

TWO-LINE ELECTRIC CHANGE-OVER VALVE

DPE

APPLICATION

Two-line electric change-over valves are necessary components of two-line central lubrication system circuits. They are usually connected after lubrication pump outlet and serve to ensure alteration of lubricant supply into both lines of the lubrication circuit. As a standard, the change-over valves are supplied as hydraulic switches with electrically controlled drive. They are usually utilized for extremely long main lines, and for large installations of lubrication circuit collateral lines. The change-over valves are supplied either separately with an anchor plate or on a common base plate with the lubrication pump.

DESCRIPTION

The electrical change-over valve is fitted with two outlets into the two lines of the lubrication circuit, one inlet from the lubrication pump, and one return outlet to the lubrication pump for pressure release in the respective line of the lubrication circuit. In case of valves supplied on a common base plate with the lubrication pump, the respective inlets and outlets are interconnected by means of piping. The change-over valve consists of a distribution hydraulic block mounted on the base plate, in which the distribution piston is latched. On the piston face there is a carrier fork, at the back you can find the piston buffer that controls the terminal switch. The piston stroke is featured by a DC electromotor with high turning moment, ensuring reliable operation even in difficult operating conditions. The control is designed so as to supply the lubricant first into a single outlet. After reaching the set-up pressure at the terminal pressure switch (e.g. DKS), a signal is issued to turn on the electromotor, and the distribution piston is moved into the other limit position. The lubricant is supplied into the other outlet and the first position is in the pressure release phase.

For 230V AC version, the transformer, the rectifier, and the line protection are placed in a distributing box, which is bolted to the base plate. The entire equipment is fitted with a sheet cover with terminals for electricity supply, and M16x1.5mm holes in the distributing hydraulic block for inlet, return and outlet connection.

OPERATION

The motor rotational motion is transformed via bearing cam and a clamp into linear motion of the piston. As soon as the opposite position is reached as compared to the original one (0° – 180° or 180° – 360°), the terminal switch contacts (13 - 14 or 21 - 22) trigger and stop the electromotor. The signal to reinitialize (transposition) is activated by an outside impulse (with a length of 1 s), e.g. from the lubrication circuit control system. Due to short operation time, the piston gets over the critical points with small overlay at a high speed.

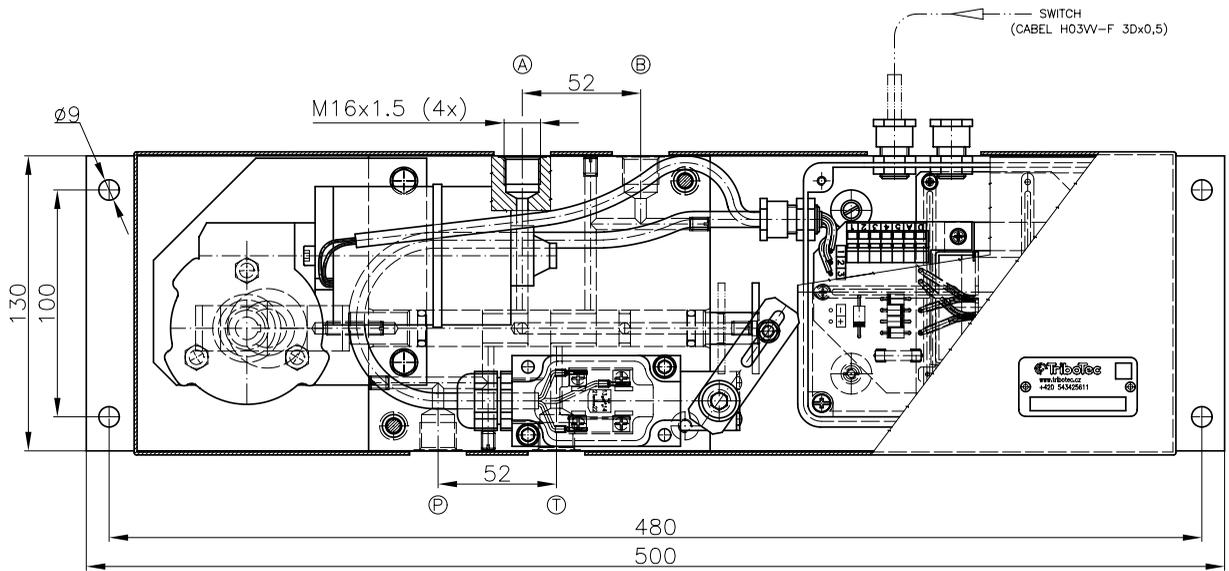
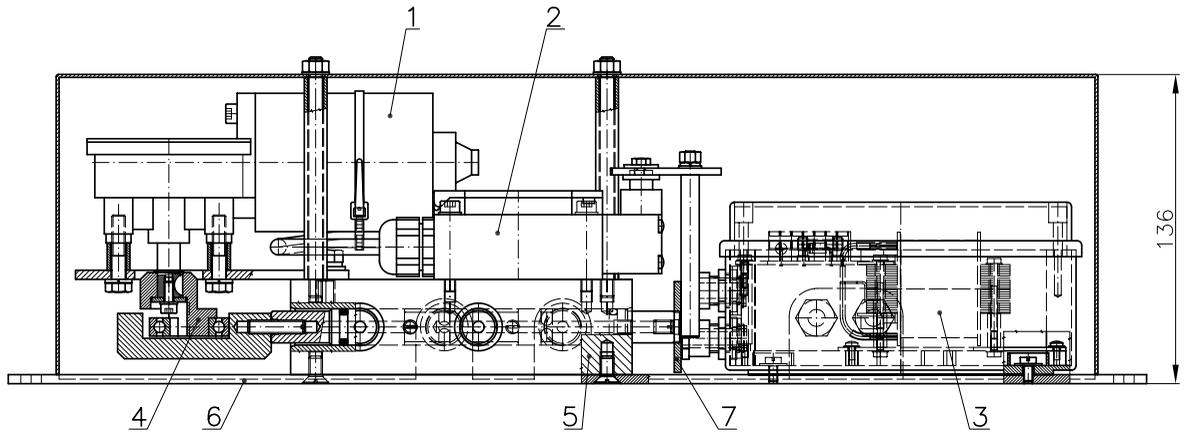
SERVICE AND MAINTENANCE

If the change-over valve is not compactly connected on a common base plate with the lubrication pump, it is possible to mount it at random in horizontal position by means of an anchor plate and four M8 bolts. The connection to the electro-supply line is performed according to the electric diagram in accordance with current standards for electrical devices. After venting the lubrication pump connect the pump to the change-over valve. The lubricator is put into operation; it is necessary to monitor whether the lubricant flows from the change-over valve outlet regularly and without air bubbles. The outlet is then covered with a suitable plug or lubrication system closure component. Then the transmission to the other line is

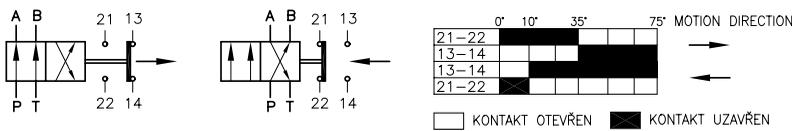
performed, and, consequently, the supply change-over to the other change-over valve outlet. If the lubricant flow is regular even at this outlet, it is possible, after unplugging the first outlet, to connect the change-over valve to the lubrication circuit piping and to the release outlet into the lubrication pump. The pressure change-over valve does not need further maintenance or manipulation. With continuous operation, it is recommended to check the lubrication circuit piping connection for a leakage.

TECHNICAL DATA

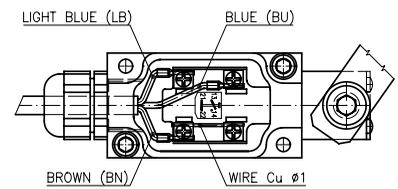
Maximum working pressure		400 bar
Working pressure		350 bar
Number of outlets		2
Inlet pipe union		M16x1.5 mm
Outlet pipe union		M16x1.5 mm
Time of run /transposition/		0.5 s.
Angle of rotation		180 ⁰
Turning moment		20 Nm (2 kpm)
Operational voltage		24V DC, 230V AC-50 Hz, 1 A
Protection		IP 54
Electric motor		24V DC, 1 A, 24 W
Lubricant	grease	max. NLGI – 2
	oil	min. 50 mm ² . s ⁻¹
Temperature of working environment		- 25 to 80 °C
Weight		13 kg
Assembly position		horizontal



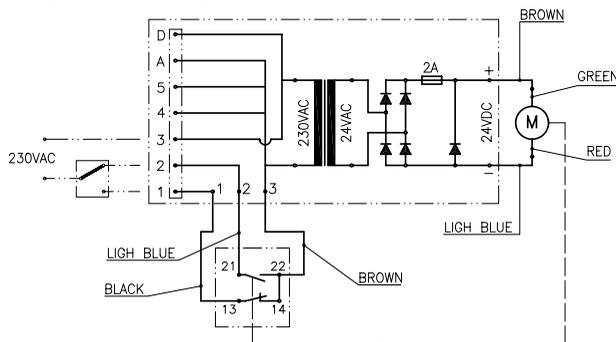
POSITION OF CONTACTS SWITCHING



SWITCH WIRING



EL. WIRING SCHEMA



Pos	Name
1	Electric motor
2	Terminal switch
3	El.switch board
4	Drive cam
5	Distributor body
6	Base plate
7	Terminal stopper

Name	TWO-LINE CHANGE-OVER VALVE	Tribotec s.r.o. Košuličova 4 Brno www.tribotec.cz +420 543 425 611
Type	DPE	
Code	9 52 0589	