Progressive lubrication systems

Product catalogue

LINCOLN®

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Two leading brands

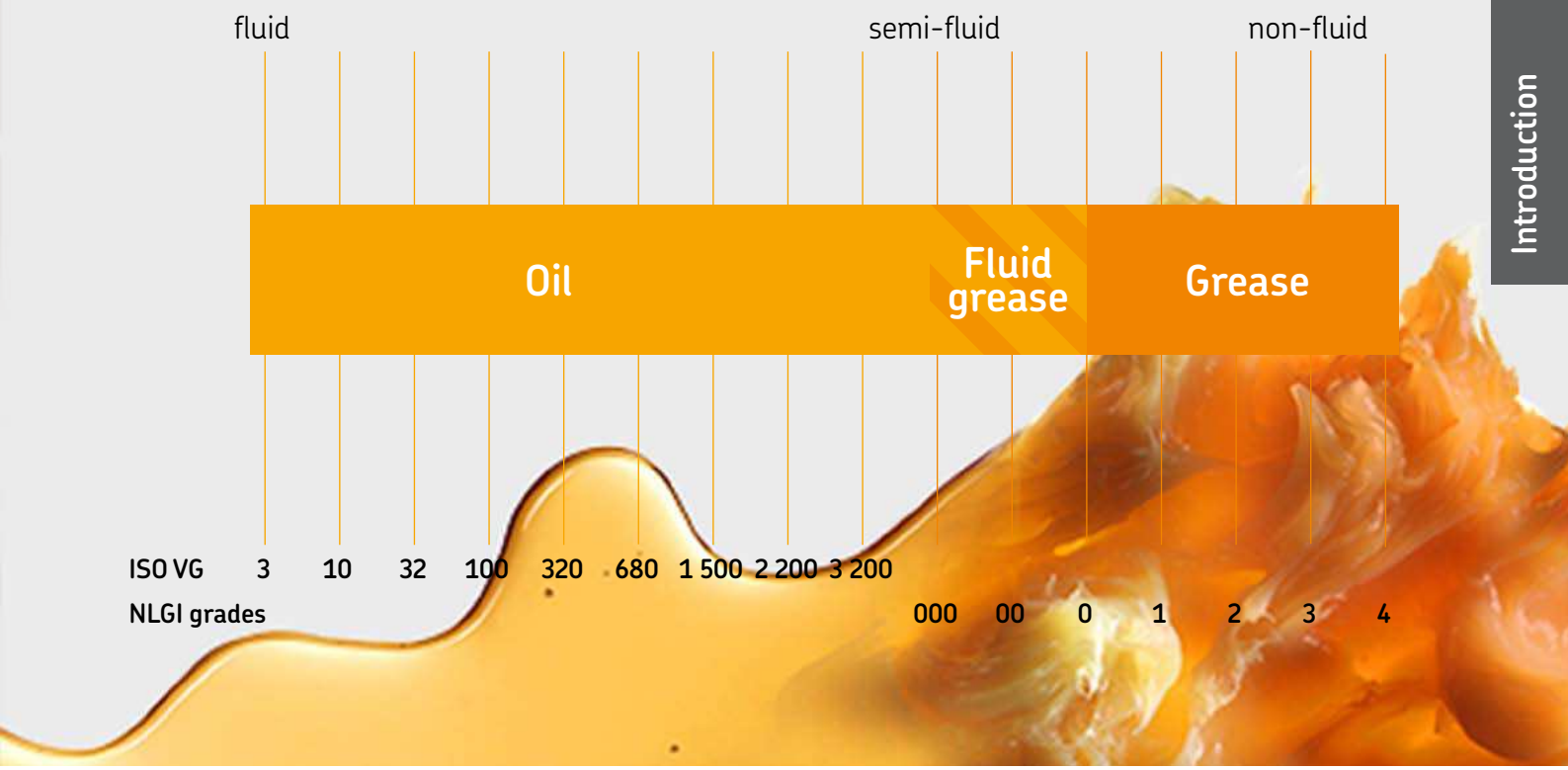
One global leader

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 friction management experience, we can help you improve machine reliability, reduce maintenance, increase productivity, enhance safety and optimise manpower resources.

Lubricants suitable for lubrication systems



Oil and fluid grease

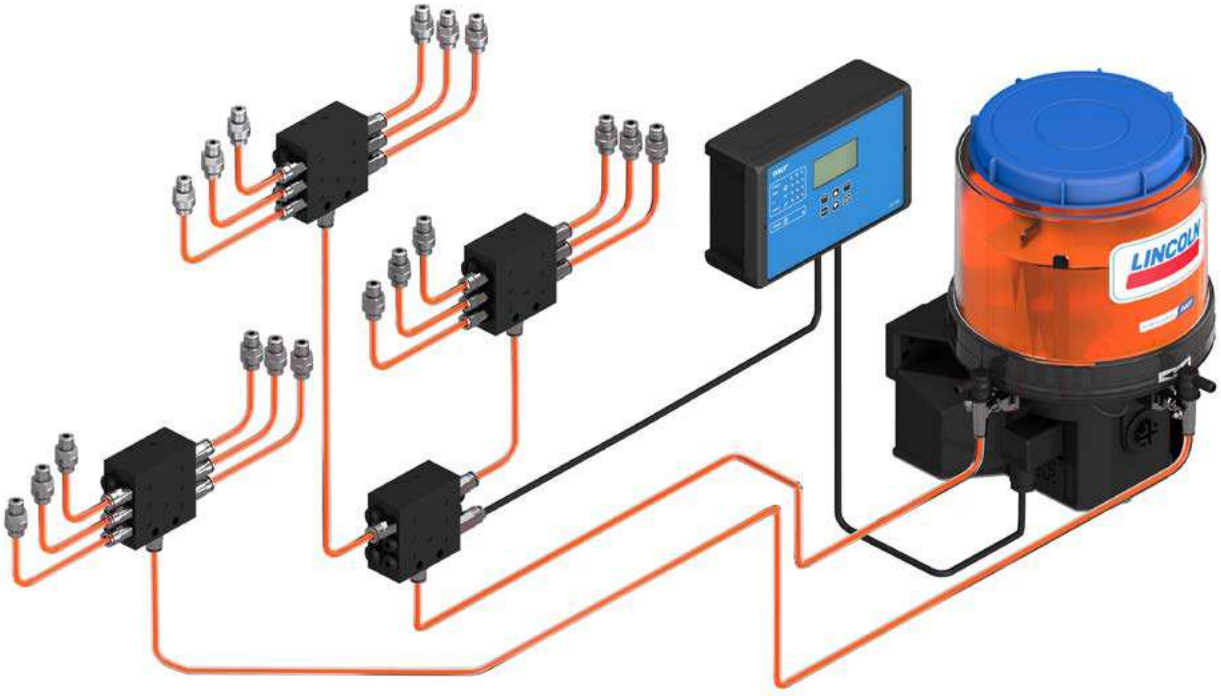
The viscosity is an expression of a fluid's internal friction. Oils are classified in ISO VG viscosity classes from 2 to 3 200. NLGI grade 000, 00 and 0 greases are called fluid greases. Different types of oils are available, including mineral oils, organic oils and synthetic oils. A compatibility check 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.

Progressive lubrication systems

System video



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 SKF Lincoln lubrication solutions 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.

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 and 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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Overview of pumps and pump units

Electrically operated pump units

Product	Function priciple	Lubricant oil	grease	Metering quantity per pump element		Reser-voir		Operating pressure max.		Page
		mm²/s	NLGI	cm³/min	*in³/min*	l	*gal*	bar	*psi*	
P 205	Piston pump unit	40–1 500	up to 2	0,23–40,25	*0.014–2.45*	5–30	*1.32–7.9*	350	*5 075*	12
P 203	Piston pump unit	40–1 500	up to 2	0,7–4,0	*0.042–0.244*	2–15	*0.53–4.0*	350	*5 075*	14
P 223 / P 233	Piston pump unit	40–1 500	up to 2	0,7–4,0	*0.042–0.244*	2–15	*0.53–4.0*	350	*5 075*	16
KFG	Piston pump unit	–	up to 2	0,8–5,0	*0.049–0.305*	2–20	*0.53–5.28*	300	*4 350*	18
KFA	Piston pump unit	–	up to 2	1,0–2,0	*0.061–0.122*	1	*0.26*	300	*4 350*	20
QLS 311 SSV	Piston pump unit with metering device	40–1 500	–	1,0	*0.03*	1; 2	*0.26; 0.53*	80	*1 200*	22
QLS 301 SSV	Piston pump unit with metering device	–	up to 2	1,0	*0.06*	1	*0.26*	205	*3 000*	24
QLS 401 SSV	Piston pump unit with metering device	–	up to 2	1,0	*0.06*	1–2	*0.26– 0.53*	205	*3 000*	26
QLS 401 SSVDV	Piston pump unit with metering device	–	up to 2	1,0	*0.06*	1–2	*0.26– 0.53*	205	*3 000*	28
QLS 421 SSV	Piston pump unit with metering device	–	up to 2	1,0	*0.06*	1–2	*0.26– 0.53*	205	*3 000*	30
P 502	Piston pump unit	–	up to 2	1,0–2,4	*0.06–0.15*	1	*0.26*	270	*4 000*	32
P 603 M	Piston pump unit	–	up to 2	4,0–12,0	*0.24–0.73*	4–20	*1.05–5.28*	350	*5 075*	34
P 623 M	Piston pump unit	–	up to 2	4,0–12,0	*0.24–0.73*	4–20	*1.05–5.28*	300	*4 351*	36
P 653 M	Piston pump unit	–	up to 2	8,0–24,0	*0.48–1.46*	4–20	*1.05–5.28*	350	*5 075*	38
ZPU 01/02	Piston pump unit	20–1 500	up to 3	13,3–53,3	*0.83–3.25*	10–30	*2–8*	350	*5 075*	40
EDL 1	Pressure booster pump	–	up to 2	0,5-1,0	*0.03-0.06*	-	-	280	*4 015*	42
				cm³/min	*in³/min*	kg	*lb*	bar	*psi*	
E-PUMP	Barrel pump unit	40–1 000	up to 2	55	*3.35*	18-180	*18-180*	240	*3 480*	44

Air operated pump units

Product	Function priciple	Lubricant oil	grease	Metering quantity		Reservoir		Operating pressure max.		Page
		mm²/s	NLGI	cm³/stroke	*in³/stroke*	l	*gal*	bar	*psi*	
PPU-5	Piston pump unit	40–1 500	up to 2	0,10–0,50	*0.006–0.030*	2,5; 5,0	*0.66; 1.32*	160	*2 320*	46
PPU-35	Piston pump unit	40–1 500	up to 2	0,70–3,50	*0.042–0.210*	2,5; 5,0	*0.66; 1.32*	160	*2 320*	46
87 214	Piston pump	40–1 500	up to 2	0,164–0,980	*0.010–0.060*	–	–	14	*200*	48
87 216	Piston pump	40–1 500	up to 2	0,010–0,050	*0.010–0.050*	–	–	–	–	50
87 200	Piston pump	40–1 500	up to 2	0,041-0,164	*0.025–0.100*	–	–	–	–	
PPG	Piston pump unit	–	up to 2	0,2	*0.012*	0,4; 1,5	*0.1; 0.4*	300	*4 350*	52
PP	Piston pump unit	–	up to 2	2,6	*0.158*	1,5	*0.4*	300	*4 350*	52
PFP-23-22	Piston pump unit	–	up to 2	1,25 /port	*0.076 /port*	1,5	*0.4*	190	*2 755*	54
PFP-23-2	Piston pump unit	–	up to 2	2,50 /port	*0.150 /port*	1,5	*0.4*	190	*2 755*	54
MPB	Barrel pump unit	20–10 000	up to 2	6,1	*0.37*	18, 50, 180	*40, 120, 400*	300	*4 350*	56

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Overview of progressive pump units

Hydraulically operated pumps and pump units

Product	Function priciple	Lubricant oil	grease	Metering quantity		Reservoir		Operating pressure max.		Page
		mm²/s	NLGI	cm³/stroke	*in³/stroke*	l	*gal*	bar	*psi*	
87 212	Piston pump (unit)	40–1 500	up to 2	0,164–0,98	*0.01–0.06*	–	–	68	*1 000*	58
87 202	Piston pump (unit)	40–1 500	up to 2	0,41–1,64	*0.025–0.10*	–	–	138	*2 000*	60
PHU-5	Piston pump unit	40–1 500	up to 2	0,1–0,5	*0.006–0.030*	2,5; 5,0	*0.66; 1.32*	160	*2 320*	62
PHU-35	Piston pump unit	40–1 500	up to 2	0,7–3,5	*0.042–0.210*	2,5; 5,0	*0.66; 1.32*	160	*2 320*	62
PFH-23-22	Piston pump unit	–	up to 2	1,25 /port	*0.076 /port*	1,5	*0.4*	190	*2 755*	64
PFH-23-2	Piston pump unit	–	up to 2	2,50 /port	*0.150 /port*	1,5	*0.4*	190	*2 755*	64

Free shaft-end pump [1)]

Product	Function priciple	Lubricant oil	grease	Pump head	Metering quantity		Operating pressure max.		Page
		mm²/s	NLGI	mm	cm³/min	*in³/min*	bar	*psi*	
MCLP	Piston pump	20–1 500	–	7 or 10	0,44–440	*0.027–26.91*	555	*8 000*	66

Manually operated pumps and pumps units

Product	Function priciple	Lubricant oil	grease	Metering quantity		Reservoir		Operating pressure max.		Page
		mm²/s	NLGI	cm³/stroke	*in³/stroke*	l	*gal*	bar	*psi*	
HP / HPG	Piston pump unit	–	up to 2	0,2; 1,6 / SSV outlet	*0.012; 0.098 / SSV outlet*	0,4–1,5 l	*0.11–0.4 gal*	250	*3 625*	68
HP-500-SSV	Piston pump unit	–	up to 2	0,2 /SSV outlet	*0.012 /SSV outlet*	0,4–0,5 l	*0.11–0.13 gal*	400	*5 800*	70
HP-500W	Piston pump unit	–	up to 2	1,5	*0.09*	0,4–0,5 l	*0.11–0.13 gal*	400	*5 800*	70
169-000-146	Piston pump unit	–	up to 2	0,2; 2,0 / *VPBM outlet*	*0.012; 0.12 / VPBM outlet*	0,4	*0.11*	400	*5 800*	72
PF-VPBM	Piston pump unit	–	up to 2	2,0	*0.12*	0,4	*0.11*	400	*5 800*	72
HJ 2	Piston pump unit	150–1 500	up to 2	1–2	*0.06–0.12*	3 l	*0.79*	300	*4 350*	74
PF-23-22	Piston pump unit	–	up to 2	1,25	*0.076*	1,5 l	*0.4*	100	*1 450*	76
PF-23-2	Piston pump unit	–	up to 2	2,5	*0.15*	1,5 l	*0.4*	100	*1 450*	76

Pump unit

P 205

Product description

The P 205 high-pressure, multi-line pump can supply lubricant directly to lubrication points or can be used as a centralized lubrication pump in large-sized progressive systems. It can drive up to five elements, which are available in varying sizes for optimum adjustability. The pump's drive and eccentric shaft design, high-efficiency worm gear, minimal number of parts and multi-range motor provide several advantages. P 205 pumps are available with a three-phase flange mount and multi-range motor or with a free shaft end for use with other motors. Various gear ratios and reservoir sizes with or without level control are offered.

Features and benefits

- Durable, versatile and reliable pump series
- Suitable for grease or oil
- Designed for continual lubrication of machines and systems operating in harsh environments
- Broad range of output options
- Modular design and easy maintenance

Applications

- Stationary machines with a high lubricant consumption
- Turbines in hydro-electric power plants
- Needling machines
- Screens and crushers in quarries
- Material handling equipment

Technical data

Function principle	electrically operated piston pump
Metering quantity	oil: 0,23–40,25 cm^3/min *0.014–2.45 in^3/min* grease: 0,23–28,75 cm^3/min *0.014–1.75 in^3/min*
Outlets	1 to 5
Lubricant	oil: viscosity 40–1 500 mm^2/s grease: up to NLGI 2
Operating pressure	max. 350 bar, *5 075 psi*
Operating temperature	–20 to +40 °C, *-4 to +104 °F*
Protection class	IP 55
Materials	steel plate or plastic, depending on reservoir
Reservoir [1]	plastic: 4 and 8 kg, *8.8 and 17.6 lb* steel: 5, 10 and 30 kg; *11; 22 and 66 lb*
Line connection	G $^1/_4$
Drive speed main shaft	grease: 25 min^{-1}, oil: 35 min^{-1}
Electrical connections	380–420 V AC/50 Hz, 440–480 V AC/60 Hz 500 V AC/50Hz
Dimensions	depending on the model min. 406 × 280 × 230 mm max. 507 × 365 × 300 mm *min. 160 × 110 × 91 in* *max. 200 × 144 × 118 in*
Mounting position	vertical
Options	several different level switches; ATEX versions

[1] valid for ρ=1 kg/dm^3

NOTE
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on SKF.com/lubrication:
13651

Pump unit

P 205

Identification code P 205 – ___ ___ – ___ ___ – ___ – ___

Product series

Drive
M = AC flange gear motor
F = free shaft end

Gear ratio
280 =280:1
700 =700:1
070 = 70:1

Reservoir
4 = plastic, 4 l, *1.05 gal*
8 = plastic, 8 l, *2.11 gal*
5 = steel plate, 5 l, *1.32 gal*
10 = steel plate, 10 l, *2.64 gal*
30 = steel plate, 30 l, *7.93 gal*

Reservoir design
N = without level control
XY = for grease and oil
XL = for grease with low level control)
BU = with level control (ultrasonic sensor for two switching points, low- and high-level)

Pump elements; define max. 5 elements (f.i. 4 elements K6 = 4K6, ...)
K 5 = piston ø 5 mm, output per stroke: 0,11 cm^3, *0.0067 in^3*
K 6 = piston ø 6 mm, output per stroke: 0,16 cm^3, *0.0098 in^3*
K 7 = piston ø 6 mm, output per stroke: 0,23 cm^3, *0.014 in^3*
KR = adjustable output, piston ø 7 mm, output per stroke: 0,04-0,18 cm^3, *0.0024-0.011 in^3*

Supplements to motor designation
320 - 420, 440 – 480 = multi-range motor for nominal supply voltage, 380-420 V AC/50 Hz, 440-480 V AC/60 Hz
500 = single-range motor for nominal supply voltage, 500 V/50 Hz
000 = pump without motor, with coupling flange

P205 pump elements

Order number	Description	Metering quantity	
		cm^3/stroke	*in^3/stroke*
600-27464-2	pump element K 5	0,11	*0.0067*
600-26876-2	pump element K 6	0,16	*0.0098*
600-26877-2	pump element K 7	0,23	*0.014*
655-28716-1	adjustable pump element KR (7)	0,04–0,18	*0.0024-0.011*
303-19285-1	closing screw [1]		

[1] for outlet port instead of a pump element

Pressure-relief valve and filling connectors

Order number	Description
624-29056-1	pressure-relief valve, 350 bar, G 1/4 D 6 for tube ø 6 mm OD
624-29054-1	pressure-relief valve, 350 bar, G 1/4 D 8 for tube ø 8 mm OD
304-17571-1	filling connector G 1/4 female [1]
304-17574-1	filling connector G 1/2 female [1]

[1] filling connector fits for vacant outlet ports

Pump unit

P 203

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	electrically operated piston pump
Operating temperature	
V DC:	–40 to +70 °C; –40 to +158 °F
V AC:	–25 to +70 °C; –13 to +158 °F
Operating pressure	350 bar; 5 075 psi
Lubricant	grease: up to NLGI 2 oil: viscosity 40–1 500 mm^2/s
Outlets	up to 3
Metering quantity	depending on pump element: 0,7-4,0 cm^3/min per outlet *0.042-0.244 in^3/min per outlet*
Reservoir	2; 4; 8; 11 and 15 l *0.53, 1.05, 2.11; 2.09 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 max. 211 × 250 × 774 mm *min. 8.31 × 8.82 × 11.29 in* *max. 8.31 × 9.84 × 30.47 in*
Protection class	IP6K9K
Mounting position	upright, with follower plate any

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions are are available on SKF.com/lubrication:
12401 EN

Pump unit

P 203

Identification code P203 – _ _ – _ _ _ – _ _ _ – _ – _ _ _ _ – _ _

Product series
P203 = model

Corrisions resistance
_ = standard (C3)
X = seawater protection (C5M)

Accreditiation
U = UL approval
E = KBA approval
D = UL/CSA/KBA approval

Reservoir size
_2 = 2 l; *0.52 gal*
_4 = 4 l; *1.06 gal*
_8 = 8 l; *2.11 gal*
11 = 11 l; *2.90 gal*
15 = 15 l; *3.96 gal*

Lubricant
X = grease
Y = oil

Fill level monitoring
N = normal version
L = low level signal
B = high- and low level signal
C = low level signal (as normally closed)
P = high- , low level and prewarning signal

Reservoir type [1]
BO = filling from top
BA = filling from top, lockable
FL = flat reservoir (2l only)
F = with follower plate

Pump elements (positions 1, 2, 3)

0 = no pump element
5 = 2,0 cm³/min; *0.12 in³/min*
6 = 2,8 cm³/min; *0.17 in³/min*
C = 4,0 cm³/min; *0.24 in³/min* [2]
R = adjustable 0,7–3,0 cm³/min, *0.042-0.18 in³/min*
B = 2,0 cm³/min; *0.12 in³/min*, with bypass-check valve
7 = 4,0 cm³/min; *0.24 in³/min*, with bypass bore

Power supply
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]

Electrical connection [4] **(power supply, mandatory for position 1 or 2)** (positions 1, 2, 3, 4)

Position 1
00 = no plug, no socket, no cable
D0 = square plug, no socket, no cable [5]
D1 = square plug, with socket, without cable (with PcB) [5]
11 = square plug, with socket, without cable (without PcB)

Position 2
00 = no plug, no socket, no cable
20 = M12 plug, no socket, no cable
PF = bayonet plug, 7/5 pole and bayonet socket, 7/5 wire, with cable [6]
RG = bayonet plug, 7/6 pole and bayonet socket, 7/6 wire, with cable [6]
TG = bayonet plug, 7/7 pole and bayonet socket, 7/7 wire, with cable [6] version for US market

Position 3
00 = no plug, no socket, no cable
F2 = square plug, with socket, no cable (with PcB) [5]
FB = square plug, with socket, with cable (with PcB) [5] [6]
G2 = square plug, with socket, no cable (without PcB)
GB = square plug, with socket, with cable (without PcB) [6]

Position 4
00 = no plug, no socket, no cable
NO = bayonet plug, 4/4 pole, no socket, no cable
NK = bayonet plug, 4/4 pole, bayonet socket, 4/4 wire, with cable [6]

Control boards
_ = without control board
V10–V13 = control board with variably adjustable pause and lubricating time (pin 15 and 30 internally bridged)
V20–V23 = control board with variably adjustable pause and lubricating time
M08–M23 = control board with microprocessor control (different setting variants, monitored systems)
MS8 = control board with microprocessor control (different setting variants, monitored systems) for US market
H = control board for trailers and semi-trailers

Lubricant priming
A = pump prefilled partially with standard grease (NLGI 2)
S = pump filled with customer specific grease
Z = pump without lubricant (default for oil pumps)

1) 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 separate documentation
4) further electrical connections available on request
5) only for 110-260 V AC power supply
6) cable 10 m *(32 ft)*

Pump unit

P 223/P 233

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 MDF01/02 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	grease: up to NLGI 2 oil: viscosity 40–1 500 mm^2/s
Outlets	up to 3
Metering quantity	depending on pump element; per outlet: 0,7-4,0 cm^3/min; *0.042-0.24 in^3/min*
Reservoir	2, 4, 8, and 15 l; *0.53, 1.05, 2.11 and 3.96 gal*
Connection main line	G1/4
Operating voltage	12/24 V DC; 110/240 V AC (±10%); 50/60 Hz
Protection class	IP 6K9K
Dimensions	min. 230 × 224 × 367 mm max. 230 × 250 × 729 mm *min. 9.06 × 8.82 × 14.45 in* *max. 9.06 × 9.84 × 28.70 in*
Mounting position with follower plate without follower plate	 any upright

Pump unit

P 223/P 233

Identification code ____ – ____ ____ – ____ ____ ____ – ____ – ____ . ____ – ____

1 2 3

Product design

for grease with 1-3 outlets and V DC motor
P223 = pump without Datalogger
P233 = pump with 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; *1.06 or 2.11 gal*

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

. = without pump elements
1K5 = 2,0 cm³/min; *0.12 in³/min*; piston ∅ 5 mm
1K6 = 2,8 cm³/min; *0.17 in³/min*; piston ∅ 6 mm
1K7 = 4,0 cm³/min; *0.24 in³/min*: piston ∅ 7 mm, with bypass bore
1KR = 0,7-3,0 cm³/min, *0.042-0.18 in³/min:* adjustable, piston ∅ 7 mm
1B7 = 2,0 cm³/min; *0.12 in³/min*; piston ∅ 7 mm, with bypass check valve
1C7 = 4,0 cm³/min; *0.24 in³/min;* piston ∅ 7 mm [2]

Operating voltage

12 = 12 V DC
24 = 24 V DC
AC = 110/240 V AC ±10%, 50/60 Hz

Connections

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

Type of connection [5]

1 = square plug, power supply. DIN 43650
2 = M 12 plug
5 = bayonet plug 4-pole, DIN 72585-1, MF01/MDF01 [3]
6 = bayonet plug 7/5-pole, MF02/MDF02 [4]

Connections from the pump to external devices

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

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

Pump unit

KFG

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

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:
12649 EN; 951-170-211; 951-170-212; 951-170-213

3D
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 cm³/min 0.049, 0.079, 0.11, 0.15, 0.31 in³/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	aluminum-silicon cast alloy, PMMA, PA 6l
Connection	outlet pump element: M 14 × 1,5 female thread
Power supply	12 V DC, 24 V DC, 230 or 90 to 264 V AC; (± 10%)
Dimensions	min. 266 × 208 × 229 mm max. 268 × 227 × 1,170 mm *min. 10.47 × 8.19 × 9.01 in* *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

Pump unit

KFG

Order number 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]

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 ∅ 6 mm tubes
D = solderless pipe union for ∅ 8 mm tubes
E = solderless pipe union for ∅ 10 mm tubes
F -P = with pressure relief valve
F = 300 bar; *4 850 psi*, with SKF Quick Connector for ∅ 6 mm tubes [5]
G = 300 bar; *4 850 psi*, with solderless pipe union for ∅ G $^1/_4$ tubes [5]
H = 300 bar; *4 850 psi*, with solderless pipe union ∅ 6 mm tubes [5]
J = 300 bar; *4 850 psi*, with solderless pipe union ∅ 8 mm tubes [5]
K = 300 bar; *4 850 psi*, with solderless pipe union ∅ 10 mm tubes [5]
L = 300 bar; *4 850 psi*, with SKF Quick Connector for ∅ 8 mm tubes [5]
M = 200 bar; *2 900 psi*, with solderless pipe union for ∅ 8 mm tubes
N = 200 bar; *2 900 psi*, with solderless pipe union for ∅ 10 mm tubes
O = 200 bar; *2 900 psi*, with solderless pipe union for ∅ 12 mm tubes
P = 200 bar; *2 900 psi*, with SKF Quick Connector for ∅ 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

Pump unit

KFA

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
- 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 V AC; (± 10%)
Protection class	IP 6K9K
Dimensions	216 × 150 × 234,5 mm *8.1 × 5.9 × 9.2 in*
Mounting position	upright

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:
951-170-008, 12667-EN

Pump unit

KFA

Order information

Order number	Designation applications	Monitoring level monitoring	Monitoring cycle switch	Control units extern	Control units integrated	Voltages 12 V DC	Voltages 24 V DC	Voltages 115 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	•	•	–	•	–	•	–
KFAS10 485	industry	–	–	–	•	–	–	•
KFAS10-W 485	industry	•	–	–	•	–	–	•

1) only pump; pump elements need to be ordered separatly

Accessories

Cable kits

Order number	Designation, applications
997-000-820	cable kit for pump KFA1, square type, 4-pins (12 m, *39 ft*)
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 cm³/min	Metering quantity *in³/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*

Pump unit

QLS 311 SSV

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 to +70 °C; *–13 to +158 °F*
Operating pressure	80 bar; 1 200 psi
Lubricant	oil: 40–1 500 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*
Connection main line	
via SSV:	see information for SSV page 86
via connection block:	G 1/8
	12/24 V DC; 120 and 230 V AC (± 10%)
Protection class	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

Pump unit

QLS 311 SSV

Identification code P 3 1 1 _ _ _ _ _ _ _ _

Product design

SSV Metering devices

0 = external SSV 6, SSV 8 [1)]
1 = external SSV 12, SSV 18 [1)]
3 = SSV 6, rear-mounted
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*
2 = 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 **

Electrical connector types

1 = with socket, without cable *
5 = with socket, with cable (10 m, *33 ft*) *
7 = with bayonet 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.

Pump unit

QLS 301 SSV

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 cm^3/min; *0.06 in^3/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
Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:
951-171-003 EN

Pump unit

QLS 301 SSV

Identification code P301 _ _ _ 1 _ _ _ _

Product design

Metering devices SSV

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)]

Operating 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, only with control P.C.B.
8 = 230 V AC, only with control P.C.B.

Reservoir

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

Connection

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; 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

Pump unit

QLS 401 SSV

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: 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 ; 2 l; *0.26;0.53 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 max. 237 × 235 × 353 mm *min. 9.33 × 8.46 × 9.05 in* *max. 9.33 × 9.25 × 13.89 in*
Mounting position	upright

[1] Before metering devices

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:
951-171-003 EN

Pump unit

QLS 401 SSV

Identification code P401 [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

Product design

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, back mounted
2 = horizontal metering device outlets, H, bottom-mounted [1)]

Operating 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

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 [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 (SSV12/ SSV18)
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 (SSV12/ SSV18) [4)]
6 = control P.C.B. S6 for 12/ 24 V DC; NC contact signal [4)]
6 = control P.C.B. S6 for 12/ 24 V DC; NC contact signal: 1-3 cycles (SSV 6/ SSV 8) 1 cycle (SSV12/ SSV18) [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

Pump unit

QLS 401 SSVDV

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: NLGI 2 fluid grease: NLGI 00, 000
Outlets	max. 16
Metering quantity	*depending on metering screw; per outlet:* *0,08-0,4 cm³/min;* *0.0048 -0,0244 in³/min*
Reservoir	1 ; 2 l; *0.26; 0.53 gal* via SSV: see information for SSVD 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 max. 237 × 235 × 353 mm *min. 9.33 × 8.46 × 9.05 in* *max. 9.33 × 9.25 × 13.89 in*
Mounting position	upright

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:
951-171-003 EN, 12667 EN

Pump unit

QLS 401 SSVDV

Identification code P401 SSVDV __ – _ _ _ _ _ _ _ _ – _ _ – _ _ – _ _ – _ . _

1 2 3 4 5 6 7 8

Product design

Metering devices SVVDV

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.

Operating 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

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 industrial applications [1]
5 = bayonet plug 4-pole design. For vehicles [2]

Electrical connector types

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

Pump unit

QLS 421 SSV

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: NLGI 2 fluid grease: NLGI 00, 000
Outlets	up to 18
Reservoir	1; 2 l; *0.26; 0.53 gal*
Metering quantity	1,0 cm^3/min; *0.06 in^3/min*
Connection main line	via SSV: see information for SSVD via connection block: G 1/8
Operating voltage	12/24 V DC
Protection class	IP 6K9K, NEMA 4
Dimensions	min. 237 × 215 × 230 mm max. 237 × 235 × 353 mm *min. 9.33 × 8.46 × 9.05 in* *max. 9.33 × 9.25 × 13.89 in*
Mounting position	upright

Pump unit

QLS 421 SSV

Identification code

P421		1			2	5		1

Product design

Metering devices SVV

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

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

Connections

2 = 1A5 - 1 connection, power supply, bayonet plug, left

Connection socket design

5 = bayonet plug according to DIN 72858-1

Electrical connector types

3 = with connection socket and cable (10 m; *33 ft*)
4 = with connection socket and ADR cable (10 m; *33 ft*)

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

1 = with variable pause and lubrication time

Pump unit

P 502

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 per outlet: 1,0-2,4 cm^3/min; *0.06-0.15 in^3/min*
Reservoir	1 l; *0.26 gal*
Connection main line	G1/4
Operating voltage	12/24 V DC
Protection class	IP 6K9K; 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 without follower plate	 any upright

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:
12737 EN

Pump unit

P 502

Identification code P502 – ___ – ___ ___ – ___ – ___ ___ . ___ – ___

Product design

Reservoir plastic 1 2

1XN = 1 l; *0.26 gal* reservoir for grease
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 ∅ 5 mm
1K6 = 1,2 cm³/min; *0.07 in³/min;* piston ∅ 6 mm
1K7 = 1,8 cm³/min; *0.11 in³/min;* piston ∅ 7 mm
1B7 = 2,4 cm³/min; *0.15 in³/min;* piston ∅ 7 mm

Operating voltage

2 = 12 V DC
4 = 24 V DC

Connections

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 M12
01 = connection plug and socket, square plug M12
10 = connection plug and socket, square plug, cable (10 m; *33 ft*)
14 = bayonet socket, 4-core, with cable (10 m; *33 ft*)
15 = bayonet socket, 7/5-core, with cable (10 m; *33 ft*)
16 = bayonet socket, 7/6-core, with cable (10 m; *33 ft*)

Control printed circuit board (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

Pump unit

P 603 M

Description

The compact P 603 M 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 603 M 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	depending on pump element; 4 cm^3/min; *0.24 in^3/min*
Lubricant output [1]	max. 12 cm^3/min; *0.73 in^3/min*
Reservoir [2]	4, 8, 10, 15 and 20 l; *1.05, 2.11, 2.64, 3.96 and 5.28 gal*
Connection main line	G $^1/_4$
Operating voltage	100–240 V AC, 50/60 Hz
Protection class	IP 6K9K
Dimensions	min. 240 × 235 × 415 mm max. 240 × 235 × 591 mm *min. 9.45 × 9.25 × 16.34 in* *max. 9.45 × 9.25 × 23.27 in*
Mounting position with stirring paddle with follower plate	 reservoir upside any

[1] with internally combined three pump elements to one outlet
[2] 30 l, *7.9 gal* steel reservoir version available on request

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:
12735 EN

Pump unit

P 603 M

Identification code P 603 M – ___ ___ – 1 2 3 – ___ – ___ ___ . ___

Product design

Reservoir size [2]

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 max. 2 pump elements)

. = without pump elements
1K7 = 4,0 cm^3/min; *0.24 in^3/min;* piston ∅ 7 mm
3Z7 = 12,0 cm^3/min; *0.73 in^3/min*; piston ∅ 7 mm, internally combined to 1 outlet

Operating voltage

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

Connections

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 plug
5 = bayonet plug 7/4-pole

Connections from the pump to external devices

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

1) Electrical signal should be taken from top of lid
2) 30 l, *7.9 gal* steel reservoir version available on request

Pump unit

P 623 M

Description

P 623 M electrically operated pumps have been designed to withstand electromagnetic pulses caused by lightning strikes. An extension of the P603 pump series, the P623 M is for use in progressive automatic lubrication systems. Working closely with customers to develop product solutions that meet specific needs, SKF developed the P623 M for onshore and offshore wind energy applications. In addition, these pump units are suitable for use in construction, mining and renewable energy applications where lightning protection must be considered. P623 M pumps feature a power supply board that transfers 230 V to 24 V (control) with overvoltage protection to discharge 8 KV (electric grounding). The pump units are available with a grease follower plate for rotating applications or a stirring paddle for stationary applications.

Features and benefits

- Reduces operational risk compared to standard automatic lubrication
- Offers higher safety standards
- Brings lubrication system into compliance

Applications

- Wind energy generators
- Construction, mining
- Renewable energies

Technical data

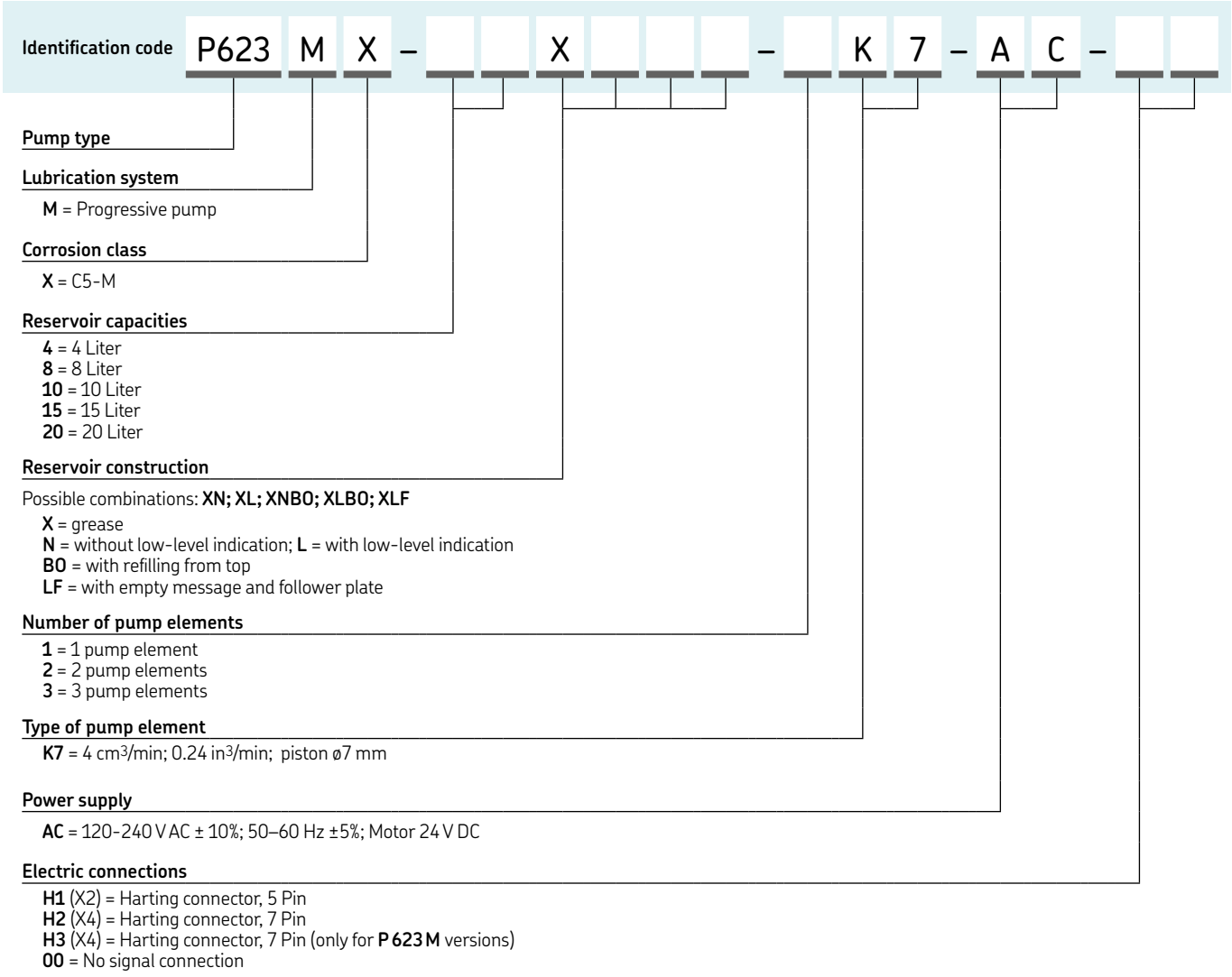
Function principle	electrically operated piston pump with lightning protection
Operating temperature	-25 to +55 °C; *-13 to +131 °F*
Operating pressure	300 bar; *4 351 psi*
Lubricant	grease: up to NLGI 2
Outlets	up to 3 pump elements
Metering quantity	depending on pump element; 4 cm^3/min; *0.24 in^3/min*
Lubricant output [1]	max. 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*
Connection main line	G $^1/_4$
Operating voltage	100-240 V AC, 50/60 Hz
Protection class	IP 67
LPZ0 (Lightning Protection Zone)	8 kV (acc. EN61000-6-2)
EMC (Electromagnetic compatibility)	2014/30/EU
Dimensions	min. 220 × 278 × 439 mm max. 220 × 278 × 976 mm *min. 8.66 × 10.94 × 17.28 in* *max. 8.66 × 10.94 × 38.42 in*
Mounting positions:	
with stirring paddle	reservoir upside
with follower plate	any

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

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:
16797 EN

Pump unit

P 623 M



Pump unit

P 653 M

Description

The compact P 653 M 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 653 M 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
- Etc.

Technical data

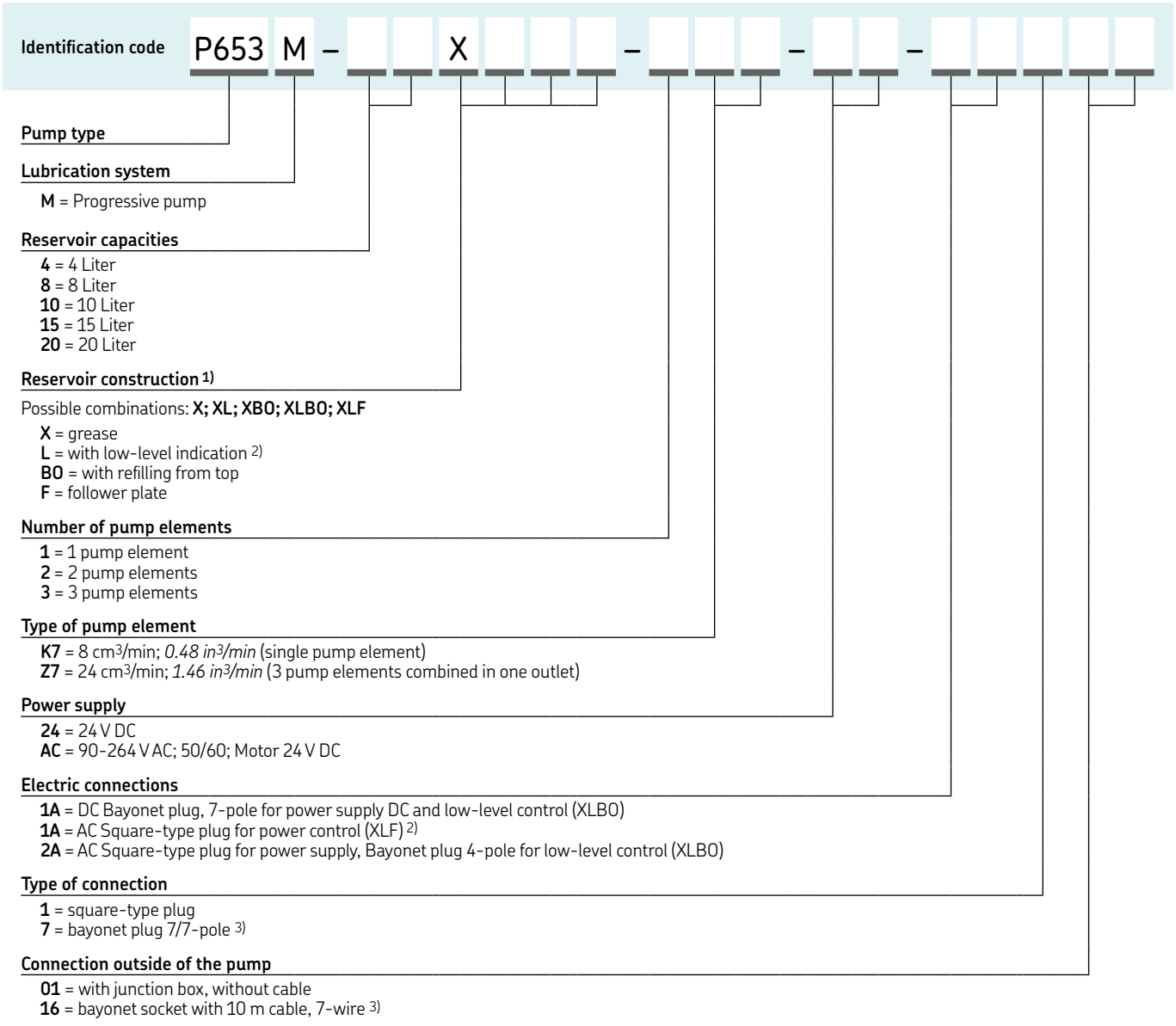
Function principle	electrically operated piston pump
Operating temperature	-40 to +70 °C; *-40 to +158 °F*
Operating pressure	350 bar; *5 075 psi*
Lubricant	grease: up to NLGI 2
Outlets	up to 3 pump elements
Metering quantity	depending on pump element; 8 cm^3/min; *0.48 in^3/min*
Lubricant output [1]	max. 24 cm^3/min; *1.46 in^3/min*
Reservoir [2]	4, 8, 10, 15 and 20 l; *1.05, 2.11, 2.64, 3.96 and 5.28 gal*
Connection main line	G $^1/_4$
Operating voltage	90-264 V AC, 50/60 Hz; 24 V DC
Protection class	IP 6K 9K
Certifcation	UL, CE
Dimensions	min. 240 × 235 × 467 mm max. 240 × 235 × 800 mm *min. 9.45 × 9.25 × 18.4 in* *max. 9.45 × 9.25 × 31 in*
Mounting positions:	
with stirring paddle	reservoir upside
with follower plate	any

[1] with internally combined three pump elements to one outlet
[2] 30 l, *7.9 gal* steel reservoir version available on request

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:
16797 EN

Pump unit

P 653 M



Pump type

Lubrication system

M = Progressive pump

Reservoir capacities

4 = 4 Liter
8 = 8 Liter
10 = 10 Liter
15 = 15 Liter
20 = 20 Liter

Reservoir construction [1)]

Possible combinations: **X; XL; XBO; XLBO; XLF**

X = grease
L = with low-level indication [2)]
BO = with refilling from top
F = follower plate

Number of pump elements

1 = 1 pump element
2 = 2 pump elements
3 = 3 pump elements

Type of pump element

K7 = 8 cm³/min; *0.48 in³/min* (single pump element)
Z7 = 24 cm³/min; *1.46 in³/min* (3 pump elements combined in one outlet)

Power supply

24 = 24 V DC
AC = 90–264 V AC; 50/60; Motor 24 V DC

Electric connections

1A = DC Bayonet plug, 7-pole for power supply DC and low-level control (XLBO)
1A = AC Square-type plug for power control (XLF) [2)]
2A = AC Square-type plug for power supply, Bayonet plug 4-pole for low-level control (XLBO)

Type of connection

1 = square-type plug
7 = bayonet plug 7/7-pole [3)]

Connection outside of the pump

01 = with junction box, without cable
16 = bayonet socket with 10 m cable, 7-wire [3)]

1) 30 l, *7.9 gal* steel reservoir version available on request
2) With follower plate pumps, the empty signal can be picked up at the top of the cube plug (container lid).
3) Only with connection 1A7

Pump unit

ZPU 01/02

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	
M100; M490	max. 350 bar; *5 075 psi*
M049	max. 400 bar; *5 800 psi*
Lubricant	grease: NLGI 2, NLGI 3 on request oil: viscosity 20–1 500 mm^2/s at operating temperature
Metering quantity [1]	
ZPU01	13,33 cm^3/min; *0.813 in^3/min*
ZPU02	26,67 cm^3/min; *1.63 in^3/min*
ZPU02-M049	53,33 cm^3/min; *3.25 in^3/min*
Reservoir	10 or 30 l; *2.6 or 8 gal*
Connection main line	
Model V	for tube ∅ 10mm
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 max. 754 × 431 × 337 mm *min. 20.25 × 15.00 × 12.50 in* *max. 29.75 × 17.00 × 15.00 in*
Low-level sensor	30 × 125 × 65 mm *1.20 × 5.00 × 2.75 in*
Mounting position	upright

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

NOTE

Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:

951-171-016 EN

3D

skf-lubrication.partcommunity.com/3d-cad-models

Pump unit

ZPU 01/02

Identification code ZPU __ – __ __ – __ __ – __ – ____

Product design

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

90 = 1:490
100 = 1:100
049 = 1:49

Reservoir size

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

Pump unit

EDL1

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

- ost-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 operated lubricator
Operating temperature	–25 to +70 °C; *–13 to +158 °F*
Operating pressure	max. 280 bar; *4 015 psi*
Inlet pressure	min. 2 bar; max. 280 bar *min. 30 psi; max. 4 015 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-LX10 (others on request)
Protection class	IP 65
Dimensions	116 × 114 × 350 mm *4.56 × 4.48 × 13.78 in*
Mounting position	any

NOTE

Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:

951-171-010 EN, 16144 EN

3D

skf-lubrication.partcommunity.com/3d-cad-models

Pump unit

EDL1

Identification code EDL1 – ☐☐☐ – ☐☐ – ☐☐ + 924

Product design

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 ∅ 10 mm

Outlet or outlet connection at check valve [1)]

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

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

Pump unit

E-PUMP

Description

The electrical barrel pumping unit E-PUMP is a versatile barrel pump and it is especially designed for pumping oil or grease lubricants up to NLGI grade 2 into a centralized lubrication system. When equipped with a change-over valve unit, as E-VALV e.g. or a shut-off valve as E-VALVE-S e.g. it can be used either in single-line, dual-line or progressive lubrication systems. A complete pumping center consists of a pumping unit and a lid set. EPUMP-XXX-ECO coding is referring to ECO lid sets (descending pump head with follower plate), which are suitable for greases in NLGI grades 1 and 2 while EPUMP-XXX-STA coding is referring to STA lid sets (pump head always at barrel bottom), which are suitable for oil or greases in NLGI 0, 00 and 000 classes.

Features and benefits

- EPUMP models reflecting typical and often used barrel sizes
- Compact electrically operated pump for applications where no air supply is available
- An internal pressure control and a heating element secure the pump's function in high-pressure conditions and cold climates

Applications

- Heavy industries (paper, steel and other process industries)
- Mining and mineral processing
- Machinery workshops
- Food and beverage
- Cement industry

Technical data

Function principle	electrically operated pump
Outlets	1
Number of pump elements	4
Metering quantity	55 g/min; *0.3880136 oz/min*
Operating temperature	–30 to +70 °C, *-20 to 160 °F*
Operating pressure	max. 240 bar, *3 480 psi*
Lubricant	grease up to NLGI 2 oil up 40–1 000 mm²/s
Supply voltage	20–32 V DC
Power consumption	150 W
Heater	40W/24V, heater resistor for pump elements in ECO models
Display	LED's 5 yellow, 1 green, 1 red
Drum capacity	18, 50 and 180 kg, *40, 120 or 400 lb* drum not included
Pressure sensor	50-240 bar adjustable in 25 bar steps *725.1 to 3480.9 psi in 362.6 psi steps*
Protection class	IP 65
Dimensions	depending on the model min. 400 × 400 × 800 mm max. 400 × 400 × 1 300 mm *min. 15.75 × 15.75 × 31.49 in* *max. 15.75 × 15.75 × 51.18 in*
Mounting position	vertical

Pump unit

E-PUMP

Order information

Order number	Designation	Lubricant	Control	Suitable barrel size	
				kg	*gal*
12375010	SKF-EPUMP-1/8-ECO-24-P	Grease up to NLGI 2	integrated control unit for progressive systems	18	*4.5*
12375090	SKF-EPUMP-1/4-ECO-24-P	Grease up to NLGI 2	integrated control unit for progressive systems	50	*13*
12375170	SKF-EPUMP-1/1-ECO-24-P	Grease up to NLGI 2	integrated control unit for progressive systems	180	*45*
12375050	SKF-EPUMP-1/8-STA-24-P	Oil up to 1 000 mm²/s	integrated control unit for progressive systems	18	*4.5*
12375130	SKF-EPUMP-1/4-STA-24-P	Oil up to 1 000 mm²/s	integrated control unit for progressive systems	50	*13*
12375210	SKF-EPUMP-1/1-STA-24-P	Oil up to 1 000 mm²/s	integrated control unit for progressive systems	180	*45*

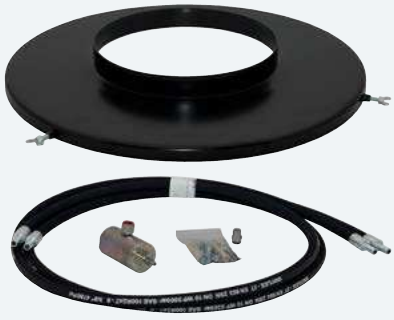
Accessories

Lid sets for grease barrels

Lid sets for grease barrels

Order number	Designation	Lubricant	for barrel size	
			kg	*lb*
12381280	E-LIDSET-1/8-ECO	Grease	18	*40*
12381285	E-LIDSET-1/4-ECO	Grease	50	*120*
12381290	E-LIDSET-1/1-ECO	Grease	180	*400*

Lid sets for oil



Lid sets for oil barrels

Order number	Designation	Lubricant	for barrel size	
			kg	*lb*
12381292	E-LIDSET-1/8- STA	Oil	18	*40*
12381294	E-LIDSET-1/4- STA	Oil	50	*120*
12381296	E-LIDSET-1/1- STA	Oil	180	*400*

Pump unit

PPU–5/PPU–35

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
Operating pressure [1]	160 bar; *2 320 psi*
Air pressure	adjustable 4,5-10 bar; *65-145 psi*
Priming pressure	30 bar; *435 psi*
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*
Reservoir	2,5 and 5 l; *0.66 and 1.32 gal*
Connection main line	tube ∅ 10 mm
Dimensions	min. 247 × 40 × 120 mm max. 270 × 83 × 126 mm *min. 9.72 × 1.57 × 4.72 in* *max. 10.63 × 3.27 × 4.96 in*
Mounting position	any

[1] Rupture disc, other pressures available

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:
951-170-012 EN

Pump unit

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

PPU–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

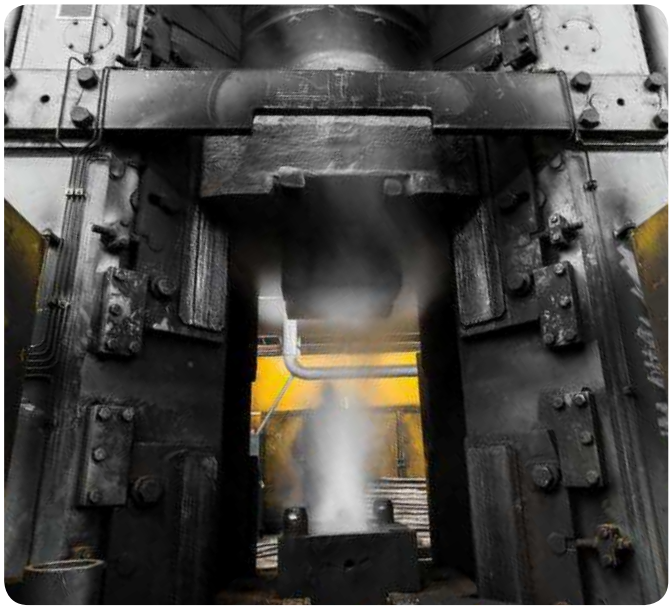
Rupture discs

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*

Pump

87214



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 0-2
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	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 0 – rings
3) Output adjustable by steps of one turn of adjustment screw equal to 0,049 cm^3; *0.003 in^3*

Pump

87214

Order information

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

Accessories

Reservoir

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

Pump

87200/87216/130179

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 piston pump [1]
Inlet pressure air	
87200; 87216	min. 2,8 bar, max. 10 bar *min. 40 psi, max. 150 psi*
130179	min. 4,5 bar, max. 10 bar *min. 65 psi, max. 150 psi*
Lubricant	oil and grease: NLGI 0-2
Outlets	1
Metering quantity [2]	
87200	0,041-0,164 cm^3/stroke *0.025–0.10 in^3/stroke*
87216	0,164–0,82 cm^3/stroke *0.01–0.05 in^3/stroke*
130179	4,1–16,39 cm^3/stroke *0.25–1.0 in^3/stroke*
Oil	
87200; 87216	max. 30 strokes/min
130179	max. 25 strokes/min
Grease	
87200; 87216	max. 22 strokes/min
130179	max. 10 strokes/min
Ratio, pressure	25:1
87200; 87216	50:1
130179	
Connection main line	1/4 NPTF
Dimensions	pumps 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

Pump

87200/87216/130179

Order information

Order number	Ratio	Baseplate 87218 [1]	87204 [2]	130095 [3]
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

Baseplate

87218/87216/130179

Order number	Air NPTF (F) inlet	Lubricant NPTF (F) inlet	outlet
	in	*in*	*in*
87218 [1]	*1/8*	*3/8*	*1/4*
87216 [2]	*1/4*	*3/8*	*1/4*
130179 [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

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 include FKM O-rings.

Reservoir

Modular reservoirs for oil systems [1]

Order number	Designation	Capacity		Lubricant outlet NPTF(F)	Dimensions	
		l	gal	*in*	mm	*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

Description

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

Modular reservoirs for grease systems [1] [2]

Order number	Designation	Capacity		Dimensions	
		l	gal	mm	*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

Pump unit

PP/PPG

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 have one outlet and can be used with a primary progressive metering device or with a secondary-level metering device. In comparison 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, *3 265 psi*
Air inlet pressure	min. 4 bar, max. 10 bar; *min. 58 psi, max 145 psi*
Air pressure ratio	40:1
Lubricant	grease: up to NLGI2
Outlets	
PP	1
PPG	8
Metering quantity per stroke	
PP	2,6 cm^3; *0.158 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 ∅ 6mm
PPG [2]	M 10 × 1
Connection main line	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

Pump unit

PP/PPG

Order information

Ordernumber	Designation	Outlets	Reservoir	
			l	*gal*
604-29967-1	**PP-4**	1	0,4	*0.1*
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

Closure plug

HP/HPG accessoriess

Ordernumber	Designation	Tube
		∅ mm
504-30344-4	special outlet fitting	6
504-30345-2	special outlet fitting	4
303-17499-3	closure plug	-

Pump unit

PFP-23-2/PFP-23-22

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
- Applications with air power supply
- Especially for indoor applications
- Die-cutting machines
- Small presses

Technical data

Function principle	air-operated piston pump
Operating temperature [1]	+10 to 60 °C; *+50 to 140 °F*
Operating pressure [2]	190 bar; *2 755 psi*
Air inlet pressure	6-10 bar; *87-145 psi*
Lubricant	grease: up to NLGI2
Outlets	
PFP-23-2:	1
PFP-23-22:	2
Metering quantity per stroke	
PFP-23-2:	outlet one closed, outlet two 2,5 cm^3; *0.15 in^3*
PFP-23-22:	both outlets 1,25 cm^3; *0.076 in^3*
Ratio	20:1
Reservoir [3]	1,5 l; *0.4 gal*
Connection main line	
outlets	tube ∅ 10mm
return line	G 1/4
Dimensions	132 × 132 × 410 mm *5.20 × 5.20 × 16.14 in*
Mounting position	upright

1) For temperature below 10°C/ *50°F* special version with follower piston pressurized with compressed air available,see further publication
2) Depending on air inlet pressure
3) Use filling connection order number: 995-001-500 to refill reservoir

NOTE

Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:

951-170-012 EN, 1-0107-4 EN

Pump unit

PFP-23-2/PFP-23-22

Order information

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

Ordernumber	Designation
24-9909-0244	filler socket with sealing ring

995-001-500

Coupling socket

Ordernumber	Designation
995-001-500	coupling socket for reservoir refilling

857-760-...

Hose socket

Ordernumber	Designation
857-760-007	hose socket; ∅ 13 mm
857-760-002	hose socket; ∅ 16 mm

Pump unit

MPB

Description

The MPB pump unit is especially designed for automatic lubrication systems. The unique feature in it compared to traditional air-operated barrel pump with mechanical air motor valve is its magnetically operated air motor valve. This will reduce the amount of mechanical components in the air motor and also eliminates the need of lubrication in the air motor. The pump is suitable for use with 18, 50 and 180 kg (40, 120 and 400 lb) lubricant barrels. And when equipped with a suitable adapter MPB pump unit can also be used in lubricant bulk containers.

Features and benefits

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

Applications

- Paper industry
- Steel industry
- Heavy industry

Technical data

Function principle	air operated piston pump for barrels
Operating temperature	–10 to +55 °C, *14 to 131 °F*
Operating pressure	max. 300 bar, *4 350 psi*
Pressure ratio	1:65
Pressure air supply	2 to 4,5 bar, *29 to 65 psi*
Air consumption	max. 300 l/min; 80 gal/min
Lubricant	grease up to NLGI 2 oil up to 20–10 000 mm^2/s
Metering quantity per cycle [1]	6,1 cm^3; *0.37 in^3*
Electrical connections	20–32 V DC
Drum capacity	18, 50 and 180 kg, *40, 120 or 400 lb* drum 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	vertical

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

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions available on SKF.com/lubrication:
PUB LS/P8 17178 EN

Pump unit

MPB

Order information

Order number	Designation	Suitable barrel size	
		kg	*lb*
12371702	SKF-MPB-PUMP-1/8	18	*40*
12371701	SKF-MPB-PUMP-1/4	50	*120*
12381700	SKF-MPB-PUMP-1/1	180	*400*

Accessories

Air regulator unit

Air regulator unit

Order number	Designation
12382666	MAX-V2-SET-MPB

Lid sets

Lid sets

Order number	Designation
12381381	MAXV2-LIDSET-1/1-ECO-MPB
12381382	MAXV2-LIDSET-1/4-ECO-MPB
12381383	MAXV2-LIDSET-1/8-ECO-MPB
12381384	MAXV2-LIDSET-1/1-STA-MPB
12381385	MAXV2-LIDSET-1/4-STA-MPB
12381386	MAXV2-LIDSET-1/8-STA-MPB

Pump unit

87212

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
Metering quantity [2)]	*0,164-0,98 cm³/stroke* *0.01-0.06 in³/stroke*
oil	max. 30 strokes/min
grease	max. 22 strokes/min
Reservoirs	see accessories
Pressure ratio	5:1
Connection main line	1/4 NPTF
Dimensions	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 cm³; *0.003 in³*
3) Pump includes NBR O-rings

Pump unit

87212

Order information

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

Accessories

Reservoir

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) 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

Pump unit

87202

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
Metering quantity	*0,41-1,64 cm³/stroke* *0.025-0.10 in³/stroke*
Outlet	1
Connection main line	1/4 NPTF
Dimensions	241,3 × 47,7 × 54,1 mm *9.5 × 1.88 × 2.13 in*
Mounting position	with reservoir upward

Pump unit

87202

Order information

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

Accessories

Baseplate

Baseplates [1]

Order number	Air 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 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

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 include FKM O-rings.

Reservoir

Modular reservoirs for oil systems [1]

Order number	Designation	Capacity l	*gal*	Lubricant outlet [1] NPTF (F)	Dimensions mm	*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

Description

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

Modular reservoirs for grease systems [1] [2]

Order number	Designation	Capacity l	*gal*	Dimensions mm	*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

Pump unit

PHU-5/PHU-35

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 and oil
- Adjustable output via stroke setting screw
- Direct connect reservoir or remote connect reservoir possible
- Optional low-level control available, only with integrated reservoir
- Air operated version of pump available

Applications

- Small progressive systems
- Small presses

Technical data

Function principle	hydraulically operated piston pump
Operating pressure	160 bar; *2 320 psi*
Actuating pressure	adjustable: 4,5-10 bar; *65-145 psi*
Priming pressure	30 bar; *435 psi*
Lubricant	oil and grease: up to NLGI 2
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*
Outlet	1
Reservoir	2,5 and 5 l; *0.66 and 1.32 gal*
Connection main line	M10×1 or tube ∅ 10 mm
Dimensions	min. 247 × 40 × 120 mm max. 270 × 83 × 126 mm *min. 9.72 × 1.57 × 4.72 in* *max. 10.63 × 3.27 × 4.96 in*
Mounting position	any

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:
1-0107-5 EN; 951-170-012 EN

Pump unit

PHU-5/PHU-35

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

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*

Pump unit

PFH-23-2/PFH-23-22

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	6-30 bar; *87-435 psi*
Lubricant	grease: up to NLGI 2
Outlets	
PHP-23-2	1
PHP-23-22	2
Metering quantity per port/stroke	
PHP-23-2	outlet one closed outlet two: 2,5 cm^3; *0.15 in^3*
PHP-23-22	both outlets: 1,25 cm^3; *0.076 in^3*
Pressure ratio	7:1
Reservoir [2]	1,5 l; *0.4 gal*
Connection main line	
outlets	tube ∅ 10mm
return line	G 1/4
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
Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:
1-0107-4 EN; 951-170-012 EN

Pump unit

PFH-23-2/PFH-23-22

Order information

Ordernumber	Designation	Outlets	Metering quantity per stroke/port	
			cm^3	*in^3*
PFH-23-2 [1]	hydraulically operated grease pump	1	2,50	*0.15*
PFH-23-22	hydraulically operated grease pump	2	1,25	*0.076*

[1] One outlet closed by plug

Accessories

Refill coupling

24-9909-0244

Filler socket

Ordernumber	Designation
24-9909-0244	filler socket with sealing ring

995-001-500

Coupling socket

Ordernumber	Designation
995-001-500	coupling socket for reservoir refilling

857-760-...

Hose socket

Ordernumber	Designation
857-760-007	hose socket; ∅ 13 mm
857-760-002	hose socket; ∅ 16 mm

Pump unit

MCLP

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

- wo 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
Operating temperature	-18 to +94 °C; *0 to +200 °F*
Operating pressure	
pump head 7 mm:	max. 550 bar; *max. 8 000 psi*
pump head 10 mm:	max. 240 bar; *max. 3 500 psi*
Relief pressure	
pump head 7 mm:	max. 375 bar; *max. 5 500 psi*
pump head 10 mm:	max. 220 bar; *max. 3 250 psi*
Inlet pressure	max. 3,5 bar; *max. 50 psi*
Lubricant	oil: 20–1 500 mm^2/s
Outlets	1 -2
Metering quantity per stroke	
pump head 7 mm:	0,033-0,24 cm^3; *0.002-0.015 in^3*
pump head 10 mm:	0,07-0,49 cm^3; *0.004-0.03 in^3*
Reservoir	1,5 l; *0.4 gal*
Drive speed	12 to 75 min^{-1}
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 x 206 x 343 mm*
	10.19 x 8.13 x 13.50 in
Mounting position	upside up

Pump unit

MCLP

Order information

Ordernumber	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 ordered separately
130200DEE	right	4:1	–, to be ordered separately
130300GEE	left	8:1	–, to be ordered separately

Accessories

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

Ordernumber	Piston
	Ø mm
130332	7
130335	10

MCLP pump inlet filte

MCLP pump inlet filter

This MCLP pump inlet 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*

MCLP pump heads

In-line filter

Filter used at the outlet of the pump heads to remove solid contaminants before de-livering 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	415	*6 000*

MCLP pump heads

No-flow valve

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

No-flow valve

Order number	Operating pressure max.		Air supply max.	
	bar	*psi*	bar	*psi*
87862	415	*6 000*	10	*150*

Pump unit

HP/HPG

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	250 bar, *3 625 psi*
Lubricant	grease: up to NLGI 2
Outlets	1-8
Metering quantity per stroke	1,6 cm^3; *0.10 in^3*
Reservoir	
HP 4/ HPG 4	0,4; 0.1 gal
HP15 / HPG15	*1,5 l; 0.4 gal*
Connection main line [1]	for tube ∅ 6mm; M10×1
Dimensions [2]	min. 73 × 110 × 350 m *max. 107 × 180 × 455 mm* *min. 2.87 × 5.15 × 21.65 in* *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
Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:
951-231-000-EN

Pump unit

HP/HPG

Order information

Ordernumber	Designation	Outlet	Operating pressure	
			bar	*psi*
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 [1)]	8	200	*2 900*

Accessories

Closure plug

HP/HPG accessoriess

Ordernumber	Designation	Tube
		∅ 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	-

Description

HP pump type is delivered with outlet fittings for tube ∅ 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*.

Pump unit

HP-500W/HP-500W-SSV

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 piston 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
Outlet	
HP-500W	1
HP-500W SSV	6, 8, 10, 12
Metering quantity	
HP-500W	per stroke: 1,5 cm^3; *0.09 in^3*
HP-500W SSV	per SSV outlet: 0,2 cm^3; *0.012 in^3*
Reservoir	
with cartridge	0,4 l; *0.11 gal*
without cartridge	0,5 l; *0.13 gal*
Connection main line [1]	M 10 × 1 [1]
Dimensions [2]	
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
Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:
951-231-000-EN

Pump unit

HP-500 W / HP-500 W-SSV

Order information

Ordernumber	Designation	Outlet	Metering device
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

Closure plug

HP / HPG accessories

Ordernumber	Designation	Tube
		∅ 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	-

Description

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*.

Pump unit

PF-VPBM/169-000-146

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.

The PF-VPBM 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

- 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 to +180 °F*
Operating pressure	400 bar, *5 800 psi*
Lubricant	grease: up to NLGI 2
Outlets	6-12
Metering quantity	per lever stroke without metering device: 2,0 cm^3; *0.12 in^3*
Reservoir	450 cm^3 in 400 g cartridge *27.46 in^3 in 0.88 lbs cartridge*
Connection main line	outlet fitting: M 10 × 1
Dimensions [2]	
HP-500W	min. 140 × 156 × 396 mm max. 140 × 156 × 506 mm
HP-500W SSV	*min. 5.51 × 6.14 × 15.59 in* *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
Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:
1-9430-EN, 951-230-008-EN

Pump unit

PF-VPBM/169-000-146

Order information

Ordernumber	Outlet	Metering device
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 fitting

PF–VPBM accessories

Ordernumber	Designation	Tube
		∅ mm
VPKM-RV-S4	outlet fitting with check valve	6
VPKM-RV-VS	push-in fitting	6
917-006-101	closure plug	

Pump unit

HJ 2

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 levere

Applications

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

Technical data

Function principle	manually operated doubler stroke piston pump
Operating temperature	-20 to +70 °Cxxxx; *-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 mm2/s at operating temperature
Outlets	up to 2
Metering quantity	HJ 2: 2 cm^3, 0.122 in^3 HJ 2A : 2x 1 cm^3, 0.061 in^3
Reservoir	3 l; *0.8 gal*
Connection main line	G 1/4
Dimensions	410 × 135 × 393 mm *16.1 × 5.5 × 15.5 in*
Mounting position	upright

Pump unit

HJ 2

Order information

Ordernumber	Designation	Position hand lever	Outlets
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

223-13052-1

223-13052-2

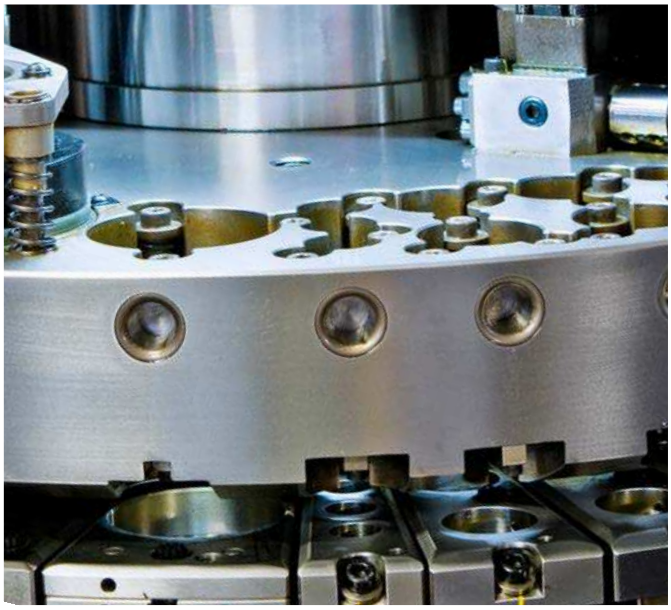
Outlet fitting with integrated check valve

Ordernumber	Designation	Tube
		∅ 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

Pump unit

PF-23-2/PF-23-22



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 piston 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 per stroke	
PHP-23-2	outlet one closed outlet two: 2,5 cm^3; *0.15 in^3*
PHP-23-22	both outlets: 1,25 cm^3; *0.076 in^3*
Reservoir	1,5 l; *0.4 gal*
Material reservoir	acryl glass
Connection main line	
outlets	tube ∅ 10mm
return line	G 1/4
Dimensions	*185 × 130 × 397 mm* *7.28 × 5.12 × 15.63 in*
Mounting position	upright

NOTE

Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:

951-170-012 EN, 1-0107-4-EN

Pump unit

PF-23-2/PF-23-22

Order information

Ordernumber	Outlets	Metering quantity	
		cm^3/stroke	*in^3/stroke*
PF-23-2 [1]	1	2,50	*0.150*
PF-23-22	2	1,25	*0.076*

[1] One outlet closed by plug

Accessories

Refill coupling

24-9909-0244

Filler socket

Ordernumber	Designation
24-9909-0244	filler socket with sealing ring

995-001-500

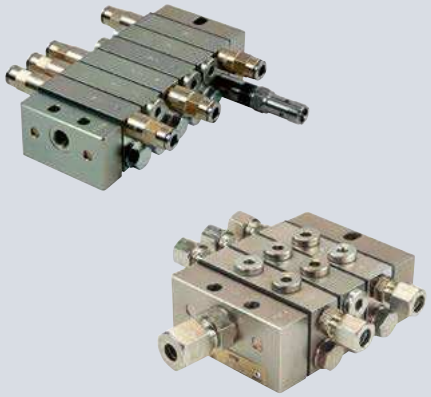
Coupling socket

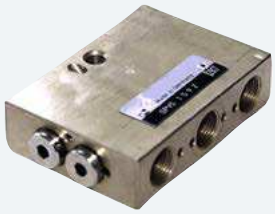
Ordernumber	Designation
995-001-500	coupling socket for reservoir refilling

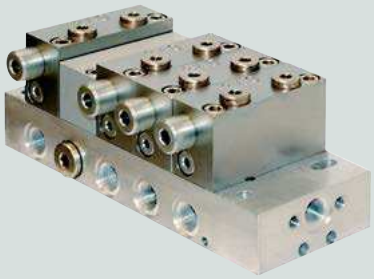
857-760-...

Hose socket

Ordernumber	Designation
857-760-007	hose socket; ∅ 13 mm
857-760-002	hose socket; ∅ 16 mm







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*	80
SSVD	•	•	0,08–1,80	*0.005–0.11*	6 to 22	350	*5 075*	82
SSVDL	•	•	0,08–1,80	*0.005 –0.11*	6 to 14	350	*5 075*	84
SPVS	•	•	0,16–0,32	*0.010–0.02*	2 to 4	100	*1 450*	86
VPB	•	•	0,2	*0.01*	6 to 20	300	*4 350*	88
SSV	•	•	0,2	*0.01*	6 to 22	350	*5 075*	90
SSVL	•	•	0,2	*0.01*	6 to 14	350	*5 075*	92

[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	Operating pressure max.		Page
			cm³/outlet	*in³/outlet*		bar	*psi*	
VPK	•	•	0,050–0,600	*0.003–0.037*	6 to 20	300	*4 350*	94
VP	•	•	0,100–1,200	*0.006–0.073*	6 to 20	300	*4 350*	96

Segment metering device

Product	Lubricant Oil/ fluid grease	Grease	Metering quantity		Outlets)	Operating pressure max.		Page
			cm³/outlet	*in³/outlet*		bar	*psi*	
PSG1	•	•	0,050–0,250	*0.003–0.015*	6 to 20	200	*2 900*	98
PSG2	•	•	0,060–0,840	*0.003–0.051*	6 to 20	200	*2 900*	100
PSG3	•	•	0,800–3,200	*0.049–0.195*	6 to 20	200	*2 900*	102
UV	•	•	0,164–0,656	*0.010–0.040*	6 to 16	240	*3 480*	104
MC²-HP	•	•	0,196–0,393	*0.012–0.024*	6 to 16	510	*7 425*	106
XL	•	•	0,983–2,460	*0.060–0.150*	6 to 12	170	*2 495*	108

Metering device

SSVM

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; *0,0043 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 max. 83 × 50 × 25 mm *min. 1.91 × 1.97 × 0.98 in* *max. 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

Metering device

SSVM

Order information

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

SSVM 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 ∅ 4 mm
519-31661-1	screw-in fitting with clamping ring and -check valve for steel tube ∅ 4 mm

Metering device

SSVD

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
Operating temperature	–25 to +70 °C; *–13 to +158 °F*
Operating pressure	max. 350 bar; *5 075 psi*
Outlets [1]	6 to 22
Lubricant	
grease:	up to NLGI 2
oil:	at least 40 mm^2/s
Metering quantity [2]	
per cycle and outlet:	min. 0,08 cm^3; *0.0042 in^3* max. 1,80 cm^3; *0.11 in^3*
Connection inlet	G 1/8 or 1/8 NPTF
Connection outlet [3]	M 10 × 1
Material	black chromated steel or nickel plated
Dimensions	min. 70 × 60 × 40 mm max. 190 × 60 × 40 mm *min. 2.75 × 2.36 × 1.57 in* *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
Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:
12401 EN

Metering device

SSVD

Order information [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**	**649-77394-1**	**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**
SSVD 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

SSVD Outlets and devices

Order number	Designation
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 ∅ 6 mm
504-30344-4	Outlet screw-in fitting, with clamping ring and check valve for tube ∅ 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 adjustment screws

Order number [1] [2]		Code	Output	
Single product	Bag of 12		cm^3	*in^3*
303-16118-1	**549-34254-1**	A	0,08	*0.0049*
303-16119-1	**549-34254-2**	B	0,14	*0.0085*
303-16120-1	**549-34254-3**	C	0,20	*0.012*
303-16121-1	**549-34254-4**	D	0,30	*0.018*
303-16122-1	**549-34254-5**	E	0,40	*0.024*
303-16123-1	**549-34254-6**	F	0,60	*0.037*
303-16124-1	**549-34254-7**	G	0,80	*0.049*
303-16125-1	**549-34254-8**	H	1,00	*0.061*
303-16126-1	**549-34254-9**	I	1,40	*0.085*
303-16127-1	**549-34255-1**	J	1,80	*0.110*

[1] For black chromated SSVD; for nickel plated SSVD ask for metering screws in stainless steel
[2] **549-34255-2** a Bag of 2 pcs. each

Metering device

SSVDL

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
Operating temperature	–25 to +75 °C; *–13 to +167 °F*
Operating pressure	max. 350 bar; *5 075 psi*
Outlets [1]	6 to 14
Lubricant	
grease:	up to NLGI 2
oil:	minimum 40 mm^2/s
Metering quantity per cycle and outlet:	min. 0,08 cm^3; *0,0042 in^3* max. 1.80 cm^3; *0.11 in^3*
Connection inlet	R 1/4
Connection outlet	8, 10 or 12 mm
Material	black chromated steel
Dimensions	min. 110 × 60 × 50 mm max. 230 × 60 × 50 mm *min. 4.33 × 2.36 × 1.97 in* *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
Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:
12401 EN

Metering device

SSVDL

SSVDL

Outlets	Order number Standard	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**

Metering adjustment screws

Order number [1] [2]		Code	Output	
Single product	Bag of 12		cm^3	*in^3*
303-16118-1	**549-34254-1**	A	0,08	*0.0049*
303-16119-1	**549-34254-2**	B	0,14	*0.0085*
303-16120-1	**549-34254-3**	C	0,20	*0.012*
303-16121-1	**549-34254-4**	D	0,30	*0.018*
303-16122-1	**549-34254-5**	E	0,40	*0.024*
303-16123-1	**549-34254-6**	F	0,60	*0.037*
303-16124-1	**549-34254-7**	G	0,80	*0.049*
303-16125-1	**549-34254-8**	H	1,00	*0.061*
303-16126-1	**549-34254-9**	I	1,40	*0.085*
303-16127-1	**549-34255-1**	J	1,80	*0.110*

1) For black chromated SSVD; for nickel plated SSVD ask for metering screws in stainless steel
2) **549-34255-2** a Bag of 2 pcs. each

Accessories

Outlet combinations

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

Metering device

SPVS

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
Operating temperature [2]	–10 to +100 °C; *–14 to +212 °F*
Operating pressure [1]	max. 100 bar; *1 450 psi*
Outle'ts	2 to 4
Lubricant	grease: up to NLGI 2 oil at least 12 mm²/s
Metering quantity	per cycle and outlet
4 outlets:	0,16 cm³; *0.01 in³*
2 outlets	0,32 cm³; *0.02 in³*
Inlet volume flow	max. 45 cm³; *2.75 in³*
Connection inlet/outlet	M12×1 or G 1/8
Material	
with M 12 x 1:	brass
with G 1/8:	steel
with electrical monitoring	cast iron
Electrical monitoring	one electrical cycle/pulse corresponds to 0,64 cm³, *0.04 in³*
Electrical connection	plug according DIN 43650
Voltage rated U_i	30 V DC
Current load I_i	0,02 A
Output function	closer
Switching element	reed contact
Protection class [3]	IP 65
Dimensions	55 x 168,5 x 31 mm *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
Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:
1-3029 EN

SPVS

Order information

Order number	Outlets	Thread G 1/8	Thread M 12 x 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

Metering devices

VPB

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.

Feature 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 – 20
Lubricant	grease up to NLGI 2 oil: operating viscosity 12 mm²/s
Metering quantity	per stroke and outlet: 0,2 cm³; *0.01 in³*
Operating pressure	oil: max. 200 bar; *2 900 psi* grease: max. 300 bar; *4 350 psi*
Operating temperature	-25 to + 110 °C; *-13 to +230 °F*
Material	stainless steel, tinned/nitrile
Inlet connection	VPBM; M 10 × 1 VPBG: G 1/8
Outlet connection	VPBM; M 10 × 1 VPBG: G 1/8
Dimensions	min: 60 × 60 × 30 mm max: 165 × 60 × 30mm *min. 2.36 × 2.36 × 1.18 in* *min. 6.48 × 2.36 × 1.18 in*
Mounting position on machines without vibration on machines with vibration	 any piston position should be 90° to machine movements direction

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions available on SKF.com/lubrication:
1-3017-EN, 951-230-008-EN

VPB

Identification code

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
P 2 = 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

VPB inlet fittings

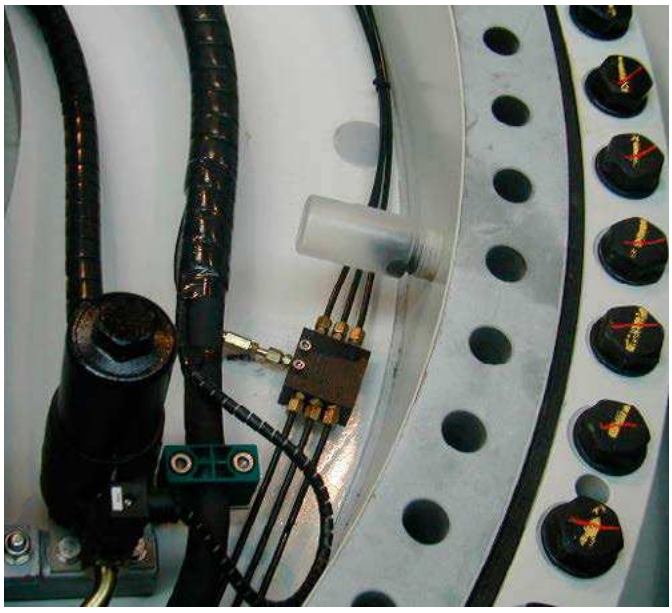
Ordernumber	Designation	for tube Ø mm
406-423	M10×1	6
441-008-511	M10×1	8
410-443	M10×1	10
406-403W	G1/8	6
408-423W	G1/8	8
410-443W	G1/8	10

VPB outlet fittings

Ordernumber	Designation	for tube Ø mm
404-403	M10×1	6
406-403	M10×1	8
441-008-511	M10×1	10
451-006-518-VS	M10×1 Quick Connector	6
406-403W	G1/8	6
408-423W	G1/8	8
410-443W	G1/8	10
451-006-518W VS	G1/8 Quick Connector	6
466-431-001	M10×1 closure plug	–
466-419-001	G1/8 closure plug	–

Metering device

SSV



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:	0,2cm^3; *0.01 in^3*
Connection inlet	G 1/8 or 1/8 NPTF
Connection outlet [2]	M 10 × 1
Operating temperature	–40 to +200 °C *–40 to +390 °F*
Operating pressure	max. 350 bar; *5 075 psi*
Material	black chromated steel, stainless steel
Dimensions	min. 60 × 60 × 30 mm max. 180 × 60 × 30 mm *min. 2.37 × 2.37 × 1.18 in* *max. 7.087 × 2.63 × 1.18 in*
Mounting position	any

1) crossporting or closing outlets possible to increase metering quantity of the open outlets - outlet #1 and #2 should never be closed
2) use special SSV outlet fittings

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions are available on SKF.com/lubrication:
12401 EN

Metering device

SSV

Order information

Outlets	Standard	Visual pin K	with bypass bore 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
226-14091-4	Outlet push-in fitting with clamping ring and check valve for tube or plastic tube for ∅ 6 mm
504-30344-4	Outlet screw-in fitting with clamping ring and check valve for tube ∅ 6 mm
519-318 26-1	Device for external gathering of SSV outputs from outlet #1 and #2

Metering device

SSVL

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
- Construction machinery
- Vehicles

Technical data

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

Metering device

SSVL

Order information

Outlets	Order number Standard	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**

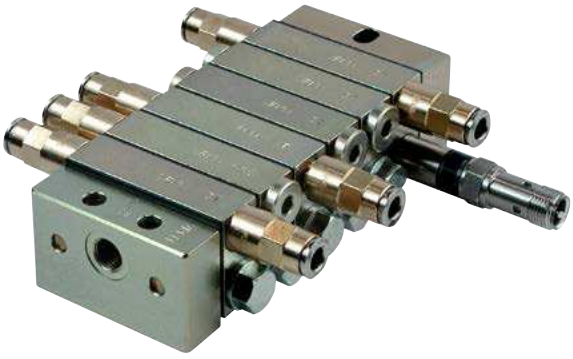
Accessories

Assemblies

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)

Metering device

VPK



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 500 cm³/min; *30.5 in³/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
Operating temperature	–25 to +90 °C; *-13 to 194 °F*
Operating pressure	oil: 200 bar: *2 900 psi* grease: 300 bar; *4 350 psi*
Outlets	6 to 20
Lubricant	
grease	up to NLGI 2;
oil	viscosity min. 12 mm²/s
Metering quantity	per cycle and outlet: 0,05–0,6 cm³ ; *0.003-0.037 in³*
Material:	
inlet, separator and end plate	steel, galvanized/NBR
sections/piston plate	steel, galvanized
Connection inlet	VPKM/VPKG: M10 × 1/G 1/8
Connection outlet	VPKM/VPKG: M10 × 1/G 1/8
Dimensions	min. 81,9 × 65 × 34 mm max. 195,3 × 65 × 34 mm *min. 3.22 × 2.56 × 1.34 in* *max. 7.69 × 2.56 × 1.34 in*
Mounting position:	
on machines without vibration	any
on machines with vibration	piston position should 90° to machine's movement direction

NOTE

Further technical information, technical drawings, accessories, spare parts or product function descriptions available on SKF.com/lubrication:

1-3015-EN, 951-230-008-EN

3D

skf-lubrication.partcommunity.com/3d-cad-models

Metering device

VPK

Identification code VPK [ ] [ ] [ ] X [ ] [ ]

Product series

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

Monitoring
X = none
2 = 2-pin piston detector, M12×1 plug
3 = 3-pin piston detector, M12×1 plug (wire breaking detection)
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 M12×1 (without proximity switch) [1]

Position of monitoring device [2]
X = none

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

Mainline fitting [2] [3]
X = none
G = VPKM/VPKG straight push-in connector ∅ 6 mm
B = VPKM straight screw-in connector, tube ∅ 6 mm (LL)
C = VPKM/VPKG straight screw-in connector ∅ 8 mm (LL)

Sections

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

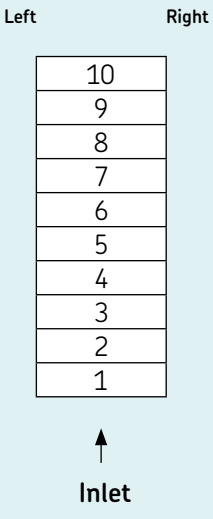
Section configurator [4] – –

Section (minimum 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 connector left
S = outlet closed by screw plug [5]
X = outlet without fitting

Outlet connector 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 to number of selected sections (1 to 10)
5) Metering device only operates with one side (left or right) outlet closed per section

Metering device

VP

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 cm^3 (T-section = 2 outlets) to 1,2 cm^3 (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 1,0 l/min; *61 in^3/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 built-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 grease	up to NLGI 2; environmentally friendly mineral and synthetic oils; viscosity min. 12 mm^2/s
Metering quantity	per cycle and outlet: 0,1–1,2 cm^3; *0.006–0.073 in^3*
Flow rate	1 l/min; *61 in^3/min*
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, separator and end plate	steel, galvanized/NBR
sections/piston plate	steel, galvanized
Connection inlet	VPM/VPG: M14 × 1,5/G 1/4
Connection outlet	VPM/VPG: M10 × 1/G 1/8
Protection class	IP 67
Dimensions	min. 98 × 82,5 × 41 mm max. 238 × 82,5 × 41 mm *min. 3.86 × 3.25 × 161 in* *max. 9.37 × 3.25 × 161 in*
Mounting position:	
on machines without vibration	any
on machines with vibration	piston position should 90° to machine's movement direction

NOTE

Further technical information, technical drawings, accessories, spare parts or product function descriptions available on SKF.com/lubrication:
15400EN, 951-230-008 EN

3D
skf-lubrication.partcommunity.com/3d-cad-models

Metering device

VP

Identification code VP _ _ _ A _ _ X _

Product series

Connections
M = M14×1,5 inlet thread; M10×1 outlet thread
G = G $^1/_4$ inlet thread; G $^1/_8$ outlet thread

Monitoring
X = none
2 = 2-pin piston detector, M12×1 plug
3 = 3-pin piston detector, M12×1 plug (wire breaking detection)
Y = cycle indicator, visual (plunger rod) [1]

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

Plug-on
A = flow limiter SMB 8 with norminal volumeup to 1,09 l/min; *2.3 pts/min*

Plug-in nozzle for flow limiter
see PUB 1-3016 EN, p. 12

Inlet connector [2] [3]
X = none

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

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

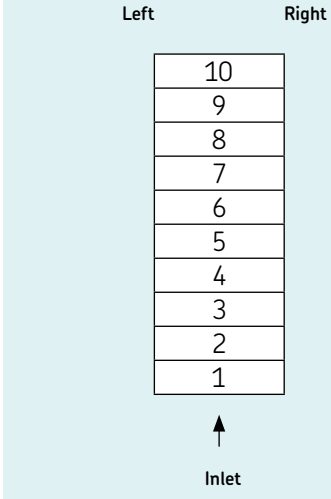
Section configurator [4] – –

Section (minimum 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 connection left
S = outlet closed by screw plug [5]
X = outlet without fitting

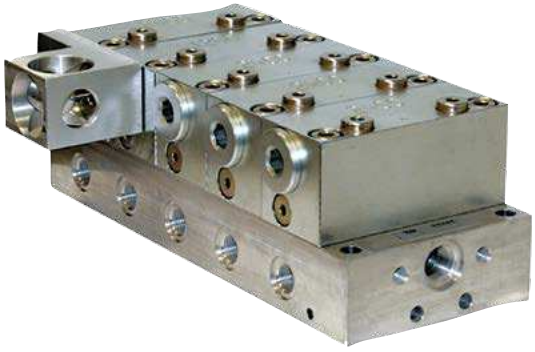
Outlet connection right
S = outlet closed by screw plug [5]
X = outlet without fitting



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

Metering device

PSG1



Description

The PSG1 is a progressive metering device consisting of a baseplate and different metering sections that can be individually combined for specific outlet rations and cross portings. The ports are part of the baseplate, so that connectors and tubes remain in place when segments need to be changed.

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

Applications

- Automobile presses
- Paper machines
- Tunnel boring machines

Technical data

Function principle	segmented metering device
Outlets	6 to 20
Lubricant	grease: up to NLGI 2 oil: min. viscosity 12 mm^2/s
Metering quantity	per cycle and outlet: min. 0,05 cm ; *0.003 in* max. 0,25 cm ; *0.015 in*
Flow rate	*max. 0,8 l/min; 0.17 pts/min*
Operating temperature	*–15 to +110 °C; +5 to 230 °F*
Operating pressure [1]	200 bar; *2 900 psi*
Material	
baseplate:	aluminum alloy
sections:	steel galvanized
Connection inlet	G 1/8
Connection outlet	G 1/4
Protection class	IP 67
Dimensions	min. 90 × 55 × 41 mm max. 244 × 55 × 41 mm *min. 3.54 × 2.17 × 1.61 in* *max. 9.61 × 2.17 × 1.61 in*
Mounting position:	
on machines without vibration	any
on machines with vibration	piston position should be 90° to machine's movement 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; crossporting bridge also available for 3 outlets, see brochure

NOTE

Further technical information, technical drawings, accessories, spare parts or product function descriptions available on SKF.com/lubrication:

1-3010 EN; 951-230-013

3D

skf-lubrication.partcommunity.com/3d-cad-models

Metering device

PSG1

Identification code PSG1 [ ] [ ] X X [ ] X [ ]

Product series

Monitoring

X = none
3 = 3-pin piston detector, M12×1 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, section 1
C = left, section 2
E = left, section 3
G = left, section 4
J = left, section 5
L = left, section 6
N = left, section 7
Q = left, section 8
S = left, section 9
U = left, section 10
B = right, section 1
D = right, section 2
F = right, section 3
H = right, section 4
K = right, section 5
M = right, section 6
P = right, section 7
R = right, section 8
T = right, section 9
V = right, section 10

Connector baseplate inlet[3)]

X = none
A = tube ∅ 6 mm
B = tube ∅ 8 mm
C = tube ∅ 10 mm

Sections

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

Section configurator – –

Section (minimum 3 sections) [4)]

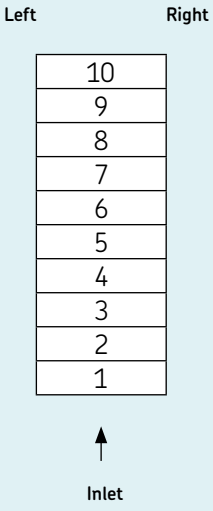
X = dummy section
A = 0,05 cm^3/cycle [5)]
C = 0,15 cm^3/cycle
B = 0,10 cm^3/cycle
D = 0,20 cm^3/cycle
E = 0,25 cm^3/cycle

Outlet connector left

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

Outlet connector right

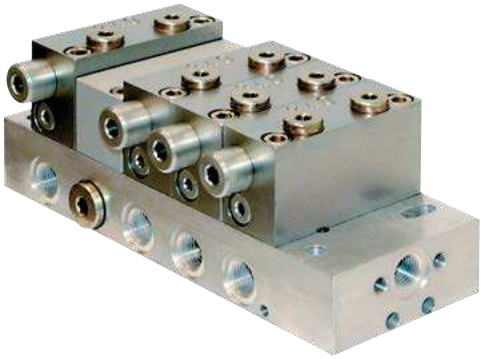
S = outlet closed by screw plug [6)]
X = outlet without fitting



1) Only on 200 and 250 mm^3 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 metering device
6) Metering device only operates with one side (left or right) outlet closed per section

Metering device

PSG2



Description

The PSG2 is a progressive metering device consisting of a baseplate and different metering sections that can be individually combined for specific outlet rations and cross portings. The ports are part of the baseplate, so that connectors and tubes remain in place when segments need to be changed.

Features and benefits

- Easy servicing due to outlet location
- Flexible with exchangeable metering segments
- Visual or electrical monitoring available
- Increased corrosion-resistant material offered
- Adjustable output by consolidating outlets internally or externally

Applications

- Automobile presses
- Tunnel boring machines
- Paper machines

Technical data

Function principle	segmented metering device
Operating temperature	*–15 to +110 °C; +5 to +230 °F*
Operating pressure [1]	200 bar; *2 900 psi*
Outlets	6 to 20
Lubricant	grease: up to NLGI 2 oil: min. viscosity of 12 mm²/s
Metering quantity	per cycle and outlet: min. 0,06 cm³ *; 0.0037 in³* max. 0,84 cm³ *; 0.051 in³*
Flow rate	*max. 2,5 l/min; 5.3 pts/min*
Material	
baseplate:	aluminium alloy or anodized
sections:	steel or nickel plated
Connection inlet	G 1/4
Connection outlet	G 1/4
Protection class	IP67
Dimensions	min. 131 × 86 × 71 mm max. 327 × 86 × 71 mm *min. 5.16 × 3.39 × 2.80 in* *max. 12.87 × 3.39 × 2.80 in*
Mounting position:	
on machines without vibration	any
on machines with vibration	piston position should be 90° to machine movement 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

Further technical information, technical drawings, accessories, spare parts or product function descriptions available on SKF.com/lubrication:

1-3010 EN; 951-230-01

3D

skf-lubrication.partcommunity.com/3d-cad-models

Metering device

PSG2

Identification code PSG2 _ _ X X _ X _

Product series

Monitoring

X = none
3 = 3-pin piston detector, M12×1 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, section 1	**B** = right, section 1
C = left, section 2	**D** = right, section 2
E = left, section 3	**F** = right, section 3
G = left, section 4	**H** = right, section 4
J = left, section 5	**K** = right, section 5
L = left, section 6	**M** = right, section 6
N = left, section 7	**P** = right, section 7
Q = left, section 8	**R** = right, section 8
S = left, section 9	**T** = right, section 9
U = left, section 10	**V** = right, section 10

Connector baseplate inlet [3)]

X = none

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

Sections

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

Section configurator [4)] – –

Section (minimum 3 sections) [4)]

x = dummy section

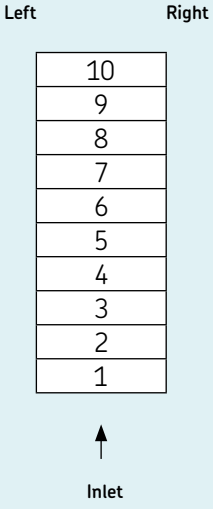
F = 0,06 cm³/cycle [5)]	**K** = 0,48 cm³/cycle
G = 0,12 cm³/cycle	**L** = 0,60 cm³/cycle
H = 0,24 cm³/cycle	**M** = 0,72 cm³/cycle
J = 0,36 cm³/cycle	**N** = 0,84 cm³/cycle

Outlet connector left

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

Outlet connector right

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



1) Only on 60 mm² 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 metering device
6) Metering device only operates with one side (left or right) outlet closed per section

Metering device

PSG3

Description

The PSG3 is a progressive metering device consisting of a baseplate and different metering sections that can be individually combined for specific outlet rations and cross portings.The ports are part of the baseplate, so that connectors and tubes remain in place when segments need to be changed.

Features and benefits

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

Applications

- Automobile presses
- Paper machines
- Tunnel boring machines

Technical data

Function principle	segmented metering device
Operating temperature	*–15 to +110 °C;+5 to +230 °F*
Operating pressure [1]	200 bar *2 900 psi*
Outlets	6 to 20
Lubricant	grease up to NLGI 2 oil: min. viscosity 12 mm^2/s
Metering quantity	per cycle and outlet: min. 0,80 cm^3; *0.049 in^3* max. 3,20 cm^3: *0.195in^3*
Flow rate	*max. 6 l/min; 12.7 pts/min*
Material	
baseplate:	aluminium alloy or anodized
sections:	steel galvanized or nickel plated
Connection inlet	G 3/8
Connection outlet	G 1/4
Protection class	IP 67
Dimensions	min. 165 × 108 × 88 mm max. 466 × 108 × 88 mm *min. 6.50 × 4.25 × 3.46 in* *max. 18.35 × 4.25 × 3.46 in*
Mounting position:	
on machines without vibration	any
on machines with vibration	piston position should be 90° to machine's movement 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

Further technical information, technical drawings, accessories, spare parts or product function descriptions available on SKF.com/lubrication:

1-3010 EN; 951-230-013

3D

skf-lubrication.partcommunity.com/3d-cad-models

Metering device

PSG3

Identification code PSG3 [ ] [ ] X X [ ] X [ ]

Product series

Monitoring

X = none
3 = 3-pin piston detector, M12×1 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 [2]

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

Connector baseplate inlet [2]

X = none
B = tube ∅8 mm
C = tube ∅10 mm
D = tube ∅12 mm
E = tube ∅15 mm
F = tube ∅16 mm

Sections

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

Section configurator – [ ] – [ ]

Section (minimum 3 sections) [3]

X = dummy section
P = 0,80 cm³/cycle [4]
Q = 1,20 cm³/cycle
R = 1,60 cm³/cycle
S = 2,40 cm³/cycle
T = 3,20 cm³/cycle

Outlet fitting left

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

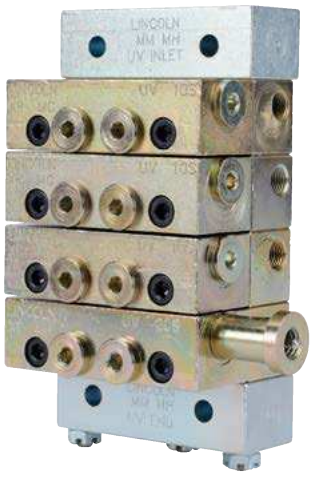
Outlet fitting right

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

Metering device

UV



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.

Feature 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	sectional metering device
Operating temperature	–26 to +200 °C; *-15 to +400 °F*
Operating pressure	max. 240 bar: *3 500 psi*
Outlets	6 to 16
Lubricant oil and grease	NLGI 0 to 2
Metering quantity	per cycle and outlet: min. 0,082 cm³*; 0.005 in³* max. 1,311 cm³*; 0.08 in³*
Material:	
housing	zinc plated steel
seals	FKM
Connection inlet	1/4 NPSF (F)
Connection outlet	1/8 NPSF (F)
Dimensions	min. 115 × 76 × 57 mm max. 232 × 76 × 57 mm *min. 4.52 × 3 × 2.25 in* *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.

Metering device

UV

UV baseplate and tie rod specifications [1]

Outlets	Inlet section Order number	End section	Tie rod [1]	Intermediate section Order number	Intermediate section quantity required	Metering valves quantity required
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- single outlet S

Order number Standard	Right side cycle indicator	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*

UV metering valve - twin outlet T

Order number Standard	Right side cycle indicator	Designation	Metering quantity per outlet	
			cm^3	in^3
882052	**–**	05T	0,082	*0.005*
882102	**–**	10T	0,164	*0.010*
882152	**–**	15T	0,246	*0.015*
882202	**882204**	20T	0,328	*0.020*
882252	**882254**	25T	0,410	*0.025*
882302	**882304**	30T	0,492	*0.030*
882352	**882354**	35T	0,574	*0.035*
882402	**882404**	40T	0,656	*0.040*

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

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	224	*3 250*
87937	atmospheric relief	yellow/natural	255	*3 700*
87938	reset-type	–	35	*500*
87939	reset-type	–	69	*1 000*
87940	reset-type	–	103	*1 500*
87941	reset-type	–	138	*2 000*
87942	reset-type	–	207	*3 000*

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).

Metering device

MC²-HP

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.

Feature 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
Operating temperature	–26 to +200 °C; *-15 to +400 °F*
Operating pressure	max. 512 bar: *7 500 psi*
Outlets	6 to 16
Lubricant	mineral and 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*
Material:	
housing	black chromate plated steel
seals	FKM
Connection inlet	1/4 NPSF (F)
Connection outlet	1/8 NPSF (F)
Dimensions	min. 129 × 86 × 48 mm max. 245 × 86 × 48 mm *min. 5.09 × 3.38 × 1.87 in* *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.

Metering device

MC²-HP

MC²–HP modular design

Outlets	Inlet section Order number	End section	Tie rod	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	
			cm^3	*in^3*
876061	•	06S	0,196	*0.012*
876091	•	09S	0,295	*0.018*
876121	**876123**	12S	0,393	*0.024*
876181	**876183**	18S	0,590	*0.036*
876241	**876243**	24S	0,787	*0.048*

MC²–HP Metering valves twin outlet

Order number Standard	W/right side cycle indicator	Designation	Metering quantity	
			cm^3	*in^3*
876062	•	06T	0,098	*0.006*
876092	•	09T	0,147	*0.009*
876122	**876124**	12T	0,197	*0.012*
876182	**876184**	18T	0,295	*0.018*
876242	**876244**	24T	0,393	*0.024*

Accessories

Plug and crossporting

Order number	Designation
1068645	closure plug
87905	single and crossport kit

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

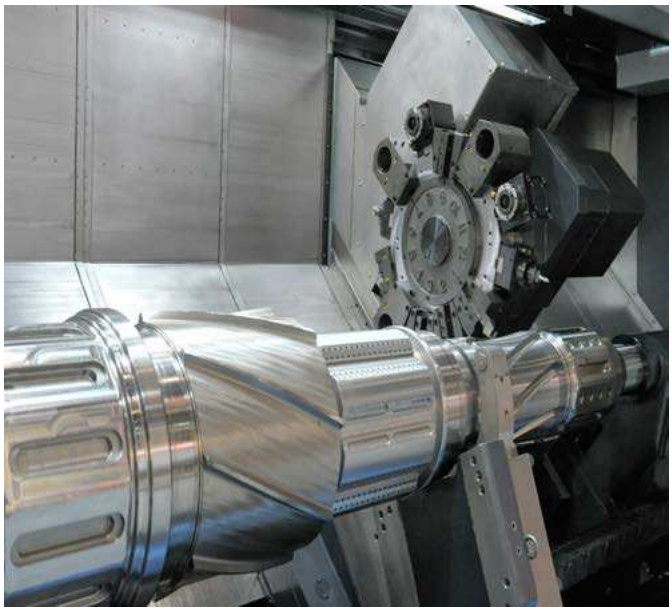
Order number	Type	Colour	Pressure rating	
			bar	*psi*
87895	pin	yellow	109	*1 450*
87896	pin	red	120	*1 750*
87897	pin	orange	141	*2 050*
87885	reset	green	69	*1 000*
87886	reset	yellow	103	*1 500*
87887	reset	red	138	*2 000*
87888	reset	orange	172	*2 500*
87889	reset	blue	207	*3 000*

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.

Metering device

XL



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.

Feature 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	segmented metering device
Operating temperature	0 to +120 °C; *+35 to 250 °F*
Operating pressure	max. 170 bar; *2500 psi*
Outlets	6 to 12
Lubricant	
oil and 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*
Material:	
housing	zinc plated steel
seals	NBR
Connection inlet	1/4 NPTF (F)
Connection outlet	1/8 NPTF (F)
Dimensions	min. 136 × 127 × 70 mm max. 238 × 127 × 70 mm *min. 5.34 × 5 × 2.75 in* *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.

Metering device

XL

XL metering valve- single outlet S

Order number Standard	Designation	Metering quantity per outlet	
		cm³	*in³*
87026-03S	30S	0,983	0.060
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

XL metering valve - twin outlet T

Order number Standard	Designation	Metering quantity per outlet	
		cm³	*in³*
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

Plug and crossporting

Order number	Designation
67359	closure plug
87823	crossport kit
87824	singling kit

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*

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).


SKF ST-2240-LUB


SKF


ST102
1 2 P
SKF


SKF
Circuit diagram


SKF
PUMP
A B C
RUN
LL
FAULT
POWER
RESET

Overview of control units

Control units

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*	112
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*	113
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*	114
EOT 2	Control and monitoring device	Easy time controller for lubrication pumps in progressive systems	12, 24	–	1	–25 to +70	*–13 to +158*	116
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*	117
LC502	Controller	Controller programmable for single-, dual-line and progressive lubrication systems	24	230; 400 3-phase	3	0 to +60	*+32 to 140*	118
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*	120 120
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*	122
ST-1240-Graph-4	Lubrication control center	Can handle four channels, single-, dual-line or progressive lubrication systems. Configura-tion 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	123
ST-2240-LUB	Lubrication control center (modular)	This modular control centre can operate 1 to 14 channels of single-line, dual-line and progressive lubrication systems. Configuration can be set in the field by touchscreen display.	–	93–132, 186–264	1–14	0 to +50	*+32 to +122*	124
LRM 2	Control unit with remote control	The LRM2 can communicate with a pump or group of pumps on the same type of lubrication system. LRM utilizes a SIM card to send and receive text messages that allow system control.	12/24	–	1–3	-30 to +70	*-22 to +158*	126

Control units

LMC 101

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.

Feature 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

Technical data

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 sec to 99 h
On time (adjustable)	15 sec to 99 h
Protection class	IP 52
Dimensions	186 × 120 × 59 mm *7.3 × 4.7 × 2.3 in*
Mounting position	any

Order information

Order number	Designation
86535	Single line and progressive lubrication controller

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

LMC 2

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 progressive systems, it controls the pump unit and the metering devices.

Feature and benefits

- Integrated, flexible lubrication programs
- 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

- General lubrication sytems with a pump and pulse generator
- Railway
- Food and beverage
- ChaLMCin lubrication systems like Lincoln Cobra and PMA
- Multi-line as well as dual-line, single-line and progressive systems

Technical data

Function principle	control and monitoring device
Operating temperature	–10 to +70 °C, *–14 to +158 °F*
Supply voltage	12 or 24 V DC
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

Order information

Order number	Description
236–10567–6	LMC 2; 230 AC (230 V AC)
236–10567–5	LMC 2; 24 DC (24 V DC)

For use with electric operated 3-phase pump must order motor starter separately.

NOTE

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

Control unit

LMC 301

Description

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

Feature and benefits

- Integrated, flexible lubrication programs
- Main device with 10 digital inputs, for 3 lubrication pumps and max. 6 pulse transmitters
- Up to 7 slave/extension with additional inputs for max. 10 pulse transmitters
- Three lubrication pumps can be controlled and monitored
- Can be connected to universal pulse generators

Applications

- General and heavy industry
- Steel industry
- Mining – stationary and mobile excavators
- Food and beverage
- Multi-, dual-, single-line and progressive systems

Technical data

Function principle	control and monitoring device
Operating temperature	VAC: -10 to + 50 °C; *+14 to 122 °F* VDC: -40 to +70°C; *-40 to 158 °F*
Inputs	10 count, short-circuit proof, 2 with analog
Outputs	8 count, relay outputs NO-contact 8 A, 2 of which up to 15 A
Operating voltage	depending in model 100-240 V AC, 24 V DC ±20%
Standard	CE; UL; CSA
Protection class	IP 65
Dimensions	270 × 170 × 90 mm *10.7 × 6.7 × 3.5 in*
Mounting position	vertical

Order information

Order number	Designation
086500	LMC 301; 24 V DC, master, incl. LCD display
086501	LMC 301; 100-240 V AC, master, incl. LCD display
086502	LMC 301; 24 V DC, I/O board, slave, without display
086503	LMC 301; 100-240 AC, I/O board, slave, without display

NOTE

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

LMC 301 - Accessories

LMC 301 motor relay assembly

Order number	Description
236-10850-7	with motor starter 0,4–0,6 A
236-10850-8	with motor starter 0,6–1,0 A
236-10850-9	with motor starter 1,0–1,6 A
236-10980-6	with motor starter 2,4–4,0 A

LMC 301 housing

Order number	Description
086504	door housing, complete
086505	cable USB

General LMC 301 accessories

Order number	Description
	PG-M20 Cable gland kit, IP 65
086506	Multiple cable gasket set (3 x)
086507	Cable gasket set (3 x)
	Cable glands PG-M20; complete, with cap nut, cable gasket set, screw plug cartridge
3515-10-6020	Cable gasket set; 2-wire, ∅ 0.6 mm
3515-10-6620	Cable gasket set; 4-wire, ∅ 0.5 mm
3515-10-7620	**Blind plug**
3515-10-6320	Gasket
3515-10-6120	Counter nut
	Conduit glands, IP 65, with flexible metal tube (FMC), UL approved
3515-07-6120	Conduit glands AMG-M 20 x 1,5; UL 514B
3515-10-2021	Counter nut M 20 x 1,5
3515-07-2022	Protection hose, liquid-proof protective; UL 360 (sold by the metre, when ordering specify the required length)
179-990-486	Fuse, blade-type, FK1 3A (32 V) according to ISO 8820-3
236-11066-1	Battery, 3 V lithium button cell, model CR3032
www.skf.com/LMC301	**LMC 301 software,** free download

[1] The installation of the cable glands and cable sets to be provided and done by the customer. The customer is responsible for proper installation.

Control units

EOT-2

Description

The EOT-2 controller is designed to control lubrication pumps during interval operation in multi-line 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.

Feature and benefits

- Easy-to-use controller for installation 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
- In connection with motor relay assembly; also prefered for three-phase multi-line pump units

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

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
Standard	CE
Protection class	IP 65
Dimensions	*122* × 118 × 56 mm, *4.80* × *4.65* × *2.00 in*
Mounting position	any

Order information

Order number	Description
236-10850-7	EOT-2 with motor starter 0,4–0,6 A and housing according to IP 57
236-10850-8	EOT-2 with motor starter 0,6–1,0 A and housing according to IP 57
236-10850-9	EOT-2 with motor starter 1,0–1,6 A and housing according to IP 57
236-10980-6	EOT-2 with motor starter 2,4–4,0 A and housing according to IP 57
664-34135-7	EOT-2 controller, for one pump only

Control units

IG 502-2E +...

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.

Feature 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	control and monitoring device
Operating temperature	–25 to +75 °C, *–13 to +167 °F*
Storage temperature	–10 to +70 °C, *14 to 158 °F*
Control voltage max.	12 or 24 V DC
Contact load connector M	5 A at 12 or 24 V DC
SL-output	4 W
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*

Order information

Order number	Description
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 on SKF.com/lubrication:
1-1700-2-EN, 951-180-002-EN

Control unit

LC 502

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.

Feature 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	control and monitoring device
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	*400* × 400 × 600 mm *15.75 × 15.75 × 23.62 in*
Mounting position	upright, cable terminals pointing downwards

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

Control unit

LC 502

Order information

Order number	Designation
24-1074-2280	LC 502; 24 V DC; 0,25 kW; for progressive systems
24-1074-2250	LC 502; 230 V AC; 0,85 kW; for progressive systems
24-1074-2220	LC 502; 400 V AC; 0,85 kW; for progressive systems

Control unit

IGZ / EXZT

Description

IGZ 51 and EXZT universal electronic control and monitoring devices are used in multi-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 devices control the pump running time and monitors simultaneously the strokes of the pulse generator or sensor of the metering device. All devices have custom-built functions integrated and can be set to meet system requirements.

Feature and benefits

- Combined universal control and monitoring device
- Easy installation by top hat rail mounting
- Adjustable operating modes
- Time operation or load-dependent machine-stroke operation
- Low-level control and EPROM included

Applications

- Stationary industrial applications
- Installation in switching cabinet of stationary general industry machines

Technical data

Function principle	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 × 4.3 in*

Version + 471

Input voltage	100 – 120 V AC; 200 – 240 V AC
Input current rated	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 – 24 V DC; 20 – 24 V AC
Input current rated	75 mA at max. fan-out of 250 mA
Power input	5 W
Frequency	DC or 50 – 60 Hz
Fuse	max. 6.3 A
Switching current	max. 5 A
Input voltage sensors	24 V DC
Mounting posistion	any

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

Control unit

IGZ / EXZT

Order information [1)]

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	–	–	–	•	•

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

Controll units

ST-102

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 –30 to +80 °C (–22 to +176 °F) and features an IP 30 protection class. All lubrication configurations can be set in the field by the user.

Feature 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	–30 to +80 °C;*–22 to +176 °F*
Power supply	12 and 24 V DC
Input	4 digital
Output	4 digital
Interface	none
Protection class	IP 30
Dimensions	26 × 60 × 160 mm *1.02 × 2.36 × 6.3 in*

Order information

Order number	Description
11500610	ST-102 for progressive and single-line systems

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions available on SKF.com/lubrication:
6408 EN

Controll units

ST-1240-GRAPH-4

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.

Feature 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
- Steel industry

Technical data

Function principle	control and monitoring device
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;
Operating voltage frequency	(± 10%)
Operating current	47 to 63 Hz
Control voltage	5,4 A/115 V AC, 2,2 A/230 V AC
Overload protection	24 V DC, ± 10%
Cable connection	automatic fuse, 6 A screw connections for 25 mm2 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*

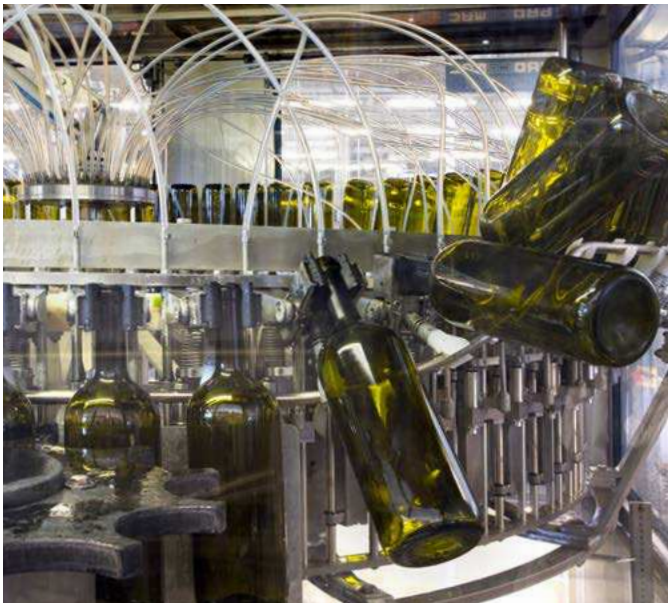
Order information

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

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions available on SKF.com/lubrication:
12404 EN, 13615 EN

Controll units

ST-2240-LUB



Description

ST-2240-LUB-6 and ST-2240-LUB-14 lubrication control centers are suitable for use in dual-line lubrication systems, as well as single-line and progressive systems. These units have a touchscreen display and are only differentiated by the cabinet size and maximum number of lubrication channels served. The ST-2240-LUB-6 controls up to 6 separate lubrication channels, while ST-2240-LUB-14 controls up to 14 channels, each having independent lubrication parameters and/allows use of different lubricants if required. The lubrication system is adjustable at field site by adding or reducing channel modules, and configuration can be changed in the field by the user. Pressure switches and transmitters or piston detectors can be used in all channels. Also the new lubricant low level ultrasonic sensor is supported.

Features and benefits

- Versatile and durable, automatic pump change (Dualset)
- Modular units provide easy system modification
- Compatible with ultrasonic low level sensor
- Grease spraying control with air monitoring
- Compatible with SKF Doser monitor

Applications

- Cement and steel industry
- Mining – stationary and mobile excavators
- Automotive industry
- Food and beverage

Technical data

Function principle	control and monitoring device
Operating temperature	0 to +50 °C, *+32 to +122 °F*
Lubricant channels	1-14
Supply voltage	115/230 V AC, automatic range selection
Supply voltage frequency	47 to 63 Hz
Control voltage	24 V DC, ± 10 %
Overload protection	automatic fuse, 6 A
Cable connection	screw terminals for 2,5 mm^2 wires
Protection class	IP 65
Interface	5.7" TFT touch screen , 320 × 240, 64k colors, ethernet and USB port mobile app for monitoring
Data logging	Log files on USB memory
Fieldbus	ModbusTCP slave, other protocols on request
Alarm Outputs	relays K1 & K2: potential-free change over contact; maximum load 230 V/1 A; channel modules: potential-free contact; maximum load 50 V DC/1A
EMC	EN61000-6-4, EN61000-6-2
Safety of Machinery Standard	EN 60204-1
Dimensions	600 × 600 × 250 mm *23.6 × 23.6 × 9.8 in*

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions available on SKF.com/lubrication:
PUB LS/P2 17950 EN

ST-2240-LUB

Order information

Order number	Designation	Lubrication channels
12380760	ST-2240-LUB-6 control center	1–6
12380765	ST-2240-LUB-14 control center	1–14
12501270	CM channel module	

Controll units

LRM 2

Description

SKF's LRM2 lubrication remote monitor is designed for use with lubrication systems that cannot be checked daily due to the nature or position of the specific application. Compatible with oil or grease, the monitor can be used on single-line, dual-line and progressive lubrication systems. The LRM2 can communicate with a pump or group of pumps on the same type of lubrication system. LRM utilizes a SIM card similar to those found in cell phones and tablets to send and receive text messages via iOS or android mobile devices or via e-mail to a computer. The monitoring system can transmit alert messages to a random number of e-mail or mobile phone contacts. These contacts can be grouped based on the message type. The LRM2 features two digital inputs and outputs and sends both low-level and fault messages. Also, the monitor can be used to start an additional lubrication cycle and can be reset by sending messages from the mobile device. In addition, you can access system information by using your web browser without having to install special software. The LRM is suitable for wind energy, railroad wayside, cable car and wastewater treatment applications, as well as other industries.

Features and benefits

- Two digital inputs and outputs
- Antenna is packed inside housing; optional external antenna can be ordered
- LRM2 module is available without housing for mounting in existing control box

Applications

- Wind energy generators
- Wastewater treatment applications

Technical data

Function principle	control and monitoring device with remote control
Operating temperature	-30 to +70 °C; *-22 to +158 °F*
Storage temperature	-40 to +70 °C; *-40 to +158 °F*
Air humidity	0–95%
Protection class	IP 66
Screwed cable gland	M16
Clamping zone of cable strand	∅4–10 mm; *0,16–0,39 in*
LRM2 clamping zone	0,25–2,5 mm; *0.0098–0.098 in*
Power supply	12–24 V DC (∓ 20%)
Power consumption	max. 3 W
Min. installation space	420 × 220 × 350 mm
Dimensions	
LRM 2 without enclosure	150 × 90 × 61 mm; *10.67 × 6.73 × 10.31 in*
Enclosure	271 × 171 × 262 mm *16.53 × 8.66 × 13.78 in*
Mounting position	any

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions available on SKF.com/lubrication.
PUB LS/P2 17887 EN; 951-181-022-EN

Controll units

LRM 2

Order code

Lubrication Remote Monitor 2

Country code

E = Europe and Asia (no UL/CSA/FCC)

Pump / product family

0 = P203, P603, P653 (without coupling relays)
1 = KFG (with coupling relays and always in enclosure) (2 coupling relays)
2 = If 2 AC pumps are switched to one LRM (4 coupling relays)
3 = If 3 AC pumps are switched to one LRM (6 coupling relays)

Programming

1 = Joint empty signal and fault signal (on KFG or P-series)
2 = Separate empty signal and fault signal (only on P-series, not with KFG pumps)

Enclosure

1 = with enclosure
2 = base unit only, without enclosure, no antenna

Order example

LRM2-E-00-100

- Lubrication Remote Monitor 2
- For use in Europe and Asia
- Pump versions P203, P603, P653
- Low-level and fault signal separately
- With enclosure

Antenna

Order number	Designation
236-11335-8	2G/3G Magnetic base antenna (3 m length)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SKF

Overview of monitoring devices

Control units

Product	Function type	Designation	Voltage		Operating temperature		Page
			V DC	V AC	°C	*°F*	
HCC	Monitoring 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*	130
Smart Plug lubrication control	Multifunctional monitoring device	Direct adaption between sensor and connecting cable. Configurable by PC via IR interface converter	10 to 30	–	0 to +60	*+32 to 140*	132
Universal piston detector	Piston detector	Allround magnetic sensor for all SKF metering devices in progressive systems	10 to 30	–	-40 to +85	*-40 to +185*	133
SP/SFE30	Pulse monitor	To monitor oil and grease volumetric flow rates	0 to 30	–	+15 to 70	*+5 to 158*	134
EWT2A	Pulse monitor	Monitors up to 3 pulse generators	24	115, 230	0 to +60	*+32 to 140*	135
234-11145-3/4/5/9	Digital pressure switch	Pressure switch for extensive lubrication point monitoring	18–36	–	–25 to 125	*-13 to 257*	136
234-10825-8	Digital pressure switch	Pressure switch for simple lubrication point monitoring	30–250	125, 250	-25 to +85	*-13 to 185*	137

Monitoring devices

HCC

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*).

Feature 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	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
Further technical information, technical drawings, accessories, spare parts or product function descriptions available on SKF.com/lubrication:
13615 EN

Monitoring devices

HCC

Order information

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

HCC Hose

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

Monitoring devices

SmartPlug lubrication control

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.

Feature 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 prinicple	multifunctional monitoring device
Operating temperature	0 to +60 °C; *+32 to 140 °F*
Operating voltage UB	10 – 30 V DC
Residual ripple within UB	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	∅ 20, l=60 mm *∅ 0.79, l=2.36 in*

Order information

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

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions available on SKF.com/lubrication.

Monitoring devices

Universal piston detector

Description

The universal and bipolar piston detectors are position sensors that are screwed into the metering device together with the relevant pressure-resistant adapter. The sensors detect the piston by means of the closed adapter without coming into direct contact with it. They adjust themselves independently after several distribution strokes. The universal piston detector automatically detects the customer's plug or cable assignment, 2-wire or 3-wire version (with cable break protection). The bipolar piston detector is only available in a 2-wire version. The signal voltage can be applied to either pin 1 or pin 4, which means this sensor can be used for mobile applications such as vehicles or agriculturaland construction machinery.

Feature and benefits

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

Technical data

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	∅ 12 mm, l = 52 mm, *∅ 0.47 in; l =2.052 in*

Order information

Order number	Description
234-13163-9	Universal piston detector
234-11454-1	Bipolar piston detector
237-13442-4	Cable with M12x1 socket

Kits with piston detector, O-ring and adapter for lubricant metering devices

Order number	Suitable for metering device	Type
24-0159-6025	VP / PSG2	Universal
24-0159-6021	VP	Bipolar
24-0159-6024	VPK / PSG1	Universal
24-0159-6022	VPK	Bipolar
24-0159-6023	VPB	Universal
24-0159-6028	VPB	Bipolar
24-0159-6026	PSG3	Universal
519-85224-1	SSV / SSVL / SSVD / SSVDL / VS...	Universal

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions available on SKF.com/lubrication:
17645 EN; 951-150-032

Monitoring devices

SP/SFE30

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 German Lloyd for use on ships.

Feature 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 prinicple	pulse monitor
Operating temperature	*–15 a +70 °C; +5 a +158 °F*
Operating pressure	*4 to 600 bar; 58 to 8 700 psi*
Lubricant	oil: viscosity minimum 12 mm^2/s; grease: NLGI 1
Volumetric flow range	0,1 to 50 cm^3/min *0.006 in^3 to 3.051 in^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	Description	Tube
406-411	straight connector G 1/4	∅ 6 mm
96-1108-0058	straight connector G 1/4	∅ 8 mm

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions available on SKF.com/lubrication:
1-3009-EN, 1-3018-EN, 951-230-012 EN

EWT2A

Product description

The EWT2A series of universal pulse monitoring devices can be used in all standard SKF lubrication systems. The pulse, generated from a progressive metering valve sensor, a pulse generator or a rotary gear sensor, must be received within a pre-selected and defined value. Depending on the selected version, a minimum and a maximum value can be monitored simultaneously for two or three pulse inputs. The EWT2A pulse monitoring devices are available in two voltage versions and may be installed in a switching cabinet. All devices have custom-built functions integrated and can be set to meet system requirements.

Features and benefits

- Easy installation by top hat rail mounting
- Adjustable operating modes
- Monitoring time 6-90 seconds
- Settings possible from 0,01 to 2 500 pulses/minute

Applications

- In connection with a pulse generator for oil and grease to reliably monitor lubricant flow

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%
Dimensions	70 × 75 × 110 mm *2.7 × 3 × 4.3 in*
Version + 471	
Input voltage	100–120 V AC; 200–240 V AC
Input current rated	70 mA /35 mA
Power input	8 W
Frequency	50 – 60 Hz
Fuse	max. 6.3 A
Switching current	max. 5 A
Output voltage sensors	24 V DC
Version + 472	
Input voltage	20 to 24 V DC; 20 to 24 V AC
Input current rated	75 mA at max. fan-out of 250 mA
Power input	5 W
Frequency	DC or 50 – 60 Hz
Fuse	max. 6.3 A
Switching current	max. 5 A
Output voltage sensors	24 V DC

Order information

Order number	Description
EWT2A01-S1-E+471	for up to 3 pulse generators, 115/230 V AC
EWT2A01-S1-E+472	for up to 3 pulse generators, 24 V DC
EWT2A04-S1-E+471	for up to 2 pulse generators, 115/230 V AC
EWT2A04-S1-E+472	for up to 2 pulse generators, 115/230 V AC

NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publications available on SKF.com/lubrication:
1-1700-5 EN, 951-180-001 EN

Monitoring devices

234-11145-3/4/5/9

Description

These virtually maintenance-free electronic pressure sensors are suitable for pressure measurements for gases and fluids. They are user friendly and can be applied easily in standard or superior applications. The space-saving housing is pivotable up to 320° for optimal readability of the 4-digit, digital display. One or two switching outputs and an analog output signal for switching point and hysteresis. Both can be adjusted via push buttons. Different value units such as bar, mbar, psi or MPa can be selected.

Features and benefits

- Simple monitoring of lubrication points
- Menu-guided adjustments via 2 push buttons
- Pre-adjustable hysteresis
- Programmable parameters, password protected
- Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection are provided
- Compact housing with 320° pivot
- For standard and superior applications

Applications

- Marine, off-shore applications
- Wind, vehicle, steel and heavy industries

Technical data

Function principle	Digital pressure switch
Lubricant	oil and fluid grease NLGI 000–00, grease NLGI 1 ,2
Operating temperature	–25 to +125 °C; *–13 to +257 °F*
Operating pressure	max. 600 bar; *max. 8 700 psi* **234-11145-5:** max. 400 bar; *max. 5 800 psi*
Operating voltage	18–36 V DC
Operating current	max. 500 mA
Current draw	≤ 50 mA
Output signal	1 or 2 × PNP; 1 analog, digital, NO or NC adjustable
Switching frequency	max. 200 Hz
Switching point adjusted	**234-1145-5**: 175 bar; *2 465 psi*
Material:	
Housing	PA6.6, stainless steel, FKM
Measuring cell	ceramics Al203
Apapter	stainless steel
Electrical connection	M12 × 1; 4 pin plug
Pressure port	G 1/4 or G 3/8; DIN3852
Protection class	IP 67; EC 60529
Dimensions	min. 34 × 94 × 49 mm max. 34 × 134,5 × 49 mm *min. 1.34 × 3.7 × 1.9 in* *max. 1.34 × 5.3 × 1.9 in*
Mounting position	any

Order information

Order number	Designation
234-11145-3	1 × PNP, 4-20 MA, with adapter G 1/4 and connector
234-11145-4	1 × PNP, 4-20 MA, basic model
234-11145-5	2 × PNP, 0-20 MA, with adapter G 1/4 and connector, front flushed
234-11145-9	1 × PNP, 4-20 MA, with adapter G3/8 and connector

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions available on SKF.com/lubrication.

Monitoring devices

234-10825-8

Description

This pressure switch reliably monitors pressure in lubrication systems at a pre-adjusted pressure value. When adjusted value is reached, pressure switch opens or closes an electric circuit via a defined piston stroke (depending on pressure power and pre-load spring). A micro switch can be used for DC or AC voltage. The switch's housing can be pivoted up to 360°. The pre-adjusted switching point pressure value is set at the factory.

Features and benefits

- Simple, mechanically operated pressure switch for monitoring of lubrication points
- Designed as a change-over pressure switch
- Monitors a pre-adjusted pressure value
- Suitable for DC and AC voltage
- Pivotable housing up to 360°
- Maintenance free

Applications

- Machine tools
- Construction machinery
- Wind energy
- Vehicle
- Steel and heavy industries

Technical data

Order number	**234-10825-8**
Function principle	rotatable pressure switch
Lubricant	oil and fluid grease NLGI 000, 00
Operating temperature	–25 to +85 °C *–13 to +185 °F*
Operating pressure	max. 400 bar *max. 5 800 psi*
Switching pressure	100 to 400 bar *1 450 to 5 800 psi*
Adjustability	under pressure
Operating voltage	adjustable: 30 to 250 V DC; 125; 250 V AC
Load resistance	0,25-5 A
Load inductive	0,25-5 A
Switch type	micro switch with spring-loaded piston
Contact type	change-over
Contact electrical	plug connector DIN72585 ø 2,5 mm
Material:	
Housing	zinc-coated steel, UR
Contact electrical	electroplated silver gilt
Protection class	IP 67, IP 6K9K
Dimensions	30 × 74 mm; *1.18 × 2.91 in*
Mounting position	any, but preferably vertical

NOTE
Further technical information, technical drawings, accessories, spare parts or product function descriptions available on SKF.com/lubrication.

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Important information on product usage
SKF and Lincoln lubrication systems or their components are not approved for use with gases, liquefied gases, pressurized gases in solution and fluids with a vapor pressure exceeding normal atmospheric pressure (1 013 mbar) by more than 0,5 bar at their maximum permissible temperature.

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