	70	26.2	52.4	11.0	0.45	<b>PFF34G</b>	345	345
1	19	<b>G 3/4</b>	19	35	21	19	55	70	26.2	52.4	11.0	0.45	<b>PFF34G34</b>	345	345
1 1/4	32	<b>G 1 1/4</b>	32	40	21	22	68	79	30.2	58.7	11.5	0.66	<b>PFF35G</b>	276	276
1 1/4	25	<b>G 1</b>	25	42	25	22	65	80	30.2	58.7	11.5	0.80	<b>PFF35G1</b>	276	276
1 1/2	38	<b>G 1 1/2</b>	38	45	25	24	78	93	35.7	69.9	13.5	1.05	<b>PFF36G</b>	207	207
1 1/2	32	<b>G 1 1/4</b>	32	45	27	24	78	95	35.7	69.9	13.5	1.17	<b>PFF36G114</b>	207	207
2	51	<b>G 2</b>	51	45	25	30	89	103	42.9	77.8	13.5	1.17	<b>PFF38G</b>	207	207
2	38	<b>G 1 1/2</b>	38	45	25	26	89	103	42.9	77.8	13.5	1.52	<b>PFF38G112</b>	207	207
2 1/2	63	<b>G 2 1/2</b>	63	50	25	30	101	115	50.8	88.9	13.5	1.59	<b>PFF310G</b>	172	172
2 1/2	51	<b>G 2</b>	51	50	25	30	101	115	50.8	88.9	13.5	2.13	<b>PFF310G2</b>	172	172
3	73	<b>G 3</b>	73	50	27	34	124	135	61.9	106.4	17.5	2.28	<b>PFF312G</b>	138	138
3	63	<b>G 2 1/2</b>	63	50	27	30	124	135	61.9	106.4	17.5	2.56	<b>PFF312G212</b>	138	138
3 1/2	89	<b>G 3 1/2</b>	89	48	27	34	136	152	69.9	120.7	17.5	2.42	<b>PFF314G</b>	34	34
3 1/2	73	<b>G 3</b>	73	48	27	34	136	152	69.9	120.7	17.5	3.28	<b>PFF314G3</b>	34	34
4	99	<b>G 4</b>	99	48	27	34	146	162	77.8	130.2	17.5	2.78	<b>PFF316G</b>	34	34
4	89	<b>G 3 1/2</b>	89	48	27	34	146	162	77.8	130.2	17.5	3.30	<b>PFF316G312</b>	34	34
5	129	<b>G 5</b>	120	50	28	30	180	184	92.1	152.4	17.5	5.80	<b>PFF320G</b>	34	34

**6000 PSI Series**

1/2	13	<b>G 3/8</b>	13	36	16	19	46	57	18.2	40.5	9.0	0.26	<b>PFF62G38</b>	420	420
1/2	13	<b>G 1/2</b>	13	36	16	19	46	57	18.2	40.5	9.0	0.29	<b>PFF62G</b>	420	420
3/4	19	<b>G 3/4</b>	19	35	21	22	55	71	23.8	50.8	11.0	0.50	<b>PFF63G</b>	420	420
3/4	13	<b>G 1/2</b>	13	35	21	22	55	71	23.8	50.8	11.0	0.50	<b>PFF63G12</b>	420	420
1	25	<b>G 1</b>	25	42	25	24	65	81	27.8	57.2	13.0	0.76	<b>PFF64G</b>	420	420
1	19	<b>G 3/4</b>	19	42	25	24	65	81	27.8	57.2	13.0	0.76	<b>PFF64G34</b>	420	420
1 1/4	32	<b>G 1 1/4</b>	32	45	27	25	78	95	31.8	66.6	15.0**	1.20	<b>PFF65G</b>	420	420
1 1/4	25	<b>G 1</b>	25	45	27	25	78	95	31.8	66.6	15.0**	1.20	<b>PFF65G1</b>	420	420
1 1/2	38	<b>G 1 1/2</b>	38	50	30	28	94	112	36.5	79.3	17.0	1.65	<b>PFF66G</b>	420	420
1 1/2	32	<b>G 1 1/4</b>	32	50	30	28	94	112	36.5	79.3	17.0	1.65	<b>PFF66G114</b>	420	420
2	51	<b>G 2</b>	51	65	37	30	114	134	44.5	96.8	21.0	2.45	<b>PFF68G</b>	420	420
2	38	<b>G 1 1/2</b>	38	65	37	30	114	134	44.5	96.8	21.0	2.45	<b>PFF68G112</b>	420	420
2 1/2	63	<b>G 2 1/2</b>	63	80	45	32	152	180	58.7	123.8	25.0	3.05	<b>PFF610G</b>	420	420
3	73	<b>G 3</b>	73	90	55	40	178	208	71.4	152.4	32.0	3.45	<b>PFF612G</b>	420	420

\*\*DB = 13.5 for UNC Screws

1) Pressure shown = Item deliverable

 \*Please add the **suffixes** below according to the material/surface required.

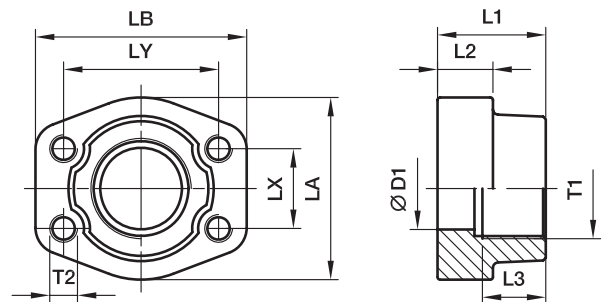
Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PFF32G38S	PFF32G38SM	PFF32G38SU	NBR
Stainless steel	SS	PFF32G38SS	PFF32G38SSM	-	VIT
Steel, zinc plated, Cr(VI)-free	CF	PFF32G38CF	PFF32G38CFM	PFF32G38CFU	NBR

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$



**PCFF-G SAE Straight 4 bolt flange with BSPP thread**

SAE Counter flange / Female BSPP thread  
(ISO 6162-1/-2) (ISO 1179-1)



**3000 PSI Series**

Nom. flange size		T1	D1	L1	L2	L3	LA	LB	LX	LY	T2		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)										(metr.)	(unc.)			S	SS
1/2	13	<b>G 3/8</b>	13	36	16	19	46	57	17.5	38.1	M 8	5/16	0.26	<b>PCFF32G38</b>	345	345
1/2	13	<b>G 1/2</b>	13	36	16	19	46	57	17.5	38.1	M 8	5/16	0.28	<b>PCFF32G</b>	345	345
3/4	19	<b>G 3/4</b>	19	36	18	19	50	65	22.3	47.6	M10	3/8	0.41	<b>PCFF33G</b>	345	345
3/4	13	<b>G 1/2</b>	13	36	18	19	50	65	22.3	47.6	M10	3/8	0.44	<b>PCFF33G12</b>	345	345
1	25	<b>G 1</b>	25	38	18	22	55	70	26.2	52.4	M10	3/8	0.49	<b>PCFF34G</b>	345	345
1	19	<b>G 3/4</b>	19	35	21	19	55	70	26.2	52.4	M10	3/8	0.55	<b>PCFF34G34</b>	345	345
1 1/4	32	<b>G 1 1/4</b>	32	40	21	22	68	79	30.2	58.7	M10	7/16	0.71	<b>PCFF35G</b>	276	276
1 1/4	25	<b>G 1</b>	25	42	25	22	65	80	30.2	58.7	M10	7/16	0.85	<b>PCFF35G1</b>	276	276
1 1/2	38	<b>G 1 1/2</b>	38	45	25	24	78	93	35.7	69.9	M12	1/2	1.12	<b>PCFF36G</b>	207	207
1 1/2	32	<b>G 1 1/4</b>	32	45	27	24	78	95	35.7	69.9	M12	1/2	1.24	<b>PCFF36G114</b>	207	207
2	51	<b>G 2</b>	51	45	25	30	89	103	42.9	77.8	M12	1/2	1.24	<b>PCFF38G</b>	207	207
2	38	<b>G 1 1/2</b>	38	45	25	26	89	103	42.9	77.8	M12	1/2	1.59	<b>PCFF38G112</b>	207	207
2 1/2	64	<b>G 2 1/2</b>	63	50	25	30	101	115	50.8	88.9	M12	1/2	1.66	<b>PCFF310G</b>	172	172
2 1/2	51	<b>G 2</b>	51	50	25	30	101	115	50.8	88.9	M12	1/2	2.20	<b>PCFF310G2</b>	172	172
3	76	<b>G 3</b>	73	50	27	30	124	135	61.9	106.4	M16	5/8	2.37	<b>PCFF312G</b>	138	138
3	63	<b>G 2 1/2</b>	63	50	27	30	124	135	61.9	106.4	M16	5/8	2.65	<b>PCFF312G212</b>	138	138
3 1/2	89	<b>G 3 1/2</b>	89	50	27	30	136	152	69.9	120.7	M16	5/8	2.51	<b>PCFF314G</b>	34	34
3 1/2	73	<b>G 3</b>	73	48	27	34	136	152	69.9	120.7	M16	5/8	3.37	<b>PCFF314G3</b>	34	34
4	102	<b>G 4</b>	99	50	27	30	146	162	77.8	130.2	M16	5/8	2.87	<b>PCFF316G</b>	34	34
4	89	<b>G 3 1/2</b>	89	48	27	34	146	162	77.8	130.2	M16	5/8	3.39	<b>PCFF316G312</b>	34	34
5	127	<b>G 5</b>	120	50	28	30	180	184	92.1	152.4	M16	5/8	5.80	<b>PCFF320G</b>	34	34

**6000 PSI Series**

1/2	13	<b>G 3/8</b>	13	36	16	19	46	57	18.2	40.5	M 8	5/16	0.26	<b>PCFF62G38</b>	420	420
1/2	13	<b>G 1/2</b>	13	36	16	19	46	57	18.2	40.5	M 8	5/16	0.29	<b>PCFF62G</b>	420	420
3/4	19	<b>G 3/4</b>	19	35	21	22	55	71	23.8	50.8	M10	3/8	0.55	<b>PCFF63G</b>	420	420
3/4	13	<b>G 1/2</b>	13	35	21	22	55	71	23.8	50.8	M10	3/8	0.60	<b>PCFF63G12</b>	420	420
1	25	<b>G 1</b>	25	42	25	24	65	81	27.8	57.2	M12	7/16	0.87	<b>PCFF64G</b>	420	420
1	19	<b>G 3/4</b>	19	42	25	24	65	81	27.8	57.2	M12	7/16	0.90	<b>PCFF64G34</b>	420	420
1 1/4	32	<b>G 1 1/4</b>	32	45	27	25	78	95	31.8	66.6	M14	1/2	1.21	<b>PCFF65G</b>	420	420
1 1/4	25	<b>G 1</b>	25	45	27	25	78	95	31.8	66.6	M14	1/2	1.34	<b>PCFF65G1</b>	420	420
1 1/2	38	<b>G 1 1/2</b>	38	50	30	28	94	112	36.5	79.3	M16	5/8	1.90	<b>PCFF66G</b>	420	420
1 1/2	32	<b>G 1 1/4</b>	32	50	30	28	94	112	36.5	79.3	M16	5/8	2.03	<b>PCFF66G2</b>	420	420
2	51	<b>G 2</b>	51	65	37	30	114	134	44.5	96.8	M20	3/4	3.43	<b>PCFF68G</b>	420	420
2	38	<b>G 1 1/2</b>	38	65	37	30	114	134	44.5	96.8	M20	3/4	3.92	<b>PCFF68G12</b>	420	420
2 1/2	64	<b>G 2 1/2</b>	63	80	45	32	152	180	58.7	123.8	M24	–	6.98	<b>PCFF610G</b>	420	420
3	76	<b>G 3</b>	73	90	55	40	178	208	71.4	152.4	M30	–	13.00	<b>PCFF612G</b>	420	420

\*Please add the **suffixes** below according to the material/surface required.

<sup>1)</sup> Pressure shown = Item deliverable

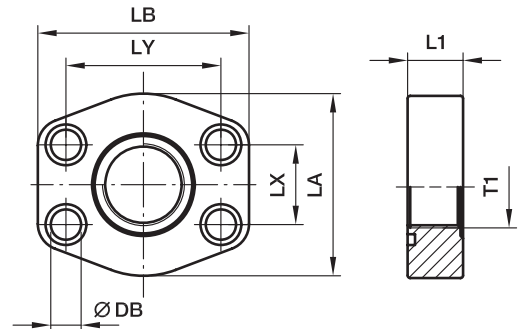
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Order code suffixes				
Material	Suffix surface and material	Example 4 bolt flange with metr. threads	Example 4 bolt flange with UNC threads	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PCFF32G38SM	PCFF32G38SU	NBR
Stainless steel	SS	PCFF32G38SSM	PCFF32G38SSU	VIT
Steel, zinc plated, Cr(VI)-free	CF	PCFF32G38CFM	PCFF32G38CFU	NBR

**PAFSF-G SAE Straight 4 bolt flange flat with BSPP thread**

 SAE Flange / Female BSPP thread  
 (ISO 6162-1/-2) (ISO 1179-1)

only for low pressure applications


**3000 PSI Series**

Nom. flange size		T1	L1	LA	LB	LX	LY	DB	Screws		O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)								(metr.)	(unc.)				S	SS
1/2	13	<b>G 3/8</b>	16	46	58	17.5	38.1	9.0	M 08×30	5/16×1 1/4	<b>Standard</b>	0.20	<b>PAFSF080G38</b>	40	40
1/2	13	<b>G 1/2</b>	16	46	58	17.5	38.1	9.0	M 08×30	5/16×1 1/4	<b>OR25.07x2.62x</b>	0.27	<b>PAFSF080G</b>	40	40
3/4	19	<b>G 1/2</b>	18	49	66	22.3	47.6	10.5	M 10×35	3/8×1 1/2	<b>Standard</b>	0.29	<b>PAFSF100G12</b>	40	40
3/4	19	<b>G 3/4</b>	18	49	66	22.3	47.6	10.5	M 10×35	3/8×1 1/2	<b>OR31.34X3.53X</b>	0.27	<b>PAFSF100G</b>	40	40
1	25	<b>G 3/4</b>	19	53	71	26.2	52.4	10.5	M 10×35	3/8×1 1/2	<b>Standard</b>	0.32	<b>PAFSF102G34</b>	40	40
1	25	<b>G 1</b>	19	53	71	26.2	52.4	10.5	M 10×35	3/8×1 1/2	<b>OR37.7X3.53X</b>	0.31	<b>PAFSF102G</b>	40	40
1 1/4	32	<b>G 1</b>	21	69	80	30.2	58.7	10.5	M 10×35	7/16×1 1/2	<b>Standard</b>	0.44	<b>PAFSF104G1</b>	40	40
1 1/4	32	<b>G 1 1/4</b>	21	69	80	30.2	58.7	10.5	M 10×35	7/16×1 1/2	<b>OR44.45X3.53X</b>	0.56	<b>PAFSF104G</b>	40	40
1 1/2	38	<b>G 1 1/4</b>	24	77	95	35.7	69.9	13.5	M 12×45	1/2×1 3/4	<b>Standard</b>	0.83	<b>PAFSF106G114</b>	40	40
1 1/2	38	<b>G 1 1/2</b>	24	77	95	35.7	69.9	13.5	M 12×45	1/2×1 3/4	<b>OR52.39X3.53X</b>	0.76	<b>PAFSF106G</b>	40	40
2	51	<b>G 1 1/2</b>	24	89	103	42.9	77.8	13.5	M 12×45	1/2×1 3/4	<b>Standard</b>	1.00	<b>PAFSF108G112</b>	40	40
2	51	<b>G 2</b>	24	89	103	42.9	77.8	13.5	M 12×45	1/2×1 3/4	<b>OR65.09X3.53X</b>	0.90	<b>PAFSF108G</b>	40	40
2 1/2	64	<b>G 2</b>	25	101	116	50.8	88.9	13.5	M 12×45	1/2×1 3/4	<b>Standard</b>	1.30	<b>PAFSF110G2</b>	40	40
2 1/2	64	<b>G 2 1/2</b>	25	101	116	50.8	88.9	13.5	M 12×45	1/2×1 3/4	<b>OR78.97X3.53X</b>	1.25	<b>PAFSF110G</b>	40	40
3	76	<b>G 2 1/2</b>	25	124	136	61.9	106.4	17.0	M 16×55	5/8×2 1/4	<b>Standard</b>	1.86	<b>PAFSF112G212</b>	30	30
3	76	<b>G 3</b>	25	124	136	61.9	106.4	17.0	M 16×55	5/8×2 1/4	<b>OR94.84X3.53X</b>	1.49	<b>PAFSF112G</b>	30	30
3 1/2	89	<b>G 3</b>	25	136	152	69.9	120.7	17.0	M 16×55	5/8×2 1/4	<b>Standard</b>	1.68	<b>PAFSF114G3</b>	30	30
3 1/2	89	<b>G 3 1/2</b>	25	136	152	69.9	120.7	17.0	M 16×55	5/8×2 1/4	<b>OR107.5X3.53X</b>	1.59	<b>PAFSF114G</b>	30	30
4	102	<b>G 3 1/2</b>	25	146	162	77.8	130.2	17.0	M 16×55	5/8×2 1/4	<b>Standard</b>	2.35	<b>PAFSF116G312</b>	30	30
4	102	<b>G 4</b>	25	146	162	77.8	130.2	17.0	M 16×55	5/8×2 1/4	<b>OR117.1X3.53X</b>	2.25	<b>PAFSF116G</b>	30	30
5	127	<b>G 4</b>	25	180	184	92.1	152.4	17.0	M 16×55	5/8×2 1/4	<b>Standard</b>	3.45	<b>PAFSF118G4</b>	30	30
5	127	<b>G 5</b>	25	180	184	92.1	152.4	17.0	M 16×55	5/8×2 1/4	<b>OR145.6X3.53X</b>	3.15	<b>PAFSF118G</b>	30	30

**6000 PSI Series**

1/2	13	<b>G 3/8</b>	16	46	58	18.2	40.5	9.0	M 08×30	5/16×1 1/4	<b>Standard</b>	0.25	<b>PAFSF401G38</b>	40	40
1/2	13	<b>G 1/2</b>	16	46	58	18.2	40.5	9.0	M 08×30	5/16×1 1/4	<b>OR25.07X2.62X</b>	0.20	<b>PAFSF401G</b>	40	40
3/4	19	<b>G 1/2</b>	19	53	71	23.8	50.8	10.5	M 10×35	3/8×1 1/2	<b>Standard</b>	0.37	<b>PAFSF402G12</b>	40	40
3/4	19	<b>G 3/4</b>	19	53	71	23.8	50.8	10.5	M 10×35	3/8×1 1/2	<b>OR32.92X3.53X</b>	0.36	<b>PAFSF402G</b>	40	40
1	25	<b>G 3/4</b>	24	66	80	27.8	57.2	13.5	M 12×45	7/16×1 1/2	<b>Standard</b>	0.64	<b>PAFSF403G34</b>	40	40
1	25	<b>G 1</b>	24	66	80	27.8	57.2	13.5	M 12×45	7/16×1 1/2	<b>OR37.7X3.53X</b>	0.60	<b>PAFSF403G</b>	40	40
1 1/4	32	<b>G 1</b>	27	77	94	31.8	66.6	15.0	M 14×50	1/2×1 3/4	<b>Standard</b>	0.88	<b>PAFSF404G1</b>	40	40
1 1/4	32	<b>G 1 1/4</b>	27	77	94	31.8	66.6	15.0	M 14×50	1/2×1 3/4	<b>OR44.45X3.53X</b>	0.87	<b>PAFSF404G</b>	40	40
1 1/2	38	<b>G 1 1/4</b>	30	89	103	36.5	79.3	17.0	M 16×55	5/8×2 1/4	<b>Standard</b>	1.14	<b>PAFSF405G114</b>	40	40
1 1/2	38	<b>G 1 1/2</b>	30	89	103	36.5	79.3	17.0	M 16×55	5/8×2 1/4	<b>OR52.39X3.53X</b>	1.01	<b>PAFSF405G</b>	40	40
2	51	<b>G 1 1/2</b>	35	123	135	44.5	96.8	21.0	M 20×70	3/4×2 3/4	<b>Standard</b>	2.94	<b>PAFSF406G112</b>	40	40
2	51	<b>G 2</b>	35	123	135	44.5	96.8	21.0	M 20×70	3/4×2 3/4	<b>OR65.09X3.53X</b>	2.84	<b>PAFSF406G</b>	40	40

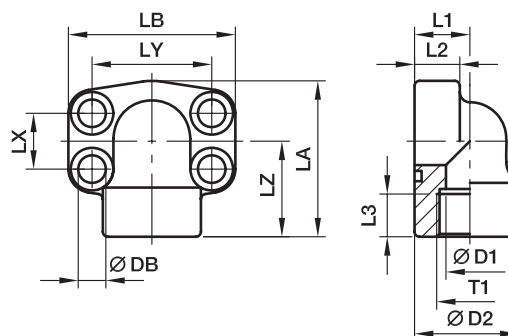
 \*Please add the **suffixes** below according to the material/surface required.

1) Pressure shown = Item deliverable

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PAFSF080GS	PAFSF080GSM	PAFSF080GSU	NBR
Stainless steel	SS	PAFSF080GSS	PAFSF080GSSM	—	VIT

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

**PEFF-G SAE 90° 4 bolt flange with BSPP thread**

 SAE 90° Flange / Female BSPP thread  
 (ISO 6162-1/-2) (ISO 1179-1)

**3000 PSI Series**

Nom. flange size		T1	D1	D2	L1	L2	L3	LA	LB	LX	LY	LZ	DB	Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)													(metr.)	(unc.)			S	SS
1/2	13	<b>G 1/2</b>	13	34.0	18	16	16	59	57	17.5	38.1	36	09.0	M 08x30	5/16x1 1/4	0.35	<b>PEFF32G</b>	348	348
3/4	19	<b>G 3/4</b>	19	38.5	22	18	19	63	68	22.3	47.6	38	10.5	M 10x35	3/8x1 1/2	0.55	<b>PEFF33G</b>	348	348
1	25	<b>G 1</b>	25	44.5	28	19	19	68	74	26.2	52.4	41	10.5	M 10x35	3/8x1 1/2	0.80	<b>PEFF34G</b>	348	348
1 1/4	32	<b>G 1 1/4</b>	31	53.5	30	22	22	84	81	30.2	58.7	50	10.5	M 10x35	7/16x1 1/2	1.30	<b>PEFF35G</b>	278	278
1 1/2	38	<b>G 1 1/2</b>	38	62.5	36	25	24	97	95	35.7	69.9	58	13.5	M 12x45	1/2x1 3/4	1.60	<b>PEFF36G</b>	210	210
2	51	<b>G 2</b>	50	77.0	41	25	26	109	105	42.9	77.8	65	13.5	M 12x45	1/2x1 3/4	2.00	<b>PEFF38G</b>	210	210
2 1/2	64	<b>G 2 1/2</b>	60	89.0	50	25	30	127	115	50.8	88.9	77	13.5	M 12x45	1/2x1 3/4	2.40	<b>PEFF310G</b>	175	175

**6000 PSI Series**

1/2	13	<b>G 1/2</b>	13	34.0	18	16	16	59	57	18.2	40.5	36	08.8	M 08x30	5/16x1 1/4	0.35	<b>PEFF62G</b>	420	420
3/4	19	<b>G 3/4</b>	19	44.5	28	20	22	68	72	23.8	50.8	41	10.5	M 10x35	3/8x1 1/2	0.80	<b>PEFF63G</b>	420	420
1	25	<b>G 1</b>	25	53.5	30	24	24	84	82	27.8	57.2	50	13.5	M 12x45	7/16x1 1/2	1.30	<b>PEFF64G</b>	420	420
1 1/4	32	<b>G 1 1/4</b>	31	62.5	36	25	25	97	95	31.8	66.6	58	15.0**	M 14x50	1/2x1 3/4	1.60	<b>PEFF65G</b>	420	420
1 1/2	38	<b>G 1 1/2</b>	38	77.0	51	26	28	109	110	36.5	79.3	65	17.0	M 16x55	5/8x2 1/4	2.00	<b>PEFF66G</b>	420	420
2	51	<b>G 2</b>	50	87.0	45	35	34	133	134	44.5	96.8	75	21.0	M 20x70	3/4x2 3/4	2.50	<b>PEFF68G</b>	420	420

\*\*DB = 13.5 for UNC Screws

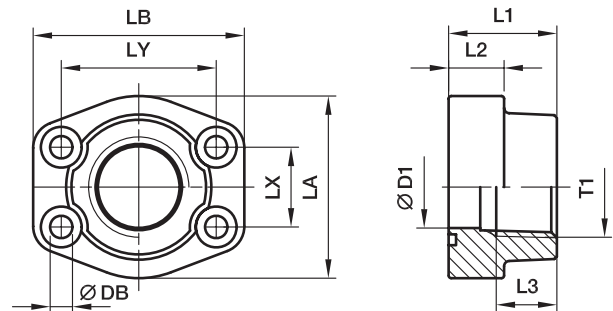
<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PEFF32GS	PEFF32GSM	PEFF32GSU	NBR
Stainless steel	SS	PEFF32GSS	PEFF32GSSM	—	VIT

**PFF-N SAE Straight 4 bolt flange with NPT thread**

 SAE Flange / Female NPT thread  
 (ISO 6162-1/-2) (SAE 476)

**3000 PSI Series**

Nom. flange size		T1	D1	L1	L2	L3	LA	LB	LX	LY	DB	Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)											(metr.)	(unc.)			S	SS
1/2	13	<b>3/8 NPT</b>	13	36	16	15	46	58	17.5	38.1	9.0	M 08×30	5/16×1 1/4	0.25	<b>PFF32N38</b>	345	345
1/2	13	<b>1/2 NPT</b>	13	36	16	15	46	58	17.5	38.1	9.0	M 08×30	5/16×1 1/4	0.28	<b>PFF32N</b>	345	345
3/4	19	<b>3/4 NPT</b>	19	36	18	19	49	66	22.3	47.6	10.5	M 10×35	3/8×1 1/2	0.39	<b>PFF33N</b>	345	345
1	25	<b>1 NPT</b>	25	38	18	19	53	71	26.2	52.4	10.5	M 10×35	3/8×1 1/2	0.46	<b>PFF34N</b>	345	345
1 1/4	32	<b>1 1/4 NPT</b>	31	41	21	22	69	80	30.2	58.7	10.5	M 10×40	7/16×1 1/2	0.66	<b>PFF35N</b>	276	276
1 1/2	38	<b>1 1/2 NPT</b>	38	44	25	24	77	94	35.7	69.9	13.5	M 12×45	1/2×1 3/4	1.05	<b>PFF36N</b>	207	207
2	51	<b>2 NPT</b>	50	45	25	26	89	103	42.9	77.8	13.5	M 12×45	1/2×1 3/4	1.19	<b>PFF38N</b>	207	207
2 1/2	64	<b>2 1/2 NPT</b>	63	50	25	30	101	115	50.8	88.9	13.5	M 12×45	1/2×1 3/4	1.40	<b>PFF310N</b>	172	172
3	76	<b>3 NPT</b>	73	50	27	34	124	135	61.9	106.4	17.0	M 16×55	5/8×2 1/4	2.15	<b>PFF312N</b>	138	138
3 1/2	89	<b>3 1/2 NPT</b>	89	50	27	36	136	152	69.9	120.7	17.0	M 16×55	5/8×2 1/4	2.40	<b>PFF314N</b>	34	34
4	102	<b>4 NPT</b>	99	50	27	36	146	162	77.8	130.2	17.0	M 16×55	5/8×2 1/4	2.85	<b>PFF316N</b>	34	34
5	127	<b>5 NPT</b>	120	50	28	36	180	184	92.1	152.4	17.0	M 16×55	5/8×2 1/4	3.25	<b>PFF320N</b>	34	34

**6000 PSI Series**

1/2	13	<b>3/8 NPT</b>	13	36	16	15	46	58	18.2	40.5	9.0	M 08×30	5/16×1 1/4	0.26	<b>PFF62N38</b>	420	420
1/2	13	<b>1/2 NPT</b>	13	36	16	15	46	58	18.2	40.5	9.0	M 08×30	5/16×1 1/4	0.29	<b>PFF62N</b>	420	420
3/4	19	<b>3/4 NPT</b>	19	36	19	22	53	71	23.8	50.8	10.5	M 10×35	3/8×1 1/2	0.50	<b>PFF63N</b>	420	420
1	25	<b>1 NPT</b>	25	44	24	24	69	80	27.8	57.2	13.5	M 12×45	7/16×1 1/2	0.76	<b>PFF64N</b>	420	420
1 1/4	32	<b>1 1/4 NPT</b>	31	44	27	25	77	94	31.8	66.6	15.0	M 14×50	1/2×1 3/4	1.20	<b>PFF65N</b>	420	420
1 1/2	38	<b>1 1/2 NPT</b>	38	51	30	28	89	106	36.5	79.3	17.0	M 16×55	5/8×2 1/4	1.65	<b>PFF66N</b>	420	420
2	51	<b>2 NPT</b>	50	70	37	33	116	135	44.5	96.8	21.0	M 20×70	3/4×2 3/4	2.45	<b>PFF68N</b>	420	420
2 1/2	64	<b>2 1/2 NPT</b>	63	75	45	35	150	166	58.7	123.8	25.0	M 24×90	–	3.05	<b>PFF610N</b>	420	420
3	76	<b>3 NPT</b>	73	90	55	40	178	208	71.4	152.4	32.0	M 30×110	–	3.45	<b>PFF612N</b>	420	420

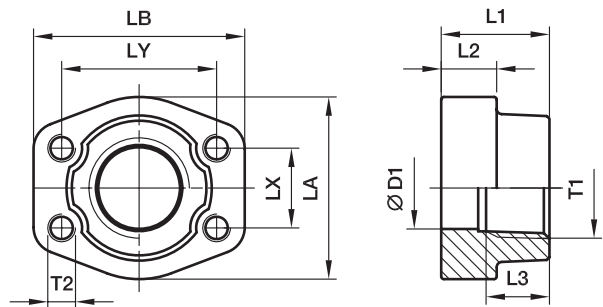
<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PFF32N38S	PFF32N38SM	PFF32N38SU	NBR
Stainless steel	SS	PFF32N38SS	PFF32N38SSM	–	VIT

**PCFF-N SAE Straight 4 bolt flange with NPT thread**

 SAE Counter flange / Female NPT thread  
 (ISO 6162-1/-2) (SAE 476)

**3000 PSI Series**

Nom. flange size		T1	D1	L1	L2	L3	LA	LB	LX	LY	T2		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)										(metr.)	(unc.)			S	SS
1/2	13	<b>3/8 NPT</b>	13	36	16	19	47	57	17.5	38.1	M 8	5/16	0.25	<b>PCFF32N38</b>	345	345
1/2	13	<b>1/2 NPT</b>	13	36	16	19	47	57	17.5	38.1	M 8	5/16	0.28	<b>PCFF32N</b>	345	345
3/4	19	<b>3/4 NPT</b>	19	36	18	19	49	66	22.3	47.6	M10	3/8	0.39	<b>PCFF33N</b>	345	345
1	25	<b>1 NPT</b>	25	38	18	19	53	71	26.2	52.4	M10	3/8	0.46	<b>PCFF34N</b>	345	345
1 1/4	32	<b>1 1/4 NPT</b>	31	41	21	22	69	80	30.2	58.7	M10	7/16	0.66	<b>PCFF35N</b>	276	276
1 1/2		<b>1 1/2 NPT</b>	38	44	25	24	77	94	35.7	69.9	M12	1/2	1.05	<b>PCFF36N</b>	207	207
2	51	<b>2 NPT</b>	50	45	25	26	89	103	42.9	77.8	M12	1/2	1.19	<b>PCFF38N</b>	207	207
2 1/2	64	<b>2 1/2 NPT</b>	63	50	25	30	101	115	50.8	88.9	M12	1/2	1.40	<b>PCFF310N</b>	172	172
3	76	<b>3 NPT</b>	73	50	27	30	124	135	61.9	106.4	M16	5/8	2.15	<b>PCFF312N</b>	138	138
3 1/2	89	<b>3 1/2 NPT</b>	89	50	27	30	136	152	69.9	120.7	M16	5/8	2.40	<b>PCFF314N</b>	34	34
4	102	<b>4 NPT</b>	99	50	27	30	146	162	77.8	130.2	M16	5/8	2.85	<b>PCFF316N</b>	34	34
5	127	<b>5 NPT</b>	120	50	28	30	180	184	92.1	152.4	M16	5/8	3.25	<b>PCFF320N</b>	34	34

**6000 PSI Series**

1/2	13	<b>3/8 NPT</b>	13	36	16	19	47	57	18.2	40.5	M 8	5/16	0.26	<b>PCFF62N38</b>	420	420
1/2	13	<b>1/2 NPT</b>	13	36	16	19	47	57	18.2	40.5	M 8	5/16	0.29	<b>PCFF62N</b>	420	420
3/4	19	<b>3/4 NPT</b>	19	36	19	22	53	71	23.8	50.8	M10	3/8	0.50	<b>PCFF63N</b>	420	420
1	25	<b>1 NPT</b>	25	44	24	24	69	80	27.8	57.2	M12	7/16	0.76	<b>PCFF64N</b>	420	420
1 1/4	32	<b>1 1/4 NPT</b>	31	44	27	25	77	94	31.8	66.6	M14	1/2	1.20	<b>PCFF65N</b>	420	420
1 1/2	32	<b>1 1/2 NPT</b>	38	51	30	28	89	106	36.5	79.3	M16	5/8	1.65	<b>PCFF66N</b>	420	420
2	51	<b>2 NPT</b>	50	70	37	33	116	135	44.5	96.8	M20	3/4	2.45	<b>PCFF68N</b>	420	420
2 1/2	64	<b>2 1/2 NPT</b>	63	75	45	35	150	166	58.7	123.8	M24	–	3.05	<b>PCFF610N</b>	420	420
3	76	<b>3 NPT</b>	73	90	55	40	178	208	71.4	152.4	M30	–	3.45	<b>PCFF612N</b>	420	420

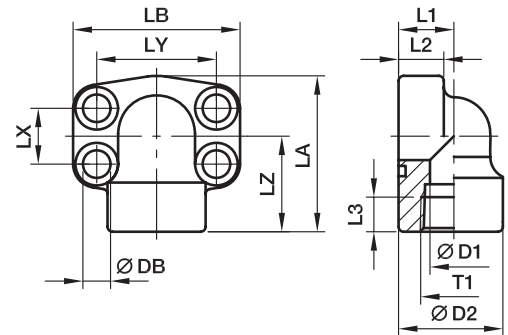
1) Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes				
Material	Suffix surface and material	Example 4 bolt flange with metr. threads	Example 4 bolt flange with UNC threads	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PCFF32N38SM	PCFF32N38SU	NBR
Stainless steel	SS	PCFF32N38SSM	PCFF32N38SSU	VIT

**PEFF-N SAE 90° 4 bolt flange with NPT thread**

 SAE 90° Flange / Female NPT thread  
 (ISO 6162-1/-2) (SAE 476)

**3000 PSI Series**

Nom. flange size		T1	D1	D2	L1	L2	L3	LA	LB	LX	LY	LZ	DB	Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)													(metr.)	(unc.)			S	SS
1/2	13	<b>1/2 NPT</b>	13	34.0	18	16	16	59	56	17.5	38.1	36	09.0	M 08×30	5/16×1 1/4	0.35	<b>PEFF32N</b>	348	348
3/4	19	<b>3/4 NPT</b>	19	38.5	22	18	19	63	68	22.3	47.6	38	10.5	M 10×35	3/8×1 1/2	0.55	<b>PEFF33N</b>	348	348
1	25	<b>1 NPT</b>	25	44.5	28	19	19	68	74	26.2	52.4	41	10.5	M 10×35	3/8×1 1/2	0.80	<b>PEFF34N</b>	348	348
1 1/4	32	<b>1 1/4 NPT</b>	31	53.5	30	22	22	84	81	30.2	58.7	50	10.5	M 10×35	7/16×1 1/2	1.30	<b>PEFF35N</b>	278	278
1 1/2	38	<b>1 1/2 NPT</b>	38	62.5	36	25	24	97	95	35.7	69.9	58	13.5	M 12×45	1/2×1 3/4	1.60	<b>PEFF36N</b>	210	210
2	51	<b>2 NPT</b>	50	77.0	41	25	26	109	105	42.9	77.8	65	13.5	M 12×45	1/2×1 3/4	2.00	<b>PEFF38N</b>	210	210
2 1/2	64	<b>2 1/2 NPT</b>	60	89.0	50	25	30	127	115	50.8	88.9	77	13.5	M 12×45	1/2×1 3/4	2.40	<b>PEFF310N</b>	175	175

**6000 PSI Series**

1/2	13	<b>1/2 NPT</b>	13	34.0	18	16	16	59	56	18.2	40.5	36	09.0	M 08×30	5/16×1 1/4	0.35	<b>PEFF62N</b>	420	420
3/4	19	<b>3/4 NPT</b>	19	44.5	28	20	22	68	72	23.8	50.8	41	10.5	M 10×35	3/8×1 1/2	0.80	<b>PEFF63N</b>	420	420
1	25	<b>1 NPT</b>	25	53.5	30	24	24	84	82	27.8	57.2	50	13.5	M 12×45	7/16×1 1/2	1.30	<b>PEFF64N</b>	420	420
1 1/4	32	<b>1 1/4 NPT</b>	31	62.5	36	25	25	97	95	31.8	66.6	58	15.0**	M 14×50	1/2×1 3/4	1.60	<b>PEFF65N</b>	420	420
1 1/2	38	<b>1 1/2 NPT</b>	38	77.0	51	26	28	109	110	36.5	79.3	65	17.0	M 16×55	5/8×2 1/4	2.00	<b>PEFF66N</b>	420	420
2	51	<b>2 NPT</b>	50	87.0	45	35	34	133	134	44.5	96.8	75	21.0	M 20×70	3/4×2 3/4	2.50	<b>PEFF68N</b>	420	420

\*\*DB = 13.5 for UNC Screws

<sup>1)</sup> Pressure shown = Item deliverable

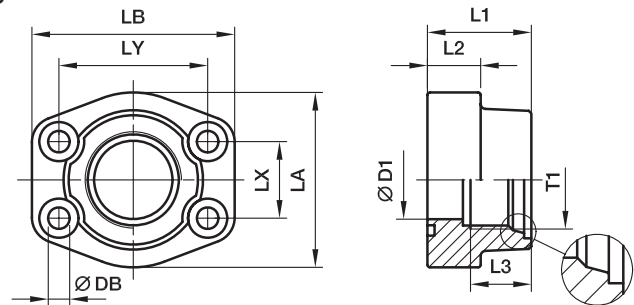
$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$


 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PEFF32NS	PEFF32NSM	PEFF32NSU	NBR
Stainless steel	SS	PEFF32NSS	PEFF32NSSM	–	VIT

**PAFS-M SAE Straight 4 bolt flange with metric thread**

SAE Flange / Female metric thread for O-ring  
(ISO 6162-1/-2) (ISO 6149-1)



**3000 PSI Series**

Nom. flange size		T1	D1	L1	L2	L3	LA	LB	LX	LY	DB	Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)											(metr.)	(unc.)			S	SS
1/2	13	<b>M 18×1.5</b>	13	36	16	15	46	58	17.5	38.1	9.0	M 08×30	5/16×1 1/4	0.33	<b>PAFS080MA</b>	345	345
1/2	13	<b>M 20×1.5</b>	13	36	16	15	46	58	17.5	38.1	9.0	M 08×30	5/16×1 1/4	0.30	<b>PAFS080MB</b>	345	345
3/4	19	<b>M 22×1.5</b>	19	36	18	16	49	66	22.3	47.6	10.5	M 10×35	3/8×1 1/2	0.45	<b>PAFS100MA</b>	345	345
3/4	19	<b>M 27×2.0</b>	19	36	18	19	49	66	22.3	47.6	10.5	M 10×35	3/8×1 1/2	0.42	<b>PAFS100MB</b>	345	345
1	25	<b>M 27×2.0</b>	25	38	18	19	53	71	26.2	52.4	10.5	M 10×35	3/8×1 1/2	0.48	<b>PAFS102MA</b>	345	345
1	25	<b>M 33×2.0</b>	25	38	18	19	53	71	26.2	52.4	13.5	M 10×35	3/8×1 1/2	0.45	<b>PAFS102MB</b>	345	345
1 1/4	32	<b>M 33×2.0</b>	31	41	21	19	69	80	30.2	58.7	13.5	M 10×40	7/16×1 1/2	0.84	<b>PAFS104MA</b>	276	276
1 1/4	32	<b>M 42×2.0</b>	31	41	21	20	69	80	30.2	58.7	13.5	M 10×40	7/16×1 1/2	0.71	<b>PAFS104MB</b>	276	276
1 1/2	38	<b>M 42×2.0</b>	38	44	25	20	77	94	35.7	69.9	17.0	M 12×45	1/2×1 3/4	1.25	<b>PAFS106MA</b>	207	207
1 1/2	38	<b>M 48×2.0</b>	38	44	25	22	77	94	35.7	69.9	17.0	M 12×45	1/2×1 3/4	1.14	<b>PAFS106MB</b>	207	207

**6000 PSI Series**

1/2	13	<b>M 18×1.5</b>	13	36	16	15	46	58	18.2	40.5	9.0	M 08×30	5/16×1 1/4	0.33	<b>PAFS401MA</b>	420	420
1/2	13	<b>M 20×1.5</b>	13	36	16	15	46	58	18.2	40.5	9.0	M 08×30	5/16×1 1/4	0.30	<b>PAFS401MB</b>	420	420
3/4	19	<b>M 22×1.5</b>	19	36	19	16	53	71	23.8	50.8	10.5	M 10×35	3/8×1 1/2	0.53	<b>PAFS402MA</b>	420	420
3/4	19	<b>M 27×2.0</b>	19	36	19	19	53	71	23.8	50.8	10.5	M 10×35	3/8×1 1/2	0.50	<b>PAFS402MB</b>	420	420
1	25	<b>M 27×2.0</b>	25	44	24	19	69	80	27.8	57.2	13.5	M 12×45	7/16×1 1/2	0.86	<b>PAFS403MA</b>	420	420
1	25	<b>M 33×2.0</b>	25	44	24	19	69	80	27.8	57.2	13.5	M 12×45	7/16×1 1/2	0.84	<b>PAFS403MB</b>	420	420
1 1/4	32	<b>M 33×2.0</b>	31	44	27	19	77	94	31.8	66.6	15.0	M 14×50	1/2×1 3/4	1.30	<b>PAFS404MA</b>	420	420
1 1/4	32	<b>M 42×2.0</b>	31	44	27	20	77	94	31.8	66.6	15.0	M 14×50	1/2×1 3/4	1.25	<b>PAFS404MB</b>	420	420
1 1/2	38	<b>M 42×2.0</b>	38	51	30	20	89	106	36.5	79.3	17.0	M 16×55	5/8×2 1/4	1.78	<b>PAFS405MA</b>	420	420
1 1/2	38	<b>M 48×2.0</b>	38	51	30	22	89	106	36.5	79.3	17.0	M 16×55	5/8×2 1/4	1.70	<b>PAFS405MB</b>	420	420

<sup>1)</sup>Pressure shown = Item deliverable

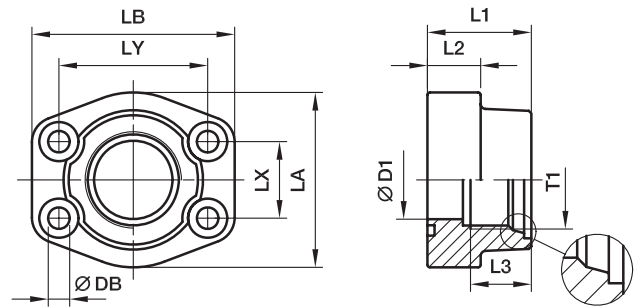
$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PAFS080MAS	PAFS080MASM	PAFS080MASU	NBR
Stainless steel	SS	PAFS080MASS	PAFS080MASSM	–	VIT



**PAFS-U SAE Straight 4 bolt flange with UN/UNF thread**

 SAE Flange / Female UN/UNF thread for O-ring  
 (ISO 6162-1/-2) (ISO 11926-1)

**3000 PSI Series**

Nom. flange size		T1	D1	L1	L2	L3	LA	LB	LX	LY	DB	Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)											(metr.)	(unc.)			S	SS
1/2	13	<b>3/4-16UNF-2A</b>	13	36	16	17	46	58	17.5	38.1	9.0	M 08×30	5/16×1 1/4	0.30	<b>PAFS080UA</b>	345	345
3/4	19	<b>7/8-14UNF-2A</b>	19	36	18	17	49	66	22.3	47.6	10.5	M 10×35	3/8×1 1/2	0.45	<b>PAFS100UA</b>	345	345
3/4	19	<b>1 1/16-12UN-2A</b>	19	36	18	23	49	66	22.3	47.6	10.5	M 10×35	3/8×1 1/2	0.42	<b>PAFS100UB</b>	345	345
1	25	<b>1 1/16-12UN-2A</b>	25	38	18	23	53	71	26.2	52.4	10.5	M 10×35	3/8×1 1/2	0.48	<b>PAFS102UA</b>	345	345
1	25	<b>1 5/16-12UN-2A</b>	25	38	18	23	53	71	26.2	52.4	10.5	M 10×35	3/8×1 1/2	0.45	<b>PAFS102UB</b>	345	345
1 1/4	32	<b>1 5/16-12UN-2A</b>	31	41	21	23	69	80	30.2	58.7	10.5	M 10×40	7/16×1 1/2	0.84	<b>PAFS104UA</b>	276	276
1 1/4	32	<b>1 5/8-12UN-2A</b>	31	41	21	23	69	80	30.2	58.7	10.5	M 10×40	7/16×1 1/2	0.71	<b>PAFS104UB</b>	276	276
1 1/2	38	<b>1 5/8-12UN-2A</b>	38	44	25	23	77	94	35.7	69.9	13.5	M 12×45	1/2×1 3/4	1.25	<b>PAFS106UA</b>	207	207
1 1/2	38	<b>1 7/8-12UN-2A</b>	38	44	25	23	77	94	35.7	69.9	13.5	M 12×45	1/2×1 3/4	1.14	<b>PAFS106UB</b>	207	207

**6000 PSI Series**

1/2	13	<b>3/4-16UNF-2A</b>	13	36	16	17	46	58	18.2	40.5	9.0	M 08×30	5/16×1 1/4	0.30	<b>PAFS401UA</b>	420	420
3/4	19	<b>7/8-14UNF-2A</b>	19	36	19	17	53	71	23.8	50.8	10.5	M 10×35	3/8×1 1/2	0.53	<b>PAFS402UA</b>	420	420
3/4	19	<b>1 1/16-12UN-2A</b>	19	36	19	23	53	71	23.8	50.8	10.5	M 10×35	3/8×1 1/2	0.50	<b>PAFS402UB</b>	420	420
1	25	<b>1 1/16-12UN-2A</b>	25	44	24	23	69	80	27.8	57.2	13.5	M 12×45	7/16×1 1/2	0.86	<b>PAFS403UA</b>	420	420
1	25	<b>1 5/16-12UN-2A</b>	25	44	24	23	69	80	27.8	57.2	13.5	M 12×45	7/16×1 1/2	0.84	<b>PAFS403UB</b>	420	420
1 1/4	32	<b>1 5/16-12UN-2A</b>	31	44	27	23	77	94	31.8	66.6	15.0	M 14×50	1/2×1 3/4	1.30	<b>PAFS404UA</b>	420	420
1 1/4	32	<b>1 5/8-12UN-2A</b>	31	44	27	23	77	94	31.8	66.6	15.0	M 14×50	1/2×1 3/4	1.25	<b>PAFS404UB</b>	420	420
1 1/2	38	<b>1 5/8-12UN-2A</b>	38	51	30	23	89	106	36.5	79.3	17.0	M 16×55	5/8×2 1/4	1.78	<b>PAFS405UA</b>	420	420
1 1/2	38	<b>1 7/8-12UN-2A</b>	38	51	30	23	89	106	36.5	79.3	18.0	M 16×55	5/8×2 1/4	1.70	<b>PAFS405UB</b>	420	420

<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{PN(\text{bar})}{10} = PN(\text{M Pa})$$

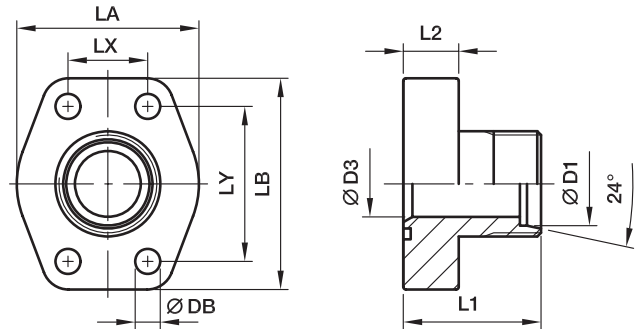
 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, oil dipped	S	PAFS080UAS	PAFS080UASM	PAFS080UASU	NBR
Stainless steel	SS	PAFS080UASS	PAFS080UASSM	—	VIT



**PFF-..S/L SAE Straight 4 bolt flange with EO 24° cone end**

SAE Flange / EO 24° cone end  
(ISO 6162-1/-2)



**3000 PSI Series**

Nom. flange size		D1 <sup>2)</sup>									Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)		D3	L1	L2	LA	LB	LX	LY	DB	(metr.)	(unc.)			CF	SS
1/2	13	12S	8	47	16	42	57	17.5	38.1	9.0	M 08x30	5/16x1 1/4	0.25	PFF32/12S	348	348
1/2	13	15L	11	47	16	42	57	17.5	38.1	9.0	M 08x30	5/16x1 1/4	0.29	PFF32/15L	348	315
1/2	13	16S	12	47	16	42	57	17.5	38.1	9.0	M 08x30	5/16x1 1/4	0.32	PFF32/16S	348	348
3/4	19	16S	12	52	18	50	66	22.3	47.6	11.0	M 10x35	3/8x1 1/2	0.35	PFF33/16S	348	348
3/4	19	20S	16	52	18	50	66	22.3	47.6	11.0	M 10x35	3/8x1 1/2	0.36	PFF33/20S	348	348
3/4	19	22L	18	52	18	50	66	22.3	47.6	11.0	M 10x35	3/8x1 1/2	0.37	PFF33/22L	250	160
1	25	20S	16	55	18	53	71	26.2	52.4	11.0	M 10x35	3/8x1 1/2	0.44	PFF34/20S	348	348
1	25	25S	20	55	18	53	71	26.2	52.4	11.0	M 10x35	3/8x1 1/2	0.46	PFF34/25S	348	348
1	25	28L	23	55	18	53	71	26.2	52.4	11.0	M 10x35	3/8x1 1/2	0.50	PFF34/28L	250	160
1 1/4	32	25S	20	60	21	69	80	30.2	58.7	11.5	M 10x40	7/16x1 1/2	0.65	PFF35/25S	278	278
1 1/4	32	30S	25	60	21	69	80	30.2	58.7	11.5	M 10x40	7/16x1 1/2	0.70	PFF35/30S	278	278
1 1/4	32	35L	30	60	21	69	80	30.2	58.7	11.5	M 10x40	7/16x1 1/2	0.72	PFF35/35L	278	278
1 1/2	38	35L	30	70	25	77	94	35.7	69.9	13.5	M 12x45	1/2x1 3/4	1.00	PFF36/35L	210	210
1 1/2	38	38S	32	70	25	77	94	35.7	69.9	13.5	M 12x45	1/2x1 3/4	1.00	PFF36/38S	210	210
1 1/2	38	42L	36	70	25	77	94	35.7	69.9	13.5	M 12x45	1/2x1 3/4	1.02	PFF36/42L	210	210
2	51	38S	32	74	25	90	103	42.9	77.8	13.5	M 12x45	1/2x1 3/4	1.40	PFF38/38S	210	210
2	51	42L	36	74	25	90	103	42.9	77.8	13.5	M 12x45	1/2x1 3/4	1.35	PFF38/42L	210	210

**6000 PSI Series**

1/2	13	12S	8	47	16	47	57	18.3	40.5	9.0	M 08x30	5/16x1 1/4	0.30	PFF62/12S	420	420
1/2	13	14S	10	47	16	47	57	18.3	40.5	9.0	M 08x30	5/16x1 1/4	0.32	PFF62/14S	420	420
1/2	13	16S	12	47	16	47	57	18.3	40.5	9.0	M 08x30	5/16x1 1/4	0.35	PFF62/16S	420	420
3/4	19	16S	12	52	18	53	71	23.8	50.8	11.0	M 10x35	3/8x1 1/2	0.68	PFF63/16S	420	420
3/4	19	20S	16	52	18	53	71	23.8	50.8	11.0	M 10x35	3/8x1 1/2	0.73	PFF63/20S	420	400
3/4	19	22L	18	52	18	53	71	23.8	50.8	11.0	M 10x35	3/8x1 1/2	0.82	PFF63/22L	250	160
1	25	20S	16	60	21	66	80	27.8	57.2	13.0	M 12x45	7/16x1 1/2	1.00	PFF64/20S	420	400
1	25	25S	20	60	21	66	80	27.8	57.2	13.0	M 12x45	7/16x1 1/2	1.15	PFF64/25S	420	400
1	25	28L	23	60	21	66	80	27.8	57.2	13.0	M 12x45	7/16x1 1/2	1.20	PFF64/28L	250	160
1 1/4	32	25S	20	68	24	78	94	31.8	66.6	15.0	M 14x50	1/2x1 3/4	1.60	PFF65/25S	420	400
1 1/4	32	30S	25	68	24	78	94	31.8	66.6	15.0	M 14x50	1/2x1 3/4	1.80	PFF65/30S	420	400
1 1/4	32	35L	30	68	24	78	94	31.8	66.6	15.0	M 14x50	1/2x1 3/4	1.85	PFF65/35L	250	160
1 1/2	38	35L	25	72	27	90	106	36.5	79.3	17.0	M 16x55	5/8x2 1/4	2.20	PFF66/35L	250	160
1 1/2	38	38S	32	72	27	90	106	36.5	79.3	17.0	M 16x55	5/8x2 1/4	2.25	PFF66/38S	315	315
1 1/2	38	42L	36	72	27	90	106	36.5	79.3	17.0	M 16x55	5/8x2 1/4	2.35	PFF66/42L	250	160

<sup>2)</sup> L = light series; S = heavy series

Delivery without nut and ring.

<sup>1)</sup> Pressure shown = Item deliverable

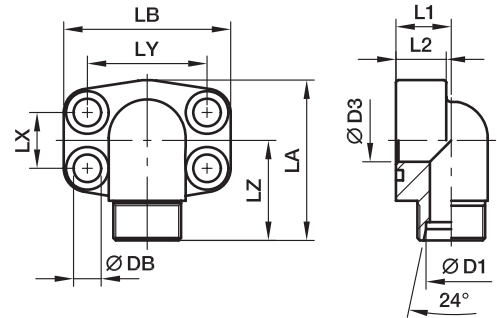
Information on ordering complete fittings or alternative sealing materials see page M11.

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

\*Please add the suffixes below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	PFF32/12SCF	PFF32/12SOMDCFM	PFF32/12SOMDCFU	NBR
Stainless steel	SS	PFF32/12S-SS	PFF32/12SOMDSSM	-	VIT

**PAFG-90M SAE 90° 4 bolt flange with EO 24° cone end**

 SAE 90° Flange / EO 24° cone end  
 (ISO 6162-1/-2)

**3000 PSI Series**

Nom. flange size		D1 <sup>2)</sup>										Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)		D3	L1	L2	LA	LB	LX	LY	LZ	DB	(metr.)	(unc.)			CF	SS
1/2	13	12S	8	18	16	60	57	17.5	38.1	36	9.0	M 08×30	5/16×1 1/4	0.28	PAFG080/90M12S	348	348
1/2	13	15L	11	18	16	60	57	17.5	38.1	36	9.0	M 08×30	5/16×1 1/4	0.33	PAFG080/90M15L	348	315
1/2	13	16S	12	18	16	60	57	17.5	38.1	36	9.0	M 08×30	5/16×1 1/4	0.30	PAFG080/90M16S	348	348
3/4	19	16S	12	22	18	63	66	22.3	47.6	38	11.0	M 10×35	3/8×1 1/2	0.43	PAFG100/90M16S	348	348
3/4	19	20S	16	22	18	63	66	22.3	47.6	38	11.0	M 10×35	3/8×1 1/2	0.43	PAFG100/90M20S	348	348
3/4	19	22L	18	22	18	63	66	22.3	47.6	38	11.0	M 10×35	3/8×1 1/2	0.43	PAFG100/90M22L	250	160
1	25	20S	16	28	19	80	71	26.2	52.4	42	11.0	M 10×35	3/8×1 1/2	0.68	PAFG102/90M20S	348	348
1	25	25S	20	28	19	80	71	26.2	52.4	42	11.0	M 10×35	3/8×1 1/2	0.64	PAFG102/90M25S	348	348
1	25	28L	23	28	19	80	71	26.2	52.4	42	11.0	M 10×35	3/8×1 1/2	0.62	PAFG102/90M28L	250	160
1 1/4	32	25S	20	30	22	84	80	30.2	58.7	50	11.5	M 10×40	7/16×1 1/2	1.15	PAFG104/90M25S	278	278
1 1/4	32	30S	25	30	22	84	80	30.2	58.7	50	11.5	M 10×40	7/16×1 1/2	1.02	PAFG104/90M30S	278	278
1 1/4	32	35L	30	30	22	84	80	30.2	58.7	50	11.5	M 10×40	7/16×1 1/2	0.94	PAFG104/90M35L	278	278
1 1/2	38	35L	30	36	25	88	94	35.7	69.9	58	13.5	M 12×45	1/2×1 3/4	1.50	PAFG106/90M35L	210	210
1 1/2	38	38S	32	36	25	88	94	35.7	69.9	58	13.5	M 12×45	1/2×1 3/4	1.50	PAFG106/90M38S	210	210
1 1/2	38	42L	36	36	25	88	94	35.7	69.9	58	13.5	M 12×45	1/2×1 3/4	1.50	PAFG106/90M42L	210	210

**6000 PSI Series**

1/2	13	12S	8	20	16	60	57	18.2	40.5	36	9.0	M 08×30	5/16×1 1/4	0.30	PAFG401/90M12S	420	420
1/2	13	14S	10	20	16	60	57	18.2	40.5	36	9.0	M 08×30	5/16×1 1/4	0.32	PAFG401/90M14S	420	420
1/2	13	16S	12	20	16	60	57	18.2	40.5	36	9.0	M 08×30	5/16×1 1/4	0.35	PAFG401/90M16S	420	420
3/4	19	16S	12	26	19	68	71	23.8	50.8	41	11.0	M 10×35	3/8×1 1/2	0.53	PAFG402/90M16S	420	420
3/4	19	20S	20	26	19	68	71	23.8	50.8	41	11.0	M 10×35	3/8×1 1/2	0.53	PAFG402/90M20S	420	400
3/4	19	22L	23	26	19	68	71	23.8	50.8	41	11.0	M 10×35	3/8×1 1/2	0.53	PAFG402/90M22L	250	160
1	25	20S	16	30	24	83	80	27.8	57.2	50	13.0	M 12×45	7/16×1 1/2	0.90	PAFG403/90M20S	420	400
1	25	25S	20	30	24	83	80	27.8	57.2	50	13.0	M 12×45	7/16×1 1/2	0.90	PAFG403/90M25S	420	400
1	25	28L	23	30	24	83	80	27.8	57.2	50	13.0	M 12×45	7/16×1 1/2	0.90	PAFG403/90M28L	250	160
1 1/4	32	25S	20	36	25	97	94	31.8	66.6	58	15.0	M 14×50	1/2×1 3/4	1.35	PAFG404/90M25S	420	400
1 1/4	32	30S	25	36	25	97	94	31.8	66.6	58	15.0	M 14×50	1/2×1 3/4	1.40	PAFG404/90M30S	420	400
1 1/4	32	35L	30	36	25	97	94	31.8	66.6	58	15.0	M 14×50	1/2×1 3/4	1.45	PAFG404/90M35L	250	160
1 1/2	38	35L	25	41	26	110	106	36.5	79.3	65	17.0	M 16×55	5/8×2 1/4	1.80	PAFG405/90M35L	250	160
1 1/2	38	38S	32	41	26	110	106	36.5	79.3	65	17.0	M 16×55	5/8×2 1/4	1.85	PAFG405/90M38S	315	315
1 1/2	38	42L	36	41	26	110	106	36.5	79.3	65	17.0	M 16×55	5/8×2 1/4	1.90	PAFG405/90M42L	250	160

<sup>2)</sup> L = light series; S = heavy series

**Delivery without nut and ring.  
 Information on ordering complete fittings  
 or alternative sealing materials see page M11.**
<sup>1)</sup> Pressure shown = Item deliverable

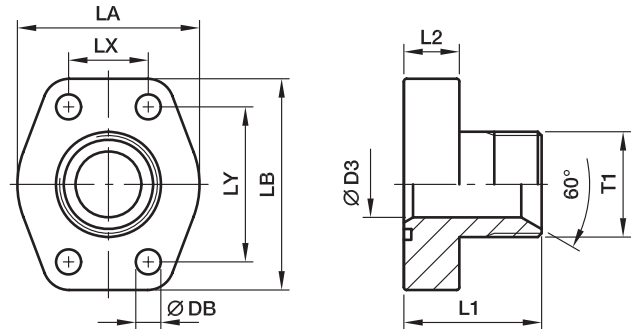
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	PAFG080/90M12SCF	PAFG080/90M12SOMDCFM	PAFG080/90M12SOMDCFU	NBR
Stainless steel	SS	PAFG080/90M12S-SS	PAFG080/90M12SOMDSSM	–	VIT

**PAFG-G SAE Straight 4 bolt flange with BSPP 60° cone end**

SAE Flange / BSPP 60° cone end  
(ISO 6162-1/-2) (ISO 8434-6)



**3000 PSI Series**

Nom. flange size		T1	D3	L1	L2	LA	LB	LX	LY	DB	Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)										(metr.)	(unc.)			CF	SS
1/2	13	<b>G 3/8</b>	10	37	16	47	56	17.5	38.1	9.0	M 08x30	5/16x1 1/4	0.25	<b>PAFG080G38</b>	348	348
1/2	13	<b>G 1/2</b>	12	39	16	47	56	17.5	38.1	9.0	M 08x30	5/16x1 1/4	0.29	<b>PAFG080G</b>	348	348
1/2	13	<b>G 3/4</b>	13	42	16	47	56	17.5	38.1	9.0	M 08x30	5/16x1 1/4	0.32	<b>PAFG080G34</b>	348	348
3/4	19	<b>G 1/2</b>	12	42	18	50	66	22.3	47.6	11.0	M 10x35	3/8x1 1/2	0.35	<b>PAFG100G12</b>	348	348
3/4	19	<b>G 3/4</b>	17	45	18	50	66	22.3	47.6	11.0	M 10x35	3/8x1 1/2	0.34	<b>PAFG100G</b>	348	348
3/4	19	<b>G 1</b>	19	47	18	50	66	22.3	47.6	11.0	M 10x35	3/8x1 1/2	0.37	<b>PAFG100G1</b>	348	348
1	25	<b>G 3/4</b>	17	47	18	53	71	26.2	52.4	11.0	M 10x35	3/8x1 1/2	0.44	<b>PAFG102G34</b>	348	348
1	25	<b>G 1</b>	22	49	18	53	71	26.2	52.4	11.0	M 10x35	3/8x1 1/2	0.46	<b>PAFG102G</b>	348	348
1	25	<b>G 1 1/4</b>	25	49	18	53	71	26.2	52.4	11.0	M 10x35	3/8x1 1/2	0.50	<b>PAFG102G114</b>	348	348
1 1/4	32	<b>G 1</b>	22	53	21	69	80	30.2	58.7	11.5	M 10x40	7/16x1 1/2	0.65	<b>PAFG104G1</b>	278	278
1 1/4	32	<b>G 1 1/4</b>	27	53	21	69	80	30.2	58.7	11.5	M 10x40	7/16x1 1/2	0.70	<b>PAFG104G</b>	278	278
1 1/4	32	<b>G 1 1/2</b>	31	55	21	69	80	30.2	58.7	11.5	M 10x40	7/16x1 1/2	0.72	<b>PAFG104G112</b>	278	278
1 1/2	38	<b>G 1 1/4</b>	27	59	24	77	94	35.7	69.9	13.5	M 12x45	1/2x1 3/4	1.00	<b>PAFG106G114</b>	210	210
1 1/2	38	<b>G 1 1/2</b>	34	61	24	77	94	35.7	69.9	13.5	M 12x45	1/2x1 3/4	1.00	<b>PAFG106G</b>	210	210
1 1/2	38	<b>G 2</b>	38	63	24	77	94	35.7	69.9	13.5	M 12x45	1/2x1 3/4	1.02	<b>PAFG106G2</b>	210	210
2	51	<b>G 1 1/2</b>	34	69	25	90	103	42.9	77.8	13.5	M 12x45	1/2x1 3/4	1.40	<b>PAFG108G112</b>	210	210
2	51	<b>G 2</b>	42	69	25	90	103	42.9	77.8	13.5	M 12x45	1/2x1 3/4	1.35	<b>PAFG108G</b>	210	210

**6000 PSI Series**

1/2	13	<b>G 3/8</b>	10	38	16	47	56	18.2	40.5	9.0	M 08x30	5/16x1 1/4	0.30	<b>PAFG401G38</b>	420	420
1/2	13	<b>G 1/2</b>	12	40	16	47	56	18.2	40.5	9.0	M 08x30	5/16x1 1/4	0.32	<b>PAFG401G</b>	420	420
1/2	13	<b>G 3/4</b>	13	43	16	47	56	18.2	40.5	9.0	M 08x30	5/16x1 1/4	0.35	<b>PAFG401G34</b>	420	420
3/4	19	<b>G 1/2</b>	12	44	18	53	71	23.8	50.8	11.0	M 10x35	3/8x1 1/2	0.68	<b>PAFG402G12</b>	420	420
3/4	19	<b>G 3/4</b>	17	47	18	53	71	23.8	50.8	11.0	M 10x35	3/8x1 1/2	0.73	<b>PAFG402G</b>	420	420
3/4	19	<b>G 1</b>	19	49	18	53	71	23.8	50.8	11.0	M 10x35	3/8x1 1/2	0.82	<b>PAFG402G1</b>	420	420
1	25	<b>G 3/4</b>	17	54	21	66	80	27.8	57.2	13.0	M 12x45	7/16x1 1/2	1.00	<b>PAFG403G34</b>	420	420
1	25	<b>G 1</b>	22	56	21	66	80	27.8	57.2	13.0	M 12x45	7/16x1 1/2	1.15	<b>PAFG403G</b>	420	420
1	25	<b>G 1 1/4</b>	25	56	21	66	80	27.8	57.2	13.0	M 12x45	7/16x1 1/2	1.20	<b>PAFG403G114</b>	420	420
1 1/4	32	<b>G 1</b>	22	61	24	78	94	31.8	66.6	15.0	M 14x50	1/2x1 3/4	1.60	<b>PAFG404G1</b>	420	420
1 1/4	32	<b>G 1 1/4</b>	27	61	24	78	94	31.8	66.6	15.0	M 14x50	1/2x1 3/4	1.80	<b>PAFG404G</b>	420	420
1 1/4	32	<b>G 1 1/2</b>	31	63	24	78	94	31.8	66.6	15.0	M 14x50	1/2x1 3/4	1.85	<b>PAFG404G112</b>	420	420
1 1/2	38	<b>G 1 1/4</b>	27	65	27	90	106	36.5	79.3	17.0	M 16x55	5/8x2 1/4	2.20	<b>PAFG405G114</b>	420	420
1 1/2	38	<b>G 1 1/2</b>	32	67	27	90	106	36.5	79.3	17.0	M 16x55	5/8x2 1/4	2.25	<b>PAFG405G</b>	420	420

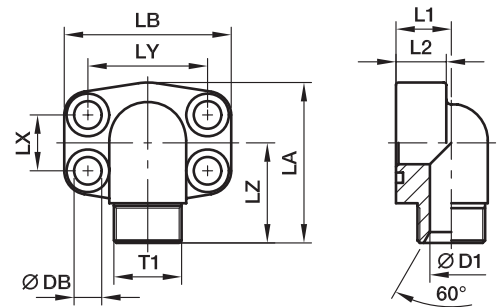
<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	PAFG080GCF	PAFG080GCFM	PAFG080GCFU	NBR
Stainless steel	SS	PAFG080GSS	PAFG080GSSM	—	VIT

**PAFG-90G SAE 90° 4 bolt flange with BSPP 60° cone end**

 SAE 90° Flange / BSPP 60° cone end  
 (ISO 6162-1/-2) (ISO 8434-6)

**3000 PSI Series**

Nom. flange size		T1	D3	L1	L2	LA	LB	LX	LY	LZ	DB	Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)											(metr.)	(unc.)			CF	SS
1/2	13	<b>G 3/8</b>	10	17	16	60	57	17.5	38.1	37	9.0	M 08x30	5/16x1 1/4	0.27	<b>PAFG080/90G38</b>	348	348
1/2	13	<b>G 1/2</b>	12	17	16	60	57	17.5	38.1	39	9.0	M 08x30	5/16x1 1/4	0.31	<b>PAFG080/90G</b>	348	348
1/2	13	<b>G 3/4</b>	13	20	16	60	57	17.5	38.1	40	9.0	M 08x30	5/16x1 1/4	0.31	<b>PAFG080/90G34</b>	348	348
3/4	19	<b>G 1/2</b>	12	20	18	63	66	22.3	47.6	41	11.0	M 10x35	3/8x1 1/2	0.47	<b>PAFG100/90G12</b>	348	348
3/4	19	<b>G 3/4</b>	17	20	18	63	66	22.3	47.6	44	11.0	M 10x35	3/8x1 1/2	0.42	<b>PAFG100/90G</b>	348	348
3/4	19	<b>G 1</b>	19	25	18	63	66	22.3	47.6	45	11.0	M 10x35	3/8x1 1/2	0.60	<b>PAFG100/90G1</b>	348	348
1	25	<b>G 3/4</b>	17	20	19	80	71	26.2	52.4	47	11.0	M 10x35	3/8x1 1/2	0.66	<b>PAFG102/90G34</b>	348	348
1	25	<b>G 1</b>	22	25	19	80	71	26.2	52.4	48	11.0	M 10x35	3/8x1 1/2	0.62	<b>PAFG102/90G</b>	348	348
1	25	<b>G 1 1/4</b>	25	31	19	80	71	26.2	52.4	49	11.0	M 10x40	3/8x1 1/2	0.65	<b>PAFG102/90G114</b>	348	348
1 1/4	32	<b>G 1</b>	22	25	22	84	80	30.2	58.7	54	11.5	M 10x40	7/16x1 1/2	1.06	<b>PAFG104/90G1</b>	278	278
1 1/4	32	<b>G 1 1/4</b>	27	31	22	84	80	30.2	58.7	55	11.5	M 10x35	7/16x1 1/2	0.93	<b>PAFG104/90G</b>	278	278
1 1/4	32	<b>G 1 1/2</b>	31	37	22	84	80	30.2	58.7	56	11.5	M 10x40	7/16x1 1/2	0.96	<b>PAFG104/90G112</b>	278	278
1 1/2	38	<b>G 1 1/4</b>	27	31	25	88	94	35.7	69.9	59	13.5	M 12x45	1/2x1 3/4	1.44	<b>PAFG106/90G114</b>	210	210
1 1/2	38	<b>G 1 1/2</b>	34	37	25	88	94	35.7	69.9	61	13.5	M 12x45	1/2x1 3/4	1.35	<b>PAFG106/90G</b>	210	210

**6000 PSI Series**

1/2	13	<b>G 3/8</b>	10	17	16	60	57	18.2	40.5	37	9.0	M 08x30	5/16x1 1/4	0.30	<b>PAFG401/90G38</b>	420	420
1/2	13	<b>G 1/2</b>	12	17	16	60	57	18.2	40.5	39	9.0	M 08x30	5/16x1 1/4	0.32	<b>PAFG401/90G</b>	420	420
1/2	13	<b>G 3/4</b>	13	20	16	60	57	18.2	40.5	40	9.0	M 08x30	5/16x1 1/4	0.35	<b>PAFG401/90G34</b>	420	420
3/4	19	<b>G 1/2</b>	12	20	19	68	71	23.8	50.8	45	11.0	M 10x35	3/8x1 1/2	0.53	<b>PAFG402/90G12</b>	420	420
3/4	19	<b>G 3/4</b>	17	20	19	68	71	23.8	50.8	48	11.0	M 10x35	3/8x1 1/2	0.53	<b>PAFG402/90G</b>	420	420
3/4	19	<b>G 1</b>	19	25	19	68	71	23.8	50.8	50	11.0	M 10x35	3/8x1 1/2	0.53	<b>PAFG402/90G1</b>	420	420
1	25	<b>G 3/4</b>	17	25	24	83	80	27.8	57.2	52	13.0	M 12x45	7/16x1 1/2	0.90	<b>PAFG403/90G34</b>	420	420
1	25	<b>G 1</b>	22	25	24	83	80	27.8	57.2	54	13.0	M 12x45	7/16x1 1/2	0.90	<b>PAFG403/90G</b>	420	420
1	25	<b>G 1 1/4</b>	25	31	24	83	80	27.8	57.2	55	13.0	M 12x45	7/16x1 1/2	0.90	<b>PAFG403/90G114</b>	420	420
1 1/4	32	<b>G 1</b>	22	31	25	97	94	31.8	66.6	59	15.0	M 14x50	1/2x1 3/4	1.35	<b>PAFG404/90G1</b>	420	420
1 1/4	32	<b>G 1 1/4</b>	27	31	25	97	94	31.8	66.6	59	15.0	M 14x50	1/2x1 3/4	1.40	<b>PAFG404/90G</b>	420	420
1 1/4	32	<b>G 1 1/2</b>	31	37	25	97	94	31.8	66.6	61	15.0	M 14x50	1/2x1 3/4	1.45	<b>PAFG404/90G112</b>	420	420
1 1/2	38	<b>G 1 1/4</b>	27	37	26	110	106	36.5	79.3	64	17.0	M 16x55	5/8x2 1/4	1.80	<b>PAFG405/90G114</b>	420	420
1 1/2	38	<b>G 1 1/2</b>	32	37	26	110	106	36.5	79.3	66	17.0	M 16x55	5/8x2 1/4	1.85	<b>PAFG405/90G</b>	420	420

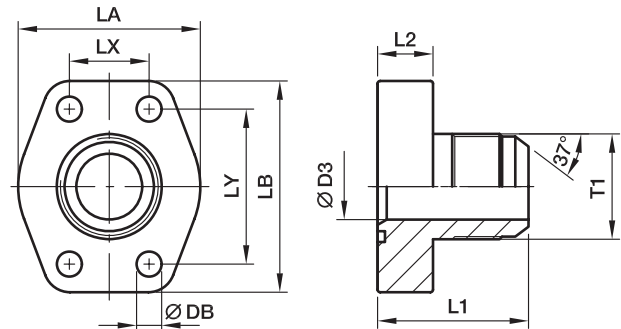
1) Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	PAFG080/90GCF	PAFG080/90GCFM	PAFG080/90GCFU	NBR
Stainless steel	SS	PAFG080/90GSS	PAFG080/90GSSM	–	VIT

**PAFG-X SAE Straight 4 bolt flange with Triple-Lok® 37° flare end**

 SAE Flange / Triple-Lok® 37° flare end  
 (ISO 6162-1/-2)

**3000 PSI Series**

Nom. flange size		T1	D3	L1	L2	LA	LB	LX	LY	DB	Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)										(metr.)	(unc.)			CF	SS
1/2	13	<b>3/4-16UNF-2A</b>	9.9	41	16	47	57	17.5	38.1	9.0	M 08x30	5/16x1 1/4	0.25	<b>PAFG080X-A</b>	348	348
1/2	13	<b>7/8-14UNF-2A</b>	12.3	41	16	47	57	17.5	38.1	9.0	M 08x30	5/16x1 1/4	0.29	<b>PAFG080X-B</b>	348	348
1/2	13	<b>1 1/16-12UN-2A</b>	12.3	46	16	47	57	17.5	38.1	9.0	M 08x30	5/16x1 1/4	0.32	<b>PAFG080X-C</b>	348	348
3/4	19	<b>7/8-14UN-2A</b>	12.3	47	18	50	66	22.3	47.6	11.0	M 10x35	3/8x1 1/2	0.35	<b>PAFG100X-A</b>	348	348
3/4	19	<b>1 1/16-12UN-2A</b>	15.5	49	18	50	66	22.3	47.6	11.0	M 10x35	3/8x1 1/2	0.34	<b>PAFG100X-B</b>	348	348
3/4	19	<b>1 5/16-12UN-2A</b>	21.5	50	18	50	66	22.3	47.6	11.0	M 10x35	3/8x1 1/2	0.37	<b>PAFG100X-C</b>	348	348
1	25	<b>1 1/16-12UN-2A</b>	15.5	51	18	53	71	26.2	52.4	11.0	M 10x35	3/8x1 1/2	0.44	<b>PAFG102X-A</b>	348	348
1	25	<b>1 5/16-12UN-2A</b>	21.5	52	18	53	71	26.2	52.4	11.0	M 10x35	3/8x1 1/2	0.46	<b>PAFG102X-B</b>	348	348
1	25	<b>1 5/8-12UN-2A</b>	27.5	54	18	53	71	26.2	52.4	11.0	M 10x35	3/8x1 1/2	0.50	<b>PAFG102X-C</b>	348	348
1 1/4	32	<b>1 5/16-12UN-2A</b>	21.5	56	21	69	80	30.2	58.7	11.5	M 10x40	7/16x1 1/2	0.65	<b>PAFG104X-A</b>	278	278
1 1/4	32	<b>1 5/8-12UN-2A</b>	27.5	58	21	69	80	30.2	58.7	11.5	M 10x40	7/16x1 1/2	0.70	<b>PAFG104X-B</b>	278	278
1 1/4	32	<b>1 7/8-12UN-2A</b>	33.0	61	21	69	80	30.2	58.7	11.5	M 10x40	7/16x1 1/2	0.72	<b>PAFG104X-C</b>	278	278
1 1/2	38	<b>1 5/8-12UN-2A</b>	27.5	64	24	77	94	35.7	69.9	13.5	M 12x45	1/2x1 3/4	1.00	<b>PAFG106X-A</b>	210	210
1 1/2	38	<b>1 7/8-12UN-2A</b>	33.0	67	24	77	94	35.7	69.9	13.5	M 12x45	1/2x1 3/4	1.00	<b>PAFG106X-B</b>	210	210

**6000 PSI Series**

1/2	13	<b>3/4-16UNF-2A</b>	9.9	42	16	47	57	18.2	40.5	9.0	M 08x30	5/16x1 1/4	0.30	<b>PAFG401X-A</b>	350	350
1/2	13	<b>7/8-14UNF-2A</b>	12.3	45	16	47	57	18.2	40.5	9.0	M 08x30	5/16x1 1/4	0.32	<b>PAFG401X-B</b>	350	350
1/2	13	<b>1 1/16-12UN-2A</b>	12.3	47	16	47	57	18.2	40.5	9.0	M 08x30	5/16x1 1/4	0.35	<b>PAFG401X-C</b>	350	350
3/4	19	<b>7/8-14UN-2A</b>	12.3	49	18	53	71	23.8	50.8	11.0	M 10x35	3/8x1 1/2	0.68	<b>PAFG402X-A</b>	350	350
3/4	19	<b>1 1/16-12UN-2A</b>	15.5	51	18	53	71	23.8	50.8	11.0	M 10x35	3/8x1 1/2	0.73	<b>PAFG402X-B</b>	350	350
3/4	19	<b>1 5/16-12UN-2A</b>	21.5	52	18	53	71	23.8	50.8	11.0	M 10x35	3/8x1 1/2	0.82	<b>PAFG402X-C</b>	350	350
1	25	<b>1 1/16-12UN-2A</b>	15.5	58	21	66	80	27.8	57.2	13.0	M 12x45	7/16x1 1/2	1.00	<b>PAFG403X-A</b>	350	350
1	25	<b>1 5/16-12UN-2A</b>	21.5	59	21	66	80	27.8	57.2	13.0	M 12x45	7/16x1 1/2	1.15	<b>PAFG403X-B</b>	350	350
1	25	<b>1 5/8-12UN-2A</b>	27.5	61	21	66	80	27.8	57.2	13.0	M 12x45	7/16x1 1/2	1.20	<b>PAFG403X-C</b>	275	275
1 1/4	32	<b>1 5/16-12UN-2A</b>	21.5	64	24	78	94	31.8	66.6	15.0	M 14x50	1/2x1 3/4	1.60	<b>PAFG404X-A</b>	350	350
1 1/4	32	<b>1 5/8-12UN-2A</b>	27.5	66	24	78	94	31.8	66.6	15.0	M 14x50	1/2x1 3/4	1.80	<b>PAFG404X-B</b>	275	275
1 1/4	32	<b>1 7/8-12UN-2A</b>	33.0	69	24	78	94	31.8	66.6	15.0	M 14x50	1/2x1 3/4	1.85	<b>PAFG404X-C</b>	210	210
1 1/2	38	<b>1 5/8-12UN-2A</b>	27.5	70	27	90	106	36.5	79.3	17.0	M 16x55	5/8x2 1/4	2.20	<b>PAFG405X-A</b>	275	275
1 1/2	38	<b>1 7/8-12UN-2A</b>	33.0	73	27	90	106	36.5	79.3	17.0	M 16x55	5/8x2 1/4	2.25	<b>PAFG405X-B</b>	210	210

<sup>1)</sup> Pressure shown = Item deliverable

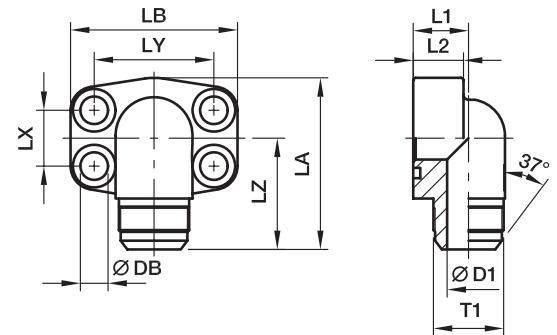
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	PAFG080X-ACF	PAFG080X-ACFM	PAFG080X-ACFU	NBR
Stainless steel	SS	PAFG080X-ASS	PAFG080X-ASSM	—	VIT



**PAFG-90X SAE 90° 4 bolt flange with Triple-Lok® 37° flare end**

 SAE 90° Flange / Triple-Lok® 37° flare end  
 (ISO 6162-1/-2)

**3000 PSI Series**

Nom. flange size		T1	D1	L1	L2	LA	LB	LX	LY	LZ	DB	Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)											(metr.)	(unc.)			CF	SS
1/2	13	3/4-16	9.9	17	16	60	56	17.5	38.1	40	9.0	M 08×30	5/16×1 1/4	0.27	<b>PAFG080/90X-A</b>	348	348
1/2	13	7/8-14	12.3	17	16	60	56	17.5	38.1	42	9.0	M 08×30	5/16×1 1/4	0.31	<b>PAFG080/90X-B</b>	348	348
1/2	13	1 1/16-12	12.3	20	16	60	57	17.5	38.1	43	9.0	M 08×30	5/16×1 1/4	0.31	<b>PAFG080/90X-C</b>	348	348
3/4	19	7/8-14	12.3	20	18	63	66	22.3	47.6	45	11.0	M 10×35	3/8×1 1/2	0.47	<b>PAFG100/90X-A</b>	348	348
3/4	19	1 1/16-12	15.5	20	18	63	66	22.3	47.6	47	11.0	M 10×35	3/8×1 1/2	0.42	<b>PAFG100/90X-B</b>	348	348
3/4	19	1 5/16-12	21.5	25	18	63	66	22.3	47.6	48	11.0	M 10×35	3/8×1 1/2	0.60	<b>PAFG100/90X-C</b>	348	348
1	25	1 1/16-12	15.5	20	19	80	71	26.2	52.4	50	11.0	M 10×35	3/8×1 1/2	0.66	<b>PAFG102/90X-A</b>	348	348
1	25	1 5/16-12	21.5	25	19	80	71	26.2	52.4	51	11.0	M 10×35	3/8×1 1/2	0.62	<b>PAFG102/90X-B</b>	348	348
1 1/4	32	1 5/16-12	21.5	25	22	84	80	30.2	58.7	56	11.5	M 10×40	7/16×1 1/2	1.06	<b>PAFG104/90X-A</b>	278	278
1 1/4	32	1 5/8-12	27.5	31	22	84	80	30.2	58.7	58	11.5	M 10×40	7/16×1 1/2	0.93	<b>PAFG104/90X-B</b>	278	278
1 1/4	32	1 7/8-12	33.0	37	22	84	80	30.2	58.7	61	11.5	M 10×40	7/16×1 1/2	0.96	<b>PAFG104/90X-C</b>	278	278
1 1/2	38	1 5/8-12	27.5	31	25	88	94	35.7	69.9	63	13.5	M 10×40	1/2×1 3/4	1.44	<b>PAFG106/90X-A</b>	210	210
1 1/2	38	1 7/8-12	33.0	37	25	88	94	35.7	69.9	66	13.5	M 12×45	1/2×1 3/4	1.35	<b>PAFG106/90X-B</b>	210	210

**6000 PSI Series**

1/2	13	3/4-16	9.9	17	16	60	57	18.2	40.5	40	9.0	M 08×30	5/16×1 1/4	0.30	<b>PAFG401/90X-A</b>	350	350
1/2	13	7/8-14	12.3	17	16	60	57	18.2	40.5	42	9.0	M 08×30	5/16×1 1/4	0.32	<b>PAFG401/90X-B</b>	350	350
1/2	13	1 1/16-12	12.3	20	16	60	57	18.2	40.5	43	9.0	M 08×30	5/16×1 1/4	0.35	<b>PAFG401/90X-C</b>	350	350
3/4	19	7/8-14	12.3	20	19	68	71	23.8	50.8	49	11.0	M 10×35	3/8×1 1/2	0.53	<b>PAFG402/90X-A</b>	350	350
3/4	19	1 1/16-12	15.5	20	19	68	71	23.8	50.8	51	11.0	M 10×35	3/8×1 1/2	0.53	<b>PAFG402/90X-B</b>	350	350
3/4	19	1 5/16-12	21.5	25	19	68	71	23.8	50.8	52	11.0	M 10×35	3/8×1 1/2	0.53	<b>PAFG402/90X-C</b>	350	350
1	25	1 1/16-12	15.5	25	24	83	80	27.8	57.2	55	13.0	M 12×45	7/16×1 1/2	0.90	<b>PAFG403/90X-A</b>	350	350
1	25	1 5/16-12	21.5	25	24	83	80	27.8	57.2	56	13.0	M 12×45	7/16×1 1/2	0.90	<b>PAFG403/90X-B</b>	350	350
1	25	1 5/8-12	27.5	31	24	83	80	27.8	57.2	58	13.0	M 12×45	7/16×1 1/2	0.90	<b>PAFG403/90X-C</b>	275	275
1 1/4	32	1 5/16-12	21.5	31	25	97	94	31.8	66.6	56	15.0	M 14×50	1/2×1 3/4	1.35	<b>PAFG404/90X-A</b>	350	350
1 1/4	32	1 5/8-12	27.5	31	25	97	94	31.8	66.6	63	15.0	M 14×50	1/2×1 3/4	1.40	<b>PAFG404/90X-B</b>	275	275
1 1/4	32	1 7/8-12	33.0	37	25	97	94	31.8	66.6	63	15.0	M 14×50	1/2×1 3/4	1.45	<b>PAFG404/90X-C</b>	210	210
1 1/2	38	1 5/8-12	27.5	37	26	110	106	36.5	79.3	67	17.0	M 16×55	5/8×2 1/4	1.80	<b>PAFG405/90X-A</b>	275	275
1 1/2	38	1 7/8-12	33.0	37	26	110	106	36.5	79.3	70	17.0	M 16×55	5/8×2 1/4	1.85	<b>PAFG405/90X-B</b>	210	210

1) Pressure shown = Item deliverable

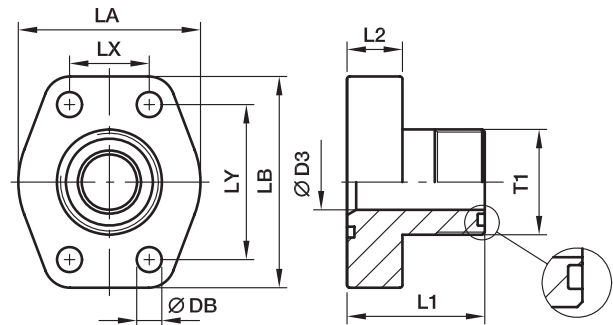
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	PAFG080/90X-ACF	PAFG080/90X-ACFM	PAFG080/90X-ACFU	NBR
Stainless steel	SS	PAFG080/90X-ASS	PAFG080/90X-ASSM	–	VIT

**PAFG-L SAE Straight 4 bolt flange with O-Lok® ORFS end**

SAE Flange / O-Lok® ORFS end  
(ISO 6162-1/-2)



**3000 PSI Series**

Nom. flange size		T1	D3	L1	L2	LA	LB	LX	LY	DB	Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)										(metr.)	(unc.)			CF	SS
1/2	13	<b>11/16-16UN-2A</b>	6	37	16	47	56	17.5	38.1	9.0	M 08×30	5/16×1 1/4	0.24	<b>PAFG080L-A</b>	348	348
1/2	13	<b>13/16-16UN-2A</b>	9	39	16	47	56	17.5	38.1	9.0	M 08×30	5/16×1 1/4	0.25	<b>PAFG080L-B</b>	348	348
1/2	13	<b>1-14UN-2A</b>	12	42	16	47	56	17.5	38.1	9.0	M 08×30	5/16×1 1/4	0.27	<b>PAFG080L-C</b>	348	348
3/4	19	<b>1-14UN-2A</b>	12	45	18	50	66	22.3	47.6	11.0	M 10×35	3/8×1 1/2	0.44	<b>PAFG100L-A</b>	348	348
3/4	19	<b>1 3/16-12UN-2A</b>	15	47	18	50	66	22.3	47.6	11.0	M 10×35	3/8×1 1/2	0.46	<b>PAFG100L-B</b>	348	348
1	25	<b>1 3/16-12UN-2A</b>	15	49	18	53	71	26.2	52.4	11.0	M 10×35	3/8×1 1/2	0.53	<b>PAFG102L-A</b>	348	348
1	25	<b>1 7/16-12UN-2A</b>	20	49	18	53	71	26.2	52.4	11.0	M 10×35	3/8×1 1/2	0.52	<b>PAFG102L-B</b>	348	348
1 1/4	32	<b>1 7/16-12UN-2A</b>	20	53	21	69	80	30.2	58.7	11.5	M 10×40	7/16×1 1/2	0.75	<b>PAFG104L-A</b>	278	278
1 1/4	32	<b>1 11/16-12UN-2A</b>	26	53	21	69	80	30.2	58.7	11.5	M 10×40	7/16×1 1/2	0.78	<b>PAFG104L-B</b>	278	278
1 1/2	38	<b>1 11/16-12UN-2A</b>	26	61	24	77	94	35.7	69.9	13.5	M 12×45	1/2×1 3/4	1.20	<b>PAFG106L-A</b>	210	210
1 1/2	38	<b>2-12UN-2A</b>	32	61	24	77	94	35.7	69.9	13.5	M 12×45	1/2×1 3/4	1.25	<b>PAFG106L-B</b>	210	210

**6000 PSI Series**

1/2	13	<b>11/16-16UN-2A</b>	6	38	16	47	57	18.2	40.5	9.0	M 08×30	5/16×1 1/4	0.25	<b>PAFG401L-A</b>	420	420
1/2	13	<b>13/16-16UN-2A</b>	9	40	16	47	57	18.2	40.5	9.0	M 08×30	5/16×1 1/4	0.27	<b>PAFG401L-B</b>	420	420
1/2	13	<b>1-14UN-2A</b>	12	43	16	47	57	18.2	40.5	9.0	M 08×30	5/16×1 1/4	0.31	<b>PAFG401L-C</b>	420	420
3/4	19	<b>1-14UN-2A</b>	12	47	18	53	71	23.8	50.8	11.0	M 10×35	3/8×1 1/2	0.56	<b>PAFG402L-A</b>	420	420
3/4	19	<b>1 3/16-12UN-2A</b>	15	49	18	53	71	23.8	50.8	11.0	M 10×35	3/8×1 1/2	0.65	<b>PAFG402L-B</b>	420	420
1	25	<b>1 3/16-12UN-2A</b>	15	56	21	66	80	27.8	57.2	13.0	M 12×45	7/16×1 1/2	0.62	<b>PAFG403L-A</b>	420	420
1	25	<b>1 7/16-12UN-2A</b>	20	56	21	66	80	27.8	57.2	13.0	M 12×45	7/16×1 1/2	0.66	<b>PAFG403L-B</b>	420	420
1 1/4	32	<b>1 7/16-12UN-2A</b>	20	61	24	78	94	31.8	66.6	15.0	M 14×50	1/2×1 3/4	0.95	<b>PAFG404L-A</b>	345	345
1 1/4	32	<b>1 11/16-12UN-2A</b>	26	61	24	78	94	31.8	66.6	15.0	M 14×50	1/2×1 3/4	1.08	<b>PAFG404L-B</b>	345	345
1 1/2	38	<b>1 11/16-12UN-2A</b>	26	65	27	90	106	36.5	79.3	17.0	M 16×55	5/8×2 1/4	1.66	<b>PAFG405L-A</b>	310	310
1 1/2	38	<b>2-12UN-2A</b>	32	67	27	90	106	36.5	79.3	17.0	M 16×55	5/8×2 1/4	1.75	<b>PAFG405L-B</b>	310	310

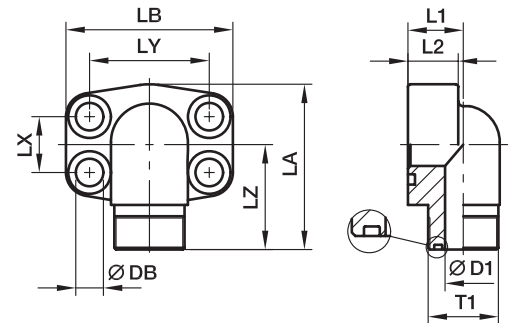
<sup>1)</sup> Pressure shown = Item deliverable

PN (bar) = PN (MPa)  
10

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	PAFG080L-ACF	PAFG080L-ACFM	PAFG080L-ACFU	NBR
Stainless steel	SS	PAFG080L-ASS	PAFG080L-ASSM	—	VIT

**PAFG-90L SAE 90° 4 bolt flange with O-Lok® ORFS end**

 SAE 90° Flange / O-Lok® ORFS end  
 (ISO 6162-1/-2)

**3000 PSI Series**

Nom. flange size		T1	D1	L1	L2	LA	LB	LX	LY	LZ	DB	Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)											(metr.)	(unc.)			CF	SS
1/2	13	<b>11/16-16UN-2A</b>	6	17	16	60	56	17.5	38.1	37	9.0	M 08×30	5/16×1 1/4	0.26	<b>PAFG080/90L-A</b>	348	348
1/2	13	<b>13/16-16UN-2A</b>	9	17	16	60	56	17.5	38.1	39	9.0	M 08×30	5/16×1 1/4	0.29	<b>PAFG080/90L-B</b>	348	348
1/2	13	<b>1-14UN-2A</b>	12	20	16	60	56	17.5	38.1	40	9.0	M 08×30	5/16×1 1/4	0.31	<b>PAFG080/90L-C</b>	348	348
3/4	19	<b>1-14UN-2A</b>	12	20	18	63	66	22.3	47.6	44	11.0	M 10×35	3/8×1 1/2	0.63	<b>PAFG100/90L-A</b>	348	348
3/4	19	<b>1 3/16-12UN-2A</b>	15	25	18	63	66	22.3	47.6	45	11.0	M 10×35	3/8×1 1/2	0.64	<b>PAFG100/90L-B</b>	348	348
1	25	<b>1 3/16-12UN-2A</b>	15	25	19	80	71	26.2	52.4	48	11.0	M 10×35	3/8×1 1/2	0.63	<b>PAFG102/90L-A</b>	348	348
1	25	<b>1 7/16-12UN-2A</b>	20	31	19	80	71	26.2	52.4	49	11.0	M 10×35	3/8×1 1/2	0.66	<b>PAFG102/90L-B</b>	348	348
1 1/4	32	<b>1 7/16-12UN-2A</b>	20	31	22	84	80	30.2	58.7	55	11.5	M 10×40	7/16×1 1/2	1.02	<b>PAFG104/90L-A</b>	278	278
1 1/4	32	<b>1 11/16-12UN-2A</b>	26	31	22	84	80	30.2	58.7	55	11.5	M 10×40	7/16×1 1/2	1.08	<b>PAFG104/90L-B</b>	278	278
1 1/2	38	<b>1 11/16-12UN-2A</b>	26	31	25	88	94	35.7	69.9	59	13.5	M 12×45	1/2×1 3/4	1.66	<b>PAFG106/90L-A</b>	210	210
1 1/2	38	<b>2-12UN-2A</b>	32	37	25	88	94	35.7	69.9	61	13.5	M 12×45	1/2×1 3/4	1.68	<b>PAFG106/90L-B</b>	210	210

**6000 PSI Series**

1/2	13	<b>11/16-16UN-2A</b>	16	17	16	60	57	18.2	40.5	37	9.0	M 08×30	5/16×1 1/4	0.27	<b>PAFG401/90L-A</b>	420	420
1/2	13	<b>13/16-16UN-2A</b>	16	17	16	60	57	18.2	40.5	39	9.0	M 08×30	5/16×1 1/4	0.30	<b>PAFG401/90L-B</b>	420	420
1/2	13	<b>1-14UN-2A</b>	16	20	16	60	57	18.2	40.5	40	9.0	M 08×30	5/16×1 1/4	0.32	<b>PAFG401/90L-C</b>	420	420
3/4	19	<b>1-14UN-2A</b>	19	20	19	68	71	23.8	50.8	48	11.0	M 10×35	3/8×1 1/2	0.64	<b>PAFG402/90L-A</b>	420	420
3/4	19	<b>1 3/16-12UN-2A</b>	19	25	19	68	71	23.8	50.8	50	11.0	M 10×35	3/8×1 1/2	0.65	<b>PAFG402/90L-B</b>	420	420
1	25	<b>1 3/16-12UN-2A</b>	24	25	24	83	80	27.8	57.2	54	13.0	M 12×45	7/16×1 1/2	0.64	<b>PAFG403/90L-A</b>	420	420
1	25	<b>1 7/16-12UN-2A</b>	24	31	24	83	80	27.8	57.2	55	13.0	M 12×45	7/16×1 1/2	0.67	<b>PAFG403/90L-B</b>	420	420
1 1/4	32	<b>1 7/16-12UN-2A</b>	25	31	25	97	94	31.8	66.6	59	15.0	M 14×50	1/2×1 3/4	1.04	<b>PAFG404/90L-A</b>	420	420
1 1/4	32	<b>1 11/16-12UN-2A</b>	25	31	25	97	94	31.8	66.6	59	15.0	M 14×50	1/2×1 3/4	1.10	<b>PAFG404/90L-B</b>	345	345
1 1/2	38	<b>1 11/16-12UN-2A</b>	26	37	26	110	106	36.5	79.3	64	17.0	M 16×55	5/8×2 1/4	1.69	<b>PAFG405/90L-A</b>	345	345
1 1/2	38	<b>2-12UN-2A</b>	26	37	26	110	106	36.5	79.3	66	17.0	M 16×55	5/8×2 1/4	1.71	<b>PAFG405/90L-B</b>	310	310

1) Pressure shown = Item deliverable

 PN (bar) = PN (MPa)  
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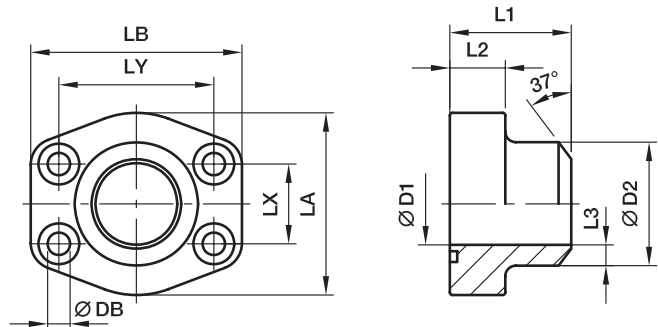
 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	PAFG080/90L-ACF	PAFG080/90L-ACFM	PAFG080/90L-ACFU	NBR
Stainless steel	SS	PAFG080/90L-ASS	PAFG080/90L-ASSM	–	VIT



**PAFS-B SAE Straight 4 bolt flange (butt weld)**

SAE Flange / Butt weld tube end  
(ISO 6162-1/-2)



**3000 PSI Series**

Nom. flange size		⊕ max.											Screws		Weight (steel) kg/piece	PN (bar) <sup>1)</sup>		
SAE (in.)	ISO (DN)		D1	D2	L1	L2	L3	LA	LB	LX	LY	DB	(metr.)	(unc.)		Order code*	S	SS
1/2	13	21.3	13	21.6	36	16	4.3	46	58	17.5	38.1	9.0	M 08×30	5/16×1 1/4	0.28	<b>PAFS080B</b>	345	345
3/4	19	26.9	19	27.2	36	18	4.1	49	66	22.3	47.6	10.5	M 10×35	3/8×1 1/2	0.39	<b>PAFS100B</b>	345	345
1	25	33.7	25	34.5	38	18	4.7	53	71	26.2	52.4	10.5	M 10×35	3/8×1 1/2	0.46	<b>PAFS102B</b>	345	345
1 1/4	32	42.4	31	42.8	41	21	3.0	69	80	30.2	58.7	10.5	M 10×40	7/16×1 1/2	0.66	<b>PAFS104B</b>	276	276
1 1/2	38	48.3	38	48.6	44	25	5.3	77	94	35.7	69.9	13.5	M 12×45	1/2×1 3/4	1.05	<b>PAFS106B</b>	207	207
2	51	60.3	50	61.0	45	25	5.5	89	103	42.9	77.8	13.5	M 12×45	1/2×1 3/4	1.19	<b>PAFS108B</b>	207	207
2 1/2	64	76.1	63	76.6	50	25	6.8	101	115	50.8	88.9	13.5	M 12×45	1/2×1 3/4	1.40	<b>PAFS110B</b>	172	172
3	76	88.9	73	89.0	50	27	8.0	124	135	61.9	106.4	17.0	M 16×55	5/8×2 1/4	2.15	<b>PAFS112B</b>	138	138
3 1/2	89	101.6	89	103.0	50	27	7.0	134	153	69.9	120.7	17.0	M 16×55	5/8×2 1/4	2.40	<b>PAFS114B</b>	34	34
4	102	114.3	99	115.0	50	27	8.0	147	163	77.8	130.2	17.0	M 16×55	5/8×2 1/4	2.85	<b>PAFS116B</b>	34	34
5	127	140.0	120	141.0	50	28	10.5	180	184	92.1	152.4	17.0	M 16×55	5/8×2 1/4	4.85	<b>PAFS118B</b>	34	34

**6000 PSI Series**

1/2	13	17.2	10	17.5	36	18	3.7	46	58	18.2	40.5	9.0	M 08×30	5/16×1 1/4	0.26	<b>PAFS401B38</b>	420	420
1/2	13	21.3	13	21.6	36	18	4.3	46	58	18.2	40.5	9.0	M 08×30	5/16×1 1/4	0.29	<b>PAFS401B</b>	420	420
3/4	19	26.9	18	27.2	36	18	4.6	53	71	23.8	50.8	10.5	M 10×35	3/8×1 1/2	0.50	<b>PAFS402B</b>	420	420
1	25	33.7	22	34.5	44	24	6.3	66	80	27.8	57.2	10.5	M 12×45	7/16×1 1/2	0.76	<b>PAFS403B</b>	420	420
1 1/4	32	42.4	28	42.8	44	25	7.4	77	94	31.8	66.6	15.0	M 14×50	1/2×1 3/4	1.35	<b>PAFS404B</b>	420	420
1 1/2	38	48.3	32	48.6	51	29	8.3	89	106	36.5	79.3	17.0	M 16×55	5/8×2 1/4	1.80	<b>PAFS405B</b>	420	420
2	51	60.3	41	61.0	70	35	10.0	116	135	44.5	96.8	21.0	M 20×70	3/4×2 3/4	2.45	<b>PAFS406B</b>	420	420
2 1/2	64	76.1	50	76.6	75	45	13.0	150	166	58.7	123.8	25.0	M 24×90	–	6.25	<b>PAFS407B</b>	420	420
3	76	88.9	58	90.0	90	55	16.0	178	208	71.4	152.4	32.0	M 30×110	–	8.10	<b>PAFS408B</b>	420	420

<sup>1)</sup>Pressure shown = Item deliverable

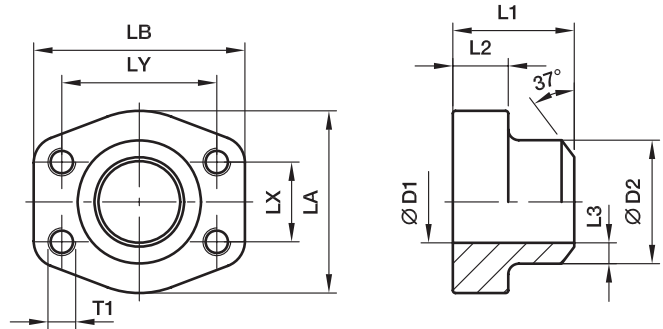
$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PAFS080BS	PAFS080BSSM	PAFS080BSU	NBR
Stainless steel	SS	PAFS080BSS	PAFS080BSSM	–	VIT

**PGFS-B SAE Straight 4 bolt counter flange (butt weld)**

 SAE Counter flange / Butt weld tube end  
 (ISO 6162-1/-2)

**3000 PSI Series**

Nom. flange size		⌀	max.	D1	D2	L1	L2	L3	LA	LB	LX	LY	Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)												(metr.)	(unc.)			S	SS
1/2	13	21.3	13	21.6	36	16	4.3	47	57	17.5	38.1	M 8	5/16	0.25	<b>PGFS080B</b>	345	345	
3/4	19	26.9	19	27.2	36	18	4.1	49	66	22.3	47.6	M10	3/8	0.35	<b>PGFS100B</b>	345	345	
1	25	33.7	25	34.5	38	18	4.7	53	71	26.2	52.4	M10	3/8	0.46	<b>PGFS102B</b>	345	345	
1 1/4	32	42.4	31	42.8	41	21	6.0	69	80	30.2	58.7	M10	7/16	0.66	<b>PGFS104B</b>	276	276	
1 1/2	38	48.3	38	48.6	44	25	5.3	77	94	35.7	69.9	M12	1/2	1.05	<b>PGFS106B</b>	207	207	
2	51	60.3	50	61.0	45	25	5.5	89	103	42.9	77.8	M12	1/2	1.19	<b>PGFS108B</b>	207	207	
2 1/2	64	76.1	63	76.6	50	25	6.8	101	115	50.8	88.9	M12	1/2	1.40	<b>PGFS110B</b>	172	172	
3	76	88.9	73	89.0	50	27	8.0	124	135	61.9	106.4	M16	5/8	2.15	<b>PGFS112B</b>	138	138	
3 1/2	89	101.6	89	103.0	50	27	7.0	134	153	69.9	120.7	M16	5/8	2.40	<b>PGFS114B</b>	34	34	
4	102	114.3	99	115.0	50	27	8.0	147	163	77.8	130.2	M16	5/8	2.85	<b>PGFS116B</b>	34	34	
5	127	140.0	120	141.0	50	28	10.5	180	184	92.1	152.4	M16	5/8	4.90	<b>PGFS118B</b>	34	34	

**6000 PSI Series**

1/2	13	17.2	10	17.5	36	16	3.7	47	57	18.2	40.5	M 8	5/16	0.29	<b>PGFS401B38</b>	420	420
1/2	13	21.3	13	21.6	36	16	4.3	47	57	18.2	40.5	M 8	5/16	0.26	<b>PGFS401B</b>	420	420
3/4	19	26.9	18	27.2	36	19	4.6	53	71	23.8	50.8	M10	3/8	0.50	<b>PGFS402B</b>	420	420
1	25	33.7	22	34.5	44	24	6.3	66	80	27.8	57.2	M12	7/16	0.76	<b>PGFS403B</b>	420	420
1 1/4	32	42.4	28	42.8	44	27	7.4	77	94	31.8	66.6	M14	1/2	1.20	<b>PGFS404B</b>	420	420
1 1/2	38	48.3	32	48.6	51	30	8.3	89	106	36.5	79.3	M16	5/8	1.65	<b>PGFS405B</b>	420	420
2	51	60.3	41	61.0	70	37	10.0	116	135	44.5	96.8	M20	3/4	2.75	<b>PGFS406B</b>	420	420
2 1/2	64	76.1	50	76.6	75	45	13.0	150	166	58.7	123.8	M24	–	6.40	<b>PGFS407B</b>	420	420
3	76	88.9	58	90.0	90	55	16.0	178	208	71.4	152.4	M30	–	8.25	<b>PGFS408B</b>	420	420

<sup>1)</sup>Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

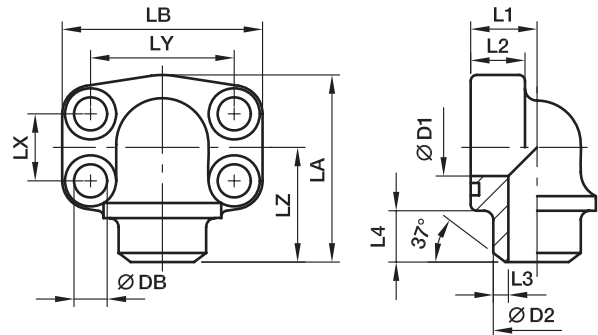
 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes				
Material	Suffix surface and material	Example 4 bolt flange with metr. threads	Example 4 bolt flange with UNC threads	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PGFS080BSM	PGFS080BSU	NBR
Stainless steel	SS	PGFS080BSSM	PGFS080BSSU	VIT

## SAE 4 Bolt flanges

### PAFS-90B SAE 90° 4 bolt flange (butt weld)

SAE 90° Flange / Butt weld tube end  
(ISO 6162-1/-2)



#### 3000 PSI Series

Nom. flange size		max.														Screws		Weight (steel) kg/piece	PN (bar) <sup>1)</sup>		
SAE (in.)	ISO (DN)		D1	D2	L1	L2	L3	L4	LA	LB	LX	LY	LZ	DB	(metr.)	(unc.)	Order code*		S	SS	
1/2	13	21.3	13	21.6	18	16	4.3	12	63	56	17.5	38.1	40	9.0	M 08×30	5/16×1 1/4	0.45	<b>PAFS080/90B</b>	345	345	
3/4	19	26.9	19	27.2	22	18	4.1	12	74	68	22.3	47.6	41	10.5	M 10×35	3/8×1 1/2	0.65	<b>PAFS100/90B</b>	345	345	
1	25	33.7	25	34.5	28	19	4.7	13	77	74	26.2	52.4	50	10.5	M 10×35	3/8×1 1/2	0.85	<b>PAFS102/90B</b>	345	345	
1 1/4	32	42.4	31	42.8	30	22	6.0	13	91	81	30.2	58.7	57	10.5	M 10×40	7/16×1 1/2	1.15	<b>PAFS104/90B</b>	276	276	
1 1/2	38	48.3	38	48.6	36	25	5.3	14	105	95	35.7	69.9	66	13.5	M 12×45	1/2×1 3/4	1.70	<b>PAFS106/90B</b>	207	207	
2	51	60.3	50	61.0	41	25	5.5	15	110	105	42.9	77.8	66	13.5	M 12×45	1/2×1 3/4	2.15	<b>PAFS108/90B</b>	207	207	
2 1/2	64	76.1	60	76.6	50	25	8.0	25	127	115	50.8	88.9	77	13.5	M 12×45	1/2×1 3/4	2.95	<b>PAFS110/90B</b>	172	172	

#### 6000 PSI Series

1/2	13	21.3	13	21.6	18	16	4.3	12	63	56	18.2	40.5	40	9.0	M 08×30	5/16×1 1/4	0.50	<b>PAFS401/90B</b>	420	420
3/4	19	26.9	18	27.2	28	20	4.6	12	77	72	23.8	50.8	50	10.5	M 10×35	3/8×1 1/2	0.55	<b>PAFS402/90B</b>	420	420
1	25	33.7	22	34.5	26	24	6.3	13	91	82	27.8	57.2	57	13.5	M 12×45	7/16×1 1/2	0.80	<b>PAFS403/90B</b>	420	420
1 1/4	32	42.4	28	42.8	36	25	7.4	13	105	95	31.8	66.6	66	15.0	M 14×50	1/2×1 3/4	1.15	<b>PAFS404/90B</b>	420	420
1 1/2	38	48.3	32	48.6	41	26	8.3	15	109	110	36.5	79.3	65	17.0	M 16×55	5/8×2 1/4	2.00	<b>PAFS405/90B</b>	420	420
2	51	60.3	41	61.0	45	35	10.0	15	133	134	44.5	96.8	75	21.0	M 20×70	3/4×2 3/4	3.00	<b>PAFS406/90B</b>	420	420

<sup>1)</sup> Pressure shown = Item deliverable

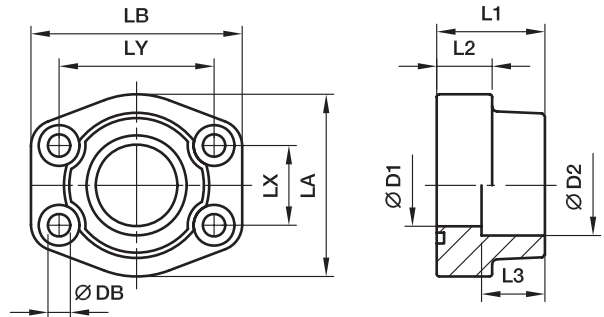
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PAFS080/90BS	PAFS080/90BSM	PAFS080/90BSU	NBR
Stainless steel	SS	PAFS080/90BSS	PAFS080/90BSSM	—	VIT

**PAFS-S SAE Straight 4 bolt flange (socket weld)**

 SAE Flange / Socket weld tube end  
 (ISO 6162-1/-2)

**3000 PSI Series**

Nom. flange size		⌀ max.											Screws		Weight (steel) kg/piece	PN (bar) <sup>1)</sup>		
SAE (in.)	ISO (DN)		D1	D2	L1	L2	L3	LA	LB	LX	LY	DB	(metr.)	(unc.)		Order code*	S	SS
1/2	13	17.2	13	17.5	36	16	18	46	58	17.5	38.1	9.0	M 08×30	5/16×1 1/4	0.25	<b>PAFS080S17.5</b>	345	345
1/2	13	21.3	13	21.6	36	16	18	46	58	17.5	38.1	9.0	M 08×30	5/16×1 1/4	0.28	<b>PAFS080S21.6</b>	345	345
3/4	19	26.9	19	27.2	36	18	18	49	66	22.3	47.6	10.5	M 10×35	3/8×1 1/2	0.39	<b>PAFS100S27.2</b>	345	345
1	25	33.7	25	34.1	38	18	18	53	70	26.2	52.4	10.3	M 10×35	3/8×1 1/2	0.46	<b>PAFS102S34.1</b>	345	345
1 1/4	32	42.4	31	42.8	41	21	20	69	80	30.2	58.7	10.5	M 10×40	7/16×1 1/2	0.66	<b>PAFS104S42.8</b>	276	276
1 1/2	38	48.3	38	48.6	44	25	22	77	94	35.7	69.9	13.5	M 12×45	1/2×1 3/4	1.05	<b>PAFS106S48.6</b>	207	207
2	51	60.3	50	61.0	45	25	24	89	103	42.9	77.8	13.5	M 12×45	1/2×1 3/4	1.19	<b>PAFS108S61</b>	207	207
2 1/2	64	76.1	63	76.6	50	25	28	101	115	50.8	88.9	13.5	M 12×45	1/2×1 3/4	1.40	<b>PAFS110S76.6</b>	172	172
3	76	88.9	73	90.5	50	27	28	124	135	61.9	106.4	17.0	M 16×55	5/8×2 1/4	2.15	<b>PAFS112S90.5</b>	138	138
3 1/2	89	101.6	89	103.0	50	27	28	137	153	69.9	120.7	17.0	M 16×55	5/8×2 1/4	2.40	<b>PAFS114S103</b>	34	34
4	102	114.3	99	115.5	50	27	28	147	163	77.8	130.2	17.0	M 16×55	5/8×2 1/4	2.85	<b>PAFS116S115.5</b>	34	34
5	127	140.0	120	142.0	50	28	28	180	184	92.1	152.4	17.0	M 16×55	5/8×2 1/4	3.25	<b>PAFS118S142</b>	34	34

**6000 PSI Series**

1/2	13	17.2	13	17.5	36	16	18	46	58	18.2	40.5	9.0	M 08×30	5/16×1 1/4	0.26	<b>PAFS401S17.5</b>	420	420
1/2	13	21.3	13	21.6	36	16	18	46	58	18.2	40.5	9.0	M 08×30	5/16×1 1/4	0.29	<b>PAFS401S21.6</b>	420	420
3/4	19	26.9	19	27.2	36	19	20	53	71	23.8	50.8	10.3	M 10×35	3/8×1 1/2	0.50	<b>PAFS402S27.2</b>	420	420
1	25	33.7	25	34.1	44	24	22	66	80	27.8	57.2	13.5	M 12×45	7/16×1 1/2	0.76	<b>PAFS403S34.1</b>	420	420
1 1/4	32	42.4	31	42.8	44	27	22	77	94	31.8	66.6	15.0	M 14×50	1/2×1 3/4	1.20	<b>PAFS404S42.8</b>	420	420
1 1/2	38	48.3	38	48.6	51	30	24	89	106	36.5	79.3	17.0	M 16×55	5/8×2 1/4	1.65	<b>PAFS405S48.6</b>	420	420
2	51	60.3	50	61.0	70	37	25	116	135	44.5	96.8	21.0	M 20×70	3/4×2 3/4	2.45	<b>PAFS406S61</b>	420	420
2 1/2	64	76.1	63	76.6	75	45	28	150	166	58.7	123.8	25.0	M 24×90	–	3.05	<b>PAFS407S76.6</b>	420	420
3	76	88.9	73	90.5	90	55	30	178	208	71.4	152.4	32.0	M 30×110	–	3.45	<b>PAFS408S90.5</b>	420	420

<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

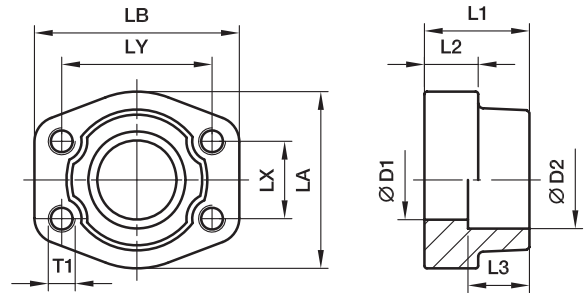
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PAFS080S17.5S	PAFS080S17.5SM	PAFS080S17.5SU	NBR
Stainless steel	SS	PAFS080S17.5SS	PAFS080S17.5SSM	–	VIT

**PGFS-S SAE Straight counter 4 bolt flange (socket weld)**

SAE Counter flange / Socket weld tube end  
(ISO 6162-1/-2)



**3000 PSI Series**

Nom. flange size		⊕ max.											Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)		D1	D2	L1	L2	L3	LA	LB	LX	LY	DB	(metr.)	(unc.)			S	SS
1/2	13	17.2	13	17.5	36	18	16	46	58	17.5	38.1	9.0	M 8	5/16	0.25	<b>PGFS080S17.5</b>	345	345
1/2	13	21.3	13	21.6	36	18	16	46	58	17.5	38.1	9.0	M 8	5/16	0.28	<b>PGFS080S21.6</b>	345	345
3/4	19	26.9	19	27.2	36	18	18	49	66	22.3	47.6	10.5	M10	3/8	0.39	<b>PGFS100S27.2</b>	345	345
1	25	33.7	25	34.1	38	18	18	53	70	26.2	52.4	10.5	M10	3/8	0.46	<b>PGFS102S34.1</b>	345	345
1 1/4	32	42.4	31	42.8	41	20	21	69	80	30.2	58.7	10.5	M10	7/16	0.66	<b>PGFS104S42.8</b>	276	276
1 1/2	38	48.3	38	48.6	44	22	25	77	94	35.7	69.9	13.5	M12	1/2	1.05	<b>PGFS106S48.6</b>	207	207
2	51	60.3	50	61.0	45	24	25	89	103	42.9	77.8	13.5	M12	1/2	1.19	<b>PGFS108S61</b>	207	207
2 1/2	64	76.1	63	76.6	50	28	25	101	115	50.8	88.9	13.5	M12	1/2	1.40	<b>PGFS110S76.6</b>	172	172
3	76	88.9	73	90.5	50	28	27	124	135	61.9	106.4	17.0	M16	5/8	2.15	<b>PGFS112S90.5</b>	138	138
3 1/2	89	101.6	89	103.0	50	28	27	137	153	69.9	120.7	17.0	M16	5/8	2.40	<b>PGFS114S103</b>	34	34
4	102	114.3	99	115.5	50	28	27	147	163	77.8	130.2	17.0	M16	5/8	2.85	<b>PGFS116S115.5</b>	34	34
5	127	140.0	120	142.0	50	28	28	180	184	92.1	152.4	17.0	M16	5/8	3.25	<b>PGFS118S142</b>	34	34

**6000 PSI Series**

1/2	13	17.2	13	17.5	36	18	16	46	58	18.2	40.5	9.0	M 8	5/16	0.26	<b>PGFS401S17.5</b>	420	420
1/2	13	21.3	13	21.6	36	18	16	46	58	18.2	40.5	9.0	M 8	5/16	0.29	<b>PGFS401S21.6</b>	420	420
3/4	19	26.9	19	27.2	36	20	19	53	71	23.8	50.8	10.5	M10	3/8	0.50	<b>PGFS402S27.2</b>	420	420
1	25	33.7	25	34.1	44	22	24	66	80	27.8	57.2	13.5	M12	7/16	0.76	<b>PGFS403S34.1</b>	420	420
1 1/4	32	42.4	31	42.8	44	22	27	77	94	31.8	66.6	15.0	M14	1/2	1.20	<b>PGFS404S42.8</b>	420	420
1 1/2	38	48.3	38	48.6	51	24	30	89	106	36.5	79.3	17.0	M16	5/8	1.65	<b>PGFS405S48.6</b>	420	420
2	51	60.3	50	61.0	70	25	37	116	135	44.5	96.8	21.0	M20	3/4	2.45	<b>PGFS406S61</b>	420	420
2 1/2	64	76.1	63	76.6	75	28	45	150	166	58.7	123.8	25.0	M24	-	3.05	<b>PGFS407S76.6</b>	420	420
3	76	88.9	73	90.5	90	30	55	178	208	71.4	152.4	32.0	M30	-	3.45	<b>PGFS408S90.5</b>	420	420

<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

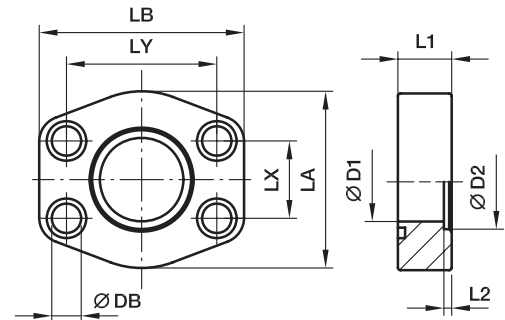
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes				
Material	Suffix surface and material	Example 4 bolt flange with metr. threads	Example 4 bolt flange with UNC threads	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PGFS080S17.5SM	PGFS080S17.5SU	NBR
Stainless steel	SS	PGFS080S17.5SSM	PGFS080S17.5SSU	VIT

**PAFSF-S SAE Straight 4 bolt flange flat (socket weld)**

 SAE Flange / Socket weld tube end  
 (ISO 6162-1/-2)

only for low pressure applications


**3000 PSI Series**

Nom. flange size		max.	D1	D2	L1	L2	LA	LB	LX	LY	DB	Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)											(metr.)	(unc.)			S	SS
1/2	13	17.2	13	17.5	16	3	46	58	17.5	38.1	9.0	M 08×30	5/16×1 1/4	0.12	<b>PAFSF080S17.5</b>	40	40
1/2	13	21.3	13	21.6	16	3	46	58	17.5	38.1	9.0	M 08×30	5/16×1 1/4	0.12	<b>PAFSF080S21.6</b>	40	40
3/4	19	21.3	13	21.6	18	4	49	66	22.3	47.6	10.5	M 10×35	3/8×1 1/2	0.20	<b>PAFSF100S21.6</b>	40	40
3/4	19	26.9	19	27.2	18	4	49	66	22.3	47.6	10.5	M 10×35	3/8×1 1/2	0.20	<b>PAFSF100S27.2</b>	40	40
1	25	26.9	19	27.2	19	4	53	71	26.2	52.4	10.5	M 10×35	3/8×1 1/2	0.25	<b>PAFSF102S27.2</b>	40	40
1	25	33.7	25	34.5	19	4	53	71	26.2	52.4	10.5	M 10×35	3/8×1 1/2	0.25	<b>PAFSF102S34.5</b>	40	40
1 1/4	32	33.7	25	34.5	21	4	69	80	30.2	58.7	10.5	M 10×40	7/16×1 1/2	0.31	<b>PAFSF104S34.5</b>	40	40
1 1/4	32	42.4	31	42.8	21	4	69	80	30.2	58.7	10.5	M 10×40	7/16×1 1/2	0.31	<b>PAFSF104S42.8</b>	40	40
1 1/2	38	42.4	31	42.8	24	4	77	95	35.7	69.9	13.5	M 12×45	1/2×1 3/4	0.50	<b>PAFSF106S42.8</b>	40	40
1 1/2	38	48.3	38	48.6	24	4	77	95	35.7	69.9	13.5	M 12×45	1/2×1 3/4	0.50	<b>PAFSF106S48.6</b>	40	40
2	51	48.3	38	48.6	24	4	89	103	42.9	77.8	13.5	M 12×45	1/2×1 3/4	0.59	<b>PAFSF108S48.6</b>	40	40
2	51	60.3	50	61.0	24	4	89	103	42.9	77.8	13.5	M 12×45	1/2×1 3/4	0.59	<b>PAFSF108S61.0</b>	40	40
2 1/2	64	60.3	50	61.0	25	5	101	116	50.8	88.9	13.5	M 12×45	1/2×1 3/4	0.72	<b>PAFSF110S61.0</b>	40	40
2 1/2	64	76.1	63	76.6	25	5	101	116	50.8	88.9	13.5	M 12×45	1/2×1 3/4	0.72	<b>PAFSF110S76.6</b>	40	40
3	76	76.1	63	76.6	25	5	124	136	61.9	106.4	17.0	M 16×55	5/8×2 1/4	1.25	<b>PAFSF112S76.6</b>	30	30
3	76	88.9	73	90.5	25	5	124	136	61.9	106.4	17.0	M 16×55	5/8×2 1/4	1.25	<b>PAFSF112S90.5</b>	30	30
3 1/2	89	88.9	73	90.5	25	5	136	152	69.9	120.7	17.0	M 16×55	5/8×2 1/4	1.50	<b>PAFSF114S90.5</b>	30	30
3 1/2	89	101.6	89	103.0	25	5	136	152	69.9	120.7	17.0	M 16×55	5/8×2 1/4	1.50	<b>PAFSF114S103</b>	30	30
4	102	101.6	89	103.0	25	6	146	162	77.8	130.2	17.0	M 16×55	5/8×2 1/4	2.15	<b>PAFSF116S103</b>	30	30
4	102	114.3	99	115.5	25	6	146	162	77.8	130.2	17.0	M 16×55	5/8×2 1/4	2.15	<b>PAFSF116S115.5</b>	30	30
5	127	114.3	99	115.5	25	6	180	184	92.1	152.4	17.0	M 16×55	5/8×2 1/4	3.00	<b>PAFSF118S115.5</b>	30	30
5	127	140.0	120	142.5	25	6	180	184	92.1	135.0	17.0	M 16×55	5/8×2 1/4	3.00	<b>PAFSF118S142.5</b>	30	30

**6000 PSI Series**

1/2	13	17.2	13	17.5	16	4	46	58	18.2	40.5	9.0	M 08×30	5/16×1 1/4	0.12	<b>PAFSF401S17.5</b>	40	40
1/2	13	21.3	13	21.6	16	4	46	58	18.2	40.5	9.0	M 08×30	5/16×1 1/4	0.12	<b>PAFSF401S21.6</b>	40	40
3/4	19	21.3	13	21.6	19	4	53	71	23.8	50.8	10.5	M 10×35	3/8×1 1/2	0.20	<b>PAFSF402S21.6</b>	40	40
3/4	19	26.9	19	27.2	19	4	53	71	23.8	50.8	10.5	M 10×35	3/8×1 1/2	0.20	<b>PAFSF402S27.2</b>	40	40
1	25	26.9	19	27.2	24	4	66	80	27.8	57.2	13.5	M 12×45	7/16×1 1/2	0.25	<b>PAFSF403S27.2</b>	40	40
1	25	33.7	25	34.5	24	4	66	80	27.8	57.2	13.5	M 12×45	7/16×1 1/2	0.25	<b>PAFSF403S34.5</b>	40	40
1 1/4	32	33.7	25	34.5	27	4	77	94	31.8	66.6	15.0	M 14×50	1/2×1 3/4	0.31	<b>PAFSF404S34.5</b>	40	40
1 1/4	32	42.4	31	42.8	27	4	77	94	31.8	66.6	15.0	M 14×50	1/2×1 3/4	0.31	<b>PAFSF404S42.8</b>	40	40
1 1/2	38	42.4	31	42.8	30	4	89	103	36.5	79.3	17.0	M 16×55	5/8×2 1/4	0.50	<b>PAFSF405S42.8</b>	40	40
1 1/2	38	48.3	38	48.6	30	4	89	103	36.5	79.3	17.0	M 16×55	5/8×2 1/4	0.50	<b>PAFSF405S48.6</b>	40	40
2	51	48.3	38	48.6	35	4	123	135	44.5	96.8	21.0	M 20×70	3/4×2 3/4	0.59	<b>PAFSF406S48.6</b>	40	40
2	51	60.3	50	61.0	35	4	123	135	44.5	96.8	21.0	M 20×70	3/4×2 3/4	0.59	<b>PAFSF406S61.0</b>	40	40

The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

 \*Please add the **suffixes** below according to the material/surface required.

<sup>1)</sup> Pressure shown = Item deliverable

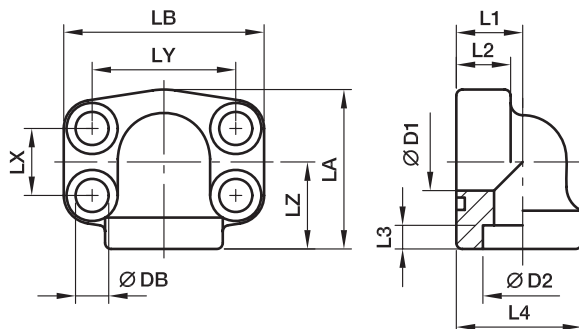
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PAFSF080S17.5S	PAFSF080S17.5SM	PAFSF080S17.5SU	NBR
Stainless steel	SS	PAFSF080S17.5SS	PAFSF080S17.5SSM	—	VIT

## SAE 4 Bolt flanges

### PAFS-90S SAE 90° 4 bolt flange (socket weld)

SAE 90° Flange / Socket weld tube end  
(ISO 6162-1/-2)



#### 3000 PSI Series

Nom. flange size		⊕ max.														Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)		D1	D2	L1	L2	L3	L4	LA	LB	LX	LY	LZ	DB	(metr.)	(unc.)	S			SS	
1/2	13	21.3	13	21.6	18	17	5	34.0	51	57	17.5	38.1	28	9.0	M 08×30	5/16×1 1/4	0.35	<b>PAFS080/90S21.6</b>	345	345	
3/4	19	26.9	19	27.2	22	18	5	38.5	50	68	22.2	47.6	25	10.5	M 10×35	3/8×1 1/2	0.55	<b>PAFS100/90S27.2</b>	345	345	
1	25	33.7	25	34.1	28	19	6	44.5	55	72	26.2	52.4	28	10.5	M 10×35	3/8×1 1/2	0.80	<b>PAFS102/90S34.1</b>	345	345	
1 1/4	32	42.4	31	42.8	30	22	7	53.5	68	82	30.2	58.7	34	10.5	M 10×40	7/16×1 1/2	1.30	<b>PAFS104/90S42.8</b>	276	276	
1 1/2	38	48.3	38	48.6	36	25	8	62.5	82	95	35.7	69.9	43	13.5	M 12×45	1/2×1 3/4	1.60	<b>PAFS106/90S48.6</b>	207	207	
2	51	60.3	50	61.0	41	25	10	77.0	94	105	42.9	77.8	50	13.5	M 12×45	1/2×1 3/4	2.00	<b>PAFS108/90S61</b>	207	207	
2 1/2	64	76.1	60	76.6	50	25	28	85.0	127	115	50.8	88.9	77	13.5	M 12×45	1/2×1 3/4	2.60	<b>PAFS110/90S76.6</b>	172	172	

#### 6000 PSI Series

1/2	13	21.3	13	21.6	18	17	5	34.0	51	57	18.2	40.5	28	9.0	M 08×30	5/16×1 1/4	0.35	<b>PAFS401/90S21.6</b>	420	420
3/4	19	26.9	19	27.2	28	19	6	44.5	55	72	23.8	50.8	28	10.5	M 10×35	3/8×1 1/2	0.80	<b>PAFS402/90S27.2</b>	420	420
1	25	33.7	25	34.1	30	24	7	53.5	68	82	27.8	57.2	34	13.5	M 12×50	7/16×1 1/2	1.30	<b>PAFS403/90S34.1</b>	420	420
1 1/4	32	42.4	31	42.8	36	25	8	62.5	82	95	31.8	66.6	43	15.0	M 14×45	1/2×1 3/4	1.60	<b>PAFS404/90S42.8</b>	420	420
1 1/2	38	48.3	38	48.6	41	26	10	77.0	94	110	36.5	79.3	50	17.0	M 16×55	5/8×2 1/4	2.00	<b>PAFS405/90S48.6</b>	420	420
2	51	60.3	50	61.0	45	35	12	89.0	123	134	44.5	96.8	65	21.0	M 20×70	3/4×2 3/4	2.50	<b>PAFS406/90S61</b>	420	420

<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

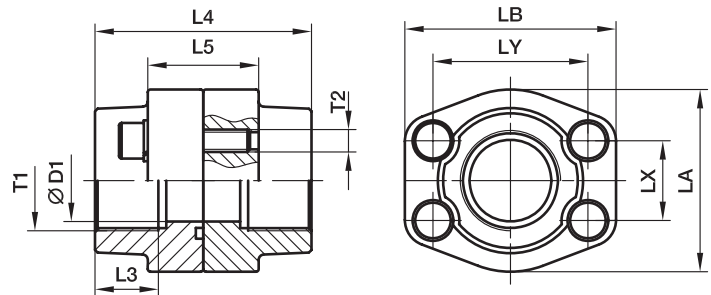
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only 4 bolt flange	Example 4 bolt flange incl. metr. screws and O-ring	Example 4 bolt flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PAFS080/90S21.6S	PAFS080/90S21.6SM	PAFS080/90S21.6SU	NBR
Stainless steel	SS	PAFS080/90S21.6SS	PAFS080/90S21.6SSM	–	VIT



**PDFS-G SAE Straight 4 bolt flange connection**

 SAE Flange / Female BSP thread  
 (ISO 6162-1/-2) (ISO 1179-1)

**3000 PSI Series**

Nom. flange size		T1	D1	L3	L4	L5	LA	LB	LX	LY	T2		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)										(metr.)	(unc.)			S	SS
1/2	13	<b>G 3/8</b>	13	19	72	32	47	57	17.5	38.1	M 8	5/16	0.50	<b>PDFS080G38</b>	345	345
1/2	13	<b>G 1/2</b>	13	19	72	32	47	57	17.5	38.1	M 8	5/16	0.56	<b>PDFS080G</b>	345	345
3/4	19	<b>G 3/4</b>	19	19	72	36	49	66	22.3	47.6	M10	3/8	0.78	<b>PDFS100G</b>	345	345
1	25	<b>G 1</b>	25	19	76	36	53	71	26.2	52.4	M10	3/8	0.92	<b>PDFS102G</b>	345	345
1 1/4	32	<b>G 1 1/4</b>	31	22	82	42	69	80	30.2	58.7	M10	7/16	1.32	<b>PDFS104G</b>	276	276
1 1/2	38	<b>G 1 1/2</b>	38	24	88	48	77	94	35.7	69.9	M12	1/2	2.10	<b>PDFS106G</b>	207	207
2	51	<b>G 2</b>	50	26	90	48	89	103	42.9	77.8	M12	1/2	2.38	<b>PDFS108G</b>	207	207
2 1/2	64	<b>G 2 1/2</b>	63	30	100	48	101	115	50.8	88.9	M12	1/2	2.80	<b>PDFS110G</b>	172	172
3	76	<b>G 3</b>	73	34	100	53	124	135	61.9	106.4	M16	5/8	4.30	<b>PDFS112G</b>	138	138
3 1/2	89	<b>G 3 1/2</b>	89	27	100	54	136	152	69.9	120.7	M16	5/8	4.80	<b>PDFS114G</b>	34	34
4	102	<b>G 4</b>	99	30	100	54	146	162	77.8	130.2	M16	5/8	5.70	<b>PDFS116G</b>	34	34
5	127	<b>G 5</b>	120	30	100	54	180	184	92.1	152.4	M16	5/8	6.60	<b>PDFS118G</b>	34	34

**6000 PSI Series**

1/2	13	<b>G 3/8</b>	13	19	72	32	47	57	18.2	40.5	M 8	5/16	0.52	<b>PDFS401G38</b>	420	420
1/2	13	<b>G 1/2</b>	13	19	72	32	47	57	18.2	40.5	M 8	5/16	0.58	<b>PDFS401G</b>	420	420
3/4	19	<b>G 3/4</b>	19	22	72	38	53	71	23.8	50.8	M10	3/8	1.00	<b>PDFS402G</b>	420	420
1	25	<b>G 1</b>	25	24	88	48	69	80	27.8	57.2	M12	7/16	1.52	<b>PDFS403G</b>	420	420
1 1/4	32	<b>G 1 1/4</b>	31	25	88	54	77	94	31.8	66.6	M14	1/2	2.40	<b>PDFS404G</b>	420	420
1 1/2	38	<b>G 1 1/2</b>	38	28	102	60	89	106	36.5	79.3	M16	5/8	3.30	<b>PDFS405G</b>	420	420
2	51	<b>G 2</b>	50	33	140	74	116	135	44.5	96.8	M20	3/4	4.90	<b>PDFS406G</b>	420	420
2 1/2	64	<b>G 2 1/2</b>	63	35	150	90	150	166	58.7	123.8	M24	–	6.50	<b>PDFS407G</b>	420	420
3	76	<b>G 3</b>	73	40	180	110	178	208	71.4	152.4	M30	–	8.00	<b>PDFS408G</b>	420	420

<sup>1)</sup> Pressure shown = Item deliverable

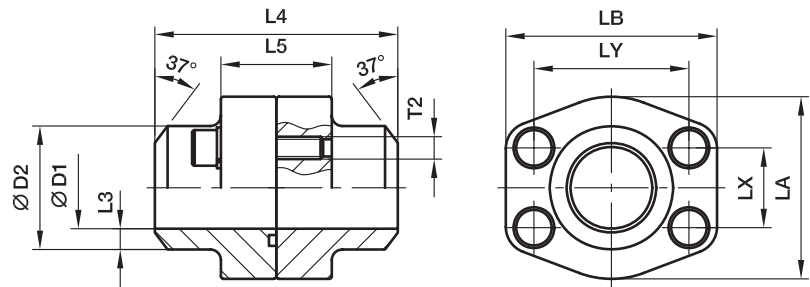
$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes				
Material	Suffix surface and material	Example 4 bolt flange coupling incl. metr. screws and O-ring	Example 4 bolt flange coupling incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PDFS080GS	PDFS080GSU	NBR
Stainless steel	SS	PDFS080GSS	–	VIT



**PDFS-B SAE Straight 4 bolt flange connection (butt weld)**

 SAE Flange / Butt weld tube end  
 (ISO 6162-1/-2)

**3000 PSI Series**

Nom. flange size		⊕ max.	D1	D2	L3	L4	L5	LA	LB	LX	LY	T2		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)											(metr.)	(unc.)			S	SS
1/2	13	21.3	13	21.6	4.3	72	32	47	57	17.5	38.1	M 8	5/16	0.50	<b>PDFS080B</b>	345	345
3/4	19	26.9	19	27.2	4.1	72	36	49	66	22.3	47.6	M10	3/8	0.56	<b>PDFS100B</b>	345	345
1	25	33.7	25	34.5	4.7	76	36	53	71	26.2	52.4	M10	3/8	0.78	<b>PDFS102B</b>	345	345
1 1/4	32	42.4	31	42.8	6.0	82	42	69	80	30.2	58.7	M10	7/16	0.92	<b>PDFS104B</b>	345	345
1 1/2	38	48.3	38	48.6	5.3	88	48	77	94	35.7	69.9	M12	1/2	1.32	<b>PDFS106B</b>	276	276
2	51	60.3	50	61.0	5.5	90	48	89	103	42.9	77.8	M12	1/2	2.10	<b>PDFS108B</b>	207	207
2 1/2	64	76.1	63	76.6	6.8	100	48	101	115	50.8	88.9	M12	1/2	2.38	<b>PDFS110B</b>	207	207
3	76	88.9	73	89.0	8.0	100	53	124	135	61.9	106.4	M16	5/8	2.80	<b>PDFS112B</b>	172	172
3 1/2	89	101.6	89	103.0	7.0	100	54	137	153	69.9	120.7	M16	5/8	4.30	<b>PDFS114B</b>	138	138
4	102	114.3	99	115.0	8.0	100	54	147	163	77.8	130.2	M16	5/8	4.80	<b>PDFS116B</b>	34	34
5	127	140.0	120	141.0	10.5	100	54	180	184	92.1	152.4	M16	5/8	5.70	<b>PDFS118B</b>	34	34

**6000 PSI Series**

1/2	13	17.2	10	17.5	3.7	72	32	47	57	18.2	40.5	M 8	5/16	0.52	<b>PDFS401B38</b>	420	420
1/2	13	21.3	13	21.6	4.3	72	32	47	57	18.2	40.5	M 8	5/16	0.58	<b>PDFS401B</b>	420	420
3/4	19	26.9	18	27.2	4.6	72	38	53	71	23.8	50.8	M10	3/8	1.00	<b>PDFS402B</b>	420	420
1	25	33.7	22	34.5	6.3	88	48	66	80	27.8	57.2	M12	7/16	1.52	<b>PDFS403B</b>	420	420
1 1/4	32	42.4	28	42.8	7.4	88	54	77	94	31.8	66.5	M14	1/2	2.40	<b>PDFS404B</b>	420	420
1 1/2	38	48.3	32	48.6	8.3	102	60	89	106	36.5	79.3	M16	5/8	3.30	<b>PDFS405B</b>	420	420
2	51	60.3	41	61.0	10.0	140	74	116	135	44.5	96.8	M20	3/4	4.90	<b>PDFS406B</b>	420	420
2 1/2	64	76.1	50	76.6	13.0	150	90	150	166	58.7	123.8	M24	–	6.50	<b>PDFS407B</b>	420	420
3	76	88.9	58	90.0	16.0	180	110	178	208	71.4	152.4	M30	–	8.00	<b>PDFS408B</b>	420	420

<sup>1)</sup>Pressure shown = Item deliverable

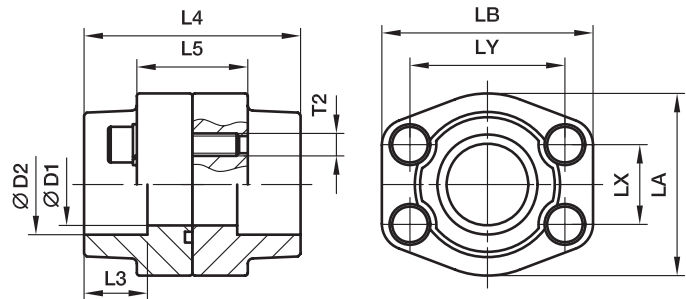
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes				
Material	Suffix surface and material	Example 4 bolt flange coupling incl. metr. screws and O-ring	Example 4 bolt flange coupling incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PDFS080BS	PDFS080BSU	NBR
Stainless steel	SS	PDFS080BSS	–	VIT

**PDFS-S SAE Straight 4 bolt flange connection (socket weld)**

 SAE Flange / Socket weld tube end  
 (ISO 6162-1/-2)

**3000 PSI Series**

Nom. flange size		⊕ max.	D1	D2	L3	L4	L5	LA	LB	LX	LY	T2		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)											(metr.)	(unc.)			S	SS
1/2	13	17.2	13	17.5	18	72	36	47	57	17.5	38.1	M 8	5/16	0.50	<b>PDFS080S17.5</b>	345	345
1/2	13	21.3	13	21.6	18	72	36	47	57	17.5	38.1	M 8	5/16	0.50	<b>PDFS080S21.6</b>	345	345
3/4	19	26.9	19	27.2	18	72	36	49	66	22.3	47.6	M10	3/8	0.56	<b>PDFS100S27.2</b>	345	345
1	25	33.7	25	34.1	18	76	36	53	71	26.2	52.4	M10	3/8	0.78	<b>PDFS102S34.1</b>	345	345
1 1/4	32	42.4	31	42.8	20	82	42	69	80	30.2	58.7	M10	7/16	0.92	<b>PDFS104S42.8</b>	345	345
1 1/2	38	48.3	38	48.6	22	88	48	77	94	35.7	69.9	M12	1/2	1.32	<b>PDFS106S48.6</b>	276	276
2	51	60.3	50	61.0	24	90	48	89	103	42.9	77.8	M12	1/2	2.10	<b>PDFS108S61</b>	207	207
2 1/2	64	76.1	63	76.6	28	100	48	101	116	50.8	88.9	M12	1/2	2.38	<b>PDFS110S76.6</b>	207	207
3	76	88.9	73	90.5	28	100	53	124	135	61.9	106.4	M16	5/8	2.80	<b>PDFS112S90.5</b>	172	172
3 1/2	89	101.6	89	103.0	28	100	54	137	153	69.9	120.7	M16	5/8	4.30	<b>PDFS114S103</b>	138	138
4	102	114.3	99	115.5	28	100	54	147	163	77.8	130.2	M16	5/8	4.80	<b>PDFS116S115.5</b>	34	34
5	127	140.0	120	142.0	28	100	54	180	184	92.1	152.4	M16	5/8	5.70	<b>PDFS118S142</b>	34	34

**6000 PSI Series**

1/2	13	17.2	13	17.5	18	72	32	47	57	18.2	40.5	M 8	5/16	0.52	<b>PDFS401S17.5</b>	420	420
1/2	13	21.3	13	21.6	18	72	32	47	57	18.2	40.5	M 8	5/16	0.58	<b>PDFS401S21.6</b>	420	420
3/4	19	26.9	19	27.2	20	72	38	53	71	23.8	50.8	M10	3/8	1.00	<b>PDFS402S27.2</b>	420	420
1	25	33.7	25	34.1	22	88	48	66	80	27.8	57.2	M12	7/16	1.52	<b>PDFS403S34.1</b>	420	420
1 1/4	32	42.4	31	42.8	22	88	54	77	94	31.8	66.6	M14	1/2	2.40	<b>PDFS404S42.8</b>	420	420
1 1/2	38	48.3	38	48.6	24	102	60	89	106	36.5	79.3	M16	5/8	3.30	<b>PDFS405S48.6</b>	420	420
2	51	60.3	50	61.0	25	140	74	116	135	44.5	96.8	M20	3/4	4.90	<b>PDFS406S61</b>	420	420
2 1/2	64	76.1	63	76.6	28	150	90	150	166	58.7	123.8	M24	–	6.50	<b>PDFS407S76.6</b>	420	420
3	76	88.9	73	90.5	30	180	110	178	208	71.4	152.4	M30	–	8.00	<b>PDFS408S90.5</b>	420	420

<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

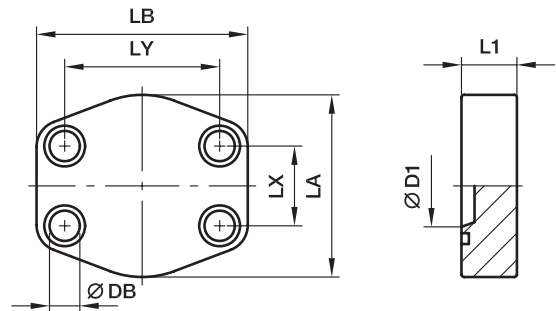
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes				
Material	Suffix surface and material	Example 4 bolt flange coupling incl. metr. screws and O-ring	Example 4 bolt flange coupling incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PDFS080S17.5S	PDFS080S17.5SU	NBR
Stainless steel	SS	PDFS080S17.5SS	–	VIT

## PCFF SAE Closed flange

SAE Closed flange  
(ISO 6162-1/-2)



### 3000 PSI Series

Nom. flange size		D1	L1	LA	LB	LX	LY	DB	Screws		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)								(metr.)	(unc.)			S	SS
1/2	13	13	16	46	58	17.5	38.1	9.0	M 08×30	5/16×1 1/4	0.30	<b>PCFF32</b>	345	345
3/4	19	15	18	49	66	22.3	47.6	10.5	M 10×35	3/8×1 1/2	0.37	<b>PCFF33</b>	345	345
1	25	18	19	53	71	26.2	52.4	10.5	M 10×35	3/8×1 1/2	0.54	<b>PCFF34</b>	345	345
1 1/4	32	23	21	69	80	30.2	58.7	10.5	M 10×40	7/16×1 1/2	0.90	<b>PCFF35</b>	276	276
1 1/2	38	28	24	77	95	35.7	69.9	13.5	M 12×45	1/2×1 3/4	1.03	<b>PCFF36</b>	207	207
2	51	45	24	89	103	42.9	77.8	13.5	M 12×45	1/2×1 3/4	1.30	<b>PCFF38</b>	207	207
2 1/2	64	58	25	101	116	50.8	88.9	13.5	M 12×45	1/2×1 3/4	1.45	<b>PCFF310</b>	172	172
3	76	70	25	124	136	61.9	106.4	17.0	M 16×55	5/8×2 1/4	2.72	<b>PCFF312</b>	138	138
3 1/2	89	85	25	136	152	69.9	120.7	17.0	M 16×55	5/8×2 1/4	2.90	<b>PCFF314</b>	34	34
4	102	95	25	146	162	77.8	130.2	17.0	M 16×55	5/8×2 1/4	3.85	<b>PCFF316</b>	34	34
5	127	110	25	180	184	92.1	152.4	17.0	M 16×55	5/8×2 1/4	4.20	<b>PCFF320</b>	34	34

### 6000 PSI Series

1/2	13	13	16	46	58	18.2	40.5	9.0	M 08×30	5/16×1 1/4	0.30	<b>PCFF62</b>	420	420
3/4	19	15	19	53	71	23.8	50.8	10.5	M 10×35	3/8×1 1/2	0.44	<b>PCFF63</b>	420	420
1	25	22	24	66	80	27.8	57.2	13.5	M 12×45	7/16×1 1/2	0.73	<b>PCFF64</b>	420	420
1 1/4	32	30	27	77	94	31.8	66.6	15.0	M 14×50	1/2×1 3/4	0.85	<b>PCFF65</b>	420	420
1 1/2	38	35	30	89	103	36.5	79.3	17.0	M 16×55	5/8×2 1/4	1.61	<b>PCFF66</b>	420	420
2	51	48	35	123	135	44.5	96.8	21.0	M 20×70	3/4×2 3/4	3.31	<b>PCFF68</b>	420	420
2 1/2	64	55	45	150	166	58.7	123.8	25.0	M 24×90	–	4.50	<b>PCFF610</b>	420	420
3	76	65	55	178	208	71.4	152.4	32.0	M 30×110	–	5.30	<b>PCFF612</b>	420	420

<sup>1)</sup> Pressure shown = Item deliverable

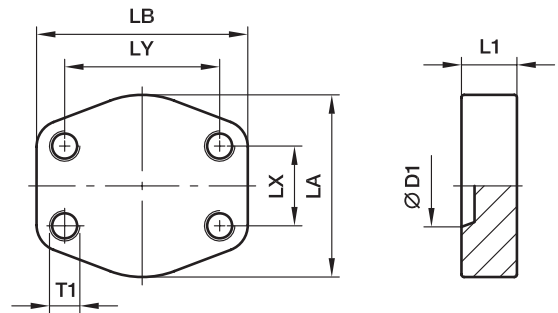
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes					
Material	Suffix surface and material	Example only closed flange	Example closed flange incl. metr. screws and O-ring	Example closed flange incl. UNC screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PCFF32S	PCFF32SM	PCFF32SU	NBR
Stainless steel	SS	PCFF32SS	PCFF32SSM	–	VIT

## PCCFF SAE Closed counter flange

SAE Closed counter flange  
(ISO 6162-1/-2)



### 3000 PSI Series

Nom. flange size		D1	L1	LA	LB	LX	LY	T1		Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)							(metr.)	(unc.)			S	SS
1/2	13	13	16	46	58	17.5	38.1	M 8	5/16	0.30	<b>PCCFF32</b>	345	345
3/4	19	15	18	49	66	22.3	47.6	M10	3/8	0.37	<b>PCCFF33</b>	345	345
1	25	18	19	53	71	26.2	52.4	M10	3/8	0.54	<b>PCCFF34</b>	345	345
1 1/4	32	23	21	69	80	30.2	58.7	M10	7/16	0.90	<b>PCCFF35</b>	276	276
1 1/2	38	28	24	77	95	35.7	69.9	M12	1/2	1.03	<b>PCCFF36</b>	207	207
2	51	45	24	89	103	42.9	77.8	M12	1/2	1.20	<b>PCCFF38</b>	207	207
2 1/2	64	58	25	101	116	50.8	88.9	M12	1/2	1.45	<b>PCCFF310</b>	172	172
3	76	70	25	124	136	61.9	106.4	M16	5/8	2.72	<b>PCCFF312</b>	138	138
3 1/2	89	85	25	136	152	69.9	120.7	M16	5/8	2.90	<b>PCCFF314</b>	34	34
4	102	95	25	146	162	77.8	130.2	M16	5/8	3.85	<b>PCCFF316</b>	34	34
5	127	110	25	180	184	92.1	152.4	M16	5/8	4.20	<b>PCCFF320</b>	34	34

### 6000 PSI Series

1/2	13	13	16	46	58	18.2	40.5	M 8	5/16	0.30	<b>PCCFF62</b>	420	420
3/4	19	15	19	53	71	23.8	50.8	M10	3/8	0.44	<b>PCCFF63</b>	420	420
1	25	22	24	66	80	27.8	57.2	M12	7/16	0.73	<b>PCCFF64</b>	420	420
1 1/4	32	30	27	77	94	31.8	66.6	M14	1/2	0.85	<b>PCCFF65</b>	420	420
1 1/2	38	35	30	89	103	36.5	79.3	M16	5/8	1.61	<b>PCCFF66</b>	420	420
2	51	48	35	123	135	44.5	96.8	M20	3/4	3.31	<b>PCCFF68</b>	420	420
2 1/2	64	55	45	150	166	58.7	123.8	M24	–	4.50	<b>PCCFF610</b>	420	420
3	76	65	55	178	208	71.4	152.4	M30	–	5.30	<b>PCCFF612</b>	420	420

<sup>1)</sup> Pressure shown = Item deliverable

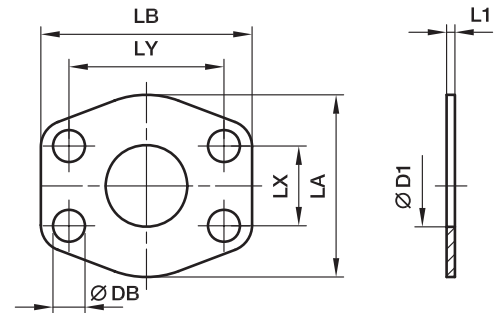
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes				
Material	Suffix surface and material	Example closed flange with metr. threads	Example closed flange with UNC threads	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PCCF32SM	PCCFF32SU	NBR
Stainless steel	SS	PCCFF32SSM	PCCFF32SSU	VIT

## CPM SAE Flange connector plate

ISO 6162-1/-2



### 3000 PSI Series

Nom. flange size		D1	L1	LA	LB	LX	LY	DB	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)										CF	SS
1/2	13	13	3	47	57	17.5	38.1	9.0	0.01	<b>8CPM1</b>	345	345
3/4	19	19	3	49	66	22.3	47.6	11.0	0.01	<b>12CPM1</b>	345	345
1	25	25	3	53	71	26.2	52.4	11.0	0.01	<b>16CPM1</b>	345	345
1 1/4	32	32	3	69	80	30.2	58.7	11.5	0.02	<b>20CPM1</b>	276	276
1 1/2	38	38	3	77	95	35.7	69.9	13.5	0.02	<b>24CPM1</b>	207	207
2	51	51	3	89	103	42.9	77.8	13.5	0.03	<b>32CPM1</b>	207	207
2 1/2	64	63	3	101	116	50.8	88.9	13.5	0.03	<b>40CPM1</b>	172	172
3	76	73	4	124	136	61.9	106.4	17.0	0.04	<b>48CPM1</b>	138	138
3 1/2	89	89	4	136	152	69.9	120.7	17.0	0.06	<b>56CPM1</b>	34	34
4	102	99	4	146	162	77.8	130.2	17.0	0.08	<b>64CPM1</b>	34	34
5	127	120	4	180	184	92.1	152.4	17.0	0.09	<b>80CPM1</b>	34	34

### 6000 PSI Series

1/2	13	13	4	47	57	18.2	40.5	9.0	0.01	<b>8CPM2</b>	420	420
3/4	19	17	4	53	71	23.8	50.8	11.0	0.01	<b>12CPM2</b>	420	420
1	25	24	4	66	80	27.8	57.2	13.0	0.02	<b>16CPM2</b>	420	420
1 1/4	32	31	4	77	94	31.8	66.6	15.0	0.03	<b>20CPM2</b>	420	420
1 1/2	38	38	4	89	103	36.5	79.3	17.0	0.04	<b>24CPM2</b>	420	420
2	51	51	4	123	135	44.5	96.8	21.0	0.05	<b>32CPM2</b>	420	420
2 1/2	64	63	4	150	166	58.7	123.8	25.0	0.07	<b>40CPM2</b>	420	420
3	76	73	4	178	208	71.4	152.4	32.0	0.08	<b>48CPM2</b>	420	420

<sup>1)</sup> Pressure shown = Item deliverable

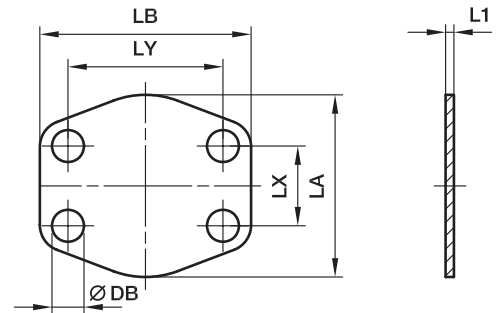
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, Cr(VI)-free	CF	8CPM1CF	only connector plate
Stainless steel	SS	8CPM1SS	only connector plate

## AP SAE Flange locking plate

ISO 6162-1/-2



### 3000 PSI Series

Nom. flange size		L1	LA	LB	LX	LY	DB	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)									CF	SS
1/2	13	3	47	57	17.5	38.1	9.0	0.02	<b>8AP1</b>	-	-
3/4	19	3	49	66	22.3	47.6	11.0	0.02	<b>12AP1</b>	-	-
1	25	3	53	71	26.2	52.4	11.0	0.02	<b>16AP1</b>	-	-
1 1/4	32	3	69	80	30.2	58.7	11.5	0.03	<b>20AP1</b>	-	-
1 1/2	38	3	77	95	35.7	69.9	13.5	0.03	<b>24AP1</b>	-	-
2	51	3	89	103	42.9	77.8	13.5	0.04	<b>32AP1</b>	-	-
2 1/2	64	3	101	116	50.8	89.9	13.5	0.04	<b>40AP1</b>	-	-
3	76	4	124	136	61.9	106.4	17.0	0.07	<b>48AP1</b>	-	-
3 1/2	89	4	136	152	69.9	102.7	17.0	0.07	<b>56AP1</b>	-	-
4	102	4	146	162	77.8	130.2	17.0	0.09	<b>64AP1</b>	-	-
5	127	4	180	184	92.1	152.4	17.0	0.10	<b>80AP1</b>	-	-

### 6000 PSI Series

1/2	13	4	47	57	18.2	40.5	9.0	0.02	<b>8AP2</b>	-	-
3/4	19	4	53	71	23.8	50.8	11.0	0.02	<b>12AP2</b>	-	-
1	25	4	66	80	27.8	57.1	13.0	0.03	<b>16AP2</b>	-	-
1 1/4	32	4	77	94	31.8	66.7	15.0	0.04	<b>20AP2</b>	-	-
1 1/2	38	4	89	103	36.5	79.4	17.0	0.05	<b>24AP2</b>	-	-
2	51	4	123	135	44.5	96.8	21.0	0.06	<b>32AP2</b>	-	-
2 1/2	64	4	150	166	58.7	123.8	25.0	0.08	<b>40AP2</b>	-	-
3	76	4	178	208	71.4	152.4	32.0	0.10	<b>48AP2</b>	-	-

<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

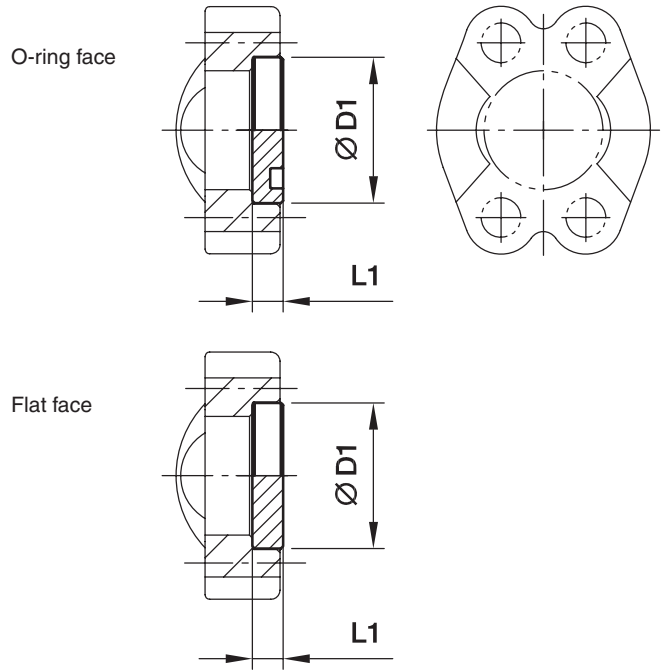
This flange locking plate is not used under pressure.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, Cr(VI)-free	CF	8AP1CF	only locking plate
Stainless steel	SS	8AP1SS	only locking plate

**PMQ Flange head plug flat**

(ISO 6162-1/-2)



**3000 PSI Series**

Nom. flange size SAE (in.)	D1	L1	Weight (steel) kg/piece	O-ring face Order code*	Flat face Order code*	PN (bar) <sup>1)</sup> CF
1/2	30.2	6.8	0.03	<b>8PFMQ1</b>	<b>8PFCMQ1</b>	210
3/4	38.1	6.8	0.05	<b>12PFMQ1</b>	<b>12PFCMQ1</b>	210
1	44.5	8.0	0.09	<b>16PFMQ1</b>	<b>16PFCMQ1</b>	210
1 1/4	50.8	8.0	0.12	<b>20PFMQ1</b>	<b>20PFCMQ1</b>	210
1 1/2	60.3	8.0	0.17	<b>24PFMQ1</b>	<b>24PFCMQ1</b>	160
2	71.4	9.6	0.29	<b>32PFMQ1</b>	<b>32PFCMQ1</b>	200
2 1/2	84.1	9.6	0.39	<b>40PFMQ1</b>	<b>40PFCMQ1</b>	–
3	101.6	9.6	0.58	<b>48PFMQ1</b>	<b>48PFCMQ1</b>	–
3 1/2	114.3	11.3	0.86	<b>56PFMQ1</b>	<b>56PFCMQ1</b>	–
4	127.0	11.3	1.02	<b>64PFMQ1</b>	<b>64PFCMQ1</b>	–
5	152.4	11.3	1.96	<b>80PFMQ1</b>	<b>80PFCMQ1</b>	–

**6000 PSI Series**

1/2	31.8	7.8	0.04	<b>8PFMQ2</b>	<b>8PFCMQ2</b>	250
3/4	41.3	8.8	0.09	<b>12PFMQ2</b>	<b>12PFCMQ2</b>	250
1	47.6	9.5	0.13	<b>16PFMQ2</b>	<b>16PFCMQ2</b>	250
1 1/4	54.0	10.3	0.18	<b>20PFMQ2</b>	<b>20PFCMQ2</b>	250
1 1/2	63.5	12.6	0.30	<b>24PFMQ2</b>	<b>24PFCMQ2</b>	250
2	79.4	12.6	0.48	<b>32PFMQ2</b>	<b>32PFCMQ2</b>	250
2 1/2	108.0	21.2	1.26	<b>40PFMQ2</b>	<b>40PFCMQ2</b>	–
3	132.0	26.5	2.31	<b>48PFMQ2</b>	<b>48PFCMQ2</b>	–

<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

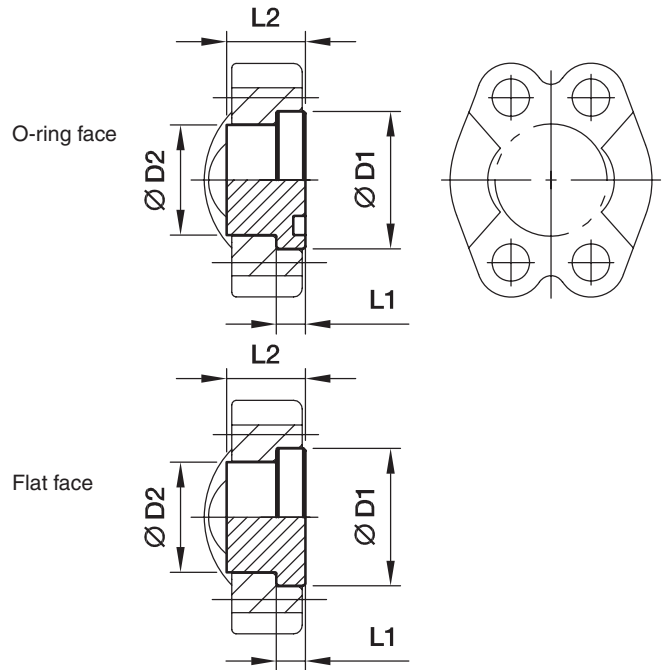
Flange head plug in stainless steel on request.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, Cr(VI)-free	CF	8PFMQ1CF	only flange head plug

## PMQ Flange head plug

(ISO 6162-1/-2)



### 3000 PSI Series

Nom. flange size SAE (in.)	D1	D2	L1	L2	Weight (steel) kg/piece	O-ring face Order code*	Flat face Order code*	PN (bar) <sup>1)</sup> CF
1/2	24.0	30.2	6.8	16	0.03	<b>8PMQ1</b>	<b>8PCMQ1</b>	350
3/4	31.8	38.1	6.8	17	0.05	<b>12PMQ1</b>	<b>12PCMQ1</b>	350
1	38.0	44.5	8.0	17	0.09	<b>16PMQ1</b>	<b>16PCMQ1</b>	315
1 1/4	43.0	50.8	8.0	17	0.12	<b>20PMQ1</b>	<b>20PCMQ1</b>	250
1 1/2	50.0	60.3	8.0	19	0.17	<b>24PMQ1</b>	<b>24PCMQ1</b>	200
2	62.0	71.4	9.6	19	0.29	<b>32PMQ1</b>	<b>32PCMQ1</b>	200
2 1/2	74.0	84.1	9.6	40	0.39	<b>40PMQ1</b>	<b>40PCMQ1</b>	160
3	90.0	101.6	9.6	45	0.58	<b>48PMQ1</b>	<b>48PCMQ1</b>	138
3 1/2	102.0	114.3	11.3	30	0.86	<b>56PMQ1</b>	<b>56PCMQ1</b>	35
4	114.5	127.0	11.3	36	1.02	<b>64PMQ1</b>	<b>64PCMQ1</b>	35
5	140.0	152.4	11.3	45	1.96	<b>80PMQ1</b>	<b>80PCMQ1</b>	35

### 6000 PSI Series

1/2	24.0	31.8	7.8	14	0.04	<b>8PMQ2</b>	<b>8PCMQ2</b>	400
3/4	31.8	41.3	8.8	15	0.09	<b>12PMQ2</b>	<b>12PCMQ2</b>	400
1	38.0	47.6	9.5	16	0.13	<b>16PMQ2</b>	<b>16PCMQ2</b>	400
1 1/4	44.0	54.0	10.3	16	0.18	<b>20PMQ2</b>	<b>20PCMQ2</b>	400
1 1/2	50.8	63.5	12.6	19	0.30	<b>24PMQ2</b>	<b>24PCMQ2</b>	400
2	67.0	79.4	12.6	30	0.48	<b>32PMQ2</b>	<b>32PCMQ2</b>	400
2 1/2	89.0	108.0	21.2	45	1.26	<b>40PMQ2</b>	<b>40PCMQ2</b>	400
3	114.3	132.0	26.5	55	2.31	<b>48PMQ2</b>	<b>48PCMQ2</b>	400

<sup>1)</sup> Pressure shown = Item deliverable

$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

Flange head plug in stainless steel on request.

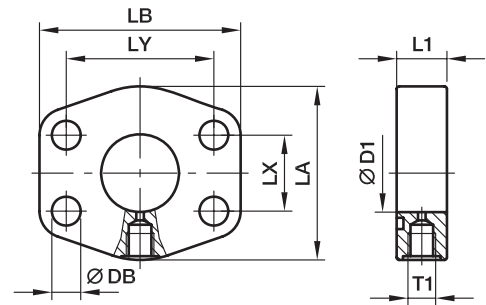
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, zinc plated, Cr(VI)-free	CF	8PMQ1CF	only flange head plug



**PAGL-(G/M) SAE 4 bolt flange with test point port**

SAE Flange with test point port  
(ISO 6162-1/-2)



**3000 PSI Series**

Nom. flange size		T1	D1	L1	LA	LB	LX	LY	DB	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in.)	ISO (DN)											S	SS
1	25	G 1/4	25	22	53	71	26.2	52.4	11.0	0.65	PAGL102G14	348	348
1	25	M 10x1.0	25	19	53	71	26.2	52.4	11.0	0.65	PAGL102M10	348	348
1 1/4	32	G 1/4	31	20	69	80	30.2	58.7	11.5	0.75	PAGL104G14	278	278
1 1/4	32	M 10x1.0	31	20	69	80	30.2	58.7	11.5	0.75	PAGL104M10	278	278
1 1/2	38	G 1/4	38	25	77	94	35.7	69.9	13.5	0.80	PAGL106G14	210	210
1 1/2	38	M 10x1.0	38	25	77	94	35.7	69.9	13.5	0.80	PAGL106M10	210	210
2	51	G 1/4	50	25	89	103	42.9	77.8	13.5	1.25	PAGL108G14	210	210
2	51	M 10x1.0	50	25	89	103	42.9	77.8	13.5	1.25	PAGL108M10	210	210
2 1/2	64	G 1/4	63	25	101	115	50.8	88.9	13.5	1.75	PAGL110G14	175	175
2 1/2	64	M 10x1.0	63	25	101	115	50.8	88.9	13.5	1.75	PAGL110M10	175	175
3	76	G 1/4	73	27	124	135	61.9	106.4	17.0	2.25	PAGL112G14	138	138
3	76	M 10x1.0	73	27	124	135	61.9	106.4	17.0	2.25	PAGL112M10	138	138
3 1/2	89	G 1/4	89	27	136	152	61.9	120.7	17.0	3.00	PAGL114G14	35	35
3 1/2	89	M 10x1.0	89	27	136	152	61.9	120.7	17.0	3.00	PAGL114M10	35	35
4	102	G 1/4	99	26	146	162	77.8	130.2	17.0	4.25	PAGL116G14	35	35
4	102	M 10x1.0	99	26	146	162	77.8	130.2	17.0	4.25	PAGL116M10	35	35
5	127	G 1/4	120	23	180	184	92.1	152.4	17.0	5.75	PAGL118G14	35	35
5	127	M 10x1.0	120	23	180	184	92.1	152.4	17.0	5.75	PAGL118M10	35	35

**6000 PSI Series**

1	25	G 1/4	25	22	69	80	27.8	57.2	13.0	0.65	PAGL403G14	420	420
1	25	M 10x1.0	25	22	69	80	27.8	57.2	13.0	0.65	PAGL403M10	420	420
1 1/4	32	G 1/4	31	26	77	94	31.8	66.6	15.0	0.75	PAGL404G14	420	420
1 1/4	32	M 10x1.0	31	26	77	94	31.8	66.6	15.0	0.75	PAGL404M10	420	420
1 1/2	38	G 1/4	38	30	89	106	36.5	79.3	17.0	0.95	PAGL405G14	420	420
1 1/2	38	M 10x1.0	38	30	89	106	36.5	79.3	17.0	0.85	PAGL405M10	420	420
2	51	G 1/4	50	36	116	135	44.5	96.8	21.0	1.25	PAGL406G14	420	420
2	51	M 10x1.0	50	36	116	135	44.5	96.8	21.0	1.25	PAGL406M10	420	420
2 1/2	64	G 1/4	63	45	150	166	58.7	123.8	25.0	1.75	PAGL408G14	420	420
2 1/2	64	M 10x1.0	63	45	150	166	58.7	123.8	25.0	1.75	PAGL408M10	420	420
3	76	G 1/4	73	55	178	208	71.4	152.4	32.0	2.25	PAGL410G14	420	420
3	76	M 10x1.0	73	55	178	208	71.4	152.4	32.0	2.25	PAGL410M10	420	420

<sup>1)</sup> Pressure shown = Item deliverable

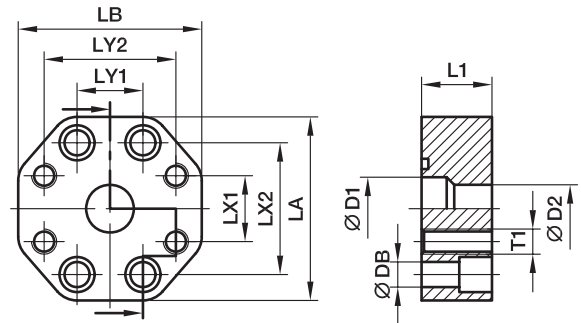
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, blanc oil dipped	S	PAGL102G14S	only flange
Stainless steel	SS	PAGL102G14SS	only flange

**PRF SAE Straight reducing flange adapter**

ISO 6162-1/-2


**3000 PSI Series**

Nom. flange size		D1	D2	L1	LA	LB	LX1	LX2	LY1	LY2	DB	Screws (metr.)	T1	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> S
SAE (in.)	ISO (DN)															
1x1	25/25	25	25	28	73	73	26.2	52.4	26.2	52.4	11	M 10x35	M10	1.10	PRF102/102	210
1x3/4	25/19	25	19	28	73	73	22.3	52.4	26.2	47.6	11	M 10x35	M10	1.15	PRF102/100	210
1 1/4x1 1/4	32/32	30	30	28	80	80	30.2	58.7	30.2	58.7	11	M 10x35	M10	1.55	PRF104/104	210
1 1/4x1	32/25	30	25	28	80	71	26.2	58.7	30.2	52.4	11	M 10x35	M10	1.55	PRF104/102	210
1 1/2x1 1/2	38/38	38	38	32	94	94	35.7	69.9	35.7	69.9	13	M 12x45	M12	2.25	PRF106/106	210
1 1/2x1 1/4	38/32	38	30	32	94	80	30.2	69.9	35.7	58.7	13	M 10x35	M10	2.40	PRF106/104	210
2x2	51/51	50	50	33	103	103	42.9	77.8	42.9	77.8	13	M 12x45	M12	3.00	PRF108/108	210
2x1 1/2	51/38	50	38	33	103	94	35.7	77.8	42.9	70.0	13	M 12x45	M12	3.15	PRF108/106	210
2 1/2x2 1/2	64/64	63	63	33	115	115	50.8	88.9	50.8	88.9	13	M 12x45	M12	3.85	PRF110/110	175
2 1/2x2	64/51	63	50	33	115	103	42.9	88.9	50.8	77.8	13	M 12x45	M12	3.95	PRF110/108	175
3x3	76/76	73	73	36	135	135	61.9	106.4	61.9	106.4	17	M 16x50	M16	4.25	PRF112/112	138
3x2 1/2	76/64	73	63	36	135	115	50.8	106.4	61.9	89.0	17	M 12x45	M12	4.45	PRF112/110	138

**6000 PSI Series**

3/4x3/4	19/19	19	19	28	71	71	23.8	50.8	23.8	50.8	11	M 10x35	M10	0.80	PRF402/402	420
1x1	25/25	25	25	33	80	80	27.8	57.2	27.8	57.2	13	M 12x45	M12	1.10	PRF403/403	420
1x3/4	25/19	25	19	33	80	71	23.8	57.2	27.8	50.8	13	M 10x35	M10	1.10	PRF403/402	420
1 1/4x1 1/4	32/32	30	30	33	94	94	31.8	66.6	31.8	66.6	15	M 14x45	M14	1.40	PRF404/404	420
1 1/4x1	32/25	30	25	33	94	80	27.8	66.6	31.8	57.2	15	M 12x45	M12	1.60	PRF404/403	420
1 1/2x1 1/2	38/38	38	38	48	106	106	36.5	79.3	36.5	79.3	17	M 16x50	M16	3.30	PRF405/405	420
1 1/2x1 1/4	38/32	38	30	48	106	94	31.8	79.3	36.5	66.6	17	M 14x45	M14	3.60	PRF405/404	420
2x2	51/51	50	50	48	135	135	44.5	96.8	44.5	96.8	21	M 20x65	M20	5.00	PRF406/406	420
2x1 1/2	51/38	50	38	48	135	106	36.5	96.8	44.5	79.3	21	M 16x50	M16	5.25	PRF406/405	420
2 1/2x2	64/64	63	63	53	166	166	44.5	123.8	58.7	96.8	25	M 20x65	M20	6.50	PRF408/406	420
3x2	76/51	73	50	58	208	178	44.5	152.4	71.4	96.8	31	M 20x65	M20	7.50	PRF410/406	420

<sup>1)</sup> Pressure shown = Item deliverable

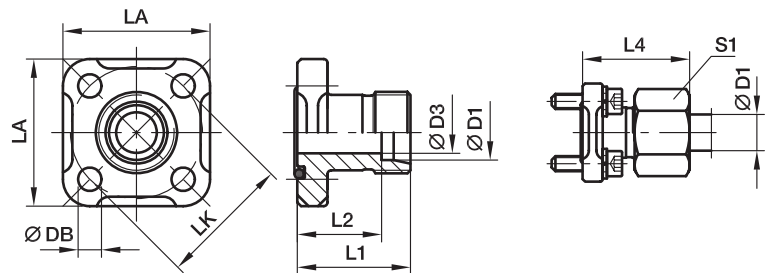
$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, blanc oil dipped	S	PRF102/102S	only flange
Stainless steel	SS	PRF102/102SS	only flange

## BFG Gear pump flange straight

Hydraulic flange / EO 24° cone end



### BFG Straight flange connection EO 24° cone end

LK	D1 <sup>2)</sup>	D3	L1	L2	L4	LA	S1	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> CF
35	10L	8	30	23.0	39.0	39	19	6.4	M 06x22	20x2.5	0.15	<b>BFG10L/LK35</b>	315
35	12L	10	30	23.0	39.0	39	22	6.4	M 06x22	20x2.5	0.16	<b>BFG12L/LK35</b>	315
35	15L	12	30	23.0	38.0	39	27	6.4	M 06x22	20x2.5	0.19	<b>BFG15L/LK35</b>	250
35	16S	12	30	21.5	39.5	39	30	6.4	M 06x22	20x2.5	0.21	<b>BFG16S/LK35</b>	315
40	15L	12	35	28.0	43.0	42	27	6.4	M 06x22	26x2.5	0.17	<b>BFG15L/LK40</b>	100
40	18L	15	35	27.5	44.0	42	32	6.4	M 06x22	26x2.5	0.22	<b>BFG18L/LK40</b>	100
40	22L	19	35	27.5	44.5	42	36	6.4	M 06x22	26x2.5	0.24	<b>BFG22L/LK40</b>	100
40	28L	24	35	27.5	44.5	42	41	6.4	M 06x22	26x2.5	0.28	<b>BFG28L/LK40</b>	100
55	20S	16	50	39.5	61.0	57	36	8.4	M 08x25	32x2.5	0.35	<b>BFG20S/LK55</b>	250

<sup>1)</sup> Pressure shown = Item deliverable

<sup>2)</sup> L = light series; S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

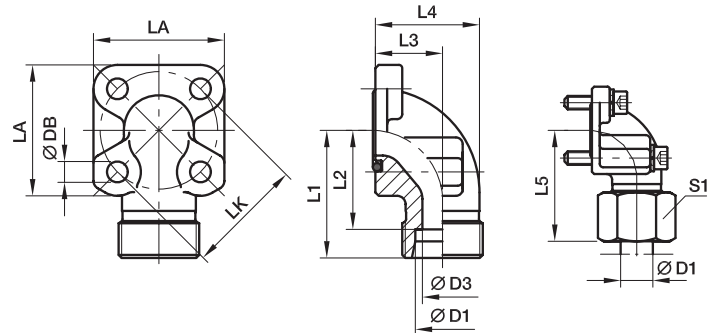
Delivery without nut and ring.  
Information on ordering complete fittings  
or alternative sealing materials see page M11.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	BFG16S/LK35OMDCF	NBR

## BFW Gear pump flange 90° elbow

Hydraulic flange / EO 24° cone end



**BFW 90° Flange connection EO 24° cone end**

LK	D1 <sup>2)</sup>	D3	L1	L2	L3	L4	L5	LA	S1	DB	Screws		O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>
											2 pieces (metr.)	2 pieces (metr.)				
35	10L	8	38	31.0	16.5	26.5	47.0	40	19	6.4	M 06×22	M 06×35	20×2.5	0.23	<b>BFW10L/LK35</b>	315
35	12L	10	38	31.0	16.5	26.5	47.0	40	22	6.4	M 06×22	M 06×35	20×2.5	0.26	<b>BFW12L/LK35</b>	315
35	15L	12	38	31.0	16.5	26.5	46.0	40	27	6.4	M 06×22	M 06×35	20×2.5	0.38	<b>BFW15L/LK35</b>	315
35	16S	12	38	29.5	20.0	31.0	48.0	40	30	6.4	M 06×22	M 06×40	20×2.5	0.55	<b>BFW16S/LK35</b>	315
35	20S	16	45	34.5	25.0	38.0	56.0	40	36	6.4	M 06×22	M 06×45	20×2.5	0.65	<b>BFW20S/LK35</b>	315
40	15L	12	38	31.0	22.5	36.5	46.0	42	27	6.4	M 06×22	M 06×22	26×2.5	0.29	<b>BFW15L/LK40</b>	100
40	18L	15	38	30.5	22.5	36.5	47.0	42	32	6.4	M 06×22	M 06×22	26×2.5	0.70	<b>BFW18L/LK40</b>	100
40	22L	19	38	30.5	22.5	36.5	47.5	42	36	6.4	M 06×22	M 06×22	26×2.5	0.36	<b>BFW22L/LK40</b>	100
40	28L	22	40	32.5	28.0	43.0	49.0	42	41	6.4	M 06×20	M 06×50	26×2.5	0.82	<b>BFW28L/LK40</b>	100
40	35L	31	41	30.5	32.0	55.0	52.0	42	50	6.4	M 06×22	M 06×60	26×2.5	0.22	<b>BFW35L/LK40</b>	100
40	20S	16	40	29.5	22.5	35.5	50.0	42	36	6.4	M 06×22	M 06×45	26×2.5	0.23	<b>BFW20S/LK40</b>	250
55	35L	31	49	38.5	32.0	51.5	62.0	58	50	8.4	M 08×25	M 08×60	32×2.5	0.27	<b>BFW35L/LK55</b>	250
55	42L	38	49	38.0	40.0	64.5	61.0	58	60	8.4	M 08×25	M 08×70	32×2.5	0.41	<b>BFW42L/LK55</b>	250
55	20S	17	45	34.5	24.0	38.0	56.0	58	36	8.4	M 08×25	M 08×50	32×2.5	0.94	<b>BFW20S/LK55</b>	250
55	25S	20	49	37.0	30.0	46.0	61.0	58	46	8.4	M 08×25	M 08×55	32×2.5	0.80	<b>BFW25S/LK55</b>	250
55	30S	26	49	35.5	32.0	50.0	62.0	58	50	8.4	M 08×25	M 08×50	32×2.5	0.20	<b>BFW30S/LK55</b>	250

<sup>1)</sup> Pressure shown = Item deliverable

<sup>2)</sup> L = light series; S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring.

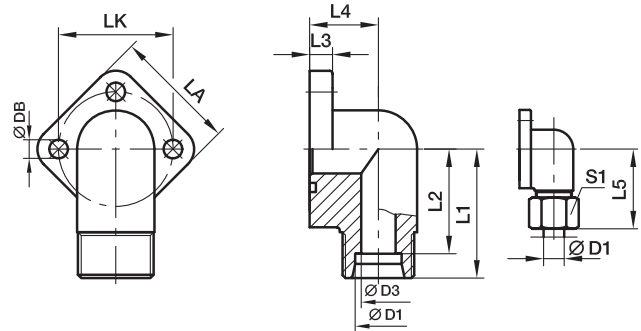
Information on ordering complete fittings or alternative sealing materials see page M11.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	BFW16S/LK35OMDCF	NBR

## BFW3 Gear pump flange 90° elbow 3 holes

Hydraulic flange / EO 24° cone end



BFW-3 90° Flange connection EO 24° cone end

LK	D1 <sup>2)</sup>	D3	L1	L2	L3	L4	L5	LA	S1	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> CF
30	12L	10	37	30.0	10	37.5	46	38	22	6.4	M 06×22	16×2.5	0.13	<b>BFW3-12L/LK30</b>	250
30	15L	12	37	30.0	10	37.5	47	38	27	6.4	M 06×22	16×2.5	0.14	<b>BFW3-15L/LK30</b>	250
30	18L	15	37	30.0	10	37.5	47	38	32	6.4	M 06×22	16×2.5	0.17	<b>BFW3-18L/LK30</b>	160
40	22L	19	43	35.5	14	41.0	53	48	36	8.4	M 08×30	24×2.5	0.29	<b>BFW3-22L/LK40</b>	160
40	28L	24	43	35.5	14	41.0	53	48	41	8.4	M 08×30	24×2.5	0.40	<b>BFW3-28L/LK40</b>	160

<sup>1)</sup> Pressure shown = Item deliverable

<sup>2)</sup> L = light series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring.

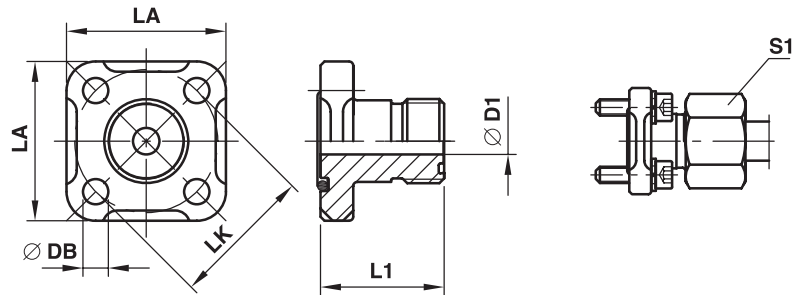
Information on ordering complete fittings  
or alternative sealing materials see page M11.

\*Please add the **suffixes** below according  
to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	BFW3-12L/LK30OMDCF	NBR

## BFGL Gear pump flange straight

Hydraulic flange / O-Lok®-connection straight



### BFGL Straight flange connection O-Lok® end

LK	D1	S1	Thread UN/UNF-2A T1	L1	LA	DB	Screws (metr.)	O-ring 1	O-ring 2	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> CF
35	6.5	10L	11/16-16	30	40	6.5	M 06×22	20×2.5	9.25×1.78	0.09	<b>6BFGL/LK35</b>	315
35	9.5	12L	13/16-16	30	40	6.5	M 06×22	20×2.5	12.42×1.78	0.10	<b>8BFGL/LK35</b>	250
35	12.5	15L	1-14	30	40	6.5	M 06×22	20×2.5	15.60×1.78	0.10	<b>10BFGL/LK35</b>	250
40	12.5	15L	1-14	35	42	6.5	M 06×22	20×2.5	15.60×1.78	0.12	<b>10BFGL/LK40</b>	100
40	15.5	18L	1 3/16-12	35	42	6.5	M 06×22	26×2.5	18.77×1.78	0.13	<b>12BFGL/LK40</b>	100
40	20.5	28L	1 7/16-12	42	42	6.5	M 06×22	26×2.5	23.52×1.78	0.15	<b>16BFGL/LK40</b>	100

<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

Delivery without nut and ring.  
Information on ordering complete fittings  
or alternative sealing materials see page M11.

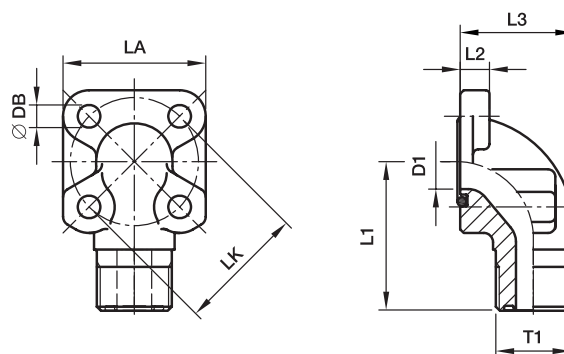


\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	6BFGL/LK35OMDCF	NBR

## BFWL Gear pump flange 90° elbow

Hydraulic flange / O-Lok®-connection – 90°



### BFWL-90° O-Lok®-connection

LK	D1	Thread UN/UNF-2A T1	L1	L2	L3	LA	DB	Screws		O-ring 1	O-ring 2	Weight kg/piece	Order code	PN (bar) <sup>1)</sup> CF
								2 pieces (metr.)	2 pieces (metr.)					
35	14	11/16-16	38	8	16.5	40	6.5	M 06×22	M 06×35	20×2.5	9.25×1.78	0.16	<b>6BFWL/LK35</b>	315
35	14	13/16-16	38	8	16.5	40	6.5	M 06×22	M 06×35	20×2.5	12.42×1.78	0.16	<b>8BFWL/LK35</b>	315
35	15	1-14	38	8	20.0	40	6.5	M 06×22	M 06×40	20×2.5	15.60×1.78	0.19	<b>10BFWL/LK35</b>	250
40	20	1-14	38	8	22.5	42	6.5	M 06×22	M 06×22	20×2.5	15.60×1.78	0.16	<b>10BFWL/LK40</b>	100
40	20	1 3/16-12	40	8	22.5	42	6.5	M 06×22	M 06×45	26×2.5	18.77×1.78	0.20	<b>12BFWL/LK40</b>	250
40	20	1 7/16-12	40	8	28.0	42	6.5	M 06×20	M 06×50	26×2.5	23.52×1.78	0.24	<b>16BFWL/LK40</b>	100

<sup>1)</sup> Pressure shown = Item deliverable

$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

**Material: Steel**

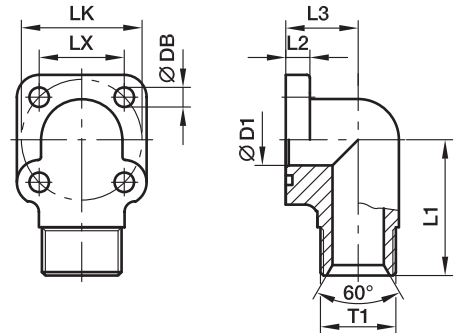
- Complete with O-ring and metric screws
- Single part without accessories

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	6BFWL/LK35CFM	NBR

## BFW-G Gear pump flange 90° elbow

Hydraulic flange / BSPP 60° cone end  
(ISO 8434-6)



### BFW-G 90° BSPP 60° cone end

LK	T1	D1	L1	L2	L3	LX	DB	Screws		O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>
								2 pieces (metr.)	2 pieces (metr.)				CF
35	<b>G 3/8</b>	10	40	8	20.0	24.8	6.5	M 06×20	M 06×35	18.72×2.62	0.22	<b>BFW-G38/LK35</b>	315
35	<b>G 1/2</b>	12	40	8	20.0	24.8	6.5	M 06×20	M 06×35	18.72×2.62	0.24	<b>BFW-G12/LK35</b>	315
35	<b>G 3/4</b>	15	40	8	20.0	24.8	6.5	M 06×20	M 06×40	18.72×2.62	0.26	<b>BFW-G34/LK35</b>	315
40	<b>G 3/8</b>	10	40	8	22.5	28.2	6.5	M 06×20	M 06×40	25.07×2.62	0.30	<b>BFW-G38/LK40</b>	250
40	<b>G 1/2</b>	12	40	8	22.5	28.2	6.5	M 06×20	M 06×40	25.07×2.62	0.32	<b>BFW-G12/LK40</b>	250
40	<b>G 3/4</b>	17	40	8	22.5	28.2	6.5	M 06×20	M 06×40	25.07×2.62	0.34	<b>BFW-G34/LK40</b>	250
40	<b>G 1</b>	19	40	8	28.0	28.2	6.5	M 06×20	M 06×50	25.07×2.62	0.36	<b>BFW-G1/LK40</b>	250
55	<b>G 1/2</b>	12	49	12	24.0	38.8	8.5	M 08×25	M 08×45	31.42×2.62	0.35	<b>BFW-G12/LK55</b>	250
55	<b>G 3/4</b>	17	46	12	24.0	38.8	8.5	M 08×25	M 08×60	31.42×2.62	0.40	<b>BFW-G34/LK55</b>	250
55	<b>G 1</b>	22	49	12	31.0	38.8	8.5	M 08×25	M 08×70	31.42×2.62	0.45	<b>BFW-G1/LK55</b>	250

<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$



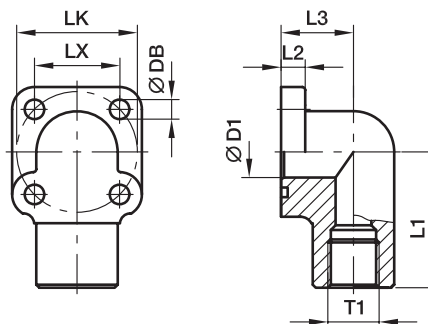
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	BFW-G38/LK35CFM	NBR



## BFW-GI Gear pump flange 90° elbow

Hydraulic flange / Female BSPP thread  
(ISO 1179-1)



### BFW-GI 90° Female BSPP thread

LK	T1	D1	L1	L2	L3	LX	DB	Screws		O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>
								2 pieces (metr.)	2 pieces (metr.)				CF
35	<b>G 3/8</b>	10	40	8	20.0	24.8	6.5	M 06×20	M 06×35	18.72×2.62	0.22	<b>BFW-GI38/LK35</b>	315
35	<b>G 1/2</b>	12	40	8	20.0	24.8	6.5	M 06×20	M 06×35	18.72×2.62	0.24	<b>BFW-GI12/LK35</b>	315
40	<b>G 3/8</b>	10	40	8	22.5	28.2	6.5	M 06×20	M 06×40	25.07×2.62	0.30	<b>BFW-GI38/LK40</b>	250
40	<b>G 1/2</b>	12	40	8	22.5	28.2	6.5	M 06×20	M 06×40	25.07×2.62	0.32	<b>BFW-GI12/LK40</b>	250
40	<b>G 3/4</b>	17	40	8	22.5	28.2	6.5	M 06×20	M 06×40	25.07×2.62	0.34	<b>BFW-GI34/LK40</b>	250
55	<b>G 1/2</b>	12	49	12	24.0	38.8	8.5	M 08×25	M 08×45	31.42×2.62	0.35	<b>BFW-GI12/LK55</b>	250
55	<b>G 3/4</b>	17	46	12	24.0	38.8	8.5	M 08×25	M 08×60	31.42×2.62	0.40	<b>BFW-GI34/LK55</b>	250
55	<b>G 1</b>	22	49	12	31.0	38.8	8.5	M 08×25	M 08×70	31.42×2.62	0.45	<b>BFW-G 11/LK55</b>	250

<sup>1)</sup> Pressure shown = Item deliverable

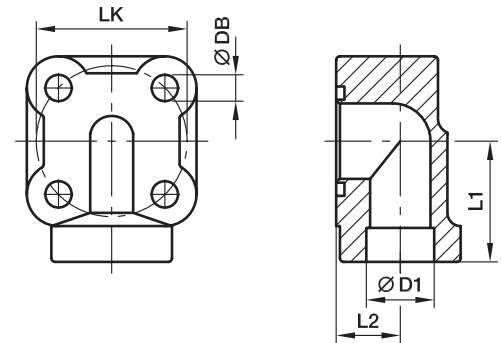
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	BFW-GI38/LK35CFM	NBR

## BFW-S Gear pump flange 90° elbow

Hydraulic flange / Socket weld end



### BFW-S 90° Socket weld end

LK	D1	L1	L2	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> S
30	12	30	14	7.0	M 06×30	15.88×2.62	0.15	<b>BFW-S12/LK30/M6</b>	200
30	12	27	13	8.5	M 08×35	15.88×2.62	0.15	<b>BFW-S12/LK30/M8</b>	250
30	14	27	13	6.5	M 06×30	15.88×2.62	0.14	<b>BFW-S14/LK30/M6</b>	200
30	14	27	13	8.5	M 08×35	15.88×2.62	0.14	<b>BFW-S14/LK30/M8</b>	250
30	16	27	13	6.5	M 06×30	15.88×2.62	0.12	<b>BFW-S16/LK30/M6</b>	200
30	16	27	13	8.5	M 08×35	15.88×2.62	0.12	<b>BFW-S16/LK30/M8</b>	250
30	18	27	13	6.5	M 06×30	15.88×2.62	0.10	<b>BFW-S18/LK30/M6</b>	200
35	14	30	12	6.5	M 06×35	18.72×2.62	0.20	<b>BFW-S14/LK35/M6</b>	200
35	14	30	14	8.5	M 08×40	18.72×2.62	0.20	<b>BFW-S14/LK35/M8</b>	250
35	16	30	12	6.5	M 06×35	18.72×2.62	0.18	<b>BFW-S16/LK35/M6</b>	200
35	16	30	14	8.5	M 08×40	18.72×2.62	0.18	<b>BFW-S16/LK35/M8</b>	250
35	18	30	14	6.5	M 06×35	18.72×2.62	0.18	<b>BFW-S18/LK35/M6</b>	200
35	18	30	14	8.5	M 08×40	18.72×2.62	0.18	<b>BFW-S18/LK35/M8</b>	250
35	20	30	14	6.5	M 06×35	18.72×2.62	0.17	<b>BFW-S20/LK35/M6</b>	200
40	18	32	17	6.5	M 06×40	23.81×2.62	0.25	<b>BFW-S18/LK40/M6</b>	200
40	18	32	17	8.5	M 08×40	23.81×2.62	0.25	<b>BFW-S18/LK40/M8</b>	250
40	20	32	17	6.5	M 06×40	23.81×2.62	0.24	<b>BFW-S20/LK40/M6</b>	200
40	20	32	17	8.5	M 08×40	23.81×2.62	0.24	<b>BFW-S20/LK40/M8</b>	250
40	22	32	17	6.5	M 06×40	23.81×2.62	0.23	<b>BFW-S22/LK40/M6</b>	200
40	22	32	17	8.5	M 08×40	23.81×2.62	0.23	<b>BFW-S22/LK40/M8</b>	250
40	25	32	17	6.5	M 06×40	23.81×2.62	0.22	<b>BFW-S25/LK40/M6</b>	200
40	25	32	17	8.5	M 08×40	23.81×2.62	0.22	<b>BFW-S25/LK40/M8</b>	250

<sup>1)</sup> Pressure shown = Item deliverable

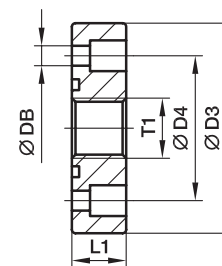
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

\*Please add the **suffixes** below according to the material/surface required.

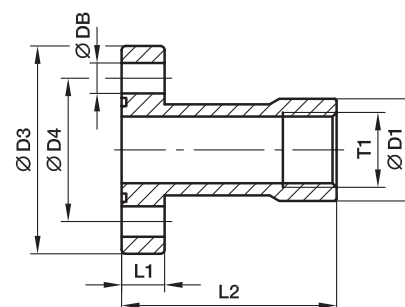
Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	BFW-S16/LK30/M6SM	NBR

**PF Gear pump flange straight**

 Hydraulic flange / Female BSPB thread  
(ISO 1179-1)

**PF**

Pump size	LK	T1	D3	D4	L1	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> CF
1.0	30.0	<b>G 3/8</b>	45	30.0	13	6.5	M 06×16	18.77×1.78	0.10	<b>PF1</b>	250
2.0	40.0	<b>G 1/2</b>	58	40.0	15	8.5	M 08×20	25.12×1.78	0.21	<b>PF2</b>	250
3.0	51.0	<b>G 3/4</b>	75	51.0	18	10.5	M 10×25	31.42×2.62	0.48	<b>PF3</b>	250
3B	56.0	<b>G 3/4</b>	76	56.0	18	10.5	M 10×25	31.42×2.62	0.48	<b>PF3B</b>	250
3.5	62.0	<b>G 1</b>	88	62.0	20	10.5	M 10×25	39.69×3.53	0.53	<b>PF3.5</b>	180
3.5B	62.0	<b>G 1</b>	88	62.0	20	12.5	M 12×25	39.69×3.53	0.59	<b>PF3.5B</b>	180
4.0	72.5	<b>G 1 1/4</b>	98	72.5	22	12.5	M 12×30	47.22×3.53	0.64	<b>PF4</b>	180

**PFL Gear pump flange straight**

 Hydraulic flange / Female BSPB thread – long version  
(ISO 1179-1)

**PFL**

Pump size	LK	T1	D1	D3	D4	L1	L2	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> CF
1.0	30.0	<b>G 3/8</b>	23.0	45	30.0	10	55	6.5	M 06×20	18.77×1.78	0.15	<b>PFL1</b>	250
2.0	40.0	<b>G 1/2</b>	26.5	58	40.0	12	60	8.5	M 08×25	25.12×1.78	0.27	<b>PFL2</b>	250
3.0	51.0	<b>G 3/4</b>	33.5	76	51.0	16	72	10.5	M 10×35	31.42×2.62	0.59	<b>PFL3</b>	250
3B	56.0	<b>G 3/4</b>	33.5	76	56.0	19	72	10.5	M 10×35	31.42×2.62	0.69	<b>PFL3.5</b>	250

<sup>1)</sup> Pressure shown = Item deliverable

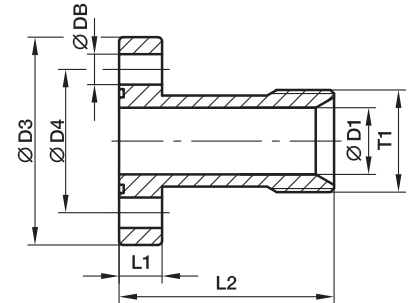
$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	<b>PF</b> CF	PF1CFM	NBR
Steel, zinc plated, Cr(VI)-free	<b>PFL</b> CF	PFL1CFM	NBR

## PFE Gear pump flange straight

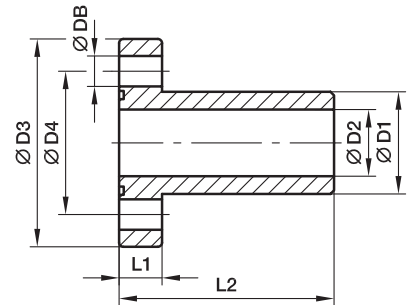
Hydraulic flange / BSPP 60° cone end  
(ISO 8434-6)


**PFE**

Pump size	LK	T1	D1	D3	D4	L1	L2	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> CF
1.0	30.0	<b>G 1/2</b>	14.0	45	30.0	10	55	6.5	M 06×20	18.77×1.78	0.15	<b>PFE1</b>	250
2.0	40.0	<b>G 3/4</b>	19.0	58	40.0	12	60	8.5	M 08×25	25.12×1.78	0.27	<b>PFE2</b>	250
3.0	51.0	<b>G 1</b>	24.0	76	51.0	16	72	10.5	M 10×35	31.42×2.62	0.59	<b>PFE3</b>	250
3B	56.0	<b>G 1</b>	24.0	76	56.0	16	72	10.5	M 10×35	31.42×2.62	0.69	<b>PFE3.5</b>	250

## PFB Gear pump flange straight

Hydraulic flange / Butt weld tube end


**PFB**

Pump size	LK	D1	D2	D3	D4	L1	L2	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> S
1.0	30.0	19.5	14.0	45	30.0	10	55	6.5	M 06×20	18.77×1.78	0.15	<b>PFB1</b>	250
2.0	40.0	25.4	19.0	58	40.0	12	60	8.5	M 08×25	25.12×1.78	0.27	<b>PFB2</b>	250
3.0	51.0	32.0	24.5	76	51.0	16	72	10.5	M 10×35	31.42×2.62	0.59	<b>PFB3</b>	250
3B	56.0	32.0	24.5	76	56.0	16	72	10.5	M 10×35	31.42×2.62	0.69	<b>PFB3.5</b>	250

<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

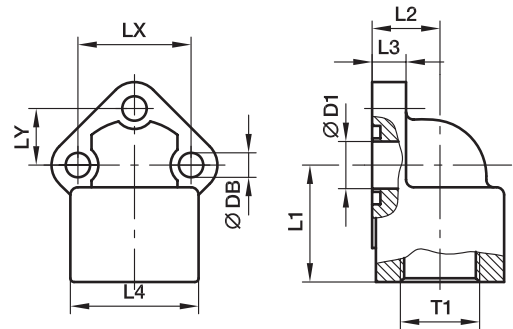
The pressures (PFB) given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	<b>PFE</b> CF	PFE1CFM	NBR
Steel, blanc oil dipped	<b>PFB</b> S	PFB1SM	NBR

**BFW3-G Gear pump flange 90° elbow 3 holes**

Hydraulic flange / Female BSSP thread  
(ISO 1179-1)



**PWDS Female BSSP thread**

Pump size	LK	T1	D1	L1	L2	L3	L4	LX	LY	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> CF
0.5	26.0	3/8	11	28	17	9.0	30	26.0	13.0	5.5	M 05×18	15.60×1.78	0.16	<b>BFW3-G38/LK26</b>	315
0.5	26.0	1/2	11	28	17	9.0	30	26.0	13.0	5.5	M 05×18	15.60×1.78	0.15	<b>BFW3-G12/LK26</b>	315
1.0	30.0	3/8	12	30	17	9.0	30	30.0	15.0	6.5	M 06×20	15.88×2.62	0.16	<b>BFW3-G38/LK30</b>	315
1.0	30.0	1/2	12	30	17	9.0	30	30.0	15.0	6.5	M 06×20	15.88×2.62	0.15	<b>BFW3-G12/LK30</b>	315
2.0	40.0	1/2	18	36	23	11.5	36	40.0	20.0	8.5	M 08×25	23.81×2.62	0.33	<b>BFW3-G12/LK40</b>	315
2.0	40.0	3/4	18	36	23	11.5	36	40.0	20.0	8.5	M 08×25	23.81×2.62	0.31	<b>BFW3-G34/LK40</b>	315
3.0	51.0	3/4	24	46	26	13.0	45	51.0	25.5	10.5	M 10×30	29.75×3.53	0.57	<b>BFW3-G34/LK51</b>	315
3.0	51.0	1	24	46	26	13.0	45	51.0	25.5	10.5	M 10×30	29.75×3.53	0.52	<b>BFW3-G1/LK51</b>	315
3B	56.0	3/4	24	46	26	13.0	45	56.0	28.0	10.5	M 10×30	29.75×3.53	0.57	<b>BFW3-G34/LK56</b>	315
3B	56.0	1	24	46	26	13.0	45	56.0	28.0	10.5	M 10×30	29.75×3.53	0.52	<b>BFW3-G1/LK56</b>	315
3.5	62.0	1 1/4	31	55	35	14.0	55	62.0	31.0	11.0	M 10×30	37.69×3.53	0.74	<b>BFW3-G114/LK62</b>	315
3.5	62.0	1	25	55	35	14.0	55	62.0	31.0	11.0	M 10×30	37.69×3.53	0.73	<b>BFW3-G1/LK62</b>	315
3.5	62.0	1 1/4	31	55	35	14.0	55	62.0	31.0	13.0	M 12×35	37.69×3.53	0.74	<b>BFW3-G114/LK62/12</b>	315
3.5	62.0	1	25	55	35	14.0	55	62.0	31.0	13.0	M 12×35	37.69×3.53	0.73	<b>BFW3-G1/LK62/12</b>	315
4.0	72.5	1 1/2	38	58	38	15.0	62	72.5	36.2	13.0	M 12×35	47.22×3.53	0.95	<b>BFW3-G112/LK72.5</b>	315
4.0	72.5	1 1/4	31	58	38	15.0	62	72.5	36.2	13.0	M 12×35	47.22×3.53	0.93	<b>BFW3-G114/LK72.5</b>	315

<sup>1)</sup> Pressure shown = Item deliverable

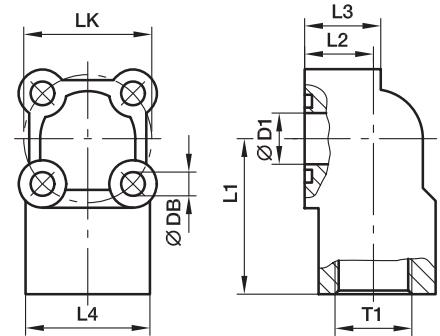
$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	BFW3-G38/LK26CFM	NBR

**PWDS-G Gear pump flange 90° elbow 4 holes – aluminium**

Hydraulic flange / Female BSPP thread  
(ISO 1179-1)



**PWDS-G 90° Female BSPP thread**

LK	T1	D1	L1	L2	L3	L4	DB	Screws		O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> A
								2 pieces (metr.)	2 pieces (metr.)				
30	<b>G 3/8</b>	11.5	39.0	18	20	33	6.5	M 06×30	M 06×40	15.88×2.62	0.09	<b>PWDS-G38/LK30</b>	180
30	<b>G 1/2</b>	11.5	39.0	18	20	33	6.5	M 06×30	M 06×40	15.88×2.62	0.09	<b>PWDS-G12/LK30</b>	180
35	<b>G 3/8</b>	14.0	42.5	18	20	34	6.5	M 06×30	M 06×40	18.72×2.62	0.11	<b>PWDS-G38/LK35</b>	180
35	<b>G 1/2</b>	14.0	42.5	18	20	34	6.5	M 06×30	M 06×40	18.72×2.62	0.11	<b>PWDS-G12/LK35</b>	180
40	<b>G 1/2</b>	18.0	47.5	24	28	41	6.5	M 06×40	M 06×50	22.22×2.62	0.18	<b>PWDS-G12/LK40</b>	180
40	<b>G 3/4</b>	18.0	47.5	24	28	41	6.5	M 06×40	M 06×50	22.22×2.62	0.18	<b>PWDS-G34/LK40</b>	180
55	<b>G 3/4</b>	24.5	54.0	29	31	49	8.5	M 08×45	M 08×60	29.75×3.53	0.31	<b>PWDS-G34/LK55</b>	180
55	<b>G 1</b>	24.5	54.0	29	31	49	8.5	M 08×45	M 08×60	29.75×3.53	0.30	<b>PWDS-G1/LK55</b>	180

<sup>1)</sup> Pressure shown = Item deliverable

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

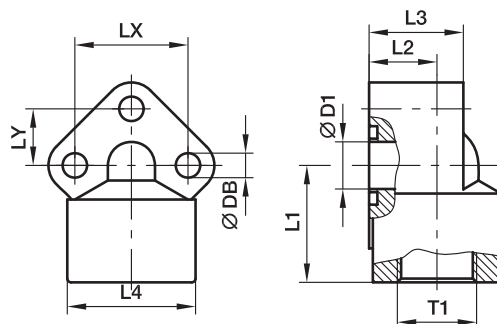


\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Aluminium	A	PWDS-G38/LK30AM	NBR

## PWDA Gear pump flange 90° elbow 3 holes – aluminium

Hydraulic flange / Female BSPP thread  
(ISO 1179-1)



### PWDA 90° Female BSPP thread

Pump size	LK	T1	D1	L1	L2	L3	L4	LX	LY	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> A
0.5	26	<b>G 3/8</b>	10.0	31	18.0	25	31	26	13.0	5.5	M 05×35	14.00×1.78	0.06	<b>PWDA-05/38</b>	180
0.5	26	<b>G 1/2</b>	10.0	31	18.0	25	31	26	13.0	5.5	M 05×35	14.00×1.78	0.06	<b>PWDA-05/12</b>	180
1.0	30	<b>G 3/8</b>	12.5	31	18.0	26	34	30	15.0	6.5	M 06×35	15.88×2.62	0.08	<b>PWDA-1/38</b>	180
1.0	30	<b>G 1/2</b>	12.5	31	18.0	26	34	30	15.0	6.5	M 06×35	15.88×2.62	0.08	<b>PWDA-1/12</b>	180
2.0	40	<b>G 1/2</b>	18.0	40	21.5	31	42	40	20.0	8.5	M 08×45	22.22×2.62	0.15	<b>PWDA-2/12</b>	180
2.0	40	<b>G 3/4</b>	18.0	40	21.5	31	42	40	20.0	8.5	M 08×45	22.22×2.62	0.15	<b>PWDA-2/34</b>	180
3.0*	51	<b>G 3/4</b>	24.5	46	26.0	42	49	56	25.5 -28	11.0	M 10×60	29.75×3.53	0.32	<b>PWDA-3/34</b>	180
3.0*	51	<b>G 1</b>	24.5	46	26.0	42	49	56	25.5 -28	11.0	M 10×60	29.75×3.53	0.32	<b>PWDA-3/100</b>	180

<sup>1)</sup> Pressure shown = Item deliverable

\*Oval drill hole

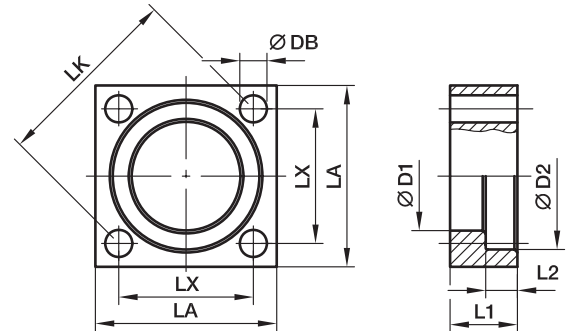
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Aluminium	A	PWDA-05/38AM	NBR

**PSFC Square flange clamp**

ISO 6164



**250 bar Series**

Series <sup>2)</sup>	Nom. flange size		LK	D1	D2	L1	L2	LA	LX	DB	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>
	SAE (in.)	ISO (DN)											S
L	3/8	10	35	18.5	25.0	18	6.2	40	24.7	6.6	0.07	<b>PSFC/L/10</b>	250
L	1/2	13	42	24.3	31.0	20	6.2	45	29.7	9.0	0.08	<b>PSFC/L/13</b>	250
L	3/4	19	50	32.2	38.9	22	6.2	50	35.4	9.0	0.12	<b>PSFC/L/19</b>	250
L	1	25	62	38.5	45.3	25	7.5	65	43.8	11.0	0.24	<b>PSFC/L/25</b>	250
L	1 1/4	32	73	43.7	51.6	30	7.5	75	51.6	13.5	0.35	<b>PSFC/L/32</b>	250
L	1 1/2	38	85	50.8	61.1	36	7.5	90	60.1	17.5	0.51	<b>PSFC/L/38</b>	250
L	2	51	98	62.8	72.3	40	9.0	100	69.3	17.5	0.88	<b>PSFC/L/51</b>	250
L	2 1/2	56	118	76.6	88.0	45	9.0	120	83.4	22.0	1.53	<b>PSFC/L/56</b>	250
L	3	63	145	90.8	102.3	52	9.0	140	102.5	22.0	2.31	<b>PSFC/L/63</b>	250
L	4	80	160	114.5	132.0	60	21.0	160	113.5	25.0	4.19	<b>PSFC/L/80</b>	250

**400 bar Series**

S	3/8	10	35	18.5	26.4	18	7.2	40	24.7	6.6	0.08	<b>PSFC/S/10</b>	400
S	1/2	13	42	24.7	32.6	20	7.2	45	29.7	9.0	0.12	<b>PSFC/S/13</b>	400
S	3/4	19	50	32.5	42.1	22	8.2	50	35.4	9.0	0.17	<b>PSFC/S/19</b>	400
S	1	25	62	38.9	48.4	25	9.0	65	43.8	1.0	0.32	<b>PSFC/S/25</b>	400
S	1 1/4	32	73	44.6	54.8	30	9.8	75	51.6	13.5	0.46	<b>PSFC/S/32</b>	400
S	1 1/2	38	85	51.6	64.3	36	12.0	90	60.1	17.5	0.69	<b>PSFC/S/38</b>	400
S	2	51	98	67.6	80.2	40	12.0	100	69.3	17.5	1.18	<b>PSFC/S/51</b>	400
S	2 1/2	56	118	80.5	95.0	50	16.1	120	83.4	22.0	1.97	<b>PSFC/S/56</b>	400
S	3	63	145	90.5	111.0	52	16.1	150	102.5	26.0	2.81	<b>PSFC/S/63</b>	400
S	3 1/2	70	160	102.5	120.0	60	17.5	160	113.1	26.0	3.09	<b>PSFC/S/70</b>	400
S	4	80	175	114.5	136.0	70	21.0	180	123.7	33.0	4.88	<b>PSFC/S/80</b>	350

1) Pressure shown = Item deliverable

2) L = light series; S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

\*Please add the **suffixes** below according to the material/surface required.

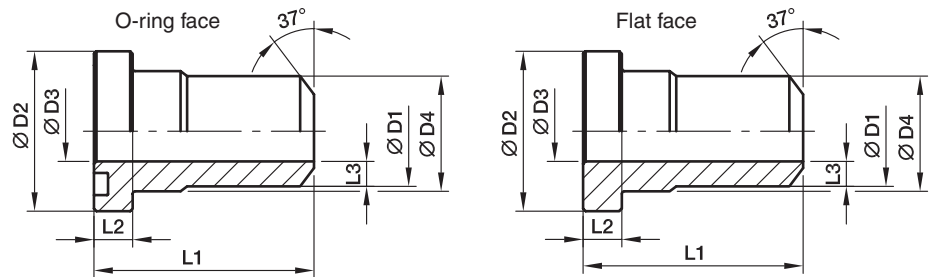
Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, blanc oil dipped	S	PSFC/L/10S	only flange clamp





## PSFA-B Square flange adapter (butt weld)

Square flange / Butt weld end  
(ISO 6164)



### 250 bar Series

Series <sup>2)</sup>	Nom. flange size		D1	D2	D3	D4	L1	L2	L3	O-ring	Weight (steel) kg/piece	O-ring face Order code*	Flat face Order code*	PN (bar) <sup>1)</sup> S
	SAE (in.)	ISO (DN)												
L	3/8	10	17.5	24.5	10	18.0	40	6.8	3.75	17.13x2.62	0.09	PSFA10/L/17.5B	PSCFA10/L/17.5B	250
L	1/2	13	21.6	30.2	13	24.0	50	6.8	4.30	18.64x3.53	0.12	PSFA13/L/21.6B	PSCFA13/L/21.6B	250
L	3/4	19	27.2	38.1	19	31.5	60	6.8	4.10	24.99x3.53	0.18	PSFA19/L/27.2B	PSCFA19/L/27.2B	250
L	1	25	34.5	44.5	25	38.0	70	8.0	4.75	32.93x3.53	0.35	PSCFA25/L/34.5B	PSCFA25/L/34.5B	250
L	1 1/4	32	43.0	50.8	31	43.0	80	8.0	6.00	37.89x3.53	0.50	PSFA32/L/43B	PSCFA32/L/43B	250
L	1 1/2	38	48.6	60.4	38	50.0	90	8.0	5.30	47.22x3.53	0.74	PSFA38/L/48.6B	PSCFA38/L/48.6B	250
L	2	51	61.0	71.4	50	62.0	100	9.6	5.50	56.74x3.53	1.27	PSFA51/L/61B	PSCFA51/L/61B	250
L	2 1/2	56	76.6	87.2	63	76.0	110	12.0	6.80	69.44x3.53	2.20	PSFA56/L/76.6B	PSCFA56/L/76.6B	250
L	3	63	89.0	101.6	70	90.0	120	15.0	9.50	85.32x3.53	3.32	PSFA63/L/89B	PSCFA63/L/89B	250
L	4	80	114.0	131.0	90	114.0	140	23.5	12.00	97.79x5.34	6.03	PSFA80/L/114B	PSCFA80/L/114B	250

### 400 bar Series

S	3/8	10	17.5	26.0	10	18.0	40	7.8	3.75	17.13x2.62	0.11	PSFA10/S/17.5B	PSCFA10/S/17.5B	400
S	1/2	13	21.6	31.8	13	24.0	50	7.8	4.30	18.64x3.53	0.17	PSFA13/S/21.6B	PSCFA13/S/21.6B	400
S	3/4	19	27.2	41.3	18	32.0	60	8.8	4.60	24.99x3.53	0.25	PSFA19/S/27.2B	PSCFA19/S/27.2B	400
S	1	25	34.5	47.6	22	38.0	70	9.5	6.25	32.93x3.53	0.46	PSFA25/S/34.5B	PSCFA25/S/34.5B	400
S	1 1/4	32	43.0	54.0	28	44.0	90	10.3	7.50	37.89x3.53	0.65	PSFA32/S/43B	PSCFA32/S/43B	400
S	1 1/2	38	48.6	63.5	32	51.0	90	12.6	8.30	47.22x3.53	0.99	PSFA38/S/48.6B	PSCFA38/S/48.6B	400
S	2	51	61.0	79.4	41	67.0	100	12.6	10.00	56.52x5.34	1.69	PSFA51/S/61B	PSCFA51/S/61B	400
S	2 1/2	56	76.6	94.2	50	90.0	110	16.5	13.30	69.22x5.34	2.83	PSFA56/S/76.6B	PSCFA56/S/76.6B	400
S	3	63	89.0	104.0	58	90.0	120	18.0	15.50	75.57x5.34	4.04	PSFA63/S/89B	PSCFA63/S/89B	400
S	3 1/2	70	102.0	119.0	63	102.0	130	20.0	19.50	85.09x5.34	4.45	PSFA70/S/102B	PSCFA70/S/102B	400
S	4	80	114.0	131.0	74	114.0	140	23.5	20.00	88.27x5.34	7.01	PSFA80/S/114B	PSCFA80/S/114B	350

1) Pressure shown = Item deliverable

2) L = light series; S = heavy series

PN (bar) / 10 = PN (MPa)

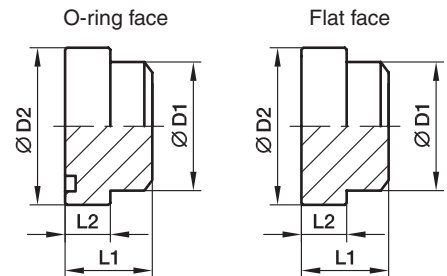
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, blanc oil dipped	S	PSFA10/L/17.5BS	only flange adapter

**PSFP Square flange plug**

ISO 6164


**250 bar Series**

Series <sup>2)</sup>	Nom. flange size		D1	D2	L1	L2	O-ring	Weight (steel) kg/piece	O-ring face Order code*	Flat face Order code*	PN (bar) <sup>1)</sup> S
	SAE (in.)	ISO (DN)									
L	3/8	10	18.0	24.5	6.8	18.0	17.13×2.62	0.07	PSFP10/L/18B	PSCFP10/L/18B	250
L	1/2	13	24.0	30.2	6.8	20.0	18.64×3.53	0.08	PSFP13/L/24B	PSCFP13/L/24B	250
L	3/4	19	31.5	38.1	6.8	22.0	24.99×3.53	0.12	PSFP19/L/31.5B	PSCFP19/L/31.5B	250
L	1	25	38.0	44.5	8.0	25.0	32.93×3.53	0.24	PSFP25/L/38B	PSCFP25/L/38B	250
L	1 1/4	32	43.0	50.8	8.0	30.0	37.89×3.53	0.35	PSFP32/L/43B	PSCFP32/L/43B	250
L	1 1/2	38	50.0	60.4	8.0	36.0	47.22×3.53	0.51	PSFP38/L/50B	PSCFP38/L/50B	250
L	2	51	62.0	71.4	9.6	40.0	56.74×3.53	0.88	PSFP51/L/62B	PSCFP51/L/62B	250
L	2 1/2	56	76.0	87.2	12.0	45.0	69.44×3.53	1.53	PSFP56/L/76B	PSCFP56/L/76B	250
L	3	63	90.0	101.6	15.0	52.0	85.32×3.53	2.31	PSFP63/L/90B	PSCFP63/L/90B	250
L	4	80	114.0	131.0	23.5	61.5	97.79×5.34	4.19	PSFP80/L/114B	PSCFP80/L/114B	250

**400 bar Series**

S	3/8	10	18.0	26.0	7.8	18.0	17.13×2.62	0.08	PSFP10/S/18B	PSCFP10/S/18B	400
S	1/2	13	24.0	31.8	7.8	20.0	18.64×3.53	0.12	PSFP13/S/24B	PSCFP13/S/24B	400
S	3/4	19	32.0	41.3	8.8	22.0	24.99×3.53	0.17	PSFP19/S/32B	PSCFP19/S/32B	400
S	1	25	38.0	47.6	9.5	25.0	32.93×3.53	0.32	PSFP25/S/38B	PSCFP25/S/38B	400
S	1 1/4	32	44.0	54.0	10.3	30.0	37.89×3.53	0.46	PSFP32/S/44B	PSCFP32/S/44B	400
S	1 1/2	38	51.0	63.5	12.6	36.0	47.22×3.53	0.69	PSFP38/S/51B	PSCFP38/S/51B	400
S	2	51	67.0	79.4	12.6	40.0	56.52×5.34	1.18	PSFP51/S/67B	PSCFP51/S/67B	400
S	2 1/2	56	80.0	94.2	16.5	45.0	69.22×5.34	1.97	PSFP56/S/80B	PSCFP56/S/80B	400
S	3	63	90.0	104.0	18.0	52.0	75.57×5.34	2.81	PSFP63/S/90B	PSCFP63/S/90B	400
S	3 1/2	70	102.0	119.0	20.0	60.0	85.09×5.34	3.09	PSFP70/S/102B	PSCFP70/S/102B	400
S	4	80	114.0	131.0	23.5	70.0	88.27×5.34	4.88	PSFP80/S/114B	PSCFP80/S/114B	350

1) Pressure shown = Item deliverable

2) L = light series; S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

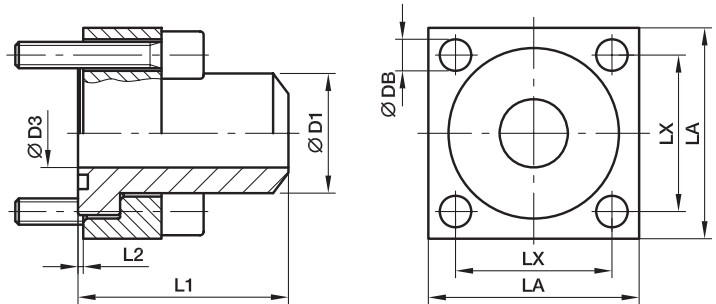
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Description
Steel, blanc oil dipped	S	PSFP10/L/18BS	only flange plug

## PSF-B Square flange (butt weld adapter coupling)

Square flange / Butt weld end  
(ISO 6164)



### 250 bar Series

Series <sup>2)</sup>	Nom. flange size		D1	D3	L1	L2	LA	LX	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> S
	SAE (in.)	ISO (DN)												
L	3/8	10	17.5	10	40	0.4	40	24.7	6.6	M 06x30	17.13x2.62	0.17	<b>PSF10/L/17.5B</b>	250
L	1/2	13	21.6	13	50	0.4	45	29.7	9.0	M 08x35	18.64x3.53	0.22	<b>PSF13/L/21.6B</b>	250
L	3/4	19	27.2	19	60	0.4	50	35.4	9.0	M 08x35	24.99x3.53	0.32	<b>PSF19/L/27.2B</b>	250
L	1	25	34.5	25	70	0.5	65	43.8	11.0	M 10x40	32.93x3.53	0.63	<b>PSF25/L/34.5B</b>	250
L	1 1/4	32	43.0	31	80	0.5	75	51.6	13.5	M 12x50	37.89x3.53	0.92	<b>PSF32/L/43B</b>	250
L	1 1/2	38	48.6	38	90	0.5	90	60.1	17.5	M 16x60	47.22x3.53	1.34	<b>PSF38/L/48.6B</b>	250
L	2	51	61.0	50	100	0.6	100	69.3	17.5	M 16x70	56.74x3.53	2.30	<b>PSF51/L/61B</b>	250
L	2 1/2	56	76.6	63	110	3.0	120	83.4	22.0	M 20x80	69.44x3.53	4.00	<b>PSF56/L/76.6B</b>	250
L	3	63	89.0	70	120	6.0	140	102.5	22.0	M 20x90	85.32x3.53	6.03	<b>PSF63/L/89B</b>	250
L	4	80	114.0	90	140	2.5	160	113.5	25.0	M 24x100	97.79x5.34	10.96	<b>PSF80/L/114B</b>	250

### 400 bar Series

S	3/8	10	17.5	10	40	0.6	40	24.7	6.6	M 06x30	17.13x2.62	0.20	<b>PSF10/S/17.5B</b>	400
S	1/2	13	21.6	13	50	0.6	45	29.7	9.0	M 08x35	18.64x3.53	0.31	<b>PSF13/S/21.6B</b>	400
S	3/4	19	27.2	18	60	0.6	50	35.4	9.0	M 08x35	24.99x3.53	0.45	<b>PSF19/S/27.2B</b>	400
S	1	25	34.5	22	70	0.5	65	43.8	11.0	M 10x40	32.93x3.53	0.83	<b>PSF25/S/34.5B</b>	400
S	1 1/4	32	43.0	28	90	0.5	75	51.6	13.5	M 12x50	37.89x3.53	1.19	<b>PSF32/S/43B</b>	400
S	1 1/2	38	48.6	32	90	0.6	90	60.1	17.5	M 16x60	47.22x3.53	1.80	<b>PSF38/S/48.6B</b>	400
S	2	51	61.0	41	100	0.6	100	69.3	17.5	M 16x70	56.52x5.34	3.08	<b>PSF51/S/61B</b>	400
S	2 1/2	56	76.6	50	110	0.4	120	83.4	22.0	M 20x80	69.22x5.34	5.14	<b>PSF56/S/76.6B</b>	400
S	3	63	89.0	58	120	1.9	150	102.5	26.0	M 24x90	75.57x5.34	7.34	<b>PSF63/S/89B</b>	400
S	3 1/2	70	102.0	63	130	2.5	160	113.1	26.0	M 24x100	85.09x5.34	8.09	<b>PSF70/S/102B</b>	400
S	4	80	114.0	74	140	2.5	180	123.7	33.0	M 30x120	88.27x5.34	12.75	<b>PSF80/S/114B</b>	350

1) Pressure shown = Item deliverable

2) L = light series; S = heavy series

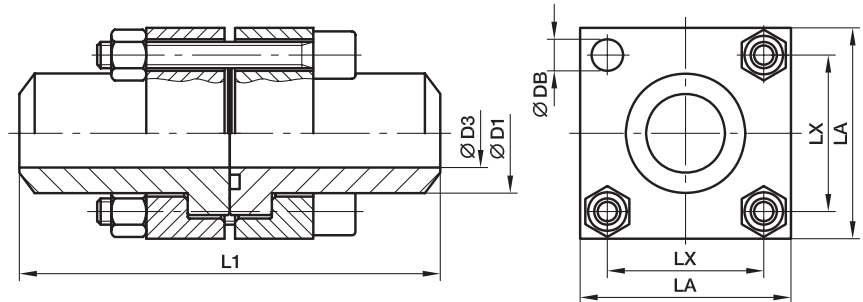
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. flange clamp, metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PSF10/L/17.5BS	NBR

**PDSF-B Square flange (butt weld connection)**

 Square flange / Butt weld tube end  
(ISO 6164)

**250 bar Series**

Series <sup>2)</sup>	Nom. flange size		D1	D3	L1	LA	LX	DB	Screws (Metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> S
	SAE (in.)	ISO (DN)											
L	3/8	10	17.5	10	80	40	24.7	6.6	M 06x45	17.13x2.62	0.34	<b>PDSF10/L/17.5B</b>	250
L	1/2	13	21.6	13	100	45	29.7	9.0	M 08x50	18.64x3.53	0.44	<b>PDSF13/L/21.6B</b>	250
L	3/4	19	27.2	19	120	50	35.4	9.0	M 08x55	24.99x3.53	0.64	<b>PDSF19/L/27.2B</b>	250
L	1	25	34.5	25	140	65	43.8	11.0	M 10x65	32.93x3.53	1.26	<b>PDSF25/L/34.5B</b>	250
L	1 1/4	32	43.0	31	160	75	51.6	13.5	M 12x75	37.89x3.53	1.84	<b>PDSF32/L/43B</b>	250
L	1 1/2	38	48.6	38	180	90	60.1	17.5	M 16x90	47.22x3.53	2.68	<b>PDSF38/L/48.6B</b>	250
L	2	51	61.0	50	200	100	69.3	17.5	M 16x100	56.74x3.53	4.60	<b>PDSF51/L/61B</b>	250
L	2 1/2	56	76.6	63	220	120	83.4	22.0	M 20x120	69.44x3.53	8.00	<b>PDSF56/L/76.6B</b>	250
L	3	63	89.0	70	240	140	102.5	22.0	M 20x140	85.32x3.53	12.06	<b>PDSF63/L/89B</b>	250
L	4	80	114.0	90	280	160	113.5	22.0	M 24x150	97.79x5.34	21.92	<b>PDSF80/L/114B</b>	250

**400 bar Series**

S	3/8	10	17.5	10	80	40	24.7	6.6	M 06x45	17.13x2.62	0.40	<b>PDSF10/S/17.5B</b>	400
S	1/2	13	21.6	13	100	45	29.7	9.0	M 08x50	18.64x3.53	0.62	<b>PDSF13/S/21.6B</b>	400
S	3/4	19	27.2	18	120	50	35.4	9.0	M 08x55	24.99x3.53	0.90	<b>PDSF19/S/27.2B</b>	400
S	1	25	34.5	22	140	65	43.8	11.0	M 10x65	32.93x3.53	1.66	<b>PDSF25/S/34.5B</b>	400
S	1 1/4	32	43.0	28	160	75	51.6	13.5	M 12x75	37.89x3.53	2.38	<b>PDSF32/S/43B</b>	400
S	1 1/2	38	48.6	32	180	90	60.1	17.5	M 16x90	47.22x3.53	3.60	<b>PDSF38/S/48.6B</b>	400
S	2	51	61.0	41	200	100	69.3	17.5	M 16x100	56.52x5.34	6.16	<b>PDSF51/S/61B</b>	400
S	2 1/2	56	76.6	50	220	120	83.4	22.0	M 20x130	69.22x5.34	10.28	<b>PDSF56/S/76.6B</b>	400
S	3	63	89.0	58	240	150	102.5	26.0	M 24x140	75.57x5.34	14.68	<b>PDSF63/S/89B</b>	400
S	3 1/2	70	102.0	63	260	160	113.1	26.0	M 24x150	85.09x5.34	16.18	<b>PDSF70/S/102B</b>	400
S	4	80	114.0	74	280	180	123.7	33.0	M 30x180	88.27x5.34	25.50	<b>PDSF80/S/114B</b>	350

1) Pressure shown = Item deliverable

2) L = light series; S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

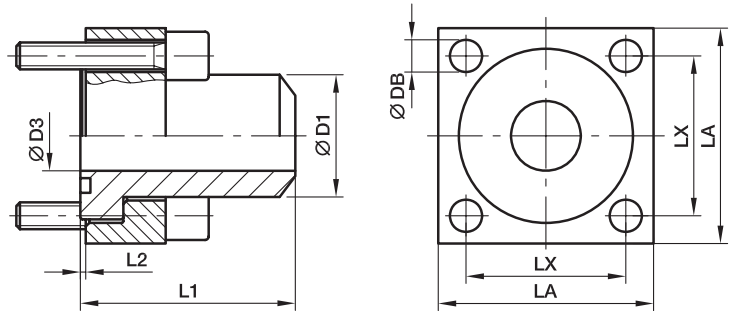
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

 \*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example Flange coupling incl. flange clamps, metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PDSF10/L/17.5BS	NBR

## PCF-B Cetop square flange (weld connection)

Cetop flange / Butt weld end



### 250 bar Series

Nom. flange size		D1 	D3	L1	L2	LA	LX	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> S
Series <sup>2)</sup>	(in.)												
L	3/8	18	12.5	40	1.0	40	24.7	6.5	M 06x25	17.13x2.62	0.17	<b>PCF38/L/18B</b>	250
L	1/2	22	14.0	45	1.0	45	29.7	8.5	M 08x30	18.64x3.53	0.22	<b>PCF12/L/22B</b>	250
L	3/4	28	20.0	50	1.0	50	35.3	8.5	M 08x30	24.99x3.53	0.32	<b>PCF34/L/28B</b>	250
L	1	35	25.0	55	1.0	65	43.8	10.5	M 10x35	32.93x3.53	0.63	<b>PCF1/L/35B</b>	250
L	1 1/4	43	31.0	61	1.0	75	51.6	13.0	M 12x40	37.89x3.53	0.92	<b>PCF114/L/43B</b>	250
L	1 1/2	50	38.0	65	1.0	85	60.0	15.0	M 14x45	47.22x3.53	1.34	<b>PCF112/L/50B</b>	250
L	2	62	47.0	70	1.5	100	69.4	17.0	M 16x55	56.74x3.53	2.30	<b>PCF2/L/62B</b>	250
L	2 1/2	76	58.0	75	1.5	120	83.4	21.0	M 20x70	69.44x3.53	4.00	<b>PCF212/L/76B</b>	250
L	3	90	70.0	85	1.5	140	102.5	21.0	M 20x80	85.32x3.53	6.03	<b>PCF3/L/90B</b>	250
L	3 1/2	102	80.0	90	1.5	140	102.5	21.0	M 20x90	85.09x5.35	7.56	<b>PCF312/L/102B</b>	250
L	4	114	90.0	105	1.5	160	113.2	25.0	M 24x100	97.79x5.34	10.96	<b>PCF4/L/114B</b>	250

### 400 bar Series

S	3/8	18	11.0	40	1.0	40	24.7	6.5	M 06x25	17.13x2.62	0.20	<b>PCF38/S/18B</b>	400
S	1/2	22	14.0	45	1.0	45	29.7	8.5	M 08x30	18.64x3.53	0.31	<b>PCF12/S/22B</b>	400
S	3/4	28	18.0	50	1.0	50	35.3	8.5	M 08x35	24.99x3.53	0.45	<b>PCF34/S/28B</b>	400
S	1	35	22.0	55	1.0	65	43.8	10.5	M 10x40	32.93x3.53	0.83	<b>PCF1/S/35B</b>	400
S	1 1/4	44	29.0	61	1.0	75	51.6	13.0	M 12x45	37.89x3.53	1.19	<b>PCF114/S/44B</b>	400
S	1 1/2	51	35.0	65	1.0	85	60.0	15.0	M 14x55	47.22x3.53	1.80	<b>PCF112/S/51B</b>	400
S	2	61	43.0	70	1.5	100	69.4	17.0	M 16x65	56.74x3.53	3.08	<b>PCF2/S/61B</b>	400
S	2 1/2	80	53.0	80	1.5	120	83.4	21.0	M 20x70	69.22x5.34	5.14	<b>PCF212/S/80B</b>	400
S	3	90	58.0	90	1.5	140	102.5	21.0	M 20x90	75.57x5.34	7.34	<b>PCF3/S/90B</b>	400
S	3 1/2	102	63.0	90	1.5	140	102.5	21.0	M 20x90	85.09x5.34	8.09	<b>PCF312/S/102B</b>	400
S	4	114	74.0	105	1.5	160	113.2	25.0	M 24x100	88.27x5.34	12.75	<b>PCF4/S/114B</b>	400

<sup>1)</sup> Pressure shown = Item deliverable

<sup>2)</sup> L = light series; S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

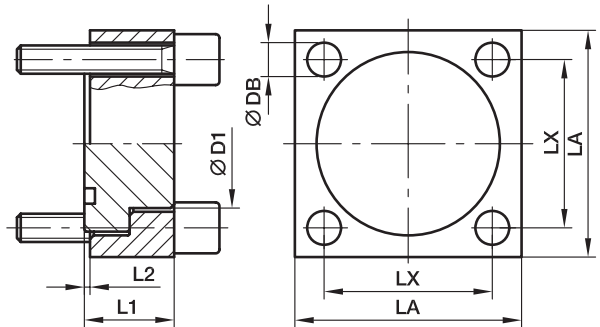
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. flange clamp, metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PCF38/L/18BS	NBR

## PPCF Cetop square flange plug

Cetop square flange / Plug



### 250 bar Series

Nom. flange size		D1 	L1	L2	LA	LX	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> S
Series <sup>2)</sup>	(in.)										
L	3/8	18.0	15	1.0	40	24.7	M 06×25	17.13×2.62	0.09	<b>PPCF38/L/18</b>	250
L	1/2	24.0	16	1.0	45	29.7	M 08×30	18.64×3.53	0.11	<b>PPCF12/L/24</b>	250
L	3/4	31.5	17	1.0	50	35.3	M 08×30	24.99×3.53	0.16	<b>PPCF34/L/31.5</b>	250
L	1	38.0	19	1.0	65	43.8	M 10×35	32.93×3.53	0.32	<b>PPCF1/L/38</b>	250
L	1 1/4	43.0	23	1.0	75	51.6	M 12×40	37.89×3.53	0.46	<b>PPCF114/L/43</b>	250
L	1 1/2	50.0	26	1.0	85	60.0	M 14×45	47.22×3.53	0.67	<b>PPCF112/L/50</b>	250
L	2	62.0	31	1.5	100	69.4	M 16×55	56.74×3.53	1.15	<b>PPCF2/L/62</b>	250
L	2 1/2	76.0	37	1.5	120	83.4	M 20×70	69.44×3.53	2.00	<b>PPCF212/L/76</b>	250
L	3	90.0	42	1.5	140	102.5	M 20×80	85.32×3.53	3.02	<b>PPCF3/L/90</b>	250
L	3 1/2	102.0	54	1.5	140	102.5	M 20×90	85.09×5.35	3.78	<b>PPCF312/L/102</b>	250
L	4	114.0	62	1.5	160	113.2	M 24×100	97.79×5.34	5.48	<b>PPCF4/L/114</b>	250
L	5	141.0	62	1.5	180	132.0	M 27×100	120.70×5.34	6.48	<b>PPCF5/L/141</b>	250

### 400 bar Series

S	3/8	18.0	17	1.0	40	24.7	M 06×25	17.13×2.62	0.10	<b>PPCF38/S/18</b>	400
S	1/2	24.0	19	1.0	45	29.7	M 08×30	18.64×3.53	0.16	<b>PPCF12/S/24</b>	400
S	3/4	32.0	21	1.0	50	35.3	M 08×35	24.99×3.53	0.23	<b>PPCF34/S/32</b>	400
S	1	38.0	25	1.0	65	43.8	M 10×40	32.93×3.53	0.42	<b>PPCF1/S/38</b>	400
S	1 1/4	44.0	31	1.0	75	51.6	M 12×50	37.89×3.53	0.60	<b>PPCF114/S/44</b>	400
S	1 1/2	51.0	33	1.0	85	60.0	M 14×55	47.22×3.53	0.90	<b>PPCF112/S/51</b>	400
S	2	67.0	42	1.5	100	69.4	M 16×65	56.74×3.53	1.54	<b>PPCF2/S/67</b>	400
S	2 1/2	80.0	48	1.5	120	83.4	M 20×70	69.22×5.34	2.57	<b>PPCF212/S/80</b>	400
S	3	90.0	54	1.5	140	102.5	M 20×90	75.57×5.34	3.67	<b>PPCF3/S/90</b>	400
S	3 1/2	102.0	54	1.5	140	102.5	M 20×90	85.09×5.34	4.05	<b>PPCF312/S/102</b>	400
S	4	114.0	62	1.5	160	113.2	M 24×100	88.27×5.34	6.38	<b>PPCF4/S/114</b>	400

<sup>1)</sup> Pressure shown = Item deliverable

<sup>2)</sup> L = light series; S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

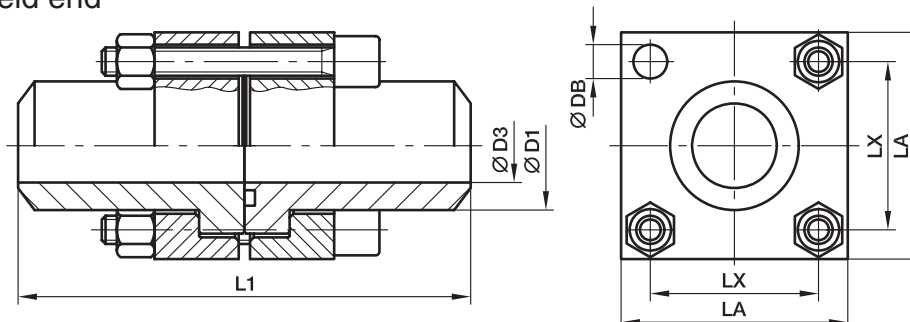
The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example flange plug incl. flange clamp, metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PPCF38/L/18S	NBR

## PDCF-B Cetop square flange coupling

Cetop square flange / Butt weld end



### 250 bar Series

Nom. flange size		D1 	D3	L1	LA	LX	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> S
Series <sup>2)</sup>	(in.)										
L	3/8	18	12.5	80	40	24.7	M 06×35	17.13×2.62	0.43	<b>PDCF38/L/18B</b>	250
L	1/2	22	14.0	90	45	29.7	M 08×40	18.64×3.53	0.55	<b>PDCF12/L/22B</b>	250
L	3/4	28	20.0	100	50	35.3	M 08×45	24.99×3.53	0.80	<b>PDCF34/L/28B</b>	250
L	1	35	25.0	110	65	43.8	M 10×50	32.93×3.53	1.58	<b>PDCF1/L/35B</b>	250
L	1 1/4	43	31.0	120	75	51.6	M 12×60	37.89×3.53	2.30	<b>PDCF114/L/43B</b>	250
L	1 1/2	50	38.0	130	85	60.0	M 14×70	47.22×3.53	3.35	<b>PDCF112/L/50B</b>	250
L	2	62	47.0	140	100	69.4	M 16×80	56.74×3.53	5.75	<b>PDCF2/L/62B</b>	250
L	2 1/2	76	58.0	150	120	83.4	M 20×100	69.44×3.53	10.00	<b>PDCF212/L/76B</b>	250
L	3	90	70.0	170	140	102.5	M 20×110	85.32×3.53	15.08	<b>PDCF3/L/90B</b>	250
L	3 1/2	102	80.0	180	140	102.5	M 20×130	85.09×5.35	18.90	<b>PDCF312/L/102B</b>	250
L	4	114	90.0	210	160	113.2	M 24×150	97.79×5.34	27.40	<b>PDCF4/L/114B</b>	250

### 400 bar Series

S	3/8	18	11.0	80	40	24.7	M 06×40	17.13×2.62	0.50	<b>PDCF38/S/18B</b>	400
S	1/2	22	14.0	90	45	29.7	M 08×45	18.64×3.53	0.78	<b>PDCF12/S/22B</b>	400
S	3/4	28	18.0	100	50	35.3	M 08×50	24.99×3.53	1.13	<b>PDCF34/S/28B</b>	400
S	1	35	22.0	110	65	43.8	M 10×60	32.93×3.53	2.08	<b>PDCF1/S/35B</b>	400
S	1 1/4	44	29.0	120	75	51.6	M 12×70	37.89×3.53	2.98	<b>PDCF114/S/44B</b>	400
S	1 1/2	51	35.0	130	85	60.0	M 14×80	47.22×3.53	4.50	<b>PDCF112/S/51B</b>	400
S	2	61	43.0	140	100	69.4	M 16×100	56.74×3.53	7.70	<b>PDCF2/S/61B</b>	400
S	2 1/2	80	53.0	160	120	83.4	M 20×120	69.22×5.34	12.85	<b>PDCF212/S/80B</b>	400
S	3	90	58.0	180	140	102.5	M 20×130	75.57×5.34	18.35	<b>PDCF3/S/90B</b>	400
S	3 1/2	102	63.0	180	140	102.5	M 20×130	85.09×5.34	20.23	<b>PDCF312/S/102B</b>	400
S	4	114	74.0	210	160	113.2	M 24×150	88.27×5.34	31.88	<b>PDCF4/S/114B</b>	400

<sup>1)</sup> Pressure shown = Item deliverable

<sup>2)</sup> L = light series; S = heavy series

$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

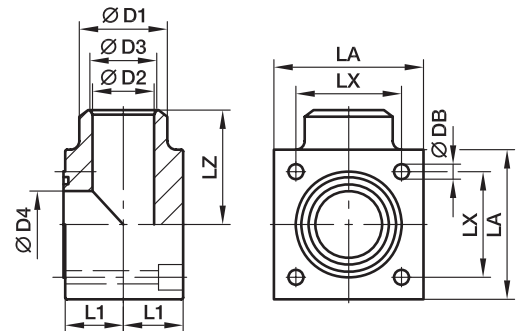
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example Flange coupling incl. flange clamps, metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PDCF38/L/18BS	NBR



## PLCF-B Cetop square flange 90° elbow connection

Cetop square flange 90° elbow / Butt weld end



### 250 bar Series

Nom. flange size		D1 	D2	D3	D4	L1	LA	LX	LZ	DB	Screws (metr.)	O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> S
Series <sup>2)</sup>	(in.)														
L	3/8	18	12	12	12.5	12	40	24.7	32	6.5	M 06×30	17.13×2.62	0.44	<b>PLCF38/L/18B</b>	250
L	1/2	22	14	14	15.0	17	45	29.7	40	8.5	M 08×40	18.64×3.53	0.57	<b>PLCF12/L/22B</b>	250
L	3/4	28	19	19	20.0	19	50	35.3	42	8.5	M 08×45	24.99×3.53	0.83	<b>PLCF34/L/28B</b>	250
L	1	35	23	23	25.0	24	65	43.8	50	10.5	M 10×55	32.93×3.53	1.64	<b>PLCF1/L/35B</b>	250
L	1 1/4	44	30	30	32.0	30	75	51.6	56	13.0	M 12×70	37.89×3.53	2.39	<b>PLCF114/L/44B</b>	250
L	1 1/2	50	35	38	38.0	34	85	60.0	65	15.0	M 14×80	47.22×3.53	3.48	<b>PLCF112/L/50B</b>	250
L	2	63	43	47	47.0	42	100	69.4	75	17.0	M 16×100	56.74×3.53	5.98	<b>PLCF2/L/63B</b>	250
L	2 1/2	86	53	58	58.0	53	120	83.4	85	21.0	M 20×120	69.44×3.53	10.40	<b>PLCF212/L/86B</b>	250
L	3	90	65	70	70.0	59	140	102.5	100	21.0	M 20×140	85.32×3.53	15.68	<b>PLCF3/L/90B</b>	250
L	4	114	80	90	90.0	65	160	113.2	110	25.0	M 24×140	97.79×5.34	19.66	<b>PLCF4/L/114B</b>	250

### 400 bar Series

S	3/8	18	12	12	12.5	12	40	24.7	32	6.5	M 06×30	17.13×2.62	0.52	<b>PLCF38/S/18B</b>	400
S	1/2	22	14	14	15.0	17	45	29.7	40	8.5	M 08×40	18.64×3.53	0.81	<b>PLCF12/S/22B</b>	400
S	3/4	28	19	19	20.0	19	50	35.3	42	8.5	M 08×45	24.99×3.53	1.17	<b>PLCF34/S/28B</b>	400
S	1	35	23	23	25.0	24	65	43.8	50	10.5	M 10×55	32.93×3.53	2.16	<b>PLCF1/S/35B</b>	400
S	1 1/4	44	30	30	32.0	30	75	51.6	56	13.0	M 12×70	37.89×3.53	3.09	<b>PLCF114/S/44B</b>	400
S	1 1/2	51	32	35	38.0	34	85	60.0	65	15.0	M 14×80	47.22×3.53	4.68	<b>PLCF112/S/51B</b>	400
S	2	63	38	43	47.0	42	100	69.4	75	17.0	M 16×100	56.74×3.53	8.01	<b>PLCF2/S/63B</b>	400
S	2 1/2	80	48	53	58.0	53	120	83.4	85	21.0	M 20×120	69.22×5.34	13.36	<b>PLCF212/S/80B</b>	400
S	3	90	58	58	58.0	59	140	102.5	100	21.0	M 20×140	75.57×5.34	19.08	<b>PLCF3/S/90B</b>	400

<sup>1)</sup> Pressure shown = Item deliverable

<sup>2)</sup> L = light series; S = heavy series

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

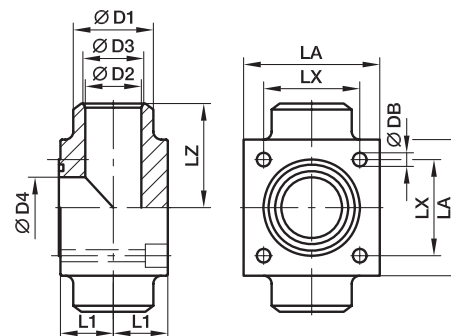
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PLCF38/L/18BSM	NBR



## PTCF-B Cetop square flange 180° T-connection

Cetop square flange 180° T-connection / Butt weld end



### 250 bar Series

Nom. flange size		D1	D2	D3	D4	L1	LA	LX	LZ	DB	Screws	O-ring	Weight (steel)	Order code*	PN (bar) <sup>1)</sup>
Series <sup>2)</sup>	(in.)										(metr.)		kg/piece		S
L	3/8	18	12	12	12.5	12	40	24.7	32	6.5	M 06×30	17.13×2.62	0.75	<b>PTCF38/L/18B</b>	250
L	1/2	22	14	14	15.0	17	45	29.7	40	8.5	M 08×40	18.64×3.53	0.97	<b>PTCF12/L/22B</b>	250
L	3/4	28	19	19	20.0	19	50	35.3	42	8.5	M 08×45	24.99×3.53	1.41	<b>PTCF34/L/28B</b>	250
L	1	35	23	23	25.0	24	65	43.8	50	10.5	M 10×55	32.93×3.53	2.78	<b>PTCF1/L/35B</b>	250
L	1 1/4	44	30	30	32.0	30	75	51.6	56	13.0	M 12×70	37.89×3.53	4.07	<b>PTCF114/L/44B</b>	250
L	1 1/2	50	35	38	38.0	34	85	60.0	65	15.0	M 14×80	47.22×3.53	5.92	<b>PTCF112/L/50B</b>	250
L	2	63	43	47	47.0	42	100	69.4	75	17.0	M 16×100	56.74×3.53	10.17	<b>PTCF2/L/63B</b>	250
L	2 1/2	76	53	58	58.0	53	120	83.4	85	21.0	M 20×120	69.44×3.53	17.68	<b>PTCF212/L/76B</b>	250
L	3	90	65	70	70.0	59	140	102.5	100	21.0	M 20×140	85.32×3.53	26.65	<b>PTCF3/L/90B</b>	250
L	4	114	80	90	90.0	65	160	113.2	110	25.0	M 24×140	97.79×5.34	33.42	<b>PTCF4/L/114B</b>	250

### 400 bar Series

S	3/8	18	12	12	12.5	12	40	24.7	32	6.5	M 06×30	17.13×2.62	0.88	<b>PTCF38/S/18B</b>	400
S	1/2	22	14	14	15.0	17	45	29.7	40	8.5	M 08×40	18.64×3.53	1.37	<b>PTCF12/S/22B</b>	400
S	3/4	28	19	19	20.0	19	50	35.3	42	8.5	M 08×45	24.99×3.53	1.99	<b>PTCF34/S/28B</b>	400
S	1	35	23	23	25.0	24	65	43.8	50	10.5	M 10×55	32.93×3.53	3.67	<b>PTCF1/S/35B</b>	400
S	1 1/4	44	30	30	32.0	30	75	51.6	56	13.0	M 12×70	37.89×3.53	5.26	<b>PTCF114/S/44B</b>	400
S	1 1/2	51	32	35	38.0	34	85	60.0	65	15.0	M 14×80	47.22×3.53	7.96	<b>PTCF112/S/51B</b>	400
S	2	63	38	43	47.0	42	100	69.4	75	17.0	M 16×100	56.74×3.53	13.61	<b>PTCF2/S/63B</b>	400
S	2 1/2	80	48	53	58.0	53	120	83.4	85	21.0	M 20×120	69.22×5.34	22.72	<b>PTCF212/S/80B</b>	400
S	3	90	58	58	58.0	59	140	102.5	100	21.0	M 20×140	75.57×5.34	32.44	<b>PTCF3/S/90B</b>	400

<sup>1)</sup> Pressure shown = Item deliverable

<sup>2)</sup> L = light series; S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

The pressures given here are the maximum allowable for the flange fittings. If the pipe or tube used has a lower pressure rating, then the welded assembly rating will be the lower one, assuming the weld is adequately strong.

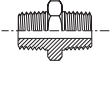
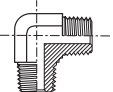
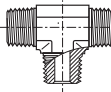
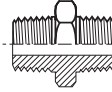


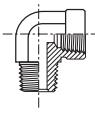
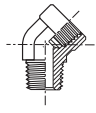
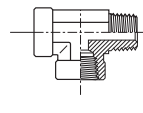
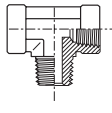

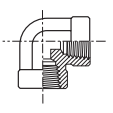
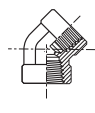
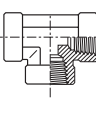
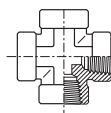



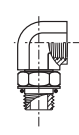
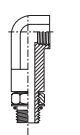









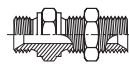
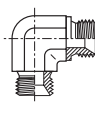
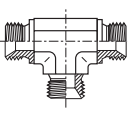




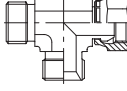
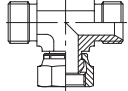


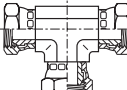
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example incl. metr. screws and O-ring	Standard sealing material (no additional suffix needed)
Steel, blanc oil dipped	S	PTCF38/L/18BSM	NBR

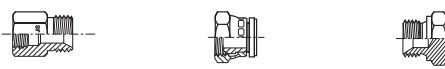

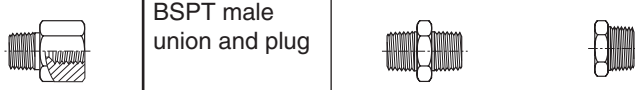
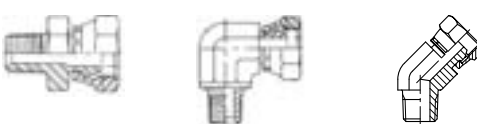


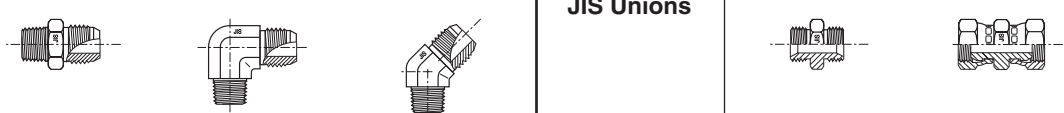
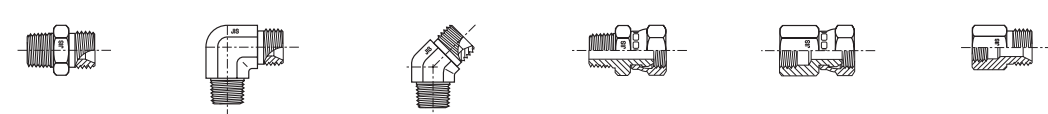



# Adapters

## Visual index

NPTF Adapters Male/male						
	<b>FFM</b> / p. N4	<b>CR</b> / p. N5	<b>RRS</b> / p. N5	<b>FFFM</b> / p. N6		
NPTF Adapters Male/Female						
	<b>PTRM</b> / p. N7	<b>FGM</b> / p. N8	<b>CDM</b> / p. N9	<b>CD45M</b> / p. N10	<b>MRO</b> / p. N11	<b>MMS</b> / p. N12
NPTF Adapters Female/Female						
	<b>GG</b> / p. N13	<b>DDM</b> / p. N14	<b>DD45</b> / p. N14	<b>MMO</b> / p. N15	<b>KMMOO</b> / p. N15	
NPTF Plug			UNF/NPTF Adapters			
	<b>HPM</b> / p. N16	<b>HHP</b> / p. N16		<b>F5OG</b> / p. N17	<b>AOEG</b> / p. N18	<b>AOE4G</b> / p. N18
UNF Adapters				UNF/ Plugs		
	<b>F5OG5</b> / p. N19	<b>F5OHAO</b> / p. N20	<b>G5G5JG5</b> / p. N20		<b>P5ONM</b> / p. N21	<b>HP5ON</b> / p. N22
BSPT-BSPP metric-UNF Conversion adapters						
	<b>F3HMG5</b> / p. N23	<b>F4OHMG5</b> / p. N24	<b>F8OHG5</b> / p. N25			
Male/Male adapters BSPP 60° cone, BSPT, NPT						
	<b>HMK4</b> / p. N26	<b>WMK4WL4NM</b> / p. N27	<b>EMK4</b> / p. N28	<b>JMK4</b> / p. N28	<b>F3MK4</b> / p. N38	<b>FMK4</b> / p. N40
Male/Female swivel adapters BSPP 60° cone						
	<b>F6MK4</b> / p. N30	<b>C6MK4</b> / p. N31	<b>R6MK4</b> / p. N32	<b>S6MK4</b> / p. N33		
Female/Female swivel adapters BSPP 60° cone						
	<b>H6MK4</b> / p. N34	<b>E6MK4</b> / p. N35	<b>J6MK4</b> / p. N36			

Visual index

<p>BSPP 60° cone Expander/Adapter cap</p>	 <p><b>G4MK4</b> / p. N37    <b>FNMK4</b> / p. N39    <b>PNMK4</b> / p. N29</p>					
<p>BSPP Adapters Female/Female</p>	 <p><b>GG44M</b> / p. N41    <b>MMO444M</b> / p. N42</p>					
<p>Reducing bushes BSPP/BSPT</p>	<p>BSPT male union and plug</p>	 <p><b>PTR34M</b> / p. N43    <b>FF33M</b> / p. N44    <b>HP3M</b> p. N45</p>				
<p>Female swivel NPSM / male NPTF</p>	 <p><b>0107</b> / p. N46    <b>2107</b> / p. N47    <b>3107</b> / p. N48</p>					
<p>Female swivel NPSM / female NPTF</p>	 <p><b>0207</b> / p. N49    <b>2207</b> / p. N50</p>					
<p>Female swivel NPSM / male UNF</p>	 <p><b>0507</b> / p. N51    <b>2507</b> / p. N52    <b>3507</b> / p. N53</p>					
<p>JIS Adapters Male to BSPT</p>	<p><b>JIS Unions</b></p>  <p><b>F3MT4</b> / p. N54    <b>C3T4</b> / p. N55    <b>V3T4</b> / p. N55    <b>HMP4</b> / p. N56    <b>HP46</b> / p. N56</p>					
<p>JIS Adapters Female cone to BSPT</p>	 <p><b>F3MP4</b> / p. N57    <b>C3P4</b> / p. N57    <b>V3P4</b> / p. N58    <b>F63MP4</b> / p. N58    <b>G63P4</b> / p. N59    <b>G3P4</b> / p. N59</p>					
<p>Seals/ Retaining ring</p>	 <p><b>Adapter Components</b> p. N60</p>					



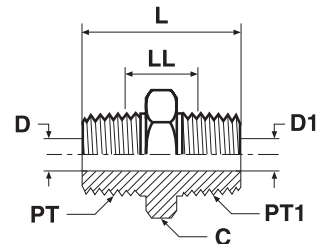
## Adapters

### FFM Male nipple

Male NPTF\* thread (SAE J476) / Male NPTF\* thread (SAE J476)

SAE 140137

\*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PT	Thread NPT/NPTF PT1	C mm	D mm	D1 mm	L mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
										S	SS
1/8-27	1/8-27	11	5	5	27	15	11	1/8 FF-S	1/8FFMSS	420	420
1/4-18	1/8-27	16	7	5	32	17	31	1/4 X 1/8 FF-S	1/4X1/8FFMSS	420	420
1/4-18	1/4-18	16	7	7	37	20	28	1/4FFMS	1/4FFMSS	420	420
3/8-18	1/8-27	19	10	5	37	22	45	3/8 X 1/8 FF-S	3/8X1/8FFMSS	420	420
3/8-18	1/4-18	19	10	10	37	19	51	3/8 X 1/4 FF-S	3/8X1/4FFMSS	420	420
3/8-18	3/8-18	19	10	10	37	19	40	3/8 FF-S	3/8FFMSS	420	420
1/2-14	1/8-27	22	14	5	39	21	58	1/2 X 1/8 FF-S	1/2X1/8FFMSS	420	420
1/2-14	1/4-18	22	7	7	43	23	88	1/2 X 1/4 FF-S	1/2X1/4FFMSS	420	420
1/2-14	3/8-18	22	10	10	43	23	71	1/2 X 3/8 FF-S	1/2X3/8FFMSS	420	420
1/2-14	1/2-14	22	14	14	48	24	71	1/2FFMS	1/2FFMSS	420	420
3/4-14	1/4-18	29	18	7	45	24	104	3/4 X 1/4 FF-S	3/4X1/4FFMSS	380	380
3/4-14	3/8-18	29	19	11	45	24	134	3/4 X 3/8 FF-S	3/4X3/8FFMSS	380	380
3/4-14	1/2-14	29	18	7	50	21	161	3/4 X 1/2 FF-S	3/4X1/2FFMSS	380	380
3/4-14	3/4-14	27	18	18	50	18	104	3/4FFMS	3/4FFMSS	380	380
1-11.5	1-11.5	36	24	24	59	30	179	1 FF-S	1FFMSS	380	380
1-11.5	1/4-18	35	24	7	50	27	188	1 X 1/4 FF-S	1X1/4FFMSS	380	380
1-11.5	3/4-14	35	18	18	53	26	195	1 X 3/4 FF-S	1X3/4FFMSS	380	380
1 1/4-11.5	1-11.5	45	32	24	62	33	256	1 1/4 X 1 FF-S	11/4X1FFMSS	350	350
1 1/4-11.5	1 1/4-11.5	45	32	32	63	33	256	1 1/4 FF-S	11/4FFMSS	350	350
1 1/2-11.5	1 1/2-11.5	51	38	38	66	36	364	1 1/2 FF-S	11/2FFMSS	210	210
2-11.5	2-11.5	64	49	49	72	41	848	2 FF-S	2FFMSS	170	170

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

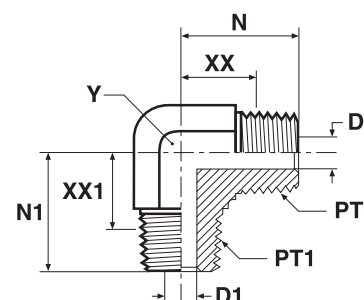
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

### CR Male thread elbow

Male NPTF\* thread (SAE J476) / Male NPTF\* thread (SAE J476)  
SAE 140237

\*Stainless Steel = NPT to prevent galling

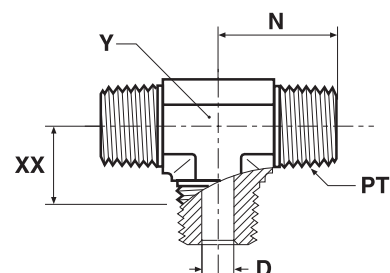


Thread NPT/NPTF PT	Thread NPT/NPTF PT1	D mm	D1 mm	N mm	N1 mm	XX mm	XX1 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
												S	SS
1/8-27	1/8-27	5	5	20	20	14	14	11	27	1/8 CR-S	1/8 CR-SS	420	420
1/4-18	1/4-18	7	7	28	28	19	19	14	54	1/4 CR-S	1/4 CR-SS	420	420
3/8-18	3/8-18	10	10	31	31	22	22	19	181	3/8 CR-S	3/8 CR-SS	420	420
3/8-18	1/4-18	10	7	31	31	22	22	19	66	3/8 X 1/4 CR-S	3/8 X 1/4 CR-SS	420	420
1/2-14	1/2-14	14	14	37	37	26	26	22	172	1/2 CR-S	1/2 CR-SS	420	420
1/2-14	3/8-18	14	10	37	33	26	24	22	103	1/2 X 3/8 CR-S	1/2 X 3/8 CR-SS	420	420
3/4-14	3/4-14	18	18	40	40	28	28	27	263	3/4 CR-S	3/4 CR-SS	280	280
3/4-14	1/2-14	18	14	40	37	28	26	27	164	3/4 X 1/2 CR-S	3/4 X 1/2 CR-SS	280	280
1-11.5	1-11.5	24	24	50	50	36	36	41	462	1 CR-S	1 CR-SS	210	210
1 1/4-11.5	1 1/4-11.5	32	32	56	56	41	41	48	782	1 1/4 CR-S	1 1/4 CR-SS	170	170
1 1/2-11.5	1 1/2-11.5	38	38	59	59	56	45	48	782	1 1/2 CR-S	1 1/2 CR-SS	170	170

### RRS Male thread tee

Male NPTF\* thread (SAE J476)  
SAE 140437

\*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PT	D mm	N mm	XX mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
								S	SS
1/8-27	5	20	14	11	33	1/8 RRS-S	1/8 RRS-SS	420	420
1/4-18	7	28	19	14	56	1/4 RRS-S	1/4 RRS-SS	420	420
3/8-18	10	31	22	19	92	3/8 RRS-S	3/8 RRS-SS	420	420
1/2-14	14	37	26	22	96	1/2 RRS-S	1/2 RRS-SS	420	420
3/4-14	19	40	28	27	235	3/4 RRS-S	3/4 RRS-SS	280	280

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

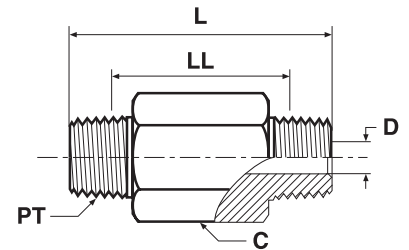
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## Adapters

### FFFM Extended male nipple

Male NPTF\* thread (SAE J476) / Male NPTF\* thread (SAE J476)

\*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PT	C mm	D mm	L mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
								S	SS
1/8-27	11	5	38	26	23	1/8 X 1.5 FFF-S	1/8X1.5FFFMSS	420	420
1/8-27	11	5	51	39	33	1/8 X 2.0 FFF-S	1/8X2.0FFFMSS	420	420
1/8-27	11	5	64	52	41	1/8 X 2.5 FFF-S	1/8X2.5FFFMSS	420	420
1/8-27	11	5	76	64	50	1/8 X 3.0 FFF-S	1/8X3.0FFFMSS	420	420
1/4-18	16	7	38	21	35	1/4 X 1.5 FFF-S	1/4X1.5FFFMSS	420	420
1/4-18	16	7	51	34	51	1/4 X 2.0 FFF-S	1/4X2.0FFFMSS	420	420
1/4-18	16	7	64	46	72	1/4 X 2.5 FFF-S	1/4X2.5FFFMSS	420	420
1/4-18	16	7	76	59	93	1/4 X 3.0 FFF-S	1/4X3.0FFFMSS	420	420
1/4-18	16	7	102	84	110	1/4 X 4.0 FFF-S	1/4X4.0FFFMSS	420	420
1/2-14	22	14	51	27	91	1/2 X 2.0 FFF-S	1/2X2.0FFFMSS	420	420
1/2-14	22	14	76	53	151	1/2 X 3.0 FFF-S	1/2X3.0FFFMSS	420	420

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

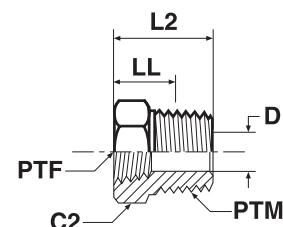
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## PTRM Thread reducer

Male NPTF\* thread (SAE J476) / Female NPTF\* thread (SAE J476)

SAE 140140

\*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PTM	Thread NPT/NPTF PTF	C2 mm	D mm	L2 mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
									S	SS
1/4-18	1/8-27	17	7	22	13	24	1/4 X 1/8 PTR-S	1/4X1/8PTRMSS	420	420
3/8-18	1/8-27	19	8	22	13	25	3/8 X 1/8 PTR-S	3/8X1/8PTRMSS	420	420
3/8-18	1/4-18	19	10	22	13	25	3/8 X 1/4 PTR-S	3/8X1/4PTRMSS	420	420
1/2-14	1/8-27	22	8	28	17	58	1/2 X 1/8 PTR-S	1/2X1/8PTRMSS	420	350
1/2-14	1/4-18	22	11	28	17	53	1/2 X 1/4 PTR-S	1/2X1/4PTRMSS	420	350
1/2-14	3/8-18	22	14	28	17	40	1/2X3/8PTRMS	1/2X3/8PTRMSS	420	350
3/4-14	1/4-18	29	11	30	18	94	3/4 X 1/4 PTR-S	3/4X1/4PTRMSS	280	280
3/4-14	3/8-18	30	15	30	18	101	3/4 X 3/8 PTR-S	3/4X3/8PTRMSS	380	280
3/4-14	1/2-14	30	18	30	18	110	3/4 X 1/2 PTR-S	3/4X1/2PTRMSS	350	280
1-11.5	3/8-18	35	14	35	20	163	1 X 3/8 PTR-S	1X3/8PTRMSS	210	210
1-11.5	1/2-14	35	18	35	20	139	1 X 1/2 PTR-S	1X1/2PTRMSS	210	210
1-11.5	3/4-14	36	23	35	20	116	1 X 3/4 PTR-S	1X3/4PTRMSS	280	210
1 1/4-11.5	1/2-14	45	18	37	22	220	1 1/4 X 1/2 PTR-S	11/4X1/2PTRMSS	170	170
1 1/4-11.5	3/4-14	45	23	37	22	236	1 1/4 X 3/4 PTR-S	11/4X3/4PTRMSS	170	170
1 1/4-11.5	1-11.5	46	29	37	22	250	1 1/4X1PTRMS	11/4X1PTRMSS	210	175
1 1/2-11.5	3/4-14	51	23	40	25	306	1 1/2 X 3/4 PTR-S	11/2X3/4PTRMSS	140	140
1 1/2-11.5	1-11.5	50	29	40	25	360	1 1/2X1PTRMS	11/2X1PTRMSS	210	140
1 1/2-11.5	1 1/4-11.5	50	38	40	25	282	1 1/2X1 1/4PTRMS	11/2X11/4PTRMSS	170	140
2-11.5	1/2-14	66	18	45	29	561	2 X 1/2 PTR-S	2X1/2PTRMSS	140	140
2-11.5	1 1/4-11.5	64	44	45	29	548	2 X 1 1/4 PTR-S	2X11/4PTRMSS	140	140

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N



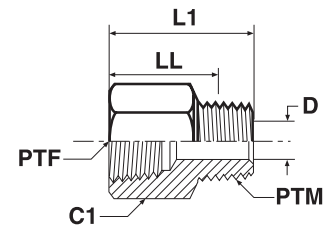
## Adapters

### FGM Thread expander / Adapter

Male NPTF\* thread (SAE J476) / Female NPTF\* thread (SAE J476)

SAE 140139

\*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PTF	Thread NPT/NPTF PTM	C1 mm	D mm	L1 mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
									S	SS
1/8-27	1/8-27	16	5	26	20	30	1/8 FG-S	1/8FGMSS	420	420
1/4-18	1/8-27	19	5	31	25	57	1/4 X 1/8 FG-S	1/4X1/8FGMSS	420	420
1/4-18	1/4-18	19	7	35	27	44	1/4 FG-S	1/4FGMSS	420	420
3/8-18	1/8-27	22	5	32	26	50	3/8 X 1/8 FG-S	3/8X1/8FGMSS	420	420
3/8-18	1/4-18	22	7	37	28	108	3/8 X 1/4 FG-S	3/8X1/4FGMSS	420	420
3/8-18	3/8-18	22	10	37	28	55	3/8 FG-S	3/8FGMSS	420	420
1/2-14	1/8-27	29	5	38	32	98	1/2 X 1/8 FG-S	1/2X1/8FGMSS	350	350
1/2-14	1/4-18	29	7	43	34	104	1/2 X 1/4 FG-S	1/2X1/4FGMSS	350	350
1/2-14	3/8-18	29	10	43	34	108	1/2 X 3/8 FG-S	1/2X3/8FGMSS	350	350
1/2-14	1/2-14	29	14	43	31	108	1/2 FG-S	1/2FGMSS	350	350
3/4-14	3/4-14	35	19	49	37	178	3/4 FG-S	3/4FGMSS	280	280
3/4-14	1/4-18	35	7	45	36	129	3/4 X 1/4 FG-S	3/4X1/4FGMSS	280	280
3/4-14	1/2-14	35	14	49	38	129	3/4 X 1/2FG-S	3/4X1/2FGMSS	280	280
1-11.5	1-11.5	42	24	60	46	160	1 FG-S	1FGMSS	210	210
1-11.5	1/2-14	41	14	56	44	180	1 X 1/2FG-S	1X1/2FGMSS	210	210
1-11.5	3/4-14	41	18	56	43	98	1 X 3/4FG-S	1X3/4FGMSS	210	210
1 1/4-11.5	1-11.5	51	24	63	48	296	1 1/4 X 1FG-S	11/4X1FGMSS	170	170

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

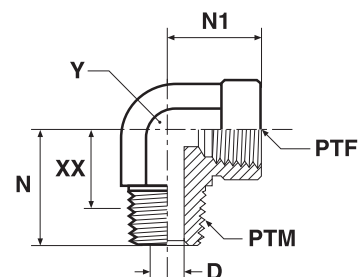
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## CDM Male female thread elbow

Male NPTF\* thread (SAE J476) / Female NPTF\* thread (SAE J476)

SAE 140239

\*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PTM	Thread NPT/NPTF PTF	D mm	N mm	N1 mm	XX mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
										S	SS
1/8-27	1/8-27	5	20	17	14	14	30	1/8 CD-S	1/8 CD-SS	350	350
1/4-18	1/4-18	7	28	22	19	19	77	1/4 CDMS	1/4 CD-SS	350	350
1/8-27	1/4-18	7	28	17	19	14	33	1/4 X 1/8 CD-S	1/4 X 1/8 CD-SS	350	350
3/8-18	3/8-18	10	31	26	22	22	96	3/8 CDMS	3/8 CD-SS	310	310
1/4-18	3/8-18	10	31	22	22	19	79	3/8 X 1/4 CD-S	3/8 X 1/4 CD-SS	350	350
1/2-14	3/8-18	10	33	31	24	27	260	3/8 X 1/2 CD-S	3/8 X 1/2 CD-SS	210	210
1/2-14	1/2-14	14	37	31	26	27	174	1/2 CD-S	1/2 CD-SS	210	210
3/8-18	1/2-14	14	38	32	26	22	96	1/2 X 3/8 CD-S	1/2 X 3/8 CD-SS	310	310
3/4-14	1/2-14	14	40	35	29	33	319	1/2 X 3/4 CD-S	1/2 X 3/4 CD-SS	210	210
3/4-14	3/4-14	18	40	35	28	33	285	3/4 CD-S	3/4 CD-SS	210	210
1/2-14	3/4-14	18	40	31	28	27	164	3/4 X 1/2 CD-S	3/4 X 1/2 CD-SS	210	210
1-11.5	1-11.5	24	50	41	36	41	515	1 CD-S	1 CD-SS	125	120
1 1/4-11.5	1 1/4-11.5	32	61	43	46	48	978	1 1/4 CD-S	1 1/4 CD-SS	100	100
1 1/2-11.5	1 1/2-11.5	38	67	53	52	64	1679	1 1/2 CD-S	1 1/2 CD-SS	100	100

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

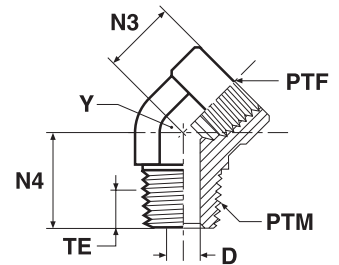
## Adapters

### CD45M Male female thread 45° elbow

Male NPTF\* thread (SAE J476) / Female NPTF\* thread (SAE J476)

SAE 140339

\*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PTM	Thread NPT/NPTF PTF	D mm	N3 mm	N4 mm	TE mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
										S	SS
1/8-27	1/8-27	5	12	18	6	14	24	1/8CD45MS	1/8 CD45-SS	350	350
1/4-18	1/4-18	7	16	27	9	19	57	1/4 CD45-S	1/4 CD45-SS	350	350
3/8-18	3/8-18	10	18	27	9	22	79	3/8 CD45-S	3/8 CD45-SS	310	310
1/2-14	1/2-14	14	23	34	12	27	141	1/2 CD45-S	1/2 CD45-SS	210	210
3/4-14	3/4-14	18	25	35	12	33	196	3/4 CD45-S	3/4 CD45-SS	210	210
1-11.5	1-11.5	24	29	44	15	41	380	1 CD45-S	1 CD45-SS	125	120
1 1/4-11.5	1 1/4-11.5	32	41	46	15	48	719	1 1/4 CD45-S	1 1/4 CD45-SS	100	100

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

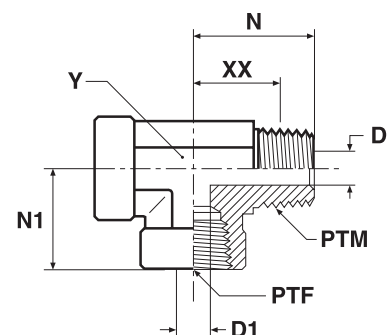
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## MRO Male female thread tee

Male NPTF\* thread (SAE J476) / Female NPTF\* thread (SAE J476)

SAE 140424

\*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PTM	Thread NPT/NPTF PTF	D mm	D1 mm	N mm	N1 mm	XX mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
											S	SS
1/8-27	1/8-27	5	8	20	17	14	14	59	1/8 MRO-S	1/8 MRO-SS	350	350
1/4-18	1/4-18	7	11	28	22	19	19	115	1/4 MRO-S	1/4 MRO-SS	350	350
3/8-18	3/8-18	10	14	31	26	22	22	122	3/8 MRO-S	3/8 MRO-SS	310	310
1/2-14	1/2-14	14	18	37	31	26	27	285	1/2 MRO-S	1/2 MRO-SS	210	210
3/4-14	3/4-14	18	23	40	35	28	33	497	3/4 MRO-S	3/4 MRO-SS	210	210
1-11.5	1-11.5	24	29	50	41	36	41	987	1 MRO-S	1 MRO-SS	125	120

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

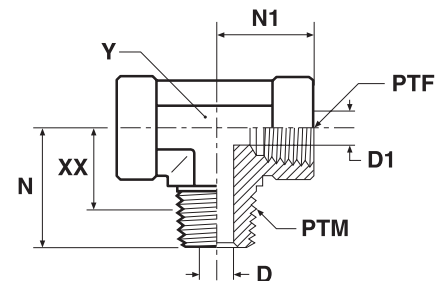
## Adapters

### MMS Male female thread tee

Male NPTF\* thread (SAE J476) / Female NPTF\* thread (SAE J476)

SAE 140425

\*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PTM	Thread NPT/NPTF PTF	D mm	D1 mm	N mm	N1 mm	XX mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
											S	SS
1/8-27	1/8-27	5	8	20	17	14	14	45	<b>1/8 MMS-S</b>	<b>1/8 MMS-SS</b>	350	350
1/4-18	1/4-18	7	11	28	22	19	19	118	<b>1/4 MMS-S</b>	<b>1/4 MMS-SS</b>	350	350
3/8-18	3/8-18	10	14	31	26	22	22	126	<b>3/8 MMS-S</b>	<b>3/8 MMS-SS</b>	310	310
1/2-14	1/2-14	14	18	37	31	26	27	272	<b>1/2 MMS-S</b>	<b>1/2 MMS-SS</b>	210	210
3/4-14	3/4-14	18	23	40	35	28	33	408	<b>3/4 MMS-S</b>	<b>3/4 MMS-SS</b>	210	210
1-11.5	1-11.5	24	29	50	41	36	41	606	<b>1 MMS-S</b>	<b>1 MMS-SS</b>	125	120

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

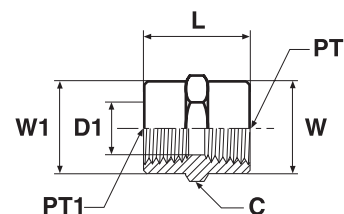
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## GG Female thread coupling

Female NPTF\* thread (SAE J476) / Female NPTF\* thread (SAE J476)

SAE 140138

\*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PT	Thread NPT/NPTF PT1	C mm	D1 mm	L mm	W mm	W1 mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
										S	SS
1/8-27	1/8-27	16	8	19	16	16	19	1/8 GG-S	1/8 GG-SS	420	420
1/4-18	1/8-27	19	8	24	19	16	35	1/4 X 1/8 GG-S	1/4 X 1/8 GG-SS	420	420
1/4-18	1/4-18	19	11	29	19	19	45	1/4 GG-S	1/4 GG-SS	420	420
3/8-18	1/8-27	22	8	26	22	16	56	3/8 X 1/8 GG-S	3/8 X 1/8 GG-SS	420	420
3/8-18	1/4-18	22	11	29	22	19	56	3/8 X 1/4 GG-S	3/8 X 1/4 GG-SS	420	420
3/8-18	3/8-18	22	14	29	22	22	62	3/8 GG-S	3/8 GG-SS	420	420
1/2-14	1/4-18	29	11	35	29	19	117	1/2 X 1/4 GG-S	1/2 X 1/4 GG-SS	350	350
1/2-14	3/8-18	29	14	38	29	22	100	1/2 X 3/8 GG-S	1/2 X 3/8 GG-SS	350	350
1/2-14	1/2-14	30	18	38	30	30	112	1/2 GG-S	1/2 GG-SS	350	350
3/4-14	1/4-18	35	11	39	35	19	150	3/4 X 1/4 GG-S	3/4 X 1/4 GG-SS	280	280
3/4-14	1/2-14	35	18	48	35	29	134	3/4 X 1/2 GG-S	3/4 X 1/2 GG-SS	280	280
3/4-14	3/4-14	36	23	39	36	36	156	3/4 GG-S	3/4 GG-SS	280	280
1-11.5	1-11.5	41	29	48	41	41	289	1 GG-S	1 GG-SS	210	210
1-11.5	1/2-14	42	18	45	41	29	235	1 X 1/2 GG-S	1 X 1/2 GG-SS	210	210
1-11.5	3/4-14	42	23	45	41	35	239	1 X 3/4 GG-S	1 X 3/4 GG-SS	210	210
1 1/4-11.5	1 1/4-11.5	51	37	49	51	51	340	1 1/4 GG-S	1 1/4 GG-SS	170	170
1 1/4-11.5	1-11.5	50	29	49	51	41	182	1 1/4 X 1 GG-S	1 1/4 X 1 GG-SS	170	170
1 1/2-11.5	1 1/2-11.5	60	43	49	61	61	706	1 1/2 GG-S	1 1/2 GG-SS	140	140
1 1/2-11.5	1 1/4-11.5	60	38	49	60	60	531	1 1/2 X 1 1/4 GG-S	1 1/2 X 1 1/4 GG-SS	140	140
2-11.5	2-11.5	73	56	50	73	73	814	2 GG-S	2 GG-SS	140	140

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

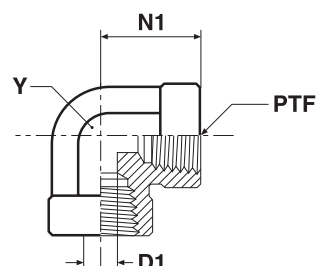
## Adapters

### DDM Female thread elbow

Female NPTF\* thread (SAE J476)

SAE 140238

\*Stainless Steel = NPT to prevent galling



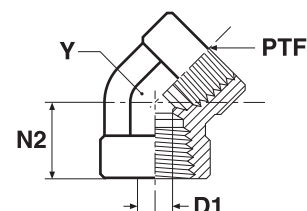
Thread NPT/NPTF PTF	D1 mm	N1 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
							S	SS
1/8-27	9	17	14	28	1/8 DD-S	1/8 DD-SS	350	350
1/4-18	11	22	19	28	1/4 DD-S	1/4 DD-SS	350	350
3/8-18	15	26	22	96	3/8 DDMS	3/8 DD-SS	310	310
1/2-14	18	31	27	159	1/2 DDMS	1/2 DD-SS	210	210
3/4-14	23	35	41	263	3/4 DD-S	3/4 DD-SS	210	210
1-11.5	29	41	48	488	1 DD-S	1 DD-SS	125	120
1 1/4-11.5	37	43	48	978	1 1/4 DD-S	1 1/4 DD-SS	100	100
1 1/2-11.5	43	53	64	1889	1 1/2 DD-S	1 1/2 DD-SS	100	100

### DD45 Female thread 45° elbow

Female NPTF\* thread (SAE J476)

SAE 140338

\*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PTF	D1 mm	N2 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
							S	SS
1/4-18	11	18	19	69	1/4 DD45-S	1/4 DD45-SS	350	350
3/8-18	14	19	22	97	3/8 DD45-S	3/8 DD45-SS	310	310
1/2-14	18	24	27	172	1/2 DD45-S	1/2 DD45-SS	210	210
3/4-14	23	25	33	248	3/4 DD45-S	3/4 DD45-SS	210	210
1-11.5	29	30	41	479	1 DD45-S	1 DD45-SS	125	120

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

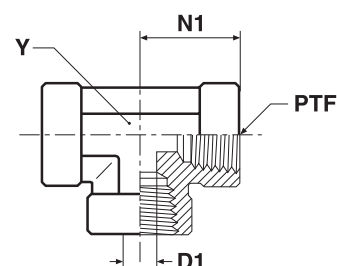
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

### MMO Female thread tee

Female NPTF\* threads (SAE J476)

SAE 140438

\*Stainless Steel = NPT to prevent galling



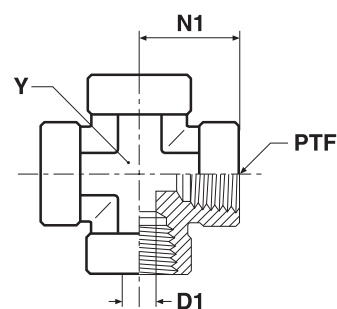
Thread NPT/NPTF PTF	D1 mm	N1 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
							S	SS
1/8-27	8	17	14	36	1/8 MMO-S	1/8 MMO-SS	350	350
1/4-18	11	22	19	94	1/4 MMO-S	1/4 MMO-SS	350	350
3/8-18	14	26	22	121	3/8 MMO-S	3/8 MMO-SS	210	210
1/2-14	17	31	27	202	1/2 MMO-S	1/2 MMO-SS	210	210
3/4-14	23	35	33	312	3/4 MMO-S	3/4 MMO-SS	210	210
1-11.5	29	41	41	606	1 MMO-S	1 MMO-SS	125	120
1 1/4-11.5	37	43	48	576	1 1/4 MMO-S	1 1/4 MMO-SS	100	100
1 1/2-11.5	43	53	64	576	1 1/2 MMO-S	1 1/2 MMO-SS	100	100

### KMMOO Female thread cross

Female NPTF\* threads (SAE J476)

SAE 140538

\*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PTF	D1 mm	N1 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
							S	SS
1/8-27	8	17	14	45	1/8 KMMOO-S	1/8 KMMOO-SS	350	350
1/4-18	11	22	19	113	1/4 KMMOO-S	1/4 KMMOO-SS	350	350
3/8-18	14	26	22	147	3/8 KMMOO-S	3/8 KMMOO-SS	210	210
1/2-14	18	31	27	257	1/2 KMMOO-S	1/2 KMMOO-SS	210	210
3/4-14	23	35	33	382	3/4 KMMOO-S	3/4 KMMOO-SS	210	210
1-11.5	29	41	41	690	1 KMMOO-S	1 KMMOO-SS	125	120

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

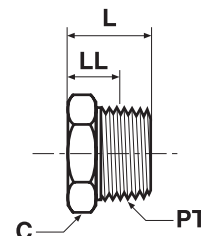


## Adapters

### HPM Hexagon head plug

Male NPTF\* Thread (SAE J476)  
SAE 130109E

\*Stainless Steel = NPT to prevent galling

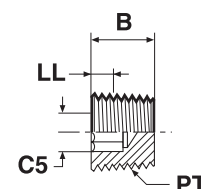


Thread NPT/NPTF PT	C mm	L mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
							S	SS
1/8-27	11	14	8	19	1/8 HP-S	1/8HPMSS	420	420
1/4-18	14	19	10	22	1/4 HP-S	1/4HPMSS	420	420
3/8-18	18	20	11	28	3/8 HP-S	3/8HPMSS	420	420
1/2-14	22	25	13	72	1/2 HP-S	1/2HPMSS	420	420
3/4-14	27	27	15	119	3/4 HP-S	3/4HPMSS	380	380
1-11.5	35	32	17	218	1 HP-S	1HPMSS	380	380
1 1/4-11.5	46	36	21	217	1 1/4 HP-S	11/4HPMSS	350	345
1 1/2-11.5	50	38	22	300	1 1/2 HP-S	11/2HPMSS	210	210

### HHP Hexagon socket plug

Male NPTF\* thread (SAE J476)  
SAE 130109N

\*Stainless Steel = NPT to prevent galling



Thread NPT/NPTF PT	B mm	C5 inch	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
							S	SS
1/16-27	8	5/32	2	2	1/16 HHP-S	1/16 HHP-SS	420	420
1/8-27	8	3/16	2	3	1/8 HHP-S	1/8 HHP-SS	420	420
1/4-18	12	1/4	3	7	1/4 HHP-S	1/4 HHP-SS	420	420
3/8-18	12	5/16	3	13	3/8 HHP-S	3/8 HHP-SS	420	420
1/2-14	16	3/8	4	16	1/2 HHP-S	1/2 HHP-SS	420	420
3/4-14	16	9/16	4	66	3/4 HHP-S	3/4 HHP-SS	380	380
1-11.5	20	1 3/8	5	73	1 HHP-S	1 HHP-SS	380	380

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

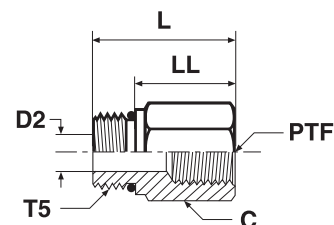
$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## F50G Male female thread adapter

Male UN/UNF thread – O-ring (ISO 11926) / Female NPTF\* thread (SAE 476)

\*Stainless Steel = NPT to prevent galling



Thread UN/UNF-2A T5	Thread NPT/NPTF PTF	C mm	D2 mm	L mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
									S	SS
9/16-18	1/4-18	19	8	30	20	36	6-1/4 F50G-S	6-1/4 F50G-SS	420	420
3/4-16	1/4-18	22	10	29	18	53	8-1/4 F50G-S	8-1/4 F50G-SS	420	420
3/4-16	3/8-18	22	10	33	21	67	8-3/8 F50G-S	8-3/8 F50G-SS	420	420
3/4-16	1/2-14	29	10	38	27	98	8-1/2 F50G-S	8-1/2 F50G-SS	350	350
7/8-14	1/4-18	25	13	21	8	78	10-1/4 F50G-S	10-1/4 F50G-SS	380	380
7/8-14	3/8-18	25	13	33	21	77	10-3/8 F50G-S	10-3/8 F50G-SS	380	380
7/8-14	1/2-14	29	13	39	26	98	10-1/2 F50G-S	10-1/2 F50G-SS	350	350
7/8-14	3/4-14	35	13	41	29	153	10-3/4 F50G-S	10-3/4 F50G-SS	280	280
1 1/16-12	1/2-14	32	17	36	21	114	12-1/2 F50G-S	12-1/2 F50G-SS	350	350
1 1/16-12	3/4-14	35	17	44	29	150	12-3/4 F50G-S	12-3/4 F50G-SS	280	280
1 3/16-12	1/2-14	35	18	27	12	159	14-1/2 F50G-S	14-1/2 F50G-SS	280	280
1 3/16-12	3/4-14	35	18	43	28	167	14-3/4 F50G-S	14-3/4 F50G-SS	280	280
1 5/16-12	1/2-14	38	21	25	10	137	16-1/2 F50G-S	16-1/2 F50G-SS	280	280
1 5/16-12	3/4-14	38	21	38	23	189	16-3/4 F50G-S	16-3/4 F50G-SS	280	280
1 5/16-12	1-11.5	41	22	48	33	216	16-1 F50G-S	16-1 F50G-SS	210	210
1 5/8-12	1-11.5	48	27	25	10	151	20-1 F50G-S	20-1 F50G-SS	210	210
1 5/8-12	1 1/4-11.5	51	27	50	35	191	20-1 1/4 F50G-S	20-1 1/4 F50G-SS	170	170
1 7/8-12	1-11.5	54	34	25	10	612	24-1 F50G-S	24-1 F50G-SS	170	170
1 7/8-12	1 1/2-11.5	57	34	51	36	653	24-1 1/2 F50G-S	24-1 1/2 F50G-SS	140	140

Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N60.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

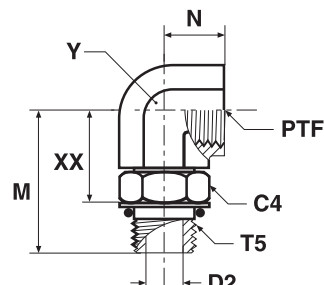
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

**N**

## Adapters

### AOEG Elbow

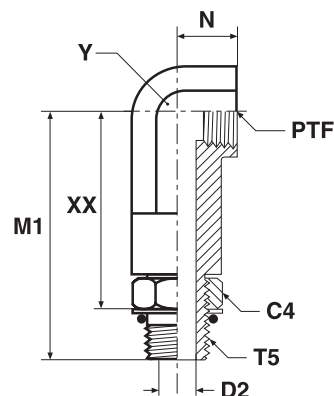
Male UN/UNF thread O-ring (ISO 11926) / Female NPTF thread (SAE 476)



Thread UN/UNF-2A T5	Thread NPTF/NPTF PTF	C4 mm	D2 mm	M mm	N mm	XX mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
3/4-16	3/8-18	22	10	37	16	25	22	100	8-3/8 AOEG-S	310
7/8-14	1/2-14	25	12	46	19	32	27	172	10-1/2 AOEG-S	210
1 1/16-12	3/4-14	32	16	51	21	34	33	274	12-3/4 AOEG-S	210
1 5/16-12	1-11.5	38	21	57	25	41	41	471	16-1 AOEG-S	125

### AOE4G Extra long elbow

Male UN/UNF thread O-ring (ISO 11926) / Female NPTF thread (SAE 476)



Thread UN/UNF-2A T5	Thread NPTF/NPTF PTF	C4 mm	D2 mm	M1 mm	N mm	XX mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
3/4-16	3/8-18	22	10	75	16	62	22	176	8-3/8 AOE4G-S	310
7/8-14	1/2-14	25	12	90	19	76	27	246	10-1/2 AOE4G-S	210
1 1/16-12	3/4-14	32	16	103	21	87	33	356	12-3/4 AOE4G-S	210
1 5/16-12	1-11.5	38	21	118	25	101	41	956	16-1 AOE4G-S	125

Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N60.

Order codes shown are part of our current manufacturing programme.

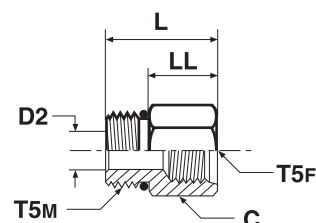
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to the Steel version of the product.

## F5OG5 Thread reducer / Expander

Male UN/UNF threads – O-ring (ISO 11926)  
SAE 090136



Thread UN/UNF-2A T5M	Thread UN/UNF-2B T5F	C mm	D2 mm	L mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
									S	SS
7/16-20	7/16-20	18	4	27	18	42	4-4 F5OG5-S	4-4 F5OG5-SS	500	315
7/16-20	9/16-18	21	4	30	20	49	4-6 F5OG5-S	4-6 F5OG5-SS	420	315
9/16-18	7/16-20	18	8	26	16	30	6-4 F5OG5-S	6-4 F5OG5-SS	500	315
9/16-18	3/4-16	27	8	35	26	64	6-8 F5OG5-S	6-8 F5OG5-SS	420	280
3/4-16	9/16-18	22	10	29	18	93	8-6 F5OG5-S	8-6 F5OG5-SS	420	315
3/4-16	7/8-14	29	10	40	29	73	8-10 F5OG5-S	8-10 F5OG5-SS	310	210
7/8-14	9/16-18	25	12	32	19	73	10-6 F5OG5-S	10-6 F5OG5-SS	420	350
7/8-14	3/4-16	25	12	33	21	75	10-8 F5OG5-S	10-8 F5OG5-SS	310	280
7/8-14	1 1/16-12	35	12	43	30	209	10-12 F5OG5-S	10-12 F5OG5-SS	310	245
1 1/16-12	3/4-16	32	16	37	22	114	12-8 F5OG5-S	12-8 F5OG5-SS	420	315
1 1/16-12	7/8-14	32	16	39	24	150	12-10 F5OG5-S	12-10 F5OG5-SS	350	210
1 1/16-12	1 5/16-12	41	16	48	33	170	12-16 F5OG5-S	12-16 F5OG5-SS	240	140
1 5/16-12	3/4-16	38	19	25	10	159	16-8 F5OG5-S	16-8 F5OG5-SS	310	310
1 5/16-12	7/8-14	38	20	25	10	240	16-10 F5OG5-S	16-10 F5OG5-SS	310	245
1 5/16-12	1 1/16-12	38	22	45	29	259	16-12 F5OG5-S	16-12 F5OG5-SS	310	245
1 5/16-12	1 5/8-12	54	22	50	35	280	16-20 F5OG5-S	16-20 F5OG5-SS	210	175
1 5/8-12	1 1/16-12	48	27	25	10	249	20-12 F5OG5-S	20-12 F5OG5-SS	280	210
1 5/8-12	1 5/16-12	48	27	44	29	249	20-16 F5OG5-S	20-16 F5OG5-SS	280	140
1 7/8-12	1 1/16-12	54	32	25	10	263	24-12 F5OG5-S	24-12 F5OG5-SS	210	140
1 7/8-12	1 5/16-12	54	32	25	10	268	24-16 F5OG5-S	24-16 F5OG5-SS	210	140
1 7/8-12	1 5/8-12	54	33	45	29	272	24-20 F5OG5-S	24-20 F5OG5-SS	210	140

Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N60.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

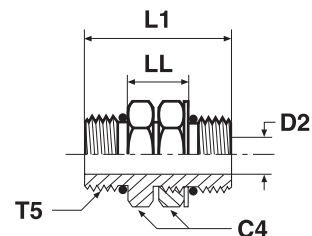
Pressure ratings – PN shown, apply to the Steel and Stainless Steel versions of the product.

N

## Adapters

### F5OHAO Straight thread union

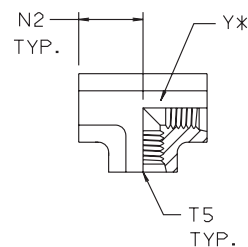
Male UN/UNF threads – O-ring (ISO 11926)



Thread UN/UNF-2A T5	C4 mm	D2 mm	L1 mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
								S	SS
7/16-20	14	5	31	12	25	<b>4 F5OHAO-S</b>	<b>4 F5OHAO-SS</b>	350	350
9/16-18	18	8	36	15	52	<b>6 F5OHAO-S</b>	<b>6 F5OHAO-SS</b>	350	350
3/4-16	22	11	40	16	76	<b>8 F5OHAO-S</b>	<b>8 F5OHAO-SS</b>	350	350
7/8-14	25	12	46	19	118	<b>10 F5OHAO-S</b>	<b>10 F5OHAO-SS</b>	310	310
1 1/16-12	32	17	54	23	213	<b>12 F5OHAO-S</b>	<b>12 F5OHAO-SS</b>	280	280
1 5/16-12	41	22	54	23	235	<b>16 F5OHAO-S</b>	<b>16 F5OHAO-SS</b>	210	210
1 5/8-12	48	28	54	23	367	<b>20 F5OHAO-S</b>	<b>20 F5OHAO-SS</b>	170	170
1 7/8-12	54	34	54	23	538	<b>24 F5OHAO-S</b>	<b>24 F5OHAO-SS</b>	140	140

### G5G5JG5 Female straight thread tee

Female UN/UNF threads – all 3 ends



Thread UN/UNF-2B T5	N2 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
7/16-20	19	19	68	<b>4 G5G5JG5-S</b>	350
9/16-18	22	19	47	<b>6 G5G5JG5-S</b>	350
3/4-16	26	27	228	<b>8 G5G5JG5-S</b>	350
7/8-14	30	27	228	<b>10 G5G5JG5-S</b>	310

Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N60.

Order codes shown are part of our current manufacturing programme.

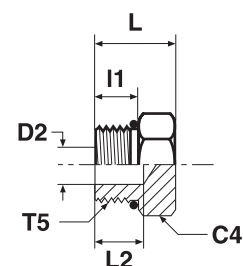
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to the Steel and Stainless Steel versions of the product.

## P5ONM Hexagon head plug

Male UN/UNF thread – O-ring (ISO 11926)  
SAE 090109A



Thread UN/UNF-2A T5	C4 mm	D2 mm	I1 mm	L mm	L2 mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
									S	SS
5/16-24	11	2	8	16	10	7	<b>2 P5ON-S</b>	<b>2P5ONMSS</b>	420	420
3/8-24	13	3	8	16	9	9	<b>3 P5ON-S</b>	<b>3P5ONMSS</b>	420	420
7/16-20	14	5	9	17	10	13	<b>4 P5ON-S</b>	<b>4P5ONMSS</b>	420	420
1/2-20	16	6	9	17	10	19	<b>5 P5ON-S</b>	<b>5P5ONMSS</b>	420	420
9/16-18	18	8	10	19	11	22	<b>6 P5ON-S</b>	<b>6P5ONMSS</b>	420	420
3/4-16	22	11	11	20	11	44	<b>8 P5ON-S</b>	<b>8P5ONMSS</b>	420	420
7/8-14	25	13	13	24	12	53	<b>10 P5ON-S</b>	<b>10P5ONMSS</b>	420	420
1 1/16-12	32	17	15	28	15	117	<b>12 P5ON-S</b>	<b>12P5ONMSS</b>	420	420
1 3/16-12	35	18	15	28	14	124	<b>14 P5ON-S</b>	<b>14P5ONMSS</b>	380	380
1 5/16-12	38	22	15	29	13	141	<b>16 P5ON-S</b>	<b>16P5ONMSS</b>	380	380
1 5/8-12	48	28	15	31	10	284	<b>20 P5ON-S</b>	<b>20P5ONMSS</b>	280	280
1 7/8-12	54	34	15	32	9	447	<b>24 P5ON-S</b>	<b>24P5ONMSS</b>	210	210
2 1/2-12	70	46	15	37	3	807	<b>32 P5ON-S</b>	<b>32P5ONMSS</b>	140	140

Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N60.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

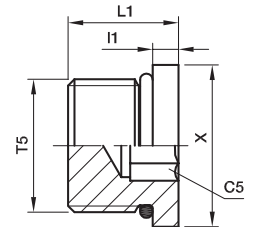
Pressure ratings – PN shown, apply to the Steel and Stainless Steel versions of the product.

**N**

## Adapters

### HP50N Hexagon socket plug

Male UN/UNF thread – O-ring (ISO 11926)  
SAE 090109B



Thread UN/UNF-2A T5	C5 mm	I1 mm	L1 mm	X mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
								S	SS
3/8-24	1/8	3	10	13	5	<b>3 HP50N-S</b>	<b>3 HP50N-SS</b>	420	420
7/16-20	3/16	3	12	14	7	<b>4 HP50N-S</b>	<b>4 HP50N-SS</b>	420	420
1/2-20	3/16	3	12	16	10	<b>5 HP50N-S</b>	<b>5 HP50N-SS</b>	420	420
9/16-18	1/4	3	13	18	12	<b>6 HP50N-S</b>	<b>6 HP50N-SS</b>	420	420
3/4-16	5/16	4	15	22	26	<b>8 HP50N-S</b>	<b>8 HP50N-SS</b>	420	420
7/8-14	3/8	4	16	25	39	<b>10 HP50N-S</b>	<b>10 HP50N-SS</b>	420	420
1 1/16-12	9/16	5	19	32	64	<b>12 HP50N-S</b>	<b>12 HP50N-SS</b>	420	420
1 3/16-12	9/16	5	19	35	85	<b>14 HP50N-S</b>	<b>14 HP50N-SS</b>	380	380
1 5/16-12	5/8	5	19	38	103	<b>16 HP50N-S</b>	<b>16 HP50N-SS</b>	380	380
1 5/8-12	3/4	5	19	48	165	<b>20 HP50N-S</b>	<b>20 HP50N-SS</b>	280	280
1 7/8-12	3/4	5	20	54	238	<b>24 HP50N-S</b>	<b>24 HP50N-SS</b>	210	210

Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N60.

Order codes shown are part of our current manufacturing programme.

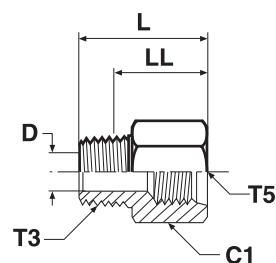
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to the Steel and Stainless Steel versions of the product.

## F3HMG5 Male female thread adapter

Male BSPT thread (ISO 7) / Female UN/UNF thread – O-ring (ISO 11926-1)



Thread BSPT T3	Thread UN/UNF-2B T5	C1 mm	D mm	L mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
									S	SS
1/8-28	7/16-20	18	5	28	22	27	<b>1/8-4F3HG5S</b>	<b>1/8-4F3HMG5SS</b>	350	350
1/8-28	1/2-20	19	5	28	22	32	<b>1/8-5F3HG5S</b>	<b>1/8-5F3HMG5SS</b>	350	350
1/4-19	9/16-18	21	7	35	26	45	<b>1/4-6F3HG5S</b>	<b>1/4-6F3HMG5SS</b>	350	350
3/8-19	3/4-16	25	10	37	28	73	<b>3/8-8F3HG5S</b>	<b>3/8-8F3HMG5SS</b>	315	315
1/2-14	7/8-14	29	14	45	34	111	<b>1/2-10F3HG5S</b>	<b>1/2-10F3HMG5SS</b>	210	210
3/4-14	1 1/16-12	35	18	49	36	177	<b>3/4-12F3HG5S</b>	<b>3/4-12F3HMG5SS</b>	210	210
1-11	1 5/16-12	41	24	54	39	272	<b>1-16F3HG5S</b>	<b>1-16F3HMG5SS</b>	120	120

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

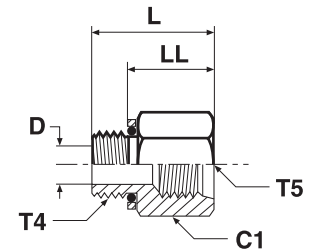
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



## Adapters

### F4OHMG5 Male female thread adapter

Male BSPP thread O-ring + retaining ring (ISO 1179) /  
Female UN/UNF thread – O-ring (ISO 11926-1)



Thread BSPP T4	Thread UN/UNF-2B T5	C1 mm	D mm	L mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
									S	SS
1/8-28	7/16-20	18	4	25	19	27	<b>1/8-4F4OHG5S</b>	<b>1/8-4F4OHMG5SS</b>	350	315
1/4-19	9/16-18	21	8	32	23	45	<b>1/4-6F4OHG5S</b>	<b>1/4-6F4OHMG5SS</b>	350	315
3/8-19	9/16-18	22	8	32	23	70	<b>3/8-6F4OHG5S</b>	<b>3/8-6F4OHMG5SS</b>	350	315
3/8-19	3/4-16	25	10	34	25	73	<b>3/8-8F4OHG5S</b>	<b>3/8-8F4OHMG5SS</b>	350	280
1/2-14	7/8-14	29	12	41	29	111	<b>1/2-10F4OHG5S</b>	<b>1/2-10F4OHMG5SS</b>	240	240
3/4-14	1 1/16-12	35	16	44	33	177	<b>3/4-12F4OHG5S</b>	<b>3/4-12F4OHMG5SS</b>	240	240
1-11	1 5/16-12	45	21	49	34	272	<b>1-16F4OHG5S</b>	<b>1-16F4OHMG5SS</b>	240	210
1 1/4-11	1 5/8-12	51	27	48	35	320	<b>1 1/4-20F4OHG5S</b>	<b>1 1/4-20F4OHMG5SS</b>	140	140

Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N60.

Order codes shown are part of our current manufacturing programme.

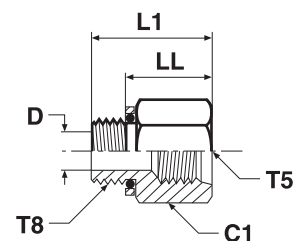
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to the Steel and Stainless Steel versions of the product.

## F8OHG5 Male female thread adapter

Male metric thread O-ring + retaining ring / Female UN/UNF thread – O-ring (ISO 11926-1)



Thread Metric T8	Thread UN/UNF-2B T5	C1 mm	D mm	L1 mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
									S	SS
M 10×1.0	7/16-20	18	4	27	20	27	<b>M10-4F8OHG5S</b>	<b>M10-4F8OHG5SS</b>	350	315
M 14×1.5	9/16-18	21	7	30	23	45	<b>M14-6F8OHG5S</b>	<b>M14-6F8OHG5SS</b>	350	315
M 16×1.5	3/4-16	25	9	33	24	73	<b>M16-8F8OHG5S</b>	<b>M16-8F8OHG5SS</b>	350	280
M 22×1.5	7/8-14	29	13	38	26	111	<b>M22-10F8OHG5S</b>	<b>M22-10F8OHG5SS</b>	240	210
M 27×2.0	1 1/16-12	32	16	48	34	170	<b>M27-12F8OHG5S</b>	<b>M27-12F8OHG5SS</b>	240	210
M 33×2.0	1 5/16-12	41	22	49	35	250	<b>M33-16F8OHG5S</b>	<b>M33-16F8OHG5SS</b>	140	140
M 42×2.0	1 5/8-12	51	28	49	34	320	<b>M42-20F8OHG5S</b>	<b>M42-20F8OHG5SS</b>	140	140

Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N60.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

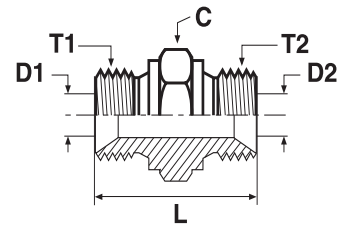
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to the Steel and Stainless Steel versions of the product.

## Adapters

### HMK4 Union

BSPP 60° Cone end (ISO 8434-6)



Thread BSPP T1	Thread BSPP T2	C mm	D1 mm	D2 mm	L mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
									S	SS
1/8	1/8	14	4	4	24	15	<b>2HMK4S</b>	<b>2HMK4SS</b>	350	350
1/4	1/8	19	5	4	28	29	<b>4-2HMK4S</b>	<b>4-2HMK4SS</b>	350	350
1/4	1/4	19	5	5	32	35	<b>4HMK4S</b>	<b>4HMK4SS</b>	350	350
3/8	1/4	22	8	5	33	46	<b>6-4HMK4S</b>	<b>6-4HMK4SS</b>	350	350
3/8	3/8	22	8	8	35	51	<b>6HMK4S</b>	<b>6HMK4SS</b>	350	350
1/2	1/4	27	11	5	37	70	<b>8-4HMK4S</b>	<b>8-4HMK4SS</b>	200	200
1/2	3/8	27	11	8	38	76	<b>8-6HMK4S</b>	<b>8-6HMK4SS</b>	200	200
1/2	1/2	27	11	11	41	85	<b>8HMK4S</b>	<b>8HMK4SS</b>	200	200
5/8	1/2	30	14	11	43	106	<b>10-8HMK4S</b>	<b>10-8HMK4SS</b>	200	200
5/8	5/8	30	14	14	45	112	<b>10HMK4S</b>	<b>10HMK4SS</b>	200	200
3/4	1/4	32	17	5	39	92	<b>12-4HMK4S</b>	<b>12-4HMK4SS</b>	200	200
3/4	3/8	32	17	8	41	107	<b>12-6HMK4S</b>	<b>12-6HMK4SS</b>	200	200
3/4	1/2	32	17	11	43	111	<b>12-8HMK4S</b>	<b>12-8HMK4SS</b>	200	200
3/4	5/8	32	17	14	45	106	<b>12-10HMK4S</b>	<b>12-10HMK4SS</b>	200	200
3/4	3/4	32	17	17	45	124	<b>12HMK4S</b>	<b>12HMK4SS</b>	200	200
1	1/2	41	22	11	47	175	<b>16-8HMK4S</b>	<b>16-8HMK4SS</b>	120	120
1	5/8	41	22	14	49	188	<b>16-10HMK4S</b>	<b>16-10HMK4SS</b>	120	120
1	3/4	41	22	17	49	190	<b>16-12HMK4S</b>	<b>16-12HMK4SS</b>	120	120
1	1	41	22	22	52	199	<b>16HMK4S</b>	<b>16HMK4SS</b>	120	120
1 1/4	3/4	50	29	17	57	259	<b>20-12HMK4S</b>	<b>20-12HMK4SS</b>	105	105
1 1/4	1	50	29	22	60	383	<b>20-16HMK4S</b>	<b>20-16HMK4SS</b>	105	105
1 1/4	1 1/4	50	29	29	61	405	<b>20HMK4S</b>	<b>20HMK4SS</b>	105	105
1 1/2	1	55	33	22	64	417	<b>24-16HMK4S</b>	<b>24-16HMK4SS</b>	105	105
1 1/2	1 1/4	55	33	29	65	410	<b>24-20HMK4S</b>	<b>24-20HMK4SS</b>	105	105
1 1/2	1 1/2	55	33	33	67	534	<b>24HMK4S</b>	<b>24HMK4SS</b>	105	105
2	1 1/2	70	46	33	73	660	<b>32-24HMK4S</b>	<b>32-24HMK4SS</b>	70	70
2	2	70	46	46	76	719	<b>32HMK4S</b>	<b>32HMK4SS</b>	70	70

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

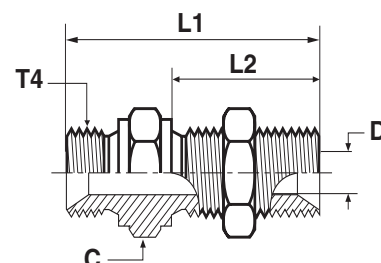
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## WMK4WL4NM Bulkhead union

BSPP 60° Cone end (ISO 8434-6)

\*Supplied with locknut



Thread BSPP T4	L1 mm	L2 mm	C mm	D mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
								S	SS
1/4	49	28	19	5	57	<b>4WMK4WL4NMS</b>	<b>4WMK4WL4NMSS</b>	350	350
3/8	55	32	22	8	84	<b>6WMK4WL4NMS</b>	<b>6WMK4WL4NMSS</b>	350	350
1/2	62	35	27	11	122	<b>8WMK4WL4NMS</b>	<b>8WMK4WL4NMSS</b>	200	200
5/8	64	35	30	14	146	<b>10WMK4WL4NMS</b>	<b>10WMK4WL4NMSS</b>	200	200
3/4	67	38	32	17	209	<b>12WMK4WL4NMS</b>	<b>12WMK4WL4NMSS</b>	200	200
1	74	41	41	22	328	<b>16WMK4WL4NMS</b>	<b>16WMK4WL4NMSS</b>	120	120
1 1/4	85	44	50	29	507	<b>20WMK4WL4NMS</b>	<b>20WMK4WL4NMSS</b>	105	105
1 1/2	93	48	55	33	609	<b>24WMK4WL4NMS</b>	<b>24WMK4WL4NMSS</b>	105	105

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

For the version without locknut, please delete "WL4NM" (e.g. 16WMK4)

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to the Steel and Stainless Steel versions of the product.

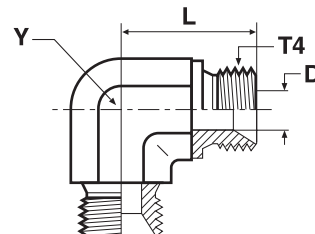
### Maximum bulkhead wallthickness

Thread BSPP	Bulkhead union Max. thickness mm
1/4	9.5
3/8	12.5
1/2	12.4
5/8	10.8
3/4	13.4
1	10.1
1 1/4	12.1
1 1/2	14.1

## Adapters

### EMK4 Union elbow

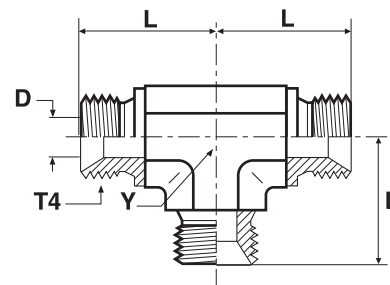
BSPP 60° Cone end (ISO 8434-6)



Thread BSPP T4	D mm	L mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
							S	SS
1/8	4	17	11	21	<b>2EMK4S</b>	<b>2EMK4SS</b>	350	350
1/4	5	24	14	45	<b>4EMK4S</b>	<b>4EMK4SS</b>	350	350
3/8	8	27	19	85	<b>6EMK4S</b>	<b>6EMK4SS</b>	350	350
1/2	11	32	22	123	<b>8EMK4S</b>	<b>8EMK4SS</b>	200	200
5/8	14	34	22	109	<b>10EMK4S</b>	<b>10EMK4SS</b>	200	200
3/4	17	36	27	178	<b>12EMK4S</b>	<b>12EMK4SS</b>	200	200
1	22	42	33	288	<b>16EMK4S</b>	<b>16EMK4SS</b>	120	120
1 1/4	29	48	41	512	<b>20EMK4S</b>	<b>20EMK4SS</b>	105	105
1 1/2	33	54	48	824	<b>24EMK4S</b>	<b>24EMK4SS</b>	105	105

### JMK4 Union tee

BSPP 60° Cone end (ISO 8434-6)



Thread BSPP T4	D mm	L mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
							S	SS
1/8	4	17	11	33	<b>2JMK4S</b>	<b>2JMK4SS</b>	350	350
1/4	5	24	14	61	<b>4JMK4S</b>	<b>4JMK4SS</b>	350	350
3/8	8	27	19	105	<b>6JMK4S</b>	<b>6JMK4SS</b>	350	350
1/2	11	32	22	157	<b>8JMK4S</b>	<b>8JMK4SS</b>	200	200
5/8	14	34	22	145	<b>10JMK4S</b>	<b>10JMK4SS</b>	200	200
3/4	17	36	27	258	<b>12JMK4S</b>	<b>12JMK4SS</b>	200	200
1	22	42	33	591	<b>16JMK4S</b>	<b>16JMK4SS</b>	120	120
1 1/4	29	48	41	646	<b>20JMK4S</b>	<b>20JMK4SS</b>	105	105
1 1/2	33	54	48	940	<b>24JMK4S</b>	<b>24JMK4SS</b>	105	105

Order codes shown are part of our current manufacturing programme.

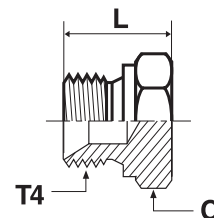
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## PNMK4 Plug

BSPP 60° Cone plug (ISO 8434-6)



Thread BSPP T4	C mm	L mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
						S	SS
1/8	14	14	11	<b>2PNMK4S</b>	<b>2PNMK4SS</b>	350	350
1/4	19	19	22	<b>4PNMK4S</b>	<b>4PNMK4SS</b>	350	350
3/8	22	21	38	<b>6PNMK4S</b>	<b>6PNMK4SS</b>	350	350
1/2	27	24	66	<b>8PNMK4S</b>	<b>8PNMK4SS</b>	200	200
5/8	30	27	76	<b>10PNMK4S</b>	<b>10PNMK4SS</b>	200	200
3/4	32	27	106	<b>12PNMK4S</b>	<b>12PNMK4SS</b>	200	200
1	41	30	170	<b>16PNMK4S</b>	<b>16PNMK4SS</b>	120	120
1 1/4	50	39	316	<b>20PNMK4S</b>	<b>20PNMK4SS</b>	105	105
1 1/2	55	43	386	<b>24PNMK4S</b>	<b>24PNMK4SS</b>	105	105
2	70	48	650	<b>32PNMK4S</b>	<b>32PNMK4SS</b>	70	70

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

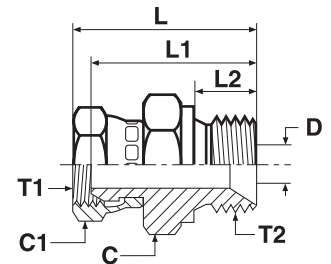
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

**N**

## Adapters

### F6MK4 Swivel male stud

BSPP 60° cone end (ISO 8434-6) / BSPP 60° Female swivel end (ISO 8434-6)



Thread BSPP T1	Thread BSPP T2	C mm	C1 mm	D mm	L mm	L1 mm	L2 mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
											S	SS
1/4	1/4	19	19	5	37	31	11	44	4-4F6MK4S	4-4F6MK4SS	350	350
1/4	3/8	22	19	5	39	33	12	61	4-6F6MK4S	4-6F6MK4SS	350	350
1/4	1/2	27	19	5	42	36	14	75	4-8F6MK4S	4-8F6MK4SS	200	200
3/8	1/4	19	22	5	38	32	11	59	6-4F6MK4S	6-4F6MK4SS	350	350
3/8	3/8	22	22	8	40	34	12	71	6-6F6MK4S	6-6F6MK4SS	350	350
3/8	1/2	27	22	8	44	37	14	92	6-8F6MK4S	6-8F6MK4SS	200	200
1/2	3/8	22	27	8	44	37	12	102	8-6F6MK4S	8-6F6MK4SS	200	200
1/2	1/2	27	27	11	46	39	14	143	8-8F6MK4S	8-8F6MK4SS	200	200
1/2	3/4	32	27	11	50	42	16	157	8-12F6MK4S	8-12F6MK4SS	200	200
3/4	1/2	27	32	11	47	39	14	171	12-8F6MK4S	12-8F6MK4SS	200	200
3/4	3/4	32	32	17	50	41	16	165	12-12F6MK4S	12-12F6MK4SS	200	200
3/4	1	41	32	17	55	45	19	261	12-16F6MK4S	12-16F6MK4SS	120	120
1	1	41	41	22	57	46	19	300	16-16F6MK4S	16-16F6MK4SS	120	120

Order codes shown are part of our current manufacturing programme.

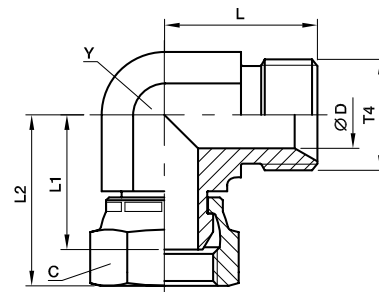
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## C6MK4 Swivel nut elbow

BSPP 60° cone end (ISO 8434-6) / BSPP 60° Female swivel end (ISO 8434-6)



Thread BSPP T4	C mm	D mm	L mm	L1 mm	L2 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
										S	SS
1/8	14	4	17	18	22	11	26	<b>2C6MK4S</b>	<b>2C6MK4SS</b>	350	350
1/4	19	5	24	25	31	14	62	<b>4C6MK4S</b>	<b>4C6MK4SS</b>	350	350
3/8	22	8	27	26	33	19	104	<b>6C6MK4S</b>	<b>6C6MK4SS</b>	350	350
1/2	27	11	32	32	39	22	159	<b>8C6MK4S</b>	<b>8C6MK4SS</b>	200	200
5/8	30	14	34	30	40	22	158	<b>10C6MK4S</b>	<b>10C6MK4SS</b>	200	200
3/4	32	17	36	33	42	27	226	<b>12C6MK4S</b>	<b>12C6MK4SS</b>	200	200
1	41	22	42	38	49	33	377	<b>16C6MK4S</b>	<b>16C6MK4SS</b>	120	120
1 1/4	50	29	48	48	58	41	650	<b>20C6MK4S</b>	<b>20C6MK4SS</b>	105	105
1 1/2	60	33	54	50	63	48	999	<b>24C6MK4S</b>	<b>24C6MK4SS</b>	105	105

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

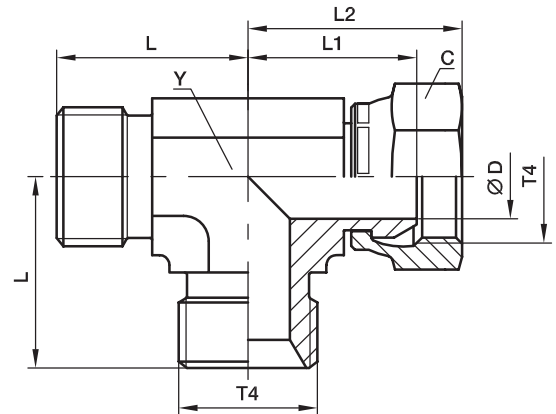
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



## Adapters

### R6MK4 Swivel nut run tee

BSPP 60° Cone ends (ISO 8434-6) / BSPP 60° Female swivel end (ISO 8434-6)



Thread BSPP T4	C mm	D mm	L mm	L1 mm	L2 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
										S	SS
1/8	14	4	17	18	22	11	29	<b>2R6MK4S</b>	<b>2R6MK4SS</b>	350	350
1/4	19	5	24	25	31	14	77	<b>4R6MK4S</b>	<b>4R6MK4SS</b>	350	350
3/8	22	8	27	26	32	19	128	<b>6R6MK4S</b>	<b>6R6MK4SS</b>	350	350
1/2	27	11	32	32	39	22	203	<b>8R6MK4S</b>	<b>8R6MK4SS</b>	200	200
5/8	30	14	34	30	40	22	274	<b>10R6MK4S</b>	<b>10R6MK4SS</b>	200	200
3/4	32	17	36	33	42	27	274	<b>12R6MK4S</b>	<b>12R6MK4SS</b>	200	200
1	41	22	42	38	48	33	456	<b>16R6MK4S</b>	<b>16R6MK4SS</b>	120	120
1 1/4	50	29	48	48	58	41	801	<b>20R6MK4S</b>	<b>20R6MK4SS</b>	105	105

Order codes shown are part of our current manufacturing programme.

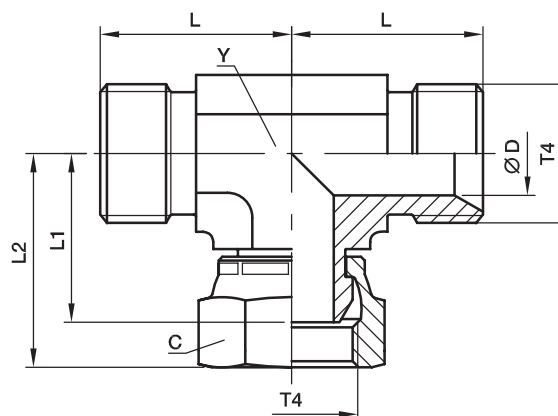
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## S6MK4 Swivel nut branch tee

BSPP 60° Cone ends (ISO 8434-6) / BSPP 60° Female swivel end (ISO 8434-6)



Thread BSPP T4	C mm	D mm	L mm	L1 mm	L2 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
										S	SS
1/8	14	4	17	18	22	11	33	<b>2S6MK4S</b>	<b>2S6MK4SS</b>	350	350
1/4	19	5	24	25	31	14	77	<b>4S6MK4S</b>	<b>4S6MK4SS</b>	350	350
3/8	22	8	27	26	32	19	126	<b>6S6MK4S</b>	<b>6S6MK4SS</b>	350	350
1/2	27	11	32	32	39	22	191	<b>8S6MK4S</b>	<b>8S6MK4SS</b>	200	200
5/8	30	14	34	30	40	22	209	<b>10S6MK4S</b>	<b>10S6MK4SS</b>	200	200
3/4	32	17	36	33	42	27	286	<b>12S6MK4S</b>	<b>12S6MK4SS</b>	200	200
1	41	22	42	38	48	33	493	<b>16S6MK4S</b>	<b>16S6MK4SS</b>	120	120
1 1/4	50	29	48	48	58	41	796	<b>20S6MK4S</b>	<b>20S6MK4SS</b>	105	105

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

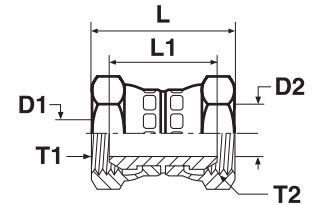
$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## Adapters

### H6MK4 Swivel nut union

BSPP 60° Female swivel ends (ISO 8434-6)



Thread BSPP T1	Thread BSPP T2	D1 mm	D2 mm	L mm	L1 mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
									S	SS
1/4	1/4	5	5	38	27	50	<b>4H6MK4S</b>	<b>4H6MK4SS</b>	350	350
3/8	1/4	8	5	40	28	61	<b>6-4H6MK4S</b>	<b>6-4H6MK4SS</b>	350	350
3/8	3/8	8	8	42	29	73	<b>6H6MK4S</b>	<b>6H6MK4SS</b>	350	350
1/2	1/4	11	5	43	30	85	<b>8-4H6MK4S</b>	<b>8-4H6MK4SS</b>	200	200
1/2	3/8	11	8	44	31	96	<b>8-6H6MK4S</b>	<b>8-6H6MK4SS</b>	200	200
1/2	1/2	11	11	47	33	107	<b>8H6MK4S</b>	<b>8H6MK4SS</b>	200	200
5/8	5/8	14	14	48	29	130	<b>10H6MK4S</b>	<b>10H6MK4SS</b>	200	200
3/4	1/2	17	11	49	33	152	<b>12-8H6MK4S</b>	<b>12-8H6MK4SS</b>	200	200
3/4	3/4	17	17	50	32	167	<b>12H6MK4S</b>	<b>12H6MK4SS</b>	200	200
1	1	22	22	58	35	201	<b>16H6MK4S</b>	<b>16H6MK4SS</b>	120	120
1 1/4	1 1/4	29	29	66	45	340	<b>20H6MK4S</b>	<b>20H6MK4SS</b>	105	105
1 1/2	1 1/2	33	33	70	43	583	<b>24H6MK4S</b>	<b>24H6MK4SS</b>	105	105

Order codes shown are part of our current manufacturing programme.

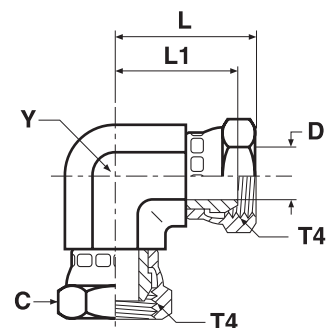
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

**E6MK4 Swivel nut elbow**

BSPP 60° Female swivel ends (ISO 8434-6)



Thread BSPP T4	C mm	D mm	L mm	L1 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
									S	SS
1/4	19	5	31	25	14	90	<b>4E6MK4S</b>	<b>4E6MK4SS</b>	350	350
3/8	22	8	33	26	19	127	<b>6E6MK4S</b>	<b>6E6MK4SS</b>	350	350
1/2	27	11	39	32	22	225	<b>8E6MK4S</b>	<b>8E6MK4SS</b>	200	200
5/8	30	14	39	30	22	203	<b>10E6MK4S</b>	<b>10E6MK4SS</b>	200	200
3/4	32	17	42	33	27	263	<b>12E6MK4S</b>	<b>12E6MK4SS</b>	200	200
1	41	22	49	38	33	667	<b>16E6MK4S</b>	<b>16E6MK4SS</b>	120	120
1 1/4	50	29	58	48	41	795	<b>20E6MK4S</b>	<b>20E6MK4SS</b>	105	105
1 1/2	60	33	63	50	48	1219	<b>24E6MK4S</b>	<b>24E6MK4SS</b>	105	105

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

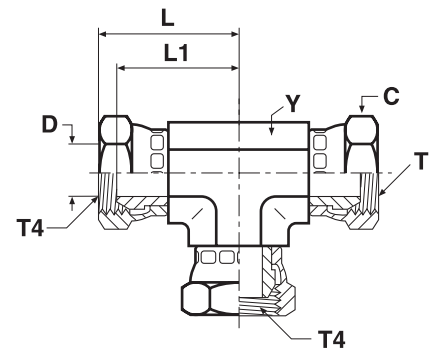
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## Adapters

### J6MK4 Swivel nut tee

BSPP 60° Female swivel ends (ISO 8434-6)



Thread BSPP T4	C mm	D mm	L mm	L1 mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
									S	SS
1/4	19	5	31	25	14	119	<b>4J6MK4S</b>	<b>4J6MK4SS</b>	350	350
3/8	22	8	36	30	19	195	<b>6J6MK4S</b>	<b>6J6MK4SS</b>	350	350
1/2	27	11	39	32	22	267	<b>8J6MK4S</b>	<b>8J6MK4SS</b>	200	200
5/8	30	14	39	30	22	300	<b>10J6MK4S</b>	<b>10J6MK4SS</b>	200	200
3/4	32	17	42	33	27	398	<b>12J6MK4S</b>	<b>12J6MK4SS</b>	200	200
1	41	22	49	38	33	620	<b>16J6MK4S</b>	<b>16J6MK4SS</b>	120	120
1 1/4	50	29	58	48	41	1050	<b>20J6MK4S</b>	<b>20J6MK4SS</b>	105	105

Order codes shown are part of our current manufacturing programme.

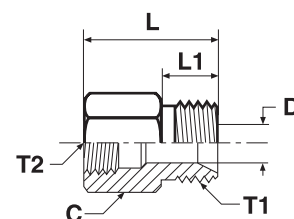
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## G4MK4 Female connector

BSPP 60° Cone end (ISO8434-6) / Female BSPP thread (ISO1179-1)



Thread BSPP T1	Thread BSPP T2	C mm	D mm	L mm	L1 mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
									S	SS
3/8	1/4	22	8	36	12	74	<b>6G4MK4S</b>	<b>6G4MK4SS</b>	350	350
1/2	1/4	27	11	38	14	77	<b>8-4G4MK4S</b>	<b>8-4G4MK4SS</b>	200	200
1/2	3/8	22	11	40	14	102	<b>8G4MK4S</b>	<b>8G4MK4SS</b>	200	200
3/4	1/4	32	17	40	16	180	<b>12-4G4MK4S</b>	<b>12-4G4MK4SS</b>	200	200
3/4	3/8	32	17	42	16	167	<b>12-6G4MK4S</b>	<b>12-6G4MK4SS</b>	200	200
3/4	1/2	32	17	48	16	209	<b>12-8G4MK4S</b>	<b>12-8G4MK4SS</b>	200	200
1	1/4	41	22	43	19	298	<b>16-4G4MK4S</b>	<b>16-4G4MK4SS</b>	120	120
1	3/8	41	22	45	19	287	<b>16-6G4MK4S</b>	<b>16-6G4MK4SS</b>	120	120
1	1/2	41	22	51	19	275	<b>16-8G4MK4S</b>	<b>16-8G4MK4SS</b>	120	120
1	3/4	41	22	52	19	360	<b>16-12G4MK4S</b>	<b>16-12G4MK4SS</b>	120	120

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

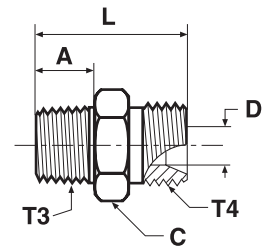
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## Adapters

### F3MK4 Male stud connector

BSPP 60° Cone end (ISO 8434-6) / Male BSPT thread (ISO 7)



Thread BSPP T4	Thread BSPT T3	A mm	C mm	D mm	L mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
									S	SS
1/8	1/8	10	14	4	24	15	<b>2F3MK4S</b>	<b>2F3MK4SS</b>	315	315
1/8	1/4	15	14	4	29	28	<b>2-4F3MK4S</b>	<b>2-4F3MK4SS</b>	315	315
1/4	1/4	15	19	5	33	31	<b>4-4F3MK4S</b>	<b>4-4F3MK4SS</b>	315	315
1/4	1/8	10	19	5	29	27	<b>4F3MK4S</b>	<b>4F3MK4SS</b>	315	315
1/4	3/8	15	19	5	33	44	<b>4-6F3MK4S</b>	<b>4-6F3MK4SS</b>	315	315
3/8	3/8	15	22	8	35	52	<b>6-6F3MK4S</b>	<b>6-6F3MK4SS</b>	315	315
3/8	1/2	19	22	8	40	68	<b>6-8F3MK4S</b>	<b>6-8F3MK4SS</b>	160	160
3/8	1/4	15	22	7	35	48	<b>6F3MK4S</b>	<b>6F3MK4SS</b>	315	315
1/2	1/2	19	27	11	43	79	<b>8-8F3MK4S</b>	<b>8-8F3MK4SS</b>	160	160
1/2	3/8	15	27	11	39	68	<b>8F3MK4S</b>	<b>8F3MK4SS</b>	200	200
5/8	1/2	19	30	14	46	101	<b>10F3MK4S</b>	<b>10F3MK4SS</b>	200	200
5/8	3/4	19	30	14	46	102	<b>10-12F3MK4S</b>	<b>10-12F3MK4SS</b>	160	160
3/4	1/2	19	32	17	46	111	<b>12-8F3MK4S</b>	<b>12-8F3MK4SS</b>	315	315
3/4	3/4	19	32	17	46	126	<b>12F3MK4S</b>	<b>12F3MK4SS</b>	160	160
3/4	1	24	36	17	51	242	<b>12-16F3MK4S</b>	<b>12-16F3MK4SS</b>	120	120
1	3/4	19	41	22	50	173	<b>16-12F3MK4S</b>	<b>16-12F3MK4SS</b>	120	120
1	1	24	41	22	55	219	<b>16F3MK4S</b>	<b>16F3MK4SS</b>	120	120
1 1/4	1 1/4	25	50	29	64	337	<b>20F3MK4S</b>	<b>20F3MK4SS</b>	105	105
1 1/2	1 1/2	26	55	33	69	497	<b>24F3MK4S</b>	<b>24F3MK4SS</b>	105	105

Order codes shown are part of our current manufacturing programme.

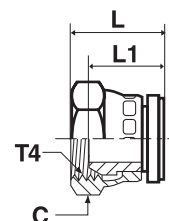
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## FNMK4 Cap

BSPP 60° Cone female swivel cap end



Thread BSPP T4	C mm	L mm	L1 mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
							S	SS
1/8	14	15	11	19	<b>2FNMK4S</b>	<b>2FNMK4SS</b>	350	350
1/4	19	20	15	23	<b>4FNMK4S</b>	<b>4FNMK4SS</b>	350	350
3/8	22	22	15	43	<b>6FNMK4S</b>	<b>6FNMK4SS</b>	350	350
1/2	27	22	18	64	<b>8FNMK4S</b>	<b>8FNMK4SS</b>	200	200
5/8	30	25	16	80	<b>10FNMK4S</b>	<b>10FNMK4SS</b>	200	200
3/4	32	26	17	115	<b>12FNMK4S</b>	<b>12FNMK4SS</b>	200	200
1	41	30	19	154	<b>16FNMK4S</b>	<b>16FNMK4SS</b>	120	120
1 1/4	50	34	24	345	<b>20FNMK4S</b>	<b>20FNMK4SS</b>	105	105
1 1/2	60	36	23	500	<b>24FNMK4S</b>	<b>24FNMK4SS</b>	105	105

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

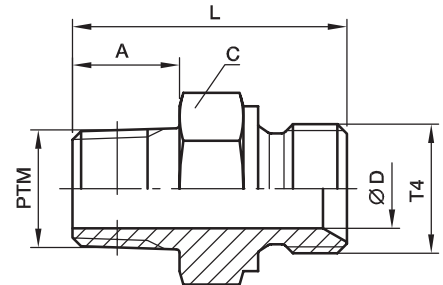


## Adapters

### FMK4 Male stud connector

BSPP 60° Cone end (ISO 8434-6) / Male NPTF\* thread (SAE J476)

\*Stainless Steel = NPT to prevent galling



Thread BSPP T4	Thread NPT/NPTF PTM	A mm	C mm	D mm	L mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
									S	SS
1/8	1/8	10	14	4	24	17	<b>2FMK4S</b>	<b>2FMK4SS</b>	350	350
1/8	1/4	15	19	4	29	21	<b>2-4FMK4S</b>	<b>2-4FMK4SS</b>	350	350
1/4	1/8	10	19	5	29	24	<b>4FMK4S</b>	<b>4FMK4SS</b>	350	350
1/4	1/4	15	19	5	33	33	<b>4-4FMK4S</b>	<b>4-4FMK4SS</b>	350	350
1/4	3/8	15	19	5	34	41	<b>4-6FMK4S</b>	<b>4-6FMK4SS</b>	350	350
3/8	1/4	15	22	8	35	45	<b>6FMK4S</b>	<b>6FMK4SS</b>	350	350
3/8	3/8	15	2	8	35	50	<b>6-6FMK4S</b>	<b>6-6FMK4SS</b>	350	350
3/8	1/2	19	22	8	40	77	<b>6-8FMK4S</b>	<b>6-8FMK4SS</b>	350	350
1/2	3/8	15	27	11	39	48	<b>8FMK4S</b>	<b>8FMK4SS</b>	200	200
1/2	1/2	19	27	11	43	93	<b>8-8FMK4S</b>	<b>8-8FMK4SS</b>	200	200
1/2	3/4	19	27	11	44	95	<b>8-12FMK4S</b>	<b>8-12FMK4SS</b>	200	200
3/4	1/2	19	32	17	46	112	<b>12-8FMK4S</b>	<b>12-8FMK4SS</b>	200	200
3/4	3/4	19	32	17	46	124	<b>12FMK4S</b>	<b>12FMK4SS</b>	200	200
3/4	1	24	36	17	51	150	<b>12-16FMK4S</b>	<b>12-16FMK4SS</b>	200	200
1	3/4	19	41	22	50	188	<b>16-12FMK4S</b>	<b>16-12FMK4SS</b>	120	120
1	1	24	41	22	55	234	<b>16FMK4S</b>	<b>16FMK4SS</b>	120	120

Order codes shown are part of our current manufacturing programme.

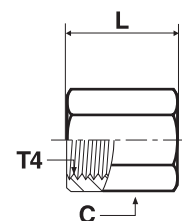
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## GG44M Female thread coupling

Female BSPP thread (ISO 1179-1)



Thread BSPP T4	C mm	L mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
						S	SS
1/8	14	19	16	<b>1/8GG44MS</b>	<b>1/8GG44MSS</b>	420	420
1/4	17	28	30	<b>1/4GG44MS</b>	<b>1/4GG44MSS</b>	420	420
3/8	22	28	47	<b>3/8GG44MS</b>	<b>3/8GG44MSS</b>	420	420
1/2	27	33	78	<b>1/2GG44MS</b>	<b>1/2GG44MSS</b>	350	350
3/4	32	37	105	<b>3/4GG44MS</b>	<b>3/4GG44MSS</b>	280	280
1	46	42	341	<b>1GG44MS</b>	<b>1GG44MSS</b>	210	210

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

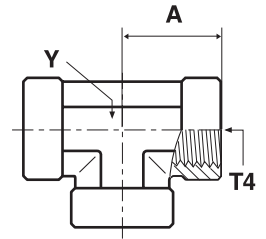
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

**N**

## Adapters

### MMO444M Female thread tee

Female BSPP threads (ISO 1179-1)



Thread BSPP T4	A mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
1/4	22	19	74	<b>1/4MMO444MS</b>	350
3/8	26	22	111	<b>3/8MMO444MS</b>	315
1/2	31	27	177	<b>1/2MMO444MS</b>	210
3/4	40	33	294	<b>3/4MMO444MS</b>	210
1	46	41	567	<b>1MMO444MS</b>	120

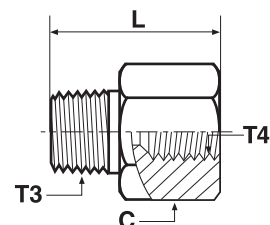
Order codes shown are part of our current manufacturing programme.  
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to the Steel version of the product.

## PTR34M Thread reducer

Male BSPT thread (ISO 7) / Female BSPP thread (ISO 1179-1)



Thread BSPT T3	Thread BSPP T4	C mm	L mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
							S	SS
1/4	1/8	14	28	16	1/4X1/8PTR34MS	1/4X1/8PTR34MSS	315	315
3/8	1/4	19	33	44	3/8X1/4PTR34MS	3/8X1/4PTR34MSS	315	315
1/2	1/4	22	39	71	1/2X1/4PTR34MS	1/2X1/4PTR34MSS	315	315
1/2	3/8	22	39	48	1/2X3/8PTR34MS	1/2X3/8PTR34MSS	315	315
3/4	1/4	27	39	108	3/4X1/4PTR34MS	3/4X1/4PTR34MSS	280	280
3/4	3/8	27	39	127	3/4X3/8PTR34MS	3/4X3/8PTR34MSS	280	280
3/4	1/2	27	42	94	3/4X1/2PTR34MS	3/4X1/2PTR34MSS	280	280
1	3/8	36	40	185	1X3/8PTR34MS	1X3/8PTR34MSS	210	210
1	1/2	36	48	224	1X1/2PTR34MS	1X1/2PTR34MSS	210	210
1	3/4	36	49	186	1X3/4PTR34MS	1X3/4PTR34MSS	210	210

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

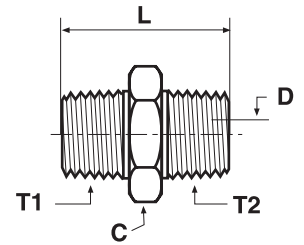
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## Adapters

### FF33M Male nipple

Male BSPT thread (ISO 7)



Thread BSPT T1	Thread BSPT T2	C mm	D mm	L mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
								S	SS
1/8	1/8	11	5	27	12	<b>1/8FF33MS</b>	<b>1/8FF33MSS</b>	315	315
1/4	1/8	14	5	32	25	<b>1/4X1/8FF33MS</b>	<b>1/4X1/8FF33MSS</b>	315	315
1/4	1/4	14	7	37	25	<b>1/4FF33MS</b>	<b>1/4FF33MSS</b>	315	315
3/8	1/4	17	7	37	42	<b>3/8X1/4FF33MS</b>	<b>3/8X1/4FF33MSS</b>	315	315
3/8	3/8	17	10	37	30	<b>3/8FF33MS</b>	<b>3/8FF33MSS</b>	315	315
1/2	1/4	22	7	43	68	<b>1/2X1/4FF33MS</b>	<b>1/2X1/4FF33MSS</b>	315	315
1/2	3/8	22	10	43	67	<b>1/2X3/8FF33MS</b>	<b>1/2X3/8FF33MSS</b>	315	315
1/2	1/2	22	14	48	72	<b>1/2FF33MS</b>	<b>1/2FF33MSS</b>	315	315
3/4	1/2	27	14	50	123	<b>3/4X1/2FF33MS</b>	<b>3/4X1/2FF33MSS</b>	160	160
3/4	3/4	27	18	50	110	<b>3/4FF33MS</b>	<b>3/4FF33MSS</b>	160	160
1	3/4	36	18	55	215	<b>1X3/4FF33MS</b>	<b>1X3/4FF33MSS</b>	160	160

Order codes shown are part of our current manufacturing programme.

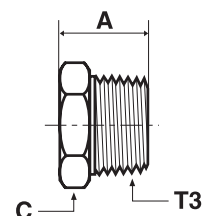
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## HP3M Hexagon head plug

Male BSPT thread (ISO 7)



Thread BSPT T3	A mm	C mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
						S	SS
1/8	14	11	9	<b>1/8HP3MS</b>	<b>1/8HP3MSS</b>	315	315
1/4	19	14	16	<b>1/4HP3MS</b>	<b>1/4HP3MSS</b>	315	315
3/8	20	17	35	<b>3/8HP3MS</b>	<b>3/8HP3MSS</b>	315	315
1/2	25	22	52	<b>1/2HP3MS</b>	<b>1/2HP3MSS</b>	315	315
3/4	27	27	85	<b>3/4HP3MS</b>	<b>3/4HP3MSS</b>	160	160
1	32	36	134	<b>1HP3MS</b>	<b>1HP3MSS</b>	160	160

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.



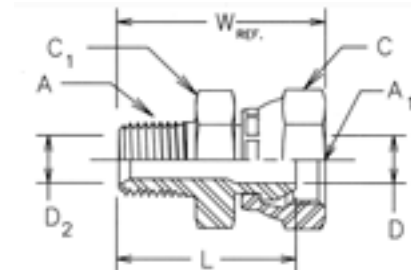
## Adapters

### 0107 Swivel male stud

Male NPTF\* thread (SAE J476) / NPSM Female swivel end (SAE J516)

SAE 140130

\*Stainless Steel = NPT to prevent galling



Thread NPTF A	Thread NPSM A1	C mm	C1 mm	D mm	D2 mm	L mm	W mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
											S	SS
1/8-27	1/8-27	14	14	4	5	24	28	23	0107-2-2	0107-2-2-SS	350	350
1/8-27	1/4-18	18	16	6	5	27	32	33	0107-2-4	0107-2-4-SS	350	350
1/4-18	1/4-18	18	18	6	7	32	36	40	0107-4-4	0107-4-4-SS	350	350
1/4-18	3/8-18	22	21	9	7	32	37	57	0107-4-6	0107-4-6-SS	280	280
1/4-18	1/2-14	25	24	12	7	37	44	91	0107-4-8	0107-4-8-SS	245	245
3/8-18	1/4-18	18	18	6	10	33	38	48	0107-6-4	0107-6-4-SS	350	350
3/8-18	3/8-18	22	22	9	10	33	38	62	0107-6-6	0107-6-6-SS	280	280
3/8-18	1/2-14	25	24	12	10	37	44	97	0107-6-8	0107-6-8-SS	245	245
1/2-14	3/8-18	22	22	9	14	38	43	76	0107-8-6	0107-8-6-SS	280	280
1/2-14	1/2-14	25	25	12	14	41	49	109	0107-8-8	0107-8-8-SS	245	245
1/2-14	3/4-14	32	32	16	14	43	52	167	0107-8-12	0107-8-12-SS	140	140
3/4-14	1/2-14	25	29	12	18	41	49	122	0107-12-8	0107-12-8-SS	245	245
3/4-14	3/4-14	32	32	16	18	42	52	154	0107-12-12	0107-12-12-SS	140	140
3/4-14	1-11.5	38	38	21	18	46	55	247	0107-12-16	0107-12-16-SS	120	120
1-11.5	3/4-14	38	35	16	24	49	58	217	0107-16-12	0107-16-12-SS	140	140
1-11.5	1-11.5	38	38	21	24	51	60	238	0107-16-16	0107-16-16-SS	120	120
1-11.5	1 1/4-11.5	48	45	29	24	51	61	298	0107-16-20	0107-16-20-SS	120	120
1 1/4-11.5	1-11.5	38	48	21	32	53	63	356	0107-20-16	0107-20-16-SS	120	120
1 1/4-11.5	1 1/4-11.5	48	48	29	32	53	63	390	0107-20-20	0107-20-20-SS	120	120
1 1/2-11.5	1 1/2-11.5	54	54	35	38	56	66	498	0107-24-24	0107-24-24-SS	85	85
2-11.5	2-11.5	67	67	46	49	60	71	749	0107-32-32	0107-32-32-SS	75	75

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

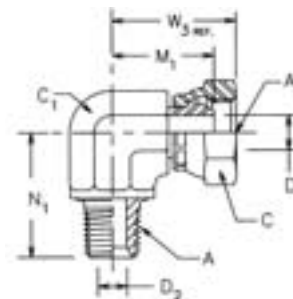
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## 2107 Swivel male elbow

Male NPTF\* thread (SAE J476) / NPSM Female swivel end (SAE J516)

SAE 140230

\*Stainless Steel = NPT to prevent galling



Thread NPTF A	Thread NPSM A1	C mm	C1 mm	D mm	D2 mm	M1 mm	N1 mm	W3 mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel		PN (bar)		
											S	SS	S	SS	
1/8-27	1/8-27	14	11	4	5	18	18	22	28	<b>2107-2-2</b>	<b>2107-2-2-SS</b>	350	350		
1/4-18	1/4-18	18	14	6	7	22	28	27	55	<b>2107-4-4</b>	<b>2107-4-4-SS</b>	350	350		
1/4-18	3/8-1/8	22	19	9	7	25	28	33	94	<b>2107-4-6</b>	<b>2107-4-6-SS</b>	280	280		
3/8-18	1/4-18	18	19	6	10	25	31	30	88	<b>2107-6-4</b>	<b>2107-6-4-SS</b>	350	350		
3/8-18	3/8-1/8	22	19	9	10	25	31	33	90	<b>2107-6-6</b>	<b>2107-6-6-SS</b>	280	280		
3/8-18	1/2-14	25	19	12	10	26	31	34	107	<b>2107-6-8</b>	<b>2107-6-8-SS</b>	245	245		
1/2-14	3/8-1/8	22	22	9	14	27	37	34	130	<b>2107-8-6</b>	<b>2107-8-6-SS</b>	280	280		
1/2-14	1/2-14	25	22	12	14	28	37	36	139	<b>2107-8-8</b>	<b>2107-8-8-SS</b>	245	245		
1/2-14	3/4-14	32	27	16	14	33	37	42	221	<b>2107-8-12</b>	<b>2107-8-12-SS</b>	140	140		
3/4-14	3/8-1/8	22	27	9	18	30	40	38	227	<b>2107-12-6</b>	<b>2107-12-6-SS</b>	280	280		
3/4-14	1/2-14	25	27	12	18	32	40	39	191	<b>2107-12-8</b>	<b>2107-12-8-SS</b>	245	245		
3/4-14	3/4-14	32	27	16	18	33	40	42	225	<b>2107-12-12</b>	<b>2107-12-12-SS</b>	140	140		
1-11.5	3/4-14	32	33	16	24	37	50	46	374	<b>2107-16-12</b>	<b>2107-16-12-SS</b>	140	140		
1-11.5	1-11.5	38	33	21	24	39	50	49	361	<b>2107-16-16</b>	<b>2107-16-16-SS</b>	120	120		
1 1/4-11.5	1 1/4-11.5	48	41	29	32	44	61	54	794	<b>2107-20-20</b>	<b>2107-20-20-SS</b>	120	120		
1 1/2-11.5	1 1/2-11.5	54	48	35	38	48	67	59	782	<b>2107-24-24</b>	<b>2107-24-24-SS</b>	85	85		
2-11.5	2-11.5	67	64	46	49	58	76	69	1910	<b>2107-32-32</b>	<b>2107-32-32-SS</b>	75	75		

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N



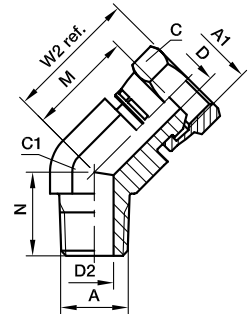
## Adapters

### 3107 Swivel male 45° elbow

Male NPTF\* thread (SAE J476) / NPSM Female swivel end (SAE J516)

SAE 140330

\*Stainless Steel = NPT to prevent galling



Thread NPTF A	Thread NPSM A1	C mm	C1 mm	D mm	D2 mm	M mm	N mm	W2 mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel		PN (bar)	
											S	SS	S	SS
1/8-27	1/8-27	14	11	4	5	16	13	20	21	<b>3107-2-2</b>		350	—	
1/4-18	1/4-18	18	14	6	7	19	22	23	44	<b>3107-4-4</b>	<b>3107-4-4-SS</b>	350	350	
3/8-18	3/8-1/8	22	19	9	10	21	24	28	80	<b>3107-6-6</b>	<b>3107-6-6-SS</b>	280	280	
1/2-14	3/8-1/8	22	22	9	14	21	30	28	110	<b>3107-8-6</b>	<b>3107-8-6-SS</b>	280	280	
1/2-14	1/2-14	25	22	12	14	22	30	30	114	<b>3107-8-8</b>	<b>3107-8-8-SS</b>	245	245	
1/2-14	3/4-14	32	27	16	14	22	31	31	144	<b>3107-8-12</b>	<b>3107-8-12-SS</b>	140	140	
3/4-14	1/2-14	25	27	12	18	24	31	31	153	<b>3107-12-8</b>	<b>3107-12-8-SS</b>	245	245	
3/4-14	3/4-14	32	27	16	18	26	31	35	172	<b>3107-12-12</b>	<b>3107-12-12-SS</b>	140	140	
1-11.5	3/4-14	32	33	16	24	28	38	37	245	<b>3107-16-12</b>	<b>3107-16-12-SS</b>	140	140	
1-11.5	1-11.5	38	33	21	24	29	38	39	368	<b>3107-16-16</b>	<b>3107-16-16-SS</b>	120	120	
1 1/4-11.5	1 1/4-11.5	48	41	29	32	31	42	41	619	<b>3107-20-20</b>	<b>3107-20-20-SS</b>	120	120	
1 1/2-11.5	1 1/2-11.5	54	48	35	38	34	45	45	719	<b>3107-24-24</b>	<b>3107-24-24-SS</b>	85	85	
2-11.5	2-11.5	67	64	46	49	37	54	48	1372	<b>3107-32-32</b>	<b>3107-32-32-SS</b>	75	75	

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

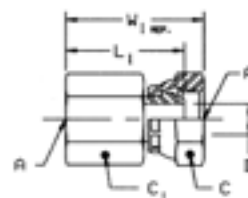
Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## 0207 Female connector

Female NPTF\* thread (SAE J476) / NPSM Female swivel end (SAE J516)

SAE 140131

\*Stainless Steel = NPT to prevent galling



Thread NPTF A	Thread NPSM A1	C mm	C1 mm	D mm	L1 mm	W1 mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
										S	SS
1/8-27	1/8-27	14	14	4	22	26	15	<b>0207-2-2</b>	<b>0207-2-2-SS</b>	350	350
1/4-18	1/4-18	18	18	6	32	36	44	<b>0207-4-4</b>	<b>0207-4-4-SS</b>	350	350
3/8-18	1/4-18	18	22	6	33	38	52	<b>0207-6-4</b>	<b>0207-6-4-SS</b>	350	350
3/8-18	3/8-18	22	22	9	33	38	81	<b>0207-6-6</b>	<b>0207-6-6-SS</b>	280	280
1/2-14	3/8-18	22	25	9	37	42	121	<b>0207-8-6</b>	<b>0207-8-6-SS</b>	280	280
1/2-14	1/2-14	25	25	12	38	46	119	<b>0207-8-8</b>	<b>0207-8-8-SS</b>	245	245
3/4-14	3/4-14	32	32	16	41	50	161	<b>0207-12-12</b>	<b>0207-12-12-SS</b>	140	140
1-11.5	1-11.5	38	38	21	51	60	162	<b>0207-16-16</b>	<b>0207-16-16-SS</b>	120	120
1 1/4-11.5	1 1/4-11.5	48	48	29	51	61	378	<b>0207-20-20</b>	<b>0207-20-20-SS</b>	120	120
1 1/2-11.5	1 1/2-11.5	54	54	35	51	62	446	<b>0207-24-24</b>	<b>0207-24-24-SS</b>	85	85
2-11.5	2-11.5	67	67	46	54	65	707	<b>0207-32-32</b>	<b>0207-32-32-SS</b>	75	75

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

N

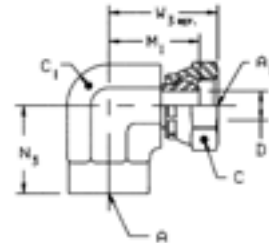
## Adapters

### 2207 Female elbow

Female NPTF\* thread (SAE J476) / NPSM Female swivel end (SAE J516)

SAE 140231

\*Stainless Steel = NPT to prevent galling



Thread NPTF A	Thread NPSM A1	C mm	C1 mm	D mm	M1 mm	W3 mm	N3 mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
											S	SS
1/8-27	1/8-27	14	14	4	20	24	17	37	<b>2207-2-2</b>	<b>2207-2-2-SS</b>	350	350
1/4-18	1/4-18	18	19	6	25	30	22	98	<b>2207-4-4</b>	<b>2207-4-4-SS</b>	350	350
3/8-18	3/8-1/8	22	22	9	27	32	26	152	<b>2207-6-6</b>	<b>2207-6-6-SS</b>	280	280
1/2-14	1/2-14	25	27	12	32	39	31	246	<b>2207-8-8</b>	<b>2207-8-8-SS</b>	245	245
3/4-14	3/4-14	32	33	16	37	46	35	313	<b>2207-12-12</b>	<b>2207-12-12-SS</b>	140	140
1-11.5	1-11.5	38	41	21	44	53	41	530	<b>2207-16-16</b>	<b>2207-16-16-SS</b>	120	120
1 1/4-11.5	1 1/4-11.5	48	48	29	47	56	43	1159	<b>2207-20-20</b>	<b>2207-20-20-SS</b>	120	120
1 1/2-11.5	1 1/2-11.5	54	64	35	61	72	53	1679	<b>2207-24-24</b>	<b>2207-24-24-SS</b>	85	85
2-11.5	2-11.5	67	71	47	65	76	61	2136	<b>2207-32-32</b>	<b>2207-32-32-SS</b>	75	75

Order codes shown are part of our current manufacturing programme.

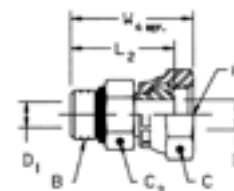
Imperial and metric parts may vary in hexagon dimensions.

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## 0507 Swivel male stud

Male UN/UNF thread O-ring (ISO 11926) / NPSM Female swivel end (SAE J516)  
SAE 140157



Thread UN/UNF-2A B	Thread NPSM A1	C mm	C2 mm	D mm	D1 mm	L2 mm	W4 mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
7/16-20	1/4-18	18	14	6	6	29	34	32	<b>0507-4-4</b>	350
9/16-18	1/4-18	18	18	6	6	30	34	45	<b>0507-6-4</b>	350
9/16-18	3/8-18	22	18	9	9	30	35	48	<b>0507-6-6</b>	280
9/16-18	1/2-14	25	19	8	8	33	40	76	<b>0507-6-8</b>	245
3/4-16	1/4-18	18	22	6	10	32	36	65	<b>0507-8-4</b>	350
3/4-16	3/8-18	22	22	9	9	32	37	69	<b>0507-8-6</b>	280
3/4-16	1/2-14	25	22	10	10	32	40	83	<b>0507-8-8</b>	245
3/4-16	3/4-14	32	25	16	10	37	46	137	<b>0507-8-12</b>	140
7/8-14	1/2-14	25	25	12	12	37	44	98	<b>0507-10-8</b>	245
1 1/16-12	1/2-14	25	32	12	12	40	48	157	<b>0507-12-8</b>	245
1 1/16-12	3/4-14	32	32	16	16	41	50	200	<b>0507-12-12</b>	140
1 5/16-12	1-11.5	38	38	21	21	45	54	317	<b>0507-16-16</b>	120
1 5/8-12	1 1/4-11.5	48	48	27	27	47	56	398	<b>0507-20-20</b>	120
1 7/8-12	1 1/2-11.5	54	54	33	33	50	61	498	<b>0507-24-24</b>	85
2 1/2-12	2-11.5	67	70	45	45	52	63	749	<b>0507-32-32</b>	75

Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N60.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

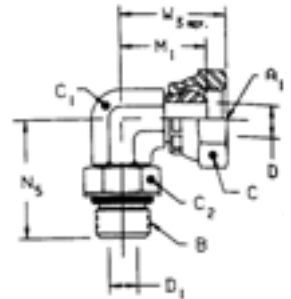
Pressure ratings – PN shown, apply to the Steel version of the product.

**N**

## Adapters

### 2507 Swivel male elbow

Male UN/UNF thread O-ring (ISO 11926) / NPSM Female swivel end (SAE J516)  
SAE 140257



Thread UN/UNF-2A B	Thread NPSM A1	C mm	C1 mm	C2 mm	D mm	D1 mm	M1 mm	W3 mm	N5 mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
7/16-20	1/4-18	18	11	14	6	4	20	25	26	42	<b>2507-4-4</b>	350
9/16-18	1/4-18	18	14	18	6	8	22	27	32	56	<b>2507-6-4</b>	350
9/16-18	3/8-18	22	14	18	9	8	23	28	32	56	<b>2507-6-6</b>	280
9/16-18	1/2-14	25	14	18	12	8	26	34	35	65	<b>2507-6-8</b>	245
3/4-16	3/8-18	22	19	22	9	10	25	30	37	119	<b>2507-8-6</b>	280
3/4-16	1/2-14	25	19	22	12	10	26	34	37	119	<b>2507-8-8</b>	245
3/4-16	3/4-14	32	19	22	16	10	33	42	41	174	<b>2507-8-12</b>	140
7/8-14	3/8-18	22	22	25	9	12	27	32	43	164	<b>2507-10-6</b>	280
7/8-14	1/2-14	25	22	25	12	12	28	36	43	178	<b>2507-10-8</b>	245
7/8-14	3/4-14	32	22	25	16	12	32	42	45	243	<b>2507-10-12</b>	140
1 1/16-12	1/2-14	25	27	32	12	16	31	38	49	193	<b>2507-12-8</b>	245
1 1/16-12	3/4-14	32	27	32	16	16	33	42	49	283	<b>2507-12-12</b>	140
1 5/16-12	1-11.5	38	33	38	21	21	39	49	52	525	<b>2507-16-16</b>	120
1 5/8-12	1 1/4-11.5	48	41	48	29	27	45	55	57	530	<b>2507-20-20</b>	120
1 7/8-12	1 1/2-11.5	54	48	54	35	33	48	59	61	600	<b>2507-24-24</b>	85

Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N60.

Order codes shown are part of our current manufacturing programme.

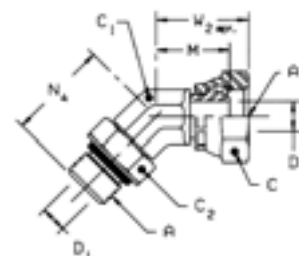
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to the Steel version of the product.

## 3507 Swivel male 45° elbow

Male UN/UNF thread O-ring (ISO 11926) / NPSM Female swivel end (SAE J516)  
SAE 140357



Thread UN/UNF-2A A	Thread NPSM A1	C mm	C1 mm	C2 mm	D mm	D1 mm	M mm	W2 mm	N4 mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
7/16-20	1/4-18	18	11	14	6	4	16	20	27	41	<b>3507-4-4</b>	350
9/16-18	3/8-18	22	14	18	9	8	21	26	29	62	<b>3507-6-6</b>	280
3/4-16	3/8-18	22	19	22	9	10	21	26	33	106	<b>3507-8-6</b>	280
3/4-16	1/2-14	25	19	22	12	10	23	30	33	141	<b>3507-8-8</b>	245
3/4-16	3/4-14	32	19	22	16	10	26	35	36	226	<b>3507-8-12</b>	140
7/8-14	1/2-14	25	22	25	12	12	22	30	39	154	<b>3507-10-8</b>	245
1 1/16-12	3/4-14	32	27	32	16	16	26	35	44	208	<b>3507-12-12</b>	140
1 5/16-12	1-11.5	38	33	38	21	21	29	39	47	408	<b>3507-16-16</b>	120

Parker Adapter are delivered with NBR elastomeric seals as standard. For more details on other seal materials see page N60.

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

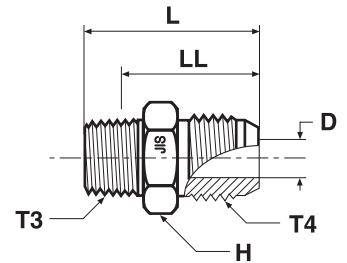
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to the Steel version of the product.

## Adapters

### F3MT4 Male stud connector

JIS BSPP 60° cone adapters (JIS B8363) / Male BSPT thread (ISO 7)



Thread BSPP T4	Thread BSPT T3	D mm	H mm	L mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
									S	SS
1/4-19	1/4-19	5	19	37	29	41	<b>4F3T4S</b>	<b>4F3MT4SS</b>	315	315
1/4-19	3/8-19	5	22	38	30	61	<b>4-6F3T4S</b>	<b>4-6F3MT4SS</b>	315	315
3/8-19	1/4-19	7	22	40	32	57	<b>6-4F3T4S</b>	<b>6-4F3MT4SS</b>	315	315
3/8-19	3/8-19	7	22	40	32	66	<b>6F3T4S</b>	<b>6F3MT4SS</b>	315	315
1/2-14	3/8-19	10	27	43	35	88	<b>8-6F3T4S</b>	<b>8-6F3MT4SS</b>	315	315
1/2-14	1/2-14	11	27	48	37	105	<b>8F3T4S</b>	<b>8F3MT4SS</b>	315	200
3/4-14	3/4-14	16	37	53	41	334	<b>12F3T4S</b>	<b>12F3MT4SS</b>	160	160
1-11	1-11	21	41	58	45	268	<b>16F3T4S</b>	<b>16F3MT4SS</b>	120	120

Order codes shown are part of our current manufacturing programme.

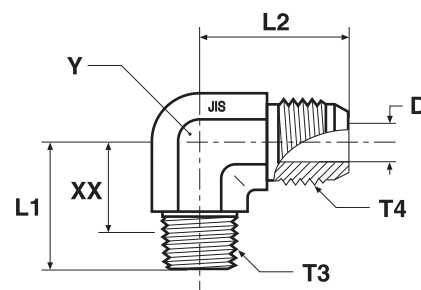
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## C3T4 Male elbow

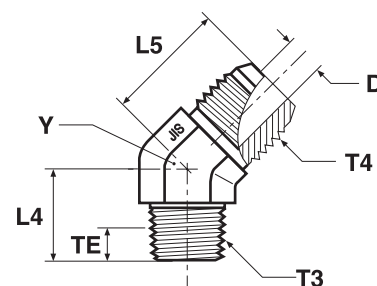
JIS BSPP 60° cone adapters (JIS B8363) / Male BSPT thread (ISO 7)



Thread BSPP T4	Thread BSPT T3	D mm	L1 mm	L2 mm	XX mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
1/4-19	1/4-19	5	25	25	18	14	41	<b>4C3T4S</b>	315
3/8-19	3/8-19	7	30	29	23	19	74	<b>6C3T4S</b>	315
1/2-14	1/2-14	11	36	34	26	22	131	<b>8C3T4S</b>	200
3/4-14	3/4-14	16	43	38	29	27	146	<b>12C3T4S</b>	160
1-11	1-11	21	50	44	37	33	398	<b>16C3T4S</b>	120

## V3T4 Male 45° elbow

JIS BSPP 30° Flare end (JIS B8363) / Male BSPT thread (ISO 7)



Thread BSPP T4	Thread BSPT T3	D mm	L4 mm	L5 mm	TE mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
1/4-19	1/4-19	5	19	22	8	14	33	<b>4V3T4S</b>	315
3/8-19	3/8-19	7	22	25	8	19	64	<b>6V3T4S</b>	315
1/2-14	1/2-14	11	27	28	11	22	112	<b>8V3T4S</b>	200
3/4-14	3/4-14	16	30	32	12	27	162	<b>12V3T4S</b>	160
1-11	1-11	21	35	32	14	33	256	<b>16V3T4S</b>	120

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

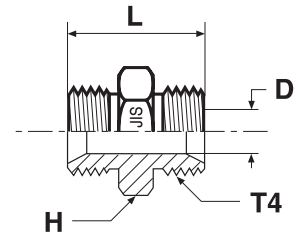
Pressure ratings – PN shown, apply to the Steel version of the product.



## Adapters

### HMP4 Union

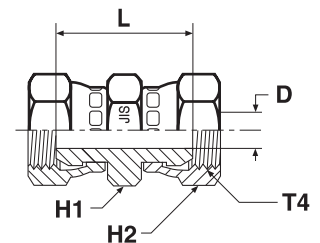
JIS BSPP 60° cone end (JIS B8363)



Thread BSPP T4	D mm	H mm	L mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
							S	SS
1/4-19	5	19	34	40	<b>4HP4S</b>	<b>4HMP4SS</b>	350	350
3/8-19	7	22	38	91	<b>6HP4S</b>	<b>6HMP4SS</b>	350	350
1/2-14	11	27	46	159	<b>8HP4S</b>	<b>8HMP4SS</b>	200	200
3/4-14	16	37	52	186	<b>12HP4S</b>	<b>12HMP4SS</b>	200	200
1-11	21	41	58	290	<b>16HP4S</b>	<b>16HMP4SS</b>	120	120

### HP46 Swivel female union

JIS BSPP 60° Cone swivel female end (JIS B8363)



Thread BSPP T4	D mm	H1 mm	H2 mm	L mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
1/4-19	5	19	19	31	33	<b>4HP46S</b>	350
3/8-19	7	22	22	35	49	<b>6HP46S</b>	350
1/2-14	11	27	27	38	77	<b>8HP46S</b>	200
3/4-14	16	37	37	40	114	<b>12HP46S</b>	200
1-11	21	41	41	46	180	<b>16HP46S</b>	120

Order codes shown are part of our current manufacturing programme.

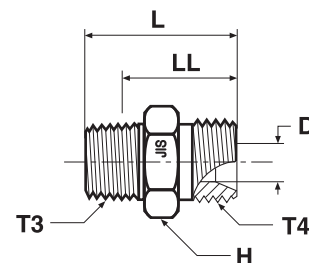
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to the Steel version of the product.

## F3MP4 Male stud connector

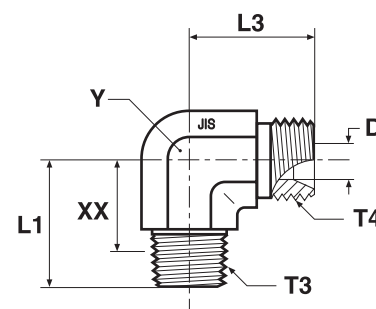
JIS BSPP 60° Cone end (JIS B8363) / Male BSPT thread (ISO 7)



Thread BSPP T4	Thread BSPT T3	D mm	H mm	L mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)		
								Adapter Stainless Steel	S	SS
1/4-19	1/4-19	5	19	37	28	47	<b>4F3P4S</b>	<b>4F3MP4SS</b>	315	315
3/8-19	3/8-19	7	22	38	30	67	<b>6F3P4S</b>	<b>6F3MP4SS</b>	315	315
1/2-14	1/2-14	11	27	46	35	109	<b>8F3P4S</b>	<b>8F3MP4SS</b>	200	200
3/4-14	3/4-14	16	37	52	40	195	<b>12F3P4S</b>	<b>12F3MP4SS</b>	160	160
1-11	1-11	21	41	58	44	292	<b>16F3P4S</b>	<b>16F3MP4SS</b>	120	120

## C3P4 Male 90° elbow

JIS BSPP 60° cone end (JIS B8363) / Male BSPT thread (ISO 7)



Thread BSPP T4	Thread BSPT T3	D mm	L1 mm	L3 mm	XX mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
1/4-19	1/4-19	5	25	24	18	14	49	<b>4C3P4S</b>	315
3/8-19	3/8-19	7	30	29	23	19	97	<b>6C3P4S</b>	315
1/2-14	1/2-14	11	36	33	26	22	147	<b>8C3P4S</b>	200
3/4-14	3/4-14	16	43	40	29	27	206	<b>12C3P4S</b>	160
1-11	1-11	21	50	44	37	33	434	<b>16C3P4S</b>	120

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

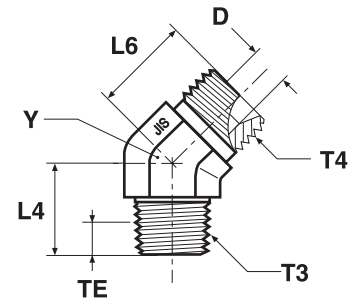
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## Adapters

### V3P4 Male 45° elbow

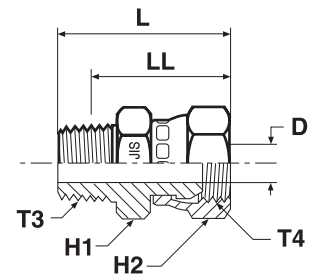
JIS BSPP 60° Cone end (JIS B8363) / Male BSPT thread (ISO 7)



Thread BSPP T4	Thread BSPT T3	D mm	L4 mm	L6 mm	TE mm	Y mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
1/4-19	1/4-19	5	19	21	8	14	36	<b>4V3P4S</b>	350
3/8-19	3/8-19	7	22	23	8	19	65	<b>6V3P4S</b>	350
1/2-14	1/2-14	11	27	27	11	22	122	<b>8V3P4S</b>	200
3/4-14	3/4-14	16	30	30	12	27	159	<b>12V3P4S</b>	200
1-11	1-11	21	35	33	14	33	412	<b>16V3P4S</b>	120

### F63MP4 Swivel male stud

JIS BSPP 60° Cone swivel female end (JIS B8363) / Male BSPT thread (ISO 7)



Thread BSPT T3	Thread BSPP T4	D mm	H1 mm	H2 mm	L mm	LL mm	Weight (steel) g/1 piece	Adapter Steel	Adapter Stainless Steel	PN (bar)	
									S	SS	
1/4-19	1/4-19	5	19	19	33	24	41	<b>4F63P4S</b>	<b>4F63MP4SS</b>	315	315
3/8-19	3/8-19	7	22	22	37	28	70	<b>6F63P4S</b>	<b>6F63MP4SS</b>	315	315
1/2-14	1/2-14	11	27	27	42	31	122	<b>8F63P4S</b>	<b>8F63MP4SS</b>	200	200
3/4-14	3/4-14	16	37	37	47	35	254	<b>12F63P4S</b>	<b>12F63MP4SS</b>	160	160
1-11	1-11	21	41	41	52	38	367	<b>16F63P4S</b>	<b>16F63MP4SS</b>	120	120

Order codes shown are part of our current manufacturing programme.

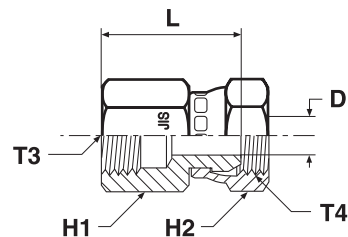
Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to Steel and Stainless Steel versions of the product.

## G63P4 Female swivel connector

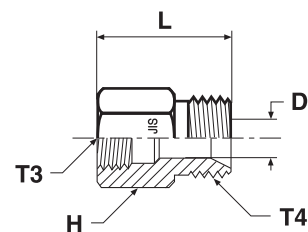
JIS BSPP 30° Flare swivel female end (JIS B8363) / Female BSPT thread (ISO 7)



Thread BSPT T3	Thread BSPP T4	D mm	H1 mm	H2 mm	L mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
1/4-19	1/4-19	5	19	19	30	36	<b>4G63P4S</b>	315
3/8-19	3/8-19	7	22	22	33	49	<b>6G63P4S</b>	315
1/2-14	1/2-14	11	27	27	36	73	<b>8G63P4S</b>	200
3/4-14	3/4-14	16	37	37	38	163	<b>12G63P4S</b>	160
1-11	1-11	21	41	41	46	195	<b>16G63P4S</b>	120

## G3P4 Female stud connector

JIS BSPP 30° Flare end (JIS B8363) / Female BSPT thread (ISO 7)



Thread BSPT T3	Thread BSPP T4	D mm	H mm	L mm	Weight (steel) g/1 piece	Adapter Steel	PN (bar)
1/4-19	1/4-19	5	19	31	40	<b>4G3P4S</b>	315
3/8-19	3/8-19	7	22	34	55	<b>6G3P4S</b>	315
1/2-14	1/2-14	11	27	40	141	<b>8G3P4S</b>	200
3/4-14	3/4-14	16	37	44	159	<b>12G3P4S</b>	160
1-11	1-11	21	41	49	225	<b>16G3P4S</b>	120

Order codes shown are part of our current manufacturing programme.

Imperial and metric parts may vary in hexagon dimensions.

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Pressure ratings – PN shown, apply to the Steel version of the product.

## Adapters

### Spare parts guide – Triple-Lok® retaining rings and seals

#### BSPB male threads – ISO 1179

BSPB Thread	ED seal Order code		O-ring order code*		O-ring ID × section mm	Retainer ring Order code Steel	Retainer ring Order code Stainless Steel
	NBR	FKM	NBR	FKM			
1/8	ED10X1X	ED10X1VITX	6-002-N552-9	6-002-V894-9	8.00 × 2.00	8207-1/8	8207SS1/8
1/4	ED14X1.5X	ED14X1.5VITX	2-111-N552-9	2-111-V894-9	10.77 × 2.62	8207-1/4	8207SS1/4A
3/8	ED3/8X	ED3/8VITX	2-113-N552-9	2-113-V894-9	13.94 × 2.62	8207-3/8	8207SS3/8A
1/2	ED1/2X	ED1/2VITX	5-256-N552-9	5-256-V894-9	17.96 × 2.62	8207-1/2	8207SS1/2
3/4	ED26X1.5X	ED26X1.5VITX	2-119-N552-9	2-119-V894-9	23.47 × 2.62	8207-3/4	8207SS3/4
1	ED33X2X	ED33X2VITX	2-217-N552-9	2-217-V894-9	29.74 × 3.53	8207-1	8207SS1A
1 1/4	ED42X2X	ED42X2VITX	2-222-N552-9	2-222-V894-9	37.69 × 3.53	8207-1-1/4	8207SS1 1/4
1 1/2	ED48X2X	ED48X2VITX	2-224-N552-9	2-224-V894-9	44.04 × 3.53	8207-1-1/2	8207SS1 1/2

Typical fittings using these parts: PTR44M / RI-ED / F4OHG5 etc.

\* Must be used with correct retainer ring

#### Metric male threads – ISO 9974

Metric Thread	ED seal order code		O-ring Order code*		O-ring ID × section mm	Retainer ring Order code Steel	Retainer ring Order code Stainless Steel
	NBR	FKM	NBR	FKM			
M 10×1.0	ED10X1X	ED10X1VITX	6-074-N552-9	6-074-V894-9	8.00 × 1.50	M10RR	RRM10X1SS
M 12×1.5	ED12X1.5X	ED12x1.5VITX	2-012-N552-9	2-012-V894-9	9.25 × 1.78	M12RR	RRM12X1.5SS
M 14×1.5	ED14X1.5X	ED14X1.5VITX	2-013-N552-9	2-013-V894-9	10.82 × 1.78	M14RR	RRM14X1.5SS
M 16×1.5	ED16X1.5X	ED16X1.5VITX	3-907-N552-9	3-907-V894-9	13.46 × 2.08	M16RR	RRM16X1.5SS
M 18×1.5	ED18X1.5X	ED18X1.5VITX	2-114-N552-9	2-114-V894-9	15.54 × 2.62	M18RR	RRM18X1.5SS
M 22×2.0	ED22X1.5X	ED22X1.5VITX	2-018-N552-9	2-018-V894-9	18.77 × 1.78	M22RR	RRM22X1.5SS
M 27×2.0	ED26X1.5X**	ED26X1.5VITX	2-119-N552-9	2-119-V894-9	23.47 × 2.62	M27RR	RRM27X2SS
M 33×2.0	ED33X2X	ED33X2VITX	2-122-N552-9	2-122-V894-9	28.24 × 2.62	M33RR	RRM33X2SS
M 42×2.0	ED42X2X	ED42X2VITX	2-128-N552-9	2-128-V894-9	37.77 × 2.62	M42RR	RRM42X2SS
M 48×2.0	ED48X2X	ED48X2VITX	2-132-N552-9	2-132-V894-9	44.12 × 2.62	M48RR	RRM48X2SS

Typical fittings using these parts: F8OHG5 / VSTI MED etc.

\* Must be used with correct retainer ring

\*\* Same seal used for M 26×1.5 and M 27×2.0 Threads

#### UN / UNF male threads – ISO 11926

UN / UNF Thread	Dash size	O-ring Order code		O-Ring ID × section (mm)
		NBR	FKM	
5/16-24	2	3-902-N552-9	3-902-V894-9	6.07 × 1.63
3/8-24	3	3-903-N552-9	3-903-V894-9	7.65 × 1.63
7/16-20	4	3-904-N552-9	3-904-V894-9	8.92 × 1.83
1/2-20	5	3-905-N552-9	3-905-V894-9	10.52 × 1.83
9/16-18	6	3-906-N552-9	3-906-V894-9	11.89 × 1.98
3/4-16	8	3-908-N552-9	3-908-V894-9	16.36 × 2.21
7/8-14	10	3-910-N552-9	3-910-V894-9	19.18 × 2.46
1 1/16-12	12	3-912-N552-9	3-912-V894-9	23.47 × 2.95
1 3/16-12	14	3-914-N552-9	3-914-V894-9	26.59 × 2.95
1 5/16-12	16	3-916-N552-9	3-916-V894-9	29.74 × 2.95
1 5/8-12	20	3-920-N552-9	3-920-V894-9	37.47 × 3.00
1 7/8-12	24	3-924-N552-9	3-924-V894-9	43.69 × 3.00
2 1/2-12	32	3-932-N552-9	3-932-V894-9	59.36 × 3.00

Typical fittings using these parts: F5OG / P5ON / F5OHAO etc.

#### Metric male threads – ISO 6149

Metric Thread	O-ring Order code		O-Ring ID × section (mm)
	NBR	FKM	
M 10×1.0	6-345-N552-9	6-345-V894-9	8.20 × 1.50
M 12×1.5	6-346-N552-9	6-346-V894-9	9.40 × 2.10
M 14×1.5	6-347-N552-9	6-347-V894-9	11.40 × 2.10
M 16×1.5	6-348-N552-9	6-348-V894-9	13.40 × 2.10
M 18×1.5	6-349-N552-9	6-349-V894-9	15.40 × 2.10
M 22×1.5	6-350-N552-9	6-350-V894-9	19.40 × 2.10
M 27×2.0	6-351-N552-9	6-351-V894-9	23.70 × 2.80
M 33×2.0	6-352-N552-9	6-352-V894-9	29.70 × 2.80
M 42×2.0	6-353-N552-9	6-353-V894-9	38.70 × 2.80
M 48×2.0	6-354-N552-9	6-354-V894-9	46.70 × 2.80

Typical fittings using these parts: VSTI-OR etc.

Other seal compounds available on request for alternative applications

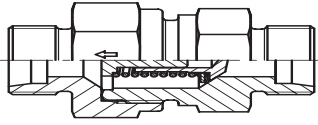


# **EO<sup>®</sup> Ermeto Original Valves**



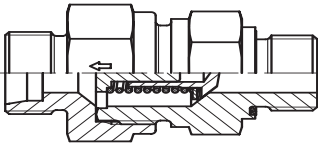
Visual index Non return valves

**RHD** / p. O13



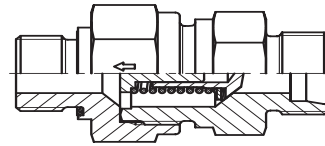
EO 24° cone end / EO 24° cone end

**RHV-R-ED** / p. O14



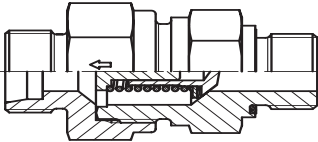
EO 24° cone end /  
Male BSPP thread – ED-seal (ISO 1179)

**RHZ-R-ED** / p. O15



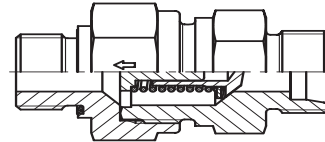
Male BSPP thread – ED-seal (ISO 1179) /  
EO 24° cone end

**RHV-M-ED** / p. O16



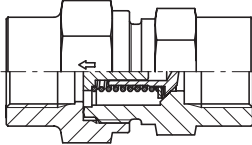
EO 24° cone end /  
Male metric thread – ED-seal (ISO 9974)

**RHZ-M-ED** / p. O17



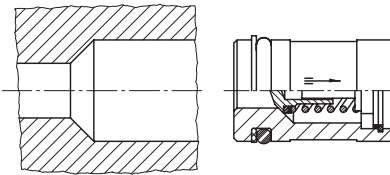
Male metric thread – ED-seal (ISO 9974) /  
EO 24° cone end

**RHDI** / p. O18



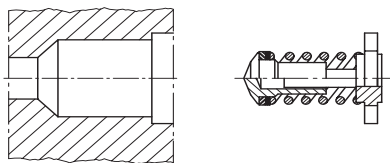
Female BSPP thread (ISO 1179-1) /  
Female BSPP thread (ISO 1179-1)

**RVP** / p. O19



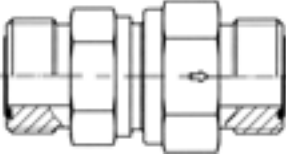
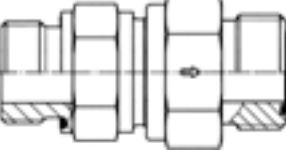
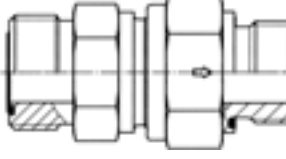
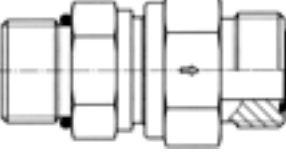
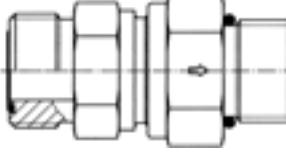
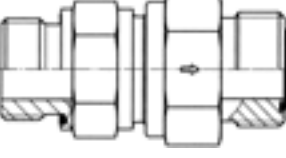
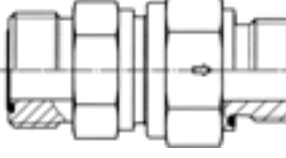
Non return valve cartridge

**I-TL** / p. O20



Internal parts of non return valve

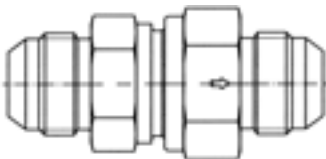
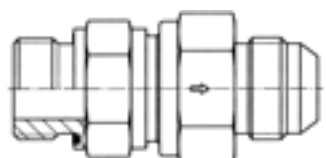
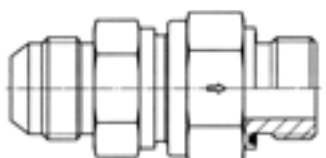
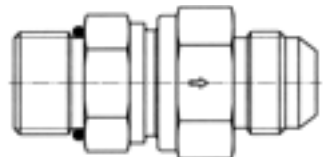
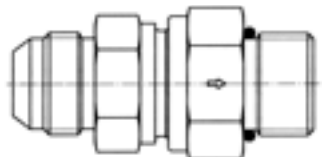
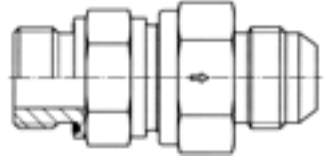
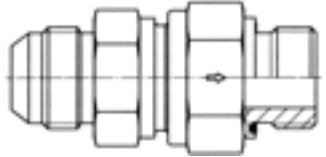
Visual index Non return valves with O-Lok® connections

<p><b>RHDMLOS / p. O22</b></p>  <p>O-Lok® ORFS end / O-Lok® ORFS end</p>	
<p><b>RHV42EDMLOS / p. O23</b></p>  <p>Male BSPP thread – ED-seal (ISO 1179) / O-Lok® ORFS end</p>	<p><b>RHZ42EDMLOS / p. O24</b></p>  <p>O-Lok® ORFS end / Male BSPP thread – ED-seal (ISO 1179)</p>
<p><b>RHV50MLOS / p. O25</b></p>  <p>Male UN/UNF thread– O-ring (ISO 11926) / O-Lok® ORFS end</p>	<p><b>RHZ50MLOS / p. O26</b></p>  <p>O-Lok® ORFS end / Male UN/UNF thread– O-ring (ISO 11926)</p>
<p><b>RHV82EDMLOS / p. O27</b></p>  <p>Male metric thread – ED-seal (ISO 9974) / O-Lok® ORFS end</p>	<p><b>RHZ82EDMLOS / p. O28</b></p>  <p>O-Lok® ORFS end / Male metric thread – ED-seal (ISO 9974)</p>

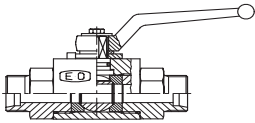
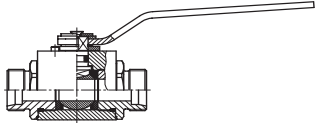
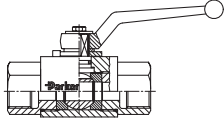
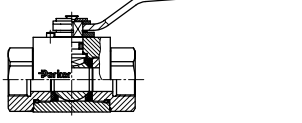
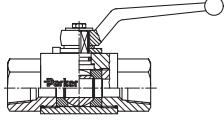
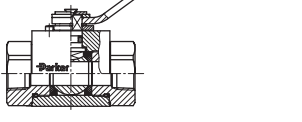




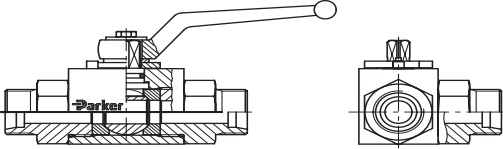
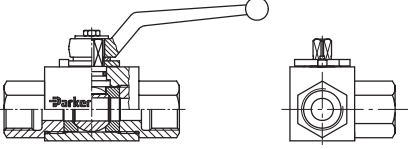
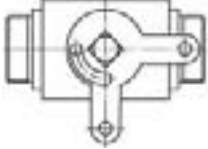
## Visual index Non return valves with Triple-Lok® connections

<p><b>RHDMTXS</b> / p. O29</p>  <p>Triple-Lok® 37° flare end / Triple-Lok® 37° flare end</p>	
<p><b>RHV42EDMXS</b> / p. O30</p>  <p>Male BSPP thread – ED-seal (ISO 1179) / Triple-Lok® 37° flare end</p>	<p><b>RHZ42EDMXS</b> / p. O31</p>  <p>Triple-Lok® 37° flare end / Male BSPP thread – ED-seal (ISO 1179)</p>
<p><b>RHV50MXS</b> / p. O32</p>  <p>Male UN/UNF thread – O-ring (ISO 11926) / Triple-Lok® 37° flare end</p>	<p><b>RHZ50MXS</b> / p. O33</p>  <p>Triple-Lok® 37° flare end / Male UN/UNF thread – O-ring (ISO 11926)</p>
<p><b>RHV82EDMXS</b> / p. O34</p>  <p>Male metric thread – ED-seal (ISO 9974) / Triple-Lok® 37° flare end</p>	<p><b>RHZ82EDMXS</b> / p. O35</p>  <p>Triple-Lok® 37° flare end / Male metric thread – ED-seal (ISO 9974)</p>

## Visual index 2/2-way ball valves Series KH

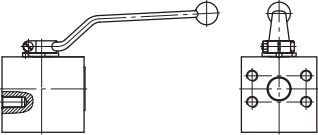
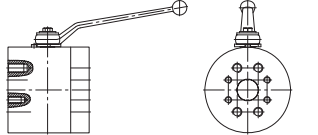
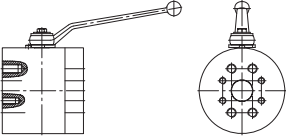
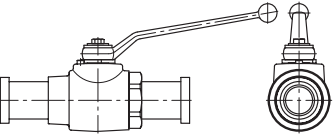
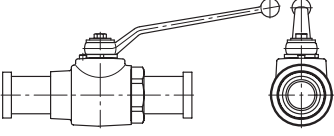
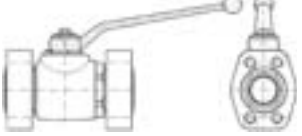
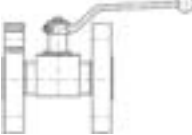
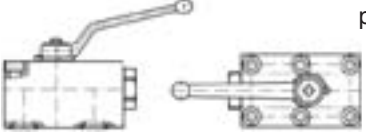
 <p><b>KH (S)</b> p. O36</p> <p>EO 24° cone end / EO 24° cone end</p>	 <p><b>KH (71)</b> p. O37</p> <p>EO 24° cone end / EO 24° cone end</p>
 <p><b>KH-BSPP (S)</b> p. O38</p> <p>Female BSPP thread (ISO 1179-1) / Female BSPP thread (ISO 1179-1)</p>	 <p><b>KH-BSPP (71)</b> p. O39</p> <p>Female BSPP thread (ISO 1179-1) / Female BSPP thread (ISO 1179-1)</p>
 <p><b>KH-NPT (S)</b> p. O40</p> <p>Female NPT thread (SAE 476) / Female NPT thread (SAE 476)</p>	 <p><b>KH-NPT (71)</b> p. O41</p> <p>Female NPT thread (SAE 476) / Female NPT thread (SAE 476)</p>

## Visual index 3/2-way ball valves

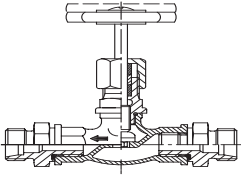
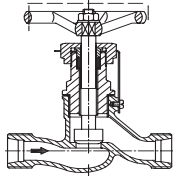
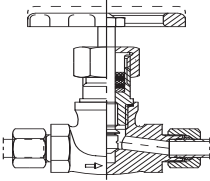
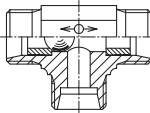

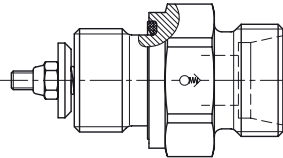
 <p><b>KH 3/2 (S)</b> p. O42</p> <p>EO 24° cone end / EO 24° cone end / EO 24° cone end</p>
 <p><b>KH 3/2-BSPP(S)</b> p. O43</p> <p>Female BSPP thread (ISO 1179-1) / Female BSPP thread (ISO 1179-1) / Female BSPP thread (ISO 1179-1)</p>
 <p><b>KH</b> p. O44</p> <p>Locking Devices for 2/2 Way and Multiway ball valves</p>



Visual index SAE ball valves/Ball valves for block structure

 <p><b>KH-B1V-S</b> p. O45</p> <p>Ball valve with SAE Flange connection</p>	 <p><b>KH-B2V-S</b> p. O46</p> <p>Ball valve with SAE Flange connection</p>
 <p><b>KH-B3V-S</b> p. O47</p> <p>Ball valve with SAE Flange connection</p>	 <p><b>KH-A-S</b> p. O48</p> <p>Ball valve with SAE Flange connection</p>
 <p><b>KH-A-S-71</b> p. O49</p> <p>Ball valve with SAE Flange adapter connection</p>	 <p><b>KH-B4V-S</b> p. O50</p> <p>Ball valve with SAE Flange connection ISO 6162 (1/2)</p>
 <p><b>KHB5V-S</b> p. O51</p> <p>Ball valve with Flange connection DIN EN 1092-1</p>	 <p><b>KHBLOCK</b> p. O52</p> <p>2/2-way ball valve for block structure</p>

Visual index shut off valves and Line Rupture Valves “LRV”

 <p><b>DV</b> p. O53</p> <p>EO 24° cone end / EO 24° cone end</p>	 <p><b>LD</b> p. O54</p> <p>EO 24° cone end / EO 24° cone end</p>
 <p><b>VDHA</b> p. O55</p> <p>EO tube end / EO tube end</p>	 <p><b>WV</b> p. O56</p> <p>EO 24° cone end / EO 24° cone end / EO 24° cone end</p>
 <p><b>ELA/ELAE</b> p. O57/O58</p> <p>Air-bleed valves</p>	 <p><b>LRV 08 ... 22L</b> p. O59</p> <p>EO 24° cone end</p>



## Range of non return valves, alternating valves and hand-operated shut off valves

### Non-return valves with nominal pressure ratings up to PN 420 bar:

- with tube connection both ends: RHD
- with tube connection to male stud: RHV/RHZ
- with female thread both ends: RHD1
- valve cartridges: RVP
- valve internal parts: I-TL
- leakage rate hydraulic testing under test pressure: 1 drop per minute

### Alternating valves:

- for nominal pressure ratings up to PN 160 WV
- leakage rate hydraulic testing under test pressure: 20 drops per minute

### Shut-off valves:

- for high pressure ratings up to PN 630 bar VDHA

### Design:

1. For materials, permissible working pressures, temperatures, flow medium torques for male studs etc. see relevant pages of the catalogue.
2. Tube connection ends must be assembled according to the Parker EO/EO-2 assembly instructions.
3. The valve bodies must be held rigidly during assembly of the tube connection ends.
4. Test pressures for non return valves: PN in conformance with O.D. information see chapter C.
5. Pressure drop values please see p. C12 and diagrams.

### Caution!

Please note the admissible pressure ratings for the EO-tube ends.

## Range of quarter turn ball valves

### Quarter turn Hand-operated ball valves:

- for high pressure ratings up to PN 500 bar KH
- leakage rate hydraulic testing under test pressure: 0 drops per minute

The pressure specification PN for hand-operated shut-off valves and quarter turn ball valves applies to the design factor 1,5 (according DIN 3230 T5 and ISO 5208).

### Steel

#### Materials:

Body made of steel, Cr(VI)-free galvanized or bronzed (coating DIN 50938-FE//A/T4), ball of hard chrome plated carbon steel, stem of zinc plated steel.

#### Seals:

Ball seat of POM (e. g. Delrin), stem seal of NBR (e. g. Perbunan).

#### Applications:

Suitable for petroleum-based hydraulic fluid, lubricants and fuel oil.

For applications suitable up to 500 bar.

#### Temperature range:

–10 up to +100 °C.

### Stainless Steel

#### Materials:

Body made of stainless steel, ball of stainless steel, stem and connectors of stainless steel.

#### Seals:

Ball seat of POM (e. g. Delrin), stem seal of NBR (e. g. Perbunan), DOZ from function nut FKM (e. g. FKM).

#### Applications:

Suitable for petroleum-based hydraulic fluid, lubricants and fuel oil.

For applications suitable up to 500 bar.

#### Temperature range:

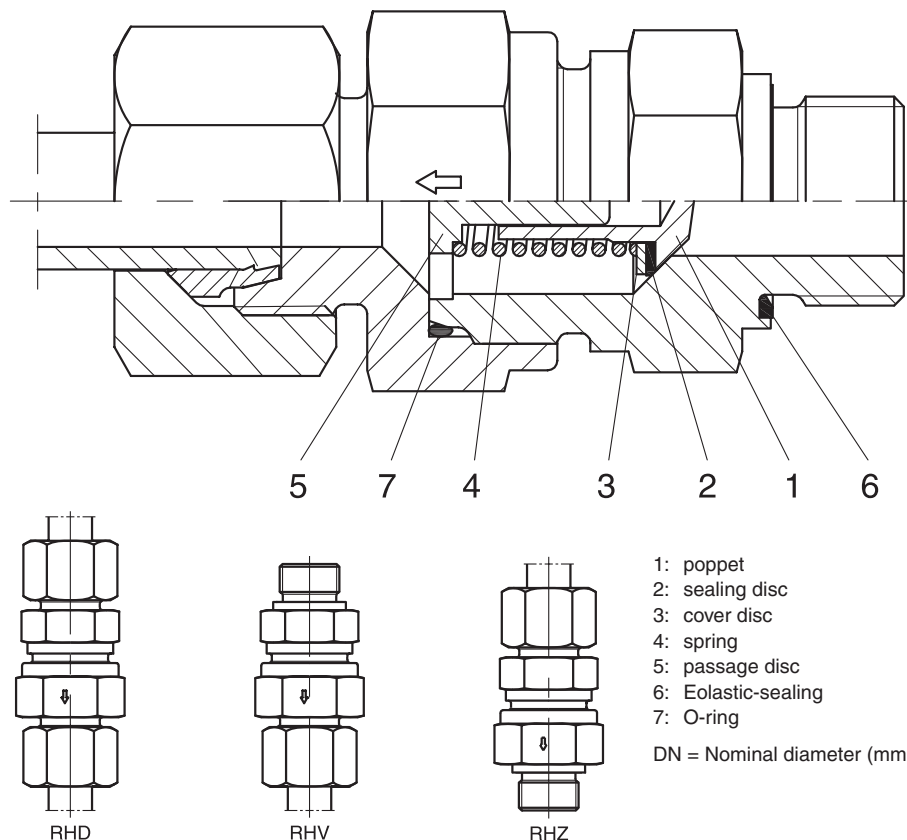
–30 up to +100 °C.

Perbunan = registered trademark of Bayer

### Notes:

To assess the suitability of valves for specific applications, please advise us of the exact specification of the medium to be used, max. working pressure incl. pressure peaks, temperature and frequency of valve operations. If water is used, indicate type of water or additives, if any.

## RHD/V/Z non return valve



### Characteristics:

Poppet check valve with a 90° valve seat with an elastomere sealing disc. Poppet stop for controlled valve opening. Damped opening action to minimize shock and noise. No reduction of cross section. Maximum flow velocity not more than 8 m/sec (for higher flow velocities special tests are required). Sealing of male stud thread by Eolastic soft seal with types RHV and RHZ.

### Opening pressure:

Standard 1 bar (on request also 0.2, 0.5, 2, 3, 4, 5 and 6 bar are available; please specify on order). For working pressure see appropriate tables. Cracking pressure tolerance:  $\pm 20\%$ .

### Material:

- Steel zinc-plated (CF Cr[VI]-free), seals in NBR (e.g. Perbunan), or (FKM) on request.

Perbunan = registered trademark of Bayer

- Stainless steel valves have FKM as standard. (Up to 3 bar cracking pressure)
- Brass-valves (CuZn35Ni2 2.0540) with internals (1.4571) available on request. (Up to 3 bar cracking pressure)

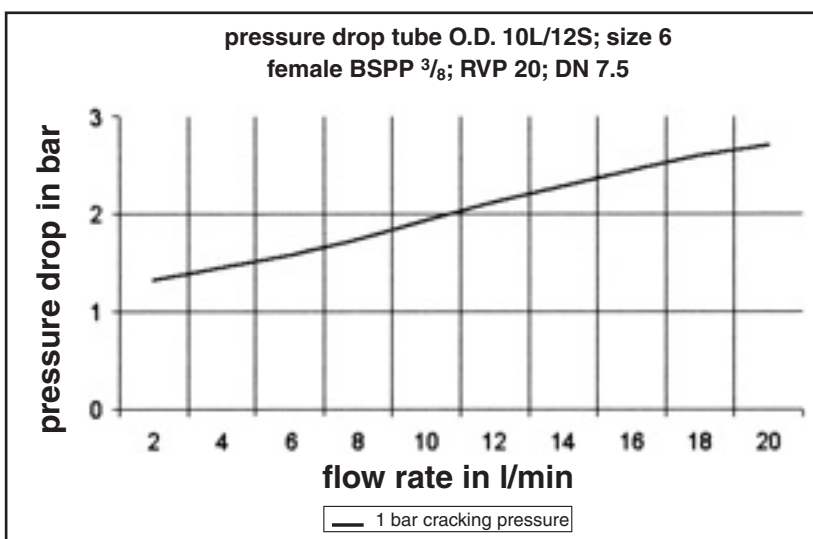
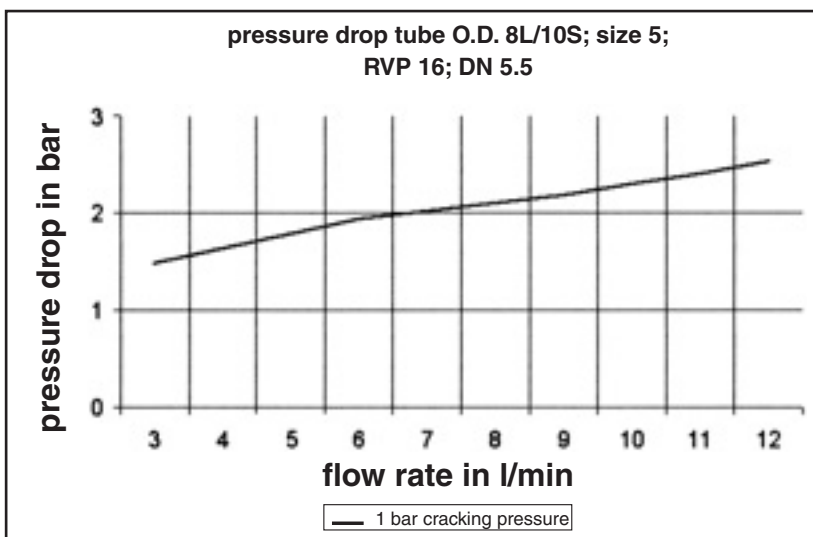
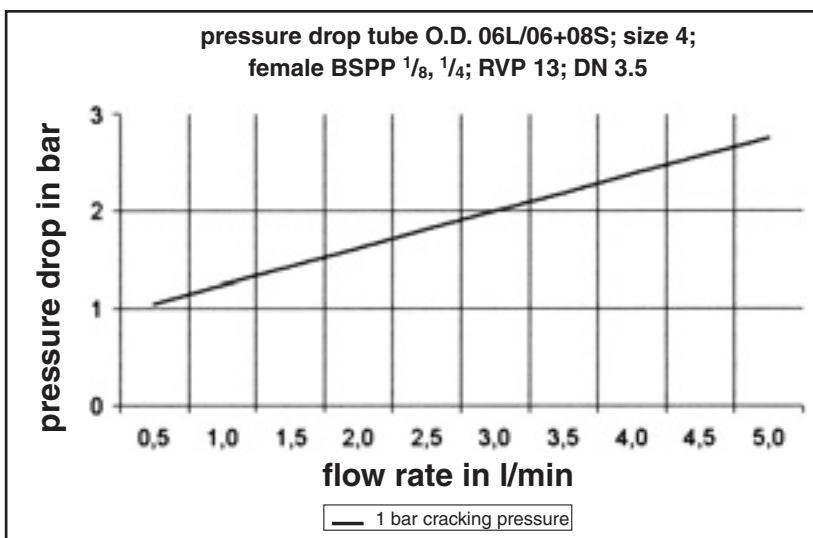
### Assembly:

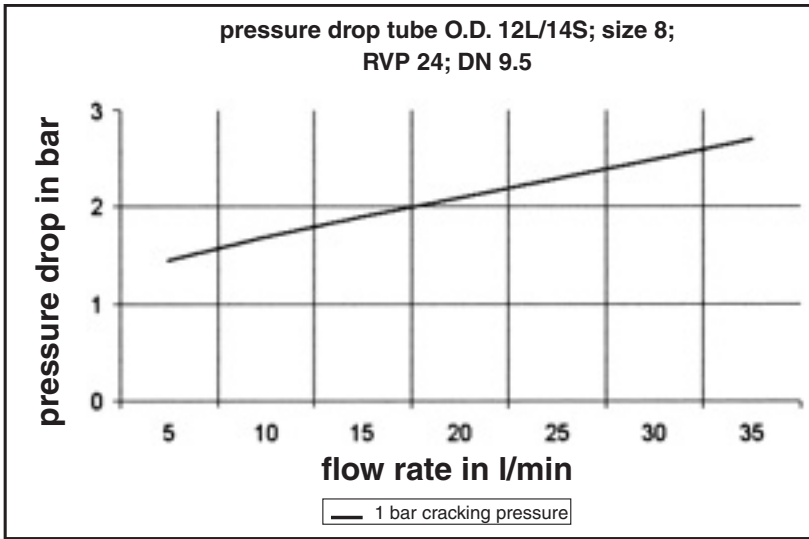
See assembly instructions for EO/EO 2 connections. Non-return valves are all packaged against contamination.

### Media:

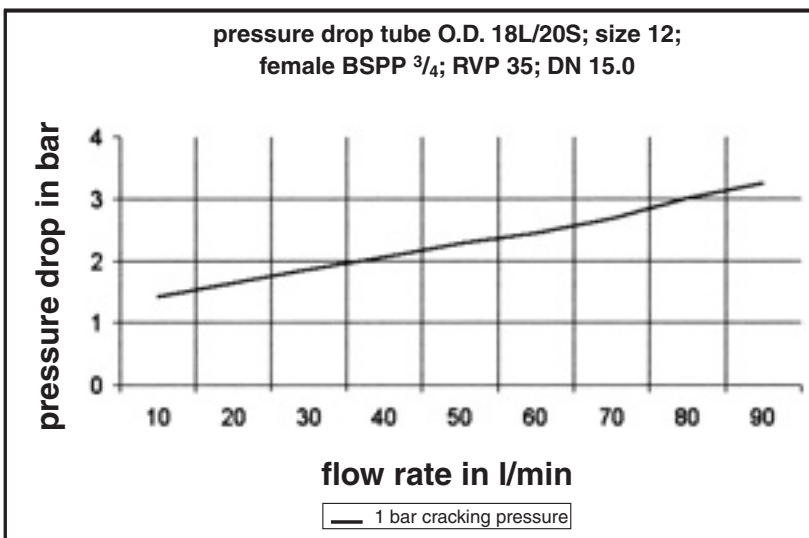
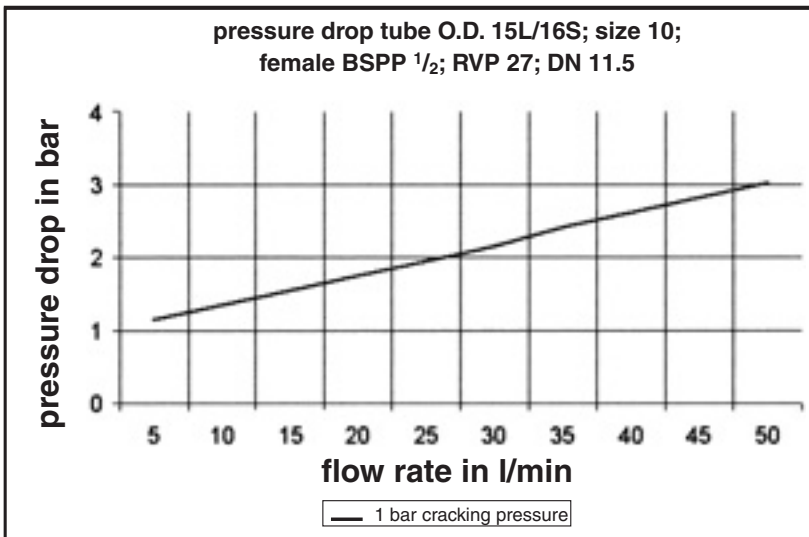
Hydraulic oil, low flammability hydraulic fluids (except for types HFC: for HFD types; FKM seals are necessary). Please indicate on order if used with compressed air. Not suitable for steam, combustible/explosive gases, or oxygen. For water applications, please consult Parker with details of water and any additives.

In all diagrams is the peak value of the flow rate in l/min. relating to the maximum permissible flow velocity of 8 m/sec.



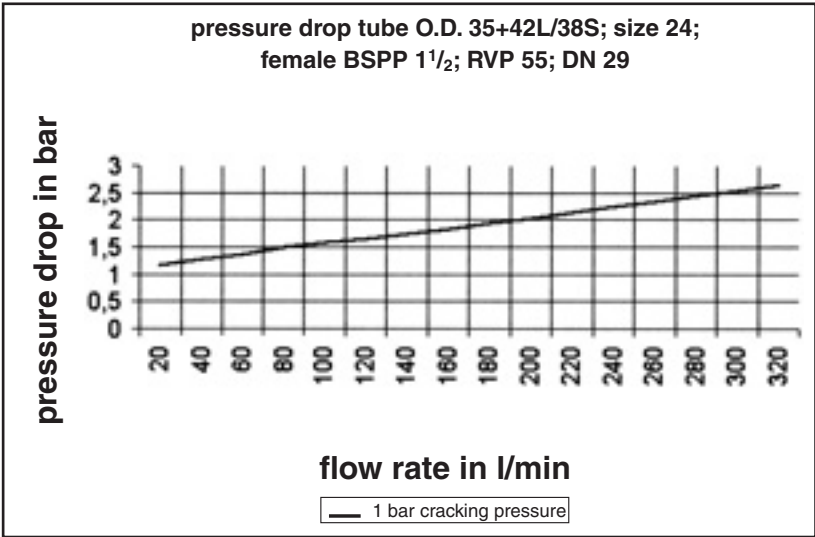
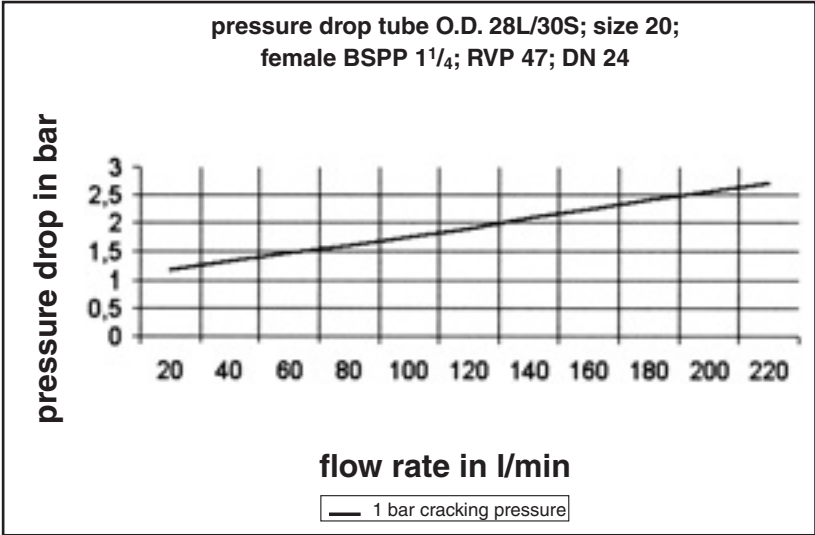
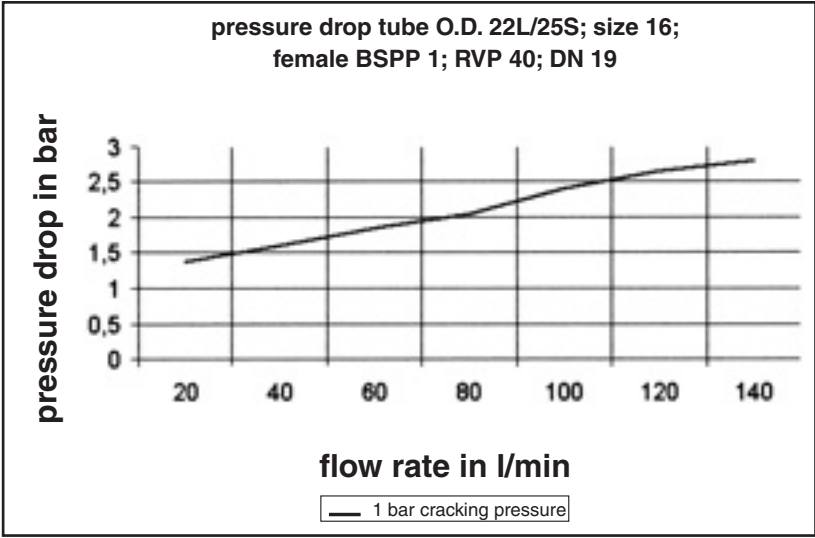


In all diagrams is the peak value of the flow rate in l/min. relating to the maximum permissible flow velocity of 8 m/sec.



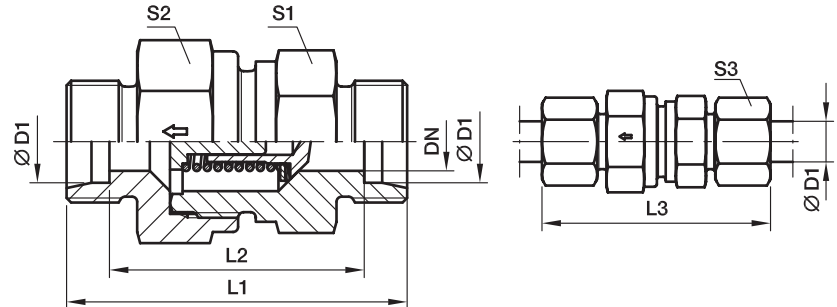


In all diagrams is the peak value of the flow rate in l/min. relating to the maximum permissible flow velocity of 8 m/sec.



## RHD Non return valve

EO 24° cone end / EO 24° cone end



Series	D1 	CF DN	71 DN	CF L1	71 L1	L2	L3	S1	CF S2	71 S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
														CF	71
L <sup>3)</sup>	06	3.5	3.5	43.0	43.0	29.0	58.0	17	17	17	14	46	RHD06LOMD	400	250
	08	5.5	5.5	44.0	44.9	30.0	59.0	19	19	19	17	61	RHD08LOMD	400	250
	10	7.5	7.5	55.0	54.5	40.5	69.5	22	24	24	19	104	RHD10LOMD	400	250
	12	9.5	9.5	58.0	57.5	43.5	72.5	27	30	30	22	166	RHD12LOMD	400	250
	15	11.0	11.5	62.0	61.5	47.5	77.5	27	32	32	27	192	RHD15LOMD	400	250
	18	14.0	14.0	67.0	66.5	51.5	83.5	36	41	36	32	292	RHD18LOMD	400	160
	22	18.0	18.0	77.0	76.5	61.5	93.5	41	46	46	36	472	RHD22LOMD	250	160
	28	23.0	23.0	85.0	84.5	69.5	102.5	50	55	55	41	746	RHD28LOMD	250	100
	35	29.0	29.0	96.0	95.5	74.5	117.5	60	65	60	50	1062	RHD35LOMD	250	100
	42	29.0	29.0	96.0	96.0	74.0	119.0	65	70	70	60	1518	RHD42LOMD	250	100
S <sup>4)</sup>	06	3.5	3.5	48.5	48.5	34.5	63.5	19	19	19	17	70	RHD06SOMD	420	400
	08	3.5	3.5	48.5	48.5	34.5	63.5	19	19	19	19	74	RHD08SOMD	420	400
	10	5.5	5.5	55.5	55.5	40.5	72.5	22	24	24	22	121	RHD10SOMD	420	400
	12	7.5	7.5	57.5	57.5	42.5	74.5	24	27	27	24	148	RHD12SOMD	420	400
	14	9.5	9.5	64.0	63.5	47.5	82.5	27	32	32	27	218	RHD14SOMD	420	315
	16	11.0	11.5	68.0	67.5	50.5	86.5	32	36	36	30	286	RHD16SOMD	420	315
	20	15.0	15.0	76.0	75.5	54.5	97.5	41	50	46	36	506	RHD20SOMD	420	250
	25	19.0	19.0	83.0	82.5	58.5	106.5	46	55	50	46	639	RHD25SOMD	420	250
	30	24.0	24.0	97.0	96.5	69.5	122.5	60	60	60	50	1157	RHD30SOMD	250	250
	38	29.0	29.0	108.0	107.5	75.5	136.5	65	70	70	60	1650	RHD38SOMD	250	250

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

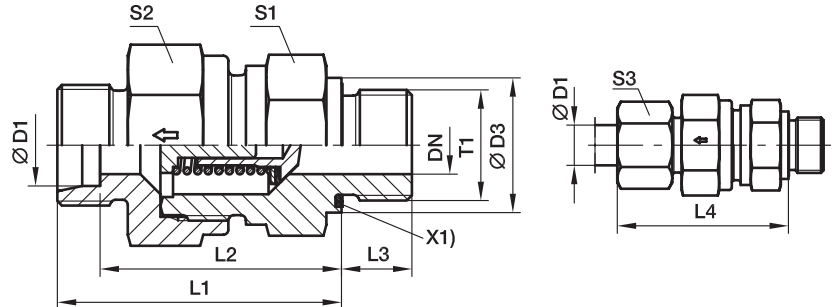
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	RHD06LOMDCF	NBR
Stainless steel	71	RHD06LOMD71	VIT

## RHV-R-ED Non return valve

EO 24° cone end / Male BSPP thread – ED-seal (ISO 1179)



X1) Elastic sealing

Series	D1	T1	CF DN	71 DN	D3	CF L1	71 L1	L2	L3	L4	S1	CF S2	71 S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																	CF	71
L <sup>3)</sup>	06	G 1/8 A	3.5	3.5	14	35.0	35.0	28.0	8	42.5	17	17	17	14	47	RHV06LREDOMD	400	250
	08	G 1/4 A	5.5	5.5	19	37.0	37.0	30.0	12	44.5	19	19	19	17	62	RHV08LREDOMD	400	250
	10	G 1/4 A	7.5	7.5	19	46.0	45.5	38.5	12	53.0	22	24	24	19	105	RHV10LREDOMD	400	250
	12	G 3/8 A	9.5	9.5	22	50.0	49.5	42.5	12	57.0	27	30	30	22	175	RHV12LREDOMD	400	250
	15	G 1/2 A	11.0	11.5	27	53.0	52.5	45.5	14	60.5	27	32	32	27	205	RHV15LREDOMD	400	250
	18	G 1/2 A	14.0	14.0	27	58.0	57.5	50.0	14	66.0	36	41	36	32	294	RHV18LREDOMD	400	160
	22	G 3/4 A	18.0	18.0	32	63.0	62.5	55.0	16	71.0	41	46	46	36	450	RHV22LREDOMD	250	160
	28	G 1 A	23.0	23.0	40	71.0	70.5	63.0	18	79.5	50	55	55	41	720	RHV28LREDOMD	250	100
	35	G 1 1/4 A	29.0	29.0	50	80.0	79.5	69.0	20	90.5	60	65	60	50	1050	RHV35LREDOMD	250	100
	42	G 1 1/2 A	29.0	29.0	55	80.0	79.5	68.5	22	91.0	65	70	70	60	1560	RHV42LREDOMD	250	100
S <sup>4)</sup>	06	G 1/4 A	3.5	3.5	19	38.5	38.5	31.5	12	46.0	19	19	19	17	73	RHV06SREDOMD	420	400
	08	G 1/4 A	3.5	3.5	19	38.5	38.5	31.5	12	46.0	19	19	19	19	79	RHV08SREDOMD	420	400
	10	G 3/8 A	5.5	5.5	22	45.5	45.5	38.0	12	54.0	22	24	24	22	132	RHV10SREDOMD	420	400
	12	G 3/8 A	7.5	7.5	22	48.5	48.5	41.0	12	57.0	24	27	27	24	153	RHV12SREDOMD	420	400
	14	G 1/2 A	9.5	9.5	27	53.0	52.5	44.5	14	62.0	27	32	32	27	230	RHV14SREDOMD	420	315
	16	G 1/2 A	11.0	11.5	27	57.0	56.5	48.0	14	66.0	32	36	36	30	293	RHV16SREDOMD	420	315
	20	G 3/4 A	15.0	15.0	32	63.0	62.5	52.0	16	73.5	41	50	46	36	511	RHV20SREDOMD	420	250
	25	G 1 A	19.0	19.0	40	67.0	66.5	54.5	18	78.5	46	55	50	46	648	RHV25SREDOMD	420	250
	30	G 1 1/4 A	24.0	24.0	50	78.0	77.5	64.0	20	90.5	60	60	60	50	1176	RHV30SREDOMD	250	250
	38	G 1 1/2 A	29.0	29.0	55	86.0	85.5	69.5	22	100.0	65	70	70	60	1624	RHV38SREDOMD	250	250

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

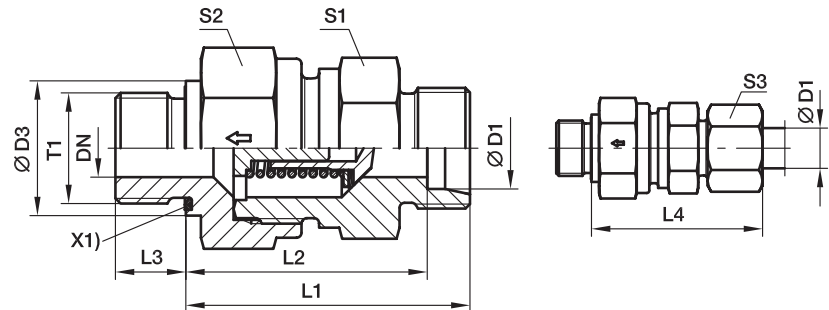
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	RHV06LREDOMDCF	NBR
Stainless steel	71	RHV06LREDOMD71	VIT

## RHZ-R-ED Non return valve

Male BSPP thread – ED-seal (ISO 1179) / EO 24° cone end



X1) Eolastic sealing

Series	D1 	T1	CF DN	71 DN	D3	CF L1	71 L1	L2	L3	L4	S1	CF S2	71 S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																	CF	71
L <sup>3)</sup>	06	G 1/8 A	3.5	3.5	14	33.5	–	26.5	8	41.0	17	17	17	14	44	RHZ06LREDOMD	400	250
	08	G 1/4 A	5.5	5.5	19	35.5	–	28.5	12	43.0	19	19	19	17	59	RHZ08LREDOMD	400	250
	10	G 1/4 A	7.5	7.5	19	46.0	–	38.5	12	53.0	22	24	24	19	125	RHZ10LREDOMD	400	250
	12	G 3/8 A	9.5	9.5	22	48.0	–	40.5	12	55.0	27	30	30	22	161	RHZ12LREDOMD	400	250
	15	G 1/2 A	11.0	11.5	27	50.0	–	42.5	14	57.5	27	32	32	27	186	RHZ15LREDOMD	400	250
	18	G 1/2 A	14.0	14.0	27	56.0	–	48.0	14	64.0	36	41	36	32	275	RHZ18LREDOMD	400	160
	22	G 3/4 A	18.0	18.0	32	64.0	–	56.0	16	72.0	41	46	46	36	463	RHZ22LREDOMD	250	160
	28	G 1 A	23.0	23.0	40	72.0	–	64.0	18	80.5	50	55	55	41	721	RHZ28LREDOMD	250	100
	35	G 1 1/4 A	29.0	29.0	50	81.0	–	70.0	20	91.5	60	65	60	50	1073	RHZ35LREDOMD	250	100
	42	G 1 1/2 A	29.0	29.0	55	82.0	–	70.5	22	93.0	65	70	70	60	1602	RHZ42LREDOMD	250	100
S <sup>4)</sup>	06	G 1/4 A	3.5	3.5	19	38.5	–	31.5	12	46.0	19	19	19	17	71	RHZ06SREDOMD	420	400
	08	G 1/4 A	3.5	3.5	19	38.5	–	31.5	12	46.0	19	19	19	19	74	RHZ08SREDOMD	420	400
	10	G 3/8 A	5.5	5.5	22	45.5	–	38.0	12	54.0	22	24	24	22	128	RHZ10SREDOMD	420	400
	12	G 3/8 A	7.5	7.5	22	48.5	–	41.0	12	57.0	24	27	27	24	152	RHZ12SREDOMD	420	400
	14	G 1/2 A	9.5	9.5	27	52.0	–	43.5	14	61.0	27	32	32	27	223	RHZ14SREDOMD	420	315
	16	G 1/2 A	11.0	11.5	27	55.0	–	46.0	14	64.0	32	36	36	30	275	RHZ16SREDOMD	420	315
	20	G 3/4 A	15.0	15.0	32	61.0	–	50.0	16	71.5	41	50	46	36	490	RHZ20SREDOMD	420	250
	25	G 1 A	19.0	19.0	40	67.0	–	54.5	18	78.5	50	55	50	46	647	RHZ25SREDOMD	420	250
	30	G 1 1/4 A	24.0	24.0	50	78.0	–	64.0	20	90.5	55	60	60	50	1180	RHZ30SREDOMD	250	250
	38	G 1 1/2 A	29.0	29.0	55	88.0	–	71.5	22	102.0	65	70	70	60	1670	RHZ38SREDOMD	250	250

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

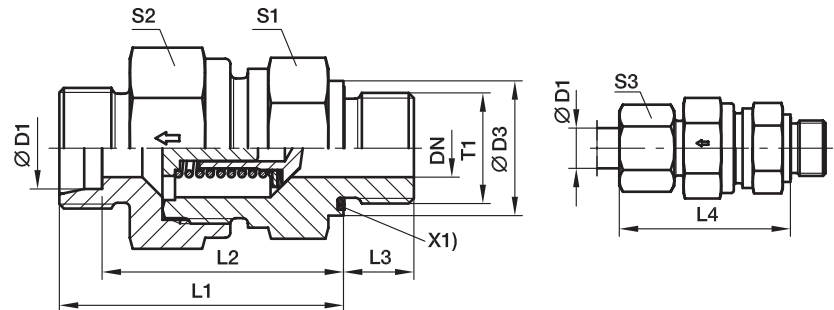
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	RHZ06LREDOMDCF	NBR
Stainless steel	71	RHZ06LREDOMD71	VIT

## RHV-M-ED Non return valve

EO 24° cone end / Male metric thread – ED-seal (ISO 9974)



X1) Eolastic sealing

Series	D1 	T1	CF DN	71 DN	D3	CF L1	71 L1	L2	L3	L4	S1	CF S2	71 S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																	CF	71
L <sup>3)</sup>	06	M 10×1.0	3.5	3.5	14	35.0	–	28.0	8	42.5	17	17	17	14	46	RHV06LMEDOMD	400	250
	08	M 12×1.5	5.5	5.5	17	36.0	–	29.0	12	43.5	19	19	19	17	58	RHV08LMEDOMD	400	250
	10	M 14×1.5	7.5	7.5	19	45.5	–	38.5	12	53.0	22	24	34	19	108	RHV10LMEDOMD	400	250
	12	M 16×1.5	9.5	9.5	22	49.5	–	42.5	12	57.0	27	30	30	22	173	RHV12LMEDOMD	400	250
	15	M 18×1.5	11.0	11.5	24	52.5	–	45.5	12	60.5	27	32	32	27	192	RHV15LMEDOMD	400	250
	18	M 22×1.5	14.0	14.0	27	56.0	–	50.0	14	66.0	36	41	36	32	298	RHV18LMEDOMD	400	160
	22	M 26×1.5	18.0	18.0	32	64.0	–	55.0	16	71.0	41	46	46	36	446	RHV22LMEDOMD	250	160
	28	M 33×2.0	23.0	23.0	40	72.0	–	63.0	18	79.5	50	55	55	41	722	RHV28LMEDOMD	250	100
	35	M 42×2.0	29.0	29.0	50	81.0	–	69.0	20	90.5	60	65	60	50	1053	RHV35LMEDOMD	250	100
	42	M 48×2.0	29.0	29.0	55	82.0	–	68.5	22	91.0	65	70	70	60	1563	RHV42LMEDOMD	250	100
S <sup>4)</sup>	06	M 12×1.5	3.5	3.5	17	38.5	–	31.5	12	46.0	19	19	19	17	70	RHV06SMEDOMD	420	400
	08	M 14×1.5	3.5	3.5	19	38.5	–	31.5	12	46.0	19	19	19	19	76	RHV08SMEDOMD	420	400
	10	M 16×1.5	5.5	5.5	22	45.5	–	38.0	12	54.0	22	24	24	22	124	RHV10SMEDOMD	420	400
	12	M 18×1.5	7.5	7.5	24	48.5	–	41.0	12	57.0	24	27	27	24	157	RHV12SMEDOMD	420	400
	14	M 20×1.5	9.5	9.5	26	52.5	–	44.5	14	62.0	27	32	32	27	215	RHV14SMEDOMD	420	315
	16	M 22×1.5	11.0	11.5	27	55.0	–	48.0	14	66.0	32	36	36	30	296	RHV16SMEDOMD	420	315
	20	M 27×2.0	15.0	15.0	32	61.0	–	52.0	16	73.5	41	50	46	36	521	RHV20SMEDOMD	420	250
	25	M 33×2.0	19.0	19.0	40	67.0	–	54.5	18	78.5	46	55	50	46	648	RHV25SMEDOMD	420	250
	30	M 42×2.0	24.0	24.0	50	78.0	–	64.0	20	90.5	60	60	60	50	1178	RHV30SMEDOMD	250	250
	38	M 48×2.0	29.0	29.0	55	88.0	–	69.5	22	100.0	65	70	70	60	1627	RHV38SMEDOMD	250	250

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

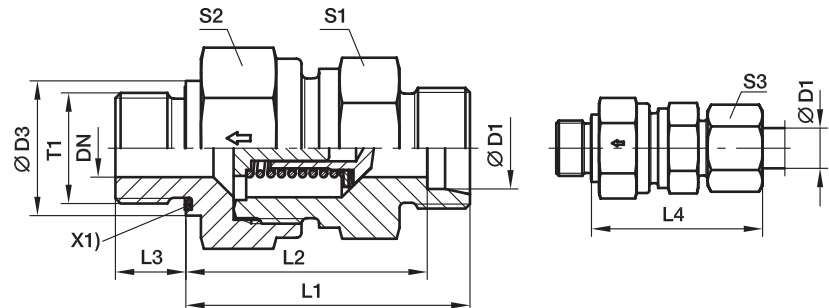
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	RHV06LMEDOMDCF	NBR
Stainless steel	71	RHV06LMEDOMD71	VIT

## RHZ-M-ED Non return valve

Male metric thread – ED-seal (ISO 9974) / EO 24° cone end



X1) Eolastic sealing

Series	D1	T1	DN	D3	L1	L2	L3	L4	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
														CF	71
L <sup>3)</sup>	06	M 10×1.0	3.5	14	33.5	26.5	8	41.0	17	17	14	44	RHZ06LMEDOMD	400	250
	08	M 12×1.5	5.5	17	35.5	28.5	12	43.0	19	19	17	58	RHZ08LMEDOMD	400	250
	10	M 14×1.5	7.5	19	45.5	38.5	12	53.0	22	24	19	104	RHZ10LMEDOMD	400	250
	12	M 16×1.5	9.5	22	47.5	40.5	12	55.0	27	30	22	169	RHZ12LMEDOMD	400	250
	15	M 18×1.5	11.5	24	49.5	42.5	12	57.5	27	32	27	174	RHZ15LMEDOMD	400	250
	18	M 22×1.5	14.0	27	55.5	48.0	14	64.0	36	41	32	279	RHZ18LMEDOMD	400	160
	22	M 26×1.5	18.0	32	63.5	56.0	16	72.0	41	46	36	459	RHZ22LMEDOMD	250	160
	28	M 33×2.0	23.0	40	71.5	64.0	18	80.5	50	55	41	721	RHZ28LMEDOMD	250	100
	35	M 42×2.0	29.0	50	80.5	70.0	20	91.5	60	65	50	1078	RHZ35LMEDOMD	250	100
	42	M 48×2.0	29.0	55	81.5	70.5	22	93.0	65	70	60	1601	RHZ42LMEDOMD	250	100
S <sup>4)</sup>	06	M 12×1.5	3.5	17	38.5	31.5	12	46.0	19	19	17	70	RHZ06SMEDOMD	420	400
	08	M 14×1.5	3.5	19	38.5	31.5	12	46.0	19	19	19	75	RHZ08SMEDOMD	420	400
	10	M 16×1.5	5.5	22	45.5	38.0	12	54.0	22	24	22	123	RHZ10SMEDOMD	420	400
	12	M 18×1.5	7.5	24	48.5	41.0	12	57.0	24	27	24	157	RHZ12SMEDOMD	420	400
	14	M 20×1.5	9.5	26	51.5	43.5	14	61.0	27	32	27	214	RHZ14SMEDOMD	420	315
	16	M 22×1.5	11.5	27	54.5	46.0	14	64.0	32	36	30	279	RHZ16SMEDOMD	420	315
	20	M 27×2.0	15.0	32	60.5	50.0	16	71.5	41	50	36	487	RHZ20SMEDOMD	420	250
	25	M 33×2.0	19.0	40	68.0	54.5	18	78.5	46	55	46	647	RHZ25SMEDOMD	420	250
	30	M 42×2.0	24.0	50	77.5	64.0	20	90.5	60	60	50	1180	RHZ30SMEDOMD	250	250
	38	M 48×2.0	29.0	55	87.5	71.5	22	102.0	65	70	60	1669	RHZ38SMEDOMD	250	250

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

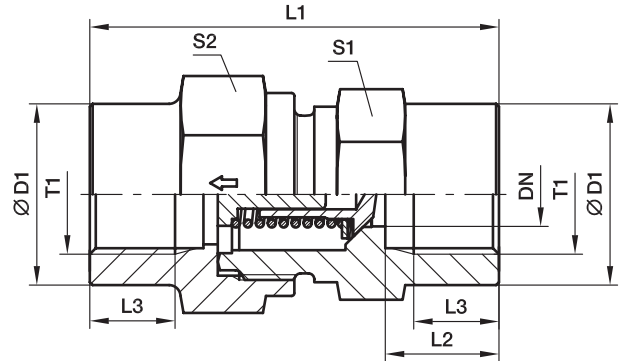
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	RHZ06LMEDOMDCF	NBR
Stainless steel	71	RHZ06LMEDOMD71	VIT

## RHDI Non return valve

Female BSPP thread (ISO 1179-1) / Female BSPP thread (ISO 1179-1)



Series	T1	DN	D1	L1	L2	L3	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
											CF	71
L <sup>3)</sup>	G 1/8	3.5	19	42.5	12.0	8.0	19	19	76	<b>RHDI1/8</b>	400	400
	G 1/4	3.5	19	51.0	16.0	12.0	19	19	82	<b>RHDI1/4</b>	400	400
	G 3/8	7.5	24	60.0	17.0	12.0	24	27	157	<b>RHDI3/8</b>	400	400
	G 1/2	11.5	32	72.0	20.0	15.0	32	36	344	<b>RHDI1/2</b>	315	315
	G 3/4	15.0	41	84.0	22.0	16.5	41	46	664	<b>RHDI3/4</b>	250	250
	G 1	19.0	46	95.0	25.5	19.0	46	50	821	<b>RHDI1</b>	250	250
G 1 1/4	24.0	60	110.0	28.0	21.5	60	60	1581	<b>RHDI11/4</b>	250	250	
G 1 1/2	29.0	65	114.0	28.5	22.0	65	70	1919	<b>RHDI11/2</b>	250	250	

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series

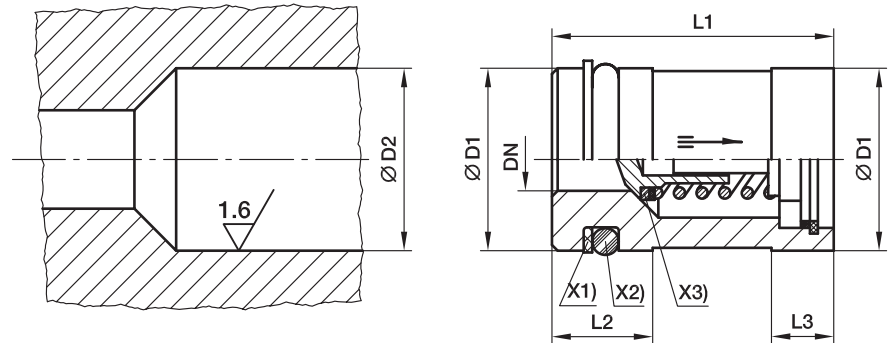
$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	RHDI1/8CF	NBR
Stainless steel	71	RHDI1/871	VIT

## RVP Non return valve cartridge



X1) Supporting ring PTFE  
 X2) O-ring NBR  
 X3) Sealing disc NBR

Valve ITL	DN	D1	D2	L1 ± 0,15	L2	L3	O-ring	Supporting ring	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
											CF	71
6-L/6 & 8-S	3.5	12.945 ± 0.055	13 <sup>+0.12 +0.05</sup>	23.15	9.5	6.0	8.3×2.4	SRA 13-2.05-1.0	21	<b>RVP13</b>	420	400
8-L/10-S	5.5	15.945 ± 0.055	16 <sup>+0.12 +0.05</sup>	26.65	9.5	6.5	11.3×2.4	SRA 16-2.05-1.0	32	<b>RVP16</b>	420	400
10-L/12-S	7.5	19.935 ± 0.065	20 <sup>+0.142 +0.065</sup>	30.15	9.5	6.5	15.3×2.4	SRA 20-2.05-1.0	54	<b>RVP20</b>	420	400
12-L/14-S	9.5	23.935 ± 0.065	24 <sup>+0.149 +0.065</sup>	35.15	12.0	7.5	18.2×3	SRA 24-2.6-1.0	80	<b>RVP24</b>	420	315
15-L/16-S	11.5	26.935 ± 0.065	27 <sup>+0.149 +0.065</sup>	38.15	12.0	7.5	21.2×3	SRA 27-2.6-1.0	105	<b>RVP27</b>	420	315
18-L/20-S	15.0	34.92 ± 0.08	35 <sup>+0.18 +0.08</sup>	44.65	12.0	9.5	29.2×3	SRA 35-2.5-1.0	204	<b>RVP35</b>	420	250
22-L/25-S	19.0	39.92 ± 0.08	40 <sup>+0.18 +0.08</sup>	50.65	12.0	11.0	34.2×3	SRA 40-2.5-1.0	275	<b>RVP40</b>	420	250
28-L/30-S	24.0	46.92 ± 0.08	47 <sup>+0.18 +0.08</sup>	60.15	13.0	13.0	41.2×3	SRA 47-2.6-1.5	412	<b>RVP47</b>	250	250
35-L/38-S	29.0	54.905 ± 0.095	55 <sup>+0.22 +0.01</sup>	70.15	16.0	13.0	44.2×5.7	SRA 55-5.1-1.5	607	<b>RVP55</b>	250	250

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

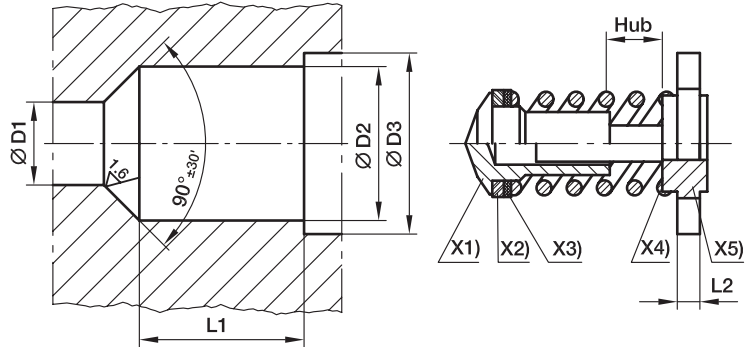
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	RVP13CF	NBR
Stainless steel	71	RVP1371	VIT



## I-TL Internal parts of non return valve



- X1) poppet
- X2) sealing disc (smooth side to the poppet)
- X3) cover disc
- X4) spring
- X5) passage disc

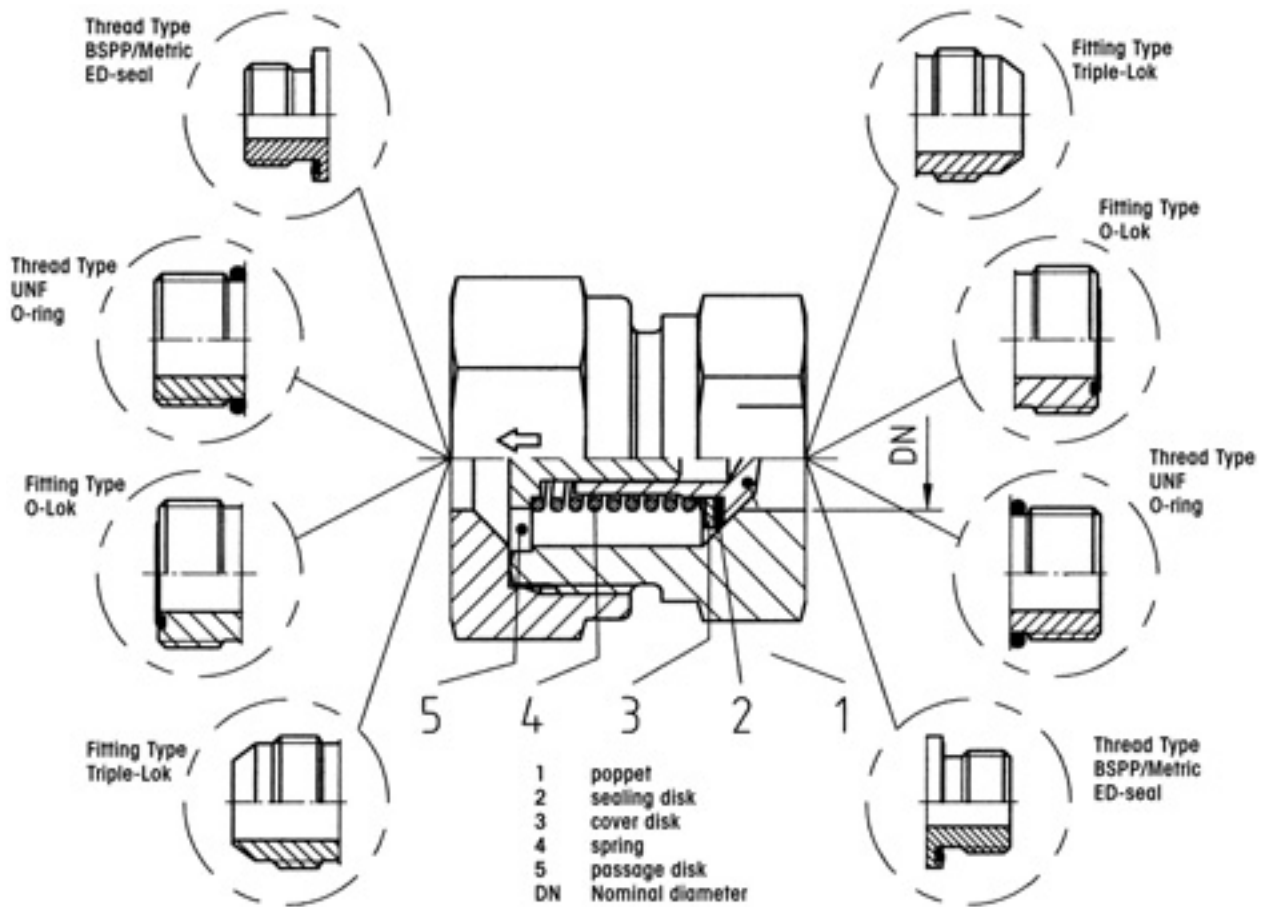
Series	Tube O.D.	D1 <sup>+0.1</sup>	D2 <sup>+0.1</sup>	D3 <sup>+0.1</sup>	L1 <sup>±0.1</sup>	L2	Hub	Weight g/1 piece	Order code*	PN (bar) <sup>1</sup>	
										CF	71
L/S/S	06/06/08	3.5	7.5	8.6	8.2	2.0	1.0	2	<b>ITL06L/06+08S</b>	*	*
L/S	08/10	5.5	10.2	11.6	11.0	2.0	1.7	4	<b>ITL08L/10S</b>	*	*
L/S	10/12	7.5	13.0	14.1	14.0	2.0	2.3	7	<b>ITL10L/12S</b>	*	*
L/S	12/14	9.5	16.7	18.1	16.5	2.5	2.9	13	<b>ITL12L/14S</b>	*	*
L/S	15/16	11.5	19.5	20.6	19.0	2.5	3.5	18	<b>ITL15L/16S</b>	*	*
L/S	18/20	15.0	25.2	27.1	22.5	3.0	4.4	37	<b>ITL18L/20S</b>	*	*
L/S	22/25	19.0	30.8	32.6	27.0	3.0	5.5	54	<b>ITL22L/25S</b>	*	*
L/S	28/30	24.0	38.6	40.6	32.5	3.5	7.3	107	<b>ITL28L/30S</b>	*	*
L/L/S	35/38/42	29.0	45.7	48.1	37.5	3.5	8.9	144	<b>ITL35L+42I/38S</b>	*	*

\* = item deliverable

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	ITL06L/06+008S	NBR
Stainless steel	71	ITL06L71/06+008S	VIT

**RHD/V/Z Non return valves with O-Lok® or Triple-Lok® connections**

**Material:**

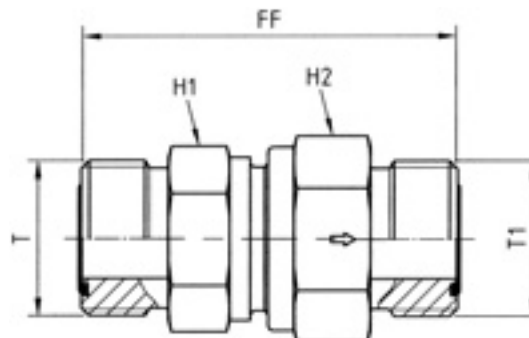
- Steel zinc-plated CF Cr(VI)-free, seals in NBR (e.g. Perbunan)
- Internal parts in stainless steel with FKM also available on request.

Perbunan = registered trademark of Bayer



## RHDMLOS Non return valve

O-Lok® ORFS end / O-Lok® ORFS end



Tube 1 O.D.		Tube 2 O.D.		ORFS (UN/UNF) thread T	ORFS (UN/UNF) thread T1	H1	H2	FF	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>
mm	Inch	mm	Inch									CF
6	1/4	6	1/4	9/16-18 UNF	9/16-18 UNF	19	19	44.5	3.5	108	<b>4RHDMLOS</b>	420
8, 10	5/16, 3/8	8, 10	5/16, 3/8	11/16-16 UNF	11/16-16 UNF	22	24	53.5	5.5	188	<b>6RHDMLOS</b>	420
12	1/2	12	1/2	13/16-16 UNF	13/16-16 UNF	24	27	59.5	7.5	223	<b>8RHDMLOS</b>	420
14, 15, 16	5/8	14, 15, 16	5/8	1-14 UNF	1-14 UNF	32	36	70.5	11.5	428	<b>10RHDMLOS</b>	420
18, 20	3/4	18, 20	3/4	1 3/16-12 UNF	1 3/16-12 UNF	41	46	77.5	15.0	731	<b>12RHDMLOS</b>	420
22, 25	1	22, 25	1	1 7/16-12 UNF	1 7/16-12 UNF	46	50	81.5	19.0	1076	<b>16RHDMLOS</b>	420
28, 30, 32	1 1/4	28, 30, 32	1 1/4	1 11/16-12 UNF	1 11/16-12 UNF	60	60	91.5	24.0	1630	<b>20RHDMLOS</b>	250
35, 38	1 1/2	35, 38	1 1/2	2-12 UNF	2-12 UNF	65	70	98.5	29.0	2362	<b>24RHDMLOS</b>	250

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

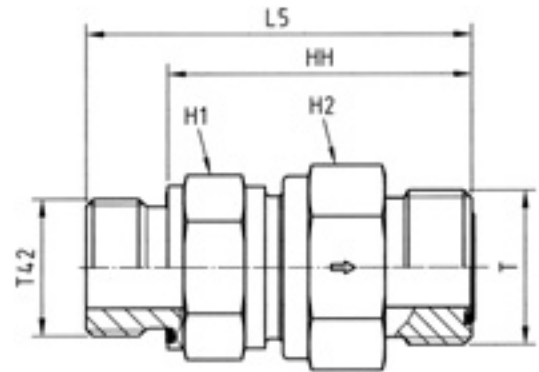
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	4RHDMLOSCF	NBR

## RHV42EDMLOS Non return valve

Male BSPP thread – ED-seal (ISO 1179) / O-Lok® ORFS end



Tube O.D.		BSPP thread	ORFS (UN/UNF)	H1	H2	L5	HH	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>
mm	Inch										T42
6	1/4	G 1/8	9/16-18 UNF	19	19	44.5	36.5	3.5	92	<b>4RHV42EDMLOS</b>	420
8, 10	5/16, 3/8	G 1/4	11/16-16 UNF	24	27	56.5	44.5	6.5	165	<b>6RHV42EDMLOS</b>	420
12	1/2	G 3/8	13/16-16 UNF	24	27	61.5	49.5	7.5	191	<b>8RHV42EDMLOS</b>	420
14, 15, 16	5/8	G 1/2	1-14 UNF	32	36	70.0	56.0	11.5	366	<b>10RHV42EDMLOS</b>	420
18, 20	3/4	G 3/4	1 3/16-12 UNF	41	46	77.5	63.5	15.0	631	<b>12RHV42EDMLOS</b>	420
22, 25	1	G 1	1 7/16-12 UNF	46	50	84.0	66.0	19.0	863	<b>16RHV42EDMLOS</b>	420
28, 30, 32	1 1/4	G 1 1/4	1 11/16-12 UNF	60	60	95.0	75.0	24.0	1403	<b>20RHV42EDMLOS</b>	250
35, 38	1 1/2	G 1 1/2	2-12 UNF	65	70	105.0	83.0	29.0	1969	<b>24RHV42EDMLOS</b>	250

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

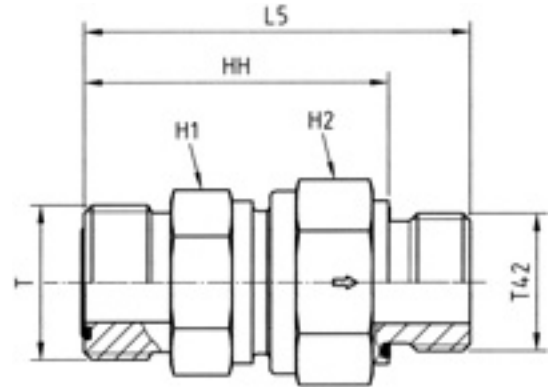
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	4RHV42EDMLOSCF	NBR

## RHZ42EDMLOS Non return valve

O-Lok® ORFS end / Male BSPP thread – ED-seal (ISO 1179)



Tube O.D.		BSPP thread	ORFS (UN/UNF) thread T	H1	H2	L5	HH	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>
mm	Inch	T42									CF
6	1/4	G 1/8	9/16-18 UNF	19	19	44.5	36.5	3.5	91	<b>4RHZ42EDMLOS</b>	420
8, 10	5/16, 3/8	G 1/4	11/16-16 UNF	24	27	56.5	44.5	6.5	161	<b>6RHZ42EDMLOS</b>	420
12	1/2	G 3/8	13/16-16 UNF	24	27	61.5	49.5	7.5	190	<b>8RHZ42EDMLOS</b>	420
14, 15, 16	5/8	G 1/2	1-14 UNF	32	36	70.0	56.0	11.5	348	<b>10RHZ42EDMLOS</b>	420
18, 20	3/4	G 3/4	1 3/16-12 UNF	41	46	77.5	53.5	15.0	634	<b>12RHZ42EDMLOS</b>	420
22, 25	1	G 1	1 7/16-12 UNF	46	50	84.0	66.0	19.0	863	<b>16RHZ42EDMLOS</b>	420
28, 30, 32	1 1/4	G 1 1/4	1 11/16-12 UNF	60	60	95.0	75.0	24.0	1397	<b>20RHZ42EDMLOS</b>	250
35, 38	1 1/2	G 1 1/2	2-12 UNF	65	70	105.0	83.0	29.0	2001	<b>24RHZ42EDMLOS</b>	250

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

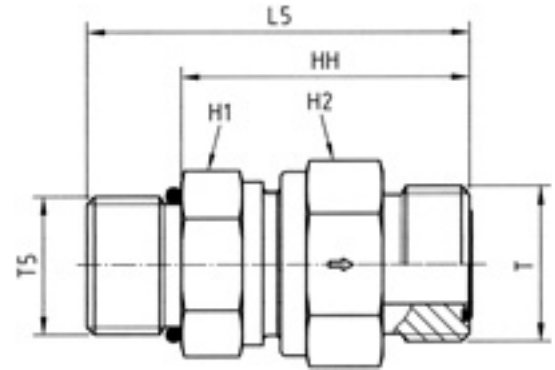
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	4RHZ42EDMLOSCF	NBR

## RHV5OMLOS Non return valve

Male UN/UNF thread – O-ring (ISO 11926) / O-Lok® ORFS end



Tube O.D.		UNF male thread T5	ORFS (UN/UNF) thread T	H1	H2	L5	HH	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>
mm	Inch										CF
6	1/4	7/16-20 UNF	9/16-18 UNF	19	19	45.5	34.5	3.5	92	<b>4RHV5OMLOS</b>	420
8, 10	5/16, 3/8	9/16-18 UNF	11/16-16 UNF	22	24	54.5	42.5	5.5	165	<b>6RHV5OMLOS</b>	420
12	1/2	3/4-16 UNF	13/16-16 UNF	24	27	60.5	46.5	5.5	165	<b>8RHV5OMLOS</b>	420
14, 15, 16	5/8	7/8-14 UNF	1-14 UNF	32	36	71.0	55.0	11.5	366	<b>10RHV5OMLOS</b>	420
18, 20	3/4	1 1/16-12 UN	1 3/16-12 UNF	41	46	79.0	60.5	15.0	631	<b>12RHV5OMLOS</b>	420
22, 25	1	1 5/16-12 UN	1 7/16-12 UNF	46	50	82.5	64.0	19.0	863	<b>16RHV5OMLOS</b>	420
28, 30, 32	1 1/4	1 5/8-12 UN	1 11/16-12 UNF	60	60	92.5	74.0	24.0	1403	<b>20RHV5OMLOS</b>	250
35, 38	1 1/2	1 7/8-12 UN	2-12 UNF	65	70	99.5	81.0	29.0	1969	<b>24RHV5OMLOS</b>	250

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

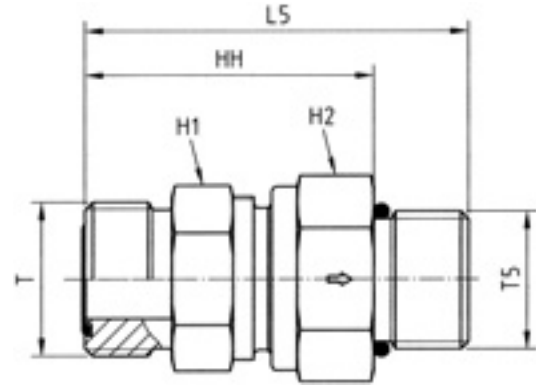
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	RHV5OMLOSCF	NBR



## RHZ5OMLOS Non return valve

O-Lok® ORFS end / Male UN/UNF thread – O-ring (ISO 11926)



Tube O.D.		UNF male thread T5	ORFS (UN/UNF) thread T	H1	H2	L5	HH	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>
mm	Inch										CF
6	1/4	7/16-20 UNF	9/16-18 UNF	19	19	45.5	34.5	3.5	91	<b>4RHZ5OMLOS</b>	420
8, 10	5/16, 3/8	9/16-18 UNF	11/16-16 UNF	22	24	54.5	42.5	5.5	161	<b>6RHZ5OMLOS</b>	420
12	1/2	3/4-16 UNF	13/16-16 UNF	24	27	60.5	46.5	5.5	161	<b>8RHZ5OMLOS</b>	420
14, 15, 16	5/8	7/8-14 UNF	1-14 UNF	32	36	71.0	55.0	11.5	348	<b>10RHZ5OMLOS</b>	420
18, 20	3/4	1 1/16-12 UN	1 3/16-12 UNF	41	46	79.0	60.5	15.0	634	<b>12RHZ5OMLOS</b>	420
22, 25	1	1 5/16-12 UN	1 7/16-12 UNF	46	50	82.5	64.0	19.0	863	<b>16RHZ5OMLOS</b>	420
28, 30, 32	1 1/4	1 5/8-12 UN	1 11/16-12 UNF	60	60	92.5	74.0	24.0	1397	<b>20RHZ5OMLOS</b>	250
35, 38	1 1/2	1 7/8-12 UN	2-12 UNF	65	70	99.5	81.0	29.0	2001	<b>24RHZ5OMLOS</b>	250

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

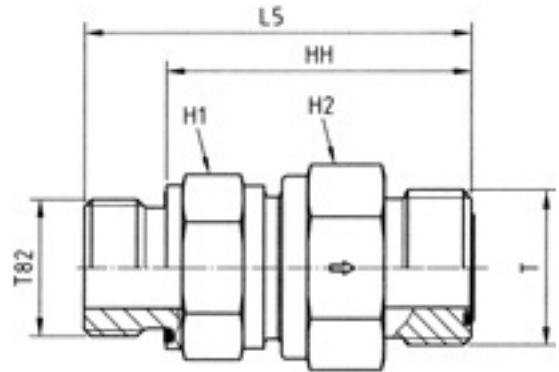
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	4RHZ5OMLOSCF	NBR

## RHV82EDMLOS Non return valve

Male metric thread – ED-seal (ISO 9974) / O-Lok® ORFS end



Tube O.D.		metric thread T82	ORFS (UN/UNF) thread T	H1	H2	L5	HH	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>
mm	Inch										CF
6	1/4	M 12×1.5	9/16-18 UNF	19	19	48.5	36.5	3.5	89	<b>4M12RHV82EDMLOS</b>	420
8, 10	5/16, 3/8	M 16×1.5	11/16-16 UNF	22	24	56.5	44.5	5.5	157	<b>6M16RHV82EDMLOS</b>	420
12	1/2	M 18×1.5	13/16-16 UNF	24	27	61.5	49.5	7.5	195	<b>8M18RHV82EDMLOS</b>	420
14, 15, 16	5/8	M 22×1.5	1-14 UNF	32	36	72.0	58.0	11.5	369	<b>10M22RHV82EDMLOS</b>	420
18, 20	3/4	M 27×2.0	1 3/16-12 UNF	41	46	79.5	63.5	15.0	628	<b>12M27RHV82EDMLOS</b>	420
22, 25	1	M 33×2.0	1 7/16-12 UNF	46	50	84.0	66.0	19.0	867	<b>16M33RHV82EDMLOS</b>	420
28, 30, 32	1 1/4	M 42×2.0	1 11/16-12 UNF	60	60	95.0	75.0	24.0	1409	<b>20M42RHV82EDMLOS</b>	250
35, 38	1 1/2	M 48×2.0	2-12 UNF	65	70	103.0	81.0	29.0	1970	<b>24M48RHV82EDMLOS</b>	250

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

\*Please add the **suffixes** below according to the material/surface required.

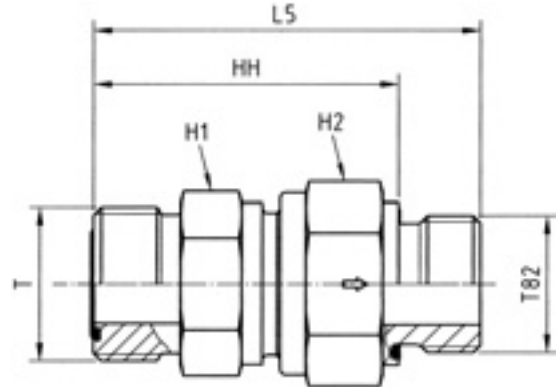
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	4M12RHV82EDMLOSCF	NBR





## RHZ82EDMLOS Non return valve

O-Lok® ORFS end / Male metric thread – ED-seal (ISO 9974)



Tube O.D.		metric thread T82	ORFS (UN/UNF) thread T	H1	H2	L5	HH	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>
mm	Inch										CF
6	1/4	M 12×1.5	9/16-18 UNF	19	19	48.5	36.5	3.5	89	<b>4M12RHZ82EDMLOS</b>	420
8, 10	5/16, 3/8	M 16×1.5	11/16-16 UNF	24	27	59.1	47.1	7.5	156	<b>6M16RHZ82EDMLOS</b>	420
12	1/2	M 18×1.5	13/16-16 UNF	24	27	61.5	49.5	7.5	195	<b>8M18RHZ82EDMLOS</b>	420
14, 15, 16	5/8	M 22×1.5	1-14 UNF	32	36	70.0	56.0	11.5	352	<b>10M22RHZ82EDMLOS</b>	420
18, 20	3/4	M 27×2.0	1 3/16-12 UNF	41	46	77.5	61.5	15.0	608	<b>12M27RHZ82EDMLOS</b>	420
22, 25	1	M 33×2.0	1 7/16-12 UNF	46	50	84.0	66.0	19.0	965	<b>16M33RHZ82EDMLOS</b>	420
28, 30, 32	1 1/4	M 42×2.0	1 11/16-12 UNF	60	60	95.0	75.0	24.0	1396	<b>20M42RHZ82EDMLOS</b>	250
35, 38	1 1/2	M 48×2.0	2-12 UNF	65	70	115.0	93.0	29.0	1978	<b>24M48RHZ82EDMLOS</b>	250

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

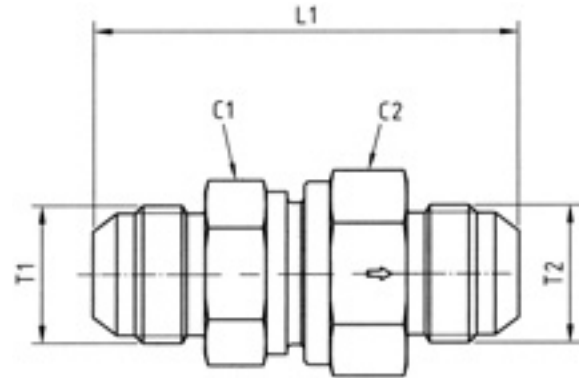
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	4M12RHZ82EDMLOSCF	NBR

## RHDMTXS Non return valve

Triple-Lok® 37° flare end / Triple-Lok® 37° flare end



Tube 1 O.D.		Tube 2 O.D.		Thread JIC SAE T1	Thread JIC SAE T2	C1	C2	L1	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>
mm	Inch	mm	Inch									CF
6	1/4	6	1/4	7/16-20 UNF	7/16-20 UNF	19	19	52.5	3.5	108	<b>4RHDMTXS</b>	420
8	5/16	8	5/16	1/2-20 UNF	1/2-20 UNF	22	24	59.5	5.5	188	<b>5RHDMTXS</b>	420
10	3/8	10	3/8	9/16-18 UNF	9/16-18 UNF	24	27	61.5	7.5	223	<b>6RHDMTXS</b>	420
12	1/2	12	1/2	3/4-16 UNF	3/4-16 UNF	27	32	69.5	9.5	324	<b>8RHDMTXS</b>	420
14, 15, 16	5/8	14, 15, 16	5/8	7/8-14 UNF	7/8-14 UNF	32	36	78.5	11.5	428	<b>10RHDMTXS</b>	350
18, 20	3/4	18, 20	3/4	1 1/16-12 UN	1 1/16-12 UN	41	46	87.5	15.0	731	<b>12RHDMTXS</b>	350
25	1	25	1	1 5/16-12 UN	1 5/16-12 UN	46	50	92.5	19.0	1076	<b>16RHDMTXS</b>	280
28, 30, 32	1 1/4	28, 30, 32	1 1/4	1 5/8-12 UN	1 5/8-12 UN	60	60	105.5	24.0	1630	<b>20RHDMTXS</b>	250
35, 38	1 1/2	35, 38	1 1/2	1 7/8-12 UN	1 7/8-12 UN	65	70	118.5	29.0	2362	<b>24RHDMTXS</b>	210

<sup>1)</sup> Pressure shown = item deliverable

$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

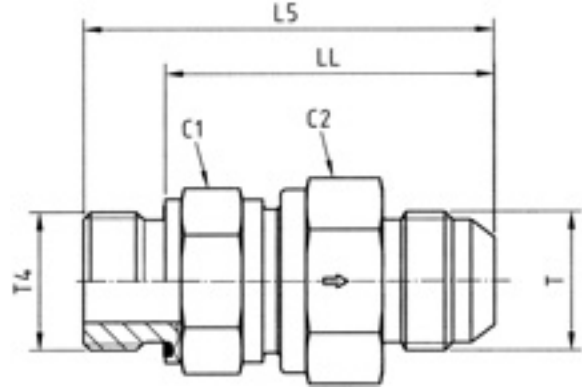
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	4RHDMTXSCF	NBR



## RHV42EDMXS Non return valve

Male BSPP thread – ED-seal (ISO 1179) / Triple-Lok® 37° flare end



Tube O.D.		BSPP thread	Thread JIC SAE T	C1	C2	L5	LL	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	CF
mm	Inch	T4										
6	1/4	G 1/8	7/16-20 UNF	19	19	48.0	40.0	3.5	92	<b>4RHV42EDMXS</b>	420	
8	5/16	G 1/4	1/2-20 UNF	22	24	59.5	47.5	5.5	165	<b>5-4RHV42EDMXS</b>	420	
10	3/8	G 1/4	9/16-18 UNF	24	27	62.0	50.0	7.5	191	<b>6RHV42EDMXS</b>	420	
12	1/2	G 3/8	3/4-16 UNF	27	32	67.0	55.0	9.5	277	<b>8RHV42EDMXS</b>	420	
14, 15, 16	5/8	G 1/2	7/8-14 UNF	32	36	76.0	62.0	11.5	366	<b>10RHV42EDMXS</b>	350	
18, 20	3/4	G 3/4	1 1/16-12 UN	41	46	84.5	68.5	15.0	631	<b>12RHV42EDMXS</b>	350	
25	1	G 1	1 5/16-12 UN	46	50	89.5	71.5	19.0	863	<b>16RHV42EDMXS</b>	280	
28, 30, 32	1 1/4	G 1 1/4	1 5/8-12 UN	60	60	102.0	82.0	24.0	1403	<b>20RHV42EDMXS</b>	250	
35, 38	1 1/2	G 1 1/2	1 7/8-12 UN	65	70	113.0	91.0	29.0	1969	<b>24RHV42EDMXS</b>	210	

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

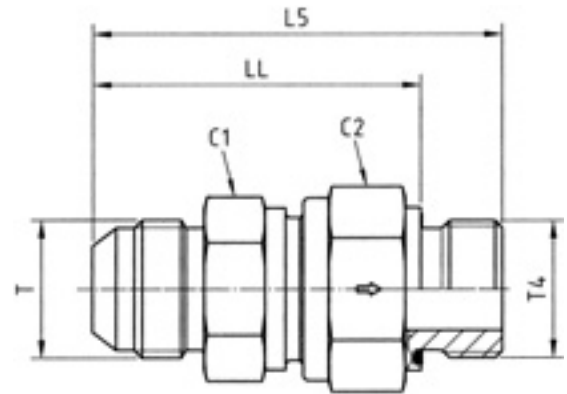
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	4RHV42EDMXSCF	NBR

## RHZ42EDMXS Non return valve

Triple-Lok® 37° flare end / Male BSPP thread – ED-seal (ISO 1179)



Tube O.D.		BSPP thread	Thread JIC SAE T	C1	C2	L5	LL	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>
mm	Inch	T4									CF
6	1/4	G 1/8	7/16-20 UNF	19	19	48.0	40.0	3.5	89	<b>4RHZ42EDMXS</b>	420
8	5/16	G 1/4	1/2-20 UNF	22	24	59.0	47.0	5.5	156	<b>5-4RHZ42EDMXS</b>	420
10	3/8	G 1/4	9/16-18 UNF	24	27	62.0	50.0	7.5	190	<b>6RHZ42EDMXS</b>	420
12	1/2	G 3/8	3/4-16 UNF	27	32	66.0	54.0	9.5	278	<b>8RHZ42EDMXS</b>	420
14, 15, 16	5/8	G 1/2	7/8-14 UNF	32	36	74.0	60.0	11.5	348	<b>10RHZ42EDMXS</b>	350
18, 20	3/4	G 3/4	1 1/16-12 UN	41	46	82.5	66.5	15.0	634	<b>12RHZ42EDMXS</b>	350
25	1	G 1	1 5/16-12 UN	46	50	89.5	71.5	19.0	863	<b>16RHZ42EDMXS</b>	280
28, 30, 32	1 1/4	G 1 1/4	1 5/8-12 UN	60	60	102.0	82.0	24.0	1397	<b>20RHZ42EDMXS</b>	250
35, 38	1 1/2	G 1 1/2	1 7/8-12 UN	65	70	115.0	93.0	29.0	2001	<b>24RHZ42EDMXS</b>	210

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

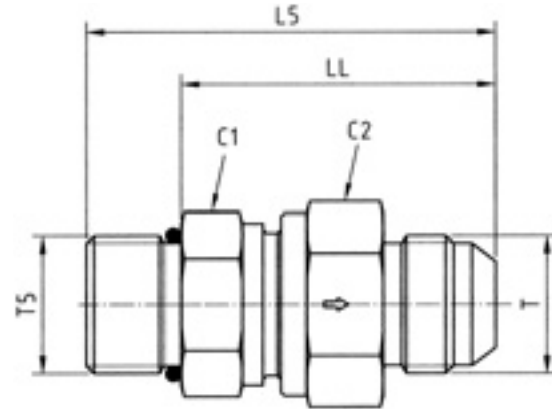
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	4RHZ42EDMXSCF	NBR

## RHV5OMXS Non return valve

Male UN/UNF thread – O-ring (ISO 11926) / Triple-Lok® 37° flare end



Tube O.D.		Thread UNF T5	Thread JIC SAE T	C1	C2	L5	LL	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>
mm	Inch										CF
6	1/4	7/16-20 UNF	7/16-20 UNF	19	19	49.5	38.5	3.5	92	<b>4RHV5OMXS</b>	420
8	5/16	1/2-20 UNF	1/2-20 UNF	22	24	56.5	45.5	5.5	165	<b>5RHV5OMXS</b>	420
10	3/8	9/16-18 UNF	9/16-18 UNF	24	27	59.5	47.5	7.5	191	<b>6RHV5OMXS</b>	420
12	1/2	3/4-16 UNF	3/4-16 UNF	27	32	66.5	52.5	9.5	277	<b>8RHV5OMXS</b>	420
14, 15, 16	5/8	7/8-14 UNF	7/8-14 UNF	32	36	75.0	59.0	11.5	366	<b>10RHV5OMXS</b>	350
18, 20	3/4	1 1/16-12 UN	1 1/16-12 UN	41	46	84.0	65.5	15.0	631	<b>12RHV5OMXS</b>	350
25	1	1 5/16-12 UN	1 5/16-12 UN	46	50	88.0	69.5	19.0	863	<b>16RHV5OMXS</b>	280
28, 30, 32	1 1/4	1 5/8-12 UN	1 5/8-12 UN	60	60	99.5	81.0	24.0	1403	<b>20RHV5OMXS</b>	250
35, 38	1 1/2	1 7/8-12 UN	1 7/8-12 UN	65	70	109.5	91.0	29.0	1969	<b>24RHV5OMXS</b>	210

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

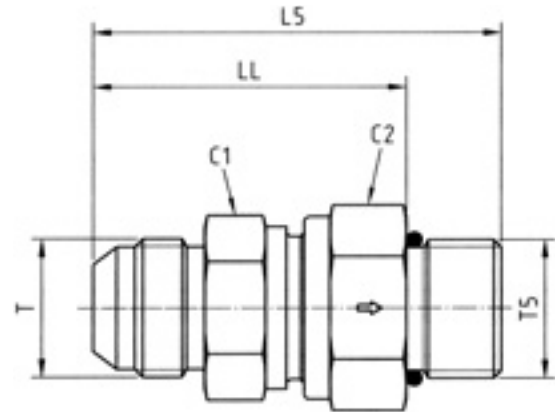
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	RHV5OMXS <sup>CF</sup>	NBR

## RHZ5OMXS Non return valve

Triple-Lok® 37° flare end / Male UN/UNF thread – O-ring (ISO 11926)



Tube O.D.		Thread UNF T5	Thread JIC SAE T	C1	C2	L5	LL	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>
mm	Inch										CF
6	1/4	7/16-20 UNF	7/16-18 UNF	19	19	49.5	38.5	3.5	91	<b>4RHZ5OMXS</b>	420
8	5/16	1/2-20 UNF	1/2-20 UNF	22	24	56.5	45.5	5.5	161	<b>5RHZ5OMXS</b>	420
10	3/8	9/16-18 UNF	9/16-18 UNF	24	27	59.5	47.5	7.5	190	<b>6RHZ5OMXS</b>	420
12	1/2	3/4-16 UNF	3/4-16 UNF	27	32	66.5	52.5	9.5	278	<b>8RHZ5OMXS</b>	420
14, 15, 16	5/8	7/8-14 UNF	7/8-14 UNF	32	36	75.0	59.0	11.5	348	<b>10RHZ5OMXS</b>	350
18, 20	3/4	1 1/16-12 UN	1 1/16-12 UN	41	46	84.0	65.5	15.0	634	<b>12RHZ5OMXS</b>	350
25	1	1 5/16-12 UN	1 5/16-12 UN	46	50	88.0	69.5	19.0	863	<b>16RHZ5OMXS</b>	280
28, 30, 32	1 1/4	1 5/8-12 UN	1 5/8-12 UN	60	60	107.0	81.0	24.0	1397	<b>20RHZ5OMXS</b>	250
35, 38	1 1/2	1 7/8-12 UN	1 7/8-12 UN	65	70	109.5	91.0	29.0	2001	<b>24RHZ5OMXS</b>	210

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

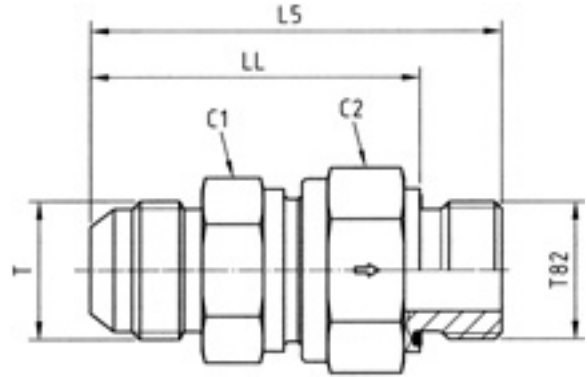
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	4RHZ5OMXS <b>CF</b>	NBR



## RHV82EDMXS Non return valve

Male metric thread – ED-seal (ISO 9974) / Triple-Lok® 37° flare end



Tube O.D.		Metric thread T82	Thread JIC SAE T	C1	C2	L5	LL	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>
mm	Inch										CF
6	1/4	M 10×1.0	7/16-20 UNF	19	19	48.0	40.0	3.5	89	<b>4M10RHV82EDMXS</b>	420
8	5/16	M 12×1.5	1/2-20 UNF	22	24	59.5	47.5	5.5	157	<b>5M12RHV82EDMXS</b>	420
10	3/8	M 14×1.5	9/16-18 UNF	24	27	62.0	50.0	7.5	195	<b>6M14RHV82EDMXS</b>	420
12	1/2	M 16×1.5	3/4-16 UNF	27	32	67.0	55.0	9.5	274	<b>8M16RHV82EDMXS</b>	420
14, 15, 16	5/8	M 18×1.5	7/8-14 UNF	32	36	73.5	61.5	11.5	369	<b>10M18RHV82EDMXS</b>	350
18, 20	3/4	M 27×2.0	1 1/16-12 UN	41	46	84.5	68.5	15.0	628	<b>12M27RHV82EDMXS</b>	350
25	1	M 33×2.0	1 5/16-12 UN	46	50	89.5	71.5	19.0	867	<b>16M33RHV82EDMXS</b>	280
28, 30, 32	1 1/4	M 42×2.0	1 5/8-12 UN	60	60	102.0	82.0	24.0	1409	<b>20M42RHV82EDMXS</b>	250
35, 38	1 1/2	M 48×2.0	1 7/8-12 UN	65	70	113.0	91.0	29.0	1970	<b>24M48RHV82EDMXS</b>	210

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

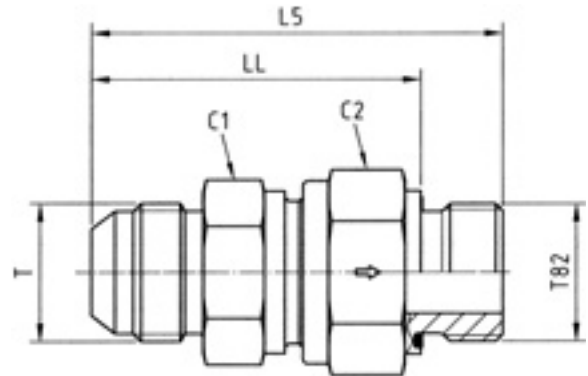
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	4M10RHV82EDMXSCF	NBR

## RHZ82EDMXS Non return valve

Triple-Lok® 37° flare end / Male metric thread – ED-seal (ISO 9974)



Tube O.D.		Metric thread T82	Thread JIC SAE T	C1	C2	L5	LL	DN (Nom. diam.)	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>
mm	Inch										CF
6	1/4	M 10×1.0	7/16-20 UNF	19	19	48.0	40.0	3.5	89	<b>4M10RHZ82EDMXS</b>	420
8	5/16	M 12×1.5	1/2-20 UNF	22	24	59.5	47.5	5.5	156	<b>5M12RHZ82EDMXS</b>	420
10	3/8	M 14×1.5	9/16-18 UNF	24	27	62.0	50.0	7.5	195	<b>6M14RHZ82EDMXS</b>	420
12	1/2	M 16×1.5	3/4-16 UNF	27	32	66.0	54.0	9.5	272	<b>8M16RHZ82EDMXS</b>	420
14, 15, 16	5/8	M 18×1.5	7/8-14 UNF	32	36	71.5	59.5	11.5	352	<b>10M18RHZ82EDMXS</b>	350
18, 20	3/4	M 27×2.0	1 1/16-12 UN	41	46	82.5	66.5	15.0	608	<b>12M27RHZ82EDMXS</b>	350
25	1	M 33×2.0	1 5/16-12 UN	46	50	89.5	71.5	19.0	965	<b>16M33RHZ82EDMXS</b>	280
28, 30, 32	1 1/4	M 42×2.0	1 5/8-12 UN	60	60	102.0	82.0	24.0	1396	<b>20M42RHZ82EDMXS</b>	250
35, 38	1 1/2	M 48×2.0	1 7/8-12 UN	65	70	115.0	93.0	29.0	1807	<b>24M48RHZ82EDMXS</b>	210

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

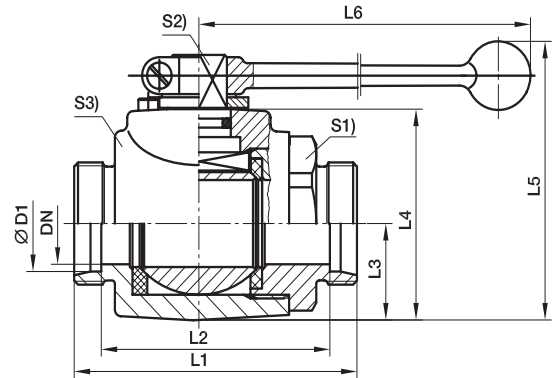
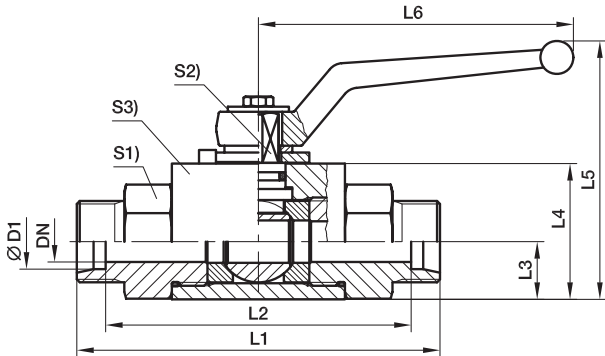
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	4M10RHZ82EDMXSCF	NBR



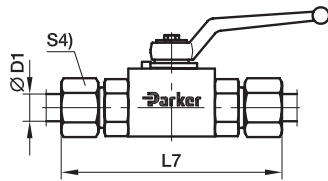


## KH 2-way ball valve steel

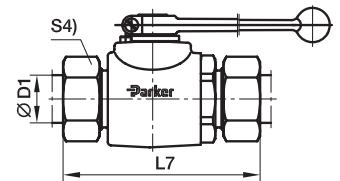
EO 24° cone end / EO 24° cone end



DN 4-25



DN 32-40



Series	D1 	DN	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	S4	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
L <sup>3)</sup>	06	4	67	53	10.0	25	55.0	76	82	19	7	20	14	195	<b>KH06LX</b>	500	
	08	6	67	53	10.0	25	55.0	76	82	19	7	20	17	190	<b>KH08LX</b>	500	
	10	8	75	61	14.5	35	68.0	100	90	24	8	30	19	420	<b>KH10LX</b>	500	
	12	10	75	61	14.5	35	68.0	100	90	24	8	30	22	410	<b>KH12LX</b>	500	
	15	12	83	69	17.0	40	92.0	112	99	30	10	35	27	631	<b>KH15LX</b>	500	
	18	16	82	67	20.0	45	105.0	166	99	36	11	45	32	850	<b>KH18LX</b>	400	
	22	20	99	84	24.0	55	113.0	187	116	41	14	45	36	1210	<b>KH22LX</b>	400	
	28	25	108	93	26.0	60	118.0	187	126	50	14	55	41	1750	<b>KH28LX</b>	400	
	35	25	116	95	26.0	60	118.0	187	138	50	14	55	50	1820	<b>KH35LXDN25</b>	400	
	35	32	121	100	36.5	80	180.5	320	143	60	17	73	50	3158	<b>KH35LX</b>	315	
	42	25	121	99	26.0	60	118.0	187	144	55	14	55	60	1940	<b>KH42LXDN25</b>	400	
	42	40	118	96	42.5	90	190.5	320	141	70	17	85	60	3788	<b>KH42LX</b>	315	
	S <sup>4)</sup>	08	4	73	59	10.0	25	55.0	76	88	19	7	20	19	214	<b>KH08SX</b>	500
		10	6	73	58	10.0	25	55.0	76	90	19	7	20	22	220	<b>KH10SX</b>	500
12		8	77	62	14.5	35	68.0	100	94	24	8	30	24	430	<b>KH12SX</b>	500	
14		10	81	65	14.5	35	68.0	100	100	24	8	30	27	440	<b>KH14SX</b>	500	
16		12	87	70	17.0	40	92.0	112	106	30	10	35	30	649	<b>KH16SX</b>	500	
20		16	90	69	20.0	45	105.0	166	112	36	11	45	36	900	<b>KH20SX</b>	400	
25		20	107	83	24.0	55	113.0	187	131	41	14	45	46	1290	<b>KH25SX</b>	400	
30		25	120	93	26.0	60	118.0	187	146	50	14	55	50	1880	<b>KH30SX</b>	400	
38		25	134	102	26.0	60	118.0	187	163	55	14	55	60	1950	<b>KH38SXDN25</b>	400	
38		32	127	95	36.5	80	180.5	320	156	60	17	73	60	3266	<b>KH38SX</b>	315	

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

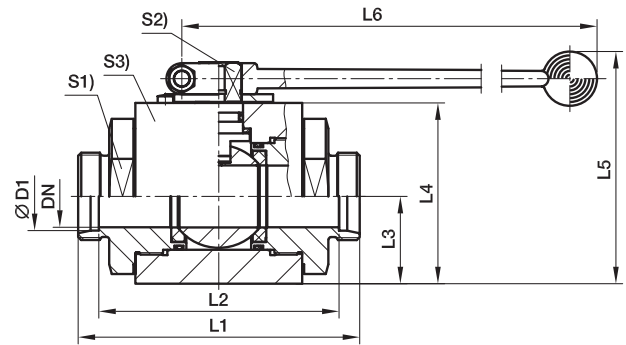
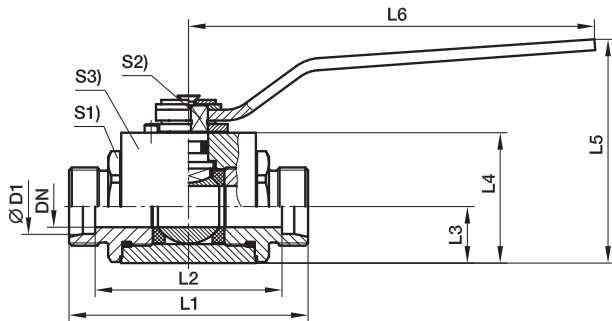
$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

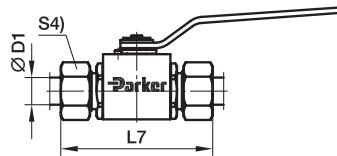
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	KH06LCFX	POM / NBR
Steel	DIN 50938-FE//A/T4	KH06LX	POM / NBR

## KH 2-way ball valve stainless steel

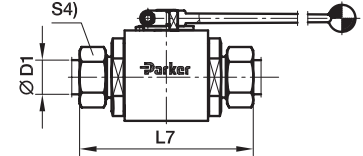
EO 24° cone end / EO 24° cone end



DN 4-25



DN 32-40



Series	D1 	DN	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	S4	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup> 71
L <sup>3)</sup>	06	4	73	59	13.7	30.0	56.5	76	88	22	7	30	14	383	<b>KH06L71X</b>	500
	08	6	73	59	13.7	30.0	56.5	76	88	22	7	30	17	381	<b>KH08L71X</b>	500
	10	8	87	73	18.0	40.0	84.5	130	102	30	8	40	19	809	<b>KH10L71X</b>	500
	12	10	87	73	18.0	40.0	84.5	130	102	30	8	40	22	821	<b>KH12L71X</b>	500
	15	12	91	77	21.0	45.0	90.0	130	107	32	10	45	27	1020	<b>KH15L71X</b>	500
	18	16/12	91	76	21.0	45.0	90.0	130	108	32	10	45	32	1037	<b>KH18L71X</b>	500
	22	20	105	87	31.0	65.0	115.0	185	119	46	14	65	36	1610	<b>KH22L71X</b>	420
	28	25	112	92	38.0	75.0	125.0	185	125	50	14	75	41	2032	<b>KH28L71X</b>	420
	35	32	145	105	45.0	93.2	175.0	320	148	70	19	100	50	4780	<b>KH35L71X</b>	420
	42	40	150	114	52.5	104.4	186.0	320	159	80	19	110	60	7754	<b>KH42L71X</b>	420
S <sup>4)</sup>	08	4	76	62	13.7	30.0	56.5	76	91	22	7	30	19	392	<b>KH08S71X</b>	500
	10	6	76	61	13.7	30.0	56.5	76	93	22	7	30	22	460	<b>KH10S71X</b>	500
	12	8	89	74	18.0	40.0	84.5	130	106	30	8	40	24	840	<b>KH12S71X</b>	500
	14	10	93	77	18.0	40.0	84.5	130	112	30	8	40	27	847	<b>KH14S71X</b>	500
	16	12	96	79	21.0	45.0	90.0	130	115	32	10	45	30	1055	<b>KH16S71X</b>	500
	20	16/12	99	78	21.0	45.0	90.0	130	121	32	10	45	36	1079	<b>KH20S71X</b>	500
	25	20	113	86	31.0	65.0	115.0	185	134	46	14	65	46	1720	<b>KH25S71X</b>	420
	30	25	124	93	38.0	75.0	125.0	185	146	50	14	75	50	2150	<b>KH30S71X</b>	420
38	32	145	100	45.0	93.2	175.0	320	161	70	19	100	60	6066	<b>KH38S71X</b>	420	

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

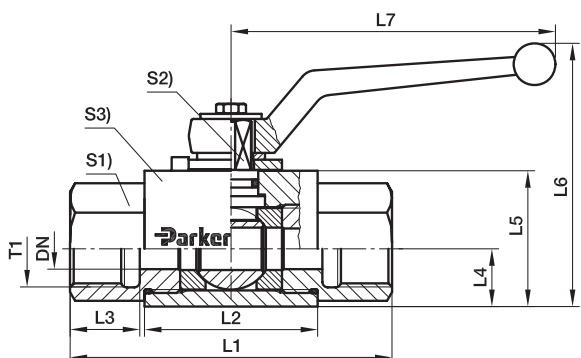
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Stainless Steel	without	KH06L71X	POM / NBR

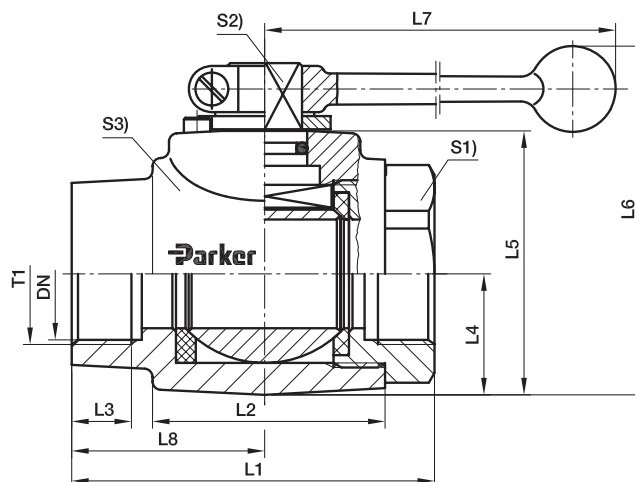
## KH 2-way BSPP ball valve steel

Female BSPP thread (ISO 1179-1) / Female BSPP thread (ISO 1179-1)

DN 4-25



DN 32-40



T1	DN	L1	L2	L3	L4	L5	L6	L7	L8	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>
G 1/8	4	69	36.0	12.0	10.0	25	55.0	76	–	19	7	20	220	<b>KH1/8X</b>	500
G 1/4	6	69	36.0	12.0	10.0	25	55.0	76	–	19	7	20	210	<b>KH1/4X</b>	500
G 3/8	10	73	45.0	14.0	14.5	35	68.0	100	–	24	8	30	430	<b>KH3/8X</b>	500
G 1/2	12	82	51.0	15.0	17.0	40	92.0	112	–	30	10	35	670	<b>KH1/2X</b>	500
G 5/8	16	88	50.0	18.0	20.0	45	105.0	166	–	36	11	45	973	<b>KH5/8X</b>	400
G 3/4	20	93	60.0	18.0	24.0	55	113.0	187	–	41	14	45	1280	<b>KH3/4X</b>	400
G 1	25	113	70.0	20.0	26.0	60	118.0	187	–	50	14	55	1982	<b>KH1X</b>	400
G 1 1/4	32	110	70.0	20.0	36.5	80	180.5	320	58.5	60	17	73	2620	<b>KH11/4X</b>	315
G 1 1/4	25	134	70.0	20.0	26.0	60	118.0	187	–	50	14	55	2066	<b>KH11/4DN25X</b>	400
G 1 1/2	40	114	75.0	22.0	42.5	90	190.5	320	57.0	70	17	85	3989	<b>KH11/2X</b>	315
G 1 1/2	25	139	70.0	22.0	26.0	60	118.0	187	–	55	14	55	2200	<b>KH11/2DN25X</b>	400
G 2	50	129	91.5	27.5	49.5	104	180.0	320	65.0	85	17	99	5020	<b>KH2X</b>	400

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

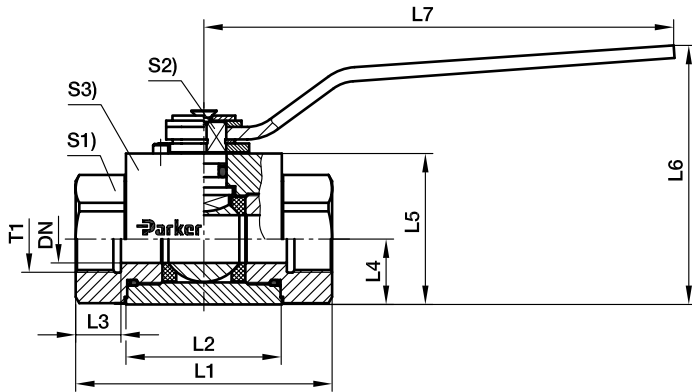
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	KH1/8CFX	POM / NBR
Steel	DIN 50938-FE//A/T4	KH1/8X	POM / NBR

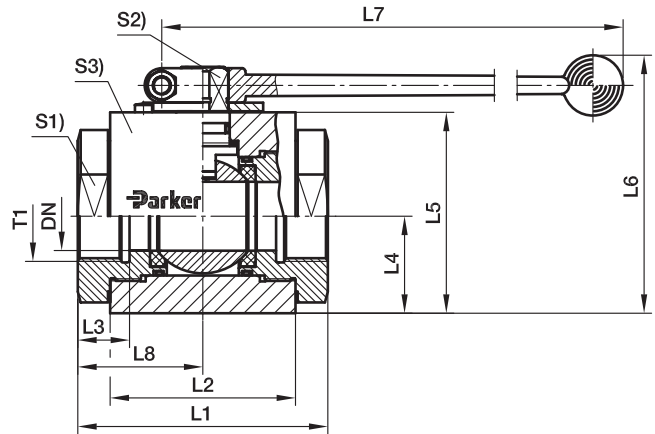
### KH 2-way BSPP ball valve stainless steel

Female BSPP thread (ISO 1179-1) / Female BSPP thread (ISO 1179-1)

DN 4-25



DN 32-40



T1	DN	L1	L2	L3	L4	L5	L6	L7	L8	S1	S2	S3	Weight g/1 piece	Order code*	PN(bar) <sup>1)</sup> 71
G 1/8	4	69	41	11	13.7	30.0	56.5	76	–	22	7	30	421	<b>KH1/871X</b>	500
G 1/4	6	75	41	14	13.7	30.0	56.5	76	–	22	7	30	422	<b>KH1/471X</b>	500
G 3/8	10	86	53	14	18.0	40.0	84.5	130	–	30	8	40	891	<b>KH3/871X</b>	500
G 1/2	12	92	55	16	21.0	45.0	90.0	130	–	32	10	45	1093	<b>KH1/271X</b>	500
G 3/4	20	111	65	18	31.0	65.0	115.0	185	–	46	14	65	1944	<b>KH3/471X</b>	420
G 1	25	122	71	20	38.0	75.0	125.0	185	–	50	14	75	2200	<b>KH171X</b>	420
G 1 1/4	32	110	86	24	45.0	93.2	175.0	320	55	70	19	100	5300	<b>KH11/471X</b>	420
G 1 1/2	40	120	92	26	52.2	104.4	186.0	320	60	80	19	110	7230	<b>KH11/271X</b>	420

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{PN(\text{bar})}{10} = PN(\text{MPa})$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

\*Please add the **suffixes** below according to the material/surface required.

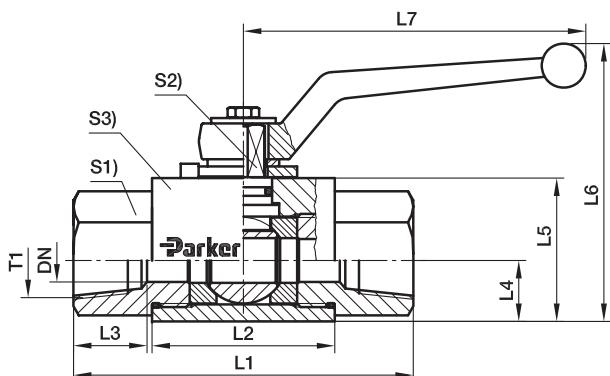
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Stainless Steel	without	KH1/871X	POM / NBR



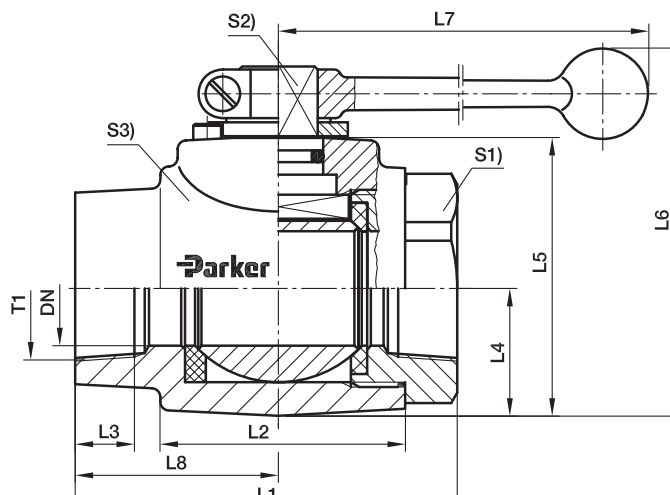
## KH 2-way NPT ball valve steel

Female NPT thread (SAE 476) / Female NPT thread (SAE 476)

DN 4-25



DN 32-40



T1	DN	L1	L2	L3	L4	L5	L6	L7	L8	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>
1/8-27 NPT	4	69	36	7.0	10.0	25	55.0	76	-	19	7	20	225	<b>KH1/8NPTX</b>	500
1/4-18 NPT	6	69	36	10.0	10.0	25	55.0	76	-	19	7	20	210	<b>KH1/4NPTX</b>	500
3/8-18 NPT	10	73	45	10.4	14.5	35	68.0	100	-	24	8	30	430	<b>KH3/8NPTX</b>	500
1/2-14 NPT	12	82	51	13.6	17.0	40	92.0	112	-	30	10	35	670	<b>KH1/2NPTX</b>	500
3/4-14 NPT	20	93	60	14.0	24.0	55	113.0	187	-	41	14	45	1280	<b>KH3/4NPTX</b>	400
1-11.5 NPT	25	113	70	16.8	26.0	60	118.0	187	-	50	14	55	1970	<b>KH1NPTX</b>	400
1 1/4-11.5 NPT	32	110	70	17.3	36.5	80	180.5	320	58.5	60	17	73	3074	<b>KH11/4NPTX</b>	315
1 1/2-11.5 NPT	40	114	75	17.3	42.5	90	190.5	320	57.0	70	17	85	3976	<b>KH11/2NPTX</b>	315

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

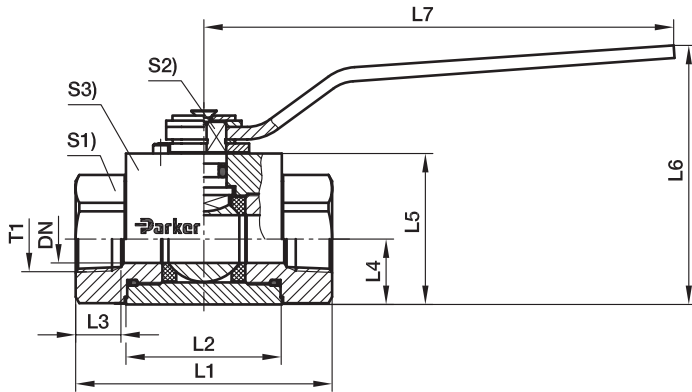
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	KH1/8NPTCFX	POM / NBR
Steel	DIN 50938-FE//A/T4	KH1/8NPTX	POM / NBR

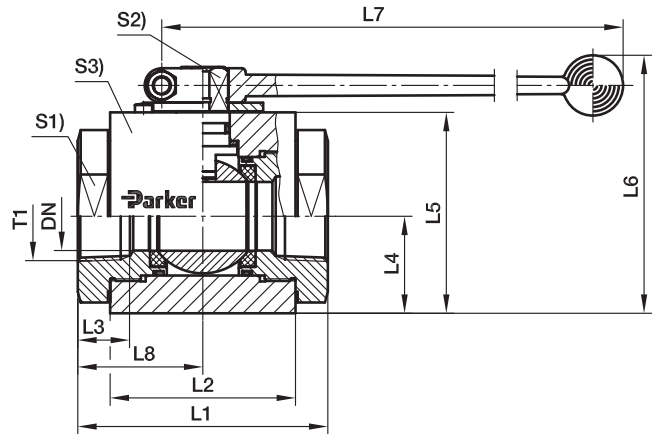
## KH 2-way NPT ball valve stainless steel

Female NPT thread (SAE 476) / Female NPT thread (SAE 476)

DN 4-25



DN 32-40



T1	DN	L1	L2	L3	L4	L5	L6	L7	L8	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup> 71
1/8-27 NPT	4	82	41	6.9	13.7	30.0	56.5	76		22	7	30	461	<b>KH1/8NPT71X</b>	500
1/4-18 NPT	6	82	41	10.0	13.7	30.0	56.5	76		22	7	30	441	<b>KH1/4NPT71X</b>	500
3/8-18 NPT	10	95	53	10.3	18.0	40.0	84.5	130		30	8	40	943	<b>KH3/8NPT71X</b>	500
1/2-14 NPT	12	108	55	13.6	21.0	45.0	90.0	130		32	10	45	1177	<b>KH1/2NPT71X</b>	500
3/4-14 NPT	20	111	65	14.1	31.0	65.0	115.0	185		46	14	65	2054	<b>KH3/4NPT71X</b>	420
1-11.5 NPT	25	122	71	16.8	38.0	75.0	125.0	185		50	14	75	2451	<b>KH1NPT71X</b>	420
1 1/4-11.5 NPT	32	110	86	17.3	45.0	93.2	175.0	320	55	70	19	100	5300	<b>KH11/4NPT71X</b>	420
1 1/2-11.5 NPT	40	120	92	17.7	52.2	104.4	186.0	320	60	80	19	110	7230	<b>KH11/2NPT71X</b>	420

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

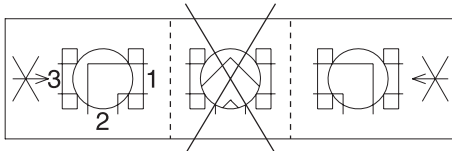
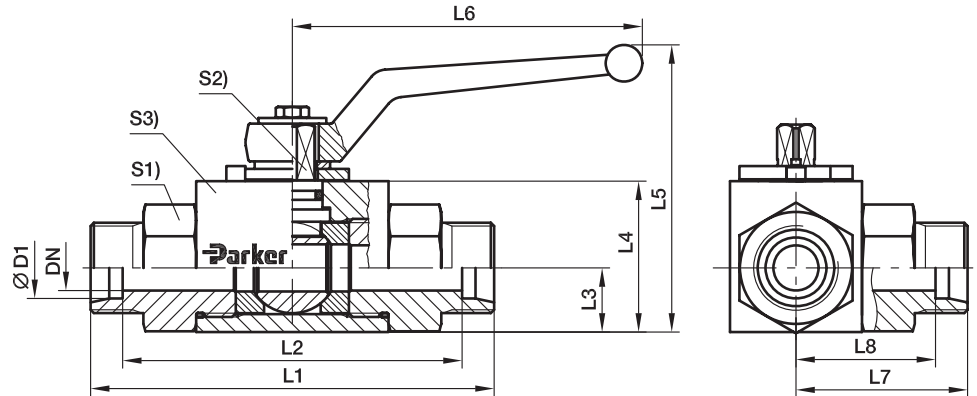
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Stainless steel	without	KH1/8NPT71X	POM / NBR

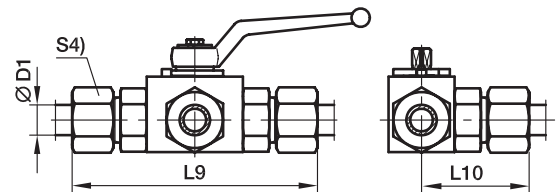


### KH 3-way compact ball valve steel

EO 24° cone end / EO 24° cone end / EO 24° cone end



### L-Version



Series	D1	DN	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	S1	S2	S3	S4	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>
L <sup>3)</sup>	06	4	67	53	15.0	30	59.5	76	33.5	26.5	82	41.0	19	7	30	14	317	<b>KH3/2-06LX</b>	500
	08	6	67	53	15.0	30	59.5	76	33.5	26.5	82	41.0	19	7	30	17	214	<b>KH3/2-08LX</b>	500
	10	8	75	61	14.5	35	67.5	100	37.5	30.5	90	45.0	24	8	40	19	445	<b>KH3/2-10LX</b>	500
	12	10	75	61	14.5	35	67.5	100	37.5	30.5	90	45.0	24	8	40	22	537	<b>KH3/2-12LX</b>	500
	15	12	83	69	22.0	45	96.5	112	41.5	34.5	99	49.5	30	10	45	27	678	<b>KH3/2-15LX</b>	500
	18	16	82	67	25.0	50	110.0	166	41.0	33.5	99	49.5	36	11	50	32	850	<b>KH3/2-18LX</b>	400
	22	20	99	84	29.0	60	126.0	187	49.5	42.0	116	58.0	41	14	55	36	1340	<b>KH3/2-22LX</b>	400
	28	25	108	93	31.0	65	131.0	187	54.0	46.5	126	63.0	50	14	65	41	2274	<b>KH3/2-28LX</b>	400
S <sup>4)</sup>	08	4	73	59	15.0	30	59.5	76	36.5	29.5	88	44.0	19	7	30	19	350	<b>KH3/2-08SX</b>	500
	10	6	73	58	15.0	30	59.5	76	36.5	29.0	90	45.0	19	7	30	22	300	<b>KH3/2-10SX</b>	500
	12	8	77	62	14.5	35	67.5	100	38.5	31.0	94	47.0	24	8	40	24	469	<b>KH3/2-12SX</b>	500
	14	10	81	65	14.5	35	67.5	100	40.5	32.5	100	50.0	24	8	40	27	500	<b>KH3/2-14SX</b>	500
	16	12	87	70	22.0	45	96.5	112	43.5	35.0	106	53.0	30	10	45	30	909	<b>KH3/2-16SX</b>	500
	20	16	90	69	25.0	50	110.0	166	45.0	34.5	112	56.0	36	11	50	36	949	<b>KH3/2-20SX</b>	400
	25	20	107	83	29.0	60	126.0	187	53.5	41.5	131	65.5	41	14	55	46	1714	<b>KH3/2-25SX</b>	400
	30	25	120	93	31.0	65	131.0	187	60.0	46.5	146	73.0	50	14	65	50	2462	<b>KH3/2-30SX</b>	400

1) Pressure shown = item deliverable

3) L = light series; 4) S = heavy series

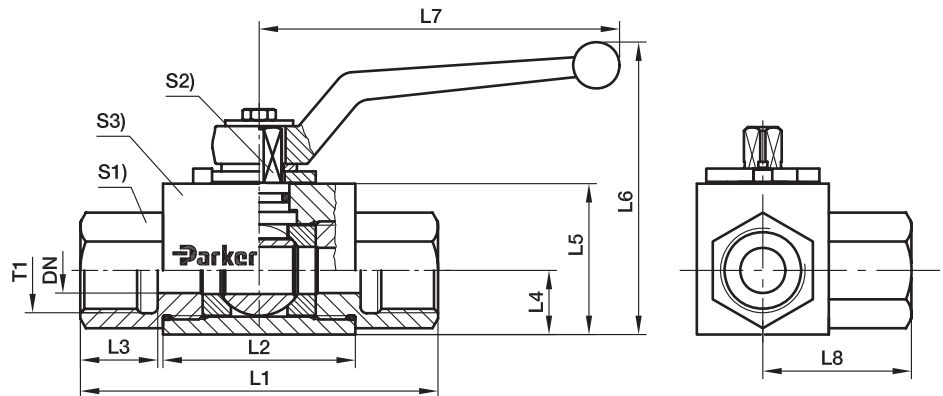
$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	KH3/2-06LCFX	POM / NBR
Steel	DIN 50938-FE//A/T4	KH3/2-06LX	POM / NBR

### KH 3-way compact BSPP ball valve steel

Female BSPP thread (ISO 1179-1) / Female BSPP thread (ISO 1179-1) /  
Female BSPP thread (ISO 1179-1)

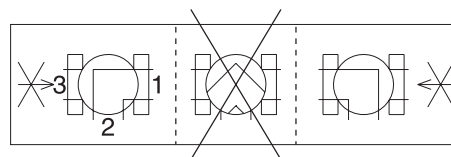


T1	DN	L1	L2	L3	L4	L5	L6	L7	L8	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>
G 1/8	4	69	36	12	15.0	30	55	76	34.5	19	7	30	270	<b>KH3/2-1/8X</b>	500
G 1/4	6	69	36	12	15.0	30	55	76	34.5	19	7	30	342	<b>KH3/2-1/4X</b>	500
G 3/8	10	73	45	14	14.5	35	68	100	36.5	24	8	40	563	<b>KH3/2-3/8X</b>	500
G 1/2	12	82	51	15	22.0	45	92	112	41.0	30	10	45	932	<b>KH3/2-1/2X</b>	500
G 3/4	20	93	60	18	29.0	60	113	187	48.0	41	14	55	1724	<b>KH3/2-3/4X</b>	400
G 1	25	118	70	20	31.0	65	118	187	56.5	50	14	65	2643	<b>KH3/2-1X</b>	400

<sup>1)</sup> Pressure shown = item deliverable

$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.



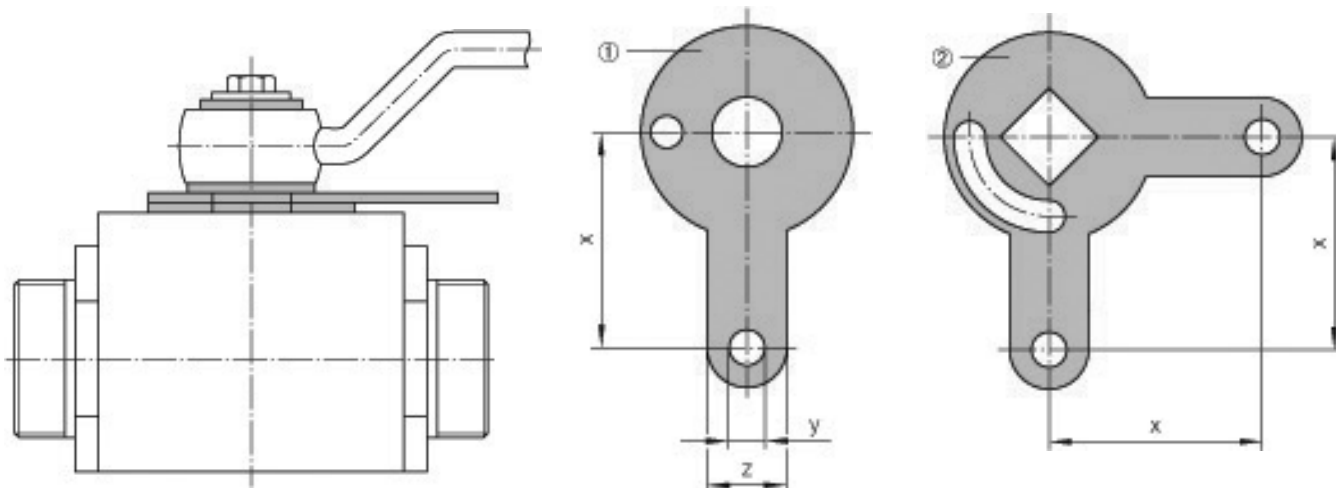
L-Version

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	KH3/2-1/8CFX	POM / NBR
Steel	DIN 50938-FE//A/T4	KH3/2-1/8X	POM / NBR

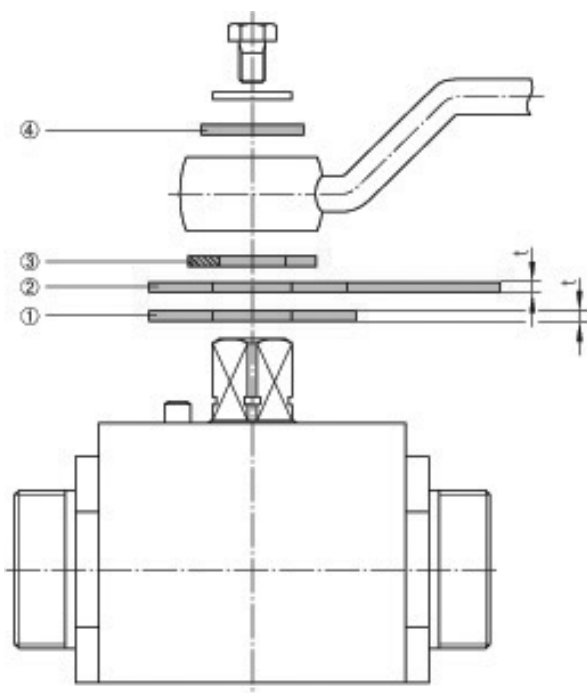


## KH – Locking Devices for 2/2 Way and Multiway ball valves

with floating ball – steel and stainless steel



DN	t	x	y	z	X	Order code Steel	Order code Stainless steel
4/6	0.80	18	9	20	21.5	<b>KHLOCKINGD.SIZE1X</b>	<b>KHLOCKINGD.SIZE171X</b>
8/10	1.20	21	9	20	26.5	<b>KHLOCKINGD.SIZE2X</b>	<b>KHLOCKINGD.SIZE271X</b>
12	1.20	24	9	20	29.0	<b>KHLOCKINGD.SIZE3X</b>	<b>KHLOCKINGD.SIZE371X</b>
16	1.50	29	9	20	–	<b>KHLOCKINGD.SIZE4X</b>	–
20/25	1.50	34	9	20	44.0	<b>KHLOCKINGD.SIZE5X</b>	<b>KHLOCKINGD.SIZE571X</b>
32/40/50	1.75	54	9	20	54.0	<b>KHLOCKINGD.SIZE6X</b>	<b>KHLOCKINGD.SIZE671X</b>

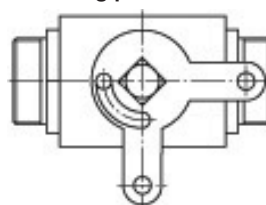


**mounting kit:**

- ① = mounting plate
- ② = limit stop plate
- ③ = safety ring
- ④ = disk

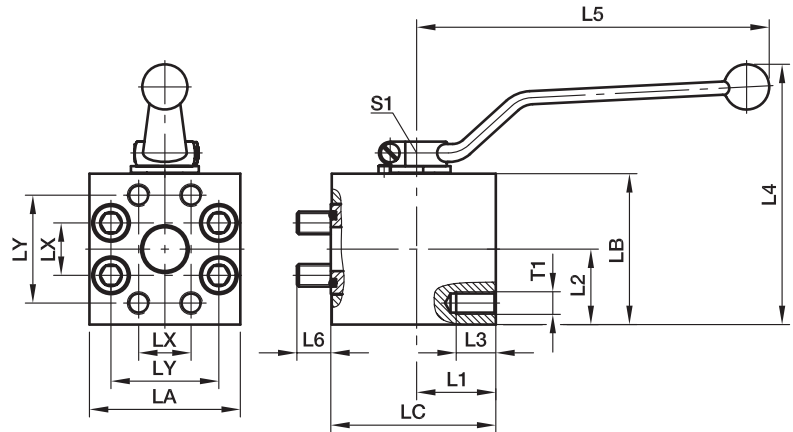
Pos. ④ only for DN32/40/50

**Switching positions**



## KH-B1V-S Ball valve with SAE Flange connection (6000 PSI)

SAE Flange (ISO 6162-1/-2) / Ball valve 2/2 way steel



### 6000 PSI Series

Nom. flange size															Screws		Weight (steel)		PN (bar) <sup>1)</sup>	
SAE (in)	ISO (DN)	L1	L2	L3	L4	L5	L6	LX	LY	LA	LB	LC	S1	T1	(metr.)	O-ring	kg/piece	Order code*	S	
1/2	12	32.0	28.5	19	107	112	13.5	18.2	40.5	60	55	60.5	10	M 8	M 08×65	18.66×3.53	1.29	<b>KH12B1V62</b>	420	
3/4	20	31.0	35.0	16	134	187	14.0	23.8	50.8	70	70	62.5	14	M10	M 10×65	25.00×3.53	2.15	<b>KH20B1V63</b>	420	
1	25	39.0	40.0	21	144	187	18.0	27.8	57.2	80	80	75.5	14	M12	M 12×80	32.92×3.53	2.95	<b>KH25B1V64</b>	420	
1 1/4	32	43.5	50.0	23	129	320	18.0	31.8	66.7	100	100	82.0	17	M12*	M 12×85	37.70×3.53	6.21	<b>KH32B1V65</b>	420	
1 1/2	40	53.5	60.0	26	149	320	18.0	36.5	79.4	120	120	99.0	17	M16	M 16×100	47.22×3.53	9.50	<b>KH40B1V66</b>	420	
2	50	61.0	61.5	34	153	320	22.0	44.5	96.8	134	124	109.5	17	M20	M 20×100	56.74×3.53	12.80	<b>KH50B1V68</b>	420	

<sup>1)</sup> Pressure shown = Item deliverable

The pressure specification PN for quarter turn ball valves applies to the design factor 1.5 (according DIN 3230 T5 and ISO 5208).

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

\*M14 deliverable on request. **KH32B1V65/14**

#### Materials:

Body made of steel, coating DIN 50938-FE/A/T4, ball of hard chrome plated carbon steel, stem of zinc plated steel.

#### Seals:

Ball seat of POM (e.g. Delrin), stem seal of NBR (e.g. Perbunan).

#### Applications:

Suitable for petroleum-based hydraulic fluid, lubricants and fuel oil. For air applications suitable up to 100 bar.

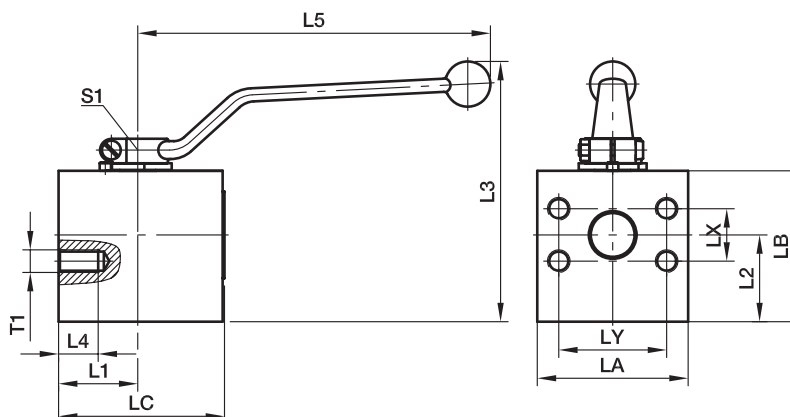
#### Temperature range:

-10 up to +100° C

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	KH12B1V62CFX	POM / NBR
Steel	DIN 50938-FE//A/T4	KH12B1V62X	POM / NBR

## KH-B2V-S Ball valve with SAE Flange connection (block 3000/6000 PSI)

SAE Flange / Ball valve 2/2 way steel  
(ISO 6162-1/-2)



### 3000 PSI Series

Nom. flange size		T1		L1	L2	L3	L4	L5	LX	LY	LA	LB	LC	S1	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> S
SAE (in)	ISO (DN)	(metr.)	(in)														
1/2	12	<b>M 8</b>	<b>5/16-18 UNC</b>	23.5	22	97	17	112	17.5	38.1	55	45	60	10	1.1	<b>KH12B2V32</b>	210
3/4	20	<b>M10</b>	<b>3/8-16 UNC</b>	39.5	39	128	21	187	22.2	47.6	70	70	80	14	2.8	<b>KH20B2V33</b>	210
1	25	<b>M12</b>	<b>3/8-16 UNC</b>	42.0	46	138	19	187	26.2	52.4	80	80	88	14	4.0	<b>KH25B2V34</b>	210

### 6000 PSI Series

1/2	12	<b>M 8</b>	<b>5/16-18 UNC</b>	23.5	22	97	17	112	18.2	40.5	55	45	60	10	1.1	<b>KH12B2V62</b>	420
3/4	20	<b>M10</b>	<b>3/8-16 UNC</b>	39.5	39	128	21	187	23.8	50.8	70	70	80	14	2.8	<b>KH20B2V63</b>	420
1	25	<b>M12</b>	<b>7/16-16 UNC</b>	42.0	46	138	19	187	27.8	57.2	80	80	88	14	4.0	<b>KH25B2V64</b>	420

<sup>1)</sup> Pressure shown = Item deliverable

The pressure specification PN for quarter turn ball valves applies to the design factor 1.5 (according DIN 3230 T5 and ISO 5208).

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

#### Materials:

Body made of steel, coating DIN 50938-FE/A/T4, ball of hard chrome plated carbon steel, stem of zinc plated steel.

#### Seals:

Ball seat of POM (e.g. Delrin), stem seal of NBR (e.g. Perbunan).

#### Applications:

Suitable for petroleum-based hydraulic fluid, lubricants and fuel oil. For air applications suitable up to 100 bar.

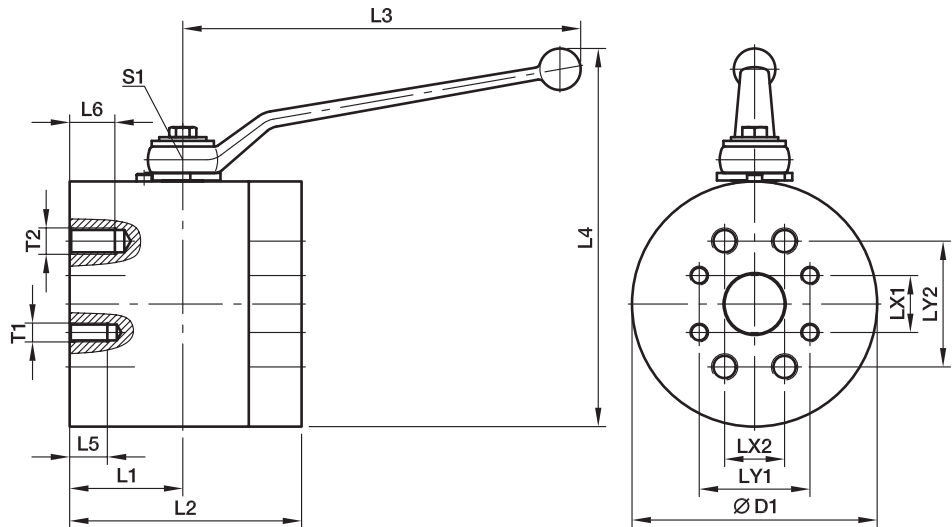
#### Temperature range:

-10 up to +100° C

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	KH12B2V32CFX	POM / NBR
Steel	DIN 50938-FE//A/T4	KH12B2V32X	POM / NBR

## KH-B3V-S Ball valve with SAE Flange connection

SAE Flange / Ball valve 2/2 way steel  
(ISO 6162-1/-2)



### 3000 PSI Series / 6000 PSI Series

Nom. flange size									3000 PSI Connection					6000 PSI Connection					Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup>	
SAE (in)	ISO (DN)	D1	L1	L2	L3	L4	S1	T1	UNC	LX1	LY1	L5	PN	T2	UNC	LX2	LY2	L6				PN
1 1/4	32	130	60	123	320	158.5	17	M12	7/16-14	30.2	58.7	27	276	M14	1/2-13	31.8	66.7	24	420	11.3	KH32B3V35	420
1 1/2	40	140	61	126	320	168.5	17	M12	1/2-13	35.7	69.9	25	207	M16	5/8-11	36.5	79.4	26	420	13.1	KH40B3V36	420
2	50	160	79	158	320	178.5	17	M12	1/2-13	42.8	77.8	25	207	M20	3/4-10	44.4	96.8	34	420	21.2	KH50B3V38	420

<sup>1)</sup> Pressure shown = Item deliverable

The pressure specification PN for quarter turn ball valves applies to the design factor 1.5 (according DIN 3230 T5 and ISO 5208).

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

#### Materials:

Body made of steel, coating DIN 50938-FE/A/T4, ball of hard chrome plated carbon steel, stem of zinc plated steel.

#### Seals:

Ball seat of POM (e.g. Delrin), stem seal of NBR (e.g. Perbunan).

#### Applications:

Suitable for petroleum-based hydraulic fluid, lubricants and fuel oil. For air applications suitable up to 100 bar.

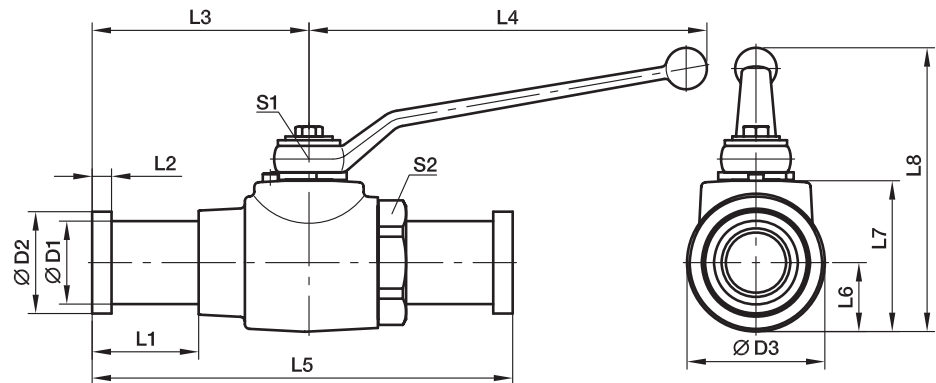
#### Temperature range:

-10 up to +100° C

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	KH32B3V35CFX	POM / NBR
Steel	DIN 50938-FE//A/T4	KH32B3V35X	POM / NBR

## KH-A-S Ball valve with SAE Flange adapter connection

SAE Flange (ISO 6162-1/-2) / Ball valve 2/2 way steel



### 3000 PSI Series

Nom. flange size		D1	D2	D3	L1	L2	L3	L4	L5	L6	L7	L8	S1	S2	O-ring	Weight (steel) kg/piece	Order code*	PN (bar) <sup>1)</sup> S
SAE (in)	ISO (DN)																	
1/2	12	24	30.2	35	42.0	6.7	75.5	112	151.0	17.0	40	92	10	32	18.66×3.53	0.9	<b>KH12A32</b>	350
3/4	20	32	38.1	45	43.0	6.7	81.0	187	162.0	24.0	55	113	14	41	25.00×3.53	1.7	<b>KH20A33</b>	315
1	25	38	44.4	55	38.9	8.0	89.0	187	178.0	26.0	60	118	14	50	32.92×3.53	2.5	<b>KH25A34</b>	315
1 1/4	32	43	50.8	73	40.3	8.0	99.0	227	190.5	36.5	80	155	17	60	37.70×3.53	3.1	<b>KH32A35</b>	276
1 1/2	40	50	60.3	85	58.3	8.0	115.5	227	231.0	42.5	90	165	17	70	47.22×3.53	4.3	<b>KH40A36</b>	207
2	50	62	71.4	99	50.9	9.5	116.0	227	232.0	49.5	104	179	17	85	56.74×3.53	5.8	<b>KH50A38</b>	207

### 6000 PSI Series

1/2	12	24	31.7	35	42.0	7.7	75.5	112	151.0	17.0	40	92	10	32	18.66×3.53	1.0	<b>KH12A62</b>	420
3/4	20	32	41.3	45	49.0	8.8	87.0	187	174.0	24.0	55	113	14	46	25.00×3.53	1.9	<b>KH20A63</b>	315
1	25	38	47.6	55	49.0	9.5	99.0	187	198.0	26.0	60	118	14	50	32.92×3.53	2.8	<b>KH25A64</b>	315
1 1/4	32	44	54.0	73	56.5	10.3	115.0	227	223.0	36.5	80	155	17	60	37.70×3.53	3.3	<b>KH32A65</b>	315
1 1/2	40	51	63.5	85	83.5	12.6	140.5	227	281.0	42.5	90	165	17	70	47.22×3.53	4.8	<b>KH40A66</b>	315
2	50	67	79.4	99	93.0	12.6	158.0	227	316.0	49.5	104	179	17	85	56.74×3.53	7.4	<b>KH50A68</b>	315

<sup>1)</sup> Pressure shown = Item deliverable

The pressure specification PN for quarter turn ball valves applies to the design factor 1.5 (according DIN 3230 T5 and ISO 5208).

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

#### Materials:

Body made of steel, coating DIN 50938-FE/A/T4, ball of hard chrome plated carbon steel, stem of zinc plated steel.

#### Seals:

Ball seat of POM (e.g. Delrin), stem seal of NBR (e.g. Perbunan).

#### Applications:

Suitable for petroleum-based hydraulic fluid, lubricants and fuel oil. For air applications suitable up to 100 bar.

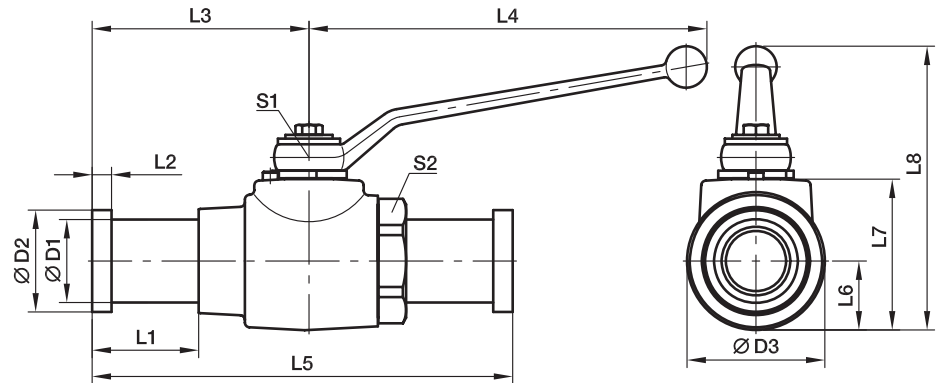
#### Temperature range:

-10 up to +100° C

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	KH12A63CFX	POM / NBR
Steel	DIN 50938-FE//A/T4	KH12A63X	POM / NBR

## KH-A-S-71 Ball valve with SAE Flange adapter connection

SAE Flange / Ball valve 2/2 way stainless steel (ISO 6162-1/-2)



### 3000 PSI Series

Nom. flange size		D1	D2	L	L1	L2	L3	B	H	H1	H2	SW	SW1	O-ring	Order code*	PN (bar) S
SAE (in)	ISO (DN)															
1/2	12	24.0	176.0	42.0	6.8	55	45	45.0	21.0	49.5	32	10	28	18.64×3.53	<b>KH12A3271</b>	350
3/4	20	31.5	197.0	43.0	6.8	65	65	65.0	31.0	70.0	46	14	29	24.99×3.53	<b>KH20A3371</b>	350
1	25	38.0	200.0	38.9	8.0	71	75	75.0	38.0	80.0	50	14	29	32.92×3.53	<b>KH25A3471</b>	315
1 1/4	32	43.0	190.5	40.3	8.0	86	100	93.2	45.0	99.0	70	19	23	37.69×3.53	<b>KH32A3571</b>	250
1 1/2	40	50.0	236.5	58.3	8.0	92	110	104.4	52.2	110.0	80	19	23	47.22×3.53	<b>KH40A3671</b>	200
2	50	62.0	242.0	50.9	9.6	97	125	119.4	59.7	125.0	95	19	23	56.74×3.53	<b>KH50A3871</b>	160

### 6000 PSI Series

1/2	12	24.0	176.0	42.0	7.8	55	45	45.0	21.0	49.5	32	10	28	18.64×3.53	<b>KH12A6271</b>	400
3/4	20	32.0	209.0	49.0	8.8	65	65	65.0	31.0	70.0	46	14	29	24.99×3.53	<b>KH20A6371</b>	400
1	25	38.0	220.0	49.0	9.5	71	75	75.0	38.0	80.0	50	14	29	32.92×3.53	<b>KH25A6471</b>	400
1 1/4	32	44.0	223.0	56.5	10.3	86	100	93.2	45.0	99.0	70	19	23	37.69×3.53	<b>KH32A6571</b>	400
1 1/2	40	51.0	287.0	83.5	12.6	92	110	104.4	52.2	110.0	80	19	23	47.22×3.53	<b>KH40A6671</b>	400
2	50	67.0	327.0	93.5	12.6	97	125	119.4	59.7	125.0	95	19	23	56.74×3.53	<b>KH50A6871</b>	400

The pressure specification PN for quarter turn ball valves applies to the design factor 1.5 (according DIN 3230 T5 and ISO 5208)

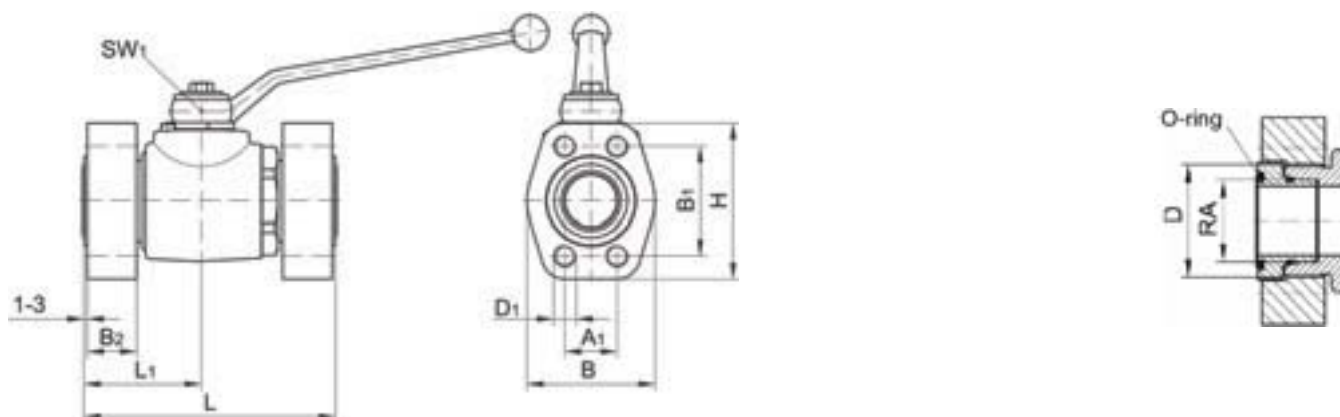
Hand lever belongs to the scope of supply  
Stainless steel (1.4571)

Body: Stainless steel  
Switching ball: Stainless steel  
Control shaft: Stainless steel  
Switching ball sealing: POM  
Control shaft sealing: FKM

Order code suffixes		
Material	Suffix surface and material	Example
Stainless steel	none	KH12A6271

## KH-B4V-S Ball valve with SAE Flange connection ISO 6162 (1/2)

SAE flanges / ball valve 2/2-ways



Port connection	DN	Thread D	RA	D1	A1	B1	B2	L	L1	B	H	O-ring	Weight kg	Order code	PN (bar) S
SAE flanges ISO 6162-1	12*	M 24×1.5	16	M 8	17.5	38.1	20	103	51.5	46	54	18.64×3.53	1.2	<b>KH12B4V3M</b>	350
	20*	M 36×2.0	25	M10	22.3	47.6	20	125	62.5	52	65	24.99×3.53	2.0	<b>KH20B4V3M</b>	350
	25*	M 42×2.0	30	M10	26.2	52.4	21	138	69.0	59	70	32.92×3.53	2.7	<b>KH25B4V3M</b>	315
	32	M 52×2.0	38	M10	30.2	58.7	24	153	71.5	73	79	37.69×3.53	3.8	<b>KH32B4V3M</b>	250
	40/32	M 52×2.0	38	M12	35.7	69.9	30	153	71.5	83	94	47.22×3.53	4.9	<b>KH40/32B4V3M</b>	200
Studs with solderless tube fittings DIN 2353 heavy series ISO 8434-1	12*	M 24×1.5	16	5/16-18 UNC	17.5	38.1	20	103	51.5	46	54	18.64×3.53	1.2	<b>KH12B4V3U</b>	350
	20*	M 36×2.0	25	3/8-16 UNC	22.3	47.6	20	125	62.5	52	65	24.99×3.53	2.0	<b>KH20B4V3U</b>	350
	25*	M 42×2.0	30	3/8-16 UNC	26.2	52.4	21	138	69.0	59	70	32.92×3.53	2.7	<b>KH25B4V3U</b>	315
	32	M 52×2.0	38	7/16-14 UNC	30.2	58.7	24	153	71.5	73	79	37.69×3.53	3.8	<b>KH32B4V3U</b>	250
	40/32	M 52×2.0	38	1/2-13 UNC	35.7	69.9	30	153	71.5	83	94	47.22×3.53	4.9	<b>KH40/32B4V3U</b>	200
SAE-clearance groove ISO 6162-2	12*	M 24×1.5	16	M 8	18.2	40.5	20	103	51.5	48	56	18.64×3.53	1.4	<b>KH12B4V6M</b>	400
	20*	M 36×2.0	25	M10	23.8	50.8	22	125	62.5	60	71	24.99×3.53	2.8	<b>KH20B4V6M</b>	400
	25*	M 42×2.0	30	M12	27.8	57.2	24	138	69.0	70	81	32.92×3.53	3.1	<b>KH25B4V6M</b>	400
	32	M 52×2.0	38	M12	31.8	66.6	30	153	71.5	78	95	37.69×3.53	4.3	<b>KH32B4V6M</b>	400
	40/32	M 52×2.0	38	M16	36.5	79.3	33	153	71.5	95	113	47.22×3.53	5.5	<b>KH40/32B4V6M</b>	400
Studs with solderless tube fittings DIN 2353 heavy series ISO 8434-1	12*	M 24×1.5	16	5/16-18 UNC	18.2	40.5	20	103	51.5	48	56	18.64×3.53	1.4	<b>KH12B4V6U</b>	400
	20*	M 36×2.0	25	3/8-16 UNC	23.8	50.8	22	125	62.5	60	71	24.99×3.53	2.8	<b>KH20B4V6U</b>	400
	25*	M 42×2.0	30	7/16-14 UNC	27.8	57.2	24	138	69.0	70	81	32.92×3.53	3.1	<b>KH25B4V6U</b>	400
	32	M 52×2.0	38	1/2-13 UNC	31.8	66.6	30	153	71.5	78	95	37.69×3.53	4.3	<b>KH32B4V6U</b>	400
	40/32	M 52×2.0	38	5/8-11 UNC	36.5	79.3	33	153	71.5	95	113	47.22×3.53	5.5	<b>KH40/32B4V6U</b>	400

\*)Case in block construction

### For the flanges see catalogue part M

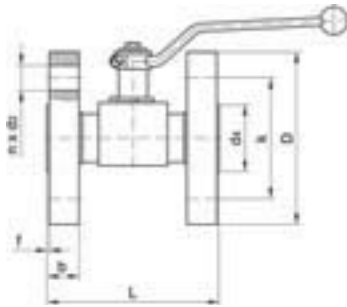
Special types on request

Body:	Steel	Steel
Switching ball:	Steel/chromium plated	Steel/chromium plated
Control shaft:	Steel	Steel
Switching ball sealing:	POM	POM
Control shaft sealing:	NBR	FKM

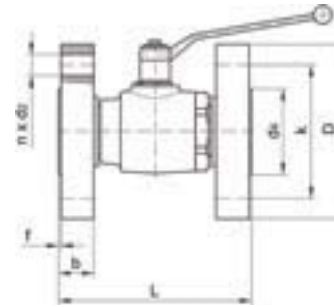
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	KH12B4V3MCFX	POM / NBR
Steel	DIN 50938-FE//A/T4	KH12B4V3MX	POM / NBR

## KH-B5V-S Ball valve with flange connection DIN EN 1092-1

Steel/DIN/rotatable



DN 10–DN25



DN 32–DN50

Port connection	DN	D	b	k	d4	f	n	Number d2	L	Weight kg	Order code
PN 25 PN 40	10	90	16	60	40	2	4	14	130	2.1	<b>KH10B5V40</b>
	15	95	16	65	45	2	4	14	130	2.7	<b>KH15B5V40</b>
	20	105	18	75	58	2	4	14	150	3.8	<b>KH20B5V40</b>
	25	115	18	85	68	2	4	14	160	4.9	<b>KH25B5V40</b>
	32	140	18	100	78	2	4	18	180	7.0	<b>KH32B5V40</b>
	40	150	18	110	88	3	4	18	200	8.9	<b>KH40B5V40</b>
PN 63	50	165	20	125	102	3	4	18	230	12.2	<b>KH50B5V40</b>
	10	100	20	70	40	2	4	14	130	2.9	<b>KH10B5V63</b>
	15	105	20	75	45	2	4	14	130	3.5	<b>KH15B5V63</b>
	25	140	24	100	68	2	4	18	160	7.6	<b>KH25B5V63</b>
	40	170	26	125	88	3	4	22	200	12.6	<b>KH40B5V63</b>
PN 100	50	180	26	135	102	3	4	22	230	15.3	<b>KH50B5V63</b>
	10	100	20	70	40	2	4	14	130	2.9	<b>KH10B5V100</b>
	15	105	20	75	45	2	4	14	130	3.5	<b>KH15B5V100</b>
	25	140	24	100	68	2	4	18	160	7.6	<b>KH25B5V100</b>
PN 160	40	170	26	125	88	3	4	22	200	12.6	<b>KH40B5V100</b>
	50	195	28	145	102	3	4	26	230	17.9	<b>KH50B5V100</b>
	10	100	20	70	40	2	4	14	130	2.9	<b>KH10B5V160</b>
	15	105	20	75	45	2	4	14	130	3.5	<b>KH15B5V160</b>
PN 250	25	140	24	100	68	2	4	18	160	7.6	<b>KH25B5V160</b>
	40	170	28	125	88	3	4	22	200	13.2	<b>KH40B5V160</b>
	50	195	30	145	102	3	4	26	230	18.7	<b>KH50B5V160</b>
	10	125	24	85	40	2	4	18	130	5.0	<b>KH10B5V250</b>
	15	130	26	90	45	2	4	18	130	6.2	<b>KH15B5V250</b>
PN 320	25	150	28	105	68	2	4	22	160	9.5	<b>KH25B5V250</b>
	40	185	34	135	88	3	4	26	200	17.2	<b>KH40B5V250</b>
	50	200	38	150	102	3	8	26	230	22.6	<b>KH50B5V250</b>
	10	125	24	85	40	2	4	18	130	5.0	<b>KH10B5V320</b>
PN 400	15	130	26	90	45	2	4	18	130	6.2	<b>KH15B5V320</b>
	25	160	34	115	68	2	4	22	160	12.5	<b>KH25B5V320</b>
	40	195	38	145	88	3	4	26	200	20.5	<b>KH40B5V320</b>
	50	210	42	160	102	3	8	26	230	26.4	<b>KH50B5V320</b>
	10	125	28	85	40	2	4	18	210	6.0	<b>KH10B5V400</b>
PN 400	15	145	30	100	45	2	4	22	210	9.0	<b>KH15B5V400</b>
	25	180	38	130	68	2	4	26	230	17.4	<b>KH25B5V400</b>
	40	220	48	165	88	3	4	30	260	31.9	<b>KH40B5V400</b>
	50	235	52	180	102	3	8	30	300	38.9	<b>KH50B5V400</b>

flange connection dimensions: DIN EN 1092-1 (DIN 2501-1)  
 sizes PN 25 – PN 320: DIN EN 558-1 series 1 (DIN 3202-1-F1)  
 sizes PN 400: DIN EN 558-1 series 2 (DIN 3202-1-F2)  
 special types on request

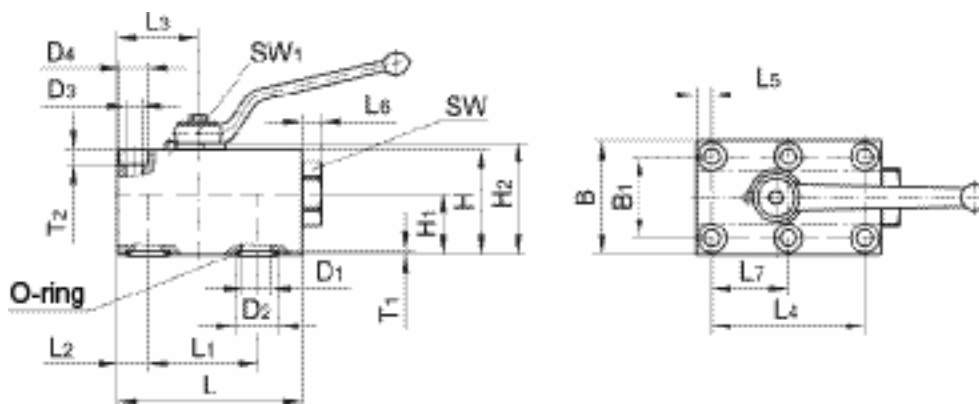
Body:	Steel	Steel	Steel
Switching ball:	Steel/chromium plated	steel/chromium plated	Steel/chromium plated
Control shaft:	Steel	Steel	Steel
Switching ball sealing:	POM	POM	PTFE-Comp. 3
Control shaft sealing:	NBR	FKM	FKM

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	KH10B5V40CFX	POM / NBR
Steel	DIN 50938-FE//A/T4	KH10B5V40X	POM / NBR



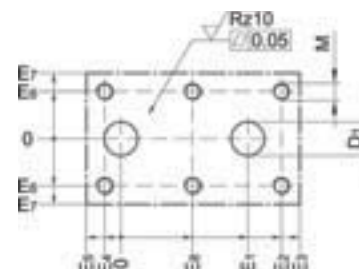
## KHBLOCK 2/2-way ball valves for block structure

Steel – DN6 – DN50



Port connection	DN	L	L1	L2	L3	L4	L5	L6	L7	B	B1	H	H1	H2	T1	T2	D1	D2	D3	D4	SW	SW1	Weight kg	Order code
Body flange with O-ring sealing	6	59	35	8.5	23.5	35	8.5	4.5	17.5	40	27	35	20.0	37.5	1.8	6.8	6.0	12.0	6.4	11	24	7	0.58	<b>KHBLOCKDN6</b>
	10	73	44	10.0	29.0	55	7.5	7.0	27.5	55	40	45	24.5	48.5	1.8	8.0	9.5	15.0	8.4	-	32	8	1.17	<b>KHBLOCKDN10</b>
	12	98	58	16.0	42.5	83	7.5	10.0	41.5	60	45	55	32.0	58.5	1.8	8.0	15.5	25.0	8.4	-	36	10	2.25	<b>KHBLOCKDN12</b>
	20	117	69	20.0	52.0	97	10.0	12.0	48.5	70	51	70	39.0	74.0	2.7	11.0	20.0	30.0	10.5	17	-	14	4.00	<b>KHBLOCKDN20</b>
	25	138	81	24.0	62.0	115	10.0	7.0	57.5	80	60	80	46.0	84.0	2.7	11.0	24.0	35.0	10.5	17	50	14	5.82	<b>KHBLOCKDN25</b>
	32	165	96	29.0	75.0	136	12.0	11.0	68.0	100	78	100	56.6	104.5	2.7	12.0	32.0	40.0	13.0	19	70	17	10.97	<b>KHBLOCKDN32</b>
	40	175	112	28.5	84.5	112	28.5	25.0	56.0	130	95	100	52.6	104.5	2.7	17.5	38.0	48.5	17.0	26	-	17	15.25	<b>KHBLOCKDN40</b>
50	215	136	38.0	106.0	136	38.0	25.0	68.0	150	112	110	55.1	114.5	2.7	20.0	48.0	55.5	21.0	33	-	17	23.20	<b>KHBLOCKDN50</b>	

	DN	D1	E1	E2	E3	E4	E5	E6	E7	E8	M	O-ring
General tolerances DIN ISO 2768 Surfaces DIN EN ISO 4287	6	6.0	35	35.0	50.5	-	8.5	13.5	20.0	17.5	M 6	7.5x2.5
	10	9.5	44	52.5	63.0	2.5	10.0	20.0	27.5	25.0	M 8	10.5x2.5
	12	15.5	58	74.5	82.0	8.5	16.0	22.5	30.0	33.0	M 8	20.5x2.5
	20	20.0	69	87.0	97.0	10.0	20.0	25.5	35.0	38.5	M10	23.5x3.5
	25	24.0	81	101.0	114.0	14.0	24.0	30.0	40.0	43.5	M10	28.5x3.5
	32	32.0	96	119.0	136.0	17.0	29.0	39.0	50.0	51.0	M12	33.5x3.5
	40	38.0	112	112.0	146.5	-	28.5	47.5	65.0	56.0	M16	42.0x3.5
50	48.0	136	136.0	177.0	-	38.0	56.0	75.0	68.0	M20	49.0x3.5	



Drilling template

Body:	Steel	Steel
Switching ball:	Steel/chromium plated	Steel/chromium plated
Control shaft:	Steel	Steel
Body sealing:	NBR	FKM
Switching ball sealing:	POM	POM
Control shaft sealing:	NBR	FKM

Standard surface: bronzed

For Cr(VI)-free please add CF

 Example: **KHBLOCKDN6CFX**

## DV Shut-off valve PN 10 – Casing DIN 3512

EO 24° cone end / EO 24° cone end

(with internal threaded spindle)

For cold and warm water\* up to 80°C, compressed air, mineral oils and fuel oils types EL and L, 6 bar and up to 80°C.

The pressure specification PN for hand-operated

shut-off valves applies to the design

factor 1,5 (according DIN 3230 T5

and ISO 5208).

### Caution!

Please note the admissible pressure ratings for the EO-tube ends.

### DVAE

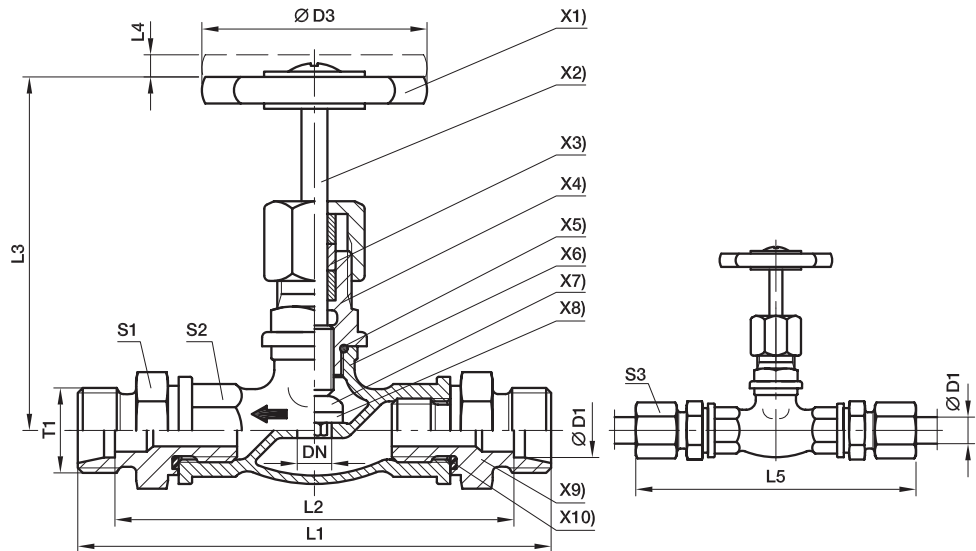
EO tube end ← male BSPP

### DVAA

male BSPP ← EO tube end

DV-valves with male BSPP thread on request.

\*Indicate type of water or additive if any



- X1) **Hand wheel:** material: Polyamid
- X2) **Spindle:** material: Brass 2.0401
- X3) **Stuffing boxpacking:** PTFE Compound
- X4) **Haed piece:** material: Brass 2.0401
- X5) **Sealing:** O-ring NBR (e.g. Perbunan)
- X6) **Casing:** material: Brass 2.0340.02
- X7) **Valve cone:** material: Brass 2.0401
- X8) **Shut-off sealing:** NBR (e.g. Perbunan)
- X9) **Male stud fitting:** material: Brass 2.0540
- X10) **Sealing:** Eolastic-sealing NBR (e.g. Perbunan)

Series	D1	T1	DN	D3	L1	L2	L3	L4	L5	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup> without surface
L <sup>3)</sup>	06	M 12×1.5	5	50	102	88	63	7	117	22	21	14	313	<b>DV06LX</b>	10
	08	M 14×1.5	6	50	102	88	63	7	117	22	21	17	305	<b>DV08LX</b>	10
	10	M 16×1.5	8	50	104	90	63	7	119	22	21	19	308	<b>DV10LX</b>	10
	12	M 18×1.5	10	50	104	90	63	7	119	22	21	22	304	<b>DV12LX</b>	10
	15	M 22×1.5	12	50	107	93	65	8	123	27	25	27	426	<b>DV15LX</b>	10
	18	M 26×1.5	16	50	109	94	67	8	126	27	25	32	434	<b>DV18LX</b>	10
	22	M 30×2.0	20	60	123	108	67	8	140	32	32	36	670	<b>DV22LX</b>	10
	28	M 36×2.0	25	60	140	125	95	10	158	41	38	41	1030	<b>DV28LX</b>	10
	35	M 45×2.0	32	70	166	145	102	10	188	50	47	50	1640	<b>DV35LX</b>	10

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Brass 2.0340.02	without	DV06LX	PTFE / NBR

## LD Shut-off valve PN 40

EO 24° cone end / EO 24° cone end

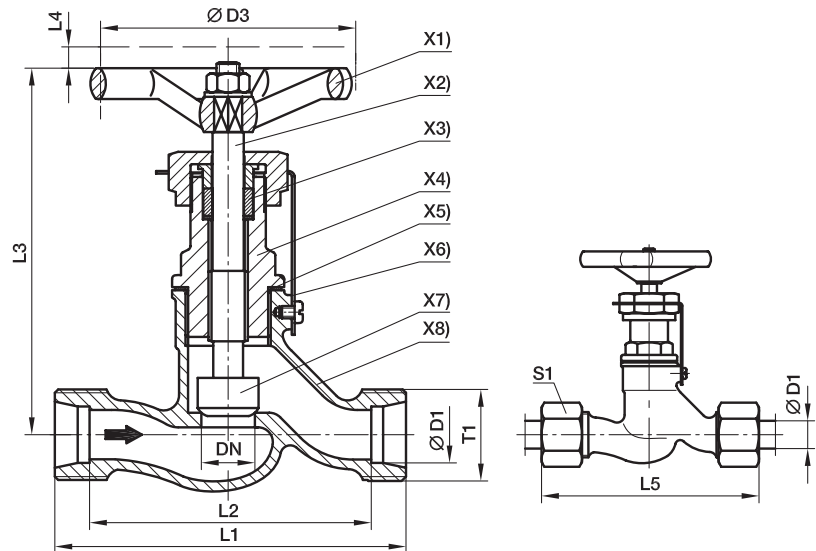
(with internal threaded spindle)

For hydraulic oil, mineral, oil, fuel oil, Diesel, water\* etc. Temperature up to 150°C. For steam up to 10 bar.  
For compressed air up to 35 bar on request. CS DIN 86501 Rg.-N.

The pressure specification PN for hand-operated shut-off valves applies to the design factor 1,5 (according DIN 3230 T5 and ISO 5208).

**Caution!**

Please note the admissible pressure ratings for the EO-tube ends.



- X1) **Hand wheel:** Plastic material typ 74 according to DIN 388 Form C
- X2) **Spindle:** with internal thread. Material: Cu Zn 35 Ni 2
- X3) **Stuffing box packing:** Graphite
- X4) **Head piece:** material: Cu Zn 39 Pb 3
- X5) **Sealing:** Copper ring
- X6) **Locking plates:** material: St. 37/zinc plated
- X7) **Valve cone:** loose tip material: Cu Zn 35 Ni 2
- X8) **Casing:** material: G-Cu Sn 5Zn Pb (Rg 5 according to DIN 1705)

**EO-tube connection:**

for **copper** tubes nuts, cutting and locking rings of brass

**Attention:**

for **steel** tubes: nuts, progressive rings of steel **specify when ordering**

We recommend pre-installation in hardened pre-installation body (see assembly instructions)

Series	D1	T1	DN	D3	L1	L2	L3	L4	L5	S1	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup> without surface
S <sup>4)</sup>	10	M 18x1.5	6	63	60	45	98	7	77	22	383	<b>LD10SX</b>	40
	12	M 20x1.5	8	63	64	49	98	7	81	24	401	<b>LD12SX</b>	40
	14	M 22x1.5	10	63	70	54	98	7	89	27	417	<b>LD14SX</b>	40
	16	M 24x1.5	12	80	84	67	110	9	103	30	631	<b>LD16SX</b>	40
	20	M 30x2.0	16	80	90	69	110	9	112	36	688	<b>LD20SX</b>	40
	25	M 36x2.0	20	100	110	86	129	12	134	46	1191	<b>LD25SX</b>	40
	30	M 42x2.0	25	100	120	93	129	12	146	50	1322	<b>LD30SX</b>	40
	38	M 52x2.0	32	100	140	108	158	12	169	60	2268	<b>LD38SX</b>	40

<sup>1)</sup> Pressure shown = item deliverable

<sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Gunmetal (Rg 5) 2.1096	without	LD10SX	Graphit / Metal

## VDHA High pressure valve

### EO tube end / EO tube end

with internal threaded spindle and body of low grade forged stainless steel  
The pressure specification PN for hand-operated shut-off valves applies to the design factor 1,5 (according DIN 3230 T5 and ISO 5208).

**Caution!**  
Please note the admissible pressure ratings for the EO-tube ends.

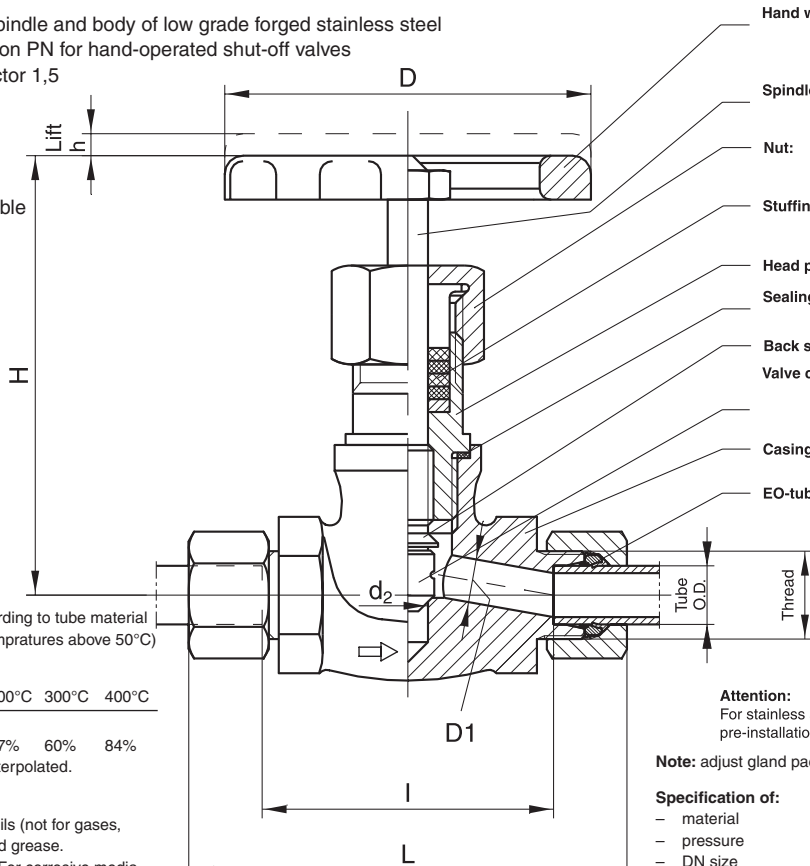
Temperatures up to 400°C according to tube material (consider pressure drop with temperatures above 50°C)

Required pressure reductions	temperature 50°C	100°C	200°C	300°C	400°C
pressure reductions	6%	15%	37%	60%	84%

Intermediate values are to be interpolated.

**Applications:**

For water, steam, hot and cold oils (not for gases, oxygen etc.) on mineral oil based grease.  
For compressed air up to 50°C. For corrosive media, acids, fire resistant fluid etc.



- Hand wheel:** Aluminium die casting GD-AL Si 8 Cu 3  
Operating position: completely opened or closed.
- Spindle:** with internal thread. Material 1.4021
- Nut:** Material 1.0718
- Stuffing box packing:** GA 24 (Graphit)
- Head piece:** Material 1.0460
- Sealing:** between casing and head piece, material-no. 2.4066
- Back sealing:** against head piece
- Valve cone:** hardened loose tip material 1.4122. For VDHA 30-PS and 38-PS material 1.0460 forged with Cr 17
- Casing:** forged. Material No. 1.4104
- EO-tube connection:** Nuts and progressive rings of steel for the assembly of steel tubes.  
For stainless steel tubes material no. 1.4571 or 1.4541 and temperatures above 120°C progressive rings and nuts of 1.4571 are to be used. (Please specify when ordering)

**Attention:**  
For stainless steel tubes always pre-assembly in hardened pre-installation body (see assembly instructions)

**Note:** adjust gland packing prior to initial working period.

**Specification of:**

- material
- pressure
- DN size
- identification mark on hand wheel.

Series	D1	PN (bar)	DN	Thread	d2	H	L	I	h	D	Weight g/1 piece	With Nut and Ring	
												Dry Technology EO-2	PSR steel
S <sup>4)</sup>	06	630	4	M 14×1.5	9.5	120	95	66	6	100	891	VDHA06ZS	VDHA06S
	08	630	5	M 16×1.5	9.5	120	95	66	6	100	917	VDHA08ZS	VDHA08S
	10	630	7	M 18×1.5	9.5	120	97	65	6	100	937	VDHA10ZS	VDHA10S
	12	630	8	M 20×1.5	9.5	120	97	65	6	100	940	VDHA12ZS	VDHA12S
	14	630	10	M 22×1.5	9.5	120	119	84	6	100	1194	VDHA14ZS	VDHA14S
	16	400	11	M 24×1.5	9.5	120	119	83	6	100	1209	VDHA16ZS	VDHA16S
	20	400	13	M 30×2.0	11.0	120	122	79	6	100	1292	VDHA20ZS	VDHA20S
	25	400	17	M 36×2.0	12.0	143	154	106	9	125	2013	VDHA25ZS	VDHA25S
	30	250	19	M 42×2.0	22.5	164	156	103	12	125	2596	VDHA30ZS	VDHA30S
	38	250	25	M 52×2.0	26.5	198	179	118	12	180	4972	VDHA38ZS	VDHA38S

<sup>1)</sup> Pressure shown = item deliverable

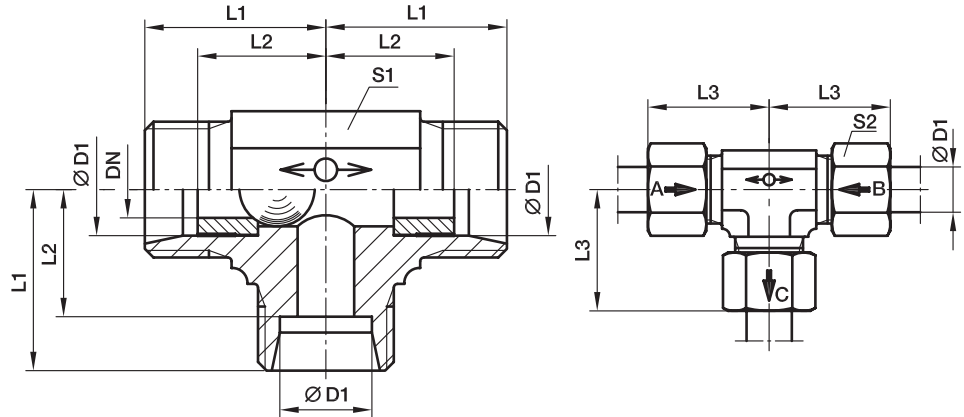
<sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

## WV Alternating valve

EO 24° cone end / EO 24° cone end / EQ 24° cone end

These valves permit the passage of flow from either inlet 1 or 2 to the outlet port whilst shutting of the inlet port not in use. The shutting off, of an inlet is achieved by a floating ball bearing which moves by the pressure of the flow.



Material: steel  
Surface finish: Cr(VI)-free.

Valves are not recommended for compressed air and gases.  
WV-valves are not to be used in connection with weld nipples, swivel nuts etc. where there is no contact with a shoulder stop in the inner cone.

Temperature range without pressure reductions: -40°C up to +120°C.

Recommended fitting position as shown in the picture.

Leakage rate for alternating valves hydraulic test with test pressure =  $P_{max}$ : approx. 20 drops (test period of 1 minute).

Directions of flow:

$D_1 \rightarrow D_3 = D_2$  closed  
 $D_2 \rightarrow D_3 = D_1$  closed

Series	D1	T1	DN	L1	L2	L3	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup> CF
L <sup>3)</sup>	8	M 14×1.5	4.5	21	14	29	14	17	53	<b>WV08LOMD</b>	160
	10	M 16×1.5	6.0	22	15	30	17	19	73	<b>WV10LOMD</b>	160
	12	M 18×1.5	7.5	24	17	32	19	22	96	<b>WV12LOMD</b>	160
	15	M 22×1.5	10.0	28	21	36	19	27	134	<b>WV15LOMD</b>	160

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

\*Please add the **suffixes** below according to the material/surface required.

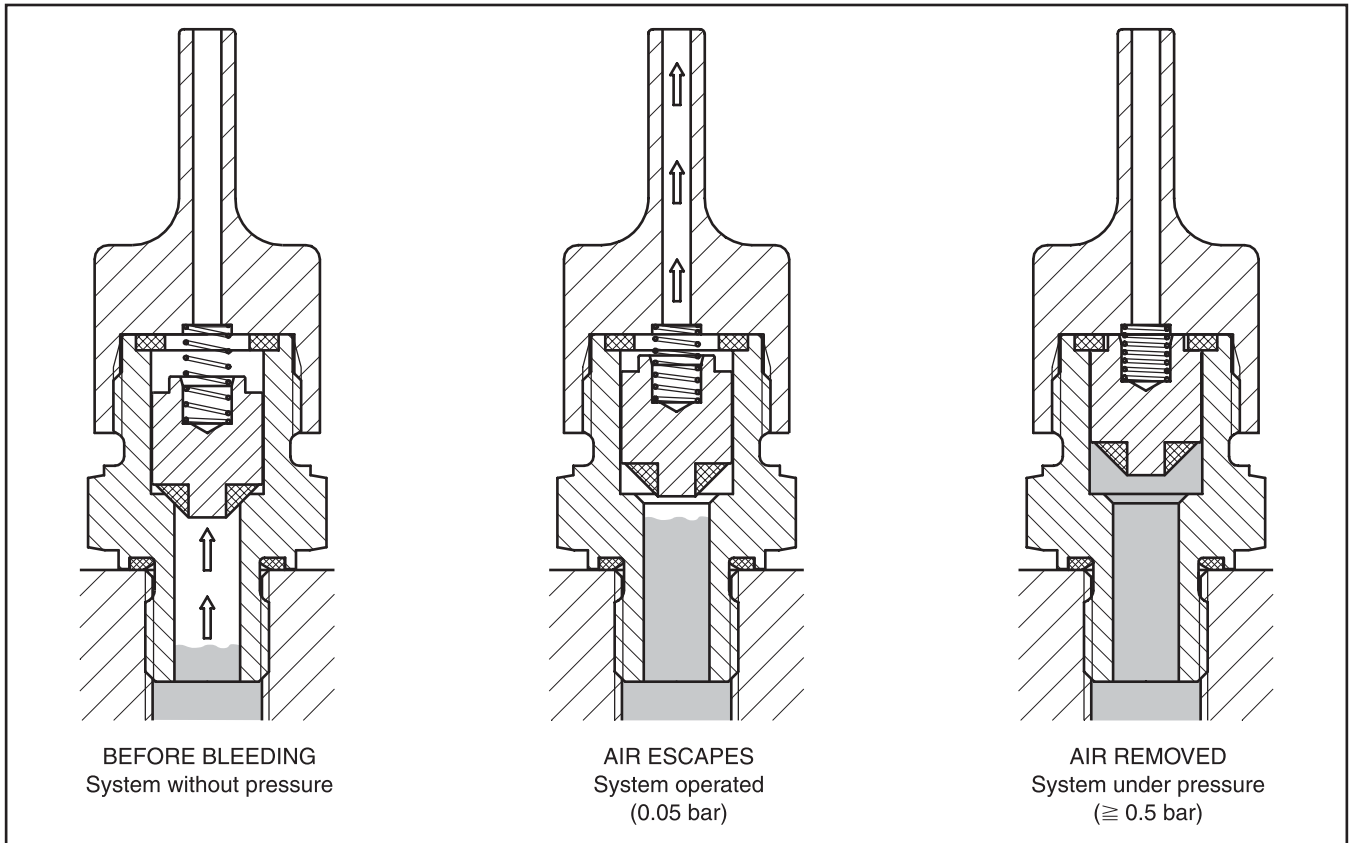
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	WV08LOMDCF	Steel ball

## ELA air-bleed valves

Hydraulic systems can effectively be bled with ELA air-bleed valves.

Easily installed – maintenance-free – almost unlimited service life – simple – safe – reliable – efficient.  
The system can be operated immediately. No control irregularities due to air contamination of the pressure medium.  
Cost saving, as non-productive de-aeration time is saved.

Air bleed between: – opening pressure 0.05 bar  
– closing pressure  $\geq 0.5$  bar



The principle of the air-bleed valve is based on the difference in behaviour of gases and liquids under pressure because of their dependence on viscosity. A piston, housed in the bore of the body with defined clearance, effects the opening and closing of the valve on start-up or shut-down of the system. On setting the system in operation, the accumulated air escapes until the liquid column of the pressure medium reaches the piston. The pressure of the liquid lifts the piston against the upper, high pressure seal, securely closing the air-vent (slight oil discharge may occur). When pressure is released the spring releases the piston reopening the air-vent, whereupon the procedure may be repeated. The special piston design prevents any intake of air in case of partial vacuum.

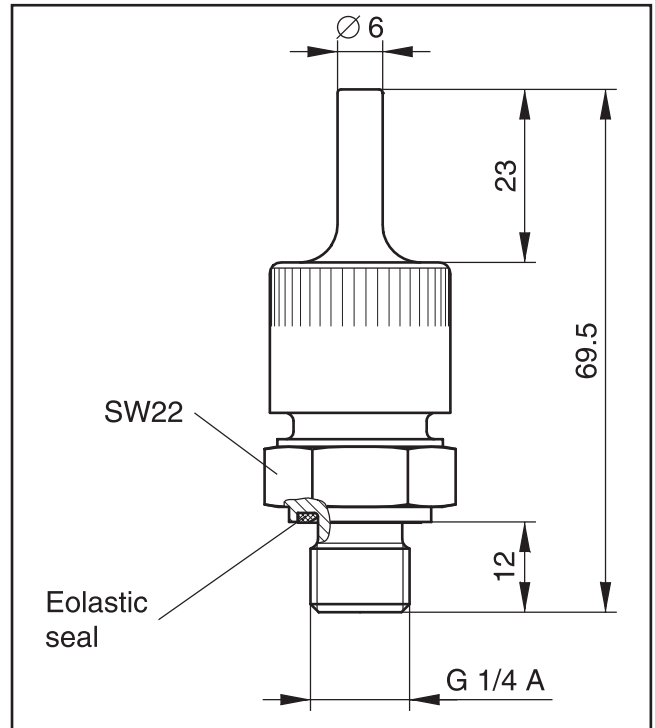
The air bleed valve should be connected vertical, at the highest point of the hydraulic system or in places where air accumulation may occur.

ELA air-bleed valves are available only for mineral oil based fluids, and within the temperature limits of  $-20^{\circ}\text{C}$  to  $+90^{\circ}\text{C}$ .

## ELA Air-bleed valves

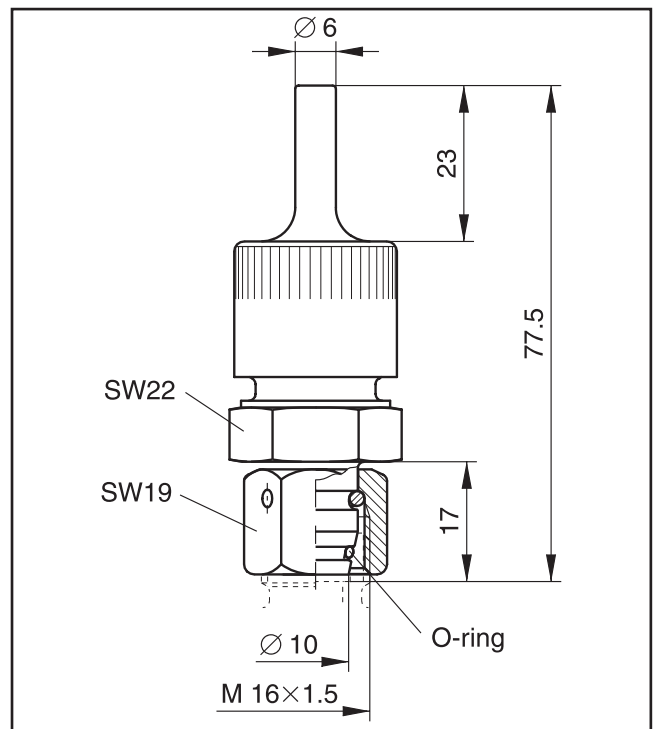
Male BSPP thread with Eolastic seal

PN (bar)	Dry Technology Steel	Weight g/1 piece
400	<b>ELA1/4EDCF</b>	109



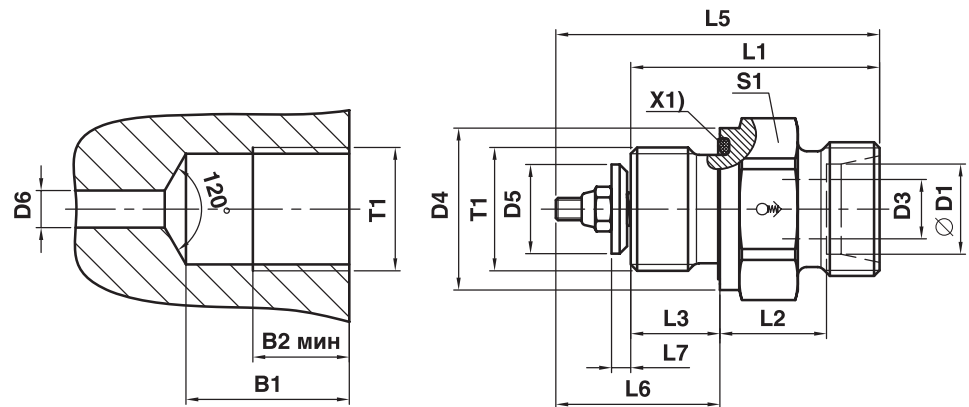
## EO Swivel

PN (bar)	Dry Technology Steel	Weight g/1 piece
315	<b>ELAE10LCF</b>	125



## LRV line rupture valve

Imperial port ends – ED (ISO 1179) / EO 24° cone end



D1	T1	D3	D4	D5	D6	L1	L2	L3	L5	S1	B1	B2	Weight g/1 piece	Order code*	PN (bar)
08	G 1/4 A	6.0	19	9.8	5	32.0	13.0	12	42	19	24	13	37	LRV08LRED*1/2OCF	400
12	G 3/8 A	9.0	22	12.0	8	33.5	14.5	12	44	22	24	13	53	LRV12LRED*1/2OCF	400
15 <sup>1)</sup>	G 3/8 A	9.0	22	12.0	8	33.5	14.5	12	44	22	24	13	53	LRV15LRED*1/2OCF	400
15 <sup>1)</sup>	G 1/2 A	14.0	27	16.0	12	37.0	15.5	14	51	27	28	15	84	LRV15LRED*1/2OCF	400
18	G 1/2 A	14.0	27	16.0	12	37.0	15.5	14	51	27	28	15	84	LRV18LRED*1/2OCF	400
22	G 3/4 A	17.5	32	20.0	16	41.0	17.5	16	56	32	32	17	121	LRV22LRED*1/2OCF	250

O-ring version and alternative connections on request!

<sup>1)</sup> Size 15L depends on the Q<sub>max</sub>!

Order code – supplementary designations			
Material	Identifying letter Version	Example	Standard sealing material (no additional identifying letter required)
Steel, galvanized, Cr(VI)-free	10Q	LRV08LRED10QOCF	NBR (set to Q 10 l/min)
Steel, galvanized, Cr(VI)-free	17Q 0.5D	LRV18LRED17Q0.5DOCF	NBR (set to Q 17 l/min and restriction drilling D = 0.5 mm)

Please add the identifying letter for the required version to the order code.

\*1 = cut-off flow Q (l/min): 9 to 17 connection 08L 15 to 75 connection 18L  
10 to 24 connection 12L 45 to 130 connection 22L

\*2 = restriction drilling D (mm): 0.5/0.8/1.0/1.5

**Supplied without nut and bite-type ring.**

Housing	Steel, galvanized, Cr(VI)-free
Valve disk	Steel
Spring	Steel
Insert	Aluminium
Slotted head screw	Galvanized steel
Nut	Galvanized steel, self-retaining
Seat seal	Sealing edge, steel/steel
Operating pressure	See table
Temperature	-40°C to +120°C
Medium	Mineral oils
Mounting position	as required





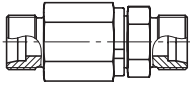


**EO<sup>®</sup> Ermeto Original**  
***Rotary fittings***



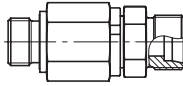
Visual index EO rotary fittings

**DG 101**  
p. P6



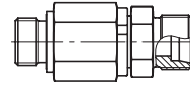
EO 24° cone end /  
EO 24° cone end

**DG 102-R**  
p. P7



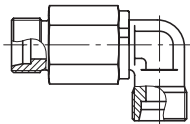
Male BSPP thread –  
ED-seal (ISO 1179) / EO 24° cone end

**DG 102-M**  
p. P8



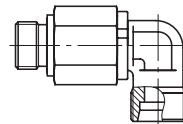
Male metric thread –  
ED-seal (ISO 1179) / EO 24° cone end

**DG 103**  
p. P9



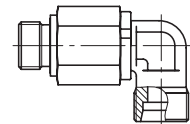
EO 24° cone end /  
EO 24° cone end

**DG 104-R**  
p. P10



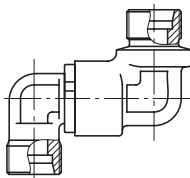
Male BSPP thread –  
ED-seal (ISO 1179) / EO 24° cone end

**DG 104-M**  
p. P11



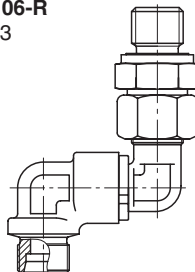
Male metric thread –  
ED-seal (ISO 1179) / EO 24° cone end

**DG 105**  
p. P12



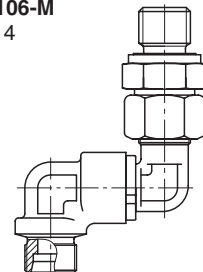
EO 24° cone end /  
EO 24° cone end

**DG 106-R**  
p. P13



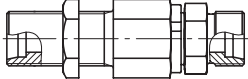
Male BSPP thread –  
ED-seal (ISO 1179) / EO 24° cone end

**DG 106-M**  
p. P14



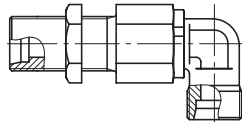
Male metric thread –  
ED-seal (ISO 1179) / EO 24° cone end

**DG 107**  
p. P15



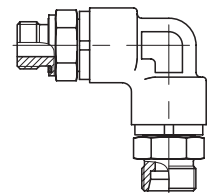
EO 24° cone end /  
EO 24° cone end

**DG 108**  
p. P16



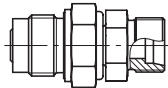
EO 24° cone end /  
EO 24° cone end

**DG 208**  
p. P17



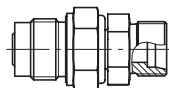
Male BSPP thread –  
ED-seal (ISO 1179) / EO 24° cone end

**DVGE-R**  
p. P18



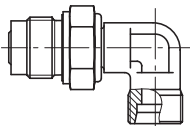
Male BSPP thread –  
ED-seal / EO 24° cone end

**DVGE-M**  
p. P19



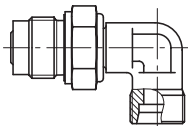
Male metric thread –  
ED-seal / EO 24° cone end

**DVWE-R**  
p. P20



Male BSPP thread –  
ED-seal / EO 24° cone end

**DVWE-M**  
p. P21



Male metric thread –  
ED-seal / EO 24° cone end

## DG Ball bearing rotary fittings

For working pressures up to 350 bar.  
Favourable pressure/RPM ratio

### Application:

Connecting a fixed point to a rotating, swinging or moving machine part via hoses.  
To prevent torsion and to avoid small hose radius.

### Flow media:

Hydraulic oils and lubricants on mineral oil base.  
Also for hydraulic fluids HETG and HEES.  
Not suitable for corrosive and HFC-fluids or gases.

### Construction:

Compact, maintenance-free construction, service-proved.  
Combined ball and plain bearing with constant lubrication.  
Low starting torque. Wear-resistant annular piston sealings.

### Materials:

Casing, body nut of steel, annular piston sealing: POM (e. g. Delrin)/FKM. Eolastic sealing: NBR (e.g. Perbunan), also available in FKM.

### Surface:

Cr(VI)-free.

### Nominal temperatures:

-25° C up to +80°C.

### Warehousing:

Ball bearing rotary fittings can be stocked for 6 months.  
Warehousing up to 1 year is possible with storage conditions acc. to DIN 7716.

Perbunan = registered trademark of Bayer

### Construction systems:

8 different versions with one rotational axis. Multiaxial rotary couplings on request. Tube connections according to DIN 2353, series S.  
Maximum working pressure 350 bar (peak pressure)  
Male stud sealing by Eolastic seals of NBR.  
Male stud with metric parallel or BSPP thread.

### Assembly instructions:

The life of a rotary fitting depends considerably on a stress-free line connection. Therefore the direct connection with tubes is to be avoided.  
For connection of hoses the use of swivel nut fittings (DIN 3865) is recommended.  
We recommend short, straight hose lines (free hose length approx. 5× hose O.D.). Thus shocks, vibrations etc. are absorbed.

### Attention!

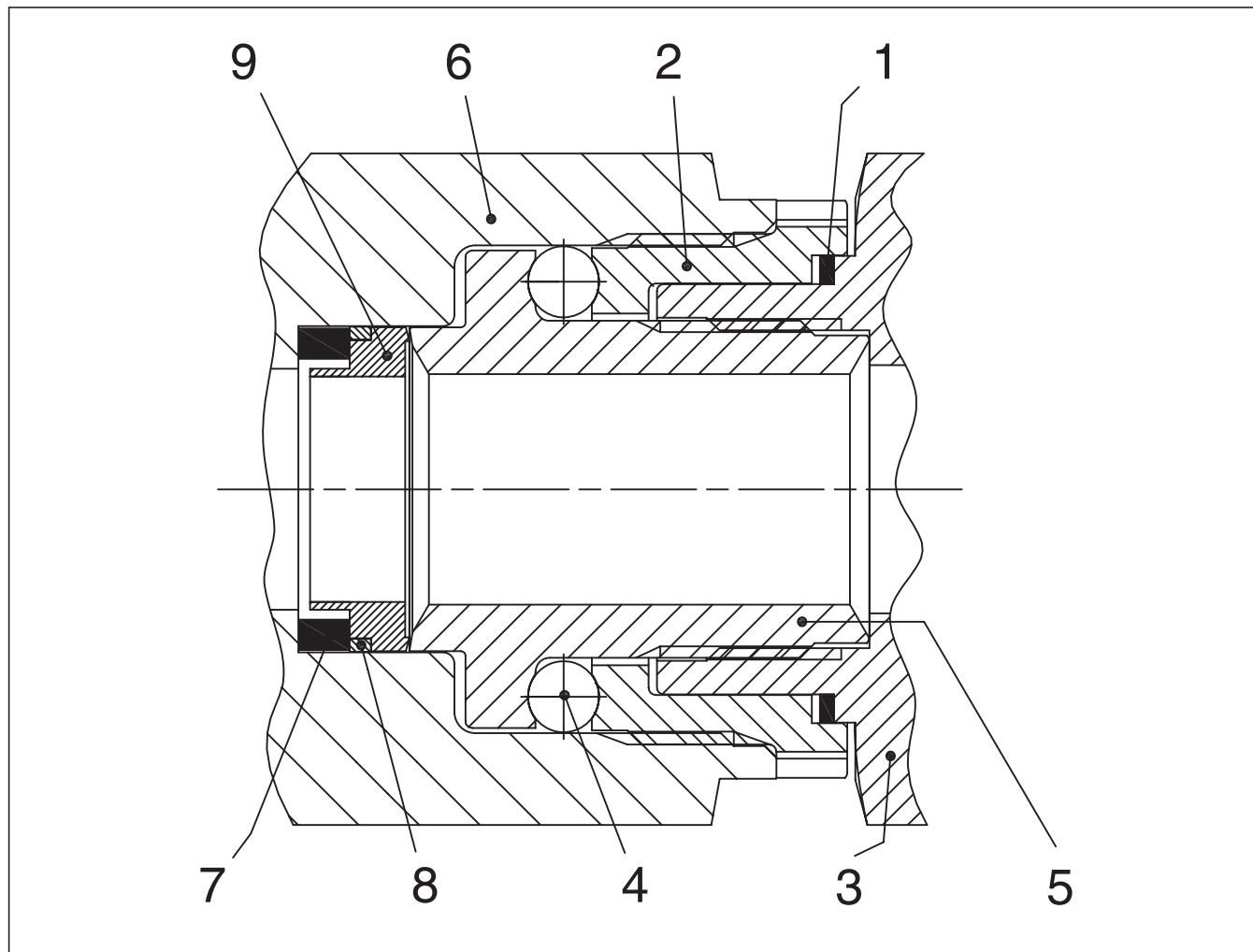
Rotary fittings with double needle bearing for higher side force stability on request. Series DGNN/DGBN.  
Maximum permissible flowrate of media: 8 m/s (recommended 5-6 m/s)

## Number of revolutions and starting torques:

Chart 1

Tube O.D.	DN Nominal diameter (mm)	Permissible number of revolutions (rpm.) under a working pressure of						Initial torque at 250 bar/Nm
		25 bar	64 bar	100 bar	160 bar	250 bar	350 bar	
6 8	5.0	1500	750	400	200	85	85	0.08
12 16	9.5	800	400	200	100	45	45	0.24
20 25	16.0	300	150	75	38	15	15	0.8
30 38	26.0	200	100	50	25	10	10	2.0

DG Ball bearing rotary fittings



9	ring piston
8	intermediate ring
7	rubber spring
6	base
5	pivot
4	ball
3	top
2	raceway
1	dust seal
position	specification

## Plain bearing rotary fittings

for slow rotating, swinging or moving machine parts up to 40 bar (series L) or up to 100 bar (series S).

### Application:

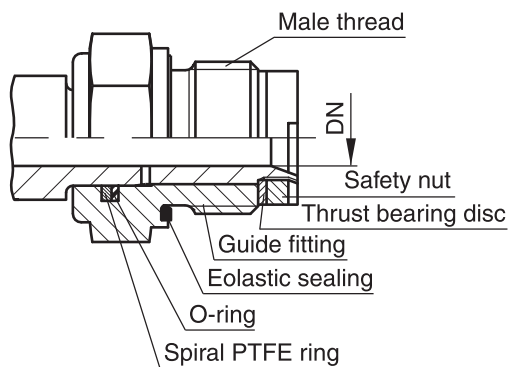
Connecting a fixed point to a rotating, swinging or moving machine part via hoses.  
To prevent torsion and to avoid small hose radius.

### Flow media:

Hydraulic oils and lubricants on mineral oil base.  
Also for hydraulic fluids HETG and HEES.  
Not suitable for corrosive and HFC-fluids or gases.

### Nominal temperature:

For sealings of NBR:  
–35° C up to +100° C.  
For sealings of FKM:  
–25° C up to +120° C.



Tube O.D.		DN Nominal diameter mm
06L	06S	4
08L	08S	5
10L	10S	6
12L	12S	8
15L	14S 16S	10
18L 22L	20S 25S	16
28L	30S	22
35L	43L 38S	25

### Construction:

Compact, maintenance-free construction, service-proved.

### Materials:

Casing, body nut and progressive ring of steel. Sealing of NBR (Perbunan), on request of FKM.  
Plain bearing rotary fittings are not available in stainless steel or brass.

### Surface:

Cr(VI)-free.

### Construction-system:

Series L, tube O. D. 6 to 35 mm, working pressure (PN): 40 bar  
Series S, tube O. D. 6 to 38 mm, working pressure (PN): 100 bar  
Tube connection according to DIN 2353, ISO 8434-1.  
Male stud with metric thread and BSP thread.  
Sealing of male stud by Eolastic-seals.

Perbunan = registered trademark of Bayer

### Number of revolutions:

Series	L								
Tube O.D.	6	8	10	12	15	18	22	28	35
Permiss. no rpm	28	28	21	17	13	10	10	7	7
Series	S								
Tube O.D.	6	8	10	12	14	16	20	25	30 38
Permiss. no rpm	11	11	9	7	5	5	4	4	3 3

### Assembly instruction:

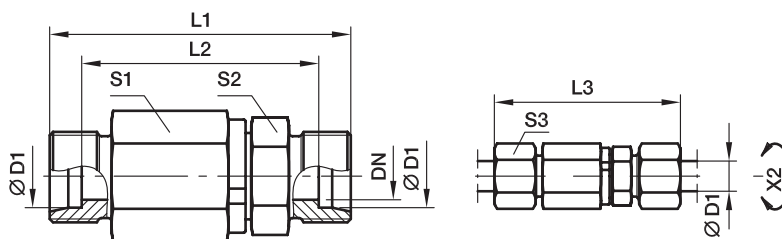
The life of a rotary fitting depends considerably on a stress-free line connection. Therefore the direct connection with tubes is to be avoided.

For connection of hoses use of swivel nut connections (DIN 3865) is recommended.

We recommend short, straight hose lines (free hose length approx. 5 × hose O. D.). Thus shocks, vibrations etc. are absorbed.

## DG 101 Straight ball bearing rotary union

EO 24° cone end / EO 24° cone end



X2) Axis

Series	D1 	DN	L1	L2	L3	S1	S2	S3	Weight g/1 piece	Order code*	CF <sup>1)</sup>
S <sup>4)</sup>	06	5.0	61	47	76	22.0	17	17.0	113	<b>DG101/06SOMD</b>	Pressure ratings see chart 1
	08	5.0	61	47	76	22.0	17	19.0	118	<b>DG101/08SOMD</b>	
	12	9.5	72	57	89	30.0	24	24.0	258	<b>DG101/12SOMD</b>	
	16	9.5	74	57	93	30.0	27	30.0	264	<b>DG101/16SOMD</b>	
	20	16.0	92	71	114	41.0	36	36.0	578	<b>DG101/20SOMD</b>	
	25	16.0	96	72	120	41.0	41	46.0	652	<b>DG101/25SOMD</b>	Pressure ratings see chart 1
	30	26.0	109	82	135	60.0	46	50.0	1321	<b>DG101/30SOMD</b>	
	38	26.0	114	82	143	60.0	55	60.0	1509	<b>DG101/38SOMD</b>	

<sup>1)</sup> Pressure shown = item deliverable

<sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

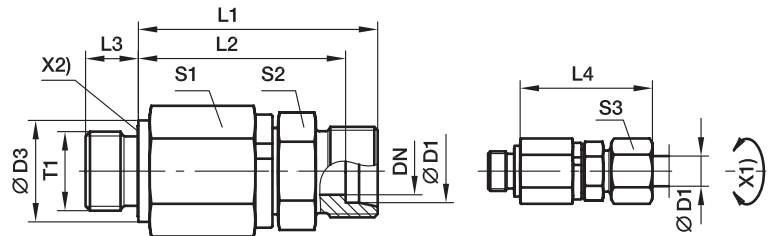
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	DG101/06SOMDCF	VIT

## DG 102-R Straight male stud ball bearing rotary union

Male BSPP thread – ED-seal (ISO 1179) / EO 24° cone end



X1) Axis  
X2) Eolastic-sealing

Series	D1	T1	DN	D3	L1	L2	L3	L4	S1	S2	S3	Weight g/1 piece	Order code*	CF <sup>1)</sup>
S <sup>4)</sup>	06	G 1/4 A	5.0	19	49	42.0	12	57.0	22	17	17	110	DG102/06SROMD	Pressure ratings see chart 1
	08	G 1/4 A	5.0	19	49	42.0	12	57.0	22	17	19	116	DG102/08SROMD	
	12	G 3/8 A	9.5	22	60	52.5	12	69.0	30	24	24	243	DG102/12SROMD	
	16	G 1/2 A	9.5	27	60	51.5	14	70.0	30	27	30	256	DG102/16SROMD	
	20	G 3/4 A	16.0	32	76	65.5	16	87.5	41	36	36	558	DG102/20SROMD	Pressure ratings see chart 1
	25	G 1 A	16.0	40	78	66.0	18	90.5	41	41	46	853	DG102/25SROMD	
	30	G 1 1/4 A	26.0	50	89	75.5	20	102.0	60	46	50	1312	DG102/30SROMD	
	38	G 1 1/2 A	26.0	55	92	76.0	22	107.0	60	55	60	1494	DG102/38SROMD	

<sup>1)</sup> Pressure shown = item deliverable

<sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.



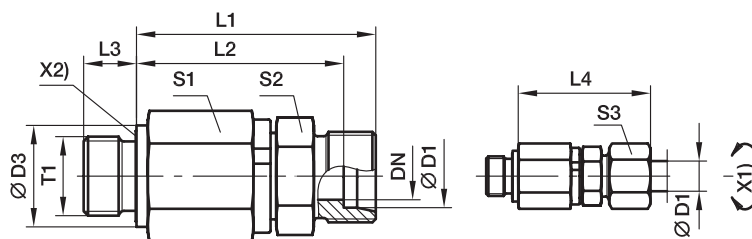
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	DG102/06SROMDCF	VIT/NBR



## DG 102-M Straight male stud ball bearing rotary union

Male metric thread – ED-seal (ISO 9974) / EO 24° cone end



X1) Axis  
X2) Eolastic-sealing

Series	D1	T1	DN	D3	L1	L2	L3	L4	S1	S2	S3	Weight g/1 piece	Order code*	CF <sup>1)</sup>
S <sup>4)</sup>	06	M 14×1.5	5.0	19	49	42.0	12	57.0	22	17	17	112	DG102/06SMOMD	Pressure ratings see chart 1
	08	M 14×1.5	5.0	19	49	42.0	12	57.0	22	17	19	113	DG102/08SMOMD	
	12	M 18×1.5	9.5	24	60	52.5	12	69.0	30	24	24	245	DG102/12SMOMD	
	16	M 22×1.5	9.5	27	60	51.5	14	70.0	30	27	30	259	DG102/16SMOMD	
	20	M 27×2.0	16.0	32	76	65.5	16	87.5	41	36	36	558	DG102/20SMOMD	
	25	M 33×2.0	16.0	40	78	66.0	18	90.5	41	41	46	637	DG102/25SMOMD	Pressure ratings see chart 1
30	M 42×2.0	26.0	50	89	75.5	20	102.0	60	46	50	1316	DG102/30SMOMD		
38	M 48×2.0	26.0	55	92	76.0	22	107.0	60	55	60	1491	DG102/38SMOMD		

<sup>1)</sup> Pressure shown = item deliverable

<sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

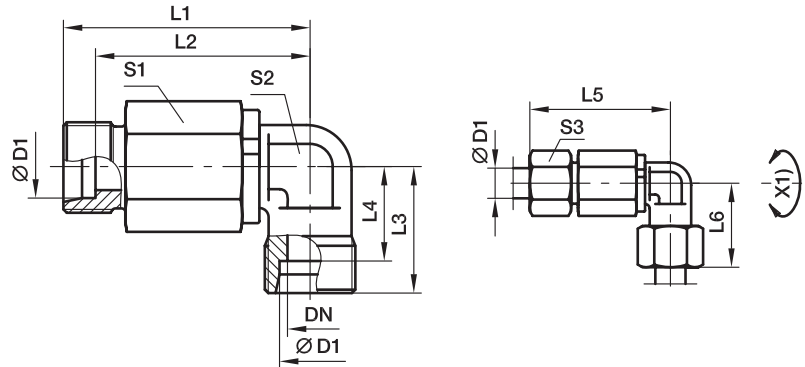
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	DG102/06SMOMDCF	VIT/NBR

## DG 103 Elbow ball bearing rotary union

EO 24° cone end / EO 24° cone end



X2) Axis

Series		DN	L1	L2	L3	L4	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	CF <sup>1)</sup>
S <sup>4)</sup>	06	5.0	51.5	59.0	23	16.0	44.5	16.0	22	17	17	134	DG103/06SOMD	Pressure ratings see chart 1
	08	5.0	51.5	59.0	24	17.0	44.5	17.0	22	17	19	141	DG103/08SOMD	
	12	9.5	63.0	72.0	29	21.5	55.5	21.5	30	22	24	296	DG103/12SOMD	
	16	9.5	63.0	73.0	33	24.5	54.5	24.5	30	22	30	298	DG103/16SOMD	
	20	16.0	83.0	94.5	37	26.5	72.5	26.5	41	36	36	772	DG103/20SOMD	
	25	16.0	83.0	95.5	42	30.0	71.0	30.0	41	36	46	803	DG103/25SOMD	
30	26.0	102.5	116.0	49	35.5	89.0	35.5	60	50	50	1722	DG103/30SOMD	Pressure ratings see chart 1	
38	26.0	102.5	117.0	57	41.0	86.5	41.0	60	50	60	1931	DG103/38SOMD		

<sup>1)</sup> Pressure shown = item deliverable

<sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

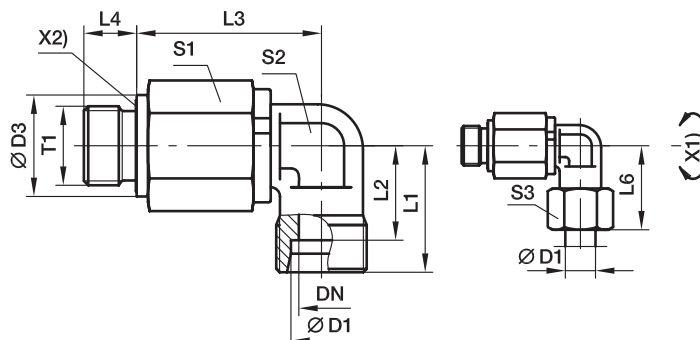
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	DG101/06SOMDCF	VIT

## DG 104-R Elbow male stud ball bearing rotary union

Male BSPP thread – ED-seal (ISO 1179) / EO 24° cone end



X1) Axis

X2) Elastomeric sealing

Series	D1	T1	DN	D3	L1	L2	L3	L4	L6	S1	S2	S3	Weight g/1 piece	Order code*	CF <sup>1)</sup>
S <sup>4)</sup>	06	G 1/4 A	05	19	23	16.0	39.5	12	31	22	17	17	131	<b>DG104/06SROMD</b>	Pressure ratings see chart 1
	08	G 1/4 A	05	19	24	17.0	39.5	12	32	22	17	19	135	<b>DG104/08SROMD</b>	
	12	G 3/8 A	10	22	29	21.5	51.0	12	38	30	22	24	284	<b>DG104/12SROMD</b>	
	16	G 1/2 A	10	27	33	24.5	49.0	14	43	30	22	30	284	<b>DG104/16SROMD</b>	
	20	G 3/4 A	16	32	37	26.5	67.0	16	48	41	36	36	752	<b>DG104/20SROMD</b>	Pressure ratings see chart 1
	25	G 1 A	16	40	42	30.0	65.0	18	54	41	36	46	789	<b>DG104/25SROMD</b>	
	30	G 1 1/4 A	26	50	49	35.5	82.5	20	62	60	50	50	1713	<b>DG104/30SROMD</b>	
	38	G 1 1/2 A	26	55	57	41.0	80.5	22	72	60	50	60	1915	<b>DG104/38SROMD</b>	

<sup>1)</sup> Pressure shown = item deliverable

<sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

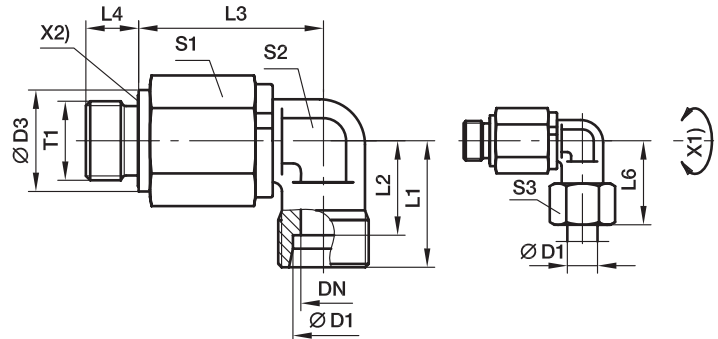
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	DG104/06SROMDCF	VIT/NBR

## DG 104-M Elbow male stud ball bearing rotary union

Male metric thread – ED-seal (ISO 9974) / EO 24° cone end



X1) Axis  
X2) Eolastic-sealing

Series	D1	T1	DN	D3	L1	L2	L3	L4	L6	S1	S2	S3	Weight g/1 piece	Order code*	CF <sup>1)</sup>
S <sup>4)</sup>	06	M 14×1.5	05	19	23	16.0	39.5	12	31	22	17	17	132	DG104/06SMOMD	Pressure ratings see chart 1
	08	M 14×1.5	05	19	24	17.0	39.5	12	32	22	17	19	136	DG104/08SMOMD	
	12	M 18×1.5	10	22	29	21.5	51.0	12	38	30	22	24	286	DG104/12SMOMD	
	16	M 22×1.5	10	27	33	24.5	49.0	14	43	30	22	30	287	DG104/16SMOMD	
	20	M 27×2.0	16	32	37	26.5	67.0	16	48	41	36	36	752	DG104/20SMOMD	
	25	M 33×2.0	16	40	42	30.0	65.0	18	54	41	36	46	788	DG104/25SMOMD	Pressure ratings see chart 1
	30	M 42×2.0	26	50	49	35.5	82.5	20	62	60	50	50	1717	DG104/30SMOMD	
	38	M 48×2.0	26	55	57	41.0	80.5	22	72	60	50	60	1913	DG104/38SMOMD	

<sup>1)</sup> Pressure shown = item deliverable

<sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

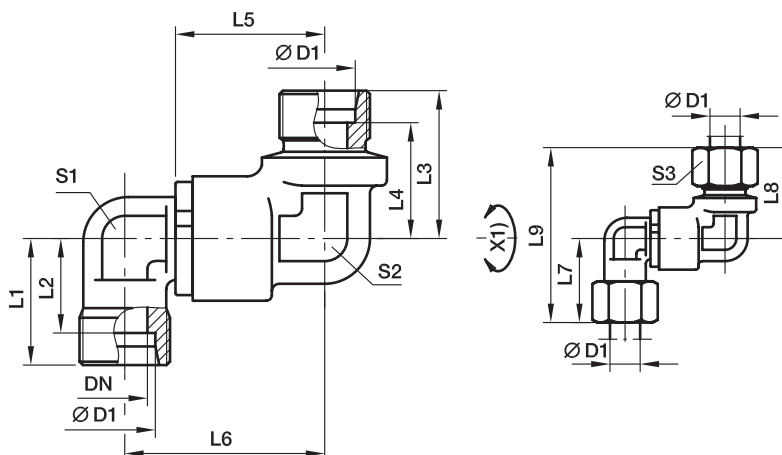
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	DG104/06SMOMDCF	VIT/NBR

## DG 105 Double elbow ball bearing rotary union

EO 24° cone end / EO 24° cone end



X1) Axis

Series	D1	DN	L1	L2	L3	L4	L5	L6	L7	L8	L9	S1	S2	S3	Weight g/1 piece	Order code*	CF <sup>1)</sup>
S <sup>4)</sup>	12	9.5	39.5	26.5	43	21.5	38	81	53.0	24	22	24	29	50.5	384	<b>DG105/12SOMD</b>	Pressure ratings see chart 1
	16	9.5	39.5	25.5	44	24.5	43	87	53.0	30	22	24	33	52.5	377	<b>DG105/16SOMD</b>	
	20	16.0	56.5	39.5	61	26.5	48	109	76.0	36	36	32	37	71.5	1015	<b>DG105/20SOMD</b>	
	25	16.0	56.5	38.0	62	30.0	54	116	76.0	46	36	32	42	74.0	1034	<b>DG105/25SOMD</b>	
	30	26.0	65.0	44.5	71	35.5	62	133	92.5	50	50	50	49	84.5	2344	<b>DG105/30SOMD</b>	
	38	26.0	65.0	42.0	73	41.0	72	145	92.5	60	50	50	57	89.0	2485	<b>DG105/38SOMD</b>	

<sup>1)</sup> Pressure shown = item deliverable

<sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

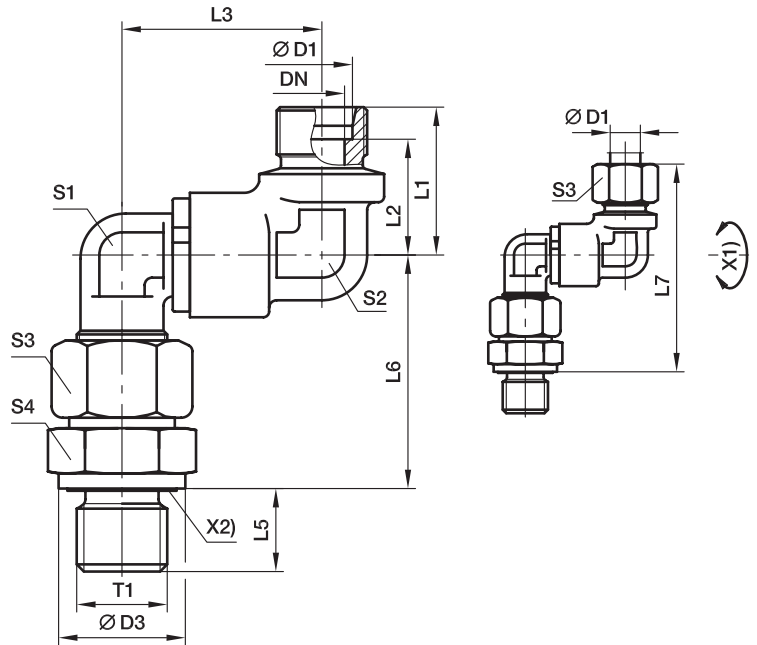
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	DG105/12SOMDCF	VIT

## DG 106-R Double elbow male stud ball bearing rotary union

Male BSPP thread – ED-seal (ISO 1179) / EO 24° cone end  
(Adjustable at male thread axis, consisting of DG105 + EGE)



X1) Axis  
X2) Eolastic-sealing

Series	D1	T1	DN	D3	L1	L2	L3	L5	L6	L7	S1	S2	S3	S4	Weight g/1 piece	Order code*	CF <sup>1)</sup>
S <sup>4)</sup>	12	G 3/8 A	9.5	24	34	26.5	53.0	12	55.5	99	24	22	24	22	484	DG106/12SROMD	Pressure ratings see chart 1
	16	G 1/2 A	9.5	27	34	25.5	53.0	14	61.5	105	24	24	30	27	547	DG106/16SROMD	
	20	G 3/4 A	16.0	32	50	39.5	76.0	16	69.5	131	36	32	36	32	1288	DG106/20SROMD	
	25	G 1 A	16.0	40	50	38.0	76.0	18	78.0	140	36	32	46	41	1528	DG106/25SROMD	
	30	G 1 1/4 A	26.0	50	58	44.5	92.5	20	86.5	158	50	50	50	50	3004	DG106/30SROMD	
	38	G 1 1/2 A	26.0	55	58	42.0	92.5	22	101.0	174	50	50	60	55	3419	DG106/38SROMD	

<sup>1)</sup> Pressure shown = item deliverable

<sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

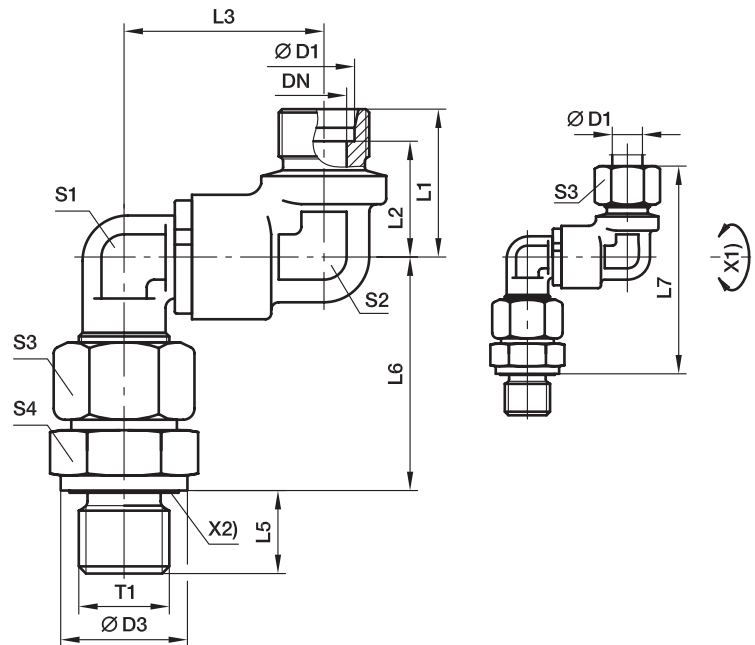


\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	DG106/06SROMDCF	VIT/NBR

## DG 106-M Double elbow male stud ball bearing rotary union

Male metric thread – ED-seal (ISO 9974) / EO 24° cone end  
 (Adjustable at male thread axis, consisting of DG105 + EGE)



X1) Axis  
 X2) Eolastic-sealing

Series	D1	T1	DN	D3	L1	L2	L3	L5	L6	L7	S1	S2	S3	S4	Weight g/1 piece	Order code*	CF <sup>1)</sup>
S <sup>4)</sup>	12	M 18×1.5	5.0	24	34	26.5	53.0	12	55.5	99	24	22	24	24	495	<b>DG106/12SMOMD</b>	Pressure ratings see chart 1
	16	M 22×1.5	9.5	27	34	25.5	53.0	14	61.5	105	24	24	30	27	551	<b>DG106/16SMOMD</b>	
	20	M 27×2.0	16.0	32	50	39.5	76.0	16	69.5	131	36	32	36	32	1289	<b>DG106/20SMOMD</b>	
	25	M 33×2.0	16.0	40	50	38.0	76.0	18	78.0	140	36	32	46	41	1532	<b>DG106/25SMOMD</b>	
	30	M 42×2.0	26.0	50	58	44.5	92.5	20	86.5	158	50	50	50	50	3007	<b>DG106/30SMOMD</b>	
	38	M 48×2.0	26.0	55	58	42.0	92.5	22	101.0	174	50	50	60	55	3441	<b>DG106/38SMOMD</b>	

<sup>1)</sup> Pressure shown = item deliverable

<sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

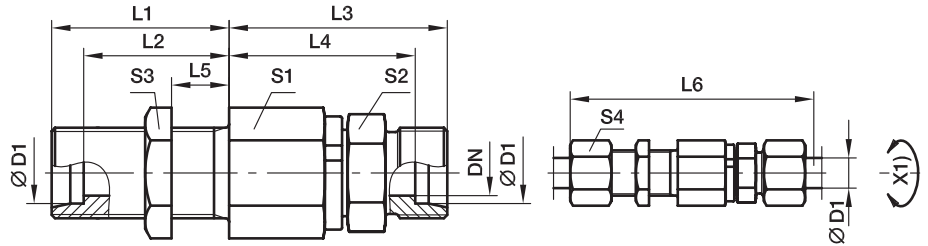
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	DG106/06SMOMDCF	VIT/NBR

## DG 107 Straight bulkhead ball bearing rotary union

EO 24° cone end / EO 24° cone end



X1) Axis

Series		DN	T1	L1	L2	L3	L4	L5	L6	S1	S2	S3	S4	Weight g/1 piece	Order code*	CF <sup>1)</sup>
S <sup>4)</sup>	06	5.0	M 14×1.5	23	16.0	49	42.0	5	87	22	17	19	17	134	DG107/06SOMD	Pressure ratings see chart 1
	08	5.0	M 16×1.5	23	16.0	49	42.0	5	87	22	17	22	19	143	DG107/08SOMD	
	12	9.5	M 20×1.5	23	15.5	60	52.5	5	100	30	24	27	24	291	DG107/12SOMD	
	16	9.5	M 24×1.5	26	17.5	60	51.5	5	105	30	27	32	30	328	DG107/16SOMD	
	20	16.0	M 30×2.0	39	28.5	76	65.5	15	137	41	36	41	36	710	DG107/20SOMD	
	25	16.0	M 36×2.0	42	30.0	78	66.0	15	144	41	41	46	46	847	DG107/25SOMD	Pressure ratings see chart 1
	30	26.0	M 42×2.0	44	30.5	89	75.5	15	159	60	46	50	50	1533	DG107/30SOMD	
	38	26.0	M 52×2.0	47	31.0	92	76.0	15	168	60	55	65	60	1930	DG107/38SOMD	

<sup>1)</sup> Pressure shown = item deliverable

<sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.



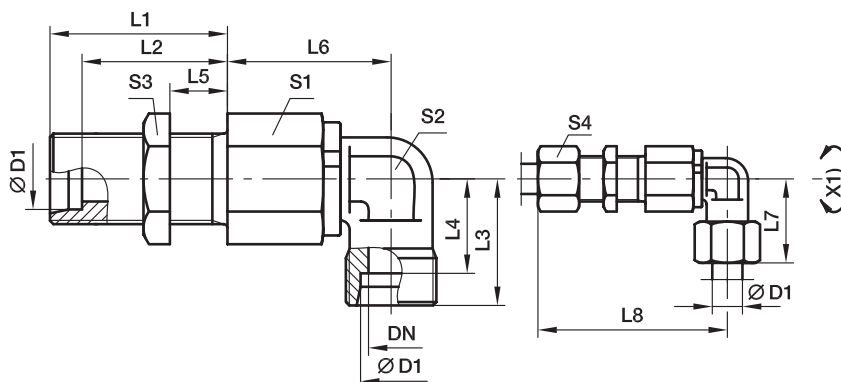
\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	DG107/06SOMDCF	VIT



## DG 108 Elbow bulkhead ball bearing rotary union

EO 24° cone end / EO 24° cone end



X1) Axis

Series	D1	DN	T1	L1	L2	L3	L4	L5	L6	L7	L8	S1	S2	S3	S4	Weight g/1 piece	Order code*	CF <sup>1)</sup>
S <sup>4)</sup>	06	5.0	M 14×1.5	23	16.0	23	16.0	5	39.5	31	70.0	22	17	19	17	154	<b>DG108/06SOMD</b>	Pressure ratings see chart 1
	08	5.0	M 16×1.5	23	16.0	23	17.0	5	39.5	32	70.0	22	17	22	19	166	<b>DG108/08SOMD</b>	
	12	9.5	M 20×1.5	23	15.5	29	21.5	5	51.0	38	83.0	30	22	27	24	333	<b>DG108/12SOMD</b>	
	16	9.5	M 24×1.5	26	17.5	33	24.5	5	49.0	43	85.0	30	22	32	30	354	<b>DG108/16SOMD</b>	
	20	16.0	M 30×2.0	39	28.5	37	26.5	15	67.0	48	117.5	41	36	41	36	904	<b>DG108/20SOMD</b>	
	25	16.0	M 36×2.0	42	30.0	42	30.0	15	65.0	54	119.5	41	36	46	46	999	<b>DG108/25SOMD</b>	
30	26.0	M 42×2.0	44	30.5	49	35.5	15	82.5	62	140.0	60	50	50	50	1935	<b>DG108/30SOMD</b>	Pressure ratings see chart 1	
38	26.0	M 52×2.0	47	31.0	57	41.0	15	80.5	72	142.0	60	50	65	60	2351	<b>DG108/38SOMD</b>		

<sup>1)</sup> Pressure shown = item deliverable

<sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

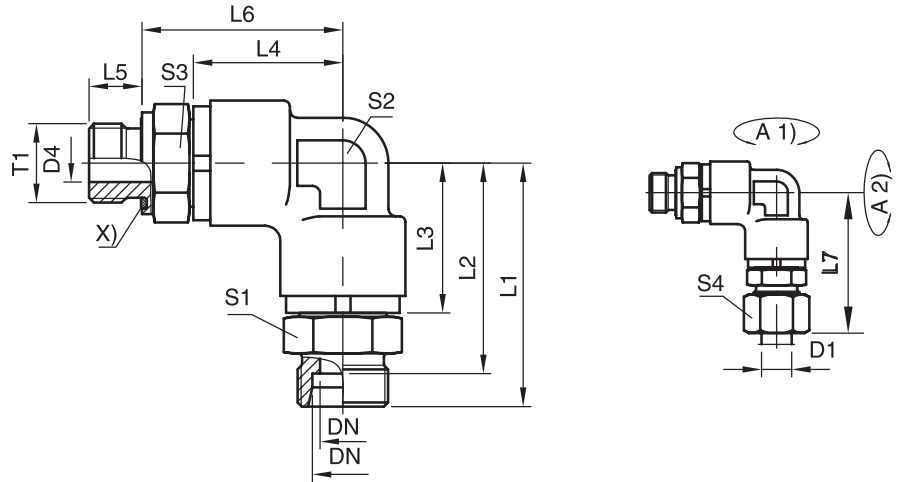
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	DG108/06SOMDCF	VIT

## DG 208-R Double elbow male stud ball bearing rotary union

Male BSPP thread – ED-seal (ISO 1179) / EO 24° cone end



Series	D1	T1	DN	L1	L2	L3	L4	L5	L6	L7	S1	S2	S3	S4	Order code*	CF <sup>1)</sup>
S <sup>4)</sup>	12	G 3/8 A	8	61.8	54.3	39.8	39.8	12	52.5	70.3	24	24	24	24	DG208/12SROMD	Pressure ratings see chart 1
	16	G 1/2 A	12	64.5	56.5	39.8	39.8	14	53.0	73.5	27	24	27	30	DG208/16SROMD	
	20	G 3/4 A	16	84.5	74.5	56.5	56.5	16	71.5	95.5	36	32	36	36	DG208/20SROMD	
	25	G 1 A	16	89.5	77.5	56.5	56.5	18	74.5	100.5	41	32	41	46	DG208/25SROMD	
	38	G 1 1/2 A	32	104.0	88.0	65.3	65.3	22	85.3	121.5	55	50	55	60	DG208/38SROMD	

<sup>1)</sup> Pressure shown = item deliverable

<sup>4)</sup> S = heavy series

$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

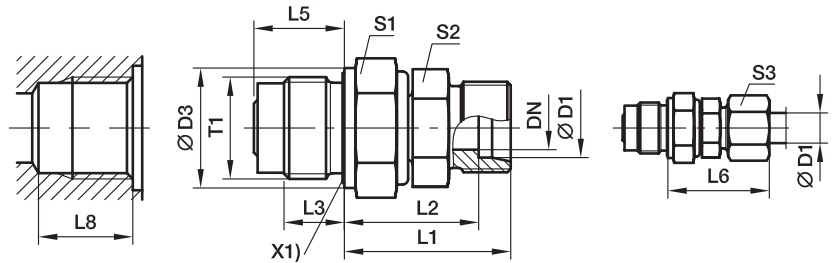


\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	DG208/12SOMDCF	VIT

## DVGE-R Straight male stud plain bearing rotary union

Male BSPP thread – ED-seal / EO 24° cone end



X1) Eolastic-sealing

L8 larger than DIN 3852  
chart page P22

Series	D1	T1	DN	D3	L1	L2	L3	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup> CF   VIT	
L <sup>3)</sup>	06	G 1/4 A	4.0	19	28.0	21.0	12	18.0	40	19	12	14	43	DVGE06LROMD	40	40
	08	G 1/4 A	5.0	19	28.0	21.0	12	18.0	40	19	14	17	44	DVGE08LROMD	40	40
	10	G 3/8 A	6.0	22	32.0	25.0	12	18.0	40	24	17	19	74	DVGE10LROMD	40	40
	12	G 1/2 A	8.0	27	34.0	27.0	14	21.0	42	27	19	22	116	DVGE12LROMD	40	40
	15	G 3/4 A	10.0	32	39.0	32.0	16	24.0	47	32	24	27	214	DVGE15LROMD	40	40
	18	G 1 A	16.0	40	42.5	35.0	18	27.5	51	41	27	32	337	DVGE18LROMD	40	40
	22	G 1 A	16.0	40	46.5	39.0	18	27.5	55	41	32	36	376	DVGE22LROMD	40	40
	28	G 1 1/4 A	22.0	50	48.0	40.5	20	31.0	57	50	41	41	586	DVGE28LROMD	40	40
	35	G 1 1/2 A	25.0	55	55.0	44.5	22	35.0	66	55	46	50	868	DVGE35LROMD	40	40
	S <sup>4)</sup>	06	G 1/4 A	4.0	19	30.0	23.0	12	18.0	38	19	14	17	50	DVGE06SROMD	100
08		G 1/4 A	5.0	19	31.0	24.0	12	18.0	39	19	17	19	55	DVGE08SROMD	100	100
10		G 3/8 A	6.0	22	34.0	26.5	12	18.0	43	24	19	22	85	DVGE10SROMD	100	100
12		G 1/2 A	8.0	27	36.0	28.5	14	21.0	45	27	22	24	134	DVGE12SROMD	100	100
14		G 3/4 A	10.0	32	41.0	33.0	16	24.0	51	32	24	27	220	DVGE14SROMD	100	100
16		G 3/4 A	10.0	32	42.0	33.5	16	24.0	52	32	27	30	230	DVGE16SROMD	100	100
20		G 1 A	16.0	40	48.5	38.0	18	27.5	60	41	32	36	385	DVGE20SROMD	100	100
25		G 1 A	16.0	40	52.5	40.5	18	27.5	65	41	41	46	483	DVGE25SROMD	100	100
30		G 1 1/4 A	22.0	50	55.0	41.5	20	31.0	68	50	46	50	691	DVGE30SROMD	100	100
38		G 1 1/2 A	25.0	55	63.0	47.0	22	35.0	78	55	55	60	1080	DVGE38SROMD	100	100

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

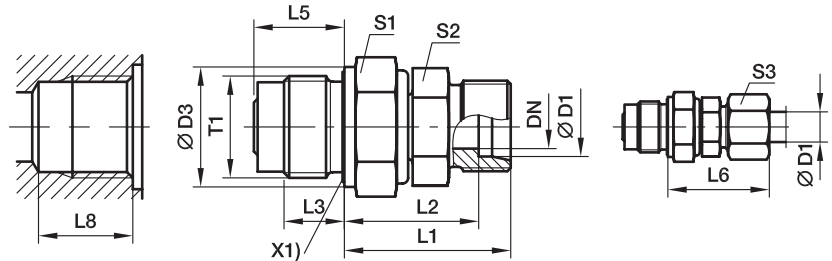
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	DVGE06LROMDCF	NBR
FKM	VITCF	DVGE06LROMDVITCF	

## DVGE-M Straight male stud plain bearing rotary union

Male metric thread – ED-seal / EO 24° cone end



X1) Eolastic-sealing

L8 larger than DIN 3852  
chart page P22

Series	D1	T1	DN	D3	L1	L2	L3	L5	L6	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup> CF VIT	
L <sup>3)</sup>	06	M 14×1.5	4.0	19	27.0	20.0	12	18.0	27	19	12	14	44	DVGE06LMOMD	40	40
	08	M 14×1.5	5.0	19	28.0	21.0	12	18.0	29	19	12	17	45	DVGE08LMOMD	40	40
	10	M 18×1.5	6.0	24	33.0	26.0	12	18.0	30	24	14	19	87	DVGE10LMOMD	40	40
	12	M 22×1.5	8.0	27	34.0	27.0	14	21.0	32	27	17	22	120	DVGE12LMOMD	40	40
	15	M 27×2.0	10.0	32	40.0	33.0	16	24.0	36	32	19	27	215	DVGE15LMOMD	40	40
	18	M 33×2.0	16.0	40	45.0	37.5	18	27.5	40	41	27	32	349	DVGE18LMOMD	40	40
	22	M 33×2.0	16.0	40	47.0	39.5	18	27.5	44	41	27	36	383	DVGE22LMOMD	40	40
	28	M 42×2.0	22.0	50	51.5	44.0	20	31.0	47	50	36	41	590	DVGE28LMOMD	40	40
	35	M 48×2.0	25.0	55	64.5	54.0	22	35.0	56	55	41	50	876	DVGE35LMOMD	40	40
	S <sup>4)</sup>	06	M 14×1.5	4.0	19	28.0	21.0	12	18.0	31	19	12	17	51	DVGE06SMOMD	100
08		M 14×1.5	5.0	19	29.0	22.0	12	18.0	32	19	14	19	56	DVGE08SMOMD	100	100
10		M 18×1.5	6.0	24	34.5	27.0	12	18.0	34	24	17	22	98	DVGE10SMOMD	100	100
12		M 22×1.5	8.0	27	35.5	28.0	14	21.0	38	27	17	24	139	DVGE12SMOMD	100	100
16		M 27×2.0	10.0	32	42.5	34.0	16	24.0	43	32	24	30	239	DVGE16SMOMD	100	100
20		M 33×2.0	16.0	40	50.0	39.5	18	27.5	48	41	27	36	385	DVGE20SMOMD	100	100
25		M 33×2.0	16.0	40	54.5	42.5	18	27.5	54	41	36	46	494	DVGE25SMOMD	100	100
30		M 42×2.0	22.0	50	61.5	48.0	20	31.0	62	50	41	50	695	DVGE30SMOMD	100	100
38		M 48×2.0	25.0	55	71.0	55.0	22	35.0	72	55	50	60	1088	DVGE38SMOMD	100	100

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

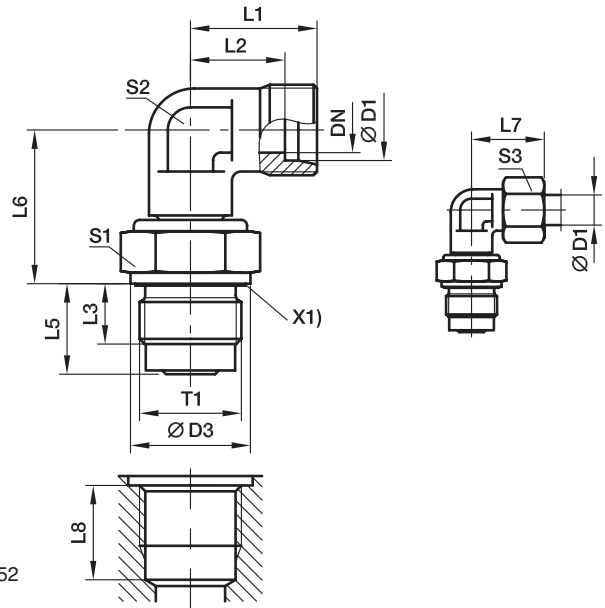
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	DVGE06LMOMDCF	NBR
FKM	VITCF	DVGE06LMOMDVITCF	

## DVWE-R Elbow male stud plain bearing rotary union

Male BSPP thread – ED-seal / EO 24° cone end



X1) Eolastic-sealing

L8 larger than DIN 3852 chart page P22

Series	D1	T1	DN	D3	L1	L2	L3	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																CF	VIT
L <sup>3)</sup>	06	G 1/4 A	4	19	19	12.0	12	18.0	20.0	27	19	12	14	50	DVWE06LROMD	40	40
	08	G 1/4 A	5	19	21	14.0	12	18.0	21.0	29	19	12	17	50	DVWE08LROMD	40	40
	10	G 3/8 A	6	22	22	15.0	12	18.0	26.0	30	24	14	19	83	DVWE10LROMD	40	40
	12	G 1/2 A	8	27	24	17.0	14	21.0	27.0	32	27	17	22	129	DVWE12LROMD	40	40
	15	G 3/4 A	10	32	28	21.0	16	24.0	33.0	36	32	19	27	232	DVWE15LROMD	40	40
	18	G 1 A	16	40	31	23.5	18	27.5	37.5	40	41	27	32	393	DVWE18LROMD	40	40
	22	G 1 A	16	40	35	27.5	18	27.5	39.5	44	41	27	36	406	DVWE22LROMD	40	40
	28	G 1 1/4 A	22	50	38	30.5	20	31.0	44.0	47	50	36	41	664	DVWE28LROMD	40	40
	35	G 1 1/2 A	25	55	45	34.5	22	35.0	54.0	56	55	41	50	1005	DVWE35LROMD	40	40
	S <sup>4)</sup>	06	G 1/4 A	4	19	23	16.0	12	18.0	21.0	31	19	12	17	58	DVWE06SROMD	100
08		G 1/4 A	5	19	24	17.0	12	18.0	22.0	32	19	14	19	65	DVWE08SROMD	100	100
10		G 3/8 A	6	22	25	17.5	12	18.0	27.0	34	24	17	22	103	DVWE10SROMD	100	100
12		G 1/2 A	8	27	29	21.5	14	21.0	28.0	38	27	17	24	152	DVWE12SROMD	100	100
14		G 3/4 A	10	32	30	22.0	16	24.0	33.0	40	32	19	27	236	DVWE14SROMD	100	100
16		G 3/4 A	10	32	33	24.5	16	24.0	34.0	43	32	24	30	276	DVWE16SROMD	100	100
20		G 1 A	16	40	37	26.5	18	27.5	39.5	48	41	27	36	415	DVWE20SROMD	100	100
25		G 1 A	16	40	42	30.0	18	27.5	42.5	54	41	36	46	569	DVWE25SROMD	100	100
30		G 1 1/4 A	22	50	49	35.5	20	31.0	48.0	62	50	41	50	886	DVWE30SROMD	100	100
38		G 1 1/2 A	25	55	57	41.0	22	35.0	55.0	72	55	50	60	1375	DVWE38SROMD	100	100

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

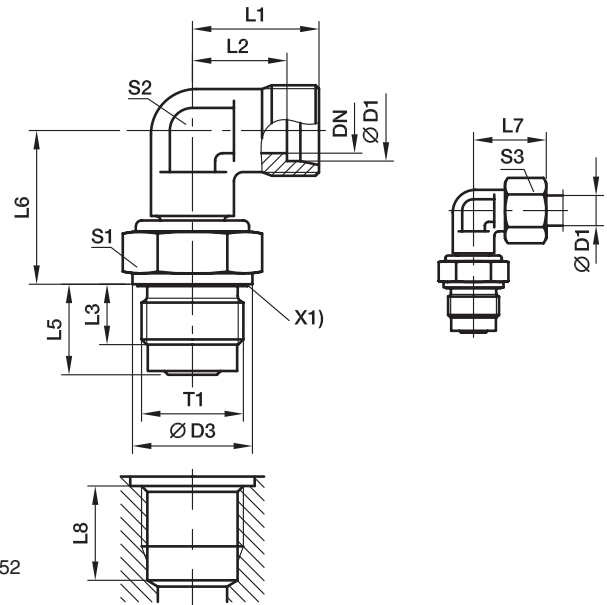
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	DVWE06LROMDCF	NBR
FKM	VITCF	DVWE06LROMDVITCF	

## DVWE-M Elbow male stud plain bearing rotary union

Male metric thread – ED-seal / EO 24° cone end



X1) Elastomeric-sealing

L8 larger than DIN 3852  
chart page P22

Series	D1 	T1	DN	D3	L1	L2	L3	L5	L6	L7	S1	S2	S3	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>	
																CF	VIT
L <sup>3)</sup>	06	M 14×1.5	4.0	19	19	12.0	12	18.0	20.0	27	19	12	14	51	DVWE06LMOMD	40	40
	08	M 14×1.5	5.0	19	21	14.0	12	18.0	21.0	29	19	12	17	51	DVWE08LMOMD	40	40
	10	M 18×1.5	6.0	24	22	15.0	12	18.0	26.0	30	24	14	19	92	DVWE10LMOMD	40	40
	12	M 22×1.5	8.0	27	24	17.0	14	21.0	27.0	32	27	17	22	160	DVWE12LMOMD	40	40
	15	M 27×2.0	10.0	32	28	21.0	16	24.0	33.0	36	32	19	27	236	DVWE15LMOMD	40	40
	18	M 33×2.0	16.0	40	31	23.5	18	27.5	37.5	40	41	27	32	405	DVWE18LMOMD	40	40
	22	M 33×2.0	16.0	40	35	27.5	18	27.5	39.5	44	41	27	36	409	DVWE22LMOMD	40	40
	28	M 42×2.0	22.0	50	38	30.5	20	31.0	44.0	47	50	36	41	660	DVWE28LMOMD	40	40
	35	M 48×2.0	25.0	55	45	34.5	22	35.0	54.0	56	55	41	50	1012	DVWE35LMOMD	40	40
	S <sup>4)</sup>	06	M 14×1.5	4.0	19	23	16.0	12	18.0	21.0	31	19	12	17	59	DVWE06SMOMD	100
08		M 14×1.5	5.0	19	24	17.0	12	18.0	22.0	32	19	14	19	66	DVWE08SMOMD	100	100
10		M 18×1.5	6.0	24	25	17.5	12	18.0	27.0	34	24	17	22	113	DVWE10SMOMD	100	100
12		M 22×1.5	8.0	27	29	21.5	14	21.0	28.0	38	27	17	24	153	DVWE12SMOMD	100	100
16		M 27×2.0	10.0	32	33	24.5	16	24.0	34.0	43	32	24	30	284	DVWE16SMOMD	100	100
20		M 33×2.0	16.0	40	37	26.5	18	27.5	39.5	48	41	27	36	427	DVWE20SMOMD	100	100
25		M 33×2.0	16.0	40	42	30.0	18	27.5	42.5	54	41	36	46	581	DVWE25SMOMD	100	100
30		M 42×2.0	22.0	50	49	35.5	20	31.0	48.0	62	50	41	50	898	DVWE30SMOMD	100	100
38		M 48×2.0	25.0	55	57	41.0	22	35.0	55.0	72	55	50	60	1373	DVWE38SMOMD	100	100

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{\text{PN (bar)}}{10} = \text{PN (MPa)}$$

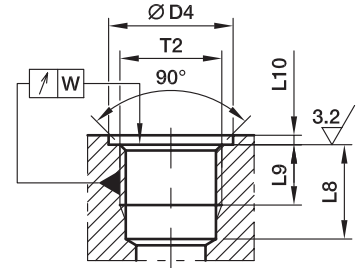
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	DVWE06LMOMDCF	NBR
FKM	VITCF	DVWE06LMOMDVITCF	

Port tapping for plain bearing rotary fittings DVGE and DVWE

**Port tapping form X**  
according to DIN 3852, part 1 and part 2  
(for parallel male studs)



Thread d1	d4 small +0.4	a <sub>1</sub> max	L9 min	L8 min	W
M 14×1.5	20	1.5	12	19.0	0.1
M 18×1.5	25 <sup>2)</sup>	2.0	12	19.0	0.1
M 22×1.5	28	2.5	14	22.0	0.1
M 27×2.0	33	2.5	16	25.0	0.2
M 33×2.0	41 <sup>2)</sup>	2.5	18	28.5	0.2
M 42×2.0	51 <sup>2)</sup>	2.5	20	32.0	0.2
M 48×2.0	56	2.5	22	36.0	0.2
G 1/4 A	20 <sup>2)</sup>	1.5	12	19.0	0.1
G 3/8 A	23	2.0	12	19.0	0.1
G 1/2 A	28 <sup>2)</sup>	2.5	14	22.0	0.1
G 3/4 A	33	2.5	16	25.0	0.2
G 1 A	41 <sup>2)</sup>	2.5	18	28.5	0.2
G 1 1/4 A	51 <sup>2)</sup>	2.5	20	32.0	0.2
G 1 1/2 A	56	2.5	22	36.0	0.2

<sup>1)</sup> Not in DIN 3852

<sup>2)</sup> Different from DIN 3852



***SensoControl®  
Test Points  
Diagnostic-  
Test equipment  
Industrial Products***

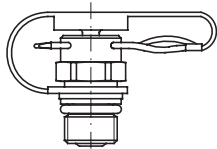




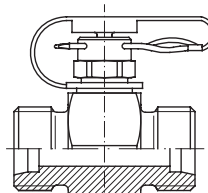
## Visual index

### Series 1

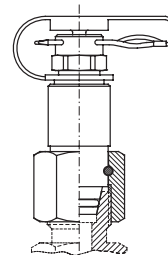
Test point fitting with pin-lock



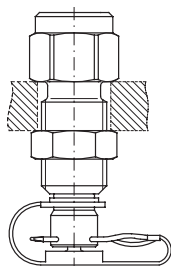
**EMA1**  
p. Q4



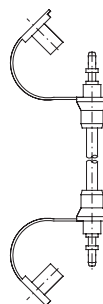
**GMA1**  
p. Q5



**VKA1**  
p. Q6



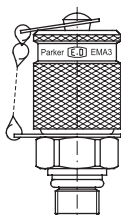
**MAV ... MA1**  
p. Q7



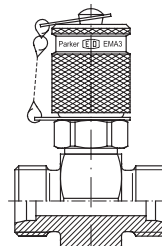
**SMA1**  
p. Q7

### Series 3

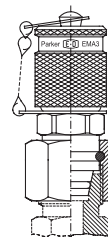
Test point with threaded connection  
M 16x2



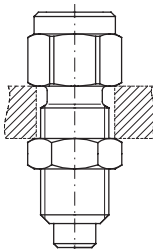
**EMA3**  
p. Q8



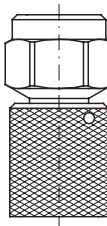
**GMA3**  
p. Q9



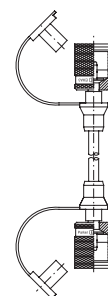
**VKA3**  
p. Q10



**MAV ... MA3**  
p. Q11



**MAVMD ... MA3**  
p. Q11



**SMA3**  
p. Q11

### SensoControl®

Product range

Diagnostic/Industrial



p. Q12

## EMA1/EMA3-Test Point fitting

- For pressure monitoring and checking on high, low and negative pressure systems.
- For bleeding cylinders and hydraulic systems.
- For taking samples on high, low and negative pressure systems.

### Advantages:

- Leakfree connection before valve is open
- Sturdy, safe constructions for small dimensions
- Easy handling
- Simple connection of measuring, control and switching devices
- Coupling under pressure up to 400 bar is possible with screw couplings
- Nominal pressures up to 630 bar
- Self locking metal guard cap, vibration resistant

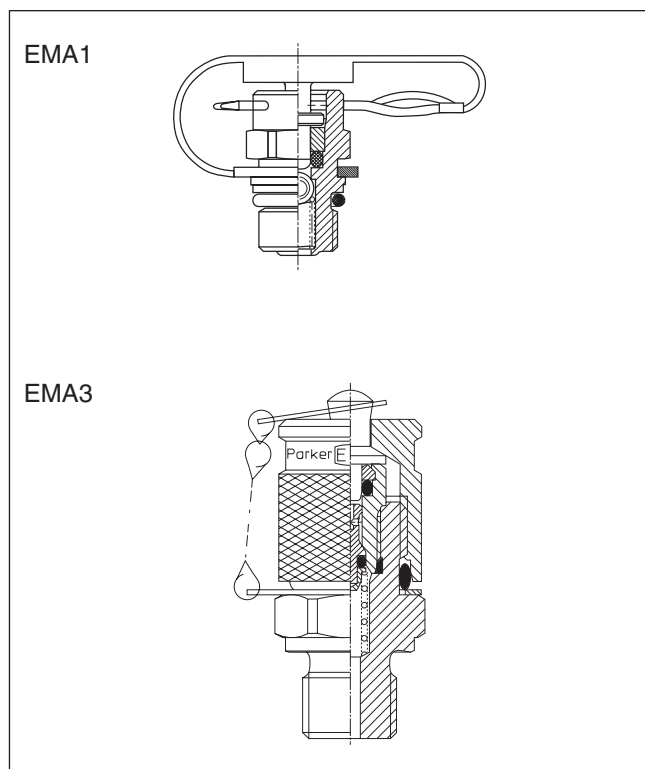
### Sealing system of the primary seal:

EMA1 by ball non-return valve.

EMA3 by cone seal with O-ring.

The new EMA3 sealing system guarantees minimum leakage rates.

The screw-on Cap (EMA3), and pin lock (EMA1) types both employ an O-ring seal as secondary sealing with the hose attached.



### Differences between EMA1 and EMA3 types

- sealing system (see previous section)
- Test hose connection by plug-in coupling in EMA1  
Test hose connection by threaded connection in EMA3
- Working pressures (see section advantages)

### Working pressure

- EMA3 types up to 630 bar
- EMA1 types up to 400 bar
- Max. working pressure 630 bar for GMA, VKA and EMA... the recommended working pressure of fitting manufacturer has to be applied
- Joining under pressure up to 400 bar max.
- The allowable nominal pressures of each Test-Point are shown on the product pages.

### Materials and Temperatures:

- Steel, zinc plated, Cr(VI)-free
- Stainless Steel, material 1.4571
- Seals:
- FKM (Temperature range -20 to +200°C)
- EPDM Ethylene Propylene (for Break Fluid) (Temperature range -40 to +150°C)
- Hose:
- Polyamide (Temperature range: -35°C ... 100°C max.)
- Stainless Steel FKM only

### Media:

- Suitable for hydraulic oils and other mineral oil based fluids (Please pay attention to the sealing materials used!)
- For use in conjunction with other liquid media please consult Parker

### Approvals

DVGW for EMA3/8X1OR, EMA3/10X1OR, EMA31/8NPT, EMA31/4NPT

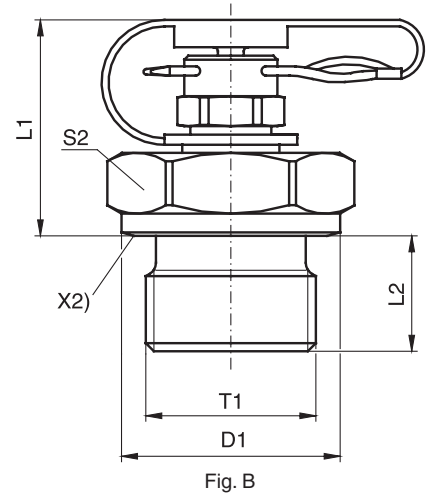
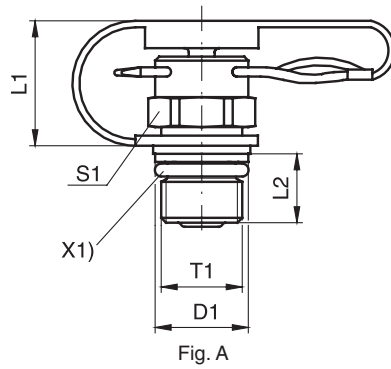
Perbunan = registered trademark of Bayer



**EMA1 Test point fitting with pin-lock**

**Series 1**

Male stud thread: BSP, metric



X1) O-ring  
X2) Cutting face

T1	D1	L1	L2	S1	S2	Fig.	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup> CF	DF**
M 12x1.5	17.0	32.0	12.0		19	B	53	<b>EMA1/12X1.5</b>	400	4
M 14x1.5	19.0	32.0	12.0		19	B	56	<b>EMA1/14X1.5</b>	400	4
M 16x1.5	21.0	25.0	12.0		22	B	47	<b>EMA1/16X1.5</b>	400	4
G 1/8	14.0	32.5	8.0		17	B	41	<b>EMA1/1/8</b>	400	4
G 1/4	18.0	32.0	12.0		19	B	54	<b>EMA1/1/4</b>	400	4
G 3/8	22.0	27.5	12.0		22	B	55	<b>EMA1/3/8</b>	400	4
G 1/2	26.0	27.5	14.0		27	B	78	<b>EMA1/1/2</b>	400	4
M 08x1.0	9.5	17.5	8.4	12		A	16	<b>EMA1/8X1OR</b>	400	4
M 10x1.0	11.5	18.0	8.0	12		A	18	<b>EMA1/10X1OR</b>	400	4
M 10x1.0	14.0	32.5	8.0		17	B	42	<b>EMA1/10X1</b>	400	4

\*\*DF = Design Factor

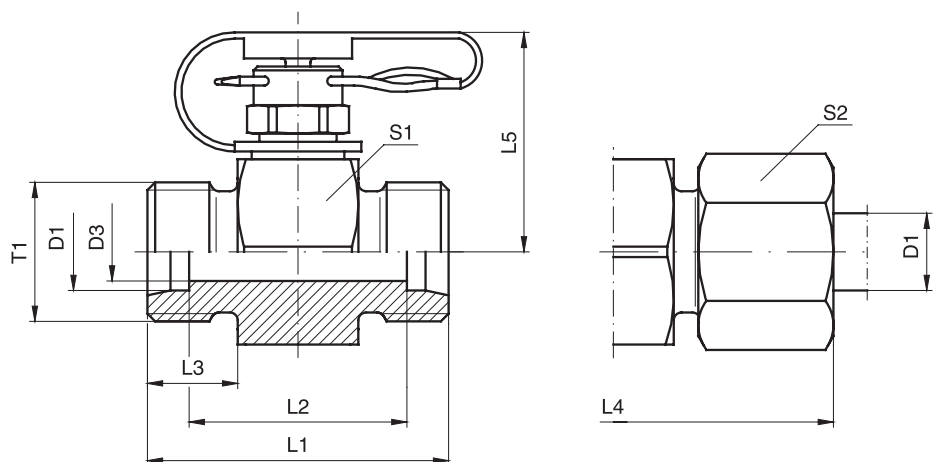
<sup>1)</sup>Pressure shown = item deliverable

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	EMA1/12X1.5CF	NBR

**GMA1 Straight test point fitting with pin-lock** **Series 1**



Series	D1	T1	D3	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup> CF	DF <sup>**</sup>
L <sup>3)</sup>	06	M 12x1.5	4	35	21	10	51	29.0	24	14	73	<b>GMA1/06LOMD</b>	315	4
	08	M 14x1.5	6	35	21	10	51	29.0	24	17	75	<b>GMA1/08LOMD</b>	315	4
	10	M 16x1.5	7	37	23	11	53	29.0	24	19	80	<b>GMA1/10LOMD</b>	315	4
	12	M 18x1.5	8	37	23	11	53	30.5	24	22	96	<b>GMA1/12LOMD</b>	315	4
	15	M 22x1.5	11	39	25	12	55	32.0	30	27	121	<b>GMA1/15LOMD</b>	315	4
	18	M 26x1.5	14	39	24	12	57	33.0	32	32	139	<b>GMA1/18LOMD</b>	315	4
	22	M 30x2.0	18	43	28	14	61	35.0	36	36	171	<b>GMA1/22LOMD</b>	160	4
S <sup>4)</sup>	06	M 14x1.5	4	39	25	12	55	29.0	24	17	82	<b>GMA1/06SOMD</b>	400	4
	08	M 16x1.5	5	39	25	12	55	29.0	24	19	88	<b>GMA1/08SOMD</b>	400	4
	10	M 18x1.5	7	39	24	12	57	29.0	24	22	90	<b>GMA1/10SOMD</b>	400	4
	12	M 20x1.5	7	39	24	12	57	29.0	24	24	96	<b>GMA1/12SOMD</b>	400	4
	14	M 22x1.5	10	43	27	14	63	30.5	27	27	121	<b>GMA1/14SOMD</b>	400	4
	16	M 24x1.5	11	43	26	14	63	32.0	30	30	138	<b>GMA1/16SOMD</b>	400	4
	20	M 30x2.0	15	47	26	16	69	35.0	36	36	222	<b>GMA1/20SOMD</b>	400	4

\*\*DF = Design Factor

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

\*Please add the **suffixes** below according to the material/surface required.

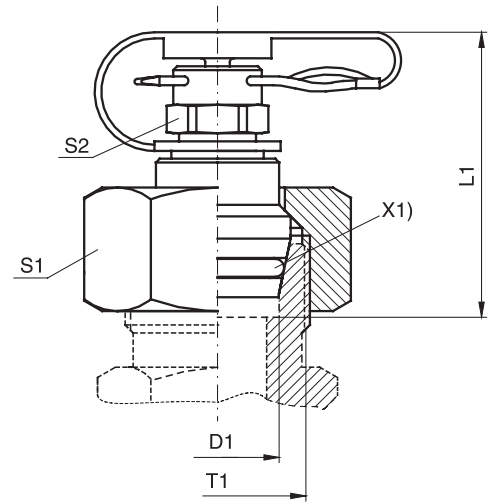
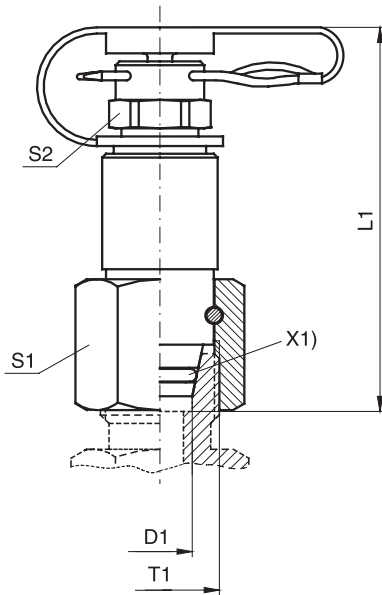
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	GMA1/06LOMDCF	NBR



**VKA1 Test point fitting with pin lock for cones**

**Series 1**

With 24° cone swivel nut connection



X1) O-ring

Series	D1	T1	L1	S1	S2	Fig.	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup> CF	DF <sup>2)</sup>
L <sup>3)</sup>	06	M 12x1.5	48	14	12	A	44	<b>VKA1/06L</b>	315	4
	08	M 14x1.5	49	17	12	A	54	<b>VKA1/08L</b>	315	4
	10	M 16x1.5	50	19	12	A	68	<b>VKA1/10L</b>	315	4
	12	M 18x1.5	51	22	12	A	81	<b>VKA1/12L</b>	315	4
	15	M 22x1.5	39	27	12	B	82	<b>VKA1/15L</b>	315	4
	18	M 26x1.5	38	32	12	B	112	<b>VKA1/18L</b>	315	4
S <sup>4)</sup>	06	M 14x1.5	48	17	12	A	51	<b>VKA1/06S</b>	400	4
	08	M 16x1.5	50	19	12	A	62	<b>VKA1/08S</b>	400	4
	10	M 18x1.5	50	22	12	A	78	<b>VKA1/10S</b>	400	4
	12	M 20x1.5	51	24	12	A	100	<b>VKA1/12S</b>	400	4
	14	M 22x1.5	39	27	12	B	88	<b>VKA1/14S</b>	400	4
	16	M 24x1.5	37	30	12	B	105	<b>VKA1/16S</b>	400	4
	20	M 30x2.0	44	36	12	B	174	<b>VKA1/20S</b>	400	4

\*\*DF = Design Factor

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

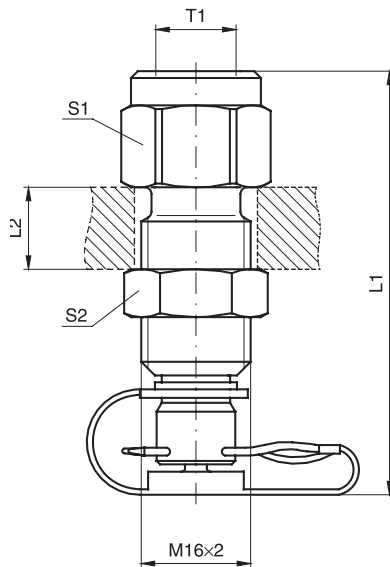
$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

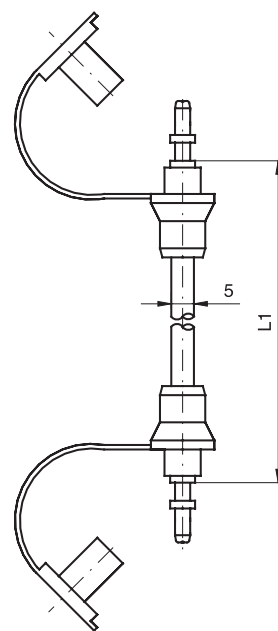
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	VKA1/06LCF	NBR

**MAV-MA1 SMA1 Test Point pressure gauge connector with pin-lock**  
**Test Point high pressure hose with pin-lock** **Series 1**

Female thread: BSP  
 Sealing: sealing ring DIN 16258



Pressure gauge connector: MAV-MA1



Test hose: SMA1

T1	L1	L2 max.	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup> CF	DF**
G 1/4	61.5	12	19	19	78	<b>MAV1/4MA1</b>	400	4.0
G 1/2	72.0	12	27	19	135	<b>MAV1/2MA1</b>	400	4.0
	400.0				21	<b>SMA1-400</b>	400	2.5
	630.0				26	<b>SMA1-630</b>	400	2.5
	800.0				26	<b>SMA1-800</b>	400	2.5
	1000.0				31	<b>SMA1-1000</b>	400	2.5
	1500.0				40	<b>SMA1-1500</b>	400	2.5
	2000.0				49	<b>SMA1-2000</b>	400	2.5
	2500.0				58	<b>SMA1-2500</b>	400	2.5
	3200.0				70	<b>SMA1-3200</b>	400	2.5
	4000.0				84	<b>SMA1-4000</b>	400	2.5

\*\*DF = Design Factor

<sup>1)</sup> Pressure shown = item deliverable

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	MAV1/4MA1CF	NBR

**Note hoses with small diameter:**

- Min. bending radius r = 20 mm
- Working temperature -20 °C up to 100 °C (short time to +120 °C)
- Hoses are to be protected from fire, from sharp-corners and hot objects.

For measuring with liquid pressure media please note:  
 Bleed before connecting tube! By capillary action discharge of the pressure medium is prevented widely.

Temperature factor of pressure rating:

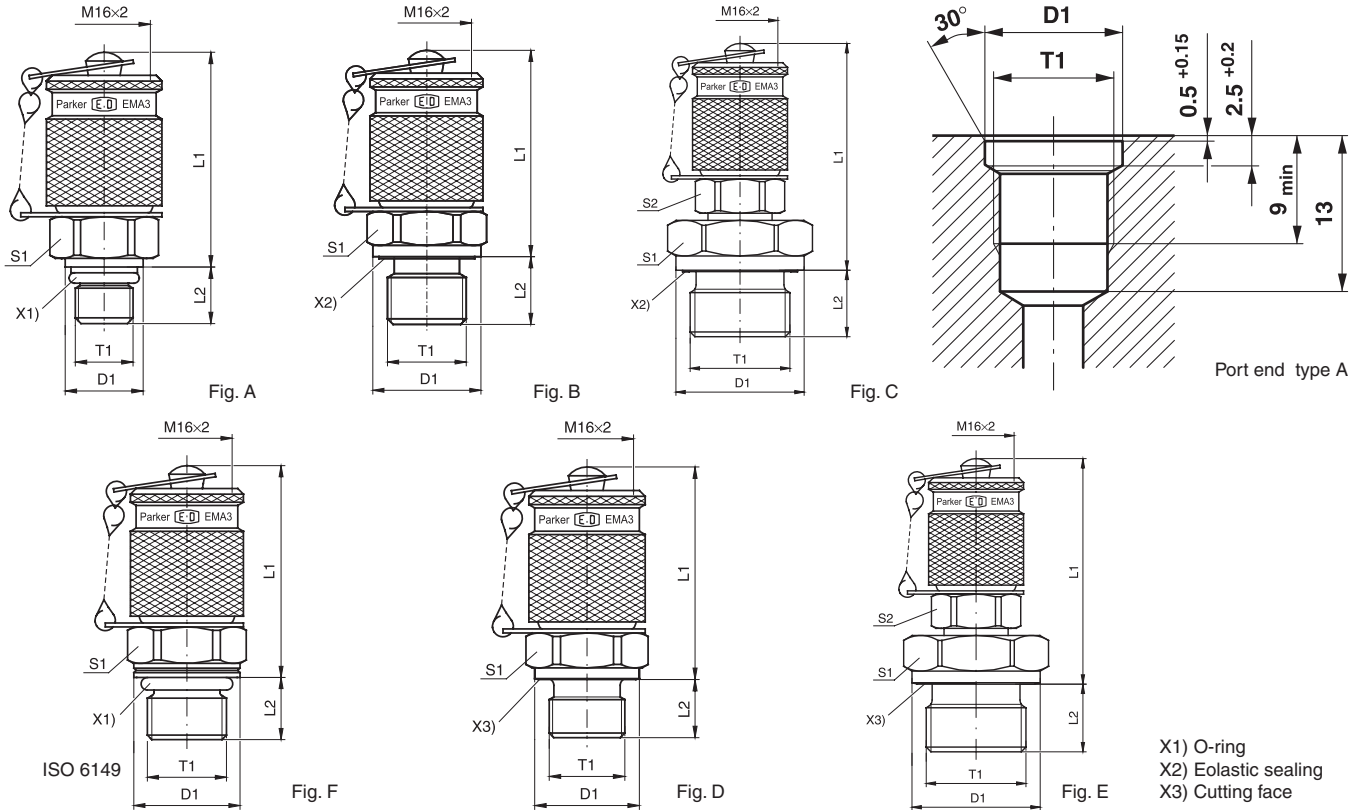
up to 0 °C	122 %
for 30 °C	110 %
for 50 °C	100 %
for 80 °C	86 %
for 100 °C	77 %



EMA3 Test Point with threaded connection M 16×2

Series 3

Male thread: BSP, metric



T1	D1	L1	L2	S1	S2	Fig.	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		DF**	
									CF	71	CF	71
M 08×1.0	9.5	38.5	7.5	17		A	66	EMA3/8X1OR	250		4.0	
M 10×1.0	11.5	37.0	7.5	17		A	70	EMA3/10X1OR	630	630	4.0	4
M 14×1.5	18.8	39.5	11.0	19		F	79	EMA3/14X1.5ISO	630	630	4.0	4
M 10×1.0	14.0	40.0	8.0	17		D	67	EMA3/10X1	400		4.0	
M 12×1.5	17.0	38.0	12.0	17		D	74	EMA3/12X1.5	400		4.0	
M 14×1.5	19.0	39.0	12.0	19		D	78	EMA3/14X1.5	400		4.0	
M 16×1.5	21.0	40.0	12.0	22		D	90	EMA3/16X1.5	400		4.0	
G 1/8	14.0	37.5	8.0	17		D	70	EMA3/1/8	400		4.0	
G 1/4	18.0	39.0	12.0	19		D	77	EMA3/1/4	400		4.0	
G 3/8	22.0	40.5	12.0	22		D	91	EMA3/3/8	400		4.0	
G 1/2	26.0	46.0	14.0	27	17	E	137	EMA3/1/2	400		3.4	
G 1/8	14.0	37.5	8.0	17		B	72	EMA3/1/8ED	400	400	4.0	4
G 1/4	19.0	39.0	12.0	19		B	76	EMA3/1/4ED	630	630	4.0	4
G 3/8	22.0	40.5	12.0	22		B	93	EMA3/3/8ED	630	630	4.0	4
M 10×1.0	14.0	40.0	8.0	17		B	71	EMA3/10X1ED	400	400	4.0	4
M 12×1.5	17.0	38.0	12.0	17		B	72	EMA3/12X1.5ED	630	630	4.0	4
M 14×1.5	19.0	39.0	12.0	19		B	77	EMA3/14X1.5ED	400	400	4.0	4
G 1/2	27.0	46.0	14.0	27	17	C	135	EMA3/1/2ED	400	400	4.0	4

\*\*DF = Design Factor

<sup>1)</sup> Pressure shown = item deliverable

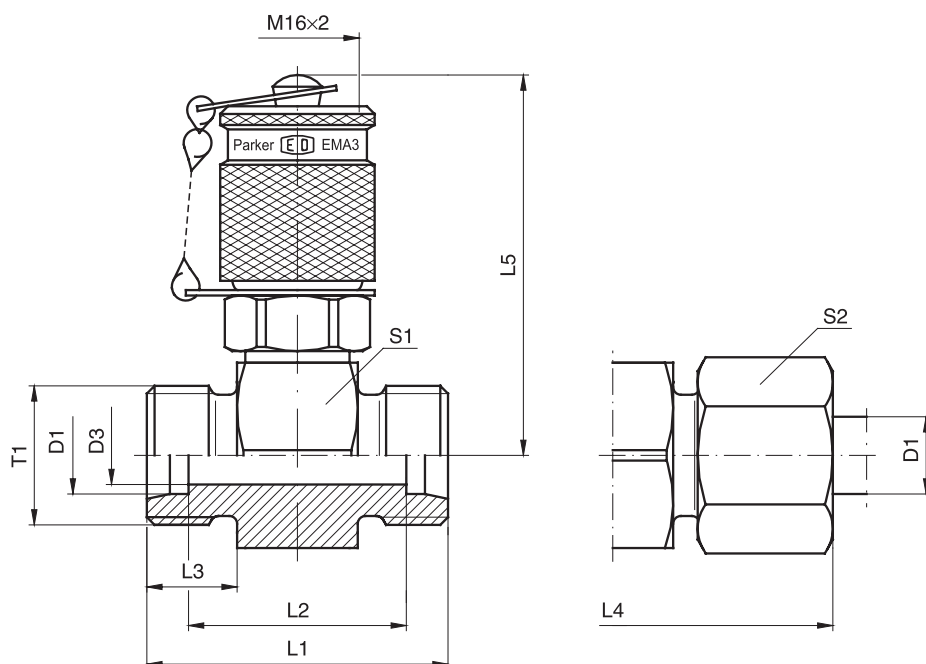
$$\frac{PN(\text{bar})}{10} = PN(\text{MPa})$$

\*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	EMA3/10X10ORCF	NBR
Stainless Steel	71	EMA3/10X10OR71	VIT

**GMA3 Straight Test Point with threaded connection M 16×2**

**Series 3**



Series	D1	T1	D3	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		DF**	
													CF	71	CF	71
L <sup>3)</sup>	06	M 12×1.5	4	35	21	10	51	49.0	24	14	126	<b>GMA3/06LOMD</b>	315	315	4	4
	08	M 14×1.5	6	35	21	10	51	49.0	24	17	128	<b>GMA3/08LOMD</b>	315	315	4	4
	10	M 16×1.5	7	37	23	11	53	49.0	24	19	132	<b>GMA3/10LOMD</b>	315	315	4	4
	12	M 18×1.5	8	37	23	11	53	50.5	27	22	145	<b>GMA3/12LOMD</b>	315	315	4	4
	15	M 22×1.5	11	39	25	12	55	52.0	30	27	174	<b>GMA3/15LOMD</b>	315	315	4	4
	18	M 26×1.5	14	39	24	12	57	53.0	32	32	192	<b>GMA3/18LOMD</b>	315	315	4	4
	22	M 30×2.0	18	43	28	14	61	55.0	36	36	220	<b>GMA3/22LOMD</b>	160	160	4	4
	28	M 36×2.0	23	43	28	14	61	57.5	41	41	259	<b>GMA3/28LOMD</b>	160	160	4	4
	35	M 45×2.0	30	47	26	16	69	60.0	46	50	363	<b>GMA3/35LOMD</b>	160	160	4	4
	42	M 52×2.0	36	47	25	16	71	64.5	55	60	419	<b>GMA3/42LOMD</b>	160	160	4	4
S <sup>4)</sup>	06	M 14×1.5	4	39	25	12	55	49.0	24	17	137	<b>GMA3/06SOMD</b>	630	630	4	4
	08	M 16×1.5	5	39	25	12	55	49.0	24	19	141	<b>GMA3/08SOMD</b>	630	630	4	4
	10	M 18×1.5	7	39	24	12	57	49.0	24	22	141	<b>GMA3/10SOMD</b>	630	630	4	4
	12	M 20×1.5	7	39	24	12	57	49.0	24	24	150	<b>GMA3/12SOMD</b>	630	630	4	4
	14	M 22×1.5	10	43	27	14	63	50.5	27	27	172	<b>GMA3/14SOMD</b>	630	630	4	4
	16	M 24×1.5	11	43	26	14	63	52.0	30	30	195	<b>GMA3/16SOMD</b>	400	400	4	4
	20	M 30×2.0	15	47	26	16	69	55.0	36	36	254	<b>GMA3/20SOMD</b>	400	400	4	4
	25	M 36×2.0	20	51	27	18	75	57.5	41	46	329	<b>GMA3/25SOMD</b>	400	400	4	4
	30	M 42×2.0	25	55	28	20	81	60.0	46	50	412	<b>GMA3/30SOMD</b>	400	400	4	4
	38	M 52×2.0	32	61	29	22	91	64.5	55	60	616	<b>GMA3/38SOMD</b>	315	315	4	4

\*\*DF = Design Factor

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

$$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$$

Delivery without nut and ring.

Information on ordering complete fittings or alternative sealing materials see page 17.

\*Please add the suffixes below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	GMA3/06LOMDCF	NBR
Stainless Steel	71	GMA3/06LOMD71	VIT



VKA3 Test Point for cones with threaded connection M 16×2

Series 3

With 24° cone swivel nut connection

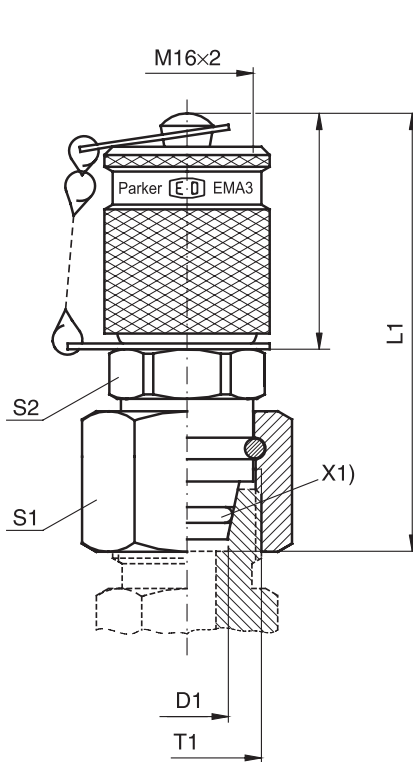


Fig. A

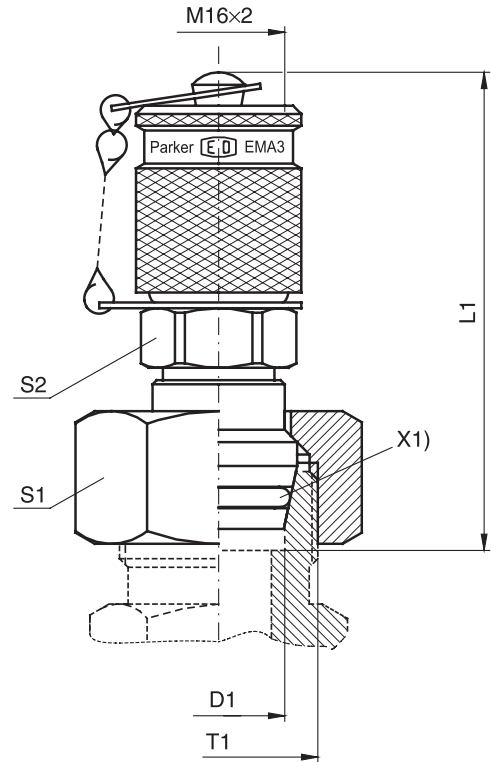


Fig. B

X1) O-ring

Series	D1	T1	L1	S1	S2	Fig.	Weight g/1 piece	Order code*	PN (bar) <sup>1)</sup>		DF**	
									CF	71	CF	71
L <sup>3)</sup>	06	M 12×1.5	55	14	17	A	82	VKA3/06L	315	315	4	4
	08	M 14×1.5	51	17	17	A	82	VKA3/08L	315	315	4	4
	10	M 16×1.5	53	19	17	A	93	VKA3/10L	315	315	4	4
	12	M 18×1.5	53	22	17	A	107	VKA3/12L	315	315	4	4
	15	M 22×1.5	59	27	17	B	133	VKA3/15L	315	315	4	4
	18	M 26×1.5	59	32	17	B	163	VKA3/18L	315	315	4	4
	22	M 30×2.0	60	36	17	B	205	VKA3/22L	160	160	4	4
	28	M 36×2.0	64	41	17	B	269	VKA3/28L	160	160	4	4
	35	M 45×2.0	71	50	17	B	411	VKA3/35L	160	160	4	4
	42	M 52×2.0	72	60	17	B	592	VKA3/42L	160	160	4	4
S <sup>4)</sup>	06	M 14×1.5	50	17	17	A	81	VKA3/06S	630	630	4	4
	08	M 16×1.5	52	19	17	A	88	VKA3/08S	630	630	4	4
	10	M 18×1.5	53	22	17	A	99	VKA3/10S	630	630	4	4
	12	M 20×1.5	54	24	19	A	121	VKA3/12S	630	630	4	4
	14	M 22×1.5	59	27	17	B	136	VKA3/14S	630	630	4	4
	16	M 24×1.5	58	30	17	B	156	VKA3/16S	400	400	4	4
	20	M 30×2.0	65	36	17	B	223	VKA3/20S	400	400	4	4
	25	M 36×2.0	68	46	17	B	367	VKA3/25S	400	400	4	4
	30	M 42×2.0	74	50	17	B	444	VKA3/30S	400	400	4	4
	38	M 52×2.0	81	60	17	B	655	VKA3/38S	315	315	4	4

\*\*DF = Design Factor

<sup>1)</sup> Pressure shown = item deliverable

<sup>3)</sup> L = light series; <sup>4)</sup> S = heavy series

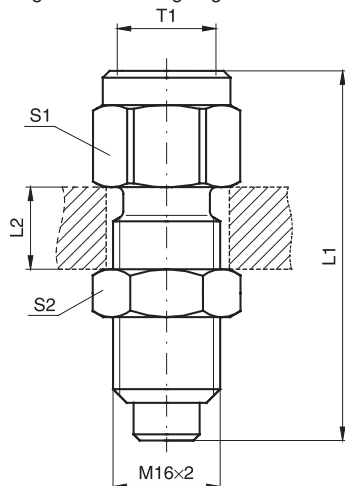
PN (bar) = PN (MPa)  
10

\*Please add the **suffixes** below according to the material/surface required.

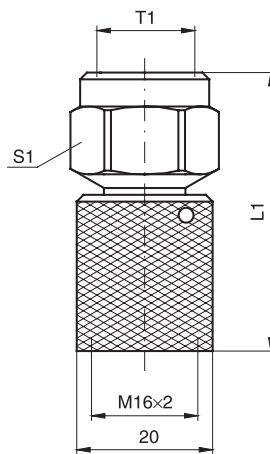
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	VKA3/06LCF	NBR
Stainless Steel	71	VKA3/06L71	VIT

**MAV...MA3 Test point pressure gauge connector with threaded connection M 16×2**  
**MAVMD...MA3 Test point with threaded connection M 16×2**  
**SMA3 Test point high pressure hose with threaded connection M 16×2 Series 3**

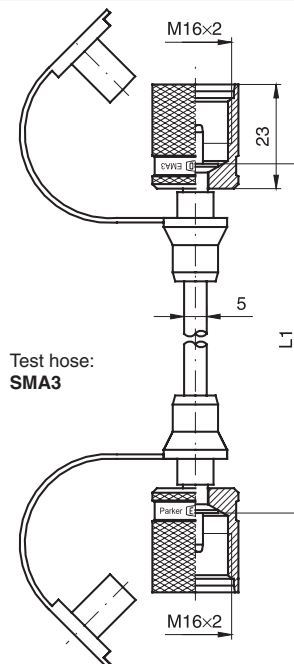
Female thread: BSP  
 Sealing: sealing ring DIN 16258\*



Pressure gauge connector:  
**MAV...MA3**



Gauge-Direct-Connector:  
**MAVMD...MA3**



Test hose:  
**SMA3**

T1	L1	L2 max.	S1	S2	Weight g/1 piece	Order code*	PN (bar)1) CF	DF**
G 1/4	54.0	12	19	19	74	<b>MAV1/4MA3</b>	630	4.0
G 1/2	64.0	12	27	19	129	<b>MAV1/2MA3</b>	630	4.0
G 1/4	41.0		19		61	<b>MAVMD1/4MA3</b>	630	4.0
G 1/2	51.5		27		103	<b>MAVMD1/2MA3</b>	630	4.0
	200.0				73	<b>SMA3-200</b>	630	2.5
	300.0				74	<b>SMA3-300</b>	630	2.5
	400.0				74	<b>SMA3-400</b>	630	2.5
	630.0				79	<b>SMA3-630</b>	630	2.5
	800.0				83	<b>SMA3-800</b>	630	2.5
	1000.0				87	<b>SMA3-1000</b>	630	2.5
	1500.0				95	<b>SMA3-1500</b>	630	2.5
	2000.0				105	<b>SMA3-2000</b>	630	2.5
	2500.0				110	<b>SMA3-2500</b>	630	2.5
	3200.0				125	<b>SMA3-3200</b>	630	2.5
	4000.0				137	<b>SMA3-4000</b>	630	2.5

\*\*DF = Design Factor

1) Pressure shown = item deliverable

PN (bar)  
 10 = PN (MPa)

\*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated, Cr(VI)-free	CF	MAV1/4MA3CF	NBR

\* Sealing rings according to DIN 16258 for steel design of copper, for stainless steel design of stainless steel.

**Note hoses with small diameter:**

- Min. bending radius r = 20 mm
- Working temperature -20 °C up to 100 °C (short time to +120 °C)
- Hoses are to be protected from fire, from sharp-corners and hot objects.

For measuring with liquid pressure media please note:  
 Bleed before connecting tube! By capillary action discharge of the pressure medium is prevented widely.

Temperature factor of pressure rating:

up to 0 °C	122 %
for 30 °C	110 %
for 50 °C	100 %
for 80 °C	86 %
for 100 °C	77 %



### SensoControl®

#### ServiceJunior



The ServiceJunior makes possible the measurement and display of pressures with one instrument. Measured values are shown with high precision on a 4-digit display. Pressure peaks are securely captured at a scanning rate of 10 ms.

- Digital pressure measurement and display
- Back-lit measured value display
- Accuracy  $\pm 0,5\%$  FS
- Pressure peaks captured by displaying MIN/MAX reading
- Graphic display with bar graph (trailing indicator), peak & hold function

#### ServiceJunior Kit

- Delivery in storage-case
- Incl. test point-adapters and test hoses

Catalogue 4054/UK

### SensoControl®

#### ServiceJunior wireless



Utilising the ServiceJunior wireless from Parker's SensoControl family of products allows you to comfortably record the pressure values taken from one or several measurement points on your machine or installation. Stored measurement data is transmitted to a PC across distances of up to 150 meters.

- Measured data memory for storing pressure sequences
- Network operations: monitor several measurement points
- Read-out data from measured data memory to the PC via a radio interface
- Set and evaluate measurement data using PC software "JuniorWin"

Catalogue 4054/UK

## SensoControl®

### Serviceman



The Serviceman has 2 inputs for sensors. This enables a differential pressure measurement by pressing only one key. Fast comparisons of actual and set values are done very easily.

- Easily operation
- Prevention of measuring errors due to automatic sensor recognition
- Two-line display
- Pressure peak measuring in 2 msec.

#### Serviceman Kit

- Delivery in storage-case
- Incl. test point-adapters and test hoses
- Attachments and sensors to measure pressure/temperature, flow

Catalogue 4054/UK

## SensoControl®

### The Parker Service Master “Easy”



Measurement and display of up to four measured values simultaneously. Proportional technology differential values, addition, performance and signals are very easily analysed.

- Rapid fault diagnosis = high quality maintenance
- Pressure spike measurement 1 msec
- Measured value storage to record pressure sequences with various storage functions (auto trigger, start-stop, etc)
- USB PC interface
- Setting and evaluation of measurement data with “SensoWin” software.

Catalogue 4054/UK

### SensoControl®

#### The Parker Service Master Plus



This high-end instrument with innovative and unique features is aimed at the future and is available worldwide.

- Analogue, CAN, LAN and USB interfaces
- Measured value display: numerical, bar graph, pointer, curve graph
- Measurement and display of more than 50 channels
- Measurement data are automatically displayed, stored and directly analysed with the proven "SensoWin" PC software
- Remote monitoring via LAN, regardless of location
- Everything is measured, stored, monitored and analysed: pressure, temperature, flow and speed
- Up to 4 million measured values per measurement. Total measured value storage for more than 1 billion measured values
- Extensive choice of trigger methods



#### The Parker Service Master Plus Kit:

- Delivery in storage-case
- Incl. attachments
- test point-adapters and test hoses

**Catalogue 4054/UK**

### Pressure/Temperature sensor SCPT



- Measurement range up to 1,000 bar
- Accuracy  $\pm 0,25\%$  FS typical
- Rugged stainless steel design
- Response time of 1 msec
- Flexible operation

Catalogue 4054/UK

### Pressure/Temperature Sensor SCPT-CAN



All advantages of the analogue SCPT sensors combined with innovative CAN-bus technology. Up to eight sensors can be wired easily to a bus cable and quick-plug SPEEDCON®) screw connection. Plug & Play functionality and no complex configuration required.

- Robust stainless steel design
- Response times of 1 msec
- Capturing of pressure peaks
- Future-proof CAN-bus technology
- Easy wiring with SPEEDCON®
- High cable lengths up to 100 m
- Sensor identification LED (SIL)

Catalogue 4054/UK

### Temperature sensor SCT



In hydraulics, temperature measurements serve to locate faults and avoid the kind of damage caused by excessive oil temperatures in critical parts such as pumps and proportional valves.

- High pressure-proof temperature sensor
- Measuring of oil temperatures up to 125°C
- Flexible operation
- Screw-in or manual sensor

Catalogue 4054/UK

### Hydraulic tester SCLV



These hydraulic testers can be used for precisely measuring flow, pressure and temperature. The testers can also be helpful when performing hydraulic system maintenance, locating error sources on directional control valves and making valve adjustments. The pressure-load valve, with its integrated bypass blow-out discs, makes it possible to build up pressure progressively in order to check the flow in an entire working area.

- Rapid fault diagnosis = high quality maintenance
- Three measurement ranges up to 750 l/min
- Pressure resistant up to 480 bar
- Integrated overload protection
- Reverse operation (Flow direction A-B)
- Also with CAN-Bus connection

Catalogue 4054/UK

\*) SPEEDCON®: Trademark of PHOENIX CONTACT GmbH & Co. KG

### Turbine flow meter type SCFT



A turbine wheel is driven by the oil flow. The frequencies thus produced are processed by digital electronics. The influence of turbulent flow effects is compensated for. Because of low flow resistance QR the hydraulic circuit operates with very low losses.

- Measurement range up to 750 l/min.
- Accuracy: 1% of measured value
- Pressure resistant up to 480 bar
- Small flow resistance
- Built-in pressure and temperature measurement ports
- Suitable for reverse operation

Catalogue 4054/UK

### Tachometer SCRPM



Contactless measurement (opto-electronic principal) can be done quickly and easily. Rotational speed is detected, for example, at a main drive shaft (e.g. power take-off shaft of a tractor), and displayed on the hand-held device. Installation or adjustment is not necessary.

- Measurement range up to 10,000 RPM
- Accuracy  $\pm 0.5\%$  FS typically
- Easy and fast measuring

Catalogue 4054/UK

### Turbine Flow Meter SCFT-CAN



- Flow turbine with CAN-Bus technology
- Six measurement ranges up to 750 l/min
- Easy assembly
- Pressure resistant up to 480 bar
- Small flow resistance
- Built-in pressure and temperature measurement ports
- Suitable for reverse operation
- Easy wiring with SPEEDCON®\*)
- High conductor lengths up to 100 m

Catalogue 4054/UK

### Flow Transducer SCQ



In the field of high pressure hydraulics, the rapid capture of the amount of flow is of great significance. The reaction times of the SCQ's enable the dynamic behaviour of hydraulic systems to be measured. The indication of direction is helpful when searching for faults in hydraulic systems.

- Measurement principle: spring/piston
- Response time:  $\leq 2$  ms
- Compact construction
- Pressure resistant up to 420 bar
- Wide viscosity range
- Mounting with the connection block permits a combined measurement of p, T and Q.

Catalogue 4054/UK

\*) SPEEDCON®: Trademark of PHOENIX CONTACT GmbH & Co. KG



## SensoControl® Controller Family



The Controllers are used in control, regulating and monitoring systems when switching or analogue signals, or a display, are required.

The Controllers can replace

- mechanical switches
- mechanical displays (manometers, thermometers, sight glasses)
- sensors

and combine all the functions of the above-mentioned components in one instrument.

- large display
- freely settable
- rugged metal design
- compact
- long-term stability
- reliable
- interference-free

**Catalogue 4083**

## SensoControl®

### Pressure Controller SCPSD



**Simple operation, comprehensive functionality and long working life are the major features of the electronic SCPSD Pressure Controller.**

Features:

- Bar/PSI/MPa
- compact design
- rotatable
- rugged housing (IP 67)
- simple operation
- 2 switching outputs
- 4 switching points
- settable analogue output
- time delay (damping)
- hysteresis/window function
- password

If pressure is to be displayed, or the requirement is for rapid switching or analogue signals, which can be set simply and without additional adjustments, then the SCPSD is the ideal solution.

**Catalogue 4083**



## SensoControl®

### Temperature Controller SCTSD



**Simple operation and comprehensive functionality are the major features of the electronic SCTSD Temperature Controller.**

Features:

- °C and °F
- compact design
- rotatable
- rugged housing (IP 67)
- simple operation
- 2 switching outputs
- 4 switching points
- settable analogue output
- delay times (damping)
- hysteresis/window function
- password

If temperature is to be displayed, or the requirement is for temperature-dependent switching or analogue signals, which can be set simply and without additional adjustments, then the SCTSD is the ideal solution.

**Catalogue 4083**

## SensoControl®

### LevelController SCLSD



**Simple operation and comprehensive functionality are the major features of the electronic SCLSD LevelController.**

- level display in mm/inch/%
- compact design
- rotatable
- rugged housing (IP 67)
- settable via menu
- high & low display
- switching output
- analogue output
- proven float measuring system
- simple operation
- flexible installation
- hysteresis/window function

The LevelController is very suitable for monitoring tank levels. With its menu-controlled setting of level switching points, a very wide range of applications can be conveniently carried out. If the percentage display is selected, the fullness level is shown to the operator in a consistent manner, independently of the tank shape.

**Catalogue 4083**

## SensoControl®

### LevelTempController SCLTSD



Simple operation and comprehensive functionality are the major features of the electronic SCLTSD LevelTempController.

Features:

- temperature and level
- compact design
- rotatable
- rugged housing (IP67)
- simple operation
- menu-controlled setting
- probe
- locating bore
- switching output
- analogue output
- hysteresis/window function
- password

With the LevelTempController it is possible to set and display temperature and level separately on a common platform. It is precisely in the field of tank monitoring that the integration of level and temperature shows its unique potential.

Catalogue 4083

## SensoControl®

### OilTankController SCOTC



The OilTankController offers standardised connection points for an air filter and a filler coupling, which are additional to the LevelTempController.

It is precisely in the field of tank monitoring for series production that the integration of level and temperature, in combination with the air filter and filler coupling, shows its unique potential. Only one location bore is required for all 4 functions.

- proven measuring system
- level and temperature display
- mm/inch/% displays
- high and low display
- only one bore
- continuous level measurement
- connections:
  - filler coupling
  - air filter
  - under-pressure
- no surge tube needed

Catalogue 4083

## SensoControl®

### Pressure sensor SCP Mini



The SCP Mini pressure sensor was designed for industrial application needs and is used in control, regulating and monitoring systems, when the requirement is for rapid pressure-dependent analogue signals. The SCP Mini sensor is noted for its compact design, high linearity and excellent interference resistance.

- stainless steel cell
- small size
- high burst pressure
- resistant to pressure peaks
- shock and vibration resistant
- wide media compatibility
- high linearity
- long-term stability

Catalogue 4083

## SensoControl®

### Pressure sensor SCP-EX



The SCP-EX pressure sensor was designed for the requirements of applications where there is a risk of explosion (II 2G EEx ia IIC T4) and is used in control, regulating and monitoring systems when there is a requirement for pressure-dependent analogue signals.

- rugged
- long-term stability
- reliable
- stainless steel
- EEx ia

Catalogue 4083



## SensoControl®

### Pressur sensor SCP-Mobil



The SCP-Mobil was specially developed for mobile hydraulic applications and may be modified to suit special customer requirements. With its rugged and compact construction the hermetically-welded stainless steel membrane guarantees high long-term stability and

freedom from leaks. The pressure cell is completely vacuum-tight, extremely resistant to bursting and accommodates all the standard media used in motor vehicles, mobile hydraulics and testing technologies. Thanks to its mechanical construction, a high degree of accuracy and long-term stability are guaranteed.

- Compact construction
- Stainless steel cell
- Load Dump Protection
- High burst pressure
- Pressure peak damping
- Shock and vibration-proof
- Vibration 50 g
- IP 65 high protection class
- High over-voltage protection
- High reverse polarity protection
- EMC up to 300 V/m

Catalogue 4083

## CanBus SCP

### Pressure/Temperature Sensor with CANopen technology



#### Flexible, innovative and reliable

The new pressure/temperature sensor in the SCPT series offers flexible application possibilities in automation technology. Besides the pressure and temperature measurement combination, CANopen technology offers the designer cost-effective and reliable measuring technology.

#### Technical data:

- Pressure range (measuring range)  
-1...16 / 0...60/150/400/600/1000 bar
- Temperature range (measuring range)  
-25 °C ... +105 °C (± 2,0% FS max.)
- Accuracy ± 0,25% FS (typ.)
- Response time 1 ms
- Housing stainless steel 1.4404
- Sealing FKM
- Connections electrical M12 5-pin  
hydraulic ½" BSP
- CANopen DS 301 v 4.1  
Type 2.0 A  
Profile DS 404 v 1.2  
Functions LSS (DSS 305 v 2.0)

#### Advantages

- Combined pressure and temperature measurement
- Digital measured value capture and transmission
- Error monitoring/self-diagnosis
- Heartbeat function/SYNC

#### Applications

- Hydraulics/pneumatics
- Automation technology
- Paper machinery/automotive/mobile hydraulics

Leaflet 4059/UK

## SensoControl®

### Temperature sensor SCT



Compact construction and high pressure resistance are the main features of the SCT temperature sensor. The SCT is ideal for use when temperatures at higher pressures are to be measured and a compact construction is required. With its pressure resistance up to 630 bar, the SCT temperature sensor is very suitable for hydraulic application requirements. It has the ability to make precise, rapid temperature measurements. SCT series temperature sensors are compatible with the SCE built-in measuring instruments. With the latter, besides the hydraulic pressure, the temperature of the medium too can be measured, controlled and evaluated.

- Pressure-proof up to 630 bar
- Compact construction
- Rugged steel housing
- Simple installation
- $-50^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$
- 0/4...20 mA

Catalogue 4083

## SensoControl®

### SCE-020 digital display instrument



Plenty of connections, flexible display and copious outputs are the main features of the SCE digital display instrument. The SCE-020 converts standard analogue signals (in the ranges 0...10 V up to 0/4...20 mA) into clearly understandable measurement values/units. Consequently with the SCE-020, any sensor required (pressure, temperature, torque, length, etc) can be easily displayed.

- Easily readable digital display
- Programmable
- Easily selectable units
- Display range can be set
- Input:
  - Current: 0/4...20 mA
  - Voltage: 0...10 V
  - Frequency: 0...8 kHz
- Switching output
- Loop-through function: analogue output, serial interface
- Standard housing 96x48 mm

Catalogue 4083



**EO<sup>®</sup> Ermeto Original  
Tubes**





## General recommendations for tubes

### 1. Steel types, mechanical properties, conditions

#### Steel types, mechanical properties and conditions of EO steel tubes

Steel type	Tensile strength R <sub>m</sub>	Yield point R <sub>eH</sub>	Ductile yield A <sub>5</sub> (longit.)	Condition
Fine grain E235N acc. to EN 10305-4 (St. 37.4 acc. to DIN 1630/DIN 2391 old designation)	340 N/mm <sup>2</sup> min. 49,000 lb/in <sup>2</sup>	235 N/mm <sup>2</sup> min. 34,000 lb/in <sup>2</sup>	25% min.	Seamless, cold drawn, normal annealed, DIN EN 10305-1 and -4

#### Steel types, mechanical properties and conditions of EO stainless steel tubes

Steel type	Tensile strength R <sub>m</sub>	Yield point (1% proof stress)	Ductile yield A <sub>5</sub> (longit.)	Condition
1.4571 X6CrNiMoTi17122	500 N/mm <sup>2</sup> min. 72,500 lb/in <sup>2</sup>	245 N/mm <sup>2</sup> min. 35,500 lb/in <sup>2</sup>	35% min.	Seamless, cold drawn free of scale, heat treated in accordance with DIN EN 10216-5 tab. 6

### 2. Tests and certifications

All tubes are subjected to a non-destructive leak test and marked accordingly as proof. This marking replaces a works certificate DIN EN 10204-2.2. Test class 1 DIN EN 10216-5 Table 7 applies for tubes made of 1.4571.

### 3. Recommended bend radius

A bend radius of 3x the external tube diameter is recommended for cold bending of tubes with tube benders or by hand.

### 4. Welding suitability and weldability

Tubes of E235N are weldable according to usual techniques. Types made of 1.4571 (stainless) are suitable for arc welding. The welding filler should be selected in accordance with DIN EN 1600 and DIN EN 12072 part 1 taking into account the type of application and the welding technique.

### 5. Approximate calculation of the flow resistance in straight tubelines

The flow resistance and thus the tubeline efficiency is influenced by the tube inside diameter, the volume flow (measured or calculated) and the properties of the medium. Laminar flow should be considered in order to keep losses in the system down to a minimum. The transition from laminar to turbulent flow, which brings an increase in the flow resistance is generally defined by the Reynolds number Re 2320. Since the transition cannot be pinpointed exactly, the transition range can only be determined by measuring. If, for simplified calculation, transition at Re 2320 and a "technically smooth" tube inner surface are assumed, the limit speeds  $w_{crit.}$  and the laminar to turbulent flow volume flow  $\dot{v}_{crit.}$  when transition takes place, can be estimated according to the following formulas:

$$w_{crit.} = \frac{2.32 \cdot \nu}{d_i} \text{ [m / s]}$$

$$\dot{v}_{crit.} = 0.109 \cdot d_i \cdot \nu \text{ [l / min]}$$

$$d_i = \text{tube bore } \varnothing \text{ in mm}$$

$$\nu = \text{kinematic viscosity in mm}^2 / \text{s.}$$

For approximate calculation of the pressure drop in bar/1 m tube length, the following formulas can be used:

#### 1. Laminar range:

$$\rho_v = \frac{0.32 \cdot w \cdot \nu \cdot \rho}{d_i^2 \cdot 10^3} = \frac{6.79 \cdot \dot{v} \cdot \nu \cdot \rho}{d_i^4 \cdot 10^3} \text{ [bar / 1 m]}$$

#### 2. Turbulent range:

$$\rho_v = \frac{0.281 \cdot w^{1.75} \cdot \nu^{0.25} \cdot \rho}{d_i^{1.25} \cdot 10^3}$$

$$= \frac{59 \cdot \dot{v}^{1.75} \cdot \nu^{0.25} \cdot \rho}{d_i^{4.75} \cdot 10^3} \text{ [bar / 1 m]}$$

$w$  = flow speed in m/s;  $\nu$  = kinetic viscosity in mm<sup>2</sup>/s;  $\dot{v}$  = volume flow in l/min.;  $\rho$  = density of the medium in kg/m<sup>3</sup>;  $d_i$  = pipe internal diameter in mm.

Detailed calculations of the flow resistance require an exact knowledge of the tubeline system and the operating conditions. Refer to the relevant literature for other methods of calculations.





## Seamless EO steel tubes Material E235N (St. 37.4)

Tolerances DIN EN 10305-4

Order code		Tube O.D. (mm)	Tolerance	Wall thickness (mm)	Tube I.D. (mm)	Design pressure bar		Burst pressure bar	Weight kg/m
Phosphated and oiled	Cr(VI)-free					DIN 2413 I Static	DIN 2413 III Dynamic		
R04X0.5	R04X0.5CF	4	±0.08	0.50	3.0	313	273	1160	0.047
	R04X0.75CF	4		0.75	2.5	470	391	1820	0.063
R04X1	R04X1CF	4	±0.08	1.00	2.0	627	500	2700	0.074
	R05X1CF	5		1.00	3.0	501	416	2120	0.099
R06X1	R06X0.75CF	6	±0.08	0.75	4.5	333	288	1150	0.103
	R06X1CF	6		1.00	4.0	444	372	1650	0.123
R06X1.5	R06X1.5CF	6	±0.08	1.50	3.0	666	526	2550	0.166
	R06X2CF	6		2.00	2.0	692	662	>3500	0.197
	R06X2.25CF	6		2.25	1.5	757	725	>3500	0.208
	R08X1	8		1.00	6.0	333	288	1175	0.173
R08X1.5	R08X1.5CF	8	±0.08	1.50	5.0	499	412	1925	0.240
	R08X2	8		2.00	4.0	666	526	2500	0.296
R08X2	R08X2CF	8	±0.08	2.50	3.0	658	630	2650	0.339
	R10X1	10		1.00	8.0	282	248	900	0.222
	R10X1.5	10		1.50	7.0	423	357	1450	0.314
	R10X2	10		2.00	6.0	564	458	2025	0.395
R10X2	R10X2.5CF	10	±0.08	2.50	5.0	705	551	2675	0.462
	R10X3CF	10		3.00	4.0	666	638	>3500	0.518
	R12X1	12		1.00	10.0	235	209	750	0.271
	R12X1.5	12		1.50	9.0	353	303	1150	0.388
	R12X2	12		2.00	8.0	470	391	1600	0.493
R12X2	R12X2.5CF	12	±0.08	2.50	7.0	588	474	2025	0.586
	R12X3CF	12		3.00	6.0	705	551	2600	0.666
	R12X3.5CF	12		3.50	5.0	651	624	2600	0.734
	R14X2	14		1.50	11.0	302	264	975	0.462
	R14X2CF	14		2.00	10.0	403	342	1325	0.592
R14X2	R14X2.5CF	14	±0.08	2.50	9.0	504	415	1650	0.709
	R14X3	14		3.00	8.0	604	485	2200	0.814
	R14X3CF	14		3.50	7.0	705	551	2625	0.906
R15X1	R15X1CF	15	±0.08	1.00	13.0	188	170	575	0.345
	R15X1.5	15		1.50	12.0	282	248	950	0.499
R15X2	R15X2CF	15	±0.08	2.00	11.0	376	321	1275	0.641
	R15X2CF	15		3.00	9.0	564	458	2000	0.888
	R16X1.5	16		1.50	13.0	264	233	850	0.536
R16X2	R16X2CF	16	±0.08	2.00	12.0	353	303	1175	0.691
	R16X2.5	16		2.50	11.0	441	370	1500	0.832
R16X3	R16X3CF	16	±0.08	3.00	10.0	529	433	1850	0.962
R18X1	R18X1CF	18	±0.08	1.00	16.0	157	143	450	0.419
R18X1.5	R18X1.5CF	18		1.50	15.0	235	209	700	0.610
R18X2	R18X2CF	18		2.00	14.0	313	273	975	0.789
R18X2.5	R18X2.5CF	18		2.50	13.0	392	333	1300	0.956
	R18X3CF	18		3.00	12.0	470	391	1575	1.111

**Surface finish:**

- Phosphated and oiled:
- Tubes with I.D. 1.5–5 mm: outside and inside oiled.
- Tubes from 6 mm I.D.: outside and inside phosphated and oiled.

• Cr(VI)-free:

These dimensions are externally thick coat passivated (thickness of coat 8–12 µm), inside oiled.

**Calculation pressures:**

Calculation pressures given are according to DIN 2413 part I for **static stress**

$$P = \frac{20 \cdot K \cdot s \cdot c}{S \cdot d_a} \text{ (bar)}$$

Material characteristic value  $K = 235\text{N/mm}^2$  and DIN 2413 part III for **dynamic stress**

$$P = \frac{20 \cdot K \cdot s \cdot c}{S \cdot (d_a + s \cdot c)} \text{ (bar)}$$

Material characteristic value  $K = 226\text{N/mm}^2$  (permanent fatigue strength)

Safety correction value  $S = 1.5$  for static and dynamic stress,  $S =$  wallthickness.

Factor  $c$  for consideration of wall thickness divergence **for static and dynamic stress** = 0.8 for tube O.D. 4 and 5; 0.85 for tube o.d. 6 and 8; 0.9 for larger tube O.D.

## Seamless EO steel tubes (Continued) Material E235N (St. 37.4)

Tolerances DIN EN 10305-4

Order code		Tube O.D. (mm)	Tolerance	Wall thickness (mm)	Tube I.D. (mm)	Design pressure bar		Burst pressure bar	Weight kg/m
Phosphated and oiled	Cr(VI)-free					DIN 2413 I Static	DIN 2413 III Dynamic		
<b>R20X2</b> <b>R20X2.5</b> <b>R20X3</b>	<b>R20X1.5CF</b>	20	±0.08	1.50	17.0	212	190	675	0.684
	<b>R20X2CF</b>	20		2.00	16.0	282	248	900	0.888
	<b>R20X2.5CF</b>	20		2.50	15.0	353	303	1100	1.079
	<b>R20X3CF</b>	20		3.00	14.0	423	357	1400	1.258
	<b>R20X3.5CF</b>	20		3.50	13.0	494	408	1650	1.424
	<b>R20X4CF</b>	20		4.00	12.0	564	458	2000	1.578
<b>R22X1.5</b> <b>R22X2</b> <b>R22X2.5</b>	<b>R22X1.5CF</b>	22	±0.08	1.50	19.0	192	173	550	0.758
	<b>R22X2CF</b>	22		2.00	18.0	256	227	775	0.986
	<b>R22X2.5CF</b>	22		2.50	17.0	320	278	1025	1.202
	<b>R22X3CF</b>	22		3.00	16.0	385	328	1175	1.406
<b>R25X2</b> <b>R25X2.5</b> <b>R25X3</b> <b>R25X4</b> <b>R25X4.5</b>	<b>R25X2CF</b>	25	±0.08	2.00	21.0	226	201	725	1.134
	<b>R25X2.5CF</b>	25		2.50	20.0	282	248	850	1.387
	<b>R25X3CF</b>	25		3.00	19.0	338	292	1025	1.628
	<b>R25X4CF</b>	25		4.00	17.0	451	378	1500	2.072
	<b>R25X4.5CF</b>	25		4.50	16.0	508	418	1625	2.275
	<b>R28X1.5</b> <b>R28X2</b> <b>R28X2.5</b> <b>R28X3</b>	<b>R28X1.5CF</b>		28	±0.08	1.50	25.0	151	138
<b>R28X2CF</b>	28	2.00	24.0	201		181	600	1.282	
<b>R28X2.5CF</b>	28	2.50	23.0	252		223	750	1.572	
<b>R28X3CF</b>	28	3.00	22.0	302		264	900	1.850	
<b>R30X2.5</b> <b>R30X3</b> <b>R30X4</b> <b>R30X5</b>	<b>R30X2CF</b>	30	±0.08	2.00	26.0	188	170	575	1.381
	<b>R30X2.5CF</b>	30		2.50	25.0	235	209	725	1.695
	<b>R30X3CF</b>	30		3.00	24.0	282	248	850	1.998
	<b>R30X4CF</b>	30		4.00	22.0	376	321	1175	2.565
	<b>R30X5CF</b>	30		5.00	20.0	470	391	1600	3.083
<b>R35X2</b> <b>R35X2.5</b> <b>R35X3</b>	<b>R35X2CF</b>	35	±0.15	2.00	31.0	161	147	450	1.628
	<b>R35X2.5CF</b>	35		2.50	30.0	201	181	600	2.004
	<b>R35X3CF</b>	35		3.00	29.0	242	215	700	2.367
	<b>R35X4CF</b>	35		4.00	27.0	322	280	960	3.058
<b>R38X3</b> <b>R38X4</b> <b>R38X5</b>	<b>R38X2.5CF</b>	38	±0.15	2.50	33.0	186	168	550	2.189
	<b>R38X3CF</b>	38		3.00	32.0	223	199	675	2.589
	<b>R38X4CF</b>	38		4.00	30.0	297	260	900	3.354
	<b>R38X5CF</b>	38		5.00	28.0	371	318	1150	4.069
	<b>R38X6CF</b>	38		6.00	26.0	445	373	1425	4.735
	<b>R38X7CF</b>	38		7.00	24.0	519	427	1700	5.352
<b>R42X2</b> <b>R42X3</b> <b>R42X4</b>	<b>R42X2CF</b>	42	±0.2	2.00	38.0	134	123	375	1.973
	<b>R42X3CF</b>	42		3.00	36.0	201	181	575	2.885
	<b>R42X4CF</b>	42		4.00	34.0	269	237	850	3.749
<b>R50X6</b>		50	±0.2	6.00	38.0	338	292		6.511
<b>R65X8</b>		65	±0.3	8.00	49.0	347	299		11.246

### Remarks:

Corrosion – additional allowances are not considered for the calculation of pressures. Tube with a diameter ratio of

$\frac{d_a}{d_{i_{max}}} > 2$  are calculated for static stress in

accordance with DIN 2413 coverage III, but with  $K = 235 \text{ N/mm}^2$ .

When a specific factor of safety is required, calculations should be based upon the burst pressures shown in the above tables.

**Temperature range:** –40° up to 120°C without pressure reductions.

### For increased temperatures:

control calculation according to DIN 2413 required (static application above 120 °C).

$$P = \frac{20 \cdot K \cdot s \cdot c}{S (d_a - s \cdot c)}$$

Material strength K for increased temperatures:

Temperature in °C	K (N/mm <sup>2</sup> )
up to 200	185
up to 250	165

## Seamless EO stainless steel tubes Material-No.: 1.4571

Tolerances DIN EN 10305-1

Order code	Tube O.D. (mm)	Tolerance	Wall thickness (mm)	Tube I.D. (mm)	1.4571 Design pressure bar DIN 2413 I Static	1.4571 burst pressure bar	Weight kg/m
R04X171	4	±0.08	1.0	2	735		0.075
R06X171	6	±0.08	1.0	4	490	1850	0.125
R06X1.571	6	±0.08	1.5	3	735	2900	0.169
R08X171	8	±0.08	1.0	6	368	1300	0.175
R08X1.571	8		1.5	5	551	2050	0.244
R10X171	10		1.0	8	294	950	0.225
R10X1.571	10	±0.08	1.5	7	441	1750	0.319
R10X271	10		2.0	6	588	2400	0.401
R12X171	12		1.0	10	245	850	0.275
R12X1.571	12	±0.08	1.5	9	368	1400	0.394
R12X271	12		2.0	8	490	1900	0.501
R14X1.571	14		1.5	11	315	1200	0.469
R14X271	14	±0.08	2.0	10	420	1550	0.601
R14X2.571	14		2.5	9	525	2100	0.720
R15X171	15		1.0	13	196	675	0.351
R15X1.571	15	±0.08	1.5	12	294	1100	0.507
R15X271	15		2.0	11	392	1400	0.651
R16X1.571	16	±0.08	1.5	13	276	950	0.545
R16X271	16		2.0	12	368	1300	0.701
R16X2.571	16	±0.08	2.5	11	459	1850	0.845
R16X371	16		3.0	10	551	2400	0.977
R18X1.571	18	±0.08	1.5	15	245	800	0.620
R18X271	18		2.0	14	327	1150	0.801
R20X271	20		2.0	16	294	1050	0.901
R20X2.571	20	±0.08	2.5	15	368	1400	1.095
R20X371	20		3.0	14	441	1800	1.277
R22X1.571	22	±0.08	1.5	19	200	650	0.770
R22X271	22		2.0	18	267	900	1.002
R25X2.571	25	±0.08	2.5	20	294	1050	1.408
R25X371	25		3.0	19	353	1275	1.653
R28X1.571	28	±0.08	1.5	25	158	550	0.995
R28X271	28		2.0	24	210	700	1.302
R30X2.571	30	±0.08	2.5	25	245	850	1.722
R30X371	30	±0.08	3.0	24	294	1150	2.028
R30X471	30		4.0	22	392	1500	2.605
R35X271	35	±0.15	2.0	31	168	550	1.653
R38X471	38	±0.15	4.0	30	309	1150	3.405
R42X271	42	±0.2	2.0	38	140	475	2.003
R42X371	42		3.0	36	210	750	2.930

## Seamless EO stainless steel tubes (continued) Material-No.: 1.4571

**Calculation pressure:**

Calculation pressures given are according to DIN 2413 part I for **static stress**

$$P = \frac{20 \cdot K \cdot s \cdot c}{S \cdot d_a} \text{ (bar)}$$

Material characteristic value  $K = 245 \text{ N/mm}^2$  (1.4571)  
(1% proof stress)

Safety factor  $S = 1.5$

Factor  $c$  for consideration of wall thickness divergence:  
0.9

For range of application for which a certain safety value compared to burst pressure is demanded for tubes of 1.4571 grade stainless steel, the measured burst pressures are contained in tube-tables.

Calculation pressures according to DIN EN 2413 part III for **dynamic stress** are not listed, because in DIN 17458 the permanent fatigue stress is not listed. Until standards will be available for gauge localization of permanent fatigue strength we recommend for calculations to use DIN EN 2413 part III with the following characteristic values:  
permanent fatigue strength  $K=190 \text{ N/mm}^2$  for tubes of 1.4571;  $S = 1.5$ ;  $C = 0.9$ .

**Remarks:**

Corrosion: additional allowances are not considered for the calculation of pressures.

Tubes with a diameter proportion  $d_a/d_i \geq 1.35$  are calculated according to DIN 2413 III with above characteristic values.

**Permissible temperature range and required**

**pressure reductions.** This is based on calculated pressures at the elevated temperatures shown, taking into consideration the recommended reduction in proof stress (DIN EN 10216-5).

Temperature	-60° up to +20° C	50°C	100°C	200°C	300°C	400°C	
Pressure reductions in %	1.4571	-	5.5	11.5	21.5	29	34

Interpolation is acceptable for intermediate temperature levels.

## Seamless EO steel tubes Material C-Steel

for hydraulic and pneumatic pressure lines.

SAE J 524. C-Steel.

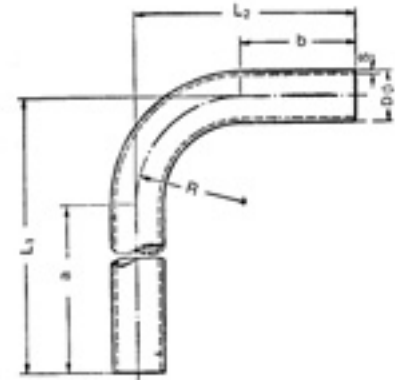
Test according ASTM A 179-90 A/ASME SA 179.

Quality and leak tested.

Order code (With Tube O.D. and wall thickness Inch)	Tube O.D. (mm)	Tolerance	Wall thickness (mm)	Design pressure bar		burst pressure bar	Weight kg/m
				DIN 2413 I Static	DIN 2413 III Dynamic		
<b>R1/4X0.049</b>	6.35	±0.08	1.24	553	450	-	0.157
<b>R3/8X0.049PHR</b>	9.53	±0.08	1.24	368	316	-	0.254
<b>R3/8X0.065PHR</b>	9.53	±0.08	1.65	489	405	-	0.321
<b>R1/2X0.049PHR</b>	12.70	±0.08	1.24	276	243	-	0.352
<b>R1/2X0.065PHR</b>	12.70	±0.08	1.65	367	314	-	0.450
<b>R5/8X0.083PHR</b>	16.00	±0.08	2.11	374	320	-	0.716
<b>R3/4X0.095PHR</b>	19.05	±0.08	2.41	357	307	-	0.990
<b>R3/4X0.109PHR</b>	19.05	±0.08	2.67	410	347	-	1.112
<b>R1X0.095PHR</b>	25.40	±0.08	2.41	268	236	-	1.368
<b>R1X0.120PHR</b>	25.40	±0.08	3.05	338	292	-	1.680
<b>R11/4X0.120PHR</b>	31.75	±0.08	3.05	271	239	-	2.157
<b>R11/2X0.156PHR</b>	38.10	±0.15	3.96	293	257	-	3.336

**Seamless EO tube bends 90° Material E235N (St. 37.4) and 1.4571**

For minimum pressure loss



Order code		Tube O.D. D	Tolerance ±	Wall-thickness S	Tube I.D. mm	Bending radius R	Leg length		Length		Weight kg/piece
Cr(VI)-free	1.4571						a	b	L1	L2	
RB16X2CF	RB16X271	16	0.08	2.0	12	30	200	40	230	70	0.198
RB18X1.5CF	RB18X1.571	18	0.08	1.5	15	36	200	35	236	71	0.178
RB20X2CF	RB20X2.571	20	0.08	2.0	16	36	200	45	236	81	0.268
RB20X2.5CF		20	0.08	2.5	15	36	200	45	236	81	0.326
RB22X1.5CF	RB22X271	22	0.08	1.5	19	38	200	40	238	78	0.227
RB22X2CF		22	0.08	2.0	18	38	200	40	238	78	0.296
RB25X2CF	RB25X2.571	25	0.08	2.0	21	44	200	50	244	94	0.362
RB25X2.5CF		25	0.08	2.5	20	44	200	50	244	94	0.442
RB25X3CF		25	0.08	3.0	19	44	200	50	244	94	0.519
RB28X1.5CF	RB28X271	28	0.08	1.5	25	48	200	50	248	98	0.319
RB28X2CF		28	0.08	2.0	24	48	200	50	248	98	0.417
RB28X3CF		28	0.08	3.0	22	48	200	50	248	98	0.601
RB30X2.5CF	RB30X371	30	0.08	2.5	25	50	200	60	250	110	0.575
RB30X3CF		30	0.08	3.0	24	50	200	60	250	110	0.677
RB30X4CF		30	0.08	4.0	22	50	200	60	250	110	0.869
RB35X2CF	RB35X271	35	0.15	2.0	31	60	200	65	260	125	0.586
RB35X3CF		35	0.15	3.0	29	60	200	65	260	125	0.852
RB38X2.5CF	RB38X471	38	0.15	2.5	33	65	200	75	265	140	0.827
RB38X3CF		38	0.15	3.0	32	65	200	75	265	140	0.979
RB38X4CF		38	0.15	4.0	30	65	200	75	265	140	1.268
RB38X5CF		38	0.15	5.0	28	65	200	75	265	140	1.538
RB42X2CF	RB42X271	42	0.20	2.0	38	80	200	85	280	165	0.809
RB42X3CF		42	0.20	3.0	36	80	200	85	280	165	1.183
RB50X6*		50	0.20	6.0	38	180	150	150	330	330	3.496
RB65X8*		65	0.30	8.0	49	180	160	160	330	330	6.294

Tolerances for leg length a, b = ±2.5 mm

For tube bends, contrary to straight tubes of the same wall thickness there is a higher stress at the inside of the bend and a reduction of the fatigue strength, because of the out-of-round of tube. Details see DIN 2413 III section 4.7.

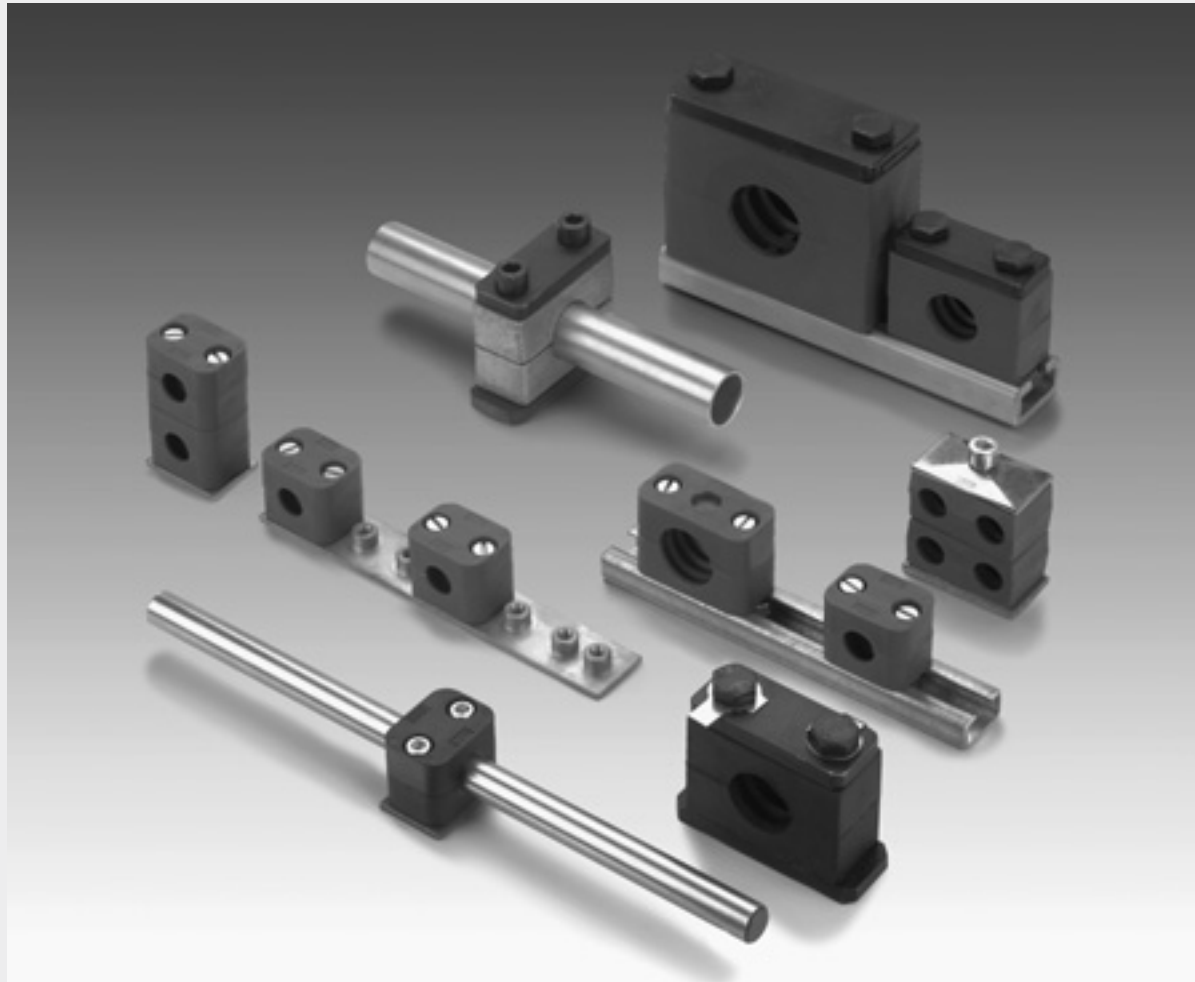
If the elbow end is cut off to a different length, a recalibration of the tube end may be necessary.

Tube bends material E235N (St. 37.4) are phosphated and oiled. (Yellow chromated on request.)

\*phosphated and oiled

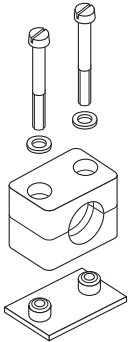
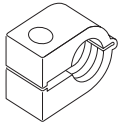
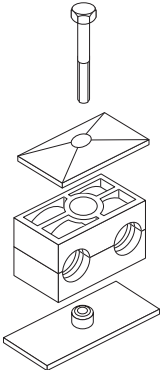
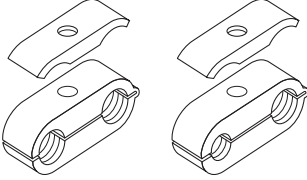
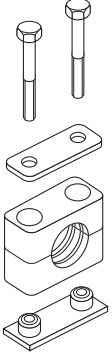
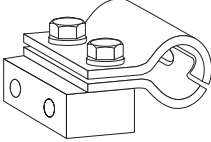
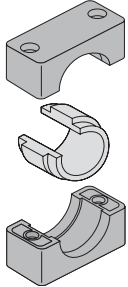
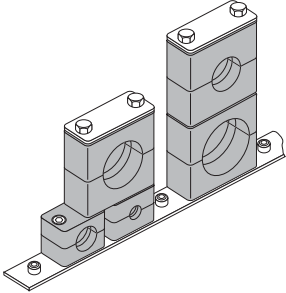


# EO<sup>®</sup> Ermeto Original *Tube clamps*



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## Tube clamps

### DIN 3015

#### Programme:

#### Tube clamps series A (according to DIN 3015 Part 1)

Available in seven standard sizes for normal mechanical requirements.

- Outer tube diameter for the metric series 6 to 57 mm
- Outer tube diameter for the inch-size series R 1/8" to R 1 1/2"
- Outer tube diameter for the imperial size series 1/4" to 2 1/2"

The clamp body is available in a round/closed version.

Welding plates, rail-supports, cover plates and construction types.

#### Tube clamps series B (according to DIN 3015 Part 3)

Available as a twin tube clamp in five standard sizes for normal mechanical requirements.

Outer tube diameter 6 to 42 mm.

The clamp body is available in a square/open design.

Welding plates, rail-supports, cover plates and construction types.

Clamp halves with different diameters are only possible when used together.

#### Tube clamps series C (according to DIN 3015 Part 2)

Specially designed for high mechanical requirements, and available in eight standard sizes.

- Outer tube diameter 6 to 220 mm.

The clamp body is available in a square/closed design.

Welding plates, rail-supports, cover plates and construction types.

#### Design:

According to DIN 3015:

Both upper and lower clamp-halves are identical.

Webs inside the bore of the clamps provide an impact and vibration deadening effect, and absorb the forces towards the direction of the tube axis.

When using hoses and cables, we recommend the use of clamp halves with a smooth bore.

#### Clamp material:

Polypropylene	–30°C up to + 90° C	colour dark green
Polyamide	–40°C up to + 120° C	colour black
Rubber	–50°C up to + 120° C	colour black
Aluminium	up to + 300° C	

All metal parts available also in stainless steel.

Other materials upon request.

Stainless steel qualities

Stainless steel 1.4401/1.4571 (AISI 316/316 TI), resistant against rust and acid.

#### Accessories material:

Steel. Screws as well as cover plates of series A and B are galvanized.

Rail-supports are also available with zinc plated surface.

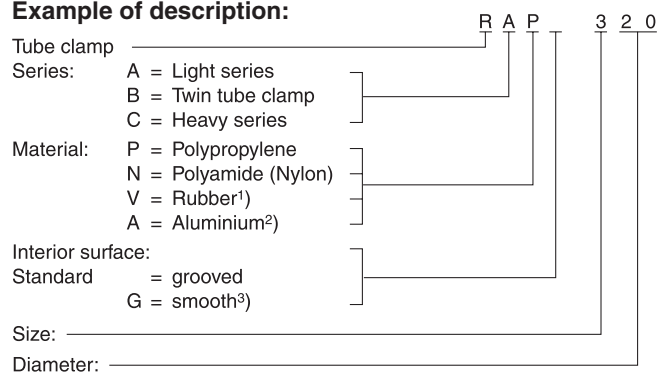
#### Resistance to stress:

The remarkable features of **Tube Clamps** are their considerable re-set capability, high tensile strength, as well as their very high output strength and excellent resistance to cold. The choice of design and clamp material depends on the specific demands of the mechanical and thermal requirements.

#### Order code:

The order code for clamp halves as well as the reference No. for complete tube clamps incorporates the serial indication, material description and interior surface.

#### Example of description:



<sup>1)</sup> Rubber only available for series A and B, inside smooth and series C grooved design

<sup>2)</sup> Aluminium only available for series A size 1 to 6 and series C size 1 to 8

<sup>3)</sup> Smooth interior surface in series C only to size 4  
Aluminium clamps only available in a grooved design  
Inside smooth series A only size 1 to 6

#### Registration:

On request



## Tube clamps material properties

### DIN 3015

Mechanical properties		Polypropylene (PP)	Polyamide 6 (PA 6)	Aluminium	Rubber
Density		0.906 g/cm <sup>3</sup>	1.12–1.15g/cm <sup>3</sup>	2.65 g/cm <sup>3</sup>	0.98 g/cm <sup>3</sup>
Flexural deflection	DIN 53452	36 N/mm <sup>2</sup>	130...200 N/mm <sup>2</sup>	70 N/mm <sup>2</sup>	–
Impact resistance	DIN 53453	no break	no break	–	
Compressive strength	DIN 53454	90 N/mm <sup>2</sup>	120 N/mm <sup>2</sup>	HB 500...600 N/mm <sup>2</sup>	A and B: 64° shore C: 73° shore
Modulus of elasticity	DIN 53452	1500 N/mm <sup>2</sup>	3000 N/mm <sup>2</sup>	70.000 N/mm <sup>2</sup>	
Tensile strength					A and B: 6.1 N/mm <sup>2</sup> C: 8.5 N/mm <sup>2</sup>
without breakage	DIN 53454	25–35 N/mm <sup>2</sup>	80–90 N/mm <sup>2</sup>	180 N/mm <sup>2</sup>	

Thermal properties					
Temp. resistance		–30 ... + 90°C	–40 ... + 120°C	300°C	–50 ... +120°C

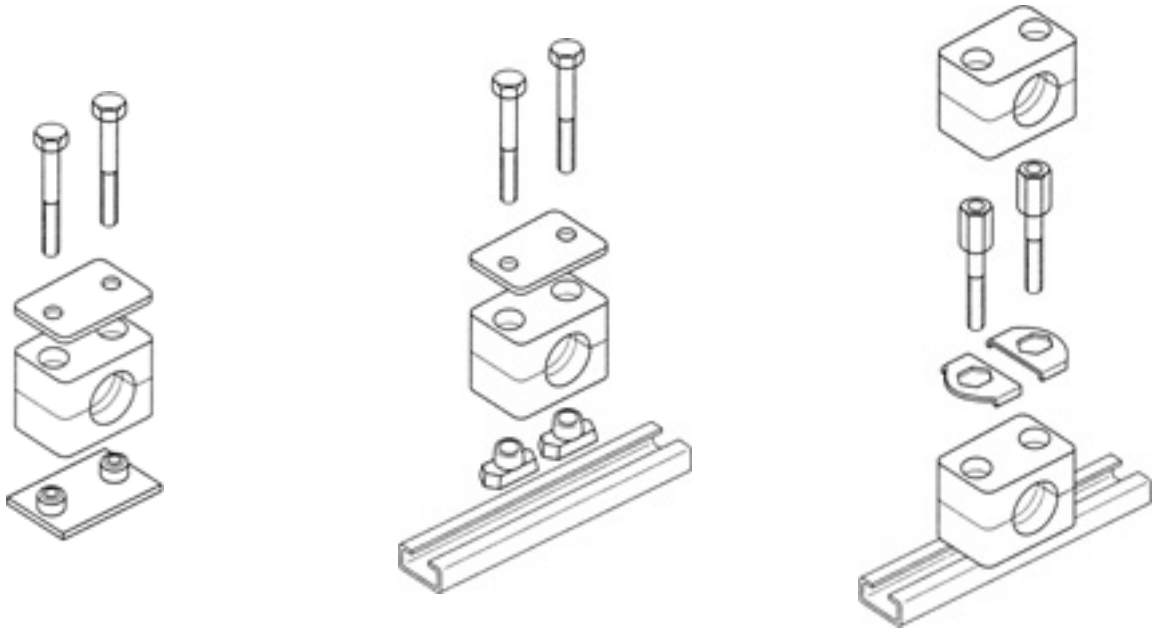
Chemical properties				
Weak acids		limited resistant	limited resistant	resistant
Weak alkalis		limited resistant	limited resistant	resistant
Alcohol		resistant	resistant	resistant
Petrol		limited resistant	resistant	limited resistant
Mineral oils		resistant	resistant	resistant
Other oils		resistant	resistant	resistant

The outlined particulars are approximate values and are only shown for reference, which are not binding, and with regard to possible protection of third parties. They do not exempt you from your own examination of suitability of the products delivered by us. Therefore, these values can only be used in a limited way for guidance only.

The application of the products is carried out outside of our control and, therefore, is exclusively subject to your own area of responsibility. Any claim however would be limited for all damages to the value of the goods supplied by us and in use by you.

It goes without saying, that we guarantee the perfect quality of our products according to our general sales and delivery conditions.

**Tube clamps assembly instruction**



**Assembly:**

**Assembly on to metal welding plates**

Place welding plates on a base appropriate for the load. Make sure that the clamps are properly aligned. Clamp lower clamp half onto welding plate, insert tube, place upper clamp half onto lower half and fasten with the screws. Attention must be paid to the bias (after completed assembly, clamp halves may not be in contact)! Do not weld with fitted plastic clamp! Extended welding plates may be screw-fastened to the base.

**Assembly on support rails**

Support rails are available in four different heights and come in pieces of 1 m or 2 m length, as required. Weld on support rail or screw-fasten with fastening angle bracket. Insert support rail nuts in rail and turn until stoppage. For heavy duty construction series, nuts are simply pushed in. Clamp lower clamp half on support rail nuts, insert tube, place upper clamp half onto lower half and fasten with the screws. Before fastening the screws the clamp may still be positioned. Attention must be paid to the bias (after completed assembly, the clamp halves may not be in contact)!

**Construction assembly**

Clamps allow the assembly of multiple clamps of the same construction size and of different tube diameters one above the other. The construction assembly is carried out with special fixing screws that are secured against twisting by applying a locking plate. Clamp lower clamp half on welding plate or support rail respectively, insert tube, place upper clamp half on lower half and fasten with fixing screws. The fixing screw juts out from the upper clamp half. The application of a locking late scurely fastens the fixing screw and prevents twisting. Clamp on second clamp half on to the fixing screws etc.

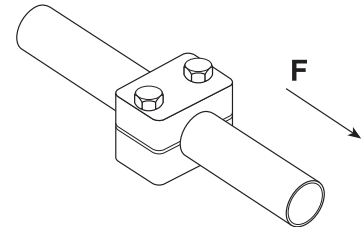


## Tube clamps

DIN 3015

### Screw tightening torque and axial pipe shearing forces

The indicated screw tightening torque and axial pipe shearing forces refer to the assembly with cover plates and outside hexagon bolts according to DIN 931/933. The axial pipe shearing force (according to DIN 3015, part 10) is an average value, determined by three tests made with a steel pipe according to DIN 2448 of St. 37, for which static friction is assumed (temperature during tests: 23°C). When loading the clamp with the indicated test force (F) in axial pipe direction, the pipe must not slide in the clamp.



### Light series (DIN 3015, part 1)

Size	Fixing screw DIN 931/933	Polypropylene		Polyamide		Aluminium	
		Screw tightening torque (Mn)	Pipe shearing force F (kN)	Screw tightening torque (Mn)	Pipe shearing force F (kN)	Screw tightening torque (Mn)	Pipe shearing force F (kN)
0	M6	8	0.6	10	0.6	–	–
1	M6	8	1.1	10	0.7	12	4.2
2	M6	8	1.2	10	0.8	12	4.3
3	M6	8	1.4	10	1.6	12	4.8
4	M6	8	1.5	10	1.7	12	5.0
5	M6	8	1.9	10	2.0	12	7.3
6	M6	8	2.0	10	2.5	12	8.9

### Heavy series (DIN 3015, part 2)

Size	Fixing screw DIN 931/933	Polypropylene		Polyamide		Aluminium	
		Screw tightening torque (Mn)	Pipe shearing force F (kN)	Screw tightening torque (Mn)	Pipe shearing force F (kN)	Screw tightening torque (Mn)	Pipe shearing force F (kN)
1	M10	12	1.6	20	4.2	30	12.1
2	M10	12	2.9	20	4.5	30	15.1
3	M10	15	3.3	25	5.1	35	15.5
4	M12	30	8.2	40	9.3	55	29.4
5	M16	45	11.0	55	15.8	120	34.8
6	M20	80	14.0	150	21.0	220	50.0
7	M24	110	28.0	200	32.0	250	70.6
8	M30	180	40.0	350	48.0	500	84.5

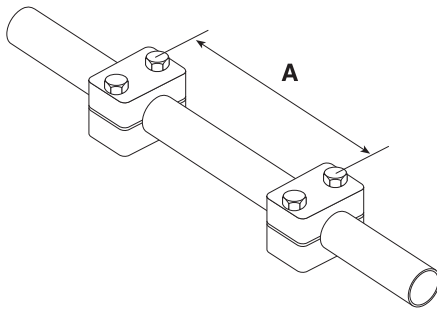
### Double series (DIN 3015, part 3)

Size	Fixing screw DIN 931/933	Polypropylene		Polyamide	
		Screw tightening torque (Mn)	Pipe shearing force F (kN)	Screw tightening torque (Mn)	Pipe shearing force F (kN)
1	M6	5	0.9	5	0.9
2	M8	12	2.1	12	2.2
3	M8	12	1.9	12	2.0
4	M8	12	2.7	12	2.9
5	M8	8	1.7	8	2.5

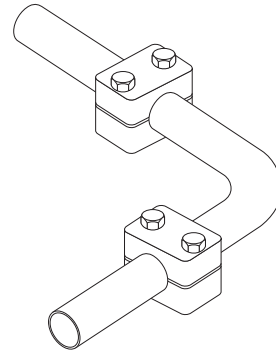
**Tube clamps**

DIN 3015

**Recommended clamp pitch**



**Pipe bend assembly**



The clamp pitches corresponding to respective outside pipe diameters are standard for static loads.

Pipe bends must be fixed with pipe clamps immediately in front of and behind the bend.

Outside pipe diameter (mm)	Clamp pitch A (m)
6.0– 12.7	1.0
12.7– 22.0	1.2
22.0– 32.0	1.5
32.0– 38.0	2.0
38.0– 57.0	2.7
57.0– 75.0	3.0
75.0– 76.1	3.5
76.1– 88.9	3.7
88.9–102.0	4.0
102.0–114.0	4.5
114.0–168.0	5.0
168.0–219.0	6.0

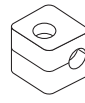


**Tube clamps series A (Light construction series) – Components**

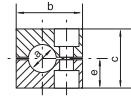
DIN 3015, part 1

**Order code for clamp halves:**

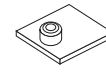
 Polypropylene – **RAP**  
 Inside smooth – **RAPG**  
 Polyamide 6 – **RAN**  
 Inside smooth – **RANG**  
 Rubber – **RAVG**  
 Aluminium – **RAA<sup>1)</sup>**

 (Please exchange as required standard abbreviation  
 RAP in column for “clamp halves”)


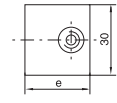
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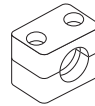
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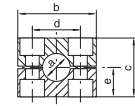
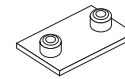
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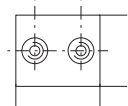
size 0



size 1-6


 size 1-6  
 Width: 30 mm


size 1-6


 size 1-6  
 Thickness:  
 3 mm

clamp size	Tube O.D. mm a	Tube NB	Tube O.D.	1 part		welding plate, short					
				RAP... Order code	2 clamp halves dimensions: b c d e	APK A... Order code	dimensions: d e				
0	6.0	G 1/8	1/4	<b>RAP006X</b> <b>RAP006.4X</b> <b>RAP008X</b> <b>RAP009.5X</b> <b>RAP010X</b> <b>RAP012X</b>	28	27	-	13.5	<b>APKA0X</b>	-	30
	6.4										
	8.0										
	9.5										
	10.0										
12.0											
1	6.0	G 1/8	1/4	<b>RAP106X</b> <b>RAP106.4X</b> <b>RAP108X</b> <b>RAP109.5X</b> <b>RAP110X</b> <b>RAP112X</b>	34	27	20	13.5	<b>APKA1X</b>	20	36
	6.4										
	8.0										
	9.5										
	10.0										
12.0											
2	12.7	G 1/4	1/2	<b>RAP212.7X</b> <b>RAP213.5X</b> <b>RAP214X</b> <b>RAP215X</b> <b>RAP216X</b> <b>RAP217.2X</b> <b>RAP218X</b>	40	33	26	16.5	<b>APKA2X</b>	26	42
	13.5										
	14.0										
	15.0	G 3/8	5/8								
	16.0										
17.2											
18.0											
3	19.0	G 1/2	3/4	<b>RAP319X</b> <b>RAP320X</b> <b>RAP321.3X</b> <b>RAP322X</b> <b>RAP323X</b> <b>RAP325X</b>	48	35	33	17.5	<b>APKA3X</b>	33	50
	20.0										
	21.3										
	22.0										
	23.0										
25.0	1										
4	26.9	G 3/4		<b>RAP426.9X</b> <b>RAP428X</b> <b>RAP430X</b>	57	42	40	21	<b>APKA4X</b>	40	59
	28.0										
	30.0										
5	32.0	G 1	1 1/4	<b>RAP532X</b> <b>RAP533.7X</b> <b>RAP535X</b> <b>RAP538X</b> <b>RAP540X</b> <b>RAP542X</b>	70	58	52	29	<b>APKA5X</b>	52	72
	33.7										
	35.0										
	38.0	G 1 1/4	1 1/2								
	40.0										
42.0											
6	44.5	G 1 1/2	1 3/4	<b>RAP644.5X</b> <b>RAP645X</b> <b>RAP648X</b> <b>RAP650X</b> <b>RAP650.8X</b> <b>RAP652X</b> <b>RAP655X</b> <b>RAP657X</b>	86	66	66	33	<b>APKA6X</b>	66	88
	45.0										
	48.0										
	50.0										
	50.8										
	52.0										
	55.0		2								
57.0	2 1/4										

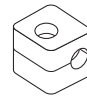
Continuation see next page ...

**Tube clamps series A (Light construction series) – Components (Continued)**

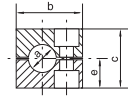
DIN 3015, part 1

**Order code for clamp halves:**

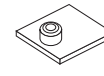
- Polypropylene – **RAP**
- Inside smooth – **RAPG**
- Polyamide 6 – **RAN**
- Inside smooth – **RANG**
- Rubber – **RAVG**
- Aluminium – **RAA<sup>1)</sup>**

 (Please exchange as required standard abbreviation  
 RAP in column for "clamp halves")


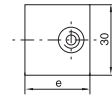
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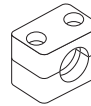
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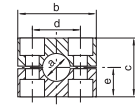
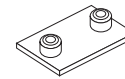
size 0



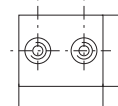
size 0



size 1-6


 size 1-6  
 Width: 30 mm


size 1-6


 size 1-6  
 Thickness:  
 3 mm

clamp size	Tube O.D. mm a	Tube NB	Tube O.D.	1 part		welding plate, short	
				RAP... Order code	dimensions: b c d e	APK A... Order code	dimensions: d e
7	57.2	G 2	2 1/4	<b>RAP757.2X</b> <b>RAP-760.3X</b> <b>RAP-763.50X</b> <b>RAP-770X</b> <b>RAP-773X</b> <b>RAP-776,1X</b>	121 93.6 94 46.8	<b>APKA7X</b>	94 122
	60.3		2 1/2				
	63,5		2 3/4				
	70.0						
	73.0						
	76.1	G 2 1/2	3				
8	88.9	G 3	4	<b>RAP-888.9X</b> <b>RAP-8101.8X</b>	147 117.6 120 58.8	<b>APKA8X</b>	120 148
	101.8						

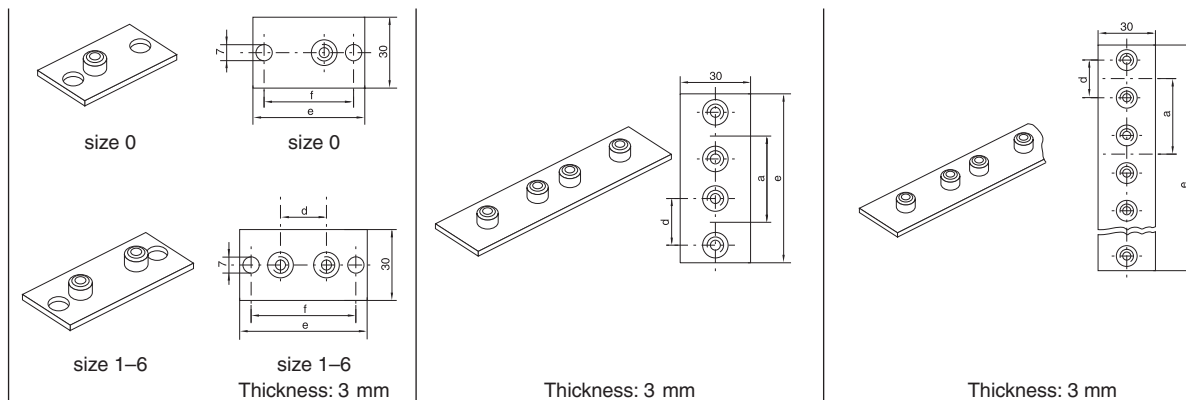
When assembling solid rubber clamps, covering plates, hexagon screws and locking washers must be used. All metal parts available in stainless steel.

1) Aluminium only sizes 1 to 6.



## Tube clamps series A (Light construction series) – Components

DIN 3015, part 1

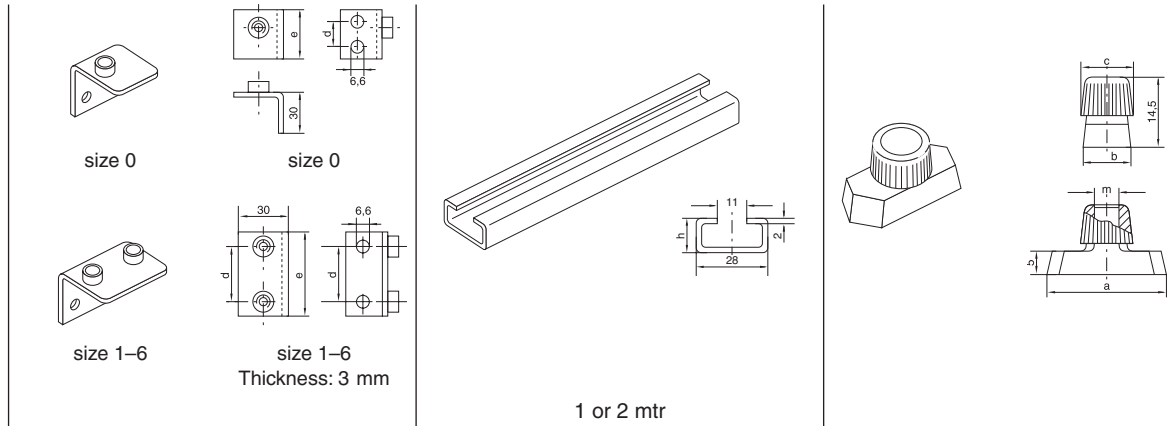


clamp size	weld/screw plate, long			twin welding plate			multiple weld plate					
	APL A... Order code	dimensions: d e f			APD A... Order code	dimensions: d a e			APR A... Order code	dimensions: d a e		
0	<b>APLA0X</b>	–	58	44	<b>APDA0X</b>	–	30	61	<b>APRA0X</b> (10 clamps)	–	30	298
1	<b>APLA1X</b>	20	64	50	<b>APDA1X</b>	20	35	69	<b>APRA1X</b> (10 clamps)	20	35	349
2	<b>APLA2X</b>	26	70	56	<b>APDA2X</b>	26	43	86	<b>APRA2X</b> (10 clamps)	26	43	427
3	<b>APLA3X</b>	33	78	64	<b>APDA3X</b>	33	52	104	<b>APRA3X</b> (10 clamps)	33	52	516
4	<b>APLA4X</b>	40	87	73	<b>APDA4X</b>	40	60	117	<b>APRA4X</b> (5 clamps)	40	60	297
5	<b>APLA5X</b>	52	100	86	<b>APDA5X</b>	52	75	145	<b>APRA5X</b> (5 clamps)	52	75	370
6	<b>APLA6X</b>	66	116	100	<b>APDA6X</b>	66	90	176	<b>APRA6X</b> (5 clamps)	66	90	446
7	<b>APLA7X</b>	94	150	136								
8	<b>APLA8X</b>	120	178	162								

Metal parts also available in stainless steel.

**Tube clamps series A (Light construction series) – Components**

DIN 3015, part 1



clamp size	weld plate, angled		mounting rail		rail nut				
	APW A... Order code	dimensions: d e	TS...A/B Order code	dimensions: h	TM...A/B1 Order code	dimensions: a b c m			
0	<b>APWA0X</b>	14 30	<b>TS11A/B1X</b> <b>TS11A/B2X</b> <b>TS14A/B1X</b> <b>TS14A/B2X</b> <b>TS30A/B1X</b> <b>TS30A/B2X</b>	TS11: 11 TS14: 14 TS30: 30	<b>TMA/TMB1VERZX</b>	25.4	10.4	12	M6
1	<b>APWA1X</b>	20 36							
2	<b>APWA2X</b>	26 42							
3	<b>APWA3X</b>	33 50							
4	<b>APWA4X</b>	40 59							
5	<b>APWA5X</b>	52 72							
6	<b>APWA6X</b>	66 88							

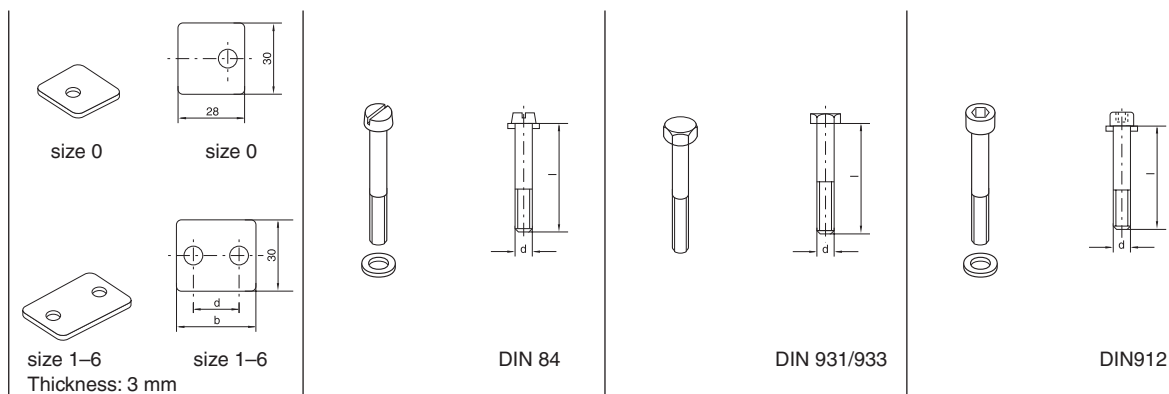
Metal parts also available in stainless steel.





**Tube clamps series A (Light construction series) – Components**

DIN 3015, part 1

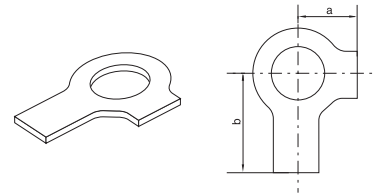
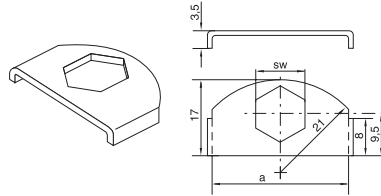
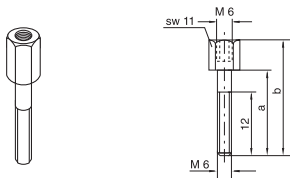


clamp size	cover plate		slot head		hexagon head		socket head	
	DP A... Order code	dimensions: b d	SL A... Order code	dimensions: d x L	SSL A... Order code	dimensions: d x L	IS A... Order code	dimensions: d x L
0	<b>DPA0X</b>	– –	<b>SLA0X</b>	M 06x20	<b>SSLA0X</b>	M 06x30	<b>ISA0X</b>	M 06x20
1	<b>DPA1X</b>	34 20	<b>SLA1X</b>	M 06x20	<b>SSLA0X</b>	M 06x30	<b>ISA0X</b>	M 06x20
2	<b>DPA2X</b>	40 26	<b>SLA2X</b>	M 06x25	<b>SSLA2/SSB1X</b>	M 06x35	<b>ISA2X</b>	M 06x25
3	<b>DPA3X</b>	48 33	<b>SLA3X</b>	M 06x30	<b>SSLA3X</b>	M 06x40	<b>ISA3X</b>	M 06x30
4	<b>DPA4X</b>	57 40	<b>SLA4X</b>	M 06x35	<b>SSLA4X</b>	M 06x45	<b>ISA4X</b>	M 06x35
5	<b>DPA5X</b>	70 52	<b>SLA5X</b>	M 06x50	<b>SSLA5X</b>	M 06x60	<b>ISA5X</b>	M 06x50
6	<b>DPA6X</b>	86 66	<b>SLA6X</b>	M 06x60	<b>SSLA6X</b>	M 06x70	<b>ISA6X</b>	M 06x60
7	<b>DPA7X</b>	120 94			<b>SSLA7X</b>	M 06x100		
8	<b>DPA8X</b>	146 120			<b>SSLA8X</b>	M 06x125		

All metal parts available in stainless steel.

**Tube clamps series A (Light construction series) – Components**

DIN 3015, part 1



clamp size	stacking <sup>1)</sup>		locking plate <sup>1)</sup>		locking washer <sup>2)</sup>	
	AS A... Order code	dimensions: a    b	SB A Order code	dimensions: a    SW	US A Order code	dimensions: a    b
0	<b>ASA0X (ASB1X)</b>	20    34	<b>SBAX</b>	30    11	<b>USA/USB1X</b>	9    18
1	<b>ASA0X (ASB1X)</b>	20    34				
2	<b>ASA2X</b>	25    39				
3	<b>ASA3X</b>	30    44				
4	<b>ASA4X</b>	35    49				
5	<b>ASA5X</b>	50    64				
6	<b>ASA6X</b>	60    74				

<sup>1)</sup> The use of stacking bolts necessitates the use of locking plates in the construction assembly.

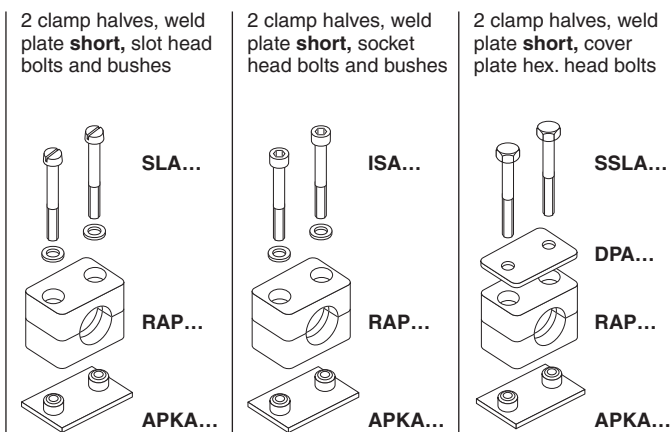
<sup>2)</sup> When assembling solid rubber clamps, cover plates, hexagon screws and locking washers must be used. Metal parts also available in stainless steel.



## Tube clamps series A (Light construction series) – Complete range

Polypropylene – **RAP**  
 Inside smooth – **RAPG**  
 Polyamide 6 – **RAN**  
 Inside smooth – **RANG**  
 Rubber – **RAVG\***  
 Aluminium – **RAA**

(As required please exchange standard abbreviation RAP in column for “Order code”)



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code	Order code
0 <sup>1)</sup>	6.0	G 1/8	1/4	<b>RAP1-006</b>	<b>RAP2-006</b>	<b>RAP3-006</b>
	6.4			<b>RAP1-006.4</b>	<b>RAP2-006.4</b>	<b>RAP3-006.4</b>
	8.0			<b>RAP1-008</b>	<b>RAP2-008</b>	<b>RAP3-008</b>
	9.5		3/8	<b>RAP1-009.5</b>	<b>RAP2-009.5</b>	<b>RAP3-009.5</b>
	10.0			<b>RAP1-010</b>	<b>RAP2-010</b>	<b>RAP3-010</b>
	12.0			<b>RAP1-012</b>	<b>RAP2-012</b>	<b>RAP3-012</b>
1	6.0	G 1/8	1/4	<b>RAP1-106</b>	<b>RAP2-106</b>	<b>RAP3-106</b>
	6.4			<b>RAP1-106.4</b>	<b>RAP2-106.4</b>	<b>RAP3-106.4</b>
	8.0			<b>RAP1-108</b>	<b>RAP2-108</b>	<b>RAP3-108</b>
	9.5		3/8	<b>RAP1-109.5</b>	<b>RAP2-109.5</b>	<b>RAP3-109.5</b>
	10.0			<b>RAP1-110</b>	<b>RAP2-110</b>	<b>RAP3-110</b>
	12.0			<b>RAP1-112</b>	<b>RAP2-112</b>	<b>RAP3-112</b>
2	12.7	G 1/4	1/2	<b>RAP1-212.7</b>	<b>RAP2-212.7</b>	<b>RAP3-212.7</b>
	13.5			<b>RAP1-213.5</b>	<b>RAP2-213.5</b>	<b>RAP3-213.5</b>
	14.0			<b>RAP1-214</b>	<b>RAP2-214</b>	<b>RAP3-214</b>
	15.0	G 3/8	5/8	<b>RAP1-215</b>	<b>RAP2-215</b>	<b>RAP3-215</b>
	16.0			<b>RAP1-216</b>	<b>RAP2-216</b>	<b>RAP3-216</b>
	17.2			<b>RAP1-217.2</b>	<b>RAP2-217.2</b>	<b>RAP3-217.2</b>
18.0	<b>RAP1-218</b>	<b>RAP2-218</b>	<b>RAP3-218</b>			
3	19.0	G 1/2	3/4	<b>RAP1-319</b>	<b>RAP2-319</b>	<b>RAP3-319</b>
	20.0			<b>RAP1-320</b>	<b>RAP2-320</b>	<b>RAP3-320</b>
	21.3			<b>RAP1-321.3</b>	<b>RAP2-321.3</b>	<b>RAP3-321.3</b>
	22.0		1	<b>RAP1-322</b>	<b>RAP2-322</b>	<b>RAP3-322</b>
	23.0			<b>RAP1-323</b>	<b>RAP2-323</b>	<b>RAP3-323</b>
	25.0			<b>RAP1-325</b>	<b>RAP2-325</b>	<b>RAP3-325</b>
4	26.9	G 3/4		<b>RAP1-426.9</b>	<b>RAP2-426.9</b>	<b>RAP3-426.9</b>
	28.0			<b>RAP1-428</b>	<b>RAP2-428</b>	<b>RAP3-428</b>
	30.0			<b>RAP1-430</b>	<b>RAP2-430</b>	<b>RAP3-430</b>
5	32.0	G 1	1 1/4	<b>RAP1-532</b>	<b>RAP2-532</b>	<b>RAP3-532</b>
	33.7			<b>RAP1-533.7</b>	<b>RAP2-533.7</b>	<b>RAP3-533.7</b>
	35.0			<b>RAP1-535</b>	<b>RAP2-535</b>	<b>RAP3-535</b>
	38.0	G 1 1/4	1 1/2	<b>RAP1-538</b>	<b>RAP2-538</b>	<b>RAP3-538</b>
	40.0			<b>RAP1-540</b>	<b>RAP2-540</b>	<b>RAP3-540</b>
	42.0			<b>RAP1-542</b>	<b>RAP2-542</b>	<b>RAP3-542</b>
6	44.5	G 1 1/2	1 3/4	<b>RAP1-644.5</b>	<b>RAP2-644.5</b>	<b>RAP3-644.5</b>
	45.0			<b>RAP1-645</b>	<b>RAP2-645</b>	<b>RAP3-645</b>
	48.0			<b>RAP1-648</b>	<b>RAP2-648</b>	<b>RAP3-648</b>
	50.0	2	2	<b>RAP1-650</b>	<b>RAP2-650</b>	<b>RAP3-650</b>
	50.8			<b>RAP1-650.8</b>	<b>RAP2-650.8</b>	<b>RAP3-650.8</b>
	52.0			<b>RAP1-652</b>	<b>RAP2-652</b>	<b>RAP3-652</b>
	55.0	2 1/4	2 1/4	<b>RAP1-655</b>	<b>RAP2-655</b>	<b>RAP3-655</b>
	57.0			<b>RAP1-657</b>	<b>RAP2-657</b>	<b>RAP3-657</b>

Delivery in unassembled individual components.

<sup>1)</sup> Contrary to the illustration size 0 clamps are secured by only one screw.

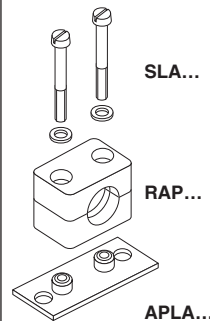
\* Only with cover plate, hexagon screws and locking washers.

## Tube clamps series A (Light construction series) – Complete range

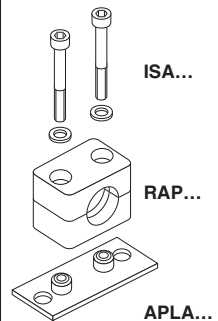
Polypropylene – **RAP**  
 Inside smooth – **RAPG**  
 Polyamide 6 – **RAN**  
 Inside smooth – **RANG**  
 Rubber – **RAVG\***  
 Aluminium – **RAA**

(As required please exchange standard abbreviation RAP in column for “Order code”)

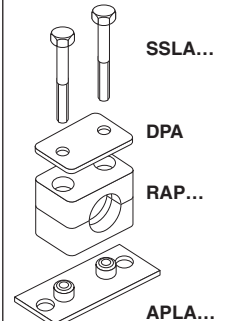
2 clamp halves, weld/  
screw plate, slot head  
bolts and bushes



2 clamp halves, weld/  
screw plate, socket  
head bolts and bushes



2 clamp halves, weld/  
screw plate, cover plate  
and hex. head bolts



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code	Order code	
0 <sup>1)</sup>	6.0	G 1/8	1/4	<b>RAP4-006</b>	<b>RAP5-006</b>	<b>RAP6-006</b>	
	6.4			<b>RAP4-006.4</b>	<b>RAP5-006.4</b>	<b>RAP6-006.4</b>	
	8.0			<b>RAP4-008</b>	<b>RAP5-008</b>	<b>RAP6-008</b>	
	9.5		5/16	<b>RAP4-009.5</b>	<b>RAP5-009.5</b>	<b>RAP6-009.5</b>	
	10.0			<b>RAP4-010</b>	<b>RAP5-010</b>	<b>RAP6-010</b>	
	12.0			<b>RAP4-012</b>	<b>RAP5-012</b>	<b>RAP6-012</b>	
1	6.0	G 1/8	1/4	<b>RAP4-106</b>	<b>RAP5-106</b>	<b>RAP6-106</b>	
	6.4			<b>RAP4-106.4</b>	<b>RAP5-106.4</b>	<b>RAP6-106.4</b>	
	8.0			<b>RAP4-108</b>	<b>RAP5-108</b>	<b>RAP6-108</b>	
	9.5		5/16	<b>RAP4-109.5</b>	<b>RAP5-109.5</b>	<b>RAP6-109.5</b>	
	10.0			<b>RAP4-110</b>	<b>RAP5-110</b>	<b>RAP6-110</b>	
	12.0			<b>RAP4-112</b>	<b>RAP5-112</b>	<b>RAP6-112</b>	
2	12.7	G 1/4	1/2	<b>RAP4-212.7</b>	<b>RAP5-212.7</b>	<b>RAP6-212.7</b>	
	13.5			<b>RAP4-213.5</b>	<b>RAP5-213.5</b>	<b>RAP6-213.5</b>	
	14.0			<b>RAP4-214</b>	<b>RAP5-214</b>	<b>RAP6-214</b>	
	15.0			<b>RAP4-215</b>	<b>RAP5-215</b>	<b>RAP6-215</b>	
	16.0	G 3/8	5/8	<b>RAP4-216</b>	<b>RAP5-216</b>	<b>RAP6-216</b>	
	17.2			<b>RAP4-217.2</b>	<b>RAP5-217.2</b>	<b>RAP6-217.2</b>	
	18.0			<b>RAP4-218</b>	<b>RAP5-218</b>	<b>RAP6-218</b>	
	3			19.0	G 1/2	3/4	<b>RAP4-319</b>
20.0		<b>RAP4-320</b>	<b>RAP5-320</b>	<b>RAP6-320</b>			
21.3		<b>RAP4-321.3</b>	<b>RAP5-321.3</b>	<b>RAP6-321.3</b>			
22.0		1	<b>RAP4-322</b>	<b>RAP5-322</b>		<b>RAP6-322</b>	
23.0			<b>RAP4-323</b>	<b>RAP5-323</b>		<b>RAP6-323</b>	
25.0			<b>RAP4-325</b>	<b>RAP5-325</b>		<b>RAP6-325</b>	
4	26.9	G 3/4		<b>RAP4-426.9</b>	<b>RAP5-426.9</b>	<b>RAP6-426.9</b>	
	28.0			<b>RAP4-428</b>	<b>RAP5-428</b>	<b>RAP6-428</b>	
	30.0			<b>RAP4-430</b>	<b>RAP5-430</b>	<b>RAP6-430</b>	
5	32.0	G 1	1 1/4	<b>RAP4-532</b>	<b>RAP5-532</b>	<b>RAP6-532</b>	
	33.7			<b>RAP4-533.7</b>	<b>RAP5-533.7</b>	<b>RAP6-533.7</b>	
	35.0			<b>RAP4-535</b>	<b>RAP5-535</b>	<b>RAP6-535</b>	
	38.0	G 1 1/4	1 1/2	<b>RAP4-538</b>	<b>RAP5-538</b>	<b>RAP6-538</b>	
	40.0			<b>RAP4-540</b>	<b>RAP5-540</b>	<b>RAP6-540</b>	
	42.0			<b>RAP4-542</b>	<b>RAP5-542</b>	<b>RAP6-542</b>	
6	44.5	G 1 1/2	1 3/4	<b>RAP4-644.5</b>	<b>RAP5-644.5</b>	<b>RAP6-644.5</b>	
	45.0			<b>RAP4-645</b>	<b>RAP5-645</b>	<b>RAP6-645</b>	
	48.0			<b>RAP4-648</b>	<b>RAP5-648</b>	<b>RAP6-648</b>	
	50.0	2	2	<b>RAP4-650</b>	<b>RAP5-650</b>	<b>RAP6-650</b>	
	50.8			<b>RAP4-650.8</b>	<b>RAP5-650.8</b>	<b>RAP6-650.8</b>	
	52.0			<b>RAP4-652</b>	<b>RAP5-652</b>	<b>RAP6-652</b>	
	55.0			<b>RAP4-655</b>	<b>RAP5-655</b>	<b>RAP6-655</b>	
	57.0			2 1/4	<b>RAP4-657</b>	<b>RAP5-657</b>	<b>RAP6-657</b>

**Delivery in unassembled individual components.**

<sup>1)</sup> Contrary to the illustration size 0 clamps are secured by only one screw.

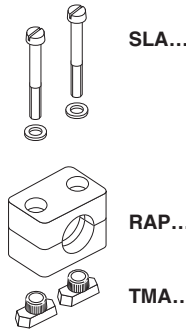
\* Only with cover plate, hexagon screws and locking washers.

## Tube clamps series A (Light construction series) – Complete range

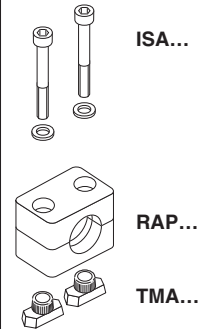
Polypropylene – **RAP**  
 Inside smooth – **RAPG**  
 Polyamide 6 – **RAN**  
 Inside smooth – **RANG**  
 Rubber – **RAVG\***  
 Aluminium – **RAA**

(As required please exchange standard abbreviation RAP in column for “Order code”)

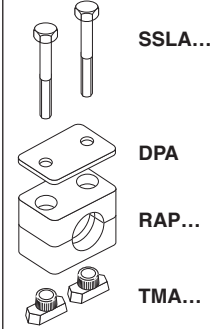
2 clamp halves, rail nuts, slot head bolts and bushes



2 clamp halves, rail nuts, socket head bolts and bushes



2 clamp halves, rail nuts, cover plate and hex. head bolts



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code	Order code
0 <sup>1)</sup>	6.0	G 1/8	1/4	<b>RAP9-006</b>	<b>RAP10-006</b>	<b>RAP12-006</b>
	6.4			<b>RAP9-006.4</b>	<b>RAP10-006.4</b>	<b>RAP12-006.4</b>
	8.0			<b>RAP9-008</b>	<b>RAP10-008</b>	<b>RAP12-008</b>
	9.5		3/8	<b>RAP9-009.5</b>	<b>RAP10-009.5</b>	<b>RAP12-009.5</b>
	10.0			<b>RAP9-010</b>	<b>RAP10-010</b>	<b>RAP12-010</b>
	12.0			<b>RAP9-012</b>	<b>RAP10-012</b>	<b>RAP12-012</b>
1	6.0	G 1/8	1/4	<b>RAP9-106</b>	<b>RAP10-106</b>	<b>RAP12-106</b>
	6.4			<b>RAP9-106.4</b>	<b>RAP10-106.4</b>	<b>RAP12-106.4</b>
	8.0			<b>RAP9-108</b>	<b>RAP10-108</b>	<b>RAP12-108</b>
	9.5		3/8	<b>RAP9-109.5</b>	<b>RAP10-109.5</b>	<b>RAP12-109.5</b>
	10.0			<b>RAP9-110</b>	<b>RAP10-110</b>	<b>RAP12-110</b>
	12.0			<b>RAP9-112</b>	<b>RAP10-112</b>	<b>RAP12-112</b>
2	12.7	G 1/4	1/2	<b>RAP9-212.7</b>	<b>RAP10-212.7</b>	<b>RAP12-212.7</b>
	13.5			<b>RAP9-213.5</b>	<b>RAP10-213.5</b>	<b>RAP12-213.5</b>
	14.0			<b>RAP9-214</b>	<b>RAP10-214</b>	<b>RAP12-214</b>
	15.0	G 3/8	5/8	<b>RAP9-215</b>	<b>RAP10-215</b>	<b>RAP12-215</b>
	16.0			<b>RAP9-216</b>	<b>RAP10-216</b>	<b>RAP12-216</b>
	17.2			<b>RAP9-217.2</b>	<b>RAP10-217.2</b>	<b>RAP12-217.2</b>
18.0	<b>RAP9-218</b>	<b>RAP10-218</b>	<b>RAP12-218</b>			
3	19.0	G 1/2	3/4	<b>RAP9-319</b>	<b>RAP10-319</b>	<b>RAP12-319</b>
	20.0			<b>RAP9-320</b>	<b>RAP10-320</b>	<b>RAP12-320</b>
	21.3			<b>RAP9-321.3</b>	<b>RAP10-321.3</b>	<b>RAP12-321.3</b>
	22.0	1	1	<b>RAP9-322</b>	<b>RAP10-322</b>	<b>RAP12-322</b>
	23.0			<b>RAP9-323</b>	<b>RAP10-323</b>	<b>RAP12-323</b>
	25.0			<b>RAP9-325</b>	<b>RAP10-325</b>	<b>RAP12-325</b>
4	26.9	G 3/4		<b>RAP9-426.9</b>	<b>RAP10-426.9</b>	<b>RAP12-426.9</b>
	28.0			<b>RAP9-428</b>	<b>RAP10-428</b>	<b>RAP12-428</b>
	30.0			<b>RAP9-430</b>	<b>RAP10-430</b>	<b>RAP12-430</b>
5	32.0	G 1	1 1/4	<b>RAP9-532</b>	<b>RAP10-532</b>	<b>RAP12-532</b>
	33.7			<b>RAP9-533.7</b>	<b>RAP10-533.7</b>	<b>RAP12-533.7</b>
	35.0			<b>RAP9-535</b>	<b>RAP10-535</b>	<b>RAP12-535</b>
	38.0	G 1 1/4	1 1/2	<b>RAP9-538</b>	<b>RAP10-538</b>	<b>RAP12-538</b>
	40.0			<b>RAP9-540</b>	<b>RAP10-540</b>	<b>RAP12-540</b>
	42.0			<b>RAP9-542</b>	<b>RAP10-542</b>	<b>RAP12-542</b>
6	44.5	G 1 1/2	1 3/4	<b>RAP9-644.5</b>	<b>RAP10-644.5</b>	<b>RAP12-644.5</b>
	45.0			<b>RAP9-645</b>	<b>RAP10-645</b>	<b>RAP12-645</b>
	48.0			<b>RAP9-648</b>	<b>RAP10-648</b>	<b>RAP12-648</b>
	50.0	2	2	<b>RAP9-650</b>	<b>RAP10-650</b>	<b>RAP12-650</b>
	50.8			<b>RAP9-650.8</b>	<b>RAP10-650.8</b>	<b>RAP12-650.8</b>
	52.0			<b>RAP9-652</b>	<b>RAP10-652</b>	<b>RAP12-652</b>
	55.0	2 1/4	2 1/4	<b>RAP9-655</b>	<b>RAP10-655</b>	<b>RAP12-655</b>
	55.0			<b>RAP9-655</b>	<b>RAP10-655</b>	<b>RAP12-655</b>
	57.0			<b>RAP9-657</b>	<b>RAP10-657</b>	<b>RAP12-657</b>

Delivery in unassembled individual components.

<sup>1)</sup> Contrary to the illustration size 0 clamps are secured by only one screw.

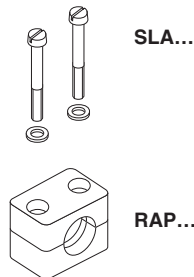
\* Only with cover plate, hexagon screws and locking washers.

**Tube clamps series A – Complete range**

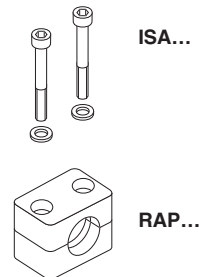
Polypropylene – **RAP**  
 Inside smooth – **RAPG**  
 Polyamide 6 – **RAN**  
 Inside smooth – **RANG**  
 Rubber – **RAVG\***  
 Aluminium – **RAA**

(As required please exchange standard abbreviation RAP in column for “Order code”)

2 clamp halves, slot heads and bushes



2 clamp halves, socket head bolts and bushes



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
0 <sup>1)</sup>	6.0	G 1/8	1/4	<b>RAP13-006</b>	<b>RAP14-006</b>
	6.4			<b>RAP13-006.4</b>	<b>RAP14-006.4</b>
	8.0			<b>RAP13-008</b>	<b>RAP14-008</b>
	9.5			<b>RAP13-009.5</b>	<b>RAP14-009.5</b>
	10.0			<b>RAP13-010</b>	<b>RAP14-010</b>
	12.0			<b>RAP13-012</b>	<b>RAP14-012</b>
1	6.0	G 1/8	1/4	<b>RAP13-106</b>	<b>RAP14-106</b>
	6.4			<b>RAP13-106.4</b>	<b>RAP14-106.4</b>
	8.0			<b>RAP13-108</b>	<b>RAP14-108</b>
	9.5			<b>RAP13-109.5</b>	<b>RAP14-109.5</b>
	10.0			<b>RAP13-110</b>	<b>RAP14-110</b>
	12.0			<b>RAP13-112</b>	<b>RAP14-112</b>
2	12.7	G 1/4	1/2	<b>RAP13-212.7</b>	<b>RAP14-212.7</b>
	13.5			<b>RAP13-213.5</b>	<b>RAP14-213.5</b>
	14.0			<b>RAP13-214</b>	<b>RAP14-214</b>
	15.0	G 3/8	5/8	<b>RAP13-215</b>	<b>RAP14-215</b>
	16.0			<b>RAP13-216</b>	<b>RAP14-216</b>
	17.2			<b>RAP13-217.2</b>	<b>RAP14-217.2</b>
18.0	<b>RAP13-218</b>	<b>RAP14-218</b>			
3	19.0	G 1/2	3/4	<b>RAP13-319</b>	<b>RAP14-319</b>
	20.0			<b>RAP13-320</b>	<b>RAP14-320</b>
	21.3			<b>RAP13-321.3</b>	<b>RAP14-321.3</b>
	22.0	1	1	<b>RAP13-322</b>	<b>RAP14-322</b>
	23.0			<b>RAP13-323</b>	<b>RAP14-323</b>
	25.0			<b>RAP13-325</b>	<b>RAP14-325</b>
4	26.9	G 3/4		<b>RAP13-426.9</b>	<b>RAP14-426.9</b>
	28.0			<b>RAP13-428</b>	<b>RAP14-428</b>
	30.0			<b>RAP13-430</b>	<b>RAP14-430</b>
5	32.0	G 1	1 1/4	<b>RAP13-532</b>	<b>RAP14-532</b>
	33.7			<b>RAP13-533.7</b>	<b>RAP14-533.7</b>
	35.0			<b>RAP13-535</b>	<b>RAP14-535</b>
	38.0	G 1 1/4	1 1/2	<b>RAP13-538</b>	<b>RAP14-538</b>
	40.0			<b>RAP13-540</b>	<b>RAP14-540</b>
	42.0			<b>RAP13-542</b>	<b>RAP14-542</b>
6	44.5	G 1 1/2	1 3/4	<b>RAP13-644.5</b>	<b>RAP14-644.5</b>
	45.0			<b>RAP13-645</b>	<b>RAP14-645</b>
	48.0			<b>RAP13-648</b>	<b>RAP14-648</b>
	50.0			<b>RAP13-650</b>	<b>RAP14-650</b>
	50.8	2	2	<b>RAP13-650.8</b>	<b>RAP14-650.8</b>
	52.0			<b>RAP13-652</b>	<b>RAP14-652</b>
	55.0			<b>RAP13-655</b>	<b>RAP14-655</b>
	57.0			<b>RAP13-657</b>	<b>RAP14-657</b>
			2 1/4		

**Delivery in unassembled individual components.**

<sup>1)</sup> Contrary to the illustration size 0 clamps are secured by only one screw.

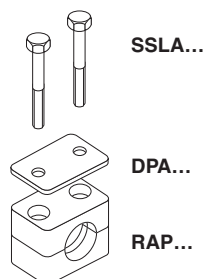
\* Only with cover plate, hexagon screws and locking washers.

**Tube clamps series A – Complete range**

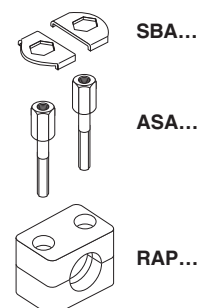
Polypropylene – **RAP**  
 Inside smooth – **RAPG**  
 Polyamide 6 – **RAN**  
 Inside smooth – **RANG**  
 Rubber – **RAVG\***  
 Aluminium – **RAA**

(As required please exchange standard abbreviation RAP in column for “Order code”)

2 clamp halves, cover plate and hex. head bolts



2 clamp halves, stacking bolts and locking plate



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
0 <sup>1)</sup>	6.0	G 1/8	1/4	<b>RAP16-006</b>	<b>RAP18-006</b>
	6.4			<b>RAP16-006.4</b>	<b>RAP18-006.4</b>
	8.0			<b>RAP16-008</b>	<b>RAP18-008</b>
	9.5			<b>RAP16-009.5</b>	<b>RAP18-009.5</b>
	10.0			<b>RAP16-010</b>	<b>RAP18-010</b>
	12.0			<b>RAP16-012</b>	<b>RAP18-012</b>
1	6.0	G 1/8	1/4	<b>RAP16-106</b>	<b>RAP18-106</b>
	6.4			<b>RAP16-106.4</b>	<b>RAP18-106.4</b>
	8.0			<b>RAP16-108</b>	<b>RAP18-108</b>
	9.5			<b>RAP16-109.5</b>	<b>RAP18-109.5</b>
	10.0			<b>RAP16-110</b>	<b>RAP18-110</b>
	12.0			<b>RAP16-112</b>	<b>RAP18-112</b>
2	12.7	G 1/4	1/2	<b>RAP16-212.7</b>	<b>RAP18-212.7</b>
	13.5			<b>RAP16-213.5</b>	<b>RAP18-213.5</b>
	14.0			<b>RAP16-214</b>	<b>RAP18-214</b>
	15.0	G 3/8	5/8	<b>RAP16-215</b>	<b>RAP18-215</b>
	16.0			<b>RAP16-216</b>	<b>RAP18-216</b>
	17.2			<b>RAP16-217.2</b>	<b>RAP18-217.2</b>
18.0	<b>RAP16-218</b>	<b>RAP18-218</b>			
3	19.0	G 1/2	3/4	<b>RAP16-319</b>	<b>RAP18-319</b>
	20.0			<b>RAP16-320</b>	<b>RAP18-320</b>
	21.3			<b>RAP16-321.3</b>	<b>RAP18-321.3</b>
	22.0		1	<b>RAP16-322</b>	<b>RAP18-322</b>
	23.0			<b>RAP16-323</b>	<b>RAP18-323</b>
	25.0			<b>RAP16-325</b>	<b>RAP18-325</b>
4	26.9	G 3/4		<b>RAP16-426.9</b>	<b>RAP18-426.9</b>
	28.0			<b>RAP16-428</b>	<b>RAP18-428</b>
	30.0			<b>RAP16-430</b>	<b>RAP18-430</b>
5	32.0	G 1	1 1/4	<b>RAP16-532</b>	<b>RAP18-532</b>
	33.7			<b>RAP16-533.7</b>	<b>RAP18-533.7</b>
	35.0			<b>RAP16-535</b>	<b>RAP18-535</b>
	38.0	G 1 1/4	1 1/2	<b>RAP16-538</b>	<b>RAP18-538</b>
	40.0			<b>RAP16-540</b>	<b>RAP18-540</b>
	42.0			<b>RAP16-542</b>	<b>RAP18-542</b>
6	44.5	G 1 1/2	1 3/4	<b>RAP16-644.5</b>	<b>RAP18-644.5</b>
	45.0			<b>RAP16-645</b>	<b>RAP18-645</b>
	48.0			<b>RAP16-648</b>	<b>RAP18-648</b>
	50.0			<b>RAP16-650</b>	<b>RAP18-650</b>
	50.8		2	<b>RAP16-650.8</b>	<b>RAP18-650.8</b>
	52.0			<b>RAP16-652</b>	<b>RAP18-652</b>
	55.0			<b>RAP16-655</b>	<b>RAP18-655</b>
	57.0			<b>RAP16-657</b>	<b>RAP18-657</b>
			2 1/4		

**Delivery in unassembled individual components.**

<sup>1)</sup> Contrary to the illustration size 0 clamps are secured by only one screw.

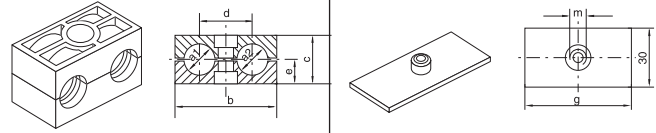
\* Only with cover plate, hexagon screws and locking washers.

**Tube clamps series B (Twin-tube clamps) – Components**

DIN 3015, part 3

**Order code for clamp halves:**

 Polypropylene – **RBP**  
 Inside smooth – **RBPG**  
 Polyamide 6 – **RBN**  
 Rubber – **RBVG**

 (Please exchange standard abbreviation RBP  
 in column for “clamp halves” as required.)


clamp size	Tube O.D. mm	Tube NB	Tube O.D.	1 part 2 clamp halves <sup>1)</sup>		weld plate	
				RBP... Order code	dimensions: b c d e	APB... Order code	dimensions: g m
1	6.0	G 1/8	1/4 5/16 3/8	<b>RBP106X</b> <b>RBP106.4X</b> <b>RBP108X</b> <b>RBP109.5X</b> <b>RBP110X</b> <b>RBP112X</b>	36 27 20 13.5	<b>APB1X</b>	37 M8  Thickness: 3 mm
	6.4						
	8.0						
	9.5						
	10.0						
2	12.7	G 1/4  G 3/8	1/2  5/8	<b>RBP212.7X</b> <b>RBP213.5X</b> <b>RBP214X</b> <b>RBP215X</b> <b>RBP216X</b> <b>RBP217.2X</b> <b>RBP218X</b>	53 26 29 13	<b>APB2X</b>	55 M8  Thickness: 5 mm
	13.5						
	14.0						
	15.0						
	16.0						
3	19.0	G 1/2	3/4  1	<b>RBP319X</b> <b>RBP320X</b> <b>RBP321.3X</b> <b>RBP322X</b> <b>RBP325X</b>	67 37 36 18.5	<b>APB3X</b>	70 M8  Thickness: 5 mm
	20.0						
	21.3						
	22.0						
	25.0						
4	26.9	G 3/4		<b>RBP426.9X</b> <b>RBP428X</b> <b>RBP430X</b>	82 42 45 21	<b>APB4X</b>	85 M8 Thickness: 5 mm
	28.0						
	30.0						
5	32.0	G 1  G 1 1/4	1 1/4  1 1/2	<b>RBP532X</b> <b>RBP533.7X</b> <b>RBP535X</b> <b>RBP538X</b> <b>RBP542X</b>	106 54 56 27	<b>APB5X</b>	110 M8  Thickness: 5 mm
	33.7						
	35.0						
	38.0						
	42.0						

Metal parts also available in stainless steel.

<sup>1)</sup> Twin-tube clamps with different outer tube diameters upon request.



## Tube clamps

### Tube clamps series B (Twin-tube clamps) – Components

DIN 3015, part 3

clamp size	weld plate, angled		mounting rail		rail nut					
	APW A... Order code	dimensions: d e Thickness:	TS...A/B Order code	dimensions: h	TM...A/B1 Order code	dimensions: a b c m				
1	<b>APRB1X</b> (5 clamps)	40 196 Thickness: 3 mm	<b>TS11A/B1X</b> <b>TS11A/B2X</b> <b>TS14A/B1X</b> <b>TS14A/B2X</b> <b>TS30A/B1X</b> <b>TS30A/B2X</b>	TS11: 11 TS14: 14 TS30: 30	<b>TMA/TMB1VERZX</b>	25.4	10.4	12	M6	
2	<b>APRB2X</b> (5 clamps)	58 288 Thickness: 5 mm			<b>TMB2X</b>	25.4	10.4	12	M8	
3	<b>APRB3X</b> (5 clamps)	72 358 Thickness: 5 mm								
4	<b>APRB4X</b> (5 clamps)	90 446 Thickness: 5 mm								
5	<b>APRB5X</b> (5 clamps)	112 558 Thickness: 5 mm								

### Tube clamps series B (Twin-tube clamps) – Components

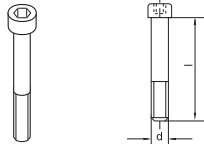
DIN 3015, part 3

clamp size	cover plate		hexagonal head	
	DP B... Order code	dimensions: b d	SS B... Order code	dimensions: d x L
1	<b>DPB1X</b>	34 6.6	<b>SSLA2/SSB1X</b>	M 06x35
2	<b>DPB2X</b>	51 8.6	<b>SSB2X</b>	M 08x35
3	<b>DPB3X</b>	64 8.6	<b>SSB3X</b>	M 08x45
4	<b>DPB4X</b>	78 8.6	<b>SSB4X</b>	M 08x50
5	<b>DPB5X</b>	102 8.6	<b>SSB5X</b>	M 08x60

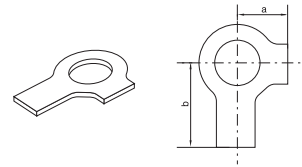
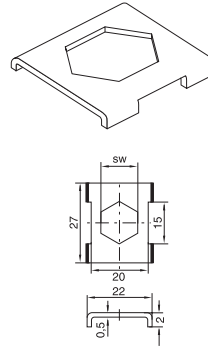
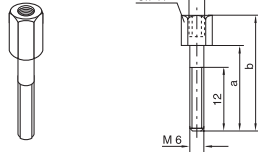
Metal parts also available in stainless steel.

**Tube clamps series B (Twin-tube clamps) – Components**

DIN 3015, part 3



DIN 912



clamp size	socket head		stacking				locking plate <sup>1)</sup>		locking washer <sup>2)</sup>			
	IS B... Order code	dimensions: d × L	AS B... Order code	dimensions:			SB B... Order code	dim.: SW	US... Order code	dimensions:		
				a	b	m	SW			a	b	
1	<b>ISA4X (ISB1X)</b>	M 06×35	<b>ASA0X (ASB1X)</b>	20	34	M6	11	<b>SBB1X</b>	11	<b>USA/USB1X</b>	9	18
2	<b>ISB2X</b>	M 08×35	<b>ASB2X</b>	20	33	M8	12	<b>SBB2X</b>	12	<b>USB2X</b>	11	20
3	<b>ISB3X</b>	M 08×45	<b>ASB3X</b>	29	44	M8	12					
4	<b>ISB4X</b>	M 08×50	<b>ASB4X</b>	34	49	M8	12					
5	<b>ISB5X</b>	M 08×60	<b>ASB5X</b>	47	62	M8	12					

<sup>1)</sup> The use of stacking screws necessitates the use of locking plates in the construction assembly!

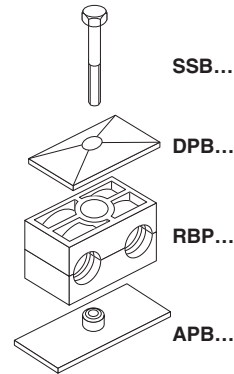
<sup>2)</sup> When assembling solid rubber clamps, covering plates, hexagon screws and locking washers must be used.  
Metal parts also available in stainless steel.

**Tube clamps series B – Complete range**

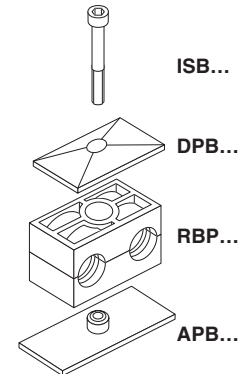
Polypropylene – **RBP**  
 Inside smooth – **RBPG**  
 Polyamide 6 – **RBN**  
 Rubber – **RBVG\***

(As required please exchange standard abbreviation RBP in column for “Order code”)

2 clamp halves, weld plate, cover plate, hex. head bolt



2 clamp halves, weld plate, cover plate, socket head bolt



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code		
1	6.0	G 1/8	1/4	<b>RBP1-106</b>	<b>RBP3-106</b>		
	6.4			<b>RBP1-106.4</b>	<b>RBP3-106.4</b>		
	8.0			<b>RBP1-108</b>	<b>RBP3-108</b>		
	9.5			<b>RBP1-109.5</b>	<b>RBP3-109.5</b>		
	10.0			<b>RBP1-110</b>	<b>RBP3-110</b>		
	12.0			<b>RBP1-112</b>	<b>RBP3-112</b>		
2	12.7	G 1/4	1/2	<b>RBP1-212.7</b>	<b>RBP3-212.7</b>		
	13.5			<b>RBP1-213.5</b>	<b>RBP3-213.5</b>		
	14.0			<b>RBP1-214</b>	<b>RBP3-214</b>		
	15.0			<b>RBP1-215</b>	<b>RBP3-215</b>		
	16.0			G 3/8	5/8	<b>RBP1-216</b>	<b>RBP3-216</b>
	17.2					<b>RBP1-217.2</b>	<b>RBP3-217.2</b>
	18.0					<b>RBP1-218</b>	<b>RBP3-218</b>
3	19.0	G 1/2	3/4	<b>RBP1-319</b>	<b>RBP3-319</b>		
	20.0			<b>RBP1-320</b>	<b>RBP3-320</b>		
	21.3			<b>RBP1-321.3</b>	<b>RBP3-321.3</b>		
	22.0			<b>RBP1-322</b>	<b>RBP3-322</b>		
	25.0			<b>RBP1-325</b>	<b>RBP3-325</b>		
4	26.9	G 3/4	1	<b>RBP1-426.9</b>	<b>RBP3-426.9</b>		
	28.0			<b>RBP1-428</b>	<b>RBP3-428</b>		
	30.0			<b>RBP1-430</b>	<b>RBP3-430</b>		
5	32.0	G 1	1 1/4	<b>RBP1-532</b>	<b>RBP3-532</b>		
	33.7			<b>RBP1-533.7</b>	<b>RBP3-533.7</b>		
	35.0			<b>RBP1-535</b>	<b>RBP3-535</b>		
	38.0			<b>RBP1-538</b>	<b>RBP3-538</b>		
	42.0			G 1 1/4	1 1/2	<b>RBP1-542</b>	<b>RBP3-542</b>

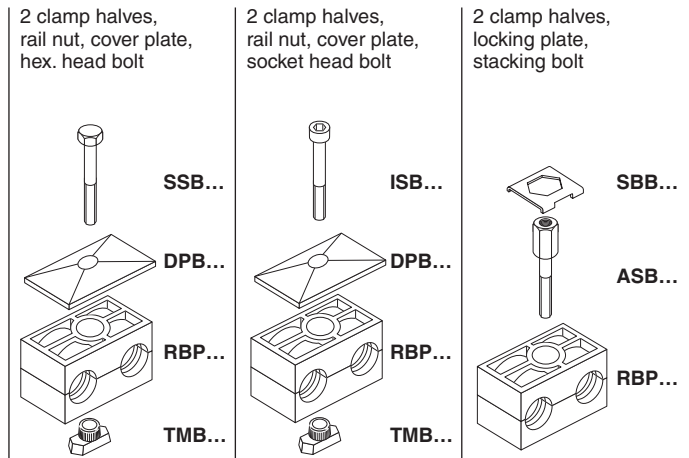
**Delivery in unassembled individual components.**

\*Only with cover plate, hexagon screws and locking washers.

**Tube clamps series B – Complete range**

Polypropylene – **RBP**  
 Inside smooth – **RBPG**  
 Polyamide 6 – **RBN**  
 Rubber – **RBVG\***

(As required please exchange standard abbreviation RBP in column for "Order code")



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code	Order code
1	6.0	G 1/8	1/4 5/16 3/8	<b>RBP4-106</b>	<b>RBP5-106</b>	<b>RBP8-106</b>
	6.4			<b>RBP4-106.4</b>	<b>RBP5-106.4</b>	<b>RBP8-106.4</b>
	8.0			<b>RBP4-108</b>	<b>RBP5-108</b>	<b>RBP8-108</b>
	9.5			<b>RBP4-109.5</b>	<b>RBP5-109.5</b>	<b>RBP8-109.5</b>
	10.0			<b>RBP4-110</b>	<b>RBP5-110</b>	<b>RBP8-110</b>
	12.0			<b>RBP4-112</b>	<b>RBP5-112</b>	<b>RBP8-112</b>
2	12.7	G 1/4  G 3/8	1/2  5/8	<b>RBP4-212.7</b>	<b>RBP5-212.7</b>	<b>RBP8-212.7</b>
	13.5			<b>RBP4-213.5</b>	<b>RBP5-213.5</b>	<b>RBP8-213.5</b>
	14.0			<b>RBP4-214</b>	<b>RBP5-214</b>	<b>RBP8-214</b>
	15.0			<b>RBP4-215</b>	<b>RBP5-215</b>	<b>RBP8-215</b>
	16.0			<b>RBP4-216</b>	<b>RBP5-216</b>	<b>RBP8-216</b>
	17.2			<b>RBP4-217.2</b>	<b>RBP5-217.2</b>	<b>RBP8-217.2</b>
18.0	<b>RBP4-218</b>	<b>RBP5-218</b>	<b>RBP8-218</b>			
3	19.0	G 1/2	3/4  1	<b>RBP4-319</b>	<b>RBP5-319</b>	<b>RBP8-319</b>
	20.0			<b>RBP4-320</b>	<b>RBP5-320</b>	<b>RBP8-320</b>
	21.3			<b>RBP4-321.3</b>	<b>RBP5-321.3</b>	<b>RBP8-321.3</b>
	22.0			<b>RBP4-322</b>	<b>RBP5-322</b>	<b>RBP8-322</b>
	25.0			<b>RBP4-325</b>	<b>RBP5-325</b>	<b>RBP8-325</b>
4	26.9	G 3/4		<b>RBP4-426.9</b>	<b>RBP5-426.9</b>	<b>RBP8-426.9</b>
	28.0			<b>RBP4-428</b>	<b>RBP5-428</b>	<b>RBP8-428</b>
	30.0			<b>RBP4-430</b>	<b>RBP5-430</b>	<b>RBP8-430</b>
5	32.0	G 1  G 1 1/4	1 1/4  1 1/2	<b>RBP4-532</b>	<b>RBP5-532</b>	<b>RBP8-532</b>
	33.7			<b>RBP4-533.7</b>	<b>RBP5-533.7</b>	<b>RBP8-533.7</b>
	35.0			<b>RBP4-535</b>	<b>RBP5-535</b>	<b>RBP8-535</b>
	38.0			<b>RBP4-538</b>	<b>RBP5-538</b>	<b>RBP8-538</b>
	42.0			<b>RBP4-542</b>	<b>RBP5-542</b>	<b>RBP8-542</b>

**Delivery in unassembled individual components.**

\*Only with cover plate, hexagon screws and locking washers.



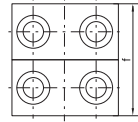
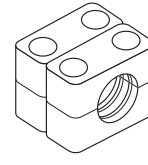
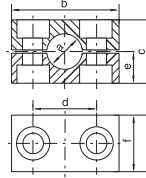
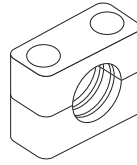
## Tube clamps series C (Heavy series) – Components

DIN 3015, part 2

**Order code for clamp halves:**

- Polypropylene – **RCP**
- Inside smooth – **RCPG<sup>1)</sup>**
- Polyamide 6 – **RCN<sup>1)</sup>**
- Rubber – **RCVR**
- Aluminium – **RCA**

(Please exchange as required standard abbreviation RCP in column for “clamp halves”)



**RCPD**  
(= 2XRCP...)

clamp size	Tube O.D. mm	Tube NB	Tube O.D.	1 part 2 clamp halves						1 part 4 clamp halves																
				RCP... Order code	dimensions:					RCPD... Order code	dimensions:															
					b	c	d	e	f		b	c	d	e	f											
1	6.0	G 1/8	5/16	RCP106X	55	32	33	16	30	RCPD106	55	32	33	16	60											
	8.0			RCP108X						RCPD108																
	10.0			RCP110X						RCPD110																
	12.0			RCP112X						RCPD112																
	12.7	RCP112.7X	RCPD112.7																							
	13.5	RCP113.5X	RCPD113.5																							
	14.0	RCP114X	RCPD114																							
	15.0	RCP115X	RCPD115																							
	16.0	RCP116X	RCPD116																							
	17.2	RCP117.2X	RCPD117.2																							
18.0	RCP118X	RCPD118																								
2	19.0	G 1/2	3/4	RCP219X	70	48	45	24	30	RCPD219	70	48	45	24	60											
	20.0			RCP220X						RCPD220																
	21.3			RCP221.3X						RCPD221.3																
	22.0			RCP222X						RCPD222																
	23.0	RCP223X	RCPD223																							
	25.0	RCP225X	RCPD225																							
	26.9	RCP226.9X	RCPD226.9																							
	28.0	RCP228X	RCPD228																							
	30.0	RCP230X	RCPD230																							
	3	30.0	G 1	1 1/4						RCP330X						85	60	60	30	30	RCPD330	85	60	60	30	60
32.0		RCP332X			RCPD332																					
33.7		RCP333.7X			RCPD333.7																					
35.0		RCP335X			RCPD335																					
38.0		RCP338X	RCPD338																							
39.0		RCP339X	RCPD339																							
40.0		RCP340X	RCPD340																							
42.0		RCP342X	RCPD342																							
4		38.0	G 1 1/4	1 1/2	RCP438X	115	90	90	45	45	RCPD438	115	90	90	45						90					
		39.0			RCP439X						RCPD439															
	40.0	RCP440X			RCPD440																					
	42.0	RCP442X			RCPD442																					
	45.0	RCP445X	RCPD445																							
	46.0	RCP446X	RCPD446																							
	48.3	RCP448.3X	RCPD448.3																							
	50.0	RCP450X	RCPD450																							
	51.0	RCP451X	RCPD451																							
	52.0	RCP452X	RCPD452																							
	55.0	RCP455X	RCPD455																							
	56.0	RCP456X	RCPD456																							
	57.0	RCP457X	RCPD457																							
	60.3	RCP460.3X	RCPD460.3																							
	63.0	RCP463X	RCPD463																							
	65.0	RCP465X	RCPD465																							
66.0	RCP466X	RCPD466																								

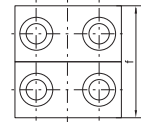
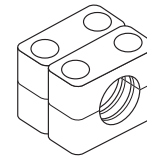
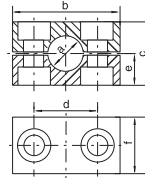
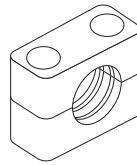
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**Tube clamps series C (Heavy series) – Components (Continued)**

DIN 3015, part 2

**Order code for clamp halves:**

 Polypropylene – **RCP**  
 Inside smooth – **RCPG**<sup>1)</sup>  
 Polyamide 6 – **RCN**<sup>1)</sup>  
 Rubber – **RCVR**  
 Aluminium – **RCA**

 (Please exchange as required standard abbreviation  
 RCP in column for “clamp halves”)

**RCPD**  
 (= 2XRCP...)

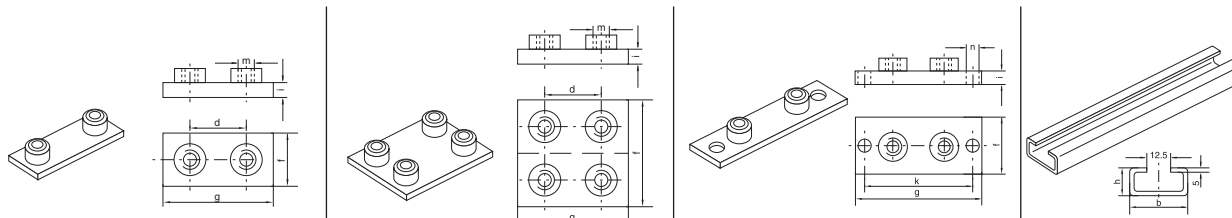
clamp size	Tube O.D. mm	Tube NB	Tube O.D.	1 part 2 clamp halves					1 part 4 clamp halves						
				RCP... Order code	dimensions:				RCPD... Order code	dimensions:					
				b	c	d	e	f	b	c	d	e	f		
5	70.0	G 2 1/2	3	RCP470X	152	120	122	60	60	RCPD470	152	120	122	60	120
	70.0			RCP570X						RCPD570					
	73.0			RCP573X						RCPD573					
	75.0			RCP575X						RCPD575					
	76.1			RCP576.1X						RCPD576.1					
	80.0	RCP580X	RCPD580												
	82.5	RCP582.5X	RCPD582.5												
	88.9	RCP588.9X	RCPD588.9												
	90.0	RCP590X	RCPD590												
6	90.0	G 3 1/2	4	RCP690X	205	170	168	85	80	RCPD690	205	170	168	85	160
	97.0			RCP697X						RCPD697					
	100.0			RCP6100X						RCPD6100					
	101.6	RCP6101.6X	RCPD6101.6												
	108.0	RCP6108X	RCPD6108												
	114.3	RCP6114.3X	RCPD6114.3												
	127.0	RCP6127X	RCPD6127												
7	127.0	G 5	5	RCP7127X	250	200	205	100	90	RCPD7127	250	200	205	100	180
	133.0			RCP7133X						RCPD7133					
	140.0			RCP7140X						RCPD7140					
	150.0	RCP7150X	RCPD7150												
	152.4	RCP7152.4X	RCPD7152.4												
	159.0	RCP7159X	RCPD7159												
	165.1	RCP7165.1X	RCPD7165.1												
	168.3	RCP7168.3X	RCPD7168.3												
	8	168.3	G 8	6 5/8						RCP8168.3X					
177.8		RCP8177.8X			RCPD8177.8										
193.7		RCP8193.7X			RCPD8193.7										
203.0		RCP8203X	RCPD8203												
219.1		RCP8219.1X	RCPD8219.1												
220.0		RCP8220X	RCPD8220												
9	219.1	G 8		RCP9219.1X	466	410	395	205	160	RCPD9219.1	466	410	395	205	320
	244.5			RCP9244.5X						RCPD9244.5					
	250.0			RCP9250X						RCPD9250					
	273.0			RCP9273X						RCPD9273					
	323.9			RCP9323.9X						RCPD9323.9					
10	355.6	G 10		RCP10355.6X	630	530	530	265	180	RCPD10355.6	630	530	530	265	360
	406.4	G 12		RCP10406.4X						RCPD10406.4					

Metal parts also available in stainless steel.

<sup>1)</sup> Only sizes 1–4

**Tube clamps series C (Heavy series) – Components**

DIN 3015, part 2



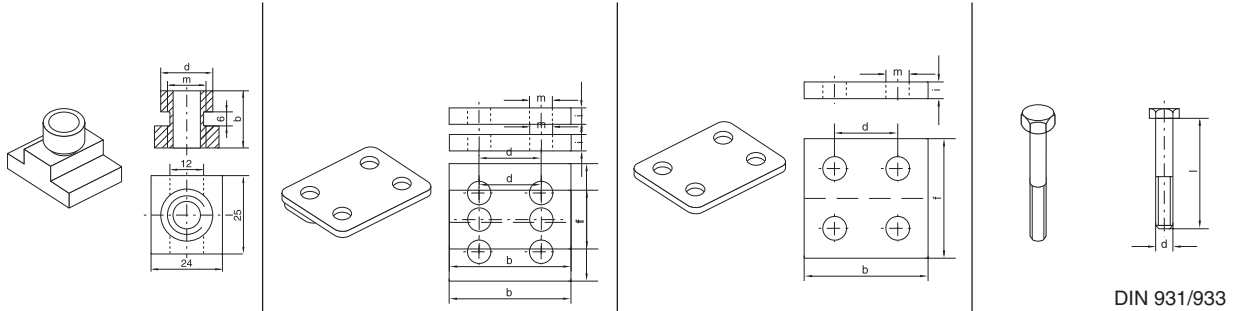
clamp size	AP C... Order code	weld plate dimensions:					APD C... Order code	double weld plate dimensions:					APL C... Order code	weld/screw plate dimensions:					mounting rail		
		d	f	g	i	m		d	f	g	i	m		g	f	i	k	n	TS C... Order code	dim.:	
		b	h																		
1	<b>APC1X</b>	33	30	73	8	M10	<b>APDC1X</b>	33	60	73	8	M10	<b>APLC1X</b>	113	30	8	85	11	<b>TSC1X</b> (1 Meter)	40	22
2	<b>APC2X</b>	45	30	85	8	M10	<b>APDC2X</b>	45	60	85	8	M10	<b>APLC2X</b>	125	30	8	97	11			
3	<b>APC3X</b>	60	30	100	8	M10	<b>APDC3X</b>	60	60	100	8	M10	<b>APLC3X</b>	140	30	8	112	11	<b>TSC2X</b> (2 Meter)		
4	<b>APC4X</b>	90	45	140	10	M12	<b>APDC4X</b>	90	90	140	10	M12	<b>APLC4X</b>	190	45	10	160	14			
5	<b>APC5X</b>	122	60	180	10	M16	<b>APDC5X</b>	122	120	180	10	M16	<b>APLC5X</b>	240	60	10	205	18			
6	<b>APC6X</b>	168	80	225	15	M20	<b>APDC6X</b>	168	160	225	15	M20	<b>APLC6X</b>	310	80	15	270	22			
7	<b>APC7X</b>	205	90	270	15	M24	<b>APDC7X</b>	205	180	270	15	M24	<b>APLC7X</b>	370	90	15	320	26			
8	<b>APC8X</b>	265	120	340	25	M30	<b>APDC8X</b>	265	240	340	25	M30	<b>APLC8X</b>	450	120	25	390	33			
9	<b>APC9X</b>	395	160	520	30	M30	<b>APDC9X</b>	395	324	520	30	M30									
10	<b>APC10X</b>	530	180	680	30	M30	<b>APDC10X</b>	530	364	680	30	M30									

Metal parts also available in stainless steel.

**Complete programme** range please refer to page S28.

**Tube clamps series C (Heavy series) – Components**

DIN 3015, part 2



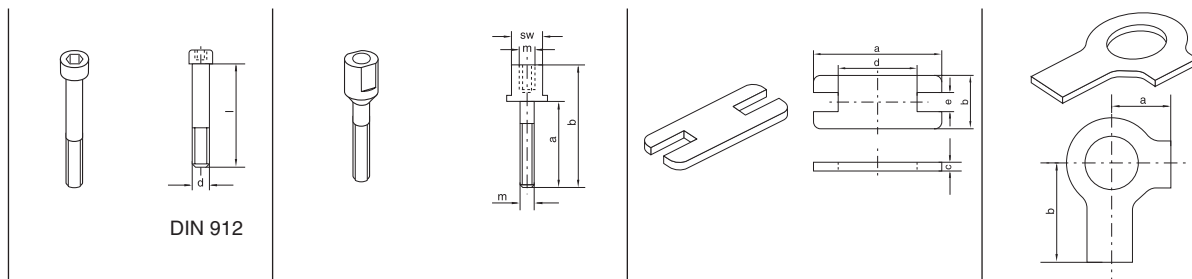
clamp size	rail nut			cover plate					double cover plate					hexagon head				
	TM C... Order code	dimensions:			DP C... Order code	dimensions:					DPD C... Order code	dimensions:					SS C... Order code	dimensions:
		b	d	m		b	d	f	i	m		b	d	f	i	m		d × L
1	<b>TMC1X</b>	20	17.8	M10	<b>DPC1X</b>	55	33	30	8	11	<b>DPDC1X</b>	55	33	60	8	11	<b>SSC1X</b>	M 10×45
2					<b>DPC2X</b>	70	45	30	8	11	<b>DPDC2X</b>	70	45	60	8	11	<b>SSC2X</b>	M 10×60
3					<b>DPC3X</b>	85	60	30	8	11	<b>DPDC3X</b>	85	60	60	8	11	<b>SSC3X</b>	M 10×70
4	<b>TMC4X</b>	23	19.8	M12	<b>DPC4X</b>	115	90	45	10	14	<b>DPDC4X</b>	115	90	90	10	14	<b>SSC4X</b>	M 12×100
5					<b>DPC5X</b>	152	122	60	10	18	<b>DPDC5X</b>	152	122	120	10	18	<b>SSC5X</b>	M 16×130
6					<b>DPC6X</b>	205	168	80	15	22	<b>DPDC6X</b>	205	168	160	15	22	<b>SSC6X</b>	M 20×190
7					<b>DPC7X</b>	250	205	90	15	26	<b>DPDC7X</b>	250	205	180	15	26	<b>SSC7X</b>	M 24×220
8					<b>DPC8X</b>	320	265	120	25	33	<b>DPDC8X</b>	320	265	240	25	33	<b>SSC8X</b>	M 30×300
9					<b>DPC9X</b>	466	395	160	30	35	<b>DPDC9X</b>	466	395	324	30	35	<b>SSC9X</b>	M 30×450
10					<b>DPC10X</b>	630	530	364	30	35	<b>DPDC10X</b>	630	530	364	30	35	<b>SSC10X</b>	M 30×560

Metal parts also available in stainless steel.



**Tube clamps series C (Heavy series) – Components**

DIN 3015, part 2



clamp size	socket head		AS C... Order code	stacking				locking plate <sup>1)</sup>					locking washer <sup>2)</sup>		
	IS C... Order code	dimensions: d × L		dimensions:	a	b	m	SW	SP C... Order code	dimensions:	a	b	c	d	e
1	<b>ISC1X</b>	M 10×45	<b>ASC1X</b>	25	51	M10	15	<b>SPC1X</b>	55	30	8	14	15.5	<b>USC1X</b>	13 22
2	<b>ISC2X</b>	M 10×60	<b>ASC2X</b>	40	66	M10	15	<b>SPC2X</b>	70	30	8	26	15.5		
3	<b>ISC3X</b>	M 10×70	<b>ASC3X</b>	50	76	M10	15	<b>SPC3X</b>	85	30	8	41	15.5		
4	<b>ISC4X</b>	M 12×100	<b>ASC4X</b>	85	112	M12	17	<b>SPC4X</b>	115	45	10	69	17.5	<b>USC4X</b>	15 28
5	<b>ISC5X</b>	M 16×130	<b>ASC5X</b>	110	146	M16	21	<b>SPC5X</b>	152	60	10	97	21.5	<b>USC5X</b>	18 32
6	<b>ISC6X</b>	M 20×190	<b>ASC6X</b>	155	206	M20	27	<b>SPC6X</b>	205	80	15	137	27.5	<b>USC6X</b>	21 36
7	<b>ISC7X</b>	M 24×220	<b>ASC7X</b>	185	245	M24	30	<b>SPC7X</b>	250	90	15	169	30.5	<b>USC7X</b>	25 42
8	<b>ISC8X</b>	M 30×300	<b>ASC8X</b>	250	330	M30	36	<b>SPC8X</b>	320	120	25	219	36.5	<b>USC8X</b>	32 52

<sup>1)</sup> The use of stacking screws necessitates the use of locking plates in the construction assembly!

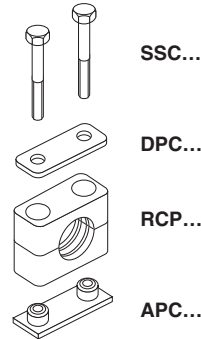
<sup>2)</sup> When assembling solid rubber clamps, covering plates, hexagon screws and locking washers must be used. Metal parts also available in stainless steel.

**Tube clamps series C – Complete range**

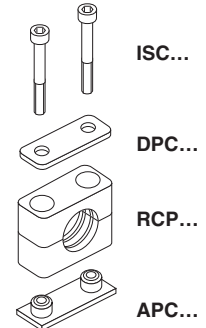
Polypropylene – **RCP**  
 Inside smooth – **RCPG<sup>1)</sup>**  
 Polyamide 6 – **RCN**  
 Rubber – **RCVR\***  
 Aluminium – **RCA**

(As required please exchange standard abbreviation  
 RCP in column for "Order code")

2 clamp halves, weld plate,  
 cover plate, hex. head bolt



2 clamp halves, weld plate,  
 cover plate, socket head bolt



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
1	6.0	G 1/8	5/16	<b>RCP1-106</b>	<b>RCP2-106</b>
	8.0			<b>RCP1-108</b>	<b>RCP2-108</b>
	10.0			<b>RCP1-110</b>	<b>RCP2-110</b>
	12.0			<b>RCP1-112</b>	<b>RCP2-112</b>
	12.7			<b>RCP1-112.7</b>	<b>RCP2-112.7</b>
	13.5	G 1/4	1/2	<b>RCP1-113.5</b>	<b>RCP2-113.5</b>
	14.0			<b>RCP1-114</b>	<b>RCP2-114</b>
	15.0			<b>RCP1-115</b>	<b>RCP2-115</b>
	16.0			<b>RCP1-116</b>	<b>RCP2-116</b>
	17.2			<b>RCP1-117.2</b>	<b>RCP2-117.2</b>
18.0	<b>RCP1-118</b>	<b>RCP2-118</b>			
2	19.0	G 1/2	3/4	<b>RCP1-219</b>	<b>RCP2-219</b>
	20.0			<b>RCP1-220</b>	<b>RCP2-220</b>
	21.3			<b>RCP1-221.3</b>	<b>RCP2-221.3</b>
	22.0			<b>RCP1-222</b>	<b>RCP2-222</b>
	23.0	G 3/4	1	<b>RCP1-223</b>	<b>RCP2-223</b>
	25.0			<b>RCP1-225</b>	<b>RCP2-225</b>
	26.9			<b>RCP1-226.9</b>	<b>RCP2-226.9</b>
	28.0			<b>RCP1-228</b>	<b>RCP2-228</b>
30.0	<b>RCP1-230</b>	<b>RCP2-230</b>			
3	30.0	G 1	1 1/4	<b>RCP1-330</b>	<b>RCP2-330</b>
	32.0			<b>RCP1-332</b>	<b>RCP2-332</b>
	33.7			<b>RCP1-333.7</b>	<b>RCP2-333.7</b>
	35.0	G 1 1/4	1 1/2	<b>RCP1-335</b>	<b>RCP2-335</b>
	38.0			<b>RCP1-338</b>	<b>RCP2-338</b>
	40.0			<b>RCP1-340</b>	<b>RCP2-340</b>
42.0	<b>RCP1-342</b>	<b>RCP2-342</b>			
4	38.0	G 1 1/4	1 1/2	<b>RCP1-438</b>	<b>RCP2-438</b>
	40.0			<b>RCP1-440</b>	<b>RCP2-440</b>
	42.0			<b>RCP1-442</b>	<b>RCP2-442</b>
	45.0			<b>RCP1-445</b>	<b>RCP2-445</b>
	48.3	G 1 1/2	2	<b>RCP1-448.3</b>	<b>RCP2-448.3</b>
	50.0			<b>RCP1-450</b>	<b>RCP2-450</b>
	51.0			<b>RCP1-451</b>	<b>RCP2-451</b>
	52.0			<b>RCP1-452</b>	<b>RCP2-452</b>
	55.0	G 2	2 1/4	<b>RCP1-455</b>	<b>RCP2-455</b>
	57.0			<b>RCP1-457</b>	<b>RCP2-457</b>
	60.3			<b>RCP1-460.3</b>	<b>RCP2-460.3</b>
	63.0			<b>RCP1-463</b>	<b>RCP2-463</b>
	65.0			<b>RCP1-465</b>	<b>RCP2-465</b>
	70.0			<b>RCP1-470</b>	<b>RCP2-470</b>

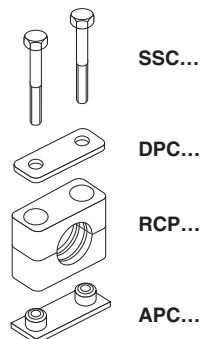
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**Tube clamps series C – Complete range (Continued)**

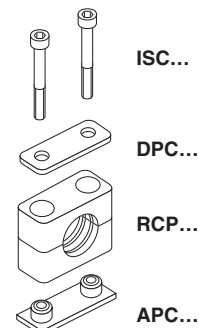
Polypropylene – **RCP**  
 Inside smooth – **RCPG<sup>1)</sup>**  
 Polyamide 6 – **RCN**  
 Rubber – **RCVR\***  
 Aluminium – **RCA**

(As required please exchange standard abbreviation  
 RCP in column for "Order code")

2 clamp halves, weld plate,  
 cover plate, hex. head bolt



2 clamp halves, weld plate,  
 cover plate, socket head bolt



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
5	70.0	G 2 1/2	3	<b>RCP1-570</b>	<b>RCP2-570</b>
	73.0			<b>RCP1-573</b>	<b>RCP2-573</b>
	75.0			<b>RCP1-575</b>	<b>RCP2-575</b>
	76.1			<b>RCP1-576.1</b>	<b>RCP2-576.1</b>
	80.0	G 3	3 1/4	<b>RCP1-580</b>	<b>RCP2-580</b>
	82.5			<b>RCP1-582.5</b>	<b>RCP2-582.5</b>
	88.9			<b>RCP1-588.9</b>	<b>RCP2-588.9</b>
90.0			<b>RCP1-590</b>	<b>RCP2-590</b>	
6	90.0	G 3 1/2	4	<b>RCP1-690</b>	<b>RCP2-690</b>
	97.0			<b>RCP1-697</b>	<b>RCP2-697</b>
	100.0			<b>RCP1-6100</b>	<b>RCP2-6100</b>
	101.6			<b>RCP1-6101.6</b>	<b>RCP2-6101.6</b>
	108.0	G 4	4 1/4	<b>RCP1-6108</b>	<b>RCP2-6108</b>
	114.3			<b>RCP1-6114.3</b>	<b>RCP2-6114.3</b>
	127.0			<b>RCP1-6127</b>	<b>RCP2-6127</b>
7	127.0	G 5	5	<b>RCP1-7127</b>	<b>RCP2-7127</b>
	133.0			<b>RCP1-7133</b>	<b>RCP2-7133</b>
	140.0			<b>RCP1-7140</b>	<b>RCP2-7140</b>
	150.0	G 5 1/2	5 1/2	<b>RCP1-7150</b>	<b>RCP2-7150</b>
	152.4			<b>RCP1-7152.4</b>	<b>RCP2-7152.4</b>
	159.0			<b>RCP1-7159</b>	<b>RCP2-7159</b>
	165.1			<b>RCP1-7165.1</b>	<b>RCP2-7165.1</b>
168.3	G 6	6 1/4	<b>RCP1-7168.3</b>	<b>RCP2-7168.3</b>	
			<b>RCP1-7168.3</b>	<b>RCP2-7168.3</b>	
8	168.3	G 8	6 5/8	<b>RCP1-8168.3</b>	<b>RCP2-8168.3</b>
	177.8		7	<b>RCP1-8177.8</b>	<b>RCP2-8177.8</b>
	193.7		7 5/8	<b>RCP1-8193.7</b>	<b>RCP2-8193.7</b>
	203.0		8 5/8	<b>RCP1-8203</b>	<b>RCP2-8203</b>
	219.1			<b>RCP1-8219.1</b>	<b>RCP2-8219.1</b>
	220.0			<b>RCP1-8220</b>	<b>RCP2-8220</b>

**Delivery in unassembled individual components.**

<sup>1)</sup> Only sizes 1–4

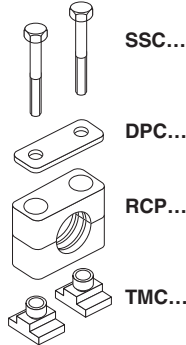
\* Only with cover plate, hexagon screws and locking washers (only sizes 1–4).

**Tube clamps series C – Complete range**

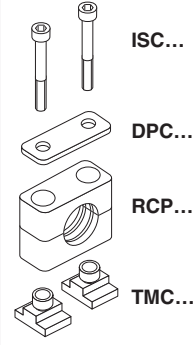
Polypropylene – **RCP**  
 Inside smooth – **RCPG<sup>1</sup>**  
 Polyamide 6 – **RCN**  
 Rubber – **RCVR\***  
 Aluminium – **RCA**

(As required please exchange standard abbreviation  
 RCP in column for "Order code")

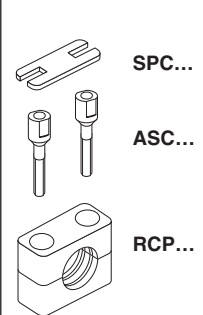
2 clamp halves,  
 rail nuts, cover plate,  
 hex. head bolts



2 clamp halves,  
 rail nuts, cover plate,  
 socket head bolts



2 clamp halves, locking  
 plate, stacking bolts



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code	Order code
1	6.0	G 1/8	5/16	RCP3-106	RCP4-106	RCP5-106
	8.0			RCP3-108	RCP4-108	RCP5-108
	10.0			RCP3-110	RCP4-110	RCP5-110
	12.0			RCP3-112	RCP4-112	RCP5-112
	12.7	G 1/4	1/2	RCP3-112.7	RCP4-112.7	RCP5-112.7
	13.5			RCP3-113.5	RCP4-113.5	RCP5-113.5
	14.0			RCP3-114	RCP4-114	RCP5-114
	15.0			RCP3-115	RCP4-115	RCP5-115
	16.0	G 3/8	5/8	RCP3-116	RCP4-116	RCP5-116
	17.2			RCP3-117.2	RCP4-117.2	RCP5-117.2
18.0	RCP3-118			RCP4-118	RCP5-118	
2	19.0	G 1/2	3/4	RCP3-219	RCP4-219	RCP5-219
	20.0			RCP3-220	RCP4-220	RCP5-220
	21.3			RCP3-221.3	RCP4-221.3	RCP5-221.3
	22.0			RCP3-222	RCP4-222	RCP5-222
	23.0	G 3/4	1	RCP3-223	RCP4-223	RCP5-223
	25.0			RCP3-225	RCP4-225	RCP5-225
	26.9			RCP3-226.9	RCP4-226.9	RCP5-226.9
	28.0			RCP3-228	RCP4-228	RCP5-228
	30.0			RCP3-230	RCP4-230	RCP5-230
3	30.0	G 1	1 1/4	RCP3-330	RCP4-330	RCP5-330
	32.0			RCP3-332	RCP4-332	RCP5-332
	33.7			RCP3-333.7	RCP4-333.7	RCP5-333.7
	35.0			RCP3-335	RCP4-335	RCP5-335
	38.0	G 1 1/4	1 1/2	RCP3-338	RCP4-338	RCP5-338
	40.0			RCP3-340	RCP4-340	RCP5-340
	42.0			RCP3-342	RCP4-342	RCP5-342
4	38.0	G 1 1/4	1 1/2	RCP3-438	RCP4-438	RCP5-438
	40.0			RCP3-440	RCP4-440	RCP5-440
	42.0			RCP3-442	RCP4-442	RCP5-442
	45.0			RCP3-445	RCP4-445	RCP5-445
	48.3	G 1 1/2	2	RCP3-448.3	RCP4-448.3	RCP5-448.3
	50.0			RCP3-450	RCP4-450	RCP5-450
	51.0			RCP3-451	RCP4-451	RCP5-451
	52.0			RCP3-452	RCP4-452	RCP5-452
	55.0	G 2	2 1/4	RCP3-455	RCP4-455	RCP5-455
	57.0			RCP3-457	RCP4-457	RCP5-457
	60.3			RCP3-460.3	RCP4-460.3	RCP5-460.3
	63.0			RCP3-463	RCP4-463	RCP5-463
	65.0			RCP3-465	RCP4-465	RCP5-465
	70.0			RCP3-470	RCP4-470	RCP5-470

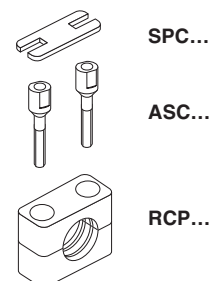
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**Tube clamps series C – Complete range (Continued)**

Polypropylene – **RCP**  
 Inside smooth – **RCPG**<sup>1)</sup>  
 Polyamide 6 – **RCN**  
 Rubber – **RCVR**\*  
 Aluminium – **RCA**

(As required please exchange standard abbreviation  
 RCP in column for "Order code")

2 clamp halves, locking  
 plate, stacking bolts



clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code
5	70.0	G 2 1/2	3	<b>RCP5-570</b>
	73.0			<b>RCP5-573</b>
	75.0			<b>RCP5-575</b>
	76.1	G 3	3 1/4	<b>RCP5-576.1</b>
	80.0			<b>RCP5-580</b>
	82.5			<b>RCP5-582.5</b>
	88.9			<b>RCP5-588.9</b>
90.0	<b>RCP5-590</b>			
6	90.0	G 3 1/2	4	<b>RCP5-690</b>
	97.0			<b>RCP5-697</b>
	100.0			<b>RCP5-6100</b>
	101.6	G 4	4 1/4	<b>RCP5-6101.6</b>
	108.0			<b>RCP5-6108</b>
	114.3			<b>RCP5-6114.3</b>
127.0	5	<b>RCP5-6127</b>		
7	127.0	G 5	5 1/4	<b>RCP5-7127</b>
	133.0			<b>RCP5-7133</b>
	140.0			<b>RCP5-7140</b>
	150.0	G 5 1/2	5 1/2	<b>RCP5-7150</b>
	152.4			<b>RCP5-7152.4</b>
	159.0	G 6	6	<b>RCP5-7159</b>
	165.1			<b>RCP5-7165.1</b>
168.3	<b>RCP5-7168.3</b>			
8	168.3	G 8	6 5/8	<b>RCP5-8168.3</b>
	177.8			<b>RCP5-8177.8</b>
	193.7			<b>RCP5-8193.7</b>
	203.0	85/8	7	<b>RCP5-8203</b>
	219.1			<b>RCP5-8219.1</b>
	220.0			<b>RCP5-8220</b>

**Delivery in unassembled individual components.**

<sup>1)</sup> Only sizes 1–4

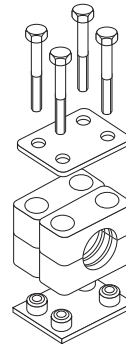
\* Only with cover plate, hexagon screws and locking washers (only sizes 1–4).

**Tube clamps series C – Complete range**

Polypropylene – **RCPD**  
 Inside smooth – **RCPDG<sup>1</sup>**  
 Polyamide 6 – **RCND**  
 Rubber – **RCVDR\***  
 Aluminium – **RCAD**

(As required please exchange standard abbreviation  
 RCP in column for "Order code")

4 clamp halves, double weld plate,  
 double cover plate, hex. head bolts



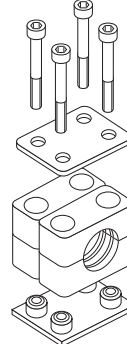
**SSC...**

**DPDC...**

**RCPD...**  
 (=2XRCP...)

**APDC...**

4 clamp halves, double weld  
 plate, double cover plate, socket  
 head bolts



**ISC...**

**DPDC...**

**RCPD...**  
 (=2XRCP...)

**APDC...**

clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
1	6.0	G 1/8	5/16	<b>RCPD1-106</b>	<b>RCPD2-106</b>
	8.0			<b>RCPD1-108</b>	<b>RCPD2-108</b>
	10.0			<b>RCPD1-110</b>	<b>RCPD2-110</b>
	12.0			<b>RCPD1-112</b>	<b>RCPD2-112</b>
	12.7	G 1/4	1/2	<b>RCPD1-112.7</b>	<b>RCPD2-112.7</b>
	13.5			<b>RCPD1-113.5</b>	<b>RCPD2-113.5</b>
	14.0			<b>RCPD1-114</b>	<b>RCPD2-114</b>
	15.0			<b>RCPD1-115</b>	<b>RCPD2-115</b>
	16.0			<b>RCPD1-116</b>	<b>RCPD2-116</b>
	17.2			<b>RCPD1-117.2</b>	<b>RCPD2-117.2</b>
18.0	G 3/8	5/8	<b>RCPD1-118</b>	<b>RCPD2-118</b>	
2	19.0	G 1/2	3/4	<b>RCPD1-219</b>	<b>RCPD2-219</b>
	20.0			<b>RCPD1-220</b>	<b>RCPD2-220</b>
	21.3			<b>RCPD1-221.3</b>	<b>RCPD2-221.3</b>
	22.0			<b>RCPD1-222</b>	<b>RCPD2-222</b>
	23.0	G 3/4	1	<b>RCPD1-223</b>	<b>RCPD2-223</b>
	25.0			<b>RCPD1-225</b>	<b>RCPD2-225</b>
	26.9			<b>RCPD1-226.9</b>	<b>RCPD2-226.9</b>
	28.0			<b>RCPD1-228</b>	<b>RCPD2-228</b>
	30.0			<b>RCPD1-230</b>	<b>RCPD2-230</b>
3	30.0	G 1	1 1/4	<b>RCPD1-330</b>	<b>RCPD2-330</b>
	32.0			<b>RCPD1-332</b>	<b>RCPD2-332</b>
	33.7			<b>RCPD1-333.7</b>	<b>RCPD2-333.7</b>
	35.0			<b>RCPD1-335</b>	<b>RCPD2-335</b>
	38.0	G 1 1/4	1 1/2	<b>RCPD1-338</b>	<b>RCPD2-338</b>
	40.0			<b>RCPD1-340</b>	<b>RCPD2-340</b>
	42.0			<b>RCPD1-342</b>	<b>RCPD2-342</b>
4	38.0	G 1 1/4	1 1/2	<b>RCPD1-438</b>	<b>RCPD2-438</b>
	40.0			<b>RCPD1-440</b>	<b>RCPD2-440</b>
	42.0			<b>RCPD1-442</b>	<b>RCPD2-442</b>
	45.0			<b>RCPD1-445</b>	<b>RCPD2-445</b>
	48.3	G 1 1/2		<b>RCPD1-448.3</b>	<b>RCPD2-448.3</b>
	50.0			<b>RCPD1-450</b>	<b>RCPD2-450</b>
	51.0	G 2	2	<b>RCPD1-451</b>	<b>RCPD2-451</b>
	52.0			<b>RCPD1-452</b>	<b>RCPD2-452</b>
	55.0			<b>RCPD1-455</b>	<b>RCPD2-455</b>
	57.0			<b>RCPD1-457</b>	<b>RCPD2-457</b>
	60.3	G 2	2 1/4	<b>RCPD1-460.3</b>	<b>RCPD2-460.3</b>
	63.0			<b>RCPD1-463</b>	<b>RCPD2-463</b>
	65.0			<b>RCPD1-465</b>	<b>RCPD2-465</b>
	70.0			<b>RCPD1-470</b>	<b>RCPD2-470</b>

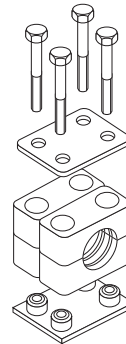
Continuation see next page ...

**Tube clamps series C – Complete range (Continued)**

Polypropylene – **RCPD**  
 Inside smooth – **RCPDG<sup>1)</sup>**  
 Polyamide 6 – **RCND**  
 Rubber – **RCVDR\***  
 Aluminium – **RCAD**

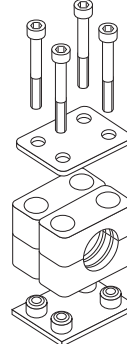
(As required please exchange standard abbreviation RCP in column for "Order code")

4 clamp halves, double weld plate, double cover plate, hex. head bolts



**SSC...**  
**DPDC...**  
**RCPD...**  
**(=2XRCP...)**  
**APDC...**

4 clamp halves, double weld plate, double cover plate, socket head bolts



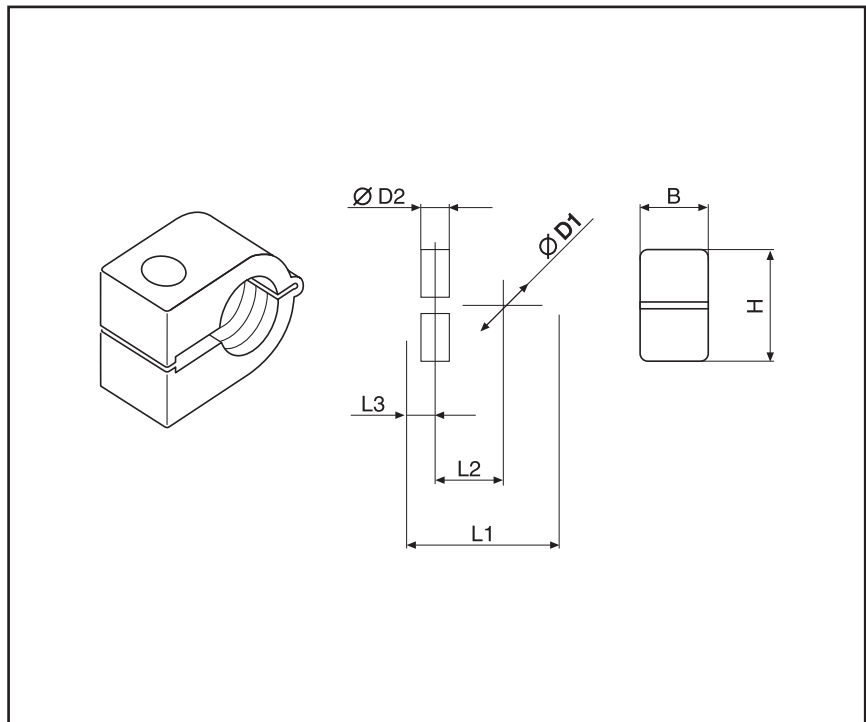
**ISC...**  
**DPDC...**  
**RCPD...**  
**(=2XRCP...)**  
**APDC...**

clamp size	Tube O.D. mm	Tube NB	Tube O.D.	Order code	Order code
5	70.0	G 2 1/2	3	<b>RCPD1-570</b>	<b>RCPD2-570</b>
	73.0			<b>RCPD1-573</b>	<b>RCPD2-573</b>
	75.0			<b>RCPD1-575</b>	<b>RCPD2-575</b>
	76.1			<b>RCPD1-576.1</b>	<b>RCPD2-576.1</b>
	80.0	G 3	3 1/4	<b>RCPD1-580</b>	<b>RCPD2-580</b>
	82.5			<b>RCPD1-582.5</b>	<b>RCPD2-582.5</b>
	88.9			<b>RCPD1-588.9</b>	<b>RCPD2-588.9</b>
	90.0			<b>RCPD1-590</b>	<b>RCPD2-590</b>
6	90.0	G 3 1/2	4	<b>RCPD1-690</b>	<b>RCPD2-690</b>
	97.0			<b>RCPD1-697</b>	<b>RCPD2-697</b>
	100.0			<b>RCPD1-6100</b>	<b>RCPD2-6100</b>
	101.6			<b>RCPD1-6101.6</b>	<b>RCPD2-6101.6</b>
	108.0	G 4	4 1/2	<b>RCPD1-6108</b>	<b>RCPD2-6108</b>
	114.3			<b>RCPD1-6114.3</b>	<b>RCPD2-6114.3</b>
	127.0			<b>RCPD1-6127</b>	<b>RCPD2-6127</b>
7	127.0	G 5	5	<b>RCPD1-7127</b>	<b>RCPD2-7127</b>
	133.0			<b>RCPD1-7133</b>	<b>RCPD2-7133</b>
	140.0			<b>RCPD1-7140</b>	<b>RCPD2-7140</b>
	150.0	G 5 1/2	5 1/2	<b>RCPD1-7150</b>	<b>RCPD2-7150</b>
	152.4			<b>RCPD1-7152.4</b>	<b>RCPD2-7152.4</b>
	159.0			<b>RCPD1-7159</b>	<b>RCPD2-7159</b>
	165.1	G 6	6	<b>RCPD1-7165.1</b>	<b>RCPD2-7165.1</b>
	168.3			<b>RCPD1-7168.3</b>	<b>RCPD2-7168.3</b>
8	168.3	G 8	6 5/8	<b>RCPD1-8168.3</b>	<b>RCPD2-8168.3</b>
	177.8		7	<b>RCPD1-8177.8</b>	<b>RCPD2-8177.8</b>
	193.7		7 5/8	<b>RCPD1-8193.7</b>	<b>RCPD2-8193.7</b>
	203.0			<b>RCPD1-8203</b>	<b>RCPD2-8203</b>
	219.1		8 5/8	<b>RCPD1-8219.1</b>	<b>RCPD2-8219.1</b>
	220.0			<b>RCPD1-8220</b>	<b>RCPD2-8220</b>

**Delivery in unassembled individual components.**

<sup>1)</sup> Only sizes 1–4

\* Only with cover plate, hexagon screws and locking washers (only sizes 1–4).

**Tube clamps series O**

**Order code for tube clamps:**

 Polypropylene **ROP\***

 Polyamide **RON\***

 \* Supplement with size and tube  $\varnothing$  mm.  
 (e.g. ROP 106X)

Packing standard 200 pieces.

**Areas of Application:**

- pneumatics
  - automotive technology
  - machine tool industry
  - lubrication
  - naval technologie
- also suitable for cables and hoses.

Clamp-size	O.D. mm	Tube $\varnothing$ D1		Order code Polypropylene ROP	Order code Polyamide RON	L1	L2	L3	B	H	$\varnothing$ D2		
		Tube NB	Inch										
1	6.0			<b>ROP 106X</b>	<b>RON 106X</b>	22	9	7	14.5	13.5	6.5		
	6.4		1/4	<b>ROP 106.4X</b>	<b>RON 106.4X</b>								
	8.0			<b>ROP 108X</b>	<b>RON 108X</b>								
2	8.0	1/8	3/8	<b>ROP 208X</b>	<b>RON 208X</b>	27	11	7	14.5	18.5	6.5		
	9.5			<b>ROP 209.5X</b>	<b>RON 209.5X</b>								
	10.0			<b>ROP 210X</b>	<b>RON 210X</b>								
	12.0	<b>ROP 212X</b>	<b>RON 212X</b>										
	12.7	<b>ROP 212.7X</b>	<b>RON 212.7X</b>										
3	10.0	1/8	1/2	<b>ROP 310X</b>	<b>RON 310X</b>	33	15	7	14.5	23.5	6.5		
	12.0			<b>ROP 312X</b>	<b>RON 312X</b>								
	12.7	<b>ROP 312.7X</b>	<b>RON 312.7X</b>										
	13.5	1/4		<b>ROP 313.5X</b>	<b>RON 313.5X</b>								
	14.0			<b>ROP 314X</b>	<b>RON 314X</b>								
	15.0			<b>ROP 315X</b>	<b>RON 315X</b>								
	16.0			<b>ROP 316X</b>	<b>RON 316X</b>								
16.0	5/8												
4	14.0	3/8	5/8	<b>ROP 414X</b>	<b>RON 414X</b>	40	19	6	14.5	30.5	6.5		
	15.0			<b>ROP 415X</b>	<b>RON 415X</b>								
	16.0			<b>ROP 416X</b>	<b>RON 416X</b>								
	17.2			<b>ROP 417.2X</b>	<b>RON 417.2X</b>								
	18.0			<b>ROP 418X</b>	<b>RON 418X</b>								
	19.0	3/4		<b>ROP 419X</b>	<b>RON 419X</b>								
	20.0			<b>ROP 420X</b>	<b>RON 420X</b>								
	21.3			1/2								<b>ROP 421.3X</b>	<b>RON 421.3X</b>
	22.0											<b>ROP 422X</b>	<b>RON 422X</b>



## Double-Tube clamps series O

### Order code for tube clamps:

Polypropylen **ROPD\***  
 Polyamid **ROND\***

\*Supplement with size and tube  $\varnothing$  mm.  
 (e.g. ROPD 106X)

\*Different diameter on request

### Order code for cover plate:

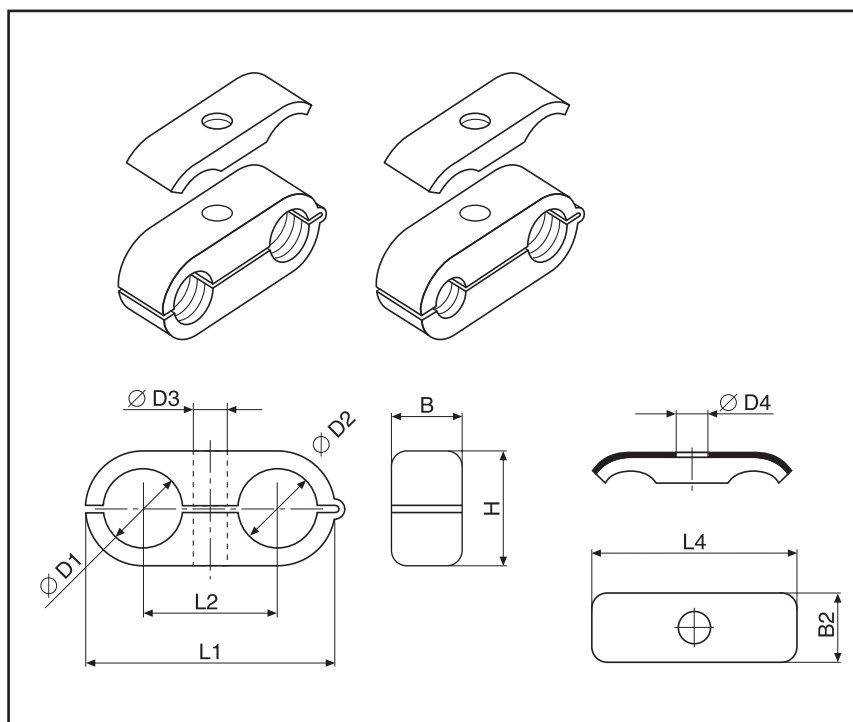
**DPO\***

\*Supplement with size.

Material: Galvanized steel  
 Stainless steel upon request

### Areas of Application:

- pneumatics
  - automotive technology
  - machine tool industry
  - lubrication
  - naval technologie
- also suitable for cables and hoses.



Clamp-size	Tube $\varnothing$ D1/D2			Order code Polypropylene ROPD	Order code Cover plate DPO	L1	L2	B	H	$\varnothing$ D3	L4	B2	$\varnothing$ D4	
	O.D. mm	Tube NB	Inch											
1	6.0		1/4	<b>ROPD 106X</b>	<b>DPO1X</b>	32	18	14.5	13.5	6.5	29.0	16.3	6.5	
	6.4			<b>ROPD 106.4X</b>	<b>DPO1X</b>									
	8.0			<b>ROPD 108X</b>	<b>DPO1X</b>									
2	8.0	1/8	3/8	<b>ROPD 208X</b>	<b>DPO2X</b>	41	22	14.5	18.5	6.5	40.0	16.3	6.5	
	9.5				<b>ROPD 209.5X</b>									<b>DPO2X</b>
	10.0				<b>ROPD 210X</b>									<b>DPO2X</b>
	12.0				<b>ROPD 212X</b>									<b>DPO2X</b>
	12.7				<b>ROPD 212.7X</b>									<b>DPO2X</b>
3	10.0	1/8	1/2	<b>ROPD 310X</b>	<b>DPO3X</b>	54	30	14.5	23.5	6.5	50.5	16.5	6.5	
	12.0				<b>ROPD 312X</b>									<b>DPO3X</b>
	12.7				<b>ROPD 312.7X</b>									<b>DPO3X</b>
	13.5			1/4	<b>ROPD 313.5X</b>									<b>DPO3X</b>
	14.0				<b>ROPD 314X</b>									<b>DPO3X</b>
	15.0				<b>ROPD 315X</b>									<b>DPO3X</b>
	16.0				<b>ROPD 316X</b>									<b>DPO3X</b>
4	14.0	3/8	5/8	<b>ROPD 414X</b>	<b>DPO4X</b>	69	38	14.5	30.5	6.5	63.0	16.5	6.5	
	15.0				<b>ROPD 415X</b>									<b>DPO4X</b>
	16.0				<b>ROPD 416X</b>									<b>DPO4X</b>
	17.2				<b>ROPD 417.2X</b>									<b>DPO4X</b>
	18.0			3/4	<b>ROPD 418X</b>									<b>DPO4X</b>
	19.0				<b>ROPD 419X</b>									<b>DPO4X</b>
	20.0				<b>ROPD 420X</b>									<b>DPO4X</b>
	21.3				1/2									<b>ROPD 421.3X</b>
	22.0			<b>ROPD 422X</b>										<b>DPO4X</b>

## Hydraulic steel-clamps

### Hydraulic steel-clamps

**Order code**

W1: steel coating ZN

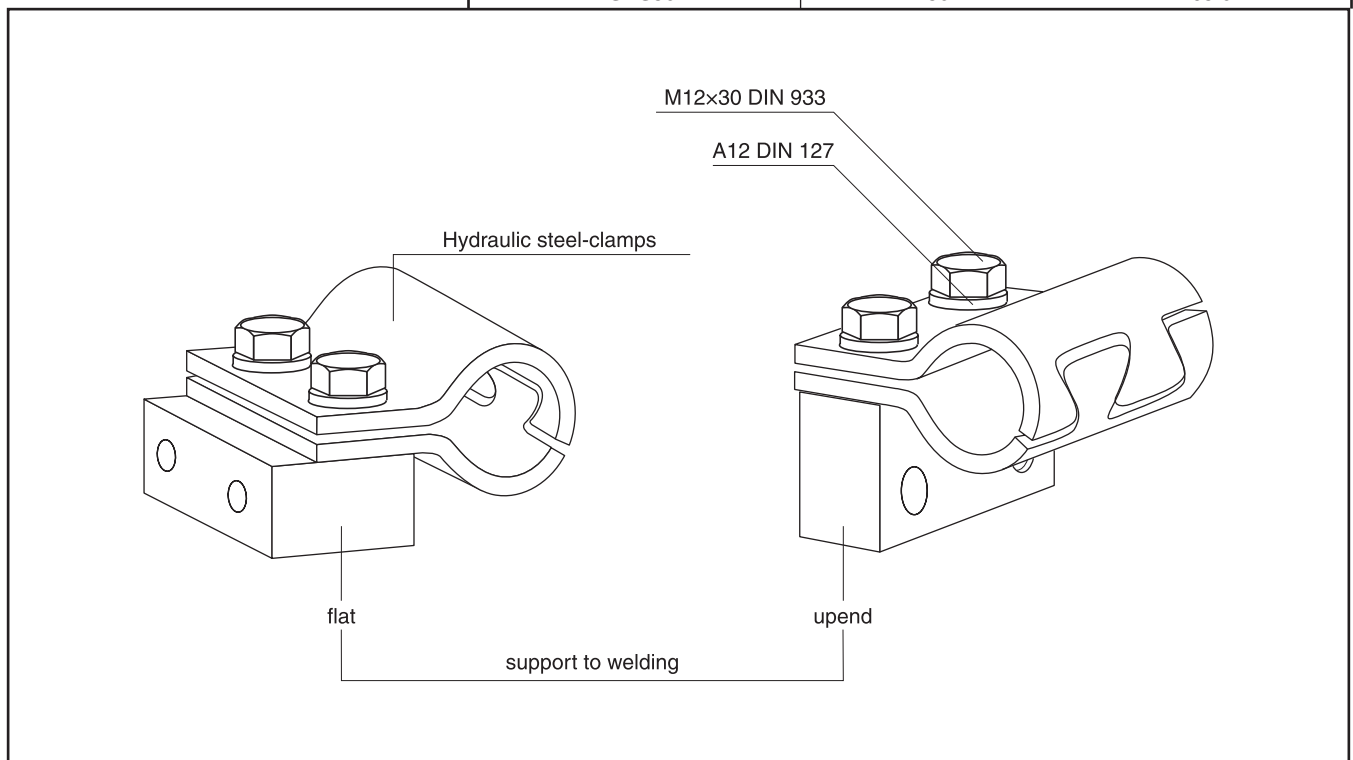
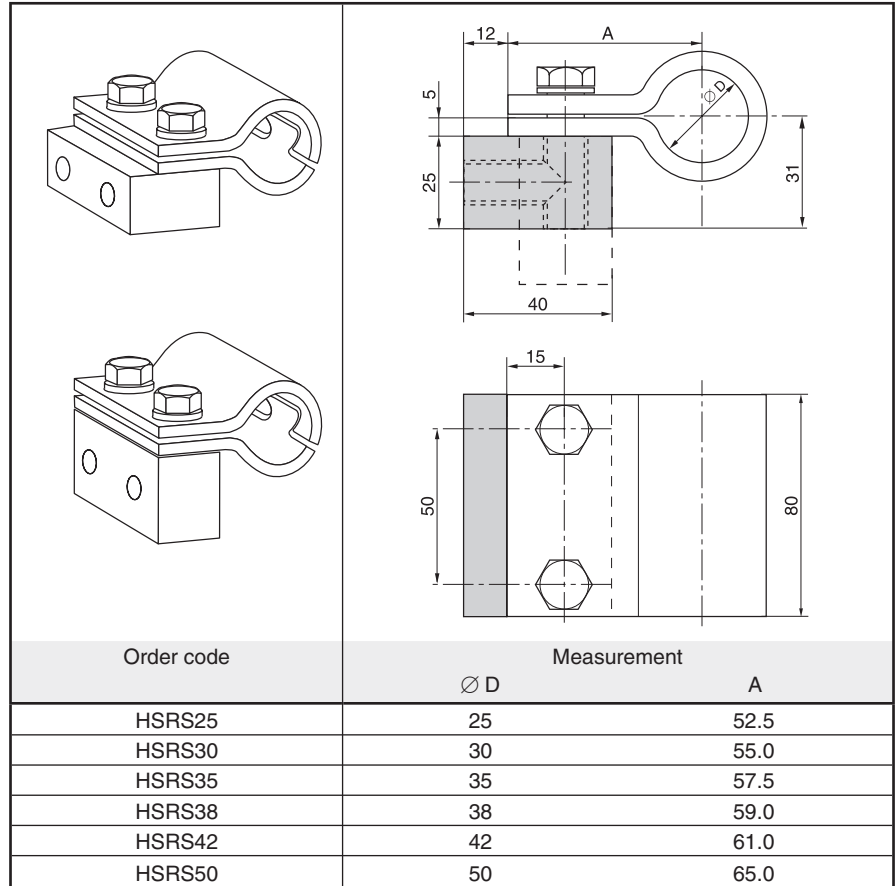
\* please add.  $\varnothing D$

**HSRS-\***

**HSRS** hydraulic steel-clamps are mainly used in the field of building machinery.

The support-block is welded to the machine body or another component either in upend or flat position. The tube-clamp is screwed on.

The robust construction of the clamp has an impact- and vibrationabsorbing effect. The small dimension/ height of the clamp allows hydraulic cables to be fitted later on – e. g. for installing additional equipment to building machinery.



## Hydraulic steel-clamps

### Elastomere Inlay for HSRS

**Order code**                    **EE-\***  
 \* complete outside tube diameter

Hydraulic steel tube clamp HSRS also available with Elastomere inlay

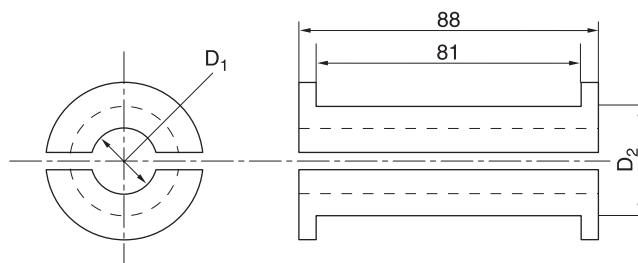
**The advantages:**

- complete outside tube diameter
- Safe fastening method even for very sensitive tube and hoses lines
- Only one clamp for different tube diameters

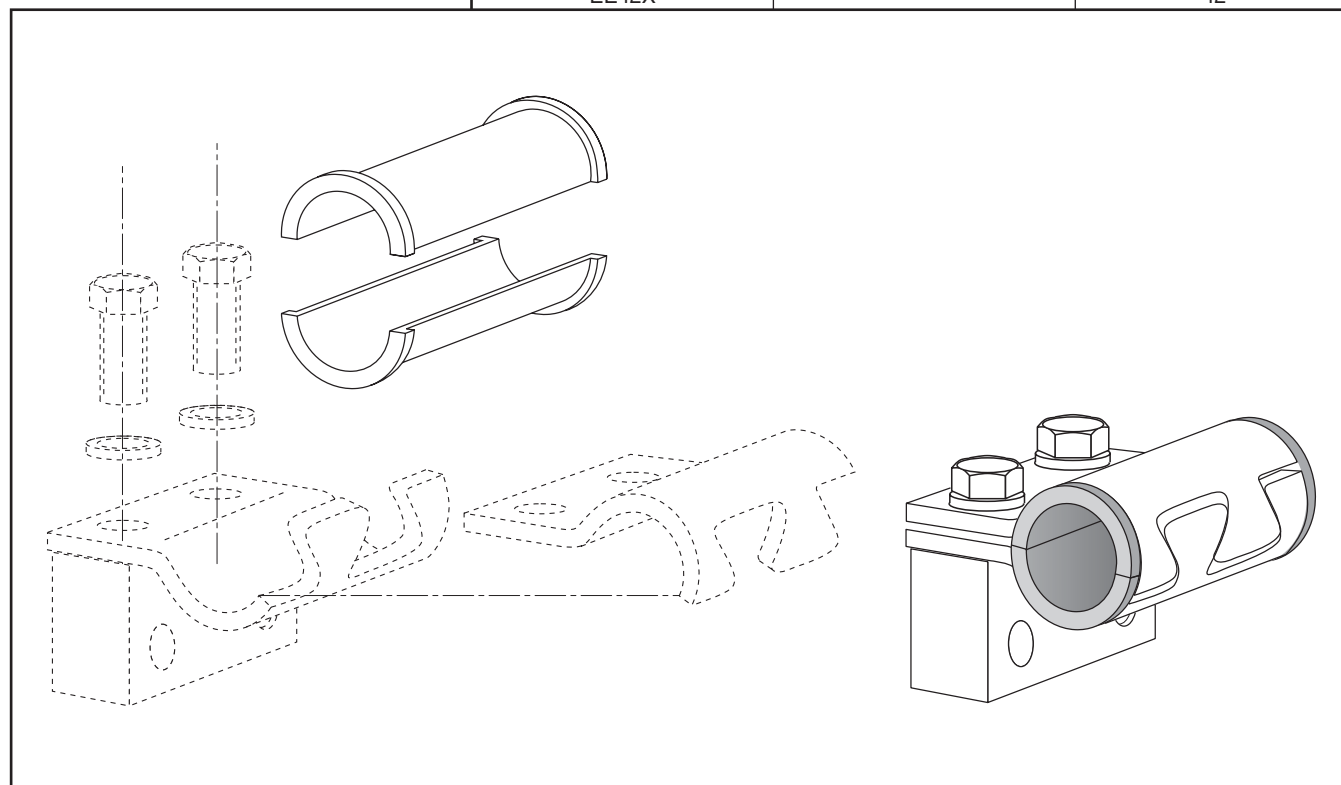
**Material:**

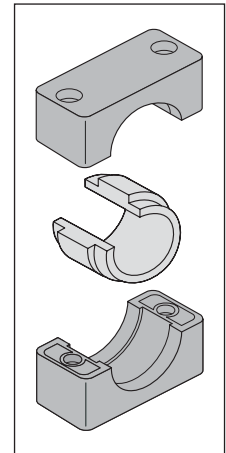
Santoprene 64 Shore

- high oil and weathering resistance
- temperature stability between -40 °C and +125°C



Order code	Nominal size D2	mm O.D. D1
EE12X	HSRS25	12
EE15X		15
EE20X	HSRS30	20
EE25X	HSRS35	25
EE30X	HSRS42	30
EE35X	HSRS50	35
EE38X		38
EE42X		42



**Tube Clamps with Elastomer Inlay**

**Light Constr. Series**
**Order codes for clamp-halves:**

 Polypropylene – **RAPE**  
 Polyamide 6 – **RANE**
**Heavy Series**
**Order codes for clamp-halves:**

 Polypropylene – **RCPE**  
 Polyamide 6 – **RCNE**
**Elastomer Inlay**
**Order code: EE-\***

\* complete with clamp size and outside tube diameter

Clamp size		Tube O.D. mm	Series A		Series C		Elastomer inlay
Serie A	Serie C		Clamp body	Clamp body with elastomer inlay	Clamp body	Clamp body with elastomer inlay	
4	2	6.0	RAPE4X	RAPE406X	RCPE2X	RCPE206X	EE206/406X
		8.0		RAPE408X		RCPE208X	EE208/408X
		10.0		RAPE410X		RCPE210X	EE210/410X
		12.0		RAPE412X		RCPE212X	EE212/412X
		12.7		RAPE412.7X		RCPE212.7X	EE212.7/412.7X
		14.0		RAPE414X		RCPE214X	EE214/414X
		15.0		RAPE415X		RCPE215X	EE215/415X
		16.0		RAPE416X		RCPE216X	EE216/416X
		17.2		RAPE417.2X		RCPE217.2X	EE217.2/417.2X
		18.0		RAPE418X		RCPE218X	EE218/418X
		19.0		RAPE419X		RCPE219X	EE219/419X
6	3	20.0	RAPE6X	RAPE620X	RCPE3X	RCPE320X	EE320/620X
		21.3		RAPE621.3X		RCPE321.3X	EE321.3/621.3X
		22.0		RAPE622X		RCPE322X	EE322/622X
		23.0		RAPE623X		RCPE323X	EE323/623X
		25.0		RAPE625X		RCPE325X	EE325/625X
		26.9		RAPE626.9X		RCPE326.9X	EE326.9/626.9X
		28.0		RAPE628X		RCPE328X	EE328/628X
		30.0		RAPE630X		RCPE330X	EE330/630X
		32.0		RAPE632X		RCPE332X	EE332/632X
				4		32.0	
33.7	RCPE433.7X		EE433.7X				
35.0	RCPE435X		EE435X				
38.0	RCPE438X		EE438X				
40.0	RCPE440X		EE440X				
42.0	RCPE442X		EE442X				
45.5	RCPE445.5X		EE445.5X				
48.0	RCPE448X		EE448X				
51.0	RCPE451X		EE451X				
53.4	RCPE453.4		EE453.4X				
56.4	RCPE456.4X		EE456.4X				

**Attention!** For clamps with elastomer inlay, the relation of diameter and size is not identical with the profile design or smooth design.


**Tube clamps series 2+5 (Light construction series)**

DIN 3015, Part 1, Components

**Order codes**
**for clamp-halves:**

 Polypropylen **RAP**  
 inside smooth **RAPG**

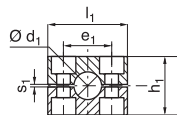
 Polyamid 6 **RAN**  
 inside smooth **RANG**

 Rubber **RAVG**

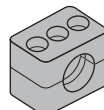
Replace standard abbreviation RAP in column "clamp halves" as required.



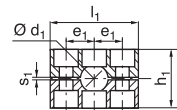
Size 2



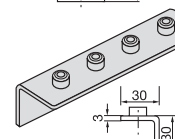
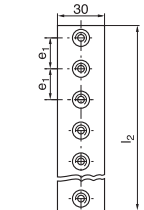
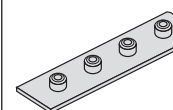
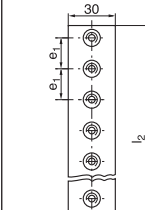
Size 2



Size 5



Size 5



Clamp size	O.D. mm	Tube NB	Inch O.D.	1 part	2 clamp-halves	Multiple	Multiple		
				2 clamp-halves	Multiple	Multiple			
	$d_1$			<b>RAP</b>	<b>RAP-...</b>	<b>APRLA2X</b>	<b>APRWLA2X</b>		
				Order code	$l_1$ $h_1$ $e_1$ $s_1$	$e_1$ $l_2$	$e_1$ $l_2$		
2	6.0	G 1/8	1/4	<b>RAP206X</b>	40 33 26 0.8	26 508	26 508		
	6.4			<b>RAP206.4X</b>					
	8.0			<b>RAP208X</b>					
	9.5		<b>RAP209.5X</b>						
	10.0		<b>RAP210X</b>						
	12.0	G 1/4	3/8	<b>RAP212X</b>					
	12.7			<b>RAP212.7X</b>					
	13.5		<b>RAP213.5X</b>						
	14.0		<b>RAP214X</b>						
	15.0		<b>RAP215X</b>						
16.0	G 3/8	5/8	<b>RAP216X</b>						
17.2			<b>RAP217.2X</b>						
18.0			<b>RAP218X</b>						
5			19.0	G 1/2	3/4	<b>RAP519X</b>	70 58 26 1.2	26 508	26 508
			20.0			<b>RAP520X</b>			
	21.3	<b>RAP521.3X</b>							
	22.0	<b>RAP522X</b>							
	23.0	G 3/4	1	<b>RAP523X</b>					
	25.0			<b>RAP525X</b>					
	26.9			<b>RAP526.9X</b>					
	28.0			<b>RAP528X</b>					
	30.0	G 1	1 1/4	<b>RAP530X</b>					
	32.0			<b>RAP532X</b>					
	33.7			<b>RAP533.7X</b>					
	35.0			<b>RAP535X</b>					
	38.0	G 1 1/4	1 1/2	<b>RAP538X</b>					
	40.0			<b>RAP540X</b>					
42.0	<b>RAP542X</b>								

 When assembling solid rubber clamps, cover plates, hexagon screws and locking washers must be used.  
 All metal parts available in stainless steel.

**Tube clamps series 2+5 (Light construction series)**

DIN 3015, Part 1, Components

Cover plate		Bolts		Bolts		Bolts		Locking washer <sup>1)</sup>	
DPA	DPA l <sub>3</sub> 3 <sub>1</sub>	Slot head SLA	Slot head SLA d x L	Socket head ISA	Socket head ISA d x L	Hexagon head SSLA	Hexagon head SSLA d x L	USA/USB1X a	b
DPA2X	40 26	SLA2X	M 06x25	ISA2X	M 06x25	SSLA2/ SSB1X	M 06x25	9	18
DPA5X	70 52	SLA5X	M 06x50	ISA5X	M 06x50	SSLA5X	M 06x60		

1) When assembling solid rubber clamps, cover plates, hexagon screws and locking washers must be used.

**Tube clamps series 2+5 (Light construction series)**

DIN 3015, Part 1, Components

Bolts		Locking plate <sup>2)</sup>		Welding plate, short		Mounting rail	Mounting rail	Rail nut				
Stacking <sup>2)</sup> ASA	Stacking <sup>2)</sup> ASA l <sub>5</sub>	SBAX a SW		APKA	APKA e <sub>1</sub> L <sub>2</sub>	TS-A/B	TS-AB l h <sub>2</sub>	TMA/TMB1 a b c d <sub>6</sub>				
ASA2X	25	30	11	APKA2X	26 42	TS11A/B1X TS11A/B2X TS14A/b1X TS14A/b2X TS30A/b1X TS30A7b2X	1 m 11 2 m 11 1 m 14 2 m 14	TMA/TMB1 VERZX	25.4	10.4	12	M6
ASA5X	50			APKA5X	52 72		1 m 30 2 m 30					

<sup>2)</sup> The usage of stacking bolts necessitates the use of locking plates during the construction assembly.

# The fully flexible tube clamp.

## Optimum insulation against noise and vibration.

### The Primary Material

The fully flexible tube clamps are made out of thermoplastic caoutchouc.

### The advantages

Excellent noise insulation and vibration properties. Easy securing also of sensitive tube and pipe installations.

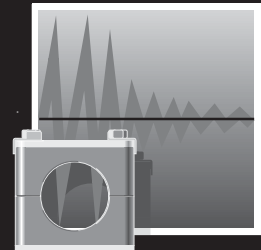
The material properties are appreciably higher than those of comparable vulcanized rubber products.

### The Construction Details

The internal surfaces are smooth or grooved. A useful screw safety-device guarantees perfect connections and together with the solid rubber construction eliminates self loosening!

The welding plates, covers and screws are also available in stainless steel.

*Low noise and vibration level*



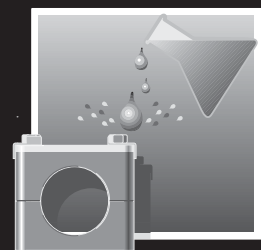
*Weather-proof and brittle-resistant*



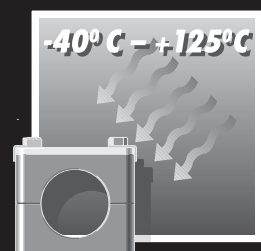
*Shape stability with high elasticity*



*Resistant against many chemicals*



*Wide temperature applications*









# ***Custom Products***



## What are Custom Products?

**Parker – supplier of your wishes – your special is our standard!**

**Your idea is our Know-How!**

### Profit of the advantages of our Custom Products:

- Slogans like “single source“ or “vendor-reduction“ are getting more and more important in industry.
- worldwide availability
- Parker TFDE Custom Products is able to offer almost every type of connector, which is not to be found in our catalogues or price-lists.

Following examples could be a suggestion, how your problems could be solved in the future.

#### Jump sizes



One connector can replace several combinations.

- to shorten assembly-time
- to reduce possible leaks and their costs
- to reduce stock

#### Extra-long connectors



to avoid long tubes  
or adapter-combinations

**Unconventional configuration of ends**



**tube and port end**  
eg: to connect metric and inch tube ...

**Restricted orifice**



**orifice × 0,3 mm**  
(technical clarification about length of reduced bore in accordance to material necessary)





## Industrial Tube Fittings Europe – Alphanumerical index

Order code	Page	Order code	Page	Order code	Page
0107	N46	C6MLO	J19	EGE-M-ED	I61
0207	N49	C6MX	K18	EGE-NPT	I65
0507	N51	C87OMLO	J37	EGEO	I60
1004	H31	C87OMX	K44	EGE-R-ED	I62
2107	N47	C8OMLO	J42	EL	I30
210A	H31	C8OMX	K48	ELA	O57
2207	N50	CC5OLO	J40	EL-M-ED	I72
226A	H51	CC5OX	K46	EL-R-ED	I73
226A BLADES	H51	CC87OMLO	J38	EMA1	Q4
2507	N52	CCCTX	K51	EMA3	Q8
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BAV 6/12	H51	DG 102-R	P7	ESV	L6
BBMTX	K22	DG 103	P9	ET	I29
BFG	M76	DG 104-M	P11	ET-M-ED	I70
BFGL	M79	DG 104-R	P10	ET-R-ED	I71
BFW	M77	DG 105	P12	EV	I28
BFW3	M78	DG 106-M	P14	EVGE-M-ED	I63
BFW3-G	M86	DG 106-R	P13	EVGE-R-ED	I64
BFW-G	M81	DG 107	P15	EVL	I33
BFW-GI	M82	DG 108	P16	EVL-M	I78
BFWL	M80	DG 208-R	P17	EVL-R	I79
BFW-S	M83	DKA	I132	EV-M-ED	I68
BL	J5	DKAZ	I131	EV-R-ED	I69
BML	J5	DKI	I128	EVT	I32
BMTX	K6	DMTX	K74	EVT-M	I76
BTX	K5	DOZ	I124	EVT-R	I77
BUZ	I119	DPR	I16	EVW	I31
BUZM	I120	DSVW-M	I92	EVW-M	I74
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C3P4	N57	DVGE-R	P18	EW-R-ED	I67
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F5OG	N17	G63P4	N59	K	I24
F5OG5	N19	G6X	K77	K6OO4MX	K83
F5OHAO	N20	G87MLO	J56	K6PP4MX	K84
F5OMLO	J27	GAI-M	I107	KARRYFLARE	H33
F5OMX	K27	GAI-NPT	I109	KD	I130
F63MP4	N58	GAI-R	I108	KDS	I129
F63MX	K43	GE-M	I55	KH	O44
F642EDML	J35	GE-M(KEG)	I56	KH (71)	O37
F642EDMX	K38	GE-M-ED	I49	KH (S)	O36
F64OMX	K39	GE-NPT	I58	KH 3/2 (S)	O42
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F687OML	J33	GE-UNF/UN	I57	KH-B1V-S	O45
F687OMX	K36	GFS	M20	KH-B2V-S	O46
F68OMX	K41	GFS-G	M24	KH-B3V-S	O47
F6MK4	N30	GFS-N	M26	KH-B4V-S	O50
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F82EDMLO	J31	GG44M	N41	KHBLOCK	O52
F82EDMX	K32	GHP	H19	KH-BSPP (S)	O38
F87OMLO	J26	GHP PRO	H23	KH-NPT (71)	O41
F87OMX	K26	GM	I121	KH-NPT (S)	O40
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FF5OMX	K29	GZ	I45	KTX	K12
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MRO .....	N11	PMQ .....	M72, M73	RHZ82EDMLOS .....	O28
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PAFS-S .....	M61	R4OMLO .....	J54	S87OMLO .....	J48
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PARFLANGE® 50 PRO .....	H42	R6MX .....	K21	SKA-ORB .....	L10
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V5OMLO .....	J45	WEMTX .....	K14	XEMQ .....	M31
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V87OMLO .....	J44	WF5OLO .....	J29	XVQ .....	M32

# Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. What-ever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 00800 27 27 5374



## AEROSPACE

### Key Markets

- Aircraft engines
- Business & general aviation
- Commercial transports
- Land-based weapons systems
- Military aircraft
- Missiles & launch vehicles
- Regional transports
- Unmanned aerial vehicles

### Key Products

- Flight control systems & components
- Fluid conveyance systems
- Fluid metering delivery & atomization devices
- Fuel systems & components
- Hydraulic systems & components
- Inert nitrogen generating systems
- Pneumatic systems & components
- Wheels & brakes



## CLIMATE CONTROL

### Key Markets

- Agriculture
- Air conditioning
- Food, beverage & dairy
- Life sciences & medical
- Precision cooling
- Processing
- Transportation

### Key Products

- CO<sub>2</sub> controls
- Electronic controllers
- Filter driers
- Hand shut-off valves
- Hose & fittings
- Pressure regulating valves
- Refrigerant distributors
- Safety relief valves
- Solenoid valves
- Thermostatic expansion valves



## ELECTROMECHANICAL

### Key Markets

- Aerospace
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Paper machinery
- Plastics machinery & converting
- Primary metals
- Semiconductor & electronics
- Textile
- Wire & cable

### Key Products

- AC/DC drives & systems
- Electric actuators, gantry robots & slides
- Electrohydrostatic actuation systems
- Electromechanical actuation systems
- Human machine interface
- Linear motors
- Stepper motors, servo motors, drives & controls
- Structural extrusions



## FILTRATION

### Key Markets

- Food & beverage
- Industrial machinery
- Life sciences
- Marine
- Mobile equipment
- Oil & gas
- Power generation
- Process
- Transportation

### Key Products

- Analytical gas generators
- Compressed air & gas filters
- Condition monitoring
- Engine air, fuel & oil filtration & systems
- Hydraulic, lubrication & coolant filters
- Process, chemical, water & micro filtration filters
- Nitrogen, hydrogen & zero air generators



## FLUID & GAS HANDLING

### Key Markets

- Aerospace
- Agriculture
- Bulk chemical handling
- Construction machinery
- Food & beverage
- Fuel & gas delivery
- Industrial machinery
- Mobile
- Oil & gas
- Transportation
- Welding

### Key Products

- Brass fittings & valves
- Diagnostic equipment
- Fluid conveyance systems
- Industrial hose
- PTFE & PFA hose, tubing & plastic fittings
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects



## HYDRAULICS

### Key Markets

- Aerospace
- Aerial lift
- Agriculture
- Construction machinery
- Forestry
- Industrial machinery
- Mining
- Oil & gas
- Power generation & energy
- Truck hydraulics

### Key Products

- Diagnostic equipment
- Hydraulic cylinders & accumulators
- Hydraulic motors & pumps
- Hydraulic systems
- Hydraulic valves & controls
- Power take-offs
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects



## PNEUMATICS

### Key Markets

- Aerospace
- Conveyor & material handling
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & automotive

### Key Products

- Air preparation
- Brass fittings & valves
- Manifolds
- Pneumatic accessories
- Pneumatic actuators & grippers
- Pneumatic valves & controls
- Quick disconnects
- Rotary actuators
- Rubber & thermoplastic hose & couplings
- Structural extrusions
- Thermoplastic tubing & fittings
- Vacuum generators, cups & sensors



## PROCESS CONTROL

### Key Markets

- Chemical & refining
- Food, beverage & dairy
- Medical & dental
- Microelectronics
- Oil & gas
- Power generation

### Key Products

- Analytical sample conditioning products & systems
- Fluor polymer chemical delivery fittings, valves & pumps
- High purity gas delivery fittings, valves & regulators
- Instrumentation fittings, valves & regulators
- Medium pressure fittings & valves
- Process control manifolds



## SEALING & SHIELDING

### Key Markets

- Aerospace
- Chemical processing
- Consumer
- Energy, oil & gas
- Fluid power
- General industrial
- Information technology
- Life sciences
- Military
- Semiconductor
- Telecommunications
- Transportation

### Key Products

- Dynamic seals
- Elastomeric o-rings
- EMI shielding
- Extruded & precision-cut, fabricated elastomeric seals
- Homogeneous & inserted elastomeric shapes
- High temperature metal seals
- Metal & plastic retained composite seals
- Thermal management



ENGINEERING YOUR SUCCESS.

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