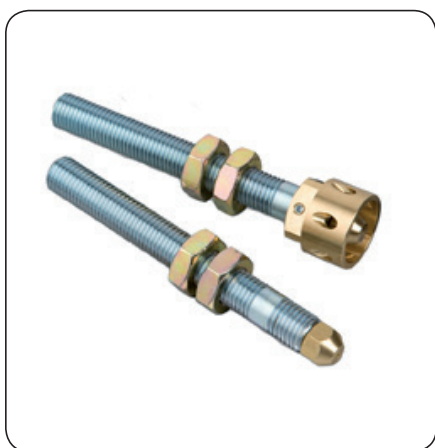


## SKF EasyRail System Components

# Product Series 112, PF, PER, LCG2

For Fluid Grease and Grease

For use in SKF EasyRail Centralized Lubrication Systems



### Wheel flange lubrication and top of rail conditioning systems for

- High-speed trains
- Regional and commuter trains
- Locomotives
- Underground and tram vehicles

### Main advantages

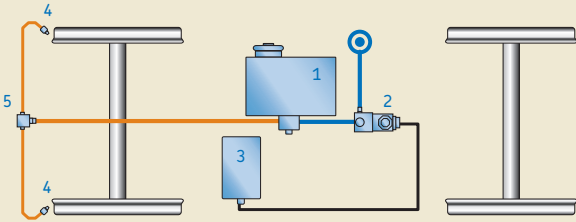
- Efficient technology with intelligent control systems
- Lower operating cost and maintenance expenditures
- Ecologically sustainable operations



# SKF EasyRail wheel flange lubrication systems (WFL) and top of rail conditioning systems (TOR)

(WFL = wheel flange lubrication, TOR = top of rail conditioning)

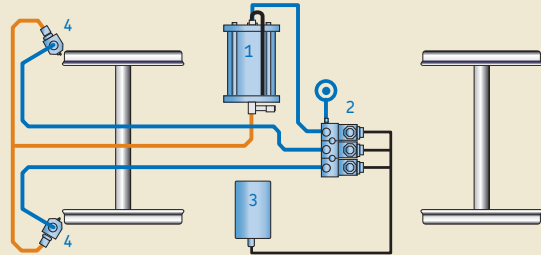
SKF EasyRail Compact (WFL)



**Components**

- 1 Piston pump unit with reservoir
- 2 Valve block
- 3 Control unit with curve sensor
- 4 Spray nozzle
- 5 Flow divider

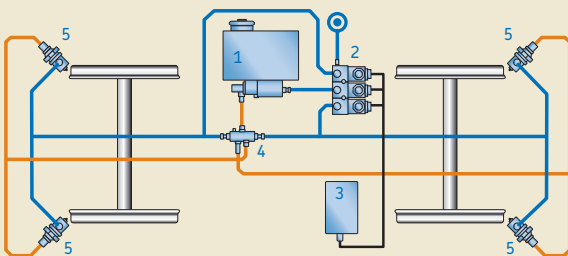
SKF EasyRail Low Pressure (WFL)



**Components**

- 1 Pressurized reservoir
- 2 Valve block
- 3 Control unit with curve sensor
- 4 Metering nozzles

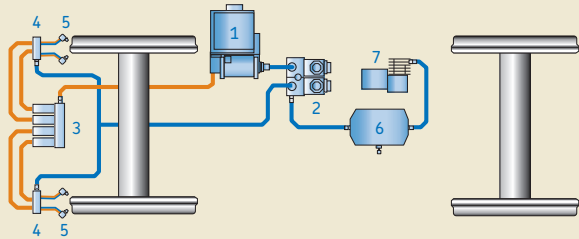
SKF EasyRail High Pressure (WFL)



**Components**

- 1 Piston pump with reservoir
- 2 Valve block
- 3 Control unit with curve sensor
- 4 Lubricant control valve
- 5 Metering nozzles

SKF EasyRail Compressor\* (WFL)

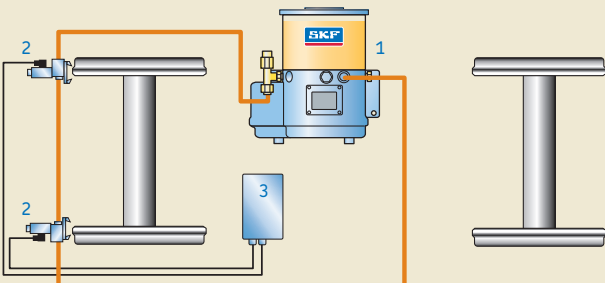


**Components**

- 1 Piston pump with reservoir
- 2 Valve block
- 3 Lubricant distributor
- 4 Mixing valve
- 5 Spray nozzle
- 6 Pressure storage
- 7 Compressor

\* detaillierte Systeminformationen auf Anfrage

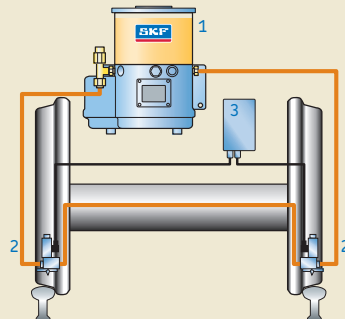
SKF EasyRail Airless (WFL)



**Components**

- 1 Pump unit with lubricant reservoir
- 2 Pump with spray nozzle
- 3 Control unit with curve sensor

SKF EasyRail Airless (TOR)



**Components**

- 1 Pump unit with lubricant reservoir
- 2 Pump with spray nozzle
- 3 Control unit with curve sensor

# SKF EasyRail system components

## Table of content

SKF EasyRail Systems	2
Product selector	3
Control units with curve sensor	4–5
Pump units / reservoirs	6–12
Valves	13–16
Flow divider	17
Spray nozzles	18–20
Accessories	20–21

### CAUTION

For all products and systems described in this brochure, apply the important product usage information on the back cover.

### Product selector

Product	SKF lubrication system					Application						Page
	SKF EasyRail Compact	SKF EasyRail Low Pressure	SKF EasyRail High Pressure	SKF EasyRail Airless (TOR)	SKF EasyRail Airless (WFL)	TRAMs	Metros	Regional trains	Commuter trains	High-speed trains	Locomotives	
Control units with curve sensor												
LCG2-A	•	•	•	•	•		•	•	•	•	•	4
LCG2-B	•	•	•				•	•	•	•	•	5
Pump units / reservoirs												
112-508-051	•							•	•		•	6
112-508-052			•				•	•	•			7
PF-100-21			•				•	•	•	•	•	8
BF4.5 / BF6-S3		•					•	•	•		•	9
MP 50 / 100 / 150 / 200 / 400	•							•	•		•	10
KFG				•	•	•	•					11
PER				•	•	•	•					12
Valves												
SF10			•				•	•	•			13
221-196... 2/2-way valves	•						•	•	•			14
221-296... 3/2-way valves		•	•				•	•	•			15
STG12			•				•	•	•	•	•	16
STG13			•				•	•	•	•	•	16
Flow divider												
SV-8	•							•	•		•	17
SV-84	•							•	•		•	17
Spray nozzles												
SP8-2			•							•	•	18
SP8-4			•							•	•	18
SP8-5			•							•	•	18
SP9-2		•					•	•	•			19
169-000-400	•							•	•			20
169-000-410	•							•	•			20
Accessories												
Hoses SLH	•	•	•	•	•	•	•	•	•	•	•	20
Refill pump 169-000-224	•	•	•	•	•	•	•	•	•	•	•	21
Micro filter 213-808-10	•	•	•	•	•	•	•	•	•	•	•	21

# Control unit with curve sensor

## LCG2-A



### Order code

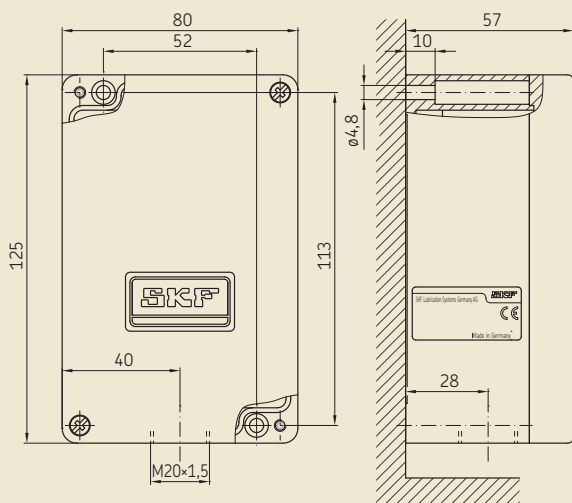
**LCG2 - A** - **000** + **924**

Software version  
(see table)

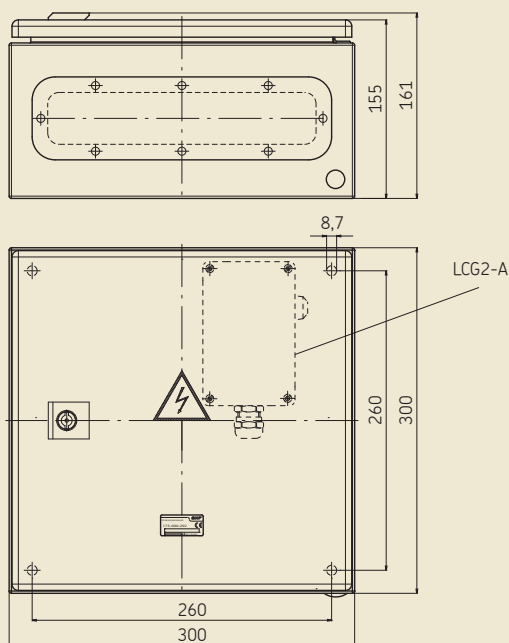
### Key for software version

System	Curve-dependent spraying	
	-outside curve	-both sides
SKF EasyRail Compact	-	<b>03</b>
SKF EasyRail Low Pressure	<b>01</b>	<b>02</b>
SKF EasyRail High Pressure	<b>01</b>	<b>02</b>
SKF EasyRail Airless	-	<b>04</b>

### LCG2-A04-000-924



### LCG2 (SKF EasyRail Airless version)



### Technical data

Order No. . . . . see order code

#### Housing

Material . . . . . aluminum, powder-coated  
Type of enclosure to EN 60 529/10.91. . . IP 65  
Weight . . . . . 0,50 kg

#### Ambient temperature

Class . . . . . T1  
Ambient temperature . . . . . -25 to +70 °C

#### Electrical connection

Rated operating voltage . . . . . 24 V DC  
Operating voltage tolerance . . . . . -30%, +25%  
Closed-circuit power consumption  
(without output load) . . . . . max. 75 mA  
Clock-pulse spaces . . . . . 1,5; 3; 4,5; 6 sec.  
Spray time . . . . . 1,5 sec

#### Curve sensor

Detection threshold adustable in 15 stages from 0,5 %/s to 1,9 %/s

#### Time-dependent operation

Spray period . . . . . 10 to 244 sec. in 15 stages

#### Distance-dependent operation

Input pulses . . . . . 500 to 123,000 in 15 st.

#### Inputs

FG. . . . . spray enable  
VR . . . . . direction of travel  
P . . . . . distance pulses:  
visually separate input  
external press button for  
spray tests  
DK . . . . .

#### 2 valve outputs

Max. output current  
(only in intermittent operation). . . . . 5 A  
Max. output load  
(only in intermittent operation). . . . . 120 W  
Short-circuit protection . . . . . yes  
Overload protection . . . . . yes

# Control unit with curve sensor

## LCG2-B



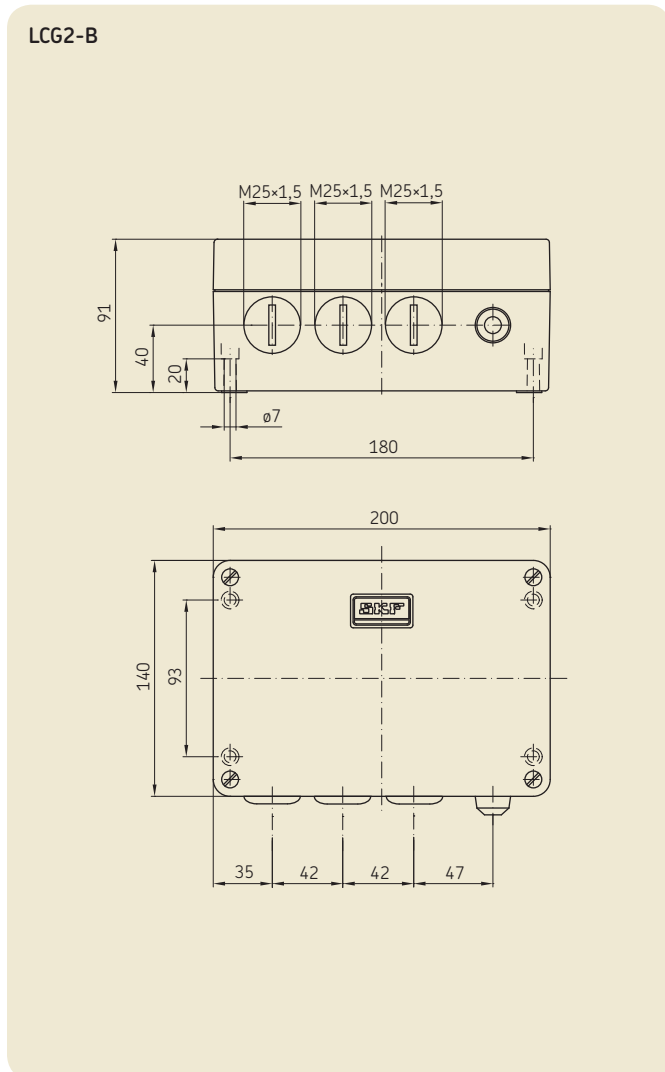
### Order code

**L C G 2 - B** - **0 0 0** + **9 0 2**

Software version  
(see table)

### Key for software version

System	Curve-dependent spraying	
	-outside curve	-both sides
SKF EasyRail Compact	-	<b>03</b>
SKF EasyRail Low Pressure	<b>01</b>	<b>02</b>
SKF EasyRail High Pressure	<b>01</b>	<b>02</b>
SKF EasyRail Airless	-	-



### Technical data

**Order No.** . . . . . see order code

#### Housing

Material . . . . . aluminum, powder-coated  
Type of enclosure to EN 60 529/10.91. . . . . IP 65  
Weight . . . . . 1,84 kg

#### Ambient temperature

Class . . . . . T1  
Ambient temperature . . . . . -25 to +70 °C

#### Electrical connection

Rated operating voltage . . . . . 72 V DC to 110 V DC  
Operating range . . . . . 50,4 V DC to 137,5 V DC  
Rated power input (without output load) . . . . . approx. 8 W  
Clock-pulse spaces . . . . . 1,5; 3; 4,5; 6 sec.  
Spray time . . . . . 1,5 sec

#### Curve sensor

Detection threshold adjustable in 15 stages from 0,5 %/s to 1,9 %/s

#### Time-dependent operation

Spray period . . . . . 10 to 244 sec. in 15 stages

#### Distance-dependent operation

Input pulses . . . . . 500 to 123,000 in 15 st.

#### Inputs

FG . . . . . spray enable  
VR . . . . . direction of travel  
P . . . . . distance pulses:  
visually separate input  
DK . . . . . external press button for  
spray tests

#### 2 valve outputs

Max. output current  
(only in intermittent operation). . . . . 0,3 A  
Max. output load  
(only in intermittent operation). . . . . 32 W  
Short-circuit protection . . . . . yes  
Overload protection . . . . . yes

# Pump units/reservoirs

## 112-508-051 – Pneumatically actuated metering pump with reservoir

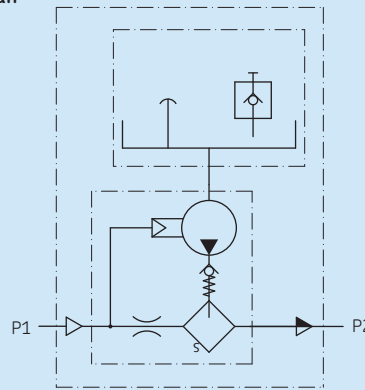


### Technical data

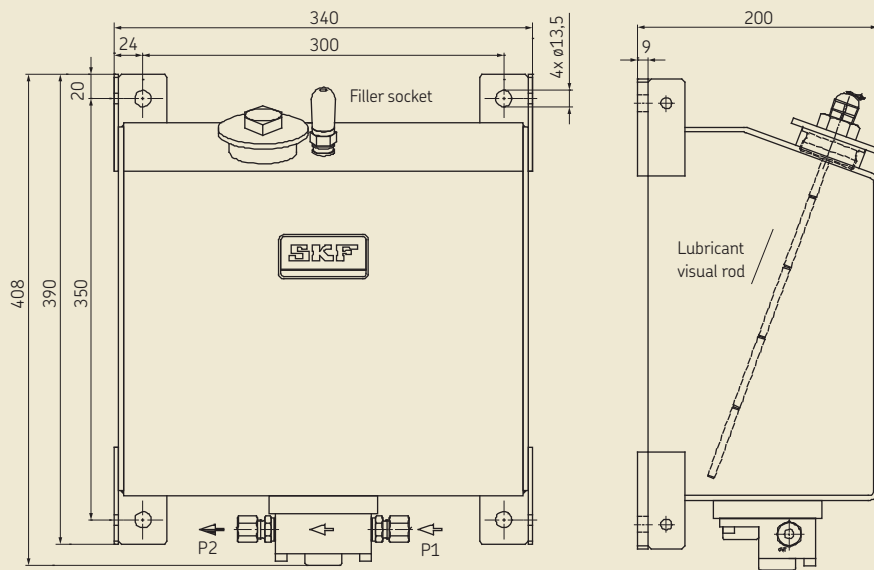
Order No. . . . . .	<b>112-508-051</b>
Reservoir capacity . . . . .	11 litre
Number of outlets . . . . .	1
Output volume <sup>1)</sup> . . . . .	0,05 cm <sup>3</sup> /spraying pulse
Operating pressure . . . . .	5–10 bar
Ambient temperature . . . . .	–25 to +80 °C
Lubricant . . . . .	oil or fluid grease, NLGI grade 000, 00

<sup>1)</sup> 0,1; 0,2 or 0,4 cm<sup>3</sup>/spraying pulse on request

### Hydraulic plan



### 112-508-051



P1 = air line from compressed air network  
P2 = main line of system

Inlet and outlet ports for 8 mm diam. tubing to DIN 2353

# Pump units/reservoirs

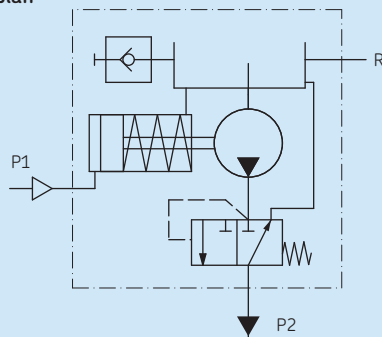
## 112-508-052 – Pneumatically actuated piston pump with reservoir



### Technical data

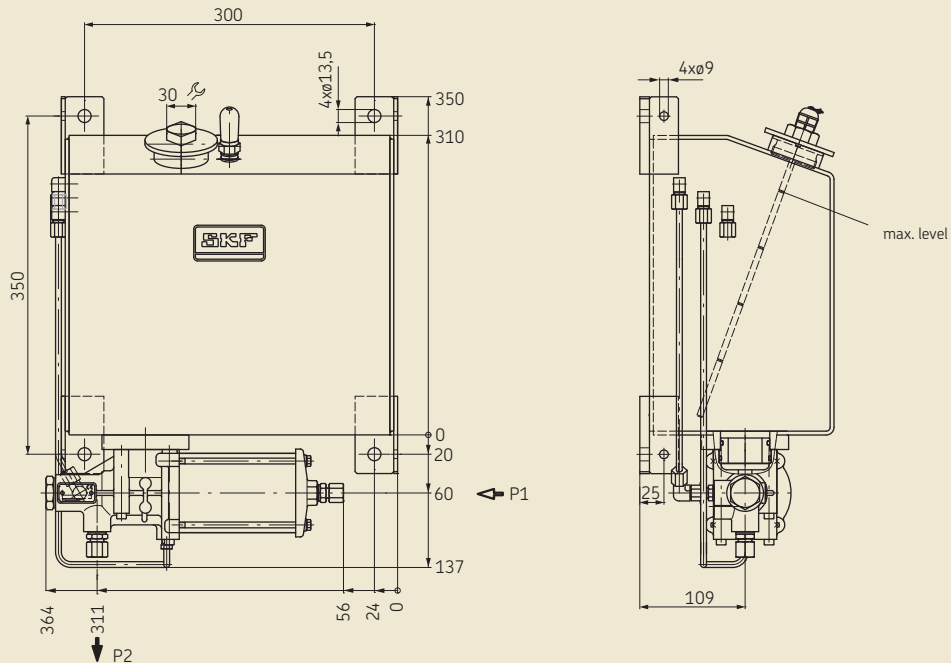
Order No. . . . . .	<b>112-508-052</b>
Reservoir capacity . . . . .	11 litre
Number of outlets . . . . .	1
Output volume . . . . .	12 cm <sup>3</sup> /stroke
Operating pressure (P2) . . . . .	60–100 bar
Actuating pressure (P1) . . . . .	6–10 bar
Ambient temperature . . . . .	-25 to +80 °C
Lubricant . . . . .	oil or fluid grease, NLGI grade 000, 00

### Hydraulic plan



- 1) P1 = Pressure Air-port for cutting sleeve screw acc. to DIN 2353 for tube ø8 mm
- 2) P2 = Pressure port for cutting sleeve screw acc. to DIN2353 für tube ø10 mm

### 112-508-052



P1 = air line from compressed air network  
P2 = main line of system

# Pump units/reservoirs

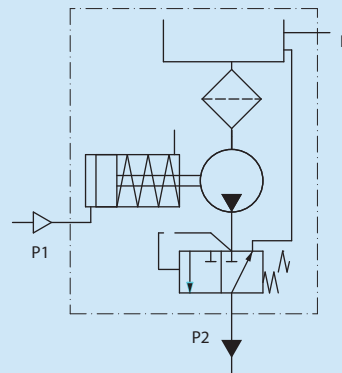
## PF-100-21 – Pneumatically actuated piston pump



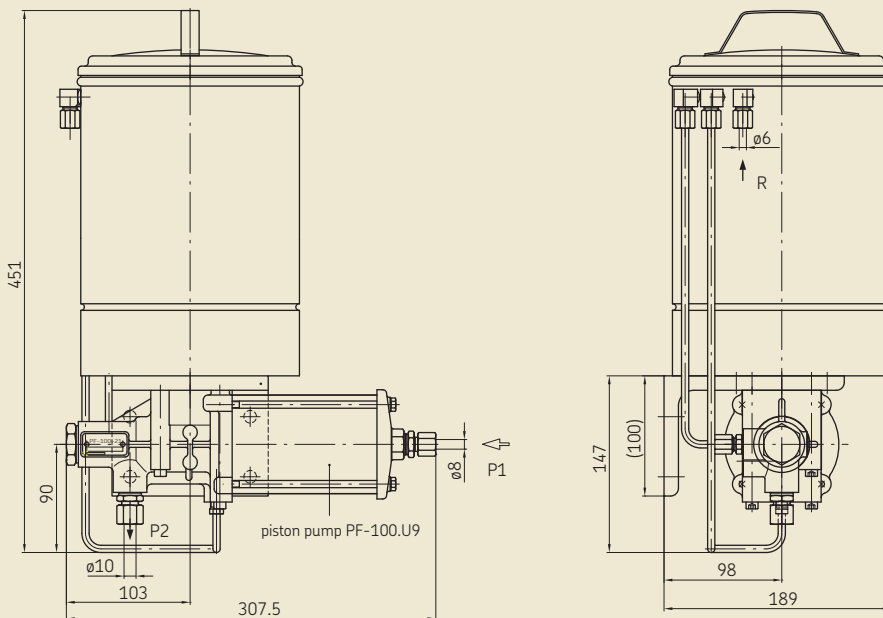
### Technical data

Order No. . . . . .	PF-100-21
Reservoir capacity . . . . .	5 litre
Lubricant . . . . .	fluid grease NLGI grade 00, 000
Number of outlets . . . . .	1
Output volume . . . . .	12 cm <sup>3</sup> /stroke
Operating pressure (P2) . . . . .	60–100 bar
Actuating pressure (P1) . . . . .	6–10 bar
Ambient temperature . . . . .	–25 to +80 °C

### Hydraulic plan



### PF-100-21

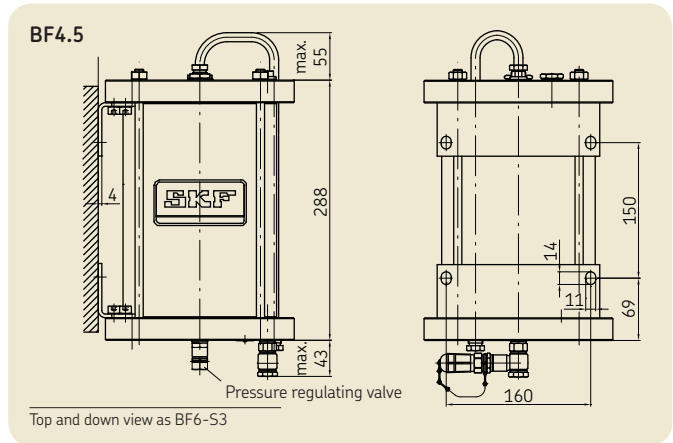


P1 = compressed air  
 P2 = lubricant  
 R = return range lubricant



# Pump units/reservoirs

## BF 4.5, BF6-S3 – Pneumatically actuated lubricant reservoir



**Technical data**

Order No. . . . . . **BF4.5 / BF6-S3**

Reservoir capacity . . . . . 4,5 / 6 litre

Material . . . . . metal

Lubricant . . . . . oil, fluid grease up to NLGI grade 000, 00

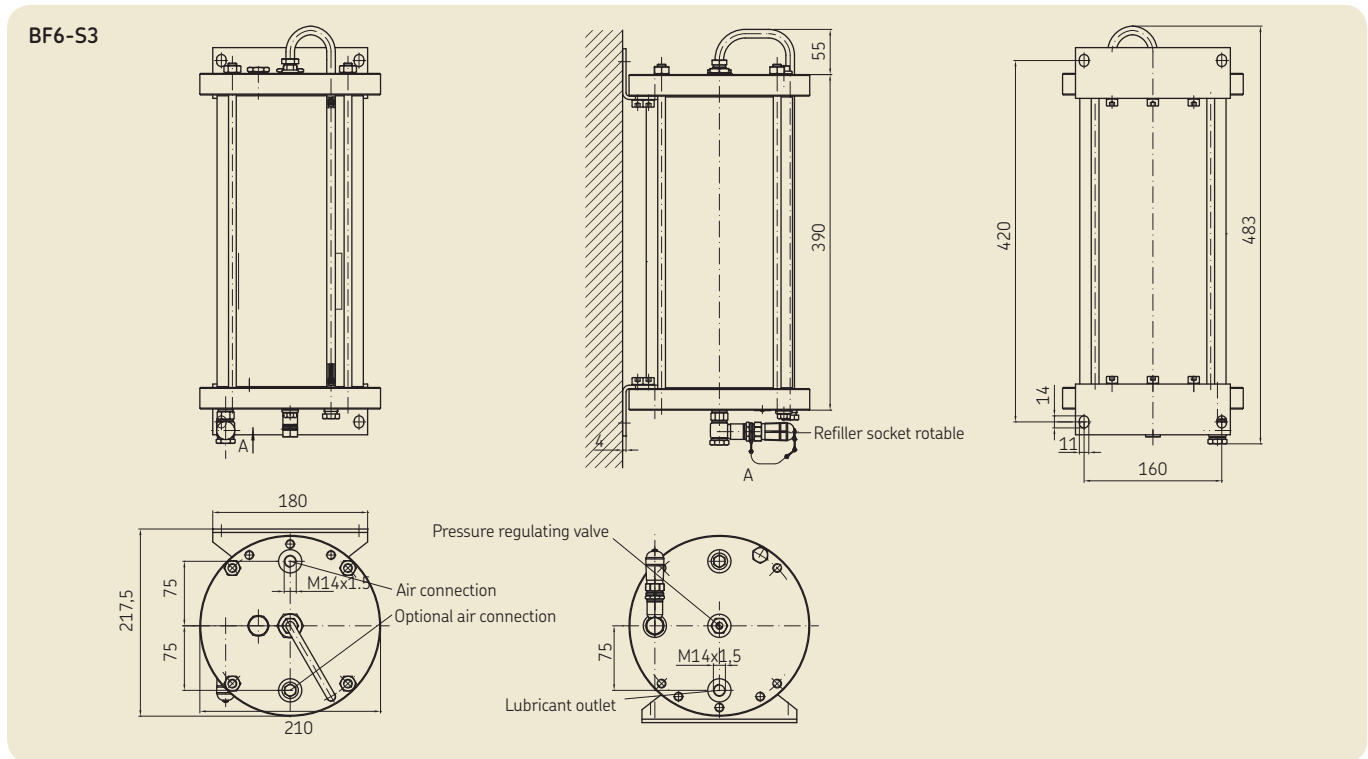
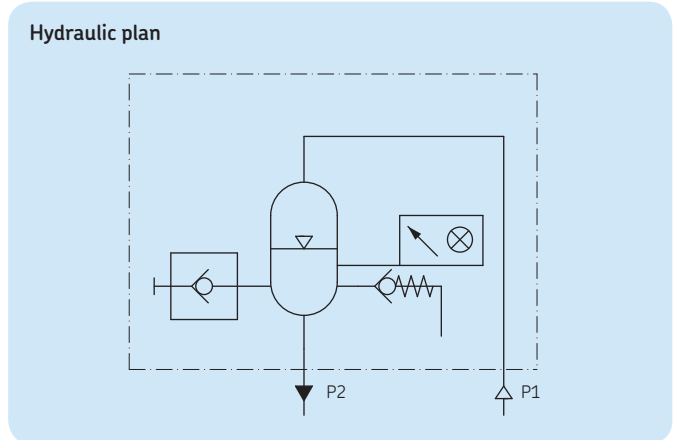
Filling level display . . . . . analog, by indicator

Operating pressure . . . . . max. 10 / 8 bar

Pressure limiting valve . . . . . 16<sub>-2</sub> bar (overflow preventer)

Ambient temperature . . . . . -25 to +80 °C

Mounting position . . . . . any, preferably as shown



PUB\_LS/P2\_13230\_EN · 1-8092-EN

# Pump units/reservoirs

## MP 50 / 100 / 150 / 200 / 400 – Pneumatically actuated metering pump

MP 50 pump unit without reservoir



### Technical data

Order No. . . . . . MP 50 / 100 / 150 / 200 / 400

Lubricant . . . . . oil or fluid grease NLGI grade 00, 000

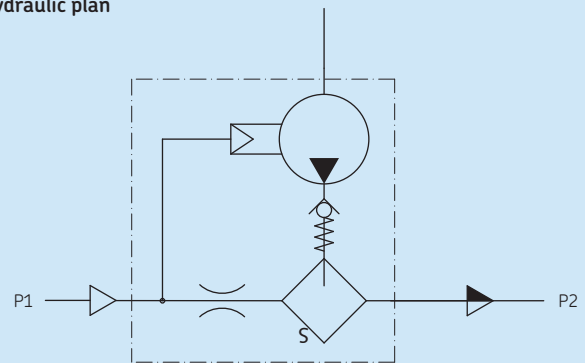
Number of outlets . . . . . 1

Output volume . . . . . MP 50: 0,05 cm<sup>3</sup>/stroke  
 MP 100: 0,1 cm<sup>3</sup>/stroke  
 MP 150: 0,15 cm<sup>3</sup>/stroke  
 MP 200: 0,2 cm<sup>3</sup>/stroke  
 MP 400: 0,4 cm<sup>3</sup>/stroke

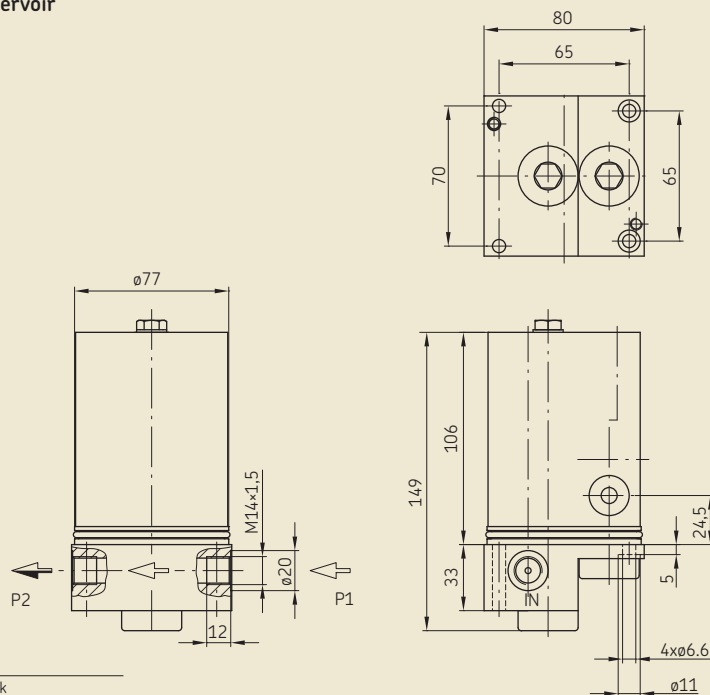
Operating pressure . . . . . 5–10 bar

Ambient temperature . . . . . –25 to +80 °C

### Hydraulic plan



MP 50 pump unit without reservoir



P1 = air line from compressed air network  
 P2 = lubricant line

# Pump units/reservoirs

## KFG – Electrically operated piston pump unit

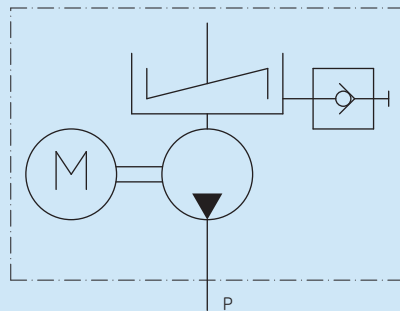


### Technical data

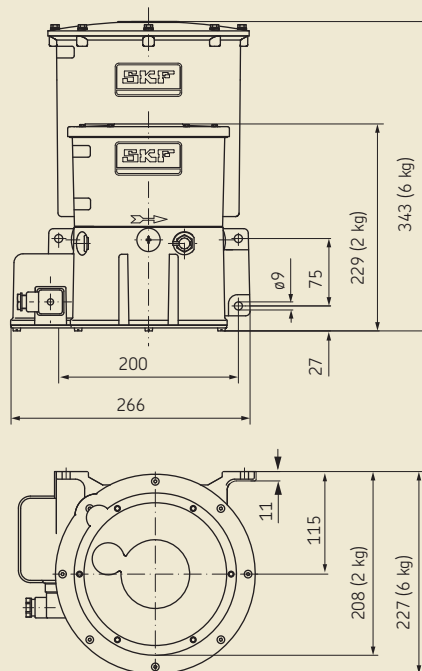
Order No. . . . . see brochure 1-3030-EN

- Reservoir capacities . . . . . 2 kg
- Number of outlets . . . . . 1-3
- Output volume . . . . . 0,8-5 cm<sup>3</sup>/min
- Ambient temperature . . . . . -25 to +80 °C
- Lubricant . . . . . fluid grease up to NLGI grade 000, 00
- Further information in KFG-brochure . . . . . 1-3030-EN

### Hydraulic plan



### KFG



Version with level switch or with 6 kg reservoir on request

# Pump units/reservoirs

## PER – Electromagnetically actuated piston pump

PER-2 pump unit with two spray nozzles



### Order code

**P E R - [ ] - [ ] [ ] + 9 2 4**

#### Nozzle

- 1 = 1 nozzle
- 2 = 2 nozzles

#### Output volume

- 20 = 0,02 cm<sup>3</sup>/stroke
- 40 = 0,04 cm<sup>3</sup>/stroke
- 60 = 0,06 cm<sup>3</sup>/stroke

#### Rated operation voltage

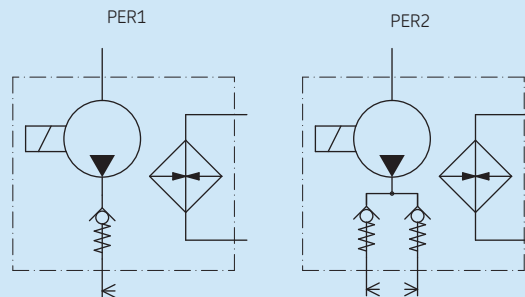
924 = 24 V DC

### Technical data

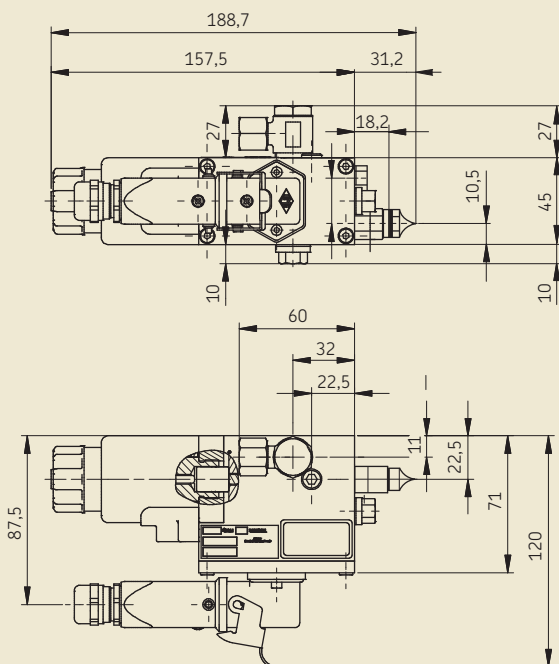
Order No. . . . . . see order code

- Lubricant . . . . . oil or fluid grease NLGI grade 00, 000
- Number of outlets (spray nozzles) . 1 or 2
- Output volume . . . . . 0,02; 0,04; 0,06 cm<sup>3</sup>/stroke
- Rated operating voltage . . . . . 24 V DC
- Ambient temperature . . . . . -25 to +45 °C

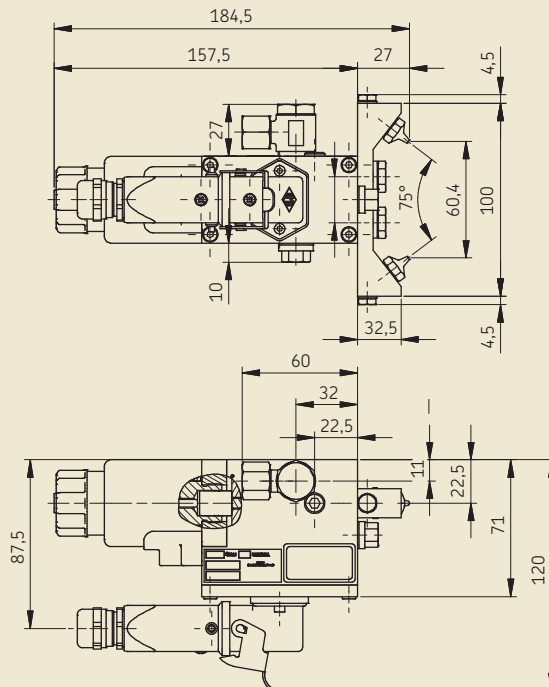
### Hydraulic plan



PER-1-20+924

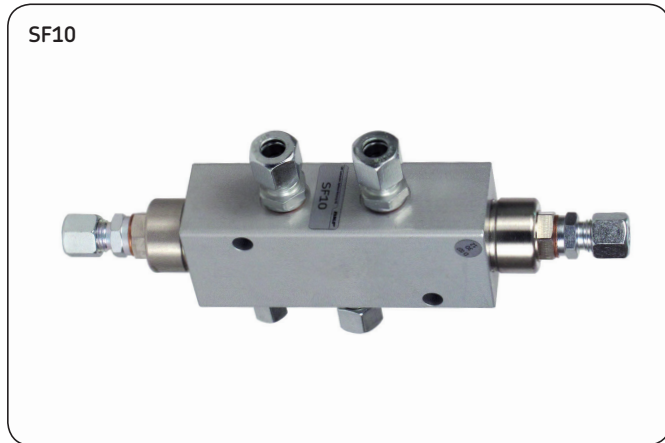


PER-2-20+924



# Pneumatically actuated valves

## SF10



### Function

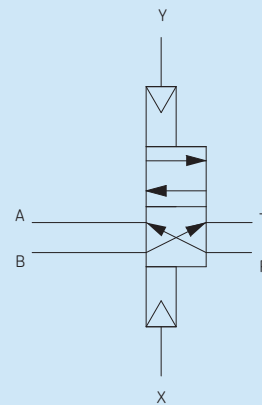
The grease control valve controls the flow of lubricant in the dual line systems, e.g. for curve-dependent lubrication (left/right spray nozzles) or distance-dependent lubrication (front/rear spray nozzles).

### Technical data

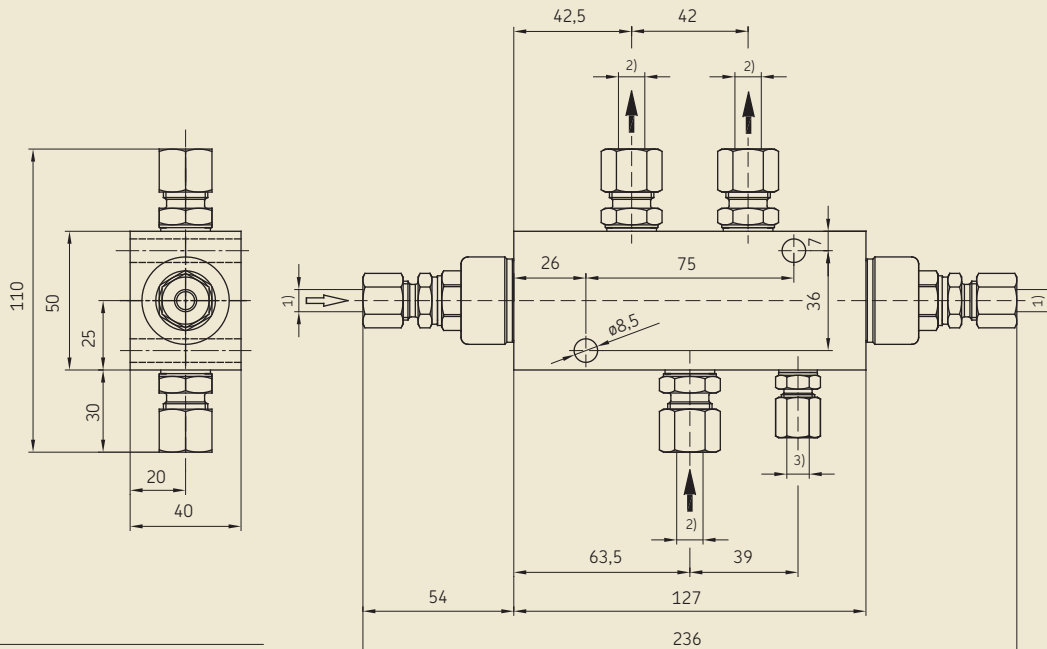
Order No. . . . . SF10

Actuation pressure . . . . . 6 to 10 bar  
 Lubricant . . . . . oil or fluid grease, NLGI grade 000, 00  
 Operating pressure . . . . . max. 100 bar  
 Ambient temperature . . . . . -25 to +80 °C  
 Mounting position . . . . . as shown in drawing

### Hydraulic plan



### SF10 Lubricant control valve



<sup>1)</sup> Compressed air ports for 8 mm diam. tubing to DIN 2353  
<sup>2)</sup> Lubricant ports for 10 mm diam. tubing to DIN 2353  
<sup>3)</sup> Leakage port for 6 mm diam. tubing to DIN 2353

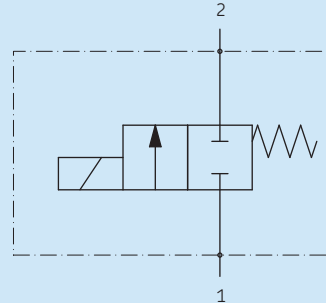
# Solenoid valves

## 221-196... – 2/2-way valves

221-196-051+927



Hydraulic plan



### Technical data

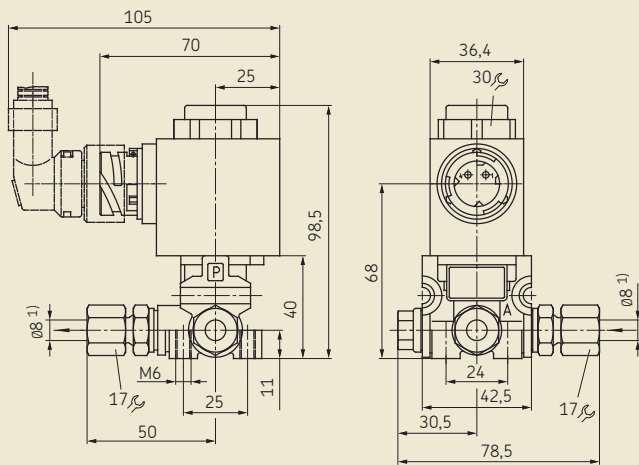
Order No. (1 port, 24 V DC) . . . . .	221-196-031+924
Rated width DN . . . . .	3 mm
Operating pressure . . . . .	0 to 10 bar
Valve seat seal . . . . .	FPM
Ambient temperature . . . . .	-25 to +80 °C
Medium . . . . .	compressed air
Mounting position . . . . .	any
Rated voltage . . . . .	24 V DC
Voltage tolerance . . . . .	+25% / -25%
Duty cycle . . . . .	100% ED
Power input . . . . .	about 10 W
Magnet . . . . .	with two built-in diodes
Type of enclosure acc. to EN 60529 . . . . .	IP 65

### Technical data

Order No. (1 port, 110 V DC) . . . . .	221-196-051+926
Order No. (1 port, 72 V DC) . . . . .	221-196-051+927
Rated width DN . . . . .	3 mm
Operating pressure . . . . .	0 to 10 bar
Valve seat seal . . . . .	FPM
Ambient temperature . . . . .	-25 to +80 °C
Medium . . . . .	compressed air
Mounting position . . . . .	any
Rated voltage . . . . .	110 or 72 V DC
Voltage tolerance . . . . .	+10% / -30%
Duty cycle . . . . .	100% ED
Power input . . . . .	about 16 W
Type of enclosure acc. to EN 60529 . . . . .	IP 65

221-196-031

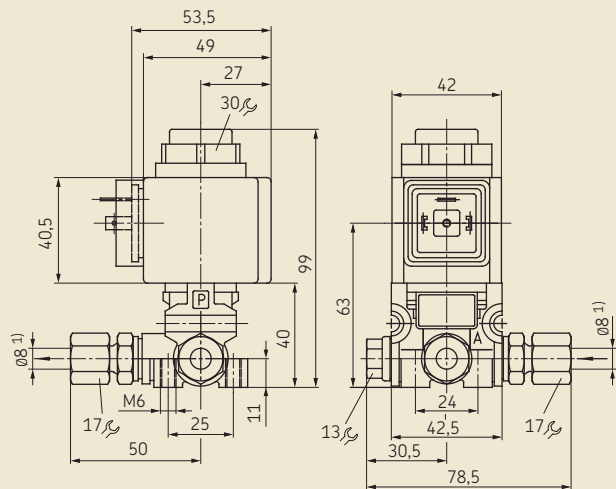
1-port type



<sup>1)</sup> Cutting sleeve screw union to DIN 2353 Port for ø8 tubing  
<sup>2)</sup> Plug connector to DIN EN 175301-803; matching socket 179-990-147

221-196-051

1-port type



<sup>1)</sup> Cutting sleeve screw union to DIN 2353 Port for ø8 tubing  
<sup>2)</sup> Plug connector to DIN EN 175301-803; matching socket 179-990-147

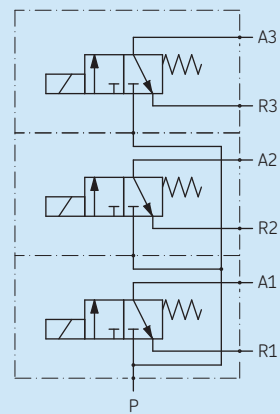
# Solenoid valves

## 221-296... – 3/2-way valves

221-296-053+927



Hydraulic plan



### Technical data

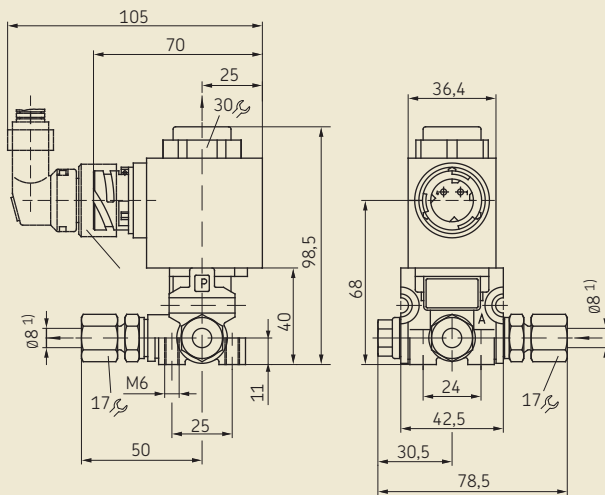
Order No. (1 port, 24 V DC)	221-296-031+924
Order No. (2 ports, 24 V DC)	221-296-032+924
Order No. (3 ports, 24 V DC)	221-296-033+924
Rated width DN	3 mm
Operating pressure	0 to 10 bar
Valve seat seal	FPM
Ambient temperature	-25 to +80 °C
Medium	compressed air
Mounting position	any
Rated voltage	24 V DC
Voltage tolerance	+25% / -25%
Duty cycle	100% ED
Power input	about 10 W
Magnet	with two built-in diodes
Type of enclosure acc. to EN 60529	IP 65

### Technical data

Order No. (2 ports, 110 V DC)	221-296-052+926
Order No. (2 ports, 72 V DC)	221-296-052+927
Order No. (3 ports, 110 V DC)	221-296-053+926
Order No. (3 ports, 72 V DC)	221-296-053+927
Rated width DN	3 mm
Operating pressure	0 to 10 bar
Valve seat seal	FPM
Ambient temperature	-25 to +80 °C
Medium	compressed air
Mounting position	any
Rated voltage	110 or 72 V DC
Voltage tolerance	+10% / -30%
Duty cycle	100% ED
Power input	about 16 W
Type of enclosure acc. to EN 60529	IP 65

221-296-031

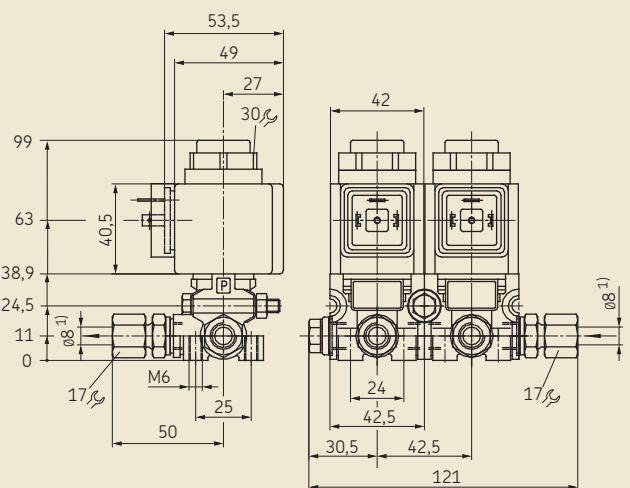
1-port type



<sup>1)</sup> Cutting sleeve screw union to DIN 2353 Port for ø8 tubing  
<sup>2)</sup> Plug connector to DIN EN 175301-803; matching socket 179-990-147

221-296-052

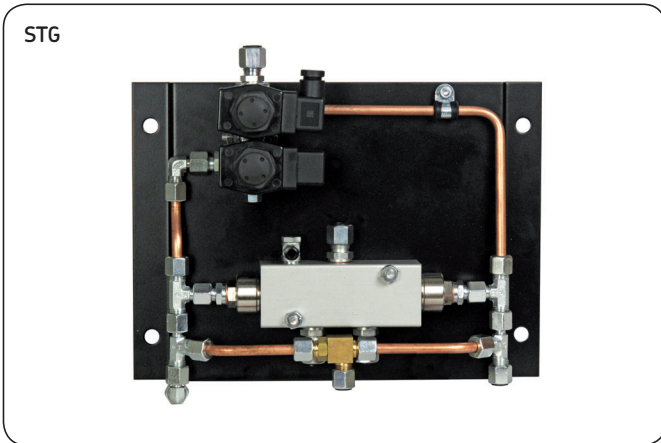
2-ports type



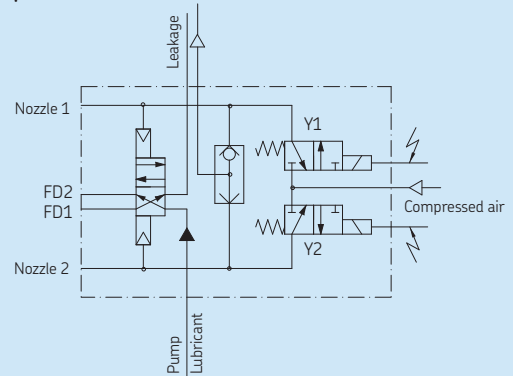
<sup>1)</sup> Cutting sleeve screw union to DIN 2353 Port for ø8 tubing  
<sup>2)</sup> Plug connector to DIN EN 175301-803; matching socket 179-990-147

# Electropneumatically actuated valve plates

## STG



Hydraulic plan



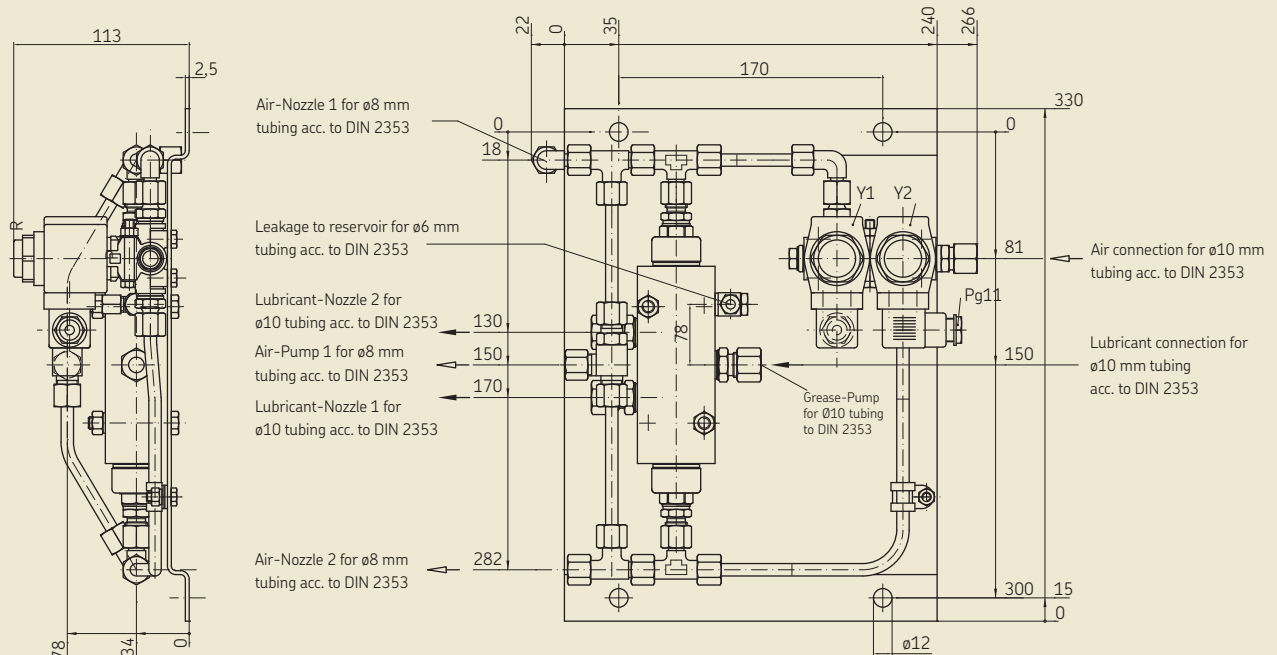
### Technical data

Order No. (24 V DC)	STG13+924
Rated width DN	3 mm
Actuation pressure (Air)	6 to 10 bar
Operating pressure (Lubricant)	max. 150 bar
Valve seat seal	FPM
Ambient temperature	-25 to +80 °C
Medium	compressed air
Mounting position	any
Rated voltage	24 V DC
Voltage tolerance	+25% / -25%
Duty cycle	100% ED
Power input	about 10 W
Magnet	with two built-in diodes
Type of enclosure acc. to EN 60529	IP 65

### Technical data

Order No. (72 V DC)	STG12-2+927
Order No. (110 V DC)	STG12-2+926
Rated width DN	3 mm
Actuation pressure (Air)	6 to 10 bar
Operating pressure (Lubricant)	max. 150 bar
Valve seat seal	FPM
Ambient temperature	-25 to +80 °C
Medium	compressed air
Mounting position	any
Rated voltage	72 or 110 V DC
Voltage tolerance	+10% / -30%
Duty cycle	100% ED
Power input	about 16 W
Type of enclosure acc. to EN 60529	IP 65

### STG12-2, STG13



24 V DC = Connector DIN 72585, ø 2,5; 72 and 110V DC = Connector DIN EN 175301-803-A

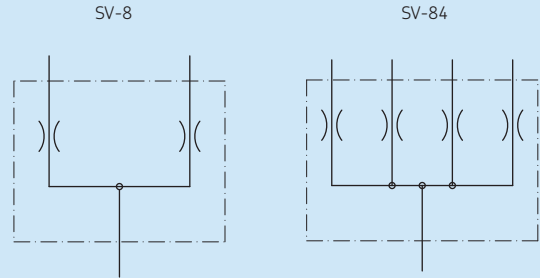


# Flow divider

## SV-8



### Hydraulic plan



### Technical data

Order No. . . . . . **SV-8**

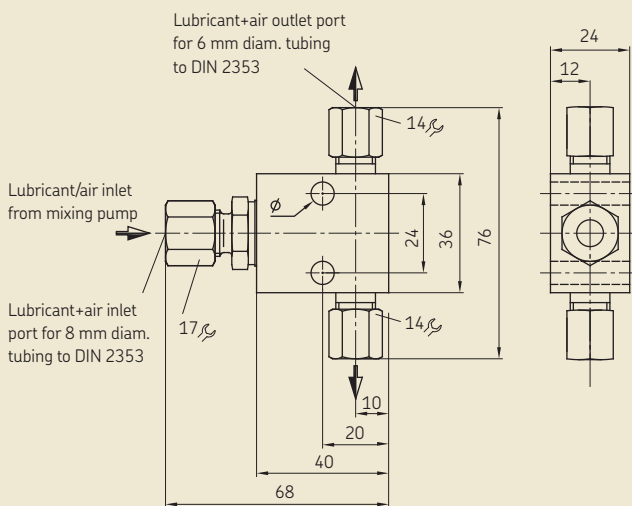
Distribution / lubricant+air . . . . . 1 inlet port in 2 outlet ports  
 Compressed air . . . . . 5 to 10 bar  
 Lubricant . . . . . fluid grease, NLGI-grade 000, 00  
 Ambient temperature . . . . . -25 to +80 °C  
 Mounting position . . . . . any

### Technical data

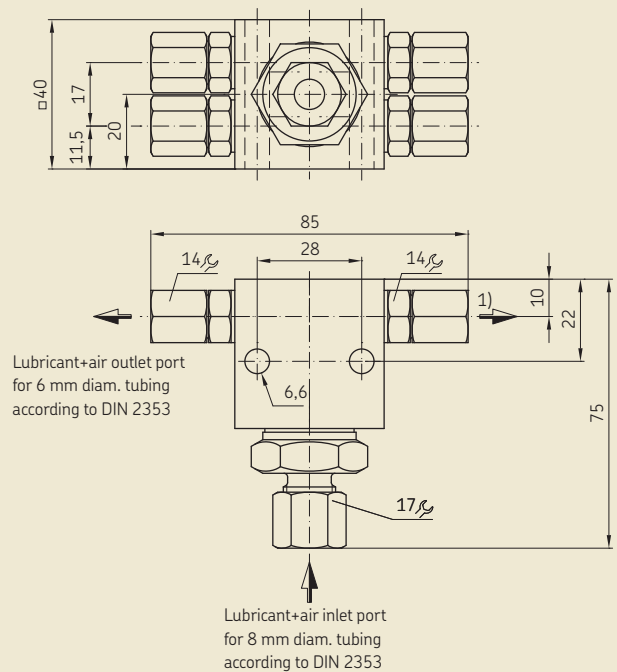
Order No. . . . . . **SV-84**

Distribution / lubricant+air . . . . . 1 inlet port in 4 outlet ports  
 Compressed air . . . . . 5 to 10 bar  
 Lubricant . . . . . fluid grease, NLGI-grade 000, 00  
 Ambient temperature . . . . . -25 to 80° C  
 Mounting position . . . . . any

### SV-8



### SV-84



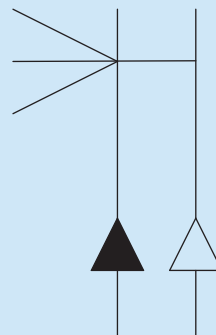
# Spray nozzles

## SP8

SP8-2 / SP8-4



Hydraulic plan



### Technical data

**Order No.** . . . . . **SP8-2**  
 Rated spray quantity. . . . . 0,05 cm<sup>3</sup> / actuation

**Order No.** . . . . . **SP8-4**  
 Rated spray quantity. . . . . 0,03 cm<sup>3</sup> / actuation

Air pressure . . . . . 6–10 bar  
 Air consumption . . . . . about 3 NL (at 6 bar / 1,5 s)  
 Ambient temperature . . . . . -25 to +80 °C  
 Medium pressure . . . . . max. 100 bar  
 Lubricant . . . . . oil/fluid grease,  
 NLGI grade 000, 00

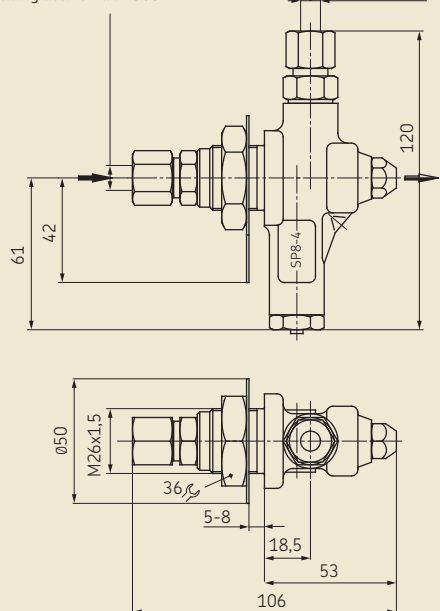
### Technical data

**Order No.** . . . . . **SP8-5**  
 Rated spray quantity. . . . . 0,03 cm<sup>3</sup> / actuation  
 Air pressure . . . . . 6–10 bar  
 Air consumption . . . . . about 3 NL (1,5 s/ 6 bar)  
 Ambient temperature . . . . . -25 to +80 °C  
 Medium pressure . . . . . max. 100 bar  
 Lubricant . . . . . fluid grease,  
 NLGI grade 000, 00  
 Actuation . . . . . max. 0,7 Hz  
 Mounting position . . . . . any  
 Seal . . . . . NBR

SP8-2 / SP8-4

Grease port for 10 mm diam. tubing acc. to DIN 2353

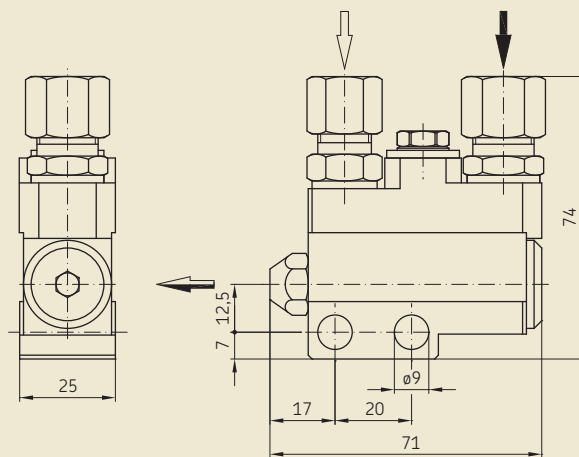
Compressed air port for 8 mm diam. tubing acc. to DIN 2353



SP8-5

Compressed air port for ø8 tubing according to DIN 2353

Grease port for ø10 tubing according to DIN 2353



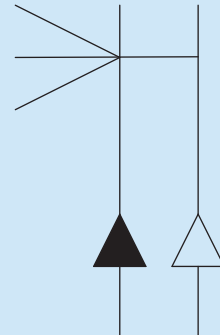
# Spray nozzles

## SP9-2, SP9-2-S7 Spray nozzle

SP9-2, SP9-2-S7



Hydraulic plan



### Technical data

Order No. . . . . . **SP9-2**

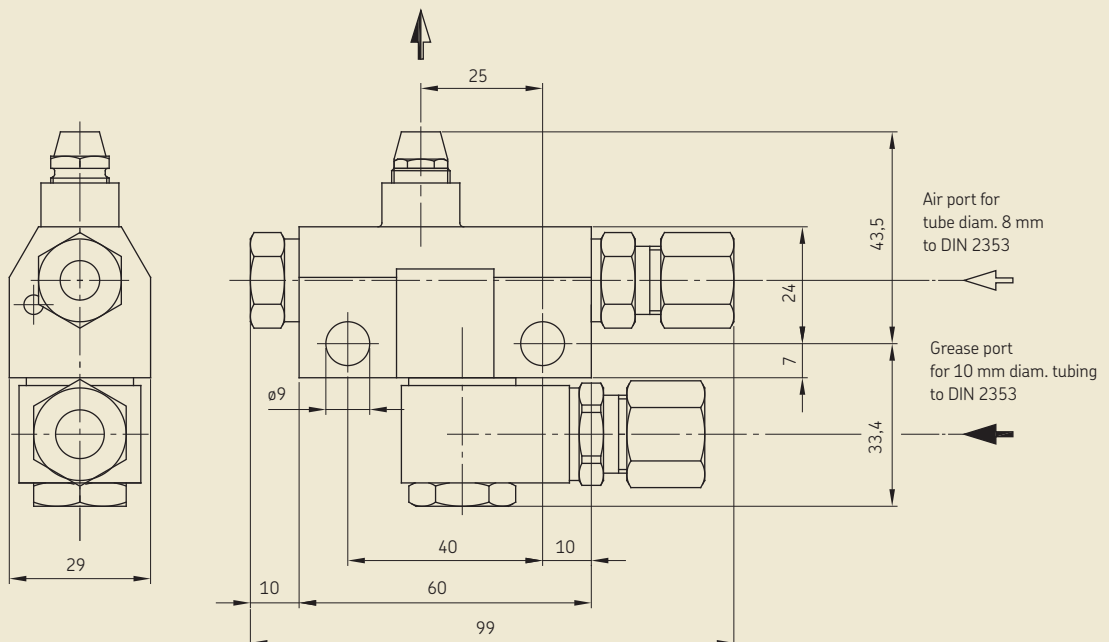
Rated spray quantity. . . . . 0,03 cm<sup>3</sup> / actuation  
 Air pressure . . . . . 4,5 to 10 bar  
 Mean air consumption . . . . . about 4,5 NL (at 6 bar / 1,5 s)  
 Max. lubrication pressure . . . . . 40 bar  
 Lubricant . . . . . fluid grease, NLGI grade 000, 00

### Technical data

Order No. . . . . . **SP9-2-S7**

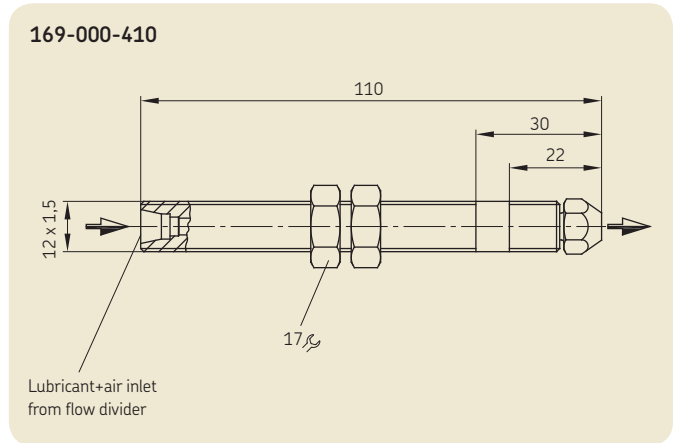
Rated spray quantity. . . . . 0,05 cm<sup>3</sup> / actuation  
 Air pressure . . . . . 4,5 to 10 bar  
 Mean air consumption . . . . . about 4,5 NL (at 6 bar / 1,5 s)  
 Max. lubrication pressure . . . . . 40 bar  
 Lubricant . . . . . fluid grease, NLGI grade 000, 00

SP9-2, SP9-2-S7



# Spray nozzles

## 169-000-400 and -410 Spray nozzle



# Accessories

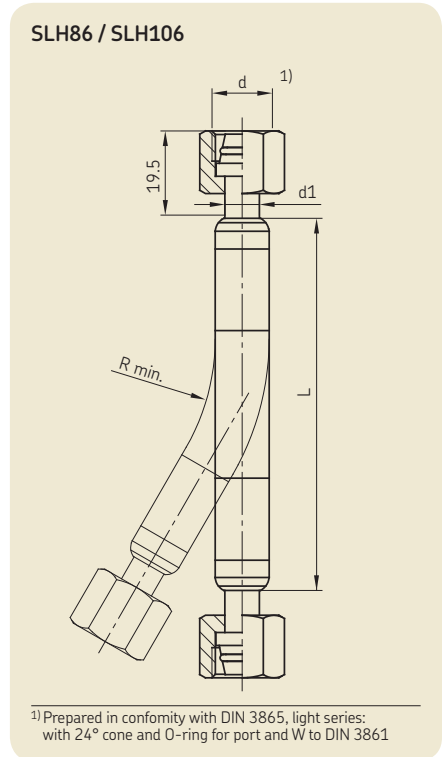
## Hose accessories for railway applications

**Hoses accessories**

Type	d	d1 Tube diam. L <sub>±10</sub>	R min.	Perm. operating pressure [bars]	Application	Order No.
SLH86	M14x1,5	8	180/560	50	225	compressed air line <b>SLH86-180-K/ SLH86-580-K</b>
SLH106	M14x1,5	10	180/560	60	180	lubricant line <b>SLH106-180-K/ SLH106-580-K</b>

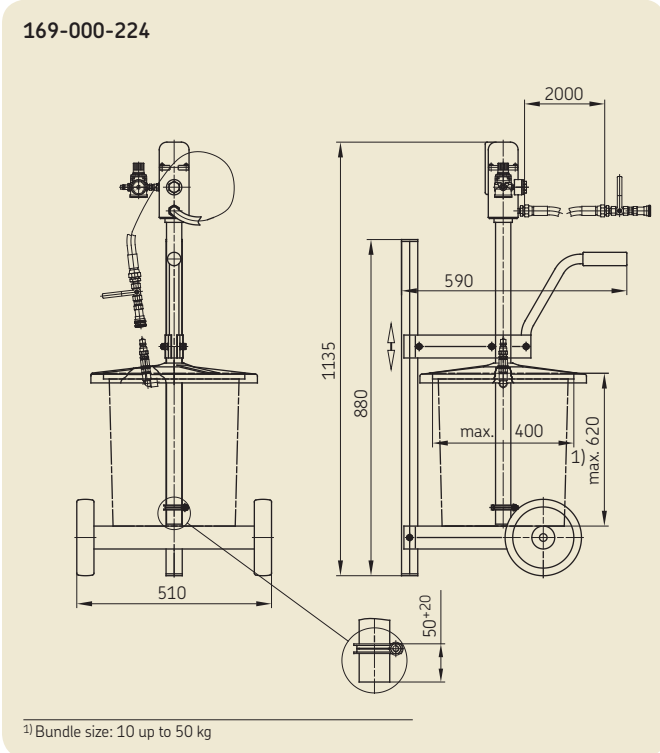
**Technical data**

Inner liner . . . . .	synthetic rubber NBR
Reinforcement . . . . .	1 wire braiding
Outer cover . . . . .	synthetic rubber CR
Resistant to . . . . .	lubricants, also rapidly biodegradable ones based on synthetic ester, vegetable and mineral oils, compressed air
Ambient temperature . . . . .	-25 to +70 °C
Fire protection standard . . . . .	DIN 5510 "Preventive fire protection in rail vehicles"
Flammability class . . . . .	S3
Smoke development class . . . . .	SR1



# Accessories

## Pneumatically refill pump – 169-000-224



**Technical data**

**Order No.** . . . . . **169-000-224**

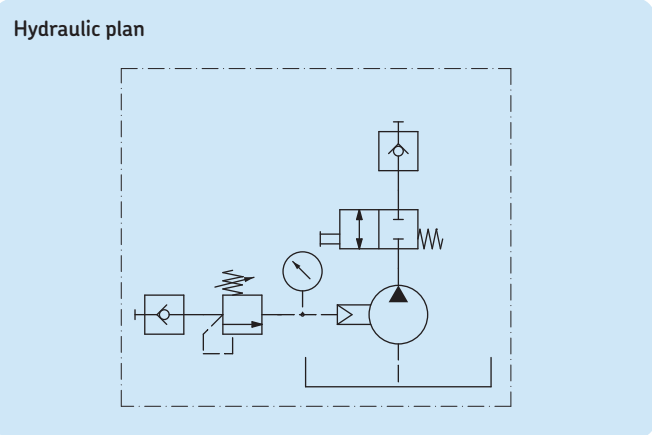
Medium . . . . . oil, fluid grease  
NLGI grade 000, 00

Delivery rate . . . . . ca. 3 l/min

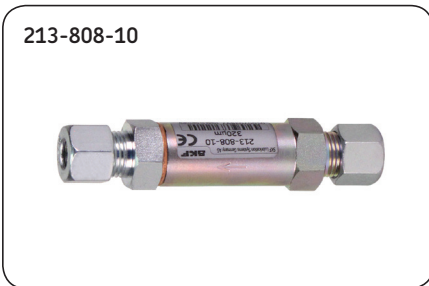
Ambient temperature . . . . . 0 to +60 °C

Connection for filler socket . . . . . 995-000-705

Fitting reservoirs . . . . . BF4.5 and BF6-S3



## Micro filters



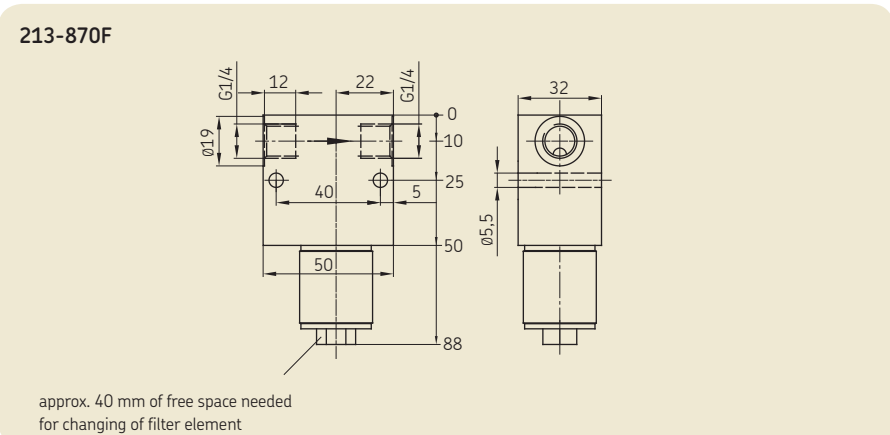
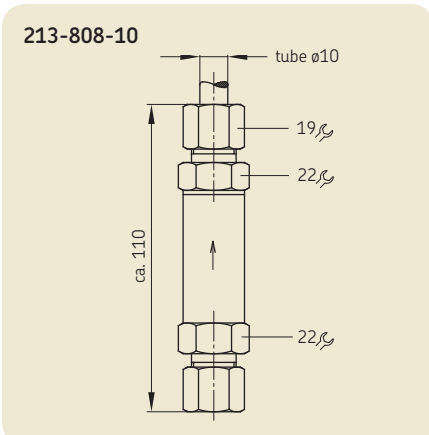
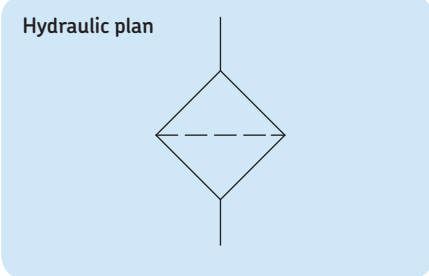
**Technical data**

**Order No.** . . . . . **213-808-10**

Filter fineness [µm] . . . . . 320

**Order No.** . . . . . **213-870F**

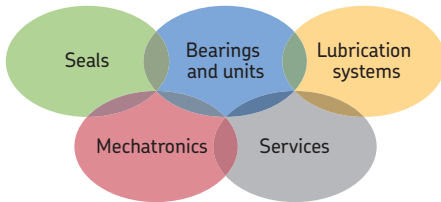
Filter fineness [µm] . . . . . 160



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Drawing on five areas of competence and application-specific expertise amassed over more than 100 years, SKF brings innovative solutions to OEMs and production facilities in every major industry world-wide. These five competence areas include bearings and units, seals, lubrication systems, mechatronics (combining mechanics and electronics into intelligent systems), and a wide range of services, from 3-D computer modelling to advanced condition monitoring and reliability and asset management systems. A global presence provides SKF customers uniform quality standards and worldwide product availability.

#### **!** Important information on product usage

All products from SKF may be used only for their intended purpose as described in this brochure and in any instructions. If operating instructions are supplied with the products, they must be read and followed.

Not all lubricants are suitable for use in centralized lubrication systems. SKF does offer an inspection service to test customer supplied lubricant to determine if it can be used in a centralized system. SKF lubrication systems or their components are not approved for use with gases, liquefied gases, pressurized gases in solution and fluids with a vapor pressure exceeding normal atmospheric pressure (1 013 mbar) by more than 0,5 bar at their maximum permissible temperature.

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#### Additional brochures for further information

- 1-2008-EN *SKF EasyRail*
- 1-6917-EN *Lubrication Solutions from SKF*
- 1-9201-EN *Transport of Lubricants in Centralized Lubrication Systems*

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