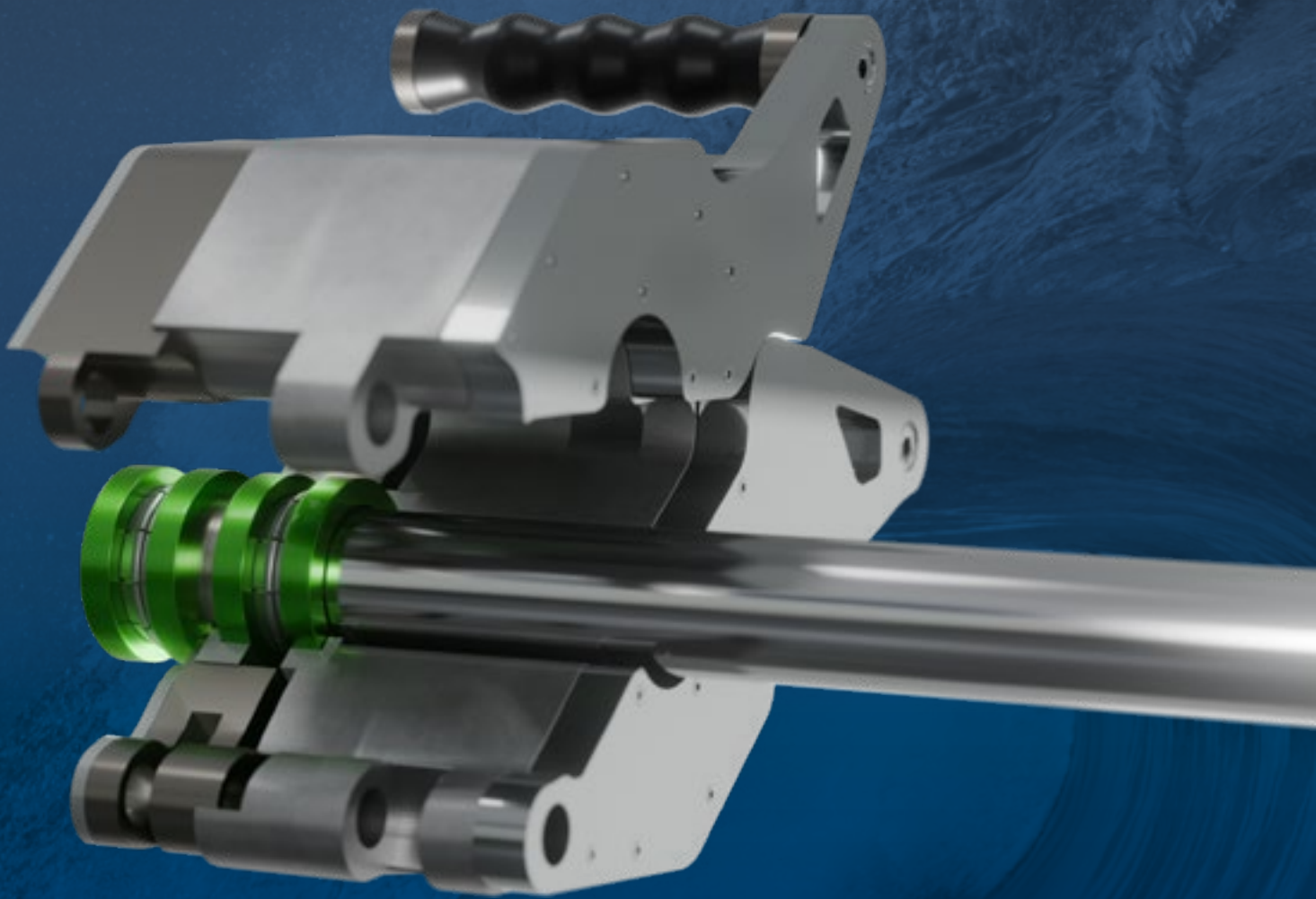


PreFiS®

PRODUCT
CATALOGUE
REV.0



Non-Welded Press Fitting System

prefis-fittings.com



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Introduction

Notice

The information and data presented in this catalogue is intended as reference for use of PreFiS® equipment by designers and users for proper application and installation of the product. It is not intended to be used as a substitute for competent, professional assistance for any specific application.

While every effort has been made to ensure its accuracy, PreFiS® Fittings GmbH, its subsidiaries and affiliated companies, make no expressed or implied warranty of any kind regarding the information contained in this catalogue or the material referred to within.

The technical and performance information such as weights, dimensions and ratings in this catalogue supersedes all previously published data. PreFiS® Fittings GmbH is always striving for continual product improvement and development and therefore reserves the right to change product designs, specifications and limitations without notice.

Use of the information or material in this catalogue is at the user's own risk, and the user assumes full liability for that use.

All technical data presented should always be used to design a system along with good piping practices. The pressure, temperature and other limiting factors of the PreFiS® product must never be exceeded. For any additional technical information, please contact info@prefis-fittings.com.

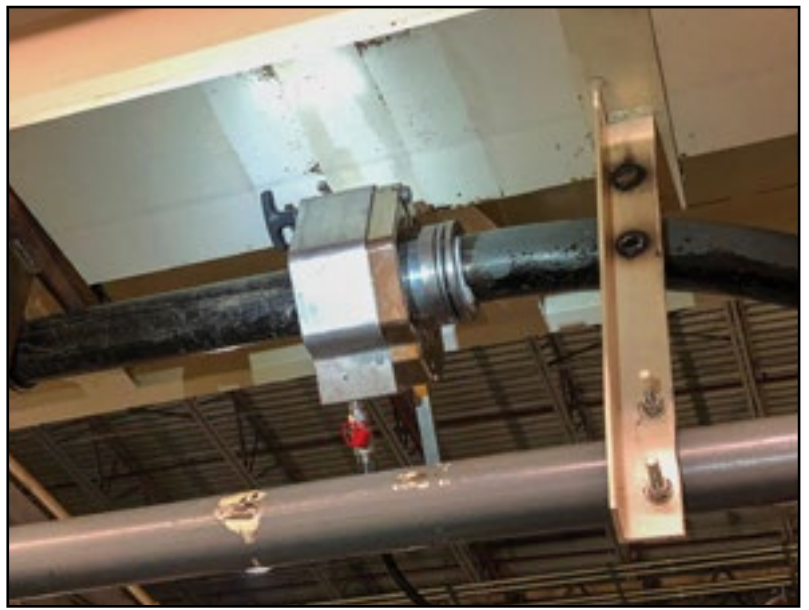
PreFiS®

Introduction

What is PreFiS®

PreFiS® is a 360° axial swage fitting that creates a permanent, leak-free cold connection between pipe and tube. Fast, reliable, and tamper-resistant, it is well suited for new construction and maintenance work where fire hazards and high temperatures are present, and a clean piping connection is required. A hydraulically powered compression tool swages the fitting onto the pipe or tube, plastically deforming it within seconds. The fitting is suitable for a wide range of low- to high-pressure piping applications in industries including marine and offshore, navy, oil and gas, petrochemical, steel, mining, and other industrial sectors.

The core concept is to create a service-free, metal-to-metal pipe connection without a gasket, replacing many joints traditionally made by welding, threading, or similar methods. This concept is realized in PreFiS® (Press Fitting System):



The Company

PreFiS® was founded in 1996 to develop a new gasket-free, metal-to-metal pipe connection. The product was originally developed by a company called SHT, later owned by Benteler Distribution and then Van Leeuwen. Today, it is part of Tube-Mac® Piping Technologies.

In 1999, this concept led to a patent for the product known as PreFiS® (Press-Fitting-System). Market interest was strong from the beginning, but its breakthrough came in high-pressure fire-fighting systems. Since then, PreFiS® has been adopted for many other applications, including high-pressure air piping, offshore installations, shipbuilding, chemical processing, cooling systems, and hydraulic systems. Version 2 was introduced in 2001 and remains the benchmark.

PreFiS® uses modern electronically controlled engineering and manufactures and supplies complete pipe connection systems, including specialized tools.

Modern production ensures the highest quality.

Quality is supported by an ISO 9001-certified management system, qualified and motivated staff, extensive in-house testing, and rigorous quality control to ensure high reliability.

Introduction

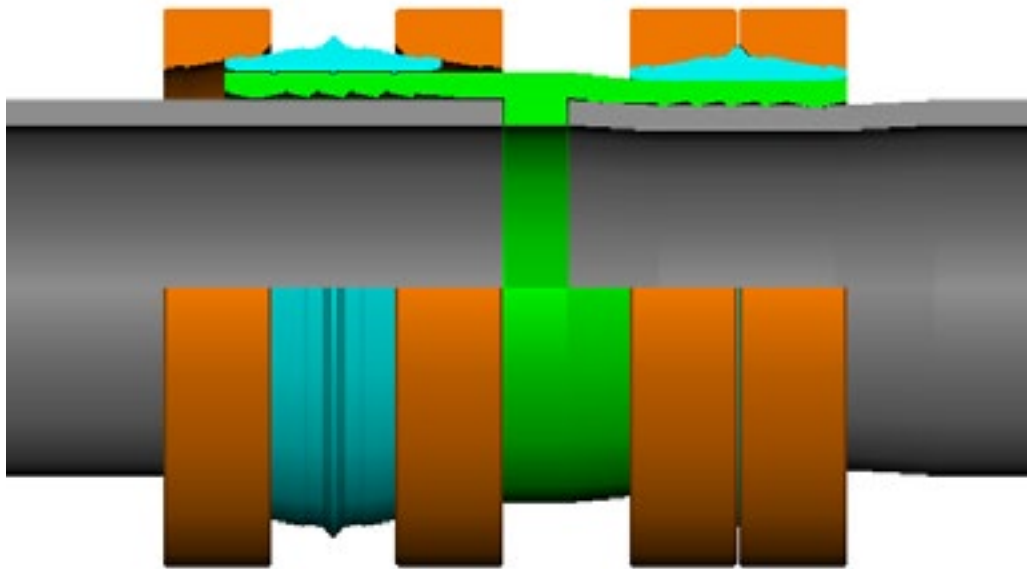
Technology

PreFiS® Fittings incorporates a unique sealing capability by using four non-metallic rings compressing against the pipe surface which produces a leak tight, permanent seal. Due to the use of a metal-to-metal connection, the fitting can be installed on pipe and tube with normal tolerances and surface conditions.

The PreFiS® connector is a metal fitting which slides over the pipe or tube. The outer diameter at each end of the connector is then swaged against the pipe or tube using a handheld portable hydraulic tool. The tool transfers linear force to 360° axial force, which results in a permanent leak-free connection. At each swaged end there are 4 internal rings which, when swaged, penetrate the outer surface of the pipe or tube.

Introduction

The basic idea is to connect pipes with a service-free, metal-to-metal connection, without a gasket, to replace most connections made by welding, screwing, etc. The materialization of this idea is PreFiS® (Press Fitting System):



The outer press rings (orange) compress the inner segment rings (blue), causing the inner fitting (green) to contract slightly. As a result, the teeth of the inner fitting grip the pipe surface (gray). Once pressed, the rings and inner fitting, lock securely onto the pipe.

In technical terms, the connection consists of a cylindrical main body and two press-ring sets. The main body is symmetrically designed at each pipe end with raised and recessed outer surfaces. When the external press rings are shifted axially, these raised areas are pressed inward, driving the annular teeth on the inner surface into the pipe ends. This creates a permanent metal-to-metal seal and a strong mechanical connection. The main body material is selected to suit the pipe material, and the press-ring sets are designed to be fully compatible with it.

Introduction

PreFiS® enables workers without advanced welding skills to connect and seal pipes quickly and easily using simple, user-friendly tools. Compared with traditional methods, PreFiS® reduces both installation time and overall lifecycle costs:

- During installation, through faster assembly
- Throughout the service life of the piping system, by virtually eliminating maintenance costs

As a second-generation system, PreFiS® holds a strong position among press fittings for high-pressure and large-diameter pipe applications.

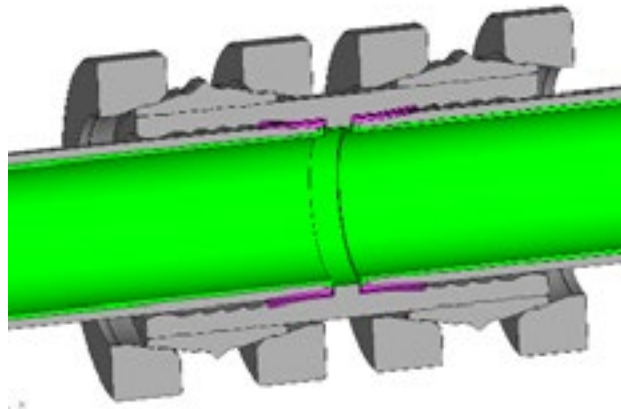
PreFiS® addresses global demand for permanent pipe connections across industries such as:

- Petrochemical, chemical, and other industrial plant construction
- Marine industries, including shipbuilding and offshore platform construction
- Building and infrastructure construction
- Mining
- Aerospace
- Automotive industry

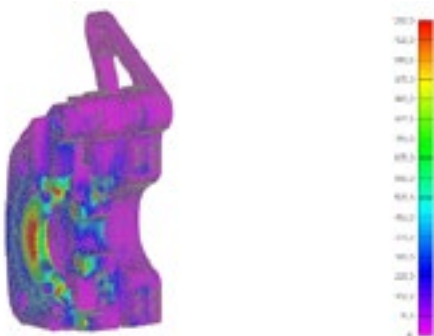
It is especially well suited for applications involving the transport of:

- High-pressure fluids and gases
- Hazardous fluids and gases

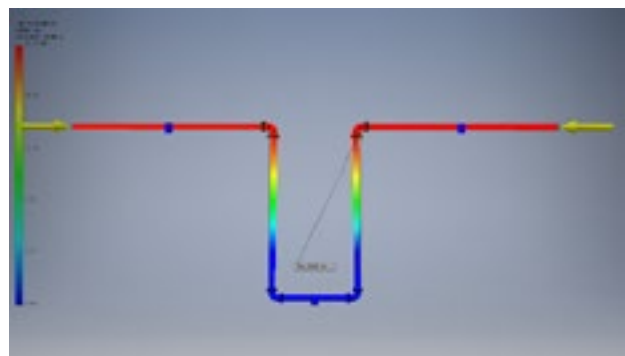
PreFiS® has undergone extensive mechanical and environmental testing in accordance with numerous standards and procedures. It has successfully passed combined impulse and vibration tests, as well as shock and fire tests. PreFiS® has also been analyzed using FEA (Finite Element Analysis) to demonstrate compliance with IACS Requirement P2.11. Below are some of the type approvals and standards with which PreFiS® complies:



Tool Test



Special Loop Test for customers



Introduction

Corrosion test according to DIN EN ISO 9227

Dokumentation

Zustand nach 360 h



Zustand nach 720 h



Ergebnis

☒ Prüfung bestanden

☐ Prüfung nicht bestanden

Introduction

DNV, Lloyd's Register & BV Type Approved

The installation and subsequent inspection of fittings is the most expensive part of joining and maintaining any piping system. Regardless of the type of piping system, there may be numerous threaded, welded and brazed fittings. These traditional types of fittings are costly to install as they are more labor intensive.

Expensive and laborious procedures may include the following:

- Obtaining permits
- Preparation time
- Fit-up time
- Inspection of joints
- Hydrostatic testing
- Purging the system
- Rework of joints that do not pass inspection
- Time for welding or brazing
- Need for a fire watch

PreFiS® Mechanically Attached Fitting System is the best alternative to threaded, welded, or brazed joints.

Some of the many advantages of using PreFiS® over traditional methods are:

- There is no need to purge or flush the piping system of gas or liquid because the application of PreFiS® requires no hot work. In other words, PreFiS® is installed cold.
- The time required to join the pipe ends together is significantly shorter because of the portable tools used to compress the fitting onto the pipe.
- Reduced inspection time checks for proper swaged diameter to determine satisfactory compression of the fitting. This eliminates the need for conventional NDT requirements such as X-rays etc.
- There is no need for fire watch or any special fire permits which are needed for welding or brazing, as there are no fumes or fire hazards when installing PreFiS®.
- PreFiS® is a safe cold work technology.

With all the advantages listed above, PreFiS® is certainly the most economical and efficient way of joining pipes. It dramatically reduces costs, greatly enhances quality and significantly improves safety conditions and reliability of the completed joint.

PreFiS® fittings come in all standard configurations (straights, 45° and 90° elbows, adapter, tees, reducers and flanged ends).

PreFiS® configurations provide permanent ends or a combination of permanent and separable ends. Separable ends include ANSI, SAE and ISO Flanged as well as JIC 37°, ORFS, NPT, BSPP and DIN 24° fittings.

PreFiS® fittings are available in Carbon Steel, Stainless Steel and Duplex on request.

PreFiS® is suitable for NPS pipes, OD tubes and Metric tubes.

Introduction

PreFiS® System Benefits

The PreFiS® system assists you and your team with safe and cost-effective work practices

Most cost effective on-site pipe work fabrication and repairs

- Reduces on-site time and labor; PreFiS® fittings are swaged on cold, hot work permits are no longer required. PreFiS® tooling is hydraulically actuated removing the need for special site services.
- PreFiS® system prevents the need for gas freeing, system flushing, NDT, and fire watch. It is designed as a one-person operation.

Provides an improved safety environment

- The PreFiS® system, developed to reduce hot work, is a safe system. There are no torches, open flames or sparks associated with the installation or maintenance.

PreFiS® system on EVERY installation achieves

- Improved productivity; many tasks carried out in only one-shift with minimum disruption to production.
- Installed cost reduction of up to 60%.

PreFiS® system on EVERY installation offers

- High tensile and high torque hold.
- Minimal pipe preparation.

Requires very little specialized skill and training

- PreFiS® system provides a range of fittings and hand-held tooling that requires a minimum of specialized skills to install – it's easy and user friendly.
- Training takes less than 30 minutes to complete.
- Fully detailed, simple-to-follow documentation (Installation and Preventative Maintenance Manuals including Inspection Criteria Instructions) are provided with each purchased kit. QR codes on tools give direct access to an online resource with manuals for specific tools.

How much does it cost - rent or buy?

- Clients have recuperated tooling and fitting costs in one system installation.
- Tooling Rental Program and/or Purchase Programs are available.

Introduction

Industries and Applications

PreFiS® has been used in numerous industries worldwide including but not limited to:

- Ship building and repair (commercial and navy)
- Refinery, chemical, pharmaceuticals, food and beverage
- Marine and offshore
- Painting and PWC systems, automotive
- Testing equipment, fire suppression
- Mining, pulp and paper, nuclear/power generation

PreFiS® applications include:

- CNG (compressed natural gas)
- CO₂ cofferdam inerting
- Condensate piping
- Deluge systems
- Down-well coiled tubing
- Drains and plumbing vents
- Ethylene glycol and water
- Fuel and fuel heating lines
- Heating coils
- Utility piping systems
- High-pressure fire suppression systems
- Mobile equipment tubing and piping
- High-pressure hydraulic systems
- Low-temperature steam (<400°C)
- LPG (liquefied petroleum gas)
- Lubrication and grease
- Natural gas distribution
- Plant, instrumentation and utility air
- Waste systems
- Solvents and water-based paints
- Wastewater
- Paint, brake fluid and sealer lines



Technical Information

Pipe Sizes

Stainless Steel					
OD1	ASTM size	Pipe OD min	Pipe OD max	Pipe Wall thickness min	*Pipe Wall thickness max
10.0		9.7	10.3	1.0	1.5
12.0		11.7	12.3	1.0	1.5
13.5	1/4"	13.2	13.8	1.0	1.5
15.0		14.7	15.3	1.0	1.5
16.0		15.7	16.3	1.0	1.5
17.2	3/8"	16.9	17.5	1.0	1.5
18.0		17.7	18.3	1.0	1.5
20.0		19.2	20.5	1.6	2.6
21.3	1/2"	20.5	21.8	1.6	2.6
22.0		21.2	22.5	1.6	2.6
25.0		24.2	25.5	1.6	2.6
26.9	3/4"	25.8	27.4	1.6	2.6
28.0		27.2	28.5	1.6	2.6
30.0		29.2	30.5	1.6	3.6
33.7	1"	32.6	34.2	1.6	3.6
35.0		34.6	35.5	1.6	3.6
38.0		37.2	38.5	1.6	3.6
42.4	1 1/4"	41.3	43.0	1.6	3.6
48.3	1 1/2"	47.4	49.0	1.6	3.6
54.0		53.2	54.6	2.0	4.0
60.3	2"	59.5	60.9	2.0	4.0
76.1	2 1/2"	75.3	76.9	2.0	5.0
88.9	3"	88.0	89.9	2.0	5.0

Carbon Steel					
OD1	ASTM size	Pipe OD min	Pipe OD max	Pipe Wall thickness min	*Pipe Wall thickness max
10.0		9.7	10.3	1.6	2.0
12.0		11.7	12.3	1.6	2.0
13.5	1/4"	13.2	13.8	1.6	2.0
15.0		14.7	15.3	1.6	2.0
16.0		15.7	16.3	1.6	2.0
17.2	3/8"	16.9	17.5	1.6	2.0
18.0		17.7	18.3	1.6	2.0
20.0		19.2	20.5	2.0	4.0
21.3	1/2"	20.5	21.8	2.0	4.0
22.0		21.2	22.5	2.0	4.0
25.0		24.2	25.5	2.0	4.0
26.9	3/4"	25.8	27.4	2.0	4.0
28.0		27.2	28.5	2.0	4.0
30.0		29.2	30.5	2.0	4.5
33.7	1"	32.6	34.2	2.0	4.5
35.0		34.6	35.5	2.0	4.5
38.0		37.2	38.5	2.0	4.5
42.4	1 1/4"	41.3	43.0	2.3	5.0
48.3	1 1/2"	47.4	49.0	2.3	5.0
54.0		53.2	54.6	2.3	5.0
60.3	2"	59.5	60.9	2.3	5.0
76.1	2 1/2"	75.3	76.9	2.6	5.6
88.9	3"	88.0	89.9	2.9	5.6

For bigger wall thickness please contact info@prefis-fittings.com.

As there are numerous pipe/tube specs, not every spec has been listed. If you do not see your spec, please consult the factory to confirm pipe/tube qualification.

Technical Information

Pipe Specifications

Stainless Steel Pipe Specifications

Material*	1.4404 (316L acc. AISI), 1.4571
Specification EN*	EN10217-7, TC2, EN 10216-5, EN ISO1127 Min. D3/T3
Specification ASTM*	ASTM A268, A269, A312, A999
Heat treatment	Bright annealed
Welding factor	W1A, W2A, W1R, W2R
Surface quality	Fittings may not be mounted if the corresponding pipe section shows any grooves, dents or other damages on the outer surface. Outside bead must be removed by grinding. Any weld imperfections like undercut, incomplete welding, lack of fusion or negative weld bead are not allowed (internal or external). When grinding the pipes, roundness of the pipe and minimum outside diameter must be assured.

Carbon Steel Pipe Specifications

Material*	1.0580, E355, 1.0562, P355N, 1.0570, 1.0038, E235, 1.0345, P235N
Specification EN*	EN 10305, EN 10220, EN 10255
Specification ASTM*	ASTM A106, A53 ERW, A333
Heat treatment*	Bright annealed
Surface quality	Fittings may not be mounted if the corresponding pipe section shows any grooves, dents or other damages on the outer surface. Outside bead must be removed by grinding. Any weld imperfections like undercut, incomplete welding, lack of fusion or negative weld bead are not allowed (internal or external). When grinding the pipes, roundness of the pipe and minimum outside diameter must be assured.

*For other material or specifications please contact info@prefis-fittings.com.

*For certain sizes and heavier wall thickness larger tonnage PreFiS® tooling may be required. Consult factory for guidance on tool selection with custom materials along with the PreFiS® installation manual for special instructions.

Technical Information

Pressure Ratings

Pressure ratings are based on system temperatures of -65°F to 752°F (-55°C to 400°C) and are limited to the maximum rating of the adjoining tube and/or end connection. Consideration must be taken on PreFiS® pressure ratings and adjoining connections with the lower rated end being the limiting factor.

Stainless Steel Pressure Ratings

OD (mm)	4:1 Safety Factor		3:1 Safety Factor		2:1 Safety Factor	
	Bar	PSI	Bar	PSI	Bar	PSI
10,0 mm up to 20,0 mm	260	3750	347	5000	520	7500
20,0 mm up to 30,0 mm	180	2600	240	3500	360	5200
30,0 mm up to 40,0 mm	160	2300	210	3000	320	4600
40,0 mm up to 50,0 mm	140	2000	180	2600	280	4000
50,0 mm up to 70,0 mm	140	2000	180	2600	280	4000
70,0 mm up to 80,0 mm	*140	*2000	*180	*2600	*280	*4000
80,0 mm up to 90,0 mm	*140	*2000	*180	*2600	*280	*4000

* For Marine please require the certificate.

Stainless steel: 1.4404

For special materials like 1.4571, 1.4362, 1.4462 please contact info@prefis-fittings.com

Carbon Steel Pressure Ratings

OD (mm)	4:1 Safety Factor		3:1 Safety Factor		2:1 Safety Factor	
	Bar	PSI	Bar	PSI	Bar	PSI
10,0 mm up to 20,0 mm	630	9100	840	12200	1260	18300
20,0 mm up to 30,0 mm	450	6500	600	8700	900	13000
30,0 mm up to 40,0 mm	400	5800	530	7700	800	11600
40,0 mm up to 50,0 mm	250	3600	330	4800	500	7300
50,0 mm up to 70,0 mm	250	3600	330	4800	500	7300
70,0 mm up to 80,0 mm	220	3200	290	4200	440	6400
80,0 mm up to 90,0 mm	200	2900	260	4200	400	6400

Please contact info@prefis-fittings.com for detailed ratings for the marine industry

Approval from:





PreFiS® Series

Standard Fitting Configuration Guide

10 to 88,9 mm 1/4" to 3"

 Straight Joint with Internal Stop G Page C2	 Straight Joint without Internal Stop GS Page C3	 End Cap BM Page C4	 Reducing Coupling RED Page C5	 Male Stud Coupling GE Page C9	 Female Stud Coupling GAI Page C12
 Equal Cross K Page C14	 Cross Reduced KR Page C15	 Equal Tee T Page C17	 Tee Reduced TR Page C18	 Angle 90° W90 Page C21	 Distribution Block 2 Port V2 Page C22
 Connector with DIN24G Female DA Page C24	 Connector 90° with DIN24G Female DA90 Page C24	 Connector Female DAI Page C25	 Connector Female 90° DAI90 Page C25	 Tee Connection with DIN24G Female TDA Page C26	 Tee with Female Nozzle Connection TDAI Page C26
 Weldable Bulkhead Coupling ESV Page C27					

Introduction

Technical Information

PreFiS® Series

PreFiS® Tooling

Manual SFT 1.4

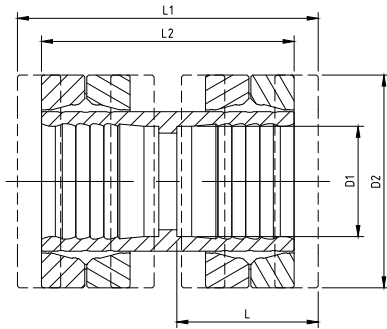
Manual SFT 2.4

Manual SFT 4.1

Installation Procedures

Appendix

PreFiS® Series



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

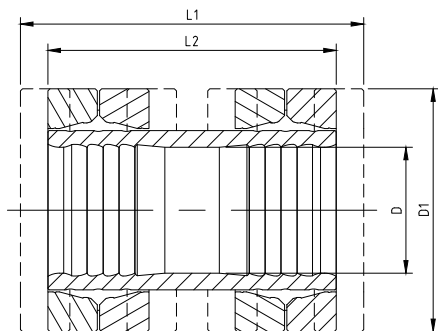
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Straight Joint with Internal Stop

Item Number	D			D1 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	Weight kg (ca.)
	G	Inch	Metric					
G100**	10.0	-	10	30	26.0	65.00	55	0.20
G120**	12.0	-	12	32				0.21
G150**	15.0	-	15	35				0.25
G160**	16.0	-	16	38				0.29
G172**	17.2	3/8"	-	39				0.30
G180**	18.0	-	18	43				0.37
G200**	20.0	-	20	48	33.8	72.60	61	0.53
G213**	21.3	1/2"	-	51				0.62
G220**	22.0	-	22					0.64
G250**	25.0	-	25	54				0.68
G269**	26.9	3/4"	-	56				0.69
G280**	28.0	-	28	58				0.70
G300**	30.0	-	30	59	39.2	83.40	70	0.89
G337**	33.7	1"	-	64				1.01
G350**	35.0	-	35	66				1.07
G380**	38.0	-	38	69				1.14
G424**	42.4	1 1/4"	42	75	45.0	96.00	80	1.50
G483**	48.3	1 1/2"	-	82				1.91
G540**	54.0	-	54	93	50.2	107.40	90	2.30
G603**	60.3	2"	-	98	55.8	119.60	100	2.92
G761**	76.1	2 1/2"	-	114	61.3	130.60	110	3.87
G889**	88.9	3"	-	126	67.9	143.84	120	4.86

PreFiS® Series



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

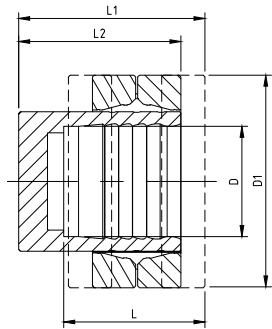
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Straight Joint without Internal Stop

Item Number	D			D1 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	Weight kg (ca.)
	G	Inch	Metric					
GS100**	10.0	-	10	30	65.00	55	0.195	0.20
GS120**	12.0	-	12	32			0.215	0.21
GS150**	15.0	-	15	35			0.244	0.25
GS160**	16.0	-	16	38			0.290	0.29
GS172**	17.2	3/8"	-	39			0.299	0.30
GS180**	18.0	-	18	43			0.374	0.37
GS200**	20.0	-	20	48	72.60	61	0.577	0.53
GS213**	21.3	1/2"	-	51			0.618	0.62
GS220**	22.0	-	22				0.635	0.64
GS250**	25.0	-	25	54			0.680	0.68
GS269**	26.9	3/4"	-	56			0.692	0.69
GS280**	28.0	-	28	58			0.700	0.70
GS300**	30.0	-	30	59	83.40	70	0.882	0.89
GS337**	33.7	1"	-	64			1.012	1.01
GS350**	35.0	-	35	66			1.068	1.07
GS380**	38.0	-	38	69			1.136	1.14
GS424**	42.4	1 1/4"	42	75	96.00	80	1.486	1.50
GS483**	48.3	1 1/2"	-	82			1.901	1.91
GS540**	54.0	-	54	93	107.40	90	2.300	2.30
GS603**	60.3	2"	-	98	119.60	100	2.928	2.92
GS761**	76.1	2 1/2"	-	114	130.60	110	3.875	3.87
GS889**	88.9	3"	-	126	143.84	120	4.861	4.86

PreFiS® Series



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

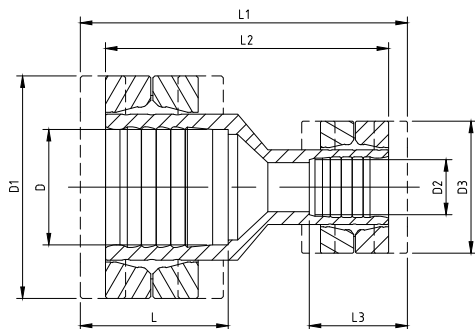
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

End Cap

Item Number	D			D1 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	Weight kg (ca.)
	BM	Inch	Metric					
BM100**	10.0	-	10	30	26.0	35.00	30	0.11
BM120**	12.0	-	12	32				0.11
BM150**	15.0	-	15	35				0.13
BM160**	16.0	-	16	38				0.16
BM172**	17.2	3/8"	-	39				0.16
BM180**	18.0	-	18	43				0.19
BM200**	20.0	-	20	48	33.8	43.80	38	0.31
BM213**	21.3	1/2"	-	51				0.35
BM220**	22.0	-	22					0.35
BM250**	25.0	-	25	54				0.40
BM269**	26.9	3/4"	-	56				0.41
BM280**	28.0	-	28	58				0.45
BM300**	30.0	-	30	59	39.2	51.70	45	0.60
BM337**	33.7	1"	-	64				0.53
BM350**	35.0	-	35	66				0.72
BM380**	38.0	-	38	69				0.80
BM424**	42.4	1 1/4"	42	75	45.0	58.00	50	0.96
BM483**	48.3	1 1/2"	-	82				1.12
BM540**	54.0	-	54	93	50.2	63.70	55	1.41
BM603**	60.3	2"	-	98	55.8	69.80	60	2.92
BM761**	76.1	2 1/2"	-	114	61.3	75.30	65	2.33
BM889**	88.9	3"	-	126	67.9	81.92	70	2.31

PreFiS® Series



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

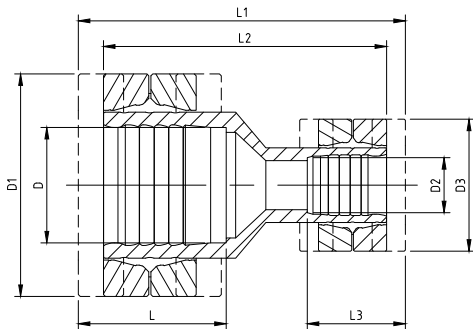
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Reducing Coupling

Item Number	D			D1 mm	D2			D3 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm (-1/+2)	L3 mm (-1/+2)	Weight kg (ca.)
	RED	Inch	Metric		KOR	inch	metric						
RED150120**	15.0	-	15	35	12.0	-	12	32	26.0	72.00	62.0	26.0	0.24
RED160120**	16.0	-	16	38	12.0	-	12	32	26.0	72.00	62.0	26.0	0.26
RED172150**	17.2	3/8"	-	39	15.0	-	15	35	26.0	72.00	62.0	26.0	0.30
RED180120**	18.0	-	18	43	12.0	-	12	32	26.0	72.00	62.0	26.0	0.30
RED180150**					15.0	-	15	35					0.31
RED200120**	20.0	-	20	48	12.0	-	12	32	33.8	78.80	68.0	26.0	0.35
RED200150**					15.0	-	15	35					0.38
RED200160**					16.0	-	16	38					0.38
RED200180**					18.0	-	18	43					0.39
RED213150**	21.3	1/2"	-	51	15.0	-	15	35	33.8	78.80	68.0	26.0	0.38
RED213172**					17.2	3/8"	-	39					0.48
RED220120**	22.0	-	22	51	12.0	-	12	32	33.8	78.80	68.0	26.0	0.49
RED220150**					15.0	-	15	35					0.50
RED220172**					17.2	3/8"	-	39					0.51
RED220180**					18.0	-	18	43					0.52
RED220200**					20.0	-	20	48		79.60	68.0	33.8	0.52
RED220213**					21.3	1/2"	-	51					0.53
RED250120**	25.0	-	25	54	12.0	-	12	32	33.8	78.80	68.0	26.0	0.46
RED250150**					15.0	-	15	35					0.47
RED250160**					16.0	-	16	38					0.46
RED250180**					18.0	-	18	43					0.48
RED250200**					20.0	-	20	48		79.60	68.0	33.8	0.49
RED250213**					21.3	1/2"	-	51					0.51
RED250220**					22.0	-	22						0.52
RED269172**	26.9	3/4"	-	56	17.2	3/8"	-	39	33.8	78.80	68.0	26.0	0.61
RED269200**					20.0	-	20	48					0.62
RED269213**					21.3	1/2"	-	51		79.60	68.0	33.8	0.67
RED269220**					22.0	-	22						0.68
RED269250**					25.0	-	25	54					0.68

PreFiS® Series



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

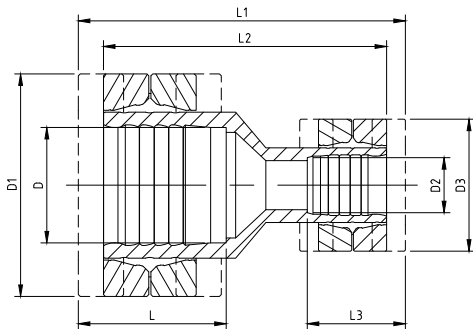
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Reducing Coupling

Item Number	D			D1 mm	D2			D3 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm (-1/+2)	L3 mm (-1/+2)	Weight kg (ca.)
	RED	Inch	Metric		KOR	inch	metric						
RED280120**	28.0	-	28	58	12.0	-	12	32	33.8	78.80	68.0	26.0	0.48
RED280150**					15.0	-	15	35					0.49
RED280180**					18.0	-	18	43					0.48
RED280213**					21.3	1/2"	-	51		79.60	68.0	33.8	0.50
RED280220**					22.0	-	22						0.51
RED280250**					25.0	-	25	54					0.53
RED280269**					26.9	3/4"	-	56					0.54
RED300120**	30.0	-	30	59	12.0	-	12	32	39.2	86.70	75.0	26.0	0.50
RED300150**					15.0	-	15	35					0.60
RED300160**					16.0	-	16	38					0.65
RED300200**					20.0	-	20	48		87.50	75.0	33.8	0.68
RED300220**					22.0	-	22	51					0.70
RED300250**					25.0	-	25	54					0.75
RED300269**					26.9	3/4"	-	56					0.80
RED300280**					28.0	-	28	58					0.85
RED337150**	33.7	1"	-	64	15.0	-	15	35	39.2	86.70	75.0	26.0	0.68
RED337172**					17.2	3/8"	-	39					0.70
RED337180**					18.0	-	18	43					0.73
RED337213**					21.3	1/2"	-	51		87.50	75.0	33.8	0.82
RED337220**					22.0		22						0.83
RED337250**					25.0		25	54					0.83
RED337269**					26.9	3/4"	-	56					0.84
RED337280**					28.0	-	28	58					0.88
RED337300**	35.0	-	35	66	30.0	-	30	59	39.2	93.40	80.0	39.2	0.90
RED350120**					12.0	-	12	32		86.70	75.0	26.0	0.70
RED350150**					15.0	-	15	35					0.77
RED350180**					18.0	-	18	43					0.80
RED350220**					22.0	-	22	51		87.50	75.0	33.8	0.90
RED350250**					25.0	-	25	54					0.95
RED350269**					26.9	3/4"	-	56					1.00
RED350280**					28.0	-	28	58					1.10
RED350300**	35.0	-	35	66	30.0	-	30	59	39.2	93.40	80.0	39.2	1.12
RED350337**					33.7	1"	-	64					1.30

PreFiS® Series



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

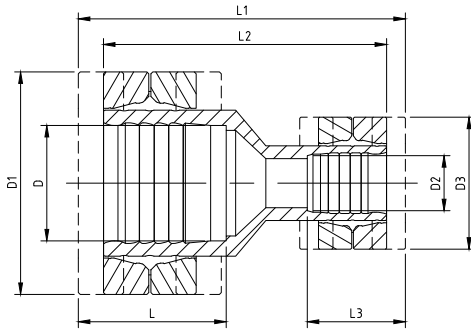
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Reducing Coupling

Item Number	D			D1 mm	D2			D3 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm (-1/+2)	L3 mm (-1/+2)	Weight kg (ca.)	
	RED	Inch	Metric		KOR	inch	metric							
RED380120**	38.0	-	38	69	12.0	-	12	32	39.2	86.70	75.0	26.0	0.75	
RED380150**					15.0	-	15	35					0.77	
RED380160**					16.0	-	16	38					0.80	
RED380200**					20.0	-	20	48					0.90	
RED380220**					22.0	-	22	51					0.95	
RED380250**					25.0	-	25	54		1.00				
RED380280**					28.0	-	28	58		1.10				
RED380300**					30.0	-	30	59		1.12				
RED380337**					33.7	1"	-	64		1.30				
RED380350**					35.0	-	35	66		1.50				
RED424120**	42.4	11/4"	42	75	12.0	-	12	32	45.0	98.80	85.0	33.8	0.90	
RED424150**					15.0	-	15	35					0.95	
RED424172**					17.2	3/8"	-	39					1.00	
RED424180**					18.0	-	18	43					1.05	
RED424200**					20.0	-	20	48					1.10	
RED424213**					21.3	1/2"	-	51		1.14				
RED424220**					22.0	-	22			1.20				
RED424250**					25.0	-	25	54		1.25				
RED424269**					26.9	3/4"	-	56		1.32				
RED424280**					28.0	-	28	58		1.35				
RED424300**					30.0	-	30	59		1.40				
RED424337**					33.7	1"	-	64		1.44				
RED424350**					35.0	-	35	66		1.48				
RED424380**					38.0	-	38	69		1.50				
RED483172**	48.3	11/2"	-	82	17.2	3/8"	-	39	45.0	98.00	85.0	26.0	1.40	
RED483213**					21.3	1/2"	-	51		98.80		33.8	1.42	
RED483220**					22.0	-	22	1.47						
RED483269**					26.9	3/4"	-	56					1.50	
RED483280**					28.0	-	28	58					1.58	
RED483300**					30.0	-	30	59					1.59	
RED483337**					33.7	1"	-	64		99.70		39.2	1.60	
RED483350**					35.0	-	35	66					1.62	
RED483380**					38.0	-	38	69					1.62	
RED483424**					42.4	11/4"	42	75					106.00	90.0

PreFiS® Series



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

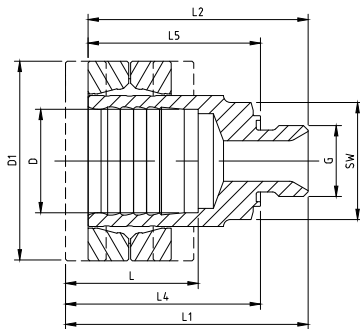
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Reducing Coupling

Item Number	D			D1 mm	D2			D3 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm (-1/+2)	L3 mm (-1/+2)	Weight kg (ca.)		
	RED	Inch	Metric		KOR	inch	metric								
RED540150**	54.0	-	54	93	15.0	-	15	35	50.2	103.70	90.0	26.0	1.30		
RED540220**					22.0	-	22	51		104.50		33.8	1.30		
RED540280**					28.0	-	28	58		110.40		39.2	1.67		
RED540300**					30.0	-	30	59					1.67		
RED540350**					35.0	-	35	66		95.0			45.0	1.81	
RED540380**					38.0	-	38	69						1.81	
RED540424**					42.4	11/4"	42	75		111.70	1.90				
RED540483**					48.3	11/2"	-	82		1.90					
RED603220**	60.3	2"	-	98	22.0	-	22	51	55.8	110.60	95.0	33.8	1.99		
RED603280**					28.0	-	28	58		116.50		100.0	39.2	2.10	
RED603300**					30.0	-	30	59						2.12	
RED603337**					33.7	1"	-	64							
RED603350**					35.0	-	35	66					2.26		
RED603380**					38.0	-	38	69					2.26		
RED603424**					42.4	11/4"	42	75		117.80		45.0	2.34		
RED603483**					48.3	11/2"	-	82					2.50		
RED603540**										54.0	-	54	93		123.50

PreFiS® Series



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

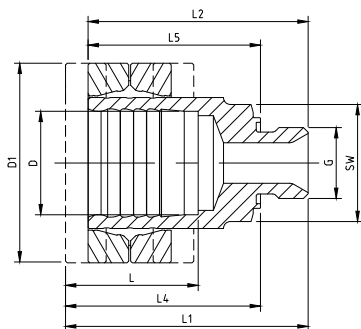
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Male Stud Coupling

Item Number	D			D1 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	L4 mm	L5 mm	G (BSP) inch	SW mm	Weight kg (ca.)
	GE	Inch	Metric									
GE12010**	12.0	-	12	32	26.00	58.00	53	37	32	3/8"	22	0.75
GE12015**						63.00	58	37	32	1/2"	30	
GE12020**						69.00	64	37	32	3/4"	36	
GE12025**						72.00	67	37	32	1"	46	
GE15010**	15.0	-	15	35	26.00	58.00	53	37	32	3/8"	22	0.75
GE15015**						63.00	58	37	32	1/2"	30	
GE15020**						69.00	64	37	32	3/4"	36	
GE15025**						72.00	67	37	32	1"	46	
GE16010**	16.0	-	16	38	26.00	58.00	53	37	32	3/8"	22	0.75
GE16015**						63.00	58	37	32	1/2"	30	
GE16020**						69.00	64	37	32	3/4"	36	
GE16025**						72.00	67	37	32	1"	46	
GE17210**	17.2	3/8"	-	39	26.00	58.00	53	37	32	3/8"	22	0.75
GE17215**						63.00	58	37	32	1/2"	30	
GE17220**						69.00	64	37	32	3/4"	36	
GE17225**						72.00	67	37	32	1"	46	
GE18010**	18.0	-	18	43	26.00	58.00	53	37	32	3/8"	22	0.75
GE18015**						63.00	58	37	32	1/2"	30	
GE18020**						69.00	64	37	32	3/4"	36	
GE18025**						72.00	67	37	32	1"	46	
GE20010**	20.0	-	20	48	33.80	61.80	56	41	35	3/8"	22	0.75
GE20015**						66.80	61	41	35	1/2"	30	
GE20020**						72.80	67	41	35	3/4"	36	
GE20025**						75.80	70	41	35	1"	46	
GE21310**	21.3	1/2"	-	51	33.80	61.80	56	41	35	3/8"	22	0.75
GE21315**						66.80	61	41	35	1/2"	30	
GE21320**						72.80	67	41	35	3/4"	36	
GE21325**						75.80	70	41	35	1"	46	
GE22010**	22.0	-	22	51	33.80	61.80	56	41	35	3/8"	22	0.75
GE22015**						66.80	61	41	35	1/2"	30	
GE22020**						72.80	67	41	35	3/4"	36	
GE22025**						75.80	70	41	35	1"	46	
GE25015**	25.0	-	25	54	33.80	66.80	61	41	35	1/2"	30	0.75
GE25020**						72.80	67	41	35	3/4"	36	
GE25025**						75.80	70	41	35	1"	46	

PreFiS® Series



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

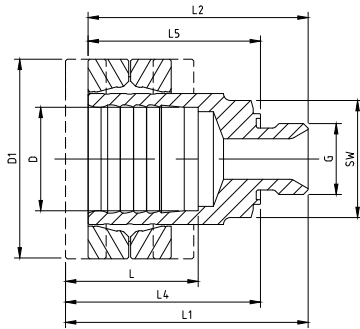
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Male Stud Coupling

Item Number	D			D1 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	L4 mm	L5 mm	G (BSP) inch	SW mm	Weight kg (ca.)
	GE	Inch	Metric									
GE26915**	26.9	3/4"	-	56	33.80	66.80	61	41	35	1/2"	30	0.75
GE26920**						72.80	67	41	35	3/4"	36	
GE26925**						75.80	70	41	35	1"	46	
GE26932**						80.80	75	41	35	1 1/4"	50	
GE26940**						85.80	80	41	35	1 1/2"	55	1.02
GE28015**	28.0	-	28	58	33.80	66.80	61	41	35	1/2"	30	0.755
GE28020**						72.80	67	41	35	3/4"	36	
GE28025**						75.80	70	41	35	1"	46	
GE28032**						80.80	75	41	35	1 1/4"	50	
GE28040**						85.80	80	41	35	1 1/2"	55	1.02
GE30015**	30.0	-	30	59	39.20	71.70	65	47	40	1/2"	30	0.75
GE30020**						78.70	72	47	40	3/4"	36	
GE30025**						81.70	75	47	40	1"	46	
GE30032**						86.70	80	47	40	1 1/4"	50	0.85
GE30040**						91.70	85	47	40	1 1/2"	55	1.02
GE30050**						96.70	90	47	40	2"	75	1.02
GE33715**	33.7	1"	-	64	39.20	71.70	65	47	40	1/2"	30	0.75
GE33720**						78.70	72	47	40	3/4"	36	
GE33725**						81.70	75	47	40	1"	46	
GE33732**						86.70	80	47	40	1 1/4"	50	0.85
GE33740**						91.70	85	47	40	1 1/2"	55	1.02
GE33750**						96.70	90	47	40	2"	75	1.02
GE35015**	35.0	-	35	66	39.20	71.70	65	47	40	1/2"	30	0.75
GE35020**						78.70	72	47	40	3/4"	36	
GE35025**						81.70	75	47	40	1"	46	
GE35032**						86.70	80	47	40	1 1/4"	50	0.85
GE35040**						91.70	85	47	40	1 1/2"	55	1.02
GE35050**						96.70	90	47	40	2"	75	1.02
GE38015**	38.0	-	38	69	39.20	71.70	65	47	40	1/2"	30	0.75
GE38020**						78.70	72	47	40	3/4"	36	
GE38025**						81.70	75	47	40	1"	46	
GE38032**						86.70	80	47	40	1 1/4"	50	0.85
GE38040**						91.70	85	47	40	1 1/2"	55	1.02
GE38050**						96.70	90	47	40	2"	75	1.02
GE42415**	42.4	1 1/4"	42	75	45.00	78.00	70	53	45	1/2"	30	0.75

PreFiS® Series



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

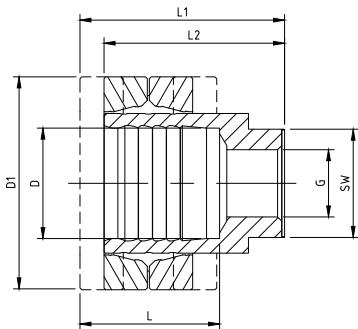
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Male Stud Coupling

Item Number	D			D1 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	L4 mm	L5 mm	G (BSP) inch	SW mm	Weight kg (ca.)
	GE	Inch	Metric									
GE42420**						85.00	77	53	45	3/4"	36	
GE42425**						88.00	80	53	45	1"	46	
GE42432**						93.00	85	53	45	1 1/4"	50	0.85
GE42440**						98.00	90	53	45	1 1/2"	55	1.02
GE42450**						103.00	95	53	45	2"	75	1.02
GE48325**	48.3	1 1/2"	-	82	45.00	88.00	80	53	45	1"	46	
GE48340**						98.00	90	53	45	1 1/2"	55	1.02
GE48350**						103.00	95	53	45	2"	75	1.02
GE54015**	54.0	-	54	93	50.20	83.70	75	59	50	1/2"	30	0.75
GE54020**						90.70	82	59	50	3/4"	36	
GE54025**						93.70	85	59	50	1"	46	
GE54032**						98.70	90	59	50	1 1/4"	50	0.85
GE54040**						103.70	95	59	50	1 1/2"	55	1.02
GE54050**						108.70	100	59	50	2"	75	1.02
GE60315**	60.3	2"	-	98	55.80	89.80	80	65	55	1/2"	30	0.75
GE60320**						96.80	87	65	55	3/4"	36	
GE60325**						99.80	90	65	55	1"	46	
GE60332**						104.80	95	65	55	1 1/4"	50	0.85
GE60340**						109.80	100	65	55	1 1/2"	55	1.02
GE60350**						114.80	105	65	55	2"	75	1.02
GE76140**	76.1	1 1/2"	-	114	61.30	115.30	105	70	60	1 1/2"	55	2.90

PreFiS® Series



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

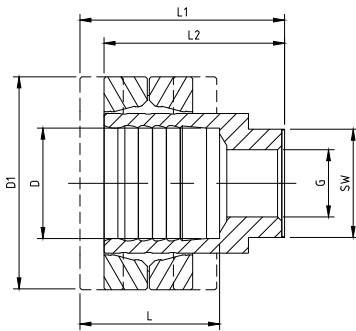
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Female Stud Coupling

Item Number	D			D1 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	G=BSPP Size inch	SW mm	Weight kg (ca.)
	GAI	Inch	Metric							
GAI12010**	12.0	-	12	32	26.0	55.00	50	3/8"	22	
GAI12015**								1/2"	30	
GAI15010**	15.0	-	15	35				3/8"	22	
GAI15015**								1/2"	30	
GAI16010**	16.0	-	16	38				3/8"	22	
GAI16015**								1/2"	30	
GAI17210**	17.2	3/8"	-	39				3/8"	22	
GAI17215**								1/2"	30	
GAI18010**	18.0	-	18	43				3/8"	22	0.24
GAI18015**								1/2"	30	0.27
GAI20010**	20.0	-	20	48	33.8	55.80	50	3/8"	22	
GAI20015**								1/2"	30	
GAI21310**	21.3	1/2"	-	51				3/8"	22	
GAI21315**								1/2"	30	0.36
GAI22010**	22.0	-	22	51				3/8"	22	
GAI22015**								1/2"	30	
GAI25010**	25.0	-	25	54				3/8"	22	
GAI25015**								1/2"	30	
GAI26910**	26.9	3/4"	-	56				3/8"	22	
GAI26915**								1/2"	30	
GAI28010**	28.0	-	28	58				3/8"	22	
GAI28015**								1/2"	30	
GAI30010**	30.0	-	30	59	39.2	56.70	50	3/8"	22	0.57
GAI30015**						56.70	50	1/2"	30	0.56
GAI30020**						59.70	53	3/4"	32	
GAI30025**						62.70	56	1"	42	
GAI30032**						66.70	60	1 1/4"	50	
GAI30040**						81.70	75	1 1/2"	64	
GAI33710**	33.7	1"	-	64		56.70	50	3/8"	22	0.62
GAI33715**						56.70	50	1/2"	30	0.61
GAI33720**						59.70	53	3/4"	32	0.74
GAI33725**						62.70	56	1"	42	0.72
GAI33732**						66.70	60	1 1/4"	50	
GAI33740**						81.70	75	1 1/2"	64	

PreFiS® Series



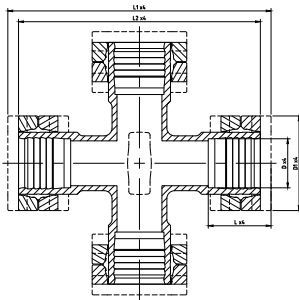
**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Female Stud Coupling

Item Number	D			D1 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	G=BSPP Size inch	SW mm	Weight kg (ca.)	
	GAI	Inch	Metric								
GAI38010**	38.0	-	38	69	39.2	56.70	50	3/8"	22	0.78	
GAI38015**						56.70	50	1/2"	30	0.77	
GAI38020**						59.70	53	3/4"	32		
GAI38025**						62.70	56	1"	42		
GAI38032**						66.70	60	1 1/4"	50		
GAI38040**						81.70	75	1 1/2"	64		
GAI42410**	42.4	1 1/4"	42.0	75	45.00	70.00	62	3/8"	22	0.89	
GAI42415**							1/2"	30	0.89		
GAI42425**							1"	42	1.18		
GAI42432**							1 1/4"	50	1.08		
GAI42440**							1 1/2"	64	1.19		
GAI48310**	48.3	1 1/2"	-	82		70.00	62	3/8"	22	1.07	
GAI48315**									1/2"	30	
GAI48322**									3/4"	32	
GAI48325**									1"	42	
GAI48332**									1 1/4"	50	
GAI48340**									1 1/2"	64	
GAI54008**	54.0	-	54.0	93	50.20	75.70	67	3/8"	22		
GAI54015**									1/2"	30	
GAI54020**									3/4"	32	
GAI54025**									1"	42	
GAI54032**								65	1 1/4"	50	
GAI54040**								80	1 1/2"	64	
GAI54050**								85	2"	75	
GAI60310**	60.3	2"	-	98	55.80	84.80	75	3/8"	22	1.82	
GAI60315**									1/2"	30	
GAI60320**									3/4"	32	
GAI60325**									1"	42	
GAI60332**									1 1/4"	50	
GAI60340**							89.80	80	1 1/2"	64	1.96
GAI60350**							93.80	84	2"	75	2.36
GAI76140**	76.1	2 1/2"	-	114	61.30			1 1/2"	64		



**** APPEND THE FOLLOWING
CODE TO THE ITEM NUMBER
TO SPECIFY MATERIAL**

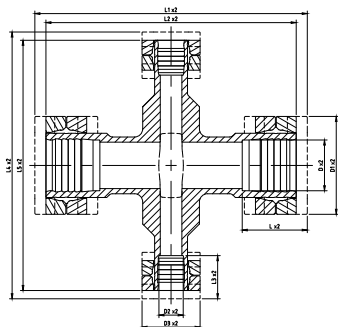
SC: Body stainless steel 1.4404
Ring sets carbon steel with
zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with
zinc-nickel coating

Equal Cross

Item Number	D			D1 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	Weight kg (ca.)
	K	Inch	Metric					
K100F**	10.0	-	10	30	26.0	122.80	112.8	0.48
K120F**	12.0	-	12	32				0.32
K150F**	15.0	-	15	35				0.45
K160F**	16.0	-	16	38				0.60
K172F**	17.2	3/8"	-	39				0.85
K180F**	18.0	-	18	43				0.93
K200F**	20.0	-	20	48	33.8	145.00	133.4	1.000
K213F**	21.3	1/2"	-	51				1.20
K220F**	22.0	-	22					1.44
K250F**	25.0	-	25	54		162.40	150.8	1.55
K269F**	26.9	3/4"	-	56				1.68
K280F**	28.0	-	28	58				1.85
K300F**	30.0	-	30	59	39.2	162.40	150.8	2.19
K337F**	33.7	1"	-	64		174.20	160.8	2.40
K350F**	35.0	-	35	66				2.85
K380F**	38.0	-	38	69				3.45
K424F**	42.4	1 1/4"	42	75	45.0	176.20	176.2	3.95
K483F**	48.3	1 1/2"	-	82		197.80	181.8	3.56
K540F**	54.0	-	54	93	50.2	244.00	226.6	7.67
K603F**	60.3	2"	-	98	55.8	246.20	226.6	9.64
K761F**	76.1	2 1/2"	-	114	61.3	270.60	250.0	12.20
K889F**	88.9	3"	-	126	67.9	294.64	270.8	15.00

PreFiS® Series



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

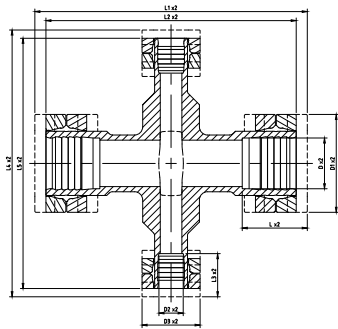
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Cross Reduced

Item Number	D			D1 mm	D2			D3 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	L3 mm (-1/+2)	L4 mm	L5 mm	Weight kg (ca.)
	KR	Inch	Metric		T	Inch	Metric								
K160120F**	16.0	-	16	38	12.0	-	12	32	26.0	122.80	112.8	26.0	122.80	112.80	2.70
K180120F**	18.0	-	18	43	12.0	-	12	32	26.0	122.80	112.8	26.0	122.80	112.80	2.70
K220120F**	22.0	-	22	51	12.0	-	12	32	33.8	137.60	126.0	26.0	143.80	133.80	2.86
K220150F**	22.0	-	22	51	15.0	-	15	35	33.8	137.60	126.0	26.0	143.80	133.80	2.86
K269213F**	26.9	3/4"	-	56	21.3	1/2"	-	51	33.8	162.40	150.8	33.8	162.40	150.80	2.86
K280120F**	28.0	-	28	58	12.0	-	12	32	33.8	137.60	126.0	26.0	143.80	133.80	2.86
K280180F**	28.0	-	28	58	18.0	-	18	43	33.8	162.40	150.8	26.0	160.80	150.80	2.86
K280220F**	28.0	-	28	58	22.0	-	22	51	33.8	162.40	150.8	33.8	162.40	150.80	2.86
K300120F**	30.0	-	30	59	12.0	-	12	32	39.2	139.40	126.0	26.0	143.80	133.80	2.86
K300150F**	30.0	-	30	59	15.0	-	15	35	39.2	139.40	126.0	26.0	143.80	133.80	2.86
K300160F**	30.0	-	30	59	16.0	-	16	38	39.2	164.20	150.8	26.0	160.80	150.80	2.86
K300200F**	30.0	-	30	59	20.0	-	20	48	39.2	164.20	150.8	33.8	162.40	150.80	2.86
K300220F**	30.0	-	30	59	22.0	-	22	51	39.2	164.20	150.8	33.8	162.40	150.80	2.86
K350120F**	35.0	-	35	66	12.0	-	12	32	39.2	139.40	126.0	26.0	151.80	141.80	2.86
K350180F**	35.0	-	35	66	18.0	-	18	43	39.2	163.40	150.0	26.0	170.00	160.00	2.86
K350220F**	35.0	-	35	66	22.0	-	22	51	39.2	163.40	150.0	33.8	171.60	160.00	2.86
K350280F**	35.0	-	35	66	28.0	-	28	58	39.2	163.40	150.0	33.8	171.60	160.00	2.86
K380120F**	38.0	-	38	69	12.0	-	12	32	39.2	139.40	126.0	26.0	151.80	141.80	2.86
K380150F**	38.0	-	38	69	15.0	-	15	35	39.2	139.40	126.0	26.0	151.80	141.80	2.86
K380160F**	38.0	-	38	69	16.0	-	16	38	39.2	163.40	150.0	26.0	170.00	160.00	2.86
K380180F**	38.0	-	38	69	18.0	-	18	43	39.2	163.40	150.0	26.0	170.00	160.00	2.86
K380200F**	38.0	-	38	69	20.0	-	20	48	39.2	163.40	150.0	33.8	171.60	160.00	2.86
K380220F**	38.0	-	38	69	22.0	-	22	51	39.2	163.40	150.0	33.8	171.60	160.00	2.86
K380250F**	38.0	-	38	69	25.0	-	25	54	39.2	163.40	150.0	33.8	171.60	160.00	2.86
K380300F**	38.0	-	38	69	30.0	-	30	59	39.2	163.40	150.0	39.2	173.40	160.00	2.86
K424120F**	42.4	1 1/4"	42	75	12.0	-	12	32	45.0	192.20	176.2	26.0	186.20	176.2	2.86
K424150F**	42.4	1 1/4"	42	75	15.0	-	15	35	45.0	192.20	176.2	26.0	186.20	176.2	2.86
K424180F**	42.4	1 1/4"	42	75	18.0	-	18	43	45.0	192.20	176.2	26.0	186.20	176.2	2.86
K424220F**	42.4	1 1/4"	42	75	22.0	-	22	41	45.0	192.20	176.2	33.8	187.80	176.2	2.86
K424280F**	42.4	1 1/4"	42	75	28.0	-	28	58	45.0	192.20	176.2	33.8	187.80	176.2	3.68
K424350F**	42.4	1 1/4"	42	75	35.0	-	35	66	45.0	192.20	176.2	39.2	189.60	176.2	3.68
K540150F**	54.0	-	54	93	15.0	-	15	35	50.2	244.00	226.6	26.0	236.60	226.6	3.68
K540300F**	54.0	-	54	93	30.0	-	30	59	50.2	244.00	226.6	39.2	240.00	226.6	3.68
K540380F**	54.0	-	54	93	38.0	-	38	69	50.2	244.00	226.6	39.2	240.00	226.6	3.68

PreFiS® Series



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

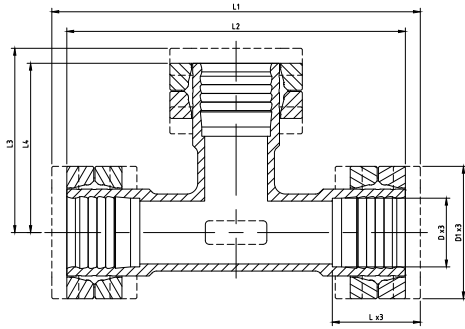
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Cross Reduced

Item Number	D			D1 mm	D2			D3 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	L3 mm (-1/+2)	L4 mm	L5 mm	Weight kg (ca.)
	KR	Inch	Metric		T	Inch	Metric								
K603280F**	60.3	2"	-	98	28.0	-	28	58	55.8	246.20	226.6	33.8	238.20	226.6	3.68
K603300F**	60.3	2"	-	98	30.0	-	30	59	55.8	246.20	226.6	39.2	240.00	226.6	3.68
K603380F**	60.3	2"	-	98	38.0	-	38	69	55.8	246.20	226.6	39.2	240.00	226.6	3.68
K603424F**	60.3	2"	-	98	42.4	1 1/4"	42	75	55.8	246.20	226.6	45.0	242.60	226.6	3.68

PreFiS® Series



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

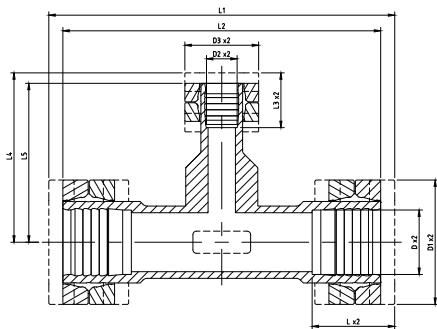
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Equal Tee

Item Number	D			D1 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	L3 mm	L4 mm	Weight kg (ca.)
	T	Inch	Metric							
T100F**	10.0	-	10	30	26.0	122.80	112.8	61.4	56.4	0.25
T120F**	12.0	-	12	32						0.45
T150F**	15.0	-	15	35						0.43
T160F**	16.0	-	16	38						0.41
T172F**	17.2	3/8"	-	39						0.70
T180F**	18.0	-	18	43						0.65
T200F**	20.0	-	20	48	33.8	145.00	133.4	72.5	66.7	0.80
T213F**	21.3	1/2"	-	51						1.22
T220F**	22.0	-	22							1.00
T250F**	25.0	-	25	54						1.10
T269F**	26.9	3/4"	-	56		162.40	150.8	81.2	75.4	1.27
T280F**	28.0	-	28	58						0.63
T300F**	30.0	-	30	59	39.2	164.20	150.8	81.2	75.4	2.86
T337F**	33.7	1"	-	64		174.20	160.8	87.1	80.4	1.40
T350F**	35.0	-	35	66						2.53
T380F**	38.0	-	38	69						3.68
T424F**	42.4	1 1/4"	42	75	45.0	176.20	176.2	88.1	88.1	4.06
T483F**	48.3	1 1/2"	-	82		197.80	181.8	98.9	90.9	2.62
T540F**	54.0	-	54	93	50.2	244.00	226.6	122.0	113.3	4.45
T603F**	60.3	2"	-	98	55.8	246.20	226.6	123.1	113.3	4.81
T761F**	76.1	2 1/2"	-	114	61.3	270.60	250.0	135.3	125.0	4.81
T889F**	88.9	3"	-	126	67.9	294.64	270.8	147.3	135.4	11.88

PreFiS® Series



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

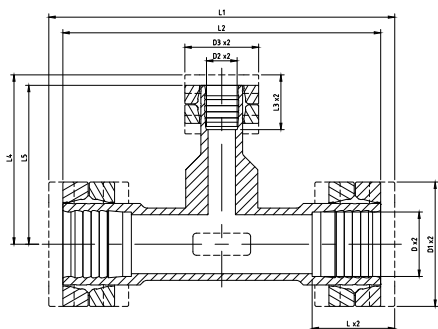
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Tee Reduced

Item Number	D			D1 mm	D2			D3 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	L3 mm	L4 mm	L5 mm	Weight kg (ca.)
	TR	Inch	Metric		TR	Inch	Metric								
T150120150F**	15.0	-	15	35	12.0	-	12	32	26.0	122.80	112.8	26.0	61.4	56.4	2.86
T160120160F**	16.0	-	16	38	12.0	-	12	32	26.0	122.80	112.8	26.0	61.4	56.4	2.86
T180120180F**	18.0	-	18	43	12.0	-	12	32	26.0	122.80	112.8	26.0	61.4	56.4	2.86
T180150180F**	18.0	-	18	43	15.0	-	15	35	26.0	122.80	112.8	26.0	61.4	56.4	2.86
T200120200F**	20.0	-	20	48	12.0	-	12	32	33.8	145.00	133.4	26.0	71.7	66.7	2.86
T200160200F**	20.0	-	20	48	16.0	-	16	38	33.8	145.00	133.4	26.0	71.7	66.7	2.86
T213172213F**	21.3	1/2"	-	51	17.2	3/8"	-	39	33.8	145.00	133.4	26.0	71.7	66.7	2.86
T213180213F**	21.3	1/2"	-	51	18.0	-	18	43	33.8	145.00	133.4	26.0	71.7	66.7	2.86
T220120220F**	22.0	-	22	51	12.0	-	12	32	33.8	145.00	133.4	26.0	71.7	66.7	2.86
T220150220F**	22.0	-	22	51	15.0	-	15	35	33.8	145.00	133.4	26.0	71.7	66.7	2.86
T220180220F**	22.0	-	22	51	18.0	-	18	43	33.8	145.00	133.4	26.0	71.7	66.7	2.86
T250120250F**	25.0	-	25	54	12.0	-	12	32	33.8	137.60	126.0	26.0	71.9	66.9	2.86
T250150250F**	25.0	-	25	54	15.0	-	15	35	33.8	137.60	126.0	26.0	71.9	66.9	2.86
T250160250F**	25.0	-	25	54	16.0	-	16	38	33.8	162.40	150.8	26.0	80.4	75.4	2.86
T250180250F**	25.0	-	25	54	18.0	-	18	43	33.8	162.40	150.8	26.0	80.4	75.4	2.86
T250200250F**	25.0	-	25	54	20.0	-	20	48	33.8	162.40	150.8	33.8	81.2	75.4	2.86
T269172269F**	26.9	3/4"	-	56	17.2	3/8"	-	39	33.8	162.40	150.8	26.0	80.4	75.4	2.86
T269213269F**	26.9	3/4"	-	56	21.3	1/2"	-	51	33.8	162.40	150.8	33.8	81.2	75.4	2.86
T280120280F**	28.0	-	28	58	12.0	-	12	32	33.8	137.60	126.0	26.0	71.9	66.9	2.86
T280150280F**	28.0	-	28	58	15.0	-	15	35	33.8	137.60	126.0	26.0	71.9	66.9	2.86
T280180280F**	28.0	-	28	58	18.0	-	18	43	33.8	162.40	150.8	26.0	80.4	75.4	2.86
T280220280F**	28.0	-	28	58	22.0	-	22	51	33.8	162.40	150.8	33.8	81.2	75.4	2.86
T300120300F**	30.0	-	30	59	12.0	-	12	32	39.2	139.40	126.0	26.0	71.9	66.9	2.86
T300150300F**	30.0	-	30	59	15.0	-	15	35	39.2	139.40	126.0	26.0	71.9	66.9	2.86
T300160300F**	30.0	-	30	59	16.0	-	16	38	39.2	164.20	150.8	26.0	80.4	75.4	2.86
T300180300F**	30.0	-	30	59	18.0	-	18	43	39.2	164.20	150.8	26.0	80.4	75.4	2.86
T300200300F**	30.0	-	30	59	20.0	-	20	48	39.2	164.20	150.8	33.8	81.2	75.4	2.86
T300220300F**	30.0	-	30	59	22.0	-	22	51	39.2	164.20	150.8	33.8	81.2	75.4	2.86
T300269300F**	30.0	-	30	59	26.9	3/4"	-	56	39.2	164.20	150.8	33.8	81.2	75.4	2.86
T337120337F**	33.7	1"	-	64	12.0	-	12	32	39.2	139.40	126.0	26.0	75.9	70.9	3.68
T337150337F**	33.7	1"	-	64	15.0	-	15	35	39.2	139.40	126.0	26.0	75.9	70.9	3.68
T337160337F**	33.7	1"	-	64	16.0	-	16	38	39.2	163.40	150.0	26.0	85.0	80.0	3.68
T337172337F**	33.7	1"	-	64	17.2	3/8"	-	39	39.2	163.40	150.0	33.8	85.0	80.0	3.68
T337213337F**	33.7	1"	-	64	21.3	1/2"	-	51	39.2	163.40	150.0	33.8	85.8	80.0	3.68
T337269337F**	33.7	1"	-	64	26.9	3/4"	-	56	39.2	163.40	150.0	39.2	85.8	80.0	3.68

PreFiS® Series



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

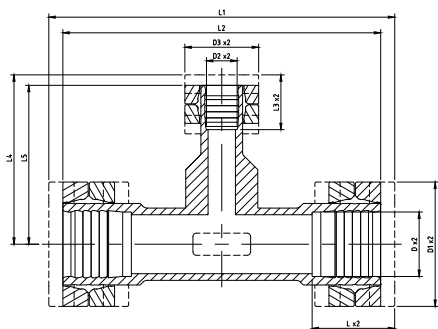
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Tee Reduced

Item Number	D			D1 mm	D2			D3 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	L3 mm	L4 mm	L5 mm	Weight kg (ca.)
	TR	Inch	Metric		TR	Inch	Metric								
T350120350F**	35.0	-	35	66	12.0	-	12	32	39.2	139.40	126.0	26.0	75.9	70.9	3.68
T350150350F**	35.0	-	35	66	15.0	-	15	35	39.2	139.40	126.0	26.0	75.9	70.9	3.68
T350180350F**	35.0	-	35	66	18.0	-	18	43	39.2	163.40	150.0	26.0	85.0	80.0	3.68
T350220350F**	35.0	-	35	66	22.0	-	22	51	39.2	163.40	150.0	33.8	85.8	80.0	3.68
T350280350F**	35.0	-	35	66	28.0	-	28	58	39.2	163.40	150.0	33.8	85.8	80.0	3.68
T380120380F**	38.0	-	38	69	12.0	-	12	32	39.2	139.40	126.0	26.0	75.9	70.9	3.68
T380150380F**	38.0	-	38	69	15.0	-	15	35	39.2	139.40	126.0	26.0	75.9	70.9	3.68
T380160380F**	38.0	-	38	69	16.0	-	16	38	39.2	163.40	150.0	26.0	85.0	80.0	3.68
T380180380F**	38.0	-	38	69	18.0	-	18	43	39.2	163.40	150.0	26.0	85.0	80.0	3.68
T380200380F**	38.0	-	38	69	20.0	-	20	48	39.2	163.40	150.0	33.8	85.8	80.0	3.68
T380220380F**	38.0	-	38	69	22.0	-	22	51	39.2	163.40	150.0	33.8	85.8	80.0	3.68
T380300380F**	38.0	-	38	69	30.0	-	30	59	39.2	163.40	150.0	39.2	86.7	80.0	3.68
T424120424F**	42.4	1 1/4"	42	75	12.0	-	12	32	45.0	192.20	176.2	26.0	93.1	88.1	4.063
T424150424F**	42.4	1 1/4"	42	75	15.0	-	15	35	45.0	192.20	176.2	26.0	93.1	88.1	4.063
T424172424F**	42.4	1 1/4"	42	75	17.2	3/8"	-	39	45.0	192.20	176.2	26.0	93.1	88.1	4.06
T424180424F**	42.4	1 1/4"	42	75	18.0	-	18	43	45.0	192.20	176.2	26.0	93.1	88.1	4.06
T424213424F**	42.4	1 1/4"	42	75	21.3	1/2"	-	51	45.0	192.20	176.2	33.8	93.9	88.1	4.06
T424220424F**	42.4	1 1/4"	42	75	22.0	-	22	51	45.0	192.20	176.2	33.8	93.9	88.1	4.06
T424250424F**	42.4	1 1/4"	42	75	25.0	-	25	54	45.0	192.20	176.2	33.8	93.9	88.1	4.06
T424269424F**	42.4	1 1/4"	42	75	26.9	3/4"	-	56	45.0	192.20	176.2	33.8	93.9	88.1	4.06
T424280424F**	42.4	1 1/4"	42	75	28.0	-	28	58	45.0	192.20	176.2	33.8	93.9	88.1	4.06
T424300424F**	42.4	1 1/4"	42	75	30.0	-	30	59	45.0	192.20	176.2	39.2	94.8	88.1	4.06
T424337424F**	42.4	1 1/4"	42	75	33.7	1"	-	64	45.0	192.20	176.2	39.2	94.8	88.1	4.06
T424350424F**	42.4	1 1/4"	42	75	35.0	-	35	66	45.0	192.20	176.2	39.2	94.8	88.1	4.06
T483172483F**	48.3	1 1/2"	-	82	17.2	3/8"	-	39	45.0	197.80	181.8	26.0	95.9	90.9	2.62
T483180483F**	48.3	1 1/2"	-	82	18.0	-	18	43	45.0	197.80	181.8	26.0	95.9	90.9	2.62
T483213483F**	48.3	1 1/2"	-	82	21.3	1/2"	-	51	45.0	197.80	181.8	33.8	96.7	90.9	2.62
T483269483F**	48.3	1 1/2"	-	82	26.9	3/4"	-	56	45.0	197.80	181.8	33.8	96.7	90.9	2.62
T483280483F**	48.3	1 1/2"	-	82	28.0	-	28	58	45.0	197.80	181.8	33.8	96.7	90.9	2.62
T483300483F**	48.3	1 1/2"	-	82	30.0	-	30	59	45.0	197.80	181.8	39.2	97.6	90.9	2.62
T483337483F**	48.3	1 1/2"	-	82	33.7	1"	-	64	45.0	197.80	181.8	39.2	97.6	90.9	2.62
T483350483F**	48.3	1 1/2"	-	82	35.0	-	35	66	45.0	197.80	181.8	39.2	97.6	90.9	2.62
T483380483F**	48.3	1 1/2"	-	82	38.0	-	38	69	45.0	197.80	181.8	39.2	97.6	90.9	2.62
T483424483F**	48.3	1 1/2"	-	82	42.4	1 1/4"	42	75	45.0	197.80	181.8	45.0	98.9	90.9	2.62
T540120540F**	54.0	-	54.0	93	12.0	-	12	32	50.2	244.00	226.6	26.0	118.3	113.3	4.81

PreFiS® Series



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

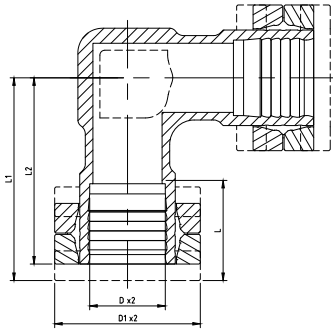
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Tee Reduced

Item Number	D			D1 mm	D2			D3 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	L3 mm	L4 mm	L5 mm	Weight kg (ca.)
	TR	Inch	Metric		TR	Inch	Metric								
T540150540F**	54.0	-	54.0	93	15.0	-	15	35	50.2	244.00	226.6	26.0	118.3	113.3	4.81
T540220540F**	54.0	-	54.0	93	22.0	-	22	51	50.2	244.00	226.6	33.8	119.1	113.3	4.81
T540280540F**	54.0	-	54.0	93	28.0	-	28	58	50.2	244.00	226.6	33.8	119.1	113.3	4.81
T540300540F**	54.0	-	54.0	93	30.0	-	30	59	50.2	244.00	226.6	39.2	120.0	113.3	4.81
T540350540F**	54.0	-	54.0	93	35.0	-	35	66	50.2	244.00	226.6	39.2	120.0	113.3	4.81
T540380540F**	54.0	-	54.0	93	38.0	-	38	69	50.2	244.00	226.6	39.2	120.0	113.3	4.81
T603150603F**	60.3	2"	-	98	15.0	-	15	35	55.8	246.20	226.6	26.0	118.3	113.3	4.81
T603180603F**	60.3	2"	-	98	18.0	-	18	43	55.8	246.20	226.6	26.0	118.3	113.3	4.81
T603200603F**	60.3	2"	-	98	20.0	-	20	48	55.8	246.20	226.6	33.8	119.1	113.3	4.81
T603213603F**	60.3	2"	-	98	21.3	1 1/2"	-	51	55.8	246.20	226.6	33.8	119.1	113.3	4.81
T603220603F**	60.3	2"	-	98	22.0	-	22	51	55.8	246.20	226.6	33.8	119.1	113.3	4.81
T603280603F**	60.3	2"	-	98	28.0	-	28	58	55.8	246.20	226.6	33.8	119.1	113.3	4.81
T603300603F**	60.3	2"	-	98	30.0	-	30	59	55.8	246.20	226.6	39.2	120.0	113.3	4.81
T603337603F**	60.3	2"	-	98	33.7	1"	-	64	55.8	246.20	226.6	39.2	120.0	113.3	4.81
T603350603F**	60.3	2"	-	98	35.0	-	35	66	55.8	246.20	226.6	39.2	120.0	113.3	4.81
T603380603F**	60.3	2"	-	98	38.0	-	38	69	55.8	246.20	226.6	39.2	120.0	113.3	4.81
T603424603F**	60.3	2"	-	98	42.4	1 1/4"	42	75	55.8	246.20	226.6	45.0	121.3	113.3	4.81
T603483603F**	60.3	2"	-	98	48.3	1 1/2"	-	82	55.8	246.20	226.6	45.0	121.3	113.3	4.81
T603540603F**	60.3	2"	-	98	54.0	-	54	93	55.8	246.20	226.6	50.2	122.0	113.3	4.81
T761280761F**	76.1	2 1/2"	-	114	28.0	-	28	58	61.3	270.60	250.0	33.8	130.8	125.0	4.81
T761350761F**	76.1	2 1/2"	-	114	35.0	-	35	66	61.3	270.60	250.0	39.2	131.7	125.0	4.81
T761380761F**	76.1	2 1/2"	-	114	38.0	-	38	69	61.3	270.60	250.0	39.2	131.7	125.0	4.81
T761424761F**	76.1	2 1/2"	-	114	42.4	1 1/4"	42	75	61.3	270.60	250.0	45.0	133.0	125.0	4.81
T761540761F**	76.1	2 1/2"	-	114	54.0	-	54	93	61.3	270.60	250.0	50.2	133.7	125.0	4.81
T761603761F**	76.1	2 1/2"	-	114	60.3	2"	-	98	61.3	270.60	250.0	55.8	134.8	125.0	4.81
T889280889F**	88.9	3"	-	126	28.0	-	28	58	67.9	294.64	270.8	33.8	141.2	135.4	11.88
T889350889F**	88.9	3"	-	126	35.0	-	35	66	67.9	294.64	270.8	39.2	142.1	135.4	11.88
T889380889F**	88.9	3"	-	126	38.0	-	38	69	67.9	294.64	270.8	39.2	142.1	135.4	11.88
T889424889F**	88.9	3"	-	126	42.4	1 1/4"	42	75	67.9	294.64	270.8	45.0	143.4	135.4	11.88
T889483889F**	88.9	3"	-	126	48.3	1 1/2"	-	82	67.9	294.64	270.8	45.0	143.4	135.4	11.88
T889540889F**	88.9	3"	-	126	54.0	-	54	93	67.9	294.64	270.8	50.2	144.1	135.4	11.88
T889603889F**	88.9	3"	-	126	60.3	2"	-	98	67.9	294.64	270.8	55.8	145.2	135.4	11.88

PreFiS® Series



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

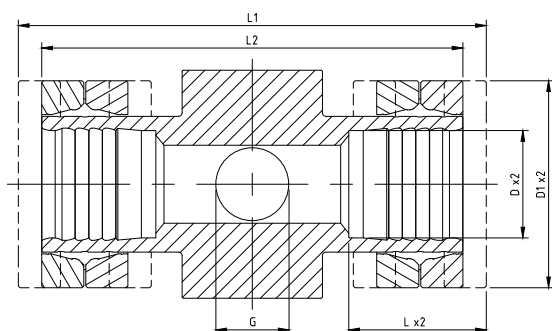
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Angle 90°

Item Number	D			D1 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	Weight kg (ca.)
	W90	Inch	Metric					
W90100F**	10.0	-	10	30	26.0	61.4	56.4	0.36
W90120F**	12.0	-	12	32				0.36
W90150F**	15.0	-	15	35				0.36
W90160F**	16.0	-	16	38				0.39
W90172F**	17.2	3/8"	-	39				0.39
W90180F**	18.0	-	18	43				0.95
W90200F**	20.0	-	20	48	33.8	72.5	66.7	0.95
W90213F**	21.3	1/2"	-	51				0.95
W90220F**	22.0	-	22					0.95
W90250F**	25.0	-	25	54		81.2	75.4	0.85
W90269F**	26.9	3/4"	-	56				0.85
W90280F**	28.0	-	28	58				1.22
W90300F**	30.0	-	30	59	39.2	81.2	75.4	1.22
W90337F**	33.7	1"	-	64		87.1	80.4	1.49
W90350F**	35.0	-	35	66				1.49
W90380F**	38.0	-	38	69				1.73
W90424F**	42.4	1 1/4"	42	75		45.0	88.1	88.1
W90483F**	48.3	1 1/2"	-	82	98.9		90.9	3.20
W90540F**	54.0	-	54	93	50.2	122.0	113.3	3.20
W90603F**	60.3	2"	-	98	55.8	123.1	113.3	4.76
W90761F**	76.1	2 1/2"	-	114	61.3	135.3	125.0	7.06
W90889F**	88.9	3"	-	126	67.9	147.3	135.4	7.06

PreFiS® Series



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

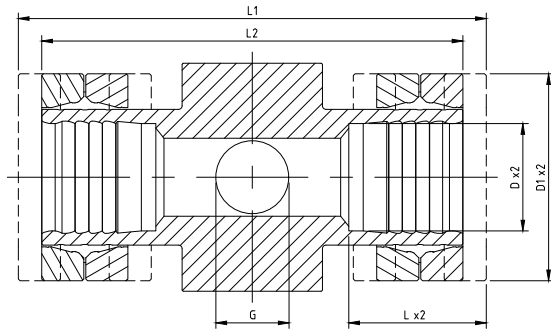
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Distribution Block 2 port

Item Number	D			D1 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	G inch	Weight kg (ca.)			
	V2	Inch	Metric									
V120210**	12.0	-	12	32	26.0	115.00	105	3/8"	0.55			
V120215**								1/2"	0.54			
V150210**	15.0	-	15	35				3/8"	0.57			
V150215**								1/2"	0.58			
V160210**	16.0	-	16	38				3/8"	0.61			
V160215**								1/2"	0.65			
V172210**	17.2	3/8"	-	39				3/8"	0.71			
V172215**								1/2"	0.70			
V180210**	18.0	-	18	43				3/8"	0.82			
V180215**								1/2"	0.81			
V200210**	20.0	-	20	48	33.8	121.60	110	3/8"	0.90			
V200215**								1/2"	0.85			
V213210**	21.3	1/2"	-	51				3/8"	0.95			
V213215**								1/2"	0.90			
V220210**	22.0	-	22	3/8"				1.00				
V220215**				1/2"				0.95				
V250210**	25.0	-	25	54				3/8"	1.05			
V250215**								1/2"	1.00			
V269210**	26.9	3/4"	-	56				3/8"	1.15			
V269215**								1/2"	1.10			
V280210**	28.0	-	28	58				3/8"	1.25			
V280215**								1/2"	1.20			
V300210**	30.0	-	30	59				39.2	133.40	120	3/8"	1.35
V300215**											1/2"	1.30
V300220**	33.7	1"	-	64	143.40	130	3/4"		1.25			
V337210**					133.40	120	3/8"		1.55			
V337215**							1/2"		1.50			
V337220**					143.40	130	3/4"		1.45			
V350210**	35.0	-	35	66	133.40	120	3/8"		1.65			
V350215**							1/2"		1.60			
V350220**					143.40	130	3/4"		1.55			
V380210**	38.0	-	38	69	133.40	120	3/8"		1.85			
V380215**							1/2"		1.80			
V380220**							143.40		130	3/4"	1.75	

PreFiS® Series



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

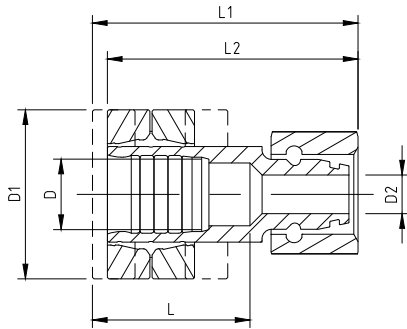
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Distribution Block 2 port

Item Number	D			D1 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	G inch	Weight kg (ca.)
	V2	Inch	Metric						
V424210**	42.4	1 1/4"	42	75	45.0	146.00	130	3/8"	2.10
V424215**								1/2"	2.05
V424220**						156.00	140	3/4"	2.00
V483210**	48.3	1 1/2"	-	82	45.0	146.00	130	3/8"	2.15
V483215**								1/2"	2.10
V483220**						156.00	140	3/4"	2.05
V540210**	54.0	-	54	93	50.2	157.40	140	3/8"	2.15
V540215**								1/2"	2.10
V540220**						167.40	150	3/4"	2.05
V603210**	60.3	2"	-	98	55.8	169.60	150	3/8"	2.30
V603215**								1/2"	2.27
V603220**						179.60	160	3/4"	2.20

PreFiS® Series



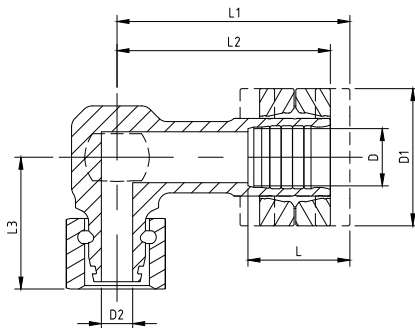
**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Connector with DIN24G Female

Item Number	D			D1 mm	D2 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	Weight kg (ca.)
	DA	Inch	Metric						
DA12012L**	12.0	-	12	32	12L	26.0	55.00	50.0	0.35
DA15012L**	15.0	-	15	35	12L	26.0	55.00	50.0	0.43
DA15015L**	15.0	-	15	35	15L	26.0	62.00	57.0	0.41
DA17215L**	17.2	3/8"	-	39	15L	26.0	62.00	57.0	0.65
DA18015L**	18.0	-	18	43	15L	26.0	62.00	57.0	0.70



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

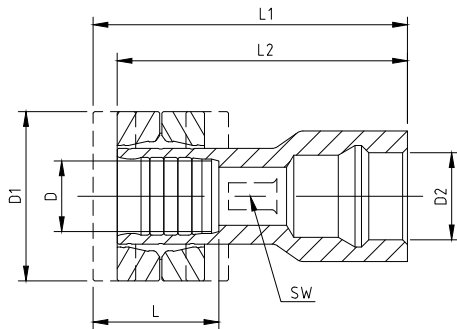
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Connector 90° with DIN24G Female

Item Number	D			D1 mm	D2 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	L3 mm	Weight kg (ca.)
	DA90	Inch	Metric							
DA9012012LF**	12.0	-	12	32	12L	26.0	71.00	66.0	31.2	0.25
DA9015012LF**	15.0	-	15	35	12L	26.0	71.00	66.0	31.2	0.43
DA9015015LF**	15.0	-	15	35	15L	26.0	71.00	66.0	31.2	0.41

PreFiS® Series



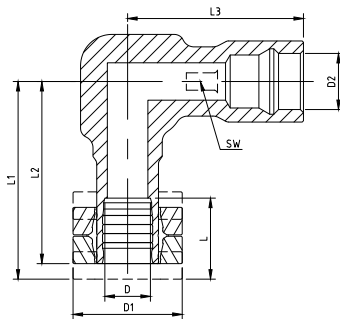
**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Connector Female

Item Number	D			D1 mm	D2 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	Weight kg (ca.)
	DAI	Inch	Metric						
DAI2012L**	12.0	-	12	32	12L	26.0	55.00	50.0	0.35
DAI5012L**	15.0	-	15	35	12L	26.0	55.00	50.0	0.43
DAI5015L**	15.0	-	15	35	15L	26.0	62.00	57.0	0.41
DAI7215L**	17.2	3/8"	-	39	15L	26.0	62.00	57.0	0.65
DAI8015L**	18.0	-	18	43	15L	26.0	62.00	57.0	0.70



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

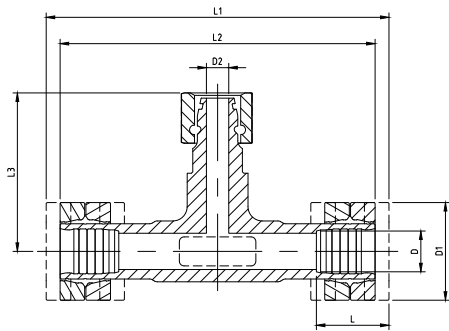
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Connector Female 90°

Item Number	D			D1 mm	D2 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	SW mm	Weight kg (ca.)
	DAI90	Inch	Metric							
DAI90120M18F**	12.0	-	12	32	M18x1,5	26.0	61.40	56.4	19	0.25
DAI90120M20F**	12.0	-	12	32	M20x1,5	26.0	61.40	56.4	19	0.43
DAI90150M18F**	15.0	-	15	35	M18x1,5	26.0	61.40	56.4	19	0.41
DAI90150M20F**	15.0	-	15	35	M20x1,5	26.0	61.40	56.4	19	0.65
DAI90180M18F**	18.0	-	18	39	M18x1,5	26.0	61.40	56.4	19	0.65
DAI90180M20F**	18.0	-	18	39	M20x1,5	26.0	61.40	56.4	19	0.65
DAI90220M18F**	22.0	-	22	51	M18x1,5	33.8	72.45	66.7	19	0.65
DAI90220M20F**	22.0	-	22	51	M20x1,5	33.8	72.45	66.7	19	0.65

PreFiS® Series



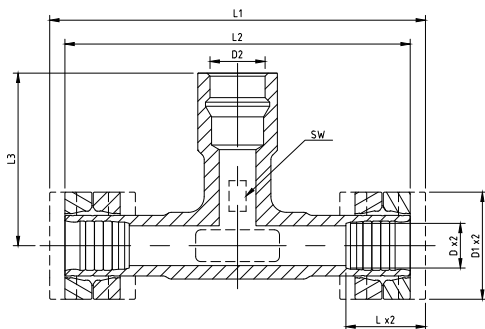
**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Tee Connection with DIN24G Female

Item Number	D			D1 mm	D2 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	L3 mm	Weight kg (ca.)
	TDA	Inch	Metric							
T12012L120F**	12.0	-	12	32	12L	26.0	122.80	112.8	56.4	0.39
T15012L150F**	15.0	-	15	35	12L	26.0	122.80	112.8	56.4	0.43
T15015L150F**	15.0	-	15	35	15L	26.0	122.80	112.8	56.4	0.41
T18012L180F**	18.0	-	18	43	12L	26.0	122.80	112.8	56.4	0.65
T22012L220F**	22.0	-	22	51	12L	33.8	145.00	133.4	66.7	1.00
T28012L280F**	28.0	-	28	58	12L	33.8	139.40	126.0	66.9	1.27
T30012L300F**	30.0	-	30	59	12L	39.2	139.40	126.0	66.9	2.86
T33712L337F**	33.7	1"	-	64	12L	39.2	139.40	126.0	70.9	1.40
T35012L350F**	35.0	-	35	66	12L	39.2	139.40	126.0	70.9	2.53
T38012L380F**	38.0	-	38	69	12L	39.2	139.40	126.0	70.9	3.68
T54012L540F**	54.0	-	54	93	12L	50.2	244.00	226.6	113.3	2.62



**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

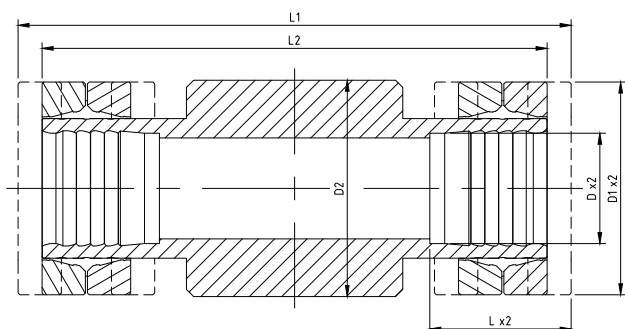
SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Tee with Female Nozzle Connection

Item Number	D			D1 mm	D2 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	L3 mm	SW mm	Weight kg (ca.)
	TDAI	Inch	Metric								
T120M18120F**	12.0	-	12	32	M18x1,5	26.0	122.80	112.8	56.4	19	0.39
T120M20120F**	12.0	-	12	32	M20x1,5	26.0	122.80	112.8	56.4	19	0.43
T150M18150F**	15.0	-	15	35	M18x1,5	26.0	122.80	112.8	56.4	19	0.41
T150M20150F**	15.0	-	15	35	M20x1,5	26.0	122.80	112.8	56.4	19	0.65
T180M18180F**	18.0	-	18	43	M18x1,5	26.0	122.80	112.8	56.4	19	1.00
T180M20180F**	18.0	-	18	43	M20x1,5	26.0	122.80	112.8	56.4	19	1.27
T220M18220F**	22.0	-	22	51	M18x1,5	33.8	145.00	133.4	66.7	19	2.86
T220M20220F**	22.0	-	22	51	M20x1,5	33.8	145.00	133.4	66.7	19	1.40

PreFiS® Series



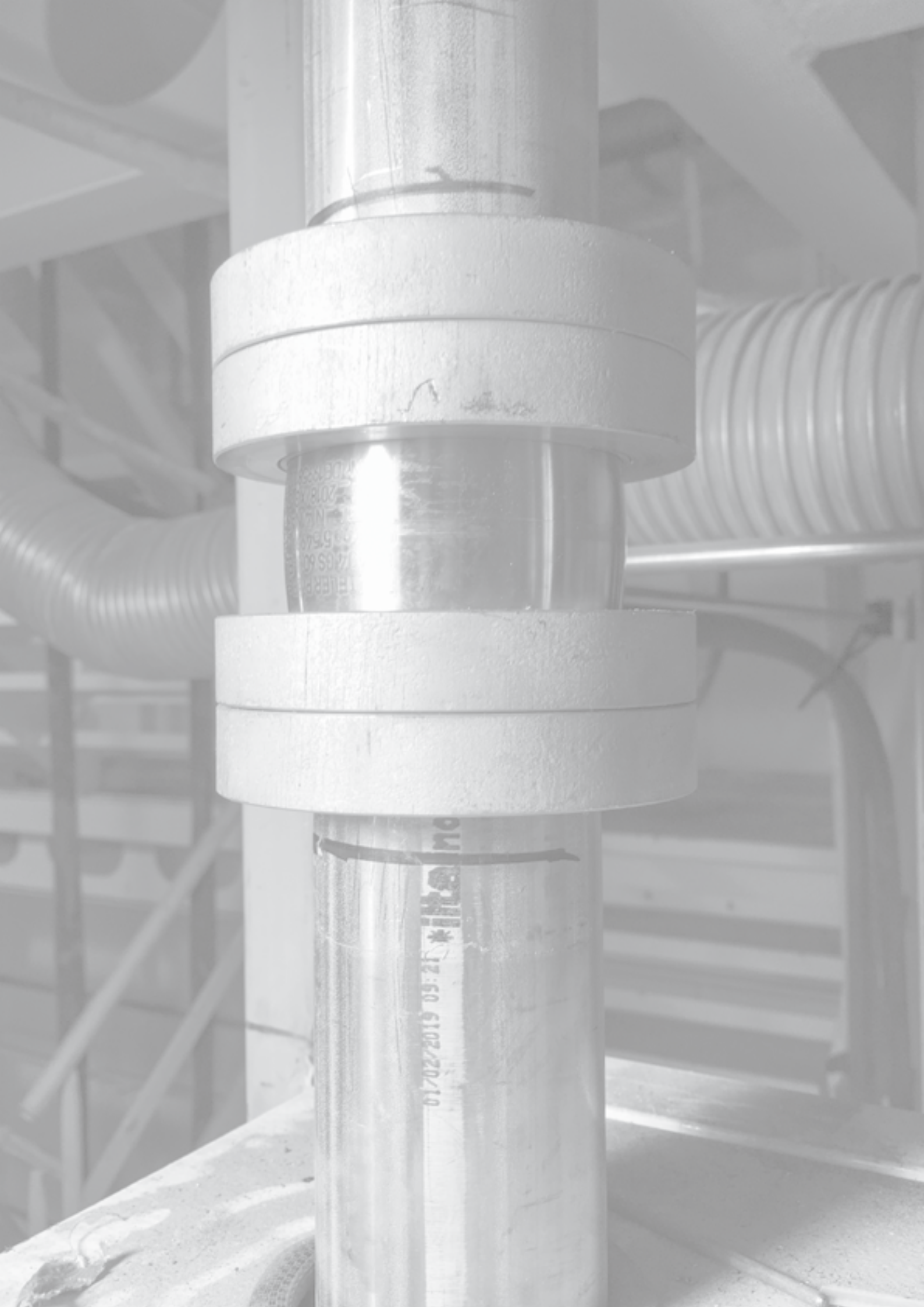
**** APPEND THE FOLLOWING CODE TO THE ITEM NUMBER TO SPECIFY MATERIAL**

SC: Body stainless steel 1.4404
Ring sets carbon steel with zinc-nickel coating

CC: Body carbon steel
Ring sets carbon steel with zinc-nickel coating

Weldable Bulkhead Coupling

Item Number	D			D1 mm	L mm (-1/+2)	L1 mm (-1/+2)	L2 mm	Weight kg (ca.)
	ESV	Inch	Metric					
ESV120**	12.0	-	12	32	26.0	134.00	124	0.70
ESV150**	15.0	-	15	35				0.80
ESV160**	16.0	-	16	38				0.90
ESV172**	17.2	3/8"	-	39				0.95
ESV180**	18.0	-	18	43				1.00
ESV200**	20.0	-	20	48	33.8	141.60	130	1.15
ESV213**	21.3	1/2"	-	51				1.20
ESV220**	22.0	-	22					1.25
ESV250**	25.0	-	25	54				1.30
ESV269**	26.9	3/4"	-	56				1.34
ESV280**	28.0	-	28	58				1.34
ESV300**	30.0	-	30	59	39.2	153.40	140	1.82
ESV337**	33.7	1"	-	64				1.82
ESV350**	35.0	-	35	66				2.46
ESV380**	38.0	-	38	69				2.46
ESV424**	42.4	1 1/4"	42	75	45.0	166.00	150	2.46
ESV483**	48.3	1 1/2"	-	82				3.00
ESV540**	54.0	-	54	93	50.2	177.40	160	3.50
ESV603**	60.3	2"	-	98	55.8	189.60	170	4.00



PreFiS® Tooling

Tooling Overview

Dimensions/ Type	Closed press heads with inserts for diameter adjustment	Closed tool - 1 head per dimension (only on special request)	Open Tools - 1 head per dimension (only on special request)
			
10.0 - 30.0 mm	SFT 1		SFT 4.1 Single size tool (12,0 mm-28,0 mm)
30.0 - 60.3 mm	SFT 2	SFT 7 Single size tool (30,0-88,9)	SFT 5 (30.0 mm)
60.3 - 889 mm	SFT 3		

Pumps: Cembre and Klauke hand pump





Manual SFT 1.4

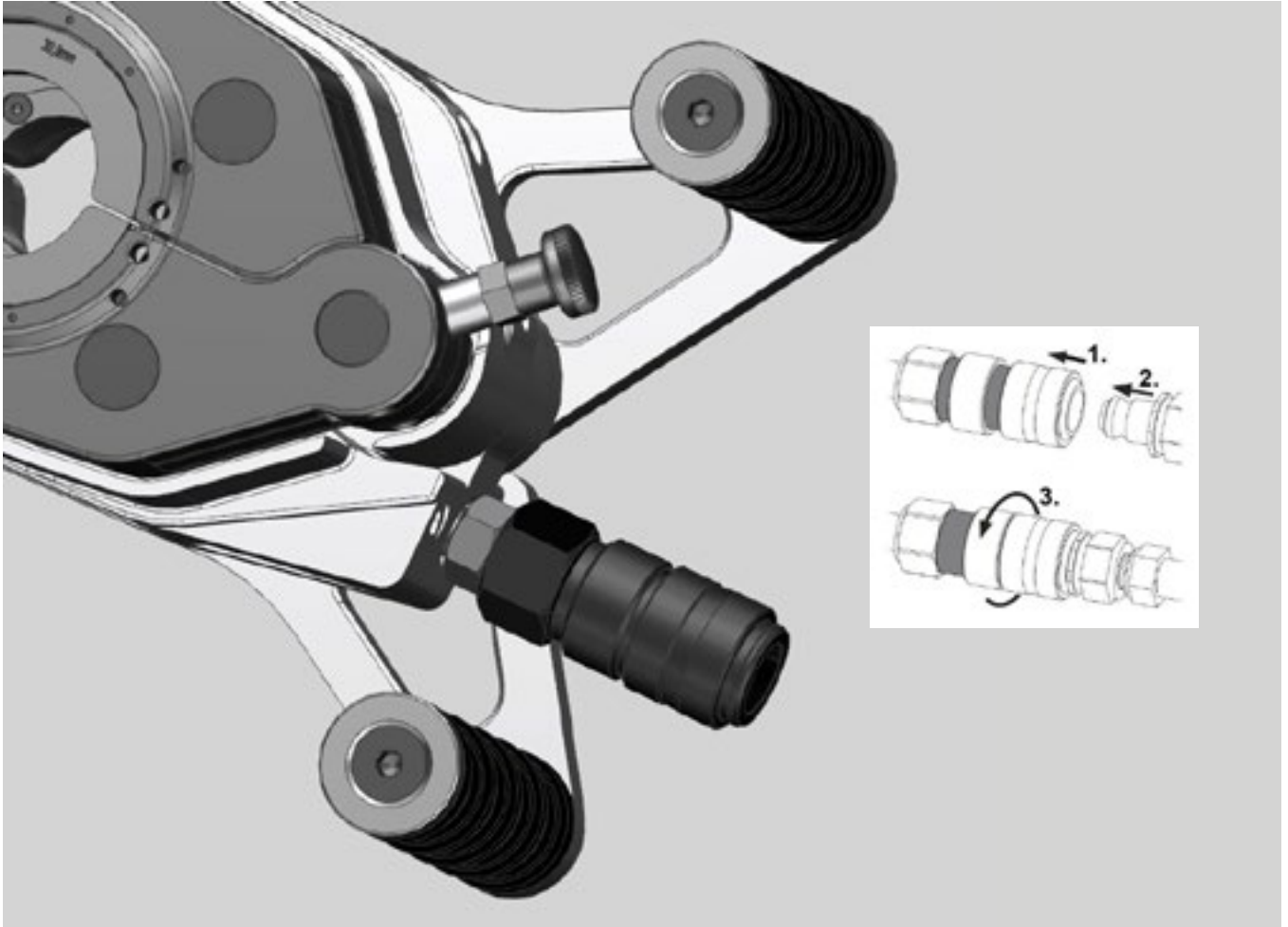
1. Technical Data

Press tool	SFT 1.4
Oil volume	approx. 30 ml
Additional working oil volume	approx. 145 ml
Tube diameter (OD mm) Inserts	10.0, 12.0, 15.0, 16.0, 17.2, 18.0, 20.0, 21.3, 22.0, 25.0, 26.9, 28.0, 30.0
Weight (w/o inserts)	approx. 6.7 kg
Operating pressure	max. 700 bar

Pump Type	UAP700NG0001 Klauke	B70M-P36 Cembre
Battery voltage	18V / 110V / 220V	36V
Weight (w/o battery)	3.6 kg	8.4 kg
Ambient temperature (Celsius)	-12 to +40	-20 to +50
Operating pressure	max. 700 bar	
Max. oil volume	approx. 290 ml	approx. 1.100 ml
		

Manual SFT 1.4

2. Hydraulic Pump Connection



1. Pull back the quick lock of the tool.
2. Stick the coupling of the hose up to the stop, then release the quick lock. If assembled correctly, the coupling of the hose will bounce back into its starting position.
3. Screw the locking ring up to the stop against the quick lock (hand tight).

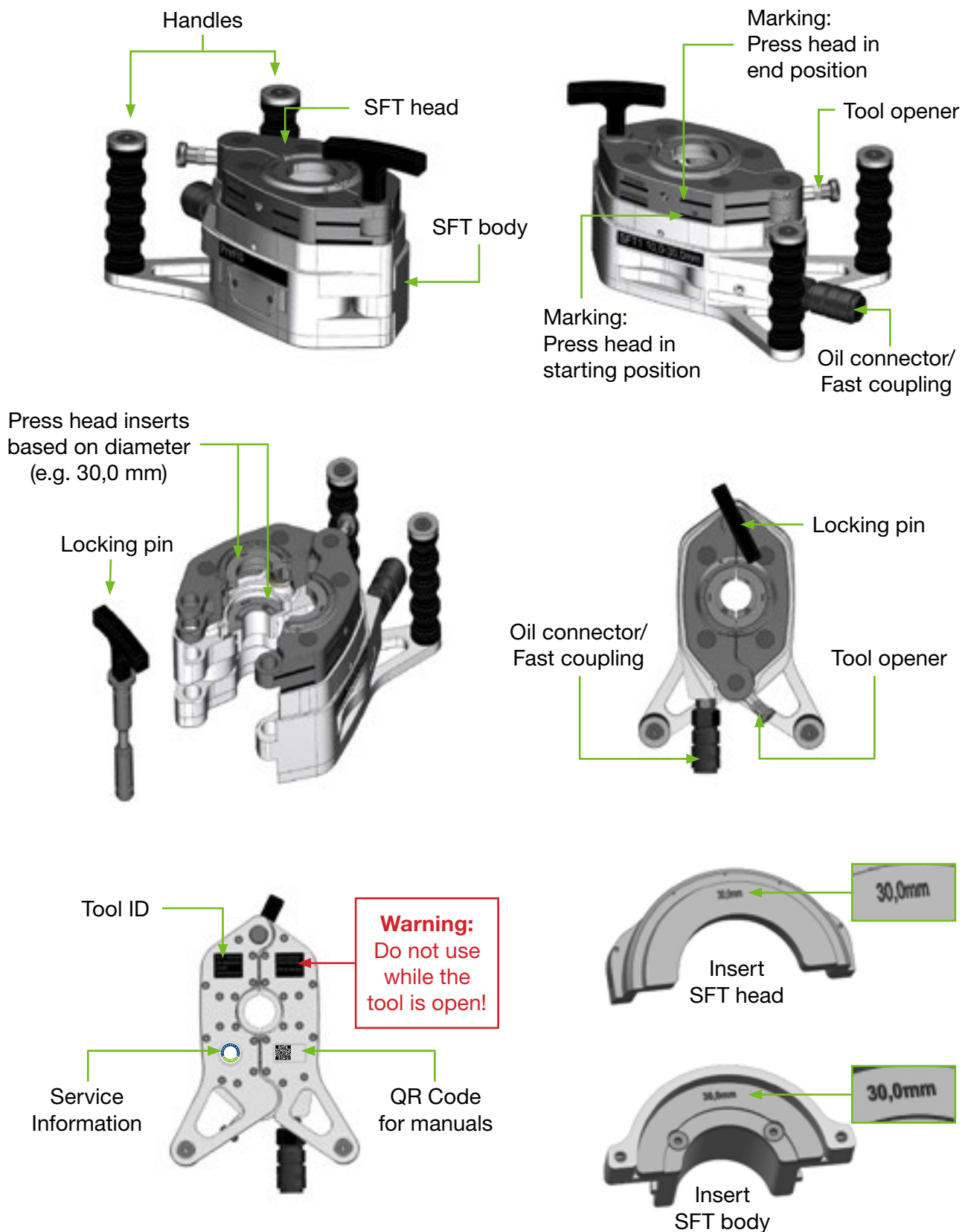
The hydraulic connection is screwed together with the press head and glued in place with a special sealant.

The hydraulic connection must not be removed from the press head under any circumstances.

The coupling end nipple must be wiped thoroughly using a clean cloth before each use.

Manual SFT 1.4

3. Overview Press Head

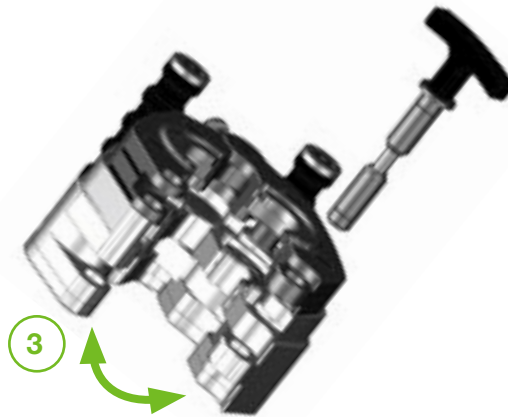
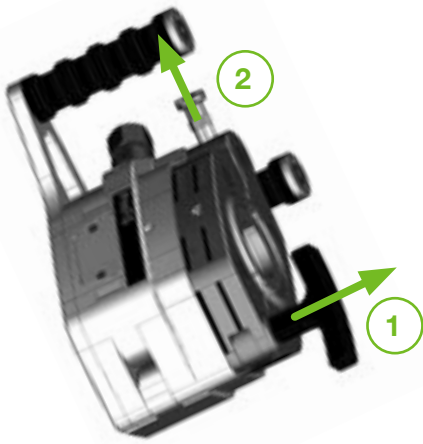


Manual SFT 1.4

4. Interlocking of Press Head

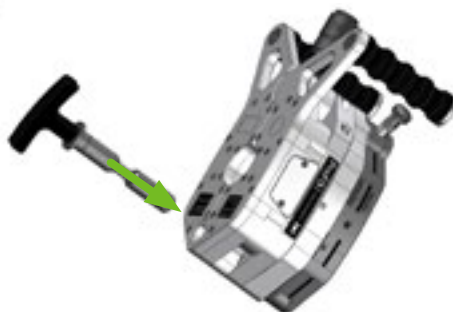
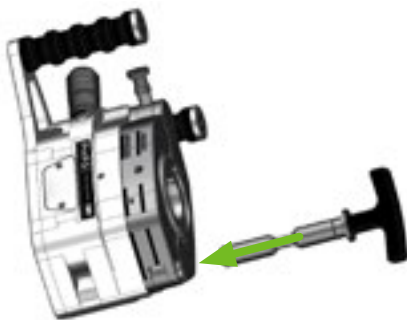
How to open the press head:

1. Remove locking pin
2. Operate (pull) the Tool opener
3. Press both tool halves with handles apart



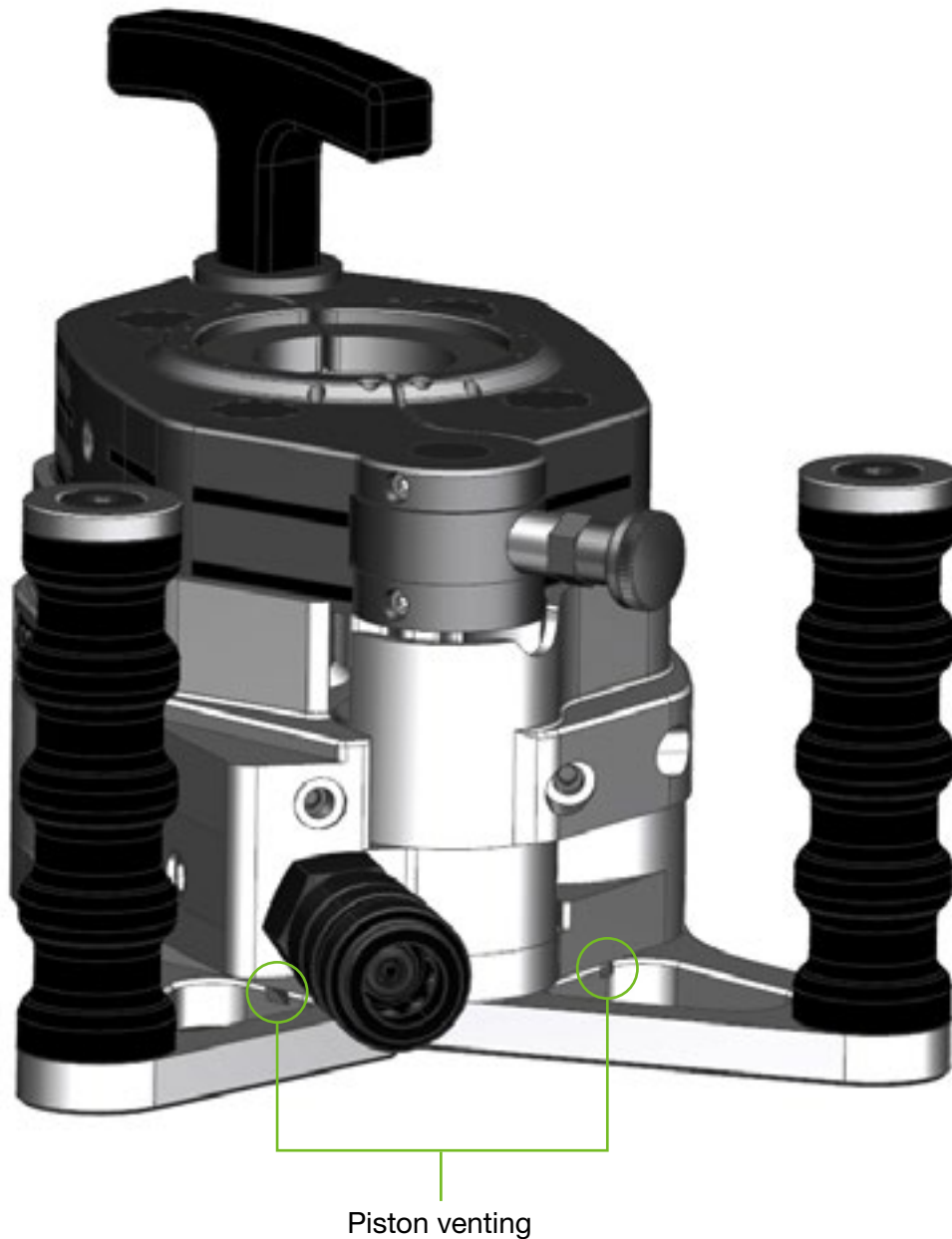
How to close the press head:

1. Press both tool halves with the handles together until the tool opener engages
2. Insert the locking pin into the holes provided



The locking pin can be inserted into the tool from above, or from below. This can be helpful in some cases.

5. Overview Piston Venting

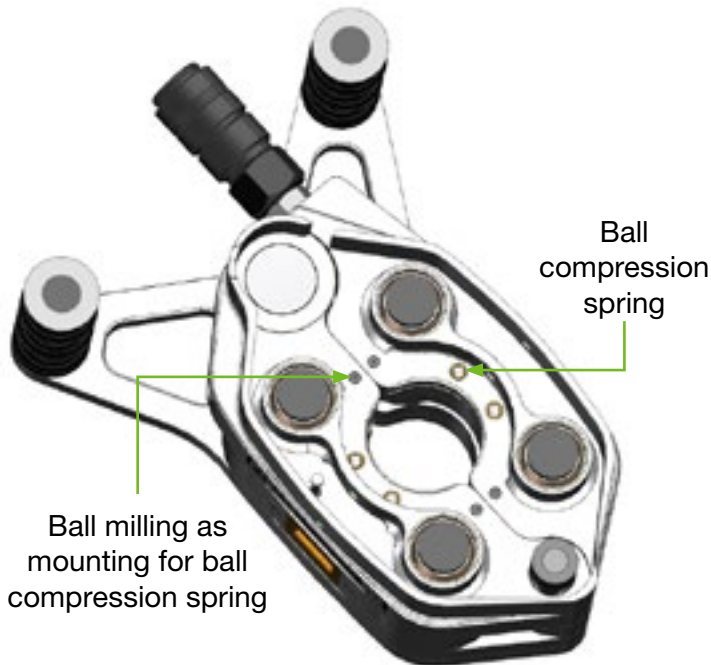


- Piston venting is necessary to avoid pressure during the crimping operation.
- The piston venting is maintenance-free.
- **Some oil spills can occur after a certain time, which is completely normal.**
- The oil can be removed with a cloth.

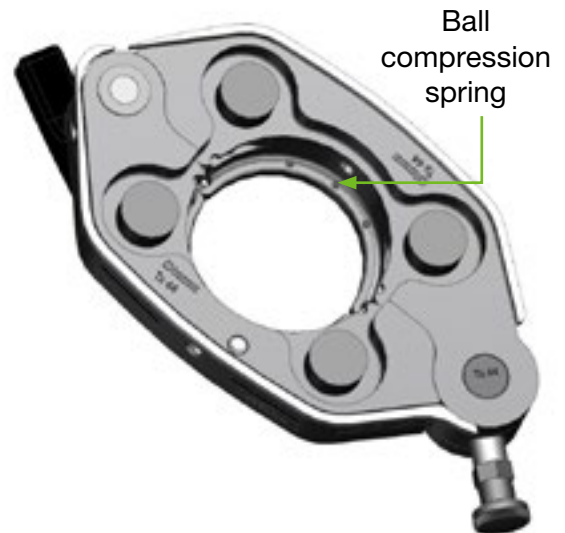
Manual SFT 1.4

6. Mode of Operation: Inserts

Sectional view from above on tool body

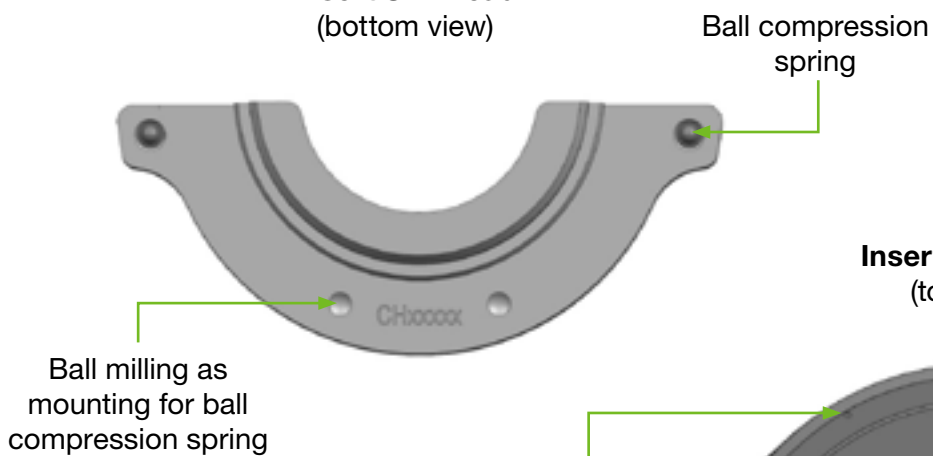


Cut view from below on tool head

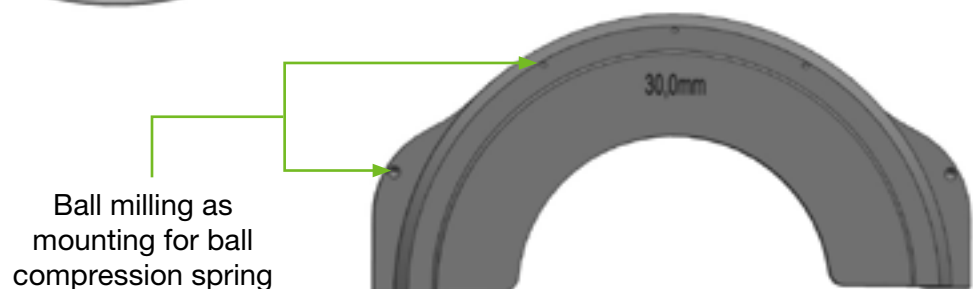


Insert body fixed with 2 ball pressure springs per insert
Insert head fixed with 5 ball pressure springs per insert
Ball pressure springs are non-adjustable!

Insert SFT head
(bottom view)



Insert SFT head
(top view)



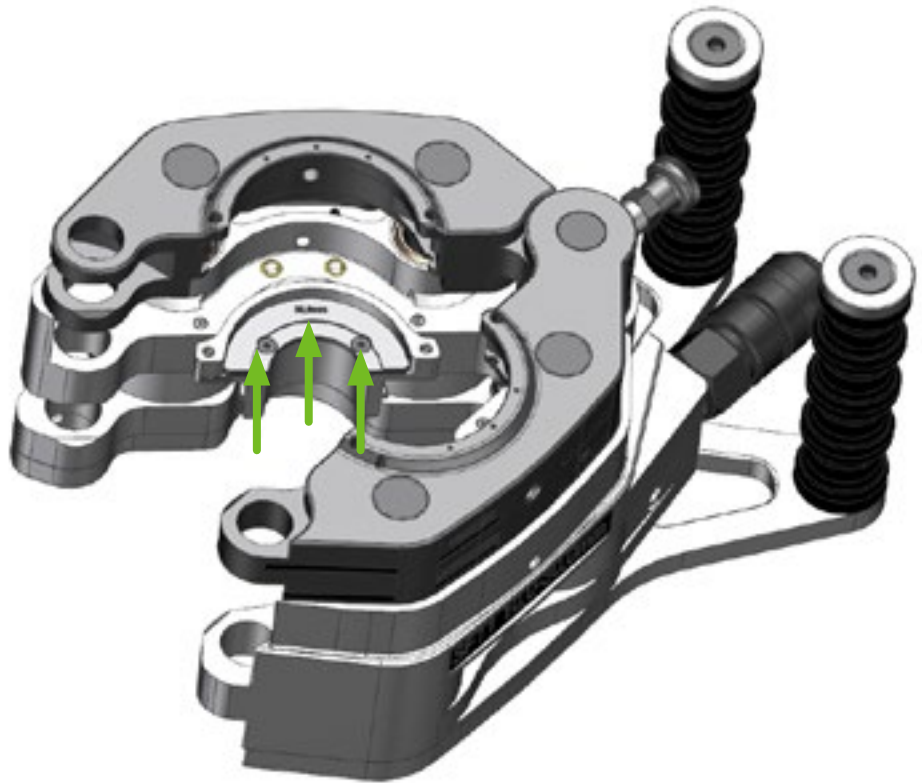
Manual SFT 1.4

7. Assembly of Inserts

Assembly: Insert SFT body

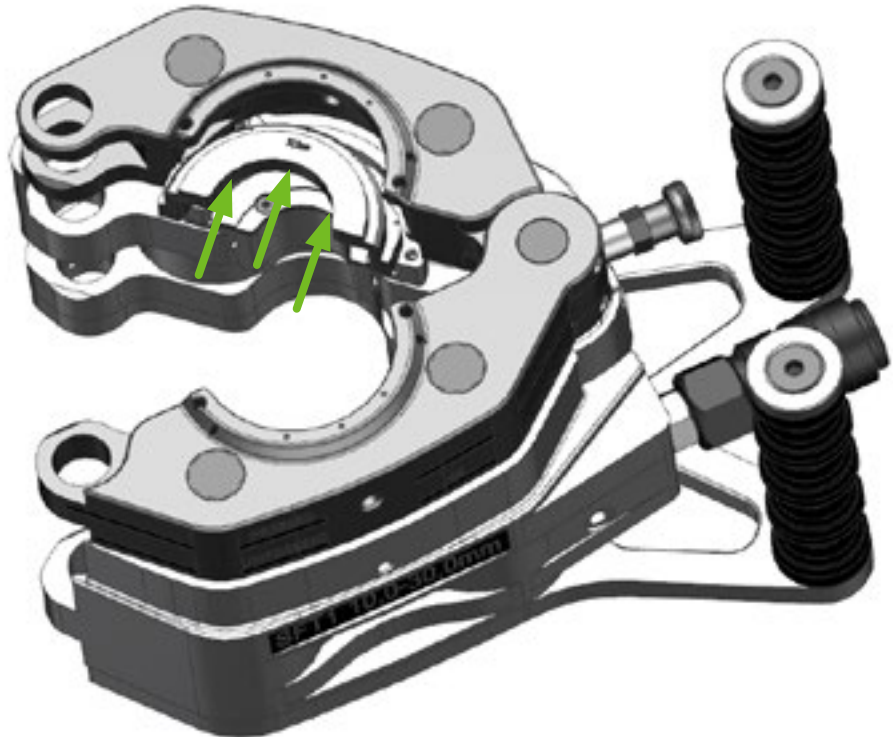
Push the insert from below against the press head and turn it into the groove until it snaps into place. Please ensure that the inserts are positioned right in the middle.

The straight surface of the insert should be parallel with the inner surface of the press tool.

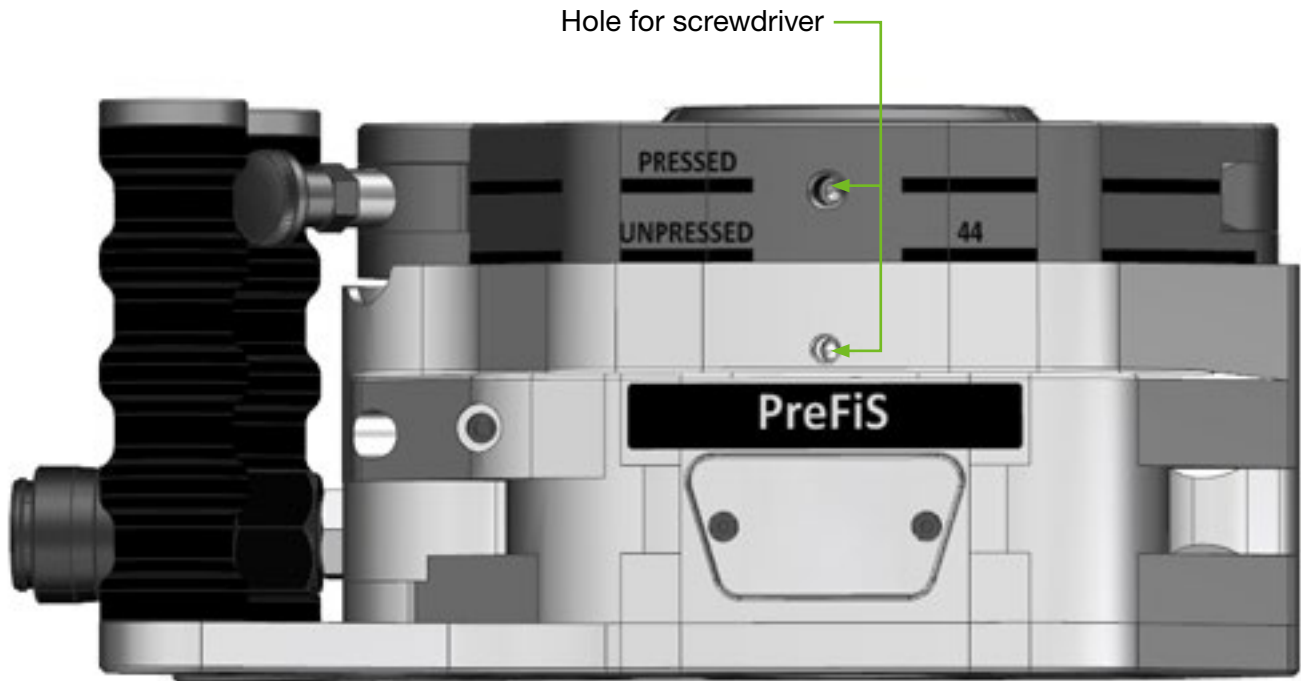


Assembly: Insert SFT head

Push the insert from below against the steel head and turn it into the groove until it snaps into place. Now both straight ends of the inserts should be parallel to the straight inner surface of the press head.



8. Disassembly of Inserts

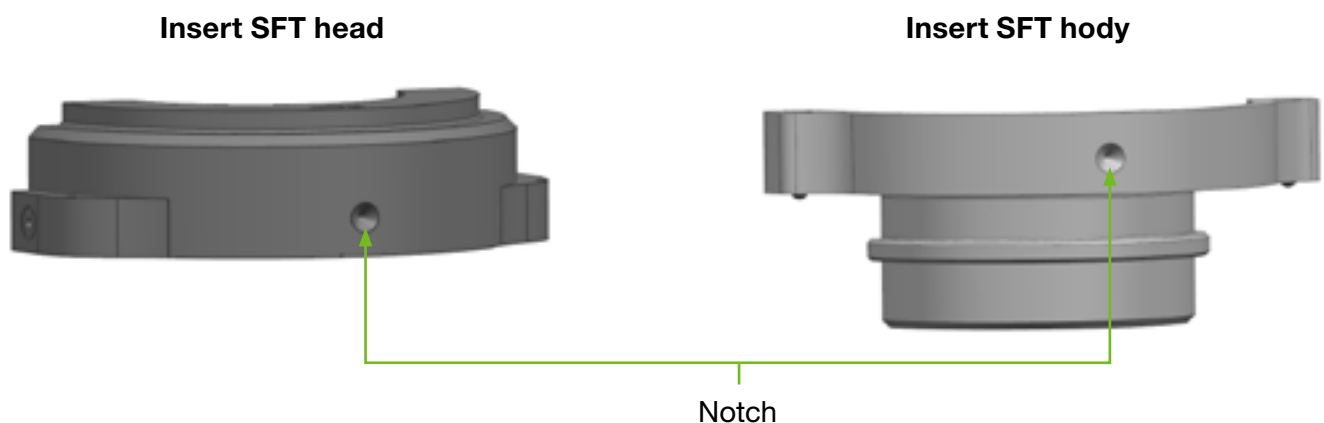


To remove the bottom inserts (SFT body), simply push the screwdriver through the hole below, into the notch of the insert. Push against the other side to support the process.

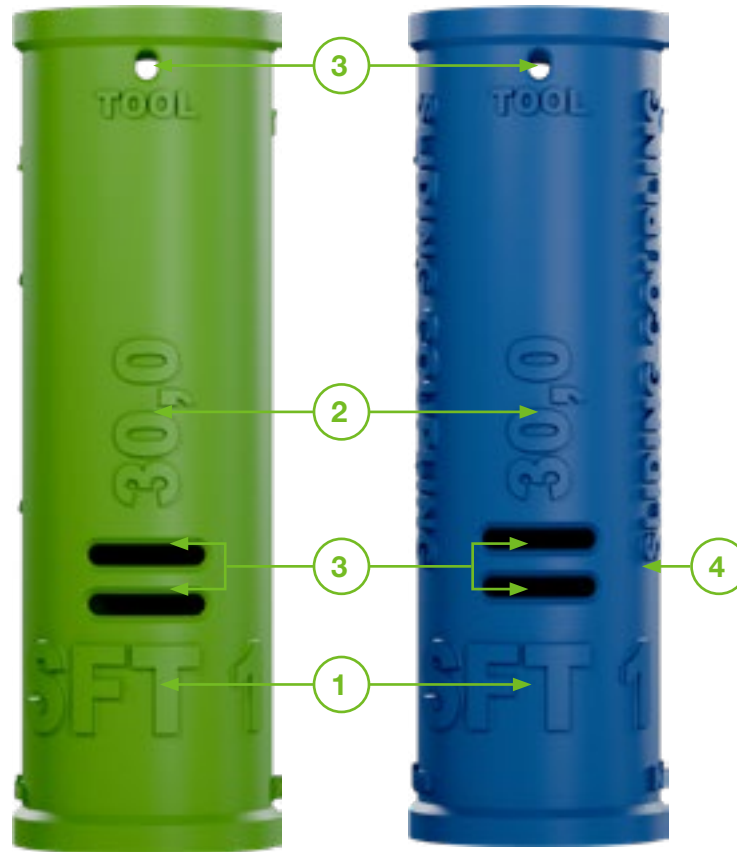
To remove the top inserts (SFT head), both ball pressure screws must be unfixed. Push against the other side to support the process and use a screwdriver to push into the notch through the top hole.

Repeat the same on the other side.

For the disassembly of the inserts, the press head needs to be open.



9. Marking Tools



There are 2 different colored marking tools.

The marking tools are usable for all diameters SFT 1.4.

Green: for all couplings **except** straight couplings without internal stop

Blue: only for straight couplings without internal stop

On the outside, you find all relevant information:

1. Press tool (SFT 1.4 in this case)
2. Tube Diameter (OD in mm)
3. Slits for the marking
4. Additional: **Blue** tool can be used only for straight coupling without internal stop

The marking tool is needed to mark the tube to be crimped.

Please use a **waterproof pen** (max. 2.5 mm) that fits into the slit of the marking tool.

The tube will be marked through the slits.

The usage will be explained below in **10. Preparation of Tube**.

10. Preparation of Tube

- 1 Check cut tube for:

Roundness



Right-angled saw edge
(+/- 5°)



Deburring
(e.g.: with hand deburrer)



- 2 Choose the correct marking tool



- 3 Select pipe diameter on the marking tool
(in this case, for a tube with Ø 30.0 mm)



- 4 Press the tube on the pipe, to better mark it.



- 5 Use a waterproof pen, to mark the pipe through the 3 slots.



- 6 Remove marking tool.



- 7 Ready for mounting

Marking to check correct press operation.

Marking to the correct fit in the press head.

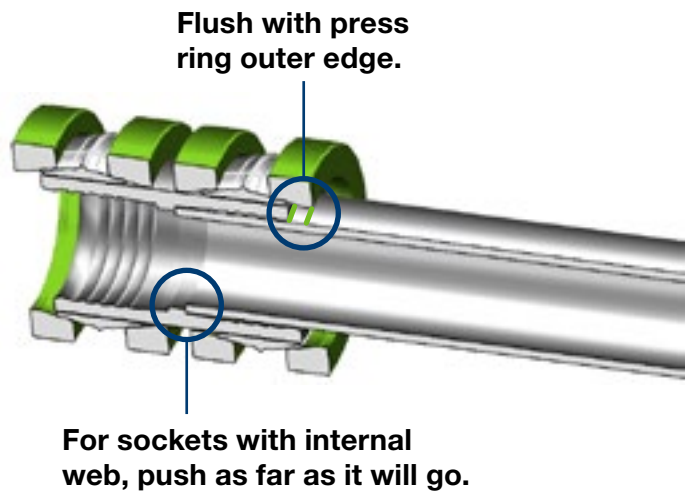


Marking for the insertion depth.

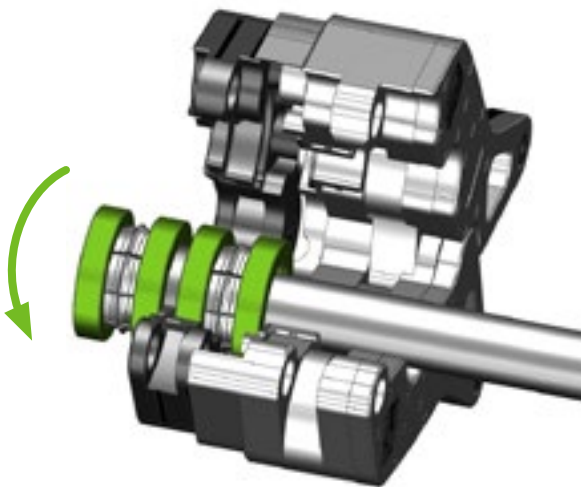
Manual SFT 1.4

11. Crimping Operation (1/2)

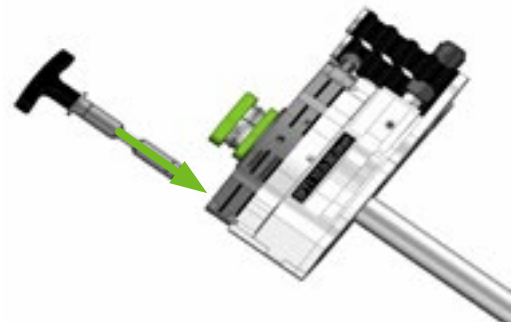
- 1 Place the coupling over the marked end of the tube until the rear marking is flush with the press ring.



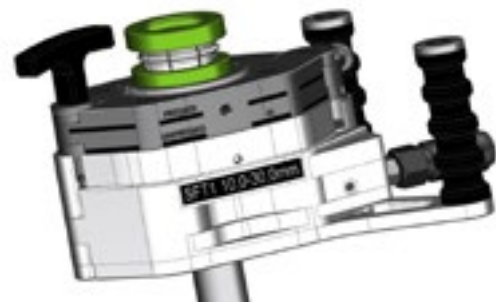
- 2 Place the press head around the fitting and close it until tool opener (on the handle side) engages. Check this operation.



- 3 Use the locking pin to securely connect the two halves of the tool.

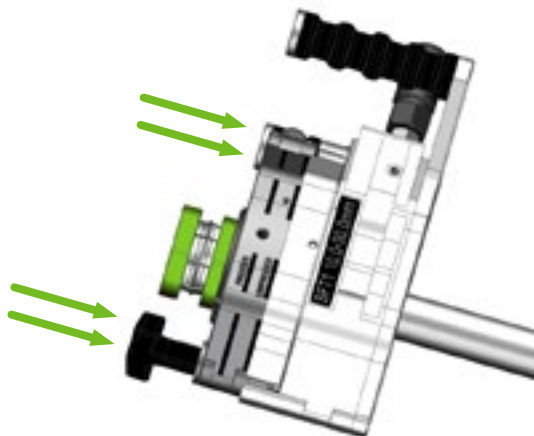


- 4 Switch on the hydraulic pump.



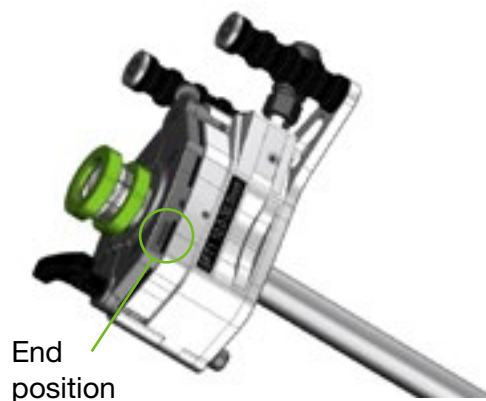
12. Crimping Operation (2/2)

- 5 The SFT head moves downward into the SFT body



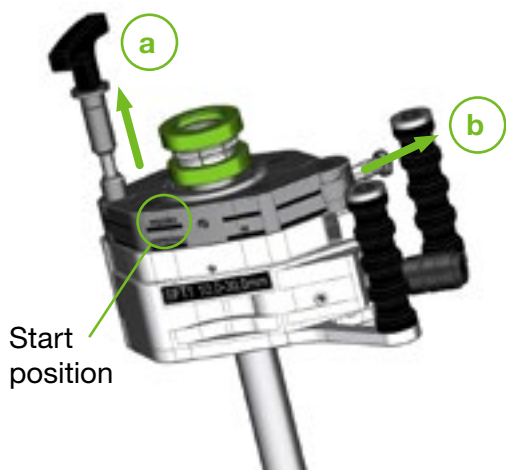
- 6 The pump must remain switched on until it switches itself off automatically.

The press process is finished when the marking of the position is at the same level as the aluminum body and the marking line **PRESSED** is reached.



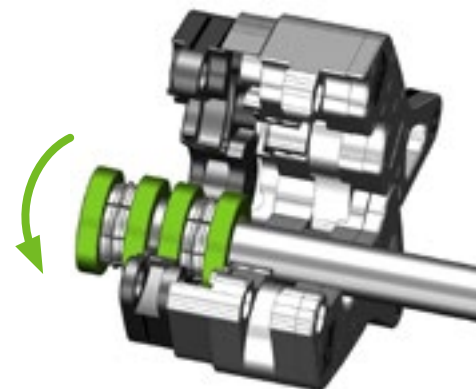
- 7 Wait until the SFT head has moved to the marking for the starting position. Marking line **UNPRESSED** is reached.

When the starting position is reached, the press head may be opened.

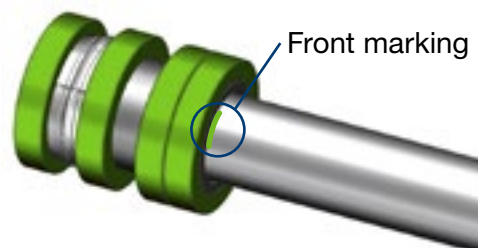


- a Remove the locking pin.
b Pull the tool opener to unlock the press head.

- 8 Remove the press tool from the coupling. Check the pressing against the markings.



- 9 The press process was successful if the front marking is flush with the press ring and the gap between the press rings is the same everywhere.

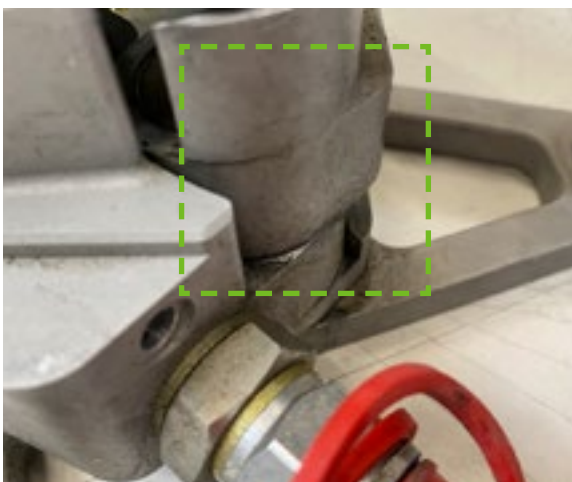
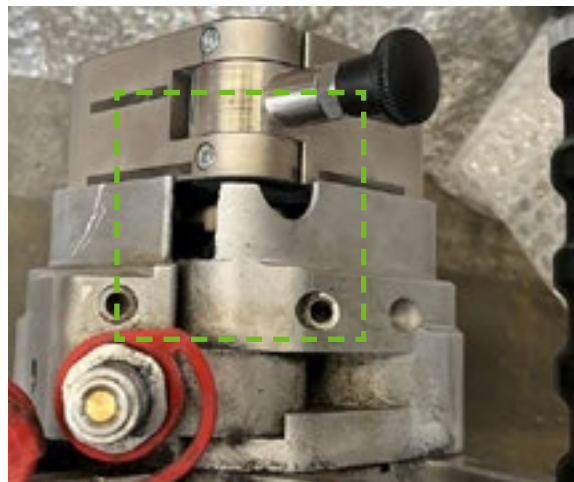
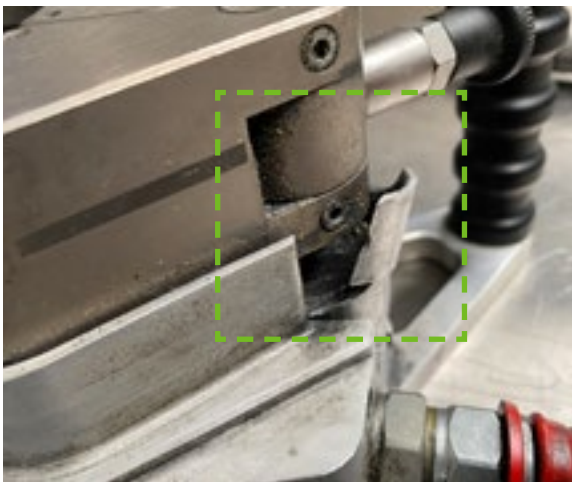


Manual SFT 1.4

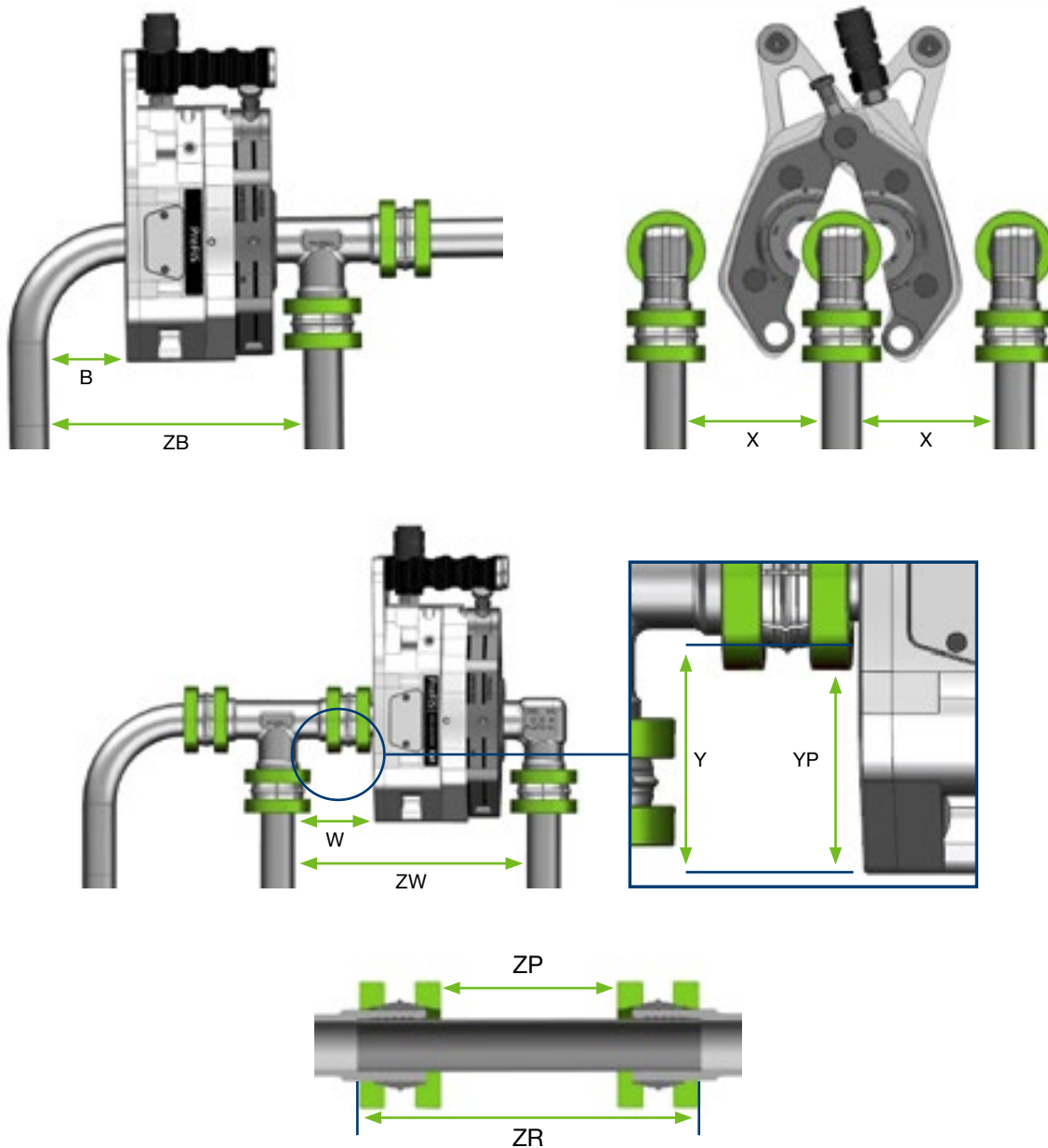
13. Indicator in Case of Mishandling



If this metal indicator is defective, missing, or torn, it is a clear sign for mishandling of the tool resulting in an invalid warranty. To avoid this issue, the press operation in closed condition as described in this manual needs to be strictly followed. (See Content 11. and 12.)



14. Space Requirements for Pipe Installation



D tube OD (mm)	B min. space to bended tube (mm)	ZB min. space to bended tube (mm)	X min. space between tubes (mm)	W min. space to tee (mm)	ZW min. space to angle (mm)	Y depth of tool (mm)	YP min. space Ring to wall (mm)	ZP min. space tool (mm)	ZR min. tube length (mm)
20.0	40	178	70	60	198	70	56	76	144
21.3/22.0	44	183	70	59	198	71	57	76	144
25.0	50	189	70	64	203	73	58	76	144
26.9	54	193	70	63	202	74	59	76	144
28.0	56	195	70	62	201	74	59	76	144
30.0	60	196	70	74	209	75	60	74	154

Manual SFT 1.4

15. Service and Maintenance

Ongoing

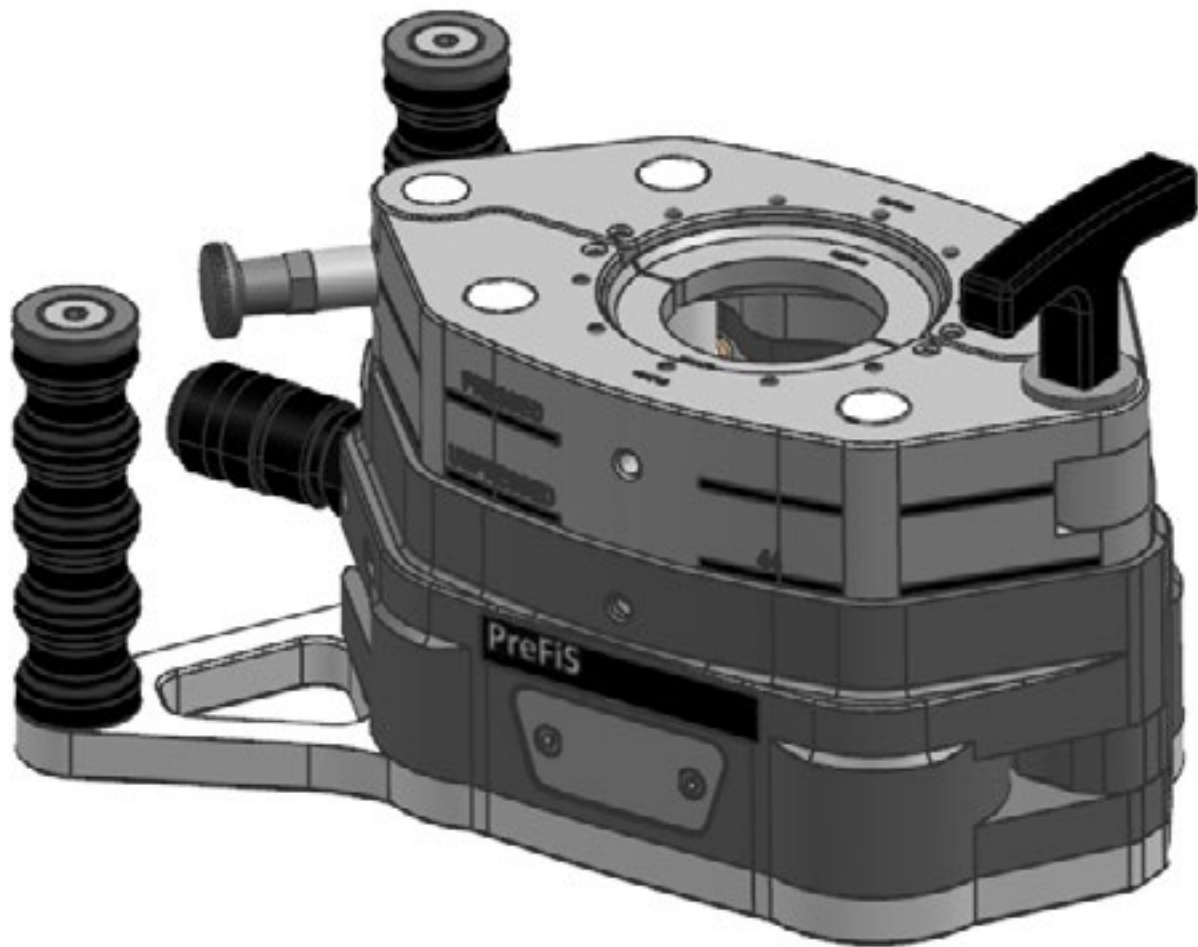
Before and after each crimping operation, there needs to be a visual inspection to check that the press head is free from any foreign objects.

Before each use, the press head inside and especially The coupling end nipple must be cleaned thoroughly with a clean cloth!

Daily

Clean the press head technically

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Manual SFT 2.4

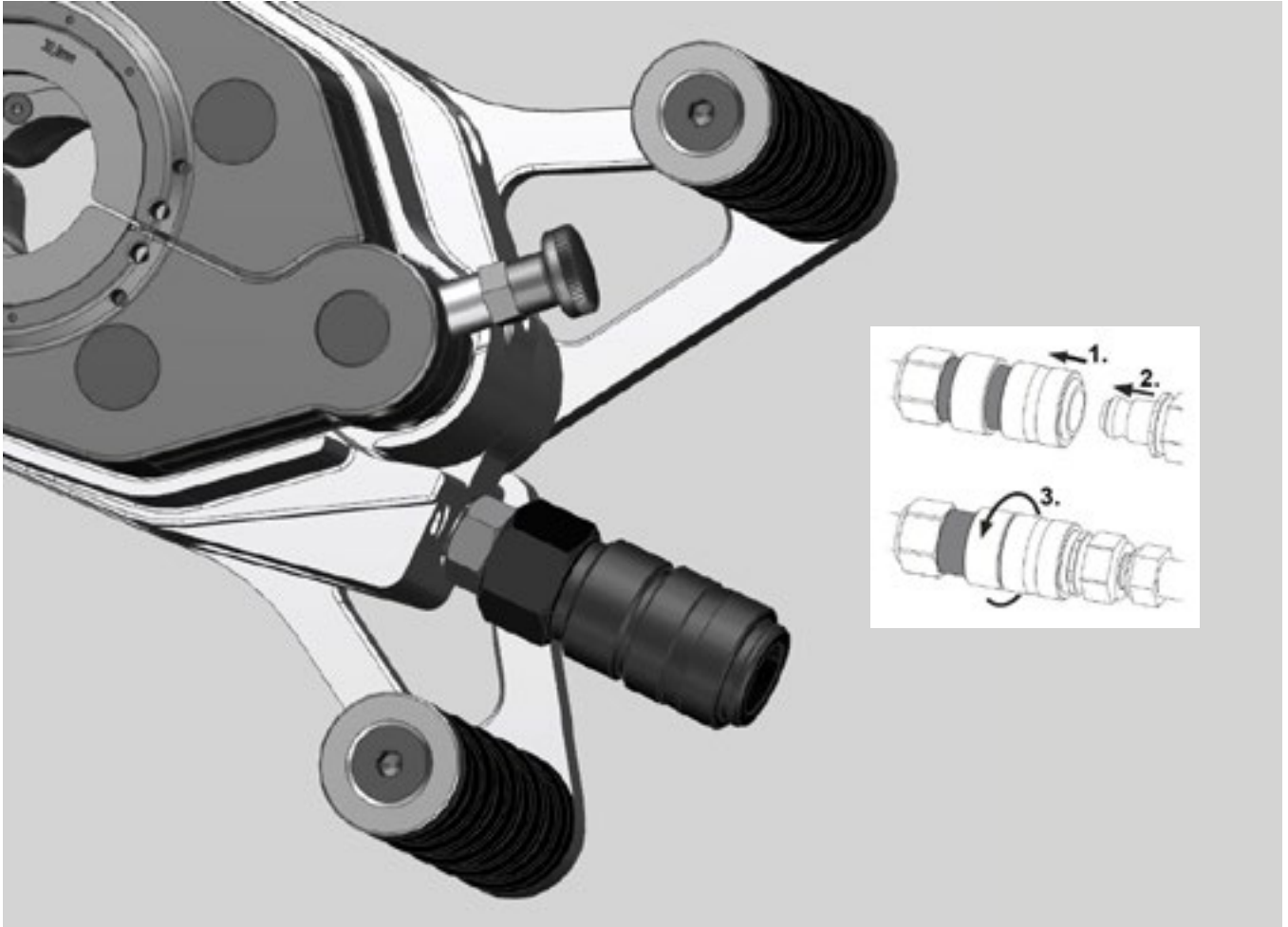
1. Technical data

Press tool	SFT 2.4
Oil volume	approx. 30 ml
Additional working oil volume	approx. 155 ml
Tube diameter (OD mm) Inserts	30.0, 33.7, 35.0, 38.0, 42.4, 48.3, 60.3
Weight (w/o inserts)	approx. 6.7 kg
Operating pressure	max. 700 bar

Pump Type	UAP700NG0001 Klauke	B70M-P36 Cembre
Battery voltage	18V / 110V / 220V	36V
Weight (w/o battery)	3.6 kg	8.4 kg
Ambient temperature (Celsius)	-12 to +40	-20 to +50
Operating pressure	max. 700 bar	
Max. oil volume	approx. 290 ml	approx. 1.100 ml
		

Manual SFT 2.4

2. Hydraulic Pump Connection



1. Pull back the quick lock of the tool.
2. Stick the coupling of the hose up to the stop, then release the quick lock. If assembled correctly, the coupling of the hose will bounce back into its starting position.
3. Screw the locking ring up to the stop against the quick lock (hand tight).

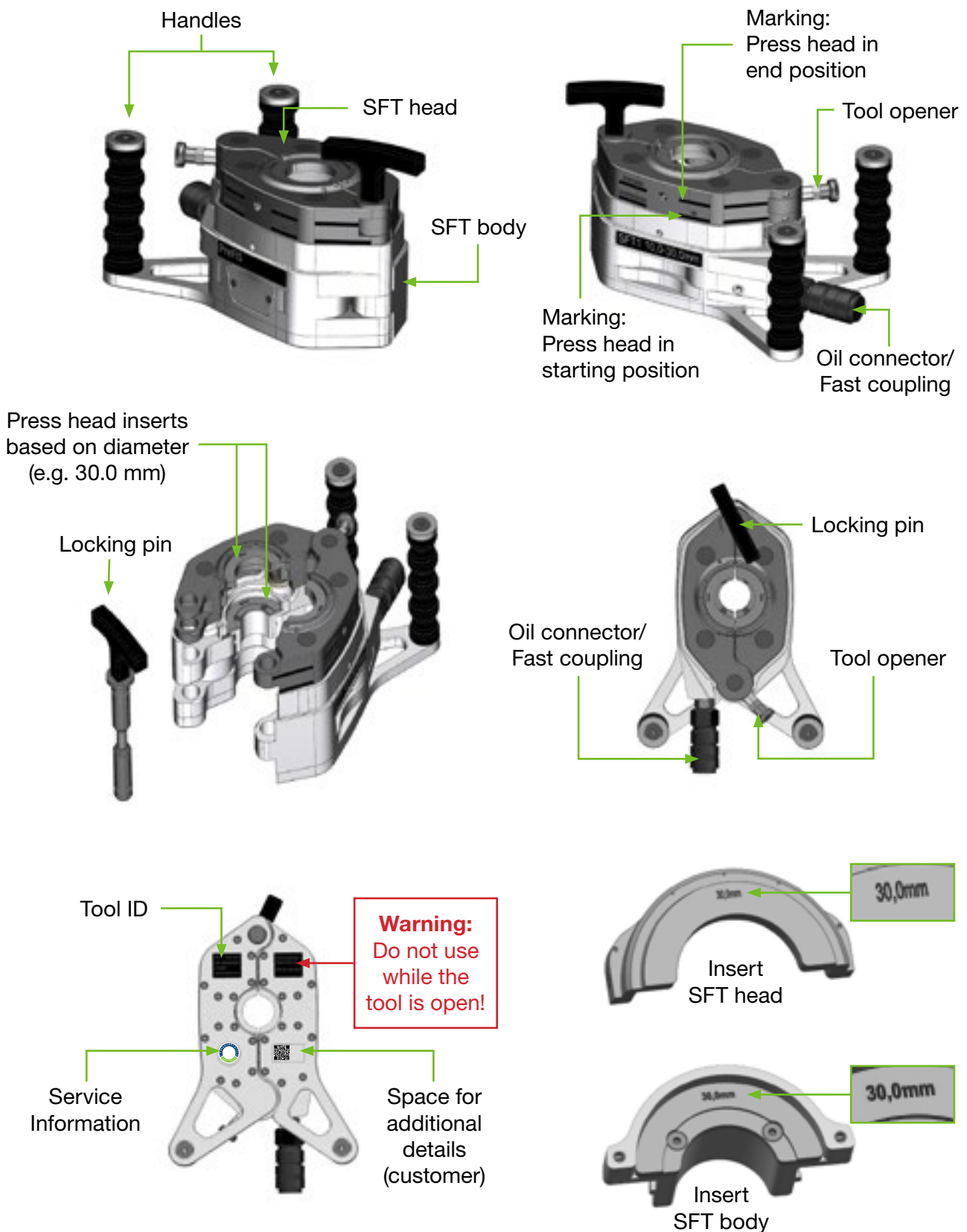
The hydraulic connection is screwed together with the press head and glued in place with a special sealant.

The hydraulic connection must not be removed from the press head under any circumstances.

The coupling end nipple must be wiped thoroughly using a clean cloth before each use.

Manual SFT 2.4

3. Overview Press Head

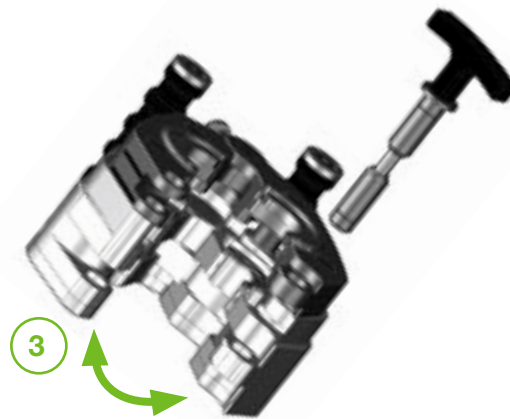
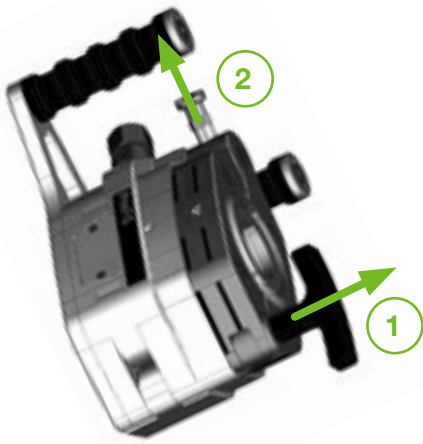


Manual SFT 2.4

4. Interlocking of Press Head

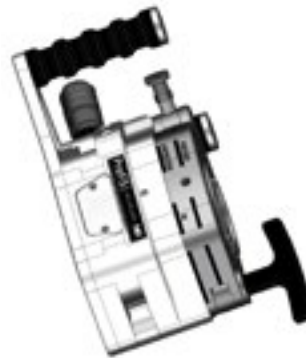
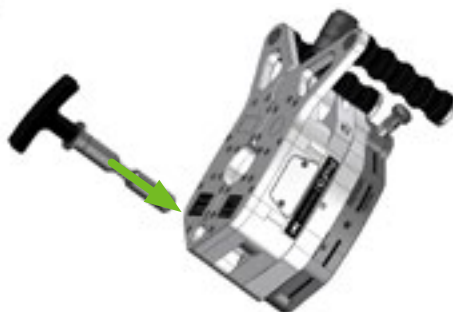
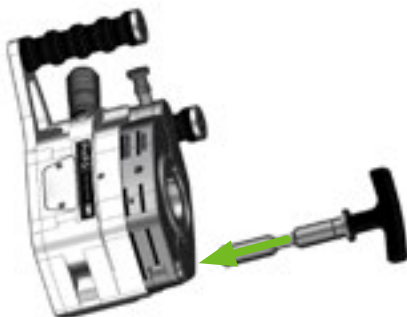
How to open the press head:

1. Remove locking pin
2. Operate (pull) the Tool opener
3. Press both tool halves with handles apart



How to close the press head:

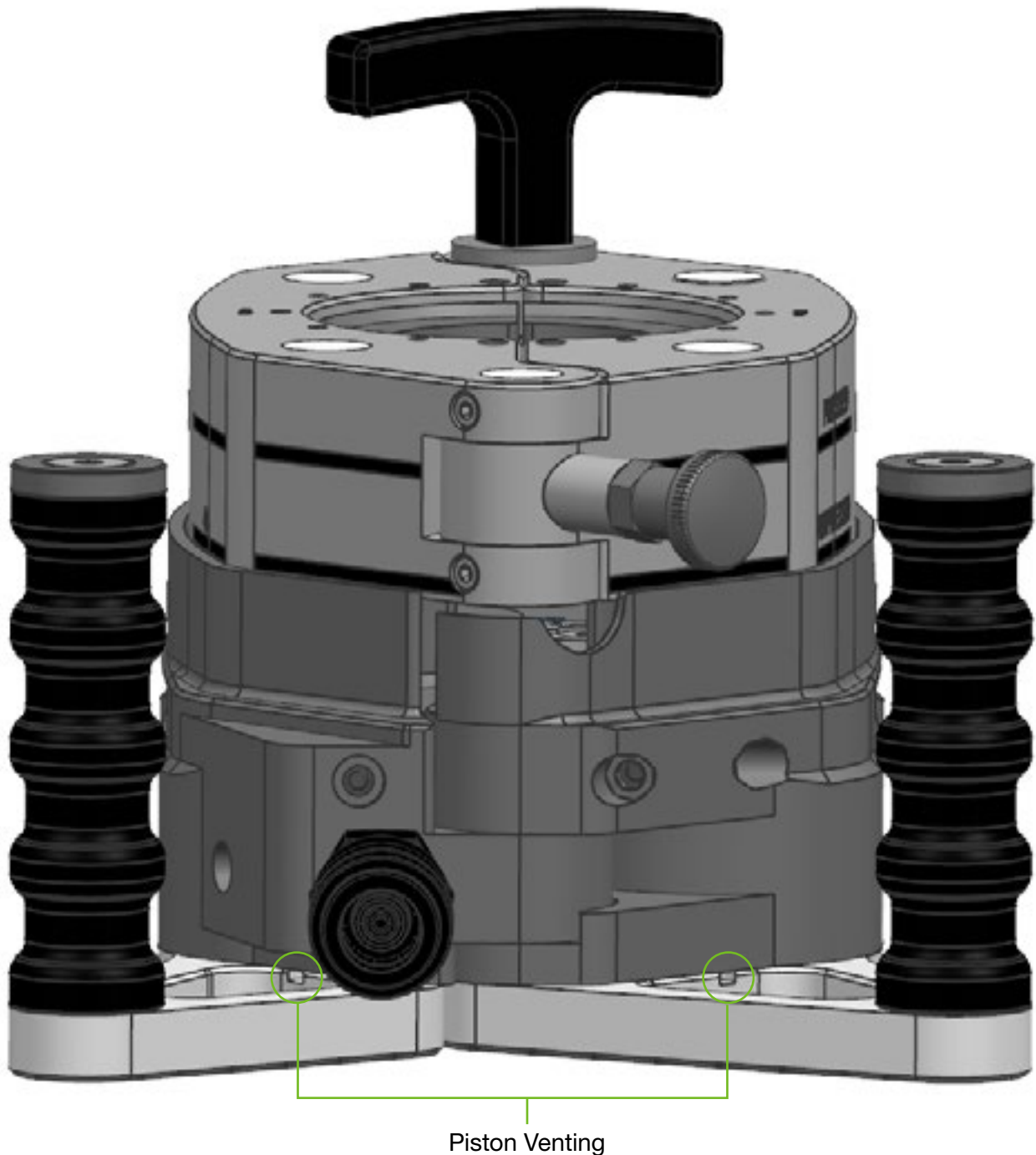
1. Press both tool halves with the handles together until the Tool opener engages
2. Insert the locking pin into the holes provided for



The locking pin can be inserted into the tool from above, or from below. This can be helpful in some cases.

Manual SFT 2.4

5. Overview Piston Venting

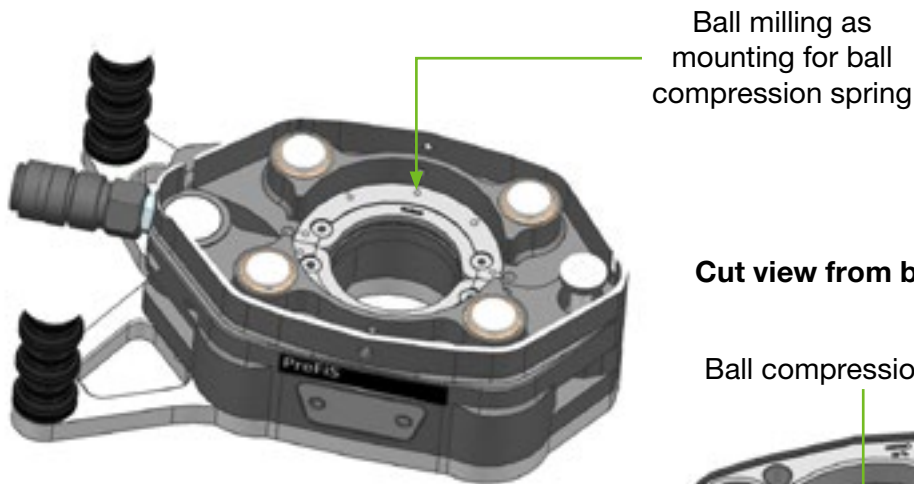


- Piston venting is necessary to avoid pressure during the crimping operation.
- The piston venting is maintenance-free.
- **Some oil spills can occur after a certain time, which is completely normal.**
- The oil can be removed with a cloth.

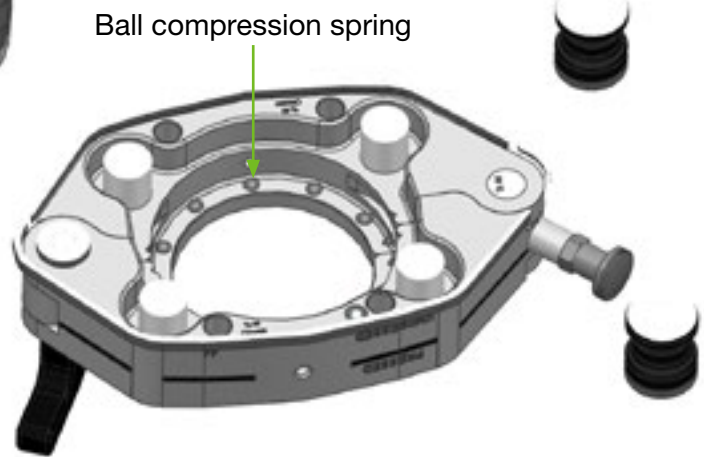
Manual SFT 2.4

6. Mode of Operation: Inserts

Sectional view from above on tool body

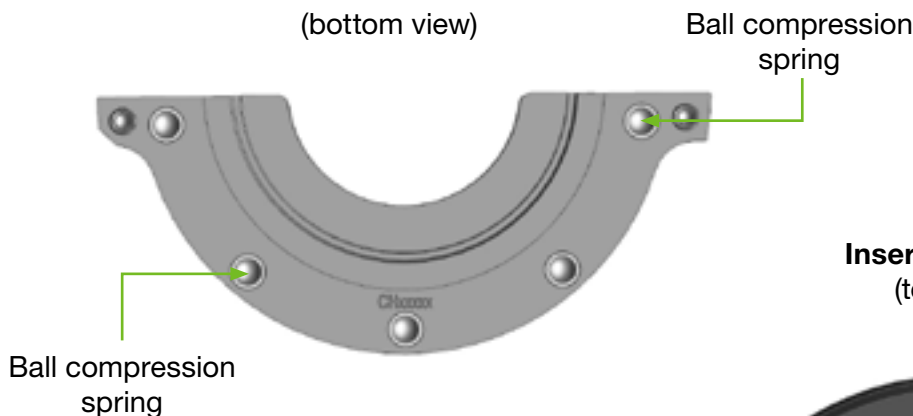


Cut view from below on tool head



Insert body and head are fixed with 5 ball pressure springs per insert
Ball pressure springs are non-adjustable!

Insert SFT head
(bottom view)



Insert SFT head
(top view)

Ball milling as mounting for ball compression spring



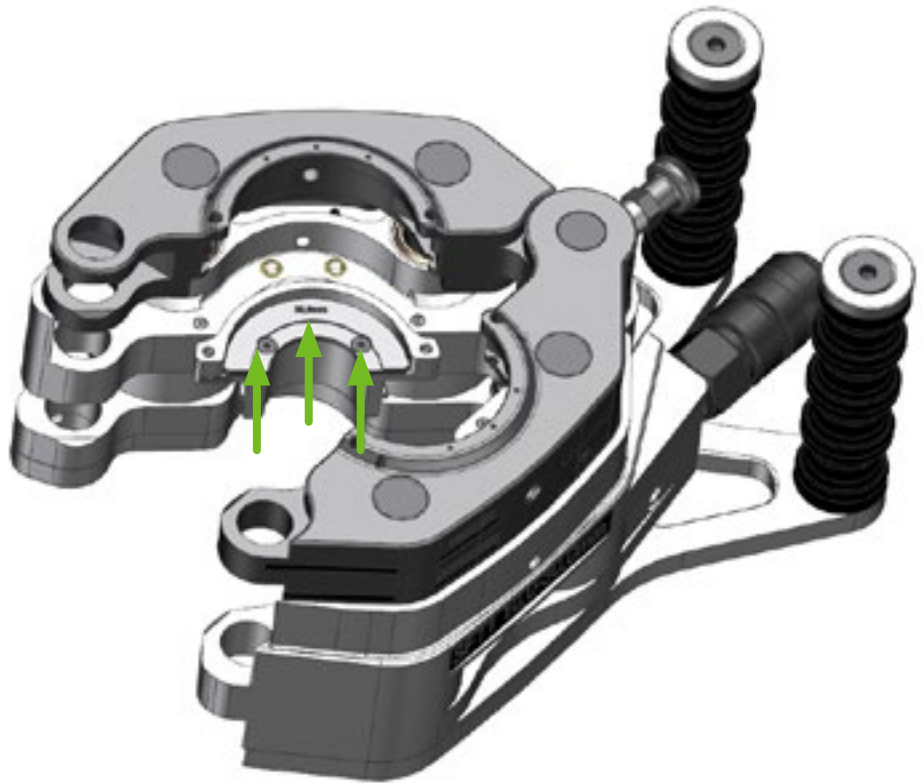
Manual SFT 2.4

7. Assembly of Inserts

Assembly: Insert SFT body

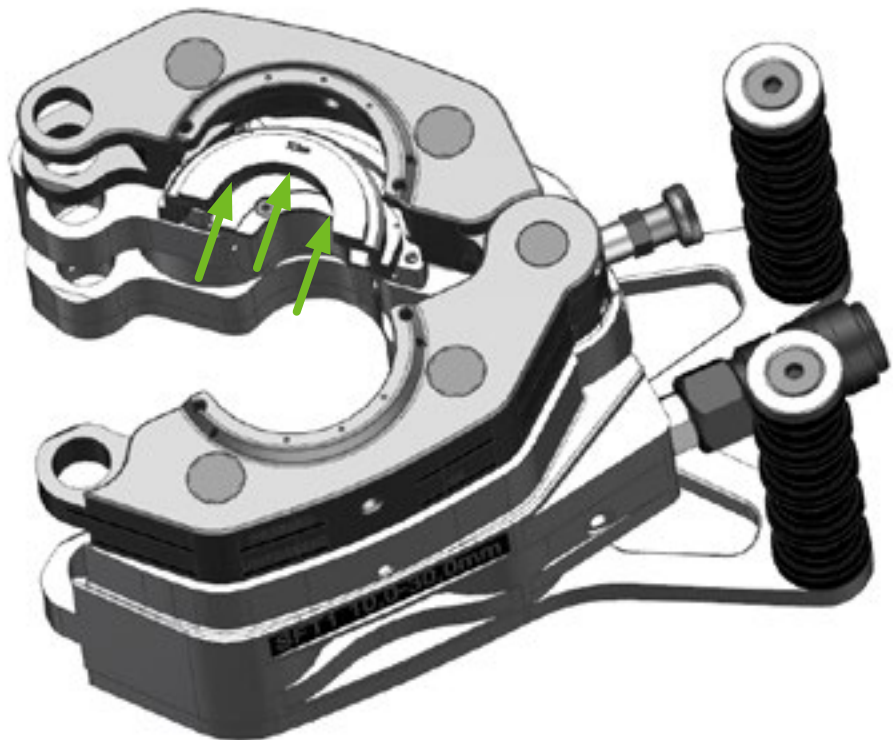
Push the insert from below against the press head and turn it into the groove until it snaps into place. Please ensure that the inserts are positioned right in the middle.

The straight surface of the insert should be parallel with the inner surface of the press tool.



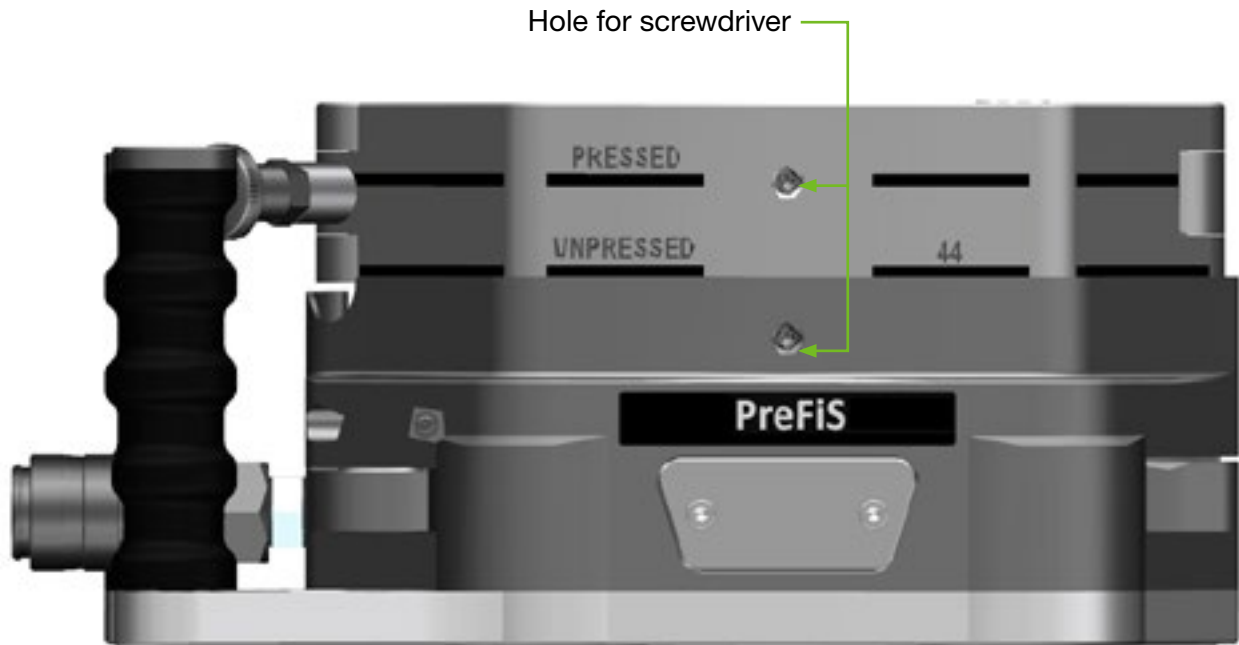
Assembly: Insert SFT head

Push the insert from below against the steel head and turn it into the groove until it snaps into place. Now both straight ends of the inserts should be parallel to the straight inner surface of the press head.



Manual SFT 2.4

8. Disassembly of Inserts

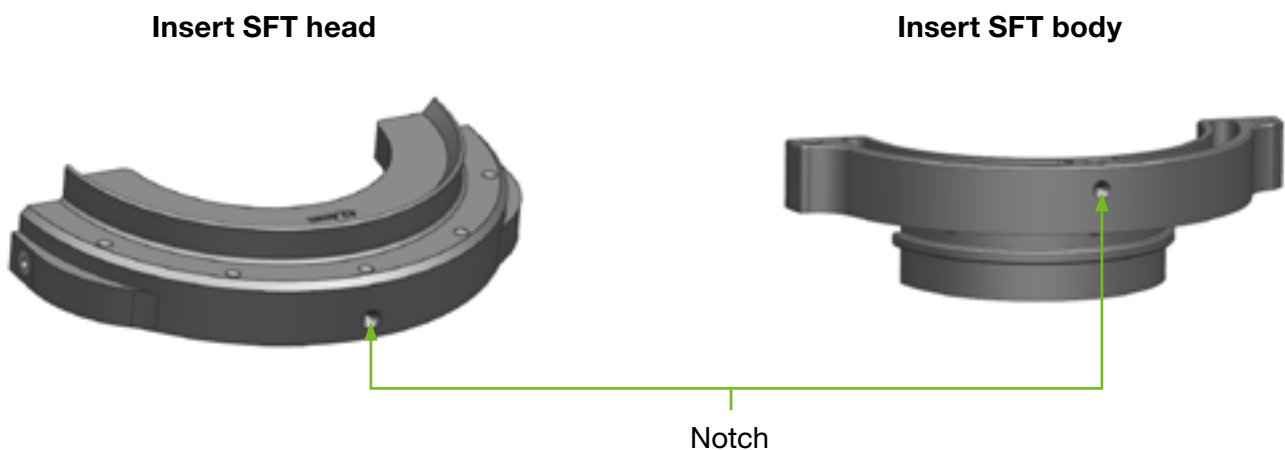


To remove the bottom inserts (SFT body), simply push the screwdriver through the below hole, into the notch of the insert. Push against the other side to support the process.

To remove the top inserts (SFT head), both ball pressure screws must be unfixed. Push against the other side to support the process and use a screwdriver to push into the notch through the top hole.

Repeat the same on the other side.

For the disassembly of the inserts, the press head needs to be open.



9. Marking Tools



There are 2 different coloured marking tools.

The marking tools are usable for all diameters SFT 2.4.

Green: for all couplings **except** straight couplings without internal stop

Blue: only for straight couplings without internal stop

On the outside, you find all relevant information:

1. Press tool (SFT 2.4 in this case)
2. Tube diameter (OD in mm)
3. Slits for the marking
4. Round hole to attach the tools (e.g. with a carabiner)
5. Additional: **Blue** tool can be used only for straight coupling without internal stop.

The marking tool is needed to mark the tube to be crimped.

Please use a **waterproof pen** (max. 2.5 mm) that fits into the slit of the marking tool.

The tube will be marked through the slits.

The usage will be explained below in section **10. Preparation of Tube**.

10. Preparation of Tube

- 1 Check cut tube for:

Roundness



Right-angled saw edge
(+/- 5°)



Deburring
(e.g.: with hand deburrer)



- 2 Choose the correct marking tool



- 3 Select pipe diameter on the marking tool
(in this case, for a tube with Ø 30.0 mm)



- 4 Press the tube on the pipe, to better mark it.



- 5 Use a waterproof pen, to mark the pipe through the 3 slots.



- 6 Remove marking tool.



- 7 Ready for mounting

Marking to check correct press operation.

Marking to the correct fit in the press head.

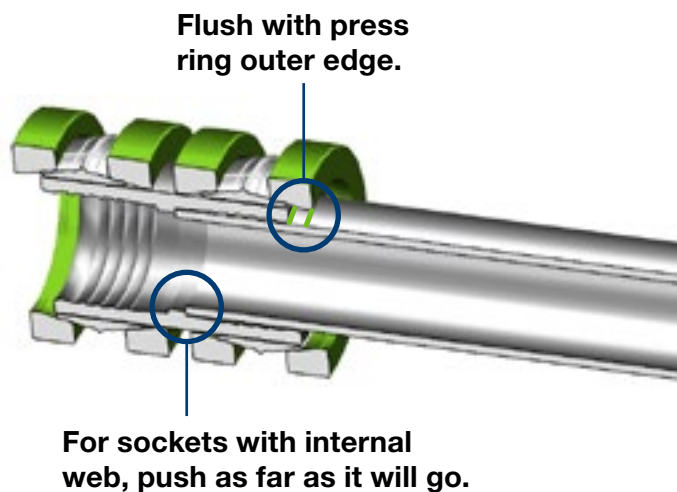


Marking for the insertion depth.

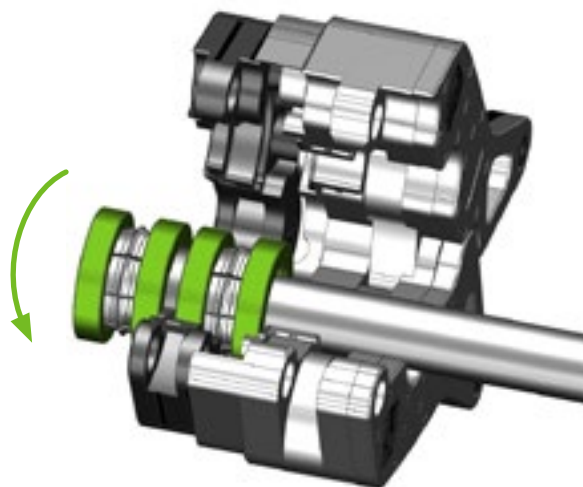
Manual SFT 2.4

11. Crimping Operation (1/2)

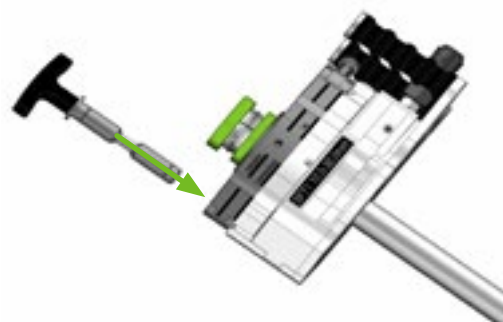
- 1 Place the coupling over the marked end of the tube until the rear marking is flush with the press ring.



- 2 Place the press head around the fitting and close it until tool opener (on the handle side) engages. Check this operation.



- 3 Use the locking pin to securely connect the two halves of the tool.

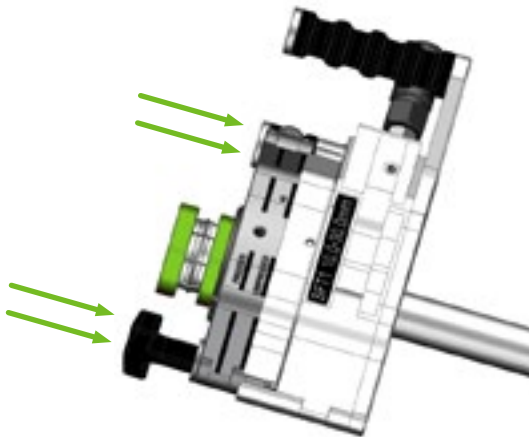


- 4 Switch on the hydraulic pump.



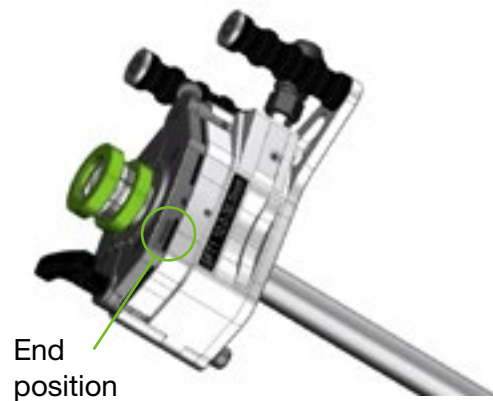
12. Crimping Operation (2/2)

- 5 The SFT head moves downward into the SFT body



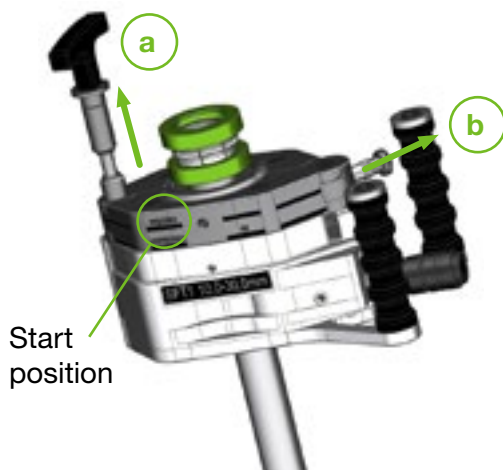
- 6 The pump must remain switched on until it switches itself off automatically.

The press process is finished, when the marking of the position is at the same level as the aluminum body and the marking line **PRESSED** is reached.

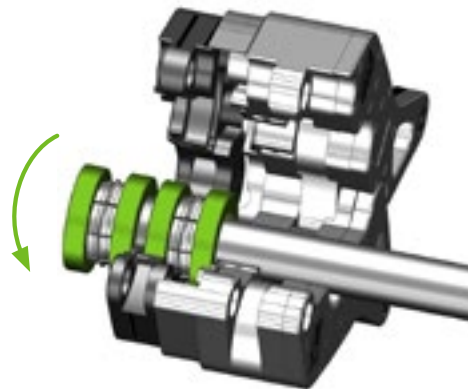


- 7 Wait until the SFT head has moved to the marking for the starting position and the marking line **UNPRESSED** is reached.

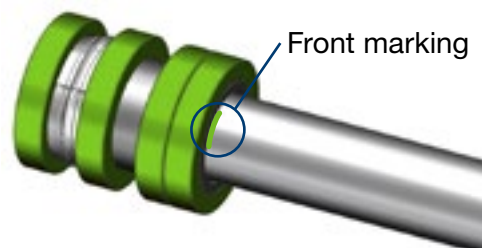
When the starting position is reached, the press head may be opened.



- 8 Remove the press tool from the coupling. Check the pressing against the markings.



- 9 The press process was successful if the front marking is flush with the press ring and the gap between the press rings is the same everywhere.



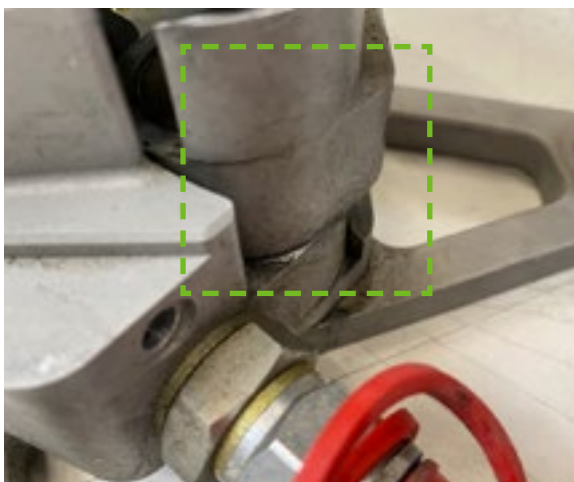
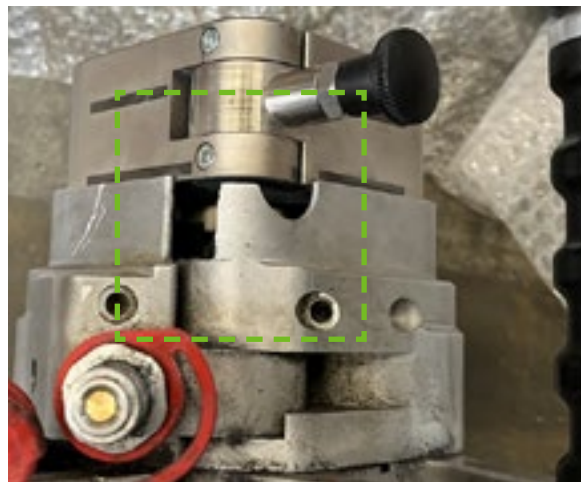
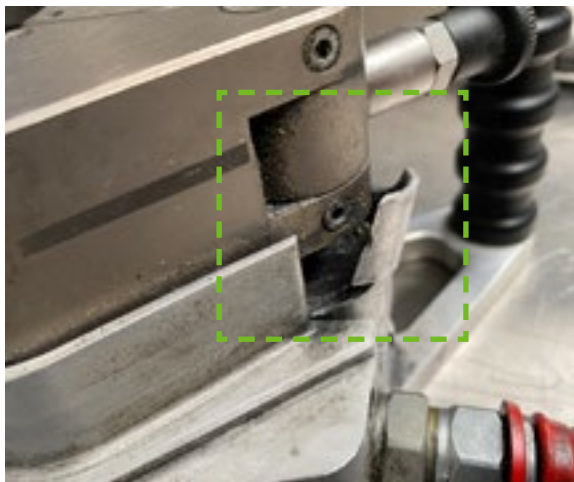
- a Remove the locking pin.
b Pull the tool opener to unlock the press head.

Manual SFT 2.4

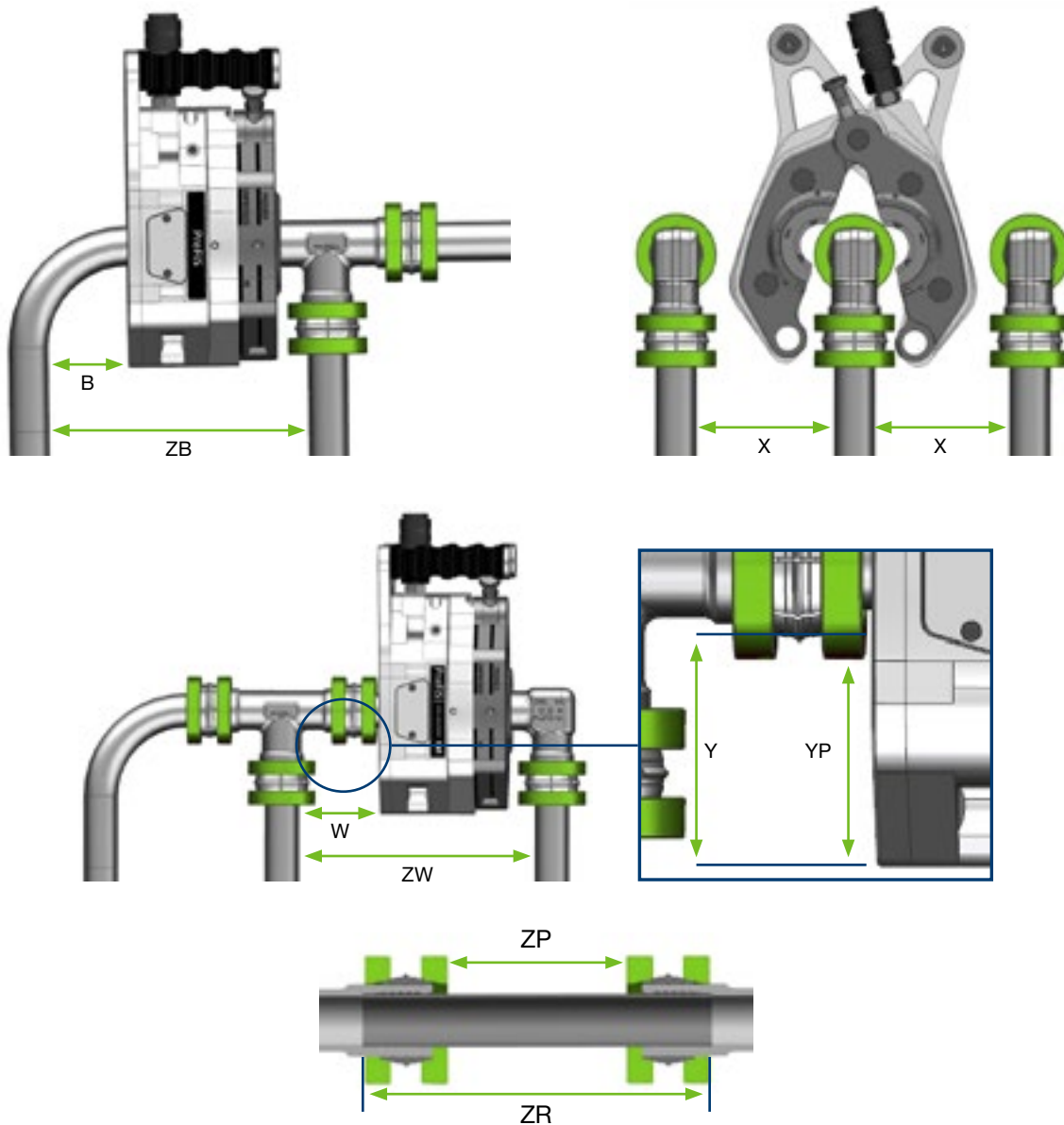
13. Indicator in Case of Mishandling



If this metal indicator is defective, missing, or torn, it is a clear sign for mishandling of the tool resulting in an invalid warranty. To avoid this issue, the press operation in closed condition as described in this manual needs to be strictly followed. (See Content 11. and 12.)



14. Space Requirements for Pipe Installation



D tube OD (mm)	B min. space to bended tube (mm)	ZB min. space to bended tube (mm)	X min. space between tubes (mm)	W min. space to tee (mm)	ZW min. space to angle (mm)	Y depth of tool (mm)	YP min. space Ring to wall (mm)	ZP min. space tool (mm)	ZR min. tube length (mm)
30.0	48	142	104	132	226	94	80	90	170
33.7	57	156	109	130	229	94	77	90	170
35.0	60	158	111	130	228	91	76	90	170
38.0	68	167	114	128	227	89	75	90	170
42.4	77	180	120	126	229	87	72	80	168
48.3	92	197	127	123	228	84	68	80	168
54.0	110	233	135	120	243	81	64	75	176
60.3	130	290	143	95	255	78	61	70	180

Manual SFT 2.4

15. Service and Maintenance

Ongoing

Before and after the crimping operation, there needs to be a visual inspection to check that the press head is free from any foreign objects.

Before each use, the press head inside and especially The coupling end nipple must be cleaned thoroughly with a clean cloth!

Daily

Clean the press head thoroughly.

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Manual SFT 4.1

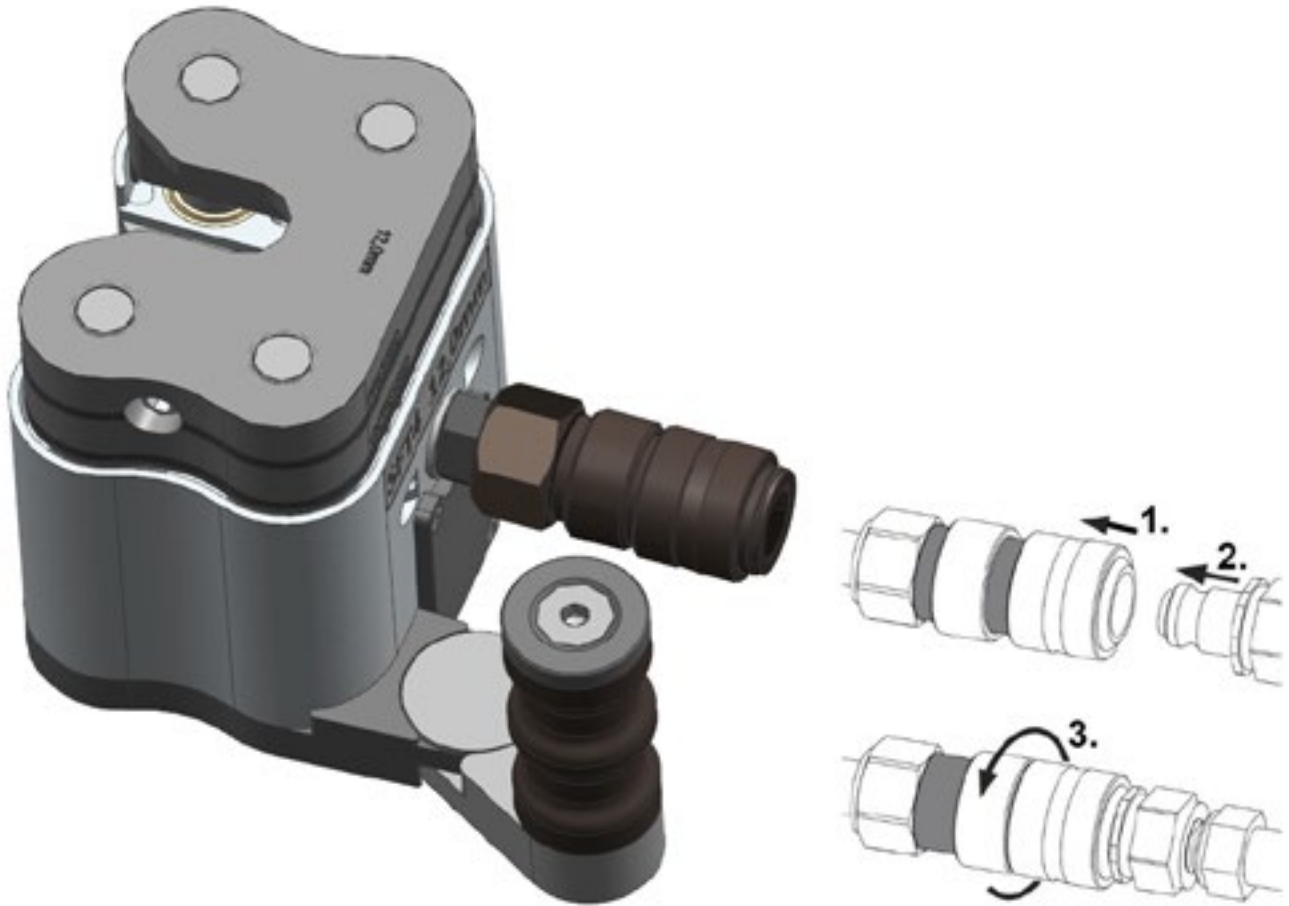
1. Technical Data

Press tool	SFT 4.1 12.0 mm & 15.0 mm
Oil volume	approx. 5 ml
Additional working oil volume	approx. 42 ml
Tube diameter (OD mm) Inserts	12.0
Weight (w/o inserts)	approx. 4,00 kg
Operating pressure	max. 700 bar

Pump Type	UAP700NG0001 Klauke	B70M-P36 Cembre
Battery voltage	18V / 110V / 220V	36V
Weight (w/o battery)	3.6 kg	8.4 kg
Ambient temperature (Celsius)	-12 to +40	-20 to +50
Operating pressure	max. 700 bar	
Max. oil volume	approx. 290 ml	approx. 1.100 ml
		

Manual SFT 4.1

2. Hydraulic Pump Connection



1. Pull back the quick lock of the tool.
2. Stick the coupling of the hose up to the stop, then release the quick lock. If assembled correctly, the coupling of the hose will bounce back into its starting position.
3. Screw the locking ring up to the stop against the quick lock (hand tight).

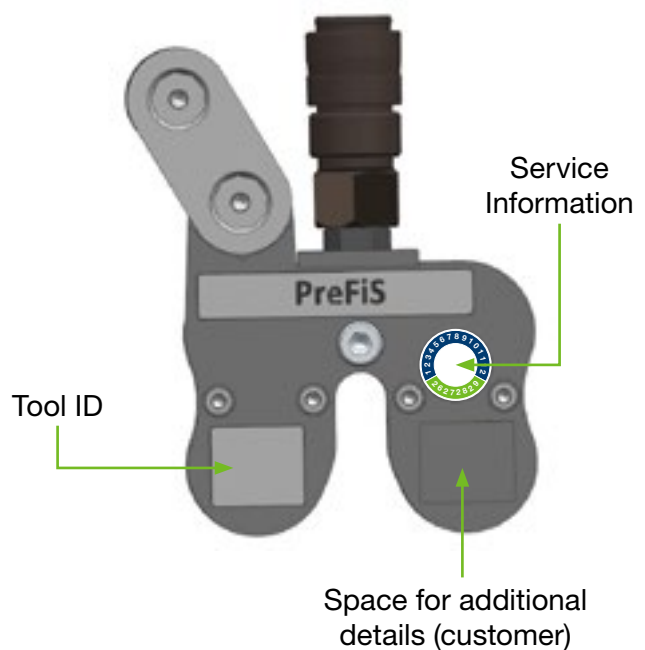
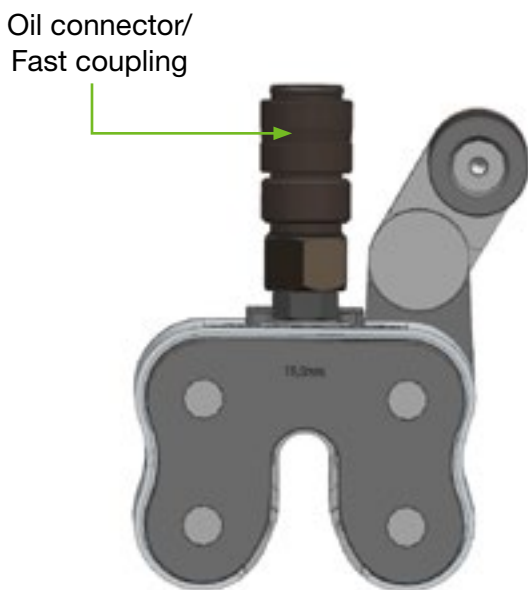
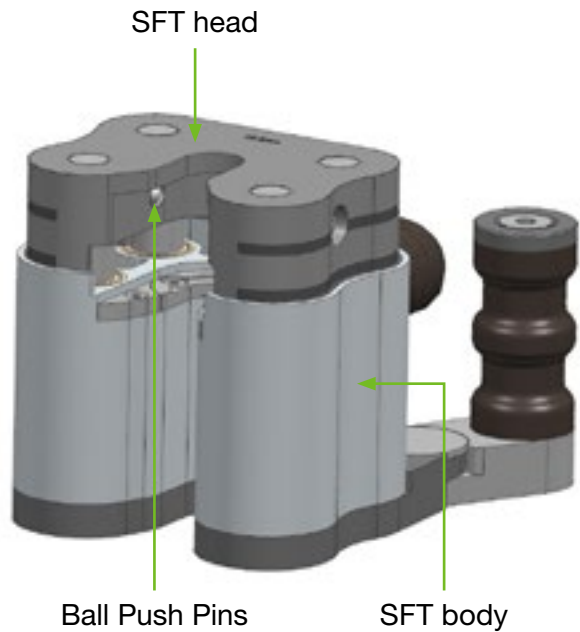
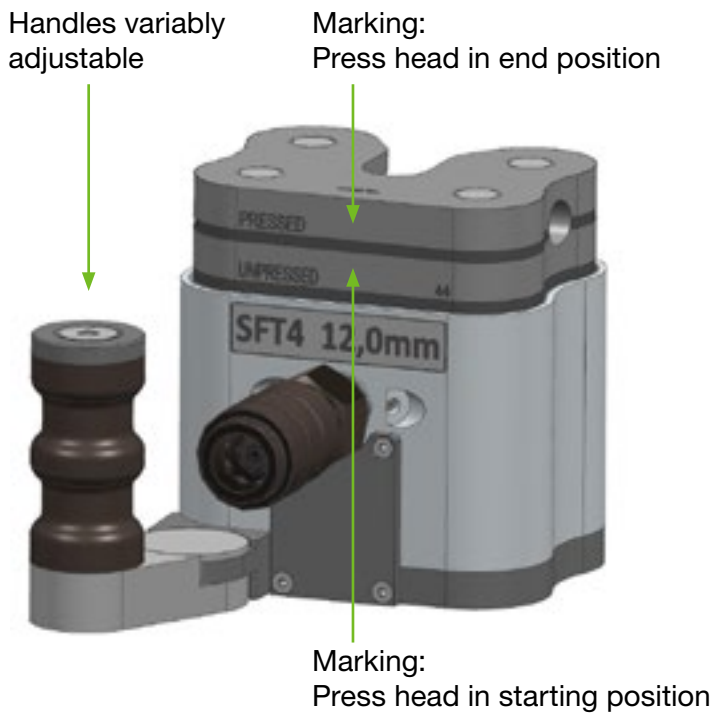
The hydraulic connection is screwed together with the press head and glued in place with a special sealant.

The hydraulic connection must not be removed from the press head under any circumstances.

The coupling end nipple must be wiped thoroughly using a clean cloth before each use.

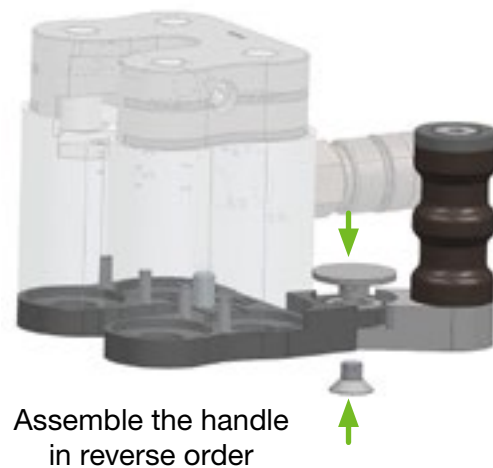
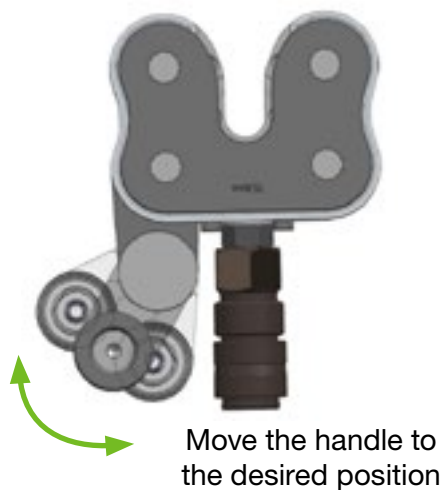
Manual SFT 4.1

3. Overview Press Head

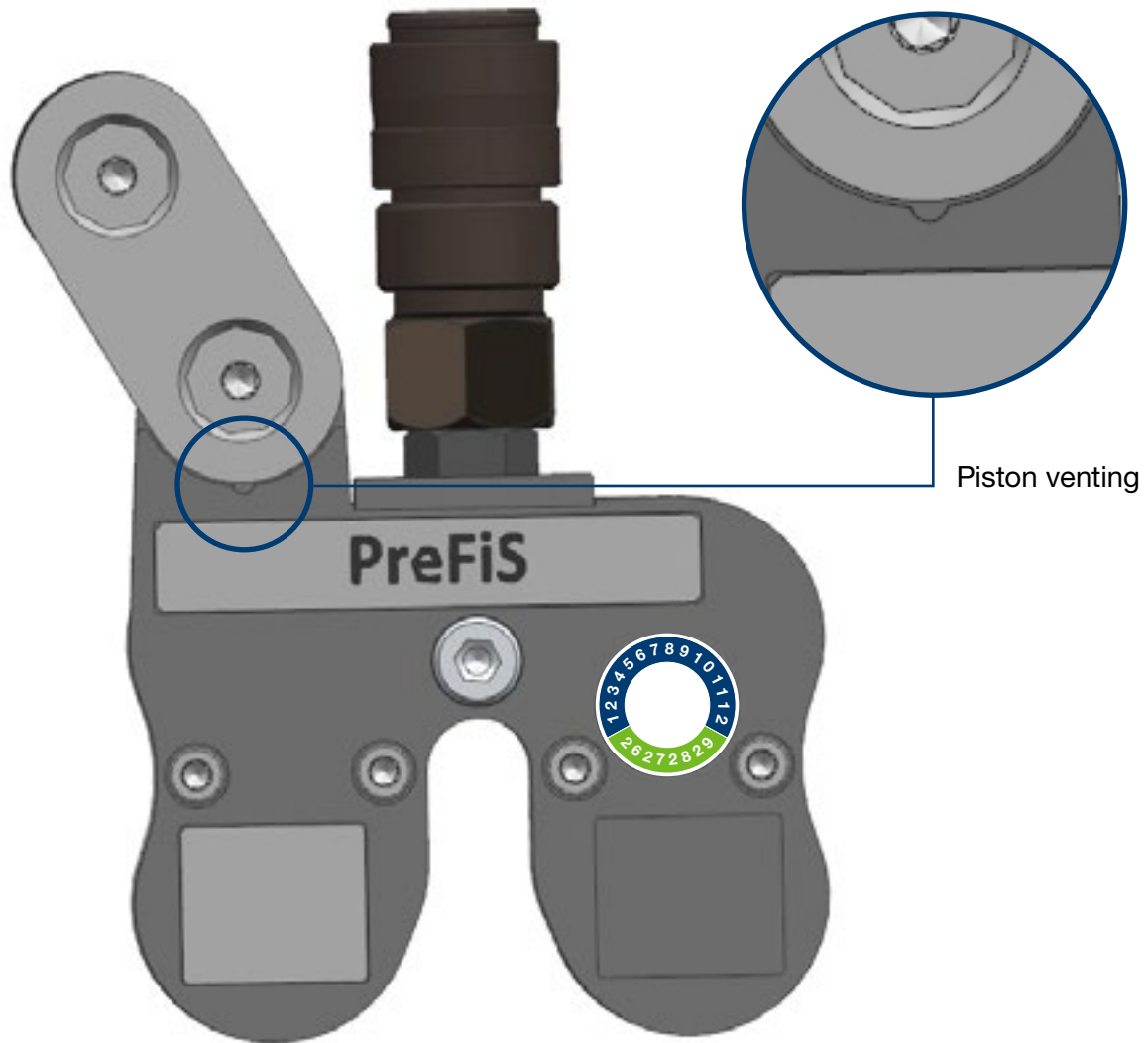


Manual SFT 4.1

4. Adjustment of Handle



5. Overview Piston Venting



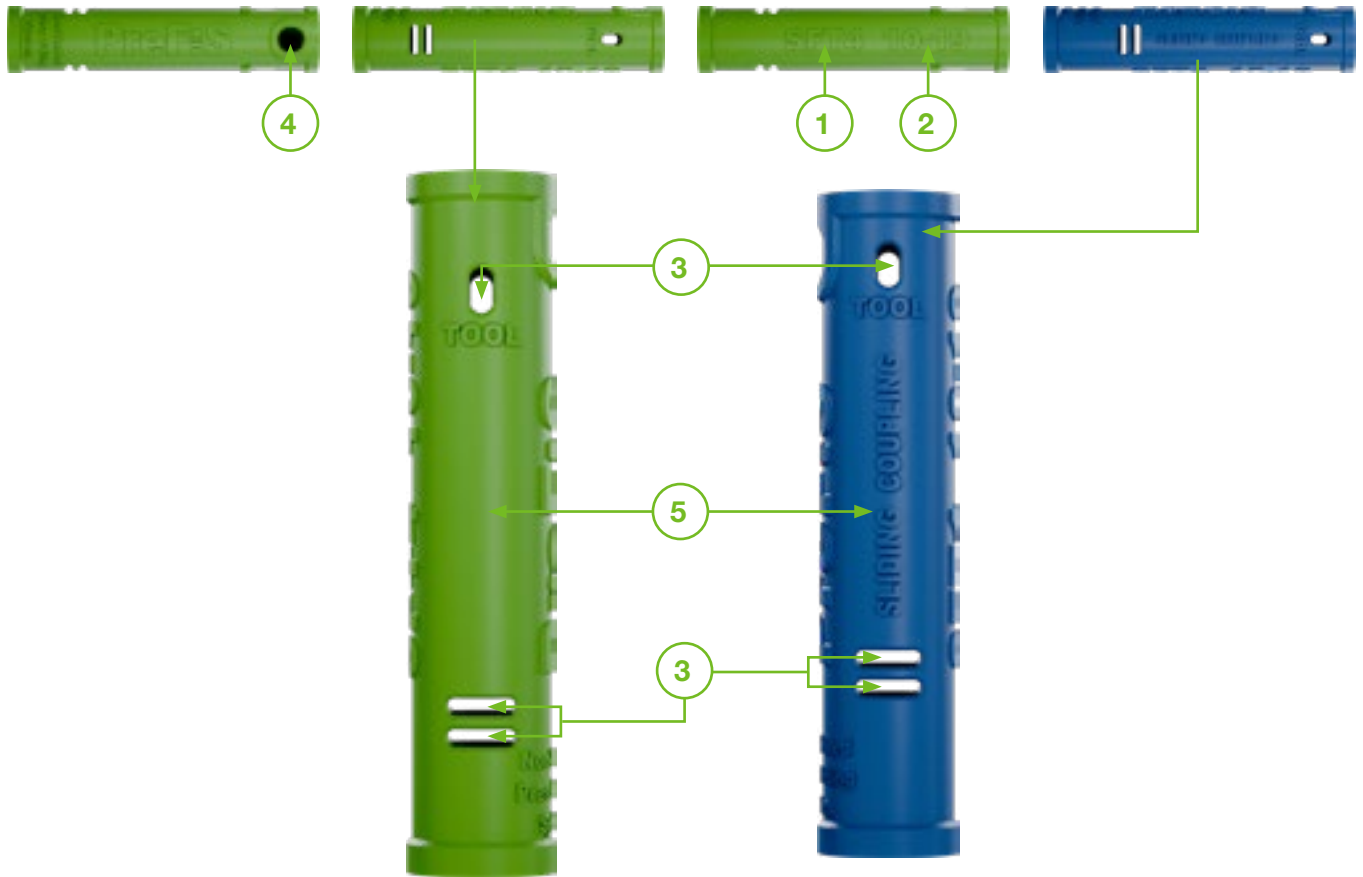
Piston venting is necessary to avoid pressure during the crimping operation.

The piston venting is maintenance-free.

Some oil spills can occur after a certain time, which is completely normal.

The oil can be removed with a cloth.

6. Marking Tools



There are 2 different coloured marking tools.

The marking tools are usable for all diameters SFT 4.1.

Green: for all couplings **except** straight couplings without internal stop

Blue: only for straight couplings without internal stop

On the outside, you find all relevant information:

1. Press tool (SFT 4.1 in this case)
2. Tube diameter (OD in mm)
3. Slits for the marking
4. Round hole to attach the tools (e.g. with a carabiner)
5. Additional: **Blue** tool can be used only for straight coupling without internal stop.

The marking tool is needed to mark the tube to be crimped.

Please use a **waterproof pen** (max. 2.5 mm) that fits into the slit of the marking tool.

The tube will be marked through the slits.

The usage will be explained below in section **7. Preparation of Tube**.

7. Preparation of Tube

- 1 Check cut tube for:

Roundness



Right-angled saw edge
(+/- 5°)



Deburring
(e.g.: with hand deburrer)



- 2 Choose the correct marking tool



- 3 Select pipe diameter on the marking tool
(in this case, for a tube with Ø 30.0 mm)



- 4 Press the tube on the pipe, to better mark it.



- 5 Use a waterproof pen, to mark the pipe through the 3 slots.



- 6 Remove marking tool.



- 7 Ready for mounting

Marking to check correct press operation.

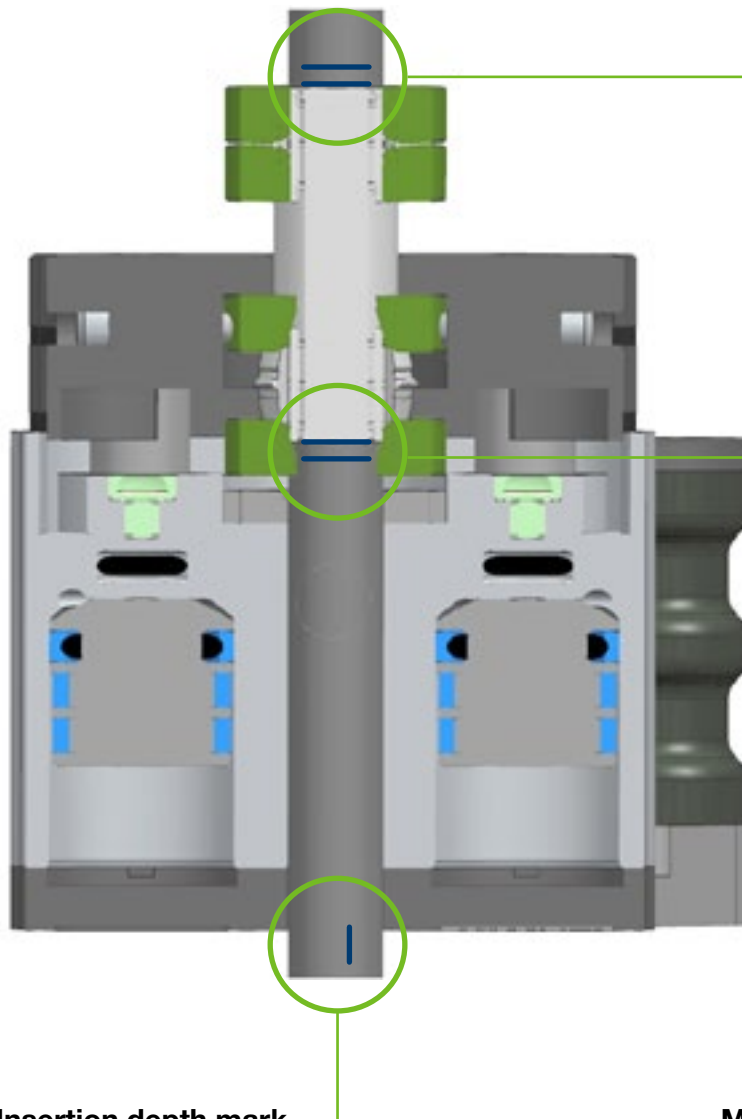
Marking to the correct fit in the press head.



Marking for the insertion depth.

Manual SFT 4.1

8. Crimping Operation (1/2)



Marking for checking the compression.

This marking tells you whether the sleeve has been properly pressed. This marking is hidden after the sleeve has been put on and only becomes visible again after the pressing process.

The marking must be flush with the pressed socket, otherwise the pressing is faulty.

Insertion depth mark.

This mark tells you whether the sleeve has been pushed deep enough onto the pipe. This marking is particularly important when using sliding sleeves, as there is no stop on the inside.

This ensures that the pipe ends are pressed to the same depth from both sides.

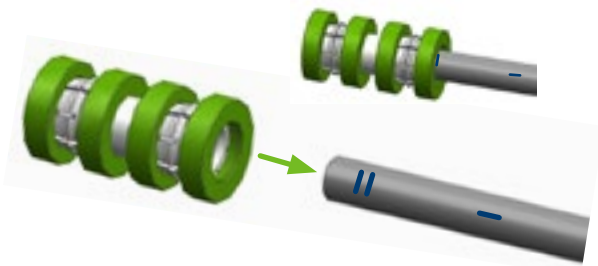
Marking for correct seating in the press head.

This marking is in the longitudinal direction. It must be visible before the pressing process, when the pressing head is closed, and there must be no gap between the tool and the marking.

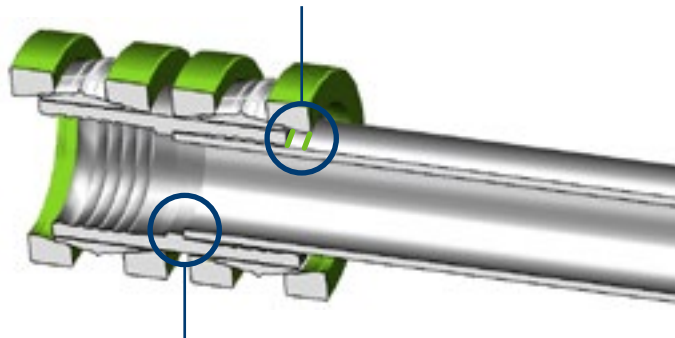
Manual SFT 4.1

9. Crimping Operation (2/2)

- 1 Place the coupling over the marked end of the tube until the rear marking is flush with the press ring.

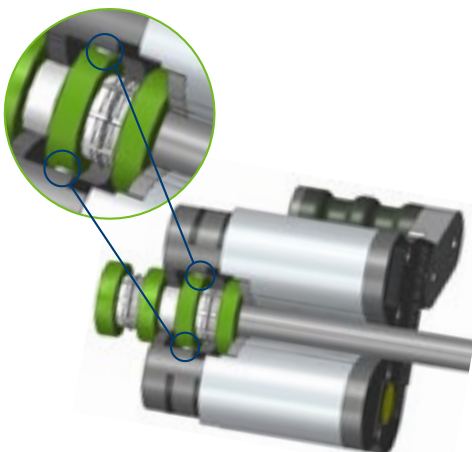


Flush with press ring outer edge.

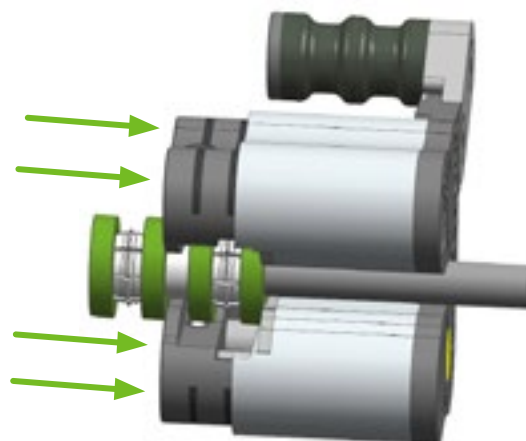


For sockets with internal web, push as far as it will go.

- 2 Place the press head around the fitting until it is fixed to the press ring by the ball clamp

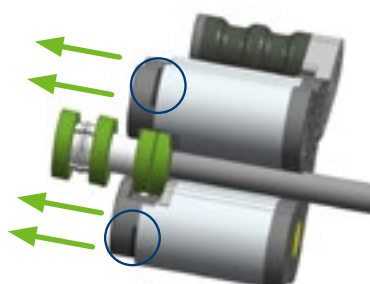


- 3 Now switch on the hydraulic pump. The SFT head moves downward into the SFT body

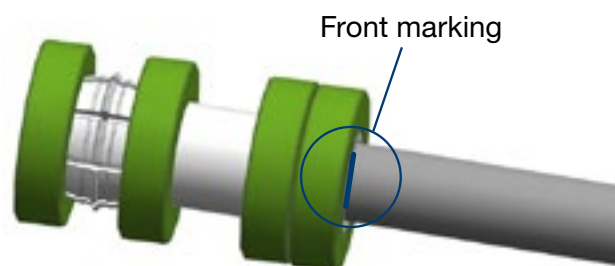


- 4 The pump must remain switched on until it switches itself off automatically.

The press process is finished when the marking of the position is at the same level like the steel body and the marking line **PRESSED** is reached.

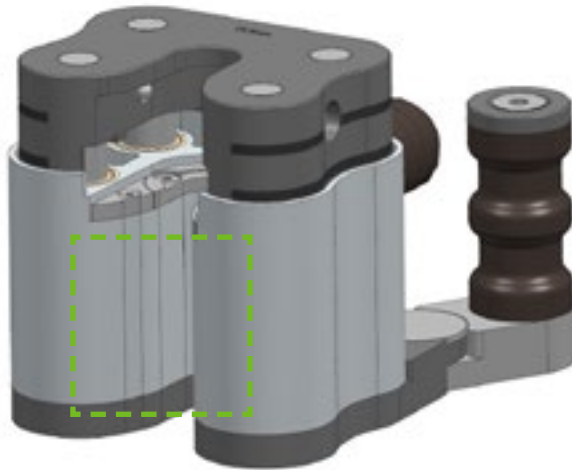


- 5 The press process was successful, if the front marking is flush with the press ring and the gap between the press rings is the same everywhere.

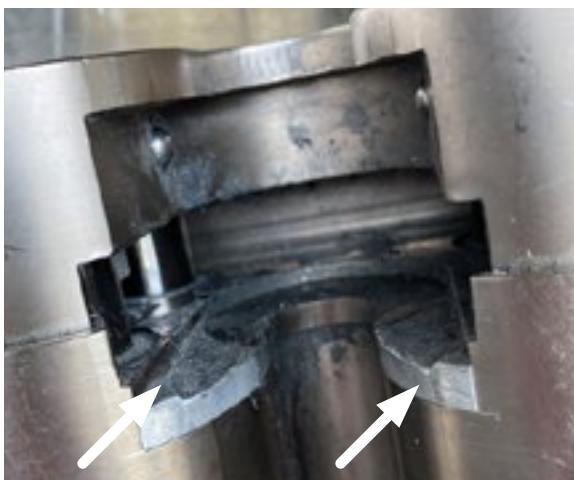
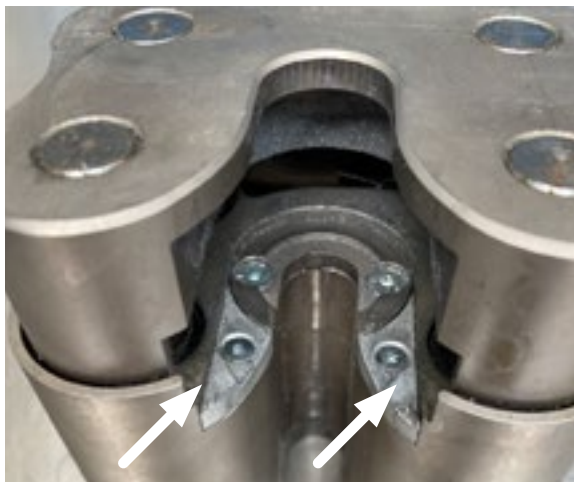


Manual SFT 4.1

10. Indicator in Case of Mishandling (1/2)

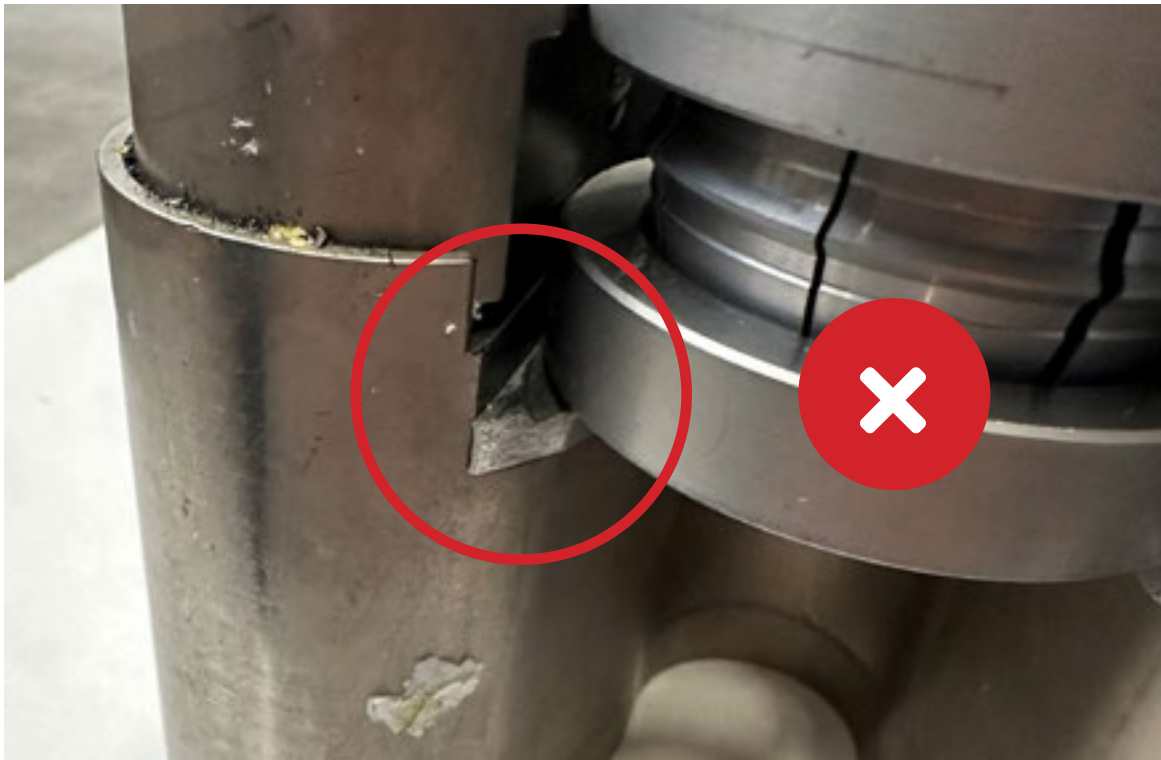
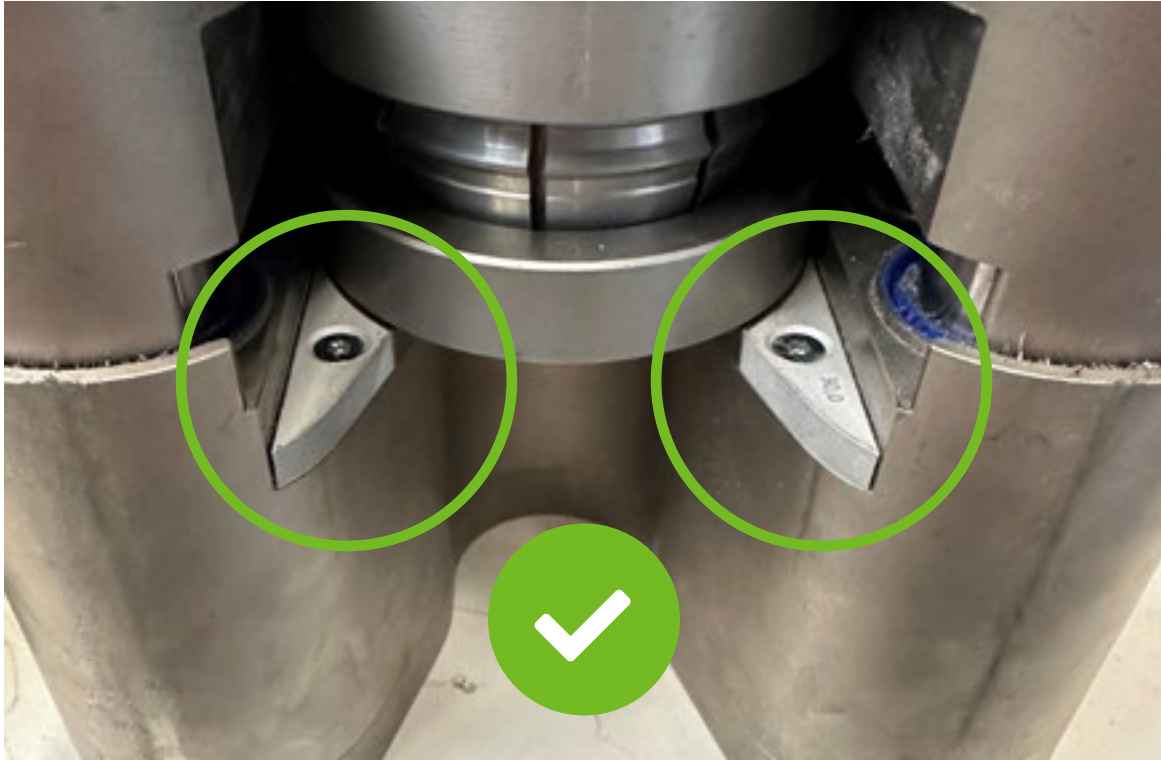


If this indicator shows destruction on the aluminum plates inside the tool, it is a clear sign for mishandling of the tool resulting in an invalid warranty. In order to avoid this issue, the press operation as described in the manual needs to be strictly followed. The fittings needs to be put in the correct position inside the tool until the press operation is done.
(see content 8. and 9.)

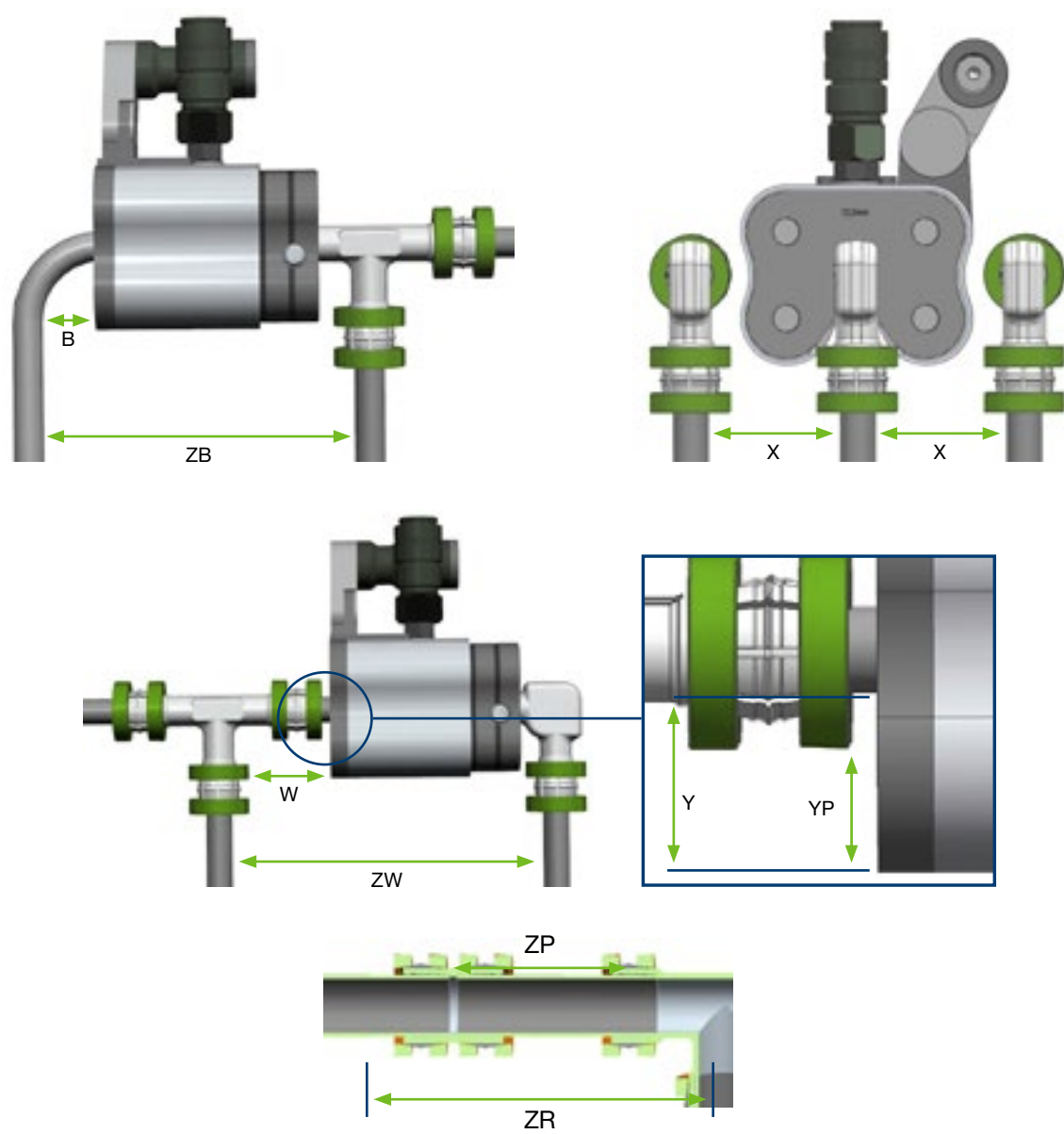


Manual SFT 4.1

11. Indicator in Case of Mishandling (2/2)



12. Space Requirements for Pipe Installation



D tube OD (mm)	B min. space to bend tube (mm)	ZB min. space to bend tube (mm)	X min. space between tubes (mm)	W min. space to tee (mm)	ZW min. space to angle (mm)	Y depth of tool (mm)	YP min. space Ring to wall (mm)	ZP min. space tool (mm)	ZR min. tube length (mm)
12.0	38	165	58	59	181	33.5	23.5	75	128
15.0	38	165	58	59	181	32	22	75	128

Manual SFT 4.1

13. Service and Maintenance

Ongoing

Before and after the crimping operation, there needs to be a visual inspection to check that the press head is free from any foreign objects.

Before each use, the press head inside and especially The coupling end nipple must be cleaned thoroughly with a clean cloth!

Daily

Clean the press head thoroughly.

FOR SERVICE PLEASE CONTACT: info@prefis-fittings.com

Installation Procedures

PreFiS® Swaging Tool Parts and Equipment

Please see PreFiS® Installation Manual for more in-depth information on installation procedures.

WARNING

THE TOOL IS TO BE OPERATED BY QUALIFIED TRAINED PERSONNEL ONLY. REFER TO PreFiS® INSTALLATION MANUAL FOR PROPER OPERATING METHODS AND SAFE PRACTICES. DUE TO HIGH SWAGING FORCES, THE TOOL MUST BE CLOSED BEFORE ADDING PRESSURE. MAXIMUM ALLOWABLE OPERATING PRESSURE MUST NOT EXCEED 10,000 PSI / 700 BAR.

WARNING

1. PreFiS® Tooling is intended for installing PreFiS® Fittings in a safe and efficient manner. The operation of the tooling by means of an external hydraulic supply to crimp the PreFiS® Fitting into place on matching tube or piping systems for a permanent, leak free, non-welded connection.
2. Select appropriate tools and Inserts for the right dimensions.
3. Check to ensure that the inserts are located properly within the Press tool.
4. Follow the above process when changing swage die sets for other sizes.
5. Used inserts are to be inspected for debris and cleaned if required. Clean with pressurized air, soft brush or hand cloth removing all debris within the tool slots and other surfaces.

Installation Procedures

Pipe Preparation - Special Notice

Carbon Steel Pipe with Surface Treatment

Special attention must be taken when using carbon steel pipe with surface applications including lacquer, paint, and other treatments. All surface treatments must be completely removed as per Pipe Preparation methods listed so that the sealing surface of the pipe is bare metal. If the sealing area is not cleared down to bare, smooth metal proper sealing of the PreFiS® fitting will be limited. Examples of improper pipe surfaces are as follows:

Surface Not Cleaned

**Lacquer Not Removed
From Pipe**

**Surface Properly Cleaned/
Bare Metal Surface**



Hot dip galvanized steel pipes can be used for steel pipes but must be in new condition.

Introduction
Technical Information
PreFiS® Series
PreFiS® Tooling
Manual SFT 1.4
Manual SFT 2.4
Manual SFT 4.1
Installation Procedures
Appendix

Installation Procedures

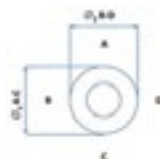
Do's and Don'ts

Participation in a technical workshop is required for the use of PreFiS® tools and fittings. Participation is confirmed by a certificate. This workshop can only be conducted by PreFiS®. Changes to this rule must be recorded in writing. PreFiS® accepts no liability for damage caused by improper use of PreFiS® tools or fittings.

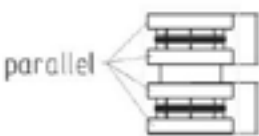
In the case of a defect in materials supplied by PreFiS®, this defect must be communicated immediately to the PreFiS® team at info@prefis-fittings.com.

In the case of a complaint, PreFiS® will provide a complaint report to be completed and returned to the PreFiS® team at info@prefis-fittings.com.

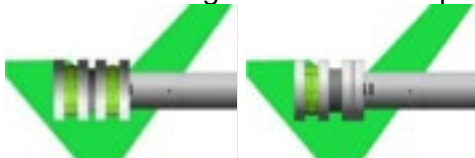
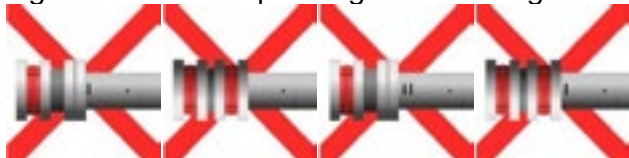
If you have any questions, please contact: info@prefis-fittings.com

DO's		DON'TS
Installation of PreFiS® fittings and tubes - by plumbers, sanitary fitters or similar AND - only after participation on the PreFiS® technical workshop and attestation by certificate		NO installation of PreFiS® fittings and tubes - Without proper training, e.g. plumber, sanitary fitter, or similar AND - without participation on the PreFiS® technical workshop; certificate not available
Testing the tubes before processing		
 An inspection must be carried out: The tube surface must not show any scores / scratches (> 0.1 mm) or dents on / at the tube. The tube surface must be clean. If necessary, the tube must be machined before processing.		Checking for scores / scratches / dents on or at the tube is not done properly.
Tube must fit into the fitting and may have a little slack.		Tube does not fit into the fitting.
Tube must be within dimensional specification.		Tube is not within specification e.g. out of round.
 Check the outside diameter with calliper at least 2 points crosswise.		Tube diameter is too large or too small.
Measuring as follows:		
Wall thickness 	Outer diameter 	

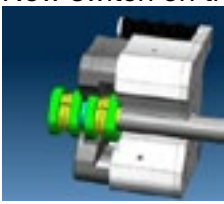
Installation Procedures

DO's		DON'TS	
Tube must not have rolled skin or rust. 	Only process tubes without paint or coating. 	Tube with rolled skin or grate must not be used. 	Tube must not have paint / coating. 
Preparing the tubes for the pressing process (see SFT 1-7 operating instructions for details)			
Maximum permissible cutting angle is 5°. Only use Band Saw suitable for the material. 		Tubes that have been cut with > 5° cutting angle must not be used 	
Tube must be deburred inside and outside 		Tubes are not deburred.	
The tube must be marked with a waterproof pen through the 3 slots in the marking tool before pressing.  		Tubes are not marked.	
Testing the fittings (see SFT 1-4 operating instructions for details)			
Visual inspection of the fittings.			
Only undamaged or complete fittings may be used.  		Damaged / incomplete fittings must be sorted out: - e.g. loose press rings / 1 ring missing - e.g. fall from a great height 	

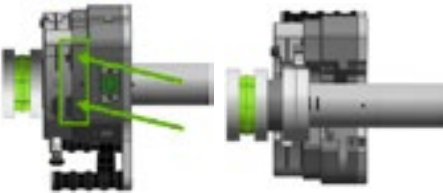
Installation Procedures

DO's		DON'TS	
Pressing			
Push the sleeve over the marked tube end until the rear marking is flush with the press ring.		Tube not flush with marking e.g. tube is not deep enough in the fitting	
			
Tubes are aligned		Tubes not aligned	
Handling of the press head (see SFT 1-4 operating instructions for details)			
Handle the press head properly		Do not drop the press head, hit it against the wall, or place it in water.	
			
Hold or carry the press head by the handles		Do not hold or carry the press head by the hydraulic hose	
			
Diameter of the press head or inserts must be equal to the fitting diameter. All inserts are marked with the diameter		Incorrect diameter of the press head or inserts.	
Labelling of the press head:			
Labelling fittings / press ring:			
			
Labelling of the inserts:			
			

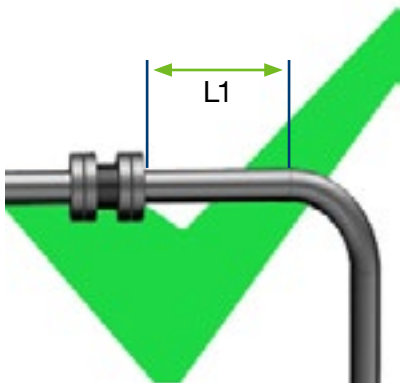
Installation Procedures

DO's	DON'TS
Handling of the closed pressing head SFT 1-3 during the pressing process. (see SFT 1-3 operating instructions for details)	
Place the press head around the sleeve and close it until the latch audibly engages. Check this operation. Press the locking button(on old version of tools) or insert pin. Now switch on the hydraulic pump. 	Closed press head (SFT 1-3) not locked during pressing process
Handling of the open press head during the pressing process. (see SFT 4 operating instructions for details)	
Press the press head over the sleeve until it audibly and tangibly engages and has a tight fit. Now switch on the hydraulic pump. 	Fitting not engaged in open press head.
Pump handling (see SFT 1-4 operating instructions for details)	
Observe the operating instructions of the manufacturer Klauke!	
Handle the pump properly.	Do not drop the pump, hit it against a wall, place it in water, or leave it unprotected against external mechanical impact. 
Conduct visual inspection of the hydraulic hose for external damage.	Hydraulic hose is damaged or leaking
Before commissioning, check that the hydraulic hose is securely connected. 	Hydraulic connection is not secured

Installation Procedures

DO's	DON'TS
Leave pump coupled during pressing process	Do not disconnect or change the pump during the pressing process, as the oil level can be brought above the maximum.
The pump must remain switched on until it switches itself off.	Do not stop pressing before automatic shutdown of the pump.
Testing before pressing	
First assemble and fix pipes, then perform press fitting.	Do not perform press fitting before all pipes are fixed.
Pipe supports or clamps must be at least 300 mm away from the fitting.	Pipe support / clamps are too close to the fitting and do not provide space for the press head.
Pressing process closed press head SFT 1-3 (see SFT 1-3 operating instructions for details)	
The pressing process is finished when the marking of the end position is at the same height as the aluminum body. When the initial position is reached, the press head may be opened. 	Do not open the press head during the pressing process or before the pump is switched off automatically.
The pressing process was successful when the front marking is flush with the pressing ring. 	The front marking is not flush with the press ring. Components must be removed and disposed of.
Pressing process open press head (see SFT 4 operating instructions for details)	
The pump must remain switched on until it switches itself off and releases the pressed fitting.	Do not stop pressing before automatic shutdown of the pump.
Hold the open press head firmly during the pressing process.	Do not pull the open press head from tube / fitting during pressing process.
The pressing process was successful when the front marking is flush with the pressing ring. 	The front marking is not flush with the press ring. Components must be removed and disposed of.

Installation Procedures

DO's		DON'TS	
After pressing			
No torsion (twisting / bending / pulling / jolting) on the tube and the fitting after pressing.		Avoid any torsion (twisting / bending / pulling / jolting) on the tube and the fitting after pressing. 	
No load / force effect on the tube and fitting in the pressed state.		Avoid any load / force effect on the tube and fitting in the pressed state. 	
Bending of the tube with minimum distance less than 5 times the diameter of the pipe. Tube is round after bending.		No bending of the tube with distance greater than 5 times the diameter of the pipe. Tube becomes out-of-round due to bending process.	
			
Pipe dimension (mm) OD x wall thickness	Minimum straight length L1 (mm)		
12.0	L 60.0		
15.0	L 75.0		
30.0	L 150.0		
38.0	L 190.0		
54	L 270.0		
60.3	L 301.5		
It is necessary to check whether expansion bends need to be installed.		No expansion bend installed; distance between expansion bends is too great.	

Appendix

PreFiS® Fittings GmbH Limited Warranty

PreFiS® Fittings GmbH WARRANTS ITS PRODUCTS TO BE FREE FROM VISIBLE DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FOLLOWING THE DATE OF DELIVERY TO THE ORIGINAL BUYER. THE WARRANTY EXTENDS ONLY TO THE ORIGINAL BUYER.

PreFiS® Fittings GmbH makes no warranty, express or implied, as to the merchantability or fitness for a particular purpose except as stated in this Warranty.

This Warranty shall be in lieu of any other Warranty, whether express or implied, by this Agreement or at law or in equity or by any statute or otherwise. The Buyer agrees that the foregoing shall be pleaded by **PreFiS® Fittings GmbH** as an estoppel in any action brought by the Buyer against **PreFiS® Fittings GmbH**.

The Buyer agrees that porosity or pin holes in steel may not be commercially detectable. Therefore, **PreFiS® Fittings GmbH** offers no warranty with respect to steel integrity and **PreFiS® Fittings GmbH** shall not be liable for any damages, claims, injuries or otherwise caused by or in any way related to steel integrity.

PreFiS® Fittings GmbH liability shall be limited to the repair or replacement of defective product(s) free of charge at the seller's sole option and discretion. **PreFiS® Fittings GmbH** reserves the right at its sole option and discretion to refund a portion or all of the purchase price paid by the Buyer in lieu of any other obligations **PreFiS® Fittings GmbH** has under this Warranty. In no event shall **PreFiS® Fittings GmbH** be liable for any incidental, consequential, general or special damage of any kind or nature whatsoever including but not limited to loss of profit arising out of any incident(s) involving the use or utilization of the product and/or system covered under this Warranty. In no event shall **PreFiS® Fittings GmbH** be liable for any personal injury or any special or general damages arising out of the personal injury of any kind or nature whatsoever.

PreFiS® Fittings GmbH shall not be liable under this Warranty or otherwise if damages to the product are caused as a result of any type of accident or in the event the product and/or system was subject to alteration, abuse, misuse, extraordinary use of any kind whatsoever, improper maintenance or operation or improper or unauthorized repair.

PreFiS® Fittings GmbH makes no warranty whatsoever as to any product and/or system covered by this Warranty which has been repaired or altered by anyone other than **PreFiS® Fittings GmbH** or authorized personnel.

PreFiS® Fittings GmbH neither assumes nor authorizes any person to assume for it any other liable in connection with the sale of such products and/or systems.

WARNING: Failure or improper selection or improper use of the products and/or systems described herein or related items can cause death, personal injury and property damage.

Also see the sales terms.





DISTRIBUTION HEADQUARTERS

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