

Modular Pressure Reducing Valve

Model: ZDR10D...5X



- ◆ Size 10
- ◆ Maximum working pressure 210 bar
- ◆ Maximum working flow 80 L/min

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Features

- Sandwich plate valve
- 2 kinds of adjusting elements:
 - Rotary knob
 - Hexagon screw with sleeve and protective cap
- Pressure reducing in port A, B or P
- Check valve, optional
- 4 pressure ratings

Function description, sectional drawing

The ZDR10D...5XJ/... reducing valve is direct operated pressure reducing valve with sandwich plate construction, it is used for system pressure reducing.

The valve is composed of valve body(1), control spool (2), compression spring (3), adjusting element (4) and an optional check valve.

Model ZDR10DA

At rest, the valve is normally open, the fluid flows freely from port A1 to A2. The pressure in port A2 acts on the spool face(2) opposite the compression spring (3) through the control channel (5). When the pressure at port A2 exceeds the set value of spring (3), the control spool (2) is moved to the control position, the pressure at port A2 remains stable. The working pressure and control oil are supplied internal from port A2 through the channel channel (5). If the pressure at port A2 continues to increase due to external force acts on the actuator, the control spool (2) will still move towards the compression spring (3), then the port A2 is

connected to the oil tank through the shoulder (9) on the control spool (2) and valve body (1). The sufficient oil flows back to the tank to prevent further pressure increase. The oil in the spring chamber (7) is drained external to the oil tank through the port TA.

The pressure gauge connection (8) is used for secondary pressure monitoring of the valve. Only in version "A", a check valve can be used for free flow back from port A2 to A1.

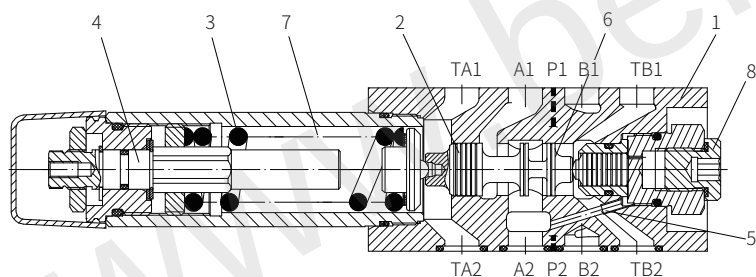
Model ZDR10DP and ZDR10DB

In model DP, the pressure is reduced in port P1, the signal and control oil are provided internally from port P1.

In model DB, the pressure is reduced in port P1, but the control oil is taken from port B.

Attention:

In model DB, when the directional valve in position P to A, the pressure of port B must not exceed the set pressure. Otherwise, the pressure at port A will be decrease. The check valve is only installed in version DA and allow oil flows freely from A2 to A1.



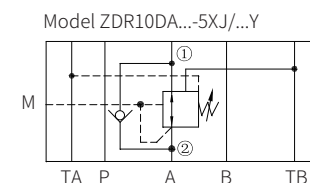
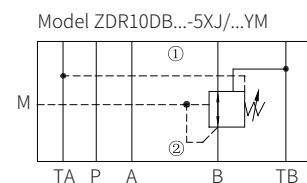
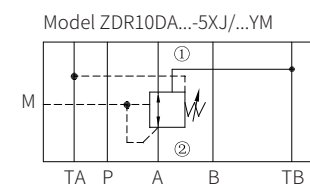
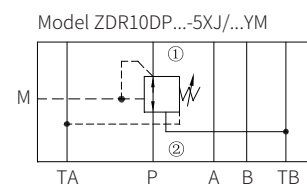
Model ZDR10DA1...5XJ/...YM

Models and specifications

Z	DR	10	D		-5X	/		Y		*
sandwich plate	=Z									more information in text
reducing valve	=DR									sealing material
size 10	=10									No code= NBR seals
direct operated	=D									V= FKM seals
pressure reducing in port A	=A									(consult for other seals)
pressure reducing in port B	=B									No code= with check valve
pressure reducing in port P	=P									(only with version "A")
adjusting element										M= without check valve
rotary knob	=1									Y= control oil supply internal and drain external
hexagon screw with sleeve and protective cap	=2									
Lockable rotary knob with scale	=3									
50 to 59 series	=5X									
(50 to 59 series: installation and connection size unchanged)										
										25= maximum secondary pressure 25bar
										75= maximum secondary pressure 75bar
										150= maximum secondary pressure 150bar
										210= maximum secondary pressure 210bar

Functional symbols

(①= Valve side ②= Subplate side)

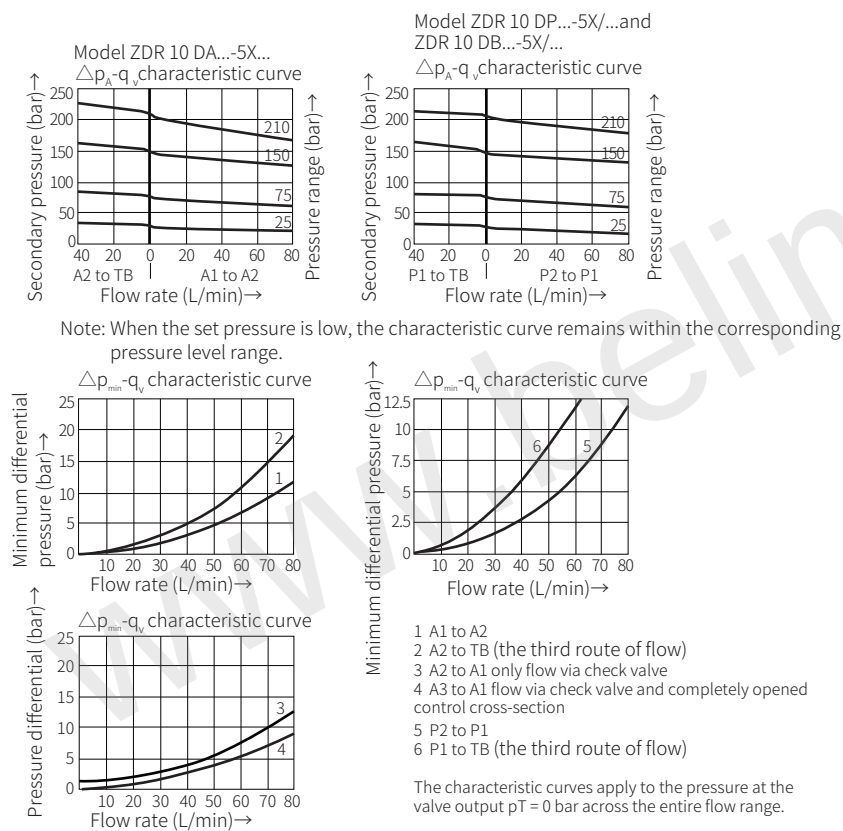


Technical parameters

Weight	Kg	about 2.8
Medium		Mineral hydraulic oil or phosphate hydraulic oil
Temperature range	°C	-30 to +80 (NBR seal) -20 to +80 (FKM seal)
Viscosity range	mm ² /s	10 to 800
Cleanliness of oil		The maximum allowable pollution level of oil is ISO4406 Class 20/18/15
Maximum working pressure (inlet)	bar	315
Secondary pressure (outlet)	bar	to 25, to 75, to 150, to 210
Oil port back pressure T(Y)	bar	to 160
Maximum flow	L/min	80

Characteristic curve

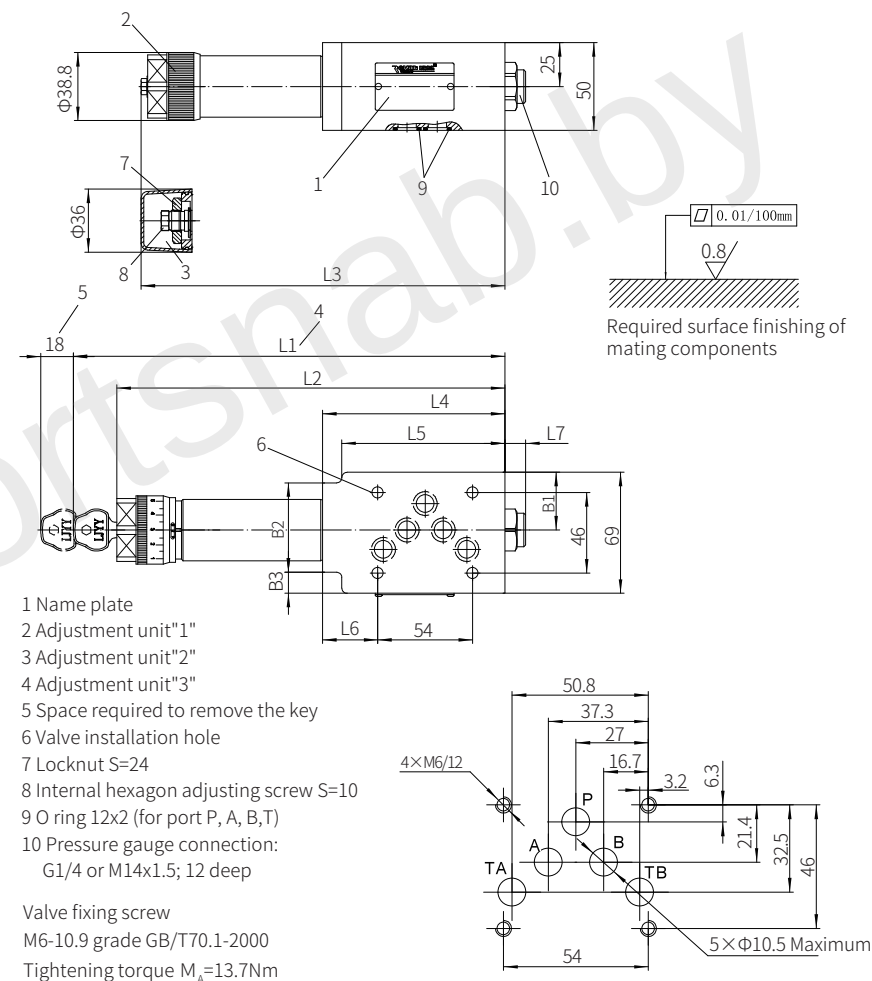
(Measured when using HLP46, $\vartheta_{oil}=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$)



Component size

Size unit: mm

Model ZDR10...-5XJ/...



Version	L1	L2	L3	L4	L5	L6	L7	B1	B2	B3
"DA"	254	230	210	104	93	31.5	4	32.9	51	12
"DB" and "DP"	242	218	198	91	-	18.5	15	35	-	-