

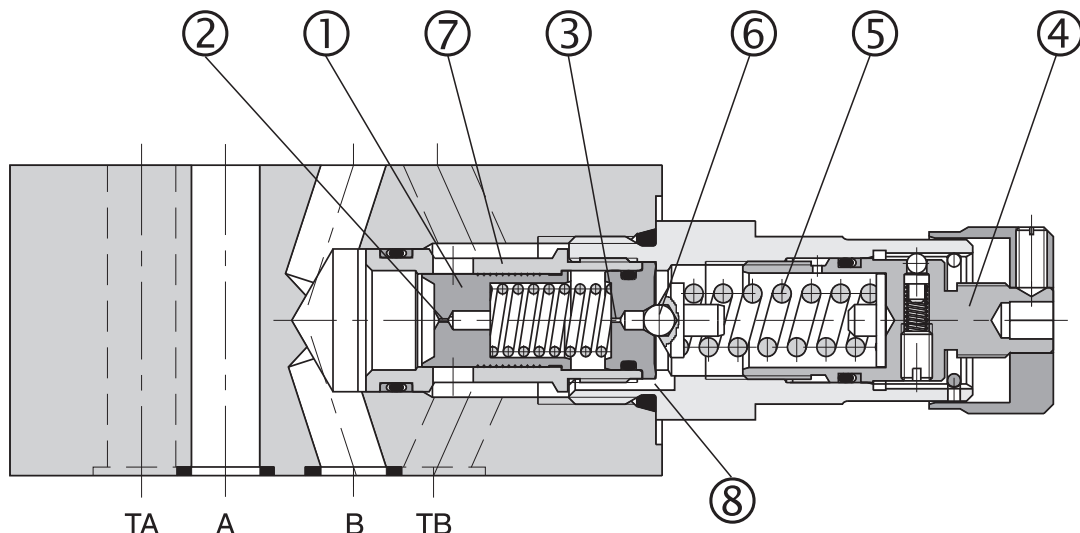
- Modular and in-line design
- Five pressure ranges
- Two pressure adjustment options:
 - screw with internal hexagon
 - hand knob with arrestment
- Installation dimensions to ISO 4401 and DIN 24 340-A10



Functional Description

Pressure relief valves VPN2 are pilot operated pressure valves designed for system pressure limitation. The pressure adjustment is controlled by the adjustment screw (4). In its basic state, the valve is closed. The pressure acts on the face area of the control spool (1) and at the same time through orifice (2) on the control spool rear side, which is preloaded by a spring and further on through orifice (3) on the pilot valve ball (6). When the increasing system pressure reaches the value, which is preset by spring (5), the valve opens and the control flow passes through the pilot valve. The spool area which is preloaded by spring becomes relieved, the spool control edge opens the radial bores in bushing (7)

and the fluid passes from port B to T. The control flow is routed through slot (8) to port T. When an accurate pressure control, which does not depend on pressure variations in port T (only for models RC2 and RC3, see Functional Symbols), is required the model "Y" with external port for pilot flow is to be used. If a relieving of the valve on a lower pressure as that set up by the spring (5) is needed, the model with port "X" (10) is to be used. The valve body and the adjustment screw are zinc coated. With models M and R the valve bodies are phosphate coated.



Ordering Code

VPN2-10/ -

Pilot Operated Pressure Relief Valve

Nominal size

Model

| | |
|--|------------|
| modular valve, flow from A to TA | MA |
| modular valve, flow from B to TB | MB |
| modular valve, flow from P to TA | MP |
| modular valve, flow from A to B and B to A | MC |
| modular valve, flow from A to TA and B to TB | MD |
| in-line valve, thread P1, P2 - G3/4; T - G1 | RA2 |
| in-line valve, thread P - G3/4; T - G1 | RB2 |
| in-line valve, thread P - G3/4; T - G1; X - G1/4 | RC2 |
| in-line valve, thread P - G3/4; T - G1; Y - G1/4 | RC3 |

Seals
without designation
V
NBR
FPM (Viton)

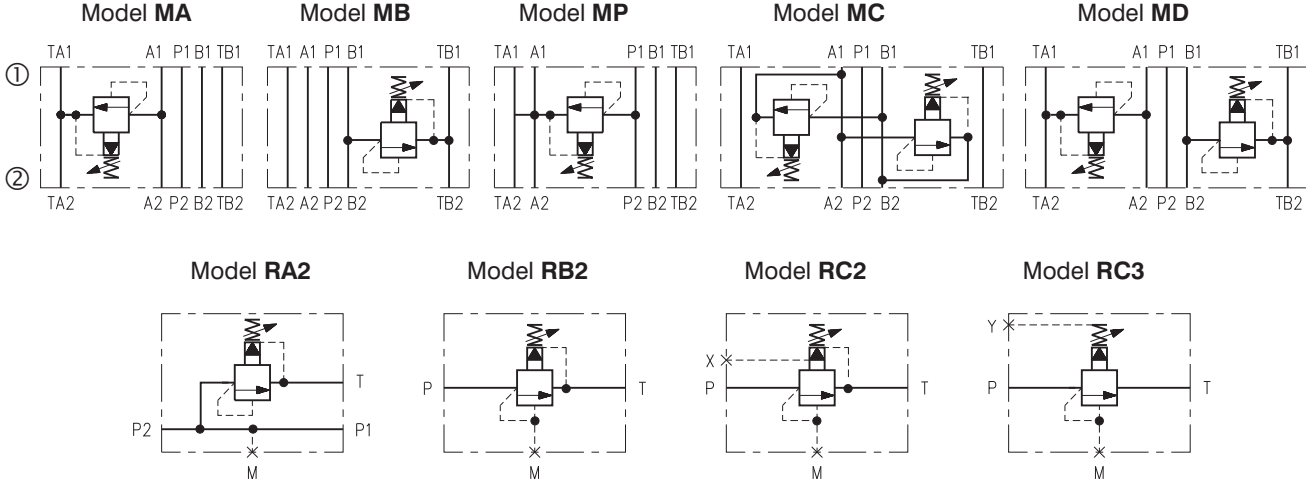
Adjustment element
S
R
screw with internal hexagon
hand knob

Pressure range
6 up to 913 PSI (63 bar)
10 up to 1450 PSI (100 bar)
16 up to 2321 PSI (160 bar)
21 up to 3045 PSI (210 bar)
32 up to 5076 PSI (350 bar)

Model with two pressure relief cartridges
32/10 pressure setting 5076 PSI (350 bar)
in port A and 1450 PSI (100 bar) in port B, etc.

FOR PREFERRED TYPES SEE BOLD TYPING IN ORDERING CODE AND TABLE OF PREFERRED TYPES ON PAGE 7

Functional Symbols



- ① Valve side
- ② Subplate side

Ordering Numbers of Sandwich / Valve Bodies (without screw-in cartridge)

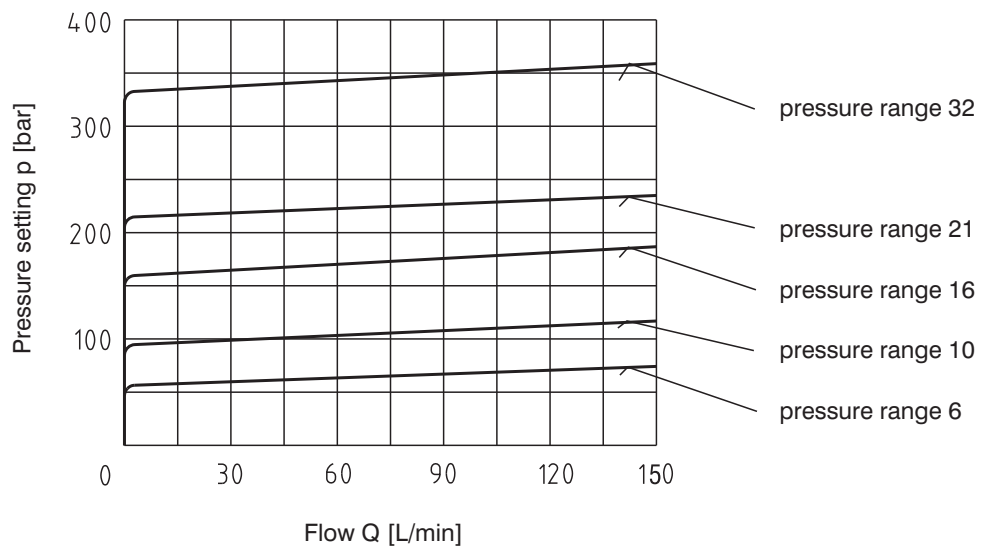
| Valve body for modular valve - NBR | Ordering number | Valve body for modular valve - Viton | Ordering number |
|------------------------------------|-----------------|--------------------------------------|-----------------|
| MA10-VP | 556-0670 | MA10-VP/V | 556-0675 |
| MB10-VP | 556-0671 | MB10-VP/V | 556-0676 |
| MP10-VP | 556-0672 | MP10-VP/V | 556-0677 |
| MC10-VP | 556-0673 | MC10-VP/V | 556-0678 |
| MD10-VP | 556-0674 | MD10-VP/V | 556-0679 |
| Valve body for in-line valve - NBR | Ordering number | Valve body for in-line valve - Viton | Ordering number |
| RA2-10-VP | 556-0688 | RA2-10-VP/V | 556-0689 |
| RB2-10-VP | 556-0682 | RB2-10-VP/V | 556-0686 |
| RC2-10-VP (RC3-10-VP) | 556-0683 | RC2-10-VP/V (RC3-10-VP/V) | 556-0687 |

Technical Data

| | | |
|--|--------------------|--|
| Nominal size | mm | 10 |
| Max. flow rate | L/min | 150 |
| Max. control flow | L/min | 0,5 |
| Max. service pressure ports (P, T, A, B) | bar | 350 |
| Working pressure related to flow | bar | see p-Q characteristics |
| Hydraulic fluid | | Hydraulic oils of power classes (HL, HLP) to DIN 51524 |
| Fluid temperature range for standard sealing (NBR) | °C | -30 ... +100 |
| Fluid temperature range for Viton sealing (FPM) | °C | -20 ... +120 |
| Viscosity range | mm ² /s | 20 ... 400 |
| Max. degree of fluid contamination | | Class 21/18/15 according to ISO 4406 (1999). |
| Weight - models MA, MB, MP - models MC, MD - models RA2, RB2, RC2, RC3 | kg | 2,6 3,0 2,7 |
| Mounting position | | optional |

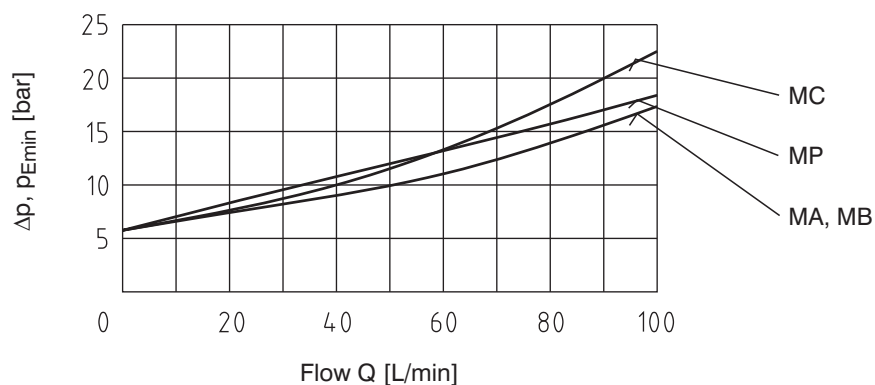
p-Q Characteristics

Measured at $v = 32 \text{ mm}^2/\text{s}$



Δp -Q Characteristics

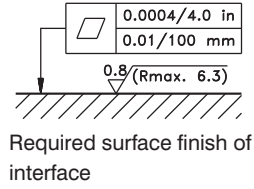
Measured at $v = 32 \text{ mm}^2/\text{s}$



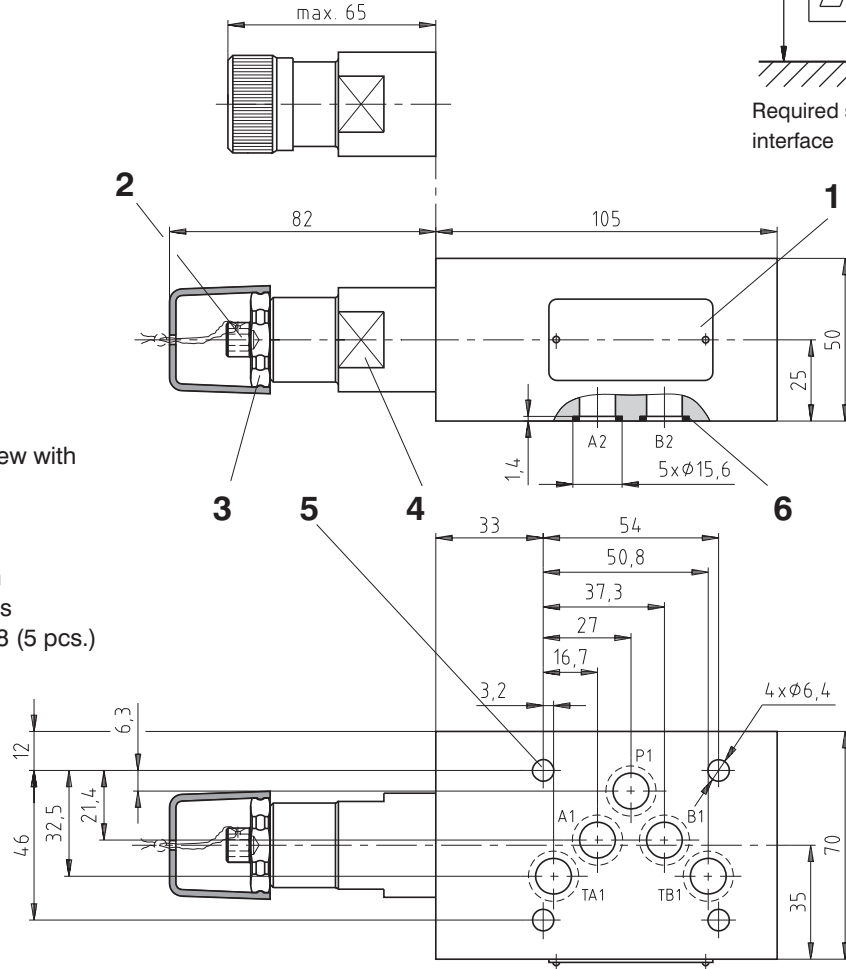
Valve Dimensions

Dimensions in millimetres

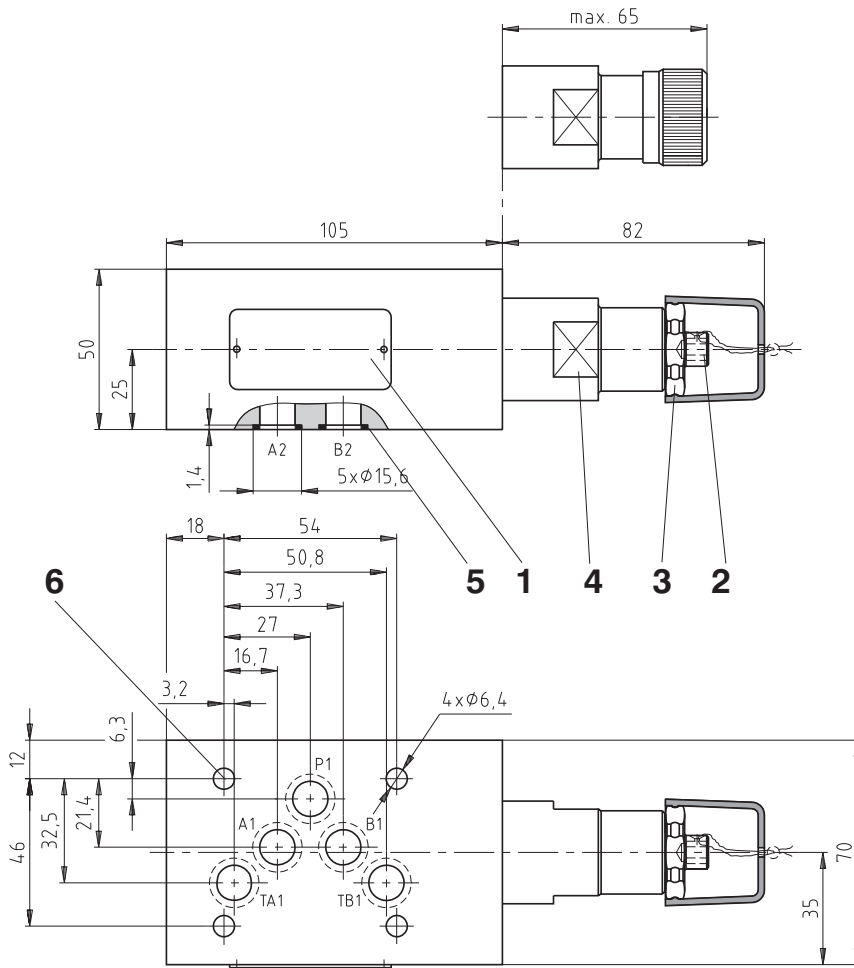
Model MA



- 1 Name plate
- 2 Adjustment element (screw with internal HEX 6)
- 3 Locknut HEX 27
- 4 Wrench flats $s = 27$
- tightening torque 60Nm
- 5 4 through mounting holes
- 6 Square rings 12.42 x 1.68 (5 pcs.)
supplied with each valve



Model MB

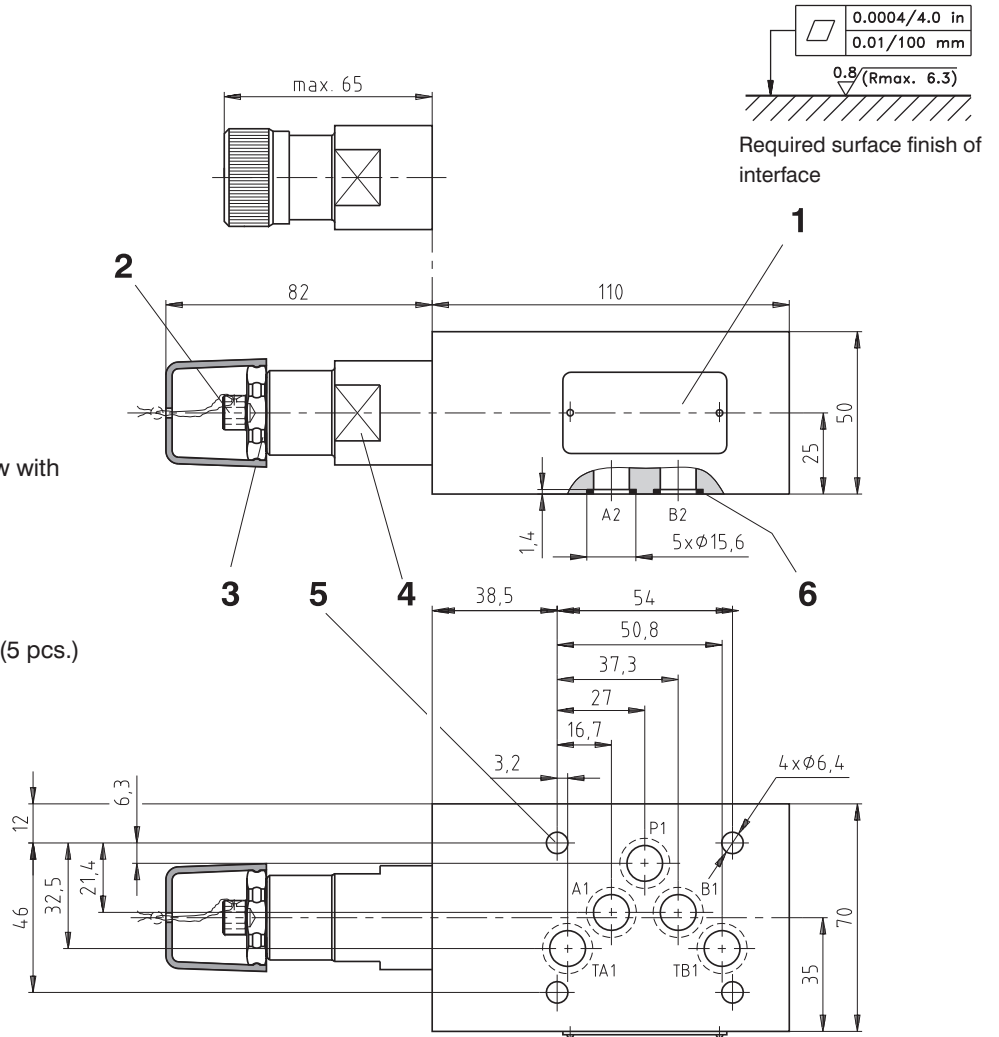


Valve Dimensions

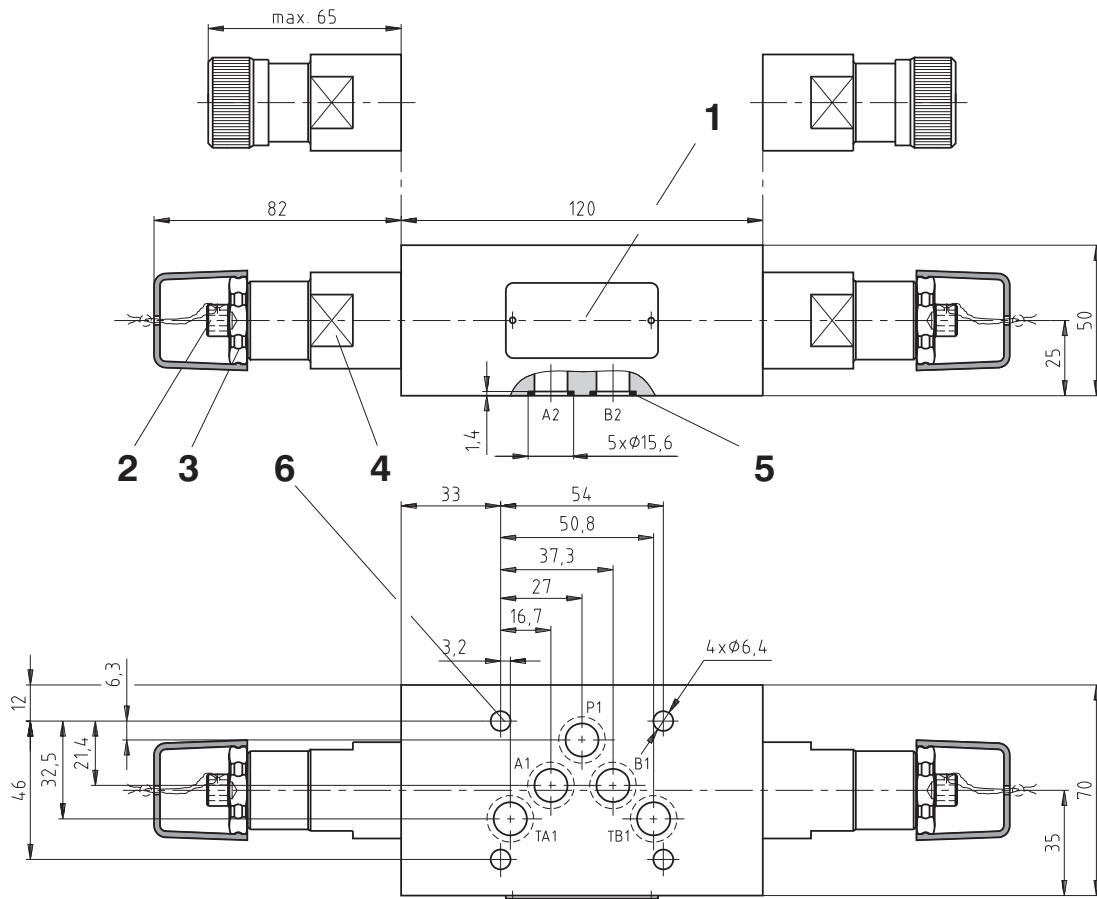
Dimensions in millimetres

Model MP

- 1 Name plate
- 2 Adjustment element (screw with internal HEX 6)
- 3 Locknut HEX 27
- 4 Wrench flats $s=27$
- tightening torque 60Nm
- 5 4 through mounting holes
- 6 Square rings 12,42 x 1,68 (5 pcs.)
supplied with each valve



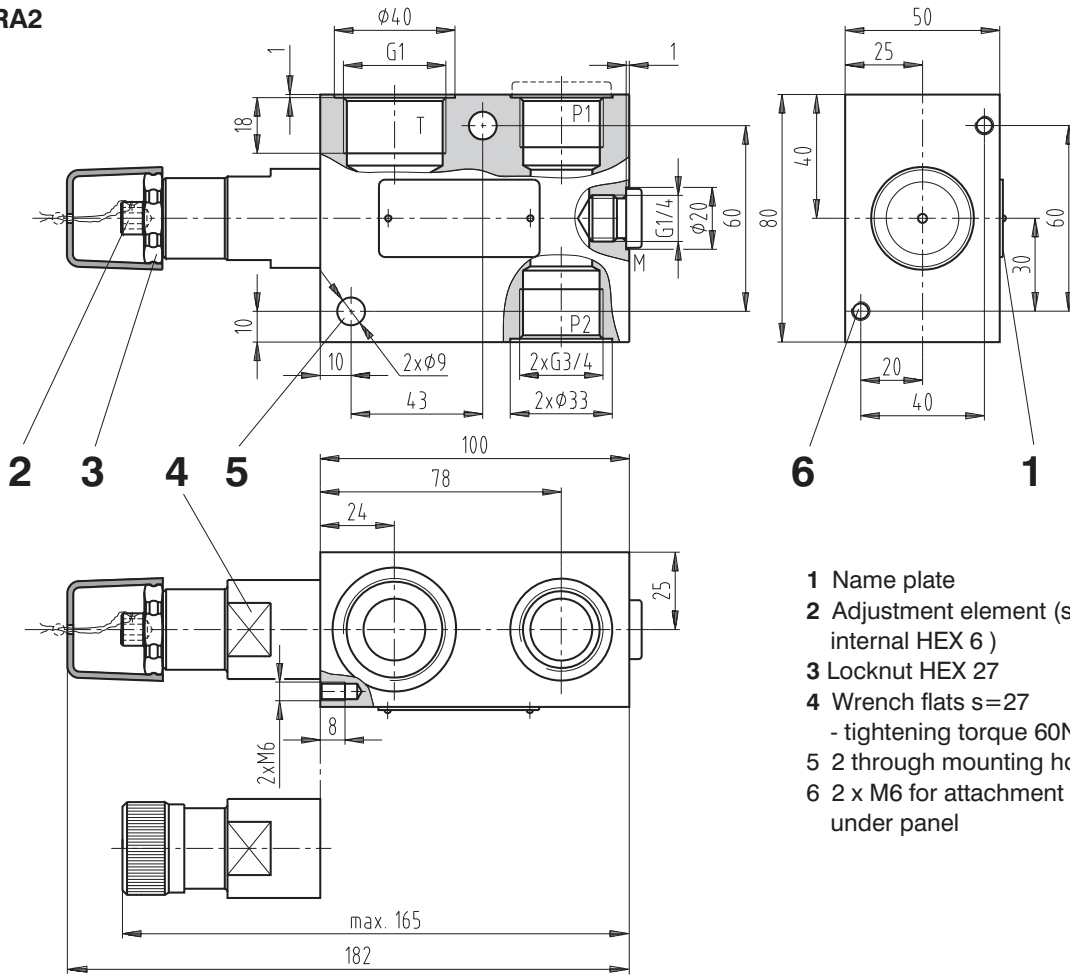
Models MC, MD



Valve Dimensions

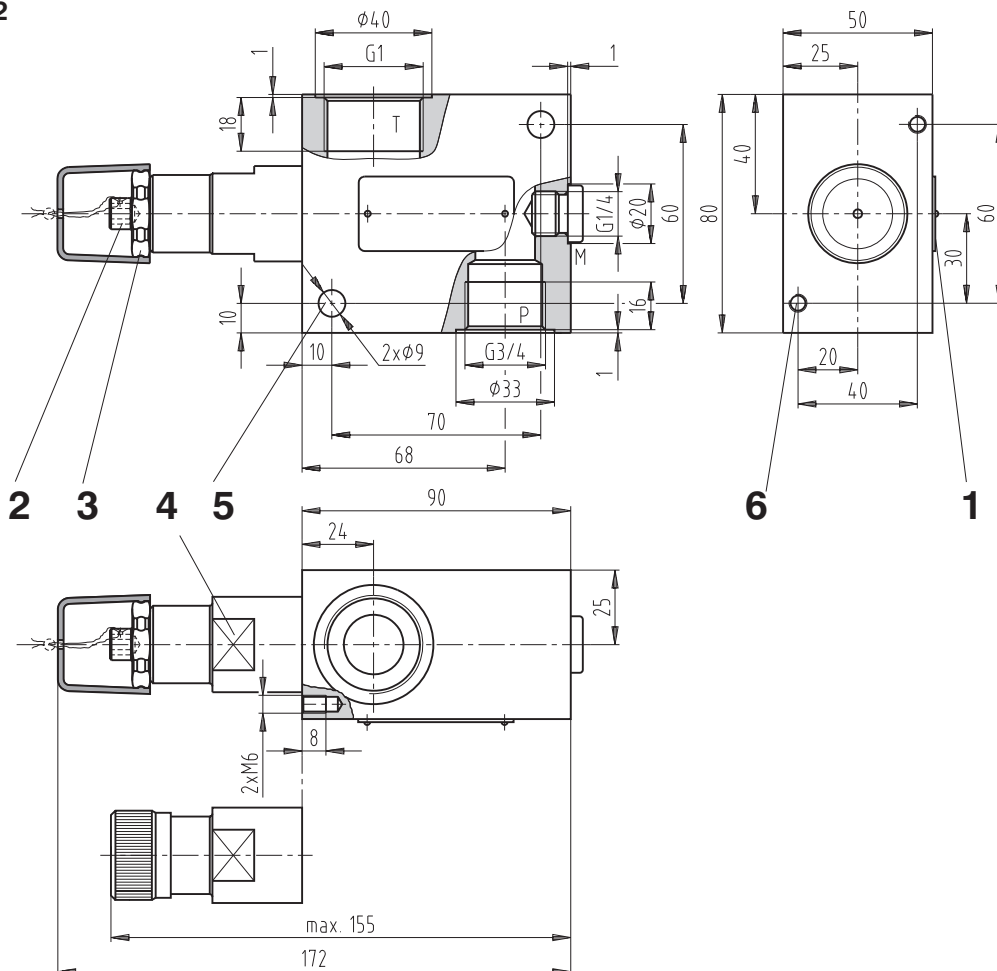
Dimensions in millimetres

Model RA2



- 1 Name plate
- 2 Adjustment element (screw with internal HEX 6)
- 3 Locknut HEX 27
- 4 Wrench flats $s=27$
- tightening torque 60Nm
- 5 2 through mounting holes
- 6 2 x M6 for attachment under panel

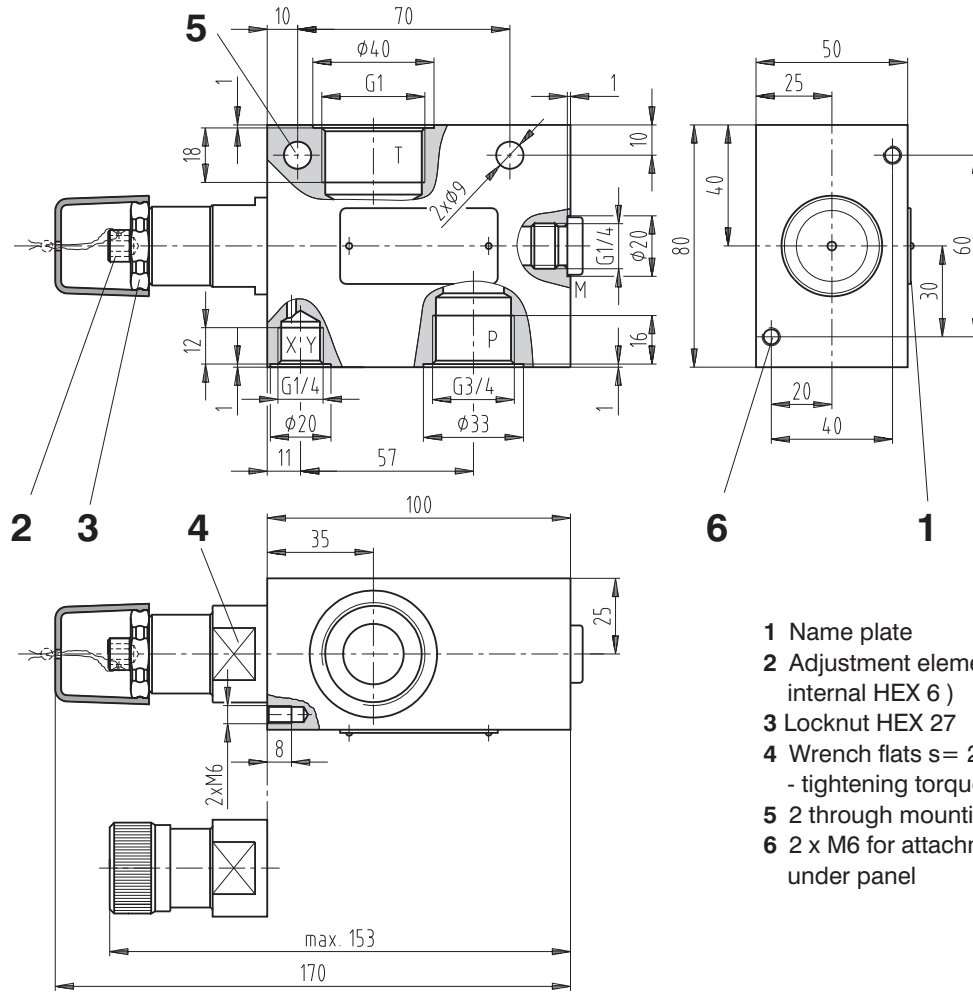
Model RB2



Valve Dimensions

Dimensions in millimetres

Model RC2, RC3



- 1 Name plate
- 2 Adjustment element (screw with internal HEX 6)
- 3 Locknut HEX 27
- 4 Wrench flats s = 27
- tightening torque 60Nm
- 5 2 through mounting holes
- 6 2 x M6 for attachment under panel

Spare Parts

| Model | Dimensions, number | Ordering number |
|-------------------------------------|--|-----------------|
| Modular valve - NBR | Square ring 12.42 x 1.68 NBR 70 (5 pcs.) | 556-0384 |
| Modular valve - Viton | O-ring 12.42 x 1.78 (5 pcs.) | 556-0385 |
| Model | Typ, number | Ordering number |
| In-line valve RA2 - NBR | VSTI R1/4-ED (1 pc.) VSTI R3/4-ED (1 pc.) | 556-0655 |
| In-line valve RB2, RC2, RC3 - NBR | VSTI R1/4-ED (1 pc.) | 556-0657 |
| In-line valve RA2 - Viton | VSTI R1/4-ED - Viton (1 pc.) VSTI R3/4-ED - Viton (1 pc.) | 556-0656 |
| In-line valve RB2, RC2, RC3 - Viton | VSTI R1/4-ED - Viton (1 pc.) | 556-0658 |

Preferred Types of Valves

| Type | Ordering number | Type | Ordering number |
|----------------|-----------------|-----------------|-----------------|
| VPN2-10/MP-10S | 556-1421 | VPN2-10/RA2-10S | 556-1561 |
| VPN2-10/MP-21S | 556-1423 | VPN2-10/RA2-21S | 556-1563 |
| VPN2-10/MP-32S | 556-1424 | VPN2-10/RA2-32S | 556-1564 |

Caution!

- The packing foil is recyclable.
- The protecting plate can be returned to the manufacturer.
- The technical information regarding the product presented in this catalogue is for descriptive purposes only. It should not be construed in any case as a guaranteed representation of the product properties in the sense of the law.

ARGO-HYTOS s.r.o. CZ - 543 15 Vrchlabí
Tel.: +420-499-403111, Fax: +420-499-403421
E-mail: sales.cz@argo-hytos.com
www.argo-hytos.com