

Pressure relief valve, pilot-operated

Type ZDB and Z2DB



- ▶ Size 10
- ▶ Component series 4X
- ▶ Maximum operating pressure 315bar [4600 psi]
- ▶ Maximum flow 100 l/min [26.4 US gpm]

Features

- ▶ Sandwich plate valve
- ▶ Porting pattern according to ISO 4401-05-04-0-05 and NFPA T3.5.1 R2-2002 D05
- ▶ 4 pressure ratings
- ▶ 6 directions of action, optional
- ▶ 1 or 2 pressure valve cartridges
- ▶ 4 adjustment types for pressure adjustment, optionally
 - Rotary knob
 - Bushing with hexagon and protective cap
 - Lockable rotary knob with scale
 - Rotary knob with scale
- ▶ Improved corrosion protection

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Ordering code

01	02	03	04	05	06	07	08	09	10	11
Z		DB	10			-	4X	/		*

01	Sandwich plate	Z
02	1 pressure valve cartridge (only with version "VA", "VB", "VT" and "VP")	no code
	2 pressure valve cartridges (only with version "VC" and "VD")	2
03	Pressure relief valve	DB
04	Size 10	10

Relief function from – to:

05	A – TA	VA
	P – TA	VP
	TB1 – TA2	VT
	B – TB	VB
	A – TA and B – TB	VC
	A – B and B – A	VD

Adjustment type for pressure adjustment

06	Rotary knob	1
	Bushing with hexagon and protective cap	2
	Lockable rotary knob with scale	3 ¹⁾
	Rotary knob with scale	7
07	Component series 40 ... 49 (40 ... 49: unchanged installation and mounting dimensions)	4X

Pressure rating

08	Set pressure up to 50 bar [725 psi]	50
	Set pressure up to 100 bar [1450 psi]	100
	Set pressure up to 200 bar [2900 psi]	200
	Set pressure up to 315 bar [4600 psi]	315

Corrosion resistance

09	None	no code
	Improved corrosion protection (240 h salt spray test according to EN ISO 9227)	J3 ²⁾
	Improved corrosion protection (720 h salt spray test according to EN ISO 9227)	J5 ²⁾

Seal material

10	NBR seals	no code
	FKM seals	V
	Observe compatibility of seals with hydraulic fluid used! (Other seals upon request)	
11	Further details in the plain text	*

¹⁾ H-key with material no. **R900008158** is included in the scope of delivery

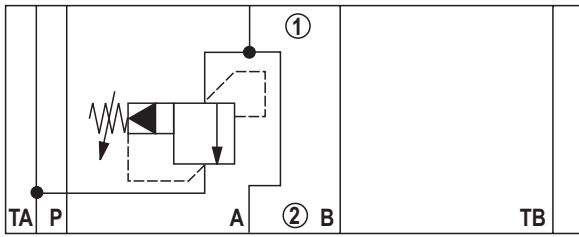
²⁾ Only with adjustment type "2", however without protective cap

Notes:

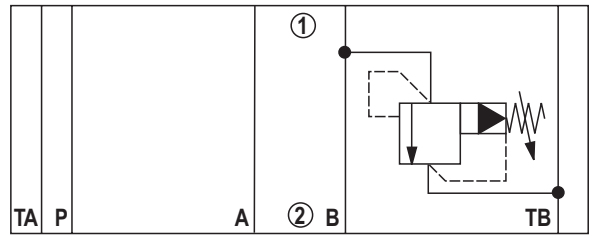
- ▶ To port X and Y bored according to ISO 4401-05-05-0-05 (e.g. for pilot-operated directional valve NG10), version "**SO30**" applies at the end of the ordering code.
- ▶ Preferred types and standard units are contained in the EPS (standard price list).

Symbols (① = component side, ② = plate side)

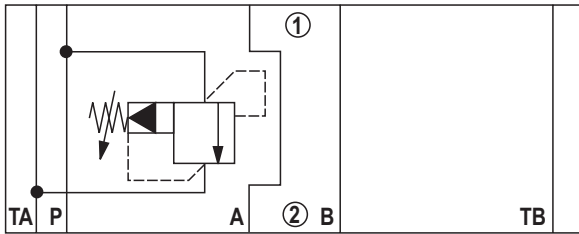
Type ZDB 10 VA...



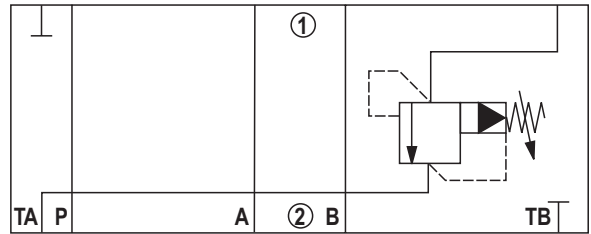
Type ZDB 10 VB...



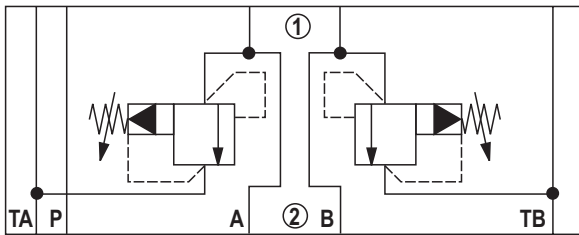
Type ZDB 10 VP...



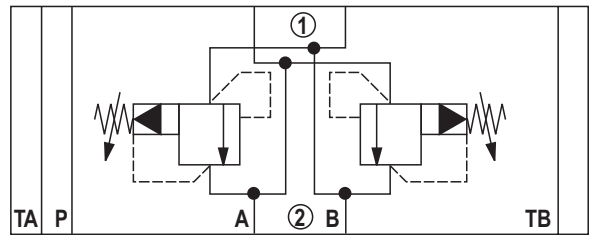
Type ZDB 10 VT...




Type Z2DB 10 VC...



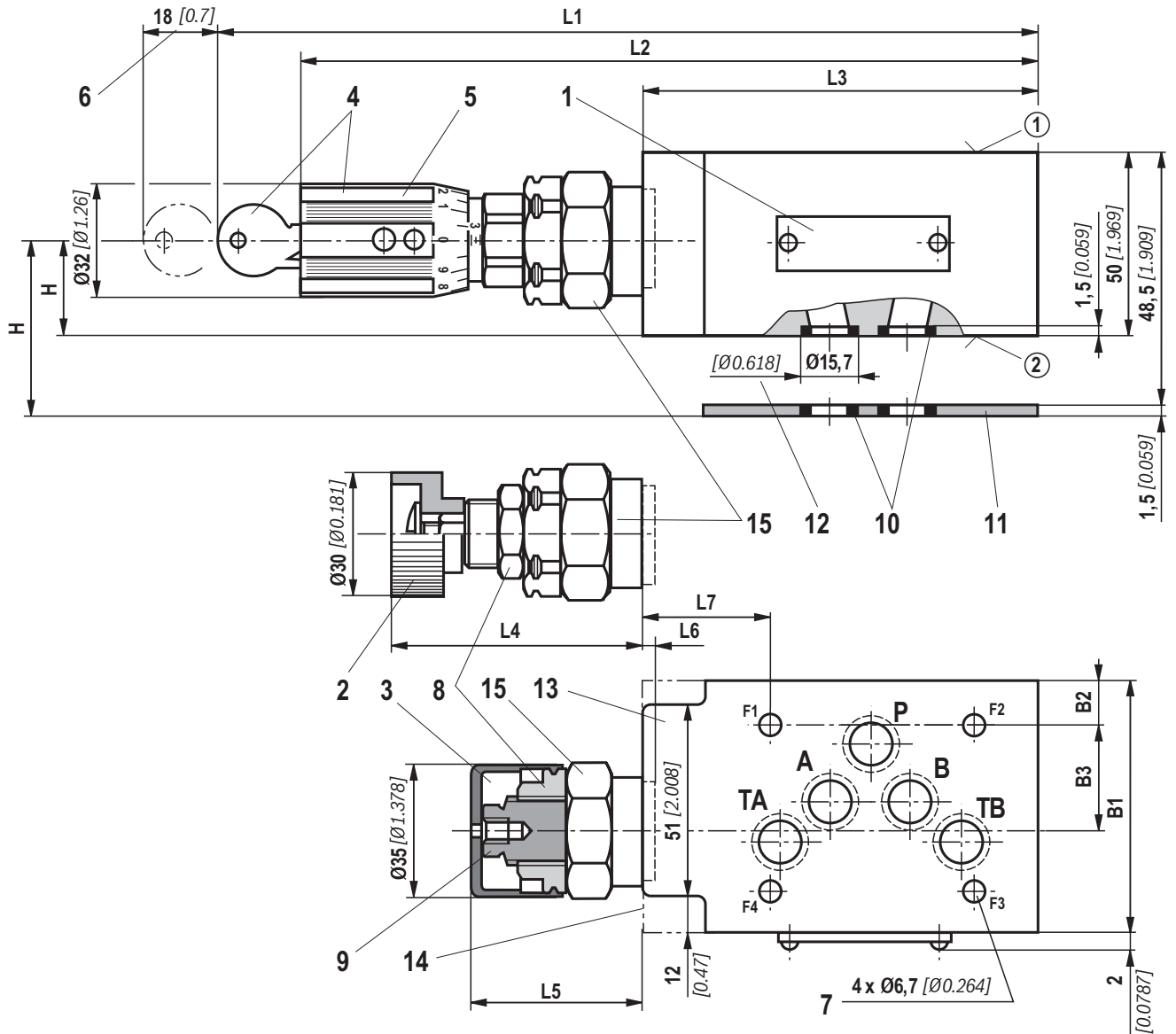
Type Z2DB 10 VD...



 **Notice:**

Deviating from ISO 4401, port T is in this data sheet called TA, port T1 is called TB.

Dimensions: Type ZDB 10 VA, VP and VT
(dimensions in mm [inch])



Notes:

- ▶ To port X and Y bored according to ISO 4401-05-05-0-05 (e.g. for pilot-operated directional valve NG10), version "SO30" applies at the end of the ordering code.
- ▶ Deviating from ISO 4401, port T is in this data sheet called TA, port T1 is called TB.

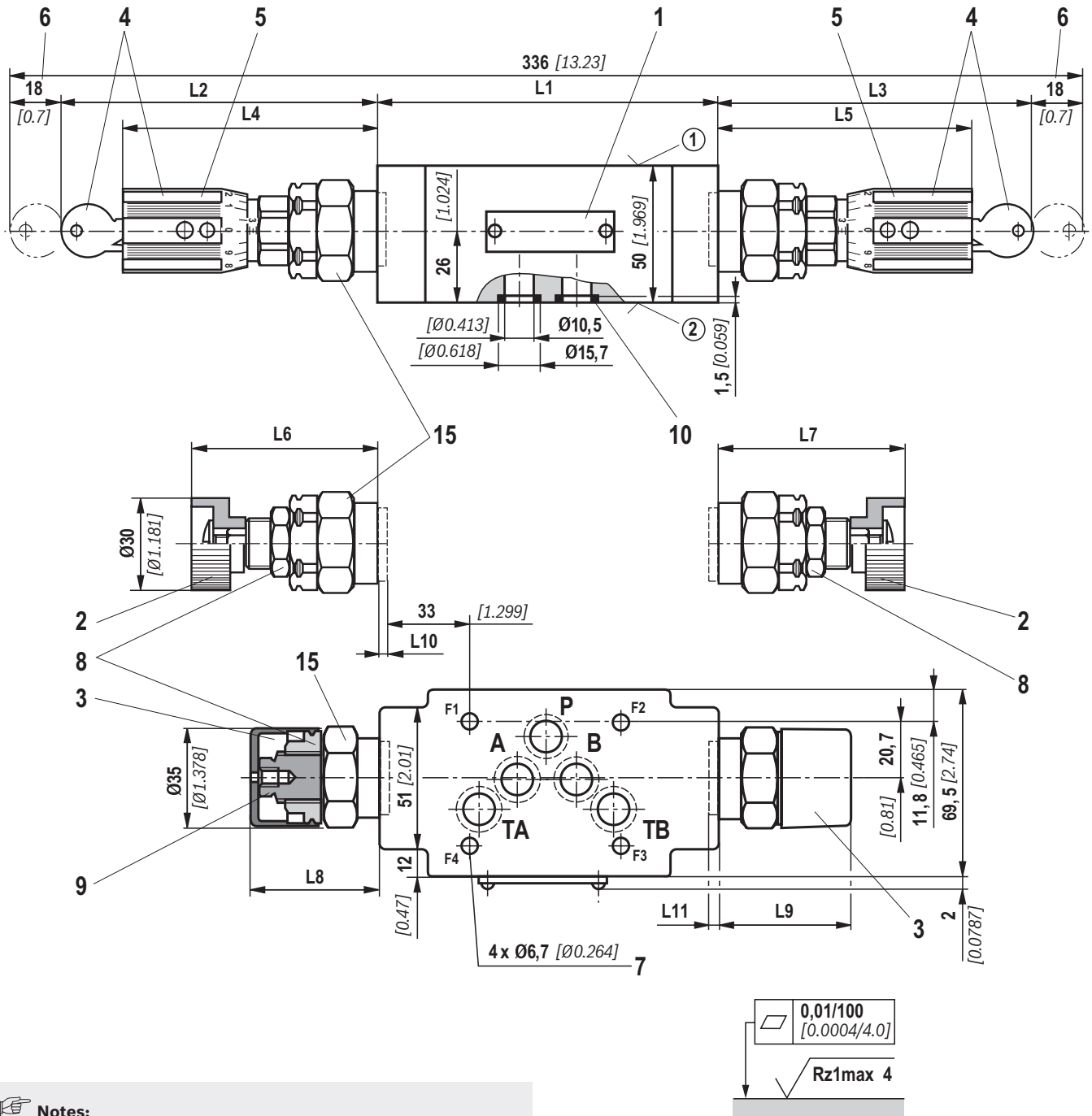
\square 0,01/100
[0.0004/4.0]

$\sqrt{\text{Rz1max 4}}$

Required surface quality of the valve contact surface

Type	B1	B2	B3	H	L1	L2	L3	L4	L5	L6	L7
VA, VP	69 [2.72]	11.5 [0.45]	20.7 [0.82]	26 [1.02]	227 [8.94]	203 [7.99]	117 [4.61]	57.6 [2.27]	50.3 [1.98]	4 [0.16]	45.5 [1.79]
VT	70 [2.76]	12 [0.47]	27 [1.06]	25 [0.98]	218 [8.58]	194 [7.64]	105 [4.13]	60.9 [2.40]	53.6 [2.11]	0.7 [0,027]	32.5 [1.28]

Dimensions: Type ZDB 10 VC and VD
(dimensions in mm [inch])



Notes:


- ▶ To port X and Y bored according to ISO 4401-05-05-0-05 (e.g. for pilot-operated directional valve NG10), version "SO30" applies at the end of the ordering code.
- ▶ Deviating from ISO 4401, port T is in this data sheet called TA, port T1 is called TB.

Required surface quality of the valve contact surface

Type	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11
VC	123 [4.84]	111 [4.37]	112 [4.40]	89 [3.50]	90 [3.54]	59 [2.32]	60 [2.36]	52 [2.05]	53 [2.09]	2 [0.08]	1 [0.04]
VD	132 [5.20]	107 [4.20]	112 [4.40]	85 [3.30]	90 [3.54]	56 [2.20]	56 [2.20]	49 [1.93]	49 [1.93]	6 [0.24]	6 [0.24]

Dimensions

- 1 Name plate
 - 2 Adjustment type "1"
 - 3 Adjustment type "2" (with version "J3" and "J5" without protective cap)
 - 4 Adjustment type "3"
 - 5 Adjustment type "7"
 - 6 Dimensions required to remove the key
 - 7 Valve mounting bores
 - 8 Lock nut SW24, tightening torque $M_A = 10^{+5}$ Nm
 - 9 Hexagon SW10
 - 10 Identical seal rings for ports A, B, P, TA, TB (plate side)
 - 11 Sealing plate 80 x 70 x 1.5 [2.76 x 3.15 x 0.06] (only with version "VA" and "VP")
 - 12 Countersinks (only with version "VT")
 - 13 Versions "VA" and "VP"
 - 14 Version "VT"
 - 15 Hexagon SW30, tightening torque $M_A = 50$ Nm [36.8 ft-lbs]
- ① component side – porting pattern according to ISO 4401-05-04-0-05 and NFPA T3.5.1 R2-2002 D05
 - ② plate side – porting pattern according to ISO 4401-05-04-0-05 and NFPA T3.5.1 R2-2002 D05
- Valve mounting screws** (separate order)
- ▶ Version "J3"
 - 4 hexagon socket head cap screws**
 - ISO 4762 - M6 - 10.9-CM-Fe-ZnNi-5-Cn-T0-H-B**
 - friction coefficient $\mu_{total} = 0.09 \dots 0.14$
 - ▶ Version "J5"
 - 4 hexagon socket head cap screws**
 - ISO 4762 - M6 - 10.9-CM-Fe-ZnNi-8-Cn-T0-H-B**
 - friction coefficient $\mu_{total} = 0.09 \dots 0.14$
 - ▶ Without corrosion protection
 - 4 hexagon socket head cap screws**
 - ISO 4762 - M6 - 10.9**
 - with friction coefficient $\mu_{total} = 0.12 \dots 0.17$

 **Notice:**

Length and tightening torque of the valve mounting screws must be calculated according to the components mounted under and over the sandwich plate valve.