

# Dual-line lubrication systems



Product catalogue



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

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Grease

## Accessories

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Accessories

# SKF – the knowledge engineering company

From one simple but inspired solution to a misalignment problem in a textile mill in Sweden, and fifteen employees in 1907, SKF has grown to become a global industrial knowledge leader.



Over the years we have built on our expertise in bearings, extending it to seals, mechatronics, services and lubrication systems. Our knowledge network includes 46 000 employees, 15 000 distributor partners, offices in more than 130 countries, and a growing number of SKF Solution Factory sites around the world.

## Research and development

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

## Meeting the toughest challenges

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

## Working for a sustainable future

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

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

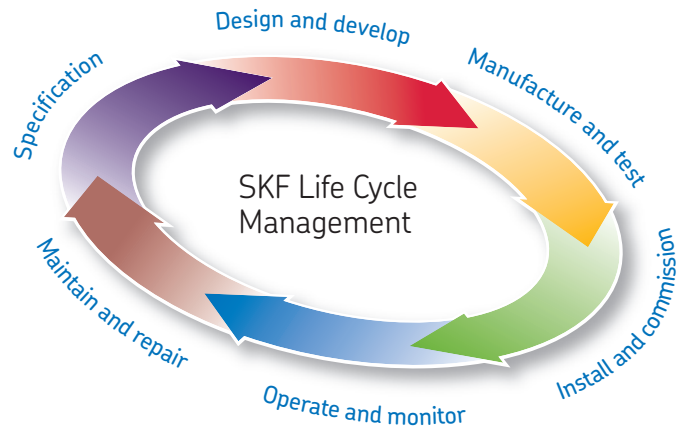


*Working with SKF IT and logistics systems and application experts, SKF Authorized Distributors deliver a valuable mix of product and application knowledge to customers worldwide.*



## Our knowledge – your success

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



### Working closely with you

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



### Bearings

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

### Innovative solutions

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



### Machinery maintenance

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

### Design optimization and verification

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



### Sealing solutions

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



### Mechatronics

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



### Lubrication solutions

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



### Actuation and motion control

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

## Two leading brands



**SKF**®



**LINCOLN**®

Oil and fluid grease

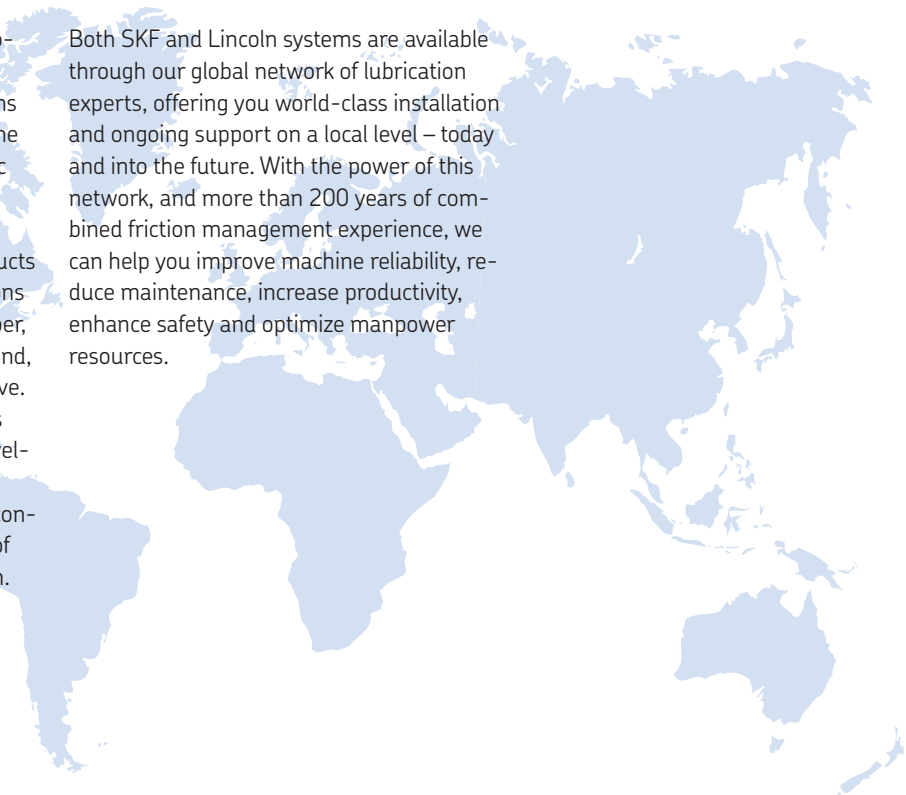
Grease

## One global leader

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

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

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



# Classification of lubricants



## Oil and fluid grease

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

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



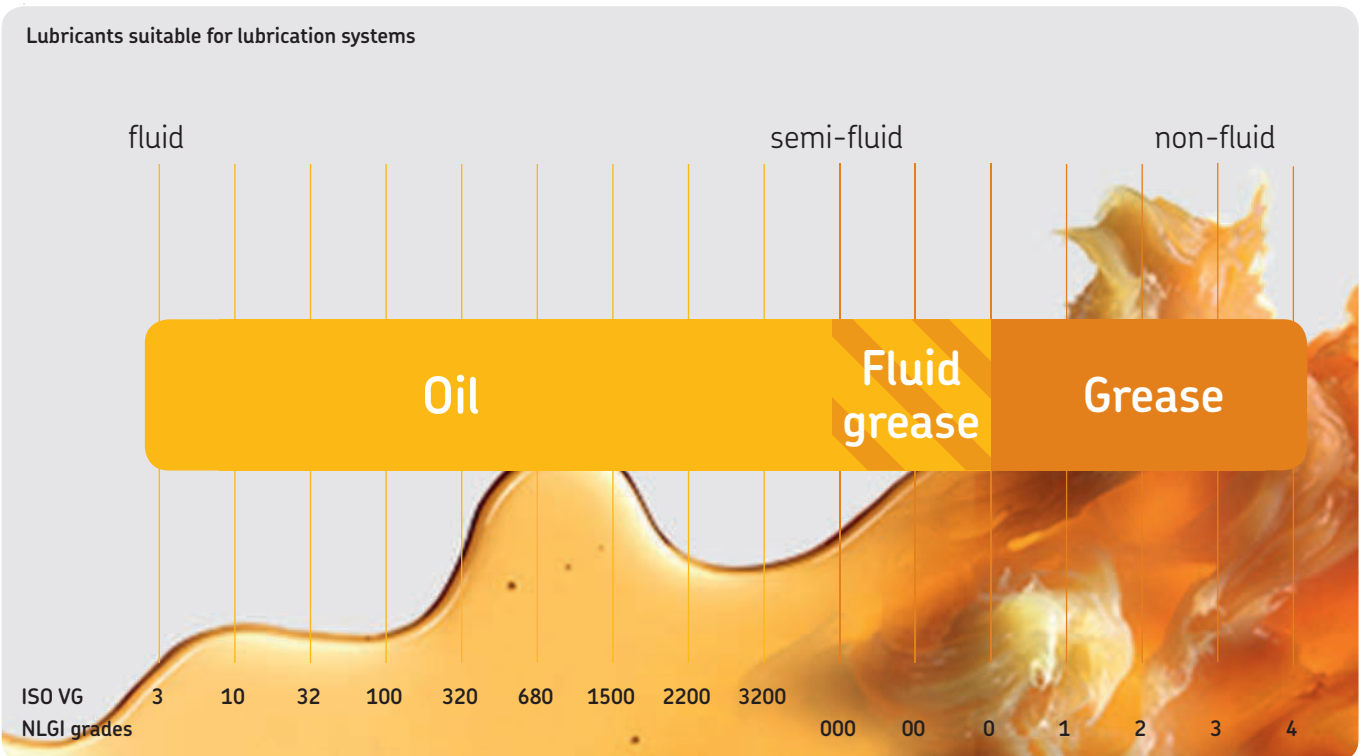
## Grease

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

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

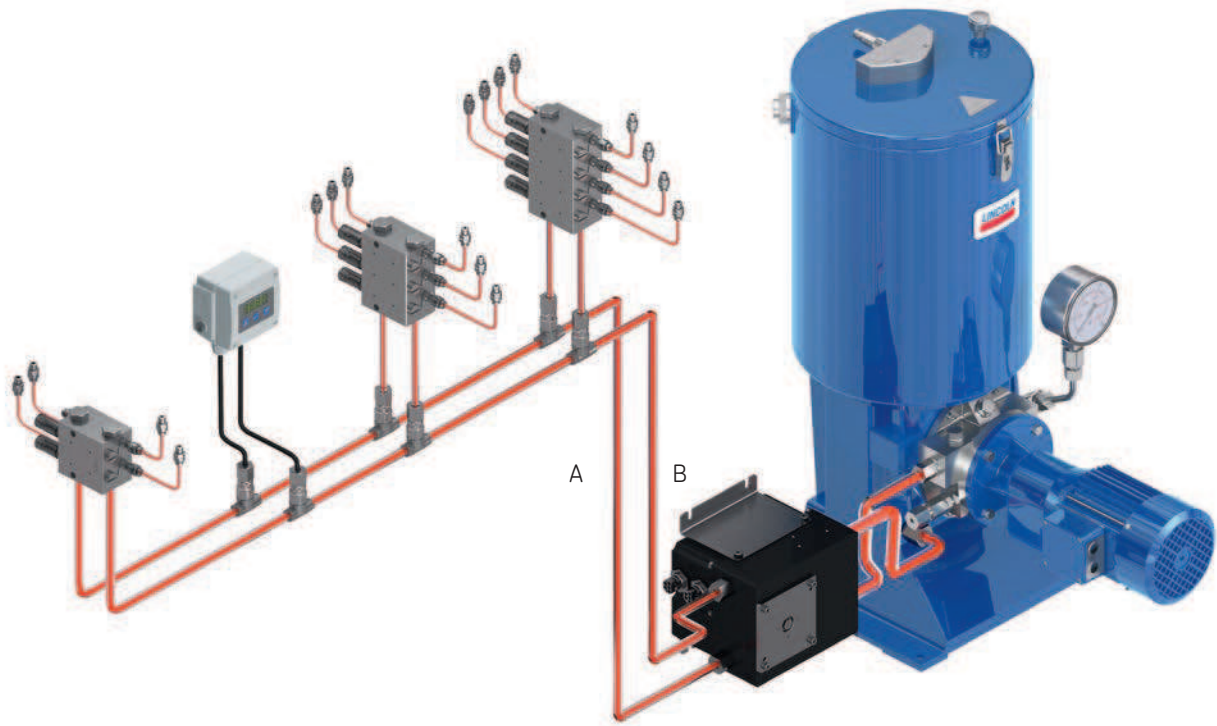
Oil and fluid grease

Grease



PUB LS/P1 16132 EN

# Dual-line lubrication systems for grease



Grease

## System description

SKF dual-line systems can be used on large systems with dispersed lubrication points that require varying lubrication quantities. These systems utilize two main lines that are supplied alternately with lubricant from a high-pressure pump via a change-over valve at up to 400 bar (5 800 psi). Branch lines, along the main lines, are connected with dual-line metering devices to supply a large volume of lubricant to the lubrication points. Within large dual-line systems, end-of-line pressure switches are used to control and monitor the system.

These flexible systems are simple to design and can be extended or reduced easily by installing additional metering devices or by removing them. A redesign of the system is not required. Dual-line metering devices can be combined with downstream progressive metering devices to increase the total number of lubrication points receiving small lubricant amounts. SKF offers dual-line systems that can dispense a precise, metered amount of lubricant to up to 2 000 lubrication

points over long distances up to 120 m (131 yd) and more, depending on case values.

Even if one pair of outlets becomes blocked inside one metering device, SKF dual-line systems provide sufficient lubrication for the rest of the system's lubrication points. Lubricant volume can be metered individually for each pair of outlets and can be monitored visually or electrically.

The function principle of the dual-line systems consists of two half-cycles. In the first half-cycle, the lubricant is pumped into the main line (A) and the main line (B) is connected to the relief line. The lubricant, which is conducted by the change-over valve, is supplied to the metering devices. The pistons of the metering devices are moved into their adjusted end positions, thus dispensing an exact, metered quantity of grease. Once all metering devices have dispensed their lubricant to the consumption point, the system is hydraulically closed, which causes the pressure in main line (A)

to rise until to the preset pressure at the end-of-line pressure switch (mounted in the main lines prior the last metering device) is reached. This pressure switch then signals an electric pulse to the control unit, which turns the pump off and signals the change-over valve to relieve main line (A), and the pause time starts. At this stage, half of the lubrication points in the system have been lubricated.

In the second half-cycle, main line (B) is pressurized and the cycle continues as before.





# Systems

Grease

## Applications

SKF dual-line lubrication systems are developed for use with oil, semi-fluid grease and hard grease up to NLGI grade 2. Harder greases of NLGI grade 3 only can be used if so determined after consultation. SKF dual-line lubrication systems are suitable for a variety of applications, including heavy industry, metal working plants, pulp and paper production, mining, mineral processing, power plants, cement factories, steel works and more. These reliable systems operate effectively in the harsh conditions associated with these industries, including potentially high lubrication-point back pressure, dirty, wet or humid environments and low temperatures.



# Pumps and pump units

HJ 2



SKF Multilube



ZPU 01/02



FK



ZPU 08/14/24



EPB pump



SKF Maxilube



Lubrigun



PowerMaster III



# Overview of grease pumps and pump units

## Manually operated pumps

Product	Lubricant	Function type	Metering quantity		Reservoir		Operation pressure max.		Page
			cm <sup>3</sup> /stroke	in <sup>3</sup> /stroke	l	gal	bar	psi	
<b>HJ 2</b>	up to 3	Piston pump	1–2	0.06–0.12	3	0.79	300	4 350	12

## Electrically operated pumps

Product	Lubricant	Function type	Metering quantity		Reservoir		Operation pressure max.		Page
			cm <sup>3</sup> /h	in <sup>3</sup> /h	l	gal	bar	psi	
<b>SKF Multilube</b>	up to 2	Piston pump	960	58.5	4–10	1.05–2.65	220	2 900	14
<b>ZPU 01/02</b>	up to 2, 3 on request	Piston pump	800–1 600	49–97.5	10–30	2.6–8	400	5 800	16
<b>FK</b>	2 + 3	Piston pump	740–4 440	45–270	15–60	4–16	400	5 800	18
<b>ZPU 08/14/24</b>	up to 2, 3 on request	Piston pump	8 000–24 000	490–1 465	40–100	10–26	400	5 800	20

## Air-operated pumps

Product	Lubricant	Function type	Metering quantity <sup>1)</sup>		Reservoir		Operation pressure max.		Page
			cm <sup>3</sup> /cycle	in <sup>3</sup> /cycle	l/kg	gal/lb	bar	psi	
<b>EPB Eco EPB STA</b>	1 + 2 0, 1, 2	Piston pump	6,1	0.37	18, 50, 180	40, 120, 400	300	4 350	22
<b>Lubrigun</b>	1 + 2	Piston pump	5,7	0.35	50, 180	120, 400	515	7 500	24
<b>SKF Maxilube</b>	up to 2	Piston pump	6,1	0.37	18, 50, 180	40, 120, 400	300	4 350	26
<b>PowerMaster III</b>	1 + 2	Piston pump	34–60,5	2.1–3.7	50, 180	120, 400	515	7 500	28

<sup>1)</sup> generally approx. 50 cycles/min are assumed

## Pump unit

### HJ 2



Grease

#### Product description

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

#### Features and benefits

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

#### Applications

- Metal forming machines
- Roll straighteners
- Tyre heating presses
- Harbor cranes

#### Technical data

Function principle	manually operated pump unit
Outlets	1
Lubricant output per stroke	1–2 cm <sup>3</sup> , 0.06–0.12 in <sup>3</sup>
Lubricant	grease: up to NLGI 3, depending on operating temperature oil: with a viscosity minimum 150 mm <sup>2</sup> /s at operating temperature
Operating temperature	–20 to +70 °C, –4 to +160 °F
Operating pressure	max. 300 bar, 4 350 psi
Hand force at max. pressure	300 N
Reservoir capacity	3 l, 0.8 gal
Outlet connection	G 1/4
Dimensions	410 x 135 x 393 mm 16.1 x 5.5 x 15.5 in
Mounting position	vertical



#### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on [SKF.com/lubrication](http://SKF.com/lubrication):  
**PUB 11EN-78001-C12**

## Pump unit

### HJ 2

#### HJ 2

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

Note: for two outlet versions refer to progressive catalogue

Grease

## Accessories

223-13052-1



223-13052-2



#### Check valves

Order number	Designation	Tube ø
		mm
223-13052-1	GERV 6-S G 1/4 AVCF	6
223-13052-2	GERV 8-L G 1/4 AVCF	8
223-13052-3	GERV 10-L G 1/4 AVCF	10

Note: must be ordered with pump

## Pump unit

# SKF Multilube



Grease



### Product description

Designed for heavy machines and equipment, the modular SKF Multilube pumping unit integrates all relevant components and functions including the control unit, pump, reservoir, directional valve and pressure monitor. Compatible with all oil and grease metering devices for SKF MonoFlex, DuoFlex and ProFlex lubrication systems, the SKF Multilube pumping unit has built-in heating to enable operation in extremely cold and demanding environments.

Depending on application requirements, auxiliary equipment, such as sliding surface nozzles and lubrication brushes, can be used.

### Features and benefits

- Durable, compact structure featuring modular design for simple installation and start up
- Two reservoir sizes available including overflow relief valve and electric low-level switch
- Two-ball pumping element for operational reliability
- Filling connection equipped with filter
- External pressure relief valve
- Optional internal or external control
- Suitable for oil and grease systems

### Applications

- Paper industry
- Heavy industry
- Plant cranes, stackers, reclaimers, etc.
- Remote, mobile applications where electricity is available

### Technical data

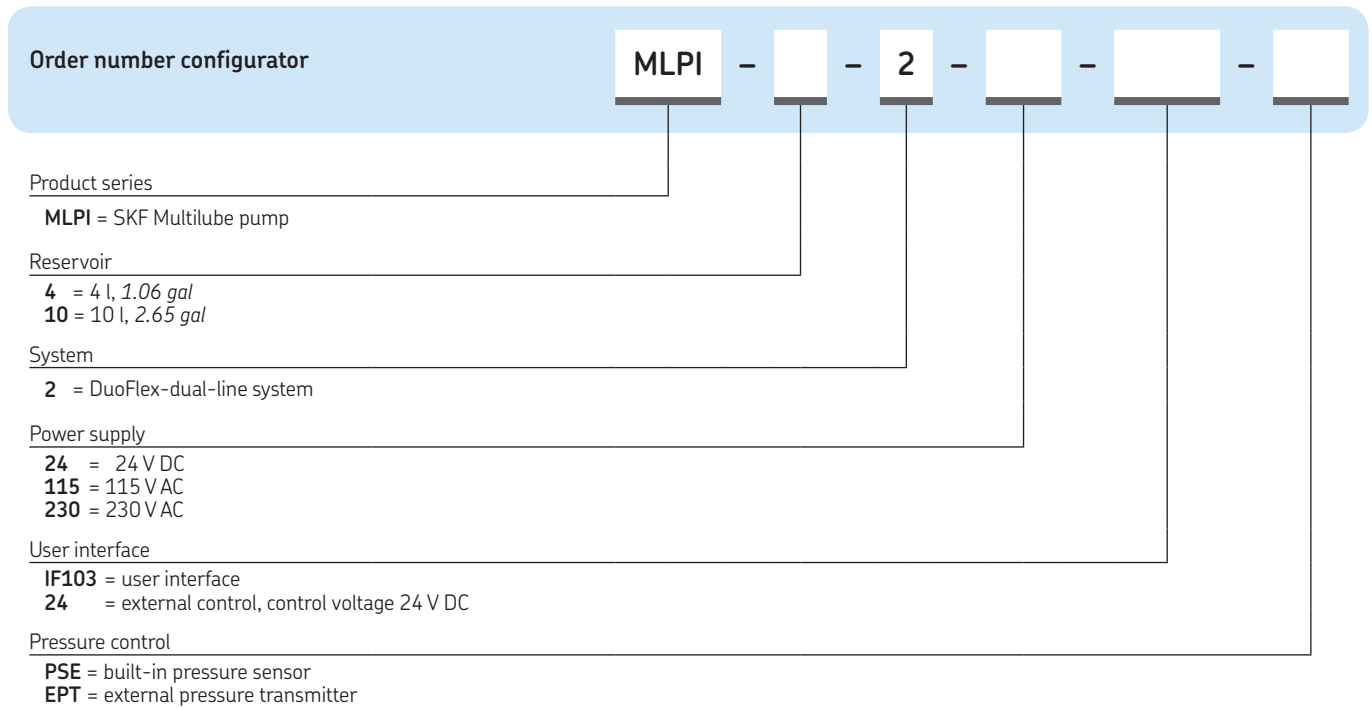
Function principle	electrically operated piston pump
Operating temperature	-30 to +60 °C, -22 to +140 °F
Operating pressure	max. 200 bar, 2 900 psi
Lubricant	grease: up to NLGI 2 oil: operating viscosity > 46 mm <sup>2</sup> /s
Metering quantity	approx. 960 cm <sup>3</sup> /h, 58.6 in <sup>3</sup> /h
Outlet connection	G 1/4
Electrical connections	24 V DC; 115, 230 V AC
Protection class	IP 67 (IP 65 with user interface)
Dimensions	depending on the model min. 535 x 274 x 244 mm max. 720 x 274 x 244 mm min. 21.06 x 10.8 x 9.6 in max. 28.35 x 10.8 x 9.6 in
Reservoir capacity	4 and 10 l, 1.05 and 2.65 gal
Mounting position	horizontal and vertical

### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on SKF.com/lubrication:  
**PUB 6407 EN**

# Pump unit

## SKF Multilube



Grease

## Pump unit

### ZPU 01/02



Grease

#### Product description

The ZPU 01/02 high-pressure, high-volume pumps can be used as a supply pump unit 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 temperatures ranging from -20 to +70 °C (-4 to +158 °F) 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 unit
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: up to NLGI 2, NLGI 3 on request oil: with a viscosity of min 40 mm <sup>2</sup> /s at operating temperature
Metering quantity <sup>1)</sup>	ZPU 01: 800 cm <sup>3</sup> /h, 48.8 in <sup>3</sup> /h ZPU 02: 1 600 cm <sup>3</sup> /h, 97.5 in <sup>3</sup> /h ZPU 02-M049: 3 200 cm <sup>3</sup> /h, 195.2 in <sup>3</sup> /h
Reservoir capacity	10 or 30 l, 2.6 or 8 gal
Main line connection <sup>2)</sup>	model F: for tube 10 mm
Voltage	380-420 V AC/50 Hz, 440-480 V AC/60 Hz
Protection class	IP 65
Dimensions	depending on the model: min. 514 x 379 x 317 mm max. 754 x 431 x 337 mm min. 20.25 x 15 x 12.5 in max. 29.75 x 17 x 15 in
Dimensions low level sensor	30 x 125 x 65 mm 1.2 x 5 x 2.75 in
Mounting position	vertical

<sup>1)</sup> output increase by 20% for 60 Hz applications  
<sup>2)</sup> for model E and V refer to progressive catalogue

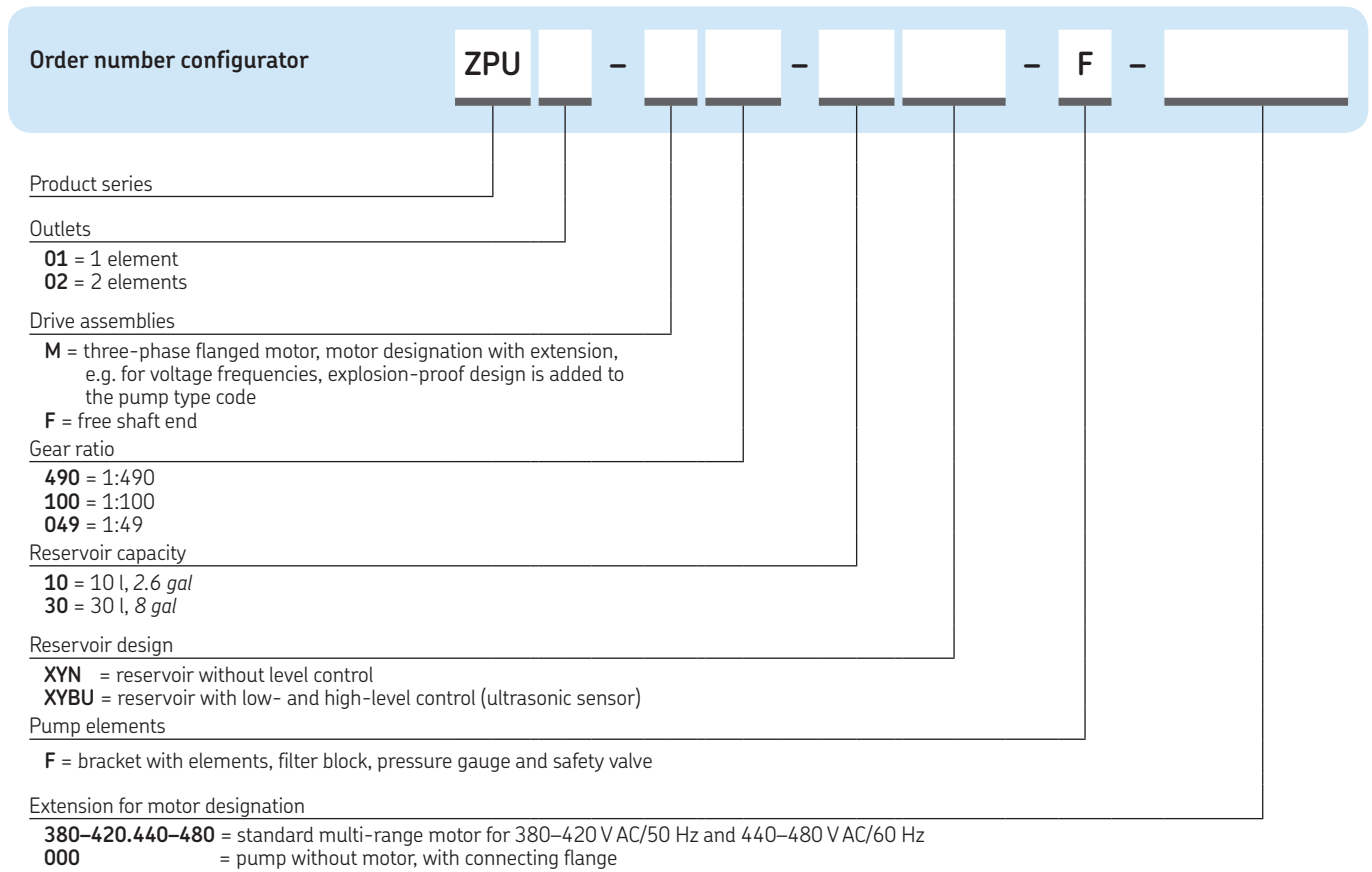
#### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on SKF.com/lubrication:  
**PUB 11A-18003-B99**



# Pump unit

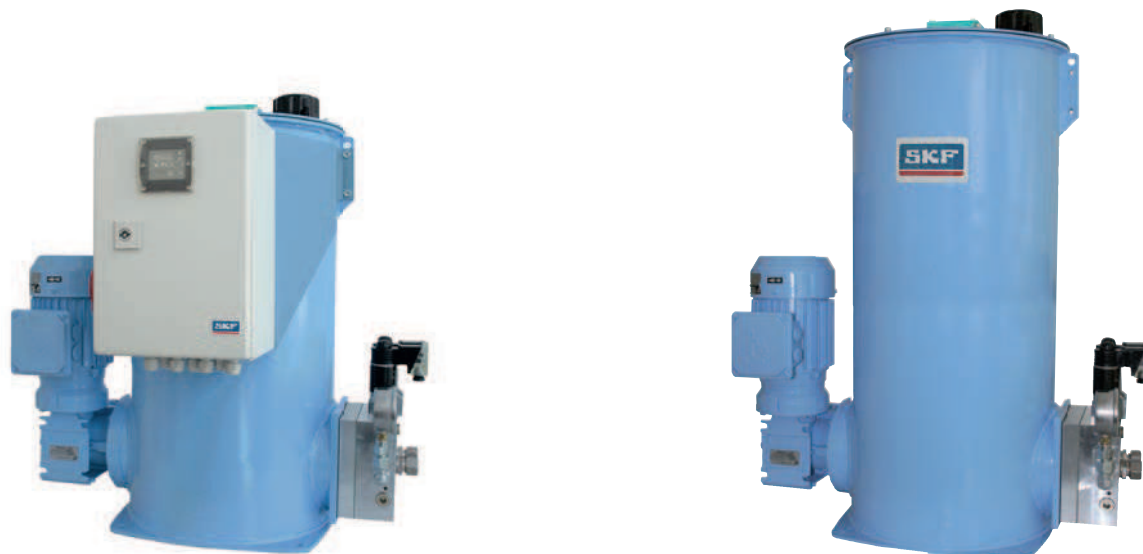
## ZPU 01/02



Grease

# Pump unit

## FK



Grease

### Product description

The FK grease lubrication pump unit is suitable for use in small to midsize dual-line lubrication systems. Its compact, modular construction enables it to be retrofitted from one system to another with minimal effort and expense. Depending on the volume of lubricant required, this radial-piston pump unit can be equipped with up to six internal pumping elements and with optional change-over valves.

Available with reservoir sizes of 15, 30 and 60 kg (33, 66 and 132 lb), this robust pump unit has an operating pressure of max. 400 bar (5 800 psi).

### Features and benefits

- Positively driven pump pistons for maximum reliability
- Fill level monitoring (using ultrasonic sensors) with two adjustable switching points
- Operates effectively in temperatures ranging from  $-25$  to  $+60$  °C ( $-13$  to  $+140$  °F)
- Screw conveyor design permits delivery of highly viscous lubricants
- Internal pressure-regulating valve and filter
- Integrated change-over valves optional

### Applications

- Crushers
- Heavy equipment
- Rope manufacturing machinery

### Technical data

Function principle	radial piston pump unit
Operating temperature	$-25$ to $+60$ °C; $-13$ to $+140$ °F with control cabinet: $0$ to $+60$ °C; $+32$ to $+140$ °F
Lubricant	grease: NLGI 2 and 3 oil: mineral or environmentally compatible oils from ISO VG 46, operating viscosity $\geq 50$ mm <sup>2</sup> /s
Operating pressure	max. 400 bar, max. 5 800 psi
Metering quantity	see order number configurator next page
Reservoir	15, 30 and 60 l; 4, 8 and 16 gal
Outlet connection	G 1/2
Electrical connection	motor: 230/400 V AC, 50 Hz solenoid valves, sensor: 24 V DC
Protection class	IP 55, with control cabinet: IP 54
Dimensions	depending on the model 598 x 335 x 990 mm 23.5 x 13.2 x 39 in
Mounting position	vertical

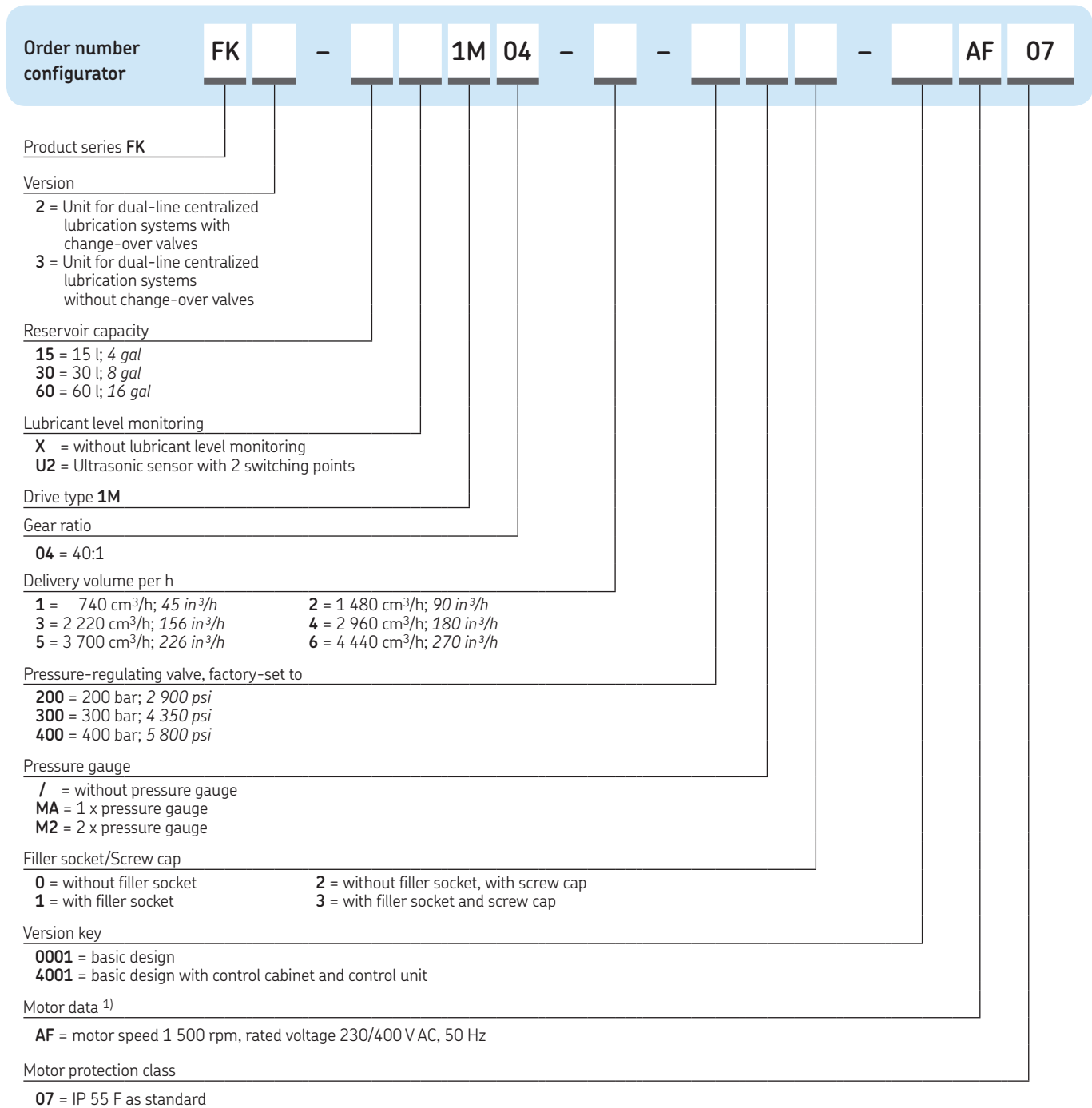


### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on SKF.com/lubrication: **PUB 3033 EN, 951-170-200-EN**

# Pump unit

## FK



Grease

<sup>1)</sup> other specifications available on request

## Pump unit

# ZPU 08/14/24



Grease

### Product description

The ZPU 08/14/24 pumps are used primarily in dual-line systems or as supply pumps and have a maximum operating pressure of 400 bar (5 800 psi). Depending on the system layout, these electric pumps can supply lubricant at distances of up to 120 meters (131 yd) and more.

Available with a 40 or 100 l (10 or 26 gal) reservoir, the pressure ZPU 08/14/24 pumps come standard with a pressure relief valve, check valve, lubricant filter and a pressure gauge. These robust units operate effectively at temperatures ranging from -20 to +80 °C (-4 to +176 °F) thanks to the integrated stirring device.

### Features and benefits

- Reliable
- Simple to service
- Three options for high lubricant output
- Ultrasonic low- and high-level control options
- Built-in lubricant filter

### Applications

- Cement plants
- Steel mills
- Power plants
- Mining
- Large machines



### Technical data

Function principle	electrically operated piston pump
Drive speed	depending on model 60 - 180 r/min
Operating temperature	-20 to +80 °C, -4 to +176 °F
Lubricant	grease: up to NLGI 2, NLGI 3 on request oil: with a viscosity of min 20 mm <sup>2</sup> /s
Metering quantity <sup>1)</sup>	ZPU 08: 8 000 cm <sup>3</sup> /h, 488 in <sup>3</sup> /h ZPU 14: 14 000 cm <sup>3</sup> /h, 855 in <sup>3</sup> /h ZPU 24: 24 000 cm <sup>3</sup> /h, 1 465 in <sup>3</sup> /h
Operating pressure	max. 400 bar, 5 800 psi
Reservoir capacity	40 or 100 l, 10 or 26 gal
Main line connection	G 3/4 female
Voltage	380-415V AC/50Hz, 420-480 V AC/60 Hz, 500 V AC/50 Hz
Protection class	IP 65
Dimensions	depending on the model min. 760 x 670 x 410 mm max. 975 x 825 x 500 mm min. 30 x 26 x 16 in max. 38.5 x 32.5 x 20 in
Mounting position	vertical

<sup>1)</sup> output increase by 20% for 60 Hz applications

### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on SKF.com/lubrication:  
**PUB 13633 EN, 11A-18001-B07**

# Pump unit

## ZPU 08/14/24

### Order number configurator



#### Product series

#### Outlets

- 08** = 8 000 cm<sup>3</sup>/h, 488 in<sup>3</sup>/h
- 14** = 14 000 cm<sup>3</sup>/h, 855 in<sup>3</sup>/h
- 24** = 24 000 cm<sup>3</sup>/h, 1 465 in<sup>3</sup>/h

#### Drive assemblies

- F** = with free shaft end
- G** = with flanged gear motor construction IMB5
- S** = with worm gear and 3-phase motor construction IMV1
- SF** = with worm gear and shaft end, suitable for 3-phase motor construction
- S/SF** is only available for model ZPU 08

#### Reservoir capacity

- 040** = 40 l, 10 gal
- 100** = 100 l, 26 gal

#### Reservoir design

- XN** = grease reservoir, standard design
- XL** = grease reservoir with low-level control
- XB** = grease reservoir with high- and low-level control
- XYBU** = reservoir with low- and high-level control via ultrasonic sensor

#### Extension for motor designation

- 380-415/440-480** = standard multi-range motor for 380-415 V AC/50 Hz, and 420-480 V AC/60 Hz
- 500** = 500 V AC/50 Hz

Grease

## Pump unit

### EPB



Grease

#### Product description

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

#### Features and benefits

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

#### Applications

- Paper industry
- Steel industry
- Heavy industry



#### Technical data

Function principle	air operated piston pump unit for barrels
Operating temperature	-10 to +50 °C, 14 to 122 °F
Operating pressure	max. 300 bar, 4 350 psi
Pressure ratio	1:65
Pressure air supply	3,5 to 4,5 bar, 51 to 65 psi
Air consumption	300 l/min; 80 gal/min
Lubricant	grease: Eco: NLGI 1 or 2 STA: NLGI 0, 1 or 2 oil: 5 000 cSt
Metering quantity per cycle <sup>1)</sup>	6,1 cm <sup>3</sup> ; 0.37 in <sup>3</sup>
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 x 130 x 130 mm max. 920 x 130 x 130 mm min. 25.6 x 5.11 x 5.11 in max. 36.22 x 5.11 x 5.11 in
Mounting position	vertical

<sup>1)</sup> generally approx. 50 cycles/min are assumed

#### NOTE

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

# Pump unit

## EPB

**Order number configurator**

SKF-EPB-PUMP - [ ] - [ ]

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**Product series**  
**SKF-EPB-PUMP** = Electro-pneumatic barrel pump

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

**Lid set**  
**ECO** = pumping unit is connected to a follower plate placed inside the lubricant barrel, allowing the pump to follow the lubricant level  
**STA** = pumping unit is fixed on the lubricant barrel  
**LG** = pumping unit is fixed on the lubricant barrel  
**OS** = pumping unit is fixed on the lubricant barrel

Grease

## Accessories



**Installation kits**

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



**Maintenance unit for easy exchange of barrels**

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



**Power supply unit**

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

PUB LS/P1 16132 EN

## Pump unit

# Lubrigun



Grease

### Product description

The performance-proven Lubrigun air-operated pump units are found in industrial facilities worldwide. Ideal for high-pressure applications, these pumps include a powerful displacement air motor with 63,5 mm (2.5 in) stroke and are available for 50 kg (120 lb) and 180 kg (400 lb) drums.

For dual-line applications, the Lubrigun utilizes a pump hoist, return-line connection, low-level switch, maintenance unit and connection hoses.

### Features and benefits

- Lightweight, zinc head casting design for corrosion resistance
- One-piece pump outlet body withstands high lubricant pressure
- Double-acting design provides high pressure and uniform delivery on both up and down strokes
- Integrated, patented muffler minimizes noise
- Pre-lubricated air motor requires no external oiler
- Pneumatically assisted mechanical air valve for positive priming
- Hardened steel plunger and bushing resist abrasion and extend pump life

### Applications

- Power plants
- Mining equipment
- Cement plants



### Technical data

Function principle . . . . . air-operated piston pump unit for barrels  
Operating temperature . . . . . -34 to +93 °C, -30 to +200°F  
Operating pressure . . . . . max. 515 bar, 7 500 psi  
Lubricant . . . . . NLGI 1 and 2  
Cycles per minute <sup>1)</sup> . . . . . max. 120  
Metering quantity per cycle . . . . . 5,7 cm<sup>3</sup>, 0,35 in<sup>3</sup>  
Pressure ratio . . . . . 50:1  
Lubricant outlet connection . . . . . 1/4 NPTF  
Dimensions with pump lift . . . . . 950 x 700 x 2 800 mm  
374 x 275 x 1 102 in  
Mounting position . . . . . vertical

<sup>1)</sup> generally approx. 50 cycles/min are assumed

### Lubrigun

Order number	Designation
<b>082054</b>	Lubrigun barrel pump, 180 kg, 400 lb
<b>082050</b>	Lubrigun barrel pump, 50 kg, 120 lb

### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on SKF.com/lubrication:  
**PUB FORM 404246**



## Lubrigun pump hoist



### Product description

Ideal for easy and clean drum change-over. Used for fast power-operated drum changing. Lifts any air-operated pump with a 60 or 200 l (15 or 55 lb) drum and lowers it into another. Can serve one or a cluster of drums from one location.

#### Pump hoist

Order number	Designation
001709	pump hoist without pump

Grease

## Lubrigun single-post primer



### Product description

For use with Lubrigun pumps, air-operated single-post pump hoist for 200 l (55 gal) drums performs several functions in applications of low- to medium-viscosity materials. The primer facilitates drum change-overs and includes a follower and wiper that use normal suction to help maintain pump prime.

The unit also includes a mounting bracket suitable for all Lubrigun pump units.

#### Single-post primer

Order number	Designation
274681	single-post primer without pump

## Pump unit

# SKF Maxilube



Grease

### Product description

The Maxilube pumping centre consists of a Maxilube combined change-over valve and control unit, a barrel pump unit with accessories, such as an EPB, as well as a pressure air regulator. Used for single-line, dual-line and progressive lubrication systems, this air-operated pumping centre can be controlled and monitored by an integrated control unit, ST-105, and external control center such as ST-1240, ST-1340 and ST-1440. The Maxilube also can be operated by a separate control unit or by SMS messaging.

### Features and benefits

- Reliable, trouble-free operation
- Suitable for lubricants up to NLGI 2
- Available for barrel reservoir capacities of 18, 50 and 180 kg (40, 120 and 400 lb)

### Applications

- Heavy industry
- Pulp and paper industry
- Steel industry

### Technical data

Function principle	air-operated piston pump unit for barrels
Operating temperature	0 to +50 °C, +32 to +122 °F
Operating pressure	max. 300 bar, 4 350 psi
Pressure ratio	1:65
Pressure air supply	3,5 to 4,5 bar, 51 to 65 psi
Air consumption	300 l/min
Lubricant	grease: up to NLGI 2 oil: 5 000 cSt
Metering quantity per cycle <sup>1)</sup>	6,1 cm <sup>3</sup> ; 0.37 in <sup>3</sup>
Electrical connections	control voltage: 24 V DC power supply: 115/230 V AC
Protection class	IP 65
Dimensions	depending on the model min. 650 x 130 x 130 mm max. 1 020 x 130 x 130 mm min. 25.6 x 5.12 x 5.12 in max. 40.16 x 5.12 x 5.12 in
Mounting position	vertical

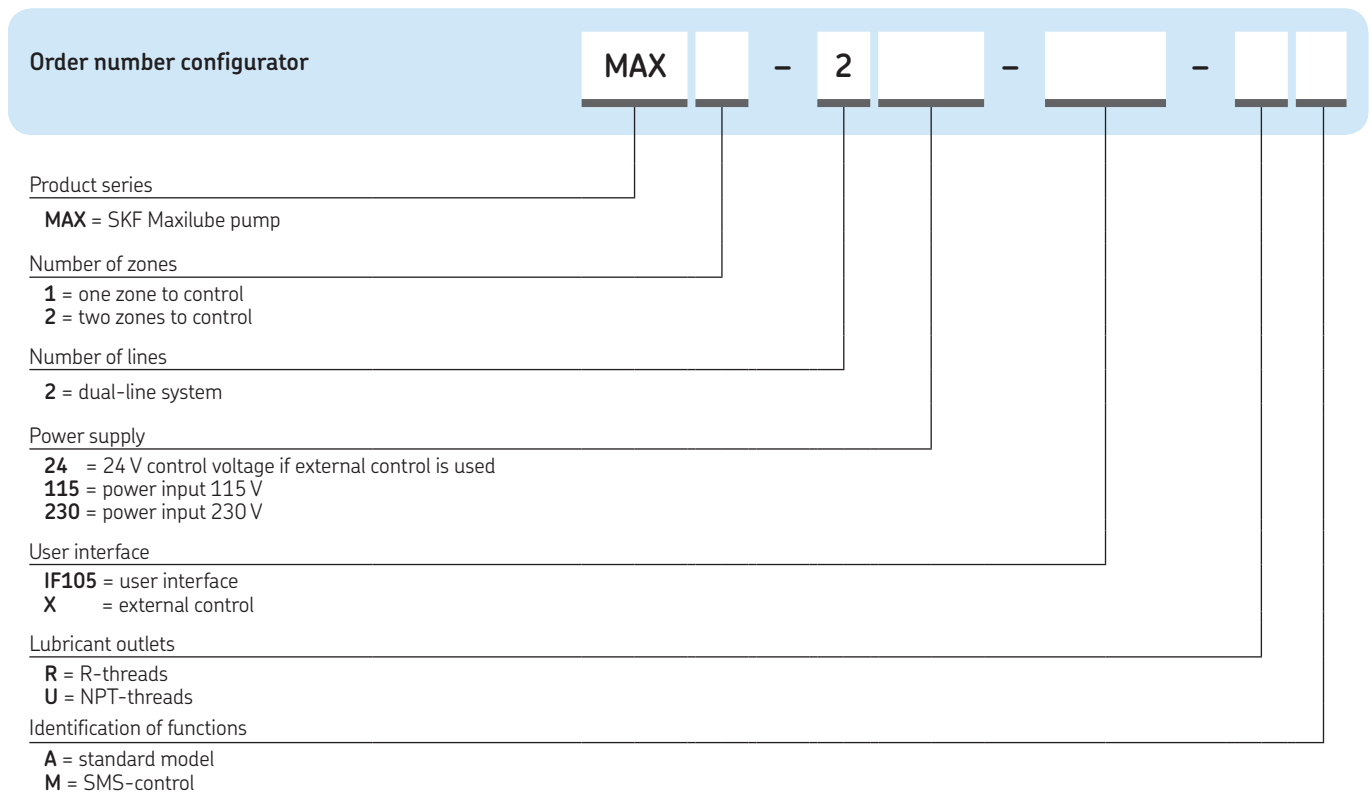
<sup>1)</sup> generally approx. 50 cycles/min are assumed

### ! NOTE

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

## Pump unit

### SKF Maxilube



Grease

## Optional SMS service



### Product description

Control centres can be equipped with an SMS connection. This way, the Maxilube pumping centre, Maxilube pumping unit and control centres can be controlled by SMS messages. The connection is created between a GSM modem installed in the pumping or control centre and a GSM mobile phone.

## Pump unit

# PowerMaster III



Grease

### Product description

Designed to fit large drums or containers, PowerMaster III pump units are ideal for lubrication systems using substantial quantities of lubricant. The modular combination of various air motors with pump tubes enables optimum adaptation to lubrication system requirements. The PowerMaster III is available in carbon steel to fit any drum size.

A complete line of priming equipment and mounting devices are offered.

### Features and benefits

- Uses air motors with diameters of 76, 101, 152 and 203 mm (3, 4, 6 or 8 in)
- Full 152 mm (6 in) stroke for greater output per cycle
- Modular design for easy repair
- Only five moving parts and no metal-to-metal contact for longer service life
- Pump tubes provide ratios and outputs for any application
- Hydraulically operated drive motors offered for lubrication systems on hydraulic excavators
- Shovel-foot-style for high-viscosity, non-fluid materials

### Applications

- Hydraulic excavators
- Sinter plants
- Beverage bottling plants

### Technical data

Function principle	air-operated piston pump unit for barrels
Operating temperature	-34 to +93 °C, -30 to +200 °F
Operating pressure	max. 500 bar, 7 300 psi
Lubricant	NLGI 1 and 2
Cycles per minute	max. 70
Metering quantity per cycle	34–60,5 cm <sup>3</sup> , 2.1–3.7 in <sup>3</sup>
Pressure ratio	50:1, 75:1 (recommended for lubrication systems)
Lubricant outlet connection	3/4 NPTF
Dimensions	950 x 700 x 2 800 mm 374 x 275 x 1 103 in
Mounting position	vertical

### PowerMaster III

Order number	Designation
002004	Barrel pump with pump tube model 84997 and air motor model 84804 (ratio 75:1)
084723	Air motor cover kit

### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on SKF.com/lubrication: **PUB 15169 EN**

## PowerMaster III single-post elevator



### Product description

This single-post elevator is ideal for quick and easy power-operated drum changes. Lifts any air-operated pump from 60 and 200 l, 15 or 55 lb drum and lowers it into another. Can serve one or a cluster of drums from one location.

### Pump hoist

Order number	Designation
001709	single-post elevator

## PowerMaster III single-post primer



### Product description

For use with PowerMaster III Series 2000 pumps, this air-operated, single-post pump hoist for 200 l (55 gal) drums performs several functions in applications of low- to medium-viscosity materials. The primer facilitates drum change-overs and includes a follower and wiper that use normal suction to help maintain pump prime. The unit also includes a mounting bracket for all PowerMaster III pumps.

### Single-post primer

Order number	Designation
002716	single-post primer

## Air motor cover panel kit



### Product description

Metal cover fits tie rods and encloses the moving plunger rod.

### Air motor cover panel kit

Order number	Designation
84723	series III air motor cover panel kit

# Metering devices

VSKH



VSG



VSL



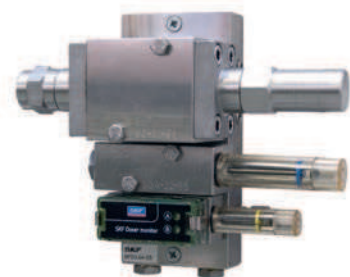
VSKV



VSL-MD



SGA and SG



# Overview of metering devices

## Block design metering devices

Product	Material housing and design	Operation pressure max.		Outlets	Metered quantity per cycle		Page
		bar	psi		cm <sup>3</sup>	in <sup>3</sup>	
	steel galvanized or stainless steel						
VSKH-KR	with indicator pin, adjustable output	400	5 800	1-8	0-1,5	0-0.09	32
VSKH-KRFBM	with FKM seals	400	5 800	1-8	0-1,5	0-0.09	32
VSKV-KR	with indicator pin, adjustable output	400	5 800	1-8	0-1,5	0-0.09	32
VSKV-KRFBM	with FKM seals	400	5 800	1-8	0-1,5	0-0.09	32
VSG-KR	with indicator pin, adjustable output	400	5 800	1-8	0-2,2	0-0.13	34
VSG-KRFBM	with FKM seals	400	5 800	1-8	0-2,2	0-0.13	34
VSG-KR-NP	with piston detector	400	5 800	1-8	0-2,2	0-0.13	34
VSG-KR-KA	with adapter for limit switch	400	5 800	2, 4, 6, 8	0-2,2	0-0.13	34
VSG-KR-KS	with limit switch	400	5 800	1-8	0-2,2	0-0.13	34
VSG-KR-KD, D	with fixed metering screw	400	5 800	1-8	0,55; 1,1; 1,65; 2,2	0.04, 0.07, 0.1, 0.13	34
VSL-KR	with indicator pin, adjustable output	400	5 800	1-8	0-5	0-0.3	38
VSL-KR-FKM	with FKM seals	400	5 800	1-8	0-5	0-0.3	38
VSL-KR-NP	with piston detector	400	5 800	1-8	0-5	0-0.3	38
VSL-KR-KA	with adapter for limit switch	400	5 800	2, 4, 6, 8	0-5	0-0.3	38
VSL-KR-KS	with limit switch	400	5 800	1-8	0-5	0-0.3	38
VSL-KR-KD, D	with fixed metering screw	400	5 800	1-8	1,25; 2,5; 3,75; 5	0.07, 0.15, 0.23, 0.3	38

## Modular design metering devices

Product	Material housing and design	Operation pressure max.		Outlets	Metered quantity per cycle		Page
		bar	psi		cm <sup>3</sup>	in <sup>3</sup>	
	steel galvanized or stainless steel						
SGA	with indicator pin, adjustable output	250	3 600	1-12	0,15-9,7	0.009-0.6	44
SG	with indicator pin, adjustable output	250	3 600	1-12	4,7-196	0.3-12	44

## Metering device

### VSKH and VSKV



Grease

#### Product description

The durable, galvanized steel VSK metering devices are designed for dual-line systems with pressures of up to 400 bar (5 800 psi).

These metering devices are available with up to eight outlets, and each pair of outlets is equipped with an indicator pin for visual monitoring. Also, the VSK metering devices are available with low-wear proximity switches, or piston detectors, for electrical monitoring (except VSK..-D version).

Additional features include rust-resistant material or rust- and acid-resistant material.

#### Features and benefits

- Solid-block construction for durability and error-free exchange
- Operates effectively in a wide range of temperatures
- Easy to monitor
- Available with horizontal VSKH outlets or vertical VSKV outlets for limited installation conditions

#### Applications

- Cement plants
- Mining excavators
- Steel plants

#### Technical data

Function principle	metering devices
Outlets	1-8
Operating temperature	KR: max. +80 °C, +176 °F MD, KR-FKM: max. +120 °C, +248 °F
Operating pressure	max. 400 bar, 5 800 psi
Lubricant	grease up to NLGI 3, oil with a viscosity of min. 20 mm <sup>2</sup> /s
Materials	carbon steel galvanized or stainless steel
Metering quantity per cycle	0-1,5 cm <sup>3</sup> , 0-0.09 in <sup>3</sup> or fixed output Version D: 0,3; 0,6; 1,2; 1,5 cm <sup>3</sup> 0.018; 0.037; 0.073; 0.092 in <sup>3</sup> order numbers on request
Main line connection inlet	G 1/4
Outlet connection	G 1/4
Dimensions	depending on the model: min. 124 x 52 x 57 mm max. 124 x 136 x 57 mm min. 4.88 x 2.05 x 2.24 in max. 4.88 x 5.35 x 2.24 in

#### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on SKF.com/lubrication:  
**PUB 12EN-28002-H08**



## Metering device

### VSKH and VSKV

#### Order numbers VSKH and VSKV

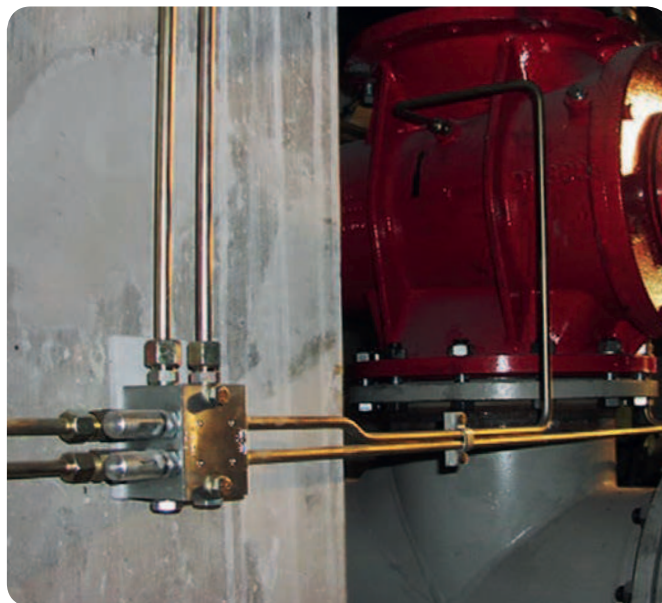
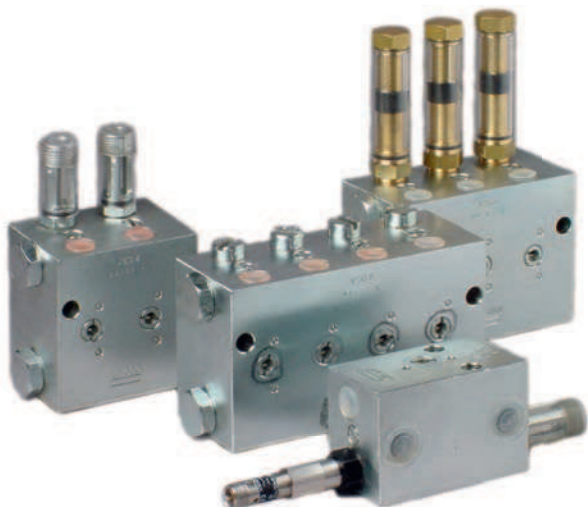
Connection thread BSPP		Outlets	Material			Indicator pin adjustable output 0–1,5 cm <sup>3</sup> , 0–0.09 in <sup>3</sup>	
VSKH–KR ..	VSKV–KR ..		Steel galvanized	Stainless steel 1.4305/303	Stainless steel 1.4571/316Ti	KR	FKM U-cup seal
620-27438-1	620-27442-1	1	•			•	
620-27418-1	620-27422-1	2	•			•	
620-27439-1	620-27443-1	3	•			•	
620-27419-1	620-27423-1	4	•			•	
620-27440-1	620-27444-1	5	•			•	
620-27420-1	620-27424-1	6	•			•	
620-27441-1	620-27445-1	7	•			•	
620-27421-1	620-27425-1	8	•			•	
620-27488-1	620-27496-1	1		•		•	
620-27489-1	620-27497-1	2		•		•	
620-27490-1	620-27498-1	3		•		•	
620-27491-1	620-27499-1	4		•		•	
620-27492-1	620-27500-1	5		•		•	
620-27493-1	620-27501-1	6		•		•	
620-27494-1	620-27502-1	7		•		•	
620-27495-1	620-27503-1	8		•		•	
620-27766-1	620-27857-1	1			•	•	
620-27767-1	620-27858-1	2			•	•	
620-27768-1	620-27859-1	3			•	•	
620-27769-1	620-27860-1	4			•	•	
620-27770-1	620-27861-1	5			•	•	
620-27771-1	620-27862-1	6			•	•	
620-27772-1	620-27863-1	7			•	•	
620-27773-1	620-27864-1	8			•	•	
620-28409-1	620-28413-1	1	•			•	•
620-28376-1	620-28392-1	2	•			•	•
620-28410-1	620-28414-1	3	•			•	•
620-28366-1	620-28393-1	4	•			•	•
620-28411-1	620-28415-1	5	•			•	•
620-28367-1	620-28374-1	6	•			•	•
620-28412-1	620-28416-1	7	•			•	•
620-28391-1	620-28394-1	8	•			•	•

Grease

## Metering device

### VSG

Grease



#### Product description

The durable, galvanized steel VSG metering devices are designed for dual-line systems with pressures of up to 400 bar (5 800 psi). These metering devices are available with up to eight outlets, and each pair of outlets is equipped with an indicator pin for visual monitoring. Also, the VSG metering devices are available with low-wear proximity switches, or piston detectors, for electrical monitoring (except VSG-D version).

Additional features include rust-resistant material or rust- and acid-resistant material.

#### Features and benefits

- Easy cross-porting with external screw to combine
- Solid-block construction for durability and error-free exchange
- Operates effectively in a wide range of temperatures
- Easy to monitor

#### Applications

- Steel plants
- Cement plants
- Mining excavators

#### Technical data

Function principle	metering devices
Outlets	1-8
Operating temperature	KR-..., KD, D: max. +80 °C, +176 °F MD, KR-FKM: max. +120 °C, +248 °F
Lubricant	grease up to NLGI 3, oil with a viscosity of min. 20 mm <sup>2</sup> /s
Operating pressure	max. 400 bar, 5 800 psi
Materials	carbon steel galvanized or stainless steel
Metering quantity per cycle	0-2,2 cm <sup>3</sup> , 0-0.13 in <sup>3</sup> or fixed output Version D: 0,55; 1,1; 1,65; 2,2 cm <sup>3</sup> , 0.033; 0.067; 0.01; 0.13 in <sup>3</sup> order numbers on request
Main line connection inlet	G 3/8, 3/8 NPTF
Outlet connection	G 1/4, 1/4 NPTF
Dimensions	min. 148 x 94 x 54 mm max. 148 x 190 x 54 mm min. 5.83 x 3.70 x 2.13 in max. 5.83 x 7.48 x 2.13 in

#### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on SKF.com/lubrication:  
**PUB 12EN-28001-D07**

# Metering device

## VSG

### Order numbers VSG

Connection thread		Outlets	Material			Indicator pin adjustable output FKM U-cup seal	Metering screws D <sup>1)</sup>
BSPP	NPTF		Steel galvanized	Stainless steel 1.4305/303	Stainless steel 1.4571/316Ti		
620-40022-1	620-40022-2	1	•			•	
620-40015-1	620-40015-2	2	•			•	
620-40022-3	620-40022-4	3	•			•	
620-40015-3	620-40015-4	4	•			•	
620-40022-5	620-40022-6	5	•			•	
620-40015-5	620-40015-6	6	•			•	
620-40022-7	620-40022-8	7	•			•	
620-40015-7	620-40015-8	8	•			•	
620-40567-1		1		•		•	
620-40567-2		2		•		•	
620-40567-3		3		•		•	
620-40567-4		4		•		•	
620-40567-5		5		•		•	
620-40567-6		6		•		•	
620-40567-7		7		•		•	
620-40567-8		8		•		•	
620-40839-1		1			•	•	
620-40839-2		2			•	•	
620-40839-3		3			•	•	
620-40839-4		4			•	•	
620-40839-5		5			•	•	
620-40839-6		6			•	•	
620-40839-7		7			•	•	
620-40839-8		8			•	•	
620-40525-2		1	•			•	•
620-40525-1		2	•			•	•
620-40525-3		3	•			•	•
620-40525-4		4	•			•	•
620-40525-5		5	•			•	•
620-40525-6		6	•			•	•
620-40525-7		7	•			•	•
620-40525-8		8	•			•	•
620-40681-2		2	•	•			•
620-40681-4		4	•	•			•
620-40681-6		6	•	•			•
620-40681-8		8	•	•			•
620-41304-4		4	•		•		•
620-41304-8		8	•		•		•

<sup>1)</sup> 2,2 cm<sup>3</sup>, 0.13 in<sup>3</sup>

Grease

# Metering device

## VSG

### Order numbers VSG

Connection thread		Outlets	Material Steel galvanized	Indication and monitoring		Adapter for limit switch KA <sup>1)</sup>	Limit switch KS	Indicator pin; fixed output; metering screws KD <sup>2)</sup>	Metering screws D <sup>2)</sup>
BSP	NPTF			Indicator pin adjustable KR	Piston detector NP				
620-40733-1		1	•	•	•				
620-40733-2		2	•	•	•				
620-40733-3		3	•	•	•				
620-40733-4		4	•	•	•				
620-40733-5		5	•	•	•				
620-40733-6		6	•	•	•				
620-40733-7		7	•	•	•				
620-40733-8		8	•	•	•				
620-40605-1		2	•	•		•			
620-40605-2		4	•	•		•			
620-40605-3		6	•	•		•			
620-40605-4		8	•	•		•			
620-40027-1	620-40027-2	1	•	•		•			
620-40027-3	620-40027-4	2	•	•		•			
620-40027-5	620-40027-6	3	•	•		•			
620-40027-7	620-40027-8	4	•	•		•			
620-40028-1	620-40028-2	5	•	•		•			
620-40028-3	620-40028-4	6	•	•		•			
620-40028-5	620-40028-6	7	•	•		•			
620-40028-7	620-40028-8	8	•	•		•			
620-40023-1	620-40023-2	1	•				•		
620-40023-3	620-40023-4	2	•				•		
620-40023-5	620-40023-6	3	•				•		
620-40023-7	620-40023-8	4	•				•		
620-40024-1	620-40024-2	5	•				•		
620-40024-3	620-40024-4	6	•				•		
620-40024-5	620-40024-6	7	•				•		
620-40024-7	620-40024-8	8	•				•		
620-40025-1	620-40025-2	1	•					•	
620-40025-3	620-40025-4	2	•					•	
620-40025-5	620-40025-6	3	•					•	
620-40025-7	620-40025-8	4	•					•	
620-40026-1	620-40026-2	5	•					•	
620-40026-3	620-40026-4	6	•					•	
620-40026-5	620-40026-6	7	•					•	
620-40026-7	620-40026-8	8	•					•	

<sup>1)</sup> thread M 12x1

<sup>2)</sup> fixed output 0,55; 1,1; 1,65; 2,2 cm<sup>3</sup>; 0.033; 0.067; 0.01; 0.13 in<sup>3</sup>

Grease

## Accessories

### Metering screws and outlet check valves

#### Metering screw for VSKH/VSKV

Order number	Output	
	cm <sup>3</sup>	in <sup>3</sup>
303-19351-1	0,30	0.018
303-19352-1	0,60	0.037
303-19354-1	1,20	0.073
303-19375-1	1,50	0.091
stainless steel 1.4571/316 Ti		
303-19356-1	0,30	0.018
303-19357-1	0,60	0.037
303-19359-1	1,20	0.073
303-19374-1	1,50	0.091

#### Metering screw for VSG

Order number	Output	
	cm <sup>3</sup>	in <sup>3</sup>
303-17505-1	0,55	0.33
303-17506-1	1,10	0.67
303-17507-1	1,65	0.10
303-17508-1	2,2	0.13
stainless steel 1.4305/303		
303-16283-1	0,55	0.33
303-16698-1	1,10	0.67
303-19838-1	1,65	0.10
303-19759-1	2,2	0.13
stainless steel 1.4571/316Ti		
303-16696-1	0,55	0.33
303-16695-1	1,10	0.67
303-16694-1	1,65	0.10
303-16224-1	2,2	0.13

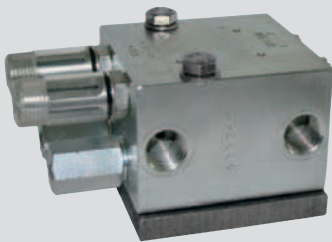
#### Metering screw for VSL

Order number	Output	
	cm <sup>3</sup>	in <sup>3</sup>
303-17509-1	1,25	0.076
303-17510-1	2,50	0.15
303-17511-1	3,75	0.23
303-17512-1	5,00	0.30
stainless steel 1.4305/303		
303-16106-1	2,50	0.15
303-19809-1	3,75	0.23
303-19760-1	5,00	0.30

Grease

### Check valves, welding plates and extensions

#### VSG4-KR with welding plate and extension



#### Welding plates for VSK, VSG and VSL

Order number	Model
432-23698-1	VSK2
432-23699-1	VSK4
432-23700-1	VSK6
432-23701-1	VSK8
432-21791-1	VSG2/VSL2
432-21792-1	VSG4/VSL4
432-21793-1	VSG6/VSL6
432-21794-1	VSG8/VSL8

#### Extensions for VSK, VSG and VSL

Order number	Model
420-23628-1	VSKH
420-23790-1	VSKH, 1.4305
420-23872-1	VSG, 1.4305
420-22139-1	VSG
420-24832-1	VSL
420-22140-1	VSL

#### 223-13052-1



#### Check valves

Order number	Tube	Designation
ø mm		
223-13052-1	6	GERV 6-S G 1/4 AVCF
223-13052-2	8	GERV 8-L G 1/4 AVCF
223-13052-3	10	GERV 10-L G 1/4 AVCF

## Metering device

### VSL



Grease

#### Product description

The durable, galvanized steel VSL metering devices are designed for dual-line systems with pressures of up to 400 bar (5 800 psi). These metering devices are available with up to eight outlets, and each pair of outlets is equipped with an indicator pin for visual monitoring. Also, the VSL metering devices are available with low-wear proximity switches, or piston detectors, for electrical monitoring.

Additional features include rust-resitant material.

#### Features and benefits

- Easy cross-porting with external screw to combine
- Solid-block construction for durability and error-free exchange
- Operates effectively in a wide range of temperatures
- Easy to monitor

#### Applications

- Steel plants
- Cement plants
- Mining excavators

#### Technical data

Function principle	metering devices
Outlets	2-8
Operating temperature	KR, KA, KD, D: max. +80 °C, +176 °F MD, KR-FKM: max. +120 °C, +248 °F
Lubricant	grease up to NLGI 3 oil with a viscosity of min 20 mm <sup>2</sup> /s
Operating pressure	max. 400 bar, 5 800 psi
Materials	steel galvanized or stainless steel 1.4305/303 on request
Metering quantity per cycle	0-5 cm <sup>3</sup> , 0-0.3 in <sup>3</sup> or fixed output: 1.25; 2.5; 3.75; 5 cm <sup>3</sup> , 0.076; 0.15; 0.23; 0.31 in <sup>3</sup> , order number on request
Main line connection inlet	G 3/8, 3/8 NPTF
Outlet connection	G 1/4, 1/4 NPTF
Dimensions	min. 148 x 94 x 54 mm max. 148 x 220 x 54 mm min. 5.83 x 3.70 x 2.13 in max. 5.83 x 8.66 x 2.13 in

#### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on SKF.com/lubrication:  
**PUB 12EN-28001-D07**

# Metering device

## VSL

Grease

**Order numbers VSL carbon steel galvanized**

Connection thread BSPB	NPTF	Outlets	Material Steel galvanized	Indication and monitoring Indicator pin adjustable output FKM U-cup seal	Piston detector NP	Adapter for limit switch KA <sup>1)</sup>	Limit switch KS
620-40062-1	620-40062-2	1	•	•			
620-40062-3	620-40062-4	2	•	•			
620-40062-5	620-40062-6	3	•	•			
620-40062-7	620-40062-8	4	•	•			
620-40064-1	610-40064-2	5	•	•			
620-40064-3	620-40064-4	6	•	•			
620-40064-5	620-40064-6	7	•	•			
620-40064-7	620-40064-8	8	•	•			
620-40527-1		1	•	•			
620-40526-1	620-40937-2	2	•	•			
620-40526-9		3	•	•			
620-40526-4	620-40937-4	4	•	•			
620-40526-5		5	•	•			
620-40526-6	620-40937-6	6	•	•			
620-40526-7		7	•	•			
620-40526-8	620-40937-8	8	•	•			
620-40853-1		1	•	•	•		
620-40853-2		2	•	•	•		
620-40853-3		3	•	•	•		
620-40853-4		4	•	•	•		
620-40853-6		6	•	•	•		
620-40853-8		8	•	•	•		
620-40637-2		2	•	•		•	
620-40637-4		4	•	•		•	
620-40637-6		6	•	•		•	
620-40637-8		8	•	•		•	
620-40068-1	620-40068-2	1	•	•			•
620-40068-3	620-40068-4	2	•	•			•
620-40068-5	620-40068-6	3	•	•			•
620-40068-7	620-40068-8	4	•	•			•
620-40069-1	620-40069-2	5	•	•			•
620-40069-3	620-40069-4	6	•	•			•
620-40069-5	620-40069-6	7	•	•			•
620-40069-7	620-40069-8	8	•	•			•

<sup>1)</sup> thread M12x1

**Order numbers VSL**

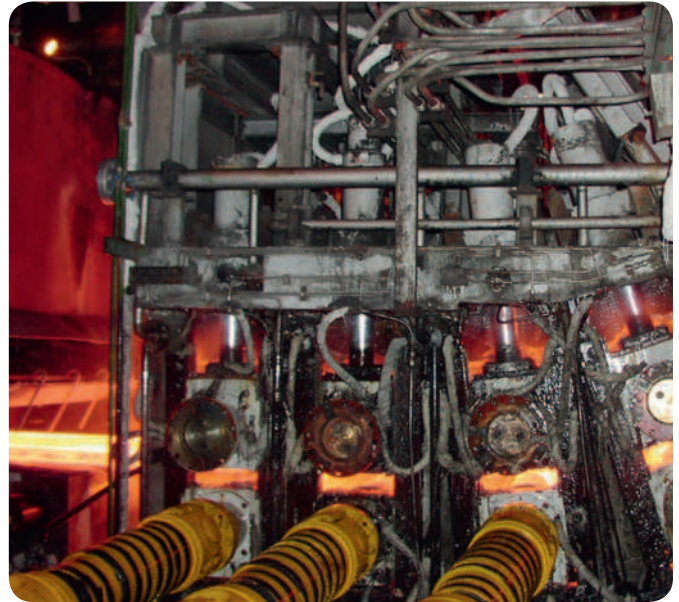
Connection thread BSPB	NPTF	Outlets	Material Carbon steel galvanized	Indication and monitoring Indicator pin; fixed output; metering screw KD <sup>1)</sup>	Metering screw D <sup>1)</sup>
620-40065-1	620-40065-2	1	•	•	
620-40065-3	620-40065-4	2	•	•	
620-40065-5	620-40065-6	3	•	•	
620-40065-7	620-40066-8	4	•	•	
620-40066-1	620-40066-2	5	•	•	
620-40066-3	620-40066-4	6	•	•	
620-40066-5	620-40066-6	7	•	•	
620-40066-7	620-40066-8	8	•	•	
620-40063-1	620-40063-2	1	•		•
620-40063-3	620-40063-4	2	•		•
620-40063-5	620-40063-6	3	•		•
620-40063-7	620-40063-8	4	•		•
620-40067-1	620-40067-2	5	•		•
620-40067-3	620-40067-4	6	•		•
620-40067-5	620-40067-6	7	•		•
620-40067-7	620-40067-8	8	•		•

<sup>1)</sup> also available: 1,25; 2,5; 3,75 cm<sup>3</sup>, 0,07, 0,15, 0,228 in<sup>3</sup>

## Metering device

### VS metering devices with magnetic indicator

Grease



#### Product description

Suitable for dual-line lubrication systems, the MD magnetic indicator device is available with VSKH, VSKV, VSG and VSL metering devices. The movement of the indicator pin is conveyed without contact by a strong magnet to the outer control ring sleeve. Coated with a bright color, the control ring is visible, even in low-light conditions.

The output of the dual-line metering device can be adjusted by using metering screws, which are available in various sizes.

#### Features and benefits

- Solid-block construction for durability and error-free exchange
- No rubber seals – suitable for use with high back pressures
- Operates effectively in a wide range of temperatures
- Easy to monitor
- Leakage-free design

#### Applications

- Continuous casters
- Rolling mills

#### Technical data

Function principle	metering devices
Outlets	2–8
Operating temperature	max. +120 °C, +248 °F
Lubricant	grease up to NLGI 3 oil with a viscosity of min 20 mm <sup>2</sup> /s
Operating pressure	max. 400 bar, 5 800 psi
Materials	steel galvanized or stainless steel
Metering quantity	VSL: 1,25; 2,50; 3,75; 5,0 cm <sup>3</sup> , 0,076; 0,15; 0,23; 0,31 in <sup>3</sup> VSG: 0,55; 1,10; 1,65; 2,20 cm <sup>3</sup> , 0,033; 0,067; 0,01; 0,13 in <sup>3</sup> VSKH, VSKV: 0,3; 0,6; 1,2; 1,5 cm <sup>3</sup> 0,018; 0,037; 0,073 and 0,092 in <sup>3</sup>
Main line connection inlet	VSL, VSG: G 3/8, 3/8 NPTF VSKH, VSKV: G 1/4, 1/4 NPTF
Outlet connection	G 1/4, 1/4 NPTF
Dimensions	depending on the model: min. 122 x 44,5 x 54 mm max. 140 x 140 x 57 mm min. 4.86 x 1.78 x 2.16 in max. 5.6 x 5.6 x 2.28 in

#### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on SKF.com/lubrication:  
**PUB 12EN-18003-A07**



## Metering device

### VS metering devices with magnetic indicator

#### VSKH-MD.. , with connection thread BSPP

Order number	Outlets	Material Metering device	Regulating sleeve	Protection cap	Metering quantity <sup>1)</sup>	
					cm <sup>3</sup>	in <sup>3</sup>
620-41086-1	2	steel, galvanized	brass	brass	1,50	0,09
620-41122-1	2	steel, galvanized	brass	plastic	1,50	0,09
620-41086-5	3	steel, galvanized	brass	brass	1,50	0,09
620-41086-2	4	steel, galvanized	brass	brass	1,50	0,09
620-41122-2	4	steel, galvanized	brass	plastic	1,50	0,09
620-41086-6	5	steel, galvanized	brass	brass	1,50	0,09
620-41086-3	6	steel, galvanized	brass	brass	1,50	0,09
620-41122-3	6	steel, galvanized	brass	plastic	1,50	0,09
620-41086-7	7	steel, galvanized	brass	brass	1,50	0,09
620-41086-4	8	steel, galvanized	brass	brass	1,50	0,09
620-41122-4	8	steel, galvanized	brass	plastic	1,50	0,09

#### VSKV-MD.. , with connection thread BSPP

Order number	Outlets	Material Metering device	Regulating sleeve	Protection cap	Metering quantity <sup>1)</sup>	
					cm <sup>3</sup>	in <sup>3</sup>
620-41123-2	2	steel, galvanized	brass	plastic	1,50	0,09
620-41089-2	2	steel, galvanized	brass	brass	1,50	0,09
620-41123-4	4	steel, galvanized	brass	plastic	1,50	0,09
620-41089-4	4	steel, galvanized	brass	brass	1,50	0,09
620-41123-6	6	steel, galvanized	brass	plastic	1,50	0,09
620-41089-6	6	steel, galvanized	brass	brass	1,50	0,09
620-41123-8	8	steel, galvanized	brass	plastic	1,50	0,09
620-41089-8	8	steel, galvanized	brass	brass	1,50	0,09

#### VSG-MD.. , with connection thread BSPP

Order number	Outlets	Material Metering device	Regulating sleeve	Protection cap	Metering quantity <sup>1)</sup>	
					cm <sup>3</sup>	in <sup>3</sup>
620-41081-7	1	steel, galvanized	brass	brass	2,20	0,13
620-41124-1	1	steel, galvanized	brass	plastic	2,20	0,13
620-41081-4	2	steel, galvanized	brass	brass	2,20	0,13
620-41124-2	2	steel, galvanized	brass	plastic	2,20	0,13
620-41124-3	3	steel, galvanized	brass	plastic	2,20	0,13
620-41081-8	3	steel, galvanized	brass	brass	2,20	0,13
620-41081-5	4	steel, galvanized	brass	brass	2,20	0,13
620-41124-4	4	steel, galvanized	brass	plastic	2,20	0,13
620-41081-6	6	steel, galvanized	brass	brass	2,20	0,13
620-41124-6	6	steel, galvanized	brass	plastic	2,20	0,13
620-41081-1	8	steel, galvanized	brass	brass	2,20	0,13
620-41133-1	1	stainless steel, 1.4571	stainless steel, 1.4571	stainless steel, 1.4571	2,20	0,13
620-41133-9	2	stainless steel, 1.4571	stainless steel, 1.4571	stainless steel, 1.4571	2,20	0,13
620-41133-3	3	stainless steel, 1.4571	stainless steel, 1.4571	stainless steel, 1.4571	2,20	0,13
620-41133-5	4	stainless steel, 1.4571	stainless steel, 1.4571	stainless steel, 1.4571	2,20	0,13
620-41133-7	6	stainless steel, 1.4571	stainless steel, 1.4571	stainless steel, 1.4571	2,20	0,13
620-41124-7	7	steel, galvanized	brass	plastic	2,20	0,13
620-41081-2	7	steel, galvanized	brass	brass	2,20	0,13
620-41124-8	8	steel, galvanized	brass	plastic	2,20	0,13
620-41081-1	8	steel, galvanized	brass	brass	2,20	0,13

<sup>1)</sup> other quantities on request

## Metering device

### VS metering devices with magnetic indicator

#### VSL-MD.. , with connection thread BSPP

Order number	Outlets	Material Metering device	Regulating sleeve	Protection cap	Metering quantity <sup>1)</sup>	
					cm <sup>3</sup>	in <sup>3</sup>
VSL-..						
620-41125-1	1	steel, galvanized	brass	plastic	5,00	0.30
620-41079-6	1	steel, galvanized	brass	brass	5,00	0.30
620-41079-2	2	steel, galvanized	brass	brass	5,00	0.30
620-41125-2	2	steel, galvanized	brass	plastic	5,00	0.30
620-41125-3	3	steel, galvanized	brass	plastic	5,00	0.30
620-41079-7	3	steel, galvanized	brass	brass	5,00	0.30
620-41079-4	4	steel, galvanized	brass	brass	5,00	0.30
620-41125-4	4	steel, galvanized	brass	plastic	5,00	0.30
620-41125-5	5	steel, galvanized	brass	plastic	5,00	0.30
620-41079-8	5	steel, galvanized	brass	brass	5,00	0.30
620-41079-5	6	steel, galvanized	brass	brass	5,00	0.30
620-41125-6	6	steel, galvanized	brass	plastic	5,00	0.30
620-41125-7	7	steel, galvanized	brass	plastic	5,00	0.30
620-41079-9	7	steel, galvanized	brass	brass	5,00	0.30
620-41079-3	8	steel, galvanized	brass	brass	5,00	0.30
620-41125-8	8	steel, galvanized	brass	plastic	5,00	0.30

<sup>1)</sup> other quantities on request

## Accessories

### VS magnetic indicator

520-33075-1



#### Magnetic indicator for VSKH/VSKV

##### Order number

Protection cap material		Output setting	
Brass	Plastic	cm <sup>3</sup>	in <sup>3</sup>
520-33109-1	520-33266-1	0,30	0.018
520-33110-1	520-33267-1	0,60	0.037
520-33112-1	520-33268-1	1,20	0.073
520-33075-1	520-33269-1	1,50	0.091

520-33277-1

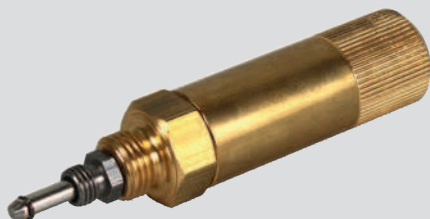


#### Magnetic indicator for VSL

##### Order number

Protection cap material		Metering quantity	
Brass	Plastic	cm <sup>3</sup>	in <sup>3</sup>
520-33103-1	520-33274-1	A 1,25	0.076
520-33104-1	520-33275-1	B 2,50	0.15
520-33108-1	520-33276-1	C 3,75	0.23
520-33074-1	520-33277-1	D 5,00	0.30

520-33073-1



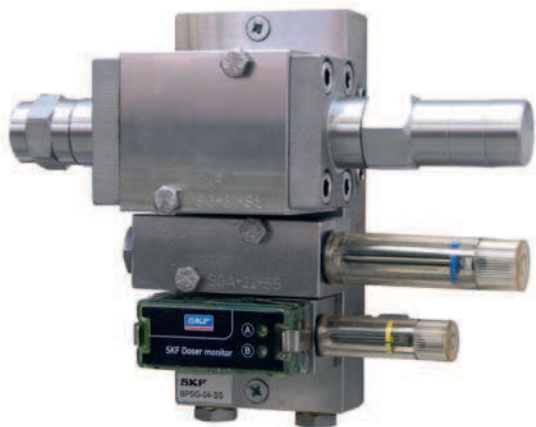
#### Magnetic indicator for VSG

##### Order number

Protection cap material		Metering quantity	
Brass	Plastic	cm <sup>3</sup>	in <sup>3</sup>
520-33105-1	520-33270-1	0,55	0.033
520-33106-1	520-33271-1	1,10	0.043
520-33107-1	520-33272-1	1,65	0.065
520-33073-1	520-33273-1	2,20	0.087

## Metering device

### SGA and SG



#### Product description

Designed for use in dual-line lubrication systems, SGA and SG metering devices feature a modular design with separate base plate that makes system modification simple. Made of zinc-coated carbon steel or stainless steel, these metering devices are installed on aluminium or stainless steel BPSG base plates. Available in six basic sizes, the SGA and SG metering devices meet industrial needs ranging from small joints to large roller bearings.

#### Features and benefits

- Versatile and durable
- Modular units provide easy system modification and maintenance without costly piping work
- Manufactured from zinc-coated carbon steel or stainless steel AISI-316 L to resist corrosion
- Suitable for lubricants up to NLGI 2

#### Applications

- Paper industry
- Steel Industry
- Heavy industry

#### Technical data

Function principle	metering devices
Outlets	1–12
Operating temperature	–25 to +80 °C, –13 to +176 °F
Lubricant	oil and greases NLGI 000–2
Operating pressure	SGA 01: max. 250 bar, 3 625 psi SG/SGA 1–5: max. 300 bar, 4 350 psi
Material	carbon steel galvanized or stainless steel
Metering quantity	depending on outlet, 0,15–196 cm <sup>3</sup> , 0,009–12 in <sup>3</sup>
Outlet connection	BSPP and NPTF
Dimensions	min. 73 x 30 x 30 mm max. 307 x 62 x 60 mm min. 2.87 x 1.18 x 1.18 in max. 12.08 x 2.44 x 2.36 in

#### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on [SKF.com/lubrication](http://SKF.com/lubrication):  
**PUB LS/P8 11277 EN**

## Metering device

### SGA and SG

#### Order number SGA and SG

Order number	Designation	Output		Outlets	Material		
		cm <sup>3</sup> /cycle	in <sup>3</sup> /cycle		Carbon steel galvanized	Stainless steel	Without mechanical indicator
12387460	SGA-011-ZN	0,30–1,6	0.02–0.10	1	•		
12387510	SGA-012-ZN	0,15–0,77	0.009–0.05	2	•		
12387560	SGA-11-ZN	0,60–2,80	0.04–0.18	1	•		
12387610	SGA-12-ZN	0,25–1,40	0.02–0.09	2	•		
12387660	SGA-21-ZN	1,5–9,7	0.09–0.6	1	•		
12387710	SGA-22-ZN	0,8–4,8	0.05–0.32	2	•		
12388110	SG-31-ZN <sup>1)</sup>	9,4–62	0.6–3.8	1	•		
12388160	SG-32-ZN <sup>1)</sup>	9,4–62	0.6–3.8	2	•		
12386560	SGA-011-SS	0,30–1,6	0.02–0.10	1		•	
12386610	SGA-012-SS	0,15–0,77	0.009–0.05	2		•	
12386660	SGA-11-SS	0,60–2,80	0.04–0.18	1		•	
12386710	SGA-12-SS	0,25–1,40	0.02–0.09	2		•	
12386760	SGA-21-SS	1,5–9,7	0.09–0.6	1		•	
12386810	SGA-22-SS	0,8–4,8	0.05–0.3	2		•	
12387525	SGA-011-ZN-NI	0,30–1,6	0.02–0.10	1		•	•
12387530	SGA-012-ZN-NI	0,15–0,77	0.009–0.05	2		•	•
12387625	SGA-11-ZN-NI	0,60–2,80	0.04–0.18	1		•	•
12387630	SGA-12-ZN-NI	0,25–1,40	0.02–0.09	2		•	•
12387680	SGA-21-ZN-NI	1,5–9,7	0.09–0.6	1		•	•
12387685	SGA-22-ZN-NI	0,8–4,8	0.05–0.3	2		•	•
12387160	SG-31-SS <sup>1)</sup>	9,4–62	0.6–3.8	1		•	
12387210	SG-32-SS <sup>1)</sup>	4,7–31	0.3–1.9	2		•	
12387260	SG-41-SS <sup>1)</sup>	21–102	1.3–6.2	1		•	
12387310	SG-42-SS <sup>1)</sup>	10,7–51	0.6–3.0	2		•	
12387360	SG-51-SS <sup>1)</sup>	95–196	5.8–12	1		•	
12387410	SG-52-SS <sup>1)</sup>	47–97	2.9–6.0	2		•	

<sup>1)</sup> takes two places on base plate

Grease

## Accessories

### BPSG

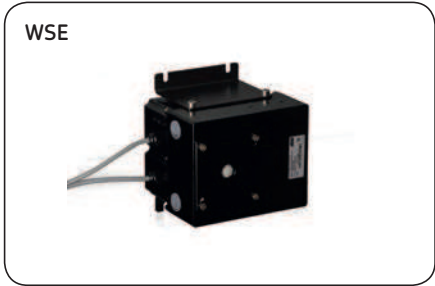
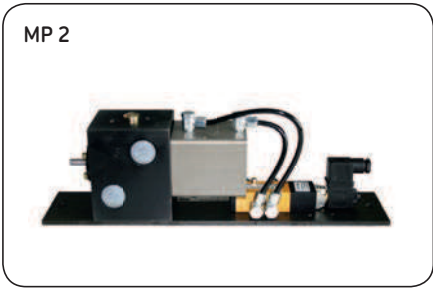
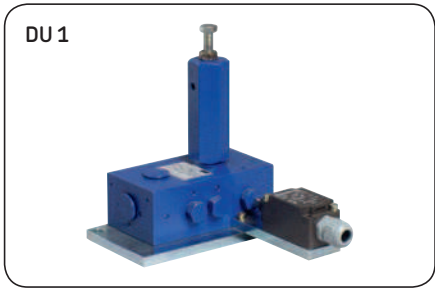
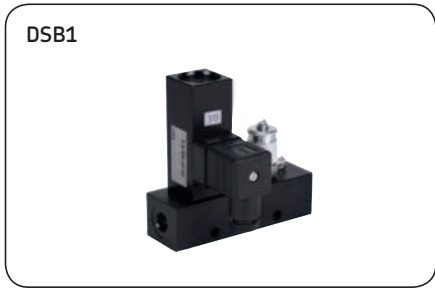
#### Order number BPSG Base plate

Order number	Designation	Dimensions		Material		Connections	
		Bore distance	Base plate	Base plate: anodized aluminium	Mounting rail: stainless steel	NPTF	R-female threads
12383250	BPSG-01-AL-U	2 1/8	2 3/4	•		•	
12383300	BPSG-02-AL-U	3 3/8	4	•		•	
12383350	BPSG-03-AL-U	4 10/16	5 9/32	•		•	
12383400	BPSG-04-AL-U	5 29/32	6 17/32	•		•	
12383450	BPSG-05-AL-U	7 5/32	7 25/32	•		•	
12383500	BPSG-06-AL-U	8 7/16	9 1/16	•		•	
12384300	BPSG-01-SS-U	2 1/8	2 3/4		•	•	
12384350	BPSG-02-SS-U	3 3/8	4		•	•	
12384400	BPSG-03-SS-U	4 10/16	5 9/32		•	•	
12384450	BPSG-04-SS-U	5 29/32	6 17/32		•	•	
12384500	BPSG-05-SS-U	7 5/32	7 25/32		•	•	
12384550	BPSG-06-SS-U	8 7/16	9 1/16		•	•	
12383250	BPSG-01-AL	48	60	•			•
12383300	BPSG-02-AL	78	92	•			•
12383350	BPSG-03-AL	110	124	•			•
12383400	BPSG-04-AL	142	156	•			•
12383450	BPSG-05-AL	174	188	•			•
12383500	BPSG-06-AL	206	220	•			•
12384300	BPSG-01-SS	54	70		•		•
12384350	BPSG-02-SS	86	102		•		•
12384400	BPSG-03-SS	448	134		•		•
12384450	BPSG-04-SS	150	166		•		•
12384500	BPSG-05-SS	182	198		•		•
12384550	BPSG-06-SS	214	230		•		•

Grease



# Dual-line lubrication systems



Accessories

# Monitoring devices





# Overview of monitoring devices

## Monitoring devices

Product	Function type	Operation pressure max.		Electrical connection		Page
		bar	psi	V DC	V AC	
<b>DSB 1</b>	Mechanical pressure switch	300	4 350	36	30	50

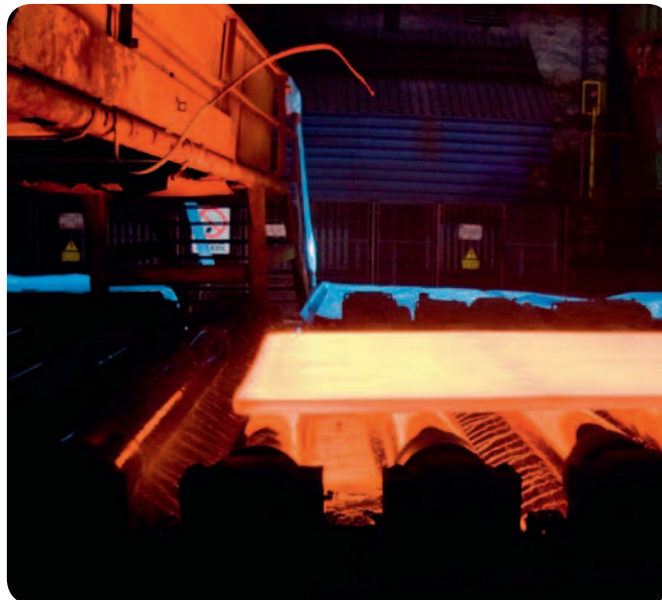
## Change-over valves

Product	Function type	Operation pressure max.		Electrical connection		Page
		bar	psi	V DC	V AC	
<b>DU 1</b>	Change-over valves, pressure operated	350	5 075			52
<b>MP 2</b>	Change-over valves, pneumatic	400	5 800	24, 110	110, 230	53
<b>EMU 3</b>	Change-over valves, electric	400	5 800	24	230	54
<b>WSE</b>	Way valves, electric	400	5 800	24	230	55

## End-of-line pressure unit

Product	Function type	Operation pressure max.		Electrical connection		Page
		bar	psi	V DC	V AC	
<b>EDW end-of-line pressure unit</b>	Electric pressure switch	600	8 700			56
<b>DW</b>	Electric pressure switch	175/400	2 465/5 800	24		57
<b>BPSG PTA-MOD</b>	Electric pressure transmitter for SGA systems	250	3 600	24		58
<b>DDS 50/1</b>	Differential pressure switch	400	5 800	24	400/500	59
<b>DPC 1</b>	End-of-line pressure switch unit	400	5 800	24		60

## DSB 1 pressure switch



### Product description

Product series DSB consists of mechanical-piston pressure switches designed for use with NLGI Grade 1-2 greases. The location of the actuating piston inside the pressure switch housing helps to ensure a continuous exchange of grease around the measuring point. This reliably prevents the same grease from being pressurized repeatedly, which could cause lubricant soap and oil separation, also known as grease bleeding.

Based on the application, the pressure switch can be configured as a single or double design and with or without a measurement connector or pressure gauge. The pressure switch generally is installed upstream of the last lubricant distributor.

### Features and benefits

- Available in pre-adjusted versions ranging from 20 to 300 bar (290 to 4 350 psi)
- Prevents oil separation-related faults
- Reliable micro-switch technology with change-over contact (NO and NC)
- Includes built-in manifold for continuous lubricant flow without dead volume
- IP 65 protection rating, corrosivity category C3 or C5M

### Applications

- General industry
- Machine tools
- Printing machines
- Steel industry
- Wind industry
- Mining industry
- Heavy industry

### Technical data

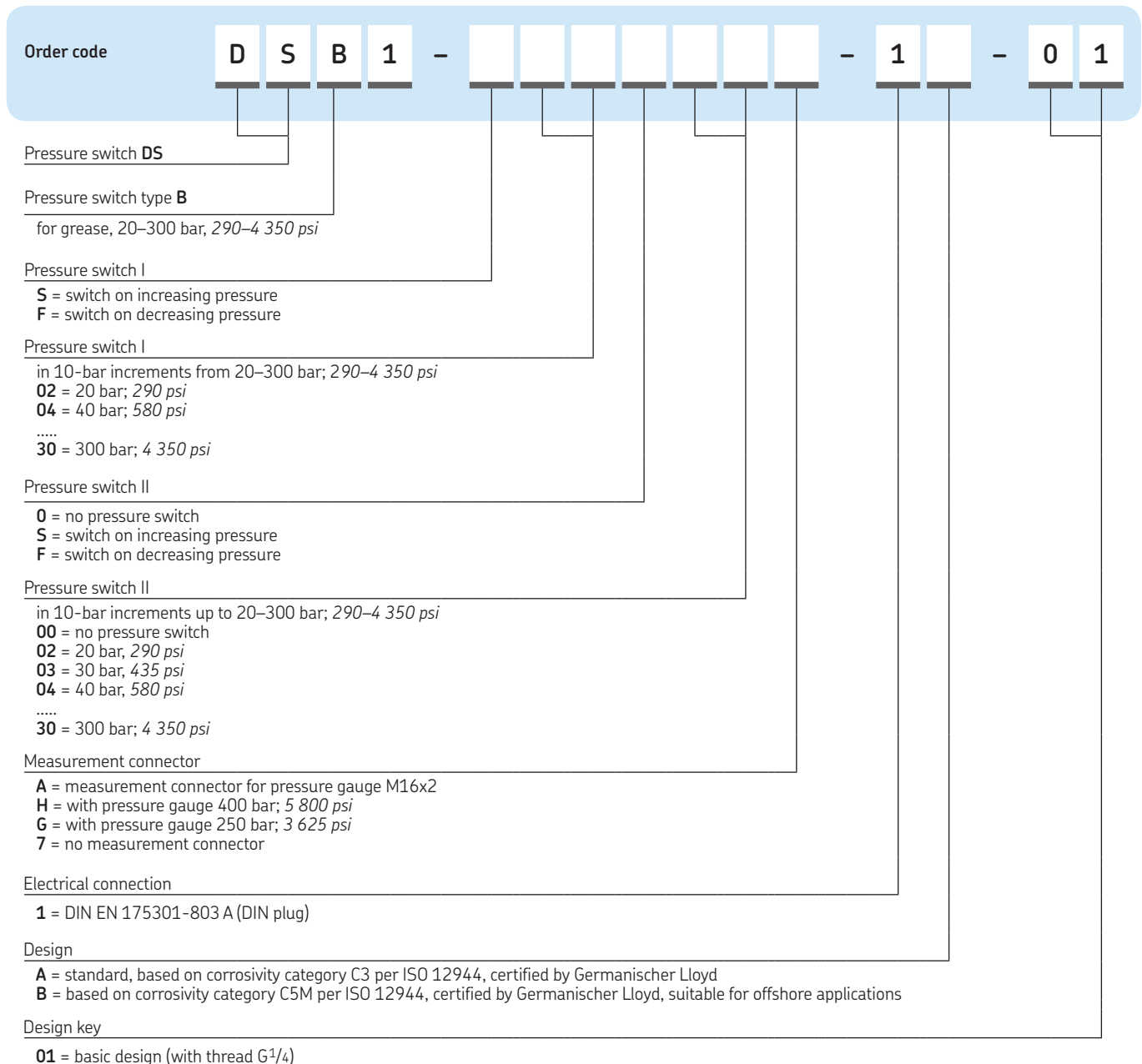
Function principle	mechanical piston pressure switch
Operating temperature	-25 to +80 °C, -13 to +132 °F
Operating pressure	max. 300 bar, 4 350 psi
Lubricant	oil and grease NLGI 1 and 2
Breaking capacity, ohm load	max. 1,2 VA
Operating voltage	max. 30 V AC/36 V DC
Operating current	min. 1 mA, max. 50 mA
Type of contact	change-over
Connection method	clamps
Mechanical service life	10 <sup>9</sup> switching cycles
Housing material	aluminium, anodized
Contact material	silver alloy, hard gold plating
Connector socket 3+PE	DIN EN 175 301-803 A
Connection	G 1/4
Dimensions	60 x 76 x 105 mm 2.36 x 3 x 4.13 in
Protection class	IP 65
Mounting position	any
Certification	Germanischer Lloyd (GL) certification

### NOTE

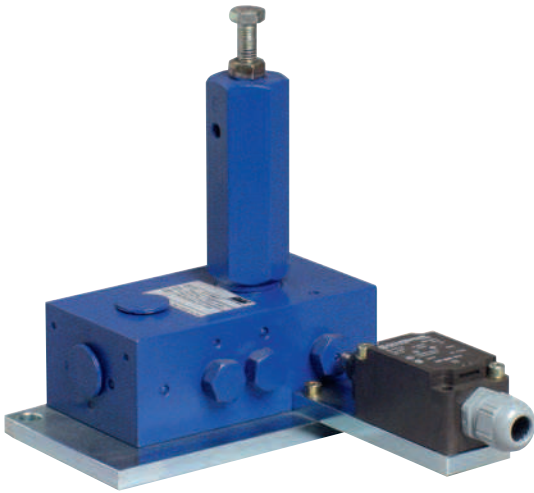
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on SKF.com/lubrication:  
**PUB LS/P2 1701 EN**

## Monitoring devices

### DSB 1 pressure switch



## DU 1 change-over valves



### Product description

Available in pneumatic, electric or hydraulic versions, DU 1 change-over valves are designed primarily for use in dual-line lubrication systems. These change-over valves alternately discharge lubricant, fed by the pump into one of the two main lines while the other line is connected to the return line connection of the pump. The switching pressure is adjustable.

### Features and benefits

- Reliable, even for hard grease
- Change-over process initiated automatically once preset pressure is reached
- Maximum operating pressure of 350 bar, 5 076 psi
- Various mounting positions
- Works effectively in temperatures ranging from -20 to +80 °C; -4 to +176 °F
- optional control switch

### Applications

- Ideal for small, electrically driven dual-line systems that requires minimal monitoring

### Technical data

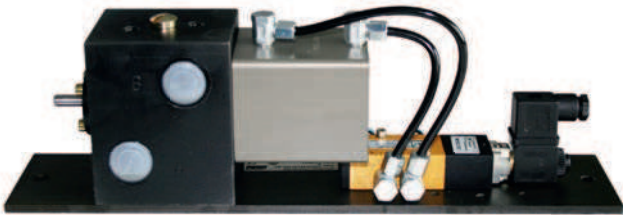
Function principle	change-over valve, hydraulic, pressure operated 4/2 way valves
Operating temperature	-20 to +80 °C -4 to +176 °F
Lubricant	grease up to NLGI 3, oil with a viscosity of min 20 mm <sup>2</sup> /s
Flow rate	14 dm <sup>3</sup> /h, 3.7 gal/h
Operating pressure	max. 350 bar, 5 075 psi
Change-over pressure	min. 140 bar, max. 350 bar, min. 2 030 psi, max. 5 075 psi
Main line connection	G 1/2 female BSPP
Electrical connection	max. 500 V, 25–60 Hz
Protection class	IP 67
Dimensions	depending on the model min. 195 x 190 x 100 mm max. 195 x 195 x 195 mm min. 7.8 x 7.8 x 4.0 in max. 7.8 x 7.8 x 7.8 in
Mounting position	any

### DU 1 Change-over valves mounted on a base plate

Order number	Designation	Description
617-28683-1	DU1-G	
617-28619-1	DU1-GK	with indicator pin
617-36148-9	DU1-GKN	with proximity switch
617-28620-1	DU1-GKS	with indicator pin and limit switch

## Monitoring devices

### MP 2 change-over valves



#### Product description

Designed for use in dual-line systems, the pneumatically operated MP 2 change-over valve works like a 4/2-way valve. It alternately discharges the lubricant fed by the pump into one of the main lines while the other main line is connected to the pump's return line connection.

#### Features and benefits

- Available in four voltages – 24 and 110 V DC, 110 and 220 V AC
- Can be used as a 3/2-way valve for grease systems
- Maximum operating pressure of 400 bar (5 800 psi)
- Works effectively in temperatures ranging from -20 to +70 °C (-4 °F to +158 °F)

#### Applications

- Particularly suitable in connection with pneumatically operated pumps like PowerMaster or Lubrigun
- Bottle filling machines in food and beverage plants
- For small, medium and large dual-line systems

#### Technical data

Function principle	change-over valve, air-operated 4/2 way valves
Operating temperature	-20 to +70 °C -4 to +158 °F
Lubricant	grease up to NLGI 3, oil with a viscosity of min 20 mm <sup>2</sup> /s
Flow rate	65 dm <sup>3</sup> /h, 17 gal/h
Operating pressure	max. 400 bar, 5 800 psi
Compressed air pressure	max. 10 bar, max. 145 psi
Operating hydraulic pressure	max. 60 bar, 870 psi
Main line connection	G 3/4 female BSPP
Voltage	24 or 110 V DC, 110 or 220 V AC
Protection class	IP 65
Dimensions	135 x 400 x 180 mm, 5.4 x 16 x 7.2 in
Mounting position	any

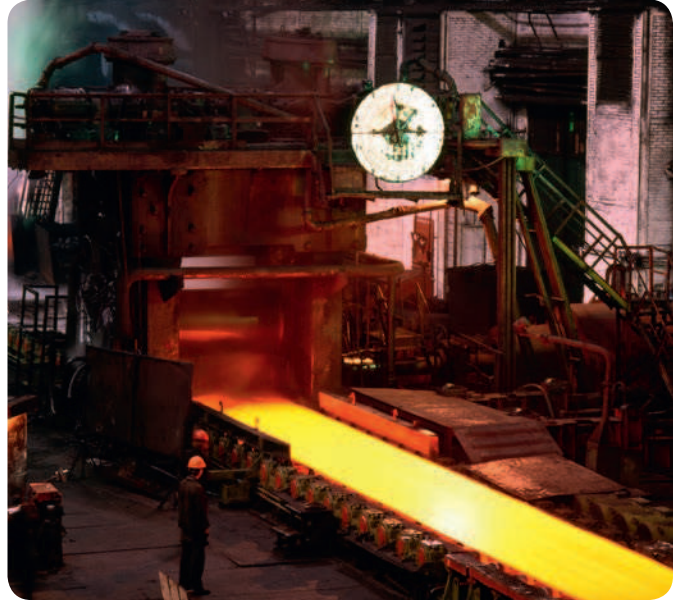
#### MP 2 Change-over valves

Order number	Designation	Voltage
618-28965-2	MP 2-24 V DC	24 V DC
618-28963-1	MP 2-110 V DC	110 V DC
618-28964-2	MP 2-110 V AC	110 V AC
618-28966-2	MP 2-220 V AC	220 V AC

#### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on SKF.com/lubrication: **PUB 13A-48001-B02**

# EMU 3 change-over valves



### Product description

The electrically operated EMU 3 change-over valve is designed for use with dual-line systems. It is particularly suitable for extended dual-line systems in combination with pneumatically operated supply pumps with large flow rates.

### Features and benefits

- Features mid position with option to relieve both main lines toward the pump reservoir during pause time
- System components are pressurized for shorter time periods and have a longer service life
- Risk of bleeding (soap and oil separation) is reduced
- Large connection thread and line distance allow larger tube diameters up to 30 mm ( $1\frac{1}{4}$  in)

### Applications

- Continuous casting machines in steel industry
- Bottle filling machines in food and beverage plants with a few thousand lubrication points
- Large bucket wheel excavators in mining and basic materials industry

### Technical data

Function principle . . . . . change-over valve, electrically operated 4/3 way valve  
 Operating temperature . . . . . -25 to +70 °C, -13 to +158 °F  
 Lubricant . . . . . grease up to NLGI 3  
 Flow rate . . . . . max. 400 l/h, 105 gal/h  
 Operating pressure . . . . . max. 400 bar, max. 5 800 psi  
 Main line connection . . . . . G 3/4 BSPP  
 Electrical connection . . . . . bayonet plug DIN 72585  
 Operating voltage . . . . . 24 V DC or 230 V AC  
 Protection class . . . . . IP 65  
 Dimensions . . . . . 220 x 238 x 180 mm  
 8.64 x 9.35 x 7.07 in  
 Mounting position . . . . . any



### NOTE

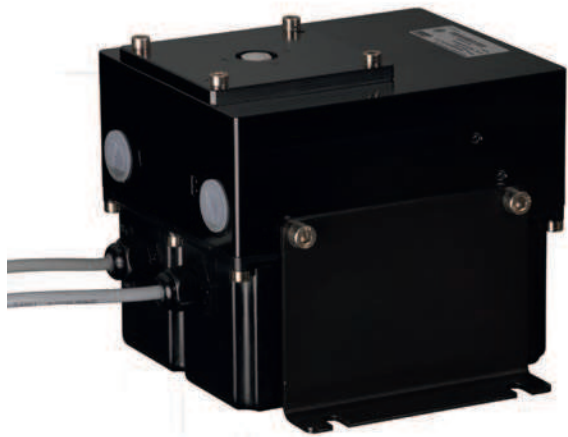
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on SKF.com/lubrication:  
**PUB 13633 EN and 951-171-001 EN**

### EMU 3

Order number	Designation	Voltage 24 V DC	230 V AC	Hydraulic connection ports
EMU-03-00-0000+924	EMU 3	•	•	no connection port closed
EMU-03-00-0000+1KF	EMU 3	•	•	no connection port closed

# Monitoring devices

## WSE way valve



### Product description

The factory-set closing of certain connection ports of the EMU 3 allows its use as a reliable and efficient shut-off or way valve. In this case, the “M” position cannot be used. The designation for these way valves is WSE.

### Features and benefits

- Functions reliably under harsh conditions due to an electrically operated piston slide valve
- Provides resistance against solid additives in greases
- Large connection thread and line distance allow larger tube diameters up to 30 mm (1¼ in)

### Applications

- Continuous casting machines in steel industry
- Bottle-filling machines in food and beverage plants with a few thousand lubrication points
- Large bucket wheel excavators in mining and basic materials industry

### Technical data

Function principle	change-over valve, electrically operated 4/3 way valve
Operating temperature	–25 to +70 °C, –13 to +158 °F
Lubricant	grease up to NLGI 3
Flow rate	max. 400 l/h, 105 gal/h
Operating pressure	max. 400 bar, max. 5 800 psi
Main line connection	G ¾ BSPP
Electrical connection	bayonet plug DIN 72585
Operating voltage	24 V DC or 230 V AC
Protection class	IP 65
Dimensions	220 x 238 x 180 mm 8.64 x 9.35 x 7.07 in
Mounting position	any



### NOTE

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

**PUB 13633 EN and 951-171-001 EN**

### WSE way valve

Order number	Designation	Voltage 24 V DC	230 V AC	Hydraulic connection ports
WSE-22-66-0000+924	WS-E 2/2 way valve	•		connection ports B and R closed
WSE-22-66-0000+1KF	WS-E 2/2 way valve		•	connection ports B and R closed
WSE-32-06-0000+924	WS-E 3/2 way valve	•		connection port R closed
WSE-32-06-0000+1KF	WS-E 3/2 way valve		•	connection port R closed
WSE-32-60-0000+924	WS-E 3/2 way valve	•		connection port B closed
WSE-32-60-0000+1KF	WS-E 3/2 way valve		•	connection port B closed

## EDW end-of-line pressure unit



### Product description

EDW End-of-line pressure switches are key components in a dual-line lubrication system. Designed to monitor the system, these switches detect the pressure at the end of the respective main line and start the change-over procedure. If the pressure at the end of the line is not reached within a specific period of time, a fault signal will be generated at the electronic control unit.

### Features and benefits

- Controls proper functioning of the pump and change-over unit
- Monitors for leaks in the tube line system
- Available with limit switches or with electronic pressure switches with LED display
- Proven, rigid design for tough conditions

### Applications

- Large dual-line systems
- Steel mills
- Cement plants
- Mining

### Technical data

Function principle	electronic pressure switch with 4-digit 7-segment LED display
Operating temperature	-25 to +85 °C -13 to +185 °F
Operating pressure	0–600 bar, 0–8 700 psi
Main line connection	G 1/4 male
Electrical connections	4 pin plug, M 12 x 1
Voltage	18–36 V DC
Dimensions	150 x 250 x 60 mm 5.9 x 9.9 x 2.4 in
Protection class	IP 67
Mounting position	any

### End-of-line pressure unit

Order number	Designation
632-36501-1	with limit switches and pressure gauges
632-36627-3	with electronic pressure switches with LED display



### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on [SKF.com/lubrication](http://SKF.com/lubrication):  
**PUB 95A-50005-C05**



## Monitoring devices

### DW electric pressure switch



#### Product description

Electric pressure switches are used to monitor the operating pressure of the pump. They are installed at the pressure outlet of the pump and will switch off the pump if an overpressure occurs downstream in the system.

#### Features and benefits

- Protects the system from damage caused by overpressure
- All parameters can be set by keypad
- Adjustable keypad lock
- Rugged construction, vibration and shock-proof
- Long-term stability

#### Applications

- Dual-line systems in general

#### Technical data

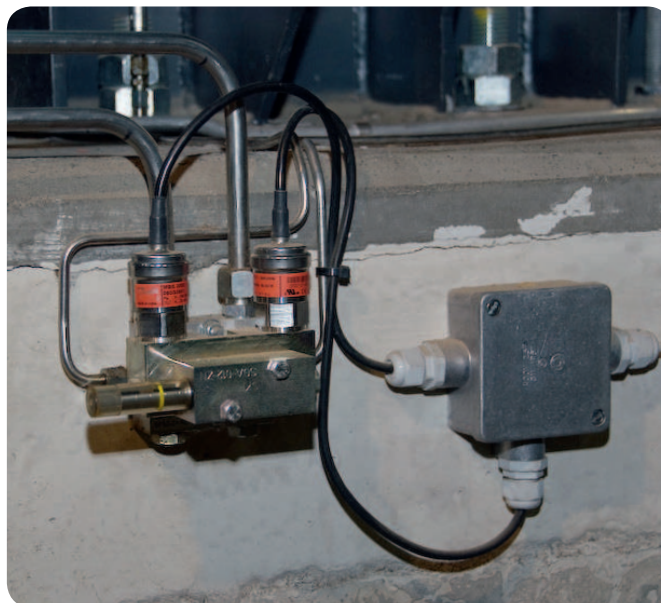
Function principle	electric pressure switch with digital display
Operating temperature	-25 to +85 °C, +13 to +185 °F
Operating pressure	0-600 bar, 0-8 700 psi
Input data	measuring range: 0-600 bar; 0-8 700 psi overload pressure: 750 bar; 10 870 psi burst pressure: 800 bar; 11 600 psi
Output data	accuracy >=0,5% full scale
Analog output	signal 4-20 mA
Switching output	type PNP transistor output switching current max. 0,5 A
Supply voltage	18-36 V DC
Hydraulic connection	G 1/4
Protection class	IP 67
Dimensions	94 x 34 x 49 mm 3.7 x 1.34 x 1.93 in
Mounting position	any

#### Electric pressure switch

Order number	Designation
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<b>623-37567-1</b>	transducer kit for 40 and 100 l, 10 and 26 gal, reservoir versions, includes electronic pressure switch with digital display
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## BPSG PTA-MOD pressure transmitter



### Product description

The BPSG2-PTA-MOD pressure transmitter assembly features a modular design for easy installation and service. Located between the base plate and metering device, the assembly's pressure transmitters measure the pressure of passing lubricant and notify the control unit. The pressure of the main lines also can be monitored from the control unit.

### Features and benefits

- Simple to install; no extra parts required
- Suitable for oils and greases up to NLGI Grade 2
- Helps to ensure that fresh lubricant flows through transmitters; no clogging
- Operates effectively in a wide range of temperatures
- IP 67 protection rating (for models with enclosure)

### Applications

- Paper industry
- Steel industry
- Heavy industry

### Technical data

Function principle . . . . .	monitoring device
Operating temperature . . . . .	-40 to +80 °C, -40 to +176 °F
Operating pressure . . . . .	0–250 bar, 0–3 600 psi
Materials . . . . .	metering device: carbon steel galvanized or stainless steel transmitter: stainless steel
Supply voltage . . . . .	24 (10-30) V DC
Output connection . . . . .	4 pole cable 20 mA, 2 wire cable
Protection class . . . . .	IP 67
Dimensions . . . . .	110 x 105 x 33 mm 4.33 x 4.13 x 1.29 in
Mounting position . . . . .	any

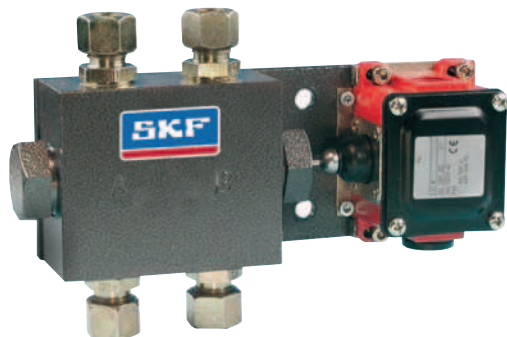
### BSPG

Order number	Designation	Material	
		Carbon steel zinc coated	Stainless steel
VGBD 12385333	BSPG2-PTA-MOD-D-ZN	•	
VGBD 12385331	BSPG2-PTA-MOD-D-SS		•

### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on SKF.com/lubrication:  
**PUB 11277 EN**

## DDS 50/1 differential pressure switch



### Product description

This differential pressure switch measures the difference in pressure between main feed lines 1 and 2. A signal is sent to the electrical control unit when a differential pressure of  $p = 50$  bar is reached. This non-adjustable differential pressure provides a high degree of functional reliability for dual-line systems. The DDS 50/1 pressure switch is installed upstream of the lubricant metering device.

### Features and benefits

- Provides fixed differential pressure; no regulating screws needed
- Reliable design for harsh environments
- Maintains system pressure on the lowest and most economical pressure level during summer and winter
- Reduces risk of grease bleeding (soap and oil separation)

### Applications

- Mining industry
- Steel industry
- Heavy industry

### Technical data

Function principle	..... differential pressure switch
Operating temperature	..... $-25$ to $+80$ °C, $-13$ to $+176$ °F
Operating pressure	..... max. 400 bar, max. 5 800 psi
Differential pressure	..... 50 bar, 725 psi
Electrical connection	..... 400 V AC
Nominal current	..... 10 A
Used contact	..... 2 closer
Connection method	..... clamps
Dimensions	..... min. 215 x 80 x 59 mm max. 221 x 80 x 59 mm min. 8.46 x 3.15 x 2.32 in max. 8.7 x 3.15 x 2.32 in
Protection class	..... IP 65
Mounting position	..... any

### DDS 50/1

Order number	Designation
24-2583-2498	DDS 50/1 (Ui 400 V AC)
24-2583-2563	DDS 50/1 (Ui 500 V AC)

### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on [SKF.com/lubrication](http://SKF.com/lubrication):  
**PUB LS/P2 1012-2 EN**

## Monitoring devices – End-of-line units

### DPC 1 dual pressure controller



#### Product description

The DPC 1 dual pressure controller was designed for dual-line lubrication systems that use a change-over valve controlled by an end-of-line pressure switch unit. The controller increases the energy efficiency of the system by matching the operating pressure to the ambient conditions. As a result, the pump motor only runs for as long as is required for pressure buildup. In the case of air-operated driven pumps, compressed air is conserved. The DPC 1 controller consists of a housing with integrated control electronics, an LCD and a membrane keypad. For the operation, there are two pressure sensors available, which will be installed in each main line.

#### Features and benefits

- Monitors proper function of system with regard to pump and change-over valve and detects tube line leaks
- Self-adjusting operating pressure increases service cycle of system components
- Integrated timer enables system operation without separate controller
- Measures the absolute min. and max. in the main lines
- Measures the differential pressure minimum and maximum
- IP 65 protection rating
- Shockproof for rigorous environments

#### Applications

- Paper mills
- Steel mills
- Heavy industry
- Beverage industry

#### Technical data

Function principle . . . . .	end-of-line-pressure switch unit
Operating temperature . . . . .	-25 to 70 °C -13 to +158 °F
Lubricant . . . . .	oil and grease
Operating or absolute pressure . . . . .	max. 400 bar, 5 800 psi
Differential pressure . . . . .	max. 400 bar, 5 800 psi
Monitoring time . . . . .	1 sec to 99 min 59 sec
Cycle . . . . .	1 min to 99 hh 59 min
Shock resistance . . . . .	20 g
Supply voltage . . . . .	24 V DC, ± 10%
Overload protection . . . . .	up to 40 V
EMC . . . . .	DIN EN 61000-6-2 and 61000-6-3
Reverse polarity protection . . . . .	integrated
Protection class . . . . .	IP 65
Dimensions without cable glands . . . . .	100 x 100 x 62 mm 3.9 x 3.9 x 2.4 in
Mounting position . . . . .	any

#### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on [SKF.com/lubrication](http://SKF.com/lubrication):  
**PUB 13597 EN**

## Monitoring devices – End-of-line units

### DPC 1 dual pressure controller

#### DPC 1

Order number	Designation
234-10723-3	end-of-line-pressure switch unit pressure sensor (two required for use with DPC 1)
234-10663-7	

#### DPC 1 accessories

Order number	Designation
236-10980-3	motor starter 1,0 A (e.g. for pump unit ZPU 02)
236-10980-4	motor starter 1,6 A (e.g. for pump unit ZPU 08)
236-10980-5	motor starter 4,0 A (e.g. for pump unit ZPU 24)

<sup>1)</sup> motor starters to operate electrically driven pumps without separate controller

# Dual-line lubrication systems

LMC 2



LMC 301



## Accessories

# Control units

ST 1240



ST 1440



# Overview of control units

## Product finder

Product	Function type	Designation	Voltage		Lubrication channels	Temperature		Page
			V DC	V AC		°C	°F	
<b>LMC 2</b>	Electronic controller	Programmable for all kind of lubrication systems: time- or cycle- dependent lubrication, with counter for chain links.	24	230	2	-10 to +70	+14 to +158	64
<b>LMC 301</b>	Lubrication monitor controller	Can handle up to 3 pumps and various types of lubrication systems. Function keys with menu display.	24	90-264 (47-63 Hz)	3	-40 to +70	-40 to +158	65
<b>ST-1240-Graph</b>	Lubrication control center	Can handle two channel, single-, dual-line and progressive lubrication systems. The lubrication channels can be zones, separated by shut-off valves, or complete lubrication systems with separate pumping centers and lubricants. Configuration can be set in the field by the alphanumeric touchscreen display. Pressure switches, pressure transmitters or piston detectors can be used in both channels.		93-132, 186-264	2	0 to +50	+32 to +122	66
<b>ST-1340</b>	Lubrication control center (modular)	It is modular and therefore could handle 1 to 4 channel, single-, dual-line and progressive lubrication systems. Configuration can be set with the user interface that includes alphanumeric keypad and display.		93-132, 186-264	1-4	0 to +60	+32 to +140	67
<b>ST-1440</b>	Lubrication control center (modular)	Similar to ST-1340 but could handle 1 to 14 channel, single-, dual-line and progressive lubrication systems.		93-132, 186-264	1-14	0 to +60	+32 to +140	67

## Control units

### LMC 2



#### Product description

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

#### Features and benefits

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

#### Applications

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

#### Technical data

Function principle . . . . . electronic controller  
 Operating temperature . . . . . -10 to +70 °C,  
 +14 to +158 °F  
 Inputs . . . . . max. 8 digital inputs  
 Outputs . . . . . 4 relay outputs, 1 electronic  
 Supply voltage . . . . . depending on model  
 230 V AC, 24 V DC  
 Protection class . . . . . IP 54  
 Mounting position . . . . . any  
 Dimensions . . . . . 200 x 120 x 90 mm  
 7.9 x 4.7 x 3.5 in

#### LMC2

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

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

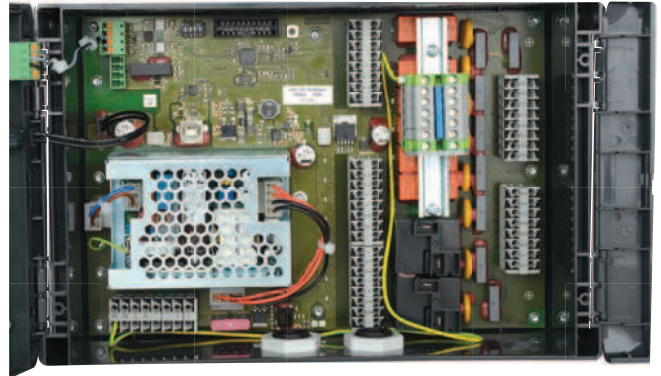
#### NOTE

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



## Control units

### LMC 301



#### Product description

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

#### Features and benefits

- Integrated, flexible lubrication programs
- Basic device with 10 digital inputs, of which two can be used analogously, and eight outputs
- Up to seven extension modules can be added, whereby each module has 10 E 8 A just like the basic device
- Three lubrication pumps can be controlled and monitored, each of which provides up to three lubrication circuits
- Single modules are connected by a bus interface

#### Applications

- Lincoln and SKF single-line, dual-line, multi-line and progressive systems
- Combination out of the three previously mentioned types of lubrication systems
- Cement industry
- Steel industry
- Mining – stationary and mobile excavators
- Food and beverage

#### Technical data

Function principle . . . . .	electronic controller
Operating temperature . . . . .	V AC: -10 to +50 °C, +14 to +122 °F V DC: -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 20 A
Supply Voltage. . . . .	depending on model 90-264 V AC, 24 V DC ±20%
Protection class . . . . .	IP 65
Mounting position . . . . .	vertical
Dimensions . . . . .	270 x 170 x 90 mm 10.7 x 6.7 x 3.5 in

#### LMC 301

Order number	Designation
86500	LMC301 DC
86501	LMC301 AC

#### NOTE

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

## Control units

# SKF ST-1240-GRAPH



Accessories

### Product description

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

### Features and benefits

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

### Technical data

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

### ST-1240-GRAPH

Order number	Designation
VGEV 12380210	ST-1240 GRAPH control centre



### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on SKF.com/lubrication:  
**PUB LS/P8 12404 EN**

## Control units

# SKF ST-1340 and ST-1440

ST-1440



### Product description

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

### Features and benefits

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

### Technical data

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

Accessories

### ST-1340 and ST-1440

Order number	Designation
VGEV 12380695	ST-1340 control center
VGEV 12501254	ST1440 / ST1340 channel module
VGEV 12380700	ST-1440 control center
VGEV 12501254	ST1440 / ST1340 channel module

### NOTE

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

**PUB LS/P8 13166 EN**

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