

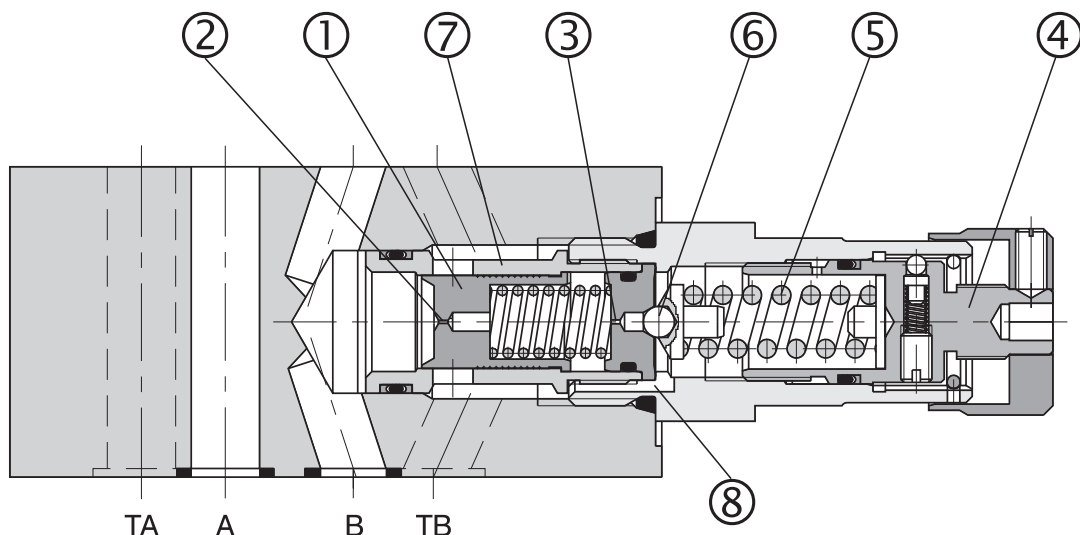
- Modular and in-line design
- Five pressure ranges
- Two pressure adjustment options:
 - screw with internal hexagon
 - hand knob with arrestment
- Installation dimensions to ISO 4401 and DIN 24 340-A10



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" 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 NBR
 V FPM (Viton)

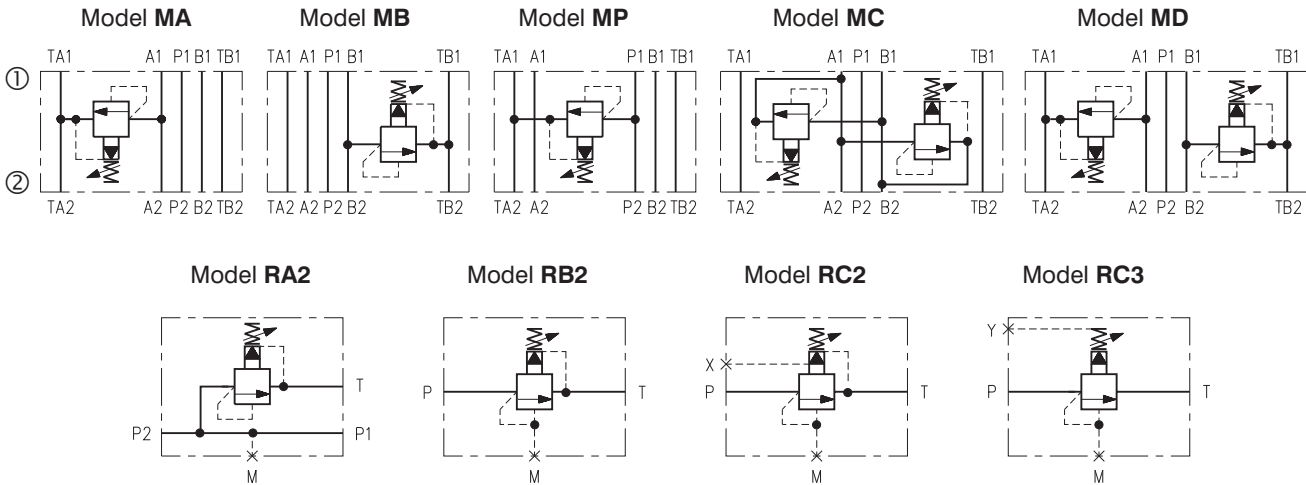
Adjustment element
 S screw with internal hexagon
 R hand knob

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.

Functional Symbols



- ① Valve side
- ② Subplate side

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

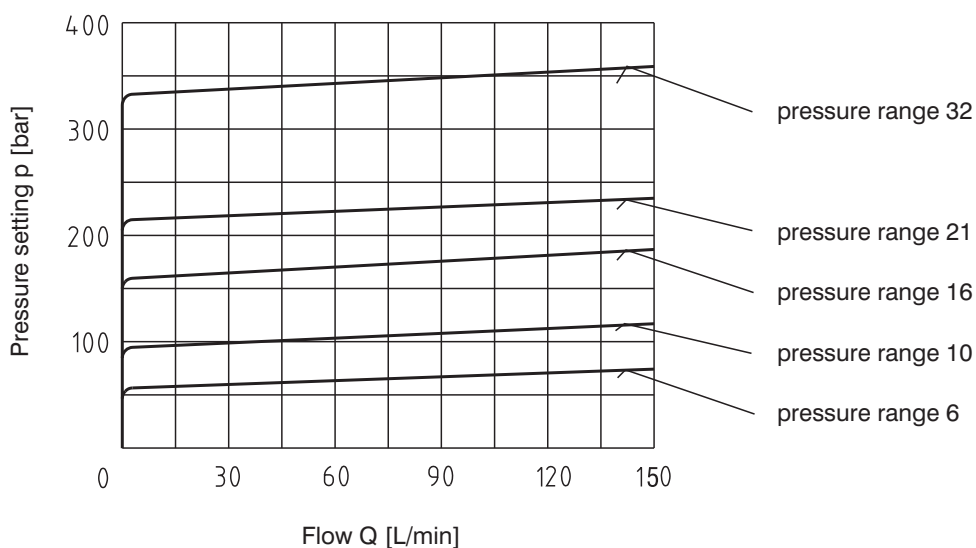
Valve body for modular valve - NBR	Ordering number	Valve body for modular valve - Viton	Ordering number
MA10-VP	15995800	MA10-VP/V	22975100
MB10-VP	15995900	MB10-VP/V	22975200
MP10-VP	15996000	MP10-VP/V	22975300
MC10-VP	15996100	MC10-VP/V	22975400
MD10-VP	15996200	MD10-VP/V	22975500
Valve body for in-line valve - NBR	Ordering number	Valve body for in-line valve - Viton	Ordering number
RA2-10-VP	15996500	RA2-10-VP/V	22976600
RB2-10-VP	15996300	RB2-10-VP/V	22976300
RC2-10-VP (RC3-10-VP)	15996400	RC2-10-VP/V (RC3-10-VP/V)	22976400

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
Weight - models MA, MB, MP - models MC, MD - models RA2, RB2, RC2, RC3	kg	2,6 3,0 2,7
Mounting position		unrestricted

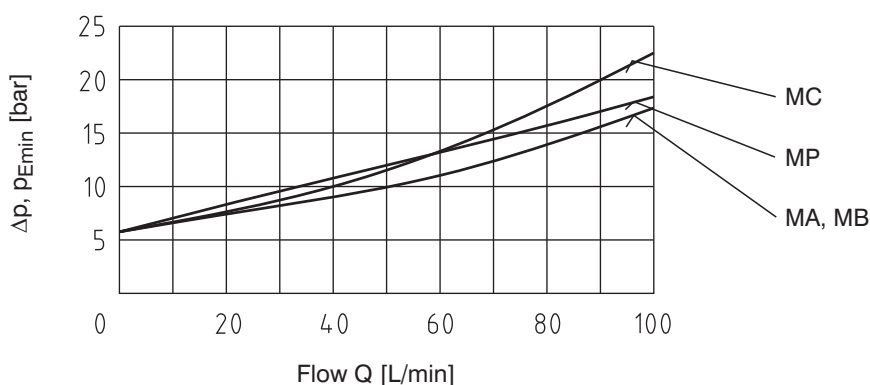
p-Q Characteristics

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



Δp-Q Characteristics

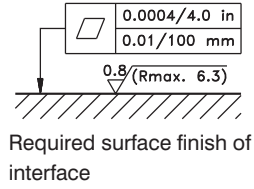
Measured at $v = 32 \text{ mm}^2/\text{s}$



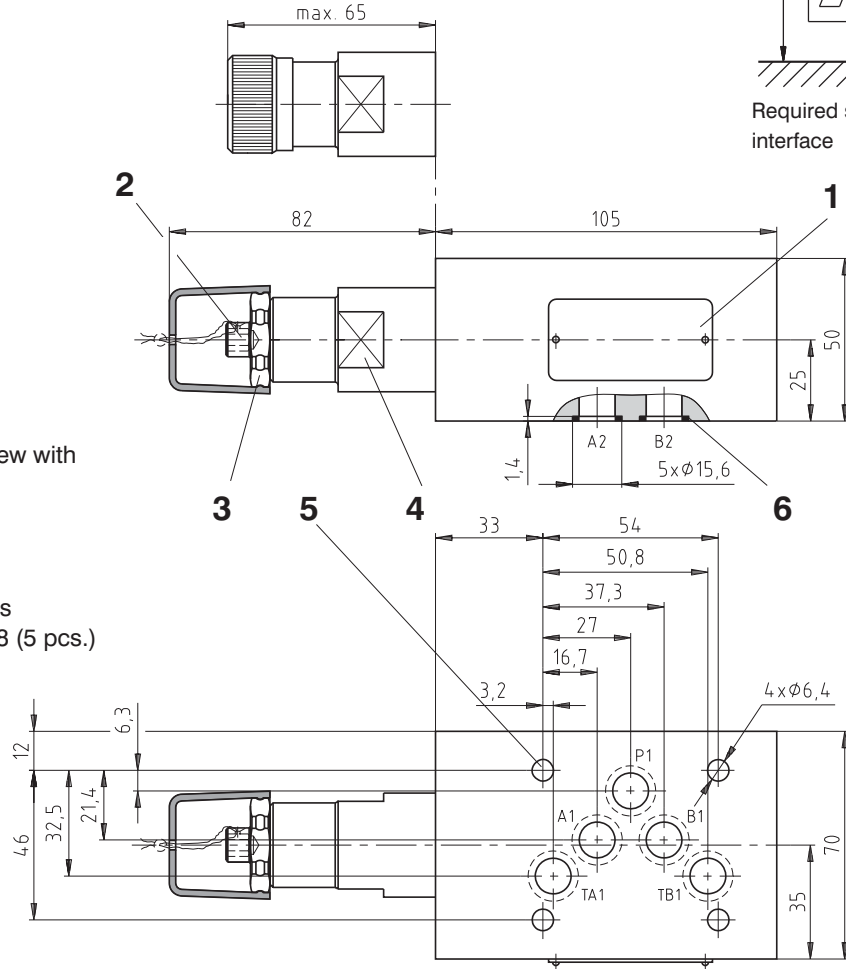
Valve Dimensions

Dimensions in millimetres

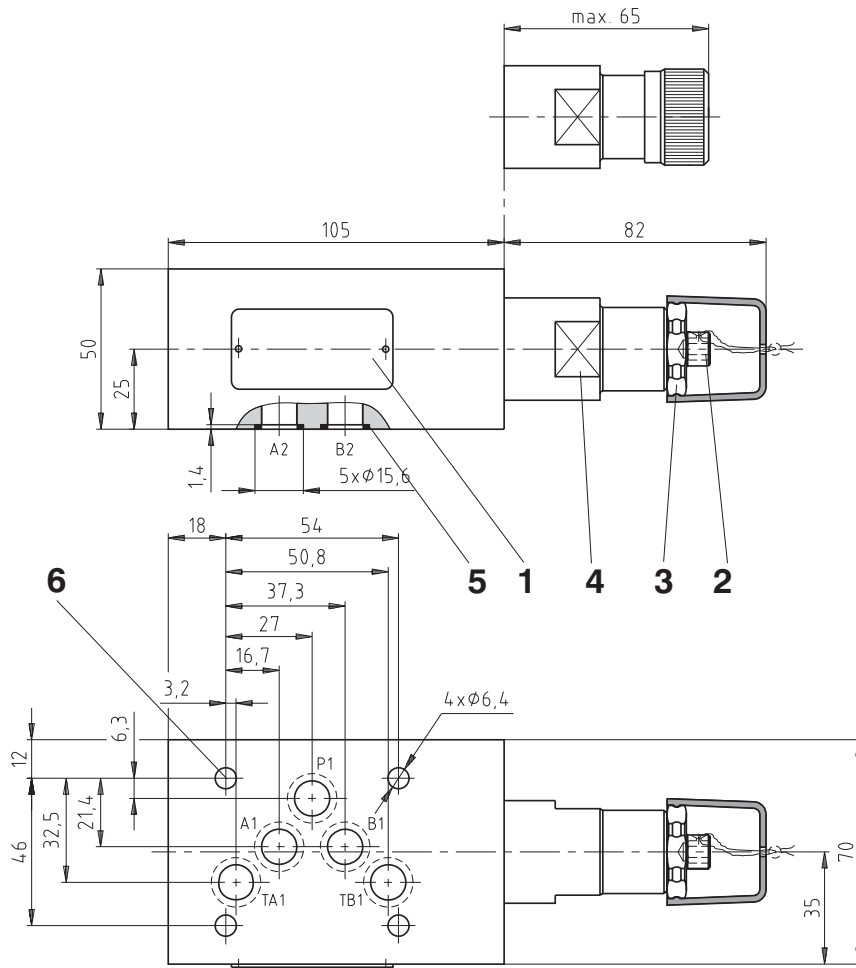
Model MA



- 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



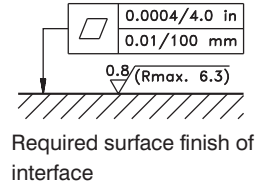
Model MB



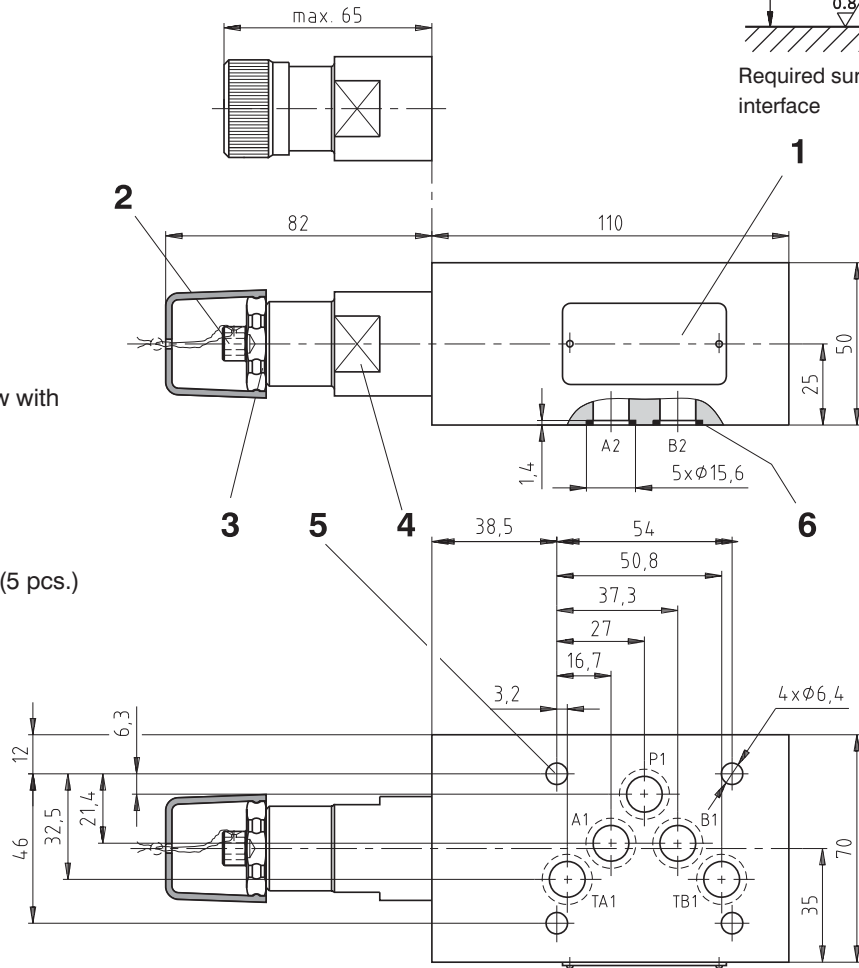
Valve Dimensions

Dimensions in millimetres

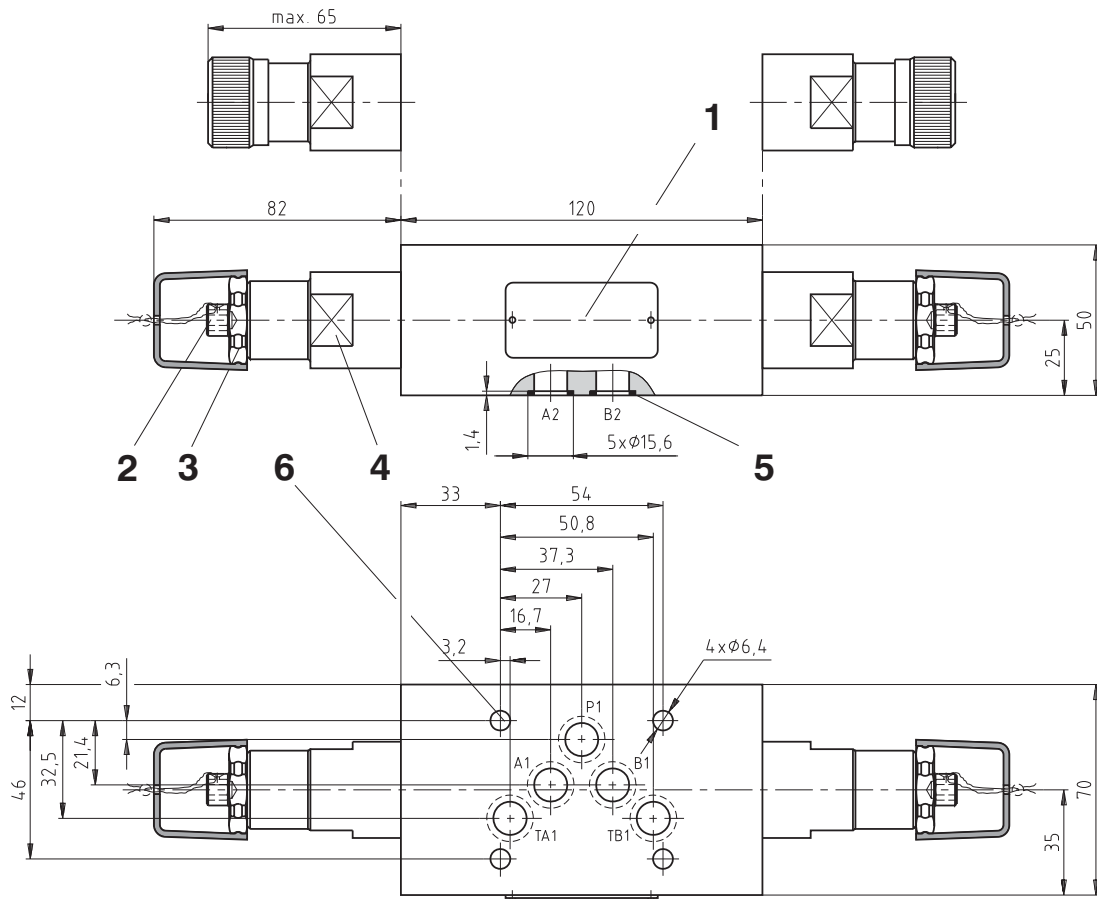
Model MP



- 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



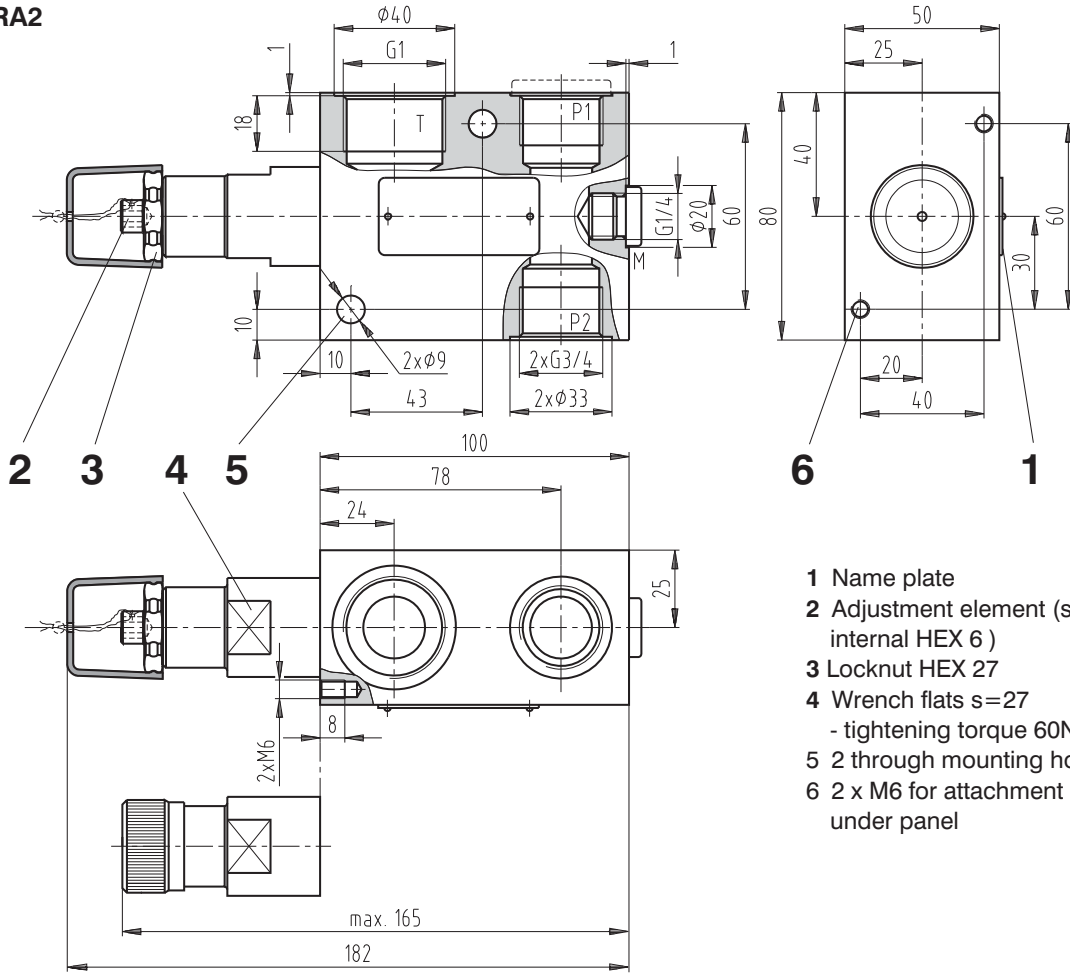
Models MC, MD



Valve Dimensions

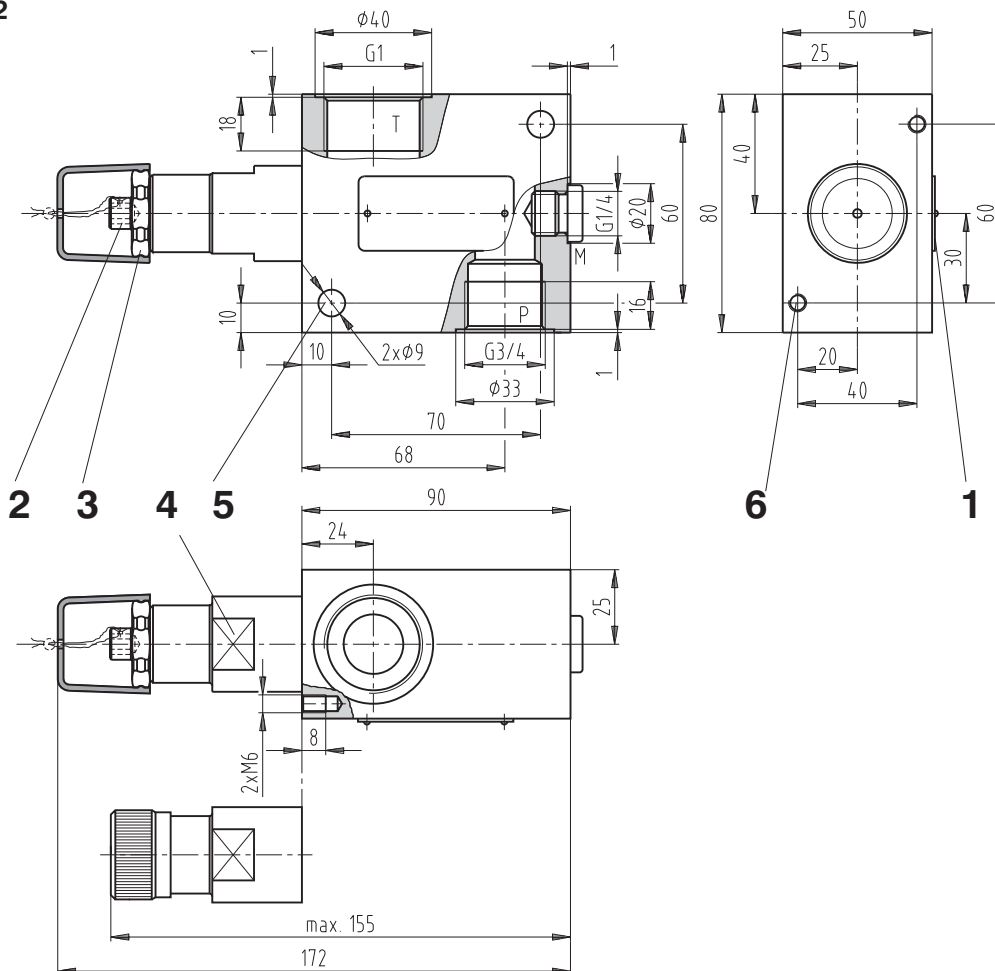
Dimensions in millimetres

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

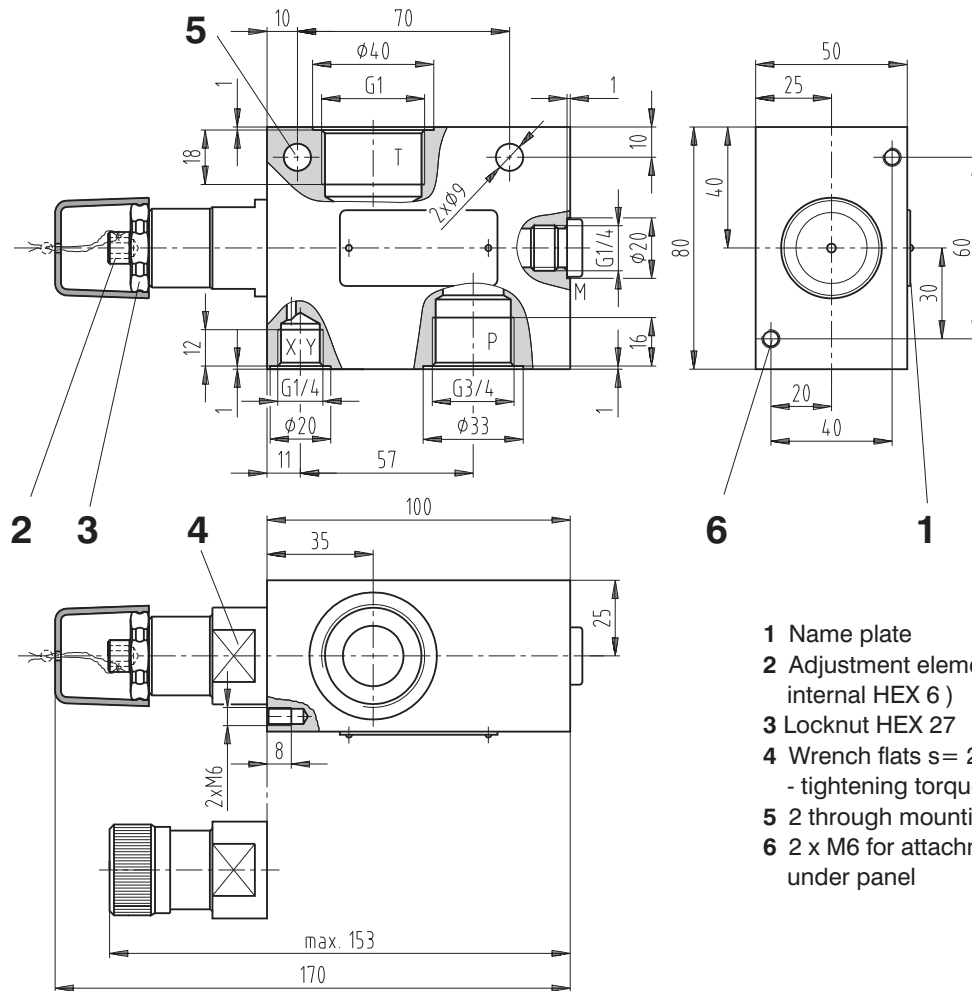
Model RB2



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.)	15991600
Modular valve - Viton	O-ring 12.42 x 1.78 (5 pcs.)	22943800
Model	Typ, number	Ordering number
In-line valve RA2 - NBR	VSTI R1/4-ED (1 pc.) VSTI R3/4-ED (1 pc.)	22972200
In-line valve RB2, RC2, RC3 - NBR	VSTI R1/4-ED (1 pc.)	22972400
In-line valve RA2 - Viton	VSTI R1/4-ED - Viton (1 pc.) VSTI R3/4-ED - Viton (1 pc.)	22972300
In-line valve RB2, RC2, RC3 - Viton	VSTI R1/4-ED - Viton (1 pc.)	22972500

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.

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