

LUBRICATION PUMP UCD



Product description

UCD lubrication pumps are used as a source of pressure lubricant for dual-line lubricating systems equipped with dual-line distributors for permanent, regular lubrication of various machines, engineering technologies and equipment. In the dual-line lubrication system, it is possible to use it for lubrication of a small or medium quantity of lubricated places, for circuits with shorter lengths of piping distribution systems and lower consumption of lubricant. Based on the type and the quantity of dual-line distributors, the pump can supply the lubricant up to a hundred of lubricated places.

In the combined system when also progressive distributors are used in dual-line system, the pump can be utilised for lubrication of a large number of lubricated places with a requirement for a small batch of lubricant and concentrated in one part of the machine or technological equipment. By using progressive distributors, it is possible to increase the number of lubricated places up to two hundred. In this case, the progressive distributors are connected at the dual-line distributors and they distribute the lubricant dispensed by the dual-line distributor to individual lubricated places.

The lubrication pump UCD is driven by an electric motor. The reciprocal supply of lubricant to the appropriate piping is provided by the dual-line change-over valve. Pressure regulators for each lubricating branch are part of the change-over valve. The change-over pressure for individual branch can be adjusted separately. There are two pressure gauges in the given branch on the change-over valve to check the pressure visually. The change-over valve can be made in the version without signalling the operation, or possibly, with visual or electrical signalling.

The lubrication pumps typically work with plastic lubricants (lubricant greases) with a consistency degree up to NLGI-2 and with lubricating oils having the minimum kinematic viscosity of $50 \text{ mm}^2\text{s}^{-1}$. Consult the usability of lubricating media with different specifications with the manufacturer.

The lubrication pump UCD is delivered in variant models with lubricant tanks of 6, 8, 12, 30 and 63 litres. The tanks are made of steel sheets. The indicated models of UCD lubrication pump do not eliminate modification and production of specific models by customer's request.

Technical data

Number of outlets	2
Maximum working pressure.....	300 bar
Working pressure	250 bar
Working pressure regulating range.....	100 - 280 bar
(on dual-line change-over valve)	
Nominal dose of lubricant	40 cm ³ /min
Output screw union.....	for Ø 10 mm pipe (M16x1.5)

Lubricant tank capacity.....	6, 8, 12, 30, 63 dm ³
Lubricant - plastic lubricant.....	max. NLGI-2
Temperature of working environment.....	- 25 to + 40°C
Weight (as per lubricant tank and model)...	approx. 30 kg
Electric motor	230/400V; 50 Hz; 1.05 A; 0.37 kW
.....	500V; 50 Hz; 0.84 A; 0.37 kW
Level signalling nominal voltage.....	24V DC, 2 A

Additional information

Recommended optional equipment

- signalling of minimum and maximum levels of lubricant in the tank (it is not possible for 6 dm³ reservoirs),
- Signalling the operation of dual-line hydraulic change-over valve is possible visually - with indication pin or electrically - with inductive sensor.

Protection against damaging

The lubrication pump and lubricating elements in the centralized lubrication circuit are protected against excessive pressure build-up by means of control valves of the dual-line change-over valve.

The lubricant is replenished when the level in the narrow part of the reservoir drops down; it is necessary to be particular about cleanness.

When operated continuously, occasional check of connection to lubrication circuit piping for tightness is recommended.

Lubrication pump installation

The lubrication pump is installed on a horizontal concrete or steel base using four anchor bolts. The pitch of anchor bolts is indicated in the drawing.

Lubrication pump operation control

The lubrication pump supplies the lubricant continuously for the entire period during which the electric motor is under voltage.

The hydraulic change-over mechanism provides for alternate supply of lubricant into both branches of the lubricating circuit. The working pressure is adjusted using the adjusting nut on the bypass valve.

Furthermore, the following can be used for the lubrication pump:

- controlling through a separate automatic control system located at the lubrication pump (refer to Lubrication system elements),
- controlling the lubrication pump from the machine control system or from the unit in which the lubrication system is installed, or from the central control room for the process equipment or from the manufacturing plant.

Description of delivery

The lubrication pump, unless it is a customized model, is delivered as a complete unit, not requiring any specific assembly preparation, except anchoring, connection to power supply, filling with lubricant and connection to centralized lubrication. In the tank, there are remnants of lubricant after functional test, serving for preservation.

Main parts of the lubrication pump:

- Body consisting of a worm gear, eccentric shaft with thrust ring into which the pistons of both working (pumping) units fit. The integral part of each working unit is the complete valve, serving as a shut-off valve during the working unit suction;
- each working unit has an independent control of lubricant dose which is adjusted to the supply of maximum lubricant quantity;
- 230/400V (500V) electric motor attached to the side of the lubrication pump through the flange;
- lubricant tank with optional capacity made of steel sheet plate, equipped with a scraper blade for blending the lubricant and improving the efficiency of lubricant suction (version for plastic lubricant);
- hydraulic control system, consisting of dual-line hydraulic change-over valve DPT, compactly installed on the body of the pump with regulation of change-over pressure separately for each branch of the dual-line system;
- pressure gauges for each branch of the dual-line system, installed behind the outlet from the change-over valve;
- Outlet screw union for connection to the piping distribution system, typically for a 10 mm outer diameter pipe.

Lubrication system elements

- dual-line distributors DD, DLD, ZVM, ZH types,
- AD type of automatic control system, serving as the control of the lubrication pump to check and monitor the entire dual-line lubrication system,
- RUK manual shut-off valve, serving for simultaneous interruption of supply of lubricant to both branches of the dual-line lubrication system,
- EUK electric shut-off valve, serving for simultaneous interruption of supply of lubricant to both branches of the dual-line lubrication system, automatically using a remote command,
- DKS dual-line terminal switch, making it possible to check the pressure in piping at the end of the lubricating circuit of the dual-line lubrication system and further, it ensures monitoring of the system operation using a switching unit,
- FLD grease strainer in piping.

Designation of models

The lubrication pump is unambiguously identified:

- A. by catalogue type identification key
- B. by catalogue number (ID code)

The catalogue number is assigned by the manufacturer and it is unique for each type.

For communications of the customer with the manufacturer, it is advisable to use the catalogue type identification key, making it possible to set up the required version using the type identification key, respecting the standard product versions. Specific customized versions are made by the manufacturer upon request.

The type is imprinted on the nameplate of the lubrication pump. It is advisable to use this code for communication with the manufacturer after delivery.

Typical models of UCD lubrication pump

The indicated models are common for a wide range of operational applications and are often utilized. This fact has no influence on the availability of other models.

UCD 2 - 0 - 100 - 0, ID 9502174

12 l tank capacity, without lubricant level signalling, electric motor voltage 230/400V 50 Hz, standard working environment, standard drive design, without signalling for change-over operation.

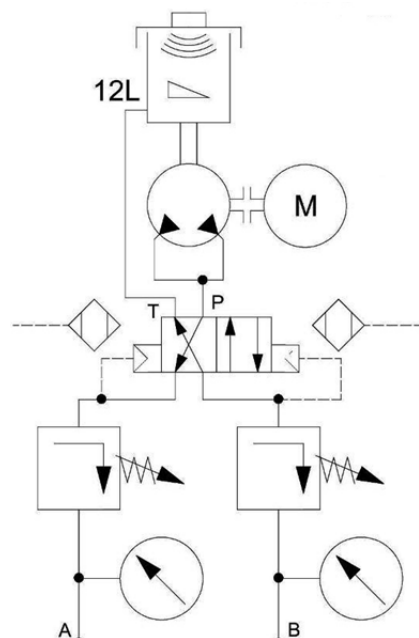
UCD 2 - 7 - 102 - 2, ID 9502268

12 l tank capacity, Min and Max lubricant level signalling, electric motor voltage 230/400V 50 Hz, standard working environment, drive design with the degree of protection IP65, electrical signalling for change-over operation.

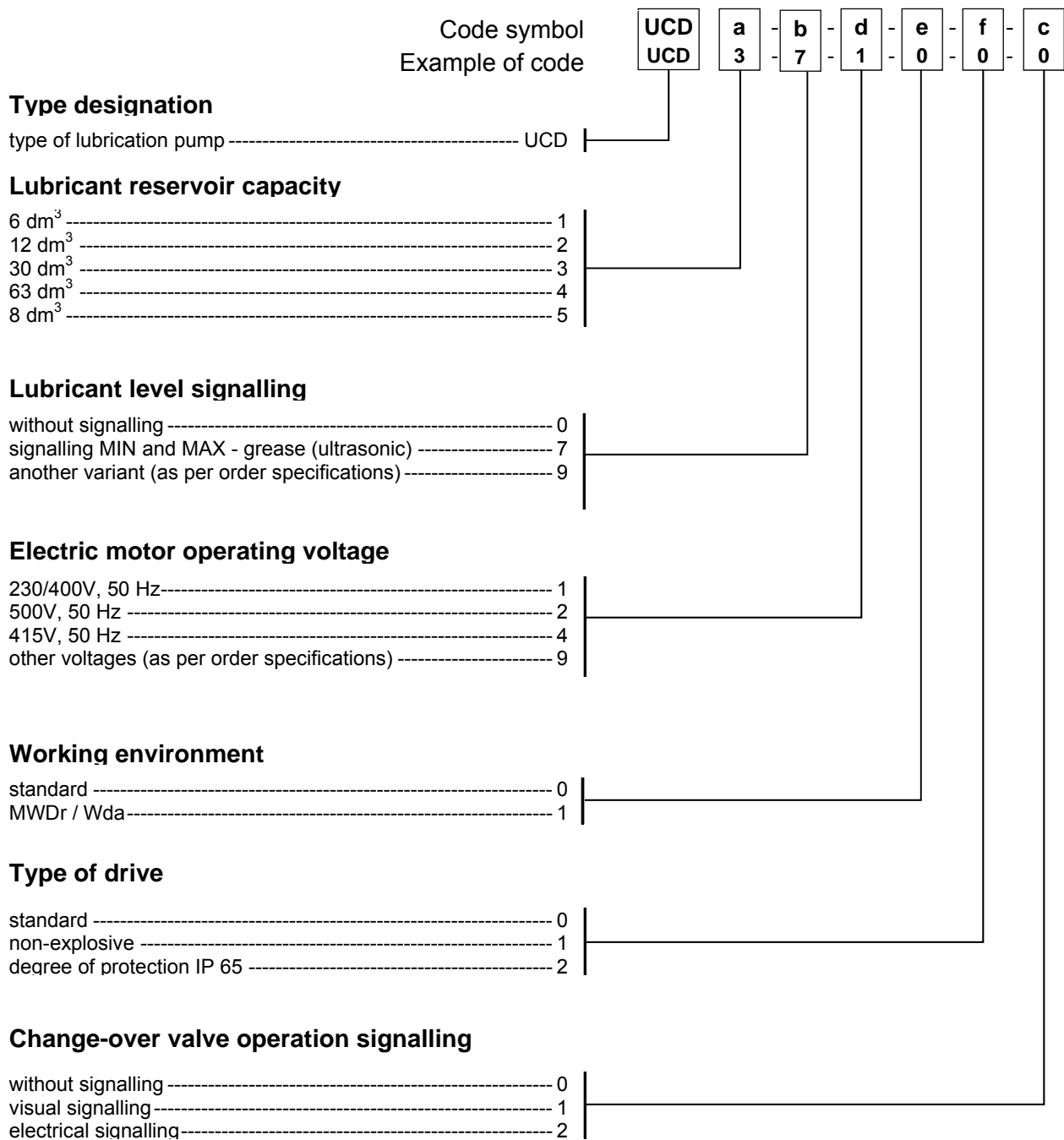
UCD 3 - 7 - 100 - 2, ID 9502528

30 l tank capacity, Min and Max lubricant level signalling, electric motor voltage 230/400V 50 Hz, standard working environment, standard drive design, electrical signalling for change-over operation.

Schematic symbol



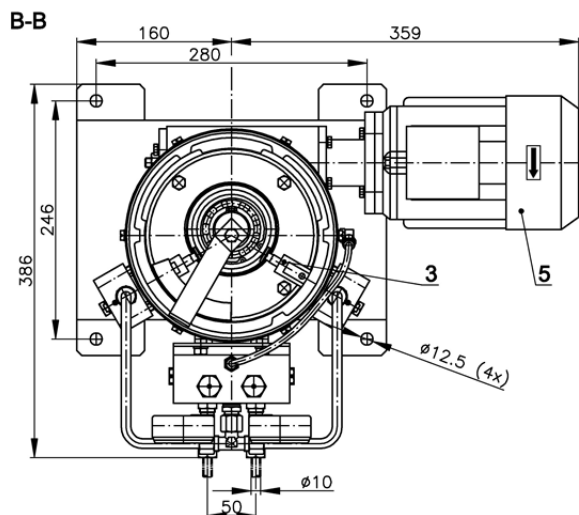
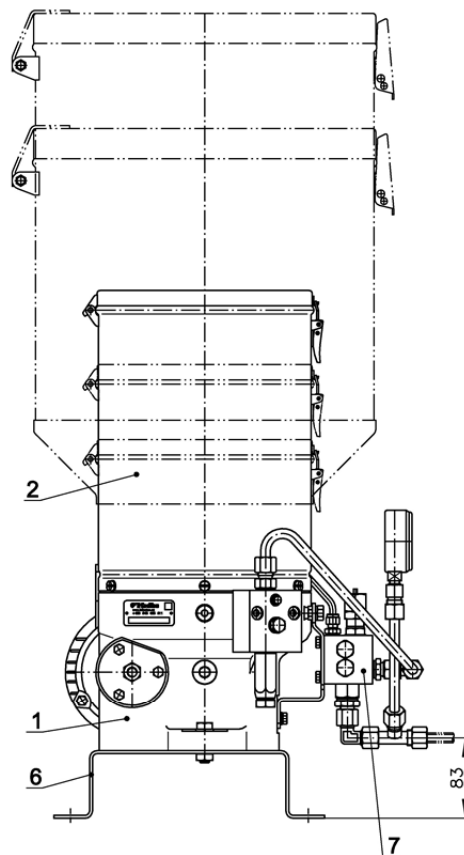
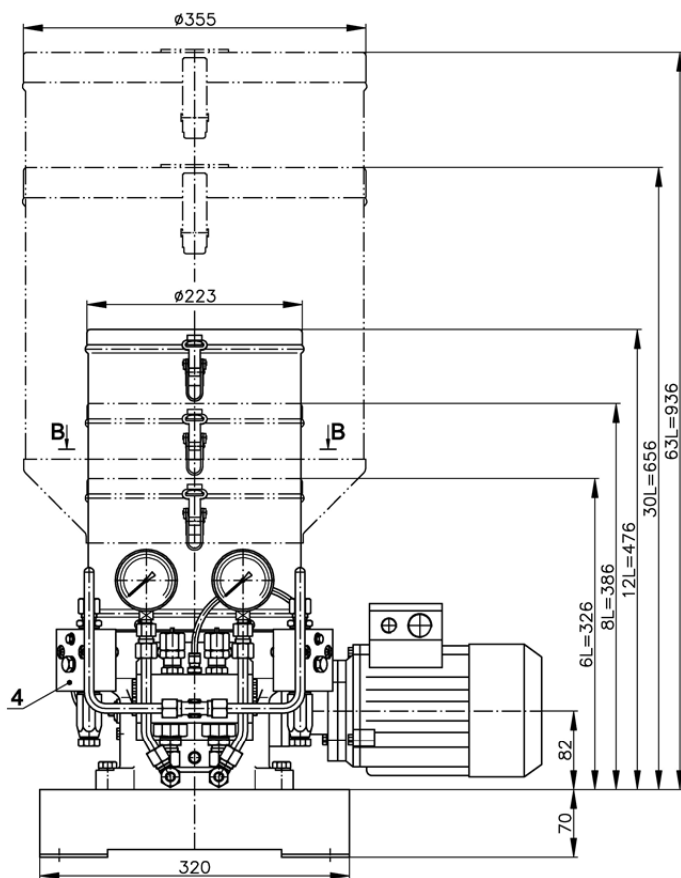
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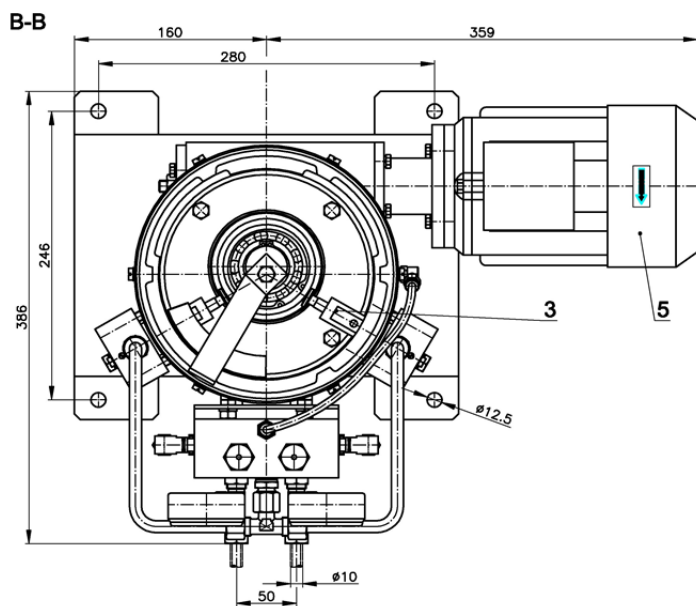
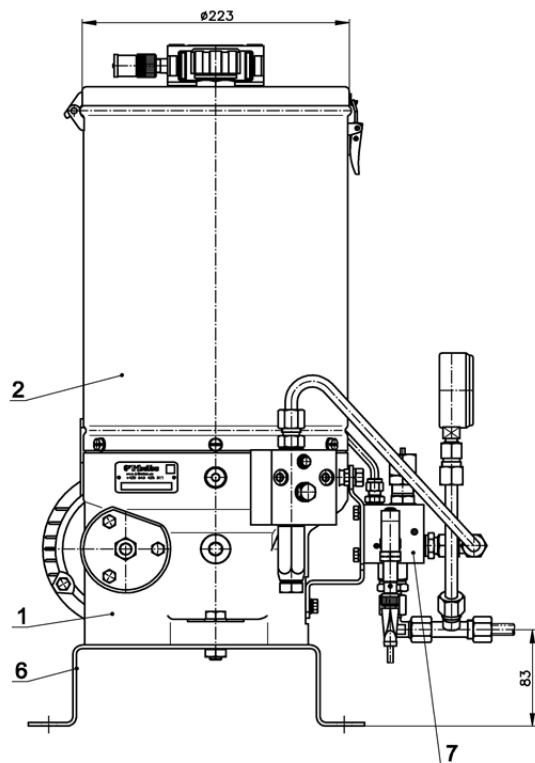
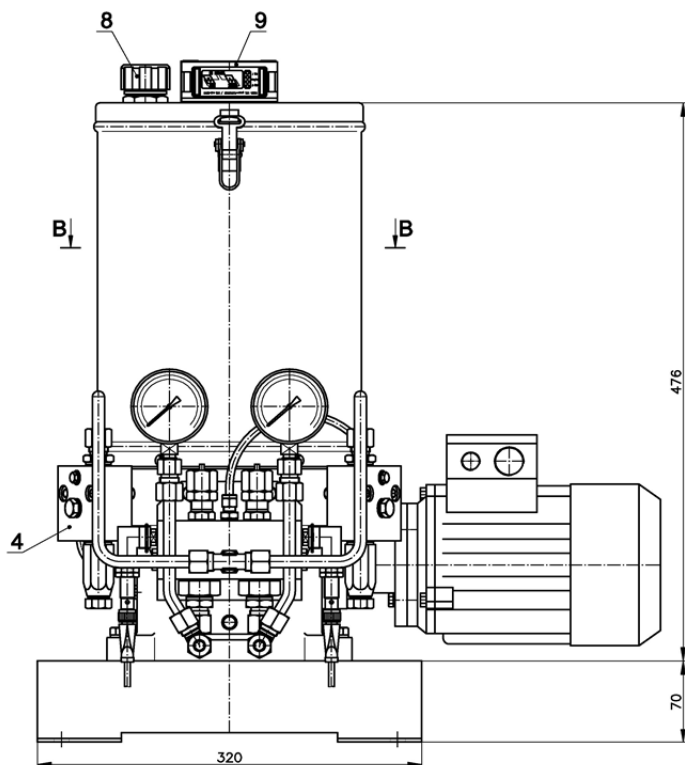
EXAMPLE OF CODE: UCD 3 - 7 - 100 - 0

Lubrication pump UCD with reservoir capacity 30 dm³, ultrasonic signalling for maximum and minimum levels in reservoir, electric motor 230/400V, 50 Hz, standard working environment, standard type of drive, dual-line change-over valve without signalling the operation.

Dimensional drawing



- 1 – Lubricator body
- 2 – Lubricant tank
- 3 – Pumping unit
- 4 – Control valve
- 5 – Electric motor
- 6 – Base
- 7 – Hydraulic change-over valve



- 1 – Lubricator body
- 2 – Lubricant tank
- 3 – Pumping unit
- 4 – Control valve
- 5 – Electric motor
- 6 – Base
- 7 – Hydraulic change-over valve with signalling
- 8 – Reservoir bleeding
- 9 – Ultrasonic level sensor