

3.18

# Pressure Reducing Valve Direct Operated

# Type ZDR6D...L4X

Size 6 Up to 210 bar Up to 50L/min



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#### Features

- Sandwich plate design
- Mounting face meeting requirements for DIN24340 A and ISO4401
- 4 pressure ranges
- 2 adjustment forms
   Rotary Knob
   Adjusting screw with protective cover
- Connector with pressure gauge
- Selectable one-way valve

### **Function and configuration**

Pressure reducing valves type ZDR 6 D.. are 3-way direct operated, sandwich plate design with a pressure reducing function on the secondary side. It is used to reduce the system pressure. The pressure reducing valve basically consists of the housing (1), the control spool (2), two compression springs (3) and the adjustment element (4) as well as with an optional check valve.

#### Model DA:

At static state, the valve is normally open, and fluid can flow freely from port P2 to port P1 (version "DP") or from port A1 to port A2(version "DA"). Pressure in port P1 acts at the spool area via control line (5) and is balanced with the setting value of the compression spring (3).

When the pressure in port P1 exceeds the setting value of the spring (3), the control spool (2) moves further towards the compression spring (3), the

Type: ZDR6DA1-L4X/...YM...

opening aperture at port P is getting smaller until fluid at port P1 flows back to the tank through the orifice (6) of the control spool (2) to prevent any further rise in pressure. The leakage oil in spring chamber(7) is always drained to tank through port T (Y).

A check valve can be fitted optionally in version "DA" for free flow from ports A2 to ports A1 .

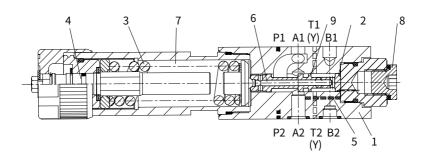
A pressure gauge connection (8) permits the secondary pressure to be monitored.

In model DA, one-way valve can only be mounted with the oil port from A2 to A1 to make the flow passage smooth.

#### Model DP and DB:

In model DP, oil port P1 is pressure reduced; signal and control oil is provided from the inside of oil port P1.

In model DB, oil port P1 is pressure reduced; but control oil is from oil port B.



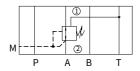
#### Note:

1. In model DB, when directional valve is in position from P to A, please make sure the pressure of oil port B is no more than the set value, otherwise, the pressure of oil port A is reduced.

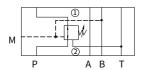
2. For internal leakage, superposition relief value for in pair with superposition (hydraulic controlled) one-way valve shall be installed between the superposition (hydraulic control) one-way valve and the directional change valve.

## Symbols

#### Type:ZDR6DA...L4X/..YM

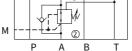


#### Type:ZDR6DB...L4X/..YM



# Ordering code

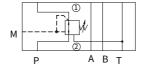




Type:ZDR6DP...L4X/..YM

① =valve side;

2 =bottom plate side



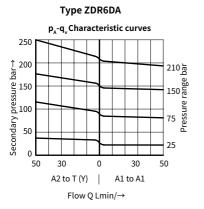
pottom plate side

	Z	DR	6	1	D		- - -	L4X	/	Y					*	]
Superposition structure =Z														Τ		Further details in clear text
Relief valve =	= DR	2														No code = NBR seals
Diameter6	=	= 6														
Direct-acting type		:	= D											1		Pressure tapping thread code = Inch G1/4
Oil port A2 pressure relieve Oil port B2 pressure relieve Oil port P1 pressure relieve	d		=	= A = B = P								L	No	ma	2 rk	
Knob Adjusting bolt with protecti Knob with lock	ve c	over			=1 =2 =3						_ Y=	:	М		Co	<ul> <li>Without one-way valve</li> <li>ntrol oil supplied from inside and drained to the outside</li> </ul>
Series L40 toL49 (L40 to L49: unchanged installation	on an	ıd con	inecti	on di		=L4) nsion:	-				2.5= 7.5= 15= 21=	=			Ма Ма	ax. secondary pressure 25bar ax. secondary pressure 75bar x. secondarypressure 150bar <. secondary pressure 210bar

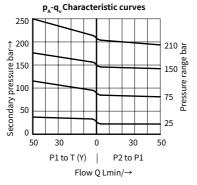
# **Technical data**

Fluid		Mineral oil suitable for NBR and FKM seal								
Fiuld		Phosphate ester for FKM seal								
Fluid temperature range	°C	-30 to +80 (NBR seal)								
Fluid temperature range	L	-20 to +80 (FKM seal)								
Viscosity range	mm²/s	10 to 800								
Deserve of constanting time		Maximum permissible degree of fluid contamination:								
Degree of contamination		Class 9. NAS 1638 or 20/18/15, ISO4406								
Max secondary pressure (inlet)	bar	315								
Max secondary pressure (outlet)	bar	25;75;150;210								
Backpressure oil port T(Y)	bar	160								
Max flow	L/min	50								
Weight	kg	About1.2								

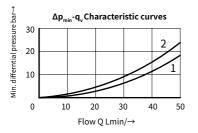
### Characteristic curves (Measured at $\vartheta_{oil} = 40^{\circ}C \pm 5^{\circ}C$ , using HLP46)

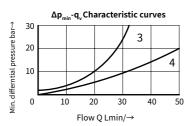


#### Type ZDR6DP and ZDR6DB



**Note:** if the set pressure is low, the performance curve is within the corresponding pressure level range.





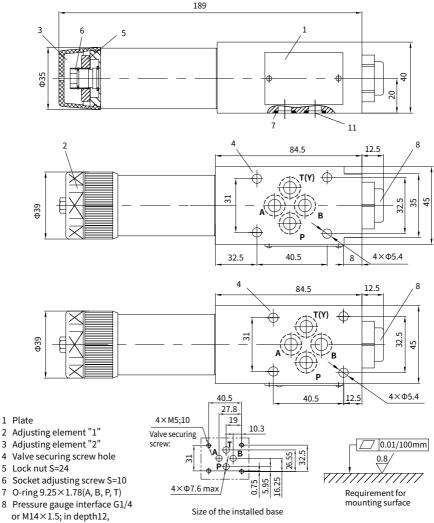
This work curve is effective to the relief function in case of outlet pressure = 0 within the overall range.

 $\begin{array}{c} \begin{array}{c} \Delta p_{min} \cdot \mathbf{q}_v \text{Characteristic curves} \\ \end{array} \\ \begin{array}{c} 30 \\ 20 \\ 0 \\ 10 \\ 0 \\ 10 \\ 20 \\ 30 \\ 40 \\ 50 \\ \end{array} \\ \begin{array}{c} 5 \\ 5 \\ Flow \ Q \ Lmin/ \rightarrow \end{array}$ 

- 1 A1 to A2
- 2 A2 to T(Y) (the third flow route)
- 3 Flow from A2 to A1 just goes through one-way valve.
- 4 Flow from A2 to A1 just goes through one-way valve and fully-open main valve.
- 5 P2 to P1
- 6 P1 to T(Y) (the third flow route)

## Unit dimensions

(Dimensions in mm)



- 3 Adjusting element "2"
- 5 Lock nut S=24
- 6 Socket adjusting screw S=10
- 7 O-ring 9.25×1.78(A, B, P, T)
- 8 Pressure gauge interface G1/4 or M14×1.5; in depth12, Hex wrench S=6

#### For connection of bottom plate, order shall be made separately Type:

G341/01(G1/4), G341/02 (M14×1.5) G342/01(G3/8), G342/02 (M18×1.5) G 502/01(G1/2),G502/02 (M22×1.5)

#### Valve fixing screws:

M5 internal hexagon screw or LT 30.02 double-screw bolt added LT 30.01 nut GB/T 70.1-10.9, the length according to sandwich, tightening torque M<sub>A</sub> = 8.9 Nm, must be ordered separately.