

Electric barrel pump EFP-1 and EFPM-2 General, Fields of application und types of systems

General:

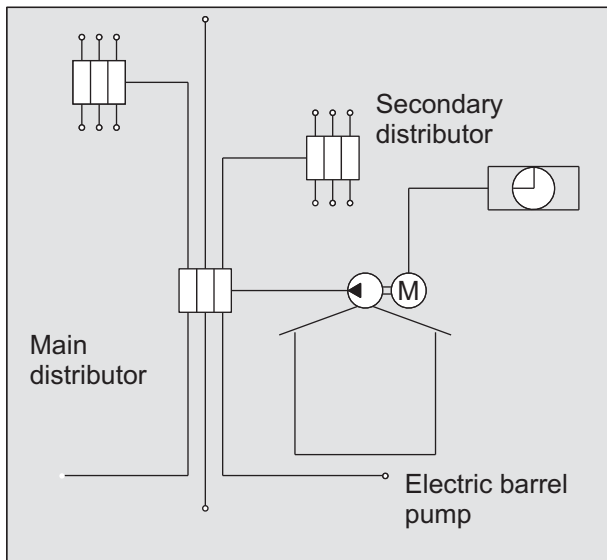
The **BEKA-MAX** - electric barrel pump EFP-1 is a precision-piston pump designed for greases up to the consistency class NLGI 2. It is actuated by a geared D.C. motor fitted by use of a flange and coupled directly to the pump shaft. Due to its first-class precision design, combined with the latest level of technology, this model series provides a grease pump of maximum reliability and very large field of application. It supplies lube points or distributors with a precisely metered grease quantity, with a pressure of 280 bar,

Fields of application:

The pump's fields of applications are mainly focused onto the supply of lube points at medium sized and large building machines, as well as machinery assemblies of industrial machines.

Types of systems:

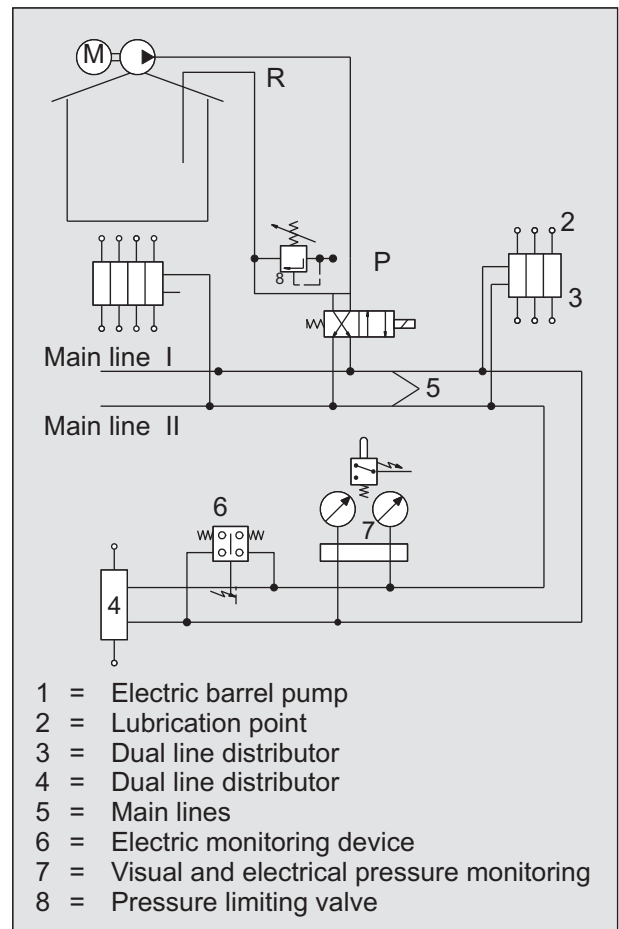
Description of the progressive system



The lubricant of the electric barrel pump is directly delivered into the main progressive distributor, which has to supply the lubricant to the secondary progressive distributors in the right relation. The secondary distributors deliver the optimal lubrication quantity to the individual lube points.

The system is completely monitored via the function of the progressive distributor. Whenever a lubrication point does not receive grease, lubricant comes out of the pump's pressure relief valve.

System description-DualLine-

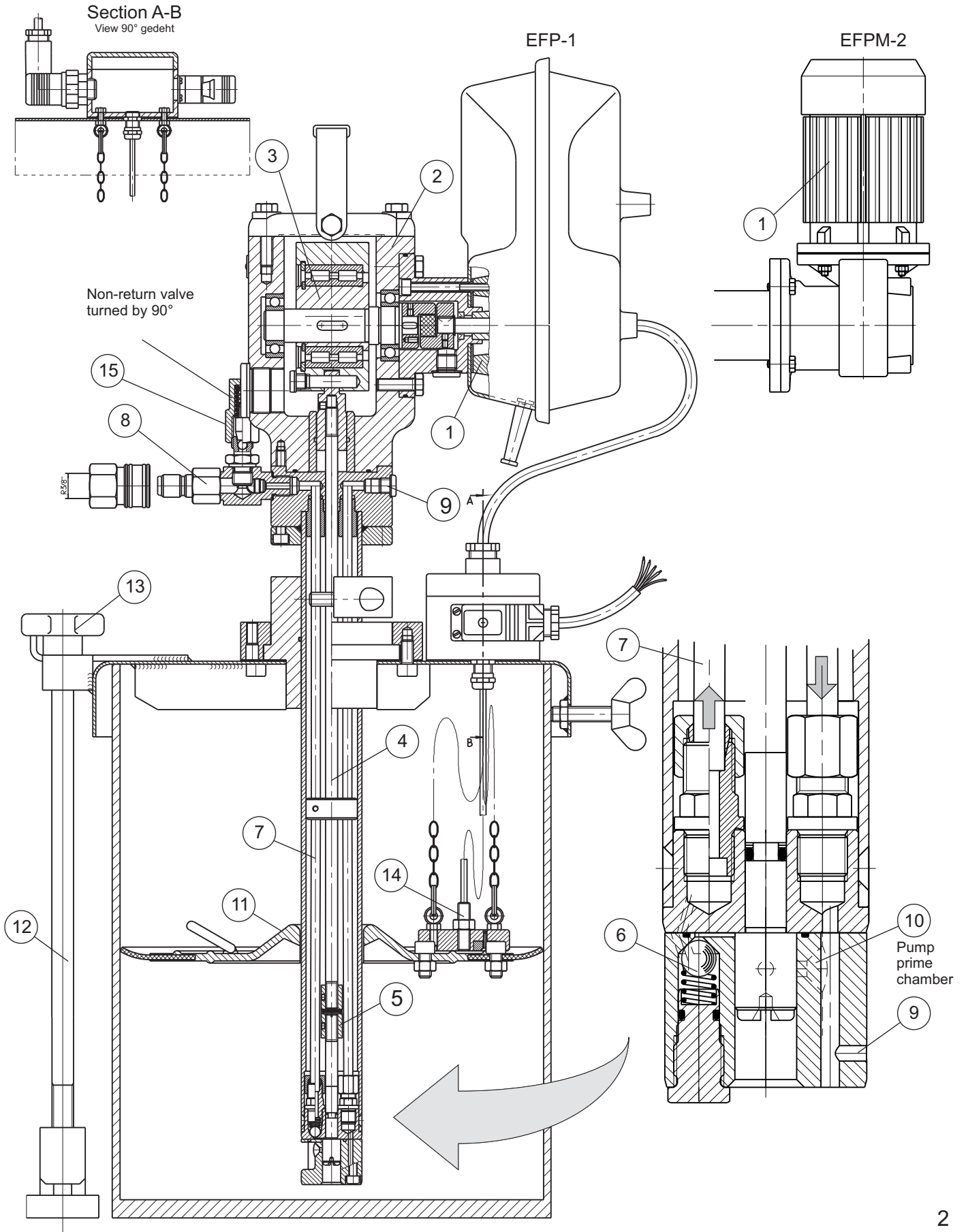


The dual line system is a system with two main lines, which can be pressurized via a valve alternately, and thus supply dual line distributors with lubricant.

The dual line distributor then supplies the requested lubricant quantity, adjustable at the distributor, to the according lube points.



Electric barrel pump EFP-1 and EFPM-2 Sectional drawing



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Electric barrel pump EFP-1 and EFPM-2 Functional description

The electric barrel pumps EFP-1 and EFPM-2 are driven by a flange-mounted D.C. geared motor (EFP-1) or an A.C. geared motor (EFPM-2) (1). The eccentric (3) which is installed in the housing (2), causes the transformation of the rotating movement of the motor into a stroke movement of the piston rod (4). The delivery piston (5) of the pump is screwed together with the piston rod (4), whereby a positively intake- and pressure stroke is carried out. Via a non-return valve (6), which prevents a repriming of lubricant, the lubricant is supplied via a pipe line (7) to the pressure connection (8), which is equipped with a coupling.

Caution: A lubrication return line (9), marked with letter "R", is installed under the pressure connection at dual line systems. This return line connection is to feed back the relieved quantity into the lubrication reservoir.

In order to prevent the pump from priming air, it is important that the grease follower plate (11) is in perfect touch with the lubricant and that the barrel has no bumps. The stability of the electric barrel pump is ensured via three connecting rods (12) with cross-shaped handles (13), which in turn, must be connected with the ground.

The emptying of the barrel is monitored by the electric grease level monitoring. A plate, magnetically secured, and provided with a proximity switch (14) is fixed on the follower piston. When the barrel is emptied, also the follower piston falls. During this process the proximity switch is lifted, by means of two chains of approx. 3 cm, above the suction drilling of the grease follower piston; then it sends a signal to exchange the barrel.

The pressure relief valve (15), which is preadjusted to 280 bar, is to protect the pump and the system from overload.

Technical data:

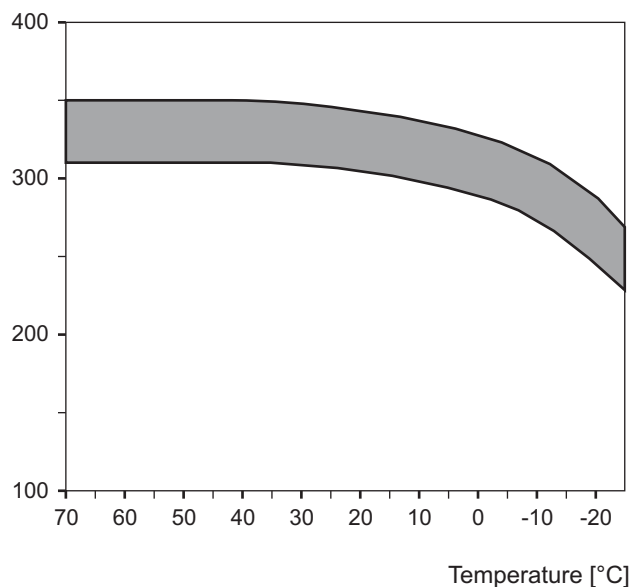
Electric barrel pump EFP-1:

No. of outlets:	1
Output rate:	330mm ³ /revolution of the pump depending on operating temperature
Current consumption:	max.5A
Delivering pressure:	max.280bar
Reservoir size:	20, 50 or 200kg
Drive:	24V direct current
Operating temperature range:	-17°C to +70°C
	greases up to NLGI-cl. 2
	-25°C to +70°C
	greases up to NLGI-cl. 1

Electric barrel pump EFPM-2:

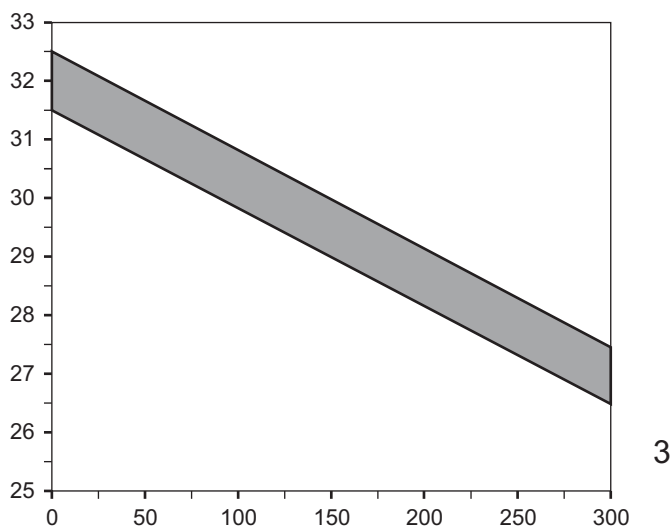
No. of outlets:	1
Output rate at 20°C:	13,5cm ³ /min.
Delivering pressure:	max. 280 bar
Reservoir size:	20; 25; 50 or 200kg
Operating temperature range:	-10°C to +70°C
Drive:	geared motor 230/400V;50-60Hz ne:40min ⁻¹ ;ISO-cl.F; IP55

Pump's output rate depends on temperature:
Output rate per revolution [mm³]



Pump's rotational speed depends on the operating temperature (only at EFP-1)

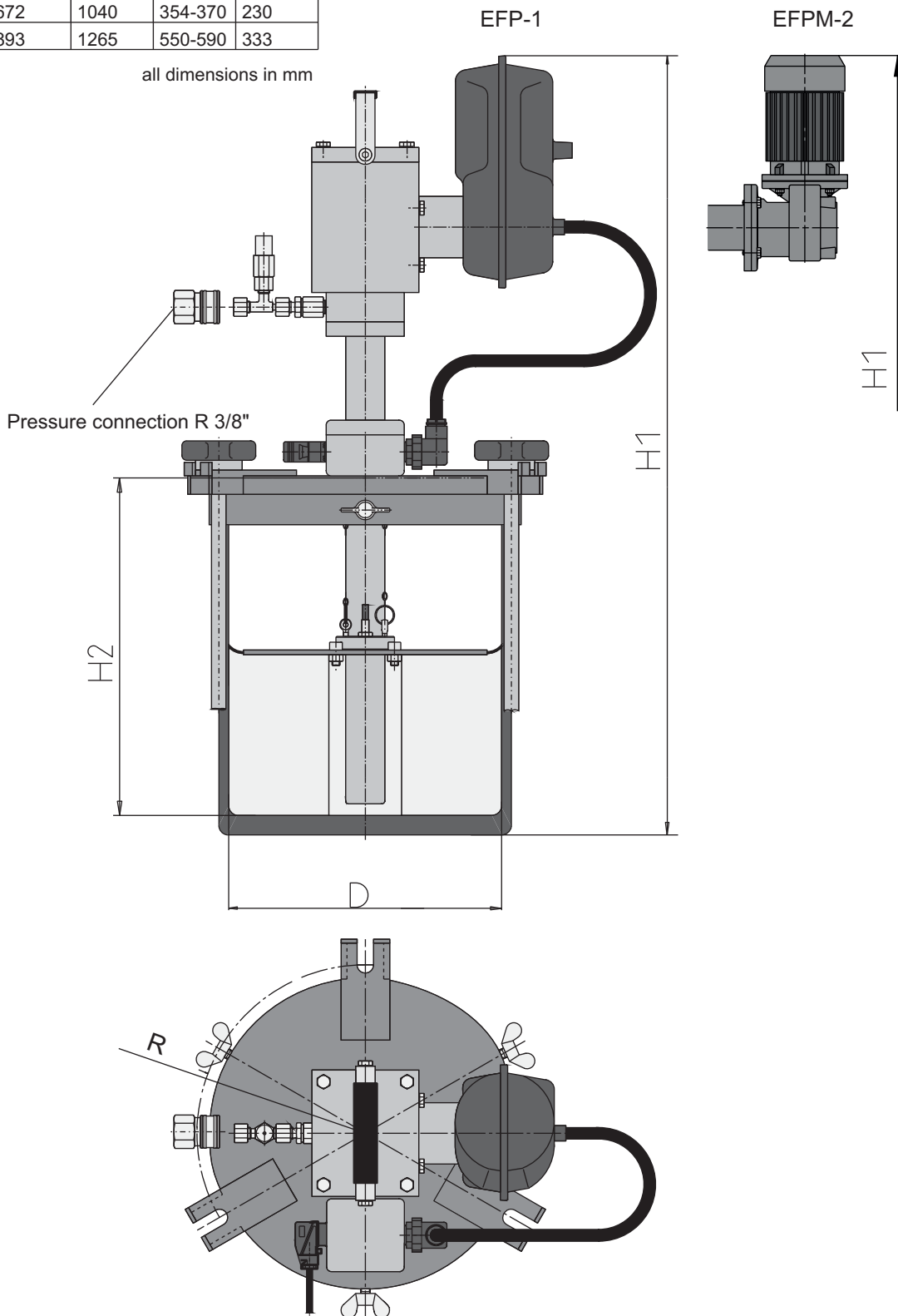
Rotational speed of pump motor [min⁻¹]



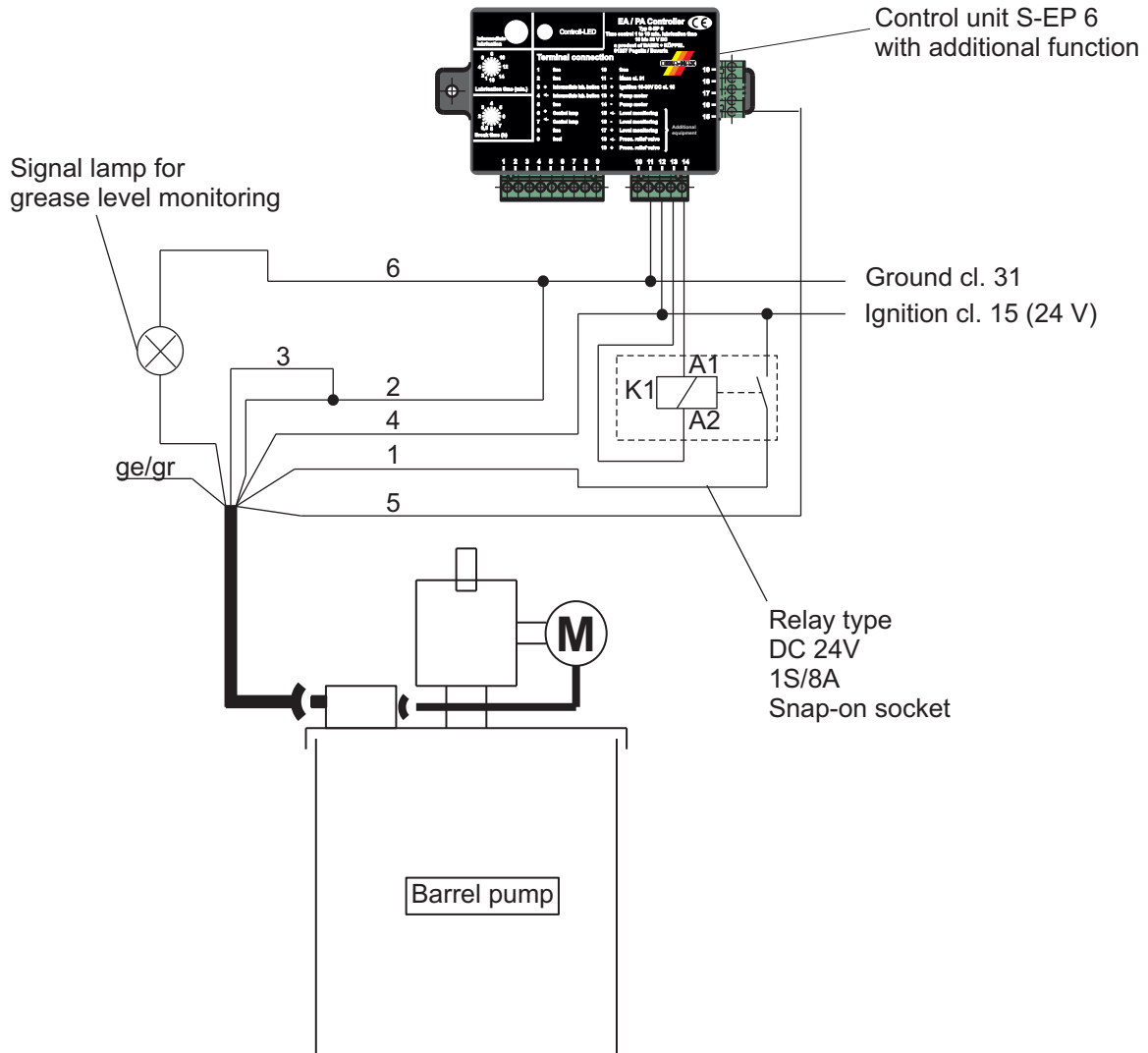
Electric barrel pump EFP-1 and EFPM-2 Dimensional drawing

Barrel size	H2	H1	D	R
20 kg	375	800	265-285	172
25 kg	475	900	311-331	202
50 kg	672	1040	354-370	230
200 kg	893	1265	550-590	333

all dimensions in mm



Electric barrel pump EFP-1 Electric wiring diagram of electric barrel pump



Lubricants

The electric barrel pump EFP-1 is designed for commercial multi-purpose greases up to NLGI-cl.2.

The following notes have to be observed:

- use greases with high pressure additions (EP-greases)
- use only greases with the same saponification
- greases with solid contents must not be used (lubricants like copper, graphite or MOS2 on enquiry)
- biodegradable lubricants can be used
- nevertheless, always observe the lubricant details of the machine manufacturer

Maintenance and care

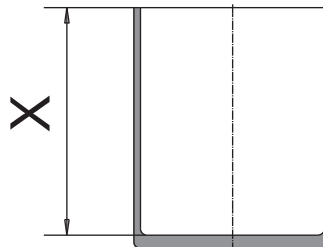
During the following weeks after the start-up, the pumps should be checked for the following points:

- Sufficient metering at the bearing points (grease collar)
- check the pipe lines (lubrication points, detached hoses, leaky parts)
- all components of the electric barrel pump are maintenance-free

Electric pump EFP-1 and EFPM-2 Adjustment of electric level monitoring

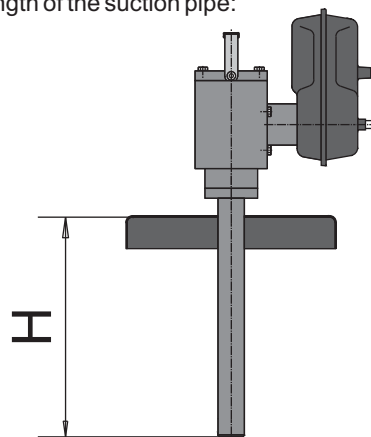
Step1: Measuring of barrel depth (dimension X)

Measuring of barrel depth:



Step 2: Adjust the pump cover at the suction pipe to dimension H and fix it with two hexagon socket screws AF 6
 Dimension $H = X - 1\text{cm}$

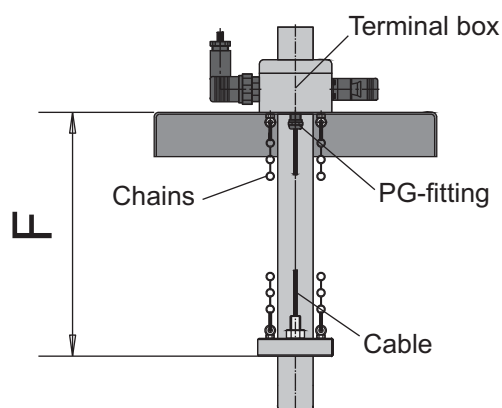
Adjust the length of the suction pipe:



Dimension H should be smaller than dimension X, so that the pump pipe does not touch the reservoir ground.

Adjust length of chain:

Step 3: Clip in the chain length of the switching unit (level monitoring) to dimension F!
 Dimension $F = H - 5\text{cm}$
 Hang up the two chains long or short according to the requested length. Afterwards screw off the cover from the terminal box, loosen the PG fitting and adjust the cable of the proximity switch according to the length of the chains. Now fasten again the PG fitting and screw the cover on again.



Dimension F must be smaller than dimension H, so that the pump does not prime air when being emptied.

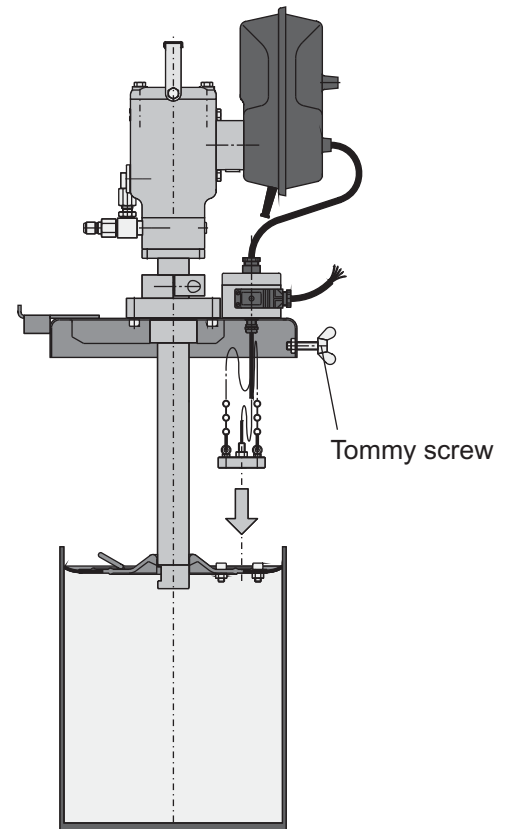
Electric barrel pump EFP-1 and EFPM-2

Adjustment of electric level monitoring

Step 4: Press the grease follower plate into the grease filled barrel, until lubricant comes out of the center drilling.

Put the pump with the cover into the center drilling of the grease follower plate. Pay attention to the terminal box's alignment with the centering screw for the level monitoring's switch unit. Now dip in the barrel and center it with tommy screws.

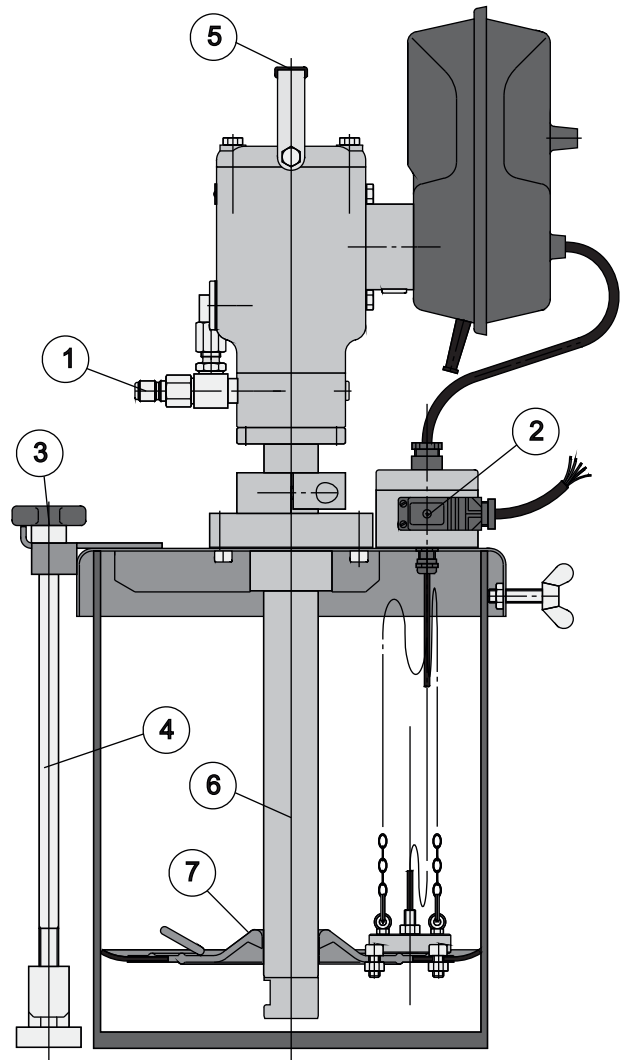
Install the grease follower plate:



Electric barrel pump EFP-1 and EFPM-2

Exchange of grease barrel

- Step 1: Loosen the screw with a screw driver from the electric plug (2); afterwards pull off the plug.
Now separate the coupling (1) from the pressure connection.
- Step 2: Loosen the 3 capstan nuts (3) from the cover and flap out the connecting rods (4).
Loosen 3 tommy screws from the cover .
- Step 3: Pull the electric pump with cover out of the barrel, and hang it up with the handle (5).
Please absolutely observe that the pump pipe (6) is not damaged or soiled.
- Step 4: Pull out the grease follower plate (7) and fill the residual grease into the new and full barrel.
Put in the grease follower plate (7) into the barrel and mount the pump in reverse order again (see item 10, step 4).
Observe that the old and the new grease reservoir have the same diameter and the same height.



Electric barrel pump EFP-1 and EFPM-2 Trouble - Cause - Remedy

Trouble	Cause	Remedy
Reduced pump speed	High system pressure Low ambient temperature	Check system/bearing points No damage (actuate intermediate lubrication if necessary)
Leakage of grease at pressure relief valve	System pressure too high Progressive distributor blocks System blocks Valve spring defective	Check system Repair blocked bearing point Repair system, exchange distributor if necessary Exchange pressure relief valve
Signal lamp of level monitoring glows	Barrel empty	Exchange barrel
Signal lamp of level monitoring glows, even if barrel is full	Proximity switch defective Plate with proximity switch does not perfectly touch the follower piston Supply cable to proximity switch defective	Exchange proximity switch Install plate with proximity switch correct (see "adjustment of level monitoring" on page XY) Lay in new supply line
Pump does not supply lubricant	Reservoir empty Non-return valve of the pump defective or soiled Drive motor defective	Exchange barrel Clean non-return valve Exchange motor and motor flange
Pump does not produce pressure	Non-return valve of the pump defective or soiled	Clean or replace non-return valve

