3.5

Pilot operated pressure relief valve

Type ZDB/ Z2DB 6V..L4X

Size 6
up to 315bar
up to 60 L/min

Contents

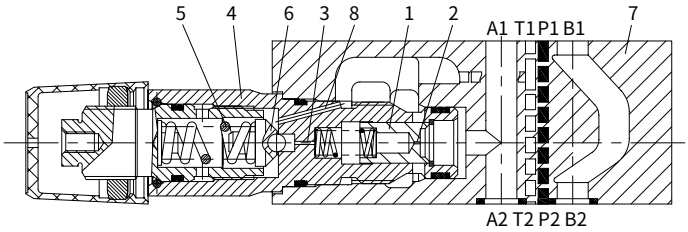
Features

- Sandwich plate valve
- Porting pattern to DIN 24 340 form A and ISO 4401
- For threaded connection and sub-plate mounting
- 4 pressure ranges
- 5 circuit options
- 2 adjustment elements:
  - Rotary knob
  - Adjustable bolt with protective cap

Function and configuration

Pressure relief valve types ZDB and Z2DB are pilot operated and sandwich structure. They are used to limit the pressure in a hydraulic system. They consist of the housing (7), together with one or two pressure relief valve cartridges (4). The system pressure is set by the inserted relief valve(4).

At static position, the valves are closed. Pressure in port A acts on the spool (1). Pressure fluid flows through orifice (2) to the spring loaded side of the spool (1) and through orifice (3) to the pilot poppet (6). If the pressure in port A rises beyond the value setting at spring (5), the pilot poppet (6)opens. Fluid can flow from the spring loaded side of spool (1), orifice (3), and channel (8) into port T. The pressure drop moves spool (1) to open the connection from A to T, while the setting pressure at spring (5) is maintained. Pilot oil returns from the two spring chambers via port T externally.

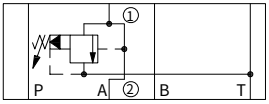


Notes:

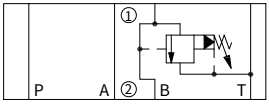
The pilot relief valves have more internal leakage, If lower leakage is demanded, such as safety valve, it is recommended to choose direct operated pressure relief valves , ZDBD type.

Symbols

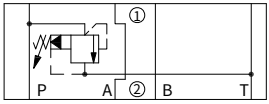
Type ZDB6VA...



Type ZDB6VB...



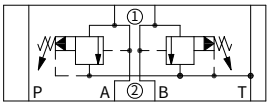
Type ZDB6VP...



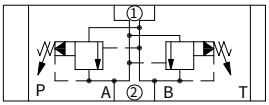
① = valve side

② = sub-plate side

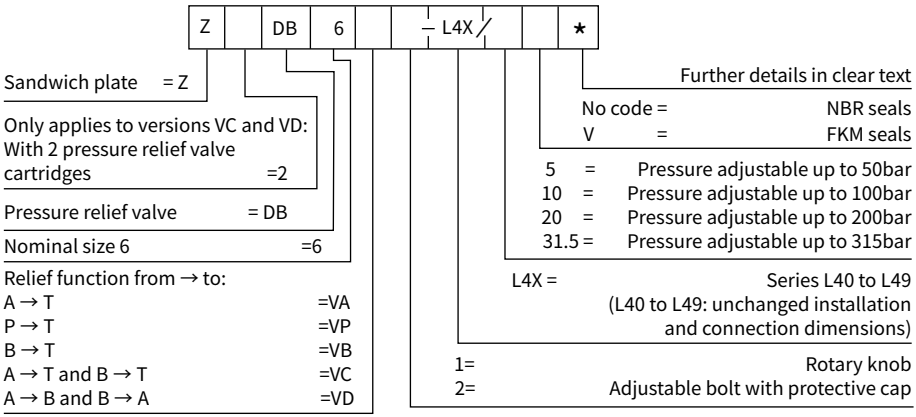
Type ZDB6VC...



Type ZDB6VD...



Ordering code



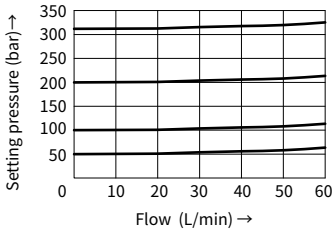
Technical data

Fluid			Mineral oil suitable for NBR and FKM seal
			Phosphate ester for FKM seal
Fluid temperature range		°C	-30 to +80 (NBR seal)
			-20 to +80 (FKM seal)
Viscosity range		mm^2/s	10 to 800
Degree of contamination			Maximum permissible degree of fluid contamination: Class 9. NAS 1638 or 20/18/15 , ISO4406
Max.operating pressure		bar	to 315
Max.adjustable pressure		bar	50;100;200;315
Max. flow-rate		L/min	60
Weight	Type ZDB6	kg	Approx.1.2
	Type Z2DB6	kg	Approx.1.9

Characteristic curves

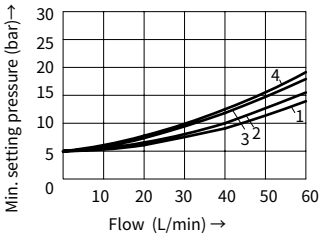
(Measured at ϑ_{oil} =40°C ±5°C , using HLP46)

PE-Q characteristic curve



The curves are measured at zero back pressure.

PEmin-Q characteristic curve

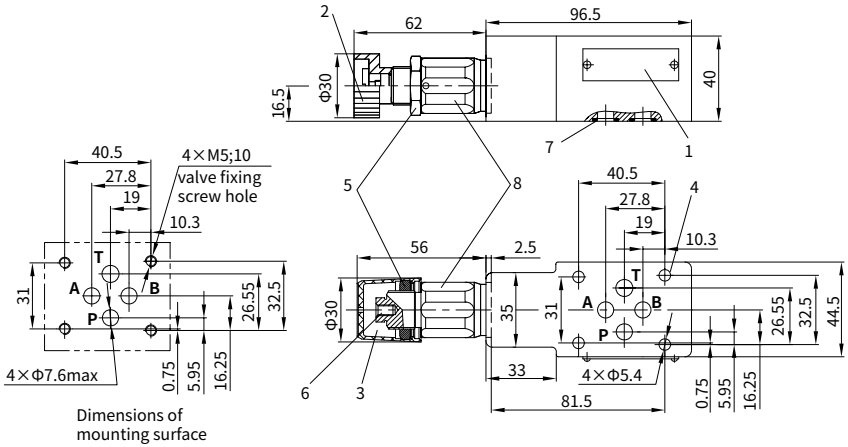


1. VD(A to B)
2. VA
3. VB and VC
4. VP and VD (B to A)

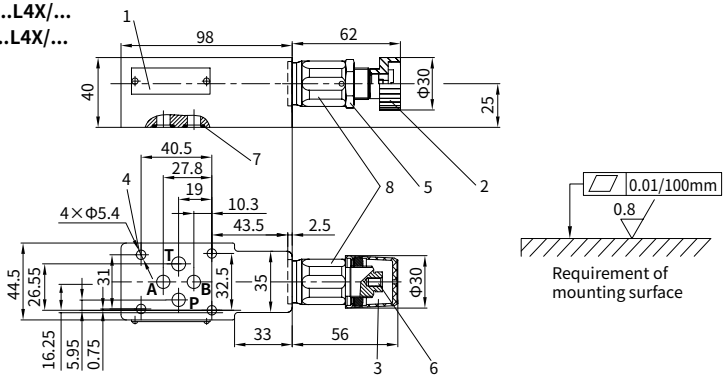
Unit dimensions

(Dimensions in mm)

Type ZDB6VA...L4X/...



Type ZDB6VB...L4X/...
Type ZDB6VP...L4X/...



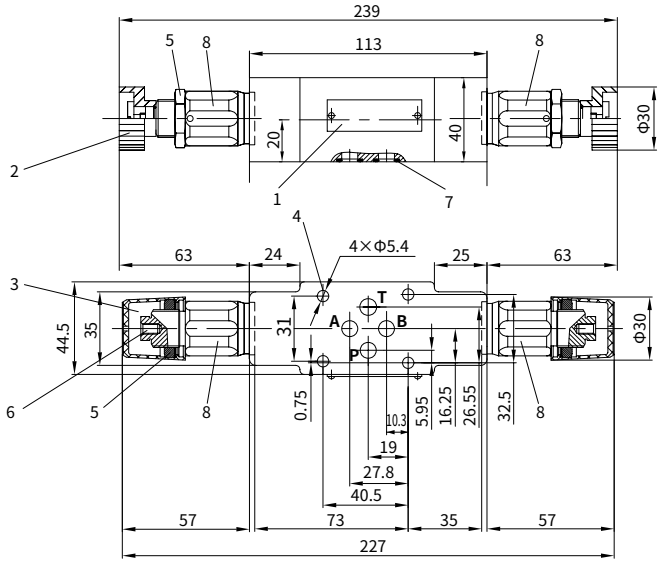
1 Nameplate
2 Adjustment element "1"
3 Adjustment element "2"
4 Valve fixing holes
5 Nut for locking S=24
6 External hexagon screw S=10
7 O-ring 9.25×1.78 (A2, B2, P2, T2)
8 External hexagon S=24
Tightening torque M_A =50 Nm

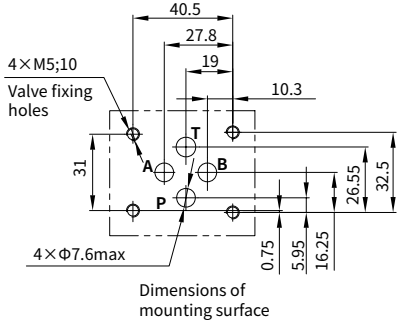
Valve fixing screws:
M5 according to GB/T 70.1-10.9,
the length according to sandwich,
tightening torque M_A =8.9 Nm,
must be ordered separately.

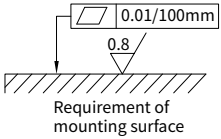
Unit dimensions

(Dimensions in mm)

Type Z2DB6VC...L4X/... **Type Z2DB6VD...L4X/...**







1 Nameplate
2 Adjustment element "1"
3 Adjustment element "2"
4 Valve fixing holes
5 Lockable nut S=24
6 External hexagon screw S=10
7 O-ring 9.25×1.78((A2, B2, P2, T2)
8 External hexagon S=24,
Tightening torque M_A=50 Nm

Valve fixing screws:
M5 according to GB/T 70.1-10.9, the length according to sandwich, tightening torque M_A=8.9Nm, must be ordered separately.