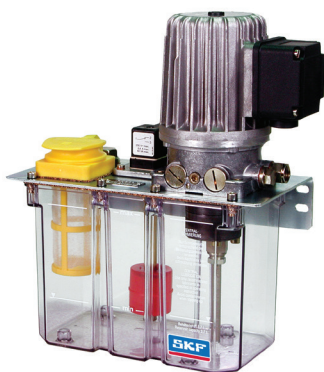


Gear Pump Units

For single-line centralized lubrication systems

MFE5-KW3-2



MFE5-KW6



MFE5-BW7



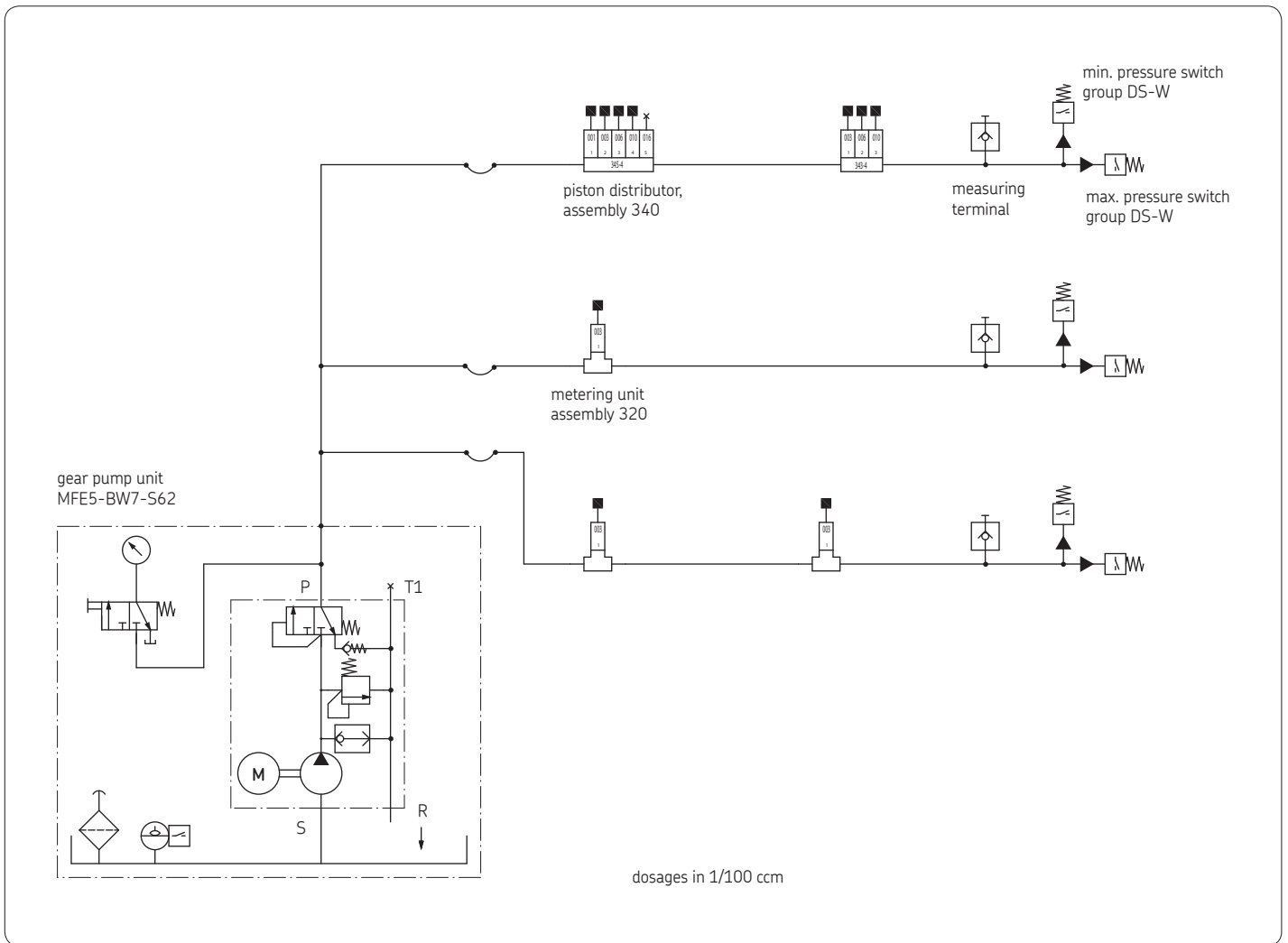
These units comprising the MFE Group are designed to supply the lubricant used in intermittently operated, single-line centralized lubrication systems.

The basic setup includes a gear pump unit with motor, a 3 or 6 liter lubricant reservoir, metal or plastic, or a 15 liter metal reservoir and float switch to monitor the minimum permissible level of lubricant.

In addition to the basic models, it is also possible for the units to be outfitted with add-ons.

Special models for a wide variety of applications are listed in the overview table on page 3.

Gear pump units for single-line centralized lubrication systems



Example of a single-line central lubrication system for an automobile manufacturing plant

The system consists essentially of:

- a gear pump unit
- 6 liter metal reservoir
- piston distributors, assembly 340
- metering units, assembly 320
- pressure switches, group DS-W
for max. pressure build-up and relief pressure

Overview table for gear pump units

See important product usage information on the back cover.

Order No.	Reservoir capacity [liters]	Reservoir material	Design features
MFE5-KW3-2	3	Plastic	Basic version with WS32-2 float switch
MFE5-KW3-2-S4	3	Plastic	Basic version with WS35-2 float switch
MFE5-KW3-2-S9	3	Plastic	For oil as 5 mm ² /s at max. 16 bars
MFE5-KW3-2-S13	3	Plastic	Unit for 50/95 weatherproofing (DIN 50015); WS32-2 float switch
MFE5-KW3-S24	3	Plastic	Motor with HAN6ES Harting connector; WS35-S30 float switch
MFE5-BW3-2	3	Metal	Basic version with WS32-2 float switch
MFE5-BW3-2-S14	3	Metal	French Automotiv version (CNOMO); WS35-2 float switch; Stäubli filler coupling
MFE5-BW3-2-S22	3	Metal	For oil as 5 mm ² /s at max. 16 bars
MFE5-BW3-2-S34	3	Metal	Motor UL/CSA
MFE5-BW3-2-S37	3	Metal	Basic version with WS35-2 float switch
MFE5-BW3-S41	3	Metal	Motor with HAN6ES Harting connector; WS35-S30 float switch
MFE5-KW6	6	Plastic	Basic version with WS32-2 float switch
MFE5-KW6-S1	6	Plastic	Basic version with WS35-2 float switch
MFE5-KW6-S8	6	Plastic	FKM (FPM) version, WS32-S8 float switch
MFE5-KW6-S33	6	Plastic	Motor with HAN6ES Harting connector; WS35-S30 float switch
MFE5-BW7	6	Metal	Basic version with WS32-2 float switch
MFE5-BW7-CF	6	Metal	Basic version with WS35-2 float switch
MFE5-BW7-S8	6	Metal	FKM (FPM) version, WS32-S8 float switch
MFE5-BW7-S22	6	Metal	Motor UL/CSA
MFE5-BW7-S29	6	Metal	French Automotiv version (CNOMO); WS35-2 float switch; Stäubli filler coupling
MFE5-BW7-S54	6	Metal	Unit for 50/95 weatherproofing (DIN 50015); WS32-2 float switch
MFE5-BW7-S120	6	Metal	VW version
MFE5-BW7-S98	6	Metal	VW version with filler coupling
MFE5-BW7-S107	6	Metal	Motor with HAN6ES Harting connector; WS35-S30 float switch
MFE5-BW15	15	Metal	Basic version with WS32-2 float switch; wall-mounted reservoir
MFE5-BW16	15	Metal	Basic version with WS35-2 float switch; wall-mounted reservoir
MFE5-BW15-S7	15	Metal	Basic version with WS35-2 float switch; foot-mounted reservoir
MFE5-BW16-S93	15	Metal	Motor with HAN6ES Harting connector; WS35-S30 float switch

Explanation of hydraulic function

Both (ME5, MFE5) types have the same hydraulic function.

Oil is sucked in at S and flows under pressure through the duct in the direction P. The oil pressure closes valve V and opens valve E3, at the same time closing valve E1 against spring tension. If air is entrained (due to low oil level in the reservoir), valve V remains open and diverts the air or, respectively, the air-oil mixture into the return duct (see bubble (o) marking in direction R1). Valve C allows oil under overpressure to flow out into the return duct (see cross (+) marking).

When the unit stops (interval time), spring-loaded valve E1 opens and valve E3 simultaneously closes. The system pressure at P can now be released through valve E1 – with the exception of a small amount of residual pressure determined by valve E2. This pressure release is required for the piston distributors to function correctly. The pressure relief process is shown in fig. 4.

Explanation of the structural differences

In the case of model ME5, the long screw plug D1 blocks flanged port R2 of the return duct. The oil returning from valves V, C and E1 flows via port R1 through a tube to the separately mounted oil reservoir (see fig. 1 and 2).

In the case of model MFE5, the short screw plug D2 – unlike D1 with model ME5 – leaves flanged port R2 open. A plug closes off external port R1. Flanged port R2 of the return duct drains directly into the reservoir without any connection threads (see fig. 3 and 4).

MFE5 unit variants *

Order No.	Flow rate ²⁾ [l/min]	Max. back pressure ³⁾ [bars]	Design
MFE5-2000	0.5	28	Basic version, NBR, plastic terminal box
MFE5-3041	0.5	28	Basic version, NBR, metal terminal box
MFE5-2000-D	0.5	28	Installed below oil level, NBR, plastic terminal box
MFE5-3000-D	0.5	28	Installed below oil level, NBR, metal terminal box
MFE5-2008	0.5	28	Basic version, FKM (FPM), plastic terminal box
MFE5-2009	0.25	17.5	For light oil as of 5 mm ² /s, NBR
MFE5-2053	0.25	17.5	For light oil as of 5 mm ² /s, FKM
MFE5-4000	0.5	28	UL/CSA-approved, NBR
MFE5-5000	0.5	28	CCC-approved, NBR
MFE5-1001	0.5	28	HAN6ES Harting connector, NBR, Motor 180° turned
MFE5-1088	0.5	28	HAN10ES Harting connector, FKM
MFE5-S67	0.5	28	50/95 weatherproofing, NBR, metal terminal box

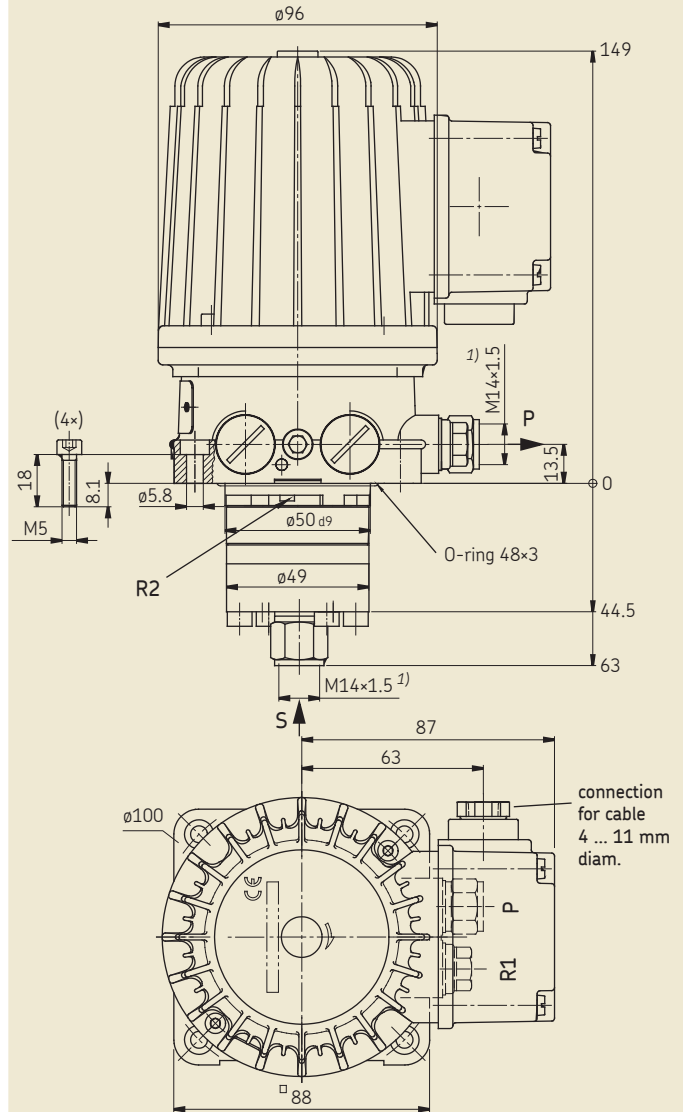
*) The geometrical dimensions of the variants can deviate of the one shown in Fig. 5.

²⁾ Flow rate based on an operating viscosity of 140 mm²/s, at a back pressure of p = 5 bars.

³⁾ The max. back pressure is equivalent to the actual value of the built-in pressure limiting valve. If the units are operated with a single-phase AC supply, only 60% of the indicated pressure is permissible, i.e. a 16-bar pressure limiting valve should be fitted to the system.

The appropriate capacitors for a frequency of 50 and 60 Hz are:
230 V ... 8 µF: order No. 179-340-007
115 V ... 30 µF: order No. 179-340-060

Fig. 5



S = inlet (suction port)
P = outlet (pressure port)
R1 (ME5) = oil return from relief and pressure limiting valve
R2 (MFE5)

¹⁾ Ports tapped for solderless 8 mm diam tube connection.

Technical data of the shown motor

Motor	Three-phase motor	
Mode of operation	S1, 100%	
Insulation class	F	
Rated frequency [Hz]	50	60
Voltage [V] Y ⁴⁾	400	480
Rated current [A]	0.29	0.29
Rated power [kW]	0.075	0.09
Rated speed [rpm]	2700	3200
Rated flow rate [l/min]	0.5	0,6
Operating pressure [bars]	28	
Operating temperature [°C]	+10 to +40	
Medium	20 to 1000 mm ² /s	
Type of enclosure acc. to DIN 50050	IP 54	
Max. suction head [mm]	500	

⁴⁾ See page 6: "Multivoltage motors"