

Modular Pressure Reducing Valve

Model: ZDR10D...5XJ



- ◆ 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.

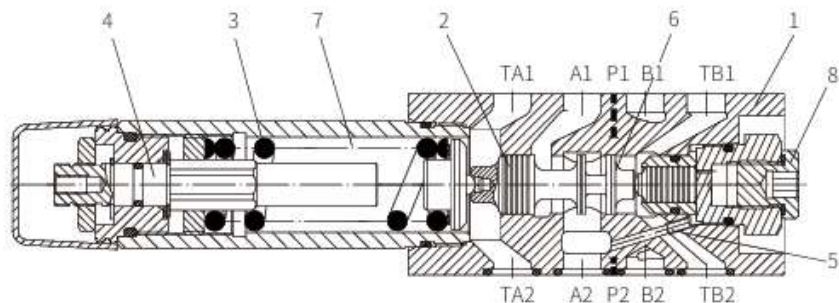
Model ZDR10DP and ZDR10DB

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

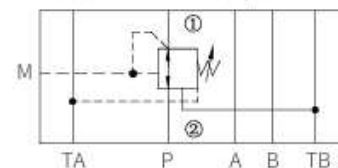
Models and specifications

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

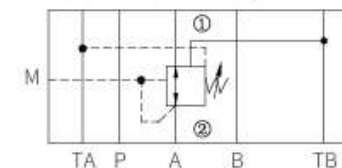
Functional symbols

(①= Valve side ②= Subplate side)

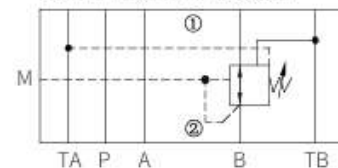
Model ZDR10DP...-5XJ/...YM



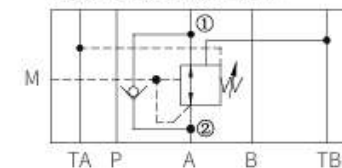
Model ZDR10DA...-5XJ/...YM



Model ZDR10DB...-5XJ/...YM



Model ZDR10DA...-5XJ/...Y

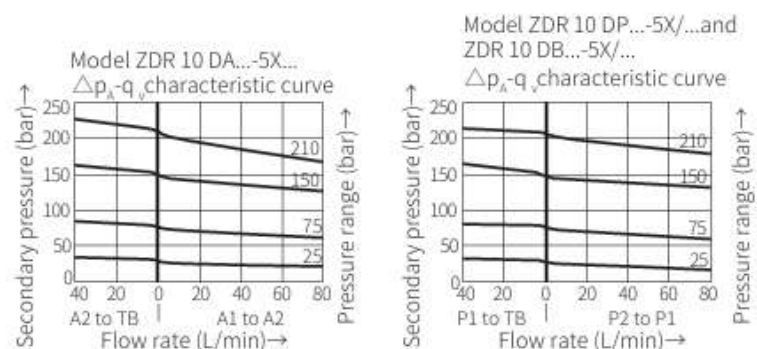


Technical parameters

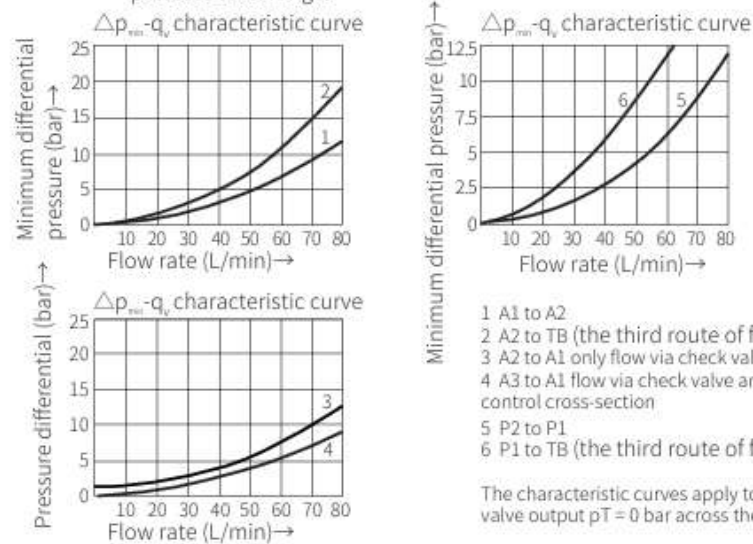
Weight	Kg	about 2.8
Medium		Mineral hydraulic oil or phosphate hydraulic oil
Temperature range	°C	-30 to +80 (NBR seal) -20 to +80 (FKM seal)
Viscosity range	mm ² /s	10 to 800
Cleanliness of oil		The maximum allowable pollution level of oil is ISO4406 Class 20/18/15
Maximum working pressure (inlet)	bar	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, $\vartheta_{oil}=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$)



Note: When the set pressure is low, the characteristic curve remains within the corresponding pressure level range.



- 1 A1 to A2
- 2 A2 to TB (the third route of flow)
- 3 A2 to A1 only flow via check valve
- 4 A3 to A1 flow via check valve and completely opened control cross-section
- 5 P2 to P1
- 6 P1 to TB (the third route of flow)

The characteristic curves apply to the pressure at the valve output $p_T = 0$ bar across the entire flow range.