



# Single-line lubrication systems

Product catalogue



**LINCOLN**

# Lubrication systems catalogues

## Single-line lubrication systems

Dual-line lubrication systems

Progressive lubrication systems

Multi-line lubrication systems

**PUB LS/P1 17046 EN**

PUB LS/P1 16132 EN

PUB LS/P1 16964 EN

PUB LS/P1 17478 EN

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Oil and fluid grease

## Grease

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Grease

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# 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.*

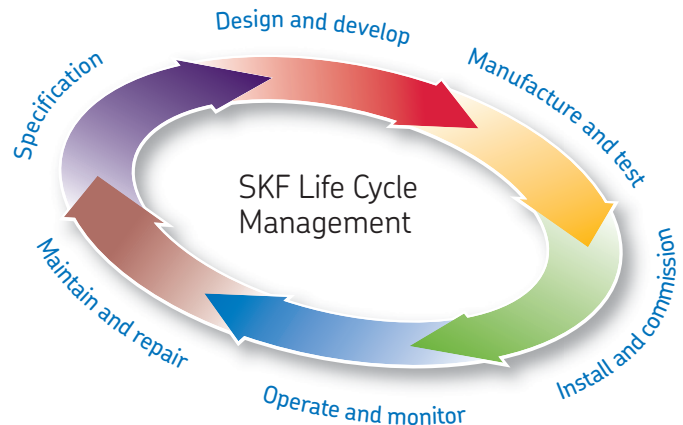


*Working with SKF IT and logistics systems and application experts, SKF Authorized Distributors deliver a valuable mix of product and application knowledge to customers worldwide.*



## 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.

### Innovative solutions

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

### Design optimization and verification

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



#### Bearings

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



#### Machinery maintenance

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



#### Sealing solutions

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



#### Mechatronics

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



#### Lubrication solutions

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



#### Actuation and motion control

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

## Two leading brands

Oil and fluid grease



Grease



## One global leader

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

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

Both SKF and Lincoln systems are available through our global network of lubrication experts, offering you world-class installation and ongoing support on a local level – today and into the future. With the power of this network, and more than 200 years of combined 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 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

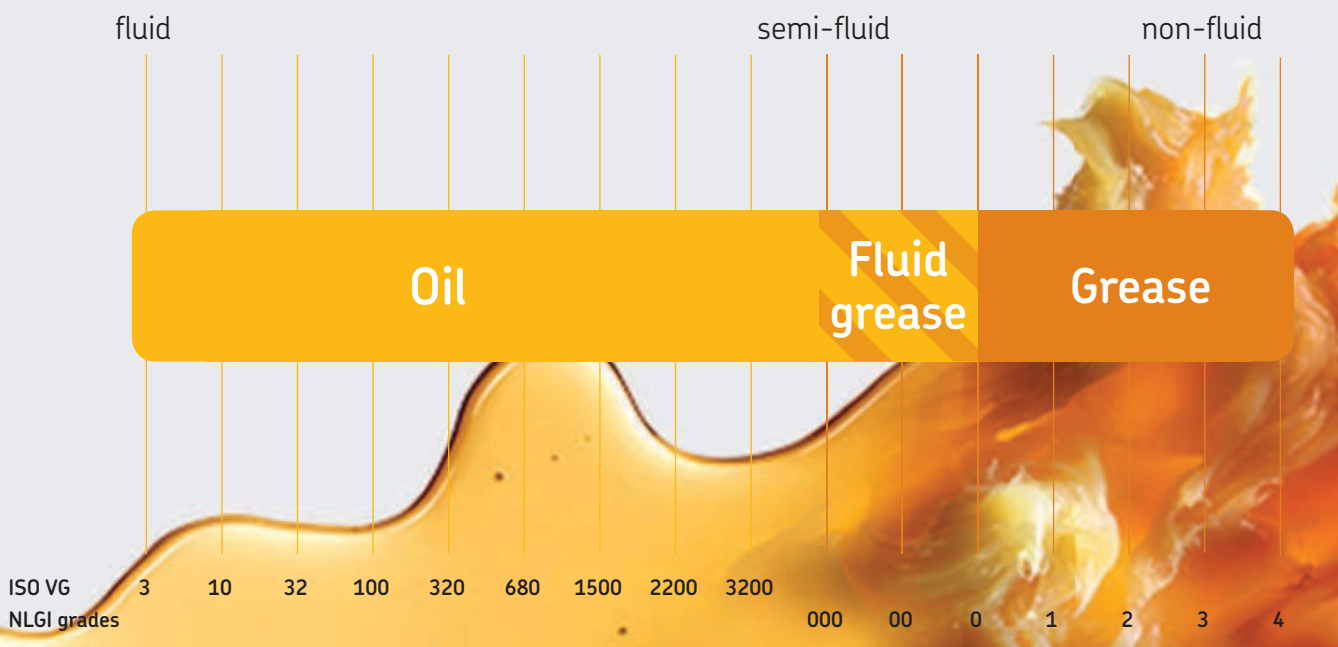
Greases are consistent lubricants (NLGI 1–6). They are soft to hard, triple-component mixtures of a base oil as the lubricating fluid, a thickening agent and additives.

In most instances, greases of NLGI 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.

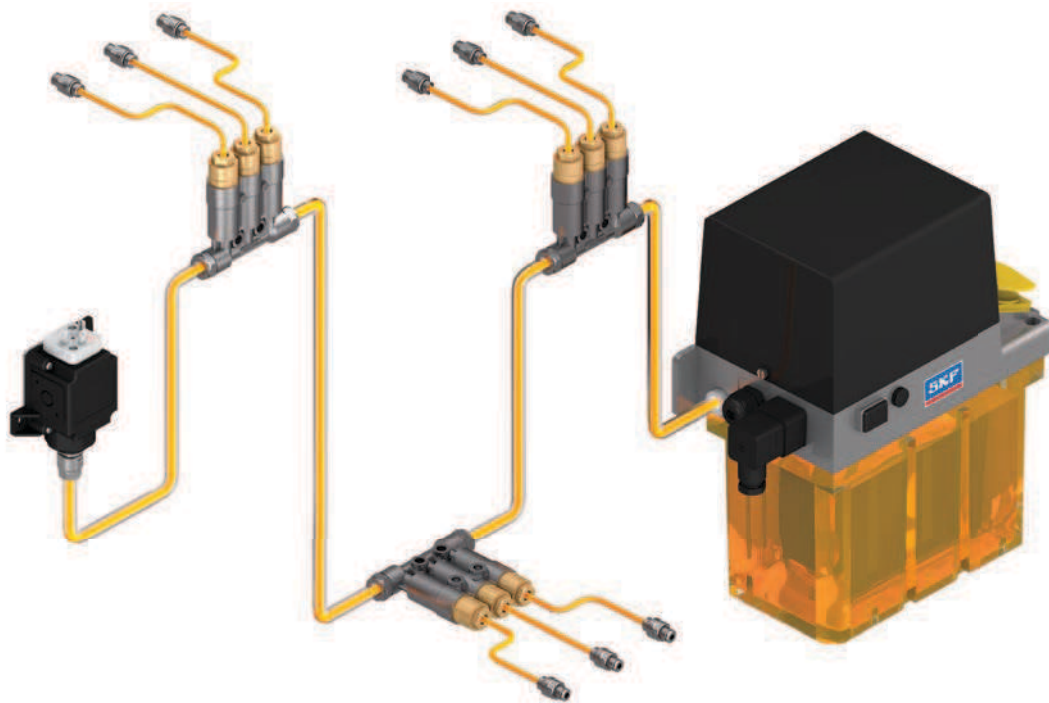
Oil and fluid grease

Grease

### Lubricants suitable for lubrication systems



# Single-line lubrication systems for oil and fluid grease



## System description

Regardless of the application, the principle of single-line lubrication remains the same: a central pump station automatically delivers lubricant through a single supply line to the lubricant metering device. Each metering device serves only one lubrication point and may be adjusted to deliver the precise amount of grease or oil required. Systems can service one machine, different zones on one machine or even several separate machines.

The SKF portfolio includes both SKF MonoFlex and Lincoln Centro-Matic system components including pumps, metering units, control and monitoring devices and accessories.

For planning a lubrication system, conditions the system will be used in need to be determined first.

The number of lubrication points, back pressures at the lubrication points, operating temperature range, lubricant, the feed pump's drive energy, control and monitoring etc. need to be defined correctly.

Attention to information on bearing or lubrication point information need to be paid too. The sum of all the quantities metered out by the system's metering devices needs to be completed by safety margin and expansion and compressibility loss. SKF application engineers, as well as SKF sales partners and distributors, are experts in laying out lubrication systems according to all these specifications. A lubrication system laid out by SKF and partners ensures the supply of the correct amount of lubricant at the best time to lubricate. This reduces wear and avoids pollution caused by over-lubrication.

### Advantages:

- Easy to understand, install and maintain
- Available in both preset and adjustable models
- Suitable for almost all lubricants
- Easy system expansion
- System continues to operate if one point becomes blocked
- Integrated system control and monitoring
- Able to pump long distances and within a wide temperature range

# System and applications



## Applications

In total loss lubrication systems, fresh lubricant is fed to friction points during a lubrication cycle. The lubrication cycle is set up so that friction points are supplied with enough lubricant to build up an adequate film of lubricant, reducing wear and tear on bearings and friction points. Monoflex and Centromatic systems are designed to allow for easy expansion and simple assembly.

Applications for single-line systems include small-to-medium machine tools, mobile on-road (fleet vehicles, on-road transport), and assembly/automation food packaging, part assembly lines and injection molding:

- Small-to-medium line length
- Small-to-medium quantities of lubricant per lubrication point
- Ease of expansion
- Linear layout of lubrication points
- Flexibility of lubricant distribution
- Easy monitoring of lubrication distribution



# Pumps and pump units

1812



POE/PFE



82885/83667



85438/40/41



P/PW/PF/  
PFW-289



POEP/PFEP



PPS30



82676/82570



85430/31/32/33



PEF/PEU



283167



1826



ECP



P653S (oil)



KFB/KFB-M



KFU



MKx



MFE



# Overview of oil and fluid grease pumps and pump units

## Manually operated pumps and pump units

| Product     | Lubricant<br>oil grease NLGI | Metering quantity       |                         | Operating pressure |       | Reservoir   |                  | Metering device | Page |
|-------------|------------------------------|-------------------------|-------------------------|--------------------|-------|-------------|------------------|-----------------|------|
|             |                              | cm <sup>3</sup> /stroke | in <sup>3</sup> /stroke | bar                | psi   | l           | gal              |                 |      |
| <b>1812</b> | • •                          | 2,6                     | 0.16                    | 69                 | 1 000 | 2,1         | 0.55             | 2, 3, 4         | 14   |
| <b>POE</b>  | • –                          | 15                      | 0.9                     | 30                 | 435   | 0,5; 1; 1,7 | 0.13; 0.26; 0.45 | 1, 2            | 15   |
| <b>PFE</b>  | – •                          | 15                      | 0.9                     | 30                 | 435   | 0,5; 1; 1,7 | 0.13; 0.26; 0.45 | 1, 2            | 16   |

<sup>1)</sup> Select the recommended fittings, adjust the pump pressure within the recommended metering device pressure range

## Air-operated pumps and pump units

| Product                             | Lubricant<br>oil grease NLGI<br>000/00 | Metering quantity       |                         | Operating pressure<br>max. |       | Reservoir   |                  | Metering device<br>category <sup>1)</sup> | Page |
|-------------------------------------|----------------------------------------|-------------------------|-------------------------|----------------------------|-------|-------------|------------------|-------------------------------------------|------|
|                                     |                                        | cm <sup>3</sup> /stroke | in <sup>3</sup> /stroke | bar                        | psi   | l           | gal              |                                           |      |
| <b>82885, 83667</b>                 | • •                                    | 7,4                     | 0.45                    | 69                         | 1 000 | 0,6; 2      | 0.16; 0.53       | 2, 3, 4                                   | 17   |
| <b>85438/40/41 <sup>2)</sup></b>    | • •                                    | 7,4                     | 0.45                    | 69                         | 1 000 | 0,6; 2      | 0.16; 0.53       | 2, 3, 4                                   | 18   |
| <b>P/PW/PF/PFW-289</b>              | • •                                    | 10                      | 0.61                    | 40                         | 580   | 1,5         | 0.39             | 1, 2, 3                                   | 19   |
| <b>POEP</b>                         | • –                                    | 15                      | 0.9                     | 60                         | 870   | 0,5; 1; 1,7 | 0.13; 0.26; 0.45 | 1, 2, 3, 4                                | 20   |
| <b>PPEP</b>                         | – •                                    | 15                      | 0.9                     | 60                         | 870   | 0,5; 1; 1,7 | 0.13; 0.26; 0.45 | 1, 2, 3, 4                                | 21   |
| <b>PPS30</b>                        | • •                                    | 30                      | 1.83                    | 27                         | 392   | 1,5         | 0.39             | 1, 2                                      | 22   |
| <b>82676</b>                        | • •                                    | 39,3                    | 2.39                    | 69                         | 1 000 | –           | –                | 4                                         | 24   |
| <b>82570</b>                        | • •                                    | 39,3                    | 2.39                    | 69                         | 1 000 | 2           | 0.53             | 4                                         | 25   |
| <b>85430/31/32/33 <sup>2)</sup></b> | • •                                    | 39,3                    | 2.39                    | 69                         | 1 000 | 0,0; 2      | 0.0; 0.53        | 4                                         | 26   |
| <b>PEF/PEU</b>                      | • •                                    | 48                      | 2.93                    | 50                         | 725   | 3           | 0.79             | 1, 2, 3                                   | 27   |
|                                     |                                        | cm <sup>3</sup> /min    | in <sup>3</sup> /min    | bar                        | psi   | l           | gal              |                                           |      |
|                                     |                                        |                         |                         |                            |       |             |                  |                                           |      |
| <b>283167</b>                       | • •                                    | 197                     | 12.02                   | 69                         | 1 000 | 7,1         | 1.88             | 3, 4                                      | 28   |
| <b>1826 <sup>2)</sup></b>           | • •                                    | 7 571                   | 462                     | 69                         | 1 000 | 200         | 52.83            | 2, 3, 4                                   | 29   |

<sup>1)</sup> Select the recommended fittings, adjust the pump pressure within the recommended metering device pressure range

<sup>2)</sup> Controller optionally

## Electrically operated pumps and pump units

| Product                             | Lubricant<br>oil grease NLGI<br>000/00 | Metering quantity    |                      | Operating pressure<br>max. |      | Reservoir |                  | Metering device<br>category <sup>1)</sup> | Page |
|-------------------------------------|----------------------------------------|----------------------|----------------------|----------------------------|------|-----------|------------------|-------------------------------------------|------|
|                                     |                                        | cm <sup>3</sup> /min | in <sup>3</sup> /min | bar                        | psi  | l         | gal              |                                           |      |
| <b>ECP</b>                          | • •                                    | 12                   | 0.73                 | 38                         | 550  | 0,38      | 0.086            | 1, 2, 3                                   | 30   |
| <b>P653S (oil) <sup>2) 3)</sup></b> | • •                                    | 24,6                 | 1.5                  | 240                        | 3500 | 4; 8      | 1.05; 2.11       | 2, 3, 4                                   | 32   |
| <b>KFB <sup>2)</sup></b>            | • •                                    | 50                   | 3                    | 38                         | 550  | 1         | 0.26             | 1, 2, 3                                   | 34   |
| <b>KFB-M <sup>2)</sup></b>          | • •                                    | 50                   | 3                    | 38                         | 550  | 1         | 0.26             | 1, 2, 3                                   | 36   |
| <b>KFU</b>                          | • •                                    | 140                  | 8.5                  | 38                         | 550  | 2,7; 6    | 0.71; 1.56       | 1, 2, 3                                   | 38   |
| <b>MKU <sup>2)</sup></b>            | • –                                    | 100; 200;<br>500     | 6; 12; 31            | 30                         | 435  | 2; 3; 6   | 0.53; 0.79; 1.56 | 1                                         | 40   |
| <b>MKF <sup>2)</sup></b>            | • •                                    | 100; 200;<br>500     | 6; 12; 31            | 30                         | 435  | 2; 3; 6   | 0.53; 0.79; 1.56 | 1, 2                                      | 42   |
| <b>MFE</b>                          | • •                                    | 250; 500             | 15; 31               | 28                         | 405  | 3; 6; 15  | 0.79; 1.56; 3.96 | 1, 2                                      | 44   |

<sup>1)</sup> Select the recommended fittings, adjust the pump pressure within the recommended metering device pressure range

<sup>2)</sup> Controller optionally

<sup>3)</sup> With pressure transducer

## Pump unit

# 1812

Oil and fluid grease



### Product description

The 1812 pump features a translucent reservoir with filler cap and strainer. Its pump base has an integrated check/vent valve and an indicator pin to show when system pressure is achieved.

### Features and benefits

- Provides precise lubrication where air or electricity are not available
- Built-in vent valve activates when handle is pushed all the way up
- Pressure stem indicates 58 bar; 850 psi
- Suitable for use with metering devices of category 2, 3, 4

### Applications

- Textile
- Stationary
- Material handling including presses
- Agriculture and farming

### Technical data

|                                 |                                                               |
|---------------------------------|---------------------------------------------------------------|
| Order number . . . . .          | <b>1812</b>                                                   |
| Function principle . . . . .    | manually operated piston pump                                 |
| Outlets. . . . .                | 1                                                             |
| Metering quantity . . . . .     | 2,6 cm <sup>3</sup> /stroke, 0.16 in <sup>3</sup> /stroke     |
| Lubricant. . . . .              | oil, synthetic oil on request                                 |
| Operating temperature . . . . . | -23 to +65 °C<br>-10 to +150 °F                               |
| Operating pressure . . . . .    | max. 70 bar, 1 000 psi                                        |
| Reservoir. . . . .              | 2,13 l; 2 130 cm <sup>3</sup><br>0.5 gal, 130 in <sup>3</sup> |
| Material (reservoir) . . . . .  | acrylic                                                       |
| Connection outlet . . . . .     | 1/4 NPTF (F)                                                  |
| Dimensions . . . . .            | 425 × 181 × 197 mm<br>16.75 × 7.125 × 7.75 in                 |
| Mounting position . . . . .     | vertical                                                      |

## Pump unit

### POE



#### Product description

These manually actuated plunger pumps were developed for intermittently operated, single-line centralized lubrication systems with metering devices. They include a set of valves required for pressure relief and pressure limitation. Versions are available with or without fill-level switches to monitor critical levels of lubricant, and reservoirs are offered in three different sizes.

#### Features and benefits

- Suitable for amount of lube points per stroke:
  - 1-20: metering device 340
  - 1-18: metering device 350
  - 1-6: metering device 390
- Simple handling
- Low-cost, efficient method of distributing lubricant
- Optional low-level control for reservoir
- Suitable for use with metering devices of category 1

#### Applications

- Machine tool
- Industrial assembly and automation



#### Technical data

|                       |                                                                                                                 |
|-----------------------|-----------------------------------------------------------------------------------------------------------------|
| Function principle    | manually operated piston pump                                                                                   |
| Outlets               | 1                                                                                                               |
| Metering quantity     | 15 cm <sup>3</sup> /stroke, 0.9 in <sup>3</sup> /stroke                                                         |
| Lubricant             | mineral, synthetic, and environmentally compatible oils, operating viscosity 20 to 1 500 mm <sup>2</sup> /s     |
| Operating temperature | 0 to +60 °C; +32 to +140 °F                                                                                     |
| Operating pressure    | max. 30 bar, 435 psi                                                                                            |
| Reservoir             | 0,5; 1,0 or 1,7 l, 0.1, 0.3 or 0.4 gal                                                                          |
| Material (reservoir)  | plastic (PP), transparent                                                                                       |
| Connection outlet     | G 1/4, on left or right                                                                                         |
| Dimensions            | depending on model<br>min. 133×248×124 mm<br>max. 190×448×124 mm<br>min. 5.2×9.8×4.8 in<br>max. 7.5×17.6×4.8 in |
| Mounting position     | vertical                                                                                                        |

#### Fill-level switch for monitoring the minimum oil level

|                    |                                     |
|--------------------|-------------------------------------|
| Type of contact    | contact opens at minimum fill level |
| Switching voltage  | max. 42 VDC                         |
| Switching capacity | max. 50 W                           |
| Plug               | 4-pin M12x1 circular plug           |
| Mounting position  | 1, 2 or 3 possible (2 on delivery)  |

#### POE pump units

| Order number | Reservoir |      | Fill-level switch |
|--------------|-----------|------|-------------------|
|              | l         | gal  |                   |
| POE-15-0.5   | 0,5       | 0.13 | —                 |
| POE-15-1.0   | 1,0       | 0.26 | —                 |
| POE-15-1.0W  | 1,0       | 0.26 | •                 |
| POE-15-1.7   | 1,7       | 0.45 | —                 |
| POE-15-1.7W  | 1,7       | 0.45 | •                 |



#### 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): **1-1110-EN, 951-170-011 EN**

3D data and product configuration:

[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

## Pump unit

## PFE

Oil and fluid grease



### Product description

These manually actuated plunger pumps were developed for intermittently operated, single-line centralized lubrication systems with metering devices. They include a set of valves required for pressure relief and pressure limitation. Versions are available with or without fill-level switches to monitor critical levels of lubricant, and reservoirs are offered in three different sizes.

### Features and benefits

- Simple handling
- Low-cost, efficient method of distributing lubricant
- Optional low-level control for reservoir
- Suitable for use with metering devices of category 1 and 2

### Applications

- Machine tool
- Printing machines
- Industrial assembly and automation

### Technical data

Function principle . . . . . manually operated piston pump  
 Outlets. . . . . 1  
 Metering quantity . . . . . 15 cm<sup>3</sup>/stroke, 0.9 in<sup>3</sup>/stroke  
 Lubricant. . . . . fluid grease, NLGI 000, 00  
 Operating temperature . . . . . 0 to +60 °C; +32 to +140 °F  
 Operating pressure . . . . . max. 30 bar, 435 psi  
 Reservoir. . . . . 0.5; 1.0 or 1.7 l, 0.1, 0.3 or 0.4 gal  
 Material (reservoir) . . . . . plastic (PP), transparent  
 Connection outlet . . . . . G 1/4, on left or right  
 Dimensions. . . . . depending on model  
     min. 133×248×124 mm  
     max. 190×448×124 mm  
     min. 5.2×9.8×4.8 in  
     max. 7.5×17.6×4.8 in  
 Mounting position . . . . . vertical

### Fill-level switch for monitoring the minimum grease level

Type of contact . . . . . NPN, PNP/NO-contact - NC contact  
 Switching voltage . . . . . 10 to 36 VDC  
 Current at switching output . . . . . max. 150 mA  
 Protection class . . . . . IP 67  
 Connection . . . . . 2 m PVC cable or 4-pin M8x1 circular plug  
 Mounting position . . . . . 1, 2 or 3 possible (2 on delivery)

### PFE pump units

| Order numbers | Reservoir |      | Fill-level switch |
|---------------|-----------|------|-------------------|
|               | l         | gal  |                   |
| PFE-15-0.5    | 0.5       | 0.13 | —                 |
| PFE-15-1.0    | 1.0       | 0.26 | —                 |
| PFE-15-1.0W2  | 1.0       | 0.26 | •                 |
| PFE-15-1.7    | 1.7       | 0.45 | —                 |
| PFE-15-1.7W2  | 1.7       | 0.45 | •                 |

### 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): **1-1110-EN, 951-170-011 EN**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

## Pump unit

82885, 83667



### Product description

Model 82885, an air-operated, single-stroke oil pump, discharges lubricant on an air-powered forward stroke and releases pressure on the lubricant line on a spring-powered return stroke through an integrated check/relief valve (3 way). Its translucent reservoir is refilled through a filler cap with strainer. The pump unit is suitable for systems with a large number of lubrication points and clocked greasing strokes. Model 83667 offers the same features but includes a larger reservoir.

### Features and benefits

- Reliable operation
- Reservoir with filler cap and internal strainer
- Suitable for use with metering devices of category 2, 3 and 4

### Applications

- Textiles
- Steel mills
- Packaging
- Plastic processing
- Material handling
- Food and beverage



Oil and fluid grease

### Technical data

Function principle . . . . . pneumatically operated piston pump  
 Outlets . . . . . 1  
 Metering quantity . . . . . 7,4 cm<sup>3</sup>/stroke, 0.45 in<sup>3</sup>/stroke  
 Lubricant . . . . . oil, synthetic oils on request  
 Operating temperature . . . -23 to +65 °C  
                                                  -10 to +150 °F  
 Operating pressure . . . . . max. 70 bar, 1 000 psi  
 Reservoir . . . . . 0,6 and 2,0 l; 0.16 and 0.5 gal  
 Material (reservoir) . . . . . acrylic  
 Connection outlet . . . . . 1/4 NPTF (F)  
 Air inlet connection . . . . . 1/4 NPTF (F)  
 Transmission ratio . . . . . 20:1  
 Air valve . . . . . required, 3-way  
 Dimensions . . . . . min. 263×133×152 mm  
                                                  10.375×5.25×6 in  
                                                  max. 470×140×152 mm  
                                                  18.5×5.5×6 in  
 Mounting position . . . . . vertical

### 82885, 83667 pump units

| Order number | Reservoir |      |
|--------------|-----------|------|
|              | l         | gal  |
| 82885        | 0,6       | 0.16 |
| 83667        | 2         | 0.5  |



### 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): **442832**

## Pump unit

# 85438/40/41

Oil and fluid grease



### Product description

Pump models 85438/40/41 are air-operated, positive displacement pumps that deliver a maximum volume by means of a single stroke of the pump. Solenoid air valve and adjustable solid-state time controls are integrated into the pump body. These pumps are designed to deliver fluid lubricants to single-line injectors and are filled via a spring-loaded filler cap and internal strainer. Acrylic reservoirs are available in two sizes. Supply voltages are offered in 120 VAC and 240 VAC.

### Features and benefits

- Reservoir with filler cap and internal strainer
- Integrated, adjustable, solid-state time controls with LED indicators for "Power On," "Pump On" and "Alarm," along with a membrane-type "Manual Lube" switch
- Integrated solenoid air valve
- Suitable for use with metering devices of category 2, 3 and 4

### Applications

- Textiles
- Steel mills
- Plastic processing
- Material handling
- Food and beverage

### Technical data

Function principle . . . . . pneumatically operated piston pump (single stroke)  
 Outlets. . . . . 1  
 Metering quantity . . . . . 7,4 cm<sup>3</sup>/stroke; 0.45 in<sup>3</sup>/stroke  
 Lubricant. . . . . oil, synthetic oils on request  
 Operating temperature . . . . . -23 to +65 °C  
 -10 to +150 °F  
 Operating pressure . . . . . max. 70 bar, 1 000 psi  
 Reservoir  
 85438 . . . . . 0,6 l; 0.16 gal  
 85440, 85441 . . . . . 2,0 l; 0.5 gal  
 Material (reservoir) . . . . . acrylic  
 Connection outlet . . . . . 1/4 NPTF (F)  
 Voltage . . . . . 120 VAC, 240 VAC  
 Transmission ratio . . . . . 20:1  
 Dimensions:  
 85438. . . . . 133×184×305 mm  
 5.25×7.24×12.02 in  
 85440, 85441 . . . . . 133×184×527 mm  
 5.25×7.24×20.75 in  
 Mounting position . . . . . vertical

### Timer and controller

On time . . . . . 10 or 30 sec  
 Off time . . . . . 30 sec to 30 min. or 30 min. to 30 h  
 Alarm contacts . . . . . 8 A at 250 VAC  
 Operating temperature . . . . . -23 to 65 °C; -10 to +150 °F

### 85438/40/41 pump units

| Order number | Voltage | Reservoir |      |
|--------------|---------|-----------|------|
|              | VAC     | l         | gal  |
| 85438        | 120     | 0,6       | 0.16 |
| 85440        | 120     | 2         | 0.5  |
| 85441        | 240     | 2         | 0.5  |

### 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): **442832**

## Pump unit

### P/PW/PF/PFW-289



#### Product description

These pneumatically actuated piston pumps were designed for intermittently operated, single-line centralized lubrication systems with metering devices. The valve set required for pressure relief and limitation is included.

#### Features and benefits

- Electrical monitoring via external controller or SPS
- Simple handling
- Optional low-level control for reservoir
- Suitable for use with metering devices of category 1, 2 and 3

#### Applications

- Machine tool
- Printing machines
- Industrial assembly and automation



Oil and fluid grease

#### Technical data

|                       |                                                                                                                                           |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Function principle    | pneumatically operated piston pump (single stroke)                                                                                        |
| Outlets               | 1                                                                                                                                         |
| Metering quantity     | 10 cm <sup>3</sup> /stroke, 0.61 in <sup>3</sup> /stroke                                                                                  |
| Lubricant             | mineral, synthetic, and environmentally compatible oils, operating viscosity 20 to 1 500 mm <sup>2</sup> /s or fluid grease, NLGI 000, 00 |
| Operating temperature | +10 to 40 °C; +50 to 104 °F                                                                                                               |
| Operating pressure    | max. 40 bar, 580 psi                                                                                                                      |
| Reservoir             | 1.5 l, 0.4 gal                                                                                                                            |
| Material (reservoir)  | polycarbonate                                                                                                                             |
| Connection outlet     | 6 mm, 0.24 in, OD tube                                                                                                                    |
| Dimensions            | depending on model<br>min. 170×248×128 mm<br>max. 170×270×128 mm<br>min. 6.7×9.8×5.04 in<br>max. 6.7×10.6×5.04 in                         |
| Mounting position     | vertical                                                                                                                                  |

#### Fill-level switch for monitoring the minimum fluid grease level

|                   |                                            |
|-------------------|--------------------------------------------|
| Type of contact   | 1 change-over                              |
| Switching voltage | 230 VAC; 230 VDC                           |
| Switching current | max. 230 VAC/DC: 1,0 A                     |
| Breaking capacity | max. 230 VAC: 60 VA;<br>max. 230 VDC: 40 W |
| Type of enclosure | IP 65                                      |
| Cable gland       | PG11                                       |

#### P, PW, PF, PFW pump units

| Order number. | Lubricant Oil | Fluid grease | Fill-level switch |
|---------------|---------------|--------------|-------------------|
| P-289         | •             | —            | —                 |
| PW-289        | •             | —            | •                 |
| PF-289        | —             | •            | —                 |
| PFW-289       | —             | •            | •                 |



#### 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): **1-1110-EN, 951-170-012**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

## Pump unit

### POEP



#### Product description

These pneumatically actuated plunger pumps were developed for intermittently operated, single-line centralized lubrication systems with metering devices. They include a set of valves required for pressure relief and pressure limitation. Versions are available with or without fill-level switches to monitor critical levels of lubricant.

#### Features and benefits

- Electrical monitoring via external controller or SPS
- Simple handling
- Low-cost, efficient method of distributing lubricant
- Optional low-level control for reservoir
- Suitable for use with metering devices of category 1, 2, 3 and 4

#### Applications

- Machine tool
- Printing machines
- Industrial assembly and automation

#### Technical data

|                       |                                                                                                                 |
|-----------------------|-----------------------------------------------------------------------------------------------------------------|
| Function principle    | pneumatically operated piston pump                                                                              |
| Outlet                | 1                                                                                                               |
| Metering quantity     | 15 cm <sup>3</sup> /stroke, 0.9 in <sup>3</sup> /stroke                                                         |
| Lubricant             | mineral, synthetic oils, operating viscosity 20 to 1 500 mm <sup>2</sup> /s                                     |
| Operating temperature | 0 to +60 °C; +32 to +140 °F                                                                                     |
| Operating pressure    | max. 60 bar, 870 psi                                                                                            |
| Reservoir             | 0.5; 1.0 or 1.7 l, 0.13, 0.26 or 0.45 gal                                                                       |
| Material (reservoir)  | plastic (PP), transparent                                                                                       |
| Connection outlet     | G 1/4, on left or right                                                                                         |
| Air inlet             | G 1/4 (on pump bottom)                                                                                          |
| Transmission ratio    | 10:1                                                                                                            |
| Dimensions            | depending on model<br>min. 133×248×124 mm<br>max. 190×448×124 mm<br>min. 5.2×9.8×4.8 in<br>max. 7.5×17.6×4.8 in |
| Mounting position     | vertical                                                                                                        |

#### Fill-level switch for monitoring the minimum oil level

|                    |                                     |
|--------------------|-------------------------------------|
| Type of contact    | contact opens at minimum fill level |
| Switching voltage  | max. 42 VDC                         |
| Switching capacity | max. 50 W                           |
| Plug               | 4-pin M12×1 circular plug           |
| Mounting position  | 1, 2 or 3 possible (2 on delivery)  |

Note:

For a hydraulic system pressure of >45 bar, 653 psi, use cutting-sleeve screw unions conforming to DIN 2353 or plug connectors as connection fittings.

#### POEP pump units

| Order number | Reservoir |      | Fill-level switch |
|--------------|-----------|------|-------------------|
|              | l         | gal  |                   |
| POEP-15-0.5  | 0,5       | 0.13 | —                 |
| POEP-15-1.0  | 1,0       | 0.26 | —                 |
| POEP-15-1.0W | 1,0       | 0.26 | •                 |
| POEP-15-1.7  | 1,7       | 0.45 | —                 |
| POEP-15-1.7W | 1,7       | 0.45 | •                 |

#### 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): **1-1110-EN, 951-170-011 EN**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

## Pump unit

### PFEP



#### Product description

These pneumatically actuated plunger pumps were developed for intermittently operated, single-line centralized lubrication systems with metering devices. They include a set of valves required for pressure relief and pressure limitation. Versions are available with or without fill-level switches to monitor critical levels of lubricant.

#### Features and benefits

- Simple handling
- Optional low-level control for reservoir
- Suitable for use with metering devices of category 1, 2, 3 and 4

#### Applications

- Machine tool
- Industrial assembly and automation



Oil and fluid grease

#### Technical data

Function principle . . . . . pneumatically operated piston pump  
 Outlets . . . . . 1  
 Metering quantity . . . . . 15 cm<sup>3</sup>/stroke, 0.9 in<sup>3</sup>/stroke  
 Lubricant . . . . . fluid grease, NLGI 000, 00  
 Operating temperature . . . . . 0 to +60 °C; +32 to +140 °F  
 Operating pressure . . . . . max. 60 bar, 870 psi  
 Reservoir . . . . . 0.5; 1.0 or 1.7 l, 0.13, 0.26 or 0.45 gal  
 Material (reservoir) . . . . . plastic (PP), transparent  
 Connection outlet . . . . . G 1/4, on left or right  
 Air inlet . . . . . G 1/4 (on pump bottom)  
 Transmission ratio . . . . . 10:1  
 Dimensions . . . . . depending on model  
     min. 133 × 248 × 124 mm  
     max. 190 × 448 × 124 mm  
     min. 5.2 × 9.8 × 4.8 in  
     max. 7.5 × 17.6 × 4.8 in  
 Mounting position . . . . . vertical

#### Fill-level switch for monitoring the minimum filling level

Type of contact . . . . . NPN, PNP/NO-contact - NC contact  
 Switching voltage . . . . . 10 to 36 VDC  
 Current at switching output . . . . . max. 150 mA  
 Protection class . . . . . IP 67  
 Connection . . . . . 2 m PVC cable or 4-pin M8x1 circ. plug  
 Mounting position . . . . . 1, 2 or 3 possible (2 on delivery)

Note:  
 For a hydraulic system pressure of >45 bar, 653 psi, use cutting-sleeve screw unions conforming to DIN 2353 or plug connectors as connection fittings.

#### PFEP pump unitss

| Order number  | Reservoir |      | Fill-level switch |
|---------------|-----------|------|-------------------|
|               | l         | gal  |                   |
| PFEP-15-0.5   | 0,5       | 0.13 | —                 |
| PFEP-15-1.0   | 1,0       | 0.26 | —                 |
| PFEP-15-1.0W2 | 1,0       | 0.26 | •                 |
| PFEP-15-1.7   | 1,7       | 0.45 | —                 |
| PFEP-15-1.7W2 | 1,7       | 0.45 | •                 |

#### NOTE

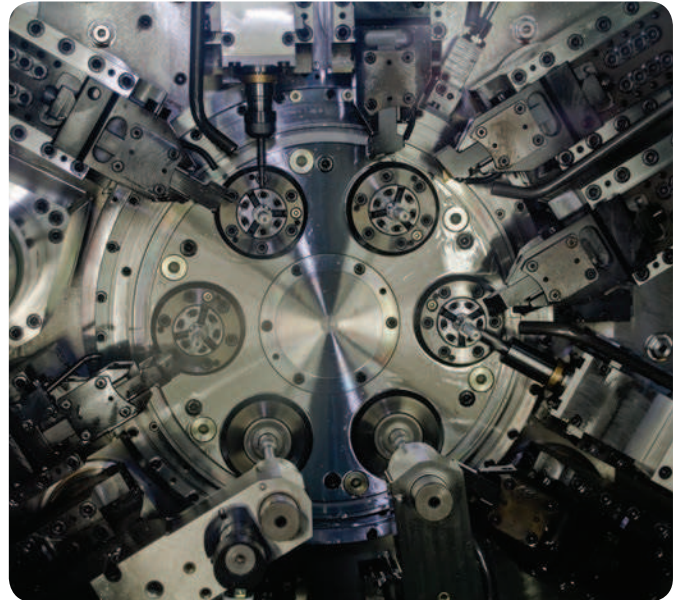
For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on [SKF.com/lubrication](http://SKF.com/lubrication): **1-1110-EN, 951-170-011 EN**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

## Pump unit

### PPS30

Oil and fluid grease



#### Product description

Setting new standards in design, this compact unit combines proven lubrication technology with integrated functional elements. The easy-to-clean PPS30 features an integrated relief valve and electronic sensors, as well as a central opening for easy filling from all sides. In addition to low investment costs, it offers very low operating costs due to minimal compressed air consumption. The light-weight unit is made almost entirely of functional, high-performance plastics.

#### Features and benefits

- Compact, modern design with user friendly operation
- Quick and simple installation with flexible connection system
- Easy visual fill-level monitoring plus electric fill-level control
- Suitable for use with metering devices of category 1 and 2

#### Applications

- Machine tool
- Automation
- Packaging
- Woodworking
- Printing
- Textiles



#### 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): **1-0942-EN, 951-170-220 EN**

3D data and product configuration:

[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

#### Technical data

|                         |                                                                                                             |
|-------------------------|-------------------------------------------------------------------------------------------------------------|
| Function principle      | pneumatically operated piston pump (single stroke)                                                          |
| Outlets                 | max. 3                                                                                                      |
| Metering quantity       | 30 cm <sup>3</sup> /stroke, 1.83 in <sup>3</sup> /stroke                                                    |
| Lubricant               | mineral and synthetic oils, operating viscosity 20 to 1 500 mm <sup>2</sup> /s or fluid grease NLGI 000, 00 |
| Operating temperature   | +10 to +50 °C; +50 to +122 °F                                                                               |
| Operating pressure      | max. 27 bar, 392 psi                                                                                        |
| Actuation pressure      | 4,5 to 6 bar; 65 to 87 psi                                                                                  |
| Reservoir               | 1,5 l, 0.39 gal                                                                                             |
| Material (reservoir)    | plastic (SAN)                                                                                               |
| Connection outlet       | M10×1 thread or plug connector for pipes ø6 and ø8 mm or banjo fitting for pipe ø6 mm                       |
| Air inlet               | M10×1 thread or plug connector for pipes ø6 and ø8 mm or banjo fitting for pipe ø6 mm                       |
| Air valve               | required 3- way, see accessories                                                                            |
| Pressure reducing valve | required, see accessories                                                                                   |
| Dimensions              | 187×246×129 mm;<br>7.3×9.6×5.1 in                                                                           |
| Installation space      | min. 230×300×250 mm<br>min. 9×11.8×9.8 in                                                                   |
| Mounting position       | vertical                                                                                                    |

#### Fill-level switch for monitoring the minimum lubricant level

|                   |                        |
|-------------------|------------------------|
| Function          | capacitive, NC-contact |
| Switching voltage | 10 to 36 VDC           |
| Power consumption | max. 150 mA            |

#### Pressure switch for monitoring pressure build-up and function

|                       |                           |
|-----------------------|---------------------------|
| Function              | NO-contact                |
| Rated pressure        | 16 bar, 232 psi           |
| Electrical connection | 4-pin M12×1 circular plug |

## Pump unit

### PPS30

#### Order number configurator

|                                                               | P | P | S | 3 | 0 | - | 2 |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------------------------------|---|---|---|---|---|---|---|--|--|--|--|--|--|--|--|--|--|--|--|
| Piston pump, pneumatically actuated                           |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| Lubricant                                                     |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| S = Oil and fluid grease                                      |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| Delivery rate                                                 |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 = 30 cm <sup>3</sup> /stroke, 1.83 in <sup>3</sup> /stroke |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| Generation                                                    |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| Lubricant reservoir                                           |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 = 1.5 l; 0.39 gal <sup>1)</sup>                             |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 = 1.5 l; 0.39 gal with oil filler screen <sup>2)</sup>      |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| Fill level switch, min.                                       |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| W1 = With <sup>1)</sup>                                       |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| XX = Without                                                  |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| Pressure switch                                               |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| A = 16 bar, 232 psi <sup>1)</sup>                             |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| X = Without                                                   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| Electrical connection <sup>3)</sup>                           |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| A = M12×1 plug, 4-pin <sup>1)</sup>                           |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| Pneumatic connection <sup>4)</sup>                            |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 = Pipe thread M10×1                                         |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 = Plug connector for pipe ø 6 <sup>1) 5)</sup>              |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 = Banjo fitting for pipe ø 6 <sup>1) 5)</sup>               |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 = Plug connector for pipe ø 8 <sup>5)</sup>                 |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| Connection main line                                          |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 = Pipe thread M10×1                                         |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 = Plug connector for pipe ø 6 <sup>1) 5)</sup>              |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 = Banjo fitting for pipe ø 6 <sup>5)</sup>                  |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 = Plug connector for pipe ø 8 <sup>5)</sup>                 |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |
| X = Closed <sup>5)</sup>                                      |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |

<sup>1)</sup> Standard design

<sup>2)</sup> The oil filler screen option can be used only on PPS30 pumps produced after September 29, 2017.

<sup>3)</sup> Electrical connection required if fill-level switch and/or pressure switch is selected

<sup>4)</sup> Must select pneumatic connection

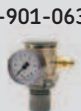
<sup>5)</sup> For fitting order numbers → accessories

## Accessories

161-120-067+924



995-901-063



169-400-405



506-140-VS / 408-004-VS



466-421-001



995-901-061



#### Order numbers for accessories

| Order number | Designation |
|--------------|-------------|
|--------------|-------------|

|                 |                                  |
|-----------------|----------------------------------|
| 161-120-067+924 | 3/2-way air inlet valve, 24 VDC  |
| 161-120-067+910 | 3/2-way air inlet valve, 110 VAC |
| 995-901-063     | Pressure-reducing valve          |
| 169-400-405     | Oil filler screen                |

#### Optional fittings for pneumatic and main line connections

|             |                                           |
|-------------|-------------------------------------------|
| 406-004-VS  | Plug connector for pipe ø 6; order code 2 |
| 506-140-VS  | Banjo fitting for pipe ø 6; order code 3  |
| 408-004-VS  | Plug connector for pipe ø 8; order code 4 |
| 466-421-001 | Closed; order code X                      |

995-901-061

Adapter plate for mounting; 214 × 48 × 10 mm, 8.4 × 1.9 × 0.4 in

## Pump unit

# 82676

Oil and fluid grease



### Product description

Pump model 82676 is a high-volume pump designed for remote or bulk-fill oil applications. It discharges lubricant on the air-powered forward stroke and releases pressure on the lubricant line through included check/relief valve through a 1/2 NPTF (F) oil inlet. (head pressure max. 5,5 bar; 80 psi)

### Features and benefits

- Designed for remote or bulk-fill oil applications
- Remote system components available upon request
- Suitable for use with metering devices of category 4

### Applications

- Steel mills
- Packaging
- Plastic processing
- Material handling
- Food and beverage



### Technical data

|                              |                                                           |
|------------------------------|-----------------------------------------------------------|
| Order number . . . . .       | <b>82676</b>                                              |
| Function principle . . . . . | pneumatically operated piston pump (single stroke)        |
| Outlets. . . . .             | 1                                                         |
| Metering quantity . . . . .  | 39,3 cm <sup>3</sup> /stroke, 2.4 in <sup>3</sup> /stroke |
| Lubricant. . . . .           | oil, synthetic oils on request                            |
| Operating temperature . . .  | -23 to +65 °C<br>-10 to +150 °F                           |
| Operating pressure . . . . . | max. 70 bar, 1 000 psi                                    |
| Reservoir. . . . .           | extern                                                    |
| Connection outlet . . . . .  | 1/4 NPTF (F)                                              |
| Transmission ratio . . . . . | 20:1                                                      |
| Air valve. . . . .           | required, 4-way                                           |
| Dimensions . . . . .         | 470×146×533 mm<br>18.5×5.75×21 in                         |
| Mounting position . . . . .  | vertical                                                  |

## Pump unit

# 82570



### Product description

Pump model 82570 is a high-volume pump that discharges lubricant on the air-powered forward stroke and releases pressure on the lubricant line through included check/relief valve on the air-powered return stroke. Its acrylic reservoir is refilled through the filler cap with strainer.

### Features and benefits

- Reservoir with filler cap and internal strainer
- Remote system components available upon request
- Suitable for use with metering devices of category 2, 3 and 4

### Applications

- Textiles
- Steel mills
- Packaging
- Plastic processing
- Material handling
- Food and beverage



Oil and fluid grease

### Technical data

|                                |                                                           |
|--------------------------------|-----------------------------------------------------------|
| Order number . . . . .         | <b>82570</b>                                              |
| Function principle . . . . .   | pneumatically operated piston pump<br>(single stroke)     |
| Outlets . . . . .              | 1                                                         |
| Metering quantity . . . . .    | 39,3 cm <sup>3</sup> /stroke, 2.4 in <sup>3</sup> /stroke |
| Lubricant . . . . .            | oil, synthetic oils on request                            |
| Operating temperature . . .    | -23 to +65 °C<br>-10 to +150 °F                           |
| Operating pressure . . . . .   | max. 70 bar, 1 000 psi                                    |
| Reservoir . . . . .            | 2,0 l, 0.5 gal                                            |
| Material (reservoir) . . . . . | acrylic                                                   |
| Connection outlet . . . . .    | 1/4 NPTF (F)                                              |
| Transmission ratio . . . . .   | 20:1                                                      |
| Air valve . . . . .            | required, 4-way                                           |
| Dimensions . . . . .           | 451 × 146 × 464 mm 17.75 × 5.75 × 18.25 in                |
| Mounting position . . . . .    | vertical                                                  |



## Pump unit

### PEF/PEU



#### Product description

These pneumatically actuated piston pumps were designed for intermittently operated, single-line centralized lubrication systems with metering devices. The valve set required for pressure relief and limitation is included.

#### Features and benefits

- Driven by on-board compressed air system
- Optional integrated control
- Electrical monitoring via external controller or SPS
- Simple handling
- Suitable for use with metering devices of category 1, 2 and 3

#### Applications

- Vehicles and trailer
- Machine tools
- Printing machines
- Industrial assembly and automation



Oil and fluid grease

#### Technical data

Function principle . . . . . pneumatically operated piston pump  
 Outlets. . . . . 1  
 Metering quantity . . . . . 48 or 50 cm<sup>3</sup>/stroke,  
 2.93 or 3.05 in<sup>3</sup>/stroke  
 Lubricant. . . . . mineral, synthetic, and environmentally  
 compatible oils, operating viscosity  
 20 to 1 500 mm<sup>2</sup>/s or fluid grease,  
 NLGI 000, 00  
 Operating temperature . . . -25 to +80 °C; -13 to +176 °F  
 Operating pressure . . . . . max. 50 bar, 725 psi  
 Reservoir. . . . . 3,0 l, 0.8 gal  
 Material (reservoir) . . . . . polycarbonate  
 Connection outlet . . . . . M16×1,5  
 Dimensions  
 PEF-90 . . . . . 248×194×341 mm  
 9.8×7.6×13.4 in  
 PEF-99 W . . . . . 270×126×355 mm  
 10.6×4.9×13.9 in  
 PEU-99 . . . . . 270×126×355 mm  
 10.6×4.9×13.9 in  
 Mounting position . . . . . vertical

#### Fill-level switch for monitoring the minimum grease level

Type of contact . . . . . NO-contact  
 Switching voltage . . . . . max. 10 to 35 VDC  
 Output current. . . . . 400 mA  
 Capacity. . . . . 15 mA  
 Type of enclosure. . . . . IP 54

#### PEF/PEU pump units

| Order number | Lubricant<br>Oil | Fluid grease | Fill-level<br>switch |
|--------------|------------------|--------------|----------------------|
| PEF-90       | •                | •            | •                    |
| PEF-99W      | —                | •            | •                    |
| PEF-99W-S1   | —                | •            | •                    |
| PEF-99W-S2   | —                | •            | •                    |
| PEF-99W-S3   | —                | •            | —                    |
| PEU-99       | •                | •            | —                    |
| PEU-99-S2    | •                | •            | —                    |
| PEU-99-S3    | •                | —            | —                    |

#### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on  
 SKF.com/lubrication: **1-1110-EN, 951-170-012 EN**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

## Pump unit

# 283167

Oil and fluid grease



### Product description

Pump model 283167 includes air motor, vent valve, translucent reservoir with filler cap, strainer and 1 200 psi (82 bar) safety unloader. Pump is an oscillating positive displacement pump with pneumatic drive. The change-over valve of the pump drive controls reciprocating of the pump strokes (discharges oil to outlet on forward stroke and sucks oil on back stroke). The reciprocating pump operates under air pressure and as such discharges material until the required system oil pressure is built up. The shut off and monitoring of the pump must be initiated by a pressure switch, 3/2 way air valve, components to limit and adjust the air operating pressure. These parts are to be furnished on site of the user.

### Features and benefits

- Reservoir with filler cap and internal strainer
- Vent valve assembly enclosed
- Remote system components available upon request
- Suitable for use with metering devices of category 3 and 4

### Applications

- Steel mills
- Glass manufacturing plants
- Packaging
- Plastic processing
- Material handling
- Food and beverage
- Metal cutting, metal forming
- Systems with many lubrication points



### Technical data

|                                 |                                                             |
|---------------------------------|-------------------------------------------------------------|
| Order number . . . . .          | <b>283167</b>                                               |
| Function principle . . . . .    | pneumatic, reciprocating piston pump                        |
| Outlets. . . . .                | 1                                                           |
| Metering quantity . . . . .     | 197 cm <sup>3</sup> /min, 12 in <sup>3</sup> /min           |
| Pump cycles/minute . . . . .    | max. 100 permitted                                          |
| Lubricant. . . . .              | oil, synthetic oils on request                              |
| Operating temperature . . . . . | -23 to +65 °C<br>-10 to +150 °F                             |
| Operating pressure . . . . .    | max. 70 bar, 1 000 psi                                      |
| Reservoir. . . . .              | 7,1 l, 7 100 cm <sup>3</sup> , 1.8 gal, 433 in <sup>3</sup> |
| Material (reservoir) . . . . .  | acrylic                                                     |
| Air inlet connection . . . . .  | 1/8 NPTF (F)                                                |
| Connection outlet . . . . .     | 3/4 NPTF (F)                                                |
| Transmission ratio . . . . .    | 40:1                                                        |
| Air valve . . . . .             | required, 3-way                                             |
| Dimensions . . . . .            | 591 × 229 × 413 mm<br>23.25 × 9 × 16.25 in                  |
| Mounting position . . . . .     | vertical                                                    |

#### Note:

When operating the pump with air pressure > 1,7 bar a pressure switch for oil is required to limit the oil pressure (max. 68 bar) of the central lubrication system.

## Pump unit

# 1826



### Product description

Pump model 1826 is modular assembled and consists of air motor, attached pump tube, vent valve assembly, drum cover, controller, lubricant connecting hoses and safety unloader. Modular structured air motor is fully pneumatically monitored. Supplied compressed air to air motor moves oscillating piston in cylinder up and down. Simultaneously outlet air pours out of opposite cylinder chamber via exhausting baffle. A signal valve operates as a sensor and forwards pneumatic signal pressure to a relay valve as soon as piston has reached its fully stroke in one direction. Relay valve now switches pneumatically movement of piston opposite. Oscillation operation is working. Pumps consist in two devices, air motor and pump tube with integrated shovel piston. Oscillation piston initiates shovel piston to pump operation by sucking and pumping function. Pumps are supplied in moduls must be furnished on side of user but can also supplied completely on request.

### Features and benefits

- Midsize volume PowerMaster air motor
- Carbon steel pump tube with shovel-foot design, selected fit plunger and bushing
- Vent valve assembly and safety unloader included
- Drum cover for standard U.S. 55 gal. ( 200 l) drums (removable head)
- Simplified, modular design
- Wear-resistant and robust construction, reliable
- Suitable for use with metering devices of category 2, 3 and 4

### Applications

- Steel mills
- Plastic processing
- Food and beverage
- Glass industry
- Material handling



Oil and fluid grease

### Technical data

|                              |                                                      |
|------------------------------|------------------------------------------------------|
| Order number . . . . .       | <b>1826</b>                                          |
| Function principle . . . . . | pneumatically operated<br>reciprocating piston pump  |
| Outlets. . . . .             | 1                                                    |
| Metering quantity . . . . .  | 7 571 cm <sup>3</sup> /min, 462 in <sup>3</sup> /min |
| Lubricant. . . . .           | oil                                                  |

|                                   |                                            |
|-----------------------------------|--------------------------------------------|
| Pump tube 84991                   |                                            |
| Volume/cycle (up and down) . . .  | 100 cm <sup>3</sup> ; 6.10 in <sup>3</sup> |
| Max. pump cycles/minute . . . . . | 70 permitted                               |
| Operating temperature . . . . .   | -34 to +93 °C<br>-29 to +199 °F            |
| Operating pressure . . . . .      | max. 70 bar; 1 000 psi                     |
| Air inlet . . . . .               | 3/8 NPTF (F)                               |
| Connection outlet . . . . .       | 3/4 NPTF (F)                               |
| Transmission ratio . . . . .      | 24:1                                       |
| Dimensions                        |                                            |
| Total length . . . . .            | 1 464 mm; 57.64 in                         |
| Immersion length . . . . .        | 864 mm; 34.01 in                           |
| Mounting position . . . . .       | vertical                                   |

### Controller

|                   |                                |
|-------------------|--------------------------------|
| Voltage . . . . . | 110 VAC, 50 Hz; 120 VAC, 60 Hz |
|-------------------|--------------------------------|

## Pump unit

### ECP



#### Product description

The Electric Cartridge Pump ECP was developed to lubricate bearings and linear guides in small machines. It includes an integrated pressure-relief. This electrically driven piston pump uses 24 VDC and is controlled by an external programmable logic controller (PLC) for convenience. In addition, the pump is capable of manually activating a lubrication cycle and can be used with an optional, integrated level switch to monitor the oil level of the cartridge. Utilizing easy-to-exchange cartridges, it is compatible with oil viscosities from 20 to 1 500 mm<sup>2</sup>/s and fluid grease grades of NLGI 00 and 000.

#### Features and benefits

- Cost effective solution
- Simple to operate
- Increases reliability
- Minimizes risk of using wrong or contaminated lubricant
- Reduces unplanned downtime
- Extends maintenance intervals
- Minimizes environmental impact via efficient use of lubricants

#### Applications

- Automation
- Machine tools
- Material handling
- Plastic processing
- Food and beverage



#### Technical data

|                       |                                                                                                                   |
|-----------------------|-------------------------------------------------------------------------------------------------------------------|
| Function principle    | electrically operated piston pump                                                                                 |
| Outlets               | 2                                                                                                                 |
| Metering quantity     | fluid grease: 12 cm <sup>3</sup> /min; 0.73 in <sup>3</sup> /min<br>oil: 0,012 l/min; 0.0027 gal/min              |
| Lubricant             | oil: 20 to 1 500 mm <sup>2</sup> /s<br>fluid grease: NLGI 00, 000                                                 |
| Operating temperature | +10 to +50 °C; +50 to 122 °F                                                                                      |
| Operating pressure    | max. 38 bar; 550 psi                                                                                              |
| Reservoir             | 380 ml; 12.8 l. oz.                                                                                               |
| Outlet connection     | M10×1 thread or<br>SKF Quick Connector 6–8 mm                                                                     |
| Output voltage        | 24 VDC                                                                                                            |
| Dimensions            | without cartridge:<br>143×172×121 mm; 5.63×6.77×4.76 in<br>with cartridge:<br>307,5×172×121 mm; 12.1×6.77×4.76 in |
| Mounting position     | upright                                                                                                           |



#### 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): **16966 EN, 951-170-232**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

## Pump unit

### ECP

#### Order number configurator

**E C P 1 - 1** **A**

#### Pump type

**ECP** = Electric Cartridge Pump

#### Output volume

**1** = 12 cm<sup>3</sup>/min; 0.73 in<sup>3</sup>/min  
0,012 l/min; 0.0027 gal/min

#### Version

**1** = 1st version

#### Reservoir level monitoring

**W** = Warning level (pre-warning empty)  
**0** = No warning switch

#### Wall bracket

**A** = With standard bracket  
**0** = Without

#### Electrical connection

**A** = Square plug following DIN EN 175301-803-A

#### Front outlet port connection

**1** = Connection thread M10×1  
**2** = Quick connector ø 6 mm  
**3** = Banjo fitting ø 6 mm  
**4** = Quick connector ø 8 mm  
**X** = Closed

#### Outlet port bottom

**1** = Connection thread M10×1  
**2** = Quick connector ø 6 mm  
**3** = Banjo fitting ø 6 mm  
**4** = Quick connector ø 8 mm  
**X** = Closed

Oil and fluid grease

## Pump unit

### P 653S (oil)



Oil and fluid grease

#### Product description

Suitable for multiple applications, the Lincoln P 653S electrically driven oil pump simplifies the design of your lubrication system and delivers significant flexibility. A member of the Centro-Matic family, the pump comes complete with a reservoir, pressure switch/transducer, vent valve and controller in one compact unit.

#### Features and benefits

- Integration of major system components reduces labor and overall costs
- Simplifies lubrication system design
- Reduces installation time via “plug-and-go” capability
- Minimizes lubricant consumption by running only when the machine is operating

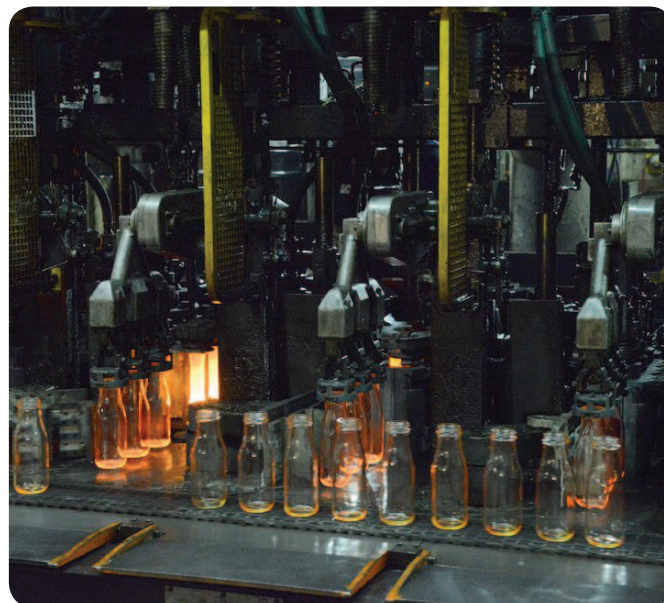
#### Applications

- Automation
- Machine tools
- Glass manufacturing plants
- Woodworking facilities
- Oil and Gas plants
- Steel plants



#### 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 16072 EN**



#### Technical data

|                       |                                                                                                                  |
|-----------------------|------------------------------------------------------------------------------------------------------------------|
| Function principle    | electrically operated piston pump                                                                                |
| Outlets               | 1                                                                                                                |
| Metering quantity     | 24,6 cm <sup>3</sup> /min, 1.5 in <sup>3</sup> /min                                                              |
| Lubricant             | oil, minimum 40 mm <sup>2</sup> /s (cST)                                                                         |
| Operating temperature | 0 to +50 °C; +32 to 122 °F                                                                                       |
| Operating pressure    | with pressure switch: 240 bar, 3 500 psi<br>with pressure transducer: factory preset to 82 bar, 1 200 psi        |
| Reservoir             | 4 l, 1 gal; 8 l, 2 gal                                                                                           |
| Material (reservoir)  | thermoplastic                                                                                                    |
| Connection outlet     | G 1/4                                                                                                            |
| Incoming voltage      | 120/230 VAC <sup>1)</sup>                                                                                        |
| Current               | max. 1,7 A                                                                                                       |
| Frequency             | 47 to 63 Hz                                                                                                      |
| Pause time            | max. 59 h, 59 min<br>min. 4 min;                                                                                 |
| Pause time increments | 1 hr or 1 min                                                                                                    |
| Pumping time          | max. 12 min                                                                                                      |
| Dimensions            | depending on model<br>min. 240×467×235 mm<br>max. 240×508×235 mm<br>min. 9.5×18.4×9.25 in<br>max. 9.5×20×9.25 in |
| Mounting position     | upright                                                                                                          |

#### Pump elements

|                  |                |
|------------------|----------------|
| Piston           | ø 7 mm, 0.3 in |
| Number connected | 3              |
| Protection       | 1P 6K9K        |

<sup>1)</sup> 24 VDC version available on request.

Pump unit

P 653S (oil)

| P653S (oil)  |                         |                    |     |                          |                              |                                          |                                              |
|--------------|-------------------------|--------------------|-----|--------------------------|------------------------------|------------------------------------------|----------------------------------------------|
| Order number | 120/230 VAC<br>50/60 Hz | Reservoir capacity |     | Internal pressure switch | Internal pressure transducer | Internal and end-of-line pressure switch | Internal and end-of-line pressure transducer |
|              |                         | l                  | gal |                          |                              |                                          |                                              |
| 80127        | •                       | 4                  | 1   | •                        | •                            | –                                        | –                                            |
| 80128        | •                       | 8                  | 2   | •                        | •                            | –                                        | –                                            |

Oil and fluid grease

## Pump unit

### KFB



#### Product description

Used with SKF single-line systems, the KFB series gear pump units supply fluid grease NLGI 000 and 00 and include a pressure-relief valve and a pressure-limiting valve. The pumps are designed for supply voltages of 12 VDC and 24 VDC and are controlled either by an integrated electronic control unit or externally, via the machine control system. Depending on the design, the gear pump units are filled via a filler socket or attached filler coupling.

#### Features and benefits

- Compact pump unit
- Integrated pressure-relief valve and pressure-regulating valve
- Visual or optional electrical fill-level monitoring
- Optional integrated control
- Optional pre-assembled lubrication distributor of VN series

#### Applications

- Commercial vehicles
- Industrial applications



#### Technical data

|                                            |                                                      |
|--------------------------------------------|------------------------------------------------------|
| Function principle                         | electrically operated gear pump                      |
| Outlets                                    | 1                                                    |
| Metering quantity <sup>1)</sup>            | 50 cm <sup>3</sup> /min, 3.05 in <sup>3</sup> /min   |
| Lubricant                                  | fluid grease of NLGI 000 or 00                       |
| Operating temperature                      | -25 to +75 °C; -13 to +167 °F                        |
| Operating pressure                         | max. 38 bar, 550 psi                                 |
| Reservoir                                  | KFB(S)1-W: 1 l, 0.26 gal<br>KFB(S)1: 1,4 l, 0.37 gal |
| Material (reservoir)                       | translucent plastic                                  |
| Connection outlet                          | ø 10×1.5<br>(max. 16 m, 52.5 ft)                     |
| Dimensions:                                |                                                      |
| KFB(S)1, KFB(S)1-W                         | 216×150×235 mm; 8.5×5.9×9.3 in                       |
| KFB(S)1-4-S1, KFB(S)1-W-4-S1, KFB(S)1-6-S1 |                                                      |
| KFB(S)1-W-6-S1                             | 245×150×294 mm; 9.6×5.9×11.6 in                      |
| Mounting position                          | vertical                                             |

#### DC motor

|                  |                   |
|------------------|-------------------|
| Voltage          | 12, 24 VDC        |
| Current          | 3,8 A; 1,7 A      |
| Rated output     | 46 W, 41 W        |
| Protection class | IP 6K6K / IP 6K9K |

<sup>1)</sup> At back pressure of 10 bar (145 psi) and a temperature of +25 °C (+77 °F)



#### 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): **1-1206-EN, 951-170-009 EN**

# Pump unit

## KFB

### KFB pump units

| Order number |    | Lubricant<br>Fluid grease<br>NLGI 000, 00 | Control<br>unit | Fill-level<br>switch | Electrical connections<br>Circular connector<br>AMP, 4-pin | Circular connector<br>AMP, 7-pin | Design                        |
|--------------|----|-------------------------------------------|-----------------|----------------------|------------------------------------------------------------|----------------------------------|-------------------------------|
| KFB1         | 2) | •                                         | —               | —                    | •                                                          | —                                | Basic version                 |
| KFB1-W       | 2) | •                                         | —               | •                    | —                                                          | •                                | Basic version                 |
| KFBS1        | 2) | •                                         | •               | —                    | —                                                          | •                                | Basic version                 |
| KFBS1-W      | 2) | •                                         | •               | •                    | —                                                          | •                                | Basic version                 |
| KFB1-4-S1    | 2) | •                                         | —               | —                    | •                                                          | —                                | VN metering device, 4-outlets |
| KFBS1-4-S1   | 2) | •                                         | •               | —                    | —                                                          | •                                | VN metering device, 4-outlets |
| KFB1-6-S1    | 2) | •                                         | —               | —                    | •                                                          | —                                | VN metering device, 6-outlets |
| KFBS1-6-S1   | 2) | •                                         | •               | —                    | —                                                          | •                                | VN metering device, 6-outlets |
| KFB1-W-4-S1  | 2) | •                                         | —               | •                    | —                                                          | •                                | VN metering device, 4-outlets |
| KFBS1-W-4-S1 | 2) | •                                         | •               | •                    | —                                                          | •                                | VN metering device, 4-outlets |
| KFB1-W-6-S1  | 2) | •                                         | —               | •                    | —                                                          | •                                | VN metering device, 6-outlets |
| KFBS1-W-6-S1 | 2) | •                                         | •               | •                    | —                                                          | •                                | VN metering device, 6-outlets |

1) All units for vehicle applications have type approval pursuant to ECE-R 10.

2) When ordering, quote the code for voltage to be used  
12 VDC: Order code +912  
24 VDC: Order code +924

### For units

KFB(S)1, KFB(S)1-W, KFB(S)1-4-S1, KFB(S)1-W-4-S1, KFB(S)1-6-S1, KFB(S)1-W-6-S1

**Fill-level switch (for KFB(S)1-W)** opens when fill level too low

Switching voltage . . . . . 10 to 36 VDC  
Switching current . . . . . Resistive load <sup>1)</sup>: ≤0.5 A  
Switching capacity . . . . . Resistive load <sup>1)</sup>: ≤12 W

### Relubrication metering device VN (KFB(S)1(-W)4-S1, KFB(S)1(-W)6-S1)

Lubrication point connection . . . . . Push-to-connect fitting for tube ø 4 mm  
Metering quantity . . . . . 0.1; 0.2; 0.4 cm<sup>3</sup>  
Feeder body material . . . . . Die-cast zinc, black corrosion protection

### Control unit IG502-2-I (KFBS1)

Interval, adjustable . . . . . 0.1 ... 99.9 h  
Pump run time, adjustable . . . . . 0.1 ... 99.9 min  
Max. pump run time . . . . . 3.0 min <sup>2)</sup>  
Elapsed-hours counter . . . . . 0 ... 99999.9 h  
Fault-hours counter . . . . . 0 ... 99999.9 h

Additional input power for units  
with control unit (without output load). . . . . 4 W

1) When switching inductive loads, take appropriate measures to protect contacts

2) The operating mode S3 (periodic duty) describes the ratio of pump run time to subsequent down time. If the relative ON-time is 2.5% and the duty cycle time is 10 to 120 min., then the limit values are as follows:  
Min. duty cycle time: 10 min×0.025 = 0.25 min. pump run time with subsequent down time of 9.75 min.  
Max. duty cycle time: 120 min×0.025 = 3 min. pump run time with subsequent down time of 117 min.

## Pump unit

### KFB-M

Oil and fluid grease



#### Product description

Used with SKF MonoFlex single-line systems, the KFB series gear pump units supply fluid grease NLGI 000 and 00 and include a pressure-relief valve and a pressure-limiting valve. The pumps are designed for supply voltages of 24 VDC and are controlled either by an integrated electronic control unit or externally, via the machine control system. Depending on the design, the gear pump units are filled via a filler socket or attached filler coupling.

#### Features and benefits

- Compact pump unit
- Integrated pressure-relief valve and pressure-regulating valve
- Visual or optional electrical fill-level monitoring
- Optional integrated control

#### Applications

- Automation
- Automotive
- Machine tools



#### 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): **1-1206-EN**

#### Technical data

|                                                     |                                                         |
|-----------------------------------------------------|---------------------------------------------------------|
| Function principle                                  | electrically operated gear pump                         |
| Outlets                                             | 1                                                       |
| Metering quantity <sup>1)</sup>                     | 50 cm <sup>3</sup> /min, 3.05 in <sup>3</sup> /min      |
| Lubricant                                           | fluid grease of NLGI grade 000 or 00                    |
| Operating temperature                               | 0 to +60 °C; +32 to 140 °F                              |
| Operating pressure                                  | max. 38 bar, 550 psi                                    |
| Reservoir                                           | KFB1-M: 1.4 l, 0.37 gal<br>KFB(S)1-M(-W): 1 l, 0.26 gal |
| Material (reservoir)                                | translucent plastic                                     |
| Connection outlet                                   | ø 8×1,25;<br>(max. 16 m, 52.5 ft)                       |
| Dimensions KFB1-M, KFB1-M-W, KFB(S)1-M, KFB(S)1-M-W | 216×150×235 mm<br>8.5×5.9×9.3 in                        |
| Dimensions KFB1-M-W-S1                              | 216×150×270 mm<br>8.5×5.9×10.6 in                       |
| Mounting position                                   | vertical                                                |

#### DC motor

|                  |                      |
|------------------|----------------------|
| Voltage          | 24 VDC <sup>2)</sup> |
| Current          | 1.7 A                |
| Rated output     | 41 W                 |
| Protection class | IP 65                |

#### Fill-level switch (KFB1-M-W) (change-over contact)

|                                                   |                      |
|---------------------------------------------------|----------------------|
| Switching voltage                                 | 24 VDC <sup>2)</sup> |
| Switching current (resistive load) <sup>3)</sup>  | ≤0.5 A               |
| Switching capacity (resistive load) <sup>3)</sup> | ≤12 W                |

#### Control unit IG502-2-I (KFB(S)1)

|                                                                          |                  |
|--------------------------------------------------------------------------|------------------|
| Interval, adjustable                                                     | 0.1 ... 99.9 h   |
| Pump run time, adjustable                                                | 0.1 ... 99.9 min |
| Max. pump run time                                                       | 2.4 min          |
| Elapsed-hours counter                                                    | 0 ... 99999.9 h  |
| Fault-hours counter                                                      | 0 ... 99999.9 h  |
| Additional input power for units with control unit (without output load) | 4 W              |

<sup>1)</sup> At back pressure of 10 bar and a temperature of +25 °C; +77 °F

<sup>2)</sup> Safety measures to be applied for correct operation:  
Protective extra-low voltage (PELV), standards: EN 60204-1/IEC 60204-1;  
HD 60364-4-41/DIN EN 6100-410/IEC 60364-4-41

<sup>3)</sup> When switching inductive loads, take appropriate measures to protect contacts

## Pump unit

### KFB-M

#### KFB-M pump units

| Order number    | Lubricant<br>Oil<br>viscosity<br>50–50 000 mm <sup>2</sup> /s | Fluid grease<br>NLGI<br>000, 00 | Control unit | Fill-level<br>switch | Electrical connections<br>Square connector<br>3-pin +PE | Circular connector<br>M12×1, 4-pin |
|-----------------|---------------------------------------------------------------|---------------------------------|--------------|----------------------|---------------------------------------------------------|------------------------------------|
| KFB1-M+924      | –                                                             | •                               | –            | –                    | •                                                       | –                                  |
| KFBS1-M+924     | –                                                             | •                               | •            | –                    | •                                                       | •                                  |
| KFB1-M-W+924    | –                                                             | •                               | –            | •                    | •                                                       | •                                  |
| KFBS1-M-W+924   | –                                                             | •                               | •            | •                    | •                                                       | •                                  |
| KFB1-M-W-S1+924 | •                                                             | –                               | –            | •                    | •                                                       | –                                  |

Oil and fluid grease

## Pump unit

### KFU



#### Product description

The gear pump continuously supplies lubricant to relubrication metering devices via the main line network when the pump is in operation. When the metering chambers of the metering devices are full, excess lubricant flows back into the reservoir via the safety valve. At the end of the pump running time, the pressure relief valve opens so that pressure in the main line drops to a residual pressure of 0.2 to 1.0 bar (2.9 to 14.5 psi), allowing the spring-loaded pistons of the metering devices to deliver lubricant from the metering chambers to the lubrication points.

#### Features and benefits

- Includes gear pump with relief valve, safety valve, DC motor, transparent lubricant reservoir, filler socket and angle bracket
- Hood protects DC motor and filler socket from contaminants
- Minimizes wear and tear
- Reduces downtime
- Lowers maintenance costs via automatic lubrication

#### Applications

- Agriculture
- Construction machinery
- Trucks, trailers and buses

#### Technical data

|                                 |                                                                                                                         |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Function principle              | electrically operated gear pump                                                                                         |
| Outlets                         | 1                                                                                                                       |
| Metering quantity <sup>1)</sup> | 140 cm <sup>3</sup> /min, 8.5 in <sup>3</sup> /min                                                                      |
| Lubricant                       | fluid grease, NLGI 000, 00                                                                                              |
| Operating temperature           | -25 to +75 °C; -13 to +167 °F                                                                                           |
| Operating pressure              | max. 38 bar, 550 psi                                                                                                    |
| Reservoir                       | 2,7 or 6 l; 0.7 or 1.6 gal                                                                                              |
| Material                        | Steel, plastic                                                                                                          |
|                                 | Sealings: FKM, NBR                                                                                                      |
|                                 | Reservoir: Translucent plastic                                                                                          |
| Main connection                 | Mainly plastic tubing ø 10×1.5<br>but also steel tubing ø 10×0.7<br>hose SLH10-...                                      |
| Secondary connection            | Mainly plastic tubing ø 4×0.85.;<br>in case of large movement between<br>lubrication point and chassis:<br>hose 734 ... |
| Operating voltage               | 12 or 24 VDC                                                                                                            |
| Protection class                | IP 59k                                                                                                                  |
| Dimensions                      | min. 268×154×325 mm<br>max. 343×184×364 mm<br>min. 10.5×6×12.7 in<br>max. 13.5×7.2×14.3 in                              |
| Mounting position               | vertical                                                                                                                |

<sup>1)</sup> At back pressure 38 bar (550 psi) and temperature +25 °C (+77 °F)



#### 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): **1-9420-EN, 951-170-006\_EN**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

## Pump unit

### KFU

#### KFU pump units

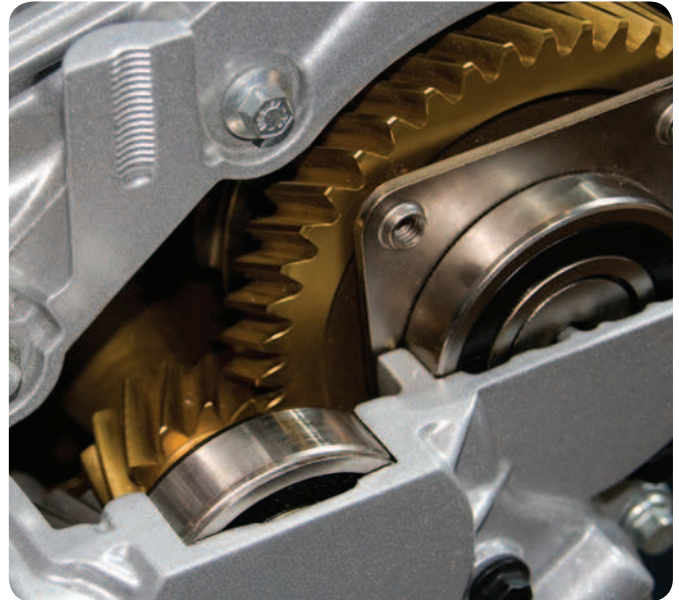
| Order number              | Reservoir |     | Operating voltage |     |
|---------------------------|-----------|-----|-------------------|-----|
|                           | l         | gal | VDC               | Amp |
| KFU2-40+912               | 2,7       | 12  | 12                | 7.5 |
| KFU2-40+924               | 2,7       | 12  | 24                | 7.5 |
| KFU6-20+912 <sup>1)</sup> | 6         | 1.6 | 12                | 7.5 |
| KFU6-20+924 <sup>1)</sup> | 6         | 1.6 | 24                | 7.5 |
| KFUS2-64+912              | 2,7       | 12  | 12                | 16  |
| KFUS2-64+924              | 2,7       | 12  | 24                | 8   |

<sup>1)</sup> This unit should only be used for systems with a minimum lubricant consumption of 6 l (1.6 gal) per year.

## Pump unit

### MKU

Oil and fluid grease



#### Product description

MKU gear pump units are used in single-line systems and include a pre-installed pressure-regulating valve and pressure-relief valve. These units can be supplied with an optional pressure gauge for visual monitoring of pressure changes in the main line. Electrical pressure monitoring is performed by an integrated pressure switch, and fill-level monitoring also is possible. The pump units are controlled externally via the machine control system or an integrated control unit. Also, MKU units can be supplied with a pushbutton to activate interim lubrication at any time. Main functions are integrated into the lid, and a plastic cap protects the electrical components from contaminants such as dirt and dust.

#### Features and benefits

- Integrated pressure limitation and pressure relief valve
- Optional: electrical pressure switch, pressure gauge, float switch
- External control via SPS or by means of internal control unit possible
- All important functions integrated into the lid
- Modular construction

#### Applications

- Material handling
- Automotive
- Machine tool
- Printing and finishing
- Industrial assembly and automation
- Textiles

#### Technical data

|                                |                                                                      |
|--------------------------------|----------------------------------------------------------------------|
| Function principle             | electrically operated gear pump                                      |
| Metering quantity              | 100; 200; 500 cm <sup>3</sup> /min<br>6; 12; 31 in <sup>3</sup> /min |
| Lubricant                      | mineral oil or synthetic oil,<br>20 to 1 500 mm <sup>2</sup> /s      |
| Operating temperature          | +10 to 40 °C; +50 to 104 °F                                          |
| Operating pressure             | max. 30 bar, 435 psi                                                 |
| Reservoir                      | 2,0; 3,0 and 6,0 l, 0,5, 0,8 and 1,6 gal                             |
| Material (reservoir)           | plastic, metal                                                       |
| Connection outlet              | G 1/4                                                                |
| Protection class               | IP 54                                                                |
| Dimensions pump unit with      |                                                                      |
| 2 l; 0,5 gal plastic reservoir | 204 × 130 × 298 mm<br>8 × 5.2 × 11.7 in                              |
| 3 l; 0,8 gal plastic reservoir | 286 × 132 × 298 mm<br>11.3 × 5.2 × 11.7 in                           |
| 3 l; 0,8 gal metal reservoir   | 286 × 132 × 313 mm<br>11.3 × 5.2 × 12.3 in                           |
| 6 l; 1,5 gal plastic reservoir | 290 × 178 × 334 mm<br>11.4 × 7 × 13.2 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): **1-1203-EN, 951-170-005 EN**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

# Pump unit

## MKU

**Order code**

**M K U** - **1** **0 0 0** +

Product series **MKx**

**U** = oil lubricant

**Delivery rate**

|                      |   |   |   |   |
|----------------------|---|---|---|---|
| <b>1</b> = 0.1 l/min | • | • | • | - |
| <b>2</b> = 0.2 l/min | - | • | • | • |
| <b>5</b> = 0.5 l/min | - | • | • | • |

**Lubricant reservoir, control**

| Lubricant reservoir | <b>1</b>     | <b>2</b>     | <b>3</b>   | <b>4</b>     |
|---------------------|--------------|--------------|------------|--------------|
|                     | 2 l, plastic | 3 l, plastic | 3 l, metal | 6 l, plastic |

**Control**

**A** = no control, with terminal strip

**B** = no control, with terminal strip and pushbutton

**C** = IG38-30-I<sup>1)</sup>

**D** = IZ38-30-I<sup>1)</sup>

**E** = IGZ36-20-S6-I<sup>1)2)</sup>

<sup>1)</sup> If control C, D, or E is selected, monitoring C must be selected.

<sup>2)</sup> If control E is selected, electrical connection 1 must be selected.

For description of control units, see page 16–17.

**Monitoring**

|                                            | <b>X</b> | <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> | <b>E</b> |
|--------------------------------------------|----------|----------|----------|----------|----------|----------|
| <b>Fill-level switch</b>                   |          |          |          |          |          |          |
| Without fill-level switch                  | •        | •        | -        | -        | -        | -        |
| NC contact (detection of wire breakage)    | -        | -        | •        | •        | -        | -        |
| NO contact (no detection of wire breakage) | -        | -        | -        | -        | •        | •        |
| <b>Pressure switch 20 bar</b>              |          |          |          |          |          |          |
| Without pressure switch                    | •        | -        | •        | -        | •        | -        |
| NO contact                                 | -        | •        | -        | •        | -        | •        |

**Voltage key**

|                          | Voltage  | Frequency | Control       |
|--------------------------|----------|-----------|---------------|
| <b>924</b> <sup>3)</sup> | 24 V DC  | -         | A, B, E       |
| <b>428</b>               | 230 V AC | 50/60 Hz  | A, B, C, D, E |
| <b>429</b>               | 115 V AC | 50/60 Hz  | A, B, C, D, E |

<sup>3)</sup> Only possible with delivery rates 0.1 and 0.2 l/min

**Electrical connection**

| Control                                                                      | A, B | A, B | C, D | E |
|------------------------------------------------------------------------------|------|------|------|---|
| <b>Monitoring</b>                                                            | X    | A    | B    | C |
| <b>Electrical connection</b>                                                 |      |      |      |   |
| <b>0</b> = 2 cable fittings                                                  | -    | •    | •    | • |
| <b>1</b> = 1 cable fitting; 1 rectangular connector                          | -    | •    | •    | • |
| <b>2</b> = 1 circular connector M12x1; 1 rectangular connector <sup>4)</sup> | -    | •    | •    | • |
| <b>3</b> = 1 sealing plug; 1 cable fitting                                   | •    | -    | -    | - |
| <b>4</b> = 1 sealing plug; 1 rectangular connector                           | •    | -    | -    | - |

<sup>4)</sup> Only for design without control.

**Pressure gauge**

**0** = without pressure gauge

**1** = with pressure gauge

**Order example**

**MKU1-11AC10000+924**

- Gear pump unit for oil
- Delivery rate 0.1 l/min
- 1st generation
- 2 l plastic reservoir
- No control, with terminal strip
- NC fill-level switch, NO pressure switch
- With pressure gauge
- 2 cable fittings
- Voltage 24 VDC

## Pump unit

### MKF

Oil and fluid grease



#### Product description

MKF gear pump units are used in single-line systems to supply fluid greases NLGI 000 and 00 and include a pressure-regulating valve and pressure-relief valve. Electrical pressure monitoring is performed by an integrated pressure switch, and fill-level monitoring also is possible. These units are controlled externally via the machine control system or an integrated control unit. Also, MKF units can be supplied with a pushbutton to activate interim lubrication at any time. Main functions are integrated into the lid, and a plastic cap protects the electrical components from contaminants such as dirt and dust.

#### Features and benefits

- Integrated pressure-limitation and pressure-relief valve
- Optional: electrical pressure switch, pressure gauge, float switch
- External control via SPS or by means of internal control unit possible
- All important functions integrated into the lid
- Modular construction

#### Applications

- Material handling
- Automotives
- Machine tool
- Printing and finishing
- Industrial assembly and automation
- Textiles



#### Technical data

|                                |                                                                                                       |
|--------------------------------|-------------------------------------------------------------------------------------------------------|
| Function principle             | electrically operated gear pump                                                                       |
| Metering quantity              | 100; 200; 500 cm <sup>3</sup> /min<br>6; 12; 31 in <sup>3</sup> /min                                  |
| Lubricant                      | fluid grease NLGI 000<br>or 00, compatible with plastics, NBR<br>elastomers, copper and copper alloys |
| Operating temperature          | +10 to 40 °C; +50 to 104 °F                                                                           |
| Operating pressure             | max. 30 bar, 435 psi                                                                                  |
| Reservoir                      | 2,0; 3,0 and 6,0 l, 0,5, 0,8 and 1,6 gal                                                              |
| Material (reservoir)           | plastic, metal                                                                                        |
| Connection outlet              | G <sup>1</sup> / <sub>4</sub>                                                                         |
| Protection class               | IP 54                                                                                                 |
| Dimensions pump unit with      |                                                                                                       |
| 2 l; 0,5 gal plastic reservoir | 204 × 130 × 298 mm<br>8 × 5,2 × 11,7 in                                                               |
| 3 l; 0,8 gal plastic reservoir | 286 × 132 × 298 mm<br>11,3 × 5,2 × 11,7 in                                                            |
| 3 l; 0,8 gal metal reservoir   | 286 × 132 × 313 mm<br>11,3 × 5,2 × 12,3 in                                                            |
| 6 l; 1,5 gal plastic reservoir | 290 × 178 × 334 mm<br>11,4 × 7 × 13,2 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): **1-1203-EN, 951-170-005 EN**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

# Pump unit

## MKF

Order code

M K F - 1 0 0 0 +

Product series **MK**

F = fluid grease lubricant

Delivery rate

1 = 0.1 l/min

2 = 0.2 l/min

Lubricant reservoir, control

Lubricant reservoir

1

2

4

2 l, plastic

3 l, plastic

6 l, plastic

Control

A = no control, with terminal strip

B = no control, with terminal strip and pushbutton

C = IG38-30-I<sup>1)</sup>

D = IZ38-30-I<sup>1)</sup>

E = IGZ36-20-S6-I<sup>1)2)</sup>

Monitoring

Fill-level switch

Without fill-level switch

NC contact (detection of wire breakage)

NO contact (no detection of wire breakage)

Pressure switch 20 bar

Without pressure switch

NO contact

Voltage key

Voltage

Frequency

Control

924

24 V DC

–

A, B, E

428

230 V AC

50/60 Hz

A, B, C, D, E

429

115 V AC

A, B, C, D, E

Electrical connection

Control

A, B

A, B

C, D

E

Monitoring

X

A

B

C

C

Electrical connection

0 = 2 cable fittings

1 = 1 cable fitting; 1 rectangular connector

2 = 1 circular connector M12x1; 1 rectangular connector<sup>4)</sup>

3 = 1 sealing plug; 1 cable fitting

4 = 1 sealing plug; 1 rectangular connector

Pressure gauge

0 = without pressure gauge

1 = with pressure gauge

Order example

**MKF1-11AC10000+924**

• Gear pump unit for fluid grease

• Delivery rate 0.1 l/min

• 1st generation

• 2 l plastic reservoir

• No control, with terminal strip

• NC fill level switch, NO pressure switch

• With pressure gauge

• 2 cable fittings

• Voltage 24 VDC

PUB LS/P1 17046 EN

SKF

43

LINCOLN

## Pump unit

## MFE



### Product description

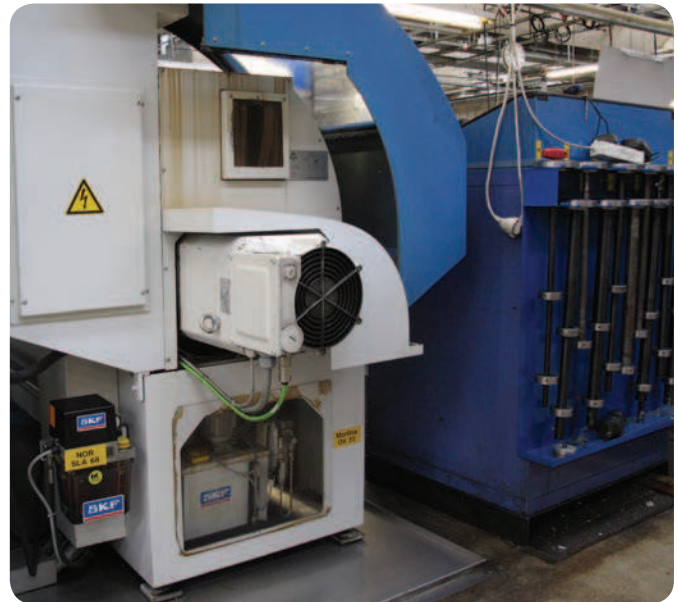
The gear pump units comprising the MFE series are designed to supply lubricant used in intermittently operated, single-line centralized lubrication systems. The basic setup includes a gear pump unit with motor, a 3- or 6 l lubricant reservoir in metal or plastic, or a 15 l metal reservoir and float switch to monitor the minimum permissible level of lubricant. In addition to the basic models, units can be outfitted with add-ons.

### Features and benefits

- Integrated float switch for fill-level monitoring
- Integrated pressure-relief valve and pressure-regulating valve
- Motors available for various voltage ranges and approvals
- Special designs offered for a wide range of applications
- Suitable for intermittent operation
- For remote installation out of reservoir or for built-in reservoir
- Reliable and versatile
- Suitable for use with metering devices of category 1 and 2

### Applications

- Automotive manufacturing
- Metal, including presses
- Machine tools
- Printing and finishing
- Industrial assembly and automation



### Technical data

Function principle . . . . . electrically operated gear pump  
Outlets. . . . . 1  
Metering quantity . . . . . 250 to 500 cm<sup>3</sup>/min, 15 to 31 in<sup>3</sup>/min  
Lubricant. . . . . oil 5 to 2 000 mm<sup>2</sup>/s and fluid grease  
NLGI 00, 000  
Operating temperature . . . . . -10 to +60 °C; +14 to +140 °F  
Back pressure . . . . . max. 17,5; 28 bar,  
max. 255, 405 psi  
Reservoir. . . . . 3; 6; 15 l, 0.8, 1.6, 4 gal  
Material (reservoir) . . . . . plastic, metal  
Connection outlet . . . . . M14×1.5  
Dimensions pump unit with  
3 l; 0.8 gal plastic reservoir . . . . . 303×130×245 mm; 11.9×5.1×9.6 in  
3 l; 0.8 gal metal reservoir. . . . . 332×178×312 mm; 13×7×12.3 in  
6 l; 1.5 gal plastic reservoir . . . . . 319×128×265 mm; 12.6×5×10.4 in  
6 l; 1.5 gal metal reservoir. . . . . 370×167×330 mm; 14.6×6.6×12.9 in  
15 l; 4 gal metal reservoir . . . . . 453×200×436 mm; 17.8×7.8×17.2 in  
Mounting position . . . . . vertical

### Floating switch for low-level monitoring of oil

Type of contact . . . . . 1 change-over;  
2 change-over contacts (reed contacts)  
Switching voltage . . . . . max. 230 VAC, 230 VDC  
Switching current . . . . . max. 0,8 A; 1,0 A

Switching capacity. . . . . max. 60 VA, 40 W<sup>1)</sup>  
Type of enclosure. . . . . IP 65

<sup>1)</sup> Take appropriate measures to protect contacts when switching inductive loads

### 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): **1-1202-EN, 951-170-002 EN**

## Pump unit

### MFE

#### MFE pump units for oil

| Order number       | Reservoir |     | Reservoir material | Design <sup>1)</sup>                                                                                                         |
|--------------------|-----------|-----|--------------------|------------------------------------------------------------------------------------------------------------------------------|
|                    | l         | gal |                    |                                                                                                                              |
| MFE5-K3-2          | 3         | 0.8 | Plastic            | CE basic version without level monitoring                                                                                    |
| MFE5-KW3-2         | 3         | 0.8 | Plastic            | CE basic version with min. fill level switch                                                                                 |
| MFE5-KW3-2-S4      | 3         | 0.8 | Plastic            | CE basic version with min. fill level switch incl. pre-warning                                                               |
| MFE5-KW3-S37+1FV   | 3         | 0.8 | Plastic            | UL/CSA version with fill level monitoring incl. min. fill level pre-warning                                                  |
| MFE5-KW3-S35+1FW   | 3         | 0.8 | Plastic            | CCC version with fill level monitoring incl. min. fill level pre-warning                                                     |
| MFE5-KW3-S24+MPG   | 3         | 0.8 | Plastic            | CE version with 6 pin Harting plug with fill level monitoring incl. min. fill level pre-warning                              |
| MFE5-K6            | 6         | 1.6 | Plastic            | CE basic version without level monitoring                                                                                    |
| MFE5-KW6           | 6         | 1.6 | Plastic            | CE basic version with min. fill level switch                                                                                 |
| MFE5-KW6-S1        | 6         | 1.6 | Plastic            | CE basic version with min. fill level switch incl. pre-warning                                                               |
| MFE5-KW6-S42+1FV   | 6         | 1.6 | Plastic            | UL/CSA version with fill level monitoring incl. min. fill level pre-warning                                                  |
| MFE5-KW6-S102+1FW  | 6         | 1.6 | Plastic            | CCC version with fill level monitoring incl. min. fill level pre-warning                                                     |
| MFE5-KW6-S33+MPG   | 6         | 1.6 | Plastic            | CE version with 6 pin Harting plug with fill level monitoring incl. min. fill level pre-warning                              |
| MFE5-B3-2          | 3         | 0.8 | Metal              | CE basic version without level monitoring                                                                                    |
| MFE5-BW3-2         | 3         | 0.8 | Metal              | CE basic version with min. fill level switch                                                                                 |
| MFE5-BW3-2-S28     | 3         | 0.8 | Metal              | CE basic version with min. fill level switch incl. pre-warning                                                               |
| MFE5-BW3-S-S34+1FV | 3         | 0.8 | Metal              | UL/CSA version with fill level monitoring incl. min. fill level pre-warning                                                  |
| MFE5-BW3-S41+MPG   | 3         | 0.8 | Metal              | CE version with 6 pin Harting plug with fill level monitoring incl. min. fill level pre-warning                              |
| MFE5-B7            | 6         | 1.6 | Metal              | CE basic version without level monitoring                                                                                    |
| MFE5-BW7           | 6         | 1.6 | Metal              | CE basic version with min. fill level switch                                                                                 |
| MFE5-BW7-S22+1FV   | 6         | 1.6 | Metal              | UL/CSA version with fill level monitoring incl. min. fill level pre-warning                                                  |
| MFE5-BW7-S97+1FW   | 6         | 1.6 | Metal              | CCC version with fill level monitoring incl. min. fill level pre-warning                                                     |
| MFE5-BW7-S107+MPG  | 6         | 1.6 | Metal              | CE version with 6 pin Harting plug with fill level monitoring incl. min. fill level pre-warning                              |
| MFE5-BW7-S222+MPG  | 6         | 1.6 | Metal              | CE version incl. gauge and vent filter, with 6 pin Harting plug with fill level monitoring incl. min. fill level pre-warning |
| MFE5-BW16          | 15        | 4   | Metal              | CE basic version with min. fill level switch incl. pre-warning                                                               |
| MFE5-BW16-S145+1FV | 15        | 4   | Metal              | UL/CSA version with fill level monitoring incl. min. fill level pre-warning                                                  |
| MFE5-BW16-S96+MPG  | 15        | 4   | Metal              | CE version with 6 pin Harting plug with fill level monitoring incl. min. fill level pre-warning                              |
| MFE5-BW16-S222+MPG | 15        | 4   | Metal              | CE version incl. gauge and vent filter, with 6 pin Harting plug with fill level monitoring incl. min. fill level pre-warning |
| MFE5-BW30          | 30        | 8   | Metal              | CE basic version with min. fill level switch                                                                                 |
| MFE5-BW30-S30      | 30        | 8   | Metal              | CE basic version with min. fill level switch incl. pre-warning                                                               |
| MFE5-BW30-S35+MPG  | 30        | 8   | Metal              | CE version with 6 pin Harting plug with fill level monitoring incl. min. fill level pre-warning                              |
| MFE5-BW30-S222+MPG | 30        | 8   | Metal              | CE version incl. gauge and vent filter, with 6 pin Harting plug with fill level monitoring incl. min. fill level pre-warning |

<sup>1)</sup> Further designs are available on request.

#### MFE pump units for fluid grease

| Order number      | Reservoir |     | Reservoir material | Design <sup>1)</sup>                                                                            |
|-------------------|-----------|-----|--------------------|-------------------------------------------------------------------------------------------------|
|                   | l         | gal |                    |                                                                                                 |
| MFE2-K3-2         | 3         | 0.8 | Plastic            | CE basic version without level monitoring                                                       |
| MFE2-K3F-2        | 3         | 0.8 | Plastic            | CE basic version with min. fill level switch                                                    |
| MFE2-KW3F-S13+1FV | 3         | 0.8 | Plastic            | UL/CSA version with fill level monitoring incl. min. fill level pre-warning                     |
| MFE2-KW3F-S9+MPG  | 3         | 0.8 | Plastic            | CE version with 6 pin Harting plug with fill level monitoring incl. min. fill level pre-warning |
| MFE2-K6F          | 6         | 1.6 | Plastic            | CE basic version without level monitoring                                                       |
| MFE2-K6F-S2       | 6         | 1.6 | Plastic            | CE basic version with min. fill level switch                                                    |
| MFE2-KW6F-S1      | 6         | 1.6 | Plastic            | CE basic version with min. fill level switch incl. pre-warning                                  |
| MFE2-KW6F-S37+1FV | 6         | 1.6 | Plastic            | UL/CSA version with fill level monitoring incl. min. fill level pre-warning                     |
| MFE2-KW6F-S41+1FW | 6         | 1.6 | Plastic            | CCC version with fill level monitoring incl. min. fill level pre-warning                        |
| MFE2-KW6F-S20+MPG | 6         | 1.6 | Plastic            | CE version with 6 pin Harting plug with fill level monitoring incl. min. fill level pre-warning |

<sup>1)</sup> Further designs are available on request.

# Metering devices

341



340



LS22



LS21



361



351



350



370



391



390



321 Modul



321 G



321 T



321 W



321 G7



321 G4



AB



310



VN



Oi-AI-SR



SL-42



SL-43



SL-41



SL-44



# Overview of oil and fluid grease metering devices

| Product                |                          |               |                     |                              |                 |                    |           |                        |       |                              |                              |      |
|------------------------|--------------------------|---------------|---------------------|------------------------------|-----------------|--------------------|-----------|------------------------|-------|------------------------------|------------------------------|------|
| Metering device series | Cate- gory <sup>1)</sup> | Lubricant oil | fluid grease 000/00 | Metering quantity per stroke |                 | Operating pressure |           | Relief pres- sure max. |       | Adjustment metering quantity | Function type                | Page |
|                        |                          |               |                     | cm <sup>3</sup>              | in <sup>3</sup> | bar                | psi       | bar                    | psi   |                              |                              |      |
| 341 <sup>2)</sup>      | 1                        | •             | –                   | 0,01-0,16                    | 0.0006-0.0097   | 6-80               | 87-1 160  | 3                      | 43.5  | –                            | prelubrication               | 48   |
| 340                    | 1                        | •             | –                   | 0,01-0,16                    | 0.0006-0.0097   | 6-80               | 87-1 160  | 3                      | 43.5  | –                            | prelubrication               | 50   |
| LS22 <sup>2)</sup>     | 1                        | •             | –                   | 0,01-0,16                    | 0.0006-0.0097   | 12-20              | 174-290   | 3                      | 43.5  | –                            | prelubrication               | 52   |
| LS21 <sup>2)</sup>     | 1                        | •             | –                   | 0,025-0,5                    | 0.0015-0.0305   | 12-80              | 174-1 160 | 3                      | 43.5  | •                            | prelubrication               | 53   |
| 361                    | 1                        | •             | –                   | 0,02-0,10                    | 0.0010-0.0060   | 8-80               | 116-1 160 | 3                      | 43.5  | –                            | dynamic pulse type           | 54   |
| 351 <sup>2)</sup>      | 1                        | •             | –                   | 0,05-0,60                    | 0.0030-0.0366   | 6-80               | 87-1 160  | 3                      | 43.5  | –                            | prelubrication               | 58   |
| 350                    | 1                        | •             | –                   | 0,05-0,60                    | 0.0030-0.0366   | 6-80               | 87-1 160  | 3                      | 43.5  | –                            | prelubrication               | 60   |
| 370                    | 1                        | •             | –                   | 0,05-1,50                    | 0.0030-0.0915   | 20-80              | 290-1 160 | 1                      | 14.5  | –                            | relubrication                | 62   |
| 391                    | 1                        | •             | –                   | 0,20-1,50                    | 0.0122-0.0915   | 8-45               | 116-653   | 7                      | 101.5 | –                            | prelubrication               | 64   |
| 390                    | 1                        | •             | –                   | 0,20-1,50                    | 0.0122-0.0915   | 8-80               | 116-1 160 | 7                      | 101.5 | –                            | prelubrication               | 66   |
| 321 G, G4, T, W, Modul | 2                        | •             | •                   | 0,01-0,10                    | 0.0006-0.0060   | 12-45              | 174-653   | 3                      | 43.5  | –                            | special assembly arrangement | 68   |
| 361                    | 2                        | •             | •                   | 0,01-0,20                    | 0.0006-0.0122   | 8-80               | 116-1 160 | 3                      | 43.5  | –                            | dynamic pulse type           | 54   |
| 321 G7                 | 2                        | •             | •                   | 0,01-0,30                    | 0.0006-0.0183   | 12-45              | 174-653   | 3                      | 43.5  | –                            | special assembly arrangement | 68   |
| AB <sup>2)</sup>       | 2                        | •             | •                   | 0,01-0,60                    | 0.0006-0.0366   | 18-50              | 261-725   | 3                      | 43.5  | –                            | prelubrication               | 70   |
| 341                    | 2                        | •             | •                   | 0,03-0,10                    | 0.0018-0.0061   | 6-80               | 87-1 160  | 3                      | 43.5  | –                            | prelubrication               | 48   |
| 340                    | 2                        | •             | •                   | 0,03-0,10                    | 0.0018-0.0061   | 6-80               | 87-1 160  | 3                      | 43.5  | –                            | prelubrication               | 50   |
| 310 <sup>3)</sup>      | 2                        | •             | •                   | 0,03-0,16                    | 0.0018-0.0097   | 12-30              | 174-465   | 3                      | 43.5  | –                            | prelubrication               | 56   |
| VN                     | 2                        | •             | •                   | 0,05-1,00                    | 0.0030-0.0610   | 20-80              | 290-1 160 | 1                      | 14.5  | –                            | relubrication                | 72   |
| 351                    | 2                        | •             | •                   | 0,10-0,60                    | 0.0061-0.0366   | 6-80               | 87-1 160  | 3                      | 43.5  | –                            | prelubrication               | 58   |
| 350                    | 2                        | •             | •                   | 0,10-0,30                    | 0.0061-0.0183   | 6-80               | 87-1 160  | 3                      | 43.5  | –                            | prelubrication               | 60   |
| Oi-Al-SR               | 3                        | •             | •                   | 0,02-0,10                    | 0.0012-0.0061   | 30-100             | 435-1 450 | 5                      | 72.5  | –                            | cartridge arrangement        | 74   |
| 391                    | 3                        | •             | •                   | 0,10-0,30                    | 0.0061-0.0183   | 8-45               | 116-653   | 7                      | 101.5 | –                            | prelubrication               | 64   |
| 390                    | 3                        | •             | •                   | 0,10-0,30                    | 0.0061-0.0183   | 8-80               | 116-1 160 | 7                      | 101.5 | –                            | prelubrication               | 66   |
| SL-42                  | 4                        | •             | •                   | 0,016-0,049                  | 0.001-0.0029    | 52-69              | 750-1 000 | 10                     | 150   | •                            | prelubrication               | 76   |
| SL-43                  | 4                        | •             | •                   | 0,016-0,131                  | 0.001-0.0080    | 52-69              | 750-1 000 | 10                     | 150   | •                            | prelubrication               | 78   |
| SL-41                  | 4                        | •             | •                   | 0,13-1,31                    | 0.0079-0.0799   | 52-69              | 750-1 000 | 10                     | 150   | •                            | prelubrication               | 80   |
| SL-44                  | 4                        | •             | •                   | 0,13-1,31                    | 0.0079-0.0799   | 52-69              | 750-1 000 | 10                     | 150   | •                            | prelubrication               | 82   |

<sup>1)</sup> The category allows a simple assignment of the metering device to a pump of the same category. The category results from the relief pressure, the operating principle and the lubricant suitable for the metering device.

<sup>2)</sup> Stainless steel or CSM available

<sup>3)</sup> For technical reasons, 310 metering devices can not be operated with the ECP pump.

## Metering device

# 341

Oil and fluid grease



### Product description

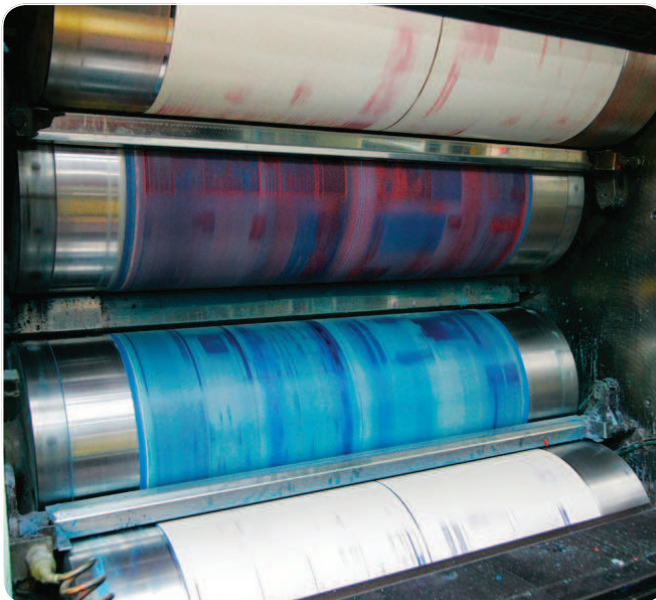
Developed for installation in manifolds, series 341 single-port, prelubrication metering devices are suitable for use with single-line, centralized lubrication systems for oil and fluid grease. The combination of these metering devices with one- to six-port manifolds provides flexible options for lubrication system design. Manifolds customized for product series 341 are available in aluminum and stainless steel.

### Features and benefits

- Suitable with manifolds having one to six ports to match number of lubrication points
- Provides flexible options for systems with remote single lubrication points or multiple-port metering devices with up to six ports
- Select optional push-in or screw-in type metering nipples for feed line connections via order code
- Choose separately manifold models with different thread sizes for main line connection and materials
- Current metering nipples above 0,03 cm<sup>3</sup> are exchangeable to yield different output quantities

### Applications

- Machine tools
- Printing machines
- Packaging industry
- Textile industry



### Technical data

|                       |                                                                                                                                                         |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                                                                                         |
| Outlets               | 1                                                                                                                                                       |
| Metering quantity     | oil: 0,01 to 0,16 cm <sup>3</sup><br>0.0006 to 0.0097 in <sup>3</sup><br>fluid grease: 0,03 to 0,10 cm <sup>3</sup><br>0.0018 to 0.0061 in <sup>3</sup> |
| Lubricant             | mineral and synthetic oil,<br>20 to 2 000 mm <sup>2</sup> /s,<br>0.031 to 3.100 in <sup>2</sup> /s<br>fluid grease of<br>NLGI 000, 00                   |
| Operating temperature | 0 to +80 °C; +32 to 176 °F                                                                                                                              |
| Operating pressure    | min. 6 bar, 87 psi<br>max. 80 bar, 1 160 psi                                                                                                            |
| Relief pressure       | max. 3 bar, 43.5 psi                                                                                                                                    |
| Materials             | steel (galvanized, Cr6-free),<br>stainless steel, nickel-plated brass,<br>brass, copper, FKM (FPM)/ NBR                                                 |
| Connection main line  | pipe ø 6 to 10 mm, solderless pipe<br>connection for threads<br>G 1/8; G 1/4; M 10x1 or M 14x1,5                                                        |
| Connection outlet     | pipe ø 2,5 mm and ø 4 mm;<br>metering nipple (VS) with SKF Quick<br>Connector, metering nipple (00) for<br>solderless pipe connection                   |
| Dimensions            | min. 43,5×12 mm; 1.713×0.472 in<br>max. 53×12 mm; 2.086×0.472 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): **1-5001-EN**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

## Metering device

# 341

**Order code**

3

4

1

-

-

0

0

0

0

-

0

0

**Product series** 341

**Number of metering points (1)** 00

**Design and metering quantity**

| Design code                        | 2                | 4                | 8                | 5                | 9            | 1                    | 7                    | 6                    |
|------------------------------------|------------------|------------------|------------------|------------------|--------------|----------------------|----------------------|----------------------|
| Lubricant                          | Oil              | Oil              | Oil              | Fluid grease     | Fluid grease | Oil                  | Fluid grease         | Oil                  |
| Ø Outlet [mm]                      | 2,5              | 4                | 4                | 4                | 4            | 4                    | 4                    | 4                    |
| Distributor body                   | Steel            | Steel            | Steel            | Steel            | Steel        | Steel                | Steel                | Steel (1.4305)       |
| Metering nipple                    | Brass            | Brass            | Brass            | Brass (n.p.)     | Brass (n.p.) | Brass                | Brass (n.p.)         | Steel (1.4305)       |
| Elastomer                          | NBR              | NBR              | FKM (FPM)        | NBR              | FKM (FPM)    | NBR                  | NBR                  | FKM (FPM)            |
| Threaded seal                      | FW <sup>2)</sup> | FW <sup>2)</sup> | FW <sup>2)</sup> | FW <sup>2)</sup> | Flat         | O-ring <sup>3)</sup> | O-ring <sup>3)</sup> | O-ring <sup>3)</sup> |
| Connection outlet                  | 00               | VS 00            | VS 00            | VS 00            | 00           | VS 00                | VS 00                | 00                   |
| Metering quantity code             | 1                | 1                | 1                | 1                | 1            | 1                    | 1                    | 1                    |
| 0,01 cm <sup>3</sup> <sup>1)</sup> | 1                | 1                | 1                | 1                | 1            | 1                    | 1                    | 1                    |
| 0,02 cm <sup>3</sup> <sup>1)</sup> | 2                | 2                | 2                | 2                | 2            | 2                    | 2                    | 2                    |
| 0,03 cm <sup>3</sup>               | 3                | 3                | 3                | 3                | 3            | 3                    | 3                    | 3                    |
| 0,06 cm <sup>3</sup>               | 4                | 4                | 4                | 4                | 4            | 4                    | 4                    | 4                    |
| 0,10 cm <sup>3</sup>               | 5                | 5                | 5                | 5                | 5            | 5                    | 5                    | 5                    |
| 0,16 cm <sup>3</sup>               | 5                | 5                | 5                | 5                | 5            | 5                    | 5                    | 5                    |

<sup>1)</sup> Subsequent modification of the metering quantity is not technically possible.  
<sup>2)</sup> FW=Flat washer must be ordered separately. Order number: **DIN7603-A8\*11.5-CU**    <sup>3)</sup> O-ring is part of the shipment

Oil and fluid grease

## Accessory

## Manifold



### Product description

For 341 metering devices, VL-manifold s are utilized for one to six screw-in points with thread M8x1 mm for O-ring or flat (copper) washer sealing. Normal-profile manifolds are available in aluminum and stainless steel, while narrow-profile manifolds are offered in aluminum only.

**Order code**

V

L

-

**Product series** VL

**Number of ports** 01 02 03 04 05 06

**Design of metering device pipe thread** A D

**Material** A E

**Design of main line connection** G1 G2 M3 M4

**01** = 1 screw-in point                      **04** = 4 screw-in points  
**02** = 2 screw-in points                   **05** = 5 screw-in points  
**03** = 3 screw-in points                   **06** = 6 screw-in points  
 (other numbers of ports available on request)

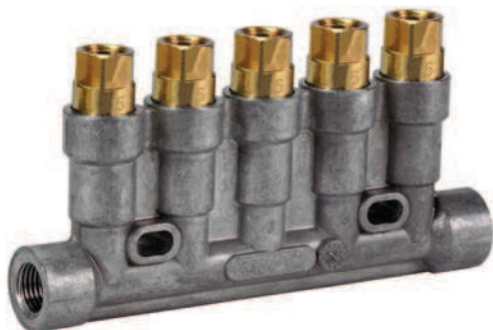
**A** = Normal profile, M8x1 with counterbore for O-ring  
**D** = Small profile, M8x1 without counterbore

**A** = Aluminum      **E** = Stainless steel (1.4305) (can only be selected for normal profile)

**G1** = G 1/8 per DIN 3852-2, Form X, small      **M4** = M14x1,5 with counterbore for solderless pipe connection per DIN 3862 (can only be selected for normal profile)  
**G2** = G 1/4 per DIN 3852-2, Form X, small  
**M3** = M10x1 with counterbore for solderless pipe connection per DIN 3862

## Metering device

340



Oil and fluid grease

### Product description

Offered in two-, three- and five-port models, series 340 metering devices were developed for use with single-line, centralized lubrication systems for oil and fluid grease. These metering devices are designed for installation directly on the machine/system requiring lubrication. Series 340 metering devices can be ordered with fittings for the main line connection by selecting the appropriate order code.

### Features and benefits

- Designed for installation directly on the machine/system requiring lubrication
- Select optional push-in or screw-in type metering nipples for feed line connections
- Choose optional push-in or screw-in type main line fittings
- Metering nipples above 0,03 cm<sup>3</sup> are exchangeable to yield different output quantities

### Applications

- Machine tools
- Printing machines
- Packaging industry
- Textile industry



### Technical data

|                       |                                                                                                                                                   |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                                                                                   |
| Outlets               | 2, 3 or 5                                                                                                                                         |
| Metering quantity     | oil: 0,01 to 0,16 cm <sup>3</sup><br>0.0006 to 0.0097 in <sup>3</sup><br>grease: 0,03 to 0,10 cm <sup>3</sup><br>0.0018 to 0.0061 in <sup>3</sup> |
| Lubricant             | mineral and synthetic oil,<br>20 to 2 000 mm <sup>2</sup> /s and<br>fluid grease NLGI 000, 00                                                     |
| Operating temperature | 0 to +80 °C; +32 to 176 °F                                                                                                                        |
| Operating pressure    | min. 6 bar, 87 psi; max. 80 bar, 1160 psi                                                                                                         |
| Relief pressure       | max. 3 bar, 43.5 psi                                                                                                                              |
| Materials             | zinc die-cast, brass (oil),<br>nickel-plated brass (fluid grease),<br>copper, steel, FKM (FPM)/NBR                                                |
| Connection main line  | different fittings for pipe ø 6 to 10 mm<br>or closure plugs for thread M10×1                                                                     |
| Connection outlet     | pipe ø2,5 and ø 4 mm metering<br>nipple (VS) with SKF quick connector,<br>metering nipple (00) for solderless<br>pipe connection                  |
| Dimensions            | min. 48×53×15 mm<br>min. 1.889×2.086×0.590 in<br>max. 99×58×15 mm<br>max. 3.897×2.283×0.590 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): **1-5001-EN**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

## Metering device

340

Order code

3

4

-

-

-

Product series

Number of metering points (2, 3, 5)

**Fittings for main line connection**

| Designation                                                        | ømain line [mm] | Code     |
|--------------------------------------------------------------------|-----------------|----------|
| Straight adapter                                                   | 6               | <b>B</b> |
| DIN 3862 with flat washer <sup>1)</sup>                            | 8               | <b>C</b> |
|                                                                    | 10              | <b>D</b> |
| Banjo fitting DIN 3862 with flat washer, lockable <sup>1) 2)</sup> | 6               | <b>F</b> |
| Screw plug with flat washer                                        | –               | <b>H</b> |
| Straight adapter with EO-2 functional nut                          | 6               | <b>M</b> |
|                                                                    | 8               | <b>N</b> |
|                                                                    | 10              | <b>P</b> |
| Straight adapter with SKF Quick Connector                          | 6               | <b>T</b> |
|                                                                    | 8               | <b>U</b> |
| Banjo fitting with SKF Quick Connectors, not lockable              | 6               | <b>V</b> |
| Vent plug with profile sealing ring                                | –               | <b>Y</b> |
| Without fitting; for solderless pipe connection <sup>1)</sup>      | 6               | <b>Z</b> |

<sup>1)</sup> Solderless pipe connection according to DIN 3862 (operating pressure max. 45 bar)  
<sup>2)</sup> Banjo bolt only inserted in delivery condition, not tightened

**Design and metering quantity**

| Design code            | 2                                  | 4     | 8         | 5                    |
|------------------------|------------------------------------|-------|-----------|----------------------|
| Lubricant              | Oil                                | Oil   | Oil       | Fluid grease         |
| Outlet [mm]            | 2,5                                | 4     | 4         | 4                    |
| Metering nipple        | Brass                              | Brass | Brass     | Brass, nickel-plated |
| Elastomer              | NBR                                | NBR   | FKM (FPM) | NBR                  |
| Outlet connection      | 00                                 | VS 00 | VS 00     | VS 00                |
| Metering quantity code | 0,01 cm <sup>3</sup> <sup>1)</sup> | 1     | 1         | 1                    |
|                        | 0,02 cm <sup>3</sup> <sup>1)</sup> | –     | 6         | 6                    |
|                        | 0,03 cm <sup>3</sup>               | 2     | 2         | 2                    |
|                        | 0,06 cm <sup>3</sup>               | 3     | 3         | 3                    |
|                        | 0,10 cm <sup>3</sup>               | 4     | 4         | 4                    |
|                        | 0,16 cm <sup>3</sup>               | 5     | 5         | 5                    |
|                        | closed <sup>2)</sup>               | V     | V         | V                    |

<sup>1)</sup> Subsequent modification of the metering quantity is not technically possible.  
<sup>2)</sup> V = Metering quantity of 0,03 cm<sup>3</sup>, closed

Oil and fluid grease

## Accessory

### Exchangeable metering nipples

**Solderless pipe connection**



**Order numbers for solderless pipe connection metering nipples**

| Outlet ø |      | Elastomer | Lubri-cant   | Order numbers sorted by metering quantity       |                                                 |                                                |                                                |
|----------|------|-----------|--------------|-------------------------------------------------|-------------------------------------------------|------------------------------------------------|------------------------------------------------|
| mm       | in   |           |              | 0,03 cm <sup>3</sup><br>0.00183 in <sup>3</sup> | 0,06 cm <sup>3</sup><br>0.00366 in <sup>3</sup> | 0,10 cm <sup>3</sup><br>0.0061 in <sup>3</sup> | 0,16 cm <sup>3</sup><br>0.0097 in <sup>3</sup> |
| 2,5      | 0.1  | NBR       | oil          | 995-994-003                                     | 995-994-006                                     | 995-994-010                                    | 995-994-016                                    |
| 4        | 0.16 | NBR       | oil          | 995-994-103                                     | 995-994-106                                     | 995-994-110                                    | 995-994-116                                    |
| 4        | 0.16 | FKM       | oil          | 341-453-K-S8                                    | 341-456-K-S8                                    | 341-460-K-S8                                   | 341-466-K-S8                                   |
| 4        | 0.16 | NBR       | fluid grease | 341-853-K                                       | 341-856-K                                       | 341-860-K                                      | –                                              |

**SKF Quick Connector**



**Order numbers for SKF Quick Connector metering nipples**

| Outlet ø |      | Elastomer | Lubri-cant   | Order numbers sorted by metering quantity       |                                                 |                                                |                                                |
|----------|------|-----------|--------------|-------------------------------------------------|-------------------------------------------------|------------------------------------------------|------------------------------------------------|
| mm       | in   |           |              | 0,03 cm <sup>3</sup><br>0.00183 in <sup>3</sup> | 0,06 cm <sup>3</sup><br>0.00366 in <sup>3</sup> | 0,10 cm <sup>3</sup><br>0.0061 in <sup>3</sup> | 0,16 cm <sup>3</sup><br>0.0097 in <sup>3</sup> |
| 4        | 0.16 | NBR       | oil          | 995-994-103-VS                                  | 995-994-106-VS                                  | 995-994-110-VS                                 | 995-994-116-VS                                 |
| 4        | 0.16 | FKM       | oil          | 341-453-S8-VS                                   | 341-456-S8-VS                                   | 341-460-S8-VS                                  | 341-466-S8-VS                                  |
| 4        | 0.16 | NBR       | fluid grease | 341-853-VS                                      | 341-856-VS                                      | 341-860-VS                                     | –                                              |

## Metering device

### LS22

Oil and fluid grease



#### Product description

Developed for installation in manifolds, LS22 are single-port metering devices for oil and special lubricants. When used in combination with one- to five-port manifolds, these prelubrication metering devices provide flexible options for lubrication system design. Connections with or without (M8x1) a quick-release connector are offered for feed lines and connections with a quick-release connector are available for main line tubes.

#### Features and benefits

- For use with manifolds having one to five ports to match number of lubrication points
- Compatible with  $\varnothing$  4 mm for feed lines and  $\varnothing$  8 for main lines
- Suitable for push-in or screw-in type fittings for dosers and push-in type fittings for manifolds
- Robust, reliable
- Suitable for up to 200 lubrication points

#### Applications

- Conveyor chain surfaces and guides
- Food and beverage
- Packaging

#### Technical data

|                       |                                                                                                                                                                          |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                                                                                                          |
| Outlets               | 1                                                                                                                                                                        |
| Metering quantity     | 0,010 to 0,160 cm <sup>3</sup><br>0.0006 to 0.0097 in <sup>3</sup>                                                                                                       |
| Lubricant             | mineral and synthetic oil,<br>5 to 2 500 mm <sup>2</sup> /s; 0.007 to 3.875 in <sup>2</sup> /s<br>or LDTS1 (dry film lubricant with<br>synthetic oil and PTFE additions) |
| Operating temperature | 0 to +50 °C; +32 to 122 °F                                                                                                                                               |
| Operating pressure    | min. 12 bar; 174 psi<br>max. 20 bar; 290 psi                                                                                                                             |
| Relief pressure       | max. 3 bar; 43.5 psi                                                                                                                                                     |
| Materials             | stainless steel 303, FKM (FPM),<br>high phosphorus FDA<br>chem. nickel-plated brass                                                                                      |
| Connection main line  | push-in connectors for pipe $\varnothing$ 8 mm<br>and thread G 1/4                                                                                                       |
| Connection outlet     | with or without push-in connectors<br>for pipe $\varnothing$ 4 mm and thread M10x1                                                                                       |
| Dimensions            | min. 89×68,5×20 mm<br>min. 3.5×2.67×0.8 in<br>max. 179×84×20 mm<br>max. 7.0×3.3×0.8 in                                                                                   |
| Mounting position     | any                                                                                                                                                                      |

#### Order numbers

| Order number. | Outlet(s) |
|---------------|-----------|
| LS2210        | 1         |
| LS2220        | 2         |
| LS2230        | 3         |
| LS2240        | 4         |
| LS2250        | 5         |

#### 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): **15848 EN**

## Metering device

### LS21



#### Product description

Developed for installation in manifolds, LS21 are single-port metering devices for oil and special lubricants. When used in combination with one- to five-port manifolds, these adjustable prelubrication metering devices provide flexible options for lubrication system design. Connections with or without (M8x1) a quick-release connector are offered for feed lines, and connections with a quick-release connector are available for main line tubes.

#### Features and benefits

- For use with manifolds having one to five ports to match number of lubrication points
- Compatible with  $\varnothing$  4 mm for feedlines and  $\varnothing$  8 for main lines
- Suitable for push-in type fittings for dosers and manifolds
- Robust, reliable
- Suitable for up to 200 lubrication points

#### Applications

- Conveyor chain surfaces and guides
- Food and beverage
- Packaging



Oil and fluid grease

#### Technical data

|                       |                                                                                                                                                                          |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Function principle    | adjustable metering device                                                                                                                                               |
| Outlets               | 1                                                                                                                                                                        |
| Metering quantity     | adjustable 0,025 to 0,5 cm <sup>3</sup><br>0.0015 to 0.0305 in <sup>3</sup>                                                                                              |
| Lubricant             | mineral and synthetic oil,<br>5 to 2 500 mm <sup>2</sup> /s; 0.007 to 3.875 in <sup>2</sup> /s<br>or LDTS1 (dry film lubricant with<br>synthetic oil and PTFE additions) |
| Operating temperature | 0 to + 50 °C; +32 to 122 °F                                                                                                                                              |
| Operating pressure    | min. 12 bar; 174 psi<br>max. 20 bar; 290 psi                                                                                                                             |
| Relief pressure       | max. 3 bar; 43.5 psi                                                                                                                                                     |
| Materials             | stainless steel 303, FKM (FPM), high<br>phosphorus FDA chem. nickel-plated brass                                                                                         |
| Connection main line  | push-in connectors for pipe<br>$\varnothing$ 8 mm and thread G 1/4                                                                                                       |
| Connection outlet     | with or without push-in connectors<br>for pipe $\varnothing$ 4 mm and thread M10x1                                                                                       |
| Working frequency     | $\leq$ 1 stroke/2 s                                                                                                                                                      |
| Dimensions            | min. 89×92×20 mm<br>min. 3.5×3.622×0.8 in<br>max. 179×110×20 mm<br>max. 7.0×4.330×0.8 in                                                                                 |
| Mounting position     | any                                                                                                                                                                      |

#### Order numbers

| Order number. | Outlet(s) |
|---------------|-----------|
| LS2110        | 1         |
| LS2120        | 2         |
| LS2130        | 3         |
| LS2140        | 4         |
| LS2150        | 5         |



#### 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): **15848 EN**



Product description

Designed for installation in manifolds, series 361 single-port, dynamic metering devices were developed for use with single-line, centralized lubrication systems for oil and fluid grease. When used in combination with one- to six-port manifolds, these metering devices provide flexible options for lubrication system design. Customized manifolds for series 361 metering devices are available in aluminum.

Features and benefits

- For use with manifolds having one to six ports to match number of lubrication points
- Designed for installation directly on the machine/system requiring lubrication
- Select screw-in type distributor with feed line connections via order code
- Choose separately optional manifold models with different thread sizes for main line connection

Applications

- Chain lubrication
- Transport and conveyor belts

Technical data

|                       |                                                                                                                                                                            |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                                                                                                            |
| Outlets               | 1                                                                                                                                                                          |
| Metering quantity     | oil and fluid grease:<br>0,01 to 0,20 cm <sup>3</sup> ; 0.0006 to 0.012 in <sup>3</sup><br>synthetic oil:<br>0,02 to 0,10 cm <sup>3</sup> ; 0.001 to 0.006 in <sup>3</sup> |
| Lubricant             | mineral and synthetic oil: 10 to<br>1 000 mm <sup>2</sup> /s, 0.015 to 1.55 in <sup>2</sup> /s<br>fluid grease of NLGI 000, 00                                             |
| Operating temperature | 0 to +80 °C; +32 to 176 °F                                                                                                                                                 |
| Operating pressure    | min. 8 bar, 116 psi<br>max. 80 bar, 1 160 psi                                                                                                                              |
| Relief pressure       | max. 3 bar; 43.5 psi                                                                                                                                                       |
| Materials             | steel (galvanized, Cr6-free),<br>(oil, grease), brass (oil), copper,<br>flat washer (copper), NBR                                                                          |
| Connection main line  | pipe ø 6 to 12 mm,<br>0.236 to 0.472 in; solderless pipe<br>connection for threads G 1/8;<br>G 1/4; M10×1 or M14×1,5 (DIN 3862)                                            |
| Connection outlet     | pipe ø 4 mm straight<br>compression nut fitting                                                                                                                            |
| Dimensions            | min. 42×14 mm<br>max. 46,5×14 mm<br>min. 1.653×0.551 in<br>max. 1.830×0.551 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](https://skf.com/lubrication): **1-5001-EN**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](https://skf-lubrication.partcommunity.com/3d-cad-models/)

## Metering device

# 361

| Order code                    |                           |
|-------------------------------|---------------------------|
| 3                             | 6 1 - 0 0 - 0 0 0 0 - 0 0 |
| Product series                |                           |
| Number of metering points (1) |                           |

| Design and metering quantity |                                                            |
|------------------------------|------------------------------------------------------------|
| Design code                  | 1 2                                                        |
| Lubricant                    | oil, fluid grease Oil                                      |
| Ø Outlet [mm]                | 4 4                                                        |
| Body                         | steel, galvanized brass                                    |
| Metering nipple material     | steel, galvanized brass                                    |
| Elastomer                    | NBR NBR                                                    |
| Connection outlet            | 00 00                                                      |
| Metering quantity code [cm³] | 0,01 1 -<br>0,02 2<br>0,03 3<br>0,05 4<br>0,10 5<br>0,20 6 |

\* Flat washer must be ordered separately. Order number: 504-019

Oil and fluid grease

## Accessory

## Manifold



### Product description

For 361 metering devices, VL-manifolds are utilized for one to six screw-in points with thread M10×1 mm for flat washer sealing. Various main line connections can be selected via order code.

| Order code                                                              |                                                                           |
|-------------------------------------------------------------------------|---------------------------------------------------------------------------|
| V                                                                       | L -                                                                       |
| Product series                                                          |                                                                           |
| Number of ports                                                         |                                                                           |
| 01 = 1 screw-in point                                                   | 04 = 4 screw-in points                                                    |
| 02 = 2 screw-in points                                                  | 05 = 5 screw-in points                                                    |
| 03 = 3 screw-in points                                                  | 06 = 6 screw-in points                                                    |
| (other numbers of ports available on request)                           |                                                                           |
| Design of metering device pipe thread                                   |                                                                           |
| B = Normal profile, M10×1 with counterbore for flat washer or O-ring    |                                                                           |
| E = Narrow profile, M10×1 with counterbore for flat washer              |                                                                           |
| Material                                                                |                                                                           |
| A = Aluminum                                                            | E = Stainless steel (1.4305) (can only be selected for normal profile)    |
| Design of main line connection                                          |                                                                           |
| G1 = G 1/8 per DIN 3852-2, Form X, small                                | M4 = M14×1,5 with counterbore for solderless pipe connection per DIN 3862 |
| G2 = G 1/4 per DIN 3852-2, Form X, small                                | (can only be selected for normal profile)                                 |
| M3 = M10×1 with counterbore for solderless pipe connection per DIN 3862 |                                                                           |

## Metering device

# 310



Oil and fluid grease

### Product description

As the industry's first non-metallic metering device, SKF's Series 310 has a unique appearance. However, its sleek, contemporary design provides proven SKF reliability for a minimum of 400 000 lubrication cycles. Developed for pre-lubrication applications using oil and fluid grease, this metering device is simple to install utilizing plastic or metallic lines and can be mounted in either an upright or inverted position. It also features easily identifiable dosing elements to meet various lubrication requirements.

### Features and benefits

- Suitable for use with plastic tubes or metal pipes
- Color-coded dosing elements to identify lubricant volumes
- Provides precise metering of lubricant
- Simple, lexible machine mounting in any position
- 2-, 3- or 5-port manifolds available
- Suitable for oil and fluid grease

### Applications

- Machine tools
- Textile and wood industry
- Printing machines
- Conveyors



### Technical data <sup>1)</sup>

|                       |                                                                                               |
|-----------------------|-----------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                               |
| Outlets               | 2, 3 or 5                                                                                     |
| Metering quantity     | 0,03 to 0,16 cm <sup>3</sup><br>0.0018 to 0.0097 in <sup>3</sup>                              |
| Lubricant             | mineral and synthetic oil,<br>20 to 1 500 mm <sup>2</sup> /s<br>fluid grease: NLGI 00 and 000 |
| Operating temperature | +5 to +50 °C; +41 to 122 °F                                                                   |
| Operating pressure    | min. 12 bar, 174 psi<br>max. 30 bar, 435 psi                                                  |
| Relief pressure       | max. 3 bar; 43.5 psi                                                                          |
| Materials             | high-performance PA66 resin                                                                   |
| Connection main line  | fittings for ø6 mm lines                                                                      |
| Connection outlet     | fittings for ø4 mm lines                                                                      |
| Dimensions            | min. 68×70×20,5 mm<br>max. 119×70×20,5 mm<br>min. 2.67×2.75×0.81 in<br>max. 4.68×2.75×0.81 in |
| Mounting position     | any                                                                                           |

<sup>1)</sup> For technical reasons, 310 metering devices can not be operated with the ECP pump.



### 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): **17505 EN**

## Metering device

### 310

|                                                          |   |   |  |   |   |   |   |   |  |  |  |  |  |  |   |   |   |
|----------------------------------------------------------|---|---|--|---|---|---|---|---|--|--|--|--|--|--|---|---|---|
| <b>Order code</b>                                        | 3 | 1 |  | - | 8 | 0 | 0 | - |  |  |  |  |  |  | - | 0 | 0 |
| <b>Product series</b>                                    |   |   |  |   |   |   |   |   |  |  |  |  |  |  |   |   |   |
| <b>Number of metering points</b>                         |   |   |  |   |   |   |   |   |  |  |  |  |  |  |   |   |   |
| 2 = 2 outlets                                            |   |   |  |   |   |   |   |   |  |  |  |  |  |  |   |   |   |
| 3 = 3 outlets                                            |   |   |  |   |   |   |   |   |  |  |  |  |  |  |   |   |   |
| 5 = 5 outlets                                            |   |   |  |   |   |   |   |   |  |  |  |  |  |  |   |   |   |
| <b>Elastomer</b>                                         |   |   |  |   |   |   |   |   |  |  |  |  |  |  |   |   |   |
| 8 = Elastomer (FPM)                                      |   |   |  |   |   |   |   |   |  |  |  |  |  |  |   |   |   |
| <b>Metering quantity</b>                                 |   |   |  |   |   |   |   |   |  |  |  |  |  |  |   |   |   |
| 0 = no outlet                                            |   |   |  |   |   |   |   |   |  |  |  |  |  |  |   |   |   |
| 2 = blue; 0,03 cm <sup>3</sup> ; 0.0018 in <sup>3</sup>  |   |   |  |   |   |   |   |   |  |  |  |  |  |  |   |   |   |
| 3 = white; 0,06 cm <sup>3</sup> ; 0.0036 in <sup>3</sup> |   |   |  |   |   |   |   |   |  |  |  |  |  |  |   |   |   |
| 4 = grey; 0,10 cm <sup>3</sup> ; 0.0061 in <sup>3</sup>  |   |   |  |   |   |   |   |   |  |  |  |  |  |  |   |   |   |
| 5 = black; 0,16 cm <sup>3</sup> ; 0.0097 in <sup>3</sup> |   |   |  |   |   |   |   |   |  |  |  |  |  |  |   |   |   |
| Y = grey; closed; blind plug                             |   |   |  |   |   |   |   |   |  |  |  |  |  |  |   |   |   |
| <b>Connection main line</b>                              |   |   |  |   |   |   |   |   |  |  |  |  |  |  |   |   |   |
| B = ø6 mm                                                |   |   |  |   |   |   |   |   |  |  |  |  |  |  |   |   |   |
| Y = closed (with #898-210-001)                           |   |   |  |   |   |   |   |   |  |  |  |  |  |  |   |   |   |

Oil and fluid grease

<sup>1)</sup> not available for 2-outlet manifold 312 = 0

<sup>2)</sup> not available for 2- and 3-outlet manifold 312 = 0; 313 = 0

## Accessory



### End-of-line plug

| Order number | description           |
|--------------|-----------------------|
| 898-210-001  | End-of-main-line plug |

### Product description

End-of-line plug suitable to plug main line outlet of 310 metering device to close the lubrication system. The red colour singalizes the end of the lubrication system.



### Product description

Designed for installation in manifolds, series 351 single-port, prelubrication metering devices were developed for use with single-line, centralized lubrication systems for oil and fluid grease. When used in combination with one- to six-port manifolds, these metering devices provide flexible options for lubrication system design. Customized manifolds for series 351 metering devices are available in aluminum and stainless steel.

### Features and benefits

- For use with manifolds having one to six ports to match number of lubrication points
- Provides flexible options for systems with remote single lubrication points or multiple-port metering devices with up to six ports
- Select optional push-in or screw-in type nipples for feed line connections
- Choose separately manifold models with different thread sizes for main line connection and materials
- Current metering nipples are exchangeable to yield different output quantities

### Applications

- Machine tools
- Printing machines
- Packaging industry
- Textile industry



### Technical data

|                       |                                                                                                                                                         |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                                                                                         |
| Outlets               | 1                                                                                                                                                       |
| Metering quantity     | oil: 0,05 to 0,60 cm <sup>3</sup><br>0.0030 to 0.0366 in <sup>3</sup><br>fluid grease: 0,10 to 0,60 cm <sup>3</sup><br>0.0061 to 0.0366 in <sup>3</sup> |
| Lubricant             | mineral and synthetic oil,<br>20 to 2 000 mm <sup>2</sup> /s and<br>fluid grease NLGI 000, 00                                                           |
| Operating temperature | 0 to +80 °C; +32 to 176 °F                                                                                                                              |
| Operating pressure    | min. 6 bar, 87 psi;<br>max. 80 bar, 1 160 psi                                                                                                           |
| Relief pressure       | max. 3 bar, 43,5 psi                                                                                                                                    |
| Materials             | aluminum, stainless steel, brass (oil),<br>nickel-plated brass (grease), flat<br>washer (copper, stainless steel), FKM<br>(FPM)/NBR                     |
| Connection main line  | pipe ø 6 to 12 mm solderless pipe<br>connection for threads G 1/8; G 1/4;<br>M10×1 or M14×1,5 (DIN 3862)                                                |
| Connection outlet     | pipe ø 4 mm metering nipple (VS) with<br>SKF Quick Connector - metering nipple<br>(00) for solderless pipe connection                                   |
| Dimensions            | min. 43,5×12 mm; 1.713×0.472 in<br>max. 53×12 mm; 2.086×0.472 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): **1-5001-EN**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

## Metering device

351

**Order code** 3 5 1 - - - 0 0 0 0 - 0 0

Product series

Number of metering points (1)

**Design and metering quantity**

| Design code            | 0                | 8                | 4                            | 1                | 7                | 2                    | 3                    | 6                    |
|------------------------|------------------|------------------|------------------------------|------------------|------------------|----------------------|----------------------|----------------------|
| Lubricant              | Oil              | Oil              | Oil                          | Fluid grease     | Fluid grease     | Oil                  | Fluid grease         | Oil                  |
| Ø Outlet [mm]          | 4                | 4                | 4                            | 4                | 4                | 4                    | 4                    | 4                    |
| Body                   | Aluminum         | Aluminum         | Steel (1.4305)               | Aluminum         | Aluminum         | Aluminum             | Aluminum             | Steel (1.4305)       |
| Metering nipple        | Brass            | Brass            | Steel (1.4305)               | Brass (n.p.)     | Brass (n.p.)     | Brass                | Brass (n.p.)         | Steel (1.4305)       |
| Elastomer              | NBR              | FKM (FPM)        | FKM (FPM)                    | NBR              | FKM (FPM)        | NBR                  | NBR                  | FKM (FPM)            |
| Threaded seal          | FW <sup>1)</sup> | FW <sup>1)</sup> | Steel (1.4305) <sup>2)</sup> | FW <sup>1)</sup> | FW <sup>1)</sup> | O-ring <sup>3)</sup> | O-ring <sup>3)</sup> | O-ring <sup>3)</sup> |
| Connection outlet      | VS 00            | VS 00            | 00                           | VS 00            | VS 00            | VS 00                | VS 00                | 00                   |
| Metering quantity code |                  |                  |                              |                  |                  |                      |                      |                      |
| 0,05 cm <sup>3</sup>   | 3                | 3                | 3                            | 3                | 3                | 3                    | 3                    | 3                    |
| 0,10 cm <sup>3</sup>   | 4                | 4                | 4                            | 4                | 4                | 4                    | 4                    | 4                    |
| 0,20 cm <sup>3</sup>   | 5                | 5                | 5                            | 5                | 5                | 5                    | 5                    | 5                    |
| 0,30 cm <sup>3</sup>   | -                | -                | -                            | -                | -                | -                    | -                    | -                    |
| 0,40 cm <sup>3</sup>   | 6                | 6                | 6                            | 6                | 6                | 6                    | 6                    | 6                    |
| 0,60 cm <sup>3</sup>   | 7                | 7                | 7                            | 7                | 7                | 7                    | 7                    | 7                    |

<sup>1)</sup> Flat washer must be ordered separately. Order number: 504-019  
<sup>2)</sup> Stainless steel ring must be ordered separately. Order number: 99-1031-7603 <sup>3)</sup> O-ring is part of the shipment

Oil and fluid grease

## Accessory

### Manifold



#### Product description

For 351 metering devices, VL-manifolds are utilized for one to six screw-in points with thread M10×1 mm for O-ring or flat (copper) washer sealing. Various main line connections can be selected via order code.

**Order code** V L - - - - -

Product series

Number of ports

01 = 1 screw-in point 04 = 4 screw-in points  
 02 = 2 screw-in points 05 = 5 screw-in points  
 03 = 3 screw-in points 06 = 6 screw-in points  
 (other numbers of ports available on request)

Design of metering device pipe thread

B = Normal profile, M10×1 with counterbore for flat washer or O-ring  
 E = Narrow profile, M10×1 with counterbore for flat washer

Material

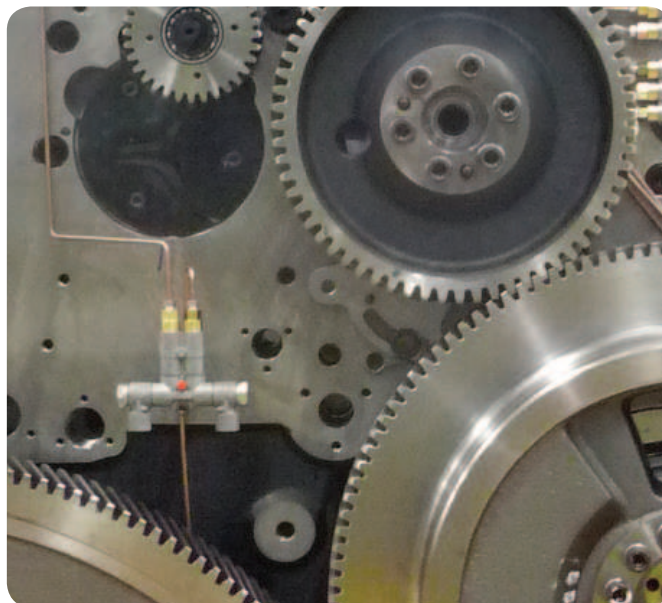
A = Aluminum E = Stainless steel (1.4305) (can only be selected for normal profile)

Design of main line connection

G1 = G 1/8 per DIN 3852-2, Form X, small M4 = M14x1,5 with counterbore for solderless pipe connection per DIN 3862  
 G2 = G 1/4 per DIN 3852-2, Form X, small (can only be selected for normal profile)  
 M3 = M10×1 with counterbore for solderless pipe connection per DIN 3862

## Metering device

350



### Product description

Designed for installation directly on the machine/system requiring lubrication, series 350 single-line, prelubrication metering devices are available in two-, three- and five-port models. These metering devices were developed for use with single-line, centralized lubrication systems for oil and fluid grease. Series 350 metering devices can be ordered with fittings for the main line connection by selecting the appropriate order code.

### Features and benefits

- For use with distributor bodies having two, three and five ports to match number of lubrication points
- Designed for installation directly on the machine/system requiring lubrication
- Select push-in or screw-in type metering nipples for feed line connection with metering device bodies
- Choose push-in or screw-in type main line fittings with metering device bodies
- Current metering nipples above 0,03 cm<sup>3</sup> are exchangeable to yield different output quantities

### Applications

- Machine tools
- Printing machines
- Packaging industry
- Textile industry
- Agriculture

### Technical data

|                       |                                                                                                                                                 |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                                                                                 |
| Outlets               | 2, 3 or 5                                                                                                                                       |
| Metering quantity     | oil: 0,05 to 0,60 cm <sup>3</sup><br>0.003 to 0.037 in <sup>3</sup><br>grease: 0,10 to 0,30 cm <sup>3</sup><br>0.0061 to 0.0183 in <sup>3</sup> |
| Lubricant             | mineral and synthetic oil,<br>20 to 2 000 mm <sup>2</sup> /s and<br>fluid grease NLGI 000, 00                                                   |
| Operating temperature | 0 to +80 °C; +32 to 176 °F                                                                                                                      |
| Operating pressure    | min. 6 bar, 87 psi;<br>max. 80 bar, 1 160 psi                                                                                                   |
| Relief pressure       | max. 3 bar, 43.5 psi                                                                                                                            |
| Materials             | zinc die-cast, brass (oil), nickel-plated<br>brass (fluid grease), copper, steel,<br>FKM (FPM)/NBR                                              |
| Connection main line  | different fittings for pipe ø 6 to 10 mm;<br>0.236 to 0.393 in or closure plugs for<br>thread M 12×1                                            |
| Connection outlet     | pipe ø 4 mm metering nipple (VS) with<br>SKF Quick Connector - metering nipple<br>(00) for solderless pipe connection                           |
| Dimensions            | min. 46×83×18 mm<br>min. 1.811×3.267×0.708 in<br>max. 97×86×18 mm<br>max. 3.818×3.385×0.708 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): **1-5001-EN**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

## Metering device

350

**Order code**

3

5

-

-

-

**Product series**

**Number of metering points (2, 3, 5)**

**Design and metering quantity**

| Design code            | 0                    |    | 8         |    | 1            |    | 7            |    |
|------------------------|----------------------|----|-----------|----|--------------|----|--------------|----|
| Lubricant              | Oil                  |    | Oil       |    | Fluid grease |    | Fluid grease |    |
| Ø Outlet [mm]          | 4                    |    | 4         |    | 4            |    | 4            |    |
| Metering nipple        | Brass                |    | Brass     |    | Brass (n.p.) |    | Brass (n.p.) |    |
| Elastomer              | NBR                  |    | FKM (FPM) |    | NBR          |    | FKM (FPM)    |    |
| Outlet connection      | VS                   | 00 | VS        | 00 | VS           | 00 | VS           | 00 |
| Metering quantity code | 0,05 cm <sup>3</sup> | 3  | 3         | 3  | 3            | -  | -            | -  |
|                        | 0,10 cm <sup>3</sup> | 4  | 4         | 4  | 4            | 4  | 4            | 4  |
|                        | 0,20 cm <sup>3</sup> | 5  | 5         | 5  | 5            | 5  | 5            | 5  |
|                        | 0,30 cm <sup>3</sup> | -  | -         | -  | -            | 6  | 6            | 6  |
|                        | 0,40 cm <sup>3</sup> | 6  | 6         | 6  | 6            | -  | -            | -  |
|                        | 0,60 cm <sup>3</sup> | 7  | 7         | 7  | 7            | -  | -            | -  |
|                        | closed *             | V  | V         | V  | V            | V  | V            | V  |

\* V = Metering quantity of 0,20 cm<sup>3</sup>, closed

**Fittings for main line connection**

| Designation                                                        | Main line [mm] | Code |
|--------------------------------------------------------------------|----------------|------|
| Straight adapter                                                   | 6              | B    |
| DIN 3862 with flat washer <sup>1)</sup>                            | 8              | C    |
|                                                                    | 10             | D    |
| Banjo fitting DIN 3862 with flat washer, lockable <sup>1) 2)</sup> | 6              | E    |
|                                                                    | 8              | F    |
| Screw plug with flat washer                                        | -              | H    |
| Straight adapter with EO-2 functional nut                          | 6              | M    |
|                                                                    | 8              | N    |
|                                                                    | 10             | P    |
|                                                                    | 12             | R    |
| Straight adapter with SKF Quick Connector                          | 6              | S    |
|                                                                    | 8              | T    |
| Banjo fitting with SKF Quick Connectors                            | 6              | W    |
|                                                                    | 8              | X    |
| Without fitting (M12x1 thread)                                     | -              | Z    |

<sup>1)</sup> Solderless pipe connection according to DIN 3862 (operating pressure max. 45 bar)  
<sup>2)</sup> Banjo bolt only inserted in delivery condition, not tightened

Oil and fluid grease

## Accessory

### Exchangeable metering nipples

#### Order numbers for metering nipples for oil (replaceable)

| Outlet Ø |      | Material Elastomer | Metering nipple | Metering quantity                             |                                               |                                               |                                               |                                               |
|----------|------|--------------------|-----------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| mm       | in   |                    |                 | 0,05 cm <sup>3</sup><br>0.003 in <sup>3</sup> | 0,10 cm <sup>3</sup><br>0.006 in <sup>3</sup> | 0,20 cm <sup>3</sup><br>0.012 in <sup>3</sup> | 0,40 cm <sup>3</sup><br>0.024 in <sup>3</sup> | 0,60 cm <sup>3</sup><br>0.036 in <sup>3</sup> |
| 4        | 0.16 | NBR                | 00              | 352-005-K                                     | 352-010-K                                     | 352-020-K                                     | 352-040-K                                     | 352-060-K                                     |
| 4        | 0.16 | NBR                | VS              | 352-005-VS                                    | 352-010-VS                                    | 352-020-VS                                    | 352-040-VS                                    | 352-060-VS                                    |
| 4        | 0.16 | FKM (FPM)          | 00              | 352-005-K-S8                                  | 352-010-K-S8                                  | 352-020-K-S8                                  | 352-040-K-S8                                  | 352-060-K-S8                                  |
| 4        | 0.16 | FKM (FPM)          | VS              | 352-005-S8-VS                                 | 352-010-S8-VS                                 | 352-020-S8-VS                                 | 352-040-S8-VS                                 | 352-060-S8-VS                                 |

#### Order numbers for metering nipples for fluid grease (replaceable)

| Outlet Ø |      | Material Elastomer | Metering nipple | Metering quantity                             |                                               |                                               |                                               |
|----------|------|--------------------|-----------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| mm       | in   |                    |                 | 0,10 cm <sup>3</sup><br>0.006 in <sup>3</sup> | 0,20 cm <sup>3</sup><br>0.012 in <sup>3</sup> | 0,30 cm <sup>3</sup><br>0.018 in <sup>3</sup> | 0,60 cm <sup>3</sup><br>0.036 in <sup>3</sup> |
| 4        | 0.16 | NBR                | 00              | 995-993-610                                   | 995-993-620                                   | 995-993-630                                   | 995-993-660                                   |
| 4        | 0.16 | NBR                | VS              | 995-993-610-VS                                | 995-993-620-VS                                | 995-993-630-VS                                | -                                             |
| 4        | 0.16 | FKM (FPM)          | 00              | 352-010-K-S82                                 | 352-020-K-S82                                 | 352-030-K-S82                                 | -                                             |
| 4        | 0.16 | FKM (FPM)          | VS              | 352-010-S82-VS                                | 352-020-S82-VS                                | 352-030-S82-VS                                | -                                             |



Product description

Series 370 relubrication metering devices were developed for use with single-line, centralized lubrication systems for oil. Designed for installation directly on the machine/system requiring lubrication, these metering devices are available in two-, three- and five-port models. Series 370 metering devices can be ordered with fittings for the main line connection by selecting the appropriate order code.

Features and benefits

- For use with distributor bodies having two, three and five ports to match number of lubrication points
- Designed for installation directly on the machine/system requiring lubrication
- Choose optional metering nipples and push-in or screw-in type fittings for feed line connections
- Select SKF Quick Connector or screw-in type main line fittings
- Current metering nipples are easily exchangeable to yield different output quantities

Applications

- Machine tools
- Printing machines
- Packaging industry
- Textile industry



Technical data

|                       |                                                                                                                                                |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                                                                                |
| Outlets               | 2, 3 or 5                                                                                                                                      |
| Metering quantity     | 0.05 to 1,50 cm <sup>3</sup><br>0.003 to 0.091 in <sup>3</sup>                                                                                 |
| Lubricant             | mineral and synthetic oil<br>20 to 2 000 mm <sup>2</sup> /s<br>0.031 to 3.100 in <sup>2</sup> /s                                               |
| Operating temperature | −20 to +80 °C; −4 to 176 °F                                                                                                                    |
| Operating pressure    | min. 20 bar, 290 psi<br>max. 80 bar, 1 160 psi                                                                                                 |
| Relief pressure       | ≤1 bar, 14.5 psi                                                                                                                               |
| Materials             | zinc die-cast, brass, copper, steel, NBR                                                                                                       |
| Connection main line  | different fittings for pipe ø 6 to 12 mm;<br>0.236 to 0.472 in or closure plugs for<br>thread M12×1                                            |
| Connection outlet     | pipe ø 4 mm; 0.16 in - metering nipple<br>(VS) with SKF Quick Connector -<br>metering nipple (00) for solderless<br>pipe connection (DIN 3862) |
| Dimensions            | min. 37 × 75 × 50,5 mm<br>min. 1.456 × 2.952 × 1.988 in<br>max. 88 × 75 × 56,5 mm<br>max. 3.464 × 2.952 × 2.224 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): **1-5001-EN**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

## Metering device

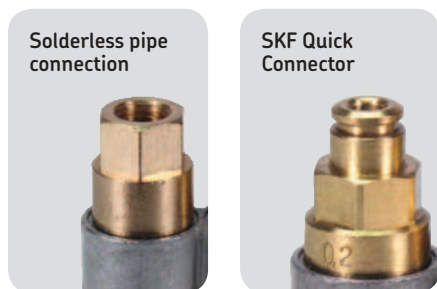
370

| Order number configurator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | 3 | 7 |  | - | 2 |  |  | - |  |  |  |  |  |  | - |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---|---|--|---|---|--|--|---|--|--|--|--|--|--|---|--|--|--|
| Product series                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |   |   |  |   |   |  |  |   |  |  |  |  |  |  |   |  |  |  |
| Number of metering points (2, 3, 5)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |   |   |  |   |   |  |  |   |  |  |  |  |  |  |   |  |  |  |
| Lubrication line fitting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |   |   |  |   |   |  |  |   |  |  |  |  |  |  |   |  |  |  |
| <b>00</b> = Solderless pipe connection<br><b>VS</b> = SKF Quick Connector                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |   |   |  |   |   |  |  |   |  |  |  |  |  |  |   |  |  |  |
| Metering quantity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |   |   |  |   |   |  |  |   |  |  |  |  |  |  |   |  |  |  |
| <b>3</b> = 0,05 cm <sup>3</sup> , 0.0030 in <sup>3</sup><br><b>4</b> = 0,10 cm <sup>3</sup> , 0.0061 in <sup>3</sup><br><b>5</b> = 0,20 cm <sup>3</sup> , 0.0122 in <sup>3</sup><br><b>6</b> = 0,40 cm <sup>3</sup> , 0.0244 in <sup>3</sup>                                                                                                                                                                                                                                                                                              |  |   |   |  |   |   |  |  |   |  |  |  |  |  |  |   |  |  |  |
| <b>7</b> = 0,60 cm <sup>3</sup> , 0.0366 in <sup>3</sup><br><b>8</b> = 1,00 cm <sup>3</sup> , 0.0610 in <sup>3</sup><br><b>9</b> = 1,50 cm <sup>3</sup> , 0.0915 in <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                          |  |   |   |  |   |   |  |  |   |  |  |  |  |  |  |   |  |  |  |
| Fittings for main line connection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |   |   |  |   |   |  |  |   |  |  |  |  |  |  |   |  |  |  |
| <b>B</b> = Solderless pipe connection ø 6 mm, 0.23 in.<br><b>C</b> = Solderless pipe connection ø 8 mm, 0.31 in.<br><b>D</b> = Solderless pipe connection ø 10 mm, 0.39 in.<br><b>E</b> = Banjo fitting DIN 3862 with flat washer, lockable ø 6 mm, 0.23 in.<br><b>F</b> = Banjo fitting DIN 3862 with flat washer, lockable ø 8 mm, 0.31 in.<br><b>H</b> = Screw plug with flat washer<br><b>M</b> = Straight adapter with EO-2 functional nut ø 6 mm, 0.23 in.<br><b>N</b> = Straight adapter with EO-2 functional nut ø 8 mm, 0.31 in. |  |   |   |  |   |   |  |  |   |  |  |  |  |  |  |   |  |  |  |
| <b>P</b> = Straight adapter with EO-2 functional nut ø 10 mm, 0.39 in.<br><b>R</b> = Straight adapter with EO-2 functional nut ø 12 mm, 0.47 in.<br><b>S</b> = Straight adapter with SKF Quick Connector ø 6 mm, 0.23 in.<br><b>T</b> = Straight adapter with SKF Quick Connector ø 8 mm, 0.31 in.<br><b>W</b> = Banjo fitting with SKF Quick Connector ø 6 mm, 0.23 in.<br><b>X</b> = Banjo fitting with SKF Quick Connector ø 8 mm, 0.31 in.<br><b>Z</b> = Without fitting, solderless pipe connection                                  |  |   |   |  |   |   |  |  |   |  |  |  |  |  |  |   |  |  |  |

Oil and fluid grease

## Accessory

### Exchangeable metering nipples



#### Order numbers for metering nipples\* (replaceable)

| Outlet ø |       | Material<br>Elastomer | Metering quantity                             |                                               |                                               |                                               |                                               |                                               |                                               |
|----------|-------|-----------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| mm       | in    |                       | 0,05 cm <sup>3</sup><br>0.003 in <sup>3</sup> | 0,10 cm <sup>3</sup><br>0.006 in <sup>3</sup> | 0,20 cm <sup>3</sup><br>0.012 in <sup>3</sup> | 0,40 cm <sup>3</sup><br>0.024 in <sup>3</sup> | 0,60 cm <sup>3</sup><br>0.036 in <sup>3</sup> | 1,00 cm <sup>3</sup><br>0.061 in <sup>3</sup> | 1,50 cm <sup>3</sup><br>0.092 in <sup>3</sup> |
| 4        | 0.157 | NBR                   | V72-005                                       | V71-010                                       | V71-020                                       | V71-040                                       | V71-060                                       | V71-100                                       | V71-150                                       |

\* Metering nipples are made of brass.

## Metering device

# 391

Oil and fluid grease



### Product description

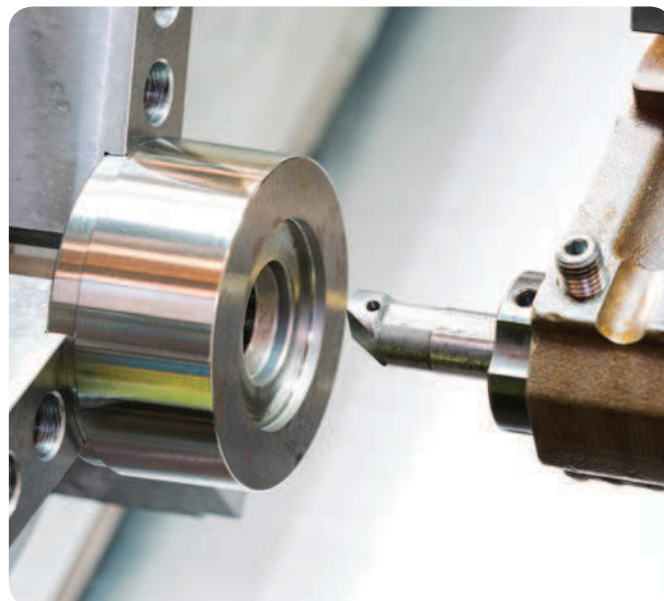
Series 391 single-port prelubrication metering devices were developed for use with single-line, centralized lubrication systems for oil and fluid grease. Designed for installation in manifolds, these metering devices provide flexible system design when combined with one- to six-port manifolds. Customized manifolds for series 391 are available in aluminum.

### Features and benefits

- For use with manifolds having one to six ports to match number of lubrication points
- Provides flexible options for systems with remote single lubrication points or multiple-port metering devices with up to six ports
- Select screw-in type metering nipples with feed line connections via order code
- Choose separately manifold models with different thread sizes for main line connection
- Current metering nipples are exchangeable to yield different output quantities

### Applications

- Machine tools
- Printing machines
- Packaging industry
- Textile industry



### Technical data

|                       |                                                                                                                                             |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                                                                             |
| Outlets               | 1                                                                                                                                           |
| Metering quantity     | oil: 0,2 to 1,5 cm <sup>3</sup> ; 0.01 to 0.09 in <sup>3</sup><br>fluid grease: 0,1 to 0,3 cm <sup>3</sup><br>0.006 to 0.02 in <sup>3</sup> |
| Lubricant             | mineral and synthetic oil,<br>20 to 2 000 mm <sup>2</sup> /s,<br>fluid grease NLGI 000, 00                                                  |
| Operating temperature | 0 to +80 °C; +32 to 176 °F                                                                                                                  |
| Operating pressure    | min. 8 bar, 116 psi<br>max. 45 bar, 653 psi                                                                                                 |
| Relief pressure       | max. 7 bar; 101.5 psi                                                                                                                       |
| Materials             | aluminum, brass (oil), nickel-plated<br>brass (fluid grease), copper, FKM<br>(FPM)/NBR                                                      |
| Connection main line  | pipe ø 6 to 12 mm<br>0.236 to 0.472 in<br>solderless pipe connection<br>for threads G 1/8; G 1/4; M10×1<br>or M14×1,5 (DIN 3862)            |
| Connection outlet     | pipe ø 4 mm; 0.16 in - metering nipple<br>(00) for solderless pipe connection                                                               |
| Dimensions            | min. 67,5 × 22 mm<br>min. 2.657 × 0.866 in<br>max. 78,5 × 22 mm<br>max. 3.091 × 0.866 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): **1-5001-EN**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

## Metering device

# 391

**Order code** 3 9 1 - 0 0 - 0 0 0 0 - 0 0

Product series

Number of metering points (1)

**Design and metering quantity**

| Design code            | 0            | 8            | 1                    |
|------------------------|--------------|--------------|----------------------|
| Lubricant              | Oil          | Oil          | Fluid grease         |
| Ø Outlet [mm]          | 4            | 4            | 4                    |
| Body                   | aluminum     | aluminum     | aluminum             |
| Metering nipple        | brass        | brass        | brass, nickel-plated |
| Elastomer              | NBR          | FKM (FPM)    | NBR                  |
| Threaded seal          | Flat washer* | Flat washer* | Flat washer*         |
| Connection outlet      | 00           | 00           | 00                   |
| Metering quantity code |              |              |                      |
| 0,10 cm <sup>3</sup>   | -            | -            | 4                    |
| 0,20 cm <sup>3</sup>   | 5            | 5            | 5                    |
| 0,30 cm <sup>3</sup>   | -            | -            | 6                    |
| 0,40 cm <sup>3</sup>   | 6            | 6            | -                    |
| 0,60 cm <sup>3</sup>   | 7            | 7            | -                    |
| 1,00 cm <sup>3</sup>   | 8            | 8            | -                    |
| 1,50 cm <sup>3</sup>   | 9            | 9            | -                    |

\* Flat washer must be ordered separately. Order number: DIN7603-A14x18-CU

Oil and fluid grease

## Accessory

## Manifold



### Product description

For 391 metering devices, VL-manifolds are utilized for one to six screw-in points with thread M14x1,5 mm for flat (copper) washer sealing. Various main line connections can be selected via order code.

**Order code** V L - C A

Product series

Number of ports

01 = 1 screw-in point  
02 = 2 screw-in points  
03 = 3 screw-in points  
04 = 4 screw-in points  
05 = 5 screw-in points  
06 = 6 screw-in points  
(other numbers of ports available on request)

Design of metering device pipe thread

C = Normal profile, M14x1,5 with counterbore for flat washer

Material

A = Aluminum

Design of main line connection

G1 = G 1/8 per DIN 3852-2, Form X, schmal  
G2 = G 1/4 per DIN 3852-2, Form X, schmal  
M3 = M10x1 with counterbore for solderless pipe connection per DIN 3862  
M4 = M14x1,5 with counterbore for solderless pipe connection per DIN 3862 (can only be selected for normal profile)

## Metering device

390

Oil and fluid grease



### Product description

Series 390 prelubrication metering devices were developed for use with single-line, centralized lubrication systems for oil and fluid grease. Designed for installation directly on the machine/system requiring lubrication, these metering devices can be ordered with fittings for the main line connection by selecting the appropriate order code.

### Features and benefits

- For use with distributor bodies having two or three ports to match number of lubrication points
- Designed for installation directly on the machine/system requiring lubrication
- Select screw-in type metering nipples for feed line connections
- Choose push-in or screw-in type main line fittings
- Current metering nipples are exchangeable to yield different output quantities

### Applications

- Machine tools
- Printing machines
- Packaging industry
- Textile industry



### Technical data

|                       |                                                                                                                                                 |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                                                                                 |
| Outlets               | 2 or 3                                                                                                                                          |
| Metering quantity     | oil: 0,2 to 1,5 cm <sup>3</sup><br>0.01 to 0.915 in <sup>3</sup><br>fluid grease: 0,1 to 0,3 cm <sup>3</sup><br>0.006 to 0.0183 in <sup>3</sup> |
| Lubricant             | mineral and synthetic oil<br>20 to 2 000 mm <sup>2</sup> /s<br>0.031 to 3.100 in <sup>2</sup> /s<br>fluid grease of NLGI 000, 00                |
| Operating temperature | 0 to +80 °C; +32 to 176 °F                                                                                                                      |
| Operating pressure    | min. 8 bar, 116 psi<br>max. 45 bar, 653 psi                                                                                                     |
| Relief pressure       | max. 7 bar, 101.5 psi                                                                                                                           |
| Materials             | zinc die-cast, brass (oil), nickel-plated brass (fluid grease), copper, steel, FKM (FPM)/NBR                                                    |
| Connection main line  | different fittings for pipe<br>ø 6 to 12 mm; 0.236 to 0.472 in<br>or closure plugs for thread M12×1                                             |
| Connection outlet     | pipe ø 4 mm; 0.16 in - metering nipple (00) for solderless pipe connection (DIN 3862)                                                           |
| Dimensions            | min. 50×89×23 mm<br>min. 1.968×3.503×0.905 in<br>max. 71×89×23 mm<br>max. 5.393×3.503×0.905 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): **1-5001-EN**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

## Metering device

390

**Order code** 3 9 - 0 0 - 0 0 -

Product series

Number of metering points (2, 3)

**Design and metering quantity**

| Design code          | 0        | 8         | 1            |
|----------------------|----------|-----------|--------------|
| Lubricant            | Oil      | Oil       | Fluid grease |
| Ø Outlet [mm]        | 4        | 4         | 4            |
| Body                 | aluminum | aluminum  | aluminum     |
| Metering nipple      | brass    | brass     | brass (n.p.) |
| Elastomer            | NBR      | FKM (FPM) | NBR          |
| Connection outlet    | 00       | 00        | 00           |
| Metering quantity    |          |           |              |
| 0,10 cm <sup>3</sup> | -        | -         | 4            |
| 0,20 cm <sup>3</sup> | 5        | 5         | 5            |
| 0,30 cm <sup>3</sup> | -        | -         | 6            |
| 0,40 cm <sup>3</sup> | 6        | 6         | -            |
| 0,60 cm <sup>3</sup> | 7        | 7         | -            |
| 1,00 cm <sup>3</sup> | 8        | 8         | -            |
| 1,50 cm <sup>3</sup> | 9        | 9         | -            |
| closed *             | V        | V         | V            |

\* V = Metering quantity of 0,20 cm<sup>3</sup>, closed

**Fittings for main line connection**

| Designation                                                     | Ø main line [mm] | Code |
|-----------------------------------------------------------------|------------------|------|
| Straight adapter                                                | 6                | B    |
| DIN 3862 with flat washer                                       | 8                | C    |
|                                                                 | 10               | D    |
| Banjo fitting DIN 3862 with flat washer, lockable <sup>1)</sup> | 6                | E    |
|                                                                 | 8                | F    |
| Screw plug with flat washer                                     | -                | H    |
| Straight adapter with EO-2 functional nut                       | 6                | M    |
|                                                                 | 8                | N    |
|                                                                 | 10               | P    |
|                                                                 | 12               | R    |
| Straight adapter with SKF Quick Connector                       | 6                | S    |
|                                                                 | 8                | T    |
| Banjo fitting with SKF Quick Connector, not lockable            | 6                | W    |
|                                                                 | 8                | X    |
| Without fitting (M12x1 thread)                                  | -                | Z    |

<sup>1)</sup> Banjo bolt only inserted in delivery condition, not tightened

Oil and fluid grease

## Accessory

### Exchangeable metering nipples

#### Order numbers for metering nipples for oil (replaceable)

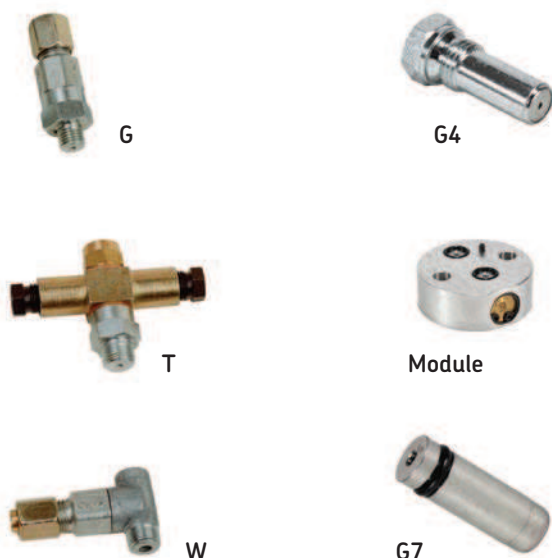
| Outlet Ø |      | Material Elastomer | metering nipple | Metering quantity                            |                                              |                                              |                                              |                                              |
|----------|------|--------------------|-----------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|
| mm       | in   |                    |                 | 0,2 cm <sup>3</sup><br>0.012 in <sup>3</sup> | 0,4 cm <sup>3</sup><br>0.024 in <sup>3</sup> | 0,6 cm <sup>3</sup><br>0.036 in <sup>3</sup> | 1,0 cm <sup>3</sup><br>0.061 in <sup>3</sup> | 1,5 cm <sup>3</sup><br>0.092 in <sup>3</sup> |
| 4        | 0.16 | NBR                | brass           | 391-020-K                                    | 391-040-K                                    | 391-060-K                                    | 391-100-K                                    | 391-150-K                                    |
| 4        | 0.16 | FKM (FPM)          | brass           | 391-020-K-S8                                 | 391-040-K-S8                                 | 391-060-K-S8                                 | 391-100-K-S8                                 | 391-150-K-S8                                 |

#### Order numbers for metering nipples for fluid grease (replaceable)

| Outlet Ø |      | Material Elastomer | metering nipple      | Metering quantity                            |                                              |                                              |
|----------|------|--------------------|----------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|
| mm       | in   |                    |                      | 0,1 cm <sup>3</sup><br>0.006 in <sup>3</sup> | 0,2 cm <sup>3</sup><br>0.012 in <sup>3</sup> | 0,3 cm <sup>3</sup><br>0.006 in <sup>3</sup> |
| 4        | 0.16 | NBR                | brass, nickel-plated | 391-010-K-S1                                 | 391-020-K-S1                                 | 391-030-K-S1                                 |

## Metering device

### 321 G, T, W, G4, Module, G7



#### Product description

Series 321 single-port prelubrication metering devices were developed for use with single-line, centralized lubrication systems for oil and fluid grease. These metering devices are designed for installation directly in a lubrication point, which eliminates feeding lubricant via a lubrication point line, as well as the lubrication line at the lubrication point. This can be beneficial where space is limited. Choose from six types to meet application requirements.

#### Features and benefits

- Specially designed, single-port metering device for prelubrication
- For direct connection to the main line
- No separate lubrication line and fittings are necessary
- Screw-in type can be monitored by a pressure switch in the main line; suitable for feed line  $\varnothing$  4 mm (oil) and  $\varnothing$  6 mm (fluid grease)

#### Applications

- Machine tools
- Printing machines
- Packaging industry
- Textile industry



#### 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): **1-5001-EN**

3D data and product configuration:

[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)



#### Technical data

|                          |                                                                                                                                                                           |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Function principle       | metering device                                                                                                                                                           |
| Outlets                  | 1                                                                                                                                                                         |
| Metering quantity        | Model G, G4, T, W, Modular:<br>0,01 to 0,10 cm <sup>3</sup> ; 0.0006 to 0.006 in <sup>3</sup><br>Model G7: 0,01 to 0,3 cm <sup>3</sup><br>0.0006 to 0.018 in <sup>3</sup> |
| Lubricant                | mineral and synthetic oil, 20 to 2 000 mm <sup>2</sup> /s, 0.031 to 3.100 in <sup>2</sup> /s<br>fluid grease of NLGI 000, 00,0                                            |
| Operating temperature    | 0 to +80 °C; +32 to 176 °F                                                                                                                                                |
| Operating pressure       | min. 12 bar, 174 psi<br>max. 45 bar, 653 psi                                                                                                                              |
| Relief pressure          | max. 3 bar, max. 43.5 psi                                                                                                                                                 |
| Materials                | steel (galvanized, Cr6-free) or brass, NBR, G7 FKM (FPM)                                                                                                                  |
| Connection main line     | different fittings for pipe $\varnothing$ 6 to 10 mm; 0.236 to 0.393 in or closure plugs for thread M 10×1                                                                |
| Connection outlet        | pipe $\varnothing$ 4 and $\varnothing$ 6 mm; 0.157 to 0.236 in – straight compression nut fitting – solderless pipe union (DIN 3862)                                      |
| Dimensions: 321 G        | length: 50 mm; 1.968 in<br>$\varnothing$ : 16,2 mm; 0.638 in<br>wrench size 14 mm                                                                                         |
| Dimensions: 321 W        | length: 46 mm; 1.811 in<br>width: 26 mm; 1.023 in<br>$\varnothing$ : 11,5 mm; 0.453 in<br>wrench size 10 mm                                                               |
| Dimensions: 321 G4       | length: 40,5 mm; 1.594 in<br>$\varnothing$ : 19,6 mm; 0.771 in<br>wrench size 17 mm                                                                                       |
| Dimensions: 321 T        | length: 43 mm; 1.692 in<br>width: 61 mm; 2.401 in<br>$\varnothing$ : 16,2 mm; 0.638 in<br>wrench size 14 mm                                                               |
| Dimensions: 321 Module   | $\varnothing$ : 30 mm; 1.181 in<br>height or thickness: 11 mm; 0.433 in                                                                                                   |
| Dimensions: 321 G7 small | length: 30 mm; 1.181 in<br>$\varnothing$ : 10,3 mm; 0.405 in                                                                                                              |
| Dimensions: 321 G7 large | length: 50 mm; 1.968 in<br>$\varnothing$ : 13,5 mm; 0.531 in                                                                                                              |
| Mounting position        | any                                                                                                                                                                       |

## Metering device

### 321 G, T, W, G4, Module, G7

#### Order numbers 321 G, T, W

| Order number.<br>321 G | 321 T     | 321 W     | ø Outlet |       | Lubricant |              | Metering quantity |                 | Pipe thread of lubrication point line |
|------------------------|-----------|-----------|----------|-------|-----------|--------------|-------------------|-----------------|---------------------------------------|
|                        |           |           | mm       | in    | Oil       | Fluid grease | cm <sup>3</sup>   | in <sup>3</sup> |                                       |
| 321-401G1              | –         | –         | 4        | 0.157 | •         | –            | 0,01              | 0.0006          | M8×1 taper                            |
| 321-401G2              | 321-401T2 | 321-401W2 | 4        | 0.157 | •         | –            | 0,01              | 0.0006          | M10×1 taper                           |
| 321-401G3              | –         | –         | 4        | 0.157 | •         | –            | 0,01              | 0.0006          | R 1/8 taper                           |
| 321-403G1              | 321-403T1 | 321-403W1 | 4        | 0.157 | •         | –            | 0,03              | 0.0018          | M8×1 taper                            |
| 321-403G2              | 321-403T2 | 321-403W2 | 4        | 0.157 | •         | –            | 0,03              | 0.0018          | M10×1 taper                           |
| 321-403G3              | 321-403T3 | 321-403W3 | 4        | 0.157 | •         | –            | 0,03              | 0.0018          | R 1/8 taper                           |
| 321-406G1              | 321-406T1 | 321-406W1 | 4        | 0.157 | •         | –            | 0,06              | 0.0036          | M8×1 taper                            |
| 321-406G2              | 321-406T2 | 321-406W2 | 4        | 0.157 | •         | –            | 0,06              | 0.0036          | M10×1 taper                           |
| 321-406G3              | 321-406T3 | 321-406W3 | 4        | 0.157 | •         | –            | 0,06              | 0.0036          | R 1/8 taper                           |
| 321-410G1              | 321-410T1 | 321-410W1 | 4        | 0.157 | •         | –            | 0,10              | 0.0061          | M8×1 taper                            |
| 321-410G2              | 321-410T2 | 321-410W2 | 4        | 0.157 | •         | –            | 0,10              | 0.0061          | M10×1 taper                           |
| 321-410G3              | 321-410T3 | 321-410W3 | 4        | 0.157 | •         | –            | 0,10              | 0.0061          | R 1/8 taper                           |
| 321-601G1              | –         | 321-601W1 | 6        | 0.236 | •         | •            | 0,01              | 0.0006          | M8×1 taper                            |
| 321-601G2              | 321-601T2 | 321-601W2 | 6        | 0.236 | •         | •            | 0,01              | 0.0006          | M10×1 taper                           |
| –                      | 321-601T3 | 321-601W3 | 6        | 0.236 | •         | •            | 0,01              | 0.0006          | R 1/8 taper                           |
| 321-603G1              | 321-603T1 | 321-603W1 | 6        | 0.236 | •         | •            | 0,03              | 0.0018          | M8×1 taper                            |
| 321-603G2              | 321-603T2 | 321-603W2 | 6        | 0.236 | •         | •            | 0,03              | 0.0018          | M10×1 taper                           |
| 321-603G3              | 321-603T3 | 321-603W3 | 6        | 0.236 | •         | •            | 0,03              | 0.0018          | R 1/8 taper                           |
| 321-606G1              | –         | 321-606W1 | 6        | 0.236 | •         | •            | 0,06              | 0.0036          | M8×1 taper                            |
| 321-606G2              | 321-606T2 | 321-606W2 | 6        | 0.236 | •         | •            | 0,06              | 0.0036          | M10×1 taper                           |
| 321-606G3              | 321-606T3 | 321-606W3 | 6        | 0.236 | •         | •            | 0,06              | 0.0036          | R 1/8 taper                           |
| 321-610G1              | 321-610T1 | 321-610W1 | 6        | 0.236 | •         | •            | 0,10              | 0.0061          | M8×1 taper                            |
| 321-610G2              | 321-610T2 | 321-610W2 | 6        | 0.236 | •         | •            | 0,10              | 0.0061          | M10×1 taper                           |
| 321-610G3              | 321-610T3 | 321-610W3 | 6        | 0.236 | •         | •            | 0,10              | 0.0061          | R 1/8 taper                           |

\* Designs G, T, W elastomer material NBR

#### Order numbers 321 G4, Module, G7

| Order number.<br>321 G4 | 321 Module | 321 G7 small | 321 G7 large | ø Outlet |       | Lubricant |              | Metering quantity |                 |
|-------------------------|------------|--------------|--------------|----------|-------|-----------|--------------|-------------------|-----------------|
|                         |            |              |              | mm       | in    | Oil       | Fluid grease | cm <sup>3</sup>   | in <sup>3</sup> |
| –                       | 321-101    | 321-401G7    | –            | 4        | 0.157 | •         | •            | 0,01              | 0.0006          |
| 321-403G4               | 321-103    | 321-403G7    | –            | 4        | 0.157 | •         | •            | 0,03              | 0.0018          |
| –                       | –          | 321-403G7-S8 | –            | 4        | 0.157 | •         | •            | 0,03              | 0.0018          |
| 321-406G4               | 321-106    | 321-406G7    | –            | 4        | 0.157 | •         | •            | 0,06              | 0.0036          |
| –                       | –          | 321-406G7-S8 | –            | 4        | 0.157 | •         | •            | 0,06              | 0.0036          |
| 321-410G4               | –          | 321-410G7    | 321-610G7    | 4        | 0.157 | •         | •            | 0,10              | 0.0061          |
| –                       | –          | 321-410G7-S8 | –            | 4        | 0.157 | •         | •            | 0,10              | 0.0061          |
| –                       | –          | –            | 321-616G7    | 6        | 0.236 | •         | •            | 0,16              | 0.0098          |
| –                       | –          | –            | 321-620G7    | 6        | 0.236 | •         | •            | 0,20              | 0.0122          |
| –                       | –          | –            | 321-630G7    | 6        | 0.236 | •         | •            | 0,30              | 0.0180          |

## Metering device

### AB

Oil and fluid grease



#### Product description

Designed for installation in manifolds, series AB single-port, prelubrication metering devices were developed for use with single-line, centralized lubrication systems for oil and fluid grease. When combined with one- to six-port manifolds, these metering devices provide flexibility in lubrication system design. The metering device body is available in steel and stainless steel versions with copper or stainless steel sealing rings.

#### Features and benefits

- For use with manifolds having one to six ports to match number of lubrication points
- Provides flexible options for systems with remote single lubrication points or multiple-port metering devices with up to six ports
- Virtually maintenance-free
- Select screw-in type metering device for feed line connection via order code
- Choose separately manifold models with different thread sizes for main line connection and materials

#### Applications

- Machine tools
- Printing machines
- Packaging industry
- Textile industry

#### Technical data

|                       |                                                                                                                                 |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                                                                 |
| Outlets               | 1                                                                                                                               |
| Metering quantity     | 0,01 to 0,60 cm <sup>3</sup> , 0.0006 to 0.04 in <sup>3</sup>                                                                   |
| Lubricant             | mineral and synthetic oil,<br>20 to 2 000 mm <sup>2</sup> /s, 0.031 to 3.100 in <sup>2</sup> /s<br>fluid grease of NLGI 000, 00 |
| Operating temperature | 0 to +80 °C; +32 to 176 °F                                                                                                      |
| Operating pressure    | min. 18 bar, 260 psi<br>max. 50 bar, 725 psi                                                                                    |
| Relief pressure       | max. 3 bar, 43.5 psi                                                                                                            |
| Materials             | steel (galvanized, Cr6-free), stainless steel,<br>copper, steel, flat washer (copper, stainless<br>steel), FKM (FPM)            |
| Connection main line  | pipe ø 6 to 10 mm; 0.236 or 0.393 in;<br>solderless pipe connection for threads<br>G 1/8; G 1/4; M10×1 or M14×1,5<br>(DIN 3862) |
| Connection outlet     | Connection outlet: pipe ø 4 mm; 0.16 in,<br>straight compression nut fitting                                                    |
| Dimensions            | min. 43×14 mm<br>min. 1.692×0.551 in<br>max. 82,5×14 mm<br>max. 1.228×0.551 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): **1-5001-EN**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

## Metering device

### AB

#### Order number configurator

|   |   |   |   |   |   |   |   |   |  |  |
|---|---|---|---|---|---|---|---|---|--|--|
| 2 | 4 | - | 2 | 8 | 0 | 0 | - | 0 |  |  |
|---|---|---|---|---|---|---|---|---|--|--|

Product series AB

Lubricant

- 5 = Oil/fluid grease, galvanized steel, copper ring  
9 = Oil/fluid grease, stainless steel, stainless steel ring

Metering quantity

- 01 = 0,01 cm<sup>3</sup>, 0.0006 in<sup>3</sup>  
02 = 0,02 cm<sup>3</sup>, 0.0012 in<sup>3</sup>  
03 = 0,03 cm<sup>3</sup>, 0.0018 in<sup>3</sup>  
05 = 0,05 cm<sup>3</sup>, 0.0030 in<sup>3</sup>  
10 = 0,10 cm<sup>3</sup>, 0.0061 in<sup>3</sup>  
20 = 0,20 cm<sup>3</sup>, 0.0122 in<sup>3</sup>  
40 = 0,40 cm<sup>3</sup>, 0.0244 in<sup>3</sup>  
60 = 0,60 cm<sup>3</sup>, 0.0366 in<sup>3</sup>

Oil and fluid grease

## Accessory

### Manifold

#### Manifold VL



#### Product description

For series AB metering devices, VL-manifolds are utilized for one to six screw-in points with thread M10x1 mm for flat (copper) washer sealing. Normal-profile manifolds are available in aluminum or stainless steel, while narrow-profile manifolds are offered only in aluminum. Various main line connections can be selected via order code.

#### Order code

|   |   |   |  |  |  |  |  |  |
|---|---|---|--|--|--|--|--|--|
| V | L | - |  |  |  |  |  |  |
|---|---|---|--|--|--|--|--|--|

Product series

Ports

- 01 = 1 screw-in point      04 = 4 screw-in points  
02 = 2 screw-in points    05 = 5 screw-in points  
03 = 3 screw-in points    06 = 6 screw-in points  
(other ports available on request)

Design of metering device pipe thread

- B = Normal profile, M10x1 with counterbore for flat washer or O-ring  
E1 = Narrow profile, M10x1 with counterbore for flat washer

Material

- A = Aluminum  
E = Stainless steel (1.4305) (can only be selected for normal profile)

Design of main line connection

- G1 = G 1/8 per DIN 3852-2, Form X, small  
G2 = G 1/4 per DIN 3852-2, Form X, small  
M3 = M10x1 with counterbore for solderless pipe union per DIN 3862  
M4 = M14x1.5 with counterbore for solderless pipe union per DIN 3862  
(can only be selected for normal profile)

## Metering device

VN



Oil and fluid grease

### Product description

Developed for use with single-line, centralized lubrication systems for fluid grease, series VN relubrication metering devices are offered with two, four or six ports. These metering devices were designed for installation directly on the vehicle or construction machine requiring lubrication. Series VN metering devices can be ordered with fittings for the main line connection via the appropriate order code.

### Features and benefits

- Choose metering device with two, four or six points to match number of lubrication points
- Designed for installation directly on the vehicle/machine requiring lubrication
- Select metering nipples and push-in or screw-in type fittings for feed line or main line connections
- Easy metering adjustment by replacing metering nipples
- Black-coloured surface for optimized corrosion protection

### Applications

- Commercial vehicles
- Construction machinery



### Technical data

|                       |                                                                                                                 |
|-----------------------|-----------------------------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                                                 |
| Outlets               | 2, 4 or 6                                                                                                       |
| Metering quantity     | 0,05 to 1,00 cm <sup>3</sup><br>0,003 to 0,061 in <sup>3</sup>                                                  |
| Lubricant             | fluid grease of NLGI 000, 00                                                                                    |
| Operating temperature | -25 to +80 °C; -13 to +176 °F                                                                                   |
| Operating pressure    | min. 20 bar; 290 psi<br>max. 80 bar; 1160 psi                                                                   |
| Relief pressure       | ≤1 bar, ≤14.5 psi                                                                                               |
| Materials             | zinc die-cast, brass, steel, flat washer (copper), NBR                                                          |
| Connection main line  | different fittings for pipe ø 6 to 10 mm; 0.236 to 0.393 in or closure plugs for thread M8x1                    |
| Connection outlet     | pipe ø 4 mm metering nipple (VS) with SKF Quick Connector - metering nipple (00) for solderless pipe connection |
| Dimensions            | min. 62×83,5×52 mm<br>max. 130,5×83,5×58 mm<br>min. 2.440×3.287×2.047 in<br>max. 5.118×3.287×2.283 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](https://www.skf.com/lubrication): **1-5001-EN**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](https://skf-lubrication.partcommunity.com/3d-cad-models/)

## Metering device

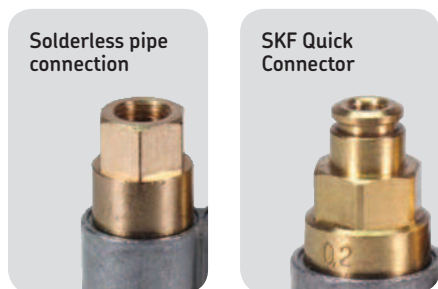
### VN

| Order number configurator                                                                                                                                                                                                                                                                                                                                                                                                 |  | V | N |  | - | 0 |  |  | - |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---|---|--|---|---|--|--|---|--|--|--|--|--|--|--|--|--|--|
| Product series                                                                                                                                                                                                                                                                                                                                                                                                            |  |   |   |  |   |   |  |  |   |  |  |  |  |  |  |  |  |  |  |
| Number of metering points (2, 4, 6)                                                                                                                                                                                                                                                                                                                                                                                       |  |   |   |  |   |   |  |  |   |  |  |  |  |  |  |  |  |  |  |
| Lubrication line fitting                                                                                                                                                                                                                                                                                                                                                                                                  |  |   |   |  |   |   |  |  |   |  |  |  |  |  |  |  |  |  |  |
| <b>00</b> = Solderless pipe connection<br><b>VS</b> = SKF Quick Connector                                                                                                                                                                                                                                                                                                                                                 |  |   |   |  |   |   |  |  |   |  |  |  |  |  |  |  |  |  |  |
| Metering quantity                                                                                                                                                                                                                                                                                                                                                                                                         |  |   |   |  |   |   |  |  |   |  |  |  |  |  |  |  |  |  |  |
| <b>1</b> = 0,05 cm <sup>3</sup> , 0.003 in <sup>3</sup><br><b>2</b> = 0,10 cm <sup>3</sup> , 0.006 in <sup>3</sup><br><b>3</b> = 0,20 cm <sup>3</sup> , 0.012 in <sup>3</sup><br><b>4</b> = 0,30 cm <sup>3</sup> , 0.018 in <sup>3</sup><br><b>5</b> = 0,40 cm <sup>3</sup> , 0.024 in <sup>3</sup><br><b>6</b> = 0,60 cm <sup>3</sup> , 0.036 in <sup>3</sup><br><b>7</b> = 1,00 cm <sup>3</sup> , 0.061 in <sup>3</sup> |  |   |   |  |   |   |  |  |   |  |  |  |  |  |  |  |  |  |  |
| Fittings for main line connection                                                                                                                                                                                                                                                                                                                                                                                         |  |   |   |  |   |   |  |  |   |  |  |  |  |  |  |  |  |  |  |
| <b>A</b> = Solderless pipe connection ø 8 mm, 0.315 in<br><b>E</b> = Solderless pipe connection ø 6 mm, 0.236 in<br><b>H</b> = Screw plug with flat washer<br><b>S</b> = SKF Quick Connector ø 10 mm, 0.01 in<br><b>Z</b> = Without fitting                                                                                                                                                                               |  |   |   |  |   |   |  |  |   |  |  |  |  |  |  |  |  |  |  |

Oil and fluid grease

## Accessory

### Exchangeable metering nipples



| Order numbers for metering nipples <sup>1)</sup> (replaceable) |      |                       |                                               |                                               |                                               |                                               |                                               |                                               |                                               |
|----------------------------------------------------------------|------|-----------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| Outlet ø                                                       |      | Material<br>Elastomer | Metering quantity                             |                                               |                                               |                                               |                                               |                                               |                                               |
| mm                                                             | in   |                       | 0,05 cm <sup>3</sup><br>0.003 in <sup>3</sup> | 0,10 cm <sup>3</sup><br>0.006 in <sup>3</sup> | 0,20 cm <sup>3</sup><br>0.012 in <sup>3</sup> | 0,30 cm <sup>3</sup><br>0.018 in <sup>3</sup> | 0,40 cm <sup>3</sup><br>0.024 in <sup>3</sup> | 0,60 cm <sup>3</sup><br>0.036 in <sup>3</sup> | 1,00 cm <sup>3</sup><br>0.061 in <sup>3</sup> |
| 4                                                              | 0.16 | NBR                   | VKU005-K                                      | VKU010-K                                      | VKU020-K                                      | VKU030-K                                      | VKU040-K                                      | VKU060-K                                      | VKU100-K                                      |

<sup>1)</sup> Metering nipples are made of brass.

## Metering device

### OI-AL-SR

Oil and fluid grease



#### Product description

Developed for use in single-line, centralized lubrication systems, series OI-AL-SR single-port, prelubrication metering devices (cartridges) feature an integrated control pin and are designed for installation in manifolds or in base plates with up to 40 lubrication points. Three cartridge models with different fixed metering quantities provide flexible lubrication system design. Reduced feeding of main lines and feed lines in machines/systems saves on materials and installation costs.

#### Features and benefits

- Screw-in type, single-port metering device with cartridges for prelubrication
- For use with manifolds having one to eight ports or with base plates with up to 40 ports to match number of lubrication points
- Suitable for many lubrication points in constricted rooms
- All main line and feed line connections are located internally in the manifolds or base plates
- Simplifies installation, control function and replacement by use of one unit

#### Applications

- Glass industry



#### Technical data

|                       |                                                                                                                             |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                                                             |
| Outlets               | 1                                                                                                                           |
| Metering quantity     | 0,02; 0,05; 0,10 cm <sup>3</sup><br>0.001; 0.003; 0.006 in <sup>3</sup>                                                     |
| Lubricant             | mineral and synthetic oil, 22 to 1 000 mm <sup>2</sup> /s, 0.034 to 1.55 in <sup>2</sup> /s<br>fluid grease of NLGI 000, 00 |
| Operating temperature | +5 to 120 °C; +41 to 248 °F                                                                                                 |
| Operating pressure    | min. 30 bar; 435 psi<br>max. 100 bar; 1 450 psi                                                                             |
| Relief pressure       | max. 5 bar; 72.5 psi                                                                                                        |
| Material cartridge    | aluminum                                                                                                                    |
| Material manifold     | AlCuMgPb F37 DIN 1796                                                                                                       |
| Material base plate   | AlMgSi1 F28-32 or AlCuMg1 F28 FKM (FPM)                                                                                     |
| Connection main line  | SKF Quick Connector or solderless pipe connection for thread G 1/8 (F)                                                      |
| Connection outlet     | SKF Quick Connector or solderless pipe connection for thread G 1/8 (F)                                                      |
| Dimensions            | min. 120×35×105 mm<br>in. 4.72×1.38×4.13 in<br>max. 300×35×105 mm<br>max. 11.81×1.38×4.13 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): **951-231-001-EN**

## Metering device

### OI-AL-SR

#### Complete metering devices

| Order number | Number of outlets | Metering quantity |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |
|--------------|-------------------|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|              |                   | Outlet 1          |                 | Outlet 2        |                 | Outlet 3        |                 | Outlet 4        |                 | Outlet 5        |                 | Outlet 6        |                 | Outlet 7        |                 | Outlet 8        |                 |
|              |                   | cm <sup>3</sup>   | in <sup>3</sup> | cm <sup>3</sup> | in <sup>3</sup> | cm <sup>3</sup> | in <sup>3</sup> | cm <sup>3</sup> | in <sup>3</sup> | cm <sup>3</sup> | in <sup>3</sup> | cm <sup>3</sup> | in <sup>3</sup> | cm <sup>3</sup> | in <sup>3</sup> | cm <sup>3</sup> | in <sup>3</sup> |
| 647-41151-2  | 2                 | 0,02              | 0.001           | 0,02            | 0.001           | –               | –               | –               | –               | –               | –               | –               | –               | –               | –               | –               | –               |
| 647-41152-2  | 3                 | 0,02              | 0.001           | 0,02            | 0.001           | 0,02            | 0.001           | –               | –               | –               | –               | –               | –               | –               | –               | –               | –               |
| 647-41152-4  | 3                 | 0,10              | 0.006           | 0,05            | 0.003           | 0,05            | 0.003           | –               | –               | –               | –               | –               | –               | –               | –               | –               | –               |
| 647-41153-2  | 4                 | 0,05              | 0.003           | 0,05            | 0.003           | 0,05            | 0.003           | –               | –               | –               | –               | –               | –               | –               | –               | –               | –               |
| 647-41154-4  | 5                 | 0,02              | 0.001           | 0,02            | 0.001           | 0,02            | 0.001           | 0,02            | 0.001           | 0,02            | 0.001           | –               | –               | –               | –               | –               | –               |
| 647-41154-5  | 5                 | 0,02              | 0.001           | 0,02            | 0.001           | 0,02            | 0.001           | 0,02            | 0.001           | –               | –               | –               | –               | –               | –               | –               | –               |
| 647-41154-7  | 5                 | 0,02              | 0.001           | 0,05            | 0.003           | 0,05            | 0.003           | 0,05            | 0.003           | 0,05            | 0.003           | –               | –               | –               | –               | –               | –               |
| 647-41154-6  | 5                 | 0,05              | 0.003           | 0,05            | 0.003           | 0,05            | 0.003           | 0,05            | 0.003           | –               | –               | –               | –               | –               | –               | –               | –               |
| 647-41155-2  | 6                 | 0,10              | 0.006           | 0,05            | 0.003           | 0,05            | 0.003           | 0,05            | 0.003           | 0,05            | 0.003           | 0,05            | 0.003           | –               | –               | –               | –               |
| 647-41156-2  | 8                 | 0,05              | 0.003           | 0,05            | 0.003           | 0,05            | 0.003           | 0,05            | 0.003           | 0,02            | 0.001           | 0,02            | 0.001           | 0,02            | 0.001           | –               | –               |

Oil and fluid grease

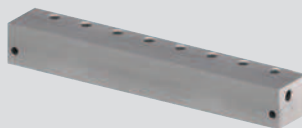
## Accessories

### Cartridges, manifolds, base plates

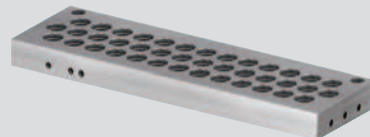
Cartridge



Manifold



Base plates



#### Cartridges

| Order number | Metering quantity            |
|--------------|------------------------------|
| 547-33924-1  | 0,02 cm <sup>3</sup> /stroke |
| 547-33925-1  | 0,05 cm <sup>3</sup> /stroke |
| 547-33926-1  | 0,10 cm <sup>3</sup> /stroke |

#### Manifolds

| Order number | Number of ports |
|--------------|-----------------|
| 447-71901-1  | 2               |
| 447-71902-1  | 3               |
| 447-71903-1  | 4               |
| 447-71904-1  | 5               |
| 447-71905-1  | 6               |
| 447-71906-1  | 8               |

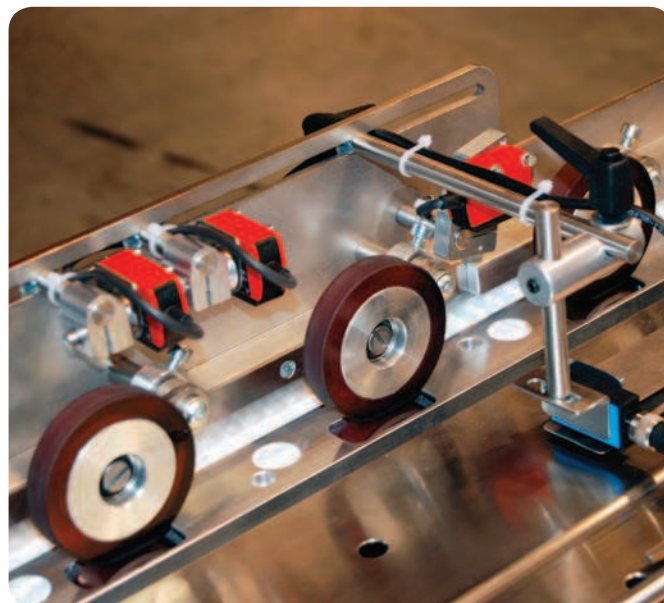
#### Base plate

| Order number | Number of ports |
|--------------|-----------------|
| 447-71899-1  | 40              |

## Metering device

### SL-42

Oil and fluid grease



#### Product description

Series SL-42 metering devices were developed for single-line, centralized lubrication systems dispensing oil or fluid grease. Lubricant output is externally adjustable, and the indicator stem permits a visual check of metering device operation. These carbon steel metering devices are available with nitrile or fluoroelastomer packings. Metering devices with fluoroelastomer packings (indicated by black adjustment caps) are used for applications requiring heat resistance or when a lubricant requires it for compatibility.

#### Features and benefits

- Screw-in type, single-port metering device for prelubrication affixed by adapter bolts
- Suitable for use with manifolds having one to 15 ports to match number of lubrication points
- Output is externally adjustable
- Indicator stem permits visual check of metering device operation
- May be combined in a circuit with SL-41, SL-43 and/or SL-44 metering devices
- Individual metering devices can be removed easily for inspection or replacement

#### Applications

- Paper converting
- Plastic processing
- Printing
- Packaging
- Metalworking
- Material handling equipment

#### Technical data

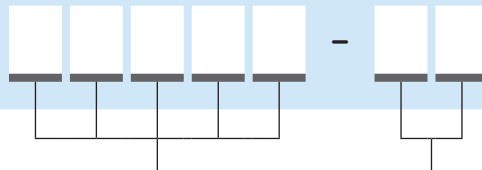
|                       |                                                                                                                                                                                  |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                                                                                                                  |
| Outlets               | 1                                                                                                                                                                                |
| Metering quantity     | adjustable from 0,016 to 0,049 cm <sup>3</sup> ,<br>0.001 to 0.003 in <sup>3</sup>                                                                                               |
| Lubricant             | mineral and synthetic oil and fluid grease                                                                                                                                       |
| Operating temperature | standard: -26 to +93 °C; -15 to +200 °F<br>heat resistant: max. +176 °C; +350 °F                                                                                                 |
| Operating pressure    | min. 52 bar, 750 psi<br>max. 70 bar, 1 000 psi                                                                                                                                   |
| Relief pressure       | < 10 bar, 150 psi                                                                                                                                                                |
| Materials             | carbon steel, stainless steel, brass,<br>steel, Nitrile (NBR) or fluoroelastomer<br>(FKM, FPM) packings<br>(indicated by black adjustment caps)<br>(heat resistance application) |
| Connection main line  | 1/8 NPTF (F)                                                                                                                                                                     |
| Connection outlet     | pipe 1/8 O.D connections <sup>1)</sup>                                                                                                                                           |
| Dimensions            | min. 41 × 62 × 43 mm<br>min. 1.6 × 2.4 × 1.7 in<br>max. 308 × 62 × 43 mm<br>max. 12.1 × 2.4 × 1.7 in                                                                             |
| Mounting position     | any                                                                                                                                                                              |

<sup>1)</sup> different adapters are possible see accessories; Note: When using feed line tubing of 1/8 O.D. the feed line must not exceed a length of 7,5 m; 295 in based on oil +18 °C; +65 °F

## Metering device

### SL-42

#### Order number configurator



#### Product series

- 83311** = standard with nitrile packings
- 84428** = heat resistant with fluoroelastomer packings
- 85352** = standard with nitrile packings for metric tube connection  
O.D. 4 and 6 mm, up to 6 outlets

#### Number of metering devices

- 1** = 1 metering device, mounted in a manifold
- 2** = 2 metering devices, mounted in a manifold
- 3** = 3 metering devices, mounted in a manifold
- 4** = 4 metering devices, mounted in a manifold
- 5** = 5 metering devices, mounted in a manifold
- 6** = 6 metering devices, mounted in a manifold
- 10** = 10 metering devices, mounted in a manifold
- 15** = 15 metering devices, mounted in a manifold

Oil and fluid grease

## Accessories

### Metering devices, manifolds and adapters

#### Metering devices



#### Manifolds



This picture shows a manifold example. Please note, that the real manifold differs in terms of size and design.

#### Adapters



#### Replacement for manifold injectors

| Order number  | Designation                                                               |
|---------------|---------------------------------------------------------------------------|
| <b>83535</b>  | standard single metering device/no manifold, 1 outlet, 1/8 NPTF (M) inlet |
| <b>83313</b>  | metering device for standard manifold                                     |
| <b>84048</b>  | metering device for heat-resistant manifold                               |
| <b>249649</b> | metric replacement injector                                               |

#### Manifolds

| Order number <sup>1)</sup> | Number of ports |
|----------------------------|-----------------|
| <b>91863-1</b>             | 1               |
| <b>91864-1</b>             | 2               |
| <b>91865-1</b>             | 3               |
| <b>91866-1</b>             | 4               |
| <b>14361</b>               | 5               |
| <b>91976-1</b>             | 6               |
| <b>14312</b>               | 10              |
| <b>14253</b>               | 15              |

<sup>1)</sup> Injectors except replacement injectors for manifold, include compression nut and ferrule for tubing 1/8 in O.D. as standard. Injectors with manifolds include two mounting clips and screws.

#### G 1/8 to metric fitting adapters

| Order number  | Pipe<br>ø mm | Material        |
|---------------|--------------|-----------------|
| <b>249281</b> | 4            | steel           |
| <b>249279</b> | 4            | stainless steel |
| <b>249282</b> | 6            | steel           |
| <b>249280</b> | 6            | stainless steel |

## Metering device

### SL-43

Oil and fluid grease



#### Product description

Series SL-43 metering devices were developed for single-line, centralized lubrication systems dispensing oil or fluid grease. Lubricant output is externally adjustable, and the indicator stem permits a visual check of metering device operation. These carbon steel metering devices are available with nitrile or fluoroelastomer packings. Metering devices with fluoroelastomer packings (indicated by black adjustment caps) are used for applications requiring heat resistance or when a lubricant requires it for compatibility.

#### Features and benefits

- Screw-in type, single-port metering device for prelubrication affixed by adapter bolts
- Suitable for use with manifolds having one to four ports to match number of lubrication points
- Output is externally adjustable
- Indicator stem permits visual check of metering device operation
- May be combined in a circuit with SL-41, SL-42 and/or SL-44 metering devices
- Individual metering devices can be removed easily for inspection or replacement

#### Applications

- Glass processing
- Paper converting
- Plastic processing
- Printing and packaging
- Metalworking
- Material handling equipment

#### Technical data

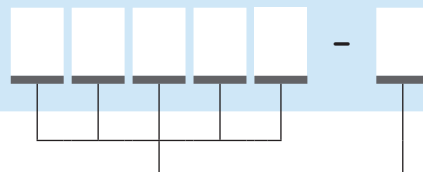
|                       |                                                                                                                                                                                  |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                                                                                                                  |
| Outlets               | 1                                                                                                                                                                                |
| Metering quantity     | adjustable from 0,016 to 0,131 cm <sup>3</sup><br>0.001 to 0.008 in <sup>3</sup>                                                                                                 |
| Lubricant             | mineral and synthetic oil                                                                                                                                                        |
| Operating temperature | standard:<br>-26 to +93 °C; -15 to +200 °F<br>heat resistant:<br>max. +176 °C; +350 °F                                                                                           |
| Operating pressure    | min. 52 bar, 750 psi<br>max. 70 bar; 1 000 psi                                                                                                                                   |
| Relief pressure       | < 10 bar, 150 psi                                                                                                                                                                |
| Materials             | carbon steel, stainless steel, brass, steel,<br>Nitrile (NBR) or fluoroelastomer (FKM,<br>FPM) packings (indicated by black<br>adjustment caps) (heat resistance<br>application) |
| Connection main line  | 1/4 NPTF (F)                                                                                                                                                                     |
| Connection outlet     | pipe 1/8 O.D connections <sup>1)</sup>                                                                                                                                           |
| Dimensions            | min. 44 × 79 × 52 mm<br>max. 102 × 79 × 52 mm<br>min. 1.7 × 3.1 × 2.0 in<br>max. 4.0 × 3.1 × 2.0 in                                                                              |
| Mounting position     | any                                                                                                                                                                              |

<sup>1)</sup> different adapters are possible see accessories; Note: When using feed line tubing of 1/8 O.D. the feed line must not exceed a length of 7,5 m; 295 in based on oil +18 °C; +65 °F

## Metering device

### SL-43

#### Order number configurator



#### Product series

**83661** = standard with nitrile packings

**84429** = heat resistant with fluoroelastomer packings

#### Number of metering devices

**1** = 1 metering device, mounted in a manifold

**2** = 2 metering devices, mounted in a manifold

**3** = 3 metering devices, mounted in a manifold

**4** = 4 metering devices, mounted in a manifold

Oil and fluid grease

## Accessories

### Metering devices, manifolds and adapters

#### Metering devices



#### Manifolds



This picture shows a manifold example. Please note, that the real manifold differs in terms of size and design.

#### Adapters



#### Replacement for manifold injectors

| Order number | Designation                                                               |
|--------------|---------------------------------------------------------------------------|
| <b>83662</b> | standard single metering device/no manifold, 1 outlet, 1/8 NPTF (M) inlet |
| <b>83660</b> | metering device for standard manifold                                     |
| <b>84110</b> | metering device for heat-resistant manifold                               |

#### Manifolds

| Order number <sup>1)</sup> | Number of ports |
|----------------------------|-----------------|
| <b>91883-1</b>             | 1               |
| <b>91884-1</b>             | 2               |
| <b>91885-1</b>             | 3               |
| <b>91886-1</b>             | 4               |

<sup>1)</sup> Injectors except replacement injectors for manifold, include compression nut and ferrule for tubing 1/8 in O.D. as standard. Injectors with manifolds include two mounting clips and screws.

#### G 1/8 to metric fitting adapters

| Order number  | Pipe ø mm | Material        |
|---------------|-----------|-----------------|
| <b>249281</b> | 4         | steel           |
| <b>249279</b> | 4         | stainless steel |
| <b>249282</b> | 6         | steel           |
| <b>249280</b> | 6         | stainless steel |

## Metering device

### SL-41

Oil and fluid grease



#### Product description

Series SL-41 metering devices are designed for use in high-temperature applications, depending on the lubricant. These metering devices are available installed only in manifolds with 3/8-inch NPT female inlets and feature a tamper-resistant adjustment screw that does not incorporate a visual indicator.

#### Features and benefits

- Screw-in type, single-port metering device affixed by adapter bolts
- Suitable for use with manifolds having one to five ports to match number of lubrication points
- Output is externally adjustable.
- Individual injectors can be removed easily for inspection or replacement
- Carbon steel with fluoroelastomer packings

#### Applications

- Glass processing
- Metalworking



#### Technical data

|                       |                                                                                                |
|-----------------------|------------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                                |
| Outlets               | 1 to 5                                                                                         |
| Metering quantity     | adjustable from 0,13 to 1,31 cm <sup>3</sup><br>0.008 to 0.0689 in <sup>3</sup>                |
| Lubricant             | mineral and synthetic oil                                                                      |
| Operating temperature | standard: -26 to +93 °C; -15 to 200 °F<br>heat resistant: max. +176 °C; +350 °F                |
| Operating pressure    | min. 52 bar, 750 psi<br>max. 70 bar; 1 000 psi                                                 |
| Relief pressure       | < 10 bar, 150 psi                                                                              |
| Materials             | carbon steel, FKM (FPM)                                                                        |
| Connection main line  | 3/8 NPTF (F)                                                                                   |
| Connection outlet     | 1/8 NPTF (F) <sup>1)</sup>                                                                     |
| Dimensions            | min. 63×163,5×52,4 mm<br>min. 2.5×6.4×2.1 in<br>max. 171×163,5×52,4 mm<br>max. 6.75×6.4×2.1 in |
| Mounting position     | any                                                                                            |

<sup>1)</sup> When using feed line tubing of 1/8 O.D. the feed line must not exceed a length of 7,5 m; 295 in based on oil +18 °C; +64 °F 1/8 NPTF (F). When using feed line tubing of 1/8 O.D. the feed line must not exceed a length of 7,5 m; 295 in based on oil +18 °C; +64 °F

## Metering device

### SL-41

#### Order number configurator

|   |   |   |   |   |   |  |
|---|---|---|---|---|---|--|
| 8 | 2 | 2 | 9 | 4 | - |  |
|---|---|---|---|---|---|--|

#### Product series

**82294** = heat resistant with fluoroelastomer packings

#### Number of metering devices

- 1 = 1 metering device, mounted in a manifold
- 2 = 2 metering devices, mounted in a manifold
- 3 = 3 metering devices, mounted in a manifold
- 4 = 4 metering devices, mounted in a manifold
- 5 = 5 metering devices, mounted in a manifold

Oil and fluid grease

## Accessories

### Metering devices and manifolds

#### Metering devices



#### Manifolds



This picture shows a manifold example. Please note, that the real manifold differs in terms of size and design.

#### Replacement for manifold injectors

| Order number | Designation                           |
|--------------|---------------------------------------|
| 82295        | metering device for manifold NPTF (F) |
| 82292        | single metering device                |

#### Manifolds

| Order number <sup>1)</sup> | Number of ports |
|----------------------------|-----------------|
| 12658                      | 1               |
| 11962                      | 2               |
| 11963                      | 3               |
| 11964                      | 4               |
| 11965                      | 5               |

<sup>1)</sup> Each injector has two outlets. One is closed by a closure plug, but can be used to increase outlet quantity combined with another injector.

## Metering device

### SL-44

Oil and fluid grease



#### Product description

Series SL-44 metering devices were developed for single-line, centralized lubrication systems dispensing fluid or semi-fluid lubricants. Lubricant output is externally adjustable, and the indicator stem permits a visual check of metering device operation. These carbon steel metering devices feature fluoroelastomer packings. Metering devices with fluoroelastomer packings (indicated by black adjustment caps) are used for applications requiring heat resistance or when a lubricant requires it for compatibility.

#### Features and benefits

- Screw-in type, single-port metering device for prelubrication affixed by adapter bolts
- Suitable for use with manifolds having one to five ports to match number of lubrication points
- Output is externally adjustable
- Indicator stem permits visual check of operation
- May be combined in a circuit with SL-41, SL-42 and/or SL-43 metering devices
- Individual metering devices can be removed easily for inspection or replacement

#### Applications

- Glass processing
- Paper converting
- Plastic processing
- Printing
- Packaging
- Metalworking
- Material handling equipment

#### Technical data

|                                 |                                                                                                |
|---------------------------------|------------------------------------------------------------------------------------------------|
| Function principle              | metering device                                                                                |
| Outlets                         | 1                                                                                              |
| Metering quantity               | adjustable from 0,13 to 1,31 cm <sup>3</sup><br>0.008 to 0.080 in <sup>3</sup>                 |
| Lubricant                       | mineral and synthetic oil                                                                      |
| Operating temperature           | -26 to +93 °C; -15 to +200 °F                                                                  |
| Operating pressure              | min. 52 bar, 750 psi<br>max. 70 bar; 1 000 psi                                                 |
| Relief pressure                 | < 10 bar, 150 psi                                                                              |
| Materials                       | carbon steel, FKM (FPM)                                                                        |
| Connection main line            | 3/8 NPTF (F)                                                                                   |
| Connection outlet <sup>1)</sup> | 1/8 NPTF (F)                                                                                   |
| Dimensions                      | min. 63×179,4×52,4 mm<br>min. 2.5×7.1×2.1 in<br>max. 171×179,4×52,4 mm<br>max. 6.75×7.1×2.1 in |
| Mounting position               | any                                                                                            |

<sup>1)</sup> When using feed line tubing of 1/8 O.D. the feed line must not exceed a length of 7,5 m; 295 in based on oil 18 °C; 64,5 °F

## Metering device

### SL-44

#### Order number configurator

|   |   |   |   |   |   |  |
|---|---|---|---|---|---|--|
| 8 | 3 | 7 | 4 | 9 | - |  |
|---|---|---|---|---|---|--|

#### Product series

**83749** = heat resistant with fluoroelastomer packings

#### Number of metering devices

- 1 = 1 metering device, mounted in a manifold
- 2 = 2 metering devices, mounted in a manifold
- 3 = 3 metering devices, mounted in a manifold
- 4 = 4 metering devices, mounted in a manifold
- 5 = 5 metering devices, mounted in a manifold

Oil and fluid grease

## Accessories

### Metering devices and manifolds

#### Metering devices



#### Manifolds



This picture shows a manifold example. Please note, that the real manifold differs in terms of size and design.

#### Replacement for manifold injectors

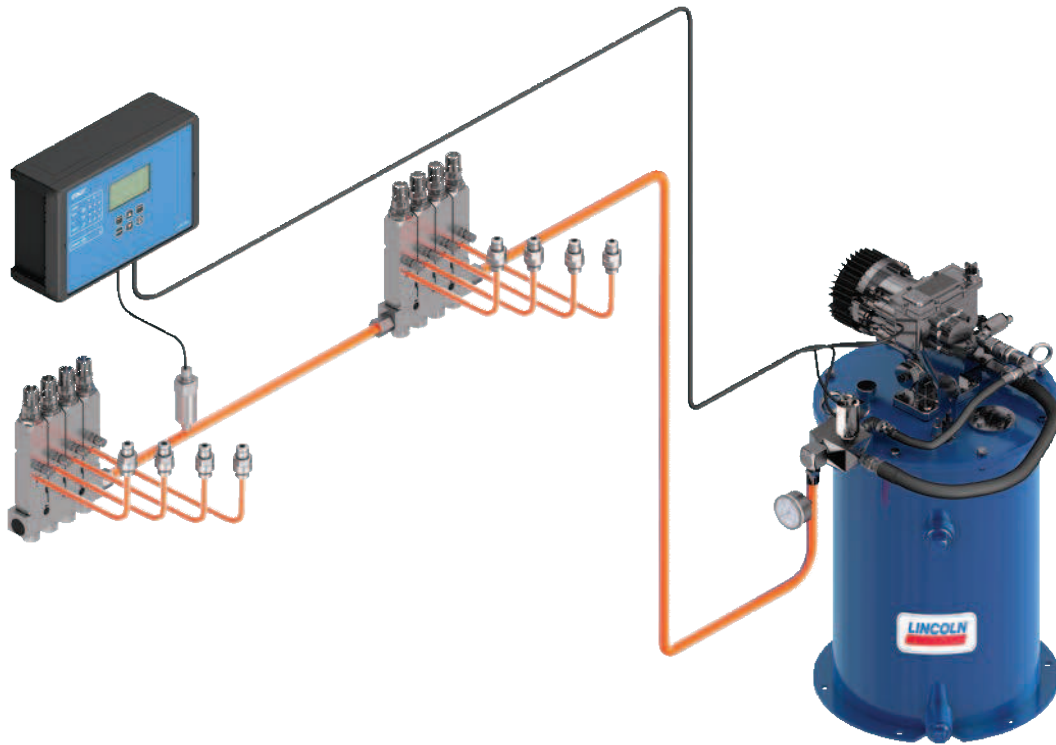
| Order number | Designation                           |
|--------------|---------------------------------------|
| <b>83748</b> | metering device for manifold NPTF (F) |

#### Manifold

| Order number <sup>1)</sup> | Number of ports |
|----------------------------|-----------------|
| <b>12658</b>               | 1               |
| <b>11962</b>               | 2               |
| <b>11963</b>               | 3               |
| <b>11964</b>               | 4               |
| <b>11965</b>               | 5               |

<sup>1)</sup> Each injector has two outlets. One is closed by a closure plug, but can be used to increase outlet quantity combined with another injector.

# Single-line lubrication systems for grease



## System description

Regardless of the application, the principle of single-line lubrication remains the same: a central pump station automatically delivers lubricant through a single supply line to the lubricant metering device. Each metering device serves only one lubrication point and may be adjusted to deliver the precise amount of grease or oil required. Systems can service one machine, different zones on one machine or even several separate machines.

All single-line systems include a pump, injectors, controller and a pressure switch / transducer. These components are very easy to install and modify on any application as needed.

SKF offers two brands of single line parallel lubrication systems: the Lincoln Centro-Matic and the SKF MonoFlex. These systems are recognized world wide for their reliability to lubricate in adverse conditions in virtually any application.

For planning a lubrication system, conditions the system will be used in need to be determined first. The number of lubrication points, back pressures at the lubrication points, operating temperature range, lubricant, the feed pump's drive energy, control and monitoring etc. need to be defined correctly.

Attention to information on bearing or lubrication point specifications need to be paid too. The sum of all the quantities metered out by the system's metering devices needs to be completed by safety margin and compressibility loss. SKF application engineers, as well as SKF sales partners and distributors, are experts in laying out lubrication systems according to all these specifications. A lubrication system laid out by SKF and partners ensures the supply of the correct amount of lubricant at the best time to lubricate. This reduces wear and it avoids pollution caused by over-lubrication.

### Advantages of a single-line lubrication system:

- Easy to understand, install and maintain
- Fully adjustable or customizable for any application
- Suitable for almost all lubricants
- Simple system expansion
- System continues to operate if one point becomes blocked
- Integrated system control and monitoring
- Able to pump long distances within a wide temperature range

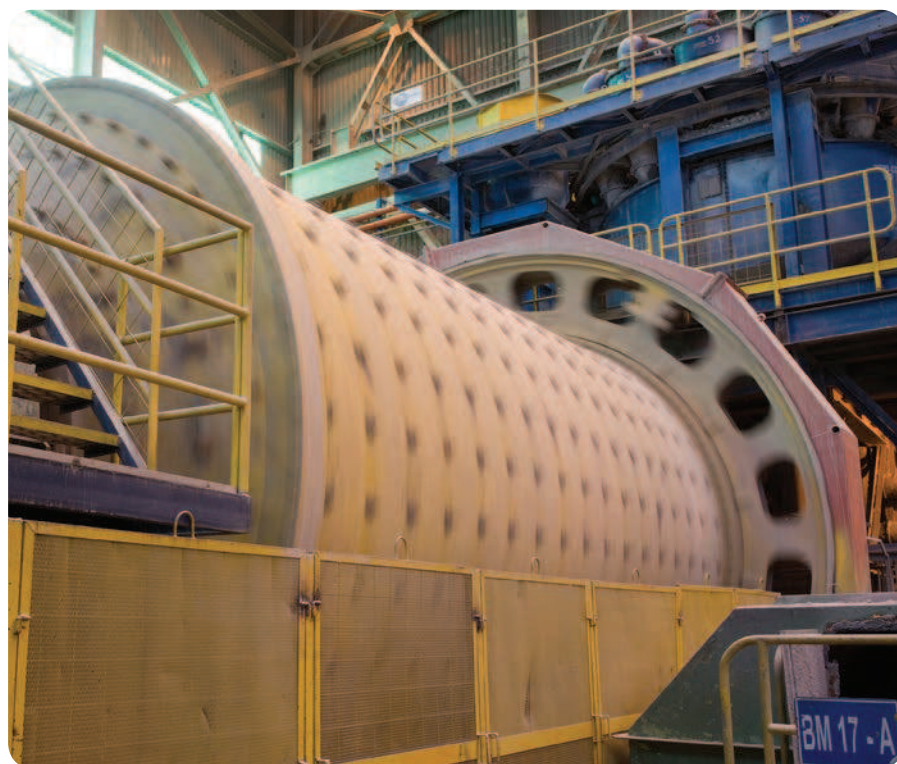


# System and applications

## Applications

Mining applications have been installed in the far north including the Oil Sands of Canada and Siberia and in the hot deserts of Africa and Australia. Major food, beverage, oil/gas, cement, steel, construction and rail customers also rely on SKF's single-line products. All single-line applications benefit from SKF's method of delivering precise amounts of lubricant at controlled intervals to the lubrication point.

- Mining
- On/Off-road
- Construction machinery
- Cement industry
- Food and beverage
- Machine tools
- Railroad
- Forestry
- Steel
- And more



## Pumps and pump units

83817



1810



40PGA



82886, 83668



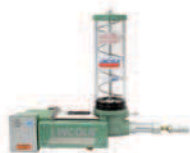
85442



85444/45



85434/35/36



82653/55,  
83800/34



83167, 83599



84050, 85460



282288



HG 1000/2000



84944, 84961



84960, 84962



FlowMaster, hydraulic



# Overview of grease pumps and pump units

## Manually operated pumps and pump units

| Product      | Lubricant grease NLGI |   |   | Metering quantity max.  |                         | Reservoir |    | Metering device category <sup>1)</sup> | Remarks                  | Page |
|--------------|-----------------------|---|---|-------------------------|-------------------------|-----------|----|----------------------------------------|--------------------------|------|
|              | 0                     | 1 | 2 | cm <sup>3</sup> /stroke | in <sup>3</sup> /stroke | kg        | lb |                                        |                          |      |
| <b>83817</b> | •                     | • | • | 1,6                     | 0.09                    | 0,5       | 1  | 5, 6, 7                                | multiple stroke possible | 90   |
| <b>1810</b>  | •                     | • | • | 2,6                     | 0.16                    | 2,3       | 5  | 5, 6, 7                                | multiple stroke possible | 91   |

<sup>1)</sup> Select the recommended fittings, adjust the pump pressure within the recommended metering device pressure range

## Air-operated pumps and pump units

| Product                          | Lubricant grease NLGI |   |   | Metering quantity max.  |                         | Reservoir     |                   | Metering device category <sup>1)</sup> | Remarks                     | Page |
|----------------------------------|-----------------------|---|---|-------------------------|-------------------------|---------------|-------------------|----------------------------------------|-----------------------------|------|
|                                  | 0                     | 1 | 2 | cm <sup>3</sup> /stroke | in <sup>3</sup> /stroke | kg            | lb                |                                        |                             |      |
| <b>40PGA</b>                     | •                     | • | • | 40                      | 2.44                    | 1,7; 2; 4; 10 | 3.7; 4.4; 8.8; 22 | 5, 6, 7                                | single stroke               | 92   |
| <b>82886, 83668</b>              | •                     | • | • | 7,4                     | 0.45                    | 0,5; 2,0      | 1; 4.4            | 5, 6, 7                                | single stroke               | 94   |
| <b>85442</b> <sup>2)</sup>       | •                     | • | • | 7,4                     | 0.45                    | 0,5           | 1                 | 5, 6, 7                                | single stroke, 120 VAC      | 95   |
| <b>85444/45</b> <sup>2)</sup>    | •                     | • | • | 7,4                     | 0.45                    | 1,8           | 4                 | 5, 6, 7                                | single stroke, 120/240 VAC  | 96   |
| <b>85434/35/36</b> <sup>2)</sup> | •                     | • | • | 18,7; 35,2              | 1.14; 2.15              | 2,0           | 4.5               | 5, 6, 7                                | single stroke, 120/240 VAC  | 97   |
| <b>82653/55</b>                  | •                     | • | • | 22,9                    | 1.39                    | 2,0           | 4.5               | 5, 6, 7                                | single stroke, 120/240 VAC  | 98   |
| <b>83800/34</b>                  | •                     | • | • | 35,2                    | 2.15                    | 2,0           | 4.5               | 5, 6, 7                                | single stroke, 120/240 VAC  | 98   |
|                                  |                       |   |   |                         |                         |               |                   |                                        |                             |      |
|                                  | 0                     | 1 | 2 | cm <sup>3</sup> /min    | in <sup>3</sup> /min    | kg            | lb                |                                        |                             |      |
| <b>83167</b>                     | •                     | • | • | 197                     | 12                      | 5,0           | 11                | 5, 6, 7                                | reciprocating               | 99   |
| <b>83599</b>                     | •                     | • | • | 197                     | 12                      | 5,0           | 11                | 5, 6, 7                                | reciprocating               | 100  |
| <b>84050, 85460</b>              | •                     | • | • | 492                     | 30                      | 27            | 60                | 5, 6, 7                                | reciprocating               | 101  |
| <b>282288</b> <sup>2)</sup>      | •                     | • | • | 492                     | 30                      | 55            | 120               | 5, 6, 7                                | reciprocating drum, 120 VAC | 100  |

<sup>1)</sup> Select the recommended fittings, adjust the pump pressure within the recommended metering device pressure range

<sup>2)</sup> Controller included or optional

## Hydraulically operated pumps and pump units

| Product             | Lubricant grease NLGI |   |   | Metering quantity max.  |                         | Reservoir              |                         | Metering device category <sup>1)</sup> | Remarks                | Page |
|---------------------|-----------------------|---|---|-------------------------|-------------------------|------------------------|-------------------------|----------------------------------------|------------------------|------|
|                     | 0                     | 1 | 2 | cm <sup>3</sup> /stroke | in <sup>3</sup> /stroke | kg                     | lb                      |                                        |                        |      |
| <b>HG 1000/2000</b> | •                     | • | – | 0–1 000<br>(0–2 000)    | 0–61.02<br>(0–122)      | 1,0; 2,0               | 2.2; 4.4                | 4, 5                                   | single stroke          | 103  |
|                     |                       |   |   |                         |                         |                        |                         |                                        |                        |      |
|                     | 0                     | 1 | 2 | cm <sup>3</sup> /min    | in <sup>3</sup> /min    | kg                     | lb                      |                                        |                        |      |
| <b>84944, 84961</b> | •                     | • | • | 180                     | 11                      | 30                     | –                       | 5, 6, 7                                | reciprocating          | 104  |
| <b>84960, 84962</b> | •                     | • | • | 180                     | 11                      | –                      | –                       | 5, 6, 7                                | reciprocating drum     | 105  |
| <b>FlowMaster</b>   | •                     | • | • | 115–737                 | 7–45                    | 16; 27; 41;<br>54; 180 | 35; 60; 90;<br>120; 400 | 5, 6, 7                                | drum, solenoid, 24 VDC | 106  |

<sup>1)</sup> Select the recommended fittings, adjust the pump pressure within the recommended metering device pressure range

<sup>2)</sup> Controller included or optional

# Single-line lubrication systems

P603S



Minilube



KFG



Multilube



FK



FlowMaster, electric



P653S



# Overview of grease pumps and pump units

## Electrically operated pumps and pump units

| Product                        | Lubricant grease NLGI |   |   | Metering quantity max. |                      | Reservoir capacity          |                                  | Metering device category <sup>1)</sup> | Remarks                   | Page |
|--------------------------------|-----------------------|---|---|------------------------|----------------------|-----------------------------|----------------------------------|----------------------------------------|---------------------------|------|
|                                | 0                     | 1 | 2 | cm <sup>3</sup> /min   | in <sup>3</sup> /min | kg                          | lb                               |                                        |                           |      |
| <b>P603S</b> <sup>2), 3)</sup> | •                     | • | • | 12                     | 0.7                  | 4; 8; 10; 15; 20            | 8.8; 18; 22; 33; 44              | 5, 6, 7                                | 12/24 VDC                 | 108  |
| <b>Minilube</b> <sup>2)</sup>  | •                     | • | – | 13                     | 0.8                  | 2                           | 4.4                              | 5, 6, 7                                | 12/24 VDC                 | 110  |
| <b>KFG</b> <sup>2), 3)</sup>   | •                     | • | • | 15                     | 0.9                  | 2; 4; 6; 8; 10; 12; 15; 20  | 4.4; 8.8; 13; 18; 22; 26; 33; 44 | 5, 6, 7                                | 12/24 VDC, 90...264 VAC   | 112  |
| <b>Multilube</b> <sup>2)</sup> | •                     | • | – | 16                     | 0.976                | 4; 10                       | 8.8; 22                          | 5, 6, 7                                | 24 VDC, 115/230 VAC       | 114  |
| <b>P653S</b> <sup>2), 3)</sup> | •                     | • | • | 24,6                   | 1.5                  | 4; 8; 15; 20                | 8.8; 18; 22; 44                  | 5, 6, 7                                | 24 VDC, 120/230 VAC       | 116  |
| <b>FK</b> <sup>2)</sup>        | •                     | • | • | 74                     | 4.5                  | 15; 30; 60                  | 22; 66; 132                      | 5, 6, 7                                | 3 phase drive             | 118  |
| <b>FlowMaster, electric</b>    | •                     | • | • | 103                    | 6.3                  | 16, 25, 28, 35, 40, 55, 180 | 35, 55, 60, 78, 90, 120, 400     | 5, 6, 7                                | 12/24 VDC; 120 to 460 VAC | 120  |

<sup>1)</sup> Select the recommended fittings, adjust the pump pressure within the recommended metering device pressure range

<sup>2)</sup> Controller included or optional

<sup>3)</sup> Stainless steel or C5M available

## Pump unit

# 83817

Grease



### Product description

This manual pump unit has a metal reservoir and a spring-loaded follower. The indicator pin in the pump base shows when 172 bar (2 500 psi) system operating pressure has been achieved.

### Features and benefits

- Number of strokes dependent on connected lubrication points and their dosage
- Metal reservoir with spring-loaded follower also suitable for replaceable 400 g grease cartridges
- Simple handling
- Low-cost, efficient method of lubricant distribution
- Pump base with built-in check vent valve and indicator pin for visual control of max. or vent pressure
- Vents when handle is pushed all the way back
- Two different filling couplers available
- For use with metering devices of category 5, 6, 7

### Applications

- Construction machinery
- Agriculture

### Technical data

|                              |                                                           |
|------------------------------|-----------------------------------------------------------|
| Order number . . . . .       | <b>83817</b>                                              |
| Function principle . . . . . | manually operated piston pump                             |
| Outlets. . . . .             | 1                                                         |
| Metering quantity . . . . .  | 1,6 cm <sup>3</sup> /stroke, 0.10 in <sup>3</sup> /stroke |
| Lubricant. . . . .           | grease NLGI 0, 1, 2                                       |
| Operating temperature . . .  | -20 to +65 °C;<br>-4 to +149 °F                           |
| Operating pressure . . . . . | min. 82 bar, 1 200 psi<br>max. 240 bar, 3 500 psi         |
| Reservoir. . . . .           | 0,5 kg, 1 lb                                              |
| Material. . . . .            | steel, brass, copper,<br>polyurethane, nitrile            |
| Filling method . . . . .     | 0,4 kg, 14.5 oz, grease cartridge/bulk fill               |
| Connection outlet . . . . .  | 1/8 NPTF (F)                                              |
| Dimensions . . . . .         | 387×127×141 mm<br>15.25×5×5.625 in                        |
| Mounting position . . . . .  | vertical or horizontal                                    |

## Pump unit

# 1810



### Product description

The Model 1810 pump unit features a translucent reservoir with spring-loaded follower. The indicator pin in the pump base shows when 172 bar (2 500 psi) system operating pressure has been achieved. It can be refilled via the included fitting using the Model 81834 filler pump or other manual pumps equipped with a Model 645006 coupler.

### Features and benefits

- Number of strokes dependent on connected lubrication points and their dosage
- Reservoir with spring-loaded follower
- Simple handling
- Low-cost, efficient method of lubricant distribution
- Pump base with built-in check vent valve and indicator pin for visual control of max. or vent pressure
- Releases pressure on the lubricant line when handle is pushed all the way back
- Two different filling couplers available
- For use with metering devices of category 5, 6, 7

### Applications

- Construction machinery
- Agriculture



Grease

### Technical data

|                              |                                                           |
|------------------------------|-----------------------------------------------------------|
| Order number . . . . .       | <b>1810</b>                                               |
| Function principle . . . . . | manually operated piston pump                             |
| Outlets. . . . .             | 1                                                         |
| Metering quantity . . . . .  | 2,6 cm <sup>3</sup> /stroke, 0.16 in <sup>3</sup> /stroke |
| Lubricant. . . . .           | grease NLGI 0, 1, 2                                       |
| Operating temperature . . .  | -20 to +65 °C; -4 to +149 °F                              |
| Operating pressure . . . . . | min. 82 bar, 1 200 psi<br>max. 240 bar, 3 500 psi         |
| Reservoir. . . . .           | 2,3 kg, 5 lb                                              |
| Material. . . . .            | acrylic, steel, brass,<br>copper, polyurethane, nitrile   |
| Connection outlet . . . . .  | 1/4 NPTF (F)                                              |
| Dimensions . . . . .         | 413 × 181 × 197 mm<br>16.25 × 7.125 × 7.75 in             |
| Mounting position . . . . .  | vertical or horizontal                                    |

## Pump unit

### 40PGA



Grease

#### Product description

Pump Model 40PGA is a compact lubrication pump unit. The splash-proof pump operates pneumatically and can be controlled and monitored by the remote electric control unit ST-102 or ST-102P. The pump is available with a choice of different kind of reservoir sizes and materials, each featuring a spring-loaded intermediate piston. A low-level alarm is available in aluminum and steel version and pump is available with an integrated pressure switch.

#### Features and benefits

- Compact, air-operated lubrication pump unit for demanding conditions
- Part of a modular and modifiable system
- Splash-proof pump is offered with:
  - choice of four different reservoir sizes
  - spring-loaded, intermediate piston in reservoir
  - steel and aluminum reservoirs are equipped with low level alarm
  - optional an integrated pressure switch
- Mechanical relief valve
- Controlled and monitored by a remote timer continuously
- Safe and environmentally friendly
- For use with metering devices of category 5, 6 and 7

#### Applications

- Buses and trucks
- Vehicles



#### Technical data

|                              |                                                                                                   |
|------------------------------|---------------------------------------------------------------------------------------------------|
| Function principle           | pneumatically operated piston pump                                                                |
| Outlet                       | 1                                                                                                 |
| Metering quantity            | 40 cm <sup>3</sup> /stroke<br>2.4 in <sup>3</sup> /stroke                                         |
| Lubricant                    | grease NLGI 0, 1, 2                                                                               |
| Operating temperature        | -20 to +65 °C<br>-4 to +150 °F                                                                    |
| Operating pressure           | max. 10 bar<br>145 psi                                                                            |
| Reservoir                    | 1,7; 2; 4 and 10 kg<br>3.75; 4.4; 8.8 and 22 lb                                                   |
| Material                     | stainless steel, plastic, steel and aluminum                                                      |
| Connection outlet            | R 1/4 in                                                                                          |
| Operating voltage            | 24 V                                                                                              |
| Transmission ratio           | 16:1                                                                                              |
| Protection class             | IP 65                                                                                             |
| Dimensions (dep. on version) | min. 270×320×180 mm<br>min. 10.63×12.59×7.0 in<br>max. 570×320×245 mm<br>max. 22.44×12.59×9.65 in |
| Mounting position            | vertical and horizontally                                                                         |



#### 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): **11678 EN, 11390007\_40PGA\_01\_EN**

## Pump unit

### 40PGA

#### Order number configurator

40PGA

-

-

24

-

PS

#### Product series

**40PGA** = 40PGA Pump unit

#### Reservoir material

**A** = Aluminium

**P** = Plastic

**S** = Stainless steel

#### Reservoir volume

**170** = 1,7 kg; 3.74 lb (plastic reservoir)

**2L** = 2 kg; 4.4 lb (stainless steel reservoir)

**4L** = 4 kg; 8.8 lb (aluminum reservoir)

**10L** = 10 kg; 22 lb (aluminum reservoir)

#### Operating voltage

**24** = 24 VDC

#### Pressure monitoring

**PS** = integrated pressure switch

Grease

Pump unit

82886, 83668

Grease



Product description

All models are air-operated, positive-displacement pumps delivering a maximum volume by means of a single stroke of the pump. Solenoid air valves and adjustable, solid-state time controls are integrated into the pump body, and translucent, acrylic reservoirs with spring-loaded followers are available in several sizes. Pump discharges lubricant on air-powered forward stroke and releases pressure on the lubricant line on spring-powered return stroke through built-in check/relief valve. Includes filler fitting for refilling reservoir with Model 81834 or other manual pump equipped with Model 645006 coupler.

Features and benefits

- Remote system components such as 3/2-way valves, adjustments for air power, and monitoring of pump and system are available separately on request
- For use with metering devices of category 5, 6 and 7

Applications

- Cement industry
- Wood-working
- Food and beverage

Technical data

Order number . . . . . **82886, 83668**  
Function principle . . . . . pneumatically operated  
psiton pump (single-stroke)  
Outlets. . . . . 1  
Metering quantity . . . . . 7,4 cm<sup>3</sup>/stroke, 0.45 in<sup>3</sup>/stroke  
Lubricant. . . . . grease NLGI 0, 1, 2  
Operating temperature . . . -18 to +65 °C; 0 to +150 °F  
Operating pressure . . . . min. 82 bar, 1 200 psi  
max. 240 bar, 3 500 psi  
Reservoir. . . . . 0,5 or 2 kg; 1 or 4.4 lb  
Material. . . . . acrylic  
Connection outlet . . . . 1/4 NPTF (F)  
Transmission ratio . . . . 20:1  
Air inlet . . . . . 1/4 NPTF (F)  
Mounting position . . . . vertical

Timer

On time . . . . . min. 10 sec; max. 1 min. 24 sec  
Cycle time . . . . . min. 20 sec; max. 24 h  
Voltage . . . . . 120 VAC, 60 Hz; 110 VAC, 50 Hz  
Operating temperature . . . -23 to +65 °C; -10 to +150 °F

Pumps

| Order number | Reservoir capacity |     | Dimensions  |              |
|--------------|--------------------|-----|-------------|--------------|
|              | kg                 | lb  | mm          | in           |
| 82886        | 0,5                | 1   | 263×133×152 | 10.4×5.3×6.0 |
| 83668        | 2                  | 4.4 | 470×133×152 | 18.5×5.3×6.0 |

## Pump unit

# 85442



### Product description

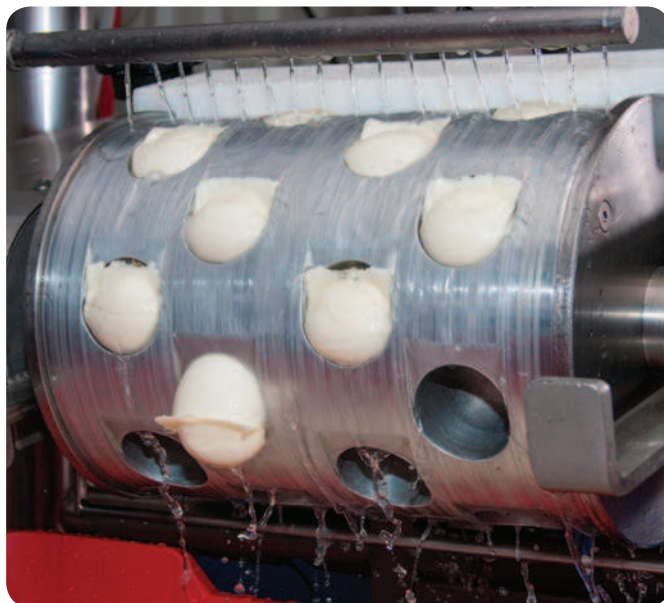
Model 85442 is an air-operated, positive-displacement pump delivering a maximum volume by means of a single stroke of the pump. Solenoid air valves and adjustable, solid-state time controls are integrated into the pump body. This pump unit is designed to deliver grease to single-line metering devices and includes a special high-volume refill fitting. Acrylic reservoirs are available in several sizes. Integrated controls feature LED indicators for "Power On", "Pump On" and "Alarm" along with a membrane-type, "Manual Lube" switch.

### Features and benefits

- Reservoir 0,45 kg / 1 lb with spring-loaded follower
- Integrated solenoid air valve
- High-volume refill fitting
- For use with metering devices of category 5, 6 and 7

### Applications

- Cement industry
- Wood-working
- Food and beverage



Grease

### Technical data

|                       |                                                           |
|-----------------------|-----------------------------------------------------------|
| Order number          | 85442                                                     |
| Function principle    | pneumatically operated piston pump (single-stroke)        |
| Outlets               | 1                                                         |
| Metering quantity     | 7,4 cm <sup>3</sup> /stroke, 0.45 in <sup>3</sup> /stroke |
| Lubricant             | grease NLGI 0, 1, 2                                       |
| Operating temperature | -23 to +65 °C; -10 to +150 °F                             |
| Operating pressure    | min. 82 bar, 1 200 psi<br>max. 240 bar, 3 500 psi         |
| Reservoir             | 0,5 kg, 1.0 lb                                            |
| Material              | acrylic                                                   |
| Connection outlet     | 1/4 NPTF (F)                                              |
| Voltage               | 120 VAC                                                   |
| Transmission ratio    | 20:1                                                      |
| Dimensions            | 133 × 184 × 305 mm<br>5.25 × 7.24 × 12.02 in              |
| Mounting position     | vertical                                                  |

### Timer and controller

|                       |                                   |
|-----------------------|-----------------------------------|
| On time               | 10 or 30 sec                      |
| Off time              | 1/2 to 30 min. or 30 min. to 30 h |
| Alarm contacts        | 8 amps at 250 VAC                 |
| Operating temperature | -23 to +65 °C; -10 to +150 °F     |

## Pump unit

85444/45

Grease



### Product description

All models are air-operated, positive-displacement pumps delivering a maximum volume by means of a single stroke of the pump. Solenoid air valves and adjustable, solid-state time controls are integrated into the pump body. These pump units are designed to deliver grease to single-line metering devices and include a special high-volume refill fitting. Acrylic reservoirs are available in several sizes. Integrated controls feature LED indicators for "Power On", "Pump On" and "Alarm," along with a membrane-type, "Manual Lube" switch.

### Features and benefits

- Reservoir 1,8 kg / 4 lb with spring-loaded follower
- Integrated, adjustable, solid-state time controls with LED indicators
- Integrated solenoid air valve
- High-volume refill fitting
- For use with metering devices of category 5, 6 and 7

### Applications

- Food and beverage
- Glass industry



### Technical data

|                       |                                                           |
|-----------------------|-----------------------------------------------------------|
| Order number          | 85444, 85445                                              |
| Function principle    | pneumatically operated<br>piston pump (single-stroke)     |
| Outlets               | 1                                                         |
| Metering quantity     | 7,4 cm <sup>3</sup> /stroke, 0.45 in <sup>3</sup> /stroke |
| Lubricant             | grease NLGI 0, 1, 2                                       |
| Operating temperature | -23 to +65 °C; -10 to +150 °F                             |
| Operating pressure    | min. 82 bar, 1 200 psi<br>max. 240 bar, 3 500 psi         |
| Reservoir             | 1,8 kg, 4.0 lb                                            |
| Material              | acrylic                                                   |
| Connection outlet     | 1/4 NPTF (F)                                              |
| Voltage               | 120 VAC; 240 VAC                                          |
| Transmission ratio    | 20:1                                                      |
| Dimensions            | 133 × 184 × 527 mm<br>5.25 × 7.24 × 20.75 in              |
| Mounting position     | vertical                                                  |

### Timer and controller

|                       |                                   |
|-----------------------|-----------------------------------|
| On time               | 10 or 30 sec                      |
| Off time              | 1/2 to 30 min. or 30 min. to 30 h |
| Alarm contacts        | 8 amps at 250 VAC                 |
| Operating temperature | -23 to +65 °C; -10 to +150 °F     |

### Pumps

| Order number | Voltage | Transmission ratio | Lubricant output        |                         |
|--------------|---------|--------------------|-------------------------|-------------------------|
|              |         |                    | cm <sup>3</sup> /stroke | in <sup>3</sup> /stroke |
| 85444        | 120     | 20:1               | 7,4                     | 0.45                    |
| 85445        | 240     | 20:1               | 7,4                     | 0.45                    |

## Pump unit

85434/35/36



### Product description

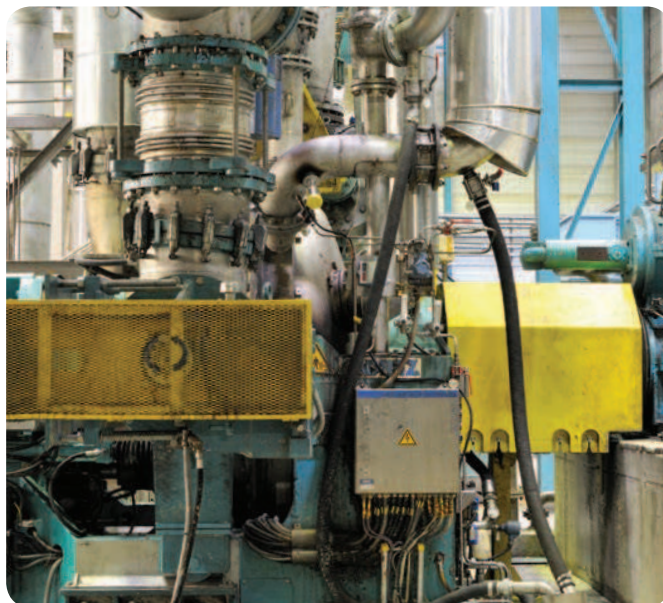
All models are air-operated, positive-displacement pumps delivering a maximum volume by means of a single stroke of the pump. Solenoid air valves and adjustable, solid-state time controls are integrated into the pump body. These pumps are designed to deliver grease to single-line metering devices and include a special high-volume refill fitting. Acrylic reservoirs are available in several sizes. Integrated controls feature LED indicators for "Power On", "Pump On" and "Alarm," along with a membrane-type, "Manual Lube" switch.

### Features and benefits

- Integrated, adjustable, solid-state time controls with LED indicators
- Integrated solenoid air valves
- High-volume refill fitting
- For use with metering devices of category 5, 6 and 7

### Applications

- Food and beverage
- Glass industry
- Machine tools



Grease

### Technical data

|                       |                                                                                                     |
|-----------------------|-----------------------------------------------------------------------------------------------------|
| Function principle    | pneumatically operated piston pump (single-stroke)                                                  |
| Outlet                | 1                                                                                                   |
| Metering quantity     | depending on model:<br>18,7 or 35,2 cm <sup>3</sup> /stroke<br>1.14 or 2.15 in <sup>3</sup> /stroke |
| Lubricant             | grease NLGI 0, 1, 2                                                                                 |
| Operating temperature | –23 to +65 °C; –10 to +150 °F                                                                       |
| Operating pressure    | min. 82 bar, 1 200 psi<br>max. 240 bar, 3 500 psi                                                   |
| Reservoir             | 2,0 kg, 4.5 lb                                                                                      |
| Material              | acrylic                                                                                             |
| Connection outlet     | 1/4 NPTF (F)                                                                                        |
| Voltage               | 120 VAC; 240 VAC                                                                                    |
| Transmission ratio    | 31:1; 25:1                                                                                          |
| Dimensions            | 627×166×460 mm<br>24.70×6.52×18.11 in                                                               |
| Mounting position     | vertical                                                                                            |

### Timer and controller

|                       |                                   |
|-----------------------|-----------------------------------|
| On time               | 10 or 30 sec                      |
| Off time              | 1/2 to 30 min. or 30 min. to 30 h |
| Alarm contacts        | 8 amps at 250 VAC                 |
| Operating temperature | –23 to +65 °C; –10 to +150 °F     |

### Pumps

| Order number | Voltage | Transmission ratio | Metering quantity       |                         |
|--------------|---------|--------------------|-------------------------|-------------------------|
|              |         |                    | cm <sup>3</sup> /stroke | in <sup>3</sup> /stroke |
| 85434        | 120     | 31:1               | 18,70                   | 1.14                    |
| 85435        | 240     | 31:1               | 18,70                   | 1.14                    |
| 85436        | 120     | 25:1               | 35,20                   | 2.15                    |

Pump unit

82653/55, 83800/34



Grease

Product description

All models are air-operated, positive-displacement pumps delivering a maximum volume by means of a single stroke of the pump. Solenoid air valves and adjustable, solid-state time controls are integrated into the pump body. These pump units are designed to deliver grease to single-line metering devices and include a special high-volume refill fitting. Translucent, acrylic reservoirs with spring-loaded followers are available in several sizes. Pump uses air for forward and return stroke but dispenses lubricant on forward stroke only. Return stroke releases pressure on the lubricant line through included check/relief valve.

Features and benefits

- Remote system components such as 4/2-way valves, adjustments for air power, and monitoring of pump and system are available separately on request
- High-volume refill fitting
- For use with metering devices of category 5, 6 and 7

Applications

- Oil and gas industry
- Chain lubrication



Technical data

Order number . . . . . **82653, 83834, 82655, 83800**  
Function principle . . . . . piston pump (single-stroke)  
Outlets. . . . . 1  
Metering quantity . . . . . 22,9 to 35,2 cm<sup>3</sup>/stroke  
1.4 to 2.15 in<sup>3</sup>/stroke  
Lubricant. . . . . grease NLGI 0, 1, 2  
Operating temperature . . . -18 to +65 °C; 0 to +150 °F  
Operating pressure . . . . min. 82 bar, 1 200 psi  
max. 240 bar, 3 500 psi  
Reservoir. . . . . 2 kg, 4.5 lb  
Material. . . . . acrylic  
Connection outlet . . . . 1/4 NPTF (F)  
Transmission ratio . . . . 31:1; 25:1  
Air inlet . . . . . 1/4 NPTF (F)  
Dimensions . . . . . 470×146×533 mm  
18.5×5.75×20.9 in  
Mounting position . . . . vertical

Timer (for 82655 and 83800 only)

On time . . . . . min. 10 sec  
max. 1 minute, 24 sec  
Cycle time . . . . . min. 20 sec  
max. 24 h  
Operating voltage . . . . 120 VAC, 60 Hz; 110 VAC, 50 Hz  
Operating temperature . . -23 to +65 °C; -10 to +150 °F

Air consumption at 6,9 bar, 100 psi, is 0,004 M<sup>3</sup>/min, 0.15 ft<sup>3</sup>/min, per stroke

Pumps

| Order number | Ratio | Lubricant output        |                         | Designation        |
|--------------|-------|-------------------------|-------------------------|--------------------|
|              |       | cm <sup>3</sup> /stroke | in <sup>3</sup> /stroke |                    |
| 82653        | 31:1  | 22,9                    | 1.4                     | bare pump          |
| 82655        | 31:1  | 22,9                    | 1.4                     | pump with controls |
| 83800        | 25:1  | 35,2                    | 2.15                    | pump with controls |
| 83834        | 25:1  | 35,2                    | 2.15                    | bare pump          |

## Pump unit

# 83167



### Product description

Model 83167 is an air-operated, positive-displacement pump delivering a maximum volume by means of a single stroke of the pump. Solenoid air valves and adjustable, solid-state time controls are integrated into the pump body. This pump unit is designed to deliver grease to single-line metering devices and includes a special high-volume refill fitting. Acrylic reservoirs are available in several sizes. Model 83167 includes a transparent reservoir, spring-loaded follower, vent valve assembly and filler fitting for refilling the reservoir.

### Features and benefits

- 2 1/2 inch air motor
- Vent valve assembly
- Operation by air-powered reciprocating strokes and releases pressure on the lubricant line through included check/relief valve (3-way) on air-powered return stroke
- Remote system components such as 3/2-way valves, adjustments for air power, and monitoring of pump are available separately on request
- Two different filling couplers available
- For use with metering devices of category 5, 6 and 7

### Applications

- Cement industry
- Food and beverage



Grease

### Technical data

|                                 |                                                   |
|---------------------------------|---------------------------------------------------|
| Order number . . . . .          | <b>83167</b>                                      |
| Function principle . . . . .    | pneumatically operated, reciprocating piston pump |
| Outlets. . . . .                | 1                                                 |
| Metering quantity . . . . .     | 197 cm <sup>3</sup> /min, 12 in <sup>3</sup> /min |
| Lubricant. . . . .              | grease NLGI 0, 1, 2                               |
| Operating temperature . . . . . | -35 to +104 °C<br>-30 to +220 °F                  |
| Operating pressure . . . . .    | min. 82 bar, 1 200 psi<br>max. 240 bar, 3 500 psi |
| Transmission ratio . . . . .    | 40:1                                              |
| Reservoir. . . . .              | 5 kg, 11.0 lb                                     |
| Material . . . . .              | acrylic, nitrile, neoprene, steel, aluminum, zinc |
| Connection outlet . . . . .     | 3/4 NPTF (F)                                      |
| Air inlet . . . . .             | 1/8 NPTF (F)                                      |
| Dimensions . . . . .            | 413 × 229 × 571,5 mm<br>16.25 × 9.0 × 22.5 in     |
| Mounting position . . . . .     | vertical                                          |

Pump requires 3-way air valve  
Air consumption at 6,9 bar, 100 psi, is 0,004 M<sup>3</sup>/min, 0.15 ft<sup>3</sup>/min, per stroke

## Pump unit

# 83599



Grease

### Product description

Model 83599 is an air-operated, positive-displacement pump delivering a maximum volume by means of a single stroke of the pump. Solenoid air valves and adjustable, solid-state time controls are integrated into the pump body. The pump is designed to deliver grease to single-line metering devices and includes a special high-volume refill fitting. Acrylic reservoirs are available in several sizes.

Model 83599 is similar to Model 83167 except that it includes a base-mounting kit and metal reservoir with indicator rod for visual check of grease level. The reservoir includes a spring-loaded follower.

### Features and benefits

- 2 1/2 inch air motor
- Reservoir with spring-loaded follower and indicator rod for visual check of grease level
- Vent valve assembly
- Base mounting kit
- Operation by air-powered reciprocating strokes and releases pressure on the lubricant line through included check/relief valve (3-way) on air-powered return stroke
- Remote system components such as 3/2-way valves, adjustments for air power, and monitoring of pump are available separately on request
- Two different filling couplers available
- For use with metering devices of category 5, 6 and 7

### Applications

- Machine tools
- Industrial machinery



### Technical data

|                                 |                                                     |
|---------------------------------|-----------------------------------------------------|
| Order number . . . . .          | <b>83599</b>                                        |
| Function principle . . . . .    | pneumatically operated, reciprocating piston pump   |
| Outlets. . . . .                | 1                                                   |
| Metering quantity . . . . .     | 197 cm <sup>3</sup> /min<br>12 in <sup>3</sup> /min |
| Lubricant. . . . .              | grease NLGI 0, 1, 2                                 |
| Operating temperature . . . . . | -34 to +121 °C<br>-30 to +250 °F                    |
| Operating pressure . . . . .    | min. 82 bar, 1 200 psi<br>max. 240 bar, 3 500 psi   |
| Transmission ratio . . . . .    | 40:1                                                |
| Reservoir. . . . .              | 5 kg, 11 lb                                         |
| Material. . . . .               | acrylic, nitrile, neoprene, steel, aluminum, zinc   |
| Connection outlet . . . . .     | 3/4 NPTF (F)                                        |
| Air inlet . . . . .             | 1/4 NPTF (F)                                        |
| Dimensions . . . . .            | 462×229×697 mm<br>18.19×9.0×27.44 in                |
| Mounting position . . . . .     | vertical                                            |

Pump requires 3-way air valve  
Air consumption at 6,9 bar, 100 psi, is 0,004 M<sup>3</sup>/min, 0.15 ft<sup>3</sup>/min, per stroke

## Pump unit

84050, 85460



### Product description

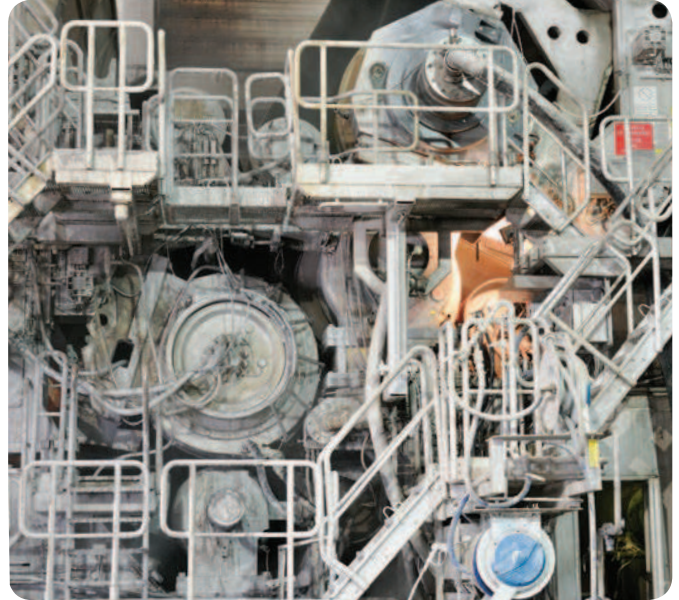
Models 84050 and 85460 are air-operated, double-acting pumps for high-volume displacement. Both pumps are supplied with a 27 kg (60 lb) capacity metal reservoir with removable cover for easy filling. It includes an air-operated vent valve and air and lubricant connecting hoses. Model 85460 features a visual low-level and follower plate assembly.

### Features and benefits

- Rugged, 14-gauge steel walls
- Large 1 inch NPT inlet for fast filling, 1 1/4 in overflow outlet
- 2 inch foam follower that virtually eliminates grease bypass
- Vent valve to bucket coupling
- Thick mounting ring that withstands severe vibration
- Bulk filling method
- Remote system components such as 3/2-way valves, adjustments for air power, and monitoring of pump are available separately on request
- For use with metering devices of category 5, 6 and 7

### Applications

- Pulp and paper industry
- Construction machinery
- Food and beverage
- Mining



Grease

### Technical data

|                                |                                                     |
|--------------------------------|-----------------------------------------------------|
| Order number . . . . .         | <b>84050, 85460</b>                                 |
| Function principle . . . . .   | pneumatically operated<br>double-acting piston pump |
| Outlets. . . . .               | 1                                                   |
| Metering quantity . . . . .    | 492 cm <sup>3</sup> /min<br>30 in <sup>3</sup> /min |
| Lubricant. . . . .             | grease xNLGI 0, 1, 2                                |
| Operating temperature . . . .  | -23 to +60 °C; -10 to +140 °F                       |
| Operating pressure . . . . .   | min. 82 bar, 1 200 psi<br>max. 240 bar, 3 500 psi   |
| Reservoir. . . . .             | 27 kg, 60 lb                                        |
| Transmission ratio . . . . .   | 50:1                                                |
| Material (reservoir) . . . . . | steel                                               |
| Connection outlet . . . . .    | 3/4 NPTF (F)                                        |
| Air inlet . . . . .            | 3/8 NPTF (F)                                        |
| Dimensions . . . . .           | 806 × 392 × 395 mm<br>31.75 × 15.44 × 15.56 in      |
| Mounting position . . . . .    | vertical                                            |

Pump requires 3-way air valve  
Air consumption at 6,9 bar, 100 psi, is 0,012 M<sup>3</sup>/min, 0.42 ft<sup>3</sup>/min, per stroke  
Optional 92597 follower available

## Pump unit

# 282288



Grease

### Product description

All models are air-operated, positive-displacement pumps delivering a maximum volume by means of a single stroke of the pump. Solenoid air valves and adjustable, solid-state time controls are integrated into the pump body. Designed to deliver grease to single-line metering devices, these pump models include a special high-volume refill fitting. Integrated controls feature LED indicators for "Power On", "Pump On" and "Alarm," along with a membrane-type, "Manual Lube" switch. Model 1823 includes a 2 1/2 inch pneumatically driven pump, vent valve assembly, pump elevator, air and lubricant connecting hoses and control panel. Model 282288 has the same specifications as Model 1823 but does not include an elevator or controller.

### Features and benefits

- Modular structure consists of 2 1/2 in air motor, pump and vent assembly, controller, pump elevator, air and lubricant connecting hoses, as well as an optional control panel
- For U. S. standard refinery drums (removable head)
- For clean and safe drum replacement
- Simplified, modular design
- For use with metering devices of category 5, 6 and 7.

### Applications

- Agriculture
- Chemical industry
- Steel industry



### Technical data

|                                 |                                                     |
|---------------------------------|-----------------------------------------------------|
| Order number . . . . .          | <b>282288</b>                                       |
| Function principle . . . . .    | pneumatically operated<br>reciprocating piston pump |
| Outlets. . . . .                | 1                                                   |
| Metering quantity . . . . .     | 492 cm <sup>3</sup> /min, 30 in <sup>3</sup> /min   |
| Lubricant. . . . .              | grease NLGI 0, 1, 2                                 |
| Operating temperature . . . . . | -15 to +121 °C; +5 to 250 °F                        |
| Operating pressure . . . . .    | min. 82 bar, 1 200 psi<br>max. 240 bar, 3 500 psi   |
| Transmission ratio . . . . .    | 50:1                                                |
| Reservoir. . . . .              | 55 kg, 120 lb                                       |
| Drum size . . . . .             | standard 120 lb. refinery drum                      |
| Material. . . . .               | nitrile, steel, polyurethane                        |
| Connection outlet . . . . .     | 3/4 NPTF (F)                                        |
| Air inlet . . . . .             | 3/8 NPTF (F)                                        |
| Voltage (controller) . . . . .  | 120 V, 60 Hz; 110 V, 50 Hz                          |
| Dimensions . . . . .            | 381 × 381 × 975 mm;<br>15 × 15 × 38.375 in          |
| Mounting position . . . . .     | vertical                                            |

Air consumption at 6,9 bar, 100 psi, is 0,004 M<sup>3</sup>/min, 0.15 ft<sup>3</sup>/min, per stroke  
83371 follower plate is available as an optional accessory

## Pump unit

### HG 1000, HG 2000



#### Product description

The hydraulic lubricator HG is an lubrication system developed for a cost-efficient automatic lubrication in machines and implements having a hydraulic circuit. With the help of the hydraulic lubricator, centralized automatic lubrication can be adapted to such units as dismountable hoists, small lift trucks and rear lifts of vehicles.

#### Features and benefits

- Simple piston pump utilizes self-relieving hydraulic lines
- Provides cost-efficient automatic lubrication
- Suitable for use in vehicles or machines having a safe hydraulic circuit that is not constantly in operation
- Pressure rise and fall operation in the pump is activated by powering-on and powering-off the adapted hydraulic circuit
- Pressure rise and fall operation in the lube line, as well as the amount of lube remaining, can be verified from the pressure gauge of the pump unit
- Optional low-level limit alarm can be indicated by a buzzer or indicator lamp 12 or 24 VDC
- Filling coupler with filter
- For use with metering devices of category 4 and 5

#### Applications

- Vehicles
- Machines
- Dismountable hoists
- Small lift trucks
- Rear lifts of trucks



Grease

#### Technical data

|                                      |                                                                                                |
|--------------------------------------|------------------------------------------------------------------------------------------------|
| Order number . . . . .               | <b>HG 1000</b><br><b>HG 2000</b>                                                               |
| Function principle . . . . .         | hydraulically operated<br>piston pump                                                          |
| Outlets. . . . .                     | 1                                                                                              |
| Metering quantity . . . . .          | depending on the inlet pressure                                                                |
| Lubricant. . . . .                   | grease NLGI 0, 1                                                                               |
| Operating temperature . . . . .      | -25 to +80 °C<br>-13 to +176 °F                                                                |
| Operating pressure . . . . .         | min. 50 bar; 725 psi<br>max. 150 bar; 2 176 psi                                                |
| Reservoir. . . . .                   | 1 and 2 kg; 2.2 and 4.4 lb                                                                     |
| Material (reservoir) . . . . .       | steel                                                                                          |
| Hydraulic inlet connection . . . . . | R 1/4 in ZN;<br>main hose ø 8 mm, 0.341 in                                                     |
| Grease outlet connection . . . . .   | R 1/4 in ZN;<br>main hose ø 8 mm, 0.341 in                                                     |
| Transmission ratio . . . . .         | 1:1                                                                                            |
| Operating voltage . . . . .          | 12 or 24 VDC                                                                                   |
| Dimensions . . . . .                 | HG 1000; 345×100×100 mm<br>13.58×3.94×3.94 in<br>HG 2000; 520×100×100 mm<br>20.47×3.94×3.94 in |
| Mounting position . . . . .          | vertical or horizontal                                                                         |

## Pump unit

84944, 84961

Grease



### Product description

Models 84944 and 84961 are pumping systems designed to operate centralized lubrication systems that utilize single-line, parallel grease metering components. The pump is double acting, dispensing lubricant on both the up and down strokes. These units are designed for off-road equipment that utilizes 24 VDC power sources. These units can be used in conjunction with: Models 244270 (not potted) or 249605 (potted) cycle timers; Model 84944 hydraulically operated pump with 60 lb metal reservoir and vent valve (basic pump); and Model 84961 basic pump (similar to Model 84944 but without reservoir or vent valve). These products include a pump and hydraulic control.

### Features and benefits

- Robust
- Pump operates by an electrical signal
- Supplied with metal reservoir with removable cover for easy filling
- Includes a hydraulic operated solenoid vent valve 24 VDC
- Includes a hydraulic pressure reduction valve rated 4 to 55 bar (60 to 800 psi) output
- Bulk filling method
- For use with metering devices of category 5, 6 and 7

### Applications

- Construction machinery
- Heavy machines
- Vehicles

### Technical data

|                                 |                                                      |
|---------------------------------|------------------------------------------------------|
| Order number . . . . .          | <b>84944</b><br><b>84961</b>                         |
| Function principle . . . . .    | hydraulically operated,<br>double-acting piston pump |
| Outlets. . . . .                | 1                                                    |
| Metering quantity . . . . .     | 180 cm <sup>3</sup> /min, 11 in <sup>3</sup> /min    |
| Lubricant. . . . .              | grease NLGI 0, 1, 2                                  |
| Operating temperature . . . .   | -40 to +57 °C; -40 to +135 °F                        |
| Fluid inlet temperature . . . . | max. +99 °C; +210 °F                                 |
| Hydraulic inlet pressure. . . . | min. 20 bar, 300 psi<br>max. 205 bar, 3 000 psi      |
| Pressure ratio . . . . .        | 16:1                                                 |
| Reservoir. . . . .              | 27 kg, 60 lb                                         |
| Material. . . . .               | steel, brass, copper, polyurethane, nitrile          |
| Connection outlet . . . . .     | 3/4 NPTF (M)                                         |
| Hydraulic inlet/outlet. . . . . | 1/4 NPTF (M)                                         |
| Flow rate . . . . .             | at 30 cycles/min: 3,8 l/min, 1.0 gal/min             |
| Operating voltage . . . . .     | 24 VDC                                               |
| Dimensions                      |                                                      |
| 84944. . . . .                  | 381×495,3×889 mm; 15×19.5×35 in                      |
| 84961. . . . .                  | 76×177,8×866,8 mm; 3×7×34.125 in                     |
| Mounting position . . . . .     | vertical                                             |

### Cycle timer

|                              |                 |
|------------------------------|-----------------|
| Voltage . . . . .            | 24 VDC          |
| Cycle rate per min . . . . . | min. 6, max. 60 |

## Pump unit

### 84960, 84962



Grease

#### Product description

Models 84960 and 84962 are pumps designed to operate centralized lubrication systems that utilize single-line parallel grease metering components. The pumps are double acting, dispensing lubricant on both the up and down strokes. These units are designed for off-road equipment that utilizes 24 VDC power sources. These units can be used in conjunction with Models 244270 (not potted) or 249605 (potted) cycle timers. Included hydraulic solenoids require 24 VDC. Model 84960 is a hydraulic pump for use with U.S. standard 120 lb refinery drums. System components (pump, vent assembly, drum cover and follower plate) must be ordered separately. Model 84962 is a hydraulic pump for custom lubricant container installations. Pump length is sized for U.S. standard 400 lb refinery drum depth.

#### Features and benefits

- For use with U.S. standard 54 kg/120 lb refinery drum
- Robust
- Includes a hydraulic pressure reduction valve rated 4 to 55 bar (60 to 800 psi) output
- System components (pump, vent valve assembly, drum cover and follower plate) must be ordered separately
- For use with metering devices of category 5, 6 and 7

#### Applications

- Mining industry
- Cement industry

#### Technical data

|                               |                                                     |
|-------------------------------|-----------------------------------------------------|
| Order number . . . . .        | <b>84960</b><br><b>84962</b>                        |
| Function principle . . . . .  | hydraulically operated<br>double-acting piston pump |
| Outlets. . . . .              | 1                                                   |
| Metering quantity . . . . .   | 180 cm <sup>3</sup> /min, 11 in <sup>3</sup> /min   |
| Lubricant. . . . .            | grease NLGI 0, 1, 2                                 |
| Operating temperature . . .   | −40 to +57 °C; −40 to +135 °F                       |
| Fluid inlet temperature . . . | max. +99 °C; +210 °F                                |
| Hydraulic inlet pressure. . . | min. 20 bar, 300 psi<br>max. 205 bar, 3 000 psi     |
| Pressure ratio . . . . .      | 16:1                                                |
| Material. . . . .             | steel, brass, copper, polyurethane, nitrile         |
| Connection outlet . . . . .   | 3/4 NPTF (F)                                        |
| Hydraulic inlet/outlet. . . . | 1/4 NPTF (M)                                        |
| Flow rate . . . . .           | at 30 cycles/min: 3,8 l/min, 1.0 gal/min            |
| Dimensions                    |                                                     |
| 84960. . . . .                | 76×177,8×1 083 mm; 3×7×42.625 in                    |
| 84962. . . . .                | 76×177,8× 862 mm; 3×7×33.94 in                      |
| Mounting position . . . . .   | vertical                                            |

#### Cycle timer

|                              |                 |
|------------------------------|-----------------|
| Voltage . . . . .            | 24 VDC          |
| Cycle rate per min . . . . . | min. 6, max. 60 |

Pumps require a timed electrical signal to operate. Use 244270 (not potted) or 249605 (potted) cycle timer. Included hydraulic solenoids require 24 VDC. All pumps have a hydraulic pressure-reducing valve rated for 4 to 55 bar, 60 to 800 psi, output. Maximum input is 207 bar, 3 000 psi.

Pump unit

FlowMaster, hydraulic



Product description

High-performance FlowMaster hydraulic pumps combine rotary-driven pump motors with reciprocating pump tubes and flexible control features that perform in desert heat and arctic cold. The integrated control manifold adjusts the amount of lubricant and operating pressure. The pump's output is adjustable from 115 to 737 cm<sup>3</sup>/min (7 to 45 in<sup>3</sup>/min).

Features and benefits

- Increases pump life and simplifies pump installation, operation and service
- Pump and reservoir combination models are automatically level-sensor and shut-off system ready
- Premium-choice pump for single-line parallel lubrication systems
- Flexible ranges of use pump only or pump and bucket with follower low- and high-level detection
- For desert heat and cold climates
- For use with metering devices of category 5, 6 and 7

Applications

- Construction machinery, mining and mineral processing
- Steel mills, paper mills, automotive
- Food and beverage, packaging

Technical data

|                                               |                                                                                                                                                    |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Function principle                            | hydraulically operated piston pump                                                                                                                 |
| Outlets                                       | 1                                                                                                                                                  |
| Metering quantity                             | adjustable<br>115 to 737 cm <sup>3</sup> /min<br>7 to 45 in <sup>3</sup> /min                                                                      |
| Lubricant                                     | grease NLGI 0, 1, 2                                                                                                                                |
| Hydraulic fluid temperature                   | max. +93 °C; +200 °F                                                                                                                               |
| Operating temperature                         | –29 to +65 °C; –20 to +150 °F                                                                                                                      |
| Operating inlet pressure                      | 20 to 32 bar, 300 to 420 psi                                                                                                                       |
| Supply inlet pressure                         | max. 200 bar, 3 000 psi                                                                                                                            |
| Reservoir                                     | 16; 27; 41; 54; 180 kg<br>35; 60; 90; 120; 400 lb                                                                                                  |
| Material                                      | fluoroelastomer, polyurethane,<br>steel, aluminum zinc casting                                                                                     |
| Connection outlet                             | 1/4 NPTF                                                                                                                                           |
| Hydraulic inlet flow                          | max. 28 l/min, 7 gal/min                                                                                                                           |
| Solenoid valve coil                           | 24 VDC                                                                                                                                             |
| Hydraulic inlet port                          | SAE 4                                                                                                                                              |
| Tank return port                              | SAE 6                                                                                                                                              |
| Transmission ratio<br>with manifold           | 9:1 at low inlet pressure (20 to 25 bar,<br>300 to 350 psi) and flow (below 7 lpm,<br>2 gpm); approaches 11:1 at higher inlet<br>pressure and flow |
| Dimensions:                                   |                                                                                                                                                    |
| Pump, dip tube length                         | min. 348 mm; 13.7 in<br>max. 864 mm; 34.02 in                                                                                                      |
| Basic pump                                    | min. 610×231×291 mm<br>min. 24×9×11.5 in<br>max. 1 126×231×291 mm<br>max. 44.3×9×11.5 in                                                           |
| Pumps with bucket, follower<br>and vent valve | min. 633×496mm<br>min. 24.9×19.5 in<br>max. 1 155×496 mm<br>max. 45.44×19.5 in                                                                     |
| Mounting position                             | vertical                                                                                                                                           |

## Pump unit

### FlowMaster, hydraulic

#### Order number

| Order number | Designation                                                  | Reservoir |        | Solenoid<br>manual<br>override | Adjustable<br>flow<br>control | Adjustable<br>pressure<br>control |
|--------------|--------------------------------------------------------------|-----------|--------|--------------------------------|-------------------------------|-----------------------------------|
|              |                                                              | kg        | lb     |                                |                               |                                   |
| 85722        | pump and bucket with follower and low-level detection        | 27        | 60     | –                              | •                             | •                                 |
| 85723        | reservoir and pump                                           | 27        | 60     | –                              | –                             | –                                 |
| 85724        | reservoir and pump                                           | 27        | 60     | –                              | –                             | –                                 |
| 85725        | pump and bucket with follower and low-level detection        | 41        | 90     | –                              | •                             | •                                 |
| 85726        | pump and bucket                                              | 41        | 90     | •                              | –                             | –                                 |
| 85727        | pump and bucket with follower, low- and high-level detection | 54        | 120    | –                              | •                             | •                                 |
| 85731        | pump only                                                    | 16        | 35     | –                              | •                             | •                                 |
| 85732        | pump only                                                    | 27        | 60     | –                              | •                             | •                                 |
| 85733        | pump only                                                    | 54/41     | 120/90 | –                              | •                             | •                                 |
| 85734        | pump only                                                    | 180       | 400    | –                              | •                             | •                                 |
| 85735        | pump only                                                    | 27        | 60     | –                              | –                             | –                                 |
| 85741        | pump only                                                    | 27        | 60     | •                              | –                             | –                                 |
| 85742        | pump only                                                    | 54/41     | 120/90 | •                              | –                             | –                                 |

Grease

## Accessory

### Drum covers, follower assemblies and vent valve assemblies

#### Order number

| Order number | Designation                | Reservoir |          |
|--------------|----------------------------|-----------|----------|
|              |                            | gal       | lb       |
| 84616        | drum cover                 | 18        | 120      |
| 85492        | follower assembly          | 18        | 120      |
| 84990        | vent valve assembly        | 18        | 120      |
| 271606       | drum cover                 | 55        | 400      |
| 270982       | follower assembly          | 55        | 400      |
| 271605       | vent valve assembly        | 55        | 400      |
| 84980        | vent valve                 | 18, 55    | 120, 400 |
| 237-11204-8  | ultrasonic high/low sensor | 18, 55    | 120, 400 |

## Pump unit

### P 603S



Grease



#### Product description

The simple-to-install, all-in-one design of the P 603S pump includes the programmable controller, a pressure switch/transducer and a vent valve. It is quick and easy to change out a metering device as the main line or nearby metering devices do not have to be removed. The exchange can be performed between lubrication cycles so that there is no wasted lubricant or excessive costly downtime. An additional pressure switch at the end of larger systems can be used for added pressure control to ensure correct lubrication. For rotating operation in wind turbines, the reservoir is equipped with a follower plate and stirring paddle, which also facilitates the use of fast-separating lubricants. For stationary operations, a stirring and fixed paddle is sufficient.

#### Features and benefits

- Robust design with easy system layout
- Simple maintenance
- Easy system expansion
- SE1/SE2 suction elements for used lubricant
- QSL / SL metering devices suitable for high pressure
- Suitable for fast-separating lubricants
- For use with metering devices of category 5, 6, 7

#### Applications

- Wind turbines
- Construction machinery
- Mining and mineral processing
- Commercial vehicles

#### Technical data

|                        |                                                                                                  |
|------------------------|--------------------------------------------------------------------------------------------------|
| Function principle     | electrically operated piston pump                                                                |
| Outlets                | 1                                                                                                |
| Metering quantity      | 12 cm <sup>3</sup> /min, 0.73 in <sup>3</sup> /min                                               |
| Lubricant              | grease up to NLGI 2                                                                              |
| Operating temperature  | −40 to +70 °C; −40 to +158 °F                                                                    |
| Operating pressure     | max. 300 bar; 4 350 psi                                                                          |
| Reservoir              | 4; 8; 10; 15 or 20 kg<br>9, 18, 22, 33 or 44 lb                                                  |
| Pumping elements       | 3 (ø 7 mm, 0.27 in)                                                                              |
| Paddle                 | 18 rpm                                                                                           |
| Operating voltage      | 12, 24 VDC, 115/230 VAC                                                                          |
| Current draw           | max. 2 A                                                                                         |
| Protection class       | IP 6K9K                                                                                          |
| Connectors             | 12, 24 VDC: bayonet style<br>AC: bayonet style plus square type                                  |
| Switching power supply | 12, 24 VDC: no AC: yes                                                                           |
| Material               | cast aluminum alloy,<br>polycarbonate resin                                                      |
| Connection outlet      | G <sup>1</sup> / <sub>4</sub>                                                                    |
| Dimensions             | min. 471×240×235 mm<br>max. 949×240×235 mm<br>min. 18.54×9.44×9.25 in<br>max. 37.08×9.44×9.25 in |
| Mounting position      | vertical (with follower plate; any)                                                              |

## Pump unit

### P 603S

#### Order number

| Order number | Designation                       | Power        | Reservoir capacity |    | Follower plate | Internal transducer |
|--------------|-----------------------------------|--------------|--------------------|----|----------------|---------------------|
|              |                                   | V            | kg                 | lb |                |                     |
| 645-41064-3  | P603S-4XLF -3Z7-AC-2A7.16-S13-SE  | 115 / 230 AC | 4                  | 9  | •              | •                   |
| 645-41062-3  | P603S-8XLF -3Z7-AC-2A7.16-S13-SE  | 115 / 230 AC | 8                  | 18 | •              | •                   |
| 645-41110-2  | P603S-8XLB0-3Z7-AC-3A7.16-S12-SE  | 115 / 230 AC | 8                  | 18 | –              | •                   |
| 645-41062-4  | P603S-8XLB0-3Z7-AC-3A7.16-S19-SE  | 115 / 230 AC | 8                  | 18 | –              | •                   |
| 645-41119-2  | P603S-10XLF -3Z7-AC-2A1.01-S13-SE | 115 / 230 AC | 10                 | 22 | •              | •                   |
| 645-41073-5  | P603S-15XLF -3Z7-AC-2A7.16-S13-SE | 115 / 230 AC | 15                 | 33 | •              | •                   |
| 645-41064-8  | P603S-4XLF1-3Z7-12-1A7.16-S01-SE  | 12 DC        | 4                  | 9  | • (bayonet)    | •                   |
| 645-41175-5  | P603S-4XNB0 -3Z7-12-1A7.16-S22-SE | 12 DC        | 4                  | 9  | –              | •                   |
| 645-41064-7  | P603S-4XNB0-3Z7-12-2A7.16-S01-SE  | 12 DC        | 4                  | 9  | –              | •                   |
| 645-41110-3  | P603S-8XLF1-3Z7-12-1A7.16-S01-SE  | 12 DC        | 8                  | 18 | • (bayonet)    | •                   |
| 645-41064-4  | P603S-4XLB0-3Z7-24-1A7.16-S17-SE  | 24 DC        | 4                  | 9  | –              | •                   |
| 645-41064-6  | P603S-4XLF -3Z7-24-1A7.16-S13-SE  | 24 DC        | 4                  | 9  | •              | •                   |
| 645-41064-2  | P603S-4XNB0-3Z7-24-1A7.16-S01-SE  | 24 DC        | 4                  | 9  | –              | •                   |
| 645-41062-9  | P603S-8XLF -3Z7-24-1A7.16-S01-SE  | 24 DC        | 8                  | 18 | •              | •                   |
| 645-41062-8  | P603S-8XLB0-3Z7-24-2A7.16-S19-SE  | 24 DC        | 8                  | 18 | –              | •                   |
| 645-41062-7  | P603S-8XLF -3Z7-24-1A7.16-S03-SE  | 24 DC        | 8                  | 18 | •              | •                   |
| 645-41119-1  | P603S-10XLF -3Z7-24-1A7.16-S13-SE | 24 DC        | 10                 | 22 | •              | •                   |

Grease

## Accessory

### P653S and P603S reservoir kits

#### Reservoir kits

| Order number | Reservoir size |    | Designation                                                                           |
|--------------|----------------|----|---------------------------------------------------------------------------------------|
|              | kg             | lb |                                                                                       |
| 276764       | 15             | 33 | Converts 4 or 8 kg, 9 or 18 lb, reservoirs without follower to 15 kg, 33 lb reservoir |
| 276765       | 20             | 44 | Converts 4 or 8 kg, 9 or 18 lb, reservoirs without follower to 20 kg, 44 lb reservoir |

## Pump unit

## Minilube



Grease



### Product description

SKF Minilube is a handy solution for vehicles with fewer lubrication points, such as mini-excavators, mini wheel loaders, buses and delivery trucks. Installing SKF Minilube is easy and quick, because everything is already integrated: control centre, pressure switch and alarm lights. Additional alarm lights can be installed, for example, in the vehicle's cabin. For each lubrication point, there is a specifically selected doser that is set according to the size of and the load on the lubrication point.

### Features and benefits

- Compact handy lubrication system for fewer lubrication points
- Increases worker safety as system lubricates all points regardless of location
- Makes driving more environmentally friendly by maintaining optimal lubrication level
- Easy and quick installing and commissioning
- For use with metering devices of category 4 and 5

### Applications

- Small excavators
- Wheel loaders
- Buses
- Delivery trucks
- Vehicles

### Technical data

|                       |                                                    |
|-----------------------|----------------------------------------------------|
| Function principle    | electrically operated piston pump                  |
| Outlets               | 1                                                  |
| Metering quantity     |                                                    |
| 12 VDC                | 6,5 cm <sup>3</sup> /min, 0.4 in <sup>3</sup> /min |
| 24 VDC                | 13 cm <sup>3</sup> /min, 0.8 in <sup>3</sup> /min  |
| Lubricant             | grease up to NLGI 1                                |
| Operating temperature | -30 to +70 °C; -22 to +158 °F                      |
| Operating pressure    | max. 250 bar, 3 625 psi                            |
| Reservoir             | 2 kg, 4 lb                                         |
| Material              | acrylic, steel, aluminum, polyurethane, nitrile    |
| Connection outlet     | R 1/4 in                                           |
| Operating voltage     | 12/24 VDC                                          |
| Consumption           | 150 W, 0.2 HP                                      |
| Protection class      | IP 65                                              |
| Dimensions            | 327 × 273 × 184 mm<br>12.9 × 10.75 × 7.25 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](https://www.skf.com/lubrication): **12236 EN**

## Pump unit

## Minilube

### Order number configurator

MIN

–

170

–

–

#### Product series

**MIN** = Minilube pump unit

#### Reservoir

**170** = 2 kg, 4 lb

#### Control system

**ST-102** = external control with ST-102 control unit

**Empty** = with integrated control ST-104

#### Operating voltage

**12 V** = 12 VDC

**24 V** = 24 VDC

Grease

Pump unit

KFG



Grease

Product description

The KFG pump unit is an electrically driven piston pump. The pump is comprised of four main components: housing with pump elements; reservoir with fill-level monitoring; internal control units; and attachments. The housing integrates the motor, the drive shaft with an eccentric and up to three pump elements for delivering the lubricant. Positively driven pump elements should be used in order to maintain the delivery rate in areas with extremely low temperatures or in applications where an increased influence of dirt is unavoidable.

Features and benefits

- Reliable: due to durable materials, robust components and designs for extreme conditions (with positively driven pump elements)
- Plug-and-play pump design for reduced installation time
- Application-oriented: individual designs through user-friendly product customizer
- Versatile: can be used as a single-line (SKF MonoFlex) and as a progressive pump (SKF ProFlex)
- Safe: through fill-level monitoring, lubrication system monitoring, pressure relief and control unit
- Options: Top filling, several electronic options, Can bus
- For use with metering devices of category 5, 6 and 7

Applications

- Wind turbines
- Construction machinery
- Vehicle aftermarket
- Rotary applications
- Industry



Technical data

|                                 |                                                                                                           |
|---------------------------------|-----------------------------------------------------------------------------------------------------------|
| Function principle              | electrically operated piston pump                                                                         |
| Outlets                         | 1-3                                                                                                       |
| Metering quantity               | 5,0 to 15 cm <sup>3</sup> /min<br>0.3 to 0.9 in <sup>3</sup> /min                                         |
| Lubricant                       | NLGI 000 to 2 with EP additives,<br>compatible with plastics, NBR<br>elastomers, copper and copper alloys |
| Operating temperature:          |                                                                                                           |
| with spring-return pump element | -25 to +70 °C; -13 to +158 °F                                                                             |
| with posit. driven pump element | -30 to +70 °C; -22 to +158 °F                                                                             |
| Operating pressure              | max. 300 bar; 4 351psi                                                                                    |
| Flow pressure                   | 0,45 to 0,7 bar, 6.5 to 10.2 psi                                                                          |
| Reservoir                       | 2; 4; 6; 8; 10; 12; 15; 20 kg<br>4, 9, 13, 18, 22, 26, 33, 44 lb                                          |
| Material (reservoir)            | polyamide PA 6I, PMMA                                                                                     |
| Material (pump housing)         | aluminum-silicon cast alloy                                                                               |
| Connection outlet               | M14x1,5 mm                                                                                                |
| Operating voltage               | 12 VDC, 24 VDC, 230 VAC<br>(90-264 VAC)                                                                   |
| Dimensions                      | min 229×268×208mm<br>min 9.01×10.55×8.2 in<br>max 1 170×268×216 mm<br>max 46×10.55×8.5 in                 |
| Mounting position               | vertical (with follower plate; 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): **1-3030 -EN, 951-170-211**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

KFG

A technical diagram of a four-way valve assembly. The valve is a dark grey, rectangular block with a central square port. Four ports are labeled with numbers: 1 points to the top-left port, 2 points to the bottom-right port, and 3 points to the top-right port. A fourth port is visible on the bottom-left but is not labeled. The valve is shown in a perspective view.

[illegible]

|   |   |   |
|---|---|---|
| 1 | 2 | 3 |
|---|---|---|

**X** = No control unit      **L** = LC502

1 = 2 kg, 4 *lb* (not available for rotary application version)  
2 = 4 kg, 9 *lb* (only rotary application version)  
3 = 6 kg, 13 *lb*  
4 = 8 kg, 18 *lb* (only rotary application version)  
5 = 10 kg, 22 *lb*  
6 = 12 kg, 26 *lb* (only rotary application version)  
7 = 15 kg, 33 *lb*  
8 = 20 kg, 44 *lb* (not available for rotary application version)

**R** = Rotary application      **M** = Industry application      **F** = Vehicle application

X = without lubricant (not available for rotary application version)  
A = Grease NLGI-Grade 2 for vehicles (not for capacitive fill-level monitor)  
F = Customized grease

X = Without fill-level monitor  
1 = Mechanical level monitor (not available for rotary application version)  
2 = Mechanical level monitor with signal smoothing (not available for rotary version; only possible with KFGX)  
3 = Capacitive level monitor (only available for industry version with 2 and 6 kg reservoir)  
4 = Cylinder switch level monitor (only available for rotary application version)

| Spring-return piston pump                                                         | Positively driven piston pump                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| X = No pump element                                                               | Y = No pump element                                                               |
| E = 5,0 cm <sup>3</sup> /min; 0,30 in <sup>3</sup> /min                           | L = 5,0 cm <sup>3</sup> /min; 0,30 in <sup>3</sup> /min                           |
| W = Socket for filling cylinder<br>(not available for rotary application version) | V = Socket for filling cylinder<br>(not available for rotary application version) |

**S** = Pressure relief and restriction valve (200 bar/2 900 psi) with SKF Quick Connector for  $\varnothing$  6 mm tubes  
**T** = Pressure relief and restriction valve (200 bar/2 900 psi) with SKF Quick Connector for  $\varnothing$  8 mm tubes  
**U** = Pressure relief and restriction valve (200 bar/2 900 psi) with solderless pipe union for  $\varnothing$  10 mm tubes  
**V** = Pressure relief and restriction valve (200 bar/2 900 psi) with solderless pipe union for  $\varnothing$  8 mm tubes  
**W** = Pressure relief and restriction valve (200 bar/2 900 psi) with female thread solderless pipe union for  $\varnothing$  G 1/4 tubes <sup>2)</sup>

|                 |                                                                                              |
|-----------------|----------------------------------------------------------------------------------------------|
| No control unit | LC502                                                                                        |
| 99 = none       | EB = 4 min. run time/1 h interval time. Factory setting, additional setting times on request |

**912** = 12 VDC (only available for vehicle application version)      **924** = 24 VDC      **486** = 90–264 VAC (not available for vehicle application version)

<sup>1)</sup> For technical reasons, the first pump element must always be installed at Outlet 1 in SKF MonoFlex systems

<sup>2)</sup> If the relief valve is configured together with several pump elements, then the lines leading from the pump elements will be joined together ahead of the relief valve

**LINCOLN**

## Pump unit

### Multilube, MLP



#### Product description

Multilube pump units help to ensure that the lubrication result is optimal, while reducing energy and lubricant consumption. All relevant components (control unit, pump, reservoir, directional valve and pressure monitoring) are integrated into its modular pumping unit. Built-in heating allows it to be operated even under demanding and cold circumstances.

#### Features and benefits

- Compact, all-in-one structure
- Modular and durable design
- Easy to install and start-up
- Can be used in single-line, dual-line and progressive lubrication systems
- For use in oil and grease lubrication systems
- Two reservoir sizes
- Pumping element equipped with pressure-relief valve
- Filling connection equipped with safety valve
- Visual and electric low-level monitoring in reservoir
- Pumping center is equipped with heating resistor
- Clear and versatile user interface
- Wide operating temperature range
- For use with metering devices of category 5, 6 and 7

#### Applications

- Stand-alone machines
- Construction machinery
- Mining applications

#### Technical data

|                       |                                                     |
|-----------------------|-----------------------------------------------------|
| Function principle    | electrically operated piston pump                   |
| Outlets               | 1                                                   |
| Metering quantity     | 16 cm <sup>3</sup> /min; 0.976 in <sup>3</sup> /min |
| Lubricant             | grease up to NLGI 1                                 |
| Operating temperature | -30 to +80 °C; -22 to +176 °F                       |
| Operating pressure    | max. 200 bar, 2 900 psi                             |
| Reservoir             | 4 or 10 kg,<br>9 or 22 lb                           |
| Material              | aluminum, polyurethane, nitrile                     |
| Connection outlet     | G 1/4                                               |
| Operating voltage     | 12/24 VDC, 115 VAC, 230 VAC                         |
| Consumption           | 150 W, 0.2 HP                                       |
| Protection class      | IP 67 (with user-interface IP 65)                   |
| Dimensions:           |                                                     |
| with 4 kg reservoir   | 539×274×250 mm                                      |
| with 9 lb reservoir   | 21.22×10.78×9.84 in                                 |
| with 10 kg reservoir  | 720×274×250 mm                                      |
| with 22 lb reservoir  | 27.09×10.78×9.84 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): **6407/2 EN**

## Pump unit

### Multilube, MLP

#### Order number configurator

MLP

-

-

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-

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-

-

Product series

Reservoir

4 = 4 l, 9 lb

10 = 10 l, 22 lb

Number of lines

1 = single-line system

2 = dual-line system

Voltage

24 = 24 V control voltage if external control is used

115 = power input 115 V

230 = power input 230 V

User interface

IF103 = user interface

24 = external control, control voltage 24 VDC

115 = external control, control voltage 115 VAC

Pressure control

PSE = Built-in pressure sensor

C2 = Single-line, dual-line lubrication pump used with single-line metering devices

C2P = Progressive, dual-line lubrication pump used with progressive metering devices

E = ATEX-certified version for Zone 20 and 22

Grease

Pump unit

P653S



Product description

The fully integrated P653S pump unit is an example of the Lincoln brand's commitment to providing innovative, cost-effective solutions through industry-leading advances in technology. This next-generation, lower-cost pump package can be fitted with one of four reservoir sizes and easily adapts to many applications. It also interfaces with telematics technology in today's heavy equipment. A neutral switch allows mobile equipment to remain idling with pump power on, but the timer is deactivated, allowing manual lubrication functionality. All pumps include low-level and system fault alarms. Simply mount the pump, connect the power and supply lines, and the system is ready for operation.

Features and benefits

- Integration of major system components reduces operation and overall costs
- Plug-and-play pump design for reduced installation time
- Neutral switch ensures lubrication only when the machine is operating, eliminating wasted grease
- For use with metering devices of category 5, 6, 7

Applications

- Renewable energy, construction machinery
- Mining and mineral processing, commercial vehicles

Technical data

|                       |                                                                                                                                                                                                                  |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Function principle    | electrically operated piston pump                                                                                                                                                                                |
| Outlets               | 1                                                                                                                                                                                                                |
| Metering quantity     | 24,6 cm <sup>3</sup> /min, 1.5 in <sup>3</sup> /min                                                                                                                                                              |
| Lubricant             | grease up to NLGI 2                                                                                                                                                                                              |
| Operating temperature | VDC: -40 to +70 °C; -40 to +158 °F<br>VAC: 0 to +50 °C; +32 to 122 °F                                                                                                                                            |
| Operating pressure    | pressure switch, fixed: 240 bar, 3 500 psi<br>pressure transducer, adjustable:<br>96 to 317 bar, 1 400 to 4 600 psi<br>end of line pressure switch and transducer<br>setting, not adjustable: 172 bar, 2 500 psi |
| Reservoir             | 4; 8; 15 or 20 kg,<br>8.8; 18; 33 or 44 lb                                                                                                                                                                       |
| Material (reservoir)  | thermoplastic                                                                                                                                                                                                    |
| Connection outlet     | G 1/4                                                                                                                                                                                                            |
| Incoming voltage      | DC: 19 to 31 VDC<br>AC: 100 to 240 VAC                                                                                                                                                                           |
| Current               | DC: max. 10 A<br>AC: max. 1,7 A                                                                                                                                                                                  |
| Frequency             | AC: 47 to 63 Hz                                                                                                                                                                                                  |
| Pause time            | max. 59 h, 59 min;<br>min. 4 min;                                                                                                                                                                                |
| Pause time increments | 1 hr or 1 min                                                                                                                                                                                                    |
| Pumping time          | max. 12 min                                                                                                                                                                                                      |
| Dimensions            | min. 240×235×467 mm<br>max. 240×235×800 mm<br>min. 9.45×9.25×18.4 in<br>max. 9.45×9.25×31 in                                                                                                                     |
| Mounting position     | vertical                                                                                                                                                                                                         |

Pump elements

|                  |                 |
|------------------|-----------------|
| Piston           | ø 7 mm, 0.28 in |
| Number connected | 3               |
| Protection       | 1P 6K9K         |

# Pump unit

## P653S

### P653S

| Order number | Operating voltage |             | Reservoir |    | Follower plate | Internal pressure switch | Internal pressure transducer | Internal and end-of-line pressure switch | Internal and end-of-line pressure transducer |
|--------------|-------------------|-------------|-----------|----|----------------|--------------------------|------------------------------|------------------------------------------|----------------------------------------------|
|              | 24 VDC            | 120/230 VAC | kg        | lb |                |                          |                              |                                          |                                              |
| 80086        | •                 | —           | 4         | 9  | —              | •                        | —                            | —                                        | —                                            |
| 80087        | •                 | —           | 4         | 9  | —              | —                        | •                            | —                                        | —                                            |
| 80105        | •                 | —           | 4         | 9  | —              | —                        | —                            | •                                        | —                                            |
| 80106        | •                 | —           | 4         | 9  | —              | —                        | —                            | —                                        | •                                            |
| 80076        | •                 | —           | 4         | 9  | •              | •                        | —                            | —                                        | —                                            |
| 80077        | •                 | —           | 4         | 9  | •              | —                        | •                            | —                                        | —                                            |
| 80109        | •                 | —           | 4         | 9  | •              | —                        | —                            | •                                        | —                                            |
| 80110        | •                 | —           | 4         | 9  | •              | —                        | —                            | —                                        | •                                            |
| 80090        | •                 | —           | 8         | 18 | —              | •                        | —                            | —                                        | —                                            |
| 80091        | •                 | —           | 8         | 18 | —              | —                        | •                            | —                                        | —                                            |
| 80107        | •                 | —           | 8         | 18 | —              | —                        | —                            | •                                        | —                                            |
| 80108        | •                 | —           | 8         | 18 | —              | —                        | —                            | —                                        | •                                            |
| 80080        | •                 | —           | 8         | 18 | •              | •                        | —                            | —                                        | —                                            |
| 80081        | •                 | —           | 8         | 18 | •              | —                        | •                            | —                                        | —                                            |
| 80111        | •                 | —           | 8         | 18 | •              | —                        | —                            | •                                        | —                                            |
| 80112        | •                 | —           | 8         | 18 | •              | —                        | —                            | —                                        | •                                            |
| 80121        | •                 | —           | 15        | 33 | •              | —                        | •                            | —                                        | —                                            |
| 80122        | •                 | —           | 15        | 33 | —              | —                        | •                            | —                                        | —                                            |
| 80120        | •                 | —           | 20        | 44 | —              | —                        | •                            | —                                        | —                                            |
| 80083        | —                 | •           | 4         | 9  | —              | —                        | •                            | —                                        | —                                            |
| 80084        | —                 | •           | 4         | 9  | —              | —                        | —                            | •                                        | —                                            |
| 80085        | —                 | •           | 4         | 9  | —              | —                        | —                            | —                                        | •                                            |
| 80072        | —                 | •           | 4         | 9  | •              | •                        | —                            | —                                        | —                                            |
| 80073        | —                 | •           | 4         | 9  | •              | —                        | •                            | —                                        | —                                            |
| 80074        | —                 | •           | 4         | 9  | •              | —                        | —                            | •                                        | —                                            |
| 80075        | —                 | •           | 4         | 9  | •              | —                        | —                            | —                                        | •                                            |
| 80088        | —                 | •           | 8         | 18 | —              | •                        | —                            | —                                        | —                                            |
| 80089        | —                 | •           | 8         | 18 | —              | —                        | •                            | —                                        | —                                            |
| 80078        | —                 | •           | 8         | 18 | •              | •                        | —                            | —                                        | —                                            |
| 80079        | —                 | •           | 8         | 18 | •              | —                        | •                            | —                                        | —                                            |
| 80134        | —                 | •           | 15        | 33 | —              | —                        | •                            | —                                        | —                                            |
| 80135        | —                 | •           | 20        | 44 | •              | —                        | —                            | —                                        | •                                            |

Note: All models are designed for grease and include stirring paddle and low-level detection. Pumps include remote signaling cable, relief valve, electrical connectors and external pressure switch or transducer (as indicated for each model).

Grease

Pump unit

FK



Grease

Product description

The FK pump unit is a multi-function piston pump with a versatile, modular structure. The FK pump unit can be used as a single-line, dual-line or progressive pump unit with or without integrated reversing valves. The modular structure of the pump also allows it to be retrofitted from one of the above-mentioned lubrication systems to another system without much effort or expense. The pump, which was designed to handle demanding usage, is available with reservoir sizes of 15 kg (33 lb), 30 kg (66 lb) and 60 kg (132 lb).

Features and benefits

- Versatile, modular system; easy to retrofit to other systems
- High functional reliability due to positively driven pistons
- Fill-level monitoring (using ultrasonic sensor) with two adjustable switching points

Applications

- Automotive industry
- Rotary applications
- Assembly lines
- Printing presses



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): **1-3033-EN, 951-170-200-EN**



Technical data

|                       |                                                                                                                                      |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Function principle    | electrically operated piston pump                                                                                                    |
| Outlets               | 1                                                                                                                                    |
| Metering quantity     | 12.3 to 74 cm <sup>3</sup> /min<br>0.75 to 4.5 in <sup>3</sup> /min                                                                  |
| Lubricant             | mineral oils or environmentally compatible oils from ISO VG 46 to greases of NLGI Class 2 (consultation required for synthetic oils) |
| Operating temperature | -25 to +60 °C; -13 to 140 °F                                                                                                         |
| Operating pressure    | max. 400 bar, 5 800 psi                                                                                                              |
| Reservoir             | 15; 30 or 60 kg,<br>33, 66 or 132 lb                                                                                                 |
| Material              | steel-sheet housing, steel, aluminum                                                                                                 |
| Operating voltage     | 230/400 VAC                                                                                                                          |
| Pumping elements      | 1 to 6                                                                                                                               |
| Filling method        | via filler socket G 1/2                                                                                                              |
| Gear type             | screw drive, type 1M                                                                                                                 |
| Gear ratio            | 40:1                                                                                                                                 |
| Nominal speed         | 1 500 rpm                                                                                                                            |
| Frequency             | 50 Hz                                                                                                                                |
| Nominal output        | 0.37 kW                                                                                                                              |
| Rated current         | 1.09 A                                                                                                                               |
| Protection            | IP 55-F                                                                                                                              |
| Connection outlet     | G 1/2                                                                                                                                |

|                   |                                                    |
|-------------------|----------------------------------------------------|
| Dimensions:       |                                                    |
| 15 kg (33 lb)     | max. 470×598×335 mm<br>max. 18.5×23.54×13.18 in    |
| 30 kg (66 lb)     | max. 665×598×335 mm<br>max. 26.2×23.54×13.18 in    |
| 60 kg (132 lb)    | max. 1 035×598×335 mm<br>max. 40.74×23.54×13.18 in |
| Mounting position | vertical                                           |

## Pump unit

### FK

#### Order number configurator

**FK** **1M** **04** **AF** **07**

#### Product series

#### Version

- 1** = Unit for single-line centralized lubrication systems
- 2** = Unit for dual-line centralized lubrication systems with change-over valves
- 3** = Unit for dual-line centralized lubrication systems without change-over valves
- 4** = Unit for progressive systems

#### Lubricant reservoir

- 15** = 15 kg, 33 lb
- 30** = 30 kg, 66 lb
- 60** = 60 kg, 132 lb

#### Monitoring

- X** = without lubricant level monitoring
- U2** = ultrasonic sensor with 2 switching points

#### Drive type

- 1M** = electrically operated

#### Gear ratio

- 04** = 40:1

#### Metering quantity

- 1** = 0.67 kg/h, 12.3 cm<sup>3</sup>/min.    **2** = 1.34 kg/h, 24.7 cm<sup>3</sup>/min
- 3** = 2.00 kg/h, 37.0 cm<sup>3</sup>/min.    **4** = 2.64 kg/h, 49.3 cm<sup>3</sup>/min
- 5** = 3.34 kg/h, 61.7 cm<sup>3</sup>/min.    **6** = 4.00 kg/h, 74.0 cm<sup>3</sup>/min

#### Pressure-regulating valve, factory-set to

- 200** = 200 bar, 2 900 psi (for progressive, single-line and dual-line centralized lubrication systems)
- 300** = 300 bar, 4 350 psi (for progressive, single-line and dual-line centralized lubrication systems)

#### Pressure gauge

- /** = without pressure gauge
- MA** = 1x pressure gauge
- M2** = 2x pressure gauge

#### Filler socket/screw cap

- 0** = without filler socket    **2** = without filler socket, with screw cap
- 1** = with filler socket    **3** = with filler socket and screw cap

#### Version key

- 0001** = basic design
- 4001** = basic design with control cabinet and control unit (on request)

#### Motor data

- AF** = motor speed 1 500 rpm, rated voltage 230/400 VAC, 50 Hz

#### Motor protection class

- 07** = IP 55 F

Grease

Pump unit

FlowMaster, electric



Product description

The high-performance FlowMaster product line is a new generation of pump technology. Compact and versatile, its unique rotary drive and modular gear set let you adjust the speed of the pump's motor to exactly fit your application. FlowMaster pumps can save the cost of air and plug in 12/24 VDC, 120/230-1ph and 230/460-3ph VAC models. The motion of pump created by the electric rotary motor is converted into reciprocating pump motion, providing an efficient lubricant flow. Because of its rotary drive, the motor can be placed directly on the pump. As a result, the pump is so compact it fits almost anywhere.

Features and benefits

- Advanced technology: brushless DC motor
- Temperature and overload protection: durable and long-lasting product that reduces machinery downtime for maintenance; less repair costs
- Totally sealed: withstands washdowns
- For use with metering devices of category 5, 6 and 7

Applications

- Mining and mineral processing, construction machinery
- Steel mills, paper mills, food and beverage



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): **12938-EN**

Technical data

|                       |                                                                |
|-----------------------|----------------------------------------------------------------|
| Function principle    | electrically operated piston pump                              |
| Outlets               | 1                                                              |
| Metering quantity     | max. 103 cm <sup>3</sup> /min<br>max. 6.3 in <sup>3</sup> /min |
| Lubricant             | grease NLGI Grade 0, 1, 2                                      |
| Operating temperature | −40 to +65 °C; −40 to +150 °F                                  |
| Operating pressure:   |                                                                |
| 12 VDC                | max. 251 bar; 3 500 psi                                        |
| 24 VDC                | max. 345 bar; 5 000 psi                                        |
| 120 to 460 VAC        | max. 345 bar; 5 000 psi                                        |
| Operating voltage     | 12/24 VDC; 120 to 460 VAC                                      |
| Reservoir             | 40, 55, 180 kg; 90, 120, 400 lb                                |
| Material              | fluoroelastomer, polyurethane, steel, aluminum zinc casting    |
| Connection outlet     | 1/4 NPTF                                                       |
| Gear ratio            | 17.8:1; 19:1; 34:1                                             |
| Nominal power         | 5 to 50 and 9,5 to 100 rpm                                     |
| Electric current      |                                                                |
| 12/24 VDC             | 1 to 7.5 A                                                     |
| 120 VAC               | 1 to 4.6 A                                                     |
| 230-460 VAC           | 0,5 to 2,4 A                                                   |
| Dimensions:           |                                                                |
| 16, 25, 28, 35, 40 kg | 360×350×170 mm                                                 |
| 35, 55, 60, 78, 90 lb | 14.17×13.78×6.7 in                                             |
| 55 Kg                 | 408×223×946 mm                                                 |
| 120 lb                | 16.07×8.78×37.24 in                                            |
| 180 kg                | 408×223×1 111 mm                                               |
| 400 lb                | 16.07×8.78×43.24 in                                            |
| Mounting position     | vertical                                                       |

## Pump unit

### FlowMaster, electric

#### Order information

| Order number | Designation                            | Power                       | Reservoir |        | Ratio  | Metering quantity    |                      |                      |                      | Operating pressure max. |       | Speed   |
|--------------|----------------------------------------|-----------------------------|-----------|--------|--------|----------------------|----------------------|----------------------|----------------------|-------------------------|-------|---------|
|              |                                        |                             | kg        | lb     |        | min.                 |                      | max.                 |                      | bar                     | psi   |         |
|              |                                        |                             |           |        |        | cm <sup>3</sup> /min | in <sup>3</sup> /min | cm <sup>3</sup> /min | in <sup>3</sup> /min |                         |       | rpm     |
| 85479        | pump, follower, bucket cover, hardware | 24 VDC                      | 28        | 60     | 19:1   | 11,5                 | 0.7                  | 103                  | 6.3                  | 170                     | 2 500 | 9,5-100 |
| 85728        | reservoir and pump                     | 24 VDC                      | 28        | 60     | 19:1   | 11,5                 | 0.7                  | 103                  | 6.3                  | 345                     | 5 000 | 9,5-100 |
| 85729        | reservoir and pump                     | 24 VDC                      | 90        | 41     | 19:1   | 11,5                 | 0.7                  | 103                  | 6.3                  | 345                     | 5 000 | 9,5-100 |
| 85730        | reservoir and pump                     | 24 VDC                      | 120       | 55     | 19:1   | 11,5                 | 0.7                  | 103                  | 6.3                  | 345                     | 5 000 | 9,5-100 |
| 85736        | pump                                   | 24 VDC                      | 16        | 35     | 19:1   | 11,5                 | 0.7                  | 103                  | 6.3                  | 345                     | 5 000 | 9,5-100 |
| 85737        | pump                                   | 24 VDC                      | 28        | 60     | 19:1   | 11,5                 | 0.7                  | 103                  | 6.3                  | 345                     | 5 000 | 9,5-100 |
| 85738        | pump                                   | 24 VDC                      | 55/40     | 120/90 | 19:1   | 11,5                 | 0.7                  | 103                  | 6.3                  | 345                     | 5 000 | 9,5-100 |
| 85739        | pump                                   | 24 VDC                      | 180       | 400    | 19:1   | 11,5                 | 0.7                  | 103                  | 6.3                  | 345                     | 5 000 | 9,5-100 |
| 85740        | pump                                   | 24 VDC                      | 25        | 55     | 19:1   | 11,5                 | 0.7                  | 103                  | 6.3                  | 345                     | 5 000 | 9,5-100 |
| 85743        | pump                                   | 115 to 230 VAC              | 55/40     | 120/90 | 19:1   | 11,5                 | 0.7                  | 103                  | 6.3                  | 345                     | 5 000 | 95      |
| 85744        | pump                                   | 115 to 230 VAC              | 180       | 400    | 19:1   | 11,5                 | 0.7                  | 103                  | 6.3                  | 345                     | 5 000 | 95      |
| 85745        | pump                                   | 220 to 420 VAC, 50 Hz, 3 ph | 55/40     | 120/90 | 19:1   | 11,5                 | 0.7                  | 103                  | 6.3                  | 345                     | 5 000 | 9,5-100 |
| 85746        | pump                                   | 220 to 420 VAC, 50 Hz, 3 ph | 180       | 400    | 19:1   | 11,5                 | 0.7                  | 103                  | 6.3                  | 345                     | 5 000 | 9,5-100 |
| 85747        | pump                                   | 24 VDC                      | 16        | 35     | 17.8:1 | 11,5                 | 0.7                  | 103                  | 6.3                  | 170                     | 5 000 | 9,5-100 |
| 85748        | pump                                   | 24 VDC                      | 16        | 35     | 34:1   | 6,55                 | 0.4                  | 57,4                 | 3.5                  | 345                     | 5 000 | 5-50    |
| 85749        | pump                                   | 24 VDC                      | 55/40     | 120/90 | 34:1   | 6,55                 | 0.4                  | 57,4                 | 3.5                  | 345                     | 5 000 | 5-50    |
| 85750        | pump                                   | 24 VDC                      | 16        | 35     | 7:1    | 11,5                 | 0.7                  | 103                  | 6.3                  | 345                     | 5 000 | 9,5-100 |
| 85751        | pump                                   | 24 VDC                      | 16        | 35     | 7:1    | 11,5                 | 0.7                  | 103                  | 6.3                  | 345                     | 5 000 | 9,5-100 |
| 85752        | pump                                   | 12 VDC                      | 16        | 35     | 19:1   | 11,5                 | 0.7                  | 103                  | 6.3                  | 170                     | 2 500 | 9,5-100 |
| 85753        | pump                                   | 12 VDC                      | 16        | 35     | 19:1   | 11,5                 | 0.7                  | 103                  | 6.3                  | 170                     | 2 500 | 9,5-100 |
| 85754        | pump                                   | 12 VDC                      | 28        | 60     | 19:1   | 11,5                 | 0.7                  | 103                  | 6.3                  | 345                     | 5 000 | 9,5-100 |

Grease

## Accessory

### Drum covers, follower assemblies and vent valve assemblies

#### Order number

| Order number       | Designation                                     | Reservoir |     |
|--------------------|-------------------------------------------------|-----------|-----|
|                    |                                                 | gal       | lb  |
| <b>85474</b>       | drum cover                                      | 18        | 120 |
| <b>85492</b>       | follower assembly                               |           |     |
| <b>85664</b>       | vent valve assembly (24 VDC)                    |           |     |
| <b>272180</b>      | strainer                                        |           |     |
| <b>85475</b>       | drum cover                                      | 55        | 400 |
| <b>270982</b>      | follower assembly                               |           |     |
| <b>85665</b>       | vent valve assembly                             |           |     |
| <b>272180</b>      | strainer                                        |           |     |
| <b>274899</b>      | 24 VDC vent valve, IP 67 explosion-proof rating |           |     |
| <b>276325</b>      | 24 VDC vent valve, IP 65 rating                 |           |     |
| <b>276903</b>      | 24 VDC vent valve, IP 65 rating                 |           |     |
| <b>276919</b>      | hardware kit for 276903                         |           |     |
| <b>525-32083-1</b> | 24 VDC vent valve, IP 54 rating                 |           |     |

## Single-line lubrication systems

SL-33



B-doser



LG-doser



Grease

# Metering devices

SL-32HV



SL-1



QSL



VR



SL-11



SL-V



SL-V XL



# Overview of grease metering devices

## Product finder

| Metering device series        | Category | Lubricant grease NLGI |   |   | Metering quantity per stroke |                 | Operating pressure |             | Relief pressure max.                   |                                            | Adjustable metering quantity | Function type  | Page |
|-------------------------------|----------|-----------------------|---|---|------------------------------|-----------------|--------------------|-------------|----------------------------------------|--------------------------------------------|------------------------------|----------------|------|
|                               |          | 0                     | 1 | 2 | cm <sup>3</sup>              | in <sup>3</sup> | bar                | psi         | bar                                    | psi                                        |                              |                |      |
| <b>SL-33</b> <sup>1)</sup>    | 5        | •                     | • | – | 0,016-0,05                   | 0.0009-0.0030   | 83-240             | 1 200-3 500 | 14                                     | 200                                        | •                            | prelubrication | 124  |
| <b>B</b> <sup>1)</sup>        | 5        | •                     | • | – | 0,02-0,50                    | 0.0012-0.0305   | max. 150           | max. 2 180  | 5-15 <sup>2)</sup>                     | 72-218 <sup>2)</sup>                       | •                            | prelubrication | 126  |
| <b>LG</b> <sup>1)</sup>       | 5        | •                     | • | – | 0,02-0,50                    | 0.0012-0.0305   | max. 150           | max. 2 180  | 5-10 <sup>2)</sup>                     | 72-145 <sup>2)</sup>                       | •                            | prelubrication | 128  |
| <b>SL-32 HV</b> <sup>1)</sup> | 6        | •                     | • | • | 0,016-0,13                   | 0.0009-0.0079   | 83-240             | 1 200-3 500 | 28                                     | 400                                        | •                            | prelubrication | 130  |
| <b>SL-1</b> <sup>1)</sup>     | 6        | •                     | • | • | 0,13-1,31                    | 0.0079-0.0799   | 127-240            | 1 850-3 500 | 41                                     | 600                                        | •                            | prelubrication | 131  |
| <b>QSL</b> <sup>1)</sup>      | 7        | •                     | • | • | 0,05-0,40                    | 0.0030-0.0244   | 140-300            | 2 030-4 350 | 60                                     | 870                                        | •                            | prelubrication | 132  |
| <b>VR</b> <sup>1)</sup>       | 7        | •                     | • | • | 0,10-1,30                    | 0.0061-0.0793   | 100-315            | 1 450-4 570 | 30 <sup>2)</sup> ,<br>70 <sup>2)</sup> | 435 <sup>2)</sup> ,<br>1 000 <sup>2)</sup> | •                            | prelubrication | 134  |
| <b>SL-11</b>                  | 7        | •                     | • | • | 0,82-8,20                    | 0.0500-0.5002   | 70-240             | 1 000-3 500 | 55                                     | 800                                        | •                            | prelubrication | 136  |
| <b>SL-V</b>                   | 7        | •                     | • | • | 0,25-1,31                    | 0.0152-0.0799   | 128-413            | 1 850-6 000 | 70                                     | 1 000                                      | •                            | prelubrication | 137  |
| <b>SL-V XL</b>                | 7        | •                     | • | • | 0,25-5,00                    | 0.0152-0.3050   | 128-413            | 1 850-6 000 | 70                                     | 1 000                                      | •                            | prelubrication | 138  |

<sup>1)</sup> Stainless steel or C5M available

<sup>2)</sup> Depending on design

## Metering device

### SL-33



Grease

#### Product description

The series SL-33 metering devices are for single-line, high-pressure centralized lubrication systems dispensing petroleum-based lubricants with a viscosity up to NLGI 2. Output is externally adjustable. Its indicator stem permits visual check of metering device operation. May be combined in a circuit of metering devices SL-32, SL-V, SL-VXL, SL-1 and/or SL-11. Individual metering devices can be removed easily for inspection or replacement. Available in stainless steel SAE 304 for applications where environmental conditions are hazardous to carbon steel or in industries preferring stainless steel.

#### Features and benefits

- For use with manifolds from 1 to 7 ports to match number of lube points
- Output is externally adjustable
- Can be removed easily for inspection or replacement

#### Applications

- Food and beverage

#### Technical data

|                       |                                                                                     |
|-----------------------|-------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                     |
| Outlets               | 1 to 4                                                                              |
| Metering quantity     | 0,016 to 0,049 cm <sup>3</sup><br>0.001 to 0.003 in <sup>3</sup>                    |
| Lubricant             | grease NLGI 0, 1                                                                    |
| Operating temperature | max. +93 °C; +200 °F                                                                |
| Operating pressure    | 83 to 240 bar, 1 200 to 3 500 psi<br>typical: 100 bar, 1 500 psi                    |
| Relief pressure       | 14 bar, 200 psi                                                                     |
| Materials             | carbon steel, stainless steel 304                                                   |
| Connection main line  | 1/8 NPTF (F), 1/8 NPTF (M)                                                          |
| Connection outlet     | 1/8 in O.D. tube                                                                    |
| Lubricant point       | solderless pipe connection (DIN 3862)<br>or plug connector                          |
| Dimensions            | min. 41×62×43 mm<br>max. 156×62×43 mm<br>min. 1.6×2.4×1.7 in<br>max. 6.1×2.4×1.7 in |
| Mounting position     | any                                                                                 |

Metering devices, except replacement metering devices for manifold, include compression nut and ferrule for tubing, 3,175 mm (0.125 in) O.D. as standard. Other outlet connectors for feed line optional; metering devices with manifolds include two mounting clips and screws; metering devices have nitrile packings. Check packing compatibility with synthetic lubricants; output with indicator cap hand-tightened is 0,016 cm<sup>3</sup> (0.001 in<sup>3</sup>). Maximum output is achieved with two turns at 0,016 cm<sup>3</sup>/turn (0.001 in<sup>3</sup>/turn)

## Metering device

### SL-33

#### SL-33

| Order number <sup>1)</sup> | Designation                                | Material            | Outlets | Manifold inlet |
|----------------------------|--------------------------------------------|---------------------|---------|----------------|
| 83309-1                    | metering device including manifold         | carbon steel        | 1       | 1/8 NPTF (F)   |
| 83309-2                    | metering device including manifold         | carbon steel        | 2       | 1/8 NPTF (F)   |
| 83309-3                    | metering device including manifold         | carbon steel        | 3       | 1/8 NPTF (F)   |
| 83309-4                    | metering device including manifold         | carbon steel        | 4       | 1/8 NPTF (F)   |
| 83309-5                    | metering device including manifold         | carbon steel        | 5       | 1/8 NPTF (M)   |
| 83309-6                    | metering device including manifold         | carbon steel        | 6       | 1/8 NPTF (F)   |
| 83900                      | single metering device, no manifold needed | carbon steel        | 1       | 1/8 NPTF (M)   |
| 83314                      | single metering device for replacement     | carbon steel        | –       | –              |
| 83715-1                    | metering device including manifold         | stainless steel 304 | 1       | 1/8 NPTF (F)   |
| 83715-2                    | metering device including manifold         | stainless steel 304 | 2       | 1/8 NPTF (F)   |
| 83715-3                    | metering device including manifold         | stainless steel 304 | 3       | 1/8 NPTF (F)   |
| 83715-4                    | metering device including manifold         | stainless steel 304 | 4       | 1/8 NPTF (F)   |
| 83715-6                    | metering device including manifold         | stainless steel 304 | 6       | 1/8 NPTF (F)   |
| 83715-7                    | metering device including manifold         | stainless steel 304 | 7       | 1/8 NPTF (F)   |
| 83900-9                    | single metering device, no manifold needed | stainless steel 304 | 1       | 1/8 NPTF (M)   |
| 83314-9                    | single metering device for replacement     | stainless steel 304 | –       | –              |

Grease

## Metering device

### B-doser

Grease



#### Product description

B-dosers are used in single-line, heavy vehicle and industrial lubrication applications. The doser group consists of a mounting rail with one or more dosers attached to it. Dosing modules and mounting rails are made of zinc-coated and yellow-passivated steel. The dosage ranges of B-dosers are from 20 to 500 mm<sup>3</sup>.

#### Features and benefits

- The output quantity of the used dosers is visible on amount of notches at the housing
- Suitable with optionally manifold sizes for 2-, 3- and 6-ports to match amount of lube points (1-6)
- Material of manifold : stainless steel AISI 303
- Suits for  $\varnothing$  4 and 6 mm of feedlines

#### Applications

- Heavy vehicles
- Heavy industrial application

#### Technical data

|                                 |                                                                                     |
|---------------------------------|-------------------------------------------------------------------------------------|
| Function principle              | metering device                                                                     |
| Outlets                         | 1 to 6                                                                              |
| Metering quantity               | 0,02 to 0,50 cm <sup>3</sup> , 0.0012 to 0.0305 in <sup>3</sup>                     |
| Lubricant                       | oil and grease NLGI 000 to 1                                                        |
| Operating temperature           | -25 to +80 °C; -13 to +176 °F                                                       |
| Operating pressure              | max. 150 bar; 2 180 psi                                                             |
| Relief pressure                 | B1, B2=15 bar; 218 psi<br>B3, B4=10 bar; 145 psi<br>B5, B6=5 bar; 72 psi            |
| Materials                       | zinc-coated and yellow-passivated steel                                             |
| Connection main line (manifold) | R 1/4 for $\varnothing$ 8 mm or pipe $\varnothing$ 1/2 in                           |
| Connection outlet               | 1/8 NPT(F) for $\varnothing$ 4 and 6 mm feedlines                                   |
| Lubricant point                 | solderless pipe connection, DIN 3862                                                |
| Dimensions                      | min. 15×90×15 mm<br>max. 17×110×17 mm<br>min. 0.6×3.5×0.6 in<br>max. 0.7×4.3×0.7 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](https://www.skf.com/lubrication): **11276 EN**

## Metering device

### B-doser

#### Order number configurator

**B** **-** **G** **1** **/** **8** **-** **Z** **N** **-**

Product series

Metering quantity

- 1 = 0,02 cm<sup>3</sup>, 0.0012 in<sup>3</sup>
- 2 = 0,05 cm<sup>3</sup>, 0.0030 in<sup>3</sup>
- 3 = 0,10 cm<sup>3</sup>, 0.0061 in<sup>3</sup>
- 4 = 0,15 cm<sup>3</sup>, 0.0091 in<sup>3</sup>
- 5 = 0,20 cm<sup>3</sup>, 0.0122 in<sup>3</sup>
- 6 = adjustable 0,2 to 0,5 cm<sup>3</sup>; 0.012 to 0.03 in<sup>3</sup>

Mounting rail fitting

**G1/8** = G 1/8 fitting

Material

**ZN** = zinc-coated steel

Lubricant outlet

- 4 = pipe connector ø 4 mm
- 6 = pipe connector ø 6 mm
- = pipe connector mm
- U = female thread NPT 1/8

Grease

## Accessory

### Manifold



#### Product description

For B-doser metering devices, manifolds utilized are for 1 to 6 screw-in points with thread G 1/8 for O-ring sealing. Mainline fitting for G 1/4 for ø 8 mm or pipe ø 1/2 in. Normal profile and opposite-side profile design manifolds are available in zinc-coated and yellow-passivated steel. Various designs of main line and feed line connection can be selected by order code.

#### Order number configurator

**B** **P** **L** **D** **-**  **-**

Mounting rail, baseplate

Lubrication system type, LD

Mounting rail size

- 02** = 2-place mounting rail
- 04** = 4-place mounting rail
- 06** = 6-place mounting rail
- 0202** = 4-place mounting rail, 2 places on opposite sides
- 0303** = 6-place mounting rail, 3 places on opposite sides

Material mounting rail

**ZN** = Zinc-coated and yellow-passivated steel

## Metering device

### LG-doser

Grease



#### Product description

LG-dosers are used in single-line lubrication applications. The doser group consists of a mounting rail with one or more dosers attached to it. Dosing modules and mounting rails are made of stainless steel.

#### Features and benefits

- Two adjustable doser sizes are selectable by the used output quantity
- Manifold material: stainless steel AISI 303
- Compatible with screw-in type fittings for dosers and manifolds
- Suitable for feed line  $\varnothing$  4 and  $\varnothing$  6 mm
- Robust and reliable

#### Applications

- Food and beverage

#### Technical data

|                            |                                                                                      |
|----------------------------|--------------------------------------------------------------------------------------|
| Function principle         | metering device                                                                      |
| Outlets                    | 1 to 6                                                                               |
| Metering quantity          | 0,02 to 0,50 cm <sup>3</sup> ; 0.0012 to 0.0305 in <sup>3</sup>                      |
| Lubricant                  | oil and grease NLGI 000 to 1                                                         |
| Operating temperature      | -25 to +80 °C; -13 to +176 °F                                                        |
| Operating pressure         | max. 150 bar; 2 180 psi                                                              |
| Relief pressure            | LG001=10 bar; 145 psi<br>LG002=5 bar; 72 psi                                         |
| Materials                  | stainless steel AISI 304                                                             |
| Connection main line       | manifold: R 1/4 in                                                                   |
| Connection outlet          | pipe connector $\varnothing$ 4 and 6 mm<br>or pipe $\varnothing$ 1/4 in              |
| Connection lubricant point | solderless pipe connection (DIN 3862)                                                |
| Material                   | stainless steel AISI 303                                                             |
| Dimensions                 | min. 15×112×15 mm<br>max. 17×110×17 mm<br>min. 0.6×4.4×0.6 in<br>max. 0.7×4.3×0.7 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](https://www.skf.com/lubrication): **11276 EN**

## Metering device

### LG-doser

#### Order number configurator

L G - - - -

Product series

Doser size

**001** = 0,02 to 0,20 cm<sup>3</sup>  
0.0012 to 0.0122 in<sup>3</sup>

**002** = 0,20 to 0,50 cm<sup>3</sup>  
0.0122 to 0.0305 in<sup>3</sup>

Material

**S** = stainless steel AISI 304

Lubricant outlet

**4** = pipe connector ø 4 mm

**6** = pipe connector ø 6 mm

**U** = lubrication pipe ø 1/4 in

Lubricant outlet

- = pipe connector mm

**U** = lubrication pipe ø 1/4 in

Grease

## Accessory

### Manifold



#### Product description

For LG-doser metering devices, manifolds utilized are for 1 to 6 screw-in points with thread G 1/8 for O-ring sealing. Normal profile and opposite-side profile design manifolds are available in stainless steel AISI 303. Various designs of main line and feed line connections can be selected by order code.

#### Order number configurator

B P L D - - S

Mounting rail, baseplate

Lubrication system type, LD

Mounting rail size

**02** = 2-place mounting rail

**04** = 4-place mounting rail

**06** = 6-place mounting rail

**0303** = 6-place mounting rail, 3 places on opposite sides

Mounting rail material

**S** = stainless steel AISI 303

## Metering device

### SL-32HV



Grease

#### Product description

The series SL-32HV (high venting) metering devices are for single-line, high-pressure centralized lubrication systems dispensing petroleum-based lubricants with a viscosity up to NLGI 2 (refer to Design Guide). Output is externally adjustable. The indicator stem permits visual check of metering device operation. Individual metering devices can be removed easily for inspection or replacement.

#### Features and benefits

- Shipped with manifolds from 1 to 10 ports to match number of lube points
- Output is externally adjustable
- Indicator stem permits visual check of operation
- Can be removed easily for inspection or replacement
- Available in stainless steel SAE 304

#### Applications

- Food and beverage
- Industrial automation
- Machine tools
- Oil and gas
- Steel industry
- Pulp and paper
- Marine and forestry
- Construction
- Wind energy
- Mobile on-road

#### Technical data

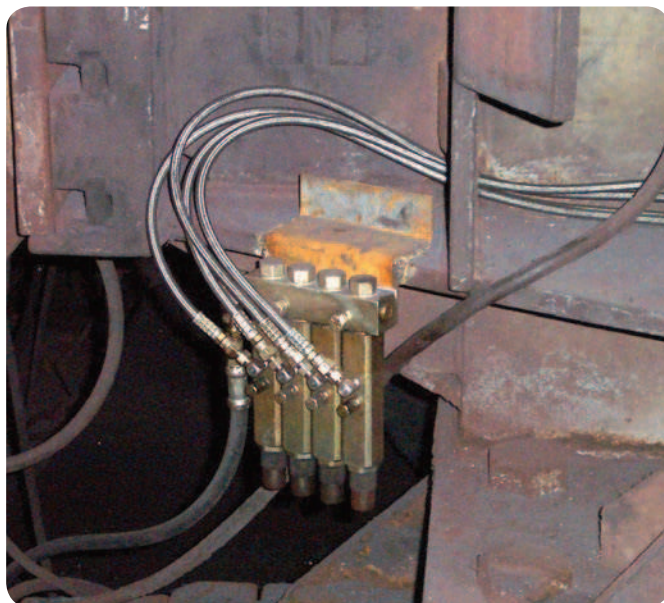
|                       |                                                                                                       |
|-----------------------|-------------------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                                       |
| Outlets               | 1 to 10                                                                                               |
| Metering quantity     | 0,016 to 0,131 cm <sup>3</sup><br>0.001 to 0.008 in <sup>3</sup>                                      |
| Lubricant             | grease NLGI 0, 1, 2                                                                                   |
| Operating temperature | max. +93 °C; +200 °F                                                                                  |
| Operating pressure    | 83 to 240 bar, 1 200 to 3 500 psi                                                                     |
| Relief pressure       | 28 bar, 400 psi                                                                                       |
| Material              | carbon steel, nitrile packings                                                                        |
| Connection main line  | 1/4 NPTF (F), 1/4 NPTF (M)                                                                            |
| Connection outlet     | 1/8 in O.D. tube                                                                                      |
| Lubricant point       | solderless pipe connection (DIN 3862)                                                                 |
| Dimensions            | min. 44,5 × 93 × 52 mm<br>max. 215 × 93 × 52 mm<br>min. 1.8 × 3.6 × 2.1 in<br>max. 8.5 × 3.6 × 2.1 in |
| Mounting position     | any                                                                                                   |

#### SL-32HV

| Order number | Designation                          | Outlet |
|--------------|--------------------------------------|--------|
| 83336HV-1    | metering device                      | 1      |
| 83336HV-2    | metering device                      | 2      |
| 83336HV-3    | metering device                      | 3      |
| 83336HV-4    | metering device                      | 4      |
| 83336HV-5    | metering device                      | 5      |
| 83336HV-6    | metering device                      | 6      |
| 83336HV-7    | metering device                      | 7      |
| 83336HV-8    | metering device                      | 8      |
| 83336HV-9    | metering device                      | 9      |
| 83336HV-10   | metering device                      | 10     |
| 83338HV      | metering device, single, no manifold | 1      |
| 83337HV      | metering device, single replacement  | –      |

## Metering device

### SL-1



Grease

#### Product description

The series SL-1 metering devices are for single-line, high-pressure centralized lubrication systems dispensing lubricants compatible with fluoroelastomer packings and viscosity up to NLGI 2. Output is externally adjustable. An indicator stem permits visual check of metering device operation. Individual metering devices can be removed easily for inspection or replacement. Available in stainless steel SAE 316, for applications where environmental conditions are hazardous to carbon steel or in industries preferring stainless steel.

#### Features and benefits

- Shipped with manifolds from 1 to 6 ports to match number of lube points
- Output is externally adjustable
- Each indicator stem permits visual check of injector operation
- Individual metering devices can be removed easily for inspection or replacement
- Includes fitting for feed lines via alternate outlet port
- Available in stainless steel SAE 316

#### Applications

- Mining and mineral processing
- Construction machinery
- Steel/heavy industry

#### Technical data

|                       |                                                                                               |
|-----------------------|-----------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                               |
| Outlets               | 1 to 6                                                                                        |
| Metering quantity     | 0,131 to 1,31 cm <sup>3</sup> ; 0.008 to 0.080 in <sup>3</sup>                                |
| Lubricant             | grease NLGI 0, 1, 2                                                                           |
| Operating temperature | -26 to +176 °C; -15 to +350 °F                                                                |
| Operating pressure    | 127 to 240 bar; 1 850 to 3 500 psi                                                            |
| Relief pressure       | 41 bar, 600 psi                                                                               |
| Materials             | carbon steel, stainless steel 316                                                             |
| Connection main line  | 3/8 NPTF (F)                                                                                  |
| Connection outlet     | 1/8 NPTF (F)                                                                                  |
| Lubricant point       | solderless pipe connection                                                                    |
| Dimensions            | min. 63×179,4×52,4 mm<br>max. 203×179,4×52,4 mm<br>min. 2.5×7.0×2.0 in<br>max. 8.0×7.0×2.0 in |
| Mounting position     | any                                                                                           |

#### SL-1

| Order number | Designation     | Outlets |
|--------------|-----------------|---------|
| 81770-1      | metering device | 1       |
| 81770-2      | metering device | 2       |
| 81770-3      | metering device | 3       |
| 81770-4      | metering device | 4       |
| 81770-5      | metering device | 5       |
| 81770-6      | metering device | 6       |

## Metering device

### QSL



Grease



#### Product description

QSL metering devices are designed for 300 bar pressure. As a result, NLGI 2 greases can be pumped at temperatures below zero without problems. All metering devices operate independently of each other. This means that in the event of a blockage or fault of one metering device, all other metering devices will continue to supply lubricant. A control pin on top shows proper function of each metering device.

#### Features and benefits

- Suitable for use with manifolds from 1 to 6 ports to match number of lube points; must be ordered separately
- Corrosion-resistant, black-cromated or nickel-plated surface
- Each indicator stem permits visual check of operation
- Can be removed easily for inspection or replacement
- Controlled via main line

#### Applications

- Renewable energy
- Construction machinery
- Mining and mineral processing
- Compact and medium-sized machines and industrial applications
- Commercial vehicles

#### Technical data

|                       |                                                                |
|-----------------------|----------------------------------------------------------------|
| Function principle    | metering device                                                |
| Outlets               | 1 to 6                                                         |
| Metering quantity     | 0,05 to 0,4 cm <sup>3</sup> , 0.003 to 0.024 in <sup>3</sup>   |
| Lubricant             | grease NLGI 0, 1, 2                                            |
| Operating temperature | -40 to +70 °C; -40 to +158 °F                                  |
| Operating pressure    | 140 to 300 bar, 2 030 to 4 350 psi                             |
| Relief pressure       | ≤ 60 bar, ≤ 870 psi                                            |
| Materials             | steel, black cromated, polyurethane                            |
| Connection main line  | G 3/8 for steel pipe<br>16 × 2 mm; 0.63 × 0.08 in              |
| Connection outlet     | G 1/8 for tubes/hoses<br>4,1 × 2,3 mm; 0.16 × 0.09 in          |
| Lubricant point       | solderless pipe connection, DIN 3862<br>or SKF quick connector |
| Dimensions            | length: max. 160 mm, 6.3 in<br>ø 28 mm; 1.1 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](https://www.skf.com/lubrication): **PUB LS/P2 12735 EN**

## Metering device

### QSL

#### OSL

| Order number <sup>1)</sup> | Designation<br>Injectors | Metering quantity<br>per stroke |                 | Ring color |
|----------------------------|--------------------------|---------------------------------|-----------------|------------|
|                            |                          | cm <sup>3</sup>                 | in <sup>3</sup> |            |
| 554-32810-1                | QSL 0,05                 | 0,05                            | 0.00305         | blue       |
| 554-32811-1                | QSL 0,1                  | 0,10                            | 0.00610         | white      |
| 554-32812-1                | QSL 0,2                  | 0,20                            | 0.01220         | yellow     |
| 554-32813-1                | QSL 0,3                  | 0,30                            | 0.01830         | red        |
| 554-32814-1                | QSL 0,4                  | 0,40                            | 0.02440         | green      |

<sup>1)</sup> In the case of backpressures in lubrication point lines of  $\geq 100$  bar or if several injectors are combined to one lubrication point, use check valves, order number 223-12289-7.

Grease

## Accessory

### Manifold, check valves and closure kit



#### Product description

For QLS metering devices, manifolds utilized are for 1 to 6 push-in points tightened by a hollow screw with thread G  $\frac{3}{8}$  for O-ring sealing. Normal profile design manifolds are available in steel. The main line connection G  $\frac{3}{8}$  is for steel pipe 16 × 2 mm (0.63 × 0.08 in). The lubrication connection is for plastic tube 4,1 × 2,3 mm; (0.16 × 0.09 in).

#### Manifolds <sup>1)</sup>

| Order number | Designation         | Dimensions<br>fixing hole |      | length, total |       |
|--------------|---------------------|---------------------------|------|---------------|-------|
|              |                     | mm                        | in   | mm            | in    |
| 454-71505-1  | divider bar, 2-fold | 74                        | 2.91 | 130           | 5.11  |
| 454-71506-1  | divider bar, 3-fold | 42                        | 1.65 | 130           | 5.11  |
| 454-71507-1  | divider bar, 4-fold | 84                        | 3.30 | 172           | 6.77  |
| 454-71508-1  | divider bar, 5-fold | 126                       | 4.96 | 214           | 8.42  |
| 454-71509-1  | divider bar, 6-fold | 84 <sup>1)</sup>          | 3.30 | 256           | 10.07 |

<sup>1)</sup> Instead of the planned injectors a divider bar can also be equipped with a closure kit 5, order number: 554-34387-1

<sup>2)</sup> 3 bores

#### Check valves and closure kit

| Order number | Designation                                              |
|--------------|----------------------------------------------------------|
| 223-12289-7  | check valves for connection at lubrication point outlets |
| 554-34387-1  | closure kit 5                                            |

## Metering device

### VR



Grease

#### Product description

Product series VR are 1- to 12-port prelubrication metering devices for single-line, centralized lubrication systems for fluid grease and grease up to NLGI 2. These metering devices are characterized by an innovative, compact and sturdy design with SKF Quick Connector systems.

#### Features and benefits

- Innovative, extremely compact design
- Optional metering devices for 1 to 12 ports to match number of lubrication points
- Metering nipples with indicator pin for visual monitoring of each lubrication point
- Optional push-in type or screw-in type fittings for feed line or main line connections are selectable
- Easy metering adjustment by replacing the metering nipples
- Black anodized surface for optimized corrosion protection
- Suitable for corrosivity category C3 and C5 per DIN EN ISO 12944 and certified by Germanischer Lloyd
- High functional reliability when using stiff greases at low working temperatures

#### Applications

- Onshore and offshore wind energy systems
- Construction machinery
- Steel industry
- Heavy industry
- General mechanical engineering applications



#### Technical data

|                       |                                                                                                                                                                              |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                                                                                                              |
| Outlets               | 1 to 12                                                                                                                                                                      |
| Metering quantity     | non-adjustable: 0,1 to 1,3 cm <sup>3</sup> /min<br>0.006 to 0.079 in <sup>3</sup> /min<br>adjustable: 0,1 to 1,1 cm <sup>3</sup> /min<br>0.006 to 0.067 in <sup>3</sup> /min |
| Lubricant             | fluid greases and grease NLGI 0, 1, 2                                                                                                                                        |
| Operating temperature | -25 to +80 °C; -13 to +176 °F                                                                                                                                                |
| Operating pressure    | 100 to 315 bar;<br>1 450 to 4 570 psi                                                                                                                                        |
| Relief pressure       | 30 or 70 bar; 435 or 1 015 psi                                                                                                                                               |
| Materials             | anodized aluminum, stainless steel, FKM (FPM)                                                                                                                                |
| Connection main line  | G 1/4 for pipes 4 or 6 mm,<br>0.16 or 0.24 in                                                                                                                                |
| Connection outlet     | G 1/8 for pipes 4 or 6 mm,<br>0.16 or 0.24 in                                                                                                                                |
| Lubricant point       | solderless pipe connection (DIN 3862)                                                                                                                                        |
| Dimensions            | depending on model:<br>min. 97×130×54 mm;<br>max. 281×121×119 mm;<br>min. 3.82×5.12×2.13 in<br>max. 11.06×4.76×4.68 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](https://www.skf.com/lubrication): **1-5001-EN, 951-230-007**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](https://skf-lubrication.partcommunity.com/3d-cad-models/)

# Metering device

## VR

Order code

V R

Product series

Number of metering points

01 = 1    07 = 7

02 = 2    08 = 8

03 = 3    09 = 9

04 = 4    10 = 10

05 = 5    11 = 11

06 = 6    12 = 12

1

2

3

4

5

6

7

8

9

10

11

12

Code letter

Metering quantity letter (0 = not present, e.g. for VR06 assign 0 for metering points 7–12)

Code for fittings for main line connection

Design for fluid grease and grease

Design code letter

A B C D E F G H N P

Max. relief pressure [bar]

30 70 30 70 30 70 30 70 30 70

Secondary line connection

G 1/8 G 1/8 VS VS VS VS G 1/8 G 1/8 SRV<sup>1)</sup> SRV<sup>1)</sup>

Secondary line ø[mm]

– – 4 4 6 6 – – 6 6

Corrosivity category <sup>2)</sup>

C3 C3 C3 C3 C3 C3 C5-M C5-M C5-M C5-M

<sup>1)</sup> SRV = cutting-sleeve screw union, see [page 2](#)

<sup>2)</sup> Corrosivity categories per DIN EN ISO 12944 (certified by Germanischer Lloyd)

Metering

Metering quantity letter

A <sup>1)</sup> B <sup>1)</sup> D <sup>1)</sup> F <sup>1)</sup> H <sup>1)</sup> J <sup>1)</sup> M <sup>1)</sup> R <sup>2)</sup> X

Metering [cm<sup>3</sup>]

0,1 0,2 0,4 0,6 0,8 1 1,3 0,1–1,1 Closed

<sup>1)</sup> Fixed metering with indicator pin for visual function monitoring

<sup>2)</sup> Adjustable metering with indicator pin for visual function monitoring

Order example

VR06FFFFFFF000000Z

- Single-line distributor, 6-port
- Relief pressure max. 70 bar
- Lubrication point line connection using SKF plug connector for pipe ø 6 mm
- Metering quantity 1–6 = 0,6 cm<sup>3</sup>
- Without fitting for main line connection (G 1/4 thread)

Fittings for main line connection

| Left fitting                | Right fitting               | ø Main line [mm] | Code   |
|-----------------------------|-----------------------------|------------------|--------|
| Cutting-sleeve screw union* | Cutting-sleeve screw union* | 8<br>10          | A<br>G |
| Cutting-sleeve screw union* | Closed                      | 8<br>10          | B<br>H |
| Closed                      | Cutting-sleeve screw union  | 8<br>10          | C<br>J |
| EO-2 screw union            | EO-2 screw union            | 8<br>10          | D<br>K |
| EO-2 screw union            | Closed                      | 8<br>10          | E<br>L |
| Closed                      | EO-2 screw union            | 8<br>10          | F<br>M |
| G 1/4                       | G 1/4                       | –                | Z      |

Grease

## Metering device

### SL-11

Grease



#### Product description

Series SL-11 metering devices are for single-line, high-pressure centralized lubrication systems dispensing lubricants compatible with fluoroelastomer packings and viscosity up to NLGI 2. Output is externally adjustable. An indicator stem permits visual check of metering device operation. Available only as single unit with 1/2 inch NPTF (F) inlet.

#### Features and benefits

- Output is externally adjustable
- Indicator stem permits visual check of injector operation
- May be combined in a circuit of metering devices SL-32, SL-33, SL-V XL, SL-V and/or SL-1
- Can be removed easily for inspection or replacement
- Includes fitting for filling feed lines via alternate outlet port
- Available in stainless steel SAE 316

#### Applications

- Construction machinery
- Mining and mineral processing
- Steel industry
- Heavy industry

#### Technical data

|                               |                                                                 |
|-------------------------------|-----------------------------------------------------------------|
| Order number . . . . .        | <b>85497</b>                                                    |
| Function principle . . . . .  | metering device                                                 |
| Outlets. . . . .              | 1                                                               |
| Metering quantity . . . . .   | 0,82 to 8,2 cm <sup>3</sup> ;<br>0.050 to 0.500 in <sup>3</sup> |
| Lubricant . . . . .           | grease NLGI 0, 1, 2                                             |
| Operating temperature . . .   | -40 to +93 °C; -40 to +200 °F                                   |
| Operating pressure . . . . .  | 70 to 240 bar, 1 000 to 3 500 psi                               |
| Relief pressure. . . . .      | 55 bar, 800 psi                                                 |
| Materials . . . . .           | carbon steel, FKM, PTFE                                         |
| Connection main line. . . . . | 1/2 NPTF (F)                                                    |
| Connection outlet . . . . .   | 1/4 NPTF (F)                                                    |
| Lubricant point . . . . .     | solderless pipe connection (DIN 3862)<br>or plug connector      |
| Dimensions . . . . .          | 73 × 241 mm<br>2.87 × 9.48 in                                   |
| Mounting position . . . . .   | any                                                             |

Metering devices have fluoroelastomer packings. Check packing compatibility with synthetic lubricants; metering devices supplied with fitting for filling feed line via alternate outlet port. Output with adjustment screw hand-tightened is 0,82 cm<sup>3</sup> (0.05 in<sup>3</sup>); maximum output is achieved with 11 1/2 turns at 0,66 cm<sup>3</sup>/turn (0.04 in<sup>3</sup>/turn)

## Metering device

### SL-V



#### Product description

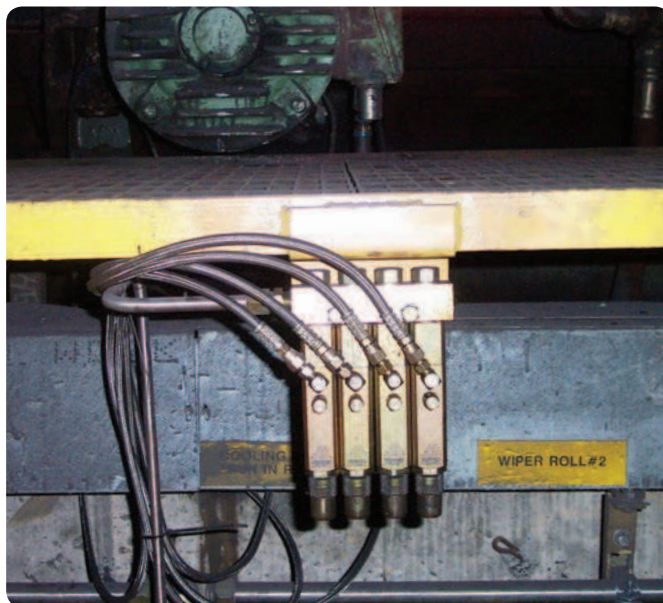
Series SL-V metering devices are for single-line, high-pressure centralized lubrication systems dispensing lubricants compatible with polyurethane seals up to NLGI 2. Output is externally adjustable. An indicator stem permits visual check of metering device operation. Individual metering devices can be removed easily for inspection or replacement. Each SL-V metering device includes a clear, polycarbonate protective cap.

#### Features and benefits

- Shipped with manifolds from 1 to 6 ports
- Output is externally adjustable
- Clear, polycarbonate protected cap over indicator stem permits visual check of operation
- Can be removed easily for inspection or replacement
- Available in carbon steel or stainless steel SAE 304
- Output setting system by a set of color-coded sleeves

#### Applications

- Construction machinery
- Mining and mineral processing
- Steel industry



Grease

#### Technical data

|                       |                                                                                                       |
|-----------------------|-------------------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                                       |
| Outlets               | 1 to 6                                                                                                |
| Metering quantity     | 0,25 to 1,31 cm <sup>3</sup><br>0.015 to 0.08 in <sup>3</sup>                                         |
| Lubricant             | greases NLGI 0, 1, 2                                                                                  |
| Operating temperature | max. +82 °C; +180 °F                                                                                  |
| Operating pressure    | 128 to 413 bar, 1 850 to 6 000 psi<br>typical: 172 bar, 2 500 psi                                     |
| Relief pressure       | 70 bar, 1 000 psi                                                                                     |
| Materials             | carbon steel                                                                                          |
| Connection main line  | 3/8 NPTF (F)                                                                                          |
| Connection outlet     | 1/8 NPTF (F)                                                                                          |
| Dimensions            | min. 63 × 222 × 35 mm<br>max. 203 × 222 × 35 mm<br>min. 2.5 × 8.7 × 1.4 in<br>max. 6.1 × 8.7 × 1.4 in |
| Mounting position     | any                                                                                                   |

Metering device manifolds have 10,3 mm (0.4 in) dia. mounting holes for 9,5 mm (0.375 in) bolt; metering devices have polyurethane seals; check compatibility with synthetic lubricants; metering devices include fitting for filling feedlines via alternate outlet port; output with adjustment screw hand-tightened is 0,246 cm<sup>3</sup> (0.015 in<sup>3</sup>); maximum output is achieved with five turns at 0,229 cm<sup>3</sup>/turn (0.014 in<sup>3</sup>/turn)

#### SL-V

| Order number | Outlets | Designation                                       |
|--------------|---------|---------------------------------------------------|
| 85770-1      | 1       | One metering device manifold                      |
| 85770-2      | 2       | Two metering device manifold                      |
| 85770-3      | 3       | Three metering device manifold                    |
| 85770-4      | 4       | Four metering device manifold                     |
| 85770-5      | 5       | Five metering device manifold                     |
| 85770-6      | 6       | Six metering device manifold                      |
| 85771        | —       | Replacement for manifold metering device          |
| 85772        | —       | Single metering device, no manifold, 3/8 NPTF (M) |

## Metering device

### SL-V XL

Grease



#### Product description

Series SL-V XL high-output metering devices are for single-line, high-pressure centralized lubrication systems dispensing lubricants compatible with polyurethane seals up to NLGI 2. Output is externally adjustable. An indicator stem permits visual check of metering device operation. Individual metering devices can be removed easily for inspection or replacement. Two SL-V XL metering devices are required to replace one SL-11 metering device. Each SL-V XL metering device includes a clear, polycarbonate protective cap.

#### Features and benefits

- Suitable for use with manifolds from 1 to 6 ports to match number of lubrication points
- Output is externally adjustable
- Includes a clear, polycarbonate protective cap over indicator stem that permits visual check of operation
- Can be removed easily for inspection or replacement
- Includes fitting for filling feed lines via alternate outlet port
- Available in carbon steel or stainless steel SAE 304

#### Applications

- Construction machinery
- Mining and mineral processing
- Heavy industry



#### Technical data

|                       |                                                                                                         |
|-----------------------|---------------------------------------------------------------------------------------------------------|
| Function principle    | metering device                                                                                         |
| Outlets               | 1 to 6                                                                                                  |
| Metering quantity     | 0,25 to 5,00 cm <sup>3</sup> , 0.015 to 0.305 in <sup>3</sup>                                           |
| Lubricant             | grease NLGI 0, 1, 2                                                                                     |
| Operating temperature | -40 to +82 °C; -40 to +180 °F                                                                           |
| Operating pressure    | 128 to 413 bar; 1 850 to 6 000 psi                                                                      |
| Relief pressure       | 70 bar, 1 000 psi                                                                                       |
| Materials             | carbon steel                                                                                            |
| Connection main line  | 3/8 NPTF (F)                                                                                            |
| Connection outlet     | 1/8 NPTF (F)                                                                                            |
| Lubricant point       | solderless pipe connection (DIN 3862) or plug connector                                                 |
| Dimensions            | min. 63 × 284 × 35 mm<br>max. 203 × 284 × 35 mm<br>min. 2.5 × 11.2 × 1.4 in<br>max. 6.1 × 11.2 × 1.4 in |
| Mounting position     | any                                                                                                     |

Metering device manifolds have 10,3 mm (0.4 in) dia. mounting holes for 9,5 mm (0.375 in) bolt; metering devices have polyurethane seals. Check compatibility with synthetic lubricants; metering devices include fitting for filling feed lines via alternate outlet port; output with adjustment screw hand-tightened is 0,246 cm<sup>3</sup> (0.015 in<sup>3</sup>); maximum output is achieved with 20.5 turns at 0,229 cm<sup>3</sup>/turn (0.014 in<sup>3</sup>/turn).

## Metering device

### SL-V XL

Order number configurator

8 5 7 8 0 -

Product series, carbon steel

**85781** = replacement for manifold metering device

**85782** = single metering device, no manifold; 9,5 mm NPTF (M), 0.375 NPTF (M) inlet

Outlets

1 = 1

2 = 2

3 = 3

4 = 4

5 = 5

6 = 6

Grease

## Accessories for single-line lubrication systems



Accessories

## Controllers



# Overview of controllers

## Controllers

| Product         | Operating temperature |             | Voltage |         | Adjustable | Level monitoring | Page |
|-----------------|-----------------------|-------------|---------|---------|------------|------------------|------|
|                 | °C                    | °F          | VDC     | VAC     |            |                  |      |
| EXZT2A02        | 0 to 60               | +32 to 140  | 12/24   | 120     | •          | –                | 142  |
| EXZT2A05        | 0 to 60               | +32 to 140  | 12/24   | 120     | •          | •                | 142  |
| EXZT2A07        | 0 to 60               | +32 to 140  | 12/24   | 120     | •          | •                | 142  |
| IGZ36-20        | 0 to 60               | +32 to 140  | 12/24   | 120     | •          | –                | 142  |
| IGZ36-20-S6     | 0 to 60               | +32 to 140  | 12/24   | 120     | •          | •                | 142  |
| IGZ38-30        | 0 to 60               | +32 to 140  | 12/24   | 120     | –          | •                | 142  |
| IGZ38-30-S1     | 0 to 60               | +32 to 140  | 12/24   | 120     | –          | •                | 142  |
| IGZ51-20-S3     | 0 to 60               | +32 to 140  | 12/24   | 120     | –          | –                | 142  |
| IG502-2-E       | -25 to +75            | -13 to +167 | 12/24   | –       | •          | •                | 144  |
| LC502           | 0 to 60               | +32 to 140  | 12/24   | –       | •          | •                | 145  |
| ST-1440         | 0 to 60               | +32 to 140  | –       | 93–264  | •          | •                | 146  |
| ST-1340         | 0 to 60               | +32 to 140  | –       | 93–264  | •          | •                | 146  |
| ST-1240-GRAPH   | 0 to 50               | +32 to 140  | –       | 93–264  | •          | •                | 147  |
| ST-1240-GRAPH-4 | 0 to 50               | +32 to 140  | –       | 93–264  | •          | •                | 147  |
| ST-1100i        | -20 to +60            | -4 to +142  | –       | 93–264  | •          | •                | 148  |
| ST-102          | -40 to +80            | -40 to +176 | 12/24   | –       | •          | •                | 149  |
| ST-102P         | -40 to +80            | -40 to +176 | 12/24   | –       | •          | •                | 150  |
| 84501           | -18 to +54            | 0 to +130   | –       | 120/230 | •          | –                | 151  |
| 84015           | -18 to +55            | 0 to +131   | 12/24   | –       | •          | –                | 152  |
| 85520           | -25 to +65            | -13 to +150 | –       | 120     | •          | •                | 153  |
| 85535           | -40 to +65            | -40 to +150 | 12/24   | –       | •          | •                | 154  |
| LMC 101         | -40 to +65            | -40 to +150 | 12/24   | –       | •          | •                | 156  |
| EOT-1           | -25 to +70            | -13 to +158 | 12/24   | –       | •          | •                | 157  |
| EOT-2           | -25 to +70            | -13 to +158 | 12/24   | –       | •          | •                | 157  |
| LMC 301         | -40 to +70            | -40 to +158 | 24      | 90–264  | •          | •                | 158  |
| LMC 2           | -10 to +70            | +14 to 158  | 12/24   | 230     | •          | •                | 159  |

## Controller kits

| Product | Designation                                      | Operating temperature |             | Voltage |         | Adjustable | Level monitoring | Page |
|---------|--------------------------------------------------|-----------------------|-------------|---------|---------|------------|------------------|------|
|         |                                                  | °C                    | °F          | VDC     | VAC     |            |                  |      |
| 85525   | Kit: controller and pressure sensor              | -25 to +65            | -13 to +150 | –       | 120     | •          | •                | 158  |
| 85208   | Kit: controller, pressure sensor, solenoid valve | 0 to +50              | +32 to +122 | –       | 110/120 | •          | •                | 159  |
| 85209   | Kit: controller, pressure sensor, solenoid valve | 0 to +50              | +32 to +122 | –       | 220     | •          | •                | 159  |

## Connection and flow controllers

| Product     | Designation           | Operating temperature |             | Voltage |     | Page |
|-------------|-----------------------|-----------------------|-------------|---------|-----|------|
|             |                       | °C                    | °F          | VDC     | VAC |      |
| HCC         | Hose tear-off control | -25 to +70            | -58 to +158 | 12/24   | –   | 160  |
| Flow sensor | Flow sensor           | +10 to +50            | 50 to 122   | 12/24   | –   | 161  |

## Controller

### EXZT/IGZ



#### Product description

Universal electronic control and monitoring devices are used in single- line and progressive lubrication systems for stationary industrial applications, installed in a switching cabinet or internally in a compact lubrication unit. Two different versions are required: +471 for 100 to 120 VAC and 200 to 240 VAC; and +472 for 24 VDC and 24 VAC. The universal devices can be used as time-dependent or pulse-dependent controllers. The main task is to initiate a

lubrication cycle after a set time. The devices also monitor the piston strokes and run the pump during the lubrication time in clogged operation. All devices have custom-built functions integrated and can be configured to meet the requirements of the application. Mentioned device models must be selected based on their special function configuration and additional features according to the user manual.

#### Features and benefits

- Easy installation via top hat rail mounting
- One unit for different operating modes such as timer, counter and monitoring functions; other features are adjustable
- Pulse generator/counter with adjustable interval time
- Time operation or machine clogged operation
- Pump run time limitation
- Monitoring of pressure build-up, contact (NO)
- Low-level control and EEPROM as an additional feature

#### Applications

- All single-line lubrication systems for stationary industrial applications

#### Technical data

|                       |                                                    |
|-----------------------|----------------------------------------------------|
| Function principle    | Universal electronic control and monitoring device |
| Operating temperature | 0 to 60 °C<br>+32 to 140 °F                        |
| Output voltage        | 24 VDC +10%/-15%                                   |
| Connector for class   | II                                                 |
| Protection class      | IP 30, clamps IP 20                                |
| Dimensions            | 70×75×110 mm<br>2.7×3×4.3 in                       |

#### Version + 471

|                       |                              |
|-----------------------|------------------------------|
| Input voltage         | 100 – 120 VAC; 200 – 240 VAC |
| Input current rated   | 70 mA / 35 mA                |
| Power input           | 8 W                          |
| Frequency             | 50 – 60 Hz                   |
| Fuse                  | max. 6.3 A                   |
| Switching current     | max. 5 A                     |
| Input voltage sensors | 24 VDC                       |

#### Version + 472

|                       |                                 |
|-----------------------|---------------------------------|
| Input voltage         | 20 to 24 VDC; 20 to 24 VAC      |
| Input current rated   | 75 mA at max. fan-out of 250 mA |
| Power input           | 5 W                             |
| Frequency             | DC or 50 – 60 Hz                |
| Fuse                  | max. 6.3 A                      |
| Switching current     | max. 5 A                        |
| Input voltage sensors | 24 VDC                          |

#### ! 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): **1-1700-4-EN**

## Controller

### EXZT/IGZ

#### Models

| Order number    | Input voltage | Adjustable monitoring time | Adjustable pump delay time | Monitoring of pressure relief, contact | Lubricant level monitoring, contact | Interval time extension | Early lubricant level warning, contact | Pulse monitoring | Activatable failure memory EEPROM |
|-----------------|---------------|----------------------------|----------------------------|----------------------------------------|-------------------------------------|-------------------------|----------------------------------------|------------------|-----------------------------------|
| EXZT2A02+471    | 120 VDC       | •                          | •                          | NO <sup>1)</sup>                       | NO <sup>1)</sup>                    | •                       | —                                      | —                | —                                 |
| EXZT2A02+472    | 24 VAC        | •                          | •                          | NO <sup>1)</sup>                       | NO <sup>1)</sup>                    | •                       | —                                      | —                | —                                 |
| EXZT2A05+471    | 120 VDC       | •                          | •                          | —                                      | NC <sup>2)</sup>                    | •                       | —                                      | •                | —                                 |
| EXZT2A05+472    | 24 VAC        | •                          | •                          | —                                      | NC <sup>2)</sup>                    | •                       | —                                      | •                | —                                 |
| EXZT2A07+471    | 120 VDC       | •                          | •                          | —                                      | NC <sup>2)</sup>                    | •                       | •                                      | —                | —                                 |
| EXZT2A07+472    | 24 VAC        | •                          | •                          | —                                      | NC <sup>2)</sup>                    | •                       | •                                      | —                | —                                 |
| IGZ36-20+471    | 120 VDC       | •                          | •                          | NC <sup>2)</sup>                       | NO <sup>1)</sup>                    | —                       | —                                      | —                | —                                 |
| IGZ36-20+472    | 24 VAC        | •                          | •                          | NC <sup>2)</sup>                       | NO <sup>1)</sup>                    | —                       | —                                      | —                | —                                 |
| IGZ36-20-S6+471 | 120 VDC       | •                          | •                          | NC <sup>2)</sup>                       | NC <sup>2)</sup>                    | —                       | —                                      | —                | —                                 |
| IGZ36-20-S6+472 | 24 VDC        | •                          | •                          | NC <sup>2)</sup>                       | NC <sup>2)</sup>                    | —                       | —                                      | —                | —                                 |
| IGZ38-30+471    | 120 VDC       | —                          | —                          | —                                      | NC <sup>2)</sup>                    | —                       | —                                      | —                | —                                 |
| IGZ38-30+472    | 24 VDC        | —                          | —                          | —                                      | NC <sup>2)</sup>                    | —                       | —                                      | —                | —                                 |
| IGZ38-30-S1+471 | 120 VDC       | —                          | —                          | —                                      | NO <sup>1)</sup>                    | —                       | —                                      | —                | —                                 |
| IGZ38-30-S1+472 | 24 VDC        | —                          | —                          | —                                      | NO <sup>1)</sup>                    | —                       | —                                      | —                | —                                 |
| IGZ51-20-S3+471 | 120 VDC       | •                          | •                          | NC <sup>2)</sup>                       | NO <sup>1)</sup>                    | •                       | —                                      | —                | •                                 |
| IGZ51-20-S3+472 | 24 VDC        | •                          | •                          | NC <sup>2)</sup>                       | NO <sup>1)</sup>                    | •                       | —                                      | —                | •                                 |

<sup>1)</sup> NO = contact normally open  
<sup>2)</sup> NC = contact normally closed

## Controller

### IG502-2-E



#### Product description

The IG 502-2-E is a universal control and monitoring device for centralized lubrication in single-line and progressive lubrication systems. The compact device is equipped with a display panel for parameter settings and function monitoring. Different operating modes such as timer, counter and monitoring functions for pressure and cycle switches are programmable in their individual functions. The display panel is protected against moisture and dirt. A red LED shows faults as a collective message. Two integrated electronic counters are used for permanent operation control and failed hours, where pump could not operate properly. In both counters, saved times cannot be deleted. The working-hour meter summarizes times when supply voltage at the device is switched on. The device has its own database independent of supply voltage for saving configuration and parameters. To avoid environmental influences, it is advisable to install the device inside of a cabin.

#### Features and benefits

- Universal control and monitoring device
- Compact design
- Easy to handle operations
- Different operating modes such as timer, counter and monitoring functions
- Red LED for failure indication and cause
- Integrated counters for permanent operation, failed hours and working-hour meter show complete life cycle of system

#### Applications

- Commercial vehicles
- Construction machinery
- Agriculture

#### Technical data

|                                 |                                   |
|---------------------------------|-----------------------------------|
| Order number                    | IG502-2-E                         |
| Wire set                        | 997-000-185                       |
| Function principle              | controller                        |
| Control voltage                 | max. 12 or 24 VDC                 |
| Contact load connector M        | 5 A at 12 or 24 VDC               |
| SL-output                       | 4 W                               |
| Protection class                | IP 20 DIN 40050, plug IP 00       |
| Temperature range               | -25 to +75 °C; -13 to +167 °F     |
| Storage temperature             | -40 to +75 °C; -40 to +167 °F     |
| Fuse protection                 | max. 5 A                          |
| Adjustable pause time           | 0,1 h to 99,9 h                   |
| Adjustable pump running time    | 0,1 min to 99,9 min               |
| Adjustable pulse time           | 1 to 999                          |
| Operation hours storage         | 0 to 99999,9 h                    |
| Operation- failed hours storage | 0 to 99999,9 h                    |
| Dimensions                      | 138×65×40 mm<br>5.43×2.56×1.57 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): **951-180-002 EN**

## Controller

### LC502



#### Product description

The compact LC502 is an all-purpose controller suitable for single-line, progressive and dual-line systems. Supplied as a separate unit or already integrated in the pump, this versatile controller includes a basic power switch, motor circuit breaker (230/400 VAC types) start button and fault indicator light. The unit's user-friendly display enables input of customer-specific settings in up to seven languages (optional). Integration of the LC502, configuration of technical ratings and characteristics depend on the customer's specific application.

#### Features and benefits

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

#### Applications integrated in the pump

- Construction machinery
- Special-purpose machinery
- Commercial vehicles
- Fork lifts

#### Applications stand alone

- Special-purpose machinery
- General industry
- Cement and steel plants
- Food and beverage



#### Technical data

|                                 |                                                                          |
|---------------------------------|--------------------------------------------------------------------------|
| Order number                    | LC502                                                                    |
| Function principle              | controller                                                               |
| Operating temperature           | 0 to +60 °C; +32 to 140 °F                                               |
| Operating voltage               |                                                                          |
| 24 VDC                          | 0,16 ... 0,25 kW                                                         |
| 230 VAC                         | 0,15 ... 0,85 kW                                                         |
| 400 VAC 3-phase                 | 0,15 ... 0,85 kW                                                         |
| Operating voltage frequency     | 50 to 60 Hz                                                              |
| Electrical connectors           | 4                                                                        |
| Electrical output connectors    | 4                                                                        |
| Input voltage                   | 12 or 24 VDC                                                             |
| Protection class                | IP 54                                                                    |
| Off time (cycle)                | 8 h                                                                      |
| On time (pumping)               | 1 h                                                                      |
| Fuses                           |                                                                          |
| F1: 400 VAC and 203 VAC         | 5 × 20 mm / 4 A                                                          |
| F2: 400 VAC, 230 VAC 24 VDC     | 5 × 20 mm / 2 A                                                          |
| Cycle settings dependent on     | time, machine pulse pump revolutions                                     |
| Possible low-level controls: W1 | Wipe /dynamic                                                            |
| Possible low-level controls: W2 | Wipe /capacitive / static                                                |
|                                 | Analog                                                                   |
| Lubrication circuits            | max. 2                                                                   |
| Rotation                        | 10 (for industry and vehicle pumps) corresponds to 10 agitator rotations |
| Dimensions, for control cubicle | 400 × 400 × 600 mm<br>15.75 × 15.75 × 23.62 in                           |
| Mounting position               | vertical, cable terminals pointing downwards                             |



#### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on [SKF.com/lubrication](http://SKF.com/lubrication): **950-180-004-EN**

# Controller

## ST-1340 and ST-1440



### Product description

SKF ST-1340 and ST-1440 CPUs are microprocessor-based control centres for use in single-line lubrication systems, as well as dual-line and progressive lubrication 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
- Program status and lubrication history data are protected by a back-up battery

### 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<br>ST-1440: up to 14                                        |
| Operating voltage           | 93 to 132 VAC, 186 to 264 VAC                                                |
| Operating voltage frequency | 47 to 63 Hz                                                                  |
| Operating current           | 5,4 A/115 VAC, 2,2 A/ 230 VAC                                                |
| Control voltage             | 24 VDC, ± 10%                                                                |
| Overload protection         | automatic fuse, 6 A                                                          |
| Cable connection            | screw terminals for 2,5 mm² wires                                            |
| Protection class            | IP 65                                                                        |
| Interface                   | alphanumeric keypad and display,<br>4 × 20 characters,<br>RS-422 Modbus port |
| Dimensions:                 |                                                                              |
| ST-1340                     | 600 × 380 × 210 mm<br>23.6 × 14.9 × 8.3 in                                   |
| ST-1440                     | 600 × 600 × 210 mm<br>23.6 × 23.6 × 8.3 in                                   |
| Options                     | SMS control feature                                                          |
| Off time (cycle)            | 1 min to 999 h 59 min                                                        |
| On time (pumping)           | 0 s to 9 999 s                                                               |
| Mounting positions          | vertical                                                                     |

### ST-1340 and ST-1440

| Order number  | Designation            |
|---------------|------------------------|
| VGEV 12380695 | ST-1340 control centre |
| VGEV 12501254 | 1 channel module       |
| VGEV 12380700 | ST-1440 control centre |
| VGEV 12501254 | 4 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**

## Control unit

### ST-1240-GRAPH/-4



#### 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

#### Applications

- Large lubrication systems where dispensing of lubricant by zones or complete lubrication systems with separate pumping centres and varying lubricants are requested

#### Technical data

|                                 |                                                        |
|---------------------------------|--------------------------------------------------------|
| Function principle              | control centre                                         |
| Operating temperature           | 0 to +50 °C; +32 to 122 °F                             |
| Lubricant                       | oil and grease                                         |
| Lubricant channels              | 2; 4                                                   |
| Operating voltage               | 93 to 132 VAC, 186 to 264 VAC                          |
| Operating voltage frequency     | 47 to 63 Hz                                            |
| Operating current               | 5,4 A/115 VAC, 2,2 A/230 VAC                           |
| Control voltage                 | 24 VDC, ± 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<br>RS-422 Modbus port |
| Dimensions without cable glands | 380×300×210 mm<br>14.9×11.8×8.3 in                     |
| Mounting position               | vertical                                               |

#### ST-1240-GRAPH

| Order number    | Designation              |
|-----------------|--------------------------|
| ST-1240 GRAPH   | 2-channel control centre |
| ST-1240 GRAPH-4 | 4-channel 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](http://SKF.com/lubrication):  
**PUB LS/P8 12404 EN**

## Controller

### ST-1100i



#### Product description

SKF ST-1100i is an one-channel, microprocessor-based control centre for single-line, dual-line and progressive lubrication systems. All lubrication configurations can be set in the field by user interface. The centre controls lubrication according to the desired settings, and lubrication events can be monitored. Lubrication programming, alarm acknowledgements and lubrication event monitoring can be performed via both the control panel and the LED signals. The control panel is located inside the casing. The user interface is a three-button, six-digit display and can be used for setting the default values for the lubrication program and for turning on manual control.

#### Features and benefits

- Microprocessor-based control centre
- Simple monitoring via control panel and cover LED signals
- All lubrication configurations can be set in field by user interface
- Set values and program status at the power failure are stored in an EEPROM-memory; no battery

#### Applications

- Stand-alone machines and plants
- Construction machinery
- Mining applications

#### Technical data

Order number . . . . . ST-1100i

|                                       |                                    |
|---------------------------------------|------------------------------------|
| Function principle . . . . .          | control centre                     |
| Operating temperature . . . . .       | -20 to +60 °C; -4 to +142 °F       |
| Lubricant . . . . .                   | oil and grease                     |
| Lubricant channels . . . . .          | 1                                  |
| Operating voltage . . . . .           | 93 to 132 VAC, 186 to 264 VAC      |
| Operating voltage frequency . . . . . | 50/60 Hz                           |
| Control voltage . . . . .             | 24 VDC, ± 10%                      |
| Protection class . . . . .            | IP 65                              |
| Interface . . . . .                   | 6-digit, 3-button user interface   |
| Lubrication cycle . . . . .           | 0 min 00 s to 9 999 min            |
| Pressurization . . . . .              | 0 min 00 s to 999 min              |
| Dimensions . . . . .                  | 200×300×120 mm<br>8.66×11.8×4.7 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 LS/P8 13165 EN**

## Controller

# ST-102



### Product description

The ST-102 controller is designed for the control and monitoring of single-line, dual-line and progressive lubrication systems in vehicles with a 12 or 24 VDC power supply. It is a one-channel lubrication control centre for systems with pneumatic or electrical pumps. The ST-102 is suitable for environments with temperatures ranging from  $-40$  to  $+80$  °C ( $-40$  to  $+176$  °F) and features an IP 40 protection class. All lubrication configurations can be set in the field by the user.

### Features and benefits

- Available for 12 or 24VDC
- Suitable for operational environments with extreme temperatures
- One-button user interface
- Power failure memory

### Applications

- Vehicles
- Construction machinery
- Agriculture

### Technical data

|                          |                                       |
|--------------------------|---------------------------------------|
| Function principle       | control and monitoring device         |
| Operating temperature    | $-40$ to $+80$ °C; $-40$ to $+176$ °F |
| Power supply             | 12 and 24 VDC; (10,5 to 32 VDC)       |
| Pump output control      | max. 5 A                              |
| Protection class         | IP 30                                 |
| Self-setting fuse        | 4 A on pcb                            |
| Time, cycle settings:    |                                       |
| Max. pressurization time | 1 to 20 min                           |
| Interval time            | 5, 10...120 min                       |
| Pressurization time      | 1,2,3...10 min                        |
| Interface                | 1-button user interface, 3 LED's      |
| Input                    | 4 digital                             |
| Output                   | 4 digital                             |
| Standard                 | CE                                    |
| Dimensions               | 26×60×160 mm<br>1.02×2.36×6.3 in      |
| Mounting position        | vertical                              |

### ST-102

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



### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on [SKF.com/lubrication](http://SKF.com/lubrication):  
**6408 EN**

# Controller

## ST-102P



### Product description

The ST-102P one-channel lubrication control centre is designed for the control and monitoring of lubrication systems in 12VDC or 24VDC vehicles. It supports single-line and dual-line lubrication systems. All lubrication configurations can be set in the field by the user. The ST-102P casing has an IP 65 rating.

### Features and benefits

- Designed for control and monitoring in 12/24 VDC lubrication systems
- Reliable and durable, one-channel lubrication controller
- Supports single-line and dual-line lubrication systems
- All lubrication configurations can be set in the field by user
- IP 65 rating

### Applications

- Control of lubrication systems with pneumatic pump SKF 40PGAS and electrical pump SKF Minilube
- Small excavators
- Wheel loaders
- Delivery trucks
- Buses, vehicles

### Technical data

|                                 |                                  |
|---------------------------------|----------------------------------|
| Order number . . . . .          | <b>ST-102P</b>                   |
| Function principle . . . . .    | controller                       |
| Operating temperature . . . . . | –40 to +80 °C<br>–40 to +176 °F  |
| Operating voltage . . . . .     | 12 or 24 VDC, (10,5 to 32 VDC)   |
| Pump output control . . . . .   | max. 5 A                         |
| Protection class . . . . .      | IP 65                            |
| Self-setting fuse . . . . .     | 4 A on printed circuit board     |
| Time, cycle settings:           |                                  |
| Pressurization time . . . . .   | 1 to 20 min                      |
| Interval time . . . . .         | 5, 10...120 min                  |
| Interface . . . . .             | 1-button user interface, 3 LEDs  |
| Dimensions . . . . .            | 67×80×170 mm<br>2.64×3.14×6.7 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): **13165 EN**

## Controller

# 84501



### Product description

Model 84501 program timer is used to control the lubrication cycle frequency of air-operated, single-stroke pumps. The timer turns pump on/off at programmed intervals via a 3-way or 4-way air solenoid valve (not included) installed in the air line to the pump. It is capable of retaining memory for three hours during machine shut down or power failure. Timing is suspended during power interruptions. This feature eliminates over-lubrication due to pre-lube when machine is frequently started and stopped. Using two programmable jumper pins, four options are available with the memory and prelube feature.

### Features and benefits

- Program timer controls lubrication cycle frequency of air-operated, single-stroke pumps
- Timer turns pump on/off via solenoid air valves in programmed intervals
- Retains memory for three hours during machine shut down or power interruption
- Suspended timing during power interruptions eliminates over-lubrication due to pre-lube when machine is frequently started and stopped

### Applications

- Cement industry
- Food and beverage
- Assembly lines
- Conveyors



### Technical data

Order number . . . . . **84501**

Function principle . . . . . controller  
Operating temperature . . . . .  $-18$  to  $+54$  °C;  $0$  to  $+130$  °F  
Operating voltage . . . . . 120/230 VAC  
Operating voltage frequency . . . . . 50/60 Hz  
Switch capacity . . . . . 120 VAC: 5 A  
230 VAC: 1,5 A  
Off-time cycle . . . . . min. 20 sec; max. 24 h  
Off-time pumping . . . . . min. 10 sec; max. 1 min 24 sec  
Prelube on time . . . . . 40 sec  
Protection class . . . . . NEMA 1  
Standards . . . . . UL, CSA  
Dimensions . . . . . 173×210×125 mm  
7×8×5 in  
Mounting position . . . . . vertical

84015



Product description

Model 84015 is a 12/24 VDC-powered, solid-state controller for lubrication systems. It is microprocessor-based and can be used for automatic lubrication systems on mobile equipment or where AC power is not available. Its rugged construction with liquid- and dust-tight enclosure includes a manual push-button for remote initiation of a lubrication cycle. The controller always will start with an “off-time” period.

Features and benefits

- 12/24 VDC-powered, solid-state controller
- Microprocessor-based
- For automatic lubrication systems on mobile equipment
- Rugged construction with liquid- and dust-tight enclosure

Applications

- Construction machinery
- Delivery trucks
- Buses, vehicles

Technical data

|                                          |                              |
|------------------------------------------|------------------------------|
| Order number . . . . .                   | <b>84015</b>                 |
| Function principle . . . . .             | controller                   |
| Operating temperature . . . . .          | –18 to +55 °C; 0 to +131 °F  |
| Operating voltage . . . . .              | 24 VDC, (10–30 VDC)          |
| Operating current . . . . .              | 25 mA <sup>1)</sup>          |
| Switch capacity . . . . .                | 5 A                          |
| Off-time cycle . . . . .                 | min. 2,5 min; max. 80 min    |
| Off-time pumping . . . . .               | fixed: 75 sec                |
| Protection class . . . . .               | NEMA 12                      |
| Off-time (cycle) <sup>2)</sup> . . . . . | min. 90 sec<br>max. 80 min   |
| On-time (pumping) . . . . .              | fixed, 75 sec                |
| Dimensions . . . . .                     | 79×133×76 mm<br>3.1×5.2×3 in |
| Mounting position . . . . .              | vertical or horizontal       |

<sup>1)</sup> Less load  
<sup>2)</sup> Available selections are 2.5, 5, 10, 20, 40 or 80 min

## Controller

# 85520



### Product description

Model 85520 is a microprocessor-controlled, 120 VAC unit. It is fully programmable and can be used either as a timer or a controller. Controllers have a wider off-time range than timers and a memory switch to turn pre-lube option on or off. The controller is used to program the cycle frequency of a lubrication pump. Lubrication cycles are determined by the setting of internal switches, and the cycle times are selected to meet system requirements. During the “on” time, the air to the pump solenoid will be energized.

### Features and benefits

- Microprocessor-controlled, 120 VAC unit
- Simple adjustment via dip switches and rotary switches
- Fully programmable
- Can be operated in timer or controller mode

### Applications

- Paper converting
- Plastic processing
- Printing
- Packaging
- Metalworking
- Material handling equipment

### Technical data

|                                       |                                |
|---------------------------------------|--------------------------------|
| Order number . . . . .                | <b>85520</b>                   |
| Function principle . . . . .          | controller                     |
| Operating temperature . . . . .       | -25 to +65 °C; -13 to 150 °F   |
| Operating voltage . . . . .           | 120 VAC                        |
| Operating voltage frequency . . . . . | 50/60 Hz                       |
| Current consumption . . . . .         | 20 mA (less external load)     |
| Relay contact load . . . . .          | 120 VAC: 2 amps inductive load |
| Relay contact alarm . . . . .         | 120 VAC: 2 amps inductive load |
| Off-timecycle . . . . .               | min. 30 sec; max. 30 h         |
| Off-time pumping . . . . .            | min. 30 sec; max. 5 min        |
| Protection class . . . . .            | NEMA 12                        |
| Dimensions . . . . .                  | 125×191×89 mm<br>5×7,5×3,5 in  |
| Mounting position . . . . .           | vertical                       |

## Controller

# 85535



### Product description

Model 85535 is a microprocessor-controlled, 24 VDC unit. It is fully programmable and can be used either as a timer or a controller. Controllers have a wider off-time range than timers and a memory switch to turn pre-lube option on or off. The controller is used to program the cycle frequency of a lubrication pump. Lube cycles are determined by the setting of internal switches, and the cycle times are selected to meet system requirements. During the “on” time, the air to the pump solenoid will be energized.

### Features and benefits

- Microprocessor-controlled, 24 VDC unit
- Simple adjustment via dip switches and rotary switches
- Fully programmable
- Can be operated in timer or controller mode

### Applications

- Paper converting
- Plastic processing
- Printing
- Packaging
- Metalworking
- Material handling equipment

### Technical data

Order number . . . . . **85535**

Function principle . . . . . controller  
Operating temperature . . . . . -40 to +65 °C; -40 to +150 °F  
Operating voltage . . . . . 24 VDC; (21 to 30 VDC)  
Operating voltage frequency . . . . . 50/60 Hz  
Current consumption . . . . . 100 mA (less external load)  
Relay contact load . . . . . 30 VDC; 2 amps inductive load  
External alarm load . . . . . 30 VDC; 2 amps inductive load  
Off-time cycle . . . . . min. 30 sec; max. 30 h  
On-time pumping . . . . . min. 30 sec; max. 120 sec  
Protection class . . . . . NEMA 12  
Dimensions . . . . . 125 × 191 × 89 mm  
5 × 7.5 × 3.5 in  
Mounting position . . . . . vertical

## Controller kit

# 85525



### Product description

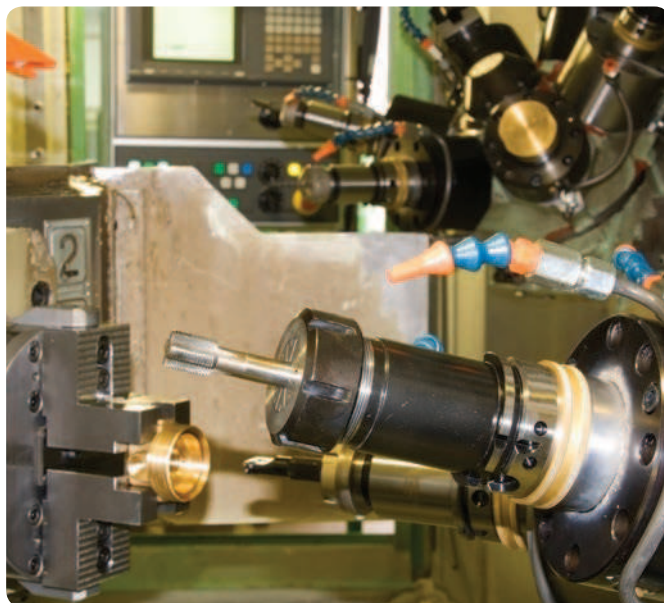
Model 85525 is a microprocessor-controlled, 120 VAC unit that includes a pressure switch and mounting brackets. It is fully programmable and can be used either as a timer or a controller. Controllers have a wider off-time range than timers and a memory switch to turn pre-lube option on or off. The controller is used to program the cycle frequency of a lubrication pump. Lubrication cycles are determined by the setting of internal switches, and the cycle times are selected to meet system requirements. During the “on” time, the air to the pump solenoid will be energized. The enclosed pressure switch senses supply line pressure rise/fall to signal system operation to controller or system alarm.

### Features and benefits

- Microprocessor-controlled, 120 VAC unit
- Includes pressure switch and brackets
- Simple setting via dip switches and rotary switches
- Fully programmable
- Can be operated in timer or controller mode

### Applications

- Paper converting
- Plastic processing
- Printing
- Packaging
- Metalworking
- Material handling equipment



### Technical data

|                                       |                                                     |
|---------------------------------------|-----------------------------------------------------|
| Order number . . . . .                | <b>85525</b>                                        |
| Function principle . . . . .          | control unit                                        |
| Operating temperature . . . . .       | –25 to +65 °C; –13 to +150 °F                       |
| Operating voltage . . . . .           | 120 VAC                                             |
| Operating voltage frequency . . . . . | 50/60 Hz                                            |
| Operating current . . . . .           | 20 mA (less external load)                          |
| Relay contact load . . . . .          | 2 amps inductive load at 120 VAC                    |
| Relay contact alarm . . . . .         | 2 amps inductive load at 120 VAC                    |
| Off-time (cycle) . . . . .            | min. 30 s, max. 30 h                                |
| On-time (pumping) . . . . .           | min. 30 s, max. 5 min                               |
| Protection class . . . . .            | NEMA 12                                             |
| Dimensions . . . . .                  | 125 × 191 × 89 mm;<br>5.0 × 7.5 × 3.5 in            |
| Mounting position . . . . .           | vertical                                            |
| Pressure switch . . . . .             | <b>69630</b>                                        |
| Protection class . . . . .            | housing and UL-listed<br>switching elements: NEMA 3 |

## Controller

### LMC 101



#### Product description

LMC 101 is a universal control and monitoring device for single-line and progressive lubrication systems. In single-line systems, pressure switches or pressure transducers can be installed at the pump and/or end of the supply line. While designed for off-the-road and mobile equipment use, the controller can be used for any low-voltage lubrication application. Timer or controller mode can be set for both systems. The device features various alarm condition settings, including cycle frequency or alarm triggers. Programming, data logging and reporting are possible, including system resets, downloads to controllers, lubrication activity, lubrication cycles and alarms. The controller must be programmed via USB connection to PC. In timer mode, the lubrication cycle ends when pre-assigned time has expired. In controller mode, the lubrication cycle ends when pressure switch, pressure transducer or piston detector actuates. System allows pressure to dissipate to end of supply line once pressure at pump is reached.

#### Features and benefits

- Various alarm condition settings including cycle frequency and alarm triggers
- Programming, data logging and reporting, including system resets, downloads to controllers, lubrication activity, lubrication cycles and alarms
- Display: LEDs, pump on and system fault (alarm)
- Controller must be programmed via USB connection to PC
- Manual lubrication push-button

#### Applications

- Off-highway vehicles
- Mobile equipment use

#### Technical data

|                                 |                                     |
|---------------------------------|-------------------------------------|
| Order number . . . . .          | <b>LMC 101</b>                      |
| Function principle . . . . .    | control unit                        |
| Voltage input . . . . .         | 12 VDC and 24 VDC -20% / +30%       |
| Current consumption . . . . .   | 60 mA (less external load)          |
| Vent relay contact . . . . .    | 20 A at 30 VDC                      |
| Pump relay contact . . . . .    | 2 A at 30 VDC                       |
| Alarm relay contact . . . . .   | 2 A at 30 VDC                       |
| Enclosure rating . . . . .      | NEMA 12                             |
| Operating temperature . . . . . | -40 to +65 °C; -40 to +150 °F       |
| Net weight . . . . .            | 0,9 kg, 2 lbs                       |
| Off-time adjustable . . . . .   | 15 sec to 99 h                      |
| On-time adjustable . . . . .    | 15 sec to 99 h                      |
| Lubrication systems . . . . .   | single-line and progressive systems |
| Enclosure size . . . . .        | 209×127×89 mm<br>8.25×5×3.50 in     |
| Mounting dimensions . . . . .   | 222×95 mm<br>8.75×3.75 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): **15625 EN**

## Controller

### EOT-1/2 664-34135-6, 664-34135-7



#### Product description

EOT-1 / EOT-2 are time controllers for lubrication pumps in single-line or progressive lubrication systems. EOT-1 has a fixed running time of 4 seconds and flexible pause time adjustments and, therefore, is suitable for chain lubrication. EOT-2 features flexible time settings. Both controllers are required if pumps without timers are used in lubrication systems or there is no customer-related request for pumps with an integrated pump controller. It also is suitable for retrofit installation. Simply set time using the red (running time) and a blue (pause time) switches and use the push-button to activate an additional lubrication cycle for easy and safe pump operation.

#### Features and benefits

- Time controller for installation in driver's cabin
- Suitable for retrofit
- Simple handling of time setting and function control

#### Applications

- Agriculture
- Chain lubrication systems

#### Technical data

|                         |                                 |
|-------------------------|---------------------------------|
| Function principle      | control unit                    |
| Supply voltage          | 12/24 VDC                       |
| Max. current draw       | ≤ 7 A                           |
| Protection class        | IP 65, SELV/PELV                |
| Operating temperature   | −25 to +70 °C; −13 to +158 °F   |
| Noise suppression       | class AVDE 0875 T11             |
| Interference resistance | DIN EN 61000-6-1                |
| Transient emissions     | DIN EN 61000-6-3                |
| Outputs                 | transistor/ no                  |
| EEPROM                  | non-dissipative storage of data |

#### EOT 1

|              |                         |
|--------------|-------------------------|
| Pause time   | min. 5 sec, max. 75 min |
| Running time | 4 sec, unvaried         |

#### EOT 2

|              |                         |
|--------------|-------------------------|
| Pause time   | min. 4 min, max. 15 h   |
| Running time | min. 8 sec, max. 30 min |

#### Factory setting

#### EOT 1

|              |        |
|--------------|--------|
| Pause time   | 15 sec |
| Running time | 4 sec  |

#### EOT 2

|              |       |
|--------------|-------|
| Pause time   | 6 min |
| Running time | 4 sec |

|            |                                         |
|------------|-----------------------------------------|
| Dimensions | 122 × 118 × 56 mm<br>4.8 × 4.6 × 2.2 in |
|------------|-----------------------------------------|

|                   |     |
|-------------------|-----|
| Mounting position | any |
|-------------------|-----|

#### EOT 1/2

| Order number | Designation |
|--------------|-------------|
| 664-34135-6  | EOT 1       |
| 664-34135-7  | EOT 2       |



#### NOTE

For further technical information, technical drawings, accessories, spare parts or product function descriptions, see the following publication available on

SKF.com/lubrication:

**951-181-005 EN**

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 six functional keys for programming, parameter setting and signalization. The user is guided through the setting menu. Also, 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

- Cement and steel industry
- Mining; stationary and mobile excavators
- Food and beverage

Technical data

Function principle . . . . . electronic controller  
Operating temperature VAC . . . . . -10 to +50 °C; +14 to +122 °F  
Operating temperature VDC . . . . . -40 to +70 °C; -40 to +158 °F  
Inputs . . . . . 10 count, short-circuit  
Outputs . . . . . 8 counts, relay outputs NO-contact  
8 A, 2 of which up to 20 A  
  
Supply voltage  
depending on model . . . . . 90-264 VAC, 24 VDC ± 20%  
Protection class . . . . . IP 64  
Dimensions . . . . . 270×170×90 mm  
10.7×6.7×3.5 in  
Mounting position . . . . . vertical

LMC 301

| Order number | Designation              |
|--------------|--------------------------|
| 86500        | LMC 301 230 AC (230 VAC) |
| 86501        | LMC 301 24 DC (24 VDC)   |

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):  
**15967 EN**

# Controller

## LMC 2



### Product description

The LMC 2 is a controller for the electronic management and monitoring of lubrication systems. It combines the advantages of a specially developed printed circuit board (PCB) and a PLC in an economical, compact unit.

### Features and benefits

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

### Applications

- Lincoln and SKF progressive systems, single-line, dual-line and multi-line 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;<br>14 to 158 °F          |
| Inputs                | max. 8 digital inputs                   |
| Outputs               | 4 relay outputs, 1 electronic           |
| Supply voltage        | depending on model:<br>230 VAC, 24 VDC  |
| Protection class      | IP 54                                   |
| Dimensions            | 200 × 120 × 90 mm<br>7.9 × 4.7 × 3.5 in |
| Mounting position     | any                                     |

### LMC2

| Order number | Designation            |
|--------------|------------------------|
| 236-10567-6  | LMC 2 230 AC (230 VAC) |
| 236-10567-5  | LMC 2 24 DC (24 VDC)   |

For use with electrically driven, 3-phase pump, a motor starter must be ordered separately.



### NOTE

For further technical information, technical drawings, accessories, spare parts or technical descriptions of functional types, see the following publication available on [SKF.com/lubrication](http://SKF.com/lubrication):

**14004 EN**

Hose connection control

HCC



Product description

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

Features and benefits

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

Applications

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



NOTE

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

Technical data

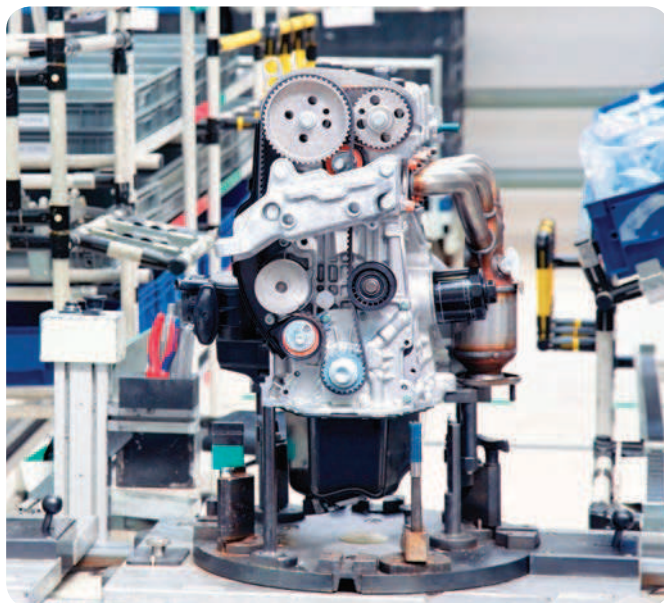
Function principle . . . . . control and monitoring device for hose connections  
Operating temperature . . . . . Isolator:  
-50 to +70 °C; -58 to +158 °F  
Controller:  
-25 to +70 °C; -13 to +158 °F  
Controller storage:  
-40 to +70 °C; -40 to +158 °F  
Power supply. . . . . 12/24 VDC  
Monitored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

HCC Hose connection control

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

Flow controller

Flow sensor



### Product description

Flow sensors keep an eye on the flow of oil from a metering point to the lubrication point, metering out a small amount of oil for only a short period of time. They are suitable for intermittent, centralized lubrication systems e. g. with piston metering devices, metering elements, injection oilers, oil and air centralized lubrication systems.

### Features and benefits

- Provide simple control
- Monitor flow of lubricant from the metering point to the lubrication point
- Meter out a small amount of oil for only a short period of time

### Applications

- Machine tools
- Automotive manufacturing
- Industrial assembly and automation



### 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): **1-1704-EN**

### Technical data

|                                         |                                                                           |
|-----------------------------------------|---------------------------------------------------------------------------|
| Ordner number . . . . .                 | <b>GS304P</b>                                                             |
| Function principle . . . . .            | flow sensor                                                               |
| Measuring principle . . . . .           | calorimetric                                                              |
| Lubricant <sup>1)</sup> . . . . .       | oil (10 to 2 000 mm <sup>2</sup> /s)                                      |
| Metering quantity . . . . .             | 0,01 - 0,6 cm <sup>3</sup> /pulse<br>0,0006 - 0,03 in <sup>3</sup> /pulse |
| Clock frequency <sup>2)</sup> . . . . . | max. 4 pulse/min                                                          |
| Operating temperature . . . . .         | +10 to 50 °C, +50 to 122 °F                                               |
| Operating pressure . . . . .            | max. 40 bar; 580 psi                                                      |
| Rated voltage . . . . .                 | 24 VDC                                                                    |
| Residual ripple . . . . .               | 10%                                                                       |
| Working range UA . . . . .              | 18 to 30 VDC                                                              |
| Max. power consumption IE . . . . .     | 25 mA                                                                     |
| Pulse output . . . . .                  | 3 s                                                                       |
| Load current IA for GS300 . . . . .     | max. 10 mA                                                                |
| for GS304 . . . . .                     | max. 500 mA per output                                                    |
| Output protection . . . . .             | short-circuit protection                                                  |
| Built-in plug . . . . .                 | circular connector with<br>M12x1 screw plug                               |
| Fluid connection . . . . .              | M 8x1 mm, port tapped for<br>solderless Ø 4 mm tube<br>connection         |
| Dimensions . . . . .                    | 95 x 50 x 20 mm<br>3.74 x 1.96 x 0.78 in                                  |
| Mounting position . . . . .             | directly upstream of lubrication point                                    |
| Vibration resistance . . . . .          | 20 g<br>(DIN / IEC 68-2-27, 10-2000 Hz)                                   |
| Impact resistance . . . . .             | 50 g<br>(DIN / IEC 68-2-27, 11 ms)                                        |

<sup>1)</sup> Sensor needs 30 sec. of warm-up time

<sup>2)</sup> The use of oils containing corrosive and/or abrasive additives may impair sensor function and possibly damage the sensor

## Accessories for single-line lubrication systems

DSA



DSD



69630



DSB1



234-10825-8



DSC2



DSC3



234-11145-3/4/5/9



## Pressure sensors

234-10330-4



234-13161-5/9



234-11272-4



DSC1



247333



# Overview of pressure sensors

## Mechanical pressure sensors with digital output signal

| Product     | Lubricant<br>oil/fluid<br>grease grease |   | Pressure ranges |             | Operating<br>temperature |             | Voltage |             | Contact type | Page |
|-------------|-----------------------------------------|---|-----------------|-------------|--------------------------|-------------|---------|-------------|--------------|------|
|             |                                         |   | bar             | psi         | °C                       | °F          | VDC     | VAC         |              |      |
| DSA         | •                                       | – | 1–30            | 14.5–435    | +10 to +60               | +50 to +140 | –       | 250         | change-over  | 164  |
| DSD         | •                                       | – | 0,5–45          | 7.25–653    | –30 to +100              | –22 to +212 | 36      | –           | change-over  | 166  |
| 69630       | •                                       | • | 19–207          | 275–3 000   | –25 to +65               | –13 to +149 | –       | 125/250/480 | NO/NC        | 170  |
| DSB         | –                                       | • | 20–300          | 290–4 350   | –25 to +80               | –13 to +176 | 30      | –           | change-over  | 168  |
| 234-10825-8 | •                                       | • | 100–400         | 1 450–5 800 | –25 to +85               | –13 to +185 | 30–250  | 125–250     | change-over  | 171  |

## Digital pressure sensors with digital output signal

| Product           | Lubricant<br>oil/fluid<br>grease grease |   | Pressure ranges |           | Operating<br>temperature |             | Voltage |     | Contact type | Page |
|-------------------|-----------------------------------------|---|-----------------|-----------|--------------------------|-------------|---------|-----|--------------|------|
|                   |                                         |   | bar             | psi       | °C                       | °F          | VDC     | VAC |              |      |
| DSC2              | •                                       | – | 0–40            | 0–580     | –10 to +80               | +14 to +176 | 18–30   | –   | change-over  | 172  |
| DSC3              | •                                       | – | 0–100           | 0–1 450   | –25 to +80               | –13 to +176 | 9–35    | –   | change-over  | 173  |
| 234-11145-3/4/5/9 | •                                       | • | 0–400           | 0–5 800   | –25 to +125              | –13 to +257 | 18–36   | –   | NO/NC        | 174  |
| 234-10330-4       | •                                       | – | 0–600           | 0–8 700   | –20 to +85               | –4 to +185  | 24      | –   | NO/NC        | 175  |
| 234-13161-5/9     | •                                       | • | 0–600           | 0–8 700   | –25 to +80               | –13 to +176 | 20–32   | –   | NO/NC        | 176  |
| 234-11272-4       | •                                       | • | 10–600          | 145–8 700 | –25 to +100              | –13 to +212 | 18–32   | –   | NO/NC        | 177  |

## Digital pressure sensors with digital and analogue output signal

| Product | Lubricant<br>oil/fluid<br>grease grease |   | Pressure ranges |       | Operating<br>temperature |             | Voltage |     | Contact type | Page |
|---------|-----------------------------------------|---|-----------------|-------|--------------------------|-------------|---------|-----|--------------|------|
|         |                                         |   | bar             | psi   | °C                       | °F          | VDC     | VAC |              |      |
| DSC1    | •                                       | – | 0–40            | 0–580 | –10 to +80               | +14 to +176 | 10–32   | –   | change-over  | 178  |

## Digital pressure transducer with analogue output signal

| Product | Lubricant<br>oil/fluid<br>grease grease |   | Pressure ranges |         | Operating<br>temperature |             | Voltage |     | Contact type | Page |
|---------|-----------------------------------------|---|-----------------|---------|--------------------------|-------------|---------|-----|--------------|------|
|         |                                         |   | bar             | psi     | °C                       | °F          | VDC     | VAC |              |      |
| 247333  | •                                       | – | 0–276           | 0–4 000 | –29 to +82               | –20 to +180 | 10–30   | –   | transducer   | 179  |

DSA



Product description

SKF pressure switches of the DSA series monitor the pressure of a centralized lubrication system to assess and help to ensure its proper function. Important monitoring parameters in an intermittently operated centralized lubrication system with single-line metering devices are pressure buildup, pressure head and pressure reduction.

Features and benefits

- Inexpensive mechanical diaphragm pressure switches
- Micro switch is designed as a change-over switch and can be used as both a normally closed contact (NC) and a normally open contact (NO)
- Switches are available for rising and falling pressures from 1 to 30 bar (14.5 to 435 psi) and have non-adjustable increments

Applications

- Machine tools
- Printing machines
- Wind
- Vehicle
- Steel and heavy industries



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): **1-1701-EN**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

Technical data

|                                     |                                                                                      |
|-------------------------------------|--------------------------------------------------------------------------------------|
| Function principle                  | pressure switch                                                                      |
| Lubricant                           | oil and fluid grease NLGI 000, 00, 0<br>oiled compressed air                         |
| Operating temperature               | +10 to 60 °C; +50 to 140 °F                                                          |
| Operating pressure <sup>1)</sup>    | max. 45 bar; max. 650 psi                                                            |
| Switching pressure range            | 1 to 30 bar; 14.5 to 435 psi                                                         |
| Switch type                         | micro switch                                                                         |
| Contact type                        | change-over                                                                          |
| Contact rating                      | max. 125 VA                                                                          |
| Switch current                      | min. 2 mA, max. 300 mA                                                               |
| Switching rate                      | max. 30 per min                                                                      |
| Switching voltage                   | max. 250 VAC / 30 VDC                                                                |
| Electrical connection <sup>2)</sup> | DIN EN 175301-803, plug                                                              |
| Connection fitting                  | ø 6 mm; connector DIN 3862,<br>for solderless pipe union,<br>plug connector for pipe |
| Materials:                          |                                                                                      |
| Housing                             | PA6 6GF30                                                                            |
| Contact                             | AuAg25Pt6                                                                            |
| Membrane                            | FKM (FPM)                                                                            |
| Protection class with cable box     | IP 65                                                                                |
| Safety class                        | II                                                                                   |
| Dimensions                          | min. 76×120×41 mm<br>min. 3.0×4.7×1.6 in<br>max. 83×129×41 mm<br>max. 3.3×5.1×1.6 in |
| Mounting position                   | any                                                                                  |

<sup>1)</sup> A pressure-regulating valve must be installed in the system to prevent operating pressure from exceeding the permissible level  
<sup>2)</sup> M 12x1 circular plug, only for design with electrical connection center

## Pressure sensor

### DSA

#### Order number configurator

**D S A 1 - [ ] [ ] [ ] W - [ ] [ ] [ ] A**

Product series **DS**

Pressure switch type **A**

Switching direction

**S** = switch on increasing pressure  
**F** = switch on decreasing pressure

Rated switching pressure

**01** = 1 bar  
**02** = 2 bar  
**03** = 3 bar  
**05** = 5 bar  
**08** = 8 bar  
**12** = 12 bar  
**20** = 20 bar  
**25** = 25 bar  
**30** = 30 bar

Type of contact

**W** = change-over

Pressure port

**1** = DIN 3862, Ø 6 mm for solderless pipe union  
**2** = plug connector for pipe Ø 6 mm

Position of electrical connection

**M** = middle  
**R** = right  
**L** = left

Electrical connection

**1** = DIN EN 175301-803 A (DIN plug)  
**2** = M12×1 circular plug (only for design with electrical connection in center)

Switching voltage, max.

**A** = 250 VAC, 30 VDC

Pressure sensor

DSD



Product description

DSD sensors are single, mechanical-diaphragm pressure switches. They are used for pressure monitoring and are dependent upon the mechanical design of resulting pressure and preloaded spring force of the pressure spring. Under pressure, a pressure plunger carries the contact washer and moves it to the opposing contact and closes the electrical circuit. If the pressure is reduced by the amount of hysteresis, the switch opens again. On an NC contact, contacts are made in the opposite way. In single-line systems, it can be integrated into metering devices at the end of the lubrication line.

Features and benefits

- Available for a pressure rating from 0 to 45 bar in fixed increments
- Electrical connection is established via screwed contacts, tab connectors, circular connectors or rectangular plug connectors
- Pressure monitoring, dependent upon the mechanical design of resulting pressure and preloaded spring force of the pressure spring
- Mechanical switch can be used as both a normally closed contact (NC) and a normally open contact (NO)

Applications

- Machine tools, printing machines, vehicles



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): **1-1701-EN**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

Technical data

|                           |                                                                                           |
|---------------------------|-------------------------------------------------------------------------------------------|
| Function principle        | pressure switch                                                                           |
| Lubricant                 | oil and fluid grease NLGI 000, 00, 0                                                      |
| Operating temperature     | –30 to +100 °C<br>–22 to +212 °F                                                          |
| Operating pressure        | static:<br>max. 300 bar; max. 4 350 psi<br>dynamic:<br>max. 150 bar; max. 2 175 psi       |
| Switch type               | mechanical diaphragm pressure switch                                                      |
| Contact type              | No, NC (change-over with rectangular plug connector only)                                 |
| Switching pressure        | 0,5 to 45 bar; 7.25 to 653 psi                                                            |
| Contact rating            | max. 18 VA, 90 VA, 100 VA                                                                 |
| Switching voltage/current | 36 VDC/2.5 A/0,5 A<br>250 VAC/5 A                                                         |
| Electrical connection     | M3 or M 12×1 or<br>DIN EN 175301-803-A                                                    |
| Pressure port             | M10×1 taper                                                                               |
| Materials:                |                                                                                           |
| Contact                   | silver plated                                                                             |
| Housing                   | steel, galvanized, Cr6-free                                                               |
| Membrane                  | NBR                                                                                       |
| Protection class          | IP 65                                                                                     |
| Dimensions                | depending on model, ø × h<br>27,7 × 50 mm; 1.09 × 1.97 in<br>31,2 × 85 mm; 1.23 × 3.35 in |
| Mounting position         | any                                                                                       |

## Pressure sensor

### DSD

#### Order number configurator

**D S D - A - N - A 1**

Product series **DS**

Pressure switch type **D**

Manufacturer marking

- 1 = marking 1 (only with electrical connection 1)
- 3 = marking 3 (only with electrical connection 2–4)

Type **A**

Rated switching pressure

- 0005 = 0,5 bar, 7 *psi*
- 0020 = 2 bar, 29 *psi*
- 0030 = 3 bar, 44 *psi*
- 0080 = 8 bar, 116 *psi*
- 0120 = 12 bar, 174 *psi*
- 0200 = 20 bar, 290 *psi*
- 0280 = 28 bar, 405 *psi*
- 0450 = 45 bar, 653 *psi*

**N** = Membrane material NBR

Type of contact

- NC** = closed (only with electrical connection 1–3 available)
- NO** = open (only with electrical connection 1–3 available)
- CO** = change-over (only with electrical connection 4 available)

Contact material

- A** = silver contacts

Pipe thread

- 1 = M10×1 taper

Electrical connection

- 1 = screwed contacts M3
- 2 = tab connector 6,3×0,8/screwed contacts M3
- 3 = circular connector M12×1
- 4 = rectangular plug connector DIN EN 175301-803-A (only as change-over (CO) available)

## Pressure sensor

### DSB1



#### Product description

SKF pressure switches of product series DSB are mechanical piston pressure switches that are specially designed for use with NLGI 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 (pressurization point between grease and actuating piston). This reliably prevents the same grease from being pressurized repeatedly, which could cause grease bleeding (separation of the soap skeleton of the grease from the stored oil). Pressure switches of product series DSB are designed for corrosivity category C3 or C5M per ISO 12944.

#### Features and benefits

- Adaptable to VR lubricant metering devices due to same hole pattern, wall distance and connections
- Micro switch is designed as a change-over switch; can be used as both a normally closed contact (NC) and a normally open contact (NO)
- Available for rising and falling pressures from 20 to 300 bar in 10-bar increments
- No grease bleeding at measuring point  
Pressure switch permits continuous lubricant flow without dead space
- Suitable for use with unstable greases with a tendency to separate into soap and oil under high pressure

#### Applications

- Machine tools
- Printing machines
- Wind
- Vehicle
- Steel and heavy industries



#### Technical data

|                          |                                                                                                                     |
|--------------------------|---------------------------------------------------------------------------------------------------------------------|
| Function principle       | pressure switch                                                                                                     |
| Lubricant                | grease NLGI 1, 2                                                                                                    |
| Operating temperature    | -25 to +80 °C; -13 to +176 °F                                                                                       |
| Operating pressure       | max. 300 bar; 4 350 psi                                                                                             |
| Operating voltage        | max. 30 VAC; max. 36 VDC                                                                                            |
| Operating current        | max. 50 mA, min. 1 mA                                                                                               |
| Breaking capacity        | max. 1,2 VA                                                                                                         |
| Mechanical service life  | 10 <sup>5</sup> switching cycles                                                                                    |
| Pressure port            | G 1/4 (F)                                                                                                           |
| Electrical connection    | connector socket 3+PE:<br>DIN EN 175 301-803 A<br>cable:<br>ø 4.5 to 7 mm; ø 0.177 to 0.275 in                      |
| Switch type              | micro switch                                                                                                        |
| Contact type             | change-over                                                                                                         |
| Switching pressure range | 20 to 300 bar; 290 to 4 350 psi;<br>increasing and decreasing                                                       |
| Materials:               |                                                                                                                     |
| Housing                  | aluminum, anodized                                                                                                  |
| Contact                  | silver alloy, hard gold plating                                                                                     |
| Protection class         | IP 65; DIN EN 60529                                                                                                 |
| Dimensions               | depending on model<br>min. 60×105×76 mm;<br>max. 150×153×76 mm;<br>min. 2.36×4.13×2.99 in<br>max. 5.90×6.02×2.99 in |
| Mounting position        | any                                                                                                                 |
| Certification            | Germanischer Lloyd (GL)                                                                                             |



#### 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): **1-1701-EN**

3D data and product configuration:  
[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

## Pressure sensor

### DSB1

#### Order number configurator

|   |   |   |   |   |  |  |  |  |  |  |  |   |   |  |   |   |   |
|---|---|---|---|---|--|--|--|--|--|--|--|---|---|--|---|---|---|
| D | S | B | 1 | - |  |  |  |  |  |  |  | - | 1 |  | - | 0 | 1 |
|---|---|---|---|---|--|--|--|--|--|--|--|---|---|--|---|---|---|

Product series **DS**

Pressure switch type **B**

Pressure switch I

**S** = switch on increasing pressure  
**F** = switch on decreasing pressure

Rated switching pressure I

**02** = 20 bar; 290 *psi*  
**03** = 30 bar; 435 *psi*  
**04** = 40 bar; 580 *psi*  
... (in 10-bar increments up to)  
**30** = 300 bar; 4 350 *psi*

Pressure switch II

**0** = no pressure switch  
**S** = switch on increasing pressure  
**F** = switch on decreasing pressure

Rated switching pressure II

**00** = no pressure switch  
**02** = 20 bar; 290 *psi*  
**03** = 30 bar; 435 *psi*  
**04** = 40 bar; 580 *psi*  
... (in 10-bar increments up to)  
**30** = 300 bar; 4 350 *psi*

Measurement connector

**A** = measurement connector for pressure gauge M16×2  
**G** = with pressure gauge 250 bar; 3 625 *psi*  
**H** = with pressure gauge 400 bar; 5 800 *psi*  
**X** = no measurement connector

Electrical connection

**1** = DIN EN 175301-803 A (DIN plug)

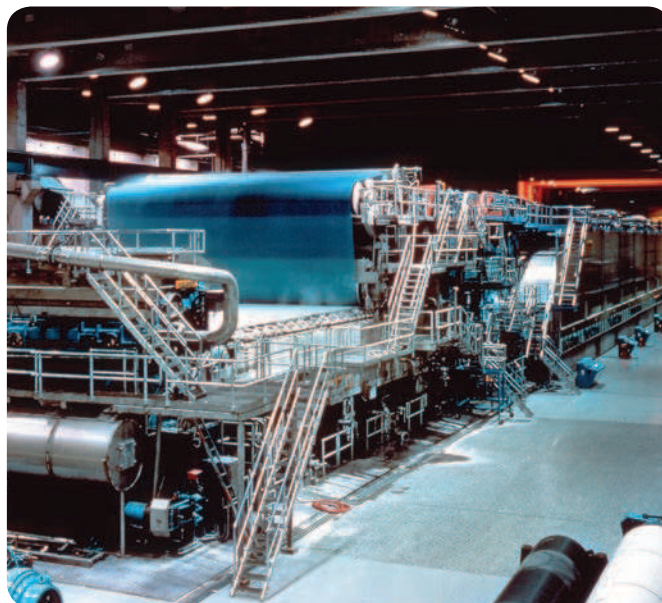
Design

**A** = standard, based on corrosivity category C3 per ISO 12944, certified by Germanischer Lloyd  
**B** = based on corrosivity category C5M per ISO 12944, certified by Germanischer Lloyd, suitable for offshore applications

Design key

**01** = basic design (with thread G 1/4)

# 69630



## Product description

Pressure switch 69630 senses supply line pressure when pressure is rising or falling. One single contact signals system operation to controller or system alarm.

## Features and benefits

- Simple pressure switch
- Adjustable pressure ranges for decreasing and increasing pressures to match system requirements
- Use as single pressure switch or in a system with controller and solenoid valve

## Applications

- Paper converting
- Plastic processing
- Printing
- Packaging
- Metalworking
- Material handling equipment

## Technical data

|                                 |                                                                           |
|---------------------------------|---------------------------------------------------------------------------|
| Order number . . . . .          | <b>69630</b>                                                              |
| Function principle . . . . .    | pressure switch                                                           |
| Operating temperature . . . . . | –25 to +65 °C;<br>–13 to +150 °F                                          |
| Switching capacity . . . . .    | 125, 250 or 480 VAC: 10 A<br>6 VDC: 15 A<br>24 VDC: 5 A<br>250 VDC: 0,3 A |
| Operating pressure:             |                                                                           |
| decreasing . . . . .            | max. 190 bar<br>max. 2 775 psi                                            |
| increasing . . . . .            | max. 207 bar<br>max. 3 000 psi                                            |
| Pressure port . . . . .         | 1/4 NPTF (F)                                                              |
| Electrical connection . . . . . | 27/32 in hole for 1/2 in; conduit<br>connector                            |
| Protection class . . . . .      | housing and UL-listed switching<br>elements: NEMA 3                       |
| Dimensions . . . . .            | 57×146 mm; 2.25×5.75 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): **442832**

## Pressure sensor

# 234-10825-8



### Product description

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

### Features and benefits

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

### Applications

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

### Technical data

|                             |                                            |
|-----------------------------|--------------------------------------------|
| Order number.....           | <b>234-10825-8</b>                         |
| Function principle .....    | rotatable pressure switch                  |
| Lubricant.....              | oil and fluid grease NLGI 000, 00          |
| Operating temperature ..... | -25 to +85 °C<br>-40 to +185 °F            |
| Operating pressure .....    | max. 400 bar<br>max. 5 800 psi             |
| Switching pressure .....    | 100 to 400 bar<br>1 450 to 5 800 psi       |
| Adjustability.....          | under pressure                             |
| Operating voltage .....     | adjustable:<br>30 to 250 VDC; 125; 250 VAC |
| Load resistance .....       | 0,25-5 A                                   |
| Load inductive.....         | 0,25-5 A                                   |
| Switch type .....           | micro switch with spring-loaded piston     |
| Contact type .....          | change-over                                |
| Contact electrical.....     | plug connector DIN72585<br>ø 2,5 mm        |
| Material:                   |                                            |
| Housing.....                | zinc-coated steel, UR                      |
| Contact electrical.....     | electroplated silver gilt                  |
| Protection class .....      | IP 67, IP 6K9K                             |
| Dimensions .....            | 30×74 mm; 1.18×2.91 in                     |
| Mounting position .....     | any, but preferably vertical               |



- Machine tools
- Printing machines
- Wind
- Vehicle
- Steel and heavy industries

## PUB LS/P1 17046 EN

## Pressure sensor

### DSC3



#### Product description

DSC3 sensors are electronic pressure switches with an integrated digital display for relative pressure measurement. They are used primarily for pressure monitoring. Depending on the design, they also can assume control functions. Pressure switch points, pressure indication and the switching logic can be configured and programmed easily. The display is a pivoted, four-digit, digital display. DSC3 can be integrated into lubrication line. It operates in switching point, hysteresis, and window function modes. The switching mode can be programmed separately for each output.

#### Features and benefits

- Available for rising and falling pressures from 0 to 100 bar in 0.5-bar increments
- Micro switch is designed as a change-over switch; can be used as both a normally closed contact (NC) and a normally open contact (NO)
- Easy to install into a lubrication line
- Pivoted, four-digit, digital display
- Can operate in switching point, hysteresis and window function modes
- Programming lock to protect against unauthorized adjustment of drive
- Switching displayed using LEDs

#### Applications

- Machine tools
- Printing machines
- Wind
- Vehicle
- Steel and heavy industries



#### Technical data

|                                 |                                      |
|---------------------------------|--------------------------------------|
| Order number . . . . .          | <b>DSC3-A100K-3A2B</b>               |
| Function principle . . . . .    | pressure switch                      |
| Lubricant . . . . .             | oil and fluid grease: 000-0          |
| Operating temperature . . . . . | -25 to +80 °C<br>-13 to +176 °F      |
| Operating pressure . . . . .    | max. 300 bar<br>4 350 psi            |
| Switch type . . . . .           | micro switch                         |
| Contact type . . . . .          | change-over                          |
| Operating voltage . . . . .     | 9 to 35 VDC                          |
| Power consumption . . . . .     | max. 35 mA                           |
| Output signal . . . . .         | 2, PNP transistor stages             |
| Vibration resistance . . . . .  | 20 g (5-500 Hz)                      |
| Service life . . . . .          | 100×10 <sup>6</sup> pressure changes |
| Material housing . . . . .      | plastic                              |
| Electrical connection . . . . . | M 12×1, 4-pin                        |
| Pressure port . . . . .         | via t connector, 2×G 1/8 (F)         |
| Protection class . . . . .      | IP 67                                |
| Dimensions . . . . .            | 42×115×40 mm<br>1.65×4.53×1.57 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): **1-1701-EN**

3D data and product configuration:

[skf-lubrication.partcommunity.com/3d-cad-models/](http://skf-lubrication.partcommunity.com/3d-cad-models/)

# Pressure sensor

234-11145-3, -4, -5, -9



## Product description

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

## Features and benefits

- Menu-guided adjustments via 2 push buttons
- Indication of status of outputs
- Pre-adjustable hysteresis
- Programmable parameters
- Password protected
- Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection are provided
- Compact housing with 320 (degree symbol) pivot
- For standard and superior applications

## Applications

- Marine
- Off-shore applications
- Wind
- Vehicle
- Steel and heavy industries

## Technical data

|                                |                                                    |
|--------------------------------|----------------------------------------------------|
| Order number.....              | <b>234-11145-...</b>                               |
| Function principle .....       | digital pressure switch                            |
| Lubricant. ....                | oil and fluid grease NLGI 000-00, grease NLGI 1,2  |
| Operating temperature .....    | -25 to +125 °C; -134 to +185 °F                    |
| Operating pressure .....       | max. 600 bar; max. 8 700 psi                       |
|                                | 234-11145-5:                                       |
|                                | max. 400 bar; max. 5 800 psi                       |
| Operating voltage .....        | 18-36 VDC                                          |
| Operating current .....        | max. 500 mA                                        |
| Current draw .....             | ≤ 50 mA                                            |
| Output signal. ....            | 1 or 2×PNP; 1 analog, digital, NO or NC adjustable |
| Switching frequency .....      | max. 200 Hz                                        |
| Switching point adjusted ..... | 234-11145-5: 175 bar; 2 465 psi                    |
| Material:                      |                                                    |
| Housing .....                  | PA6.6, stainless steel, FKM                        |
| Measuring cell .....           | ceramics Al2O3                                     |
| Apapter .....                  | stainless steel                                    |
| Electrical connection .....    | M12×1; 4 pin plug                                  |
| Pressure port .....            | G 1/4 or G 3/8; DIN3852                            |
| Protection class .....         | IP 67; EC 60529                                    |
| Dimensions .....               | min. 34×94×49 mm                                   |
|                                | min. 1.34×3.7×1.9 in                               |
|                                | max. 34×134,5×49 mm                                |
|                                | max. 1.34×5.3×1.9 in                               |
| Mounting position .....        | any                                                |

## Order number

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

## Pressure sensor

234-10330-4



### Product description

This electronic pressure switch has a 4-digit, digital display, two switching outputs and an analog output signal for switching point and hysteresis. Both can be adjusted via push buttons. The water-proofed housing is pivotable up to 290° for optimal readability of digital display. The pressure switch is virtually maintenance free.

### Features and benefits

- Menu-guided adjustments via 3 push buttons indicating status of outputs
- Peak value storage
- Adjustable hysteresis and absorption
- Programmable parameters
- Password protected
- Reverse polarity and overvoltage protected; short-circuit proof

### Applications

- Machine tools
- Printing machines
- Wind
- Vehicles
- Steel and heavy industries



### Technical data

Order number..... **234-10330-4**

Function principle ..... digital pressure switch  
Lubricant..... oil, fluid grease NLGI 00, 000, 0, grease NLGI 1, 2  
Operating temperature ..... -20 to +85 °C ; -4 to +185 °F  
Operating pressure ..... max. 1 000 bar; max. 14 500 psi  
Analog output signal ..... 0/4-20 mA, apparent ohmic resistance ≤ 500 Ω  
Operating voltage ..... 15-30 VDC, nominal 24 VDC  
Signal output type..... PNP-Transistor  
Switching current ..... max. 0,7 A  
Current consumption..... < 100 mA  
Switching cycle..... ≥ 20 Mio.  
Electrical connection ..... M12×1; 5 pin  
Pressure port ..... G 1/4 (BSPP)

#### Materials:

Housing..... stainless steel 1.4404, NBR  
Control panel..... zinc die casting, surface treated

Protection class..... IP 67  
Dimensions..... 39,5 × 105,5 × 46,3 mm  
1.55 × 4.15 × 1.82 in  
Mounting position..... any

## Pressure sensor

# 234-13161-...



### Product description

This compact, maintenance-free electronic pressure switch has a 3-digit, digital display, one switching output and an analog output signal for switching point and hysteresis. Both can be adjusted via push buttons. For optimum adaptation to a particular application, the instrument has many additional adjustment parameters, e.g. switching delay times, NO and NC function of the outputs.

### Features and benefits

- Integrated pressure sensor with thin-film strain gauge on stainless steel membrane
- 3-digit, digital display
- Compact and robust design
- Independently adjustable switch-back hysteresis and switching point
- Reverse polarity protection of the supply voltage, excess voltage, override and short-circuit protection are provided
- Password protected
- Directly installable via G 1/4 adapter into pressure line
- Many useful additional functions

### Applications

- Marine
- Off-shore applications
- Wind
- Vehicle
- Steel and heavy industries



### Technical data

|                       |                                                                                              |
|-----------------------|----------------------------------------------------------------------------------------------|
| Function principle    | digital pressure switch                                                                      |
| Lubricant             | oil and fluid grease NLGI 0-000, grease NLGI 1,2                                             |
| Operating temperature | -25 to +80 °C; -13 to +175 °F                                                                |
| Operating pressure    | 234-13161-5:<br>max. 600 bar; max. 8 700 psi<br>234-13161-9:<br>max. 250 bar; max. 3 625 psi |
| Operating voltage     | 20-32 VDC                                                                                    |
| Current consumption   | approx. 100 mA<br>(without switching outlet)                                                 |
| Electrical connection | plug DIN 43650 (3pin+ PE) or<br>plug 4-pin binder 714, M18×1                                 |
| Protection class      | IP 65                                                                                        |
| Dimensions            | 35×119×48 mm<br>1.37×4.68×1.89 in                                                            |
| Mounting position     | any                                                                                          |

### Order number

| Order number | Designation                                 |
|--------------|---------------------------------------------|
| 234-13161-5  | 1×PNP, 4-20 MA, G 1/4, with digital display |
| 234-13161-9  | 1×PNP, 4-20 MA, G 1/4, with digital display |

## Pressure sensor

234-11272-4



### Product description

The electronic pressure switch with internal stainless steel diaphragm, suits for pressure control in automatic single-line lubrication systems. It has a 4 digit 7 segment digital display, two solid state contacts or two solid state contacts plus one analog output for switching point and hysteresis. All contacts can be adjusted via push buttons. The pressure switch is virtually maintenance free.

### Features and benefits

- Alphanumeric 4-digit 7 segment LED display
- Microprocessor controlled
- Self monitoring with error display
- Scalable analog output
- Programmable parameters via keypad
- Adjustable password protection
- Revers polarity and overvoltage protected, short-circuit proof max 60 VDC temporary
- Rugged stainless steel construction
- Vibration and shock-proof, longterm stability

### Applications

- Machine tools
- Chemical technics
- Wind, vehicle, steel and heavy industries
- Automation



### Technical data

|                             |                                                       |
|-----------------------------|-------------------------------------------------------|
| Order number.....           | 234-11272-4                                           |
| Function principal .....    | electrically operated dual digital pressure switch    |
| Lubricant .....             | oil and fluid grease NLGI 00, 000, 0 grease NLGI 1, 2 |
| Operating temperature ..... | -25 to +100 °C; -13 to +212 °F                        |
| Operating pressure .....    | 10 to 600 bar; 145 to 8702 psi                        |
| Operating elements.....     | 3 easy-response push buttons                          |
| Protection class.....       | IP 65 with plug                                       |
| Pressure port .....         | G 1/4 M                                               |
| Electrical connection ..... | M12x1; for 4 pin or 5 pin plug                        |
| Current output.....         | 4-20 mA, apparent ohmic resistance 600 Ω at 24 VDC    |
| Power supply.....           | 18-32 VDC reversed polarity protected (SELV, PELV)    |
| Digital display .....       | 4-digit 7 segment LED display                         |
| Power consumption.....      | approx. 50 mA at 24 VDC without load                  |
| Materials:                  |                                                       |
| Wetted parts .....          | stainless steel 1.4301                                |
| Electronics housing .....   | aluminum die-cast                                     |
| Seals .....                 | FKM                                                   |
| Dimensions .....            | 75 x 130 x 55 mm<br>2.95 x 5.12 x 2.16 in             |
| Mounting position .....     | vertical                                              |



## PUB LS/P1 17046 EN

## Pressure sensor

# 247333



### Product description

The 24733 analog pressure transducer signals actual system pressure to a monitoring controller. It can be installed in end of single-line metering device manifolds or by the use of adapters. Comes with 1,8 m (72 in), shielded, shielded 24-gauge connecting wire. Maximum length of wire between transducer and monitor is 9,1 m (30 ft).

### Features and benefits

- Analog pressure transducer signals actual system pressure from 0 bar to 276 bar (0 to 4 000 psi)
- Complete unit with 1,8 m (72 in), shielded, 24-gauge connecting wire
- Installable on end of single-line metering device manifolds or by the use of adapters
- Sturdy, easy-to-handle product
- Cost-saving alternative to high-end sensors

### Applications

- Metalworking
- Material handling equipment
- Off-road applications
- Mobile equipment use
- Food and beverage



### Technical data

|                          |                                                                |
|--------------------------|----------------------------------------------------------------|
| Order number             | 247333                                                         |
| Function principal       | analog pressure transducer                                     |
| Lubricant                | oil and fluid grease:<br>NLGI 000, 00, 0;<br>grease: NLGI 1, 2 |
| Switching pressure range | 0 to 275 bar<br>0 to 4 000 psi                                 |
| Accuracy                 | ±1%                                                            |
| Operating pressure       | max. 515 bar<br>max. 7 500 psi                                 |
| Operating temperature    | -29 to +82 °C<br>-20 to +180 °F                                |
| Electrical input         | 10 to 30 VDC                                                   |
| Voltage output           | 1-6 VDC                                                        |
| Offset                   | 1 VDC                                                          |
| Enclosure                | NEMA 4X Rating                                                 |
| Pressure port            | 1/4 NPT (m)                                                    |
| Electrical connection    | 24 AWG 360° PVC shielded UL<br>approved                        |
| Materials                | stainless steel                                                |
| Dimensions               | 16 × 76,2 mm;<br>0.625 × 3 in                                  |
| Mounting position        | any                                                            |

## Accessories for single-line lubrication systems

35024 ...



350283



253-14076-X



525-320-XX-1



161-110-031



161-140-050



# Solenoid valves

# Overview of solenoid valves

## Solenoid valves

| Product            | Type    | Operating pressure max. |            | Operating temperature |             | Voltage |         | Page |
|--------------------|---------|-------------------------|------------|-----------------------|-------------|---------|---------|------|
|                    |         | bar                     | psi        | °C                    | °F          | VDC     | VAC     |      |
| <b>350241</b>      | 3-way   | 10,3                    | 150        | -18 to +60            | 0 to 140    | –       | 110–240 | 182  |
| <b>350242</b>      | 3-way   | 10,3                    | 150        | -18 to +60            | 0 to 140    | –       | 110–240 | 182  |
| <b>350244</b>      | 4-way   | 10,3                    | 150        | -18 to +49            | 0 to 120    | –       | 110–240 | 182  |
| <b>350245</b>      | 4-way   | 10,3                    | 150        | -18 to +49            | 0 to 120    | –       | 110–240 | 182  |
| <b>350282</b>      | 3-way   | 10,3                    | 150        | -18 to +60            | 0 to 140    | 12      | –       | 183  |
| <b>350283</b>      | 3-way   | 10,3                    | 150        | -18 to +60            | 0 to 140    | 24      | –       | 183  |
| <b>253-14076-6</b> | 3/2-way | 0,5–16                  | 7.3–232    | -10 to +55            | 14 to 131   | –       | 110     | 184  |
| <b>253-14076-7</b> | 3/2-way | 0,5–16                  | 7.3–232    | -10 to +55            | 14 to 131   | –       | 230     | 184  |
| <b>525-32085-1</b> | 3/2-way | 0–400                   | 0–5 800    | -20 to +60            | -4 to +140  | 24      | –       | 185  |
| <b>525-32086-1</b> | 3/2-way | 0–400                   | 0–5 800    | -20 to +60            | -4 to +140  | –       | 110     | 185  |
| <b>525-32087-1</b> | 3/2-way | 0–400                   | 0–5 800    | -20 to +60            | -4 to +140  | –       | 230     | 185  |
| <b>161-110-031</b> | 2/2-way | max. 500                | max. 7 250 | -25 to +80            | -13 to +176 | 24      | –       | 186  |
| <b>161-140-050</b> | 4/2-way | max. 320                | max. 4 350 | -25 to +80            | -13 to +176 | 24      | 220     | 187  |

# Solenoid valve

## 35024 ...



### Product description

Electric solenoid-operated air valves 350241 to 350245 operate as 3-way or 4-way solenoid air valves. They are used to operate single-stroke or reciprocating-stroke, air-controlled pumps in single-line systems. Timer- and pressure-controlled air is supplied to the pumps, activating air-powered forward strokes and spring- (3-way) or air-powered (4-way) return strokes. In doing so, pumps discharge lubricant to the connected metering devices.

### Features and benefits

- Timer- and pressure-controlled pump operation
- Use as 3-way or 4-way solenoid valves
- For operation of single-stroke or reciprocating-stroke pumps
- Flexible usage selectable on electrical VAC power requirements

### Applications

- Mining and mineral processing
- Heavy machines



### Technical data

Function principle  
 Model 350241, 350242 . . . . . 3-way, solenoid-operated air valve  
 Model 350244, 350245 . . . . . 4-way, solenoid-operated air valve

Operating temperature  
 350241, 350242 . . . . . -18 to +60 °C, 0 to +140 °F  
 350244, 350245 . . . . . -18 to +49 °C, 0 to +120 °F  
 Operating pressure . . . . . max. 10 bar; 150 psi  
 Operating voltage . . . . . 110–240 VAC  
 Current . . . . . 8,4 A

Current inrush  
 Model 350241, 350244 . . . . . 0,11 A  
 Model 350242, 350245 . . . . . 0,055 A

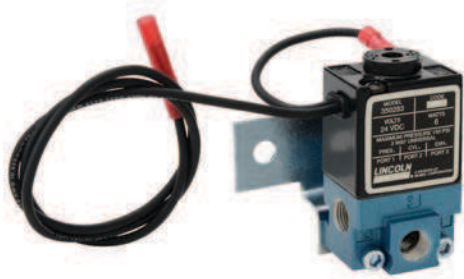
Current holding  
 Model 350241, 350244 . . . . . 0,7 A  
 Model 350242, 350245 . . . . . 0,35 A  
 Air inlet/outlet . . . . . 1/4 NPT (F)  
 Conduit connection . . . . . 1/2 NPS (F)  
 Mounting position . . . . . any

### Order number

| Order number  | Operating voltage                      | Type  |
|---------------|----------------------------------------|-------|
| <b>350241</b> | 110 VAC, 50 Hz, 120 VAC, 60 Hz, 8,4 VA | 3-way |
| <b>350242</b> | 220 VAC, 50 Hz, 240 VAC, 60 Hz, 8,4 VA | 3-way |
| <b>350244</b> | 110 VAC, 50 Hz, 120 VAC, 60 Hz, 8,4 VA | 4-way |
| <b>350245</b> | 220 VAC, 50 Hz, 240 VAC, 60 Hz, 8,4 VA | 4-way |

## Solenoid valve

# 350282, 350283



### Product description

Electric solenoid-operated air valves 350282 and 350283 operate as DC 3-way solenoid air valves. They are used to operate single-stroke, air-controlled pumps in single-line systems. Timer- and pressure-controlled air is supplied to the pumps, activating air-powered forward strokes and spring- (3-way) return strokes. In doing so, pumps discharge lubricant to the connected metering devices.

### Features and benefits

- Timer- and pressure-controlled pump operation
- Use as 3-way solenoid valves
- For operation of single-stroke pumps
- Flexible usage selectable on electrical 12 or 24 VDC power requirements

### Applications

- Mining and mineral processing
- Heavy machines



### Technical data

|                                 |                             |
|---------------------------------|-----------------------------|
| Order number . . . . .          | <b>350282, 350283</b>       |
| Function principle . . . . .    | 3-way solenoid air valve    |
| Voltage supply:                 |                             |
| 350282. . . . .                 | 12 VDC, 6 VA                |
| 350283. . . . .                 | 24VDC, 6 VA                 |
| Operating temperature . . . . . | -18 to +60 °C, 0 to +140 °F |
| Operating pressure . . . . .    | max. 10 bar; 150 psi        |
| Air inlet/outlet . . . . .      | 1/8 NPT (F)                 |
| Cv factor . . . . .             | 0.18                        |
| 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): **442832**

# Solenoid valve

## 253-14076-X



### Product description

Pumps in single-line systems can be supplied and actuated with compressed air via servo-controlled, 3/2-way piston valves (magnetic valve). For function and operation of the valve, a minimum differential pressure of 0,5 bar is requested. The valve is equipped with a control for initiation and check of function. Currentless, the valve is open to outlet A. It has a smooth-running servo piston. A 3/2-way pilot valve (tilting armature valve) provides safe and reliable operation.

### Features and benefits

- Simple to install; no extra parts required
- Service friendly manual control of function
- Medium, separated pilot valve for higher operational safety
- Ground-optimized piston design for low switching pressure
- Power-saving pulse inductor

### Applications

- Conveyors, transportation systems
- Chain lubrication
- Spray systems



### 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): **W-115-EN-1212**



### Technical data

|                       |                                              |
|-----------------------|----------------------------------------------|
| Function principle    | 3/2-way solenoid air valve with servo piston |
| Initial state         | outlet A open                                |
| Operating temperature | -10 to +55 °C<br>+14 to 131 °F               |
| Operating pressure    | 0,5–16 bar;<br>7,3–232 psi                   |
| Supply voltage        |                                              |
| 253-14076-6           | 110 VAC, 50 Hz                               |
| 253-14076-7           | 230 VAC, 50–60 Hz                            |
| Power consumption     | 8 W                                          |
| Protection class      | IP 65                                        |
| Air inlet             | G 1/2                                        |
| Air return connection | G 3/4                                        |
| Nominal width         | 12 mm; 8.35 in, socket                       |
| Materials             | brass, NBR                                   |
| Output connection     | socket for cable ø 7 mm<br>ø 0.28 in         |
| Dimensions            | 179,5×76×33 mm<br>7.06×3×1.3 in              |
| Mounting position     | any, especially impulse upward               |

### Solenoid valves 253-1XXXX-X series

| Order number | Type          | Operating voltage | Connection thread BSPP (F) |
|--------------|---------------|-------------------|----------------------------|
| 253-14076-6  | 3/2-way valve | 110-120 VAC       | G 1/2                      |
| 253-14076-7  | 3/2-way valve | 230 VAC           | G 1/2                      |

## Solenoid valve

### 525-320 ...-1



#### Product description

3/2-way solenoid valves are suitable to supply lubricant in different lubrication circuits and also are used as release valves. Each lubrication circuit can be connected to one pump outlet by switching off or switching on separately. Thereby, the pressure inlet is connected either to one or to the other circuit. Solenoid valves are equipped with a dry magnetic rotor and a conical seat valve. In their initial state, the valves always are open to the return line and are activated by a return spring. The current switching positions remain as long as current is switched on. Solenoid valves are switchable and resistant to compression in both flow directions.

#### Features and benefits

- Suitable to divide lubricant in different lubrication circuits on different time sequences
- Equipped with a dry magnetic rotor and a conical seat valve
- Switchable and resistant to compression in both flow directions

#### Applications

- Construction machinery
- Wind turbines
- Mining



#### 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): **W-115-EN-1212**



#### Technical data

|                       |                                                                    |
|-----------------------|--------------------------------------------------------------------|
| Function principle    | 3/2-way solenoid valve                                             |
| Initial state         | outlet B to R is open                                              |
| Lubricant             | oil, fluid grease and grease<br>NLGI 0, 1, 2                       |
| Operating temperature | -20 to +60 °C, -4 to +140 °F                                       |
| Operating pressure    | 0-400 bar; 0-5 800 psi                                             |
| Flow rate             | max. 2 400 cm <sup>3</sup> /min<br>max. 146.5 in <sup>3</sup> /min |
| Supply voltage        | 24 VDC, 110 VAC, 50 Hz,<br>230 VAC, 50-60 Hz                       |
| Current draw          | 0,83 A; 0,2 A; 0,1 A                                               |
| Rated power           | 20 W                                                               |
| Pressure connection   | G 3/8                                                              |
| Protection class      | IP 54                                                              |
| Isolation class       | F                                                                  |
| Materials             | steel, aluminum                                                    |
| Dimensions            | 147 × 50 × 45 mm<br>5.78 × 1.96 × 1.77 in                          |
| Mounting position     | any                                                                |

#### Solenoid valves 525-320XX-1 series

| Order number | Type          | Operating voltage | Connection thread BSPP (F) |
|--------------|---------------|-------------------|----------------------------|
| 525-32085-1  | 3/2-way valve | 24 VDC            | G 3/8                      |
| 525-32086-1  | 3/2-way valve | 110 VAC           | G 3/8                      |
| 525-32087-1  | 3/2-way valve | 230 VAC           | G 3/8                      |

# Solenoid valve

161-110-031



## Product description

The directional valves are used to control the flow of lubricants, e.g. to divide up a central lubrication system into a number of lubrication circuits (zoned actuation) or to switch between circulating and intermittently operated lubrication circuits. Valves for a maximum pressure of up to 45 bar can be used for single-line lubrication systems with metering devices. Valves for a pressure range of up to 300 or 500 bar also are suitable for progressive systems.

## Features and benefits

- Directional valves for oil with a low or high effective viscosity and greases up to NLGI Grade 2
- 2-, 4- or 5-way valve switching functions selectable for zoned actuations
- For single-line systems with sectional supplying of lubricants dependent upon different times and quantities
- Manual action possible

## Applications

- Paper industry
- Steel industry
- Heavy industry



## Technical data

|                                          |                                     |
|------------------------------------------|-------------------------------------|
| Order number . . . . .                   | <b>161-110-031</b>                  |
| Function principle . . . . .             | 2/2-way solenoid valve              |
| Lubricant. . . . .                       | oil and grease up to NLGI 2         |
| Operating temperatures:                  |                                     |
| Oil, 4–1 500 mm/s <sup>2</sup> . . . . . | –40 to +80 °C; –40 to +176 °F       |
| Grease, 700 mbar . . . . .               | –25 to +80 °C; –13 to +176 °F       |
| Operating pressure . . . . .             | max. 500 bar,<br>max. 7 250 psi     |
| Hydraulic connector. . . . .             | G <sup>1</sup> / <sub>4</sub>       |
| Materials . . . . .                      | aluminum                            |
| Supply voltage. . . . .                  | 24 VDC                              |
| Rated current . . . . .                  | 0,67 A                              |
| Rated power . . . . .                    | 16 W, 5 W                           |
| Electrical connection . . . . .          | DIN EN175301-803                    |
| Protection class . . . . .               | IP 65 with plug                     |
| Dimensions . . . . .                     | 146,5×55×45 mm<br>5.77×2.17×1.77 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): **1-1703-EN**

## Solenoid valve

# 161-140-050



### Product description

These directional valves are used to control the flow of lubricants, e.g. to divide up a central lubrication system into a number of lubrication circuits (zoned actuation) or to switch between circulating and intermittently operated lubrication circuits. Valves for a maximum pressure of up to 45 bar can be used for single-line lubrication systems with metering devices. Valves for a pressure range of up to 300 or 500 bar also are suitable for progressive systems.

### Features and benefits

- Directional valves for oil with a low or high effective viscosity and greases up to NLGI Grade 2
- 2-, 4- or 5-way valve switching functions selectable for zoned actuations
- For single-line systems with sectional supplying of lubricants dependent upon different times and quantities
- Manual action possible

### Applications

- Paper industry
- Steel industry
- Heavy industry



### Technical data

|                                |                             |
|--------------------------------|-----------------------------|
| Order number                   | <b>161-140-050</b>          |
| Function principle             | 4/2-way valve               |
| Lubricant                      | oil and grease up to NLGI 2 |
| Valve, basic position          | sliding, open P to A        |
| Operating temperatures:        |                             |
| oil, 4-1 500 mm/s <sup>2</sup> | -40 to +80 °C               |
|                                | -40 to +176 °F              |
| grease, 700 mbar               | -25 to +80 °C               |
|                                | -13 to +176 °F              |
| Operating pressure             | max. 320 bar                |
|                                | max. 4 350 psi              |
| Hydraulic connector            | base plate G 1/4            |
| Materials                      | aluminum                    |
| Supply voltage                 | DC and AC                   |
| Rated current                  | 1,33 A at 24 VDC;           |
|                                | 0,17 A at 220 VAC, 50 Hz    |
| Rated power                    | 16 W, 5 W                   |
| Electrical connection          | DIN EN175301-803            |
| Protection class               | IP 65 with plug             |
| Dimensions                     | 148×58×45 mm                |
|                                | 5.83×2.28×1.77 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): **1-1703-EN**

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