

LUBRICATION PUMP

Z1

APPLICATION

40 Z1, 63 Z1 and 100 Z1 Lubricators are used as a source of pressure lubricant in circuits of central lubricating systems which have a greater number of lubricated points, combined with two-line change-over valve for two line systems or refilling of smaller lubrication pumps, providing lubrication of more lubrication circuits.

The Z1 lubricators are supplied in a standard execution with lubricant storage bin of 40, 63 and 100 litres capacity. Nominal delivered quantity can be chosen between two variants - 200 cm³/min. or 400 cm³/min. Standard electric motors are 230/400V, 415V and 500V. For other voltages, consult the supplier.

DESCRIPTION

The main part of the Z1 lubricator is a body containing a piston pump with four working pistons in two separate pumping units. The pump is driven through a single-stage worm gearbox by a flange mounted electric motor fitted to the side of the body. A hydraulic control unit is situated on the front of the lubrication pump body. This consists of a slide insert and connecting flange, a by-pass valve with regulating nut and a pressure gauge. Four venting screws are situated on the upper part of the slide insert. A steel plate lubricant container is also fastened vertically to the body. In order to improve plastic lubricant pumping as well as suction efficiency there is a scraper blade in the pump container and oblique compression areas to direct the plastic lubricant into the suction space. An electric sensor to signal minimum and maximum lubricant level can be built into the lid of the container. A filling hole with connecting piping is situated in the lower cross part of the storage bin. The lubricator is a unit screwed on the foundation frame. There are four 17 mm dia. holes in the frame for fastening to the foundation with four anchor bolts. One outlet to the lubrication circuit is situated on the front of the hydraulic control.

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 and then to the by-pass valve. From the hydraulic control unit the lubricant is forced out into the outlet to which the piping of lubrication system is connected. The working pressure is adjusted by the regulating nut on the by-pass valve.

SERVICE AND MAINTENANCE

The lubrication pump is mounted by four M12 anchor bolts on a horizontal concrete or steel foundation. Check if lubricant storage is clean. Move the scraper by hand to make sure that there is no foreign matter inside. Fill the lubricator with the 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 the outlet regularly and without air bubbles, only then 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 outlet from the pipe 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 pressure	400 bar	
Working pressure	350 bar	
Regulating range of working pressure	50 to 380 bar	
Regulating range of by-pass valve pressure	50 to 380 bar	
Nominal output	200 cm ³ /min., 400 cm ³ /min.	
Lubricant reservoir capacity	40, 63, 100 dm ³	
Number of outlets	1	
Outlet pipe union	M16x1.5 mm, for tube outside dia. 28 mm	
Electric motor	230VD/400VY, 50Hz //460VY, 60Hz, 0.75kW 415VY, 50Hz, 0.75kW 500VY, 50Hz, 0.75kW	
Alarm nominal voltage	24V DC, 2A	
Lubricant	grease	max. NLGI-2
	oil	min. 50 mm ² /sec.
Temperature of working environment	-25 to 40°C	
Weight	125 kg	

NOTE:

Lubrication pumps are delivered in a selectable execution, due to the customer specification; standard executions can be combined following the Identification Key.

Alternatively, it is possible to use the Z1 lubrication pump in combination with an external electrically driven change-over valve (f. e. DPE) for two-line lubrication system. In this case, the pump is assembled with the valve on a common baseplate, usually equipped with filtration of remote lubricant tank refilling, cable box for easier electronic connection and, due to actual needs, electronic control unit for two-line lubrication systems.

Nominal output is guaranteed with NLGI 00 greases at an operating temperature of +20 °C and a backpressure of 250 bar.

TYPE IDENTIFICATION KEY

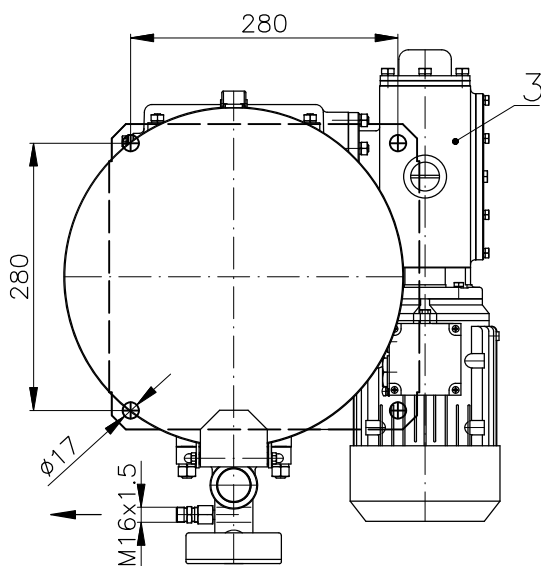
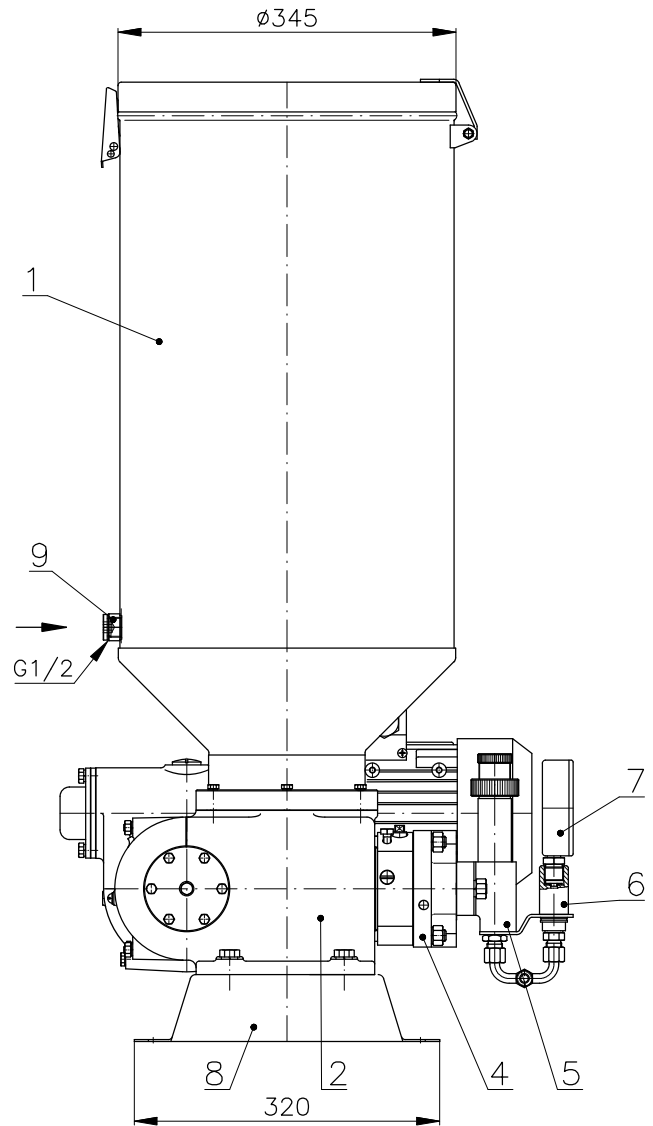
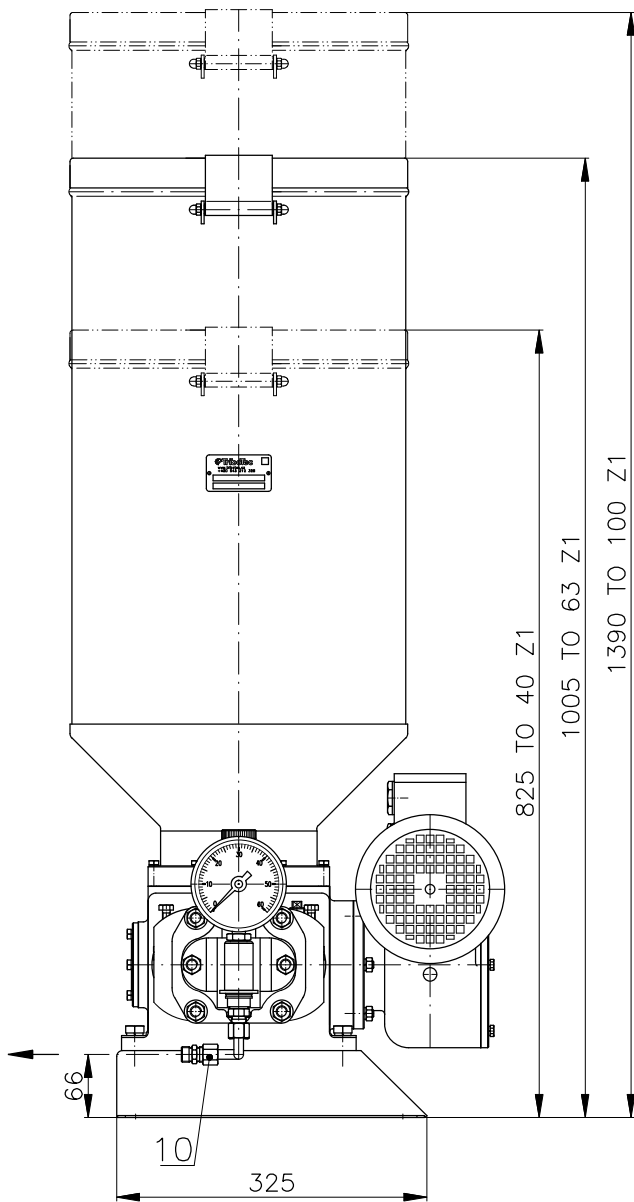
	Model code	a	Z1	b	c	d	e	f	g	h
	Code example	63	Z1	1	2	7	1	0	0	1
Lubricant reservoir capacity										
40 dm ³ -----	40									
63 dm ³ -----	63									
100 dm ³ -----	100									
Type designation										
type of lubrication pump -----	Z1									
Basic variant of lubrication pump										
for grease -----	1									
for oil -----	2									
Lubricant nominal output										
200 cm ³ /min. -----	2									
400 cm ³ /min. -----	4									
Lubricant level signalling										
without signalling -----	0									
signaling MIN a MAX - oil -----	3									
signaling MIN - oil -----	4									
signaling MIN and MAX (ultrasonic) -----	7									
another variant (upon request) -----	9									
Operating voltage of electric motor										
230VD/400VY, 50Hz//460VY, 60Hz -----	1									
500VY, 50Hz -----	2									
415VY, 50Hz -----	4									
another variant (upon request) -----	9									
Working environment *										
standard -----	0									
MWDr/Wda (upon request) -----	1									
Type of drive **										
standard -----	0									
non-explosive -----	1									
By-pass valve signalling										
without electric signalling -----	0									
with electric signalling -----	1									

Explanatory note to type identification key:

- * Standard working environment – code – 0 - The maximum absolute humidity 30 g of water per 1 m³ air.
- * Working environment MWDr/WDa – code – 1 - Absolute humidity from 30 g to 60 g of water per 1 m³ 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 m³ 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: 63Z1 - 12 - 7 - 100 - 1

Lubrication pump Z1, for grease, with reservoir capacity 63 dm³, with nominal output 200 cm³/min., ultrasonic level signalling MIN and MAX for grease, electric motor 230/400V - 50Hz, standard working environment, standard type of drive, by-pass valve with electric signalling.



Pos	Name
1	Lubricant tank
2	Piston pump
3	Gearbox
4	Connecting flange
5	By-pass valve
6	Pressure gauge damper
7	Manometer
8	Foundation frame
9	Filling hole
10	Outlet (outlet screwed fitting)

Name	LUBRICATION PUMP		Tribotec s.r.o. Košuličova 4 Brno www.tribotec.cz +420 543 425 611
Type	63 Z1, (40 Z1), (100 Z1) BASIC VARIANT		
Code	ACCORDING TO VARIANT		