

RE 26 404/02.03

Replaces: 12.02

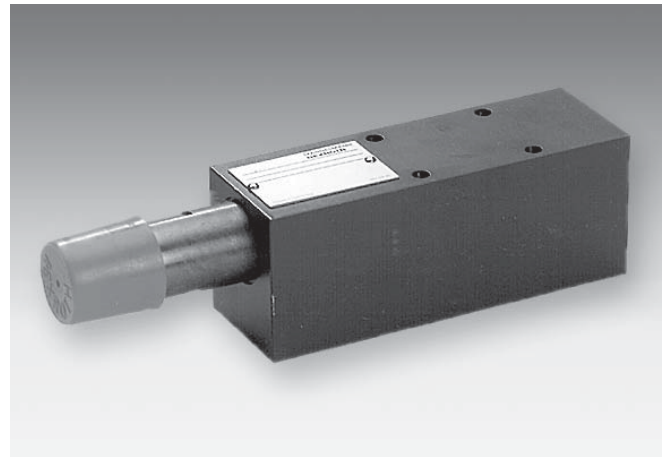
**Pressure cut-off valve, pilot operated
Type DA 6 V**

Nominal size 6

Series 4X

Maximum operating pressure 315 bar

Maximum flow 30 L/min



H5456/96

Type DA 6 V..2-4X/...

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Features

- For subplate mounting:
 - 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 details .../60 at the end of the valve type code)
 - Subplates to catalogue sheet RE 45 052 (separate order)
- As cartridge valve (Cavity to ISO 7789)
- 4 adjustment elements:
 - Rotary knob
 - Sleeve with hexagon and protective cap
 - Lockable rotary knob with scale
 - Rotary knob with scale
- 4 pressure stages



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Ordering details

DA		6	V	-4X/	-	*
Pressure cut-off valve	= DA					Further details in clear text
Nominal size 6	= 6					No code = Without locating pin hole
Pilot operated	= V					/60 ¹⁾ = With locating pin hole
For subplate mounting:						M = NBR seals
• Pump connection in P (standard)	= P					V = FKM seals
• Pump connection in A	= A					(other seals on request)
As cartridge valve (without check valve)	= K					⚠ Attention!
Rotary knob	= 1					The compatibility of the seals and pressure fluid must be taken into account!
Sleeve with hexagon and protective cap	= 2					10 = Switching pressure differential 10%
Lockable rotary knob with scale	= 3					17 = Switching pressure differential 17%
Rotary knob with scale	= 7					Settable pressure range
Series 40 to 49	= 4X					50 = 30 to 50 bar
(40 to 49: unchanged installation and connection dimensions)						100 = 50 to 100 bar
						200 = 100 to 200 bar
						315 = 200 to 315 bar

¹⁾ Locating pin 3 x 8 DIN EN ISO 8752, Material No. **R900005694** (separate order)

Preferred types (readily available)

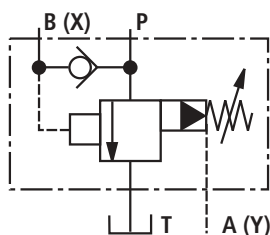
Type	Material number
DA 6 VP2-4X/100-10M	R900051309
DA 6 VP2-4X/200-10M	R900052037
DA 6 VP2-4X/200-17M	R900052038
DA 6 VP2-4X/315-10M	R900051311
DA 6 VA2-4X/100-17M	R900051318
DA 6 VA2-4X/200-17M	R900204554
DA 6 VA2-4X/315-17M	R900051322

Type	Material number
DA 6 VK1-4X/100-17M	R900051334
DA 6 VK1-4X/315-17M	R900051336
DA 6 VK2-4X/100-10M	R900051337
DA 6 VK2-4X/200-10M	R900052034
DA 6 VK2-4X/315-10M	R900051339
DA 6 VK2-4X/200-17M	R900205113

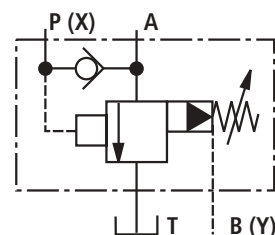
Further preferred types and standard units can be found in the EPS (Standard Price List).

Symbols

Type DA 6 VP..



Type DA 6 VA..



Function, section

Pressure valves type DA are pilot operated pressure cut-off valves. Their purpose is to pass the pump flow into the accumulator circuit until the accumulator is charged and the necessary accumulator pressure is achieved. In systems with high and low pressure pumps, the low pressure pump flow is directed to tank when the cut-off pressure is exceeded.

The pressure cut-off valve basically comprises of the housing (1), cartridge valve (2) with adjustment element (3), pilot control element (4), main spool (5) and check valve (6).

Pressure cut-off valve type DA 6 VP

Diverting the pump flow from P to B to P to T.

The pump delivers via the check valve (6) into the hydraulic system (P to B). At the same time the pressure fluid acts on spool (8) via control line (7), and via orifice (9) on the spring loaded side of the main spool (5) and via the orifice (10) on the pilot poppet (11). As soon as the cut-off pressure set at the adjustment element (3) in the hydraulic system is exceeded, the pilot poppet (11) lifts against the compression spring (12), from seat (14).

Pilot oil flows via the orifices (9) and (10), as well as the seat (14) to port A. The resulting pressure drop lifts the main spool (5) from its seat and opens the connection P to T. The check valve (6) closes the

connection from P to B. The pilot poppet (11) is now, due to the area differential between the spool and seat, held open by the actuator pressure in port B.

Diverting the pump flow from P to T to P to B.

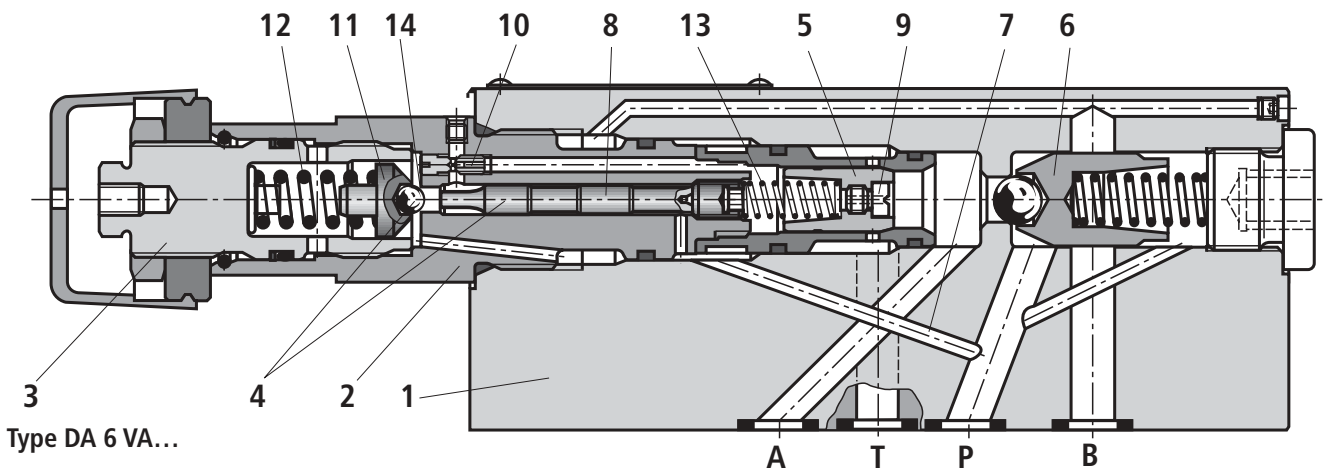
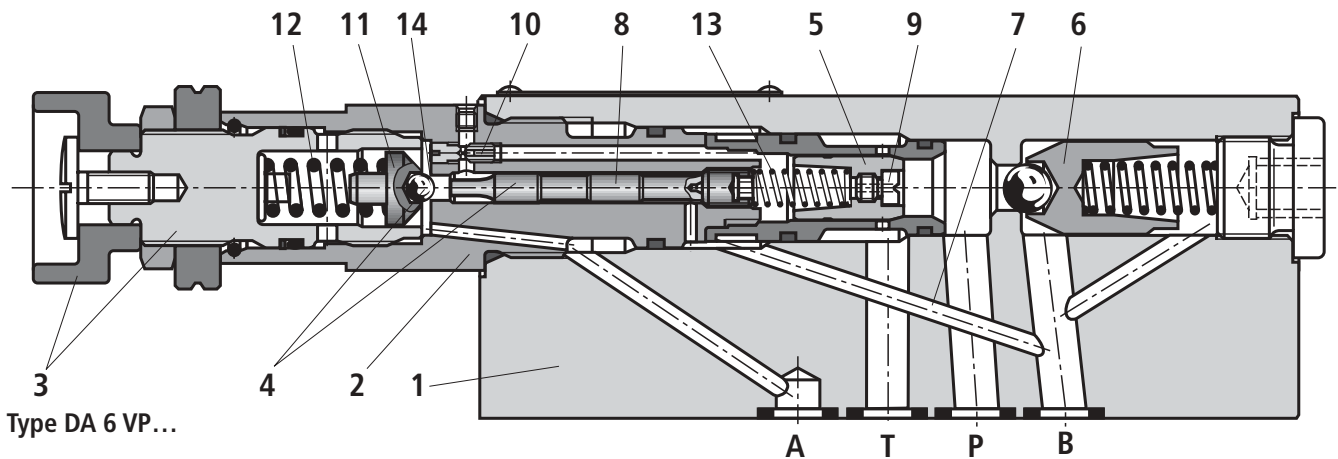
Due to the area differential of approx. 17% (10%) the effective force on spool (8) is correspondingly larger, so that the actuator pressure in port B must first fall by this amount, before the compression spring (12) can push the pilot poppet (11) onto its seat. Due to this, on the spring loaded side of the main spool (5), the pressure increases, the main spool closes supported by the compression spring (13), the connection P to T and the pump again delivers via the check valve (6) into the hydraulic system (P to B).

Pressure cut-off valve type DA 6 VA

With this type of valve the pump is not connected to P but to A. The valve delivers the pump flow from A to P to A to T.

The switching sequence is the same as with valve type DA 6 VP.

(This valve variant is used for simple interconnection with standard manifolds).



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

General

Installation	Optional		
Ambient temperature range	°C	– 30 to + 80 (NBR seals)	
		– 20 to + 80 (FKM seals)	
Weight	Manifold mounting	kg	2.4
	Cartridge valve	kg	0.

Hydraulic

Maximum operating pressure at ports B (P)	bar	315 (after switching P to T, A to T)
Maximum flow	L/min	30
Pressure fluid	Mineral oil (HL, HLP) to DIN 51 524 ¹⁾ ; Fast bio-degradable pressure fluids to VDMA 24 568 (also see RE 90 221); HETG (rape seed oil) ¹⁾ ; HEPG (polyglycols) ²⁾ ; HEES (synthetic ester) ²⁾ ; Other pressure fluids on request	
Pressure fluid temperature range	°C	– 30 to + 80 (NBR seals)
		– 20 to + 80 (FKM seals)
Viscosity range	mm ² /s	10 to 800
Cleanliness class to ISO code	Maximum permissible degree of contamination of the pressure fluid is to ISO 4406 (C) class 20/18/15 ³⁾	
Switching differential	%	10; 17 (see characteristic curves on page 5)

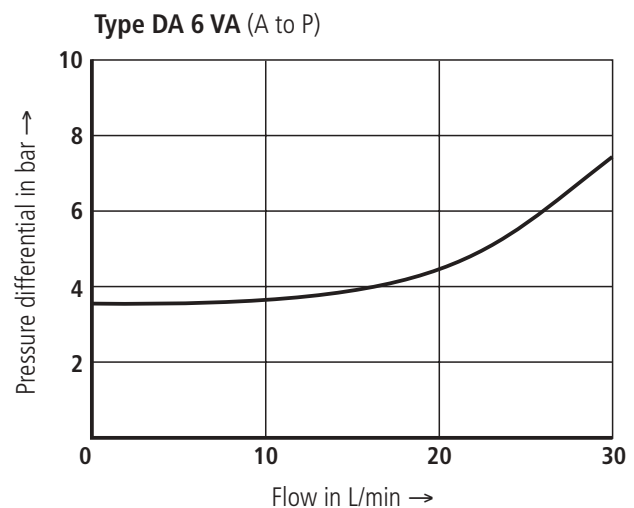
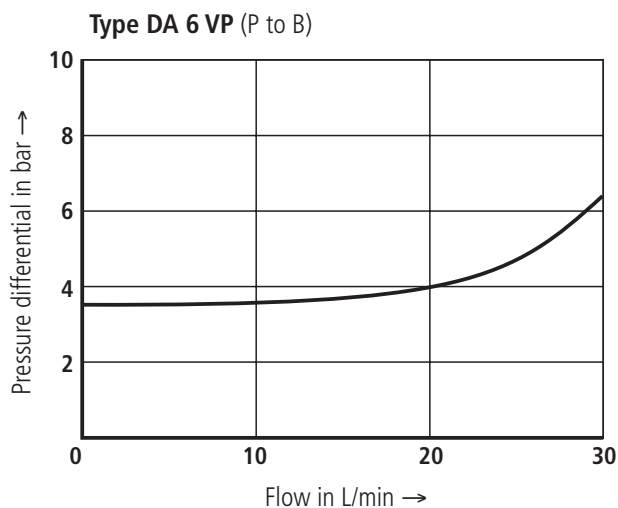
¹⁾ Suitable for NBR **and** FKM seals

²⁾ **Only** suitable for FKM seals

³⁾ The cleanliness class stated for the components must be adhered too in hydraulic systems. Effective filtration prevents faults from occurring and at the same time increases the component service life. For the selection of filters see catalogue sheets RE 50 070, RE 50 076 and RE 50 081.

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

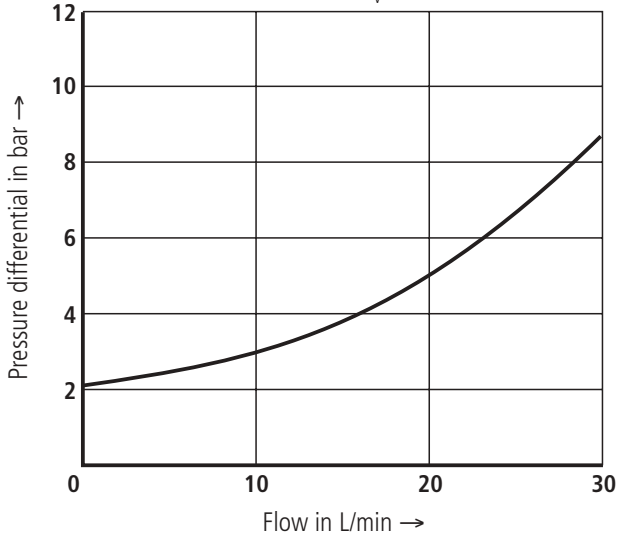
Δp - q_V -characteristic curves over the check valve



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

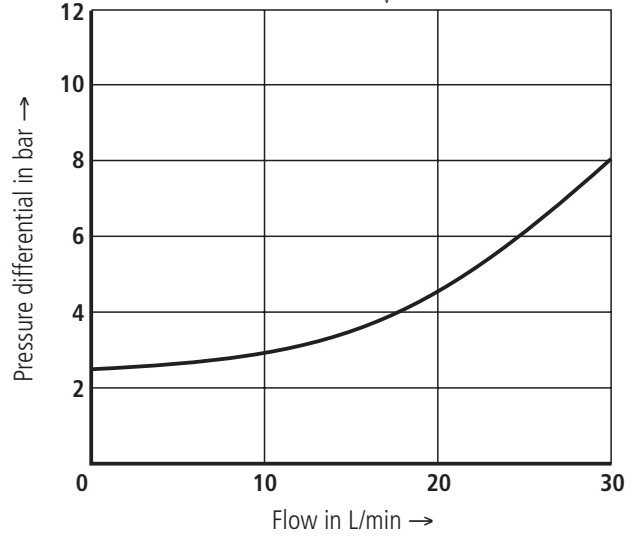
Type DA 6 VP (P to T)

Pressure differential $\Delta p = f(q_v)$



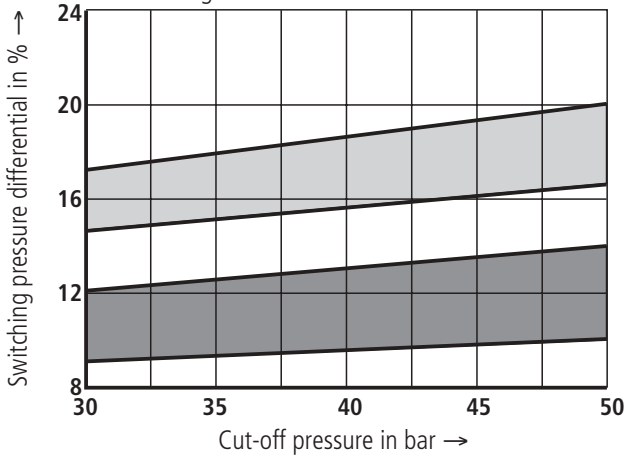
Type DA 6 VA (A to T)

Pressure differential $\Delta p = f(q_v)$

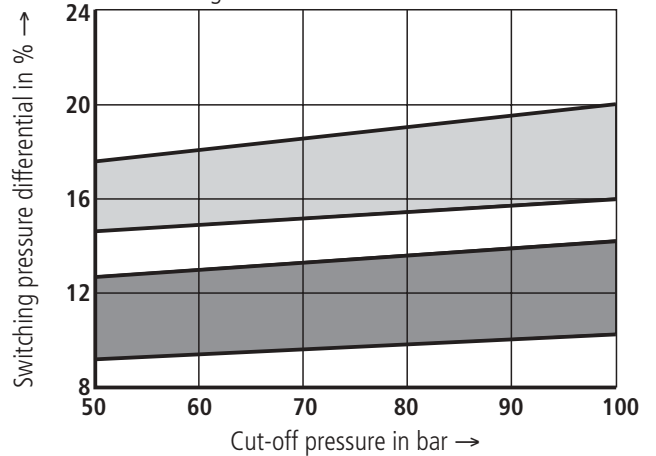


Example spread at a switching pressure differential of: 17% 10%

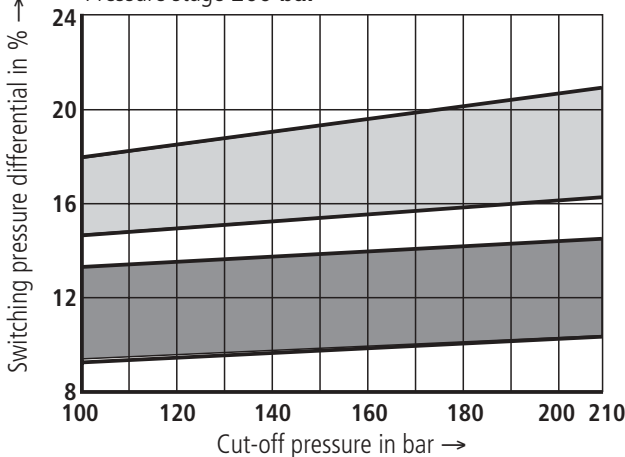
Pressure stage 50 bar



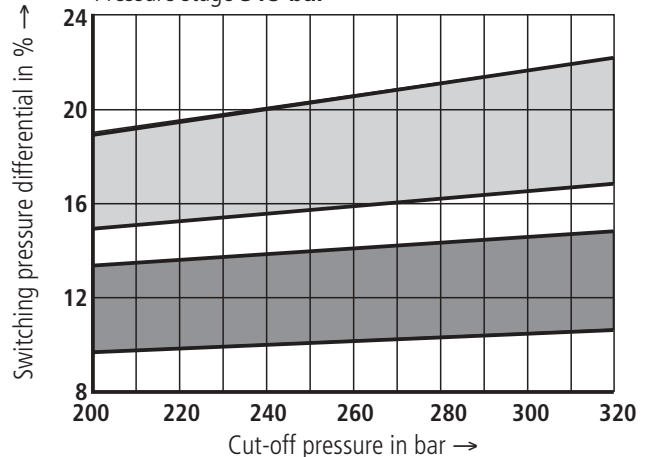
Pressure stage 100 bar



Pressure stage 200 bar



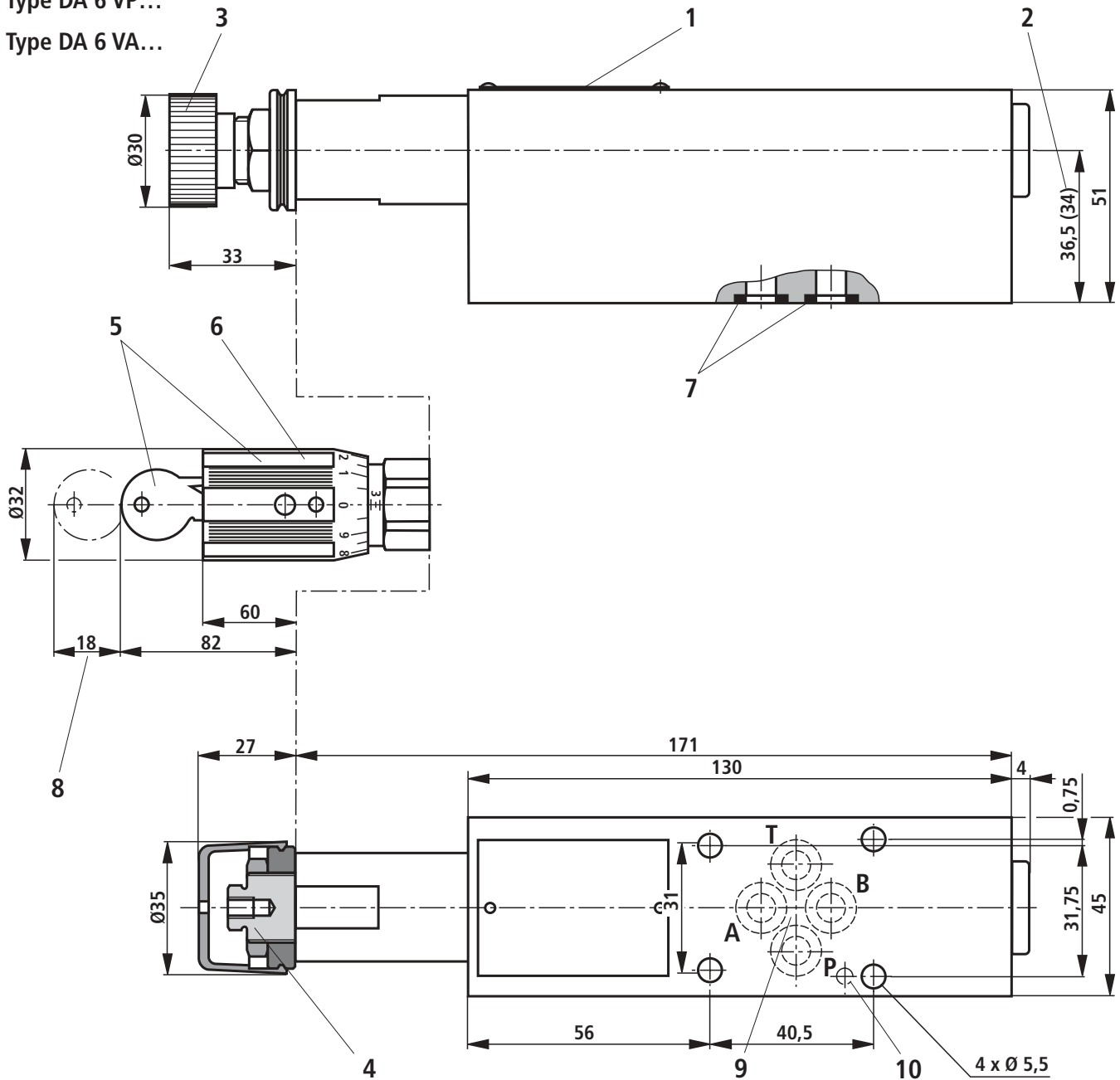
Pressure stage 315 bar



Unit dimensions: for manifold mounting (dimensions in mm)

Type DA 6 VP...

Type DA 6 VA...



- 1 Name plate
- 2 Dim. () type DA 6 VA...
- 3 Adjustment element "1"
- 4 Adjustment element "2"
- 5 Adjustment element "3"
- 6 Adjustment element "7"
- 7 Identical seals for ports A, B, P, T
- 8 Space required to remove the key
- 9 Porting pattern to DIN 24 340 Form A, **without** locating pin hole

- 10 Porting pattern to ISO 4401 and CETOP-RP 121 H **with** locating pin hole

Subplates

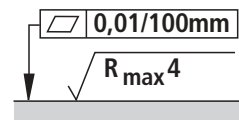
(**without** locating pin hole) G 341/01 (G 1/4)
G 342/01 (G 3/8)
G 502/01 (G 1/2)

(**with** locating pin hole) G 341/60 (G 1/4)
G 342/60 (G 3/8)
G 502/60 (G 1/2)

to catalogue sheet RE 45 052 and

Valve fixing screws

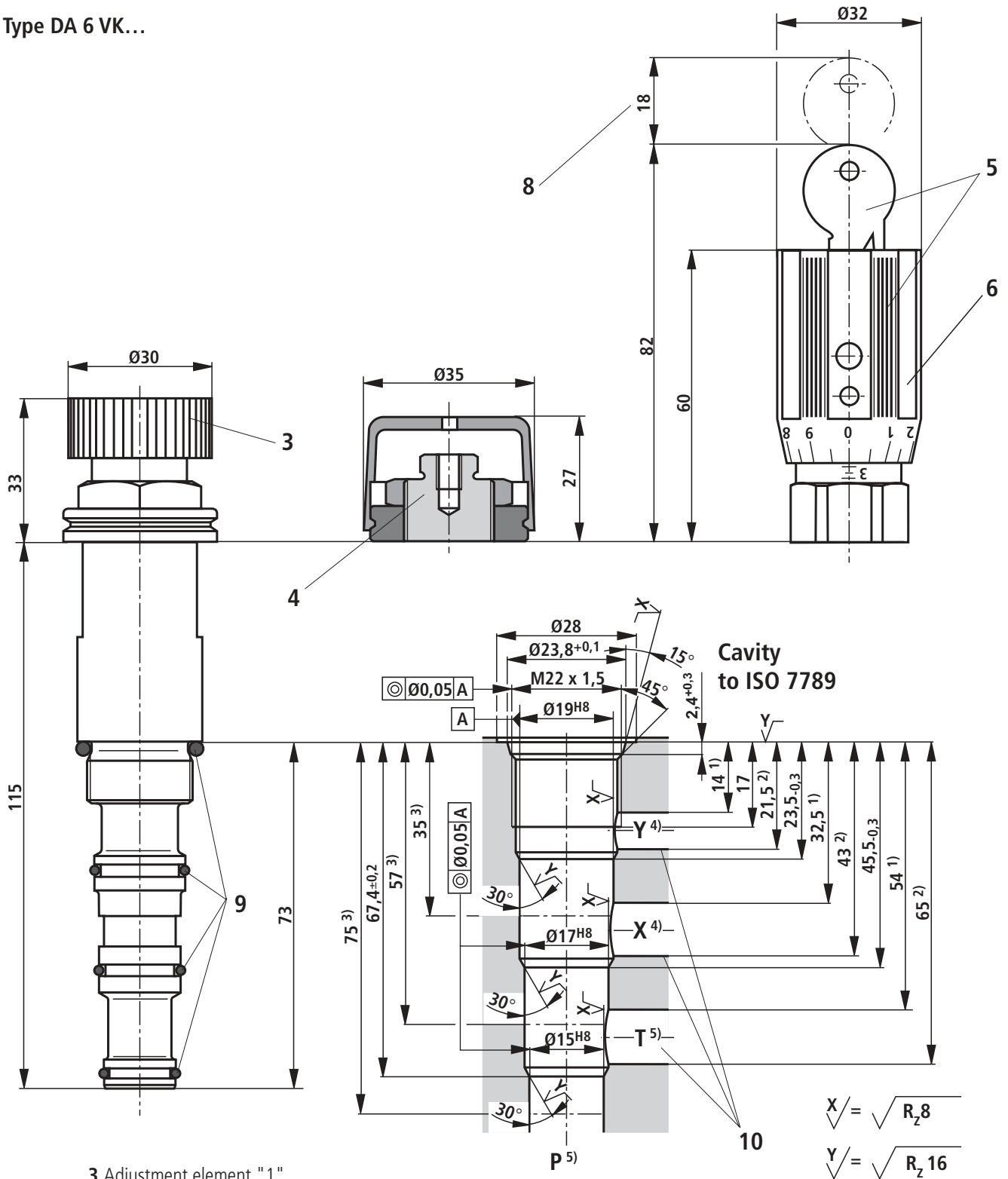
M5 x 60 DIN 912-10.9, $M_A = 8.9 \text{ Nm}$,
must be ordered separately.



Required surface finish of the mating piece

Unit dimensions: cartridge valve (dimensions in mm)

Type DA 6 VK...



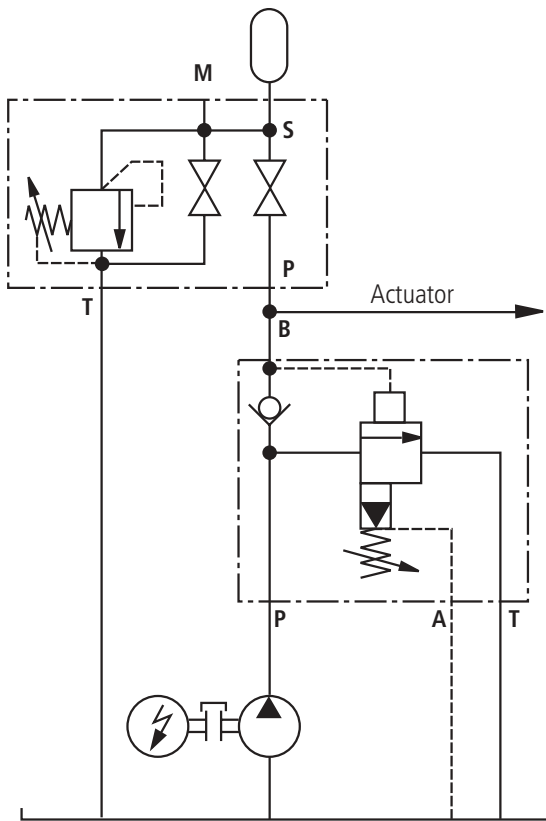
- 3 Adjustment element "1"
- 4 Adjustment element "2"
- 5 Adjustment element "3"
- 6 Adjustment element "7"
- 8 Space required to remove the key
- 9 Seal rings
- 10 Connection holes can be positioned at will about the circumference

- 1) Min. dimension
- 2) Max. dimension
- 3) Depth of fit
- 4) At least $\varnothing 4$ mm
- 5) At least $\varnothing 7$ mm

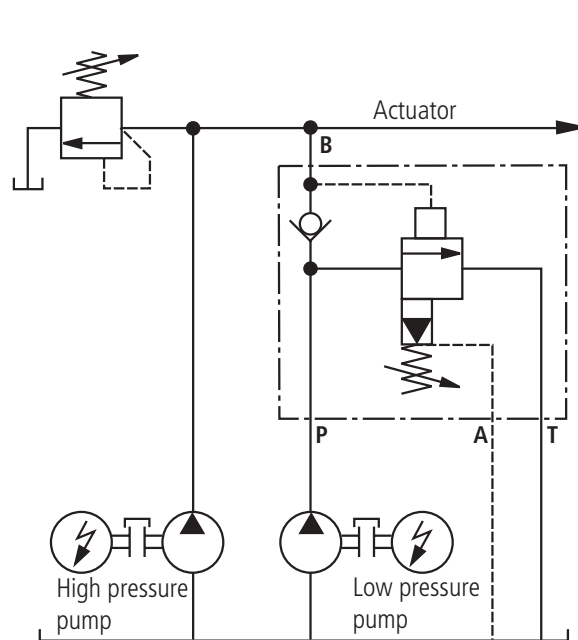
$$\sqrt{\text{A}} = \sqrt{R_{z,8}}$$

$$\sqrt{\text{Y}} = \sqrt{R_{z,16}}$$

Hydraulic system with accumulator



Hydraulic system with high and low pressure pumps



⚠ Attention!

With **high and low pressure applications** the selection of the pressure stage for the DA 6 VP... pressure cut-off valve is dependent on the maximum high pressure, i.e. the next highest pressure stage has to be selected!

Example: Cut-off pressure $p_{min} = 60$ bar
 High pressure $p_{max} = 200$ bar

results in the selection of the following pressure cut-off valve:
 Type DA 6 V..-4X/315-...

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