

RE 25 751/03.02

Replaces: 12.95

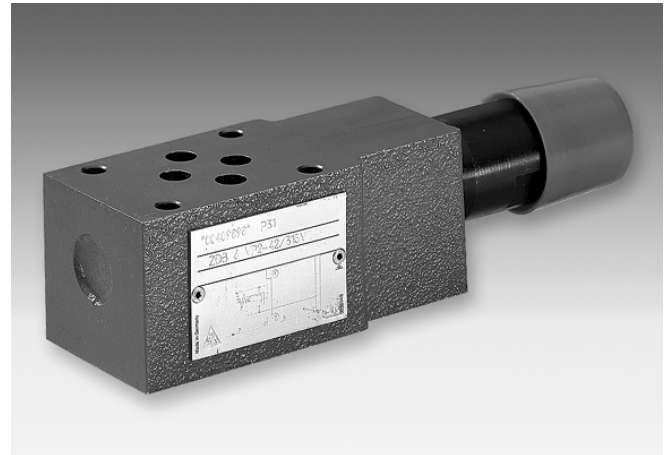
**Pressure relief valve,
pilot operated****Types ZDB and Z2DB**

Nominal size 6

Series 4X

Maximum operating pressure 315 bar

Maximum flow 60 L/min



H5564

Type ZDB 6 VP2-4X/...

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Features

- Sandwich plate valve
- Porting pattern to DIN 24 340 form A, **without** locating pin hole (standard)
- Porting pattern to ISO 4401 and CETOP–RP 121 H, **with** locating pin hole, (ordering code.../60 at the end of the valve type code)
- 4 pressure stages
- 5 circuit options
- With 1 or 2 pressure valve cartridges
- 4 adjustment elements:
 - Rotary knob
 - Sleeve with hexagon and protective cap
 - Lockable rotary knob with scale
 - Rotary knob with scale



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Ordering details

<div> <div>Z</div> <div></div> <div>DB</div> <div>6</div> <div></div> <div></div> <div>-4X/</div> <div>V</div> <div></div> <div>*</div> </div>									
Sandwich plate	= Z								Further details in clear text
With 2 pressure valve cartridges (only applies to versions „VC“ and „VD“)	= 2								No code = Without locating pin hole /60 ²⁾ = With locating pin hole
Pressure relief valve	= DB							V =	FKM seals (other seals on request)
Nominal size 6	= 6								⚠ Attention! The compatibility of the seals and pressure fluid has to be taken into account!
Relief function from – to:									
A – T									= VA
P – T									= VP
B – T									= VB
A – T and B – T									= VC
A – T and B – A									= VD
Adjustment element									
Rotary knob									=1
Sleeve with hexagon and protective cap									=2
Lockable rotary knob with scale									= 3 ¹⁾
Rotary knob with scale									=7
								4X =	Series 40 to 49 (40 to 49: unchanged installation and connection dimensions)
								50 =	Settable pressure up to 50 bar
								100 =	Settable pressure up to 100 bar
								200 =	Settable pressure up to 200 bar
								315 =	Settable pressure up to 315 bar

¹⁾ H-key with Material No. 0008158 is included within the scope of supply

²⁾ Locating pin 3 x 8 DIN EN ISO 8752, Material No. 00005694 (separate order)

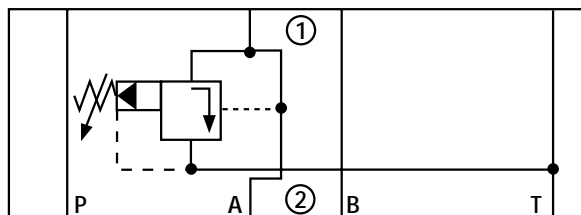
**Preferred types and standard components
are highlighted in the RPS
(Standard Price list).**

Preferred types (readily available)

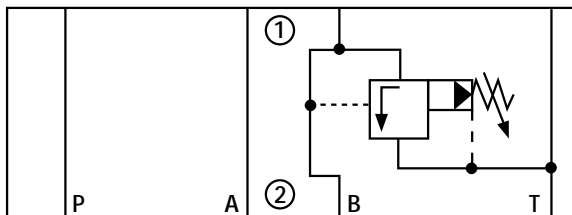
Type	Material No.	Type	Material No.
ZDB 6 VA2-4X/100V	00409889	ZDB 6 VP2-4X/315V	00409898
ZDB 6 VA2-4X/200V	00409886	ZDB 6 VP2-4X/50V	00409847
ZDB 6 VA2-4X/315V	00409893	Z2DB 6 VC2-4X/200V	00411312
ZDB 6 VB2-4X/200V	00409854	Z2DB 6 VC2-4X/315V	00411318
ZDB 6 VB2-4X/315V	00409896	Z2DB 6 VD2-4X/100V	00411317
ZDB 6 VP2-4X/100V	00409933	Z2DB 6 VD2-4X/200V	00411314
ZDB 6 VP2-4X/200V	00409844	Z2DB 6 VD2-4X/315V	00411357

Symbols (① = valve side, ② = subplate side)

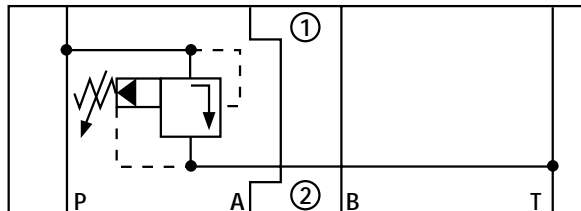
Type ZDB 6 VA...



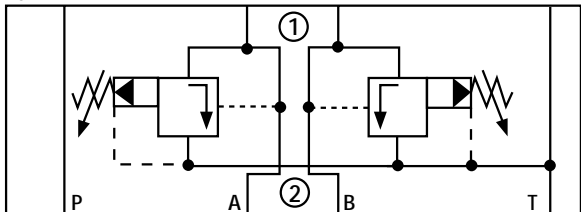
Type ZDB 6 VB...



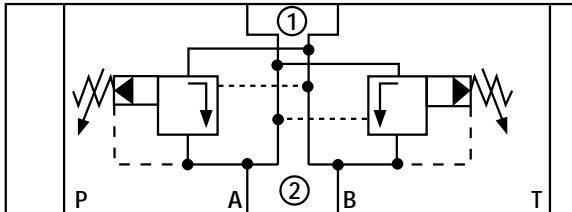
Type ZDB 6 VP...



Type Z2DB 6 VC...



Type Z2DB 6 VD...



Function, section

Pressure relief valves types ZDB und Z2DB are pilot operated and are of sandwich plate design.

They are used to limit the pressure within a hydraulic system.

They basically consist of the housing (7), together with one or two pressure relief valve cartridges.

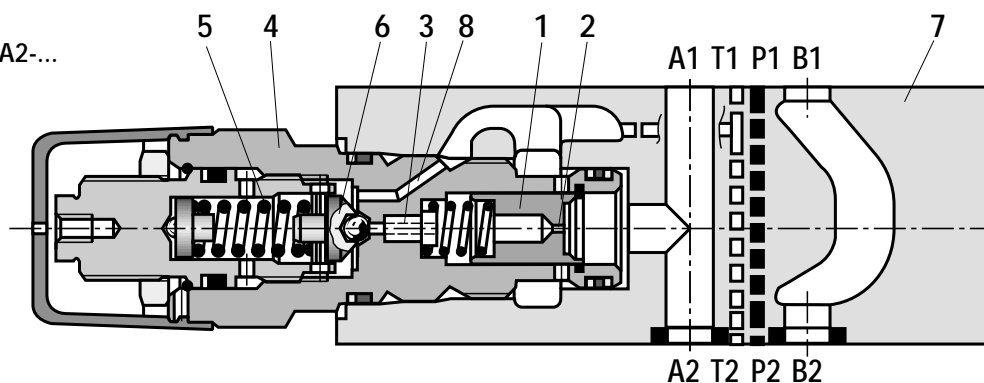
The system pressure is set by means of adjustment element (4).

At rest, the valve is closed. Pressure in port A acts on the spool (1). At the same time pressure passes through orifice (2) on to the spring loaded side of spool (1) and via orifice (3) to the pilot poppet (6). If the pressure in port A rises above the value set on spring (5), the pilot poppet (6) opens.

Fluid can now flow from the spring loaded side of the spool (1), then via orifice (3), and channel (8) into port T. The resulting pressure drop then moves the spool (1) thereby opening the connection A to T, while maintaining the pressure set at spring (5).

Pilot oil return from the two spring chambers is taken externally via port T.

Type ZDB 6 VA2-...



Technical data (for applications outside these parameters, please consult us!)

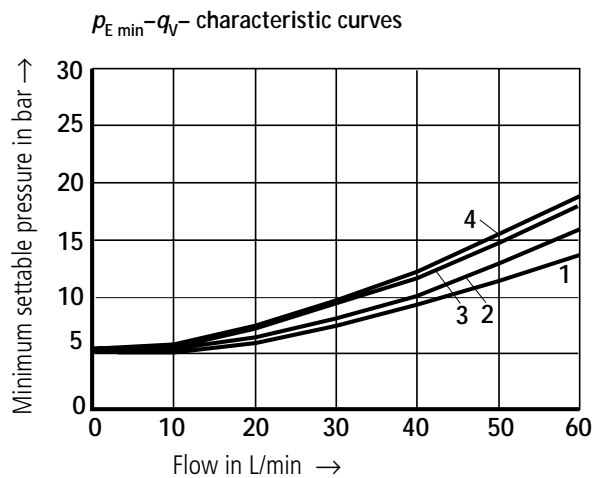
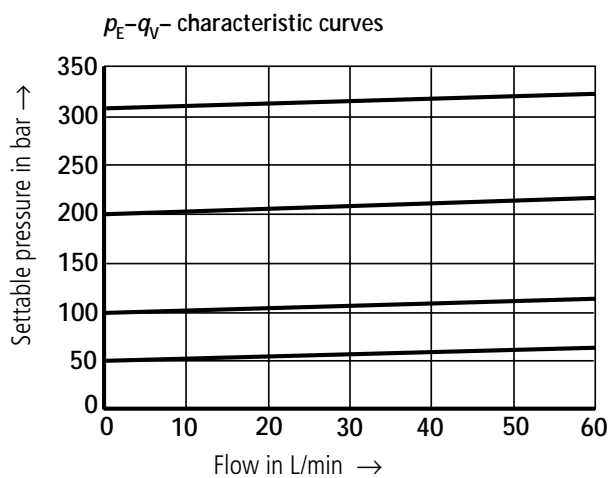
General

Weight	Type ZDB 6	kg	Approx. 1
	Type Z2DB 6	kg	Approx. 1.2

Hydraulic

Pressure fluid		Mineral oil (HL, HLP) to DIN 51 524; Fast bio-degradable pressure fluids to VDMA 24 568 (also see RE 90 221); HETG (rape seed oil); HEPG (polyglycols); HEES (synthetic ester); other pressure fluids on request
Pressure fluid temperature range	°C	− 20 ... + 80
Viscosity range	mm ² /s	10 ... 800
Degree of contamination		Maximum permissible degree of contamination of the pressure fluid is to NAS 1638 class 9. We therefore recommend a filter with a minimum retention rate of $\beta_{10} \geq 75$.
Maximum operating pressure	bar	315
Maximum settable pressure	bar	50; 100; 200; 315
Maximum flow	L/min	60

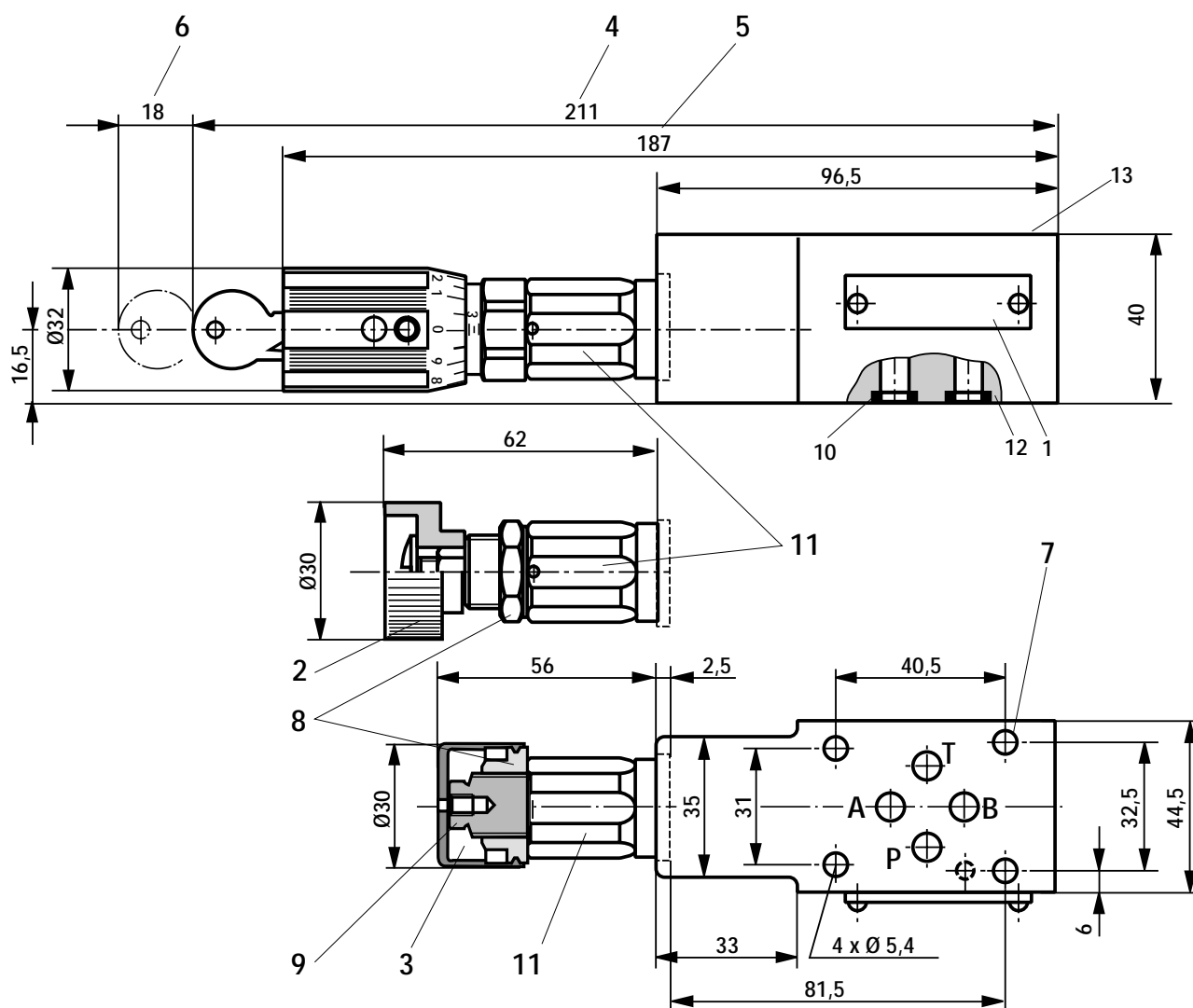
Characteristic curves (measured with HLP46 and $\vartheta_{oil} = 40 \text{ °C} \pm 5 \text{ °C}$)



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

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

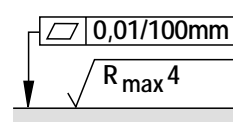
Unit dimensions: type ZDB 6 VA... (dimensions in mm)



- 1 Name plate
- 2 Adjustment element "1"
- 3 Adjustment element "2"
- 4 Adjustment element "3"
- 5 Adjustment element "7"
- 6 Space required to remove the key
- 7 Valve fixing screw holes
- 8 Locknut 24A/F
- 9 Hexagon 10A/F
- 10 R-rings
9.81 x 1.5 x 1.78 for ports A2, B2, P2, T2
- 11 Hexagon 24A/F
tightening torque $M_A = 50 \text{ Nm}$
- 12 Porting pattern to ISO 4401 and CETOP-RP 121 H, **with**
locating pin hole, Ø3 x 5 mm deep for locating pin Ø3 x 8
mm DIN EN ISO 8752, Material No. 00005694
(separate order)
- 13 Porting pattern to ISO 4401 and CETOP-RP 121 H, **with**
locating pin hole, Ø4 x 4 mm deep

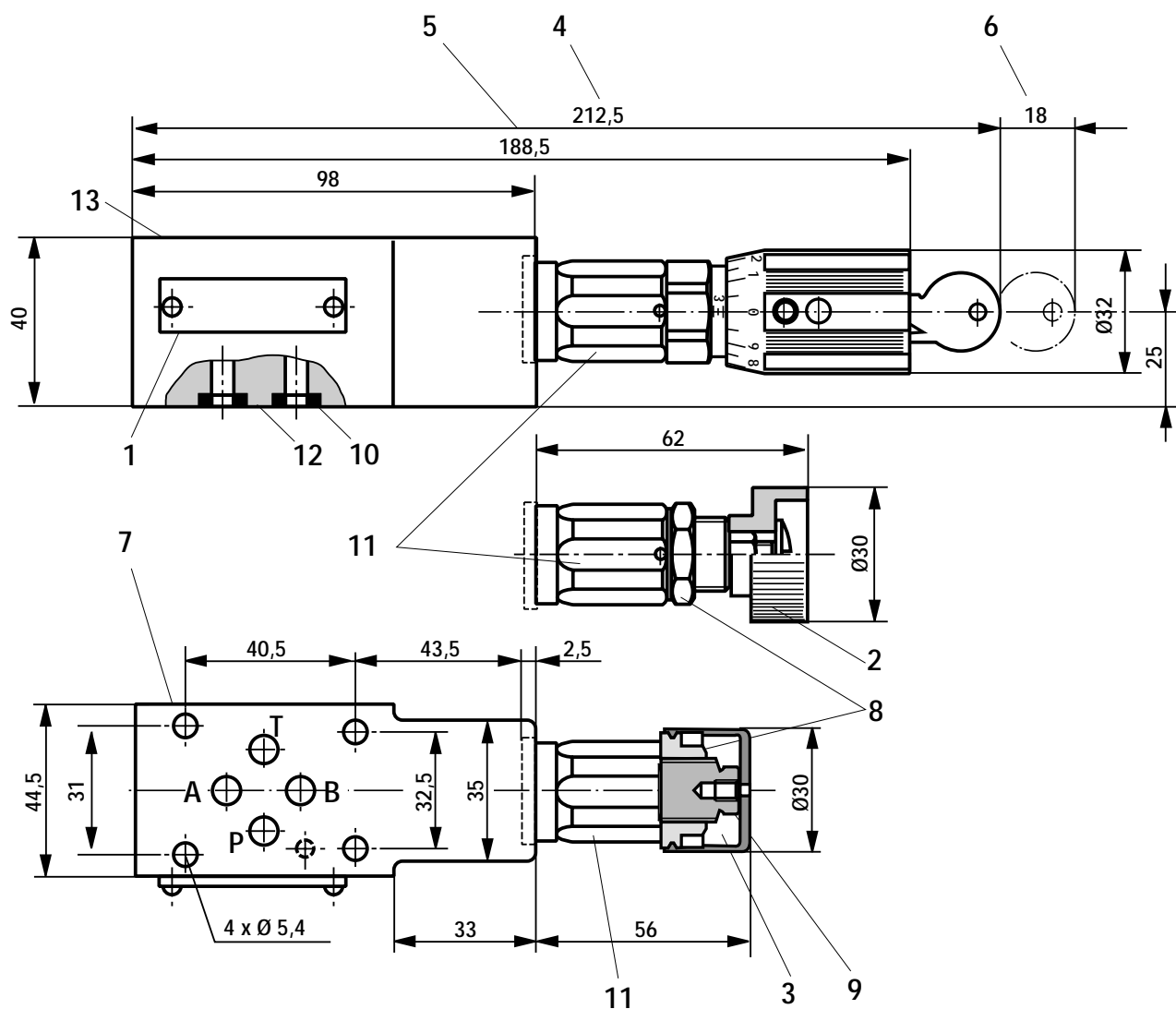
Valve fixing screws

M5 DIN 912-10.9,
Tightening torque $M_A = 8.9 \text{ Nm}$,
must be ordered separately.



Required surface finish of
mating piece

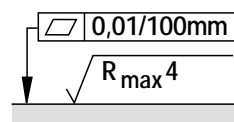
Unit dimensions: type ZDB 6 VB... and type ZDB 6 VP... (dimensions in mm)



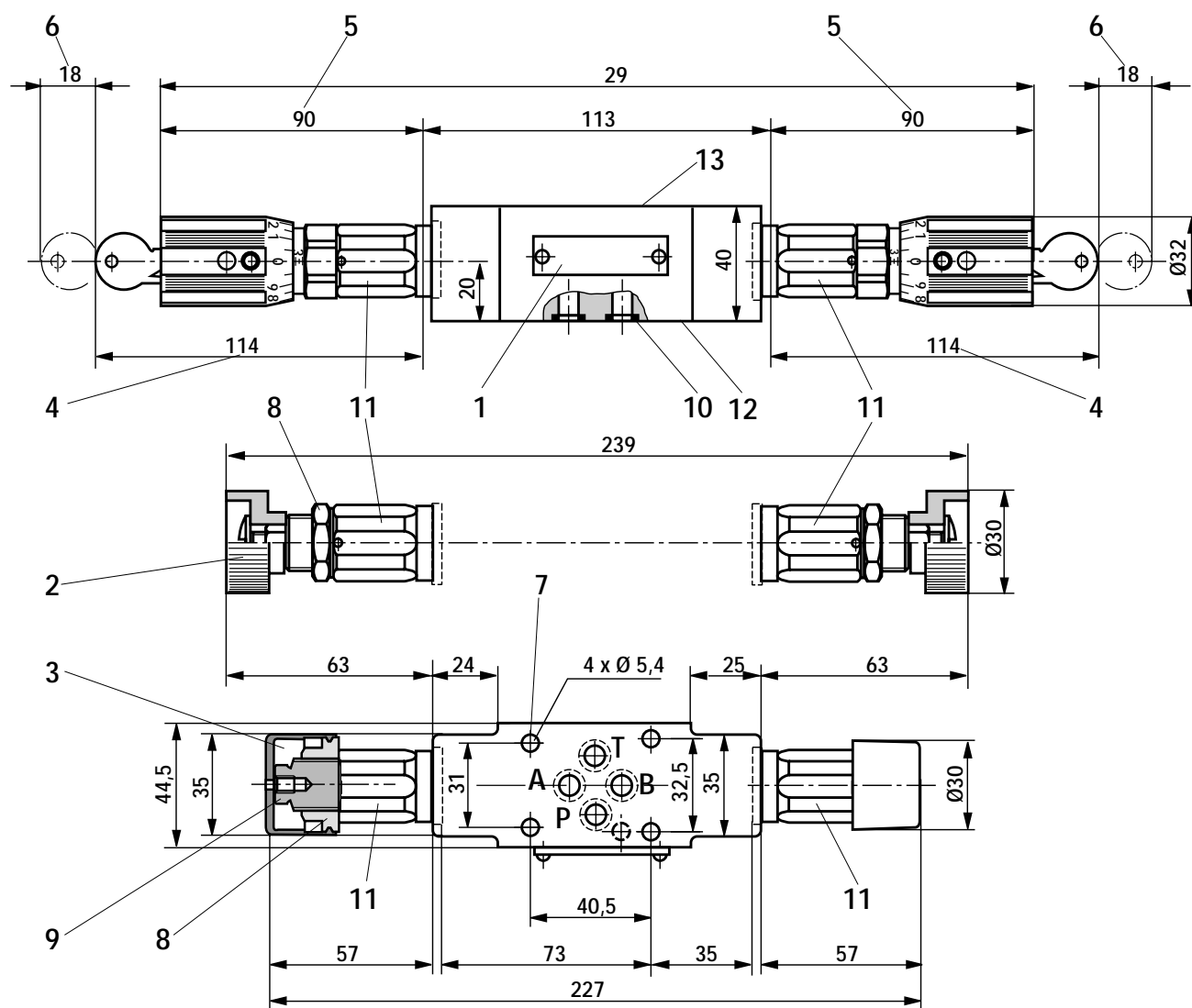
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- 2 Adjustment element "1"
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- 5 Adjustment element "7"
- 6 Space required to remove the key
- 7 Valve fixing screw holes
- 8 Locknut 24A/F
- 9 Hexagon 10A/F
- 10 R-rings
9.81 x 1.5 x 1.78 for ports A2, B2, P2, T2
- 11 Hexagon 24A/F
tightening torque $M_A = 50 \text{ Nm}$
- 12 Porting pattern to ISO 4401 and CETOP-RP 121 H, **with**
locating pin hole, $\varnothing 3 \times 5 \text{ mm}$ deep for locating pin $\varnothing 3 \times 8$
mm DIN EN ISO 8752, Material No. 00005694
(separate order)
- 13 Porting pattern to ISO 4401 and CETOP-RP 121 H, **with**
locating pin hole, $\varnothing 4 \times 4 \text{ mm}$ deep

Valve fixing screws

M5 DIN 912-10.9,
Tightening torque $M_A = 8.9 \text{ Nm}$,
must be ordered separately.



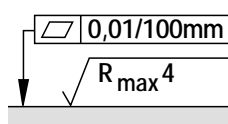
Required surface finish of
mating piece

Unit dimensions: type ZDB 6 VB... and type ZDB 6 VP... (dimensions in mm)

- 1 Name plate
- 2 Adjustment element "1"
- 3 Adjustment element "2"
- 4 Adjustment element "3"
- 5 Adjustment element "7"
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tightening torque $M_A = 50 \text{ Nm}$
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locating pin hole, $\varnothing 3 \times 5 \text{ mm}$ deep for locating pin $\varnothing 3 \times 8 \text{ mm}$ DIN EN ISO 8752, Material No. 00005694
(separate order)
- 13 Porting pattern to ISO 4401 und CETOP-RP 121 H, **with**
locating pin hole, $\varnothing 4 \times 4 \text{ mm}$ deep

Valve fixing screws

M5 DIN 912-10.9,

Tightening torques $M_A = 8.9 \text{ Nm}$,
must be ordered separately.Required surface finish of
mating piece

Notes

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