Progressive lubrication systems

Product catalogue

LINCOLN

Content

PUB LS/P1 16964 EN · November 2017

This publication supersedes publication 442832.

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This catalogue contains the global range of SKF lubrication systems products. Please contact your local country sales or customer service organization for availability in your area.

Navigation

Oil and fluid grease

Grease

System accessories

SKF – the knowledge engineering company

From one simple but inspired solution to a misalignment problem in a textile mill in Sweden, and fifteen employees in 1907, SKF has grown to become a global industrial knowledge leader.
Over the years we have built on our expertise in bearings, extending it to seals, mechatronics, services and lubrication systems. Our knowledge network includes 46 000 employees, 15 000 distributor partners, offices in more than 130 countries, and a growing number of SKF Solution Factory sites around the world.

Research and development

We have hands-on experience in over forty industries, based on our employees' knowledge of real life conditions. In addition our world-leading experts and university partners who pioneer advanced theoretical research and development in areas including tribology, condition monitoring, asset management and bearing life theory. Our ongoing commitment to research and development helps us keep our customers at the forefront of their industries.

Meeting the toughest challenges

Our network of knowledge and experience along with our understanding of how our core technologies can be combined helps us create innovative solutions that meet the toughest of challenges. We work closely with our customers throughout the asset life cycle, helping them to profitably and responsibly grow their businesses.

Working for a sustainable future

Since 2005, SKF has worked to reduce the negative environmental impact from our own operations and those of our suppliers. Our continuing technology development introduced the SKF BeyondZero portfolio of products and services which improve efficiency and reduce energy losses, as well as enable new technologies harnessing wind, solar and ocean power. This combined approach helps reduce the environmental impact both in our own operations and in our customers'.

SKF Solution Factory makes SKF knowledge and manufacturing expertise available locally, to provide unique solutions and services to our customers.

Working with SKF IT and logistics systems and application experts, SKF Authorized Distributors deliver a valuable mix of product and application knowledge to customers worldwide.

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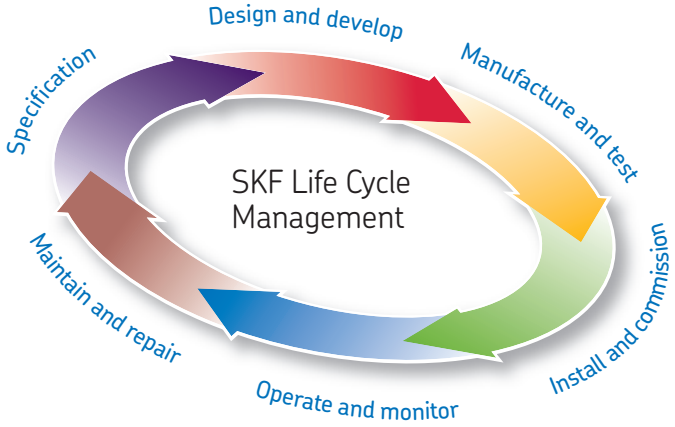
Our knowledge – your success

SKF Life Cycle Management is how we combine our technology platforms and advanced services, and apply them at each stage of the asset life cycle, to help our customers to be more successful, sustainable and profitable.



Working closely with you

Our objective is to help our customers improve productivity, minimize maintenance, achieve higher energy and resource efficiency, and optimize designs for long service life and reliability.

Innovative solutions

Whether the application is linear or rotary or a combination of the two, SKF engineers can work with you at each stage of the asset life cycle to improve machine performance by looking at the entire application. This approach doesn't just focus on individual components like bearings or seals. It looks at the whole application to see how each component interacts with the next.

Design optimization and verification

SKF can work with you to optimize current or new designs with proprietary 3-D modeling software that can also be used as a virtual test rig to confirm the integrity of the design.

Bearings
SKF is the world leader in the design, development and manufacture of high performance rolling bearings, plain bearings, bearing units and housings.

Machinery maintenance
Condition monitoring technologies and maintenance services from SKF can help minimize unplanned downtime, improve operational efficiency and reduce maintenance costs.

Sealing solutions
SKF offers standard seals and custom engineered sealing solutions to increase uptime, improve machine reliability, reduce friction and power losses, and extend lubricant life.

Mechatronics
SKF fly-by-wire systems for aircraft and drive-by-wire systems for off-road, agricultural and forklift applications replace heavy, grease or oil consuming mechanical and hydraulic systems.

Lubrication solutions
From specialized lubricants to state-of-the-art lubrication systems and lubrication management services, lubrication solutions from SKF can help to reduce lubrication related downtime and lubricant consumption.

Actuation and motion control
With a wide assortment of products – from actuators and ball screws to profile rail guides – SKF can work with you to solve your most pressing linear system challenges.

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Two leading brands

Oil and fluid grease

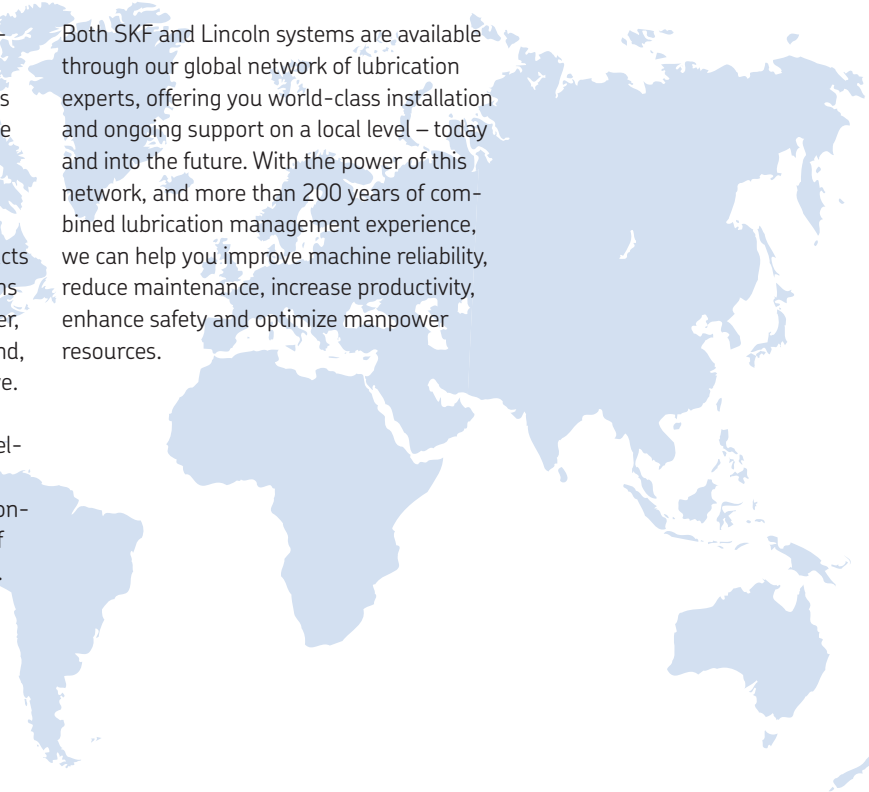
Grease

One global leader

SKF and Lincoln have joined forces to provide you with the world's most complete portfolio of innovative lubrication solutions – from manual lubricators and tools, to the most advanced centralized and automatic lubrication systems available.

In addition to traditional lubrication products and systems, we offer customized solutions for many industries such as pulp and paper, steel, mining, agriculture, marine, rail, wind, construction, machine tool and automotive. SKF engineering and technical specialists partner with OEMs and end-users to develop system solutions based on customer requirements. We also offer a variety of control and monitoring equipment for ease of use and to help ensure proper lubrication.

Both SKF and Lincoln systems are available through our global network of lubrication experts, offering you world-class installation and ongoing support on a local level – today and into the future. With the power of this network, and more than 200 years of combined lubrication management experience, we can help you improve machine reliability, reduce maintenance, increase productivity, enhance safety and optimize manpower resources.



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Classification of lubricants

Oil and fluid grease

The viscosity is an expression of a fluid's internal friction. Oils are classified in ISO VG viscosity classes from 2 to 3 200. NLGI grade 000, 00 and 0 greases are called fluid greases.

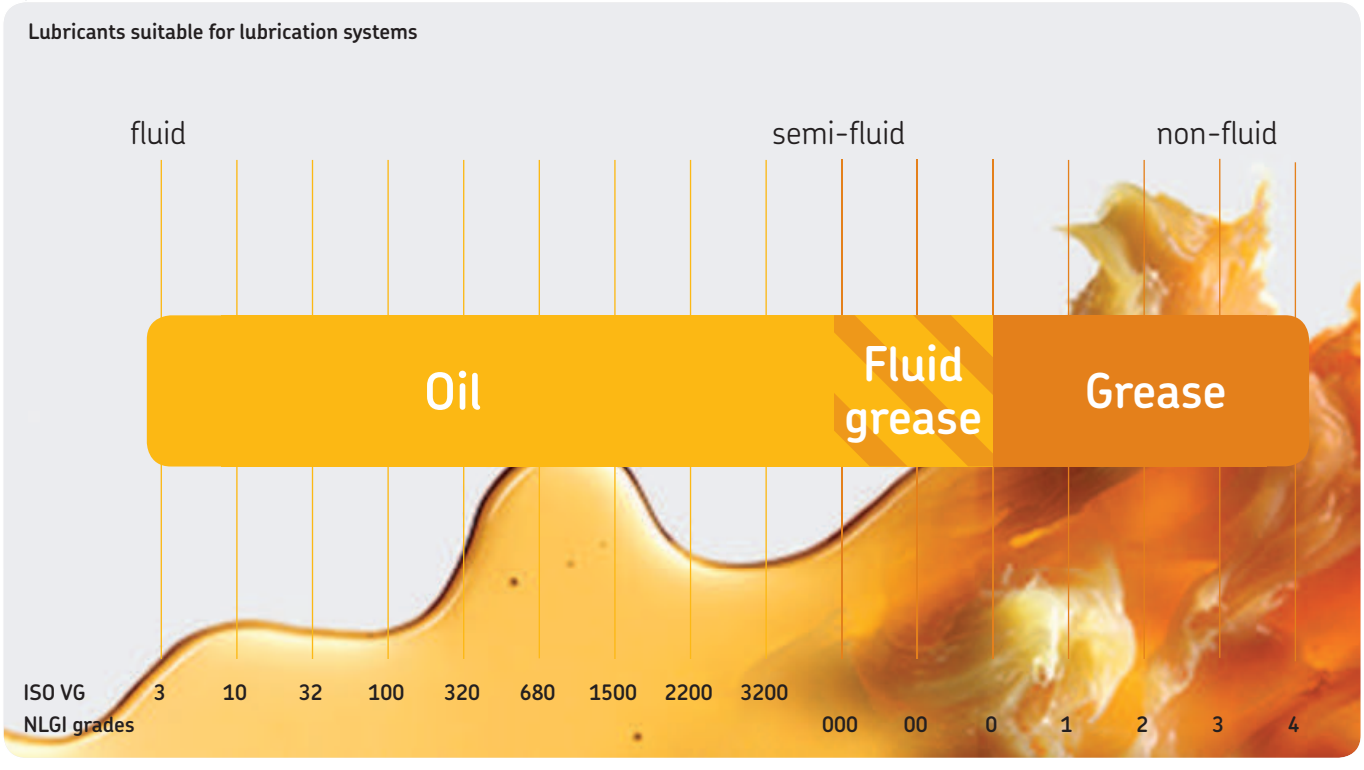
Different types of oils are available, including mineral oils, organic oils and synthetic oils. A compatibility check is recommended prior to using any oil with SKF lubrication systems.

Grease

Greases are consistent lubricants (NLGI grade 1–6). They are soft to hard, triple-component mixtures of a base oil as the lubricating fluid, a thickening agent and additives.

In most instances, greases of NLGI grade 1 up to 3 are suitable for use in a lubrication system. A compatibility check should be made prior to using any grease with SKF lubrication systems.

Lubricants suitable for lubrication systems



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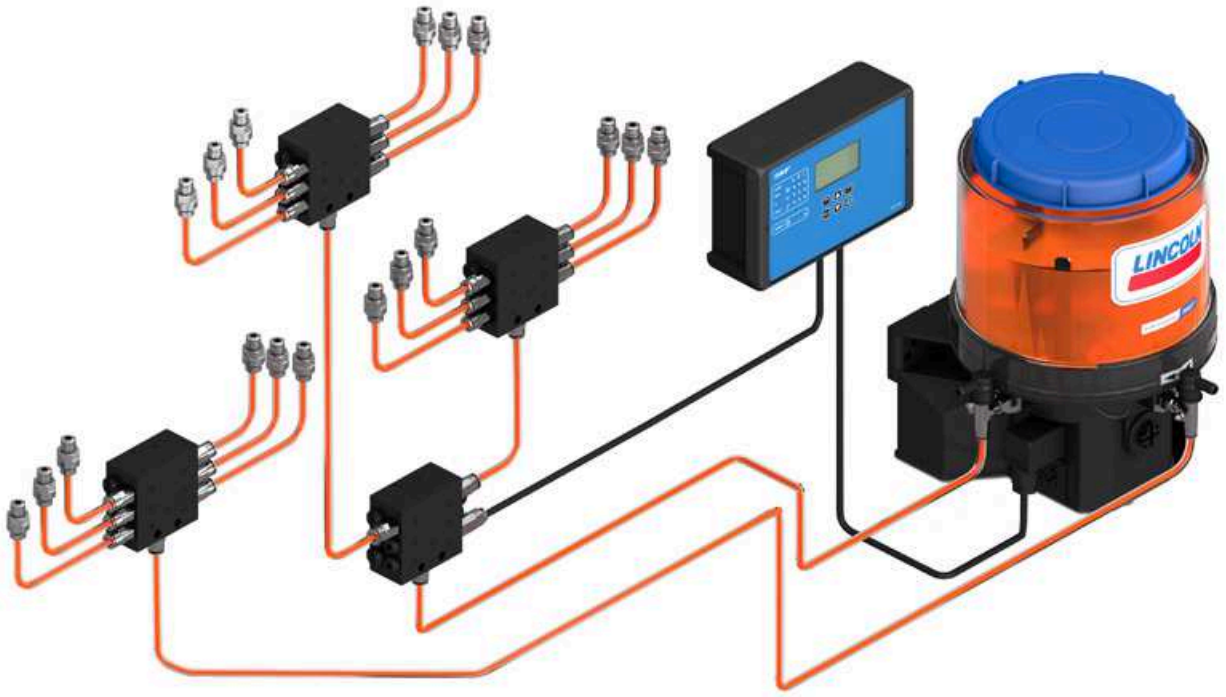
Progressive lubrication systems for oil, fluid grease and grease



System description

SKF progressive systems, SKF ProFlex and Lincoln Quicklub, can be used on small- to medium sized machines with dispersed lubrication points that require varying lubrication quantities.

Progressive systems consist of a pump connected to at least one primary metering device. If needed, second level metering devices can be connected to the outlets of the primary metering device to increase the number of lubricated points, depending on operating pressure of the pump. The outlets of the primary and second level metering devices are connected via branch lines to the lubrication points of the machine. A third level of metering devices is not recommended. The pump supplies lubricant to the metering devices with pressure up to 550 bar *(8 000 psi)*, depending on the pump model.

The metering devices split the lubricant into even or predefined amounts of lubricant, depending on metering device, that are positively displaced to the lubrication points or to the inlet of a connected secondary metering device. The lubricant amount provided by each outlet of the metering device depends on the type of metering device being used. SKF offers progressive systems that can dispense a precise, metered amount of lubricant to up to 150 lubrication points over distances of approximately 15 m *(16 yd)*, depending on case values. For oil applications, even in connection with flow limiters we can cover distances over 100 m *(110 yd)*, see also our portfolio brochure Oil Circulation Systems. SKF progressive systems provide continuous lubrication as long as the pump is in operation. Once the pump stops, the pistons of the progressive metering device will stop in their current positions. When the pump starts supplying lubricant again, the pistons will carry on where they left. Therefore, the progressive circuit of one outlet of the pump will stop when only one lubrication point is blocked. The blockage serves as a means of control and forces personnel to service the system. Only one outlet of a primary or a secondary metering device of one pump outlet can be monitored visually or electrically, depending on the chosen metering device.

For planning a lubrication system, conditions the system will be used in need to be determined first. The number of lube points, back pressures at the lube points, operating temperature range, lubricant, the feed pump's drive energy, control and monitoring etc. need to be defined correctly. Attention to information on bearing or lube point information need to be paid too. The sum of all the quantities metered out by the system's metering devices needs to be completed by safety margin and expansion and compressibility loss. SKF application engineers as well as SKF sales partners and distributors are experts in systems laying out lubrication according to all these specifications. A lubrication system layed out by SKF and partners ensures the supply of the correct amount of lubricant at the best time to lubricate. This reduces wear and it avoids pollution caused by over-lubrication.

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Systems and applications

Applications

The systems are suitable for a variety of applications including: construction machines (concrete pumps, mortar pumps, loaders, excavators, trenchers); on-road trucks (snow removal, waste press); buses; agricultural machines (harvesters, balers, manure spreaders, sugar cane loaders); wood reclaimers; and material handling (reach stackers, crane carts). In addition, progressive lubrication systems are suitable for use in asphalt mixing plants, wind turbine generators and food and beverage facilities (fillers, washing machines), reciprocating compressors in the Oil & Gas industry, among many others.

SKF progressive systems are reliable and operate effectively in harsh conditions (inclusive ATEX) with potentially high lubrication-point back pressure, dirty, wet or humid environments and low temperatures.

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P 203

KFG

KFA

QLS 301

QLS 401

QLS 421

Grease

Pumps and pump units

P 502

P 223 / P 233

P 603 M

ZPU 01/02

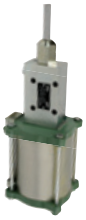
EDL1

PPU-5 / PP-35

87214

87216

872.. / 130179



PP / PPG

PFP-23-2 /
PFP-23-22

EPB

PUB LS/P1 16964 EN

Overview of grease pumps and pump units

Electrically operated pumps and pump units [1)]

Product	Metering quantity per pump element		Reservoir		Operation pressure max.		Page
	cm³/min	*in³/min*	l	*gal*	bar	*psi*	
P 203	0,7–4,0	*0.042–0.244*	2–15	*0.53–4.0*	350	*5 075*	14
KFG	0,8–5,0	*0.049–0.305*	2–20	*0.53–5.28*	300	*4 350*	16
KFA	1,0–2,0	*0.061–0.122*	1	*0.26*	300	*4 350*	18
QLS 301 SSV	1,0	*0.06*	1	*0.26*	205	*3 000*	20
QLS 401 SSV	1,0	*0.06*	1–2	*0.26– 0.53*	205	*3 000*	22
QLS 401 SSVDV	1,0	*0.06*	1–2	*0.26– 0.53*	205	*3 000*	24
QLS 421	1,0	*0.06*	1–2	*0.26– 0.53*	205	*3 000*	27
P 502	1,0–2,4	*0.06–0.15*	1	*0.26*	270	*4 000*	28
P 223 / P 233	0,7–4,0	*0.042–0.244*	2–15	*0.53–4.0*	350	*5 075*	30
P 603M	4,0–12,0	*0.24–0.73*	4–20	*1.05–5.28*	350	*5 075*	32
ZPU 01 / 02	13,3–53,3	*0.83–3.25*	10–30	*2–8*	350	*5 075*	34

[1)] These pumps are recommended by SKF for the use in grease progressive lubrication systems but can be used in many cases also with oil progressive lubrication systems. For further details please see the technical data information shown on the specific product pages.

Electrically operated pressure booster pumps [1)]

Product	Metering quantity per pump element		Reservoir		Operation pressure max.		Page
	cm³/min	*in³/min*	l	*gal*	bar	*psi*	
EDL1	0,5–1,0	*0.03–0.06*	–	–	280	*4 015*	36

[1)] These pumps are recommended by SKF for the use in grease progressive lubrication systems but can be used in many cases also with oil progressive lubrication systems. For further details please see the technical data information shown on the specific product pages.

Air-operated pumps and pump units [1)]

Product	Metering quantity		Reservoir		Operation pressure		Page
	cm³/ stroke	*in³/ stroke*	l	*gal*	bar	*psi*	
PPU-5	0,10–0,50	*0.006–0.030*	2,5; 5,0	*0.66; 1.32*	160	*2 320*	38
PPU-35	0,70–3,50	*0.042–0.210*	2,5; 5,0	*0.66; 1.32*	160	*2 320*	38
87214	0,164–0,98	*0.01–0.06*	–	–	4–14	*60–200*	40
87216	0,01–0,05	*0.01–0.05*	–	–	–	–	42
87200	0,41-0,164	*0.025–0.10*	–	–	–	–	42
PPG	0,2	*0.012*	0,4; 1,5	*0.1; 0.4*	250–300	*3 630–4 350*	44
PP	2,6	*0.16*	1,5	*0.4*	250–300	*3 630–4 350*	44
PFP-23-22	1,25 /port	*0.076 /port*	1,5	*0.4*	190	*2 755*	46
PFP-23-2	2,50 /port	*0.150 /port*	1,5	*0.4*	190	*2 755*	46
130179	4,10–16,39	*0.25–1.0*	–	–	–	–	42
	cm³/ cycle	*in³/ cycle*	kg	*lbs*	bar	*psi*	
EPB	6,10	*0.37*	18; 50; 180	*40; 110; 400*	390	*5 655*	48

[1)] These pumps are recommended by SKF for the use in grease progressive lubrication systems but can be used in many cases also with oil progressive lubrication systems. For further details please see the technical data information shown on the specific product pages.

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Progressive lubrication systems

87212

87202

PHU-35

PFH-23-2 / -22

HP/HPG

HP-500W/HP-500-SSV

PF-VPBM/169-000-146

HJ 2

PF-23-2

PUB LS/P1 16964 EN

Overview of grease pumps and pump units

Hydraulically operated pumps and pump units [1)]

Product	Metering quantity		Reservoir		Operation pressure max.		Page
	cm³/stroke/..	*in³/stroke/..*	l	*gal*	bar	*psi*	
87212	0,164–0,98	*0.01–0.06*	–	–	14–68	*200–1 000*	50
87202	0,41–1,64	*0.025–0.10*	–	–	20–138	*275–2 000*	52
PHU-5	0,1–0,5	*0.006–0.030*	2,5; 5,0	*0.66; 1.32*	160	*2 320*	54
PHU-35	0,7–3,5	*0.042–0.210*	2,5; 5,0	*0.66; 1.32*	160	*2 320*	54
PFH-23-22	1,25 /port	*0.076 /port*	1,5	*0.4*	190	*2 755*	56
PFH-23-2	2,50 /port	*0.150 /port*	1,5	*0.4*	190	*2 755*	56

[1)] These pumps are recommended by SKF for the use in grease progressive lubrication systems but can be used in many cases also with oil progressive lubrication systems. For further details please see the technical data information shown on the specific product pages.

Manually operated pumps and pumps units [1)]

Product	Metering quantity		Reservoir		Operation pressure max.		Page
	cm³/stroke	*in³/stroke*			bar	*psi*	
HP / HPG	0,2; 1,6 /SSV outlet	*0.012; 0.098 /SSV outlet*	0,4–1,5 l	*0.11–0.4 gal*	250–400	*3 625–5 800*	58
HP-500-SSV	0,2 /SSV outlet	*0.012 /SSV outlet*	0,4–0,5 l	*0.11–0.13 gal*	400	*5 800*	60
HP-500W	1,5	*0.09*	0,4–0,5 l	*0.11–0.13 gal*	400	*5 800*	60
169-000-146	0,2; 2,0 /VPBM outlet	*0.012; 0.12 /VPBM outlet*	450 cm³	*27.46 in³*	400	*5 800*	62
PF-VPBM	2,0	*0.12*	450 cm³	*27.46 in³*	400	*5 800*	62
HJ 2	1–2	*0.06–0.12*	3 l	*0.79 gal*	300	*4 350*	64
PF-23-22	1,25	*0.076*	1,5 l	*0.4 gal*	100	*1 450*	66
PF-23-2	2,5	*0.15*	1,5 l	*0.4 gal*	100	*1 450*	66

[1)] These pumps are recommended by SKF for the use in grease progressive lubrication systems but can be used in many cases also with oil progressive lubrication systems. For further details please see the technical data information shown on the specific product pages.

PUB LS/P1 16964 EN

P 203

Product description

The P 203 lubrication pump is versatile, compact and economical and can supply up to 150 lubrication points, depending on the line length. It consists of a housing with integrated motor, reservoir with stirring paddle, pump element with pressure-relief valve, filling nipple and electrical connection parts. This powerful pump can drive up to three pump elements and can be equipped with a low-level control (with or without control board).

Features and benefits

- Optional control printed circuit boards with different operating settings
- Range of reservoir types offered
- For DC or AC applications
- Variety of pumping elements for different output available

Applications

- Mobile applications
- Wheel loaders
- Excavators
- Small- and medium-sized machinery
- General industries
- Combines, balers, forage harvesters

Technical data

Function principle	electrical piston pump
Operating temperature	V DC version: –40 to +70 °C; *–40 to +158 °F* V AC version: –25 to +70 °C; *–13 to +158 °F*
Operating pressure	350 bar; *5 075 psi*
Lubricant	grease: up to NLGI 2 oil: with min. 40 mm²/s
Outlets	up to 3
Metering quantity	depending on pump element: 0,7-4,0 cm³/min per outlet *0.042-0.244 in³/min per outlet*
Reservoir	2; 4; 8 and 15 l *0.53, 1.05, 2.11 and 3.96 gal*
Connection main line	G $^1/_4$
Operating voltage	12/24 V DC, 110-260 V AC; 50/60 Hz
Dimensions	min. 211 × 224 × 287 mm *min. 8.31 × 8.82 × 11.29 in* max. 211 × 250 × 774 mm *max. 8.31 × 9.84 × 30.47 in*
Protection class	IP6K9K
Mounting position	upright, with follower plate any

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
12401 EN

PUB LS/P1 16964 EN

P 203

Order number configurator

P203 – [ ][ ] – [1][2][3] – [ ] – [ ][ ] • [ ] – [ ]

Product series

P 203 = with 1-3 outlets and V DC motor

Reservoir size

2 = 2 l; *0.52 gal*
4 = 4 l; *1.06 gal*
8 = 8 l; *2.11 gal*
15 = 15 l; *3.96 gal*

Reservoir type [1]

XN = closed, 2, 4 or 8 l; *0.52; 1.06, 2.11 gal*
XNFL = flat, 2 l; *0.52 gal*
XNBO = with lid, 2, 4, 8 or 15 l; *0.52; 1.06, 2.11 or 3.96 gal*
XL = low-level control, 2, 4 or 8 l; *0.52; 1.06, 2.11 gal*
XBF = high-/low-level control, follower plate, 4; 8 or 15 l; *1.06, 2.11 or 3.96 gal*
XLBO = low-level control, with lid; 2, 4, 8 or 15 l; *0.52; 1.06, 2.11 or 3.96 gal*
YLBO = for oil, low-level control, with lid; 4 or 8 l; *1.06 or 2.11 gal*
YNBO = for oil, with lid, 4, 8 or 15 l; *1.06, 2.11 or 3.96 gal*

Pump elements 1-3 (choose codes for max. 3 pump elements)

. = no pump element
1K5 = 2,0 cm³/min; *0.12 in³/min*; piston ø5 mm
1K6 = 2,8 cm³/min; *0.17 in³/min*; piston ø6 mm
1K7 = 4,0 cm³/min; *0.24 in³/min*: piston ø7 mm, with bypass bore
1KR = adjustable 0,7-3,0 cm³/min, *0.042-0.18 in³/min*, piston ø7 mm
1B7 = 2,0 cm³/min; *0.12 in³/min*; piston ø7 mm, with bypass-check valve
1C7 = 4,0 cm³/min; *0.24 in³/min*; piston ø7 mm [2]

Operating voltage

12 = 12 V DC, with square plug, bayonet plug or M12 plug
24 = 24 V DC, with square plug, bayonet plug or M12 plug
AC = 110–260 V AC, ±10%, 50/60 Hz ±5%, with square plug [3]

Number of possible connections

1A = 1 connection, supply voltage V DC, V AC [3]
1A: power supply V AC, square plug only, left bottom
1A: power supply V DC, left up
2A = 2 connections [4]
1 A: power supply V AC, square plug only, bottom left, V DC
2 A: illuminated pushbutton, low-level control or piston detector, see below piston detector
3A = 3 connections [3]
1 A: power supply V AC, square plug only, bottom left, V AC [3]
2 A: illuminated pushbutton, low-level control bayonett plug, left top
3 A: piston detector, bayonet plug, right top

Type of connection

1 = square plug, power supply. DIN 43650
2 = M12 plug
5 = bayonet plug, 4/3 pole design, DIN 72585-1
6 = bayonet plug 7/5 pole design, M08-M23
7 = bayonet plug 7/6 pole design, V10-V13, V20-V23
8 = PG cable gland

Connection outside of pump

01 = without socket, without cable
10 = connection socket, with cable (10 m; *33 ft*)
11 = connection socket, ADR cable (10 m; *33 ft*)
13 = bayonet socket with cable (10 m; *33 ft*), 7/5-core, M08-M23
14 = bayonet socket with cable (10 m; *33 ft*), 4/3-core
15 = bayonet socket with cable (10 m; *33 ft*), 7/5-core
16 = bayonet socket with cable (10 m; *33 ft*), 7/6-core

Control P.C.B. (keep field empty if not applicable)

V10 - V13 = with variably adjustable pause and lubricating time, (V20-V23 for US market)
V10 - V13-ADR = with variably adjustable pause and lubricating time [5]
M08 - M23 = with microprocessor control (different setting variants, monitored systems)
H = for trailers and semi-trailers
H-ADR = for trailers and semi-trailers [5]

[1] the high-/low-level control can not be combined with the integrated control P.C.B.
[2] designation for pump elements for supplying of paste for chisel (c=chisel)
[3] equipment described in seperate documentation
[4] no connection provided for low-level control for oil and 2A: with illuminated pushbutton only
[5] for transport of hazard materials

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KFG

Product description

The electrically operated KFG pump includes a drive shaft with an eccentric that drives up to three pump elements. It is comprised of four main components: housing with pump elements, reservoir with fill-level monitoring, internal control units and attachments. The pump is available in eight sizes and two variants for stationary use or with grease follower plate technology for utilization in any position. A variety of attachments permit reservoir filling, protect the pump (pressure-limitation valve) or enable the uncomplicated connection of the pump to a centralized lubrication system.

Features and benefits

- Durable and reliable components designed for extreme conditions (with positively driven pump elements)
- Versatile; can be used with single-line and progressive systems
- Fill-level and lubrication system monitoring
- Pin code protection of control unit available

Applications

- On- and off-road vehicles
- Renewable energy
- Industrial applications

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
12649 EN; 951-170-211; 951-170-212; 951-170-213

3D data and product configuration:
skf-lubrication.partcommunity.com/3d-cad-models/

Technical data

Function principle	electrically operated piston pump
Operating temperature	-30 to +70 °C; *-22 to +158 °F* depending on type of pump element
Operating pressure	200 to 300 bar; *2 900 to 4 350 psi* depending on type and size of pump element
Lubricant	grease NLGI 000 to 2, compatible with plastics, NBR elastomers, copper and copper alloys
Outlets	up to 3
Metering quantity	per pump element: 0,8; 1,3; 1,8; 2,5; 5,0 cm^3/min *0.049, 0.079, 0.11, 0.15, 0.31 in^3/min*
Reservoir	2; 4; 6; 8; 10; 12; 15 and 20 kg *4.4, 8.8, 13.2, 17.6, 22, 26.5, 33 and 44 lbs*
Material	
pump housing	aluminum-silicon cast alloy
reservoir	2; 6 kg; *4.4, 13.2 lbs*: Polyamide PA 6I 4; 8; 10; 12; 15; 20 kg; *8.8, 17.6, 22, 26.5, 33, 44 lbs*: PMMA
Connection	outlet pump element: M 14×1,5 female thread
Power supply	12 V DC, 24 V DC, 230 or or 90 to 264 V AC; (± 10%)
Dimensions	min. 266×208×229 mm *min. 10.47×8.19×9.01 in* max. 268×227×1,170 mm *max. 10.55×8.93×46.06 in*
Protection class	IP56
Mounting position	
with follower plate	any, installation possible also in rotating machines, e.g. wind turbines
without follower plate	upright

PUB LS/P1 16964 EN

KFG

Order number configurator

KFG [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] + [ ] [ ] [ ]

1 2 3

Product series

Integrated control unit

X = no control unit **S** = IG502-2-I
L = LC502 **C** = CAN bus

Reservoir

1 = 2 kg, *4.4 lbs* [1]
2 = 4 kg, *8.8 lbs* [2]
3 = 6 kg, *13.2 lbs*
4 = 8 kg , *17.6 lbs* [2]

Range of application

R = rotary application
M = industry application
F = vehicle application

Filling

X = without lubricant, not available for rotary application version
A = grease NLGI 2 for vehicles, not for capacitive fill level monitor
F = customized grease

Fill level monitor

X = without fill level monitor
1 = mechanical level monitor [1]
2 = mechanical level monitor with signal smoothing (only available for KFGX) [1]
3 = capacitive level monitor,
only available for industry version with 2 and 6 kg reservoir and NLGI ≤ 2
4 = cylinder switch level monitor [2]

Pump element or filler socket

Spring return piston pump [3]
X = no pump element
D = 0,8 cm³/min; *0.05 in³/min*
C = 1,3 cm³/min; *0.08 in³/min*
B = 1,8 cm³/min; *0.10 in³/min*
A = 2,5 cm³/min; *0.15 in³/min*
E = 5,0 cm³/min; *0.30 in³/min*
W = socket for filling cylinder [1]

Positively driven piston pump [4]
Y = no pump element
J = 1,3 cm³/min; *0.08 in³/min*
H = 1,8 cm³/min; *0.10 in³/min*
G = 2,5 cm³/min; *0.15 in³/min*
L = 5,0 cm³/min; *0.30 in³/min*
V = socket for filling cylinder [1]

Fitting for main line connection and valves

X = without attachments (with M 14 × 1,5 mm female thread)
B = without attachments (with G $^1/_4$ female thread)
C = solderless pipe union for ø 6 mm tubes
D = solderless pipe union for ø 8 mm tubes
E = solderless pipe union for ø 10 mm tubes
F - P = with pressure relief valve
F = 300 bar; *4 850 psi*, with SKF Quick Connector for ø 6 mm tubes [5]
G = 300 bar; *4 850 psi*, with solderless pipe union for ø G $^1/_4$ tubes [5]
H = 300 bar; *4 850 psi*, with solderless pipe union ø 6 mm tubes [5]
J = 300 bar; *4 850 psi*, with solderless pipe union ø 8 mm tubes [5]
K = 300 bar; *4 850 psi*, with solderless pipe union ø 10 mm tubes [5]
L = 300 bar; *4 850 psi*, with SKF Quick Connector for ø 8 mm tubes [5]
M = 200 bar; *2 900 psi*, with solderless pipe union for ø 8 mm tubes
N = 200 bar; *2 900 psi*, with solderless pipe union for ø 10 mm tubes
O = 200 bar; *2 900 psi*, with solderless pipe union for ø 12 mm tubes
P = 200 bar; *2 900 psi*, with SKF Quick Connector for ø 8 mm tubes

Pump cycle/interval time

99 = none

EB/EO = 4 min. runtime / 1 h interval time (IG502-2-I/LC502) [6]

Operating voltage

912 = 12 V DC, only available for vehicle application version
924 = 24 V DC

486 = 90–264 V AC, not available for vehicle application version

[1] not available for rotary application version
[2] only available for rotary application version
[3] operating pressure 300 bar for spring return pump (200 bar for pump element E)
[4] operating pressure 350 bar for positively driven pump (250 bar for pump element L)
[5] F,G,H,J,K,L: not for pump element E and L
[6] factory setting, other settings available

PUB LS/P1 16964 EN

KFA

Product description

KFA series pumps include a maximum of two outlet ports to connect two independent lubrication circuits. A separate pump element is required for each outlet. Three pump elements with different delivery rates are available so that the volume of grease can be adjusted to individual circuit needs. This ensures that every lubrication point is supplied with an adequate amount of grease in each lubrication cycle. Model KFAS has an integrated IG502-2-1 control and monitoring unit that operates in a time- or load- (pulse) dependent mode, with or without monitoring.

Features and benefits

Integrated control system provides:

- Non-volatile memory with PIN-code protection
- Storage of residual interval, lubricating cycle and faults signals
- Saved data in event of a power failure
- Connection for external pushbutton and inductive cycle switch
- Interval and contact times can be set independently
- Fits in tight/small places

Applications

- Commercial vehicles
- 230 V AC models for industrial applications
- Machine tools
- Printing industry

Technical data

Function principle	electrically operated piston pump
Operating temperature	-25 to +75 °C *-13 to +167 °F*
Operating pressure	300 bar; *4 350 psi*
Lubricant	grease up to NLGI 2
Outlets	1 to 2
Metering quantity	1,0; 1,5; 2,0 cm^3/min *0.061; 0.092; 0.122 in^3/min*
Reservoir	1 l; *0.26 gal*
Connection main line	M 14×1.5
Operating voltage	12 and 24 V DC; 115 and 230 V AC; (± 10%)
Protection class	IP 6K9K
Dimensions	216 × 150 × 234,5 mm *8.1 × 5.9 × 9.2 in*
Mounting position	upright

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
951-170-008, 1-9430-EN

PUB LS/P1 16964 EN

KFA

KFA pump unit

Order number	Designation applications	Monitoring level monitoring	cycle switch	Control unit extern	integrated	12 V DC	24 V DC	115 V AC	230 V AC
KFA1 912	vehicles	–	–	•	–	•	–	–	–
KFA1 924	vehicles	–	–	•	–	–	•	–	–
KFA1-W 912	vehicles	•	–	•	–	•	–	–	–
KFA1-W 924	vehicles	•	–	•	–	–	•	–	–
KFAS1 912	vehicles	–	–	–	•	•	–	–	–
KFAS1 924	vehicles	–	–	–	•	–	•	–	–
KFAS1-W 912	vehicles	•	–	–	•	•	–	–	–
KFAS1-W 924	vehicles	•	–	–	•	–	•	–	–
KFA1-M 924	industry	–	–	•	–	–	–	–	–
KFA1-M-W 924	industry	•	–	•	–	–	•	–	–
KFAS1-M 924	industry	–	–	–	•	–	•	–	–
KFAS1-M-Z 924	industry	–	•	–	•	–	•	–	–
KFAS1-M-W 924	industry	•	–	–	•	–	•	–	–
KFAS1-M-W-Z 924	industry	•	•	–	•	–	•	–	–
KFA10 263	industry	–	–	•	–	–	–	–	•
KFA10-W 263	industry	•	–	•	–	–	–	–	•
KFAS10 485	industry	–	–	–	•	–	–	•	–
KFAS10-W 485	industry	•	–	–	•	–	–	•	–

[1] only pump; pump elements need to be ordered separatly

Accessories

Cable kits, pump elements

Cable kits

Order number	Designation
997-000-820	cable kit for pump KFA1, square type
997-000-630	cable kit bayonet for pump KFAS1 and KFAS1-W, 7-pins, (12 m, *39 ft*)
997-000-650	cable kit bayonet for pump KFAS1 and KFAS1-W, 7-pins, (16 m, *52 ft*)

KFA1.U1

KFA pump elements

Order number	Designation	Metering quantity	
		cm^3/min	in^3/min
KFA1.U1	pump element	2,00	*0.122*
KFA1.U2	pump element	1,50	*0.092*
KFA1.U3	pump element	1,00	*0.061*

PUB LS/P1 16964 EN

QLS 301 SSV

Product description

The Quicklub QLS 301 is a compact lubrication system designed to supply grease. The system package includes all necessary monitoring and control functions, as well as low-level control and a pressure-relief valve. Outlet connections and standard-pressure plastic tubing must be ordered separately. Up to 18 lubrication points can be supplied and monitored directly from the pump, and its reservoir features a follower plate, enabling rotating applications. The unit's integrated, all-in-one system concept reduces installation time and costs.

Features and benefits

- Back- or bottom-mounted progressive metering devices
- Internal lubricant return possible
- Integrated pressure-relief valve
- External programming via keypad
- System monitoring with display of faults
- Follower plate

Applications

- Machine tools
- Material handling
- Automotive industry
- Food processing
- Printing industry
- Renewable energies
- Farm machinery
- Construction

Technical data

Function principle	electrically operated piston pump with follower plate
Operating temperature	–25 to +70 °C; *–13 to +158 °F*
Operating pressure	205 bar; *2 975 psi*
Lubricant	grease: NLGI 2 fluid grease: NLGI 00, 000
Outlets	up to 18
Metering quantity [1]	1,0 cm³/min; *0.06 in³/min*
Reservoir	1 l; *0.26 gal*
Connection main line	via SSV: see information for SSV via connection block: G 1/8
Operating voltage	12/24 V DC; 120 and 230 V AC (± 10%)
Protection class	IP 6K9K, NEMA 4
Dimensions	min. 237 × 215 × 230 mm *min. 9.33 × 8.46 × 9.05 in* max. 237 × 235 × 270 mm *max. 9.33 × 9.25 × 10.63 in*
Mounting position	any

[1] before metering devices

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
951-171-003 EN

PUB LS/P1 16964 EN

QLS 301 SSV

Order number configurator

P301				1				

Product series

Metering devices SVV...
- **0** = external SSV 6-KNQLS, SSV 8-KNQLS
- **1** = external SSV 12-KNQLS, SSV 18-KNQLS
- **3** = SSV 6, rear-mounted
- **4** = SSV 8, rear-mounted
- **6** = SSV 12, rear- or bottom-mounted
- **9** = SSV 18, rear- or bottom-mounted

Assignment of metering device outlets
- **0** = no metering device
- **1** = vertical metering device outlets, V, rear mounted
- **2** = horizontal metering device outlets, H, bottom-mounted [1)]

Supply voltage
- **2** = 12 V DC, available with or without control P.C.B.
- **4** = 24 V DC, available with or without control P.C.B.
- **6** = 120 V AC, available with control P.C.B. only
- **8** = 230 V AC, available with control P.C.B. only

Reservoir
- **1** = 1XL, 1 l; *0.26 gal*, with low-level indication

Connections
- **0** = 1 connection left side:
  power supply (V DC / V AC) 1A, square plug. For industrial applications
- **2** = 1 connection left side:
  power supply (V DC) 1A, low-level or fault indication, bayonet plug. For vehicles only
- **1** = 2 connections:
  1 × left side for power supply (V DC / V AC) 2A;
  1 × right side for external low-level or fault indication, square plug. For industrial applications

Connection socket design
- **1** = square plug design A. For industrial applications [2)]
- **5** = bayonet plug 4-pole design. For vehicles [3)]

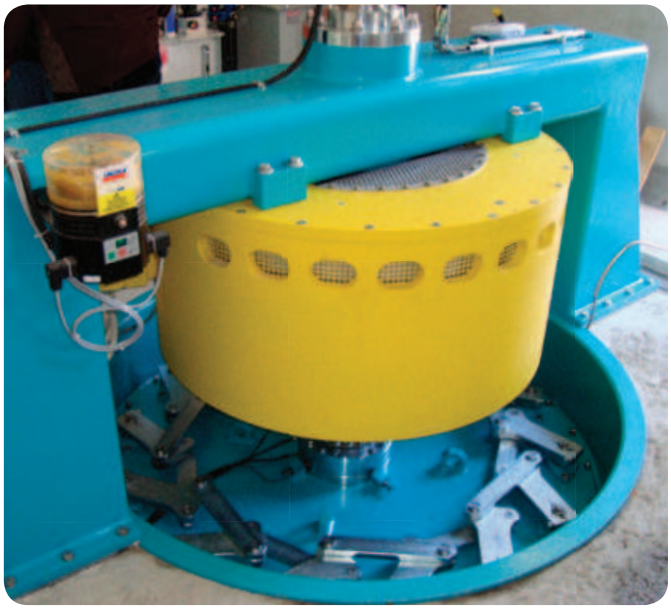
Electrical connector types
- **1** = with connection socket, without cable [2)]
- **5** = with connection socket and cable (10 m; *33 ft*) [2)]
- **6** = with connection socket and ADR cable (10 m; *33 ft*)) [2)]
- **7** = with connection socket, bayonet and cable (10 m; *33 ft*) [3)]
- **8** = with connection socket, bayonet and ADR cable (10 m; *33 ft*) [3)]

Control printed circuit board (P.C.B.)
- **0** = without
- **4** = control P.C.B. S4; NC and NO contacts programmable 1-5 cycles; only for V DC application
- **4** = control P.C.B. S4; NC and NO contacts programmable; 1-3 cycles, SSV 6/ SSV 8; 1 cycle, SSV 12/ SSV 18; only for V AC application

[1)] Not for use in areas with impact loads or vehicles
[2)] Connection types 1, 5, 6 can be combined with square plug version (1) only
[3)] Connection types 7, 8 can be combined with bayonet plug version (5) only

PUB LS/P1 16964 EN

QLS 401 SSV



Product description

The Quicklub QLS 401 SSV is a complete lubrication system that includes all necessary monitoring and control functions, as well as a pressure-relief valve and an enhanced reservoir-stirring paddle that prevents grease separation. Outlet connections and standard-pressure plastic tubing must be ordered separately. Up to 18 lubrication points can be supplied via an SSV metering device with fixed output amount and can be monitored directly from the pump. The unit's integrated, all-in-one system concept reduces installation time and costs.

Features and benefits

- Back- or bottom-mounted metering devices
- Internal lubricant return possible
- Integrated pressure-relief valve
- External programming via keypad
- System monitoring with display of faults

Applications

- Industrial and mobile applications
- Food processing
- Farm machinery
- Machine tools

Technical data

Function principle	electrically operated piston pump with stirring paddle
Operating temperature	–25 to +70 °C *–13 to +158 °F*
Operating pressure	205 bar *2 975 psi*
Lubricant	grease: up to NLGI 2 fluid grease: NLGI 00, 000
Outlets	up to 18
Metering quantity [1]	1,0 cm^3/min *0.06 in^3/min*
Reservoir	1 and 2 l *0.26 and 0.53 gal*
Connection main line	via SSV: see information for SSV, p. 86 via connection block: G 1/8
Operating voltage	12/24 V DC; 120 and 230 V AC (± 10%)
Protection class	IP 6K9K, NEMA 4
Dimensions	min. 237 × 215 × 230 mm *min. 9.33 × 8.46 × 9.05 in* max. 237 × 235 × 353 mm *max. 9.33 × 9.25 × 13.89 in*
Mounting position	upright

[1] before metering devices

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
951-171-003 EN, 12667 EN

PUB LS/P1 16964 EN

QLS 401 SSV

Order number configurator **P401** [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

Product series

Metering devices
0 = external metering device SSV 6-KNQLS, SSV 8-KNQLS
1 = external metering device SSV 12-KNQLS, SSV 18-KNQLS
3 = SSV 6, rear-mounted
4 = SSV 8, rear-mounted
6 = SSV 12, rear- or bottom-mounted
9 = SSV 18, rear- or bottom-mounted

Assignment of metering device outlets
0 = no metering device
1 = vertical metering device outlets V, back mounted
2 = horizontal metering device outlets H, bottom-mounted [1]

Supply voltage
2 = 12 V DC, available with or without control P.C.B.
4 = 24 V DC, available with or without control P.C.B.
6 = 120 V AC, available with control P.C.B. only
8 = 230 V AC, available with control P.C.B. only

Reservoir
0 = 1XN, 1 l; *0.26 gal*, without low-level indication
1 = 1XL, 1 l; *0.26 gal*, with low-level indication
2 = 2XN, 2 l; *0.53 gal*, without low-level indication
3 = 2XL 2 l; *0.53 gal*, with low-level indication

Number of possible connections
0 = 1 connection left side, power supply (V DC/ V AC) 1A, square plug. For industrial applications
2 = 1 connection left side, power supply (V DC) 1A, low-level or fault indication, bayonet plug. For vehicles only
1 = 2 connections:
1 × left side for power supply (V DC/ V AC) 2A
1 × right side for external low-level or fault indication, square plug. For industrial applications

Connection socket design
1 = square plug design A . For industrial applications [2]
5 = bayonet plug 4-pole design.for vehicles [3]

Type of electrical connectors
1 = with connection socket, without cable [1]
5 = with connection socket and cable (10 m; *33 ft*) [1]
6 = with connection socket and ADR cable (10 m; *33 ft*) [1]
7 = with connection socket, bayonet and cable (10 m; *33 ft*) [2]
8 = with connection socket, bayonet and ADR cable (10 m; *33 ft*) [2]

Control printed circuit board (P.C.B.)
0 = without
4 = control P.C.B. S4 for 12/ 24 V DC; NC and NO contacts programmable 1-5 cycles
4 = control P.C.B. S4 for 120/ 230 V AC; NC and NO contacts programmable; 1-3 cycles (SSV 6/ SSV 8), 1 cycle (SSV 12/ SSV 18)
5 = control P.C.B. S4 for 12/ 24 V DC; NO contact signal [4]
5 = control P.C.B. S5 for 120/ 230 V AC; NO contact signal; 1-3 cycles, (SSV 6/ SSV 8), 1 cycle (SSV 12/ SSV 18) [4]
6 = control P.C.B. S6 for 12/ 24 V DC; NC contact signal [4]
6 = control P.C.B. S6 for 120/ 230 V AC; NC contact signal; 1-3 cycles (SSV 6/ SSV 8) 1 cycle (SSV 12/ SSV 18) [4]

[1] Not for use in areas with impact loads or vehicles
[2] Connection types 1, 5, 6 can be combined with square plug version (1) only
[3] Connection types 7, 8 can be combined with bayonet plug version (5) only
[4] Control P.C.B. can be combined with XN reservoir versions only

PUB LS/P1 16964 EN

QLS 401 SSVDV

Product description

The Quicklub QLS 401 SSVDV is a complete lubrication system that includes all necessary monitoring and control functions, as well as a pressure-relief valve and an enhanced reservoir-stirring paddle that prevents grease separation. Outlet connections and standard-pressure plastic tubing must be ordered separately. Up to 16 lubrication points can be supplied via an SSVDV metering device with adjustable output amount (using metering screws) and can be monitored directly from the pump. The unit's integrated, all-in-one system concept reduces installation time and costs.

Features and benefits

- Back- or bottom-mounted metering devices
- Internal lubricant return possible
- Integrated pressure-relief valve
- External programming via keypad
- System monitoring with display of faults

Applications

- Industrial and mobile applications
- Food processing
- Farm machinery
- Machine tools

Technical data

Function principle	electrically operated piston pump with stirring paddle
Operating temperature	–25 to +70 °C *–13 to +158 °F*
Operating pressure	205 bar *2 975 psi*
Lubricant	grease: up to NLGI 2 fluid grease: NLGI 00, 000
Outlets	max. 16
Metering quantity	depending on metering screw 0,08-0,40 cm^3 per outlet *0.0048 -0,0244 in^3 per oulet*
Reservoir	1 and 2 l *0.26 and 0.53 gal*
Main line connection	via SSV: see information for SSVD, see p. 78 via connection block: G 1/8
Operating voltage	12/24 V DC; (± 10%)
Protection class	IP 6K9K, NEMA 4
Dimensions	min. 237 × 215 × 230 mm *min. 9.33 × 8.46 × 9.05 in* max. 237 × 235 × 353 mm *max. 9.33 × 9.25 × 13.89 in*
Mounting position	upright

NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publications available online at SKF.com/lubrication:
951-171-003 EN, 12667 EN

PUB LS/P1 16964 EN

QLS 401 SSVDV

Order number configurator P401 – SSVDV [ ] – [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] – [ ] – [ ] – [ ] [ ] • [ ] – [ ]

1 2 3 4 5 6 7 8

Product series

Metering device

SSVDV = SSVDV metering device

Metering device outlets

6 = 6 rear-mounted, vertical outlets, V
12 = 12 rear-mounted, vertical outlets, V
16 = 16 rear-mounted, vertical outlets, V

Metering screws per pair of outlets 1-8 [1] (keep field empty if not applicable)

A = 0,08 cm³; *0.0048 in³* per outlet
B = 0,14 cm³; *0.0085 in³* per outlet
C = 0,20 cm³; *0.0122 in³* per outlet
D = 0,30 cm³; *0.0183 in³* per outlet
E = 0,40 cm³; *0.0244 in³* per outlet
Marks the mounted metering screws per pair of outlets, starting with the highest pair of outlets. The number of metering screws in the identification code corresponds to half of the metering device's outlets.

Supply voltage

12 DC = 12 V DC, available with or without control P.C.B.
24 DC = 24 V DC, available with or without control P.C.B.

Reservoir

1XN = 1 l; *0.26 gal*, reservoir without low-level indication
1XL = 1 l; *0.26 gal*, reservoir with low-level indication
2XN = 2 l; *0.52 gal*, reservoir without low-level indication
2XL = 2 l; *0.52 gal*, reservoir with low-level indication

Number of possible connections

1A = 1 connection left side, power supply (V DC/ V AC), square plug, for industrial applications
1A = 1 connection left side, power supply (V DC), low-level or fault indication, bayonet plug, for vehicles only
2A = 2 connections, 1 × left side for power supply (V DC/V AC), 1 × right side for external low-level or fault indication square plug, for industrial applications

Connection socket design

1 = square plug design A. For industry[1]
5 = bayonet plug 4-pole design. For vehicles [2]

Type of electrical connectors

1 = with connection socket, without cable [1]
5 = with connection socket and cable (10 m; *33 ft*) [1]
6 = with connection socket and ADR cable (10 m; *33 ft*) [1]
7 = with connection socket, bayonet and cable (10 m; *33 ft*) [2]
8 = with connection socket, bayonet and ADR cable (10 m; *33 ft*) [2]

Control printed circuit board (P.C.B.)

Blank = without
S4 = control P.C.B. S4 for 12/ 24 V DC; NC and NO contacts programmable 1-5 cycles

[1] Connection types 1, 5, 6 can be combined with square plug version (1) only
[2] Connection types 7, 8 can be combined with bayonet plug version (5) only

PUB LS/P1 16964 EN

QLS 421

Product description

Designed for lubricating truck trailers and semi-trailers, the Quicklub QLS 421 is a complete lubrication system with an integrated metering device and controller, as well as a pressure-relief valve. The pump features a back-mounted SSV metering device and supplies grease only. Outlet connections and standard-pressure plastic tubing must be ordered separately. Up to 18 lubrication points can be supplied directly from the pump.

Features and benefits

- Compact progressive system
- Designed to supply grease
- Uses brake light as power supply via capacitor
- Lubricates at each braking until reaching set lubrication time

Applications

- Vehicles
- Trailers, semi-trailers
- Farm machinery
- Construction

Technical data

Function principle	electrically operated piston pump
Operating temperature	–25 to +70 °C *–13 to +158 °F*
Operating pressure	205 bar *2 975 psi*
Lubricant	grease: up to NLGI 2 fluid grease: NLGI 00, 000
Outlets	up to 18
Metering quantity	1,0 cm^3/min *0.06 in^3/min*
Reservoir	1; 2 l *0.26; 0.53 gal*
Connection main line	via SSV: see information for SSV, p. 84 via connection block: G $^1/_8$
Operating voltage	12 / 24 V DC
Protection class	IP 6K 9K, NEMA 4
Dimensions	min. 237 × 215 × 230 mm *min. 9.33 × 8.46 × 9.05 in* max. 237 × 235 × 353 mm *max. 9.33 × 9.25 × 13.89 in*
Mounting position	upright

PUB LS/P1 16964 EN

QLS 421

Order number configurator

P421		1			2	5		1

Product series

Metering devices
3 = SSV 6
6 = SSV 12
9 = SSV 18

Metering device position
1 = rear-mounted

Operating voltage
2 = 12 V DC
4 = 24 V DC

Reservoir / low-level control
0 = 1 l; *0.26 gal;* without low-level control
2 = 2 l; *0.53 gal;* without low-level control

Number of possible connections
2 = 1A5 - 1 connection, power supply, bayonet plug, left

Connection socket design
5 = bayonet plug according to DIN 72858-1

Type of electrical connectors
3 = with socket and cable (10 m; *33 ft*)
4 = with socket and cable ADR (10 m; *33 ft*)

Control printed circuit board (P.C.B.)
1 = with variable pause and lubrication time

PUB LS/P1 16964 EN

P 502

Product description

The P 502 is a simple, economical, electrically operated lubrication pump unit. It can provide directly a maximum of two individual lubrication points with lubricant or be connected to progressive metering devices. An integrated control board is available to set pause and lubrication time. Developed for fluid grease and grease, the P 502 features an optimized housing shape and reservoir suitable for food processing applications.

Features and benefits

- Economical operation
- Fits in tight/small places
- Flexible design for 12 and 24 V DC voltage supply
- Optional pressure-release valve
- Optimised housing design for splash zones in food processing

Applications

- Commercial vehicles
- Farm machinery
- Small construction machines
- Food and beverage industry

Technical data

Function principle	electrically operated piston pump
Operating temperature	–25 to +70 °C *–13 to +158 °F*
Operating pressure	270 bar; *3 915 psi*
Lubricant	grease up to NLGI 2
Outlets	1–2
Metering quantity	depending on pump element: 1,0-2,4 cm³/min per outlet *0.06-0.15 in³/min per outlet*
Reservoir	1 l; *0.26 gal*
Connection main line	G ¼
Operating voltage	12/24 V DC
Protection class	IP6K9K, IP65, IP67 depending on type of electrical connection
Dimensions	250×150×270 mm *9.84×5.91×10.63 in*
Mounting position	
with follower plate	any
without follower plate	upright

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
12737 EN

PUB LS/P1 16964 EN

P 502

Order number configurator

P502 – ___ – ___ ___ – ___ – ___ ___ • ___ – ___

Product series

Reservoir plastic

1XN = 1 l; *0.26 gal* reservoir for grease
1YN = 1 l; *0.26 gal* reservoir for oil
1XLF = 1 l; *0.26 gal* reservoir for grease, with follower plate and low-level signal

Pump elements 1-2 (choose max. 2 pump elements)

. = without pump elements
1K5 = 1,0 cm³/min; *0.06 in³/min;* piston ø5 mm
1K6 = 1,2 cm³/min; *0.07 in³/min;* piston ø6 mm
1K7 = 1,8 cm³/min; *0.11 in³/min;* piston ø7 mm
1B7 = 2,4 cm³/min; *0.15 in³/min;* piston ø7 mm

Supply voltage

12 = 12 V DC
24 = 24 V DC

Electrical connection

1A = 1 connection left-side supply voltage
2A = 2 connections:
- 1 connection left-side, supply voltage
- 1 connection right-side, low-level signal, illuminated pushbutton

Type of connection

1 = square plug
2 = M 12 plug
5 = bayonet plug 4-pole, DIN 72585
6 = bayonet plug 7/5-pole, DIN 72585
7 = bayonet plug 7/6-pole, DIN 72585

Connections from the pump to external devices

00 = connection plug with closure cap, square plug
01 = connection plug and socket, square plug
10 = connection plug and socket, square plug, cable (10 m; *33 ft)*
14 = bayonet socket, 4-core, cable (10 m; *33 ft)*
15 = bayonet socket, 7/5-core, cable (10 m; *33 ft)*
16 = bayonet socket, 7/6-core, cable (10 m; *33 ft)*

Control printed circuit boards (p.c.b)

00 = without control printed circuit board
V10-V13 = control printed circuit board, supply voltage terminals 15 + 31
V20-V23 = control printed circuit board, supply voltage terminals 15 + 30 + 31

PUB LS/P1 16964 EN

P 223 / P 233

Product description

Similar to the P 203 series, the P 223/233 pumps feature an integrated control printed circuit board (P.C.B.) with metering device monitoring and can drive up to three pump elements. The P 233 provides supplementary Datalogger function for data transfer to Quickdata 2.0 diagnostic software. Versatile, compact and economical, the P 233 pump is enhanced with low-level control, printed circuit board MDF01 with attached Datalogger module and a keypad with display.

Features and benefits

- Datalogger P 233 shows system settings and events including general data, pumping times, programming, operating times, malfunction and low-level indication
- Using Quickdata 2.0 diagnostic software, data can be read out via laptop and infrared interface

Applications

- Mobile applications
- Track tamping machines
- Stationary systems
- Vehicles and construction machines

Technical data

Function principle	electrically operated piston pump
Operating temperature	–25 to +70 °C *–13 to +158 °F*
Operating pressure	350 bar *5 075 psi*
Lubricant	greases up to NLGI 2 oil: with min. 40 mm^2/s
Outlets	up to 3
Metering quantity	depending on pump element: 0,7-4,0 cm^3/min per outlet *0.042-0.24 in^3/min* per outlet
Reservoir	2, 4, 8, and 15 l *0.53, 1.05, 2.11 and 3.96 gal*
Operating voltage	12/24 V DC; 100/260 V AC; 50/60 Hz
Connection main line	G ¼
Protection class	IP 6K 9K
Dimensions	min. 230 × 224 × 367 mm *min. 9.06 × 8.82 × 14.45 in* max. 230 × 250 × 729 mm *max. 9.06 × 9.84 × 28.70 in*
Mounting position	
with follower plate	any
without follower plate	upright

PUB LS/P1 16964 EN

Pump unit

P 223 / P 233

Order number configurator

	–			–				–		–			•	–	
					1	2	3								

Product series

for grease with 1-3 outlets and V DC motor
P 223 = pump with Datalogger
P 233 = pump without Datalogger

Reservoir size

2 = 2 l; *0.52 gal*
4 = 4 l; *1.06 gal*
8 = 8 l; *2.11 gal*
15 = 15 l; *3.96 gal*

Reservoir type [1]

XN = closed, 2 l; *0.52 gal*
XNFL = flat, 2 l; *0.52 gal*
XNBO = with lid, 2, 4, 8 or 15 l; *0.52; 1.06, 2.11 or 3.96 gal*
XL = low-level control, 2, 4 or 8 l; *0.52; 1.06, 2.11 gal*
XLBO = low-level control, with lid; 2, 4, 8 or 15 l; *0.52; 1.06, 2.11 or 3.96 gal*
YNBO = for oil, with lid, 4, 8 or 15 l; *1.06, 2.11 or 3.96 gal*
YLBO = for oil, low-level control, with lid; 4 or 8 l; *1.06or 2.11 gal*

Pump elements 1-3 (choose codes for max. 3 pump elements)

. = no pump element
1K5 = 2,0 cm^3/min; 0.12 in^3/min; piston ø 5 mm
1K6 = 2,8 cm^3/min; 0.17 in^3/min; piston ø 6 mm
1K7 = 4,0 cm^3/min; 0.24 in^3/min: piston ø 7 mm, with bypass bore
1KR = 0,7-3,0 cm^3/min, 0.042-0.18 in^3/min adjustable, piston ø 7 mm
1B7 = 2,0 cm^3/min; 0.12 in^3/min; piston ø 7 mm, with bypass check valve
1C7 = 4,0 cm^3/min; 0.24 in^3/min; piston ø 7 mm [2]

Operating voltage

12 = 12 V DC
24 = 24 V DC

Number of possible connections

2A =2 connections:
on the left top power supply, illuminated pushbutton (operational test & additional lubrication) and fault indication [3] [4]
on the right top piston detector, divider monitoring, bayonet plug 4/2
3A = 3 connections:
on the left bottom power supply, square-type plug
on the left top illuminated pushbutton and fault indication [3] [4]
on the right top piston detector, divider monitoring, bayonet plug 4/2-pole

Type of connection [5]

1 = square plug, power supply. DIN 43650
5 = bayonet plug, 4 pole design, DIN 72585-1, for MF01/MDF01 [3]
6 = bayonet plug 7/5 pole design, MF02/MDF02 [4]

Connection outside pump

15 = without socket, without cable
14 = bayonet socket with cable (10 m; *33 ft*), 4-core; only with type of connection 2A5 / 3A5
15 = bayonet socket with cable (10 m; *33 ft*), 7/5-core; only with type of connection 2A6 / 3A6

Control printed circuit boards 12/24 V DC

MF01 = with microprocessor and membrane keypad, contact 15/30 bridged
MF02 = with microprocessor and membrane keypad, contact 15/30 not bridged; only with type of connection 2A6
MDF01 = with microprocessor and membrane keypad and Datalogger, contact 15/30 bridged
MDF02 = with microprocessor and membrane keypad and Datalogger, contact 15/30 bridged; only with type of connection 2A6

[1] high-/low-level control can not be combined with the integrated control unit P.C.B.
[2] designation for pump elements for supplying of paste for chisel (c=chisel)
[3] for MF01/MDF01
[4] for MF02/MDF02
[5] other types of connection on request possible

PUB LS/P1 16964 EN

P 603 M

Product description

The compact P 603M automatic lubrication pump consists of a housing with integrated motor, reservoir with stirring paddle, pump element with pressure-relief valve, filling nipple and electrical connection parts. It can drive up to three pump elements and operates according to a customer-supplied, external control unit (pause and lubrication times).

Versatile and economical, this pump can be enhanced with low-level control that enables control of lubrication cycles. The P 603M can supply up to 100 lubrication points, depending on line length.

Features and benefits

- Reservoir size up to 20 l *(5.28 gal)* available
- Powerful and robust pump
- Drives up to three pump elements
- C5M corrosion protection available
- Pump elements could be internally combined to one outlet

Applications

- Wind energy systems
- Construction
- Renewable energies

Technical data

Function principle	electrically operated piston pump
Operating temperature	–40 to +70 °C; *–40 to +158 °F*
Operating pressure	350 bar; *5 075 psi*
Lubricant	grease up to NLGI 2
Outlets	up to 3 pump elements
Metering quantity	per pump element: 4 cm^3/min; *0.24 in^3/min*
Maximum lubricant output [1]	12 cm^3/min; *0.73 in^3/min*
Reservoir	4, 8, 10, 15, and 20 l *1.05, 2.11, 2.64, 3.96 and 5.28 gal*
Main line connection	G 1/4
Voltage	100-240 V AC, 50/60 Hz
Protection class	IP 6K 9K
Dimensions	min. 240 × 235 × 415 mm *min. 9.45 × 9.25 × 16.34 in* max. 240 × 235 × 591 mm *max. 9.45 × 9.25 × 23.27 in*
Mounting position	
with stirring paddle	reservoir upside up
with follower plate	any

[1] with internally combined three pump elements to one outlet

PUB LS/P1 16964 EN

P603M

Order number configurator

P603M – [ ][ ] – [ ][ ][ ] – [ ] – [ ][ ] • [ ]

1 2 3

Product series

Reservoir size

4 = plastic, transparent, 4 l; *1.05 gal*
8 = plastic transparent, 8 l; *2.11 gal*
10 = plastic, transparent, 10 l; *2.64 gal*
15 = plastic, transparent, 15 l; *3.96 gal*
20 = plastic, transparent, 20 l; *5.28 gal*

Reservoir type

XLBO = for grease, with low-level control and stirring paddle, filling from top
XLF = for grease, with low-level control and follower plate, filling from bottom [1)]

Pump elements 1-3 (choose codes for max. 3 pump elements)

. = no pump element
1K7 = 4 cm^3/min; *0.24 in^3/min;* piston ø 7 mm
3Z7 = 12 cm^3/min; *0.73 in^3/min* ; piston ø 7 mm, internally combined to 1 outlet

Supply voltage

12 = 12 V DC
24 = 24 V DC
AC = 100-240 V AC, 50/60 Hz, with 24 V DC direct current motor

Number of electric connecting possibilities

1A = AC: square-type plug for power supply, grounding equipment conductor 1
1A = DC: bayonet plug, 7/4-pole for power supply, low-level control, protective conductor
2A = AC: square-type plug for power supply, bayonet plug, 4-pole for low-level control or relay

Type of connection

1 = square-type plug
5 = bayonet plug 7/4-pole

Connection outside of the pump

01 = with connecting socket, without cable
14 = bayonet socket with 10 m; *33 ft* cable, 7/7-core
20 = bayonet socket with 20 m; *66 ft* cable, 7/7-core

[1)] Electrical signal should be taken from top of lid

PUB LS/P1 16964 EN

ZPU 01/02

Product description

The ZPU 01/02 high-pressure, high-volume pumps can be used as a supply pump for small to midsize dual-line systems or for progressive systems.

Depending on the system layout, these electric pumps can supply lubricant within a 50 m *(54 yd)* radius at a maximum pressure of 400 bar *(5 800 psi)*. Available with 10 or 30 l *(2.6 or 8 gal)* reservoirs, these units are compatible with oil and grease up to NLGI 2 (NLGI 3 upon request). Featuring one or two elements, the ZPU 01/02 pumps work effectively in a broad temperature range thanks to the integrated stirring device.

Features and benefits

- Reliable
- Versatile
- Ultrasonic low- and high-level control options
- Free shaft end for use with other motors

Applications

- Light to medium industrial applications
- Mixing machines
- Power plants
- Reclaimers
- Stackers

Technical data

Function principle	electrically operated piston pump
Operating temperature	–20 to +70 °C; *–4 to +158 °F*
Operating pressure	M 100, M490: max. 350 bar; *5 075 psi* M049: max. 400 bar; *5 800 psi*
Lubricant	grease: up to NLGI 2, NLGI 3 on request oil: with a viscosity of min. 20 mm^2/s at operating temperature
Metering quantity [1]	ZPU 01: 13,33 cm^3/min; *0.813 in^3/min* ZPU 02: 26,67 cm^3/min; *1.63 in^3/min* ZPU 02-M049: 53,33 cm^3/min; *3.25 in^3/min*
Reservoir	10 or 30 l; *2.6 or 8 gal*
Connection main line [2]	model V: for tube 10 mm model E: G $^1/_4$
Operating voltage	380–420 V AC/50 Hz, 440–480 V AC/60 Hz ; (± 10%)
Protection class	IP 65
Dimensions	min. 514 × 379 × 317 mm *min. 20.25 × 15.00 × 12.50 in* max. 754 × 431 × 337 mm *max. 29.75 × 17.00 × 15.00 in*
Dimensions low-level sensor	30 × 125 × 65 mm *1.2 × 5.0 × 2.75 in*
Mounting position	upright

[1] output increase by 20% for 60 Hz applications

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
951-171-016 EN

3D data and product configuration:
skf-lubrication.partcommunity.com/3d-cad-models/

PUB LS/P1 16964 EN

ZPU 01/02

Order number configurator

ZPU [ ] – [ ] [ ] – [ ] [ ] – [ ] – [ ]

Product series

Outlets
01 = 1 element
02 = 2 elements

Drive assemblies
M = three-phase flanged motor, motor designation with extension, e.g. for voltage frequencies, explosion-proof design is added to the pump type code
F = free shaft end

Gear ratio
490 = 1:490
100 = 1:100
049 = 1:49

Reservoir
10 = 10 l; *2.6 gal*
30 = 30 l; *8 gal*

Reservoir design
XYN = reservoir without level control
XYBU = reservoir with low- and high-level control (ultrasonic sensor)

Pump elements
E = single element
V = bracket with element and pressure gauge

Extension for motor designation
380–420.440–480 = standard multi-range motor for 380–420 V AC/50 Hz and 440–480 V AC/60 Hz
000 = pump without motor, with connecting flange

PUB LS/P1 16964 EN

EDL1

Product description

The EDL1 is an easy-to-use, electrical pressure booster for sectional lubrication systems. High output pressure enables provision of lubricant from a single source to progressive metering devices and distant lubrication points with different lubricant requirements. Low input pressure of 2 bar (*29 psi*), allows for retrofit installations in existing systems. For operation of EDL1 an additional feeder pump is required.

Features and benefits

- Cost-effective solution
- Environmentally friendly; no need for pressurized air; can be driven by solar panels
- Virtually maintenance free
- User-friendly design and operation
- Flexible inlet and outlet positions
- Sends fault messages remotely
- Optional pressure switch available

Applications

- Food and beverage
- Wayside lubrication in rail applications
- Cement industry
- Other heavy industries

Technical data

Function principle	electronically driven lubricator
Operating temperature	–25 to +70 °C *–13 to +158 °F*
Operating pressure	max. 280 bar *max. 4 015 psi*
Inlet pressure	min. 2 bar, max. 270 bar *min. 30 psi; max. 3920 psi*
Lubricant	grease: NLGI 1 and 2
Outlets	1
Metering quantity	full stroke: 1 cm^3/min; *0.06 in^3/min* half stroke: 0,5 cm^3/min; *0.03 in^3/min*
Operating voltage	24 V DC ± 10%
Connection main line	GE-L X10 (others on request)
Protection class	IP 65
Dimensions	116 × 114 × 350 mm *4.56 × 4.48 × 13.78 in*
Mounting position	any

NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publications available online at skf.com/edl1:
951-171-010 EN, 16144 EN

3D data and product configuration:
skf-lubrication.partcommunity.com/3d-cad-models/

PUB LS/P1 16964 EN

EDL1

Order number configurator

EDL1 – [ ] [ ] [ ] – [ ] – [ ] + 924

Product series

Material corrosion protection; inlet/outlet position

1 = (standard) metal parts/piston based on C3 I/O: left/right
2 = metal parts/piston based on C3 I/O: right/right
3 = metal parts/piston based on C3 I/O: right/left
4 = metal parts/piston based on C3 I/O: left/left

Inlet connection [1)]

0 = without connection
5 = GE-L ø 10 mm

Outlet or outlet connection at check valve [1)]

0 = without connection
5 = GE-L ø 10 mm
E = GE-L ø 10 mm with pressure switch 300 bar; *4 350 psi* and cable
M = GE-L ø 10 mm with pressure switch 100 bar; *1 450 psi* and cable

Controlling and timing

01 = start-stop operation settings: volume = 1 cm^3; *0.155 in^3*; full stroke
11 = automatic mode; machine contact; settings: volume = 1 cm^3; *0.155 in^3*; full stroke
61 = pulse mode; settings: open

Electric connection

00 = 3 x blind plug
01 = 2 x blind plug; with 1 x M 16 cable screw connection
11 = 1 x blind plug; with 2 x M 16 cable screw connection
31 = power supply; with 2 x M 16 cable screw connection

Power supply

924 = 24 V DC

[1)] composition defined by Material: corrosion protection

PUB LS/P1 16964 EN

PPU-5/PPU-35

Product description

PPU-5 and PPU-35 are air-operated piston pumps designed to supply either oil or grease. They feature a spring-loaded piston that can be activated either by a 3/2-way or 4/2-way valve connection, which must be ordered separately. A reservoir (for grease only) can be connected to the pump via an intermediate plate or directly to the machine for a remote reservoir connection. Output can be modified via the adjusting screw.

Features and benefits

- Compact pump for either grease and oil within progressive system
- Adjustable output via stroke setting screw
- Direct connect reservoir or remote connect reservoir possible
- Optional low-level control available, only with integrated reservoir
- Hydraulically operated version of pump available, see under hydraulic pumps

Applications

- Small progressive systems
- Engine building
- Tube bending machines

Technical data

Function principle	air-operated piston pump
Lubricant	oil and grease up to NLGI 2
Outlets	1
Metering quantity per stroke	
PPU-5	0,1–0,5 cm^3 *0.006–0.03 in^3*
PPU-35	0,7–3,5 cm^3 *0.043–0.21 in^3*
Operating pressure [1]	160 bar *2 320 psi*
Air pressure	adjustable: 4,5-10 bar; *65-145 psi*
Priming pressure	30 bar *435 psi*
Reservoir	2,5 and 5 l *0.66 and 1.32 gal*
Connection main line	tube ø 10 mm
Dimensions	min. 247 × 40 × 120 mm *min. 9.72 × 1.57 × 4.72 in* max. 270 × 83 × 126 mm *max. 10.63 × 3.27 × 4.96 in*
Mounting position	any

[1] rupture disc, other pressures available

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
951-170-012 EN

PUB LS/P1 16964 EN

PPU-5/PPU-35

PPU-5...

Order number	Reservoir integrated		Low-level control integrated
	l	*gal*	
PPU-5	no	*no*	no
PPU-5-2.5	2,50	*0.66*	no
PPU-5-2.5W	2,50	*0.66*	yes
PPU-5-5	5	*1.32*	no
PPU-5-5W	5	*1.32*	yes

PHU-35...

Order number	Reservoir integrated		Low-level control integrated
	l	*gal*	
PPU-35	no	*no*	no
PPU-35-2.5	2,50	*0.66*	no
PPU-35-2.5W	2,50	*0.66*	yes
PPU-35-5	5	*1.32*	no
PPU-35-5W	5	*1.32*	yes

Accessories

Rupture discs

PPU- BS...

Rupture discs

Order number	Colour	Burst pressure		Thickness	
		bar	*psi*	mm	*in*
PPU-BS60	black	60	*870*	0,152	*0.006*
PPU-BS80	green	80	*1 160*	0,203	*0.008*
PPU-BS100	yellow	100	*1 450*	0,254	*0.010*
PPU-BS120	red	120	*1 740*	0,305	*0.012*
PPU-BS140	orange	140	*2 030*	0,356	*0.014*
PPU-BS160	silver	160	*2 320*	0,406	*0.016*
PPU-BS180	pink	180	*2,610*	0.457	*0.018*

PUB LS/P1 16964 EN

87214

Product description

The model 87214 pump is an air-operated , single-acting pump requiring a timer and three-way valve to control the cycles. Air pressure powers the piston on the delivery stroke, and a spring returns it to priming position. Depending on the type of reservoir used, the pump is suitable for both grease and oil applications.

The 87214 pump requires a specially designed reservoir that must be ordered separately.

Features and benefits

- Pump can be removed from reservoir without disturbing existing piping
- Inlet shut-off valve in reservoir base allows removal of pump without draining reservoir

Applications

- Heavy-duty machinery
- Printing industry
- Metal cutting
- Metal forming
- Wood working and processing

Technical data

Function principle	air-operated single acting pump [1) 2)]
Operating pressure	min. 4 bar, max. 14 bar *min. 60 psi, max. 200 psi*
Lubricant	oil and grease NLGI 0 to 2
Outlets	1
Metering quantity [3)]	oil: max. 30 strokes/min grease: max. 22 strokes/min 0,164-0,98 cm^3/stroke *0.01-0.06 in^3/stroke*
Reservoir	see accessories
Ratio	18:1
Connection main line	1/4 NPTF
Dimensions pump	162 × 44,5 × 44,5 mm 6.38 × 1.75 × 1.75 in
Mounting position	upright

1) Needs to connect special reservoir to pump, see accessories
2) Pump includes NBR O -rings
3) Output adjustable by steps of one turn of adjustment screw equal to 0,049 cm^3; *0.003 in^3*

PUB LS/P1 16964 EN

Pump

87214

87214

Order number	Designation
87214	air-operated single acting pump, ratio 18:1, pump includes NBR O-rings

Accessories

Reservoirs

87402

Product description

These reservoirs made of acryl are designed to be mounted directly onto the pump. They include all connections for air (or hydraulic oil, see hydraulically driven pump 87212, see p. 68) and lubricant outlet. They include a gauge 200 bar; *3 000 psi* and an atmospheric indicator 62 bar; *900 psi*.

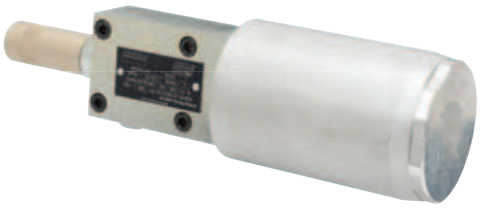
Modular reservoirs

Order number	Lubricant	Capacity		Connection [1]	Dimensions	
		l	*gal*	NPSM (F)	mm	*in*
87402	grease	1,475	*0.389*	$^1/_8$	295×172.2×179.6	*11.6×6.78×7.06*
87403	grease	2,450	*0.647*	$^1/_8$	371×172.2×179.6	*14.6×6.78×7.06*
87405	oil	2,365	*0.624*	$^1/_8$	262×172.2×179.6	*10.3×6.78×7.06*

[1] for air supply and lubricant outlet

PUB LS/P1 16964 EN

87200/87216/130179



Product description

SKF's modular pumps are designed to efficiently supply either grease or oil in automatic systems using progressive metering devices. Models 87200, 87216 and 130179 are air-operated pumps that must be equipped with an appropriate baseplate and reservoir to make up a pump assembly.

Baseplates contain all inlet and outlet connections for the pump and lubrication system and allow for quick pump removal without disturbing any existing piping. Removal of the pump does not require draining of the reservoir due to an integral check valve in the baseplate. Pump cycles will be controlled by a timer in conjunction with a three-way valve (supplied separately).

Features and benefits

- No dismantling of piping when removing pump
- No draining required due to integral check valve in baseplate
- Precise adjustability of output

Applications

- Small progressive systems
- Printing industry
- Material handling
- Metal processing

Technical data

Function principle	air-operated single acting pump [1]
Outlet	1
Lubricant	oil and grease NLGI 0 to 2
Metering quantity [2]	
87200	0,41 to 0,164 cm^3/stroke
	0.025 to 0.10 in^3/stroke
87216	0,164 to 0,82 cm^3/stroke
	0.01 to 0.05 in^3/stroke
130179	4,1 to 16,39 cm^3/stroke
	0.25 to 1.0 in^3/stroke
Strokes per minute, oil	
87200; 87216	max. 30 strokes/min
130179	max. 25 strokes/min
Strokes per minute, grease	
87200; 87216	max. 22 strokes/min
130179	max. 10 strokes/min
Inlet pressure, air	
87200; 87216	min. 2.8 bar; *40 psi*
	max. 10 bar; *150 psi*
130179	min. 4,5 bar; *65 psi*
	max. 10 bar; *150 psi*
Pressure ratio	
87200; 130179	25:1
87216	50:1
Connection mainline	1/4 NPTF(F)
Dimensions pump only	87200, 87216: 251×70×70 mm
	9.88×2.75×2.75 in
	130179: 114×291×140 mm
	4.50×15.38×5.50 in
Mounting position	with reservoir upside up

[1] needs for operation modular baseplate and reservoir, see accessories
[2] output adjustable by steps of one turn of adjustment screw

PUB LS/P1 16964 EN

87200/87216/130179

87200/87216/130179

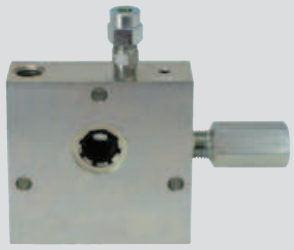
Order number	Ratio	Baseplates 87218 [1]	87204 [2]	130095 [2]
87200	25:1	•	•	–
87216	50:1	•	•	–
130179 [3]	25:1	–	–	•

[1] for use with Modular Lube reservoirs
[2] for machine mount, use with remote reservoir customer's supply
[3] with valved piston uses Modular Lube reservoirs or pressurized (max. 140 bar; *2 000 psi*) lubrication supply

Accessories

Baseplates and reservoirs

87218



Baseplates [1]

Order number	Air NPTF(F) inlet	Lubricant NPTF(F) inlet	outlet
87218 [2]	1/8		1/4
87204 [3]	1/4	3/8	1/4
130095 [3]	1/4	1/4	1/4

[1] all baseplates use atmospheric indicator 100 bar; *1450 psi*
[2] for use with Modular Lube reservoirs
[3] for machine mount, use with remote reservoir customer's supply

Product designation

Baseplates can be intermediate (for use with Modular Lube reservoirs) or machine mount (for use with remote reservoirs). They have all main connections for hydraulic oil and lubricant included. They include FKM O-rings.

87417

Modular reservoir for oil systems [1]

Order number	Designation	Capacity l	Capacity *gal*	Lubricant outlet NPTF(F)	Dimensions mm	Dimensions *in*
87400	cylindrical, acrylic	2,40	*0.63*	1/2	400×153×135	*15.7×6.0×5.3*
87413	cylindrical, acrylic	4,70	*1.25*	1/2	450×168×199	*17.7×7.3×7.47*
87417	tank, steel	18,90	*5*	3/8	258×445×319	*10.1×17.5×12.6*
87418	tank, steel	11,30	*3*	3/8	258×343×294	*10.1×13.5×11.6*
87419	tank, steel	5,70	*1.50*	3/8	258 267×192	*10.1×10.5×7.6*

[1] use filler fitting 632004

Product description

All reservoirs accept 87218 intermediate baseplate and are for direct mount.

Modular reservoir for grease systems [1] [2]

Order number	Designation	Capacity l	Capacity *gal*	Dimensions mm	Dimensions *in*
87406	acrylic	4,90	*1.30*	450×186×190	*17.7×7.3×7.5*
87416	acrylic	7,35	*1.94*	641×186×190	*25.2×7.3×7.5*
87421 [3]	steel	4,90	*1.30*	450×186×188	*17.7×7.3×7.4*
87423 [3]	steel	7,35	*1.94*	641×186×188	*25.7×7.3×7.4*

[1] use filler fitting 632004
[2] reservoirs include 1/2 NPTF(F) outlet
[3] includes visual level indicator rod

PUB LS/P1 16964 EN

PP/PPG

Product description

PP pumps are air-operated , single-stroke pumps that require a 3/2-way air valve to activate the air cylinder. Designed to supply grease through one outlet, the pumps are equipped with a spring-loaded follower plate and an indicator rod for level control purposes. Suitable for indoor/outdoor applications, PP pumps can be used with a primary progressive metering device or with a secondary-level metering device.

Similar to the PP pumps, PPG devices include an integrated metering device with eight outlets, enabling their use as small, air-operated progressive systems.

Features and benefits

- Compact, air-operated units for up to 100 lubrication points
- Indicator rod for level control available
- Unique port arrangements possible (PPG)
- Internal return of grease into reservoir (PPG)
- Simple refilling from grease pail

Applications

- Spinning machines
- Die-cutting machines
- Beverage processing
- Small presses
- Machine tools
- Handling equipment

Technical data

Function principle	air-operated single-stroke piston pump
Operating temperature	0 to +60 °C *+32 to 140 °F*
Operating pressure	PP: 300 bar; *4 350 psi* PPG: 250 bar; *3 626 psi*
Air inlet pressure	min. 4 bar; *58 psi* max. 10 bar; *145 psi*
Air pressure ratio	40:1
Lubricant	grease up to NLGI 2
Outlets	PP: 1 outlet PPG: 8 outlets
Metering quantity per stroke	PP: 2,6 cm^3; *0.16 in^3* PPG [1]: 0,2 cm^3; *0.012 in^3*
Reservoir	0,4 or 1,5 l; *0.1 or 0.4 gal*
Connection main line	PP: for tube ø 6mm PPG [2]: M 10×1
Connection inlet air	G 1/8
Dimensions	PP: 115×122×550 mm; *4.53×4.80×21.65 in* PPG [3]: 115×112×725 mm; *4.53×4.41×28.54 in*
Mounting position	upright

[1] average output/outlet for one pump stroke: 0,3cm^3/stroke; *0.018 in^3/stroke*
[2] need to use special SKF outlet fittings
[3] level indicator fully extended

PUB LS/P1 16964 EN

Pump unit

PP/PPG

PP/PPG

Order number	Designation	Outlets	Reservoir	
			l	gal
604-25105-2	PP-15	1	1,5	0.4
604-29968-1	PPG-4	8	0,4	0.1
604-29969-1	PPG-4-K [1)]	8	0,4	0.1
604-25111-3	PPG-15	8	1,5	0.4
604-25130-3	PPG-15-K [1)]	8	1,5	0.4

1) K = with optical pin indicator

Accessories

Outlet fittings and closure plugs

303-17499-3

PP/PPG outlet fittings

Order number	Designation
504-30344-4	special outlet fitting for tube ø 6mm
504-30345-2	special outlet fitting for tube ø 4mm
303-17499-3	closure plug

PUB LS/P1 16964 EN

PFP-23-2/PFP-23-22

Product description

PFP-23-2 and PFP-23-22 are air-operated grease pump units that include a reservoir and follower plate under atmospheric pressure. These pumps are made for small-sized progressive systems or for use as multi-line pumps. The output of one lever stroke is divided by two when using two outlets. A return line to the reservoir is available. Also the pump is equipped with a filling coupler to refill the pump.

Features and benefits

- Small, compact, air-operated pump
- Up to 190 bar *(2 755 psi)* operating pressure
- Port for return line is available on pump
- Refill by grease coupling avoids contamination of grease
- Available with one or two outlets

Applications

- Small- and medium-sized machines
- For all applications with air-operated power supply
- Especially for indoor applications
- Blow molding machines
- Food and beverage machines

Technical data

Function principle	air-operated piston pump
Operating pressure [1]	190 bar *2 755 psi*
Operating temperature [2]	+10 to 60 °C *+50 to 140 °F*
Air inlet pressure	6 to 10 bar; *87 to 145 psi*
Lubricant	grease up to NLGI 2
Outlets	PFP-23-2: 1 PFP-23-22: 2
Metering quantity per stroke	PFP-23-2, one outlet closed: 2,5 cm³/port *0.15 in³/port* PFP-23-22, both outlets used: 1,25 cm³/port *0.076 in³/port*
Ratio	20:1
Reservoir [3]	1,5 l *0.4 gal*
Material	reservoir: acryl glass
Connection main line	outlets: tube ø 10mm return line: G 1/4
Dimensions	132×132×410 mm *5.20×5.20×16.14 in*
Mounting position	upright

[1] depending on air inlet pressure
[2] for temperature below 10°C/ 50°F special version with follower piston pressurized with compressed air available,see further publication
[3] use filling connection order number: 995-001-500 to refill reservoir

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publications available online at SKF.com/lubrication:
951-170-012 EN, 1-0107-4 EN

PUB LS/P1 16964 EN

PFP-23-2/PFP-23-22

PFP-23-2/PFP-23-22

Order number	Designation	Outlets	Metering quantity per stroke/port	
			cm^3	in^3
PFP-23-2 [1]	air-operated grease pump	1	2,50	*0.15*
PFP-23-22	air-operated grease pump one outlet closed by plug	2	1,25	*0.076*

[1] one outlet closed by plug

Accessories

Refill coupling

24-9909-0244

Filler socket

Order number	Designation
24-9909-0244	filler socket with sealing ring

995-001-500

Coupling socket

Order number	Designation
995-001-500	coupling socket for reservoir refilling

857-760-...

Hose socket

Order number	Designation
857-760-007	hose socket; ø 13 mm
857-760-002	hose socket; ø 16 mm

PUB LS/P1 16964 EN

EPB

Product description

Designed to feed lubricant into a centralized system, the SKF EPB pump unit is an electro-air-operated barrel pump in which the traditional mechanical air motor valve has been replaced with a solenoid valve. With the proper equipment, it is possible to use the EPB pump with bag-like lubricant containers. Suitable for 18, 50 and 180 kg *(40, 120 and 400 lb)* lubricant barrels, the EPB is available in two versions – ECO and STA. The ECO version is intended for use with ECO lids sets, and the STA version works with STA, LG and OS lid sets.

Features and benefits

- Lubrication-free, electronically controlled air motor enables accurate control of pump output
- Fewer mechanical components extend air motor's service life
- Includes self-diagnosing system
- Operates effectively in wide range of temperatures
- IP 65 protection rating

Applications

- Paper industry
- Steel industry

Technical data

Function principle	electro-air-operated piston pump unit for barrels
Operating temperature	–10 to +50 °C, *+14 to 122 °F*
Operating pressure	max. 300 bar, *4 350 psi*
Pressure ratio	1:65
Pressure air supply	3,5 to 4,5 bar, *51 to 65 psi*
Air consumption	300 l/min; *80 gal/min*
Lubricant	grease: Eco: NLGI 1 or 2 STA: NLGI 0, 1 or 2 oil: 5 000 mm²/s
Metering quantity [1]	6,1 cm³/cycle; *0.37 in³/cycle*
Electrical connections	20–32 V DC
Barrel capacity	18, 50 and 180 kg, *40, 120 or 400 lb* barrel not included
Protection class	IP 65
Dimensions	depending on the model min. 650×130×130 mm max. 920×130×130 mm *min. 25.6×5.11×5.11 in* *max. 36.22×5.11×5.11 in*
Mounting position	upright

[1] generally approx. 50 cycles/min are assumed

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
06414/2 EN

PUB LS/P1 16964 EN

EPB

Order number configurator

SKF-EPB-PUMP – [ ] – [ ]

Product series

SKF-EPB-PUMP = Electro-air-operated barrel pump

Drum capacity

1/8 = lubricant barrel capacity: 18 kg, *40 lb*
1/4 = lubricant barrel capacity: 50 kg, *120 lb*
1/1 = lubricant barrel capacity: 180 kg, *400 lb*

Lid set

ECO = pumping unit is connected to a follower plate placed inside the lubricant barrel, allowing the pump to follow the lubricant level, for use with greases NLGI 2
STA = lid set for use with greases NLGI 1 and 2
LG = lid set for use with greases NLGI 000-0
OS = lid set for use with oils

Accessories

Installation kits, maintenance unit and power supply unit

Installation kits EPBP

Order number	Designation
INSTALLATION KIT-ECO EPBP	VGBV 12381354
INSTALLATION KIT-STA EPBP	VGBV 2381353

Maintenance unit for easy exchange of barrels

Order number	Designation
MAXILUBE-SET-ECO-EPBP	VGBV 12382677
MAXILUBE-SET-STA-EPBP	VGBV 12382678

Power supply unit

Order number	Designation
EPBP-UNIPOWER 24V 0.63A 100-240V	VGBV 12381505

PUB LS/P1 16964 EN

Pump

87212

Product description

The model 87212 pump is a hydraulically operated, single-acting pump with a double-acting, hydraulic cylinder that requires a four-way valve and timer for operation. Hydraulic pressure powers the piston on the delivery stroke and returns it to priming position. Depending on the type of reservoir used, the pump is suitable for both grease and oil applications. The 87212 pump requires a specially designed reservoir that must be ordered separately.

Features and benefits

- Pump can be removed from reservoir without disturbing existing piping
- Inlet shut-off valve in reservoir base allows removal of pump without draining reservoir

Applications

- Small progressive systems
- Foundry machinery
- Material handling
- Metal cutting

Technical data

Function principle	hydraulically operated single acting pump [1) 3)]
Operating pressure	14 –40 bar *200 – 600 psi*
Lubricant	oil and grease
Outlets	1
Metering quantity [2)]	0,164-0,98 cm^3/stroke *0.01-0.06 in^3/stroke* oil: max. 30 strokes/min grease: max. 22 strokes/min
Reservoirs	see accessories [4)]
Pressure ratio	5:1
Connection main line	¼ NPTF
Dimensions pump	162 × 44.5 × 44.5 mm *6.38 × 1.75 × 1.75 in*
Mounting position	with reservoir upward

1) needs to connect special reservoir to pump, see accessories
2) output adjustable by steps of one turn of adjustment screw equal to 0.049 cm^3; *0.003 in^3*
3) pump includes NBR O-rings

87212

Order number	Designation	Ratio
87212	hydraulically operated single acting pump includes NBR O-rings	5:1

PUB LS/P1 16964 EN

Accessories

87402

Product description

These reservoirs made of acryl are designed to be mounted directly onto the pump. They include all connections for hydraulic oil (air: see air-operated pump 87214, p. 58) and lubricant outlet. They include a gauge 200 bar; *3 000 psi* and an atmospheric indicator 62 bar; *900 psi*.

Modular reservoirs

Order number	Lubricant	Capacity		Connections [1]	Dimensions	
		l	*gal*	NPSM(F)	mm	*in*
87402	grease	1,475	*0.389*	$^1/_8$	295×172.2×179.6	*11.6×6.78×7.06*
87403	grease	2,450	*0.647*	$^1/_8$	371×172.2×179.6	*14.6×6.78×7.06*
87405	oil	2,365	*0.624*	$^1/_8$	262×172.2×179.6	*10.3×6.78×7.06*

[1] for air supply and lubricant outlet

PUB LS/P1 16964 EN

87202

Product description

87202 modular pumps are designed to efficiently supply grease or oil in automatic systems using metering valve metering devices. These hydraulically operated pumps must be equipped with an appropriate baseplate and reservoir to make up a pump assembly. Baseplates contain all inlet and outlet connections for the pump and lubrication system. Pump cycles will be controlled by a timer in conjunction with a four-way valve (supplied separately).

Features and benefits

- No dismantling of piping when removing pump
- No draining required due to integral check valve in baseplate
- Precise adjustability of output

Applications

- Small progressive systems
- Metal forming
- Metal cutting

Technical data

Function principle	hydraulically operated pump
Operating pressure	20–138 bar *275–2 000 psi*
Lubricant	oil and grease
Outlets	1
Metering quantity	0,41-1,64 cm³/stroke *0.025-0.10 in³/stroke*
Connection main line	¼ NPTF
Dimensions	241,3 × 47,7 × 54,1 mm *9.5 × 1.88 × 2.13 in*
Mounting position	with reservoir upward

87202 hydraulically operated pump

Order number	Ratio	Baseplate 87218 [1]	87204 [2]
87202	7:1	•	•

[1] for use with Modular Lube reservoirs
[2] for machine mount, use with remote reservoir customer's supply

PUB LS/P1 16964 EN

Baseplates and reservoirs

87218

Baseplate [1]

Order number	Hydraulic NPTF (F) inlet	Lubricant NPTF (F) inlet	outlet
87218 [2]	1/8	3/8	1/4
87204 [3]	1/4	3/8	1/4

[1] all baseplates uses atmospheric indicator 100 bar; *1450 psi*
[2] for use with Modular Lube reservoirs
[3] for machine mount, use with remote reservoir customer's supply

Product description

Baseplates can be intermediate (for use with Modular Lube reservoirs) or machine mount (for use with remote reservoirs). They have all main connections for hydraulic oil and lubricant included. They also include FKM O-rings.

87400

Modular reservoir for oil systems [1]

Order number	Designation	Capacity l	Capacity *gal*	Lubricant outlet NPTF (F)	Dimensions mm	Dimensions *in*
87400	cylindrical, acrylic	2,40	*0.625*	1/2	400×153×135	*15.7×6.0×5.3*
87413	cylindrical, acrylic	4,70	*1.25*	1/2	450×168×199	*17.7×7.3×7.47*
87417	tank, steel	18,90	*5*	3/8	258×445×319	*10.1×17.5×12.6*
87418	tank, steel	11,30	*3*	3/8	258×343×294	*10.1×13.5×11.6*
87419	tank, steel	5,70	*1.5*	3/8	258 267×192	*10.1×10.5×7.6*

[1] Use filler fitting 632004

Product description

All reservoirs accept 87218 intermediate baseplate and are for direct mount.

Modular reservoir for grease systems [1] [2]

Order number	Designation	Capacity l	Capacity *gal*	Dimensions mm	Dimensions *in*
87406	acrylic	4,90	*1.30*	450×186×190	*17.7×7.3×7.5*
87416	acrylic	7,35	*1.94*	641×186×190	*25.2×7.3×7.5*
87421 [3]	steel	4,90	*1.30*	450×186×188	*17.7×7.3×7.4*
87423 [3]	steel	7,35	*1.94*	641×186×188	*25.7×7.3×7.4*

[1] use filler fitting 632004
[2] reservoirs include 1/2 NPTF (F) outlet
[3] includes visual level indicator rod

PUB LS/P1 16964 EN

PHU-5/PHU-35

Product description

PHU-5 and PHU-35 are hydraulically operated piston pumps for progressive systems. They are designed to supply either oil or grease. The pumps feature a spring-loaded piston that can be activated either by a 3/2-way or 4/2-way valve connection, which must be ordered separately. A reservoir can be connected to the pump via an intermediate plate or directly to the machine for a remote reservoir connection. Pump output can be modified via the adjusting screw.

Features and benefits

- Compact pump for either grease or oil
- Adjustable output via setting screw
- Direct-connect or remote-connect reservoir option
- Optional low-level control available with integrated reservoir
- Air-operated pump version available

Applications

- Small progressive systems
- Small presses

Technical data

Function principle	hydraulically operated piston pump
Lubricant	oil, grease up to NLGI 2
Outlet	1
Metering quantity per stroke	
PHU-5	adjustable: 0,1–0,5 cm^3 *0.006–0.03 in^3*
PHU-35	adjustable: 0,7–3,5 cm^3 *0.043–0.21 in^3*
Actuating pressure	adjustable: 4.5 to 10 bar *65.3 to 145 psi*
Priming pressure	30 bar; *435 psi*
Operating pressure	160 bar; *2 320 psi*
Reservoir	2.5 and 5 l; *0.66 and 1.32 gal*
Connection main line	M 10×1 or tube ø 10 mm
Dimensions	min. 251 × 40 × 120 mm *min. 9.88 × 1.57 × 4.72 in* max. 270 × 83 × 126 mm *max. 10.63 × 3.27 × 4.96 in*
Mounting position	any

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
1-0107-5 EN; 951-170-012 EN

PUB LS/P1 16964 EN

Pump unit

PHU-..

PHU-5...

Order number	Reservoir integrated		Low-level control integrated
	l	*gal*	
PHU-5	no	*no*	no
PHU-5-2.5	2,50	*0.66*	no
PHU-5-2.5W	2,50	*0.66*	yes
PHU-5-5	5	*1.32*	no
PHU-5-5W	5	*1.32*	yes

PHU-35...

Order number	Reservoir integrated		Low-level control integrated
	l	*gal*	
PHU-35	no	*no*	no
PHU-35-2.5	2,50	*0.66*	no
PHU-35-2.5W	2,50	*0.66*	yes
PHU-35-5	5	*1.32*	no
PHU-35-5W	5	*1.32*	yes

Accessories

Rupture discs

PPU-BS...

Rupture discs

Order number	Colour	Burst pressure		Thickness	
		bar	*psi*	mm	*in*
PPU-BS60	black	60	*870*	0,152	*0.006*
PPU-BS80	green	80	*1 160*	0,203	*0.008*
PPU-BS100	yellow	100	*1 450*	0,254	*0.010*
PPU-BS120	red	120	*1 740*	0,305	*0.012*
PPU-BS140	orange	140	*2 030*	0,356	*0.014*
PPU-BS160	silver	160	*2 320*	0,406	*0.016*
PPU-BS180	pink	180	*2 610*	0,457	*0.018*

PUB LS/P1 16964 EN

PFH-23-2/PFH-23-22

Product description

PFH-23-2 and PFH-23-22 are hydraulically operated grease pump units that include a reservoir and follower plate under atmospheric pressure. These pumps are suitable for small-sized progressive systems or for use as multi-line pumps. When using two outlets, the output of one lever stroke is divided by two.

Features and benefits

- Small, compact, hydraulically operated pump
- Up to 200 bar *(2 900 psi)* operating pressure
- Pump port for return line is available
- Refilling via grease coupling avoids grease contamination
- Available with one or two outlets

Applications

- Small- and medium-sized machines
- Applications with hydraulic power supply
- Especially for indoor applications
- Die-cutting machines
- Small presses

Technical data

Function principle	hydraulically operated grease pump
Operating temperature	+10 to 60 °C; *+50 to 140 °F*
Operating pressure [1]	200 bar *2 900 psi*
Air inlet pressure	6 to 30 bar *87 to 435 psi*
Lubricant	grease up to NLGI 2
Outlets	PFH-23-2: 1 PFH-23-22: 2
Metering quantity	
PFH-23-2	1 outlet closed: 2,5 cm^3/port/stroke *0.15 in^3/port/stroke*
PFH-23-22	both outlets used: 1,25 cm^3/port/stroke *0.076 in^3/port/stroke*
Pressure ratio	7:1
Reservoir [2]	1,5 l; *0.4 gal*
Material	reservoir: acryl glass
Connection main line	tube ø 10 mm for outlets G 1/4 for return line
Dimensions	132 × 132 × 458 mm *5.20 × 5.20 × 18.03 in*
Mounting position	upright

[1] depending on hydraulic inlet pressure
[2] use filling connection order no. 995-001-500 to refill reservoir

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
1-0107-4 EN; 951-170-012 EN

PUB LS/P1 16964 EN

Pump unit

PFH-23-2/PFH-23-22

PFH-23-2/PFH-23-22 pump units

Order number	Outlets	Metering quantity per outlet/stroke	
		cm^3	*in^3*
PFH-23-2 [1)]	1	2,5	*0.15*
PFH-23-22	2	1,25	*0.076*

[1)] 1 outlet closed by plug

Accessories

Refill coupling

24-9909-0244

Filler socket

Order number	Designation
24-9909-0244	filler socket with sealing ring

995-001-500

Coupling socket

Order number	Designation
995-001-500	coupling socket for reservoir refilling

857-760-...

Hose socket

Order number	Designation
857-760-007	hose socket; ø 13 mm
857-760-002	hose socket; ø 16 mm

PUB LS/P1 16964 EN

HP/HPG

Product description

The manually operated single-stroke lever pump HP is designed for use in progressive systems to supply grease through one outlet. They are equipped with a spring-loaded follower plate and an indicator rod for level control purposes. The pumps can be used with a primary progressive metering device only or also with a secondary-level metering device.

Similar to HP pumps, HPG pumps include a special integrated progressive metering device with eight outlets. Therefore, the HPG are suitable for small manually operated progressive systems.

Features and benefits

- No power supply necessary
- Ease of use
- HPG with integrated progressive metering device, serving up to 8 lubrication points
- HPG 15 pumps refillable via filling nipple
- Level control via indicator rod

Applications

- Applications without power supply
- Indoor use
- Excenter presses
- Slurry centrifuges

Technical data

Function principle	manually operated single-stroke piston pump
Operating temperature	–25 to +70 °C *–13 to +158 °F*
Operating pressure	HP 4: 250 bar; *3 625 psi* HP 15: 250 bar; *3 625 psi*
Lubricant	greases up to NLGI 2
Outlets	1 to 8
Metering quantity per stroke	HP 4: 1,6 cm^3; *0.10 in^3* HP 15: 1,6 cm^3; *0.10 in^3*
Main line connection	for tube ø 6 mm; M 10×1 [1]
Reservoir	
HP 4/HPG 4	0,4 l; *0.11 gal*
HP 15/HPG 15	1,5 l; *0.4 gal*
Dimensions [2]	min. 73 × 140 × 350 mm *min. 2.87 × 5.15 × 13.78 in* max. 107 × 180 × 455 mm *max. 4.21 × 7.09 × 19.91 in*
Mounting position	upright

[1] *need to use special outlet fittings*
[2] *add approx. 153 mm for depth and 85 mm for height for full extension of lever and level rod*

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
951-231-000-EN

PUB LS/P1 16964 EN

HP/HPG

HP/HPG pumps

Order numer	Designation	Outlet	Operating pressure	
			bar	*psi*
		1		
604-25102-1	HP 4	1	250	*3 625*
604-25103-1	HP 15	8	250	*3 625*
604-25108-2	HPG 4	8	200	*2 900*
604-25109-2	HPG 15	8	200	*2 900*
604-25128-2	HPG 15-K, with visual indicator pin	8	200	*2 900*

Accessories

Outlet fittings

303-17499-3

HP/HPG Accessories

Order number	Designation	Tube
		ø mm
504-30344-4	special outlet fitting	6
504-30345-2	special outlet fitting	4
303-17499-3	closure plug to reduce number of outlets	–

Outlet fitting
HP pump type is delivered with outlet fittings for tube ø 6 mm. Special outlet connection fittings need to be used for pump model HPG. The closure plugs allow it to adapt the number of outlets. The output is then a multiple of 0,2 cm^3; *0.012 in^3*.

PUB LS/P1 16964 EN

HP-500W/HP-500W-SSV

Product description

The manually operated, single-stroke HP-500W pump is designed to be affixed vertically on a wall. The pump can supply grease directly to lubrication points or can be connected to progressive metering devices for an even supply of lubricant.

The HP 500W-SSV version of the pump features an integrated metering device with various outlet numbers. Both models may be used with bulk grease or with standard 400 g *(0.88 lb)* cartridges.

Features and benefits

- Uses standard cartridges
- No electrical power supply necessary
- Refillable bulk reservoir
- Easy to use
- Available with or without integrated metering device

Applications

- Applications without power supply
- Indoor use
- Printing industry
- Punching machines
- Planing machines

Technical data

Function principle	manually operated single stroke pump
Operating temperature	–25 to +70 °C; *–13 to +158 °F*
Operating pressure	HP-500W: 400 bar; *5 800 psi* HP-500W SSV: 350 bar; *3 625 psi*
Lubricant	grease up to NLGI 2
Outlets	HP-500W: 1 HP-500W SSV: 6, 8, 10, 12
Metering quantity	HP-500W, per stroke: 1,5 cm³; *0.09 in³* HP-500W, per SSV outlet: 0,2 cm³; *0.012 in³*
Reservoir:	
with cartridge	0.4 l; *0.11 gal*
without cartridge	0.5 l; *0.13 gal*
Connection mainline [1]	M 10×1
Dimensions [2]	
Mounting position:	
HP-500W	95 × 165 × 380 mm *3.74 × 6.50 × 14.96 in*
HP-500W SSV	95 × 165 × 405 mm *3.74 × 6.50 × 15.94 in*
Mounting position	upright

[1] need to use special outlet fittings
[2] add approx. 195 mm for depth and 210 mm for height for full extension of lever and level rod

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
951-231-000-EN

PUB LS/P1 16964 EN

HP-500W/HP-500W-SSV

HP–500 W / HP–500W-SSV

Order number	Designation	Metering device	Outlets
244-14164-1	HP-500 W	–	1
604-28766-1	HP-500W-SSV 6	•	6
604-28767-1	HP-500W-SSV 8	•	8
604-28768-1	HP-500W-SSV 10	•	10
604-28769-1	HP-500W-SSV 12	•	12

Accessories

Outlet fittings

303-17499-3

HP–500 W / HP–500W-SSV Accessories

Order number	Designation	Tube
		ø mm
504-30344-4	special outlet fitting	6
504-30345-2	special outlet fitting	4
303-17499-3	closure plug to reduce number of outlets	–

Outlet fitting
HP 500 W pumps need special outlet connection fittings. The closure plugs allow it to adapt the number of outlets. The output is then a multiple of 0,2 cm^3; *0.012 in^3*.

PUB LS/P1 16964 EN

PF-VPBM/169-000-146

Product description

The manually operated PF-VPBM pump was developed to supply lubricant from a grease cartridge. Equipped with an integrated metering device, the easy-to-use pump is suitable for applications requiring a compact progressive system. Its size can vary from six to 12 outlets that supply even amounts of lubricant.

Features and benefits

- Reliable, user-friendly pump
- Utilizes grease cartridges for convenience
- Varying number of outlets available

Applications

- Farm machinery
- Small stackers
- Construction machinery
- Motor vehicle superstructures

Technical data

Function principle	manually operated piston pump
Operating temperature	–25 to +80 °C *–13 °F to +176 °F*
Operating pressure	400 bar; *5 800 psi*
Lubricant	grease up to NLGI 2
Outlets [1]	6 to 12
Metering quantity	per lever stroke without metering device: 2 cm³; *0.12 in³* per outlet/stroke: 0,2 cm³; *0.012 in³*
Reservoir	450 cm³ in 400 g cartridge *27.46 in³ in 0.88 lbs cartridge*
Connection main line	outlet fitting: M 10×1
Dimensions [2]	*min. 140 × 156 × 396 mm* *min. 5.51 × 6.14 × 15.59 in* max. 140 × 156 × 506 mm *max. 5.51 × 6.14 × 19.92 in*
Mounting position	any

[1] pump available with one outlet, without block metering device
[2] add approx. 244 mm, *9.6 in* for depth and 415 mm; *16.3 in* for height for full extension of lever and level rod

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
1-9430-EN, 951-230-008-EN

PUB LS/P1 16964 EN

PF-VPBM/169-000-146

PF-VPBM

Order number	Metering device	Outlets
169-000-146	–	1
PF-VPBM-3-2	•	6
PF-VPBM-4-2	•	8
PF-VPBM-5-2	•	10
PF-VPBM-6-2	•	12

Accessories

Outlet fittings

VPKM-RV-S4

PF–VPBM accessories

Order number	Designation
VPKM-RV-S4	outlet fitting with check valve for tube ø 6 mm
VPKM-RV-VS	push-in fitting for tube ø 6 mm
917-006-101	closure plug

PUB LS/P1 16964 EN

Pump unit

HJ 2

Product description

The manually operated HJ 2 pump unit was developed to provide lubricant to points that do not require continuous lubrication. Comprised of two supply pistons and a 3 liter *(0.8 gal)* reservoir with an integrated stirring device, this robust pump unit operates effectively, even at low temperatures. Operating pressure is 300 bar *(4 350 psi)*.

Features and benefits

- Suitable for use with dual-line or progressive systems
- Dispenses greases up to NLGI 3
- Available with left- or right-hand lever

Applications

- Metal forming
- Roll straighteners
- Tire heating presses
- Harbor cranes

Technical data

Function principle	manually operated double stroke piston pump
Operating temperature	–20 to +70 °C, *–4 to +160 °F*
Operating pressure	max. 300 bar, *4 350 psi*
Lubricant	grease: up to NLGI 3, depending on operating temperature oil: with a viscosity minimum 150 mm^2/s at operating temperature
Outlets	up to 2
Metering quantity per double stroke	HJ 2: 2 cm^3, *0.122 in^3* HJ 2A : 2x 1 cm^3, *0.061 in^3*
Hand force at max. pressure	300 N
Reservoir	3 l; *0.8 gal*
Connection outlet	G 1/4
Dimensions	410 × 135 × 393 mm *16.1 × 5.5 × 15.5 in*
Mounting position	upright

PUB LS/P1 16964 EN

HJ 2

HJ 2

Order number	Designation	Position hand lever	Outlet
603-41200-1	HJ 2 R–3 XYN	right	1
603-41200-2	HJ 2 L–3 XYN	left	1
603-41200-3	HJ2AR- 3XYN	right	2
603-41200-4	HJ2AL- 3XYN	left	2

Accessories

Outlet fittings

223-13052-1

223-13052-2

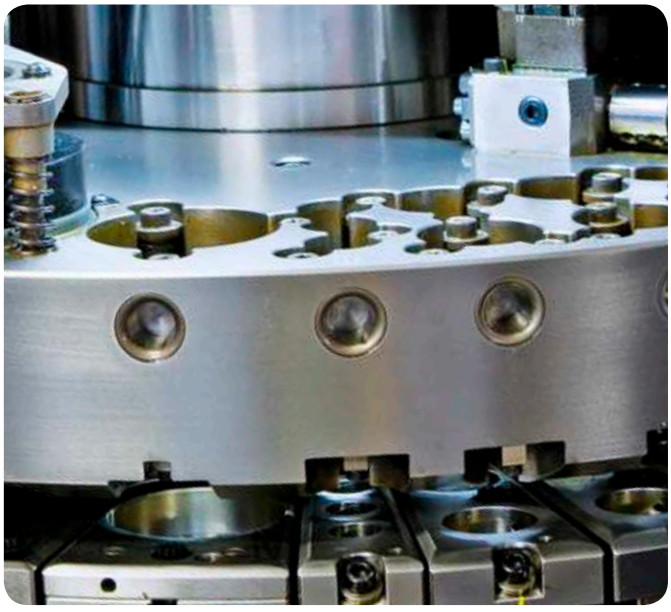
Outlet fitting with integrated check valve

Order number	Designation	Tube
		ø mm
223-13052-1	GERV 6-S G $^1/_4$ AVCF	6
223-13052-2	GERV 8-L G $^1/_4$ AVCF	8
223-13052-3	GERV 10-L G $^1/_4$ AVCF	10

Note: must be ordered with pump

PUB LS/P1 16964 EN

PF-23-2/PF-23-22



Product description

PF-23-2 and PF-23-22 are manually operated grease pump units that include a reservoir and follower plate under atmospheric pressure. These pumps are made for small-sized progressive systems or for use as multi-line pumps. When using two outlets, the output of one lever stroke is divided by two. A return line to the reservoir is available. Also, these pumps are equipped with a filling coupler for replenishing the reservoir.

Features and benefits

- Small, compact, manually operated pump
- Up to 100 bar operating pressure
- Pump inlet for return line is available
- Refilling via grease coupler avoids grease contamination
- Available with one or two outlets

Applications

- Small- and medium-sized machines
- Applications where no power supply is available
- Especially for indoor applications
- Excenter presses
- Punching machines

Technical data

Function principle	manually operated single stroke pump
Operating temperature	+10 to +60 °C *+50 to +140 °F*
Operating pressure	at 200 N manual force: 100 bar; *1 450 psi*
Lubricant	grease up to NLGI 2
Outlets	PF-23-2: 1 PF-23-22: 2
Metering quantity	PF-23-2: one outlet closed: 2,5 cm^3/stroke; *0.15 in^3/stroke;* PF-23-22: both outlets used: 1,25 cm^3/stroke; *0.076 in^3stroke*
Reservoir	1,5 l; *0.4 gal*
Material	reservoir: acryl glass
Connection main ine	outlets: tube ø 10 mm return line: G ¼
Dimensions	185 × 130 × 397 mm *7.28 × 5.12 × 15.63 in*
Mounting position	upright

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
951-170-012 EN, 1-0107-4-EN

PUB LS/P1 16964 EN

Pump unit

PF-23-2/PF-23-22

PF-23-2/PF-23-22

Order number	Outlets	Metering quantity	
		cm^3/stroke	*in^3*/stroke
PF-23-2 [1]	1	2,5	*0.150*
PF-23-22	2	1,25	*0.076*

[1] one outlet closed by plug

Accessories

Refill coupling

24-9909-0244

Filler socket

Order number	Designation
24-9909-0244	filler socket with sealing ring

995-001-500

Coupling socket

Order number	Designation
995-001-500	coupling socket for reservoir refilling

857-760-...

Hose socket

Order number	Designation
857-760-007	hose socket; ø 13 mm
857-760-002	hose socket; ø 16 mm

PUB LS/P1 16964 EN

Pumps and pump units

QLS 311

MCLP

PUB LS/P1 16964 EN

Overview of oil and fluid grease pumps

Electrically operated pump unit [1)]

Product	Function type	Metering quantity		Reservoir		Operating pressure max.		Page
		cm^3/min	*in^3/min*	l	*gal*	bar	*psi*	
QLS 311	piston pump	1,0–150	*0.03–0.50*	1; 2	*0.26; 0.53*	80	*1 200*	70

Free shaft-end pump [1)]

Product	Function type	Pump head	Metering quantity		Operating pressure max.		Page
		mm	cm^3/min	*in^3/min*	bar	*psi*	
MCLP [1)]	piston pump	7 10	0,44–216 0,95–440	*0.027–13.19* *0.058–26.91*	555 240	*8 000* *3 500*	72 72

[1)] To connect with electrical motor or to machine. For oil only, fluid grease is not allowed

See additional oil pumps with higher flow rates and special flow limiting devices in our oil circulation systems catalog.
The multi-line lubrication systems catalog shows further solutions for oil, fluid grease and grease.

PUB LS/P1 16964 EN

Pump unit

QLS 311

Product description

The QLS 311 pump is a monitored lubrication system with low-level control for a maximum of 18 lubrication points. Designed for use with standard high-pressure plastic tubing, the QLS family includes pumps with or without mounted SSV metering devices. An optional integrated controller for pause and lubrication times is available.

Features and benefits

- Internal lubricant return possible
- Integrated pressure-relief valves
- External programming via keypad
- System monitoring with display of faults
- Standard low-level control
- Suitable for V AC and V DC versions
- Protection: IP 6K9K, NEMA 4

Applications

- Machine tools
- Metal processing
- Chain lubrication
- Material handling
- Automotive industry
- Food processing
- Printing industry
- Farm machinery

Technical data

Function principle	electrically operated piston pump
Operating temperature	–25 °C to +70 °C *–13 °F to +158 °F*
Operating pressure	80 bar *1 200 psi*
Lubricant	Oil of at least 40 mm^2/s
Outlets	up to 18
Metering quantity	1,0 cm^3/min *0.06 in^3/min*
Reservoir	1; 2 l *0.26; 0.53 gal*
Main line connection	via SSV (see information for SSV on page 86) via connection block G 1/8
Operating voltage	12 and 24 V DC 120 and230 V AC (± 10%)
Protection	IP 6K9K
Dimensions	min. 237 × 215 × 230 mm *min. 9.33 × 8.46 × 9.05 in* max. 237 × 235 × 353 mm *max. 9.33 × 9.25 × 13.89 in*
Mounting position	upright

PUB LS/P1 16964 EN

QLS 311

Order number configurator

P	3	1	1								

Product series

SSV metering device
- **0** = external, SSV 6, SSV 8 [1]
- **1** = external, SSV 12, SSV 18 [1]
- **3** = SSV 6, rear only
- **4** = SSV 8, bottom only
- **6** = SSV 12
- **9** = SSV 18

SSV metering device position
- **0** = without external metering device
- **1** = back, vertical order of lines
- **2** = bottom, horizontal order of lines [2])

Operating voltage
- **2** = 12 V DC
- **4 =** 24 V DC
- **6** = 120 V AC, only with control P.C.B.
- **8** = 230 V AC, only with control P.C.B.

Reservoir with low-level control
- **1** = 1 l; *0.26 gal*
- **3** = 2 l; *0.53 gal*

Connections
- **0** = 1A – 1 connector, square-type plug, left, power supply
- **1** = 2A – 2 connectors, square-type plug, 1 connector left, power supply, 1 connector right, fault indication
- **2** = 1A – 1 connector, bayonet, left, power supply, fault indication, only for V DC application

Connection socket design
- **1** = square plug, design. For industrial applications *
- **5** = bayonet plug 4-pole design, only V DC application. For vehicles **

Type of electrical connector
- **1** = with socket, without cable *
- **5** = with socket, with cable (10 m, *33 ft*) *
- **7** = with socket, with cable (10 m, 33 ft), only for V DC application **

Control printed circuit board (P.C.B.)
- **0** = none, only terminal board without time control, only for V DC application
- **4** = control P.C.B. S4:
  NC contact or NO contact, programmable: 1-5 cycles, only for V DC application
- **4** = control P.C.B. S4:
  NC contact or NO contact, programmable: 1 cycle with SSV 12, SSV 18; 1 to 3 cycles with SSV 6, SSV 8, only for V AC application

[1] For external metering devices application only use the specific metering devices SSV...KNQLS
[2] Do not use QLS 301 with SSV metering device in bottom-mounting position for mobile applications. Do not install the pump in areas exposed to shock.

PUB LS/P1 16964 EN

MCLP

Product description

MCLP pumps are designed to supply oil under high pressure to a distribution circuit of progressive metering devices connected downstream. They include two main parts – the MCLP gearbox containing the lubrication oil and the MCLP pump heads. The gearbox can hold up to two pump heads. By the action of a cam in the gearbox, the pump plunger is pushed upward on the delivery stroke and returned to priming position by the plunger return spring. The cam can be actuated by an electrical motor or by connection to a machine. The cam of all pump models has a single lobe for pump head actuation.

Features and benefits

- Two sizes of pump heads available
- Fully adjustable output
- Driven by machine or electric motor (supplied separately)
- Various gear ratios available

Applications

- Applications with high pressure
- Natural gas engines
- Refineries
- Compressors

Technical data

Function principle	free shaft-end piston pump
Lubricant	oil
Outlets	1 to 2
Metering quantity	
pump head 7 mm	0,033-0,24 cm³/stroke *0.002-0.015 in³/stroke*
pump head 10 mm	0,07-0,49 cm³/stroke *0.004-0.03 in³/stroke*
Operating temperature	–18 to 94 °C *0 to 200 °F*
Operating pressure	pump head 7 mm: max. 550 bar; *8 000 psi* pump head 10 mm: max. 240 bar; *3 500 psi*
Relief pressure	pump head 7 mm: 375 bar; *5 500 psi* pump head 10 mm: 220 bar; *3 250 psi*
Inlet pressure	max. 3,5 bar; *50 psi*
Drive speed	12 to 75 rpm
Internal gear ratio	2:1, 4:1, 8:1, 21.5:1
Connection main line	inlet: 3/8 NPTF (F) outlet: 1/4 NPTF (F)
Dimensions	258 × 206 × 343 mm *10.188 × 8.125 × 13.5 in*
Mounting position	upside up

PUB LS/P1 16964 EN

MCLP

MLCP

Order number	Drive position	Gear ratio	Pump head
130201BCC	right, long shaft	2:1	2, including two pump heads, model number 130335
130200GEE	right	8:1	–, to be orderd separatly
130200DEE	right	4:1	–, to be orderd separatly
130300GEE	left	8:1	–, to be orderd separatly

Accessories

Pump heads, filters and valves

MCLP Pump heads

MCLP Pump heads

MCLP Pump heads are fitted to the MCLP gear box. Up to two pump heads can be used.

MCLP Pump heads

Order number	Piston
	ø mm
130332	7
130335	10

MCLP Pump inlet filter

MCLP Pump inlet filter

This filter serves two pump heads. It filters the oil, from the header tank, before entering the pump heads with filter size 10 µm.

MCLP Pump inlet filter

Order number	Inlet	Inlet pressure max.	
	NPTF(F)	bar	*psi*
130067	1	3.5	*50*

In-line filter

In-line filter

Filter used at the outlet of the pump heads to remove solid contaminants before delivering lubricants to the supply line. Uses filtering element size 10 µm. Has a hexbody size 1 $^{1}/_{4}$ in and includes FKM seal.

In-line filter

Order number	Inlet	Inlet pressure max.	
	NPTF(F)	bar	*psi*
84239	$^{1}/_{4}$	414	*6 000*

No-flow valve

No-flow valve

The no-flow valve monitors by sensing the flow of lubricant, eliminating the need for explosion-proof electrical components when used in hazardous locations. This valve actuates a three-way valve that diverts or exhausts the air supply to provide an air-operated signal or engine shutdown.

No-flow valve

Order number	Operating pressure max.		Air supply max.	
	bar	*psi*	bar	*psi*
87862	414	*6 000*	10	*150*

PUB LS/P1 16964 EN

Oil and fluid grease

Metering devices

Grease

SSVM

SSVD

SSVDL

SPVS

VPB

SSV

SSVL

VPK

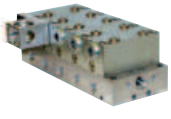
VP

UV

PSG1

PSG2

PSG3



XL

MC²-HP

PUB LS/P1 16964 EN

Overview of metering devices

Block metering device

Product	Lubricant Oil / fluid grease	Grease	Metering quantity		Outlets [1]	Operating pressure max.		Page
			cm³/outlet	*in³/outlet*		bar	*psi*	
SSVM	•	•	0,07	*0.004*	6 to 12	200	*2 900*	76
SSVD	•	•	0,08–1,80	*0.001–0.11*	6 to 22	350	*5 075*	78
SSVDL	•	•	0,08–1,80	*0.001–0.11*	6 to 14	350	*5 075*	80
SPVS	•	•	0,16–0,32	*0.010–0.02*	2 to 4	100	*1 450*	82
VPB	•	•	0,2	*0.01*	6 to 20	300	*4 350*	84
SSV	•	•	0,2	*0.01*	6 to 22	350	*5 075*	86
SSVL	•	•	0,2	*0.01*	6 to 14	350	*5 075*	88

[1] by crossporting or closing outlets possible to reduce outlet number below given minimum

Sectional metering device

Product	Lubricant Oil/ fluid grease	Grease	Metering quantity		Outlets	Operation pressure max.		Page
			cm³/outlet	*in³/outlet*		bar	*psi*	
VPK	•	•	0,050–0,600	*0.003–0.037*	6 to 20	300	*4 350*	90
VP	•	•	0,100–1,200	*0.006–0.073*	6 to 20	300	*4 350*	92
MC²-HP	•	•	0,196–0,393	*0.012–0.024*	6 to 16	510	*7 425*	94

Segment metering device

Product	Lubricant Oil/ fluid grease	Grease	Metering quantity		Outlets	Operation pressure max.		Page
			cm³/outlet	*in³/outlet*		bar	*psi*	
PSG1	•	•	0,050–0,250	*0.003–0.015*	6 to 20	200	*2 900*	96
PSG2	•	•	0,060–0,840	*0.003–0.051*	6 to 20	200	*2 900*	98
PSG3	•	•	0,800–3,200	*0.049–0.195*	6 to 20	200	*2 900*	100
UV	•	•	0,164–0,656	*0.010–0.040*	6 to 16	240	*3 480*	102
XL	•	•	0,983–2,460	*0.060–0.150*	6 to 12	170	*2 495*	104

PUB LS/P1 16964 EN

SSVM

Product description

SSVM type metering device is a compact single block progressive piston-type metering device. For direct mount of fittings with no need of any sealing in-between. Specially designed for small output needs, small spaces due to its small dimensions and short distances. Available with pin indicator for visual system monitoring.

Features and benefits

- Small and compact size for applications where space is restricted
- Internal combining of outlets
- Exact lubricant metering
- Available with visual pin indicator

Applications

- Printing industry
- Wood processing machines
- Material handling machines

Technical data

Function principle	block metering device
Outlets [1]	6 to 12
Lubricant	grease: up to NLGI 2 oil: at least 40 mm^2/s
Metering quantity	per cycle and outlet 0,07 cm^3; *0,004 in^3*
Connection inlet	G $^1/_8$ or $^1/_8$ NPTF
Connection outlet [2]	M 8 × 1
Operating temperature	–25 to +70 °C *–13 to +158 °F*
Operating pressure	max. 200 bar; *2 900 psi*
Material	black chromated steel
Dimensions	min. 48,50 × 50 × 25 mm *1.91 × 1.97 × 0.98 in* max. 83 × 50 × 25 mm *3.27 × 1.97 × 0.98 in*
Mounting position	any

[1] by crossporting or closing outlets possible to reduce outlet number below given minimum. Outlet #1 and #2 should never be closed
[2] use special SSVM outlet fittings

PUB LS/P1 16964 EN

SSVM

SSVM

Order number Inlet connection thread BSPP	Inlet connection thread NPTF	Outlets	Visual pin indicator K	Material black chromated steel
619-26761-1	**619-26764-1**	6	–	•
619-37044-1	**619-26650-1**	8	–	•
619-26846-1	**619-26848-1**	10	–	•
619-37049-1	**619-26653-1**	12	–	•
619-26762-3	**619-26765-3**	6	•	•
619-37045-3	**619-26651-3**	8	•	•
619-26847-2	**619-26849-3**	10	•	•
619-37050-3	**619-26654-3**	12	•	•

Accessories

Outlet fittings

Accessories

Order number	Designation
303-16284-1	outlet closure screw with sealing edge
226-14091-5	outlet push-in fitting with clamping ring and check valve for pressure plastic tube ø 4 mm
519-31661-1	screw-in fitting with clamping ring and -check valve for steel tube ø 4 mm

PUB LS/P1 16964 EN

SSVD

Product description

SSVD type metering device is a compact single block progressive metering device with adjustable output by means of different metering screw sizes. The screw meters the output for a pair of outlets (opposite outlets). For direct mount of fittings with no need of any sealing in-between. It is a versatile metering device available in many variants regarding type of monitoring or surface treatment.

Features and benefits

- Ten different metering screw sizes available
- Optionally visual or electrical monitoring
- Nickel plated surface treatment for corrosive environment available
- Ideal for use as primary metering device

Applications

- Construction and mining
- Farm machinery
- Industrial equipment

Technical data

Function principle	block metering device
Outlets [1]	6 to 22
Lubricant	grease up to NLGI 2 or oil of at least 40 mm^2/s
Metering quantity [2]	per cycle and outlet min. 0,08 cm^3; *0.001 in^3* max. 1,80 cm^3; *0.110 in^3*
Operating temperature	–25 to +70 °C *–13 to +158 °F*
Operating pressure	max. 350 bar; *5 075 psi*
Material	black chromated steel or nickel plated
Connection inlet	G $^1/_8$ or $^1/_8$ NPTF
Connection outlet [3]	M 10 × 1
Dimensions	min. 70 × 60 × 40 mm *min. 2.75 × 2.36 × 1.57 in* max. 190 × 60 × 40 mm *max. 7.48 × 2.36 × 1.57 in*
Mounting position	*any*

[1] by crossporting or closing outlets possible to reduce outlet number below given minimum. Outlet #1 and #2 should never be closed
[2] depending on metering screw valid for a pair of opposite outlets
[3] use special SSVD outlet fittings

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication: **12401 EN**

PUB LS/P1 16964 EN

SSVD

SSVD [1)]

Outlets	Order number Standard	Visual pin K	Emergency nipple E	Piston detector, cable (3 m, *9.8 ft*) no plug N	Indicator pin, proximity switch, cable (2 m, *6.6 ft*), no plug KN	Piston detector, with connection M 12, 3 wire NP
SSVD BSPP, black chromated						
6	**649-29485-1**	**649-29505-1**	**649-77397-1**	**649-29495-1**	**649-29515-1**	**649-29525-1**
8	**649-29486-1**	**649-29506-1**	**649-77395-1**	**649-29496-1**	**649-29516-1**	**649-29526-1**
10	**649-29487-1**	**649-29507-1**	**649-77396-1**	**649-29497-1**	**649-29517-1**	**649-29527-1**
12	**649-29488-1**	**649-29508-1**	**649-77397-1**	**649-29498-1**	**649-29518-1**	**649-29528-1**
14	**649-29489-1**	**649-29509-1**	**649-77398-1**	**649-29499-1**	**649-29519-1**	**649-29529-1**
16	**649-29587-1**	**649-29595-1**	**649-77399-1**	**649-29611-1**	**649-29603-1**	**649-29619-1**
18	**649-29588-1**	**649-29596-1**	**649-77400-1**	**649-29612-1**	**649-29604-1**	**649-29620-1**
20	**649-29589-1**	**649-29597-1**	**649-77401-1**	**649-29613-1**	**649-29605-1**	**649-29621-1**
22	**649-29590-1**	**649-29598-1**	**649-77402-1**	**649-29614-1**	**649-29606-1**	**649-29622-1**
SSVD NPTF, black chromated						
6	**649-29535-1**	**649-29545-1**	–	**649-29565-1**	**649-29555-1**	**649-29575-1**
8	**649-29536-1**	**649-29546-1**	–	**649-29566-1**	**649-29556-1**	**649-29576-1**
10	**649-29537-1**	**649-29547-1**	–	**649-29567-1**	**649-29557-1**	**649-29577-1**
12	**649-29538-1**	**649-29548-1**	–	**649-29568-1**	**649-29558-1**	**649-29578-1**
14	**649-29539-1**	**649-29549-1**	–	**649-29569-1**	**649-29559-1**	**649-29579-1**
16	**649-29627-1**	**649-29635-1**	–	**649-29651-1**	**649-29643-1**	**649-29659-1**
18	**649-29628-1**	**649-29636-1**	–	**649-29652-1**	**649-29644-1**	**649-29660-1**
20	**649-29629-1**	**649-29637-1**	–	**649-29653-1**	**649-29645-1**	**649-29661-1**
22	**649-29630-1**	**649-29638-1**	–	**649-29654-1**	**649-29646-1**	**649-29662-1**
SSV BSPP, nickel plated						
6	**649-77180-1**	**649-77853-1**	–	–	–	–
8	**649-77181-1**	**649-77854-1**	–	–	–	–
10	**649-77182-1**	**649-77855-1**	–	–	–	–
12	**649-77183-1**	**649-77856-1**	–	–	–	–
14	**649-77184-1**	**649-77857-1**	–	–	–	–
16	**649-77185-1**	**649-77858-1**	–	–	–	–
18	**649-77186-1**	**649-77859-1**	–	–	–	–
20	**649-77187-1**	**649-77852-1**	–	–	–	–
22	**649-77188-1**	**649-77860-1**	–	–	–	–

[1)] SSVD also with emergency lubrication nipple available

Accessories

Outlet fittings

Outlets and devices

Order number	Description
303-17499-3	Outlet closure plug, with sealing edge, steel
303-19346-2	Outlet closure plug, with sealing edge, stainless steel
226-10328-5	Outlet push-in fitting, with clamping ring and check valve for tube or plastic tube with stud for ø 6 mm
504-30344-4	Outlet screw-in fitting, with clamping ring and check valve for tube ø 6 mm
219-13798-3	O-ring for stainless steel closure plug if after tightening with 18 Nm not sealed
519-318 26-1	Device for external gathering of SSV outputs from outlet #1 and #2

Metering screws [1)]

Order number	Descritpion
549-34254-1	metering screw 0,08 cm^3, 12 pieces
549-34254-2	metering screw 0,14 cm^3, 12 pieces
549-34254-3	metering screw 0,20 cm^3, 12 pieces
549-34254-4	metering screw 0,30 cm^3, 12 pieces
549-34254-5	metering screw 0,40 cm^3, 12 pieces
549-34254-6	metering screw 0,60 cm^3, 12 pieces
549-34254-7	metering screw 0,80 cm^3, 12 pieces
549-34254-8	metering screw 1,00 cm^3, 12 pieces
549-34254-9	metering screw 1,40 cm^3, 12 pieces
549-34255-1	metering screw 1,80 cm^3, 12 pieces
549-34255-2	metering screws from 0,08 to 1,80 cm^3, 2 pieces

[1)] for black chromated SSVD; for nickel plated SSVD ask for metering screws in stainless steel

PUB LS/P1 16964 EN

SSVDL

Product description

SSVDL type metering device is a single block progressive metering device with larger tube diameters especially for heavy industry applications. Available with pin indicator for visual system monitoring or with piston detector for electrical system monitoring. Outlet combining elements for 2, 3, 4 and 5 outlets available.

Features and benefits

- Similar to SSVD but with larger distances between the outlets for larger tube diameters
- Sizes 6 to 14 outlets
  High operating pressure
- Exact lubricant metering
- Optionally equipped with visual monitoring pin or with electrically monitored piston detector

Applications

- Heavy industry

Technical data

Function principle	block metering device
Outlets [1]	6 to 14
Lubricant	grease up to NLGI 2, or oil of at least 40 mm^2/s
Metering quantity	per cycle and outlet min. 0,08 cm^3; *0.001 in^3* max. 1,80 cm^3; *0.110 in^3*
Operating temperature	-25 to +75 °C *-13 to 167 °F*
Operating pressure	max. 350 bar *max. 5 075 psi*
Material	black-chromated steel
Connection inlet	R 1/4
Connection outlet	8, 10 or 12 mm
Dimensions	min. 110 × 60 × 50 mm *min. 4.33 × 2.36 × 1.97 in* max. 230 × 60 × 50 mm *max. 9,05 × 2,36 × 1,97 in*
Mounting position	*any*

[1] to ensure metering device operation outlet 1 and 2 should never be closed by a closure plug

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
12401 EN

PUB LS/P1 16964 EN

SSVDL

Order numbers

Outlets	Standard	with visual pin	with bypass bore
6	**649-77167-1**	**649-77474-1**	**649-77464-1**
8	**649-77168-1**	**649-77475-1**	**649-77466-1**
10	**649-77169-1**	**649-77476-1**	**649-77468-1**
12	**649-77170-1**	**649-77477-1**	**649-77470-1**
14	**649-77171-1**	**649-77478-1**	**649-77472-1**

Accessories

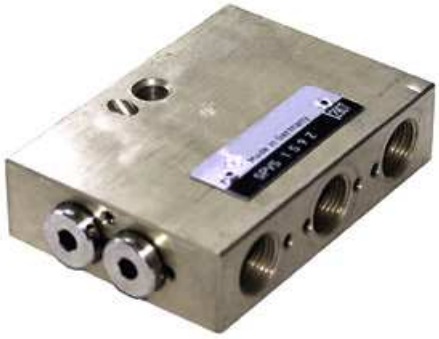
Fittings

Outlet combinations

Order number	Designation
519-34643-1	double, assembly (incl. pos. 2x3, 1x5)
519-34643-2	triple, assembly (incl. pos. 3x3, 2x5)
519-34643-3	quadruple, assembly (incl. pos. 4x3, 3x5)
519-34643-4	quintuple, assembly (incl. po s. 5x3, 4x5)

PUB LS/P1 16964 EN

SPVS



Product description

Block type metering devices of the SPVS series are used to either increase the number of outlets of a lubricating pump or to portion the volume flow and deliver it to the lube points, without any influence on the operating system pressure.

Features and benefits

- Compact design
- Compact two piston version with mechanical interlock, prevents selfblockage
- Universally usable for oil and grease
- Central function monitoring with electrical stroke monitoring device possible
- Accurate lubricant distribution due to fitted pistons

Applications

- Metal forming machines
- Small machinery
- Packaging machines

Technical data

Function principle	block metering device
Outlets	2 or 4
Lubricant	grease up to NLGI 2 oil with minimum viscosity of 12 mm^2/s
Metering quantity	per cycle and outlets: 4 outlets: 0,16 cm^3; *0.01 in^3* 2 outlets: 0,32 cm^3; *0.02 in^3*
Inlet volume flow	max. 45 cm^3/min; *2.75 in^3/min*
Operating temperature [2]	-10 to +100 °C; *-14 to +212 °F*
Operating pressure [1]	max. 100 bar; *1 450 psi*
Material	with M 12 × 1: brass with G 1/8: steel with electrical monitoring: cast iron
Connection inlet/outlet	M 12 × 1 or G 1/8
Electrical monitoring	one electrical cycle/pulse corresponds to 0,64 cm^3, *0.04 in^3*
Electrical connection	plug according DIN 43650
Voltage rated U_i	30 V DC
Current load Ii	0,02 A
Output function	normally open
Switching element	reed contact
Protection class [3]	IP 65
Dimensions	max. 55 x 168,5 x 31 mm *max. 2.16 x 6.63 x 1.22 in*
Mounting position	any

[1] max. Differential pressure with oil 20 bar *(290 psi)*, with grease 30 bar *(435 psi)*
[2] for basic design without electric monitoring
[3] available in ATEX design upon request

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication: **1-3029-EN**

PUB LS/P1 16964 EN

SPVS

SPVS

Order number	Outlets	Thread G 1/8	M 12 × 1	Monitoring electrical	Material
44-2578-6321	2	•	–	–	steel
44-2578-6323	4	•	–	–	steel
44-2578-6110	2	–	•	–	brass
44-2578-6201	4	–	•	–	brass
44-2578-6360	2	•	–	•	cast iron
44-2578-6350	4	•	–	•	cast iron

PUB LS/P1 16964 EN

VPB

Product description

VPB type metering devices are compact single-block progressive metering. Available with pin indicator for visual system monitoring or with piston detector for electrical system monitoring.

Features and benefits

- Robust and cost-efficient
- Available in metric and inch design
- Optional visual or electric monitoring
- Internal crossporting possibility, use of standard tube fittings
- Variety of material as zinc coated or stainless steel available

Applications

- Metal forming machines
- Vehicles
- Production machines of automotive industry
- Packaging machines
- Printing industry
- Farm machinery
- Construction and mining

Technical data

Function principle	block metering device
Outlets	6 to 20
Lubricant	grease up to NLGI 2 oil with minimum viscosity of 12 mm^2/s
Metering quantity	per stroke and outlet: 0,2 cm^3; *0.01 in^3*
Operating temperature	–25 to +110 °C *–13 to +230 °F*
Operating pressure	oil: max. 200 bar; *2 900 psi* grease: max. 300 bar; *4 350 psi*
Material	stainless steel, tinned/nitrile
Connection inlet	VPBM; M 10×1 VPBG: G 1/8
Connection outlet	VPBM; M 10×1 VPBG: G 1/8
Dimensions	min. 60×60×30 mm *min. 2.36×2.36×1.18 in* max. 165×60×30 mm *max. 6.48×2.36×1.18 in*
Mounting position:	
on machines without vibration	any
on machines with vibration	piston position should be 90° to machine movements direction

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
1-3017-EN, 951-230-008-EN

PUB LS/P1 16964 EN

VPB

Order number configurator

VPB							A	

Progressive block metering device

Thread inlet and outlet screw connection
M = M 10x1
G = G $^1/_8$

Metering device sections (a section consits of 2 opposing outlets)
3 = for 3 sections (max. 6 outlets)
4 = for 4 sections (max. 8 outlets)
5 = for 5 sections (max. 10 outlets)
6 = for 6 sections (max. 12 outlets)
7 = for 7 sections (max. 14 outlets)
8 = for 8 sections (max. 16 outlets)
9 = for 9 sections (max. 18 outlets)
10 = for 10 sections (max. 20 outlets)

Outlets
6 = 6 outlets open ... **20** = 20 outlets open

Monitoring type
00 = without
P2 = piston detector, 2-pin connection
P3 = piston detector, 3-pin connection
ZY = cycle indicator (use with check valve only)

Installation position of the monitoring system
-1R = right-hand side on the 1st section
-1L = left-hand side on the 1st section
-2R = right-hand side on the 2nd section
...
-0R = right-hand side on the 10 th section
-0L = left-hand side on the 10 th section

Attachments
00 = without attachments
15 = with (grease) 2/2-directional solenoid valve. When de-energized, continuity to metering device closed

Version
A = change version

Material
1 = basic design
3 = stainless steel design, monitoring on stainless steel version only with cycle switch (ZY) possible

Accessories

Fittings

Inlet fittings

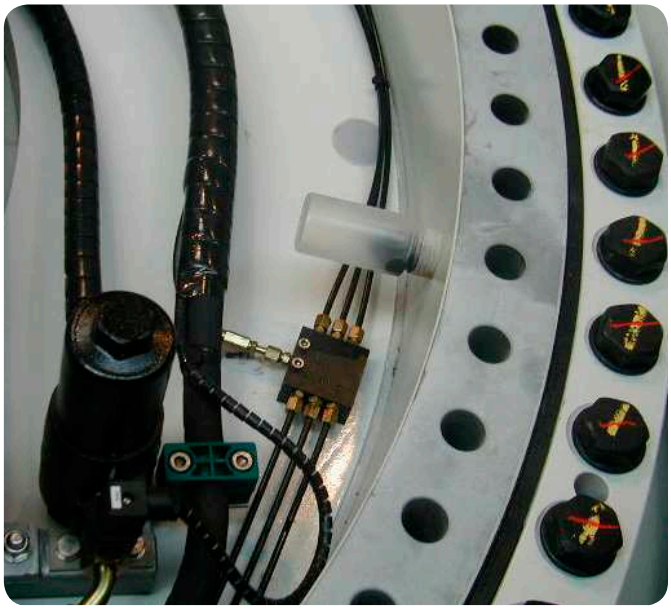
Order number	Designation
406-423	M10×1 for tube ø6 mm
441-008-511	M10×1 for tube ø8 mm
410-443	M10×1 for tube ø10 mm
406-403W	G$^1/_8$ for tube ø6 mm
408-423W	G$^1/_8$ for tube ø8 mm
410-443W	G$^1/_8$ for tube ø10 mm

Outlet fittings

Order number	Designation
404-403	M10×1 for tube ø4 mm
406-403	M10×1 for tube ø6 mm
441-008-511	M10×1 for tube ø8 mm
451-006-518-VS	M10×1 SKF Quick Connector tube ø6 mm
404-403W	G$^1/_8$ for tube ø4 mm
406-403W	G$^1/_8$ for tube ø6 mm
408-403W	G$^1/_8$ for tube ø8 mm
451-006-518W VS	G$^1/_8$ SKF Quick Connector tube ø6 mm
466-431-001	M10×1 closure plug
466-419-001	G$^1/_8$ closure plug

PUB LS/P1 16964 EN

SSV



Product description

SSV type metering device is a compact single block progressive metering device. For direct mount of fittings with no need of any sealing inbetween. Available with pin indicator for visual system monitoring or with piston detector for electrical system monitoring. Metering device has to be ordered in single parts, see chart.

Features and benefits

- Sizes up to 22 outlets
- High operating pressure
- Available in different materials
- Exact lubricant metering
- Unique internal crossporting technology
- Optionally equipped with visual monitoring pin or with electrically monitored piston detector

Applications

- Construction and mining
- Farm machinery
- Industrial equipment
- Renewable energies

Technical data

Function principle	block metering device
Outlets [1]	6 to 22
Lubricant	grease up to NLGI 2, oil at least 40 mm^2/s
Metering quantity	per cycle and outlet: 0,2 cm^3; *0.01 in^3*
Operating temperature	–40 to +200 °C *–40 to +390 °F*
Operating pressure	max. 350 bar; max. *5 075 psi*
Material	black chromated steel stainless steel
Connection inlet	G $^1/_8$ or $^1/_8$ NPTF
Connection oulet [2]	M 10×1
Dimensions	min. 60×60×30 mm *min. 2.37×2.37×1.18 in* max. 180×60×30 mm *max. 7.087×2.63×1.18 in*
Mounting position	any

[1] by crossporting or closing outlets possible to reduce outlet number below given minimum. Outlet #1 and #2 should never be closed
[2] use special SSV outlet fittings

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication: **12401-EN**

PUB LS/P1 16964 EN

SSV

Order numbers

Outlets	Standard	Visual pin K	Emergency nipple E	Piston detector, cable (3 m, *9.8 ft*) no plug N	Indicator pin, proximity switch, cable (2 m, *6.6 ft*), no plug KN	Piston detector, with connection M 12, w3 wire NP
SSV BSPP black chromated						
6	**619-26473-1**	**619-26474-3**	**619-77345-1**	**619-28257-1**	**619-27613-1**	**619-29050-1**
8	**619-25730-2**	**619-25754-4**	**619-77346-1**	**619-28258-1**	**619-27614-1**	**619-29051-1**
10	**619-26841-1**	**619-26842-2**	**619-77347-1**	**619-28259-1**	**619-27615-1**	**619-29052-1**
12	**619-25731-2**	**619-25755-4**	**619-77348-1**	**619-28260-1**	**619-27616-1**	**619-29674-1**
14	**619-28862-1**	**619-28871-1**	**619-77349-1**	**619-28890-1**	**619-29028-1**	**619-29387-1**
16	**619-28863-1**	**619-28872-1**	**619-77350-1**	**619-28907-1**	**619-28905-1**	**619-29951-1**
18	**619-28864-1**	**619-28873-1**	**619-77351-1**	**619-28957-1**	**619-28959-1**	**619-29139-1**
20	**619-28865-1**	**619-28874-1**	**619-77352-1**	**619-28935-1**	**619-28934-1**	**619-77301-1**
22	**619-28866-1**	**619-28875-1**	**619-77353-1**	**619-29015-1**	**619-77461-1**	**619-29973-1**
SSV BSPP, stainless steel 1.4305/303						
6	**619-27471-1**	**619-27472-1**	**619-77680-1**	–	–	**619-29929-1**
8	**619-27473-1**	**619-27474-1**	**619-77681-1**	–	–	**619-29322-1**
10	**619-27475-1**	**619-27476-1**	**619-77682-1**	–	–	**619-29970-1**
12	**619-27477-1**	**619-27478-1**	**619-77683-1**	–	–	**619-29971-1**
14	**619-29063-1**	**619-29067-1**	**619-77684-1**	–	–	**619-29993-1**
16	**619-29064-1**	**619-29068-1**	**619-77685-1**	–	–	**619-29994-1**
18	**619-29065-1**	**619-29069-1**	**619-77686-1**	–	–	**619-77178-1**
20	**619-29066-1**	**619-29074-1**	**619-77687-1**	–	–	–
22	**619-29775-1**	**619-77910-1**	**619-77688-1**	–	–	**619-77179-1**
SSV BSPP, stainless steel 1.4571/316 Ti						
6	**619-27824-1**	–	–	–	–	–
8	**619-27825-1**	–	–	–	–	–
10	**619-27889-1**	–	–	–	–	–
12	**619-27900-1**	–	–	–	–	–
SSV NPT, black chromated						
6	**619-27121-1**	**619-27122-1**	–	–	–	–
8	**619-26396-2**	**619-26646-2**	–	–	–	–
10	**619-26844-1**	**619-26845-2**	–	–	–	–
12	**619-26398-2**	**619-26648-2**	–	–	–	–
14	**619-29400-1**	**619-28899-1**	–	–	–	–
16	**619-29401-1**	**619-28900-1**	–	–	–	–
18	**619-77828-1**	**619-28901-1**	–	–	–	–
20	**619-77829-1**	**619-28902-1**	–	–	–	–
22	–	**619-77254-1**	–	–	–	–
SSV NPT, stainless steel 1.4305/303						
6	**619-27792-1**	**619-27793-1**	–	–	–	–
8	**619-27796-1**	**619-27797-1**	–	–	–	–
10	**619-27800-1**	**619-27801-1**	–	–	–	–
12	**619-27804-1**	**619-27805-1**	–	–	–	–
14	–	**619-77101-1**	–	–	–	–

Accessories

Order number	Designation
303-17499-3	Outlet closure plug with sealing edge, steel
303-19346-2	Outlet closure plug with sealing edge, stainless steel
219-13798-3	O-ring for stainless steel closure plug if after tightening with 18 Nm not sealed
226-10328-5	Outlet push-in fitting with clamping ring and check valve for tube or plastic tube with stud for ø 6 mm
504-30344-4	Outlet screw-in fitting with clamping ring and check valve for tube ø 6 m
519-318 26-1	Device for external gathering of SSV outputs from outlet #1 and #2

PUB LS/P1 16964 EN

SSVL

Product description

SSVL type metering device is a single block progressive metering device with larger tube diameters especially for heavy industry applications. Available with pin indicator for visual system monitoring or with piston detector for electrical system monitoring. Outlet combining elements for 2, 3, 4 and 5 outlets available.

Features and benefits

- Similar to SSV but with larger distances between the outlets for larger tube diameters
- Sizes 6 to 14 outlets
- High operating pressure
- Exact lubricant metering
- Optionally equipped with visual monitoring pin or with electrically monitored piston detector

Applications

- Heavy industry

Technical data

Function principle	block metering device
Outlets [1]	6 to 14
Lubricant	grease up to NLGI 2, or oil of at least 40 mm^2/s
Metering quantity	per cycle and outlet 0,2 cm^3; *0.12 in^3*
Operating temperature	-25 to +75 °C *-13 to 167 °F*
Operating pressure	350 bar *5 075 psi*
Material	black-chromated steel
Connection inlet	R 1/4
Connection outlet	8, 10 or 12 mm
Dimensions	min. 90×60×40 mm *min. 3.54×2.36×1.57 in* max. 210×60×40 mm *max. 8.26×2.36×1.57 in*
Mounting position	any

[1] to ensure metering device operation outlet 1 and 2 should never be closed by a closure plug

PUB LS/P1 16964 EN

SSVL

Order numbers

Outlets	Standard	with visual pin	with bypass bore
6	**619-77162-1**	**619-77231-1**	**619-77311-1**
8	**619-77163-1**	**619-77232-1**	**619-77312-1**
10	**619-77164-1**	**619-77233-1**	**619-77313-1**
12	**619-77165-1**	**619-77234-1**	**619-77314-1**
14	**619-77166-1**	**619-77235-1**	**619-77315-1**

Accessories

Fittings

Outlet combinations

Order number	Designation
519-34643-1	double, assembly (incl. pos. 2x3, 1x5)
519-34643-2	triple, assembly (incl. pos. 3x3, 2x5)
519-34643-3	quadruple, assembly (incl. pos. 4x3, 3x5)
519-34643-4	quintuple, assembly (incl. po s. 5x3, 4x5)

PUB LS/P1 16964 EN

VPK

Product description

The VPK type metering device is a sectional metering device. Its metering sections cover a metering volume per outlet and cycle of 0,05 cm³ (T-section = 2 outlets) to 0,6 cm³ (S-section = 1 outlet). All sections (inlet, intermediate, end) are tightened via tie rods. The delivery ducts are sealed by porting plates in-between the segments. A minimum of three intermediate sections is necessary.

Features and benefits

- Volumetric flow of up to 0,05 cm³/min
- Universal use in continuous or intermittent operation
- Metering sections with variable metering amount
- Internal consolidation of outlets
- Visual or electrical monitoring optional
- Safe sealing concept with porting plates

Applications

- Metal forming machines
- Vehicles
- Production machines of automotive industry
- Packaging machines
- Printing industry
- Construction and mining
- Farm machinery

Technical data

Function principle	sectional metering device
Outlets	6 to 20
Lubricant	grease up to NLGI 2 oil with minimum viscosity of 12 mm²/s
Metering quantity	per cycle and outlet: 0,05-0,6 cm³; *0.003-0.037 in³*
Operating temperature	–25 to +90 °C *–13 to +194 °F*
Operating pressure	oil: 200 bar; *2 900 psi* grease: 300 bar; *4 350 psi*
Material	Inlet plate, intermediate plate and end plate: steel, galvanized/NBR Sections/piston plates: steel, galvanized
Connection inlet	VPKM: M 10×1 VPKG: G ⅛
Connection outlet	VPKM: M 10×1 VPKG: G ⅛
Dimensions	min. 81,9×65×34 mm *min. 3.22×2.56×1.34 in* max. 195,3×65×34 mm *max. 7.69×2.56×1.34 in*
Mounting position:	
on machines without vibration	any
on machines with vibration	piston position should be 90° to machine movements direction

NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
1-3015-EN, 951-230-008-EN

3D data and product configuration:
skf-lubrication.partcommunity.com/3d-cad-models/

PUB LS/P1 16964 EN

VPK

Body configurator VPK [ ] [ ] [ ] X [ ] [ ]

Product series

Mainline thread
M = M 10x 1 inlet and outlet thread
G = G 1/8 inlet and outlet thread

Monitoring
X = none
2 = 2-pin piston detector, M 12×1 plug
3 = 3-pin piston detector, M 12×1 plug (wire breaking protection)
Y = cycle indicator, visual plunger rod [1]
S = cycle indicator with holder and proximity switch M 12×1 [1]
G = cycle indicator with holder for proximity switch M 12×1 (without proximity switch) [1]

Position of monitoring device
X = none
A = left hand side, section 1
C = left hand side, section 2
E = left hand side, section 3
G = left hand side, section 4
J = left hand side, section 5
L = left hand side, section 6
N = left hand side, section 7
Q = left hand side, section 8
S = left hand side, section 9
U = left hand side, section 10
B = right hand side, section 1
D = right hand side, section 2
F = right hand side, section 3
H = right hand side, section 4
K = right hand side, section 5
M = right hand side, section 6
P = right hand side, section 7
R = right hand side, section 8
T = right hand side, section 9
V = right hand side, section 10

Mainline fitting [2]
X = none
G = VPKM/VPKG straight push-in connector ø 6 mm
B = VPKM straight screw-in connector ø 6 mm (LL)
C = VPKM/VPKG straight screw-in connector ø 8 mm (LL)

Sections
... = to be configured in the section configurator

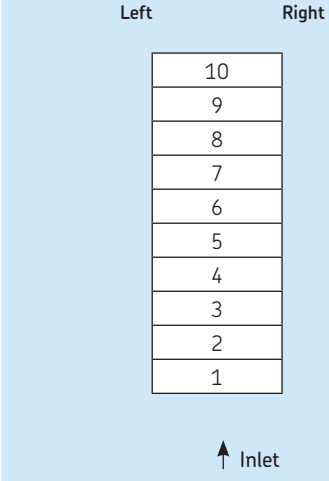
Section configurator [4] – –

Section (mininum 3 sections)

Single	Twin
B = 0,10 cm³/cycle (05S)	**A** = 0,05 cm³/cycle (05T)
D = 0,20 cm³/cycle (1S)	**C** = 0,10 cm³/cycle (1T)
F = 0,40 cm³/cycle (2S)	**E** = 0,20 cm³/cycle (2T)
H = 0,60 cm³/cycle (3S)	**G** = 0,30 cm³/cycle (3T)

Outlet fitting left
S = outlet closed by screw plug [5]
X = outlet without fitting

Outlet fitting right
S = outlet closed by screw plug [5]
X = outlet without fitting



[1] The installation of the cycle indicator **is only** possible from metering device section 2T and 2S, respectively!
[2] Solderless pipe unions with cutting sleeve acc. to DIN 2353, but for G
[3] LL-series = extra light version, L-series = light version, S-series = heavy duty version
[4] Repeat this entry according number of selected sections (1 to 10)
[5] Metering device only operates with one side (left or right) outlet closed per section

PUB LS/P1 16964 EN

VP

Product description

The VP type metering device is a sectional metering device.
Its metering sections cover a metering volume per outlet and cycle of 0,1 cm³ (T-section = 2 outlets) to 1,2 cm³ (S-section = 1 outlet). All sections (inlet, intermediate, end) are tightened via tie rods. The delivery ducts are sealed by porting plates inbetween the segments. A minimum of three intermediate sections is necessary.

Features and benefits

- Volumetric flow of up to 1 000 cm³/min (*61 in³/min*)
- Universal use in continuous or intermittent operation
- Metering sections with variable metering amount
- Internal and external consolidation of outlets
- Visual or electrical monitoring optional
- Ideal as main metering device
- All outlets with build-in non-return valves

Applications

- Preferred master metering device
- Metal forming machines
- Vehicles, trucks
- Construction and mining
- Packaging machines
- General industry
- Farm machinery

Technical data

Function principle	sectional metering device
Outlets	6 to 20
Lubricant	oil: with minimum viscosity of 12 mm²/s grease: up to NLGI 2
Metering quantity	per cycle and outlet 0,1 to 1,2 cm³; *0.006 to 0.073 in³*
Operating pressure	oil: 200 bar; *2 900 psi* grease: 300 bar; *4 350 psi*
Operating temperature	–25 to +90 °C *–13 to +194 °F*
Material	Inlet plate, separator plate and end plate: steel, galvanized/NBR sections/piston plates: steel, galvanized
Connection inlet	VPM: M 14 × 1,5 VPG: G 1/4
Connection outlet	VPM: M 10 × 1 VPG: G 1/8
Dimensions	min. 98 × 82,5 × 41 mm *min. 3.86 × 3.25 × 161 in* max. 238 × 82,5 × 41 mm *max. 9.37 × 3.25 × 161 in*
Mounting position:	
on machines without vibration	any
on machines with vibration	piston position should 90° to machine movements direction

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
15400 EN, 951-230-008 EN

3D data and product configuration:
skf-lubrication.partcommunity.com/3d-cad-models/

PUB LS/P1 16964 EN

VP

Body configurator

VP				X	X		X	

Product series

Mainline thread
M = M 14 × 1,5 inlet thread; M 10 × 1 outlet thread
G = G 1/4 inlet thread; G 1/8 outlet thread

Monitoring
X = none
2 = 2-pin piston detector, M 12 × 1 plug
3 = 3-pin piston detector, M 12 × 1 plug (wire breaking detection)
Y = cycle indicator, visual (plunger rod) [1]

Position of monitoring device
X = none

A = left hand side, section 1	**B** = right hand side, section 1
C = left hand side, section 2	**D** = right hand side, section 2
E = left hand side, section 3	**F** = right hand side, section 3
G = left hand side, section 4	**H** = right hand side, section 4
J = left hand side, section 5	**K** = right hand side, section 5
L = left hand side, section 6	**M** = right hand side, section 6
N = left hand side, section 7	**P** = right hand side, section 7
Q = left hand side, section 8	**R** = right hand side, section 8
S = left hand side, section 9	**T** = right hand side, section 9
U = left hand side, section 10	**V** = right hand side, section 10

Mainline fitting [2] [3]
X = none

A = VPM straight connector, tube ø 6 mm (L)	**B** = VPG straight connector, tube ø 6 mm (S)
D = VPM straight connector, tube ø 8 mm (S)	**C** = VPG straight connector, tube ø 8 mm (L)
E = VPM straight connector, tube ø 10 mm (L)	**E** = VPG straight connector, tube ø 10 mm (L)
F = VPM straight connector, tube ø 12 mm (L)	**F** = VPG straight connector, tube ø 12 mm (L)

Sections
... = to be configured in the section configurator

Section configurator [4]

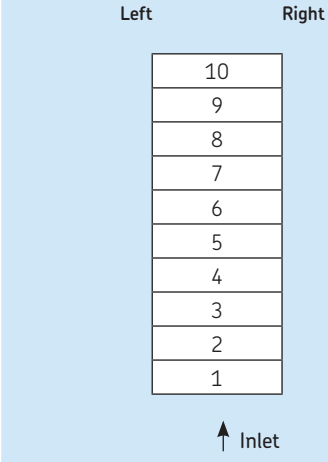
–		–

Section (mininum 3 sections)

Single	**Twin**
D = 0,20 cm³/cycle	**C** = 0,10 cm³/cycle
F = 0,40 cm³/cycle	**E** = 0,20 cm³/cycle
H = 0,60 cm³/cycle	**G** = 0,30 cm³/cycle
K = 0,80 cm³/cycle	**J** = 0,40 cm³/cycle
M = 1,00 cm³/cycle	**L** = 0,50 cm³/cycle
Q = 1,20 cm³/cycle	**N** = 0,60 cm³/cycle

Outlet fitting left
S = outlet closed by screw plug [5]
X = outlet without fitting

Outlet fitting right
S = outlet closed by screw plug [5]
X = outlet without fitting



[1] The installation of the cycle indicator is only possible from metering device section 2T and 2S, respectively!
[2] Solderless pipe unions with cutting sleeve acc. to DIN 2353
[3] LL-series = extra light version, L-series = light version, S-series = heavy duty version
[4] Repeat this entry according number of selected sections (1 to 10)
[5] Metering device only operates with one side (left or right) outlet closed per section

MC²-HP

Product description

MC²-HP metering devices are modular type metering devices consisting of a baseplate part containing all inlet and outlet connections and a metering sections part containing alternate outlet ports for installation of performance indicators. The baseplate part has one inlet, three to eight intermediate and one end section hold via three tie rods. The metering sections part consists of three to eight metering sections (depending on number of outlets needed) which are fixed on the baseplate part. All parts have FKM O-ring seals in-between. There must be a minimum of three metering sections. The metering sections will have either single or twin outlets. Whenever a single metering segment or crossport plate is used, the unused outlet must be plugged. Metering device has to be ordered in single parts, see chart.

Features and benefits

- Alternate outlet ports for performance indicators
- For mineral oil based or synthetic lubricants
- Optional metering sections with visual cycle indicator
- Optional by-pass metering segment for addition or deletion of lubrication points

Applications

- Gas engines
- Compressors
- For applications with high system back pressure

Technical data

Function principle	sectional metering device
Outlets [1]	6 to 16
Lubricant	mineral or synthetic oil or grease NLGI 0 to 2
Metering quantity	per cycle and outlet min. 0,098 cm³; *0.006 in³* max. 0,787 cm³; *0.048 in³*
Operating temperature	-26 to +200 °C *-15 °F to 400 °F*
Operating pressure	max. 510 bar; *7 500 psi*
Connection inlet	¼ NPSF (F)
Connection outlet	⅛ NPSF (F)
Material	housing: black chromate plated steel seals: FKM
Dimensions	min. 129 × 86 × 48 mm *min. 5.09 × 3.38 × 1.87 in* max. 245 × 86 × 48 mm *max. 9.63 × 3.38 × 1.87 in*
Mounting position	any

[1] It is possible to reduce the number of outlets below the given minimum by crossporting or closing outlets.

PUB LS/P1 16964 EN

MC²-HP

MC²–HP modular design

Number of outlets	Inlet section order number	End section order number	Tie rod order number	Tie rod quantity required	Intermediate section order number	Intermediate section quantity required	Metering valves quantity required
6	**87955**	**87956**	**236640**	3	**87957**	3	3
8	**87955**	**87956**	**236641**	3	**87957**	4	4
10	**87955**	**87956**	**236642**	3	**87957**	5	5
12	**87955**	**87956**	**236644**	3	**87957**	6	6
14	**87955**	**87956**	**236645**	3	**87957**	7	7
16	**87955**	**87956**	**236646**	3	**87957**	8	8

Note: use 68645 closure plug ($^1/_8$ NPT) to plug non-working outlets. Each 87956 end section contains 3 tie rod nuts

MC²–HP Metering valves single outlet

Order number Standard	W/right side cycle indicator	Designation	Metering quantity	
			cm³	in
876061	•	06S	0,196	0.196
876091	•	09S	0,295	0.295
876121	**876123**	12S	0,393	0.393
876181	**876183**	18S	0,590	0.590
876241	**876243**	24S	0,787	0.787

MC²–HP Metering valves twin outlet

Order number Standard	W/right side cycle indicator	Designation	Metering quantity	
			cm³	in
876062	•	06T	0,98	0.098
876092	•	09T	0,147	0.147
876122	**876124**	12T	0,197	0.197
876182	**876184**	18T	0,295	0.295
876242	**876244**	24T	0,393	0.393

Accessories

Plugs and indicators

Plug and crossporting

Order number	Designation
68645	closure plug
87905	single and crossport kit

Product description

Closure plug to plug non-working outlets. External crossport kit connects alternate outlet ports to combine the volume of two metering segments through a single outlet.

Performance indicators

Order number	Type	Disc colour	Pressure rating	
			bar	*psi*
87895	pin	yellow	110	*1 450*
87896	pin	red	120	*1 750*
87897	pin	orange	140	*2 050*
87885	reset	green	70	*1 000*
87886	reset	yellow	100	*1 500*
87887	reset	red	140	*2 000*
87888	reset	orange	170	*2 500*
87889	reset	blue	205	*3 000*

Product description

Pin type performance indicators where high pressure ruptures internal disc and extends indicator. Reset-type indicator where high pressure extends indicator and resets after pressure is relieved. O-rings are FKM for both types.

PUB LS/P1 16964 EN

PSG1

Product description

The PSG1 is a progressive metering device made of a baseplate and metering sections which can be removed without loosening the tubing as all inlets and outlets are positioned in the common baseplate. By unscrewing the internal setscrew two opposite outlets can be consolidated internally. Externally a maximum of three outlets can be consolidated via a crossporting bridge. A minimum of three metering sections need to be used.

Features and benefits

- Easy servicing as outlets are located on baseplate
- Flexible due to exchangeable metering segments
- Visual or electrical monitoring possible
- Dummy segments with no output available
- Adjustable by consolidating outlets internally or externally
- Most compact modular metering device

Applications

- Tunnel boring machines
- Paper machines
- Presses

Technical data

Function principle	segment metering device
Outlets	6 to 20
Lubricant	grease up to NLGI 2 oil with minimum viscosity of 12 mm^2/s
Metering quantity	per cycle and outlet min. 0,05 cm^3, *0.003 in^3* max. 0,25 cm^3, *0.015 in^3*
Operating temperature	-15 to +110 °C *+5 to 230 °F*
Operating pressure [1]	max. 200 bar; *2 900 psi*
Material	baseplate: aluminum alloy sections: steel, galvanized
Connection inlet	G 1/8
Connection outlet	G 1/8
Dimensions	min. 90 × 55 × 41 mm *min. 3.54 × 2.17 × 1.61 in* max. 244 × 55 × 41 mm *max. 9.61 × 2.17 × 1.61 in*
Mounting position	without vibration: any with vibration: piston position should 90° to machine movements direction

[1] operating pressure may be lower depending on design with monitoring or attachments

PSG1 Accessories

Order number	Designation
466-419-001	Closure plug for baseplate outlet incl. washer
24-2151-3760	Crossporting bridge, 2 outlets [1]
24-2151-3762	Crossporting bridge, 2 outlets, with outlet port [1]
24-2151-3764	Crossporting bridge, 2 outlets, with outlet port and check valve [1]

[1] bridges are approved for a maximum operating pressure of 100 bar; *1 450 psi* crossporting bridge also available for 3 outlets, see brochure 1-3010-EN

NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
951-230-013, 1-3010-EN

3D data and product configuration:
skf-lubrication.partcommunity.com/3d-cad-models/

PUB LS/P1 16964 EN

PSG1

Body configurator

PSG1			X	X		X	

Product series

Monitoring

X = none
3 = 3-pin piston detector, M 12 × 1 plug
Y = cycle indicator, visual (plunger rod) [1) 2)]
S = cycle indicator with bracket and proximity switch [1) 2)]
G = cycle indicator with bracket for proximity switch (without proximity switch) [1) 2)]

Position of monitoring device [2)]

X = none

A = left hand side, section 1	**B** = right hand side, section 1
C = left hand side, section 2	**D** = right hand side, section 2
E = left hand side, section 3	**F** = right hand side, section 3
G = left hand side, section 4	**H** = right hand side, section 4
J = left hand side, section 5	**K** = right hand side, section 5
L = left hand side, section 6	**M** = right hand side, section 6
N = left hand side, section 7	**P** = right hand side, section 7
Q = left hand side, section 8	**R** = right hand side, section 8
S = left hand side, section 9	**T** = right hand side, section 9
U = left hand side, section 10	**V** = right hand side, section 10

Baseplate inlet screw union [3)]

X = none	**B** = tube ø 8 mm
A = tube ø 6 mm	**C** = tube ø 10 mm

Sections

... = to be configured in the section configurator

Section configurator

	–		–	

Section (mininum 3 sections) [4)]

x = dummy section

A = 0,05 cm³/cycle [5)]	**B** = 0,10 cm³/cycle
C = 0,15 cm³/cycle	**D** = 0,20 cm³/cycle
E = 0,25 cm³/cycle	

Outlet fitting left

S = outlet closed by screw plug [6)]
X = outlet without fitting

Outlet fitting right

S = outlet closed by screw plug [6)]
X = outlet without fitting

1) Only on 200 and 250 mm³ section sizes
2) Installation on first or last section is not recommended
3) Solderless pipe union with cutting sleeve per DIN 2353
4) The volume per section is equal on both sides
5) If possible, do not place in first position when designing metring device
6) Metering device only operates with one side (left or right) outlet closed per section

PUB LS/P1 16964 EN

PSG2

Product description

The PSG2 is a progressive metering device made of a baseplate and metering sections which can be removed without loosening the tubing as all inlets and outlets are positioned in the common base-plate. By unscrewing the internal setscrew two opposite outlets can be consolidated internally. Externally a maximum of three outlets can be consolidated via a crossporting bridge. A minimum of three metering sections need to be used.

Features and benefits

- Easy servicing as outlets are located on baseplate
- Flexible with exchangeable metering segments
- Visual or electrical monitoring available
- Increased corrosion resistance material available
- Dummy segements without output available
- Adjustable output by consolidating outlets internally or externally

Applications

- Presses
- Tunnel boring machines
- Paper machines
- Automotive industry

Technical data

Function principle	segment metering device
Outlets	3 to 20
Lubricant	oil: with min. viscosity of 12 mm^2/s grease: up to NLGI 2
Metering quantity	per cycle and outlet, depends on metering section used min. 0,06 cm^3; *0.0037 in^3* max. 0,84 cm^3; *0.051 in^3*
Operating temperature	-15 to +110 °C *+5 to 230 °F*
Operating pressure	max. 200 bar; *2 900 psi*
Connection inlet	G 1/4
Connection outlet	G 1/4
Material	baseplate: aluminum alloy or anodized sections: steel or nickel plated
Dimensions	min. 131 × 86 × 71 mm *min. 5.16 × 3.39 × 2.80 in* max. 327 × 86 × 71 mm *max. 12.87 × 3.39 × 2.80 in*
Mounting position	without vibration: any with vibration: piston position should be 90° to machine movements direction
Options	flow limiter

[1] operating pressure may be lower depending on design with monitoring or attachments

PSG2 Accessories

Order number	Designation
466-419-001	Closure plug for baseplate outlet incl. washer
24-2151-3760	Crossporting bridge, 2 outlets [1]
24-2151-3762	Crossporting bridge, 2 outlets, with outlet port [1]
24-2151-3764	Crossporting bridge, 2 outlets, with outlet port and check valve [1]

[1] bridges are approved for a maximum operating pressure of 100 bar; crossporting bridge also available for 3 outlets, see brochure

NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
951-230-013, 14389 EN

3D data and product configuration:
skf-lubrication.partcommunity.com/3d-cad-models/

PUB LS/P1 16964 EN

PSG2

Body configurator

PSG2			X	X		X	

Product series

Monitoring

X = none
3 = 3-pin piston detector, M 12 × 1 plug
Y = cycle indicator, visual (plunger rod) [1) 2)]
S = cycle indicator with bracket and proximity switch [1) 2)]
G = cycle indicator with bracket for proximity switch (without proximity switch) [1) 2)]

Position of monitoring device [2)]

X = none

A = left hand side, section 1	**B** = right hand side, section 1
C = left hand side, section 2	**D** = right hand side, section 2
E = left hand side, section 3	**F** = right hand side, section 3
G = left hand side, section 4	**H** = right hand side, section 4
J = left hand side, section 5	**K** = right hand side, section 5
L = left hand side, section 6	**M** = right hand side, section 6
N = left hand side, section 7	**P** = right hand side, section 7
Q = left hand side, section 8	**R** = right hand side, section 8
S = left hand side, section 9	**T** = right hand side, section 9
U = left hand side, section 10	**V** = right hand side, section 10

Baseplate inlet screw union [3)]

X = none

A = tube ø 6 mm	**C** = tube ø 10 mm
B = tube ø 8 mm	**D** = tube ø 12 mm

Sections

... = to be configured in the section configurator

Section configurator

–		–

Section (mininum 3 sections) [4)]

X = dummy section

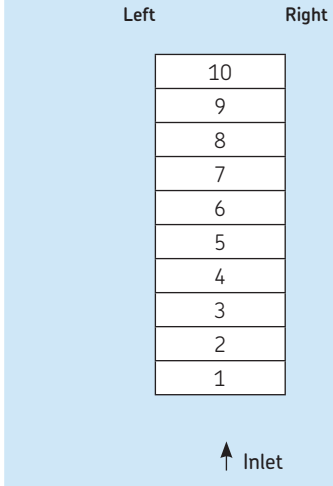
F = 0,06 cm³/cycle [5)]	**K** = 0,48 cm³/cycle
G = 0,12 cm³/cycle	**L** = 0,60 cm³/cycle
H = 0,24 cm³/cycle	**M** = 0,72 cm³/cycle
J = 0,36 cm³/cycle	**N** = 0,84 cm³/cycle

Outlet fitting left

S = outlet closed by screw plug [6)]
X = outlet without fitting

Outlet fitting right

S = outlet closed by screw plug [6)]
X = outlet without fitting



1) Not for 60 mm³ section size
2) Installation on first or last section is not recommended
3) Solderless pipe union with cutting sleeve per DIN 2353
4) The volume per section is equal on both sides
5) If possible, do not place in first position when designing metering device
6) Metering device only operates with one side (left or right) outlet closed per section

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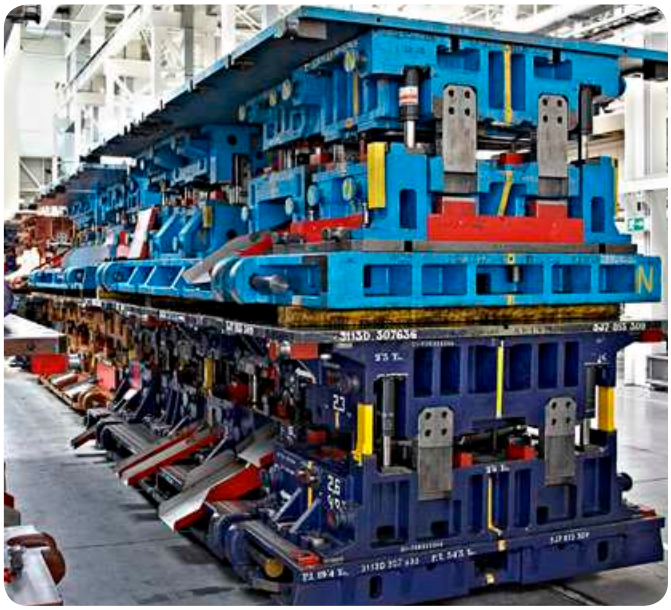
PSG3



Product description

The PSG3 is a progressive metering device made of a baseplate and metering sections which can be removed without loosening the tubing as all inlets and outlets are positioned in the common base-plate. By unscrewing the internal setscrew two opposite outlets can be consolidated internally. Externally a maximum of three outlets can be consolidated via a crossporting bridge. A minimum of three metering sections need to be used.

Features and benefits

- Easy servicing as outlets are located on baseplate
- Flexible with exchangeable metering segments
- Visual or electrical monitoring available
- Increased corrosion resistance material available
- Dummy segments without output available
- Adjustable output by consolidating outlets internally or externally
- Main metering device in oil circulation systems

Applications

- Presses
- Paper machines
- Automotive industry

Technical data

Function principle	segment metering device
Outlets	6 to 20
Lubricant	oil with min. viscosity of 12 mm²/s grease up to NLGI 2
Metering quantity	per cycle and outlet min. 0,80 cm³; *0.049 in³* max. 3,20 cm³; *0.195 in³*
Operating temperature	-15 to +110 °C *+5 to 230 °F*
Operating pressure	max. 200 bar; *2 900 psi*
Connection inlet	G ³/₈
Connection outlet	G ¼
Material	baseplate: aluminium alloy sections: steel galvanized or nickel plated
Dimensions	min. 165×108×88 mm *min. 6.50×4.25×3.46 in* max. 466×108×88 mm *max. 18.35×4.25×3.46 in*
Mounting position	without vibration: any with vibration: piston position should be 90° to machine movements direction
Options	flow limiter

[1] operating pressure may be lower depending on design with monitoring or attachments

PSG3 Accessories

Order number	Designation
DIN908-R1-4-5.8	Closure plug for baseplate outlet
508-108	Washer for closure plug
24-2151-3734	Crossporting bridge, 2 outlets [1]
24-2151-3736	Crossporting bridge, 2 outlets with outlet ports [1]

[1] bridges are approved for a maximum operating pressure of 100 bar; crossporting bridge also available for 3 outlets, see brochure

NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
951-230-013, 14389 EN

3D data and product configuration:
skf-lubrication.partcommunity.com/3d-cad-models/

PUB LS/P1 16964 EN

PSG3

Body configurator

PSG3			X	X		X	

Product series

Monitoring
- **X** = none
- **3** = 3-pin piston detector, M 12 × 1 plug
- **Y** = cycle indicator, visual (plunger rod) [1]
- **S** = cycle indicator with bracket and proximity switch [1]
- **G** = cycle indicator with bracket for proximity switch (without proximity switch) [1]

Position of monitoring device [1]
- **X** = none
- **A** = left hand side, section 1
- **C** = left hand side, section 2
- **E** = left hand side, section 3
- **G** = left hand side, section 4
- **J** = left hand side, section 5
- **L** = left hand side, section 6
- **N** = left hand side, section 7
- **Q** = left hand side, section 8
- **S** = left hand side, section 9
- **U** = left hand side, section 10
- **B** = right hand side, section 1
- **D** = right hand side, section 2
- **F** = right hand side, section 3
- **H** = right hand side, section 4
- **K** = right hand side, section 5
- **M** = right hand side, section 6
- **P** = right hand side, section 7
- **R** = right hand side, section 8
- **T** = right hand side, section 9
- **V** = right hand side, section 10

Baseplate inlet screw union [2]
- **X** = none
- **B** = tube ø 8 mm
- **D** = tube ø 12 mm
- **F** = tube ø 16 mm
- **C** = tube ø 10 mm
- **E** = tube ø 15 mm

Sections
- **...** = to be configured in the section configurator

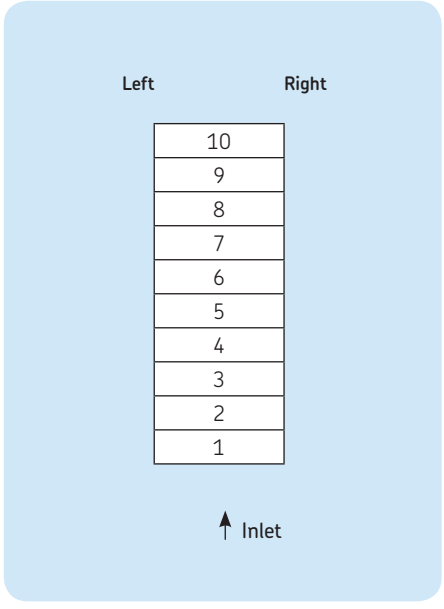
Section configurator

–		–

Section (mininum 3 sections) [3]
- **X** = dummy section
- **P** = 0,80 cm³/cycle [4]
- **R** = 1,60 cm³/cycle
- **T** = 3,20 cm³/cycle
- **Q** = 1,20 cm³/cycle
- **S** = 2,40 cm³/cycle

Outlet fitting left
- **S** = outlet closed by screw plug [5]
- **X** = outlet without fitting

Outlet fitting right
- **S** = outlet closed by screw plug [5]
- **X** = outlet without fitting



[1] Installation on first or last section is not recommended
[2] Solderless pipe union with cutting sleeve per DIN 2353
[3] The volume per section is equal on both sides
[4] If possible, do not place in first position when designing metering device
[5] Metering device only operates with one side (left or right) outlet closed per section

PUB LS/P1 16964 EN

UV

Product description

UV metering devices are modular type metering devices. They consist of a baseplate part and a metering sections part. The baseplate has one inlet, three to eight intermediate, one end section held via three tie rods. The metering sections part consists of three to eight metering sections (depending on number of outlets needed) which are fixed on the baseplate part. All parts have FKM O-ring seals in-between. There must be a minimum of three metering sections. The metering sections will have either single or twin outlets. Whenever a single metering segment or crossport plate is used, the unused outlet must be plugged. Metering device has to be ordered in single parts, see chart.

Features and benefits

- Alternate outlet ports for performance indicators
- Optional metering sections with visual cycle indicator
- Optional by-pass metering segment for addition or deletion of lubrication points

Applications

- Industrial machinery
- Metal forming machines
- Material handling machines

Technical data

Function principle	segment metering device
Outlets [1]	6 to 16
Lubricant	oil or grease NLGI 0 to 2
Metering quantity	per cycle and outlet min. 0,082 cm^3; *0.005 in^3* max. 1,311 cm^3; *0.08 in^3*
Operating temperature	-26 to +200 °C *-15 °F to 400 °F*
Operating pressure	max. 240 bar; *3 500 psi*
Connection inlet	1/4 NPSF (F)
Connection outlet	1/8 NPSF (F)
Material	housing: zinc plated steel sealing: FKM
Dimensions	min. 115 × 76 × 57 mm *min. 4.52 × 3 × 2.25 in* max. 232 × 76 × 57 mm *max. 9.13 × 3 × 2.25 in*
Mounting position	any

[1] It is possible to reduce the number of outlets below the given minimum by crossporting or closing outlets.

PUB LS/P1 16964 EN

UV

UV baseplate and tie rod specifications [1)]

Outlets max.	Order number Inlet section	End section	Tie rod [1)]	Intermediate section	Intermediate section quantity required	Metering valves
6	**87918**	**87920**	**250290**	**87919**	3	3
8	**87918**	**87920**	**250291**	**87919**	4	4
10	**87918**	**87920**	**250292**	**87919**	5	5
12	**87918**	**87920**	**250293**	**87919**	6	6
14	**87918**	**87920**	**250294**	**87919**	7	7
16	**87918**	**87920**	**250295**	**87919**	8	8

[1)] each tie rod model no. includes three tie rods and three fastening nuts

UV metering valve specification- single outlet S

Order number Standard	Right side cycle incicator	Designation	Metering quantity per outlet	
			cm^3	*in^3*
882051	**–**	05S	0,164	*0.010*
882101	**–**	10S	0,328	*0.020*
882151	**–**	15S	0,492	*0.030*
882201	**882203**	20S	0,656	*0.040*
882251	**882253**	25S	0,820	*0.050*
882301	**882303**	30S	0,983	*0.060*
882351	**882353**	35S	1,147	*0.070*
882401	**882403**	40S	1,311	*0.080*

Model 882000 UV by-pass block:
optional by-pass block permits addition or deletion of lubrication points without disturbing existing installations. Includes mounting screws and NBR seals.

UV metering valve specifitcations - twin outlet T

Order number Standard	Right side cycle incicator	Designation	Metering quantity per outlet	
			cm^3	*in^3*
882052	**–**	05T	0,082	*0.05*
882102	**–**	10T	0,164	*0.10*
882152	**–**	15T	0,246	*0.15*
882202	**882204**	20T	0,328	*0.20*
882252	**882254**	25T	0,410	*0.25*
882302	**882304**	30T	0,492	*0.30*
882352	**882354**	35T	0,574	*0.35*
882402	**882404**	40T	0,656	*0.40*

Model 882000 UV by pass block optional:
by-pass block permits addition or deletion of lubrication points without disturbing existing installations. Includes mounting screws and NBR seals.

Plug and crossporting

Order number	Designation
68645	closure plug
87905	single and crossport kit

Product description

Closure plug To plug non-working outlets. External crossport kit connects alternate outlet ports to combine the volume of two metering segments through a single outlet.

Relief and performance indicators

Order number	Type	Disc colour	Pressure rating	
			bar	*psi*
87934	atmospheric relief	yellow	100	*1 450*
87935	atmospheric relief	red	120	*1 750*
87936	atmospheric relief	purple	225	*3 250*
87937	atmospheric relief	yellow/natural	255	*3 700*
87938	reset-type	–	35	*500*
87939	reset-type	–	70	*1 000*
87940	reset-type	–	10	*1 500*
87941	reset-type	–	140	*2 000*
87942	reset-type	–	205	*3 000*

Product description

Atmospheric safety relief indicators. High pressure rupture disc, pressure and lubricant vents to the atmosphere.

Reset-type Performance Indicators. High pressure extends indicator. Reset indicator after pressure is relieved. All with thread $^1/_8$ NPTF (M).

PUB LS/P1 16964 EN

XL

Product description

XL metering devices are modular type metering devices. They consist of a baseplate as one piece and a modular metering sections part. The baseplate contains all inlet and outlet connections.
The metering sections part consists of three to six metering sections (depending on number of outlets needed) which are fixed on the baseplate part. All parts have NBR-ring seals in-between. There must be a minimum of three metering sections. The metering sections will have either single or twin outlets. Whenever a single metering segment or a crossport or a singling plate is used, the unused outlet must be plugged. Metering device has to be ordered in single parts, see chart.

Features and benefits

- Several sizes and outputs
- Can be used as primary metering device in conjunction with UV type
- Baseplate as one single piece

Applications

- Metal cutting machines
- Metal forming machines
- Wood-working machines
- Material handling machinery

Technical data

Function principle	segment metering device
Outlets [1]	6 to 12
Lubricant	oil or grease NLGI 0 to 2
Metering quantity	per cycle and outlet min. 0,492 cm^3; *0.03 in^3* max. 4,92 cm^3; *0.3 in^3*
Operating temperature	0 to +120 °C *35 °F to 250 °F*
Operating pressure	max. 170 bar; max. *2 500 psi*
Connection inlet	3/8 NPTF(F)
Connection outlet	1/4 NPTF(F)
Material	housing: zinc plated steel sealing: NBR
Dimensions	min. 136×127×70 mm *min. 5.34×5×2.75 in* max. 238×127×70 mm *max. 9.38×5×2.75 in*
Mounting position	any

[1] It is possible to reduce the number of outlets below the given minimum by crossporting or closing outlets.

PUB LS/P1 16964 EN

XL

XL Metering valve specifications - single outlet S

Order number	Designation	Metering quantity	
		cm^3	*in^3*
87026-03S	30S	0,983	*0.60*
87026-05S	50S	1,64	*0.100*
87026-08S	80S	2,62	*0.160*
87026-10S	100S	3,28	*0.200*
87026-12S	120S	3,93	*0.240*
87026-15S	150S	4,92	*0.300*

Note: Model 87028 XL by-pass block: optional by-pass block permits addition or deletion of lubrication points without disturbing existing installations. Includes mounting screws and FKM seals.

XL metering valve specifications - twin outlet T

Order number	Designation	Metering quantity	
		cm^3	*in^3*
87026-03T	30T	0,492	*0.030*
87026-05T	50T	0,820	*0.050*
87026-08T	80T	1,31	*0.080*
87026-10T	100T	1,64	*0.100*
87026-12T	120T	1,97	*0.120*
87026-15T	150T	2,46	*0.150*

Note: Model 87028 XL by-pass block: optional by-pass block permits addition or deletion of lubrication points without disturbing existing installations. Includes mounting screws and FKM seals.

XL baseplate specifications

Order number	Outlets max.	Metering devices
87030-3	**6**	3
87030-4	**8**	4
87030-6	**12**	6

Note: Use No. 67359 closure plug (1/4 NPT) to plug non-working outlets.

Accessories

Plugs and indicators

Plug and crossporting

Order number	Designation
67359	Closure plug
87823	Crossport kit
87824	Singling kit

Product description

Closure plug to plug non-working outlets.
External crossport kit connects alternate outlet ports to combine the volume of two metering segments through a single outlet.

Relief and performance indicators

Order number	Type	Disc colour	Pressure rating	
			bar	*psi*
87934	atmospheric relief	yellow	100	*1 450*
87935	atmospheric relief	red	120	*1 750*
87936	atmospheric relief	purple	225	*3 250*
87937	atmospheric relief	yellow/natural	255	*3 700*
87938	reset-type	-	35	*500*
87939	reset-type	-	70	*1 000*
87940	reset-type	-	10	*1 500*
87941	reset-type	-	140	*2 000*
87942	reset-type	-	205	*3 000*

Product description

Atmospheric safety relief indicators. High pressure rupture disc, pressure and lubricant vents to the atmosphere.

Reset-type performance indicators. High pressure extends indicator. Reset indicator after pressure is relieved. All with thread 1/8 NPTF(M)

PUB LS/P1 16964 EN

LMC 101

LMC 2

LMC 301

EOT 2

IG502

LC502

Control units

EXZT/IGZ50-20

ST 102

ST 1240

ST 1440

PUB LS/P1 16964 EN

Overview of control units

Product finder

Product	Function type	Designation	Voltage		Lubrication channels	Temperature		Page
			V DC	V AC		°C	°F	
LMC 101	Universal control and monitoring device	Universal control and monitoring device for progressive systems	12, 24	–	1	–40 to +65	–40 to +150	108
LMC 2	Electronic controller	Programmable for all kind of lubrication systems: time- or cycle- dependent lubrication	24	230	2	–10 to +70	*+14 to 158*	109
LMC 301	Lubrication monitor controller	Can handle up to 3 pumps and various types of lubrication systems. Function keys with menu display	24	90-264	3	–40 to +70	*–40 to +158*	110
EOT 2	Control and monitoring device	Easy time controller for lubrication pumps in progressive systems	12, 24	–	1	–25 to +70	*–13 to +158*	111
IG 502	Universal electronic controller	Programmable for progressive lubrication systems: time- or cycle- dependent lubrication, with timer, counter or monitoring function for pressure or cycle switches	12, 24	–	1	–25 to +75	*–13 to +167*	112
LC502	Controller	Controller programmable for single-, dual-line and progressive lubrication systems	24	230; 400 three-phase	3	0 to +60	+32 to 140	113
EXZT **IGZ51**	Universal electronic controller and monitoring device	Universal control and monitoring device for stationary industrial application installed in a switching cabinet	–	100–240	1	0 to +60 0 to +60	*+32 to 140* *+32 to 140*	114 114
ST-102	Lubrication control center	Can be used within single-, dual-line or progressive lubrication systems. Includes a user interface for monitoring and controlling the lubrication system	12, 24	–	1	–40 to +80	*–40 to +176*	116
ST-1240-Graph-4	Lubrication control center	Can handle four channels, single-, dual-line or progressive lubrication systems. Configuration can be set in the field by the alphanumeric touchscreen display. Pressure switches, pressure transmitters or piston detectors can be used in both channels	–	93–132, 186–264	4	0 to +50	*+32 to +122*	117
ST-1340	Lubrication control center (modular)	It is modular and therefore could handle 1 to 4 channels, single-, dual-line or progressive lubrication systems. Configuration can be set with the user interface that includes alphanumeric keypad and display.	–	93–132, 186–264	1–4	0 to +60	*+32 to +140*	118
ST-1440	Lubrication control center (modular)	Similar to ST-1340 but could handle 1 to 14 channels, single-, dual-line or progressive lubrication systems	–	93–132, 186–264	1–14	0 to +60	*+32 to +140*	118

PUB LS/P1 16964 EN

LMC 101

Product description

The LMC 101 is a universal control and monitoring device suitable for single-line and progressive lubrication systems. Designed for off-road and mobile equipment only in drivers cabin use or industrial indoor use, this controller also can be utilized for any low-voltage lubrication application. Time or controller mode can be set for both systems. The LMC 101 must be programmed via USB connection to a PC.

In timer mode, the lubrication cycle ends when the pre-assigned time has expired. In controller mode, the lubrication cycle ends when the pressure switch, pressure transducer or piston detector actuates. The system allows pressure to dissipate to the end of the supply line once pressure at the pump is reached.

Features and benefits

- For 12 and 24 V DC systems
- Time or controller mode
- Various alarm condition settings
- Programming, data logging, and reporting
- Controller must be programmed via USB connection to PC
- Manual lubrication pushbutton.

Applications

- Off-road equipment
- Mobile equipment
- Indoor industrial machinery
- Food and beverage industry
- Single-line and progressive systems

Function principle	control and monitoring device
Operating temperature	–40 to +66 °C, *–40 to +150 °F*
Input	12 and 24 V DC, –20% / +30%
Pump relay contact	20 A at 30 V DC
Vent relay contact	2 A at 30 V DC
Alarm relay contact	2 A at 30 V DC
Enclosure rating	NEMA 12
Off time (adjustable)	15 seconds to 99 hours
On time (adjustable)	15 seconds to 99 hours
Protection class	IP 52
Dimensions	186 × 120 × 59 mm *7.3 × 4.7 × 2.3 in*
Mounting position	any

LMC 101

Order number	Designation
86535	Single line and progressive lubrication controller
86505	LMC USB cable kit

NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
15556 EN, 15625 EN

PUB LS/P1 16964 EN

LMC 2

Product description

The LMC 2 is a controller for the electronic management and monitoring of lubrication systems. It combines the advantages of a specially developed printed circuit board (PCB) and a PLC in an economical compact unit. For dual-line systems, it controls the pump unit, change-over valve and end-of-line devices.

Features and benefits

- Integrated, flexible lubrication programmes
- 8 inputs / 5 outputs – suitable for complex lubrication systems
- Time- or cycle-dependent control of lubrication intervals
- Can be interfaced with common field bus systems

Applications

- Railway lubrication and spray lubrication systems
- Food and beverage
- Chain lubrication systems like Lincoln Cobra and PMA
- Single-line, dual-line, multi-line and progressive systems

Technical data

Function principle	control and monitoring device
Operating temperature	–10 to +70 °C, *+14 to 158 °F*
Inputs	max. 8 digital inputs
Outputs	4 relay outputs, 1 electronic
Operating voltage	depending on model 230 V AC, 24 V DC ; (± 10%)
Standard	CE
Protection class	IP 54
Dimensions	200 × 120 × 90 mm *7.9 × 4.7 × 3.5 in*
Mounting position	any

LMC2

Order number	Designation
236–10567–6	LMC2 230 AC (230 V AC)
236–10567–5	LMC2 24 DC (24 V DC)

For use with electric driven 3-phase pump; need to order motor starter separately.

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
14004 EN

PUB LS/P1 16964 EN

LMC 301

Product description

The LMC 301 is a compact, modularly expandable control and monitoring device. The device is equipped with an LCD display and 6 functional keys for programming, parameter setting and signalization. The user is guided through the setting menu. Additionally, there is a simple-to-use PC software for parameter setting and diagnostics available.

Features and benefits

- Integrated, flexible lubrication programs
- Main device with 10 digital inputs, of which two can be used analog inputs and eight outputs
- Can be used with up to seven I/O boards, 10 inputs and 8 outputs each
- Three lubrication pumps can be controlled and monitored, each of which provides up to three lubrication circuits
- Can connect the digital grease flow detectors 800030 or the universal piston detectors

Applications

- Cement industry
- Steel industry
- Mining – stationary and mobile excavators
- Food and beverage
- Single-line, dual-line, multi-line and progressive systems

Technical data

Function principle	control and monitoring device
Operating temperature	V AC: –10 to +50 °C, *+14 to 122 °F* V DC: –40 to +70 °C, *-40 to +158 °F*
Inputs	quantity 10, short-circuit-proof, 2 of them analog
Outputs	8 count, relay outputs NO-contact 8 A, 2 of which up to 20 A
Operating voltage	depending on model 90-264 V AC, 24 V DC ±10%
Standard	CE; UL; CSA
Protection class	IP 65
Dimensions	270×170×90 mm; *10.7×6.7x 3.5 in*
Mounting position	upright

LMC 301

Order number	Designation
086500	LMC301 24 V DC
086501	LMC301 100-240 V AC
086502	LMC301 24 V DC I/O board
086503	LMC301 100-240 AC I/O board

NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
15967 EN, 951-150-029 EN

PUB LS/P1 16964 EN

EOT-2

Product description

The EOT-2 controller is designed to control lubrication pumps during interval operation in progressive systems. Rotary switches on the printed circuit board may be used to adjust lubrication time in seconds or minutes and pause time in minutes or hours.
The EOT-2 is suitable for retrofit installation and often is used when a lubrication pump has no integrated control unit. Additional lubrication cycles can be triggered via a pushbutton.

Features and benefits

- Easy-to-use controller for installation in and outdoor
- Suitable for retrofit
- Easy time setting and function control

Applications

- Lubrication pumps without integrated controller
- Agricultural machinery
- Chain lubrication systems
- Simple lubrication systems in machines

Technical data

Function principle	control and monitoring device
Operating temperature	–25 to +70 °C, *-13 to +158 °F*
Supply voltage	12 or 24 V DC
Current draw	max. ≤ 7 A
Outputs	transistor/ N.O.
Pause time	min. 4 min max. 15 h
Running time	min. 8 sec max. 30 min
Protection class	IP 65
Dimensions	*122×118×56 mm* *4.80×4.65×2.00 in*
Mounting position	any

EOT 2

Order number	Designation
664-34135-7	EOT-2

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
951-181-005 EN

PUB LS/P1 16964 EN

IG 502-2-E+ ...

Product description

The IG 502-2-E ... is a universal control and monitoring device for vehicles and is suitable for centralized lubrication in progressive and single-line systems. The compact device is equipped with a display panel for parameter settings and function monitoring. Different operating modes, such as timer, counter and monitoring functions for pressure and cycle switches, are programmable. The device has its own data memory to be independent of supply voltage. To avoid environmental influences, it is advisable to install the device inside a cabinet.

Features and benefits

- Universal control and monitoring device
- Compact design
- Easy to operate
- Different operating modes, such as timer, counter and monitoring functions
- Red LED failure indicator also shows failure cause
- Integrated counters for permanent operation, failed hours and working-hour meter show system life cycle
- PIN lockout feature to prevent unauthorized programming changes

Applications

- Commercial vehicles
- Construction machines
- Farm machinery

Technical data

Function principle	controller
Max control voltage	12 or 24 V DC
Contact load connector M	5 A at 12 or 24 V DC
SL-output	4 W
Operating temperature	–25 °C to +75 °C, *-13 °F to +167°F*
Storage temperature	-40 °C to +75 °C, *-40 °F to +167 °F*
Fuse protection	max. 5 A
Pause time	adjustable, 0,1 h to 99,9 h
Pump running time	adjustable, 0,1 min to 99,9 min
Pulse time	adjustable, 1 to 999
Operation hours storage	0 to 99999,9 h
Operation- failed hours storage	0 to 99999,9 h
Protection class	IP 20 DIN 40050, plug IP 00
Dimensions	138×65×40 mm *5.43×2.56×1.57 in*

IG 502-2-E+...

Order number	Designation
IG 502-2-E+912	Controller 12 V DC
IG 502-2-E+924	Controller 24 V DC
997-000-185	Wire set

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
1-1700-2-EN, 951-180-002-EN

PUB LS/P1 16964 EN

LC 502

Product description

The compact LC 502 is an all-purpose controller suitable for single-line, progressive and dual-line systems. Supplied as a separate unit or already integrated in the pump, this versatile controller includes a basic power switch, motor circuit breaker (230/400 V AC types) start button and fault indicator light. The unit's user-friendly display enables input of customer-specific settings in up to seven languages (optional). Integration of the LC 502, configuration of technical ratings and characteristics depend on the customer's specific application

Features and benefits

- Easy-to-operate, programmable controller
- System monitoring and error detection/failure remedy
- Integrated temperature-overload safety device
- Up to three lubrication circuits can be controlled or monitored separately

Applications

- General industry
- Cement and steel plants
- Food and beverage industry
- Machine tools

Technical data

Function principle	controller
Operating temperature	0 to +60 °C; *+32 to 140 °F*
Operating voltage	
24 V DC	0,16-0,25 kW
230 V AC	0,15-0.85 kW
400 V AC, 3-phase	0,15-0.85 kW
Operating voltage frequency	50 to 60 Hz
Electrical input connectors	4
Electrical output connectors	4
Input voltage	12 or 24 V DC
Off time	cycle : 8 h
On time	pumping: 1 h
Fuse F1: 400/230 V AC	5×20 mm 4 A
Fuse F2: 400/230 V AC, 24 V DC	5×20 mm 2 A
Cycle setting	depend on: time, machine pulse, pump revolutions
Possible low-level controls: W1	wipe /dynamic
Possible low-level controls: W2	wipe /capacitive/ static analog
Lubrication circuits	max. 2
Rotation	10 corresponds to 10 agitator rotations
Protection class	IP 54
Dimensions control cubicle	400×400×600 mm *15.75×15.75×23.62 in*
Mounting position	upright, cable terminals pointing downwards

LC502

Order number	Designation
24-1074-2200	400 V AC; 0,55 kW; also for dual-line systems
24-1074-2210	400 V AC; 0,55 kW; also for single-line systems
24-1074-2220	400 V AC; 0,55 kW
24-1074-2260	24 V DC; 0,55 kW; also for dual-line systems
24-1074-2270	24 V DC; 0,55 kW; also for single-line systems
24-1074-2280	24 V DC; 0,55 kW

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on SKF.com/lubrication:
1-0361-EN, 951-170-215 EN, 951-180-005 EN

PUB LS/P1 16964 EN

EXZT/IGZ51

Product description

EXZT and IGZ51 universal electronic control and monitoring devices are used in single-line and progressive lubrication systems and are available in two voltage versions. Developed for stationary industrial applications, these devices may be installed in a switching cabinet or internally in a compact lubrication unit. They can be used as time-dependent or pulse-dependent controllers to initiate a lubrication cycle. The EXZT and IGZ51 devices monitor the piston strokes in the metering devices and run the pump during the lubrication time in clogged operation. All devices have custom-built functions integrated and can be set to meet system requirements.

Features and benefits

- One universal control and monitoring device
- Easy installation by top hat rail mounting
- Adjustable operating modes
- Time operation or machine-clogged operation
- Low-level control and EEPROM included

Applications

- Stationary industrial applications in single-line and progressive lubrication systems
- Installation in switching cabinet of stationary general industry machines

Technical data

Function principle	universal electronic control and monitoring device
Operating temperature	0 to +60 °C; *+32 to 140 °F*
Output voltage	24 V DC +10% /-15%
Connector for class	II
Protection class	IP 30, clamps IP 20
Dimensions	70×75×110 mm *2.7×3.0×4.3 in*
Version + 471	
Input voltage	100 – 120 V AC; 200 – 240 V AC; (± 10%)
Input current	70 mA / 35 mA
Power input	8 W
Frequency	50 – 60 Hz
Fuse	max. 6.3 A
Switching current	max. 5 A
Input voltage sensors	24 V DC
Version + 472	
Input voltage	20 to 24 V DC; 20 to 24 V AC; (± 10%)
Input current rated	75 mA at max. fan-out of 250 mA
Power input	5 W
Frequency rated	DC or 50 – 60 Hz
Fuse	max. 6,3 A
Switching current	max. 5 A
Input voltage rated	24 V DC
Mounting position	any

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
1-1700-2-EN, 951-180-001

PUB LS/P1 16964 EN

EXZT/IGZ51

EXZT... and IGZ 51-...

All models are with lubricant level monitoring, pulse generator; pump runtime limitation, adjustable interval and monitoring time

Order number	V DC	V AC; 50-60 Hz	pump delay time adjustable	pulse monitoring (interval time)	prelubrication	power failure memory
EXZT2A03-E+471	–	100-120; 200-240	•	–	–	–
EXZT2A03-E+472	20-24	–	•	–	–	–
EXZT2A06-E+471	–	100-120; 200-240	•	•	–	–
EXZT2A06-E+472	20-24	–	•	•	–	–
IGZ 51-20-E+471	–	100-120; 200-240	–	–	–	–
IGZ 51-20-E+472	20-24	–	–	–	–	–
IGZ 51-20-S2-E+471	–	100-120; 200-240	–	–	–	•
IGZ 51-20-S2-E+472	20-24	–	–	–	–	•
IGZ 51-20-S7-E+471	–	100-120; 200-240	–	–	–	•
IGZ 51-20-S7-E+472	20-24	–	–	–	–	•
IGZ 51-20-S8-E+471	–	100-120; 200-240	–	–	•	•
IGZ 51-20-S8-E+472	20-24	–	–	–	•	•

PUB LS/P1 16964 EN

ST-102

Product description

The ST-102 controller is designed for the control and monitoring of lubrication systems in vehicles with a 12 or 24 V DC power supply. It is a one-channel lubrication control center for systems with air-operated or electrical pumps. The ST-102 is suitable for environments with temperatures ranging from –40 to +80 °C *(–40 to +176 °F)* and features an IP 40 protection class.
All lubrication configurations can be set in the field by the user.

Features and benefits

- Available for 12 or 24 V DC
- Suitable for operational environments in extreme temperatures
- One-button user interface

Applications

- Vehicles
- Construction machinery
- Agricultural machinery
- Dual-line, progressive and single-line lubrication systems

Technical data

Function principle	control and monitoring device
Operating temperature	–40 to +80 °C; *–40 to +176 °F*
Power supply	12 and 24 V DC
Input	4 digital
Output	4 digital
Interface	none
Protection class	IP 40
Dimensions	26 × 60 × 160 mm *1.02 × 2.36 × 6.3 in*

ST–102

Order number	Designation
11500607	V1 for progressive and single-line systems
11500610	V2 for progressive, dual- and single-line systems

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
6408 EN, 13615 EN

PUB LS/P1 16964 EN

ST-1240-GRAPH-4

Product description

The ST-1240-GRAPH-4 is a four-channel lubrication control centre that supports any combination of single-line, dual-line and progressive lubrication systems. The lubrication channels can be zones, separated by shut-off valves, or complete lubrication systems with separate pumping centres and varying lubricants. The ST-1240 control centre enables configuration in the field via an alphanumeric touchscreen display.

Features and benefits

- Automatic pump change (Dualset)
- Grease spraying control with air monitoring
- IP 65 protection rating
- Compatible with SKF Doser monitor
- Works with SKF Online 1440 control software

Applications

- Stationary machines
- General industry
- Wood processing
- Steel industry
- Progressive and dual-line lubrication systems

Technical data

Function principle	control center
Operating temperature	0 to +50 °C, *+32 to 122 °F*
Lubricant	oil and grease
lubrication circuits	4
Operating voltage	93 to 132 V AC, 186 to 264 V AC; (± 10%)
Operating voltage frequency	47 to 63 Hz
Operating current	5,4 A/115 V AC, 2,2 A/230 V AC
Control voltage	24 V DC, ± 10%
Overload protection	automatic fuse, 6 A
Cable connection	screw connections for 25 mm^2 wires
Interface	alphanumeric touchscreen display RS-422 Modbus port
Protection class	IP 65
Dimensions without cable glands	380×300×210 mm *14.9×11.8×8.3 in*

ST–1240-GRAPH

Order number	Designation
VGEV 12380210	ST–1240 GRAPH-4 control centre

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
12404 EN, 13615 EN

PUB LS/P1 16964 EN

ST–1340 and ST–1440

Product description

ST-1340 and ST-1440 lubrication control centres are suitable for use in dual-line lubrication systems, as well as single-line and progressive systems. Featuring an alphanumeric keypad and display, the two units are identical with the exception of case size and maximum number of lubrication channels served. The ST–1340 controls up to four separate lubrication channels, while the ST–1440 controls up to 14 channels, each having independent lubrication parameters and/or lubricants. The lubrication system is expandable by installing new channel modules, and configuration is determined in the field by the user. Pressure switches and transmitters or piston detectors can be used in all channels.

Features and benefits

- Versatile and durable
- Modular units provide easy system modification
- Automatic pump change (Dualset)
- Grease spraying control with air monitoring
- Compatible with SKF Doser monitor
- Works with SKF Online 1440 control software with SMS control

Applications

- Stationary machines
- Progressive, dual-line and single-line systems

Technical data

Function principle	control centre
Operating temperature	0 to +60 °C, *+32 to 140 °F*
Lubricant	oil and grease
Lubricant channels	ST–1340: up to 4 ST–1440: up to 14
Operating voltage	93 to 132 V AC, 186 to 264 V AC (± 10%)
Operating voltage frequency	47 to 63 Hz
Operating current	5,4 A/115 V AC, 2,2 A/ 230 V AC
Control voltage	24 V DC, ± 10%
Overload protection	automatic fuse, 6 A
Cable connection	screw terminals for 2,5 mm^2 wires
Interface	alphanumeric keypad and display, 4 × 20 characters, RS-422 Modbus port
Protection class	IP 65
Dimensions without cable glands	ST-1340: 600 × 380 × 210 mm *23.6 × 14.9 × 8.3 in* ST-1440: 600 × 600 × 210 mm *23.6 × 23.6 × 8.3 in*

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
13166 EN

PUB LS/P1 16964 EN

ST–1340 and ST–1440

ST–1340 and ST–1440

Order number	Designation	Lubrication channels
VGEV 12380695	ST–1340 control center	up to 4
VGEV 12380700	ST–1440 control center	up to 14
VGEV 12501254	ST1440 / ST1340 channel module	–

PUB LS/P1 16964 EN

HCC

Smartplug lubrication control

Universal piston detector

Monitoring devices

SP/SFE30

800030

PUB LS/P1 16964 EN

Overview of monitoring devices

Product finder

Product	Function type	Designation	Voltage	Operating temperature		Page
			V DC	°C	*°F*	
HCC	Control and monitor device for hose connections	Additional control and monitoring system for progressive systems to identify failures in hose connections	12, 24	-50 to +70	*-58 to +158*	122
Smart Plug lubrication control	Monitoring and control device	Direct adaption between sensor and connecting cable. Configurable by PC via IR interface converter	10 to 30	0 to +60	*+32 to 140*	124
Universal piston detector	New type piston detector	Allround magnetic sensor for all SKF metering devices in progressive systems	10 to 30	-40 to +85	*-40 to +185*	125
SP / SFE30	Pulse monitoring oil/grease	To monitor oil and grease volumetric flow rates	0 to 30	+15 to 70	*+5 to 158*	126
800030	Digital grease flow detector	To generate confirmation signal to verify lubrication events; oval gear flow detector	12 to 30	-35 to +60	*-30 to +140*	127

PUB LS/P1 16964 EN

HCC

Product description

The hose connection control (HCC) is intended to monitor electrically conductive, high-pressure lubrication hoses for line breakage. If there is a fault in the main line or feed lines, the unit alerts the machine operator immediately. Operation of the HCC is not affected by line lengths, ambient temperature, pressure differential or pressure losses. Utilizing non-conductive lubricants or hydraulic fluids, this monitoring system has an operating pressure of up to 300 bar *(4 350 psi)* and can be used in temperatures ranging from –40 to +70 °C *(–40 to +158 °F)*.

Features and benefits

- Immediately detects hose ruptures
- Expandable at any time
- Easy retrofit in existing lubrication systems
- Monitors difficult-to-access hoses to lubrication points
- Common LED signal of all connected hoses on the display

Applications

- Construction and mining machines; cranes
- Wood-handling machines
- Forklifts, reach stackers and machines with movable units or accessories
- Agriculture

Technical data

Function principle	control and monitoring device for hose connections
Operating temperature	Isolator: –50 to +70 °C; *-58 to +158 °F* Controller: –25 to +70 °C; *-13 to +158 °F* Controller storage: –40 to +70 °C; *-40 to +158 °F*
Power supply	12/24 V DC
Monitored hose per monitoring unit	max. 15 pieces at 12 V DC max. 24 pieces at 24 V DC
Positive ok signal	12/24 V PNP
Signal cable to one cut-off connector	20 m; 65 ft
Signal cable at cut-off	approx. 150 mm; *5.90 in*
Protection class	IP 65
Dimensions	100 × 85 × 40 mm *3.93 × 3.34 × 1.57 in*

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions,see the following publication available online at SKF.com/lubrication:
13615 EN

PUB LS/P1 16964 EN

HCC

532-37731-1

HCC Hose connection control

Order number	Designation
236-10986-1	HCC, evaluation unit
236-10153-3	HCC, with cable 20 m
532-34839-2	HCC, endlink HCC DN 8-10L-E
532-37731-1	basic kit consisting of above three parts
532-34839-6	HCC, endlink HCC DN 4-6L-E
532-34839-3	HCC, interlink HCC DN 8-10L-I
532-34839-5	HCC, interlink HCC DN 4-6L-I

Accessories

Hoses

HCC accessories

Order number	Designation
111-35409-1	hose TBF 204 CU DN4, sold by the meter
226-11169-1	hose stud D6/NW4 C straight

PUB LS/P1 16964 EN

SmartPlug lubrication control

Product description

The SmartPlug lubrication control is a simple, multifunction switching device that can be used as a timer or pulse counter when no standard timer is available. Operation with on-delay or signal-inverter functions also is possible. Suitable for retrofitting, the SmartPlug can be installed easily in an existing electrical system. Its complimentary programming timer can be adapted directly between a sensor and the connecting cable.

Features and benefits

- Simple, cost-effective, multifunction switching device
- Acts as timer or pulse counter
- Easy installation in electrical systems
- Suitable for retrofitting in existing systems
- Free programming timer

Applications

- Progressive systems where additional monitoring of separate lubrication circuits is required
- Counter for chain lubrication systems
- Forklifts
- Chain lubrication

Technical data

Function principle	monitoring and control device
Operating temperature	0 to +60 °C; *+32 to 140 °F*
Operating voltage U_B	10 – 30 V DC
Residual ripple within U_B	max. 10%
Power consumption	< 10 mA, no load
Current consumption own	< 10 mA
Input resistance	>10 kOhm
Input frequency	max. 10 kHz, at ppp 1:1
Switching input	PNP/NPN adjustable
Output current	max. 400 mA
Drop-out delay	
Teachable time	min. 1 ms; max. 65 535 ms
Counter	
Counting time	min. 1 pulse; max. 65 535 pulses
Periodic monitoring	
Teachable time	min. 10 sec; max. 655 350 sec
Short-circuit protection	yes
Standard	CE
Protection class	IP 67
Dimensions	ø 20, l=60 mm *ø 0.79, l=2.36 in*

234-10151-8 Smart Plug

Order number	Designation
234-10151-8	Smart Plug MFU 12 P4-X01 output PNP
234-10151-9	IR Interface converter for configuration by PC

PUB LS/P1 16964 EN

Universal piston detector

Product description

The universal piston detector is suitable for all types of metering devices used in progressive lubrication systems. Featuring patented technology, this screw-in type device can be flush mounted into metering devices for complete system monitoring. By identifying iron-metals, it detects the movement of pistons inside the metering device in both directions. The universal piston detector works with 2- and 3-wire techniques and PNP and NPN switching. Usable with PLC control or with control units like LMC 301.

Features and benefits

- Provides accurate measurement
- Timer setting on external controller detects operational function signal
- Counter setting is used as cycle switch with an external controller

Applications

- All progressive lubrication systems
- Commercial vehicles
- Construction and mining
- Agricultural machinery
- Wind energy industry

Technical data

Order number	**234-13163-9**
Function principle	piston detector
Operating temperature	–40 to +85 °C; *–40 to +185 °F*
Electrical connection	3 wire DC PNP; 2 wire PNP/NPN
Operating voltage	10 to 36 V DC
Current draw	5 mA, only in 3 contact operation
Connector for class	III
Reverse voltage protection	yes
Current rating	100 mA
Overload proofed	yes
Switching frequency	10 Hz
Standard	CE, UL, CSA, E1
Protection class	IP65; IP68; IP69 K
Dimensions without socket	ø 12 mm, l = 52 mm, *ø 0.47 in; l =2.052 in*

Piston detector adapter

Order number	Designation
44-0159-2507	Adapter; VPB
44-0159-2508	Adapter; VPK+PSG1
44-0159-2509	Adapter; VP+PSG2
44-0159-2510	Adapter; PSG3
419-74031-1	Adapter; SSV/SSVD V419.0550/6

PUB LS/P1 16964 EN

SP/SFE30

Product description

SP/SFE30 pulse generators are designed to monitor oil and grease volumetric flow rates. The switching pulses are generated at a rate proportional to the volumetric flow, and the pulses from the pulse generator are evaluated by a downstream control unit. SP/SFE30/6GL pulse generators have been approved by Germanischer Lloyd for use on ships.

Features and benefits

- For oil and grease NLGI 1
- Operating pressure of up to 600 bar *(8 700 psi)*
- Germanischer Lloyd-approved device available

Applications

- Progressive lubrication systems
- General stationary industry machines
- Ships
- Wind energy systems
- Glass industry

Technical data

Order number:

SP/SFE/ 30/5	**24-2583-2516**
SP/SFE 30/6 GL with cable set	**24-2583-2517**
SP/SFE 30/3003 Atex	**24-2583-2526**
Function principle	pulse monitoring oil/grease
Operating temperature	–15 to +70 °C; *+5 to 158 °F*
Operating pressure	4 to 600 bar; *58 to 8 700 psi*
Lubricant	oil min. viscosity 12 mm^2/s grease NLGI 1
Volumetric flow range	0,1 to 50 cm^3/min *0.006 in^3 to 3.051in^3/min*
Volume/pulse	0,34 cm^3; *0.021 in^3*
Contact type	reed contact
Connection	SP/SFE 30/5: plug DIN43650 SP/SFE 30/6 GL: cable
Switching voltage	0 to 30 V DC
Switching capacity	10 W with V AC/V DC
Protection class	IP 65
Dimensions	65×170×35 mm *2.56×6.69×1.37 in*

SP/SFE30 Accessories

Order number	Designation
406-411	straight connector G $^1/_4$ for ø 6 mm tube
96-1108-0058	straight connector G $^1/_4$ for ø 8 mm tube

NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available online at SKF.com/lubrication:
1-3009 EN, 1-3018 -EN, 951-230-012 EN

PUB LS/P1 16964 EN

800030

Product description

The digital grease flow detector has been designed to generate a confirmation signal to verify lubrication events. Installed between the metering device and the bearing, the model 800030 is a positive-displacement flow detector consisting of oval gears. Signals are communicated to a control unit or PLC, detecting both small 0,016 cm³ *(0.001 in³)* and large 8,19 cm³ *(0.5 in³)* grease flow. Also, in the case of lubrication failure, the sensor signals the controller so that appropriate action can be taken. Usable with PLC control or with control units like LMC 301.

Features and benefits

- Verifies receipt of lubricant
- Helps prevent bearing failures to reduce unplanned downtime
- Signals controller in case of lubrication failure
- Blinking LED indicates processed signals
- For power supply 12 to 30 V DC

Applications

- Steel mills
- Paper mills
- Glass plants
- Heavy industries

Technical data

Function principle	digital grease flow detector
Operating temperature	-34 to +60 °C; *-30 to +140 °F*
Operating pressure	205 bar; *3 000 psi*
Lubricant	grease NLGI 0 to 2
Connection inlet/outlet	$^{1}/_{8}$ NPTF
Power supply	12 to 30 V DC
Polarity protection	12 to 30 V DC
Output signal	max. 30 M A
Sensitivity	per signal generated: -17 to +60 °C; *0 to +140 °F* 32 to 8 195 mm³; *0.002 to 0.5 in³* -35 to -17 °C; *-30 to 0 °F* 82 to 8 195 mm³; *0.005 to 0.5 in³*
Protection class	IP 67
Dimensions	51×42×48 mm *2.0×1.6×1.9 in*

800030

Order number	Designation
800030	digital grease flow detector
280137-3	cable; 3 m, *10 ft*
280137-15	cable; 15 m, *49 ft*
280137-30	cable; 30 m, *98 ft*
280137-45	cable; 45 m, *148 ft*

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