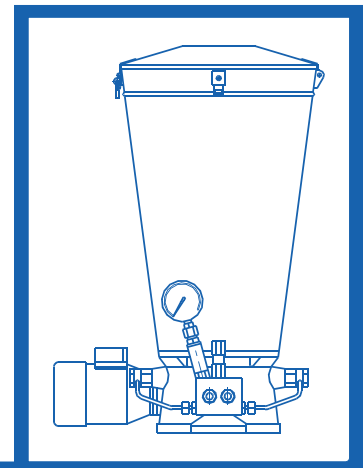
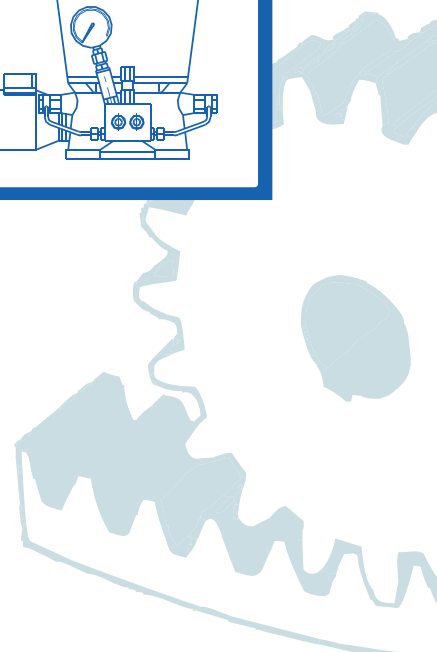


# CENTRAL LUBRICATION PUMP PD 11, PD 31 Type



Central lubrication pump PD 11& PD 31

Central Lubrication pump PD11 & PD 31



## Application

The pump is designed to lubricate friction nodes in machines and devices through dosing distributors (two-way feeders). It is recommended for use in high-load machines and devices, with a large number of lubrication points located at long distances and requiring intensive lubrication, e.g. in ironworks, steelworks, non-ferrous metal smelters, strip mines, building material plants, cement mills, sugar factories and other complexes with similar equipment and work conditions. The pump in overflow valve execution (PD 11), working with an electromagnetic distributor located in the lubricating system outside the pump, is recommended to serve machines and devices set in a line and a long distance from each other. In the hydraulic distributor execution (PD 31), the pump is recommended to serve machines and devices not located in a line and at short distances from each other. The pump with an overflow valve (PD 11) may be used in other types of lubrication systems.

## Construction

The pump consists of the following units (Fig. 1):

- a tank with a grease feeding device,
- a drive unit comprising an electrical motor, single-stage worm gear put into a common body with a cam power transmission system,
- two forcing units comprising forcing elements in which pistons receive power from the cam power transmission system, return valves and pressure conduits,
- an overflow valve located on the body of the power transmission system at the grease outlets from the forcing units or from the hydraulic distributor with an overflow valve and miniature connector mating one of the distributor's slides,
- an electric device signalling the minimum and maximum level of lubricant in the tank (special accessory).

## Operation

The pump is powered by an electric motor. The engine shaft rotation is transmitted through a worm gear to the eccentric system and grease feeding device. The feeding device drift fender separates the lubricant from the tank face, while the feeding screw of the device kneads it initially and passes to the sucking area of the forcing units. Pistons of the forcing units, activated to reciprocating movement by the eccentric system, force the lubricant through to the overflow valve or distributor and then to the lubrication system.

Depending on the position of control elements in the distributor, the grease is directed to one of the two main lubrication conduit lines and then to the dosing distributors.

After the grease is fed to the reception points by the dosing distributors and the lubricant pressure increases up to the preset value, the control distributor is activated and directs the forced grease to the other line. The moment the distributor is activated, the pump engine stops and starts again only after the preset time-lag passes. The pump may also operate the moment the distributor is activated, without stopping the engine.

The lubricant pressure in the main conduit lines at which the direction of forcing switches is preset, in the case of the system with an electromagnetic distributor – with pressure relays or electro-contact manometers located at the ends of the main lubrication conduit line and in the case of the system with a hydraulic distributor – with an overflow valve located in the distributor.

The pump tank should be filled through a filtered loading coupling with a PZ 31 or PZ 40 filling pump.

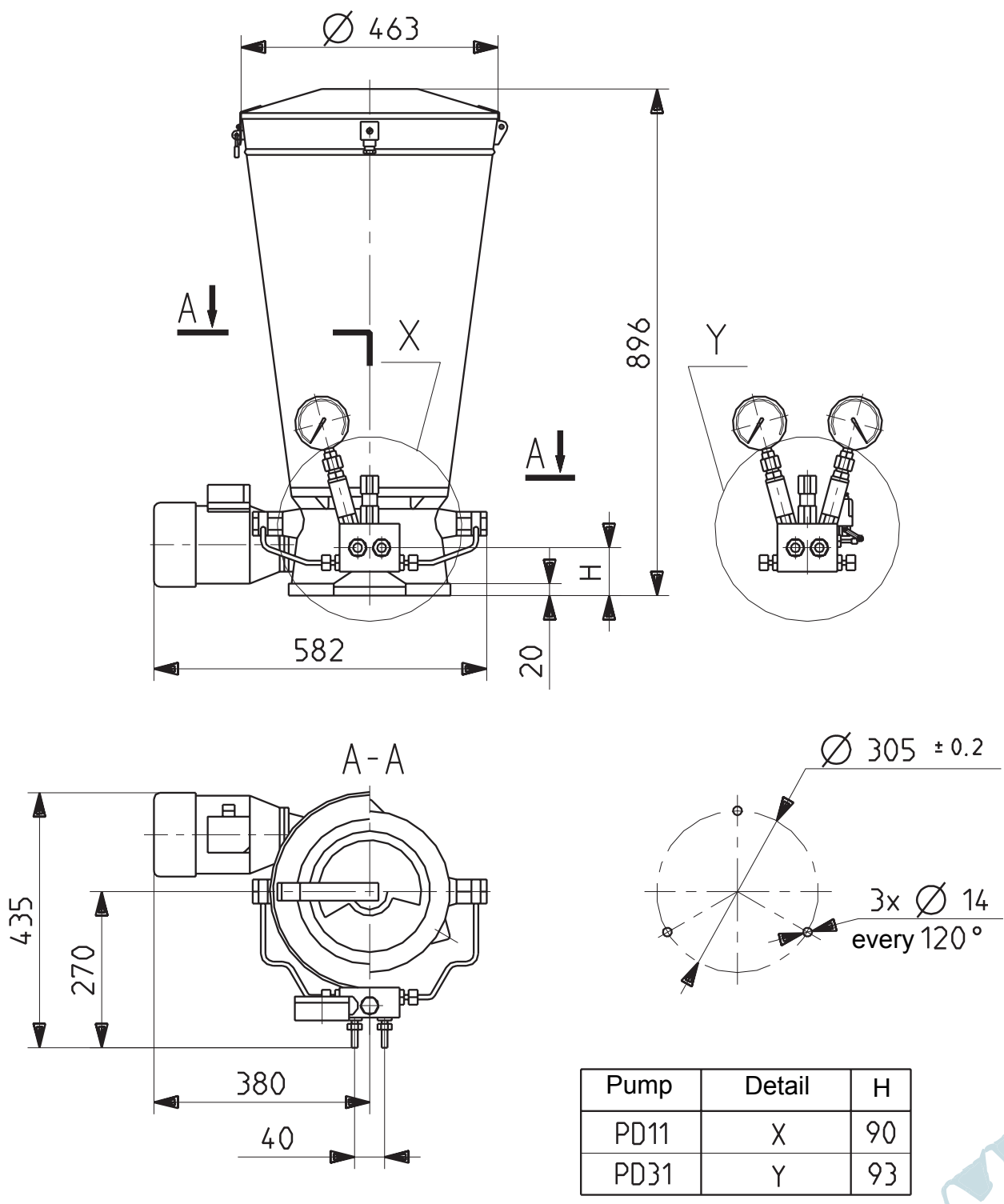
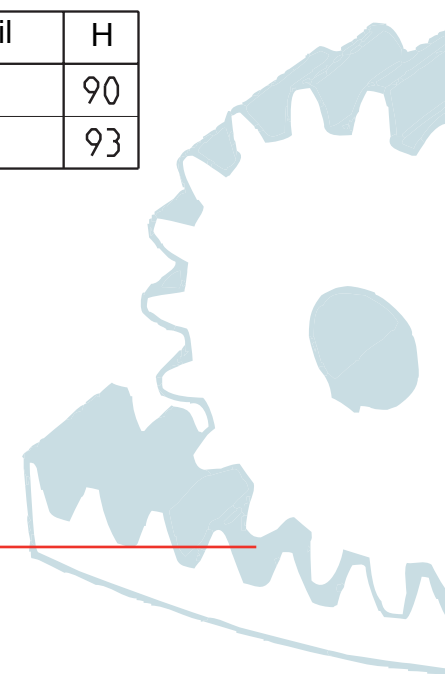


Fig. 1 Central lubrication pump of PD 1 & PD 11 type



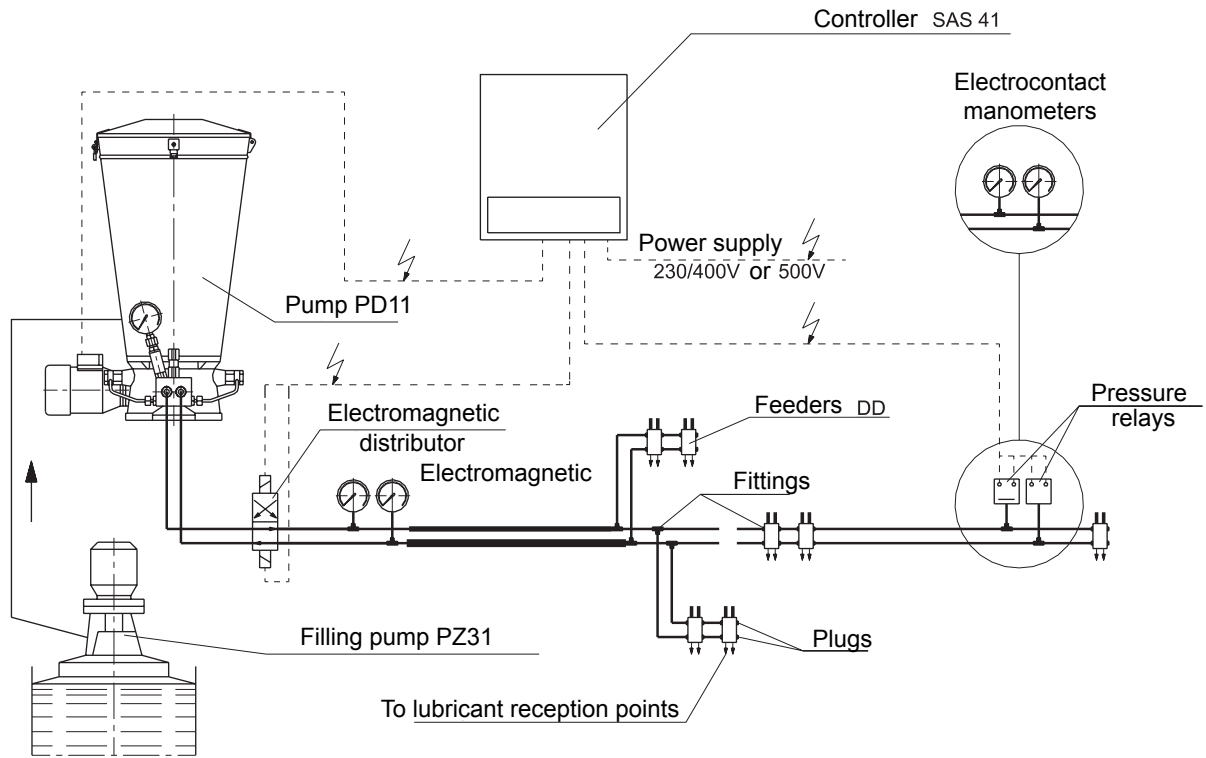


Fig. 2 Construction diagram of the central lubrication system with a PD 11 pump

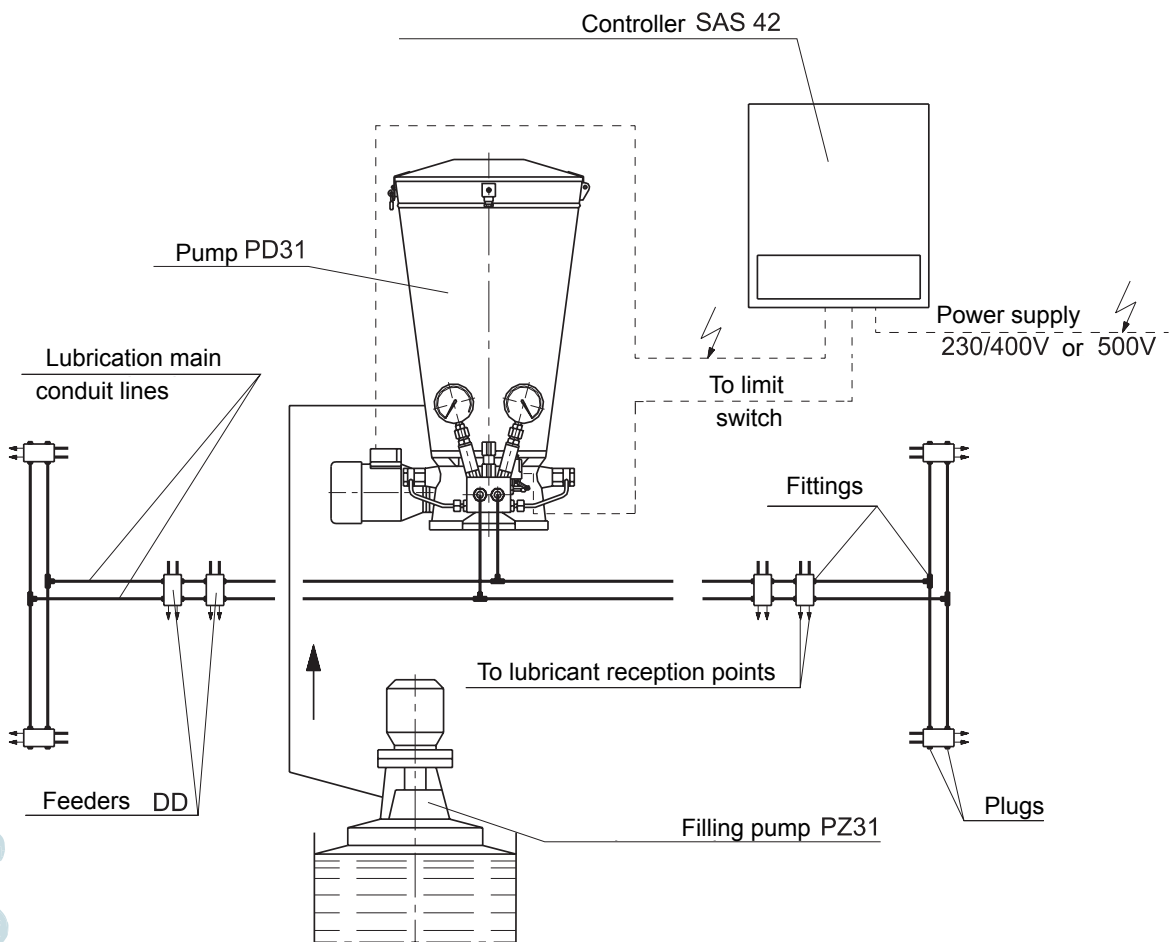
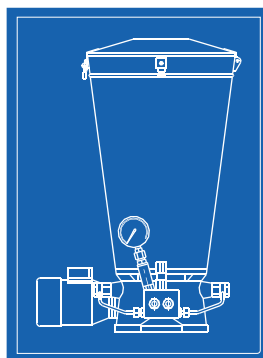


Fig. 3 Construction diagram of the central lubrication system with a PD 31 pump

## Technical details



### Delivery

at the pressure up to 20 MPa  
at the pressure up to 40 MPa

250 cm<sup>3</sup>/min  
150 cm<sup>3</sup>/min

Nominal pressure

20 MPa or 40 MPa

Power demand

0,75 kW

Rated voltage

230/400 V or 500 V, 50 Hz

Lubricants forced

plastic grease of the consistence class  $\leq 2$   
acc. to PN/72 C-04095 (NLGI)  
or lubricating oils  
of  $\geq 30$  cSt. /50°C viscosity

Ambient temperature

-10 ... 60°C

Tank capacity

63 dm<sup>3</sup>

Weight

65 kg

Pipe connection couplings

straight couplings 320-10  
wg. PN-65 M-73126

## Execution

Central lubrication pump is made in the construction varieties mentioned in the table and marked as follows:

- **type of the pump**

**PD 11** - central lubrication pump with an overflow valve, mating an electromagnetic distributor

**PD 31** - central lubrication pump with a hydraulic control distributor

- **types of lubricants forced**

A - oil

B - plastic grease

- **pump delivery**

1- 150 cm<sup>3</sup>/min

2- 250 cm<sup>3</sup>/min

- **level gauge used / not used**

1 - used

2 - not used

- **rated voltages**

1 - 230/400 V

2 - 500 V

Type of pump	Type of lubricant	Delivery	Level gauge	Rated voltage		
PD 11	A	1	1	1		
			2	2		
		2	1	1		
			2	2		
		B	1	1	1	
				2	2	
	2		1	1		
			2	2		
	PD 31		A	1	1	1
					2	2
		2		1	1	
				2	2	
B		1		1	1	
				2	2	
		2	1	1		
			2	2		

## Placing orders

The order should include name and symbol of the pump according to the table.

### Examples of pump symbols:

- central lubrication pump with an overflow valve, oil-forcing, with delivery of 250 cm<sup>3</sup>/min, with a level gauge in the tank, with 230/400 V rated voltage 230/400 V

**PD 11A-2-1-1**

- central lubrication pump with a hydraulic distributor forcing plastic grease, with delivery of 150 cm<sup>3</sup>/min, without a level gauge, with 500 V rated voltage.

**PD 31B-1-2-2**

Manufacturer and Distributor  
 Zakłady Automatyki „Polna” S.A.  
 37-700 Przemyśl, 23 Obozowa St.  
 telephone: +48 16-678-66-01  
 fax.: +48 16-678-65-24, +48 16-678-37-10  
[www.polna.com.pl](http://www.polna.com.pl)  
 e-mail: [marketing@polna.com.pl](mailto:marketing@polna.com.pl)