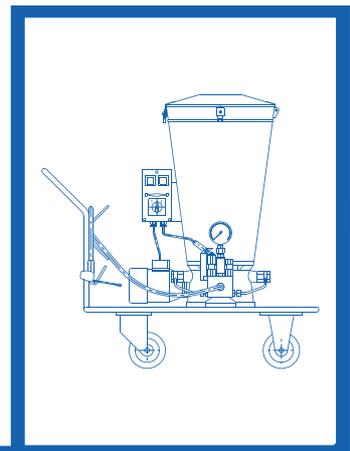


LUBRICATION STAND FOR FRICTION NODES IN TRANSPORT VEHICLES SA 1 & SA1G Type



Lubrication stand SA 1 & SA1G

Lubrication stand SA 1 and SA 1G



Application

The lubrication stand is designed to lubricate friction nodes in vehicle chasses and machines. Lubricant is fed to the reception point equipped with a ball nipple by a lubrication gun joined to the pump by a flexible hose.

Construction

The lubrication stand consists of a lubrication pump of PA 12 or PA 12G type (Fig. 2-1), lubrication gun connected to the pump by a flexible hose (Fig. 2-2) and a trolley to move the pump around (fig. 2-3). As an accessory, a filling (forcing) pump of PZ 31 type may be added (Fig. 2-4).

Pump PA 12 or PA 12G which is the basic device of the lubrication stand consists of the following assemblies:

- a tank with a grease feeding device,
- power transmission system comprising an engine, a worm gear and eccentric power transmission system
- two forcing units of different delivery, comprising forcing elements, return valves and pressure conduits,
- control valve comprising a control slide, two overflow valves (the left one equipped with a valve piston movement gauge), inductive contactless switch mating the piston movement gauge and pressure gauge,
- control device mating an inductive proximity sensor placed in the control valve,
- 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 power transmission 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, with a reciprocating movement induced by the eccentric power transmission system, force the lubricant to the return valve. The left forcing unit forces 75 cm³/min/min and the right one 125 cm³/min.

The control valve is for directing the lubricant forced through the left and the right forcing unit to their joint outlet and maintaining the maximum pressure set with overflow valves for each forcing unit. Maximum pressure for the left unit may be set at 40 MPa, and for the right at 20 MPa. The pressure gauge installed on the control valve indicates momentary pressure induced by the forcing units. The pump is designed to operate with two types of control: hydraulic and electro-hydraulic. The type of control is selected with a cam connector placed on the control device. If the connector is in position "1", only hydraulic control works. In this case, the pump operates continuously and the lubricant is forced according to the dependences shown in the diagram (Fig. 1).

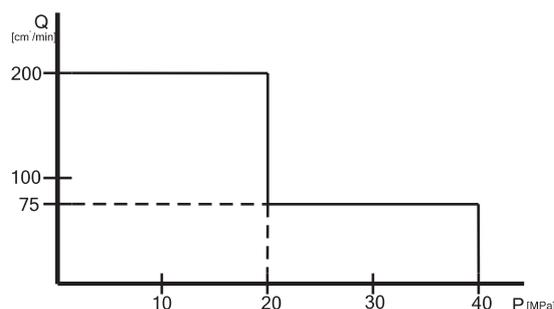


Fig. 1

If the connector is in position “2”, the electro-hydraulic control system works. The pump forces lubricant until the maximum set pressure is achieved; then, the inductive proximity sensor activates and transmits a signal to the control device which stops the engine. The pump starts again when the pressure drops (e.g. if the lubrication gun opens) to the preset minimum value. The pressure boundary values at which the pump starts or stops are preset with the overflow valve with an adjusting nut of the valve piston movement gauge. Because of stroke adjustment of the pump delivery it is possible to fill the lubricant reception point quickly at low pressure and force it at high pressure. This feature is also useful if there is a need to remove solids, which occur with the lubricant ageing or soiling, from the lubrication area (at high pressure and low delivery). When the line is unobstructed, further filling takes place at lower pressure and full pump delivery.

Technical details of pumps PA 12 & PA 12G

Delivery

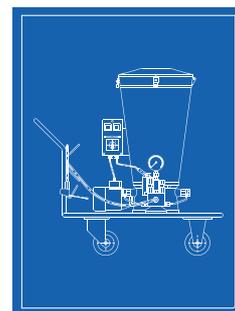
- at pressure up to 20MPa
- at pressure 20...40MPa

200 cm³/min
75 cm³/min

Maximum pressure

- for the right forcing unit
- for the left forcing unit

20 MPa
40 MPa



Pressure range during automatic operation

18...28 MPa

Power demand

0,75 KW

Rated voltage

230/400V or 500V, 50 Hz

Lubricants forced

plastic grease of the consistence class ≤ 2 acc. to PN-72/C-04090 (NLGI)

Ambient temperature

-10...60 °C

Tank capacity

63 dm³

Weight

65 kg

Technical details of PZ 31

Delivery

9 dm³/min

Nominal pressure

2,5 MPa

Rated power

1,1 KW

Rated voltage

230/400 V or 500 V, 50 Hz

Weight of pump with crane

64 kg

Executions and symbols

The lubrication stand is made in variations listed in the following Table:

Stand symbol	Voltage	Execution
SA1-1	230 / 400 V	Standard execution (Fig. 1)
SA1-2	500 V	
SA1G	500 V	Execution for applying to underground mine workings, e.g. copper mines (Rys. 2) (EC Certificate 147 on the last page)

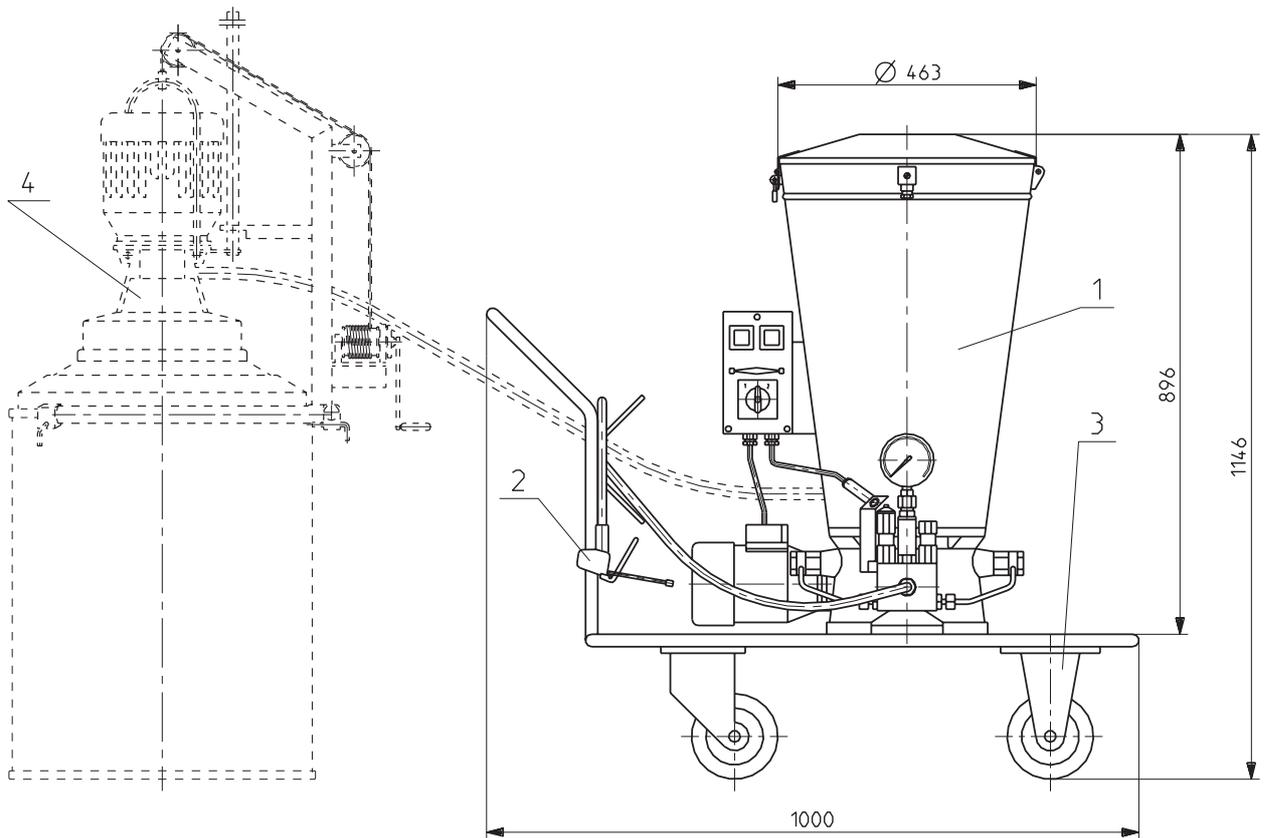


Fig. 2 Overall dimensions of the lubrication stand SA 1

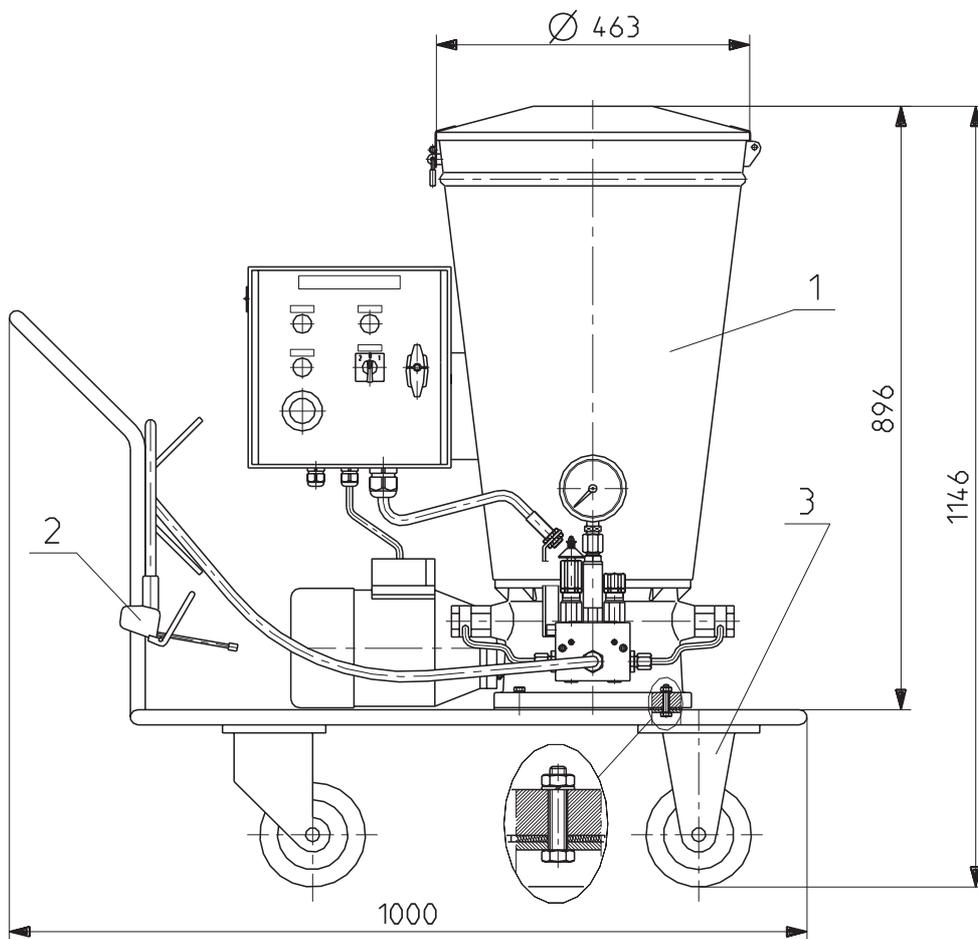


Fig. 3 Overall dimensions of the lubrication stand SA 1G

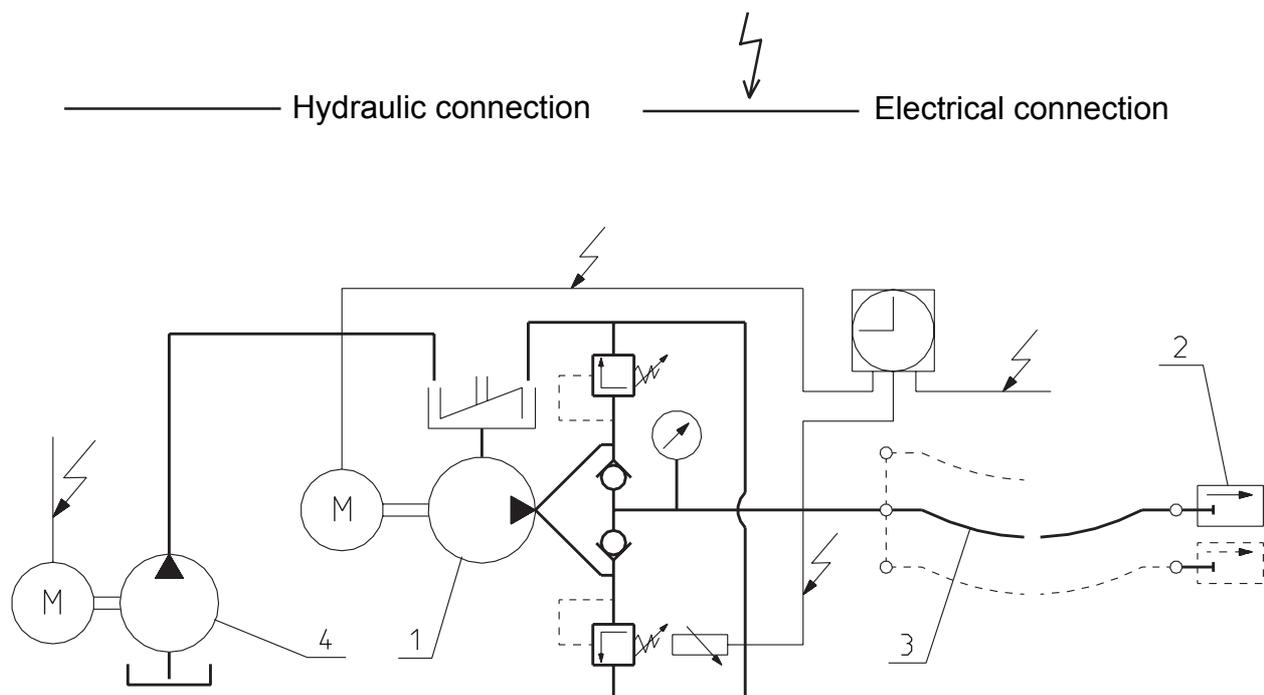


Fig. 4 Construction and operational scheme of the lubrication stand

Item	Specification
1.	Lubrication pump PA 12 or PA 12G
2.	Lubrication gun SP 10
3.	Flexible hose WP 10
4.	Loading pump PZ 31