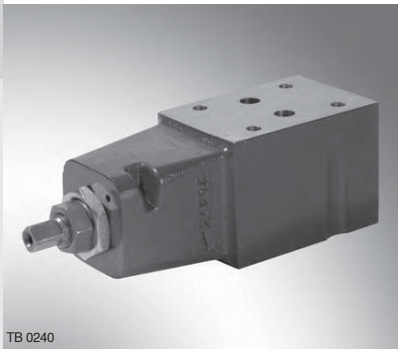
Pressure relief valve (Pilot control valve)

RE 25724/03.10 1/8
Replaces: 01.05

Type (Z)DBT/DZT

Size 6
Component series 1X
Maximum operating pressure 315 bar
Maximum flow 3 l/min



TB 0240
Type ZDBT

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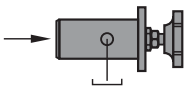
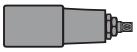
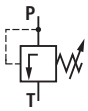
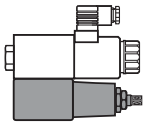
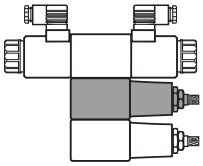
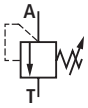
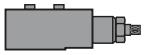
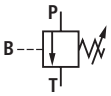
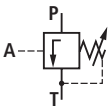
Features

- Directly operated valve for the limitation of the system pressure
- Application as pilot control valve
- For plate and control panel mounting

Ordering code, symbols

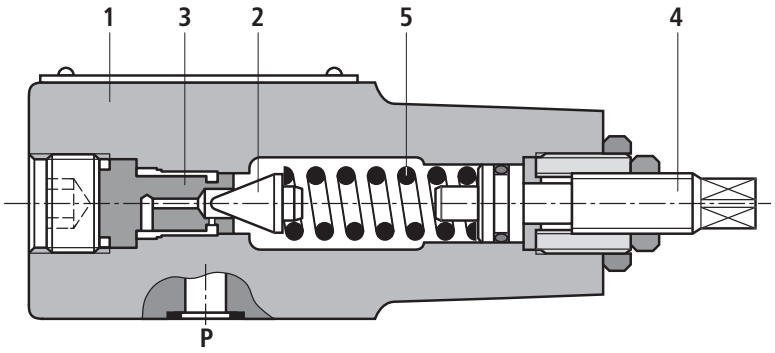
Type	Material no.	Examples of application	Symbols
DBT–G1–1X/160	**0 811 104 007**	 For control panel	
DBT–G1–1X/315	**0 811 104 013**		
DBT–G7–1X/160	**0 811 104 021**		
DBT–XP8–1X/160	**0 811 104 100**	 Sandwich plate for subplate mounting	
DBT–XP8–1X/315	**0 811 104 101**		
DBT–XP2–1X/160	**0 811 104 102**		
DBT–XP2–1X/315	**0 811 104 103**		
DBT–XP7–1X/160	**0 811 104 104**		
DBT–XP7–1X/315	**0 811 104 105**		
DBT–XP3–1X/160	**0 811 104 106**		
DBT–XP3–1X/315	**0 811 104 107**		
DBT–XP1–1X/160	**0 811 104 108**		
DBT–XP1–1X/315	**0 811 104 109**		
ZDBT–XP8–1X/160	**0 811 104 110**	 Sandwich plate for subplate mounting	
ZDBT–XP8–1X/315	**0 811 104 111**		
ZDBT–XP2–1X/160	**0 811 104 112**		
ZDBT–XP2–1X/315	**0 811 104 113**		
ZDBT–XP7–1X/160	**0 811 104 114**		
ZDBT–XP7–1X/315	**0 811 104 115**		
ZDBT–XP3–1X/160	**0 811 104 116**		
ZDBT–XP3–1X/315	**0 811 104 117**		
ZDBT–XA8–1X/160	**0 811 104 118**	 For subplate mounting Low pressure High pressure	
ZDBT–XA8–1X/315	**0 811 104 119**		
ZDBT–XA2–1X/160	**0 811 104 120**		
ZDBT–XA2–1X/315	**0 811 104 121**		
DZT–XB2–1X/315	**0 811 104 123**	Pressure cut-off valve for subplate mounting 	
DZT–XB2–1X/60	**0 811 104 124**		
DZT–XA2–1X/60	**0 811 104 125**		
DZT–XA2–1X/160	**0 811 104 126**		
DZT–XA2–1X/315	**0 811 104 127**		

Function, section

Type DBT pressure relief valves are seat design remote control valves and allow for the limitation of the system pressure. The valve is adjusted manually by the adjusting device (4). The valves basically consist of housing (1), valve poppet (2) and corresponding valve seat (3). In unloaded position, the valve poppet (2) applies pressure to the valve seat (3) locking the connection between P and T port.

If the hydraulic force equals the force set at the adjusting element (4), the valve controls the set pressure. As the valve poppet (2) lifts off the valve seat (3), the excess pressure fluid can flow off from P to T.
If the spring (5) is completely without load, a minimal pressure of 3 bar (spring pretensioning force) is reached.
These valves are basically used as pilot control valves for the indirect control of major flow.

Type DBT-XP2-1X



Technical data

general

Installation position		Any
Storage temperature range	°C	–20...+80
Ambient temperature range	°C	–20...+70
Weight	kg	2.0

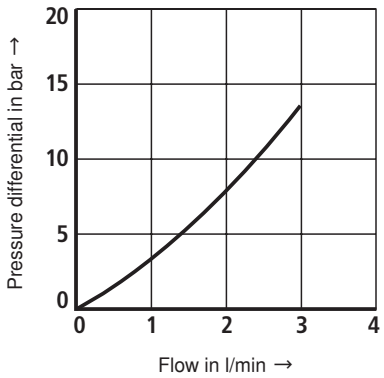
hydraulic (measured with HLP 46; ϑ_{oil} = 40 °C ± 5 °C, ν = 35 mm²/s)

Maximum operating pressure	– Port P	bar	350
Maximum set pressure	– Pressure rating 60 bar	bar	60 (only possible for type DZT)
	– Pressure rating 160 bar	bar	160
	– Pressure rating 315 bar	bar	315
	– Pressure rating 350 bar	bar	350
Minimal set pressure		bar	3
Return flow	– Port T	bar	Separately depressurized to the tank
Maximum flow		l/min	3
Hydraulic fluid			Mineral oil (HL, HLP) according to DIN 51524 Other hydraulic fluids upon request!
Hydraulic fluid temperature range		°C	–20...+80
Viscosity range		mm²/s	15...380
Max admissible degree of contamination of the hydraulic fluid - cleanliness class according to ISO 4406 (c)			Class 20/18/15 [1]
Hysteresis		%	< 5 of the max. set pressure
Control oil volume (V_x) (only pressure on/off valves)		cm³	< 0,5

[1] The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the service life of the components.

For the selection of filters, see data sheets 50070, 50076, 50081, 50086, 50087 and 50088.

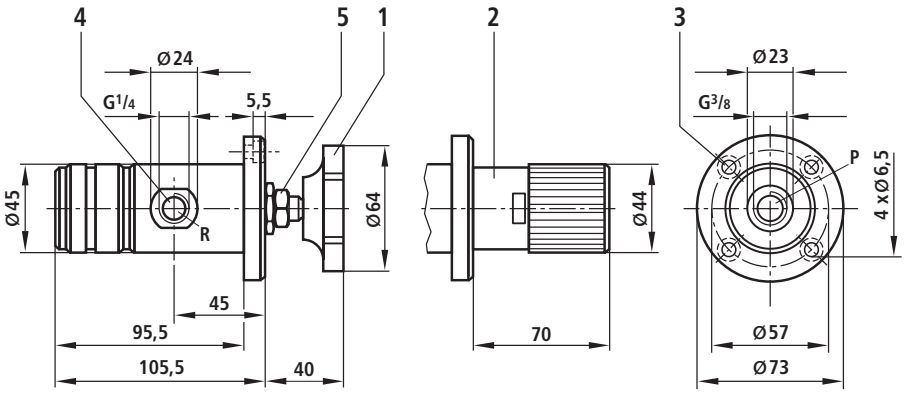
Characteristic curve (measured with HLP 46; ϑ_{oil} = 40 °C ± 5 °C, v = 35 mm²/s)



$\Delta p = f(q_V)$

Unit dimensions (dimensions in mm)

Type DBT-G1-1X/...

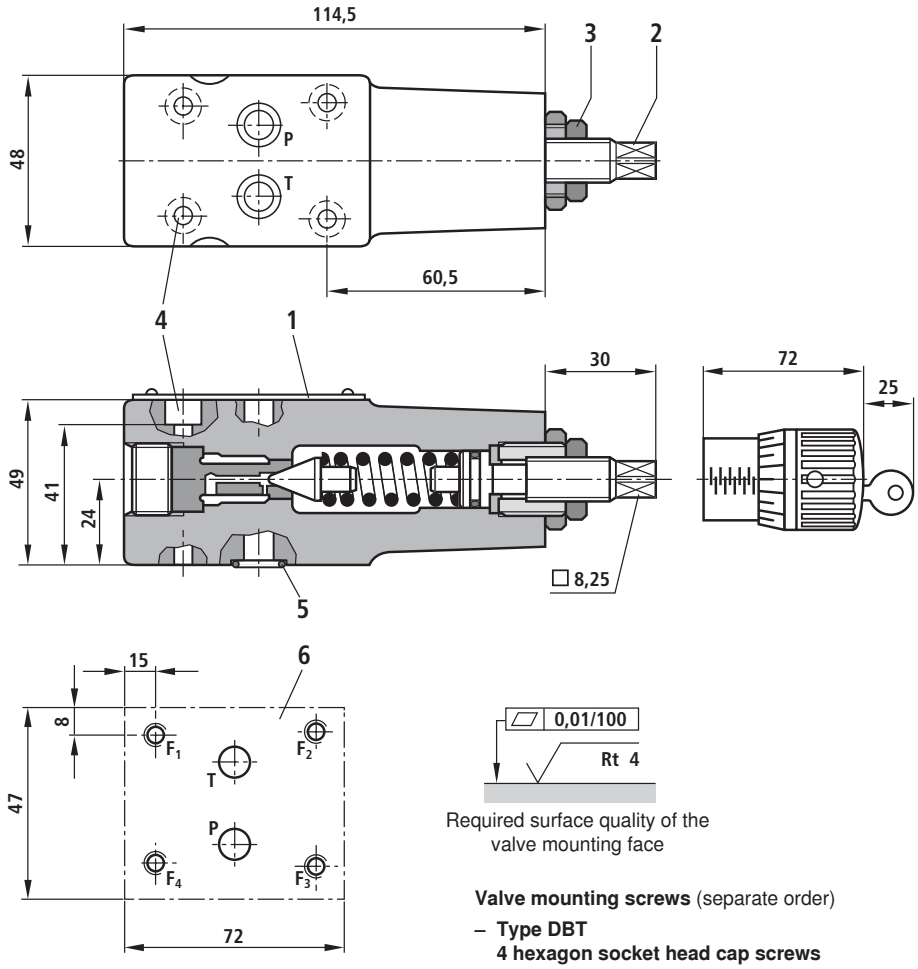


1 Hand wheel
2 Rotary knob
3 Valve mounting bores
4 Pressure gauge connection
5 Lock nut

Valve mounting screws (separate order)
4 M6 hexagon socket head cap screws
Screw length as required

Unit dimensions (dimensions in mm)

Type DBT-X...
Type ZDBT-X...



Required surface quality of the valve mounting face

1 Name plate or second flange surface
2 Adjustment type
3 Lock nut
4 Valve mounting bores
5 O-rings Ø9.25 x 1.78 (P, T ports)
6 Machined valve mounting face, porting pattern according to ISO 4401-03-02-0-05.
Subplates according to data sheet 45052 (separate order)

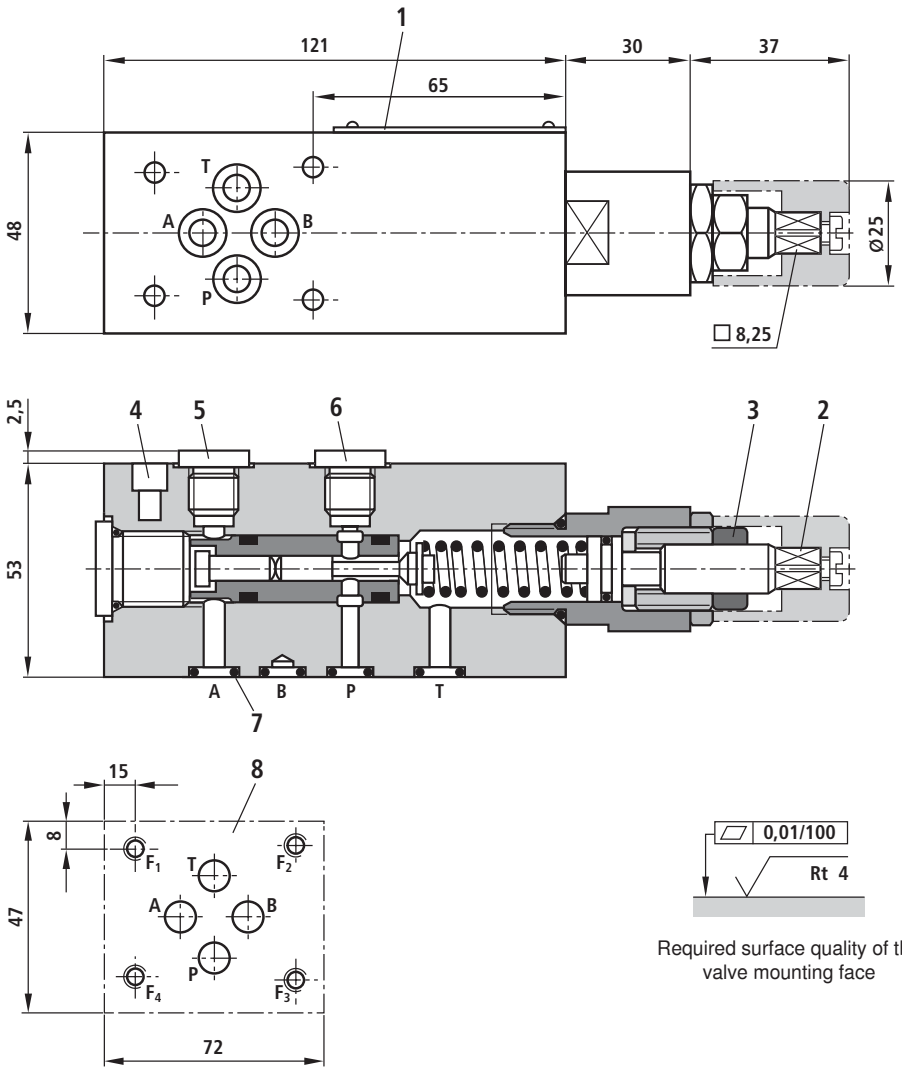
Valve mounting screws (separate order)

– **Type DBT**
4 hexagon socket head cap screws ISO 4762-M5x50-10.9-flZn-240h-L
(friction coefficient μ_{total} = 0.09–0.14);
Tightening torque M_A = 7 Nm ±10 %
or
4 hexagon socket head cap screws ISO 4762-M5x50-10.9
(friction coefficient μ_{total} = 0.12–0.17);
Tightening torque M_A = 8.9 Nm ±10 %

– **Type ZDBT**
4 hexagon socket head cap screws ISO 4762-M5-10.9-flZn-240h-L
(friction coefficient μ_{total} = 0.09–0.14);
Tightening torque M_A = 7 Nm ±10 %
or
4 hexagon socket head cap screws ISO 4762-M5-10.9
(friction coefficient μ_{total} = 0.12–0.17);
Tightening torque M_A = 8.9 Nm ±10 %
Screw length as required

Unit dimensions (dimensions in mm)

Type DZT-X...



Required surface quality of the valve mounting face

1 Name plate
2 Adjusting element
3 Lock nut
4 Valve mounting bores
5 Pressure gauge connection for control pressure X, G1/4
6 Pressure gauge connection for system pressure A, G1/4
7 O-rings Ø10 x 1.5 (ports P, A, B, T)
8 Machined valve mounting face, porting pattern according to ISO 4401-03-02-0-05.
Subplates according to data sheet 45052 (separate order)

Valve mounting screws (separate order)

4 hexagon socket head cap screws ISO 4762-M5x50-10.9-flZn-240h-L
(friction coefficient μ_{total} = 0.09–0.14);
Tightening torque M_A = 7 Nm ±10 %
or
4 hexagon socket head cap screws ISO 4762-M5x50-10.9
(friction coefficient μ_{total} = 0.12–0.17);
Tightening torque M_A = 8.9 Nm ±10 %
Screw length as required

Examples of application