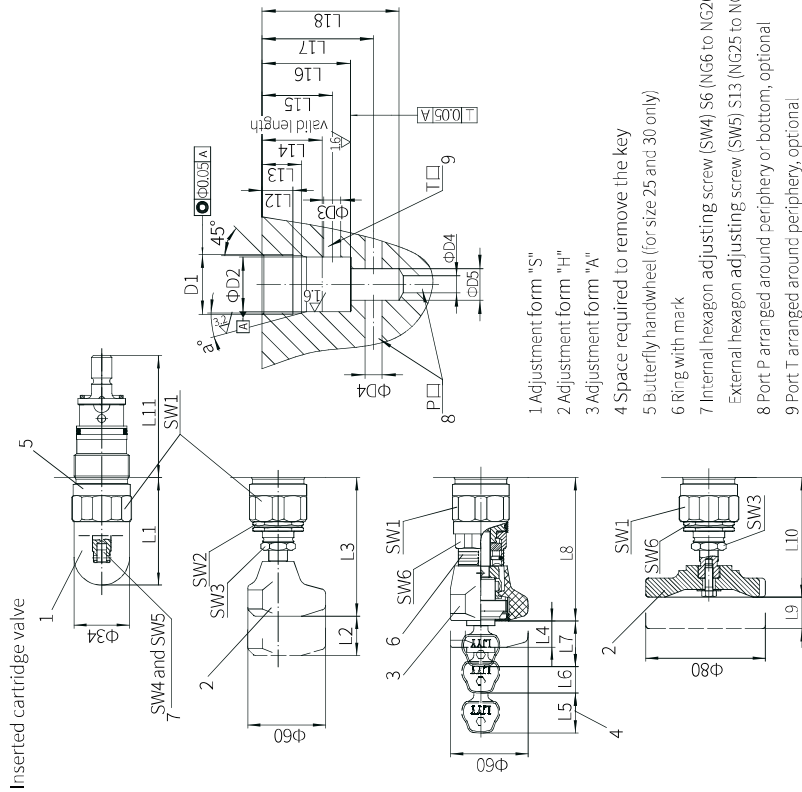


## Component size

Size unit: mm



02

- 1 Adjustment form "S"
- 2 Adjustment form "H"
- 3 Adjustment form "A"
- 4 Space required to remove the key
- 5 Butterfly handwheel (for size 25 and 30 only)
- 6 Ring with mark
- 7 Internal hexagon adjusting screw (SW4) S6 (NG6 to NG20)  
External hexagon adjusting screw (SW5) S13 (NG25 to NG30)
- 8 Port P arranged around periphery or bottom, optional
- 9 Port T arranged around periphery, optional

Size	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13
6	72	11	83	11	20	11	30	83	-	-	64.5	15	19
8, 10	68	11	79	11	20	11	30	79	-	-	77	18	23
15, 20	65	11	77	-	-	-	-	-	-	-	106	21	27
25, 30	83	-	-	-	-	-	-	-	11	79.5	131	23	29

Size	L14	L15	L16	L17	L18	ΦD1	ΦD2	ΦD3	ΦD4	ΦD5	a
6	39	35	45	56.5±15.5	65	M28×1.5	25H9	6	6	15	15
8, 10	35	41	52	67.5±7.5	80	M35×1.5	32H9	10	10	18.5	15
15, 20	45	54	70	91.5±8.5	110	M45×1.5	40H9	20	20	24	20
25, 30	45	60	84	113.5±11.5	140	M60×2	55H9	30	30	38.75	20

## Modular Pressure Relief Valve

Model: ZDB/Z2DB6...4XJ



- ◆ Size 6
- ◆ Maximum working pressure 315 bar
- ◆ Maximum working flow 60L/min

## Contents

Function description, sectional drawing	02
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Technical parameters	03
Characteristic curve	04
Component size	05-07

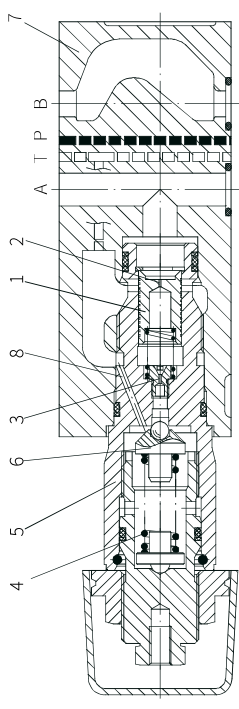
## Features

- 4 pressure ranges
- 5 circuit options
- With one or two cartridge relief valves
- 4 adjustment elements
  - Rotary knob
  - Hexagon screw with sleeve and protective cap
  - Lockable rotary knob with scale
  - Rotary knob with scale

### Function description, sectional drawing

The ZDB and Z2DB type relief valve is pilot operated relief valve with sandwich plate design. It's used to limit the pressure within hydraulic system.  
 The valve is mainly composed of valve body (7), and together with one or two cartridge relief valves.  
 The system pressure is set by adjustment element (4).  
 At rest, the valve is closed. Pressure in port A acts on the spool (1), at the same time the pressure passes through orifice (2) to act on the spring loaded side of spool (1), and through orifice (3) to act on pilot valve spool (6). If pressure of port A rises above the value set on spring (5), then the pilot valve spool (6) opens.  
 Hydraulic oil flow from the spring loaded side of the spool (1), orifice (3) and channel (8) into port T.  
 The resulting pressure drop moves the spool (1) thereby opening the connection A to T, while maintaining the pressure set at spring (5). Pilot oil return from two spring chambers via port T externally.

Model ZDB6VA2...4XJ/



### Models and specifications

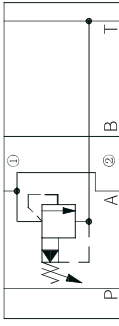
sandwich plate =Z  
 1 cartridge relief valve =No code only for "VA", "VB" and "VP"  
 2 cartridge relief valves =2 only for "VC" and "VD"  
 pressure relief valve =DB  
 size 6 =6  
 Relief function from - to:  
 A-T =VA  
 P-T =VP  
 B-T =VB  
 A-T and B-T =VC  
 A-B and B-A =VD  
 adjustment element rotary knob =1  
 hexagon screw with sleeve and protective cap =2  
 lockable rotary knob with scale =3  
 rotary knob with scale =7

Z DB 6 -4X J +  
 more information in text  
 sealing material NBR seals FKM seals (consult for other seals)  
 No code=  
 V=  
 (consult for other seals)  
 pressure range  
 50= pressure adjustable up to 50bar  
 100= pressure adjustable up to 100 bar  
 200= pressure adjustable up to 200 bar  
 315= pressure adjustable up to 315 bar  
 J= Rekith  
 4X= installation and connection size unchanged  
 40 to 49 series (40 to 49 series)

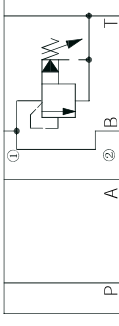
### Functional symbols

(1)=Valve side (2)=Subplate side)

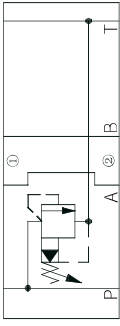
Model ZDB6VA...



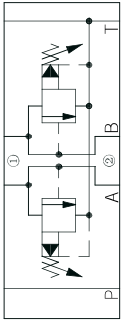
Model ZDB6VB...



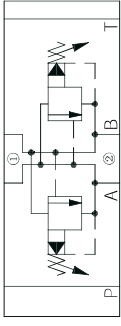
Model ZDB6VP...



Model Z2DB6VC...



Model Z2DB6VD...



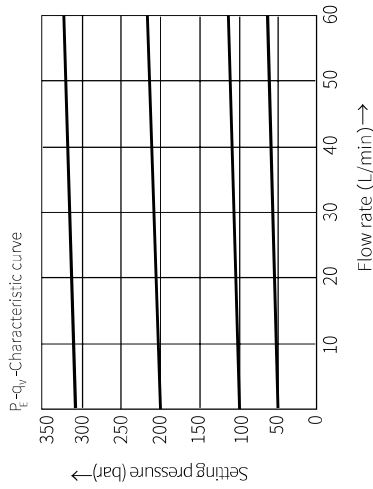
### Technical parameters

Weight	Model ZDB6	kg	About 1
	Model Z2DB6	kg	About 1.2
Installation position	Optional		
Environment temperature range	°C -20 to +80		
<b>Hydraulic</b>			
Maximum working pressure	bar	315	
Maximum setting pressure	bar	50; 100; 200; 315	
Maximum back pressure (port Y)	bar	315 (take the maximum tank pressure of the built-on valve/directional valve into account!)	
Maximum flow	l/min	60	
Oil fluid	Mineral oil (HL, HLP) in accordance with DIN 51524; Fast living organisms Degraded oil according to VDMA 24568; HEIG (Rapeseed oil) <sup>1)</sup> HEPC(Polyethylene glycol) <sup>2)</sup> HEES (synthetic ester) <sup>3)</sup>		
Oil temperature range	°C	-30 to +80 (NBR seal), -20 to +80 (FKM seal)	
Viscosity range	mm <sup>2</sup> /s	10 to 800	
Cleanliness of oil	The maximum allowable pollution level of oil is ISO4406 Class 20 / 18 / 15 <sup>3)</sup>		

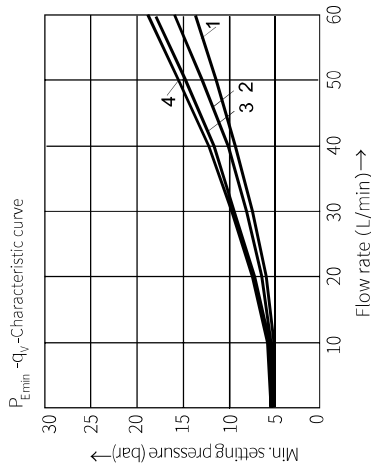
- 1) For NBR seal and FKM seal.
- 2) Only for FKM seal.
- 3) The oil must meet the cleanliness degree requested by the components in the hydraulic system. Effective oil filtration can prevent failure and increase the service life of the components.

**Characteristic curve**

(Measured when using HLP 46,  $\rho_{\text{air}} = 40^\circ\text{C} \pm 5^\circ\text{C}$ )



- 1 VD(A to B)    3 VB, VC
- 2 VA            4 VP, VD(B to A)

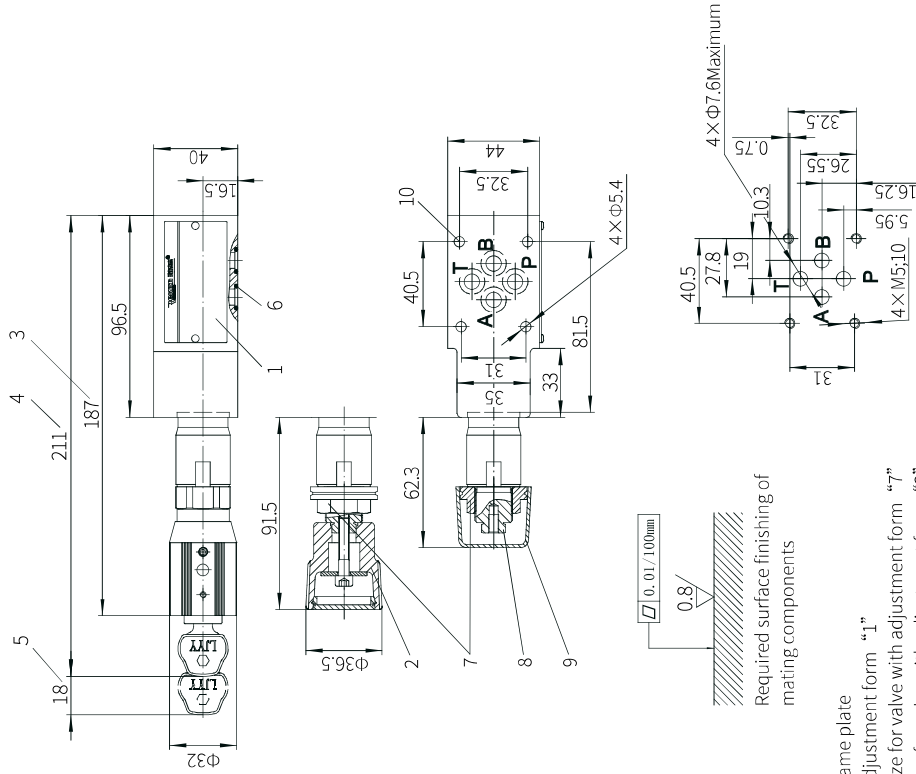


The characteristic curves are valid for an outlet pressure = zero over the entire flow range!

**Component size**

Size unit: mm

Model ZDB6VA...4XJ/...



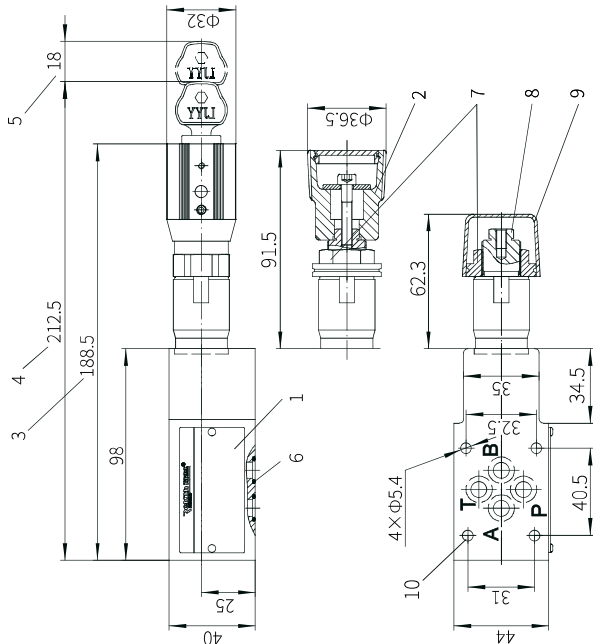
- 1 Name plate
- 2 Adjustment form "1"
- 3 Size for valve with adjustment form "7"
- 4 Size for valve with adjustment form "3"
- 5 Space required to remove the key
- 6 O-ring 9.25x1.78 (for oil port P, A, B, T)
- 7 Locknut 24N/F
- 8 Hexagon 10A/F
- 9 Adjustment form "2"
- 10 Valve fixing screw holes

Valve fixing screw  
M5-10.9 grade GB/170.1-2000  
Tightening torque  $M_t=7.8\text{Nm}$

## Component size

Model ZDB6VB...4XJ/...and ZDB6VP...4XJ/...

Size unit: mm


 $\sqrt{0.01/100\text{mm}}$ 


Required surface finishing of mating components

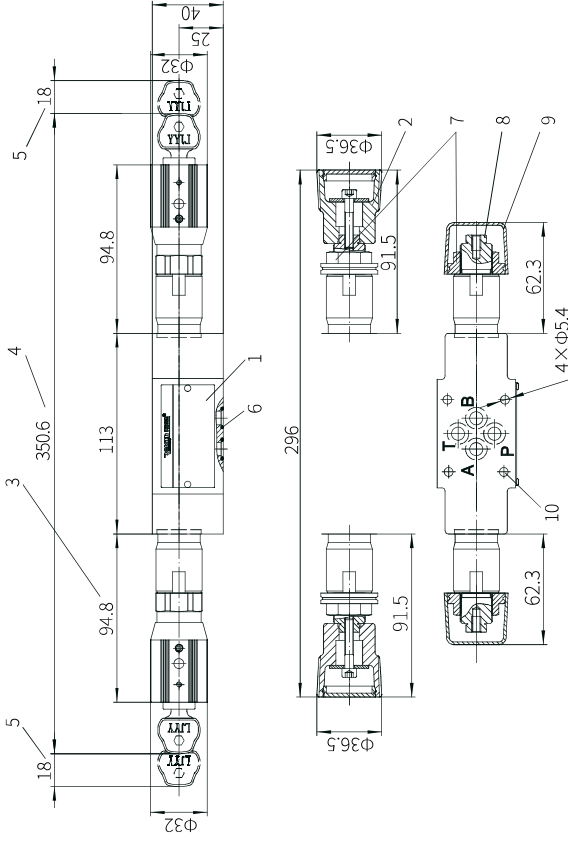
- 1 Name plate
- 2 Size for valve with adjustment form "1"
- 3 Size for valve with adjustment form "7"
- 4 Size for valve with adjustment form "3"
- 5 Space required to remove the key
- 6 O-ring 9.25x1.78 (for oil port P, A, B, T)
- 7 Locknut 24A/F
- 8 Hexagon 10A/F
- 9 Adjustment form "2"
- 10 Valve fixing screw holes

Valve fixing screw  
M5-10.9 grade GB/T70.1-2000  
Tightening torque  $M_k=7.8\text{Nm}$

## Component size

Model Z2DB6VC...4XJ/...and Z2DB6VD...4XJ/...

Size unit: mm


 $\sqrt{0.01/100\text{mm}}$ 


Required surface finishing of mating components

- 1 Name plate
- 2 Size for valve with adjustment form "1"
- 3 Size for valve with adjustment form "7"
- 4 Size for valve with adjustment form "3"
- 5 Space required to remove the key
- 6 O-ring 9.25x1.78 (for oil port P, A, B, T)
- 7 Locknut 24A/F
- 8 Hexagon 10A/F
- 9 Adjustment form "2"
- 10 Valve fixing screw holes

Valve fixing screw  
M5-10.9 grade GB/T70.1-2000  
Tightening torque  $M_k=7.8\text{Nm}$

## Modular Pressure Relief Valve

Model: ZDB/Z2DB10...4XJ



- ◆ Size 10
- ◆ Maximum working pressure 315 bar
- ◆ Maximum working flow 100 L/min

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### Features

- Cartridge valve
- 4 pressure ranges
- 6 circuit options
- With one or two cartridge relief valves
- 4 adjustment elements
- Rotary knob
- Hexagon screw with sleeve and protective cap
- Lockable rotary knob with scale
- Rotary knob with scale

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