

2-way Logic Cartridge Valves Directional Function

Model: LC...7XJ(logic cartridge valves)
LFA...7XJ(control cover)



- ◆ Size 16/63
- ◆ Maximum working pressure 420 bar
- ◆ Maximum working flow 3000 L/min

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Features

- Valve poppet with or without damping nose
- 2 area ratios
- 4 types of springs
- 4 stroke limitations
- Control cover with integrated seat valve
- Control cover with integrated shuttle valve
- Control cover for set-up of directional spool valves with or without installed shuttle valve
- Control cover for set-up of directional seat valves with or without installed shuttle valve

The 2-way logic cartridge valves are designed as components for integrated blocks. The main valve component with oil ports A and B is installed into the control block in a receiving hole standardized according to DIN ISO 7368 and closed with a cover. In most cases, the control cover is the connection between the control side of the main valve component and the pilot valve.

By control with respective pilot control valves, the main valve component can be applied for pressure, directional and throttle functions or a combination of these functions. The special economical structural designs can be achieved by matching the size of various flows of the valves and the actuators. If the main valve component can undertake more than one function, the special economical structure can be achieved.

Directional function

The 2-way logic cartridge valves generally consist of control cover (1) and cartridge element (2). The control cover contains control holes, optional stroke limitation according to function, hydraulic control directional seat valve or shuttle valve. In addition, the directional spool valve or directional seat valve can be installed onto the control cover. The cartridge element mainly includes valve sleeve (3), adjustment ring (4) (only applicable to size 32), seat valve (5), optional damping (7) and reset spring (8).

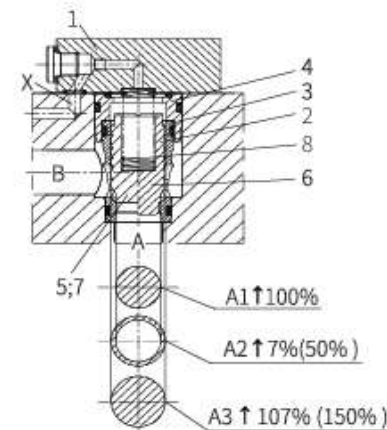
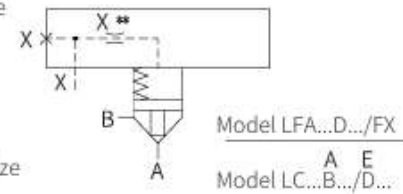
Function

The function of 2-way logic cartridge valves depends on the pressure. Therefore, there are three important pressure-bearing areas A1, A2, A3 for actuation of the valve. The area of the valve seat A1 is taken as 100%. Depending on the type, the annulus area A2 is 7% or 50% of the area A1. Therefore, the area ratio A1:A2 is either 14.3:1 or 2:1. The area A3 is equal to A1+A2. Due to the different area ratios A1:A2, the annulus area A2 is also different. The area A3 may be 107% or 150% when 100% area at seat A1.

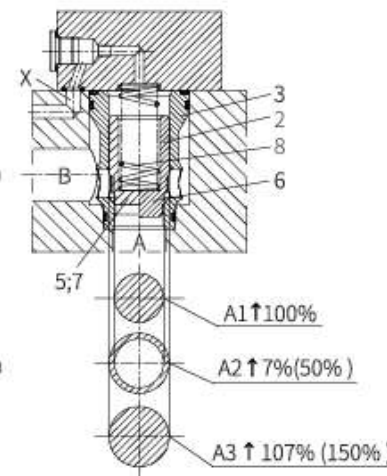
Basic application

The areas A1 and A2 are operated in the opening direction. The area A3 and the spring are operated in the closing direction. The effective direction generated by the combination of the opening and closing directions determines the position of the spool of the 2-way logic cartridge valve.

The oil can flow from A to B or B to A through the 2-way logic cartridge valve. When the area A3 is compressed by the pilot oil of channel B or external pilot oil supply, the channel A is closed without leakage."



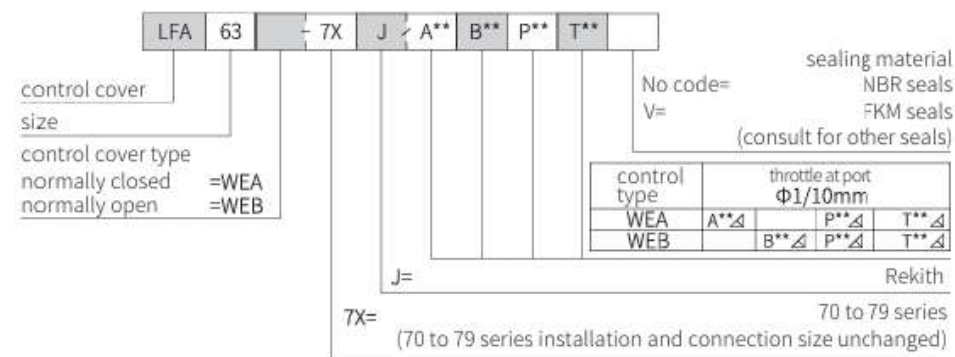
Size 16 to 32



Size 40 to 63

Control cover "WEA" and "WEB" for set-up of a directional spool or directional seat valve

Size 63



4 If necessary, please provide specifications of the throttle
e.g. X12= throttle Φ 1.2mm
Standard throttle see page 07/24

