

# LUBRICATION STATION

# Z3

## APPLICATION

Lubrication units Z3 are used as a source of pressure lubricant in the circuits of two-line central lubrication systems. Pumps can be used for lubrication of high number of lubricated points, large circuits with extensive length of distribution piping and high lubricant consumption, also in the hardest operational environment.

Lubrication pump is usually used for permanent, or in combination with control unit, for cyclic lubrication of various machines, engineering technologies and equipment.

Depending on used model and number of two-line distributors pump can supply lubricant into two hundred lubricated points or more, with various dose of lubricant. If progressive distributors are used in combination with two-line system, the pump can be used for lubrication of high number of lubricated points as well as sizable total dose of lubricant into lubrication circuit and low doses into individual lubricated points at the same time. With this solution it is possible to connect mutually distant groups of lubricated point into one lubrication unit Z3. In this case progressive distributors are placed behind two-line distributors and further divide lubricant dosed by two-line distributor into individual lubricated points.

Lubricating unit Z3 is a combination of electric piston lubrication pump Z1, with the possibility of electric change-over valve installed on a common base frame. They are equipped with pressure relief valve to control the working pressure gauge at the outlet and filling the grease filter, which may be preceded by a manual or electric stop-cock.

Pumps unit Z3 are supplied for both grease and oil, with metal reservoir of various sizes 40, 63 and 100 litres. A delivery flow rate of 200 or 400 cm<sup>3</sup>/min. is also selectable. Standard electric motors are 230/400V, 500V and 415V, for other voltages, consult the supplier.

## DESCRIPTION

Lubricating unit Z3 is a source of grease under pressure is supplied to the two-line lubrication systems. The main component of the lubricating unit Z1 lubrication pump, connected to the electric change-over valve, which changes alternately supplying grease to the first or the second main pipe lubrication circuit. Lubricating unit is adapted to control the level of grease lubrication pump in the tank Z1 in automated replenishment. In the supply pipe to fill the tank is installed grease filter. Signal and control electrical components installed on lubrication stations have supply voltage of 24V DC. The supply voltage must be connected to a terminal box.

## OPERATION

The electric motor connected to the electric supply drives an eccentric shaft in the pump through the gearbox. Through the connecting rods, a straight reverse motion of guiding pistons connected with the working pistons occurs. When the piston moves out from the pumping unit barrel, low pressure and lubricant suction occur. While moving in the lubricant is forced out through the piston and ball check valve into the union flange, safety valve into the electric change-over valve ensuring alternate supply of the lubricant into both circuit branches and further to the by-pass valve. From the electric change-over switch the lubricant is forced out into the outlets to which the piping of two-line lubrication system is connected. The working pressure is adjusted by the regulating nut on the safety valve (Z1).

## SERVICE AND MAINTENANCE

The lubrication pump is mounted by four M12 anchor bolts on a horizontal concrete or steel foundation. Check if lubricant reservoir is clean. Move the scraper by hand to make sure that there are no impurities. Fill the lubricator with prescribed lubricant. According to current standards the electric motor is connected to the electric circuits and to the level signalling or terminal switch. Set the lubricator in operation and check to see that its running is smooth and regular. Remove lubricant which remained in the lubricator as preservation means after the pressure test.

Bleed the lubrication pump by the means of the 4 venting screws. When lubricant flows out of both outlets regularly and without air bubbles (it is necessary change over branches, by plugging the active outlet), close the both outlets by connecting them to the lubricating circuit piping. Pressure adjustment is done on the relief valve according to the lubrication circuit requirement.

It is necessary to refill the lubricant if the level drops to the narrowing part of the tank. If the lubricant is fully pumped out it is recommended to disconnect the outlets from the pipes and execute the venting of the pump including the hydraulic control unit again.

Fill up lubricant through filling valve which is positioned on the lower part of the tank. The lubricant can also be filled directly into the storage bin. Remove lid to do so. On doing this, make sure that lubricant is free from dirt.

The lubrication pump does not need any other maintenance except for refilling the lubricant. In the case of permanent operation check the lubricating circuit piping for leakage every three months.

## TECHNICAL DATA

Maximum working pressure	400 bar	
Working pressure	350 bar	
Regulating range of working pressure	50 to 380 bar	
Regulating range of safety valve pressure	50 to 380 bar	
Nominal output	200 cm <sup>3</sup> /min., 400 cm <sup>3</sup> /min.	
Lubricant reservoir capacity	40, 63, 100 dm <sup>3</sup>	
Number of outlets	2	
Outlet pipe union	G1/2"	
Inlet for filling	Grease inline strainer FLD Solenoid valve SV1 Hand-operated stop-cock RUK	M16x1.5 G1/2" M16x1.5
Electric motor	230VD/400VY, 50Hz//460VY, 60Hz, 0.75kW 415VY, 50Hz, 0.75kW 500VY, 50Hz, 0.75kW	
Nominal voltage of change over valve DPE	24V DC, 2A	
Nominal voltage of alarm	24V DC, 2A	
Nominal voltage of solenoid valve SV1	24V DC, 1.7A	
Lubricant	grease	max. NLGI-2
	oil	min. 50 mm <sup>2</sup> /sec.
Temperature of working environment	-25 to 40°C	
Weight	250 kg	

## TYPE IDENTIFICATION KEY

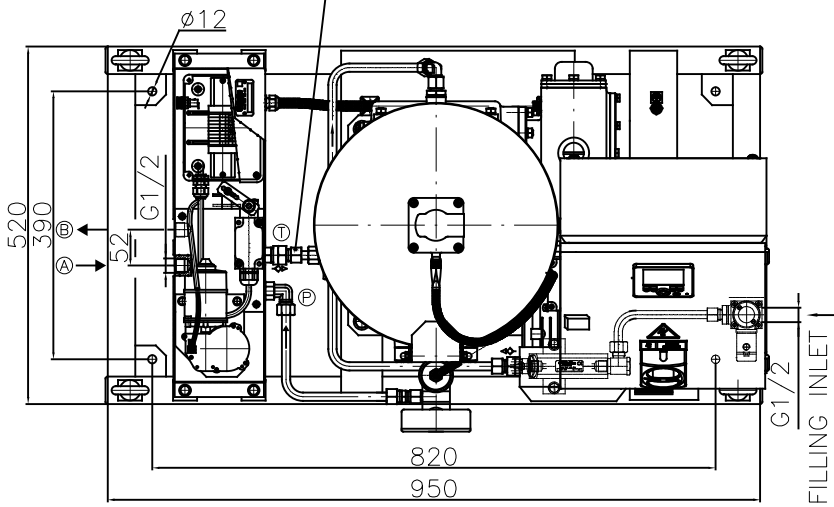
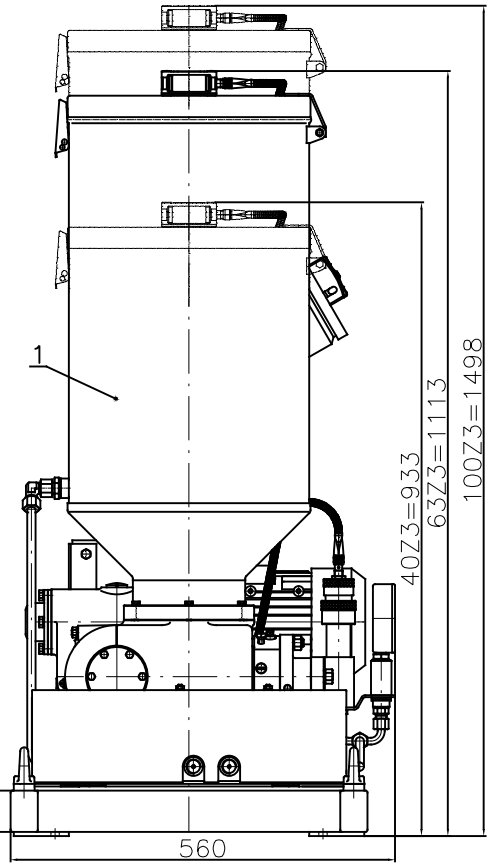
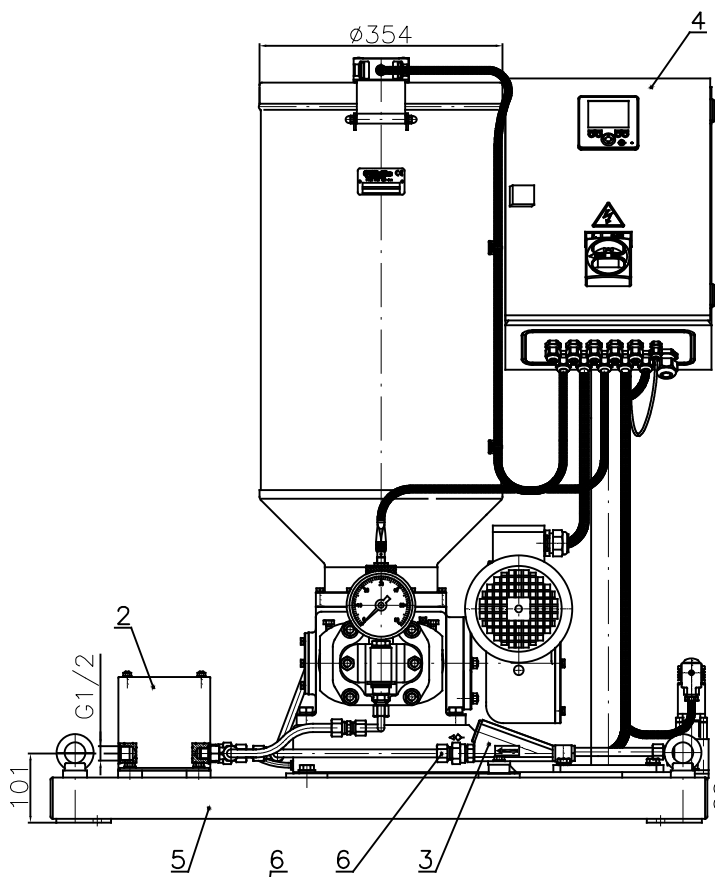
	Model code	a	Z3	b	c	d	e	f	g	h	i	j	k
	Code example	63	Z3	1	2	7	1	0	0	1	1	0	1
<b>Lubricant reservoir capacity</b>													
40 dm <sup>3</sup> -----	40												
63 dm <sup>3</sup> -----	63												
100 dm <sup>3</sup> -----	100												
<b>Type designation</b>													
Type of lubrication pump -----	Z3												
<b>Basic variant of lubrication pump</b>													
for grease -----	1												
for oil -----	2												
<b>Lubricant nominal output</b>													
200 cm <sup>3</sup> /min. -----	2												
400 cm <sup>3</sup> /min. -----	4												
<b>Lubricant level signaling</b>													
without signaling -----	0												
signaling MIN a MAX - oil -----	3												
signaling MIN - oil -----	4												
signaling MIN and MAX (ultrasonic) -----	7												
another variant (upon request) -----	9												
<b>Operating voltage of electric motor</b>													
230VD/400VY, 50Hz//460VY, 60Hz -----	1												
500VY, 50Hz -----	2												
415VY, 50Hz -----	4												
another variant (upon request) -----	9												
<b>Working environment *</b>													
standard -----	0												
MWDr/Wda (upon request) -----	1												
<b>Type of drive **</b>													
standard -----	0												
non-explosive -----	1												
<b>By-pass valve signalling</b>													
without electric signalling -----	0												
with electric signalling -----	1												
<b>Change over valve</b>													
without (progressive system) -----	0												
electric change over valve (motor) DPE -----	1												
electric change over valve (solenoid) SV2 -----	2												
<b>Controlled filling of tanks</b>													
Grease filter FLD (basic variant) -----	0												
Grease filter FLD + solenoid valve SV1 -----	1												
Grease filter FLD + hand-operated stop-cock RUK -----	2												
<b>Control timer</b>													
Without control timer (only terminal box) -----	0												
Control timer AD3 -----	1												

### Explanatory note to type identification key:


- \* Standard working environment – code – 0 - The maximum absolute humidity 30 g of water per 1 m<sup>3</sup> air.
- \* Working environment MWDr/WDa – code – 1 - Absolute humidity from 30 g to 60 g of water per 1 m<sup>3</sup> air.  
For the determination of humidity for the specific use of the drive is recommended to use the values specified in ČSN IEC 721-2-1. Higher values of absolute humidity than 60 g of water per 1 m<sup>3</sup> air upon the agreement with the manufacturer.
- \*\* Standard type of drive – code – 0 - Rated motor voltage 230VD/400VY, 50Hz//460VD, 60Hz. The electric motor closed with degree of protection IP55, insulation 155 (F) with warming in B classification, working environment temperature from - 20°C to +40°C.
- \*\* None-explosive type of drive – code – 1 - The specific type upon the agreement with the manufacturer.

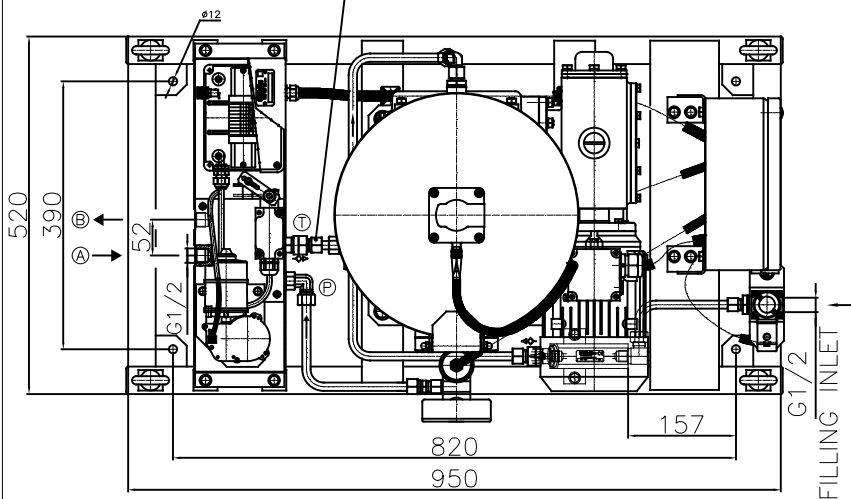
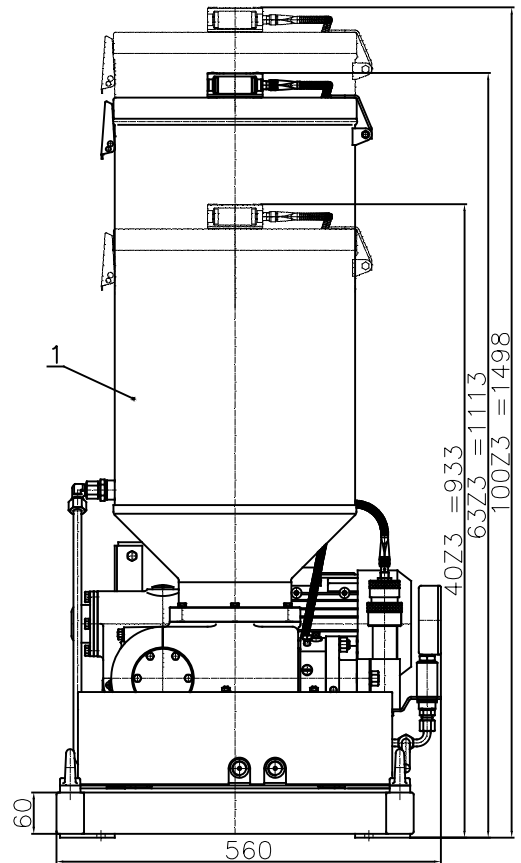
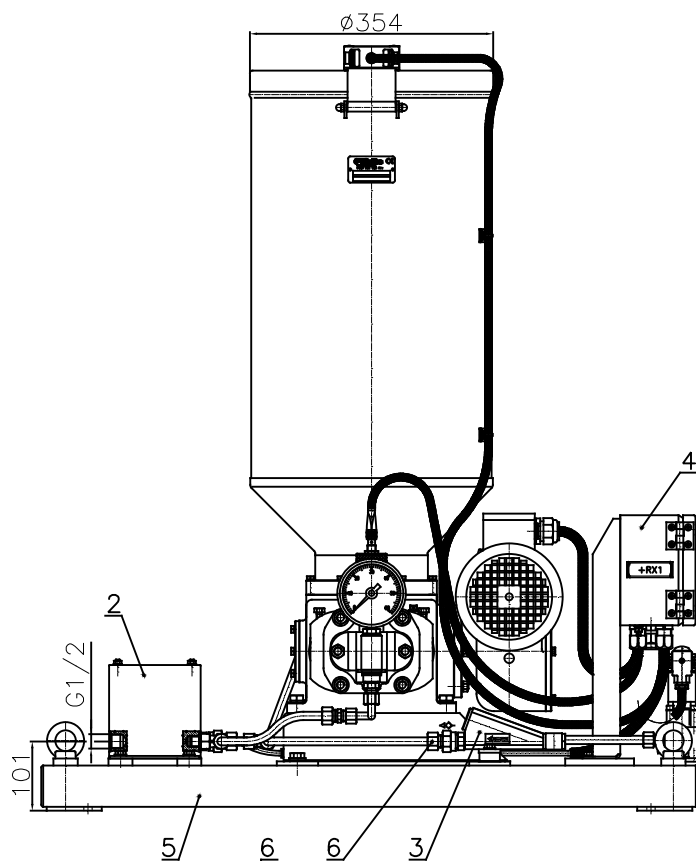
### MODEL CODE EXAMPLE: 63Z3 - 12 - 7 - 100-1-1-0-1

Lubrication unit Z3, for grease, with reservoir capacity 63 dm<sup>3</sup>, with nominal output 200 cm<sup>3</sup>/min., ultrasonic level signalling MIN and MAX for grease, electric motor 230/400V - 50 Hz, standard working environment, standard type of drive, by-pass valve with electric signalling, electric change-over valve DPE, inline grease filter FLD, control timer AD3.




Pos	Name
	40 Z1 lubricator with level signalling
1	63 Z1 lubricator with level signalling
	100 Z1 lubricator with level signalling
2	Electrical dual-line change-over DPE
3	Grease filter FLD 160
4	Control timer
5	Base frame
6	Check valve
7	Solenoid valve 24VDC, 2/2, NC, G1/2

Name	<b>LUBRICATION STATION</b>	 s.r.o. Košuličova 4 Brno www.tribotec.cz +420 543 425 611
Type	<b>40 Z3, 63 Z3, 100 Z3</b>	
Code	<b>ACCORDING TO TANK DESIGN</b>	



Pos	Name
	40 Z1 lubricator with level signalling
1	63 Z1 lubricator with level signalling
	100 Z1 lubricator with level signalling
2	Electrical dual-line change-over DPE
3	Grease filter FLD 160
4	Junction box
5	Base frame
6	Check valve
7	Solenoid valve 24VDC, 2/2, NC, G1/2

Name	<b>LUBRICATION STATION</b>		 s.r.o. Košuličova 4 Brno www.tribotec.cz +420 543 425 611
Type	<b>40 Z3, 63 Z3, 100 Z3</b>		
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