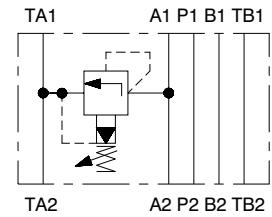


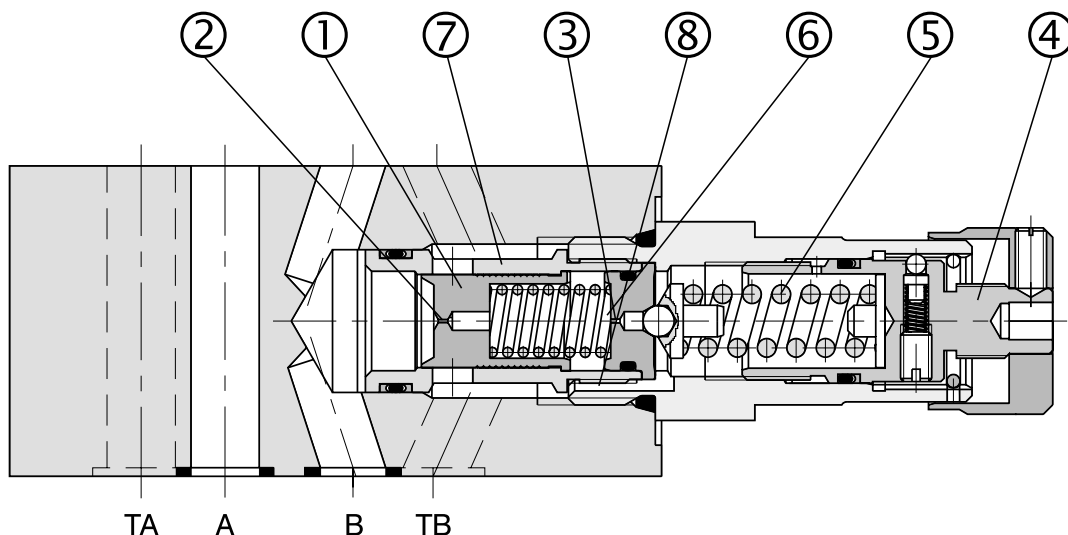
- Modular and in-line design
- Five pressure ranges
- Two pressure adjustment options:
 - screw with internal hexagon
 - hand knob with arrestment
- Installation dimensions to ISO 4401 and DIN 24 340-A10



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 **10**

Seals
without designation
V
NBR
FPM (Viton)

Adjustment element
S
R
screw with internal hexagon
hand knob

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

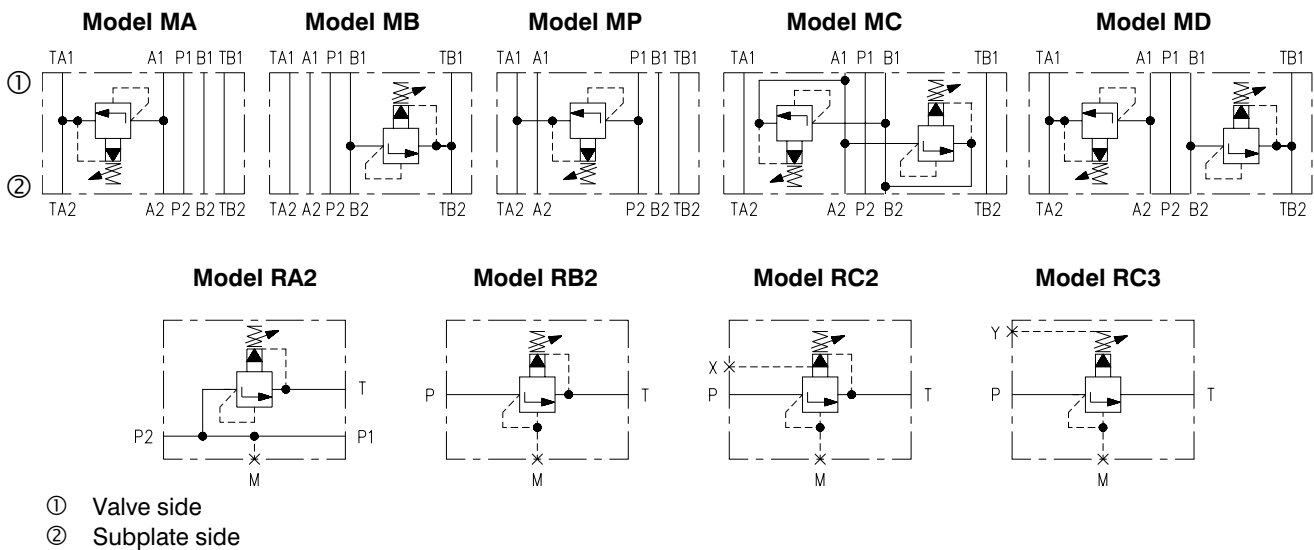
Pressure range

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 4641 PSI (320 bar)

Model with two pressure relief cartridges
32/10 pressure setting 4641 PSI (320 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



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

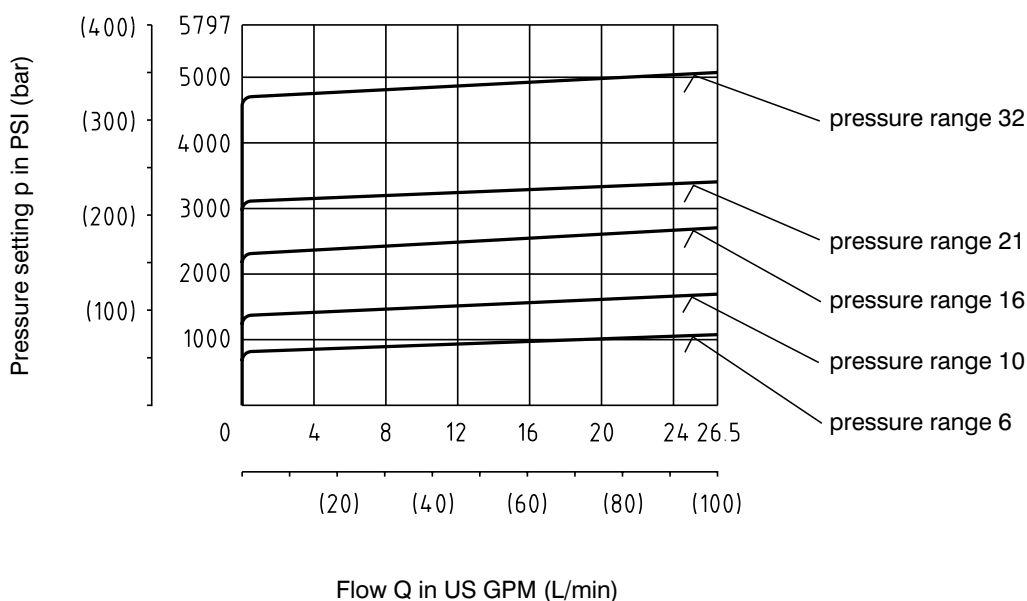
Valve body for modular valve - NBR	Ordering number	Valve body for modular valve - Viton	Ordering number
MA10-VP	556-0670	MA10-VP/V	556-0675
MB10-VP	556-0671	MB10-VP/V	556-0676
MP10-VP	556-0672	MP10-VP/V	556-0677
MC10-VP	556-0673	MC10-VP/V	556-0678
MD10-VP	556-0674	MD10-VP/V	556-0679
Valve body for in-line 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	US GPM (L/min)	39.683 (150)
Max. control flow	US GPM (L/min)	0.132 (0.5)
Max. input pressure (ports P, A, B)	PSI (bar)	913 (63); 1450 (100); 2321 (160); 3045 (210); 4641 (320)
Max. output pressure (port T)	PSI (bar)	4641 (320)
Working pressure related to flow	PSI (bar)	see p-Q characteristics
Hydraulic fluid		Hydraulic oils of power classes HM, HV to CETOP-RP 91H in viscosity classes ISO VG 32, 46 and 68.
Fluid temperature range for standard sealing (NBR)	°F (°C)	-22 ... 176 (-30 ... +80)
Fluid temperature range for Viton sealing (FPM)	°F (°C)	-4 ... 176 (-20 ... +80)
Viscosity range	SUS (mm ² /s)	68 ... 1840 (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	lbs (kg)	5.714 (2.6) 6.593 (3.0) 5.934 (2.7)
Mounting position		optional

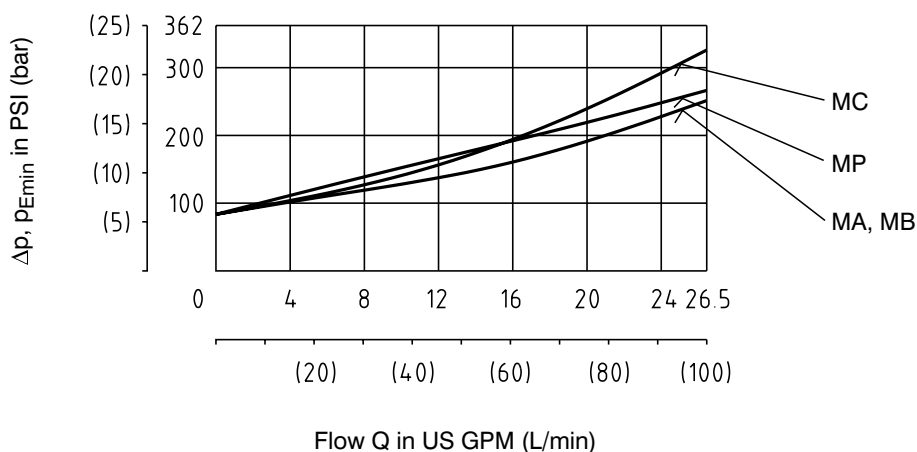
p-Q Characteristics

Measured at $v = 166 \text{ SUS } (35 \text{ mm}^2/\text{s})$ and $t = 104 \text{ °F } (40 \text{ °C})$



Δp-Q Characteristics

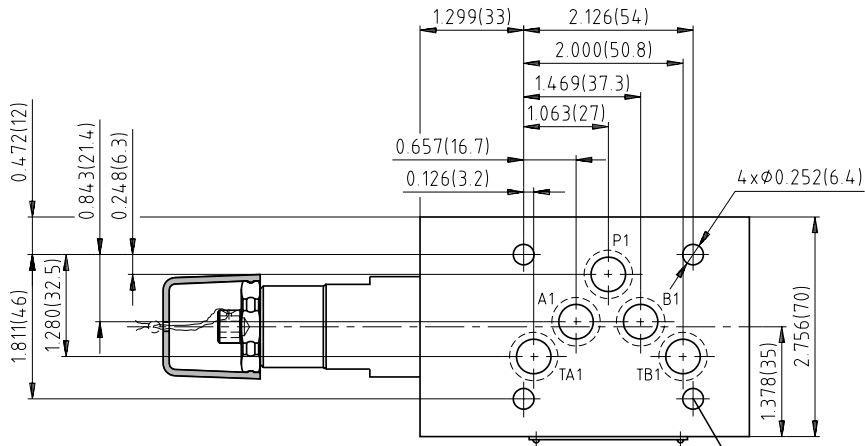
Measured at $v = 166 \text{ SUS } (35 \text{ mm}^2/\text{s})$ and $t = 104 \text{ °F } (40 \text{ °C})$



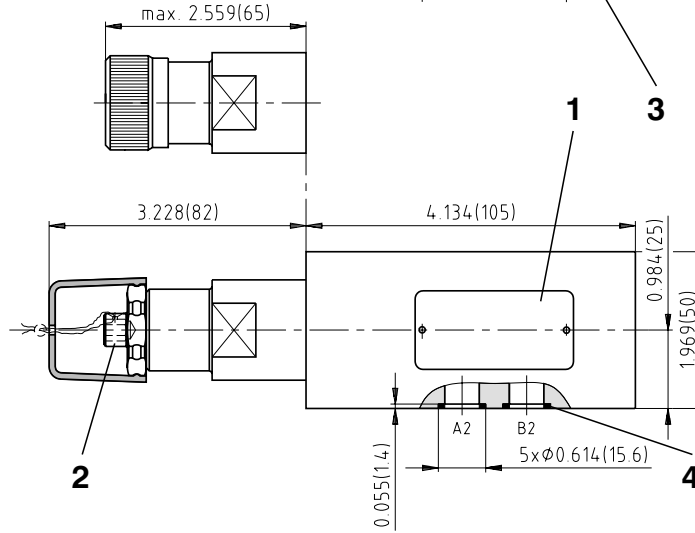
Valve Dimensions

Dimensions in inches and millimetres (in brackets)

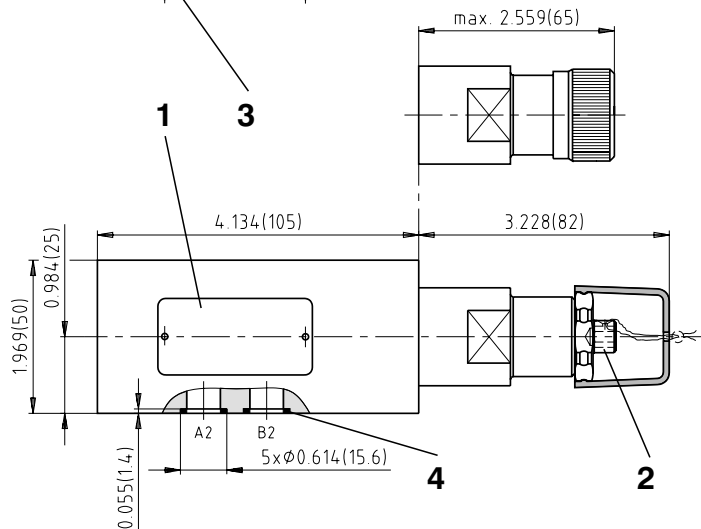
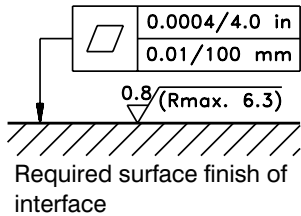
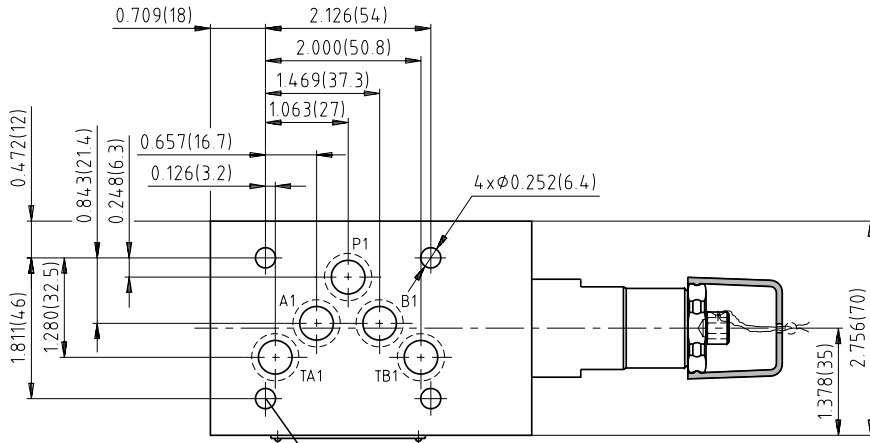
Model MA



- 1 Name plate
- 2 Adjustment elements for pressure setting
- 3 4 through mounting holes
- 4 Square rings 12.42 x 1.68 (5 pcs.) supplied with each valve



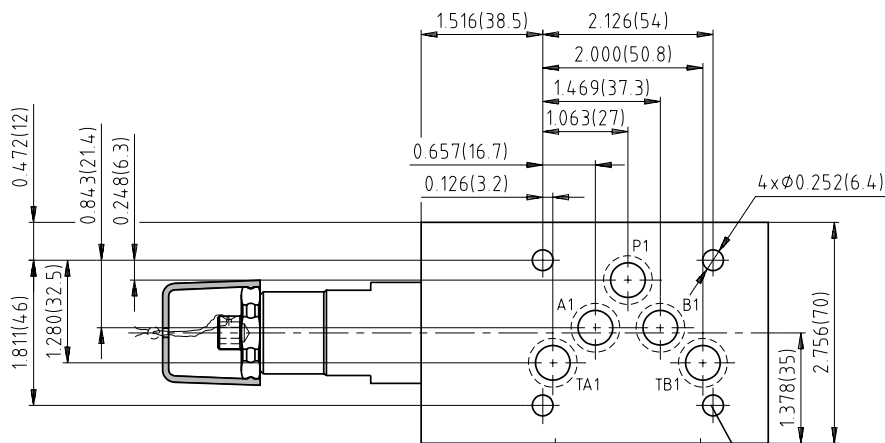
Model MB



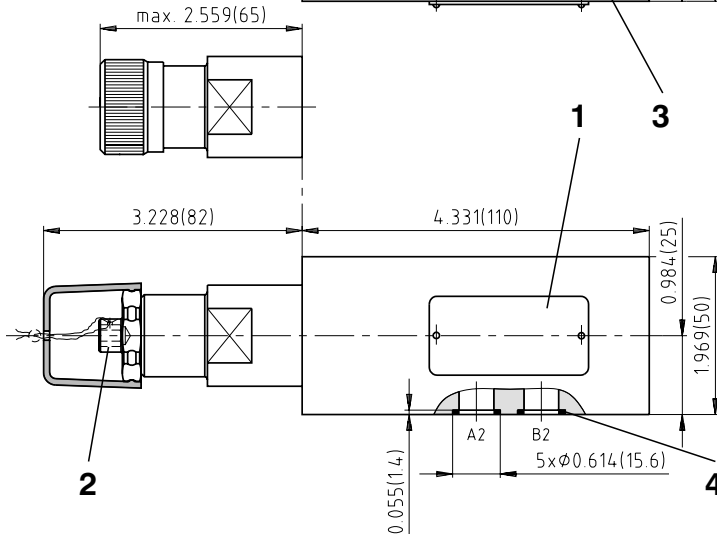
Valve Dimensions

Dimensions in inches and millimetres (in brackets)

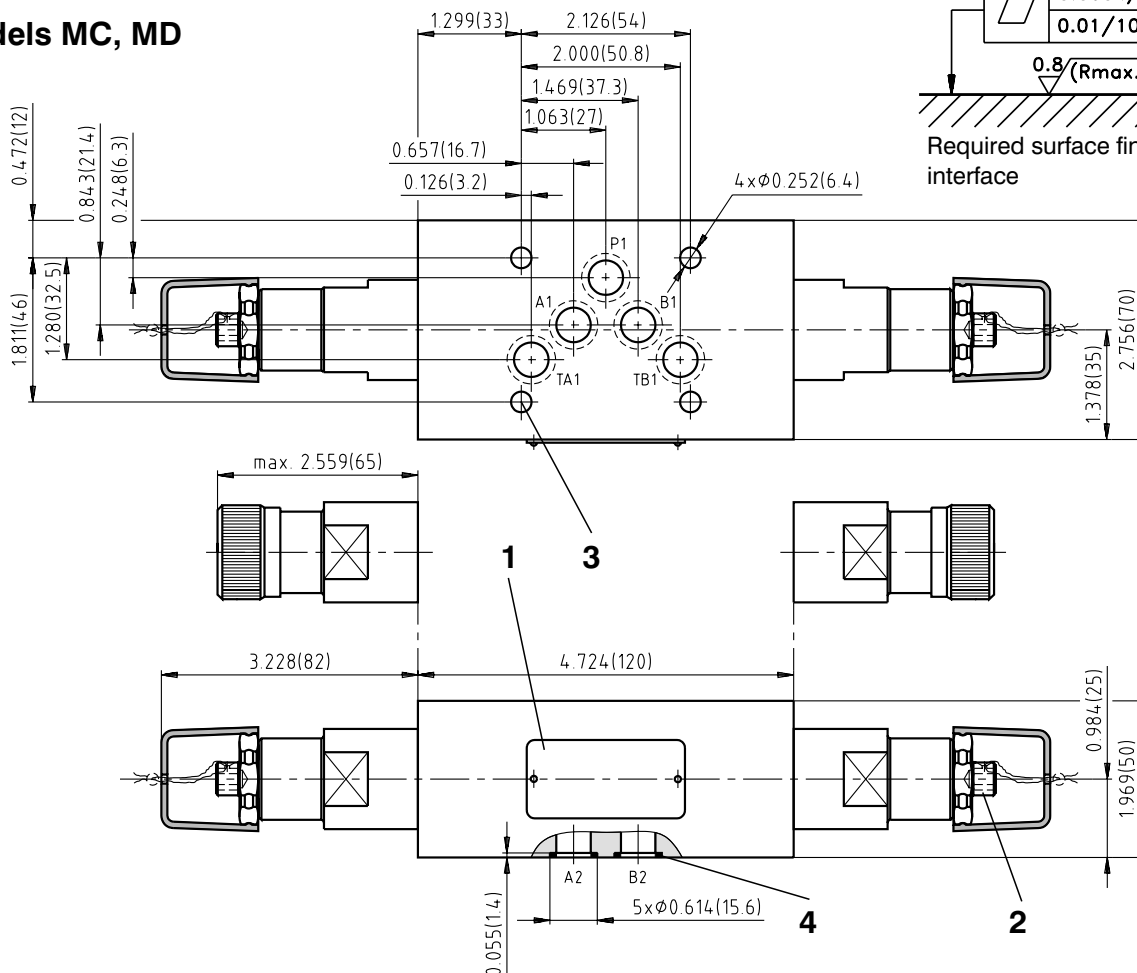
Model MP



- 1 Name plate
- 2 Adjustment elements for pressure setting
- 3 4 through mounting holes
- 4 Square rings 12.42 x 1.68 (5 pcs.) supplied with each valve



Models MC, MD



	0.0004/4.0 in
	0.01/100 mm

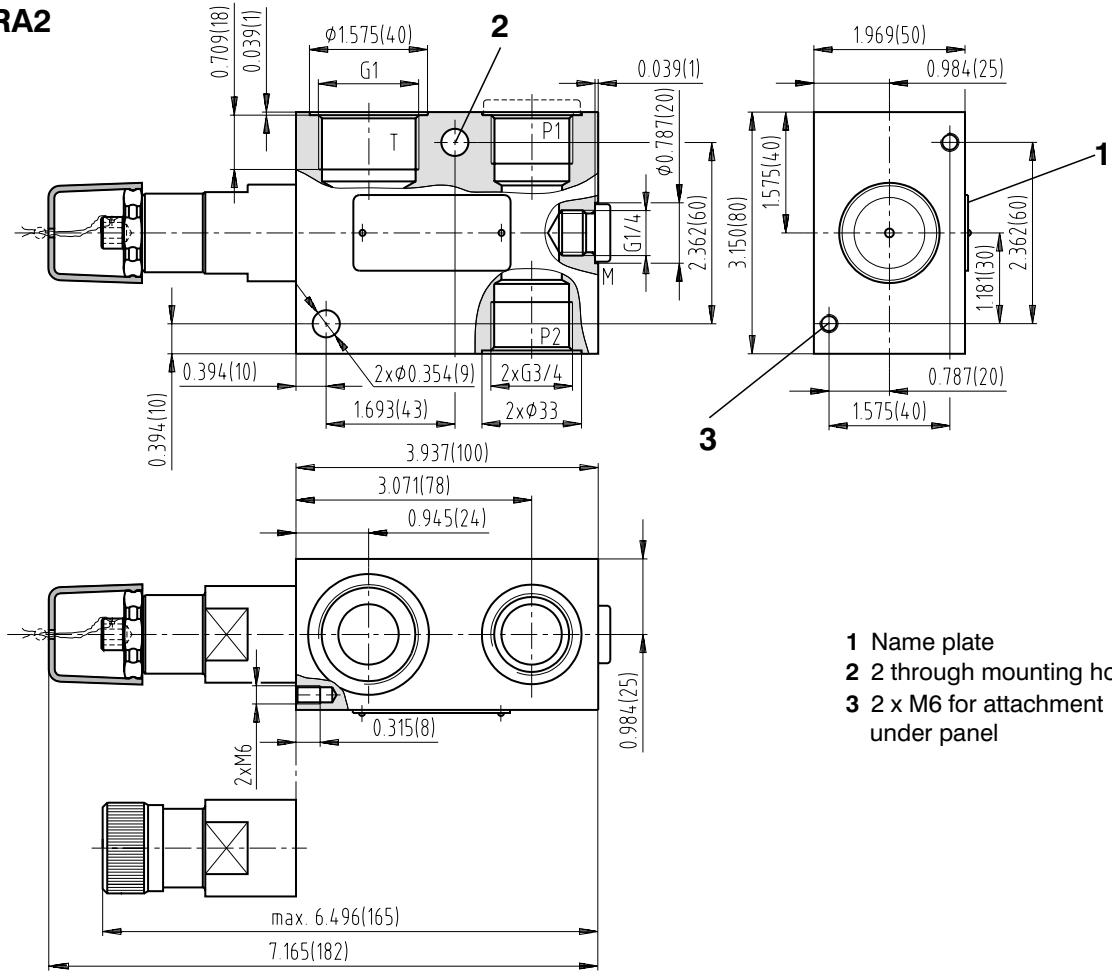
0.8 (Rmax. 6.3)

Required surface finish of interface

Valve Dimensions

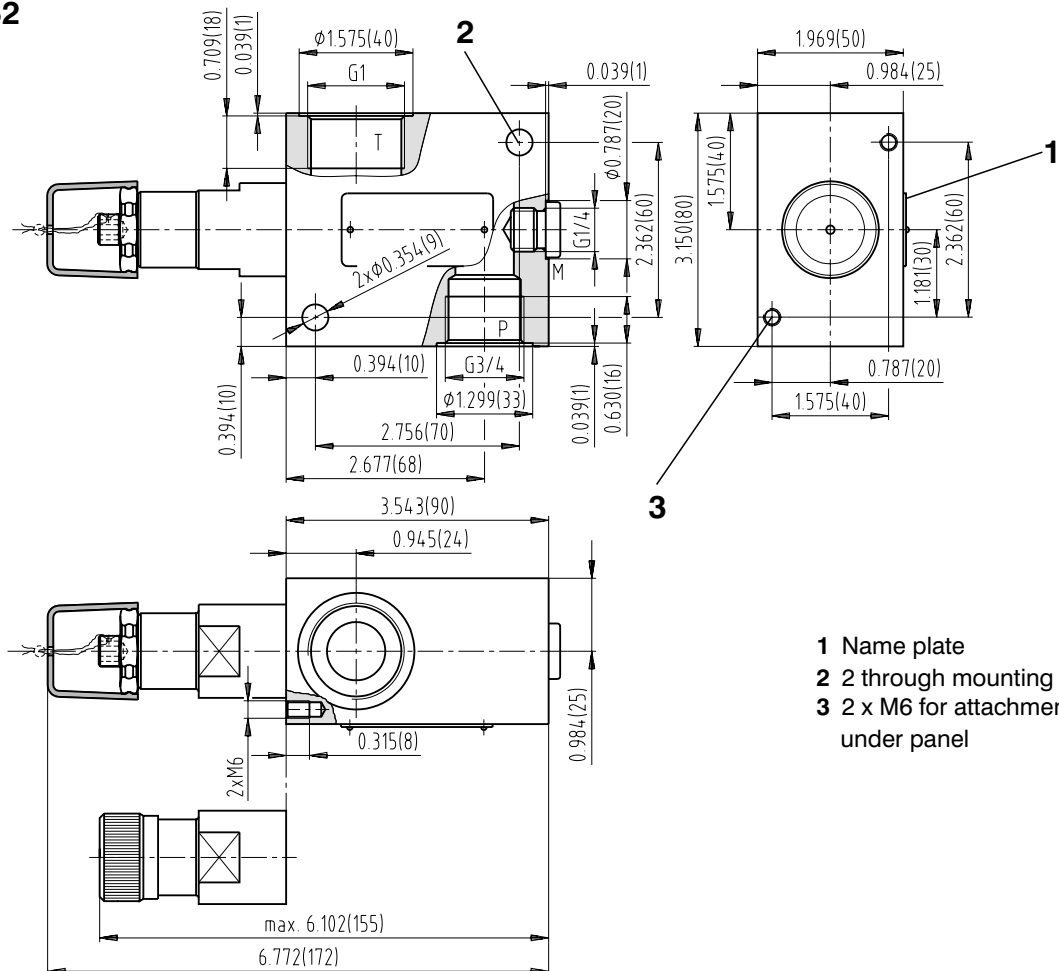
Dimensions in inches and millimetres (in brackets)

Model RA2



- 1 Name plate
- 2 2 through mounting holes
- 3 2 x M6 for attachment under panel

Model RB2

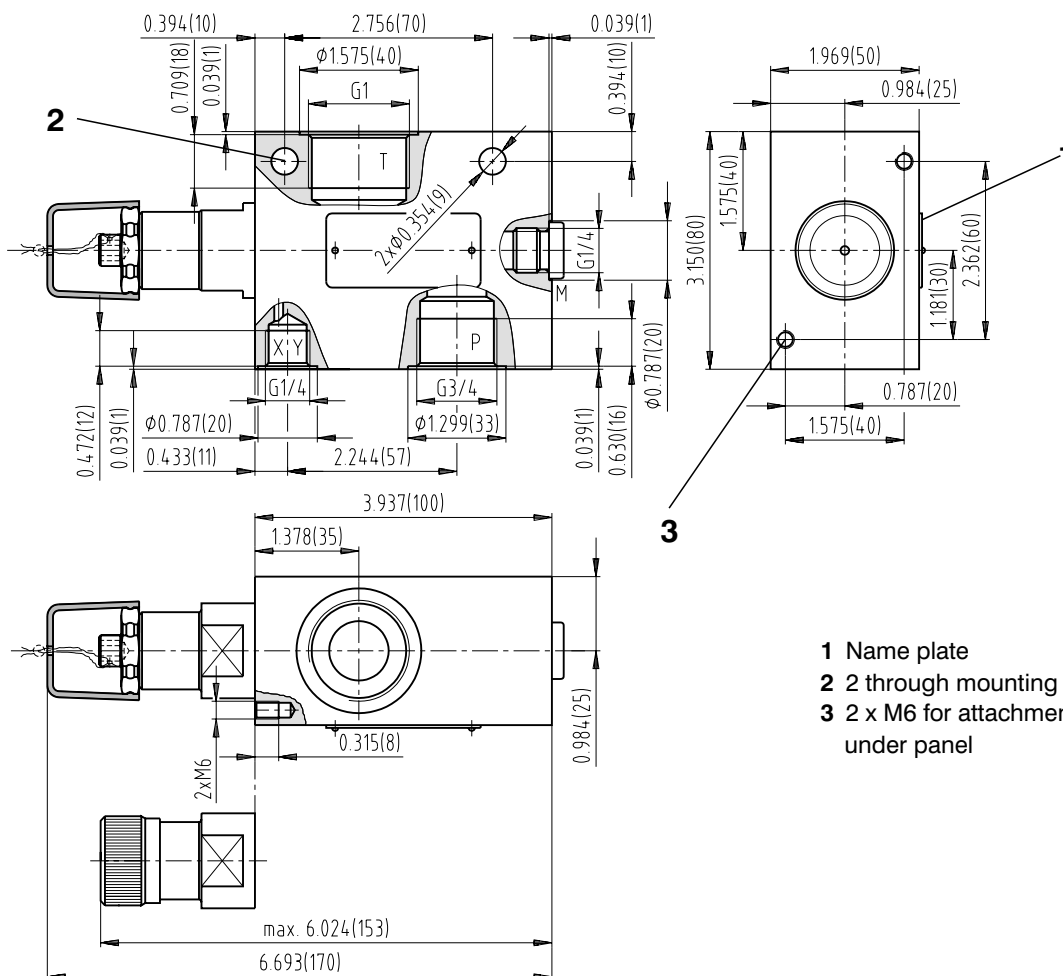


- 1 Name plate
- 2 2 through mounting holes
- 3 2 x M6 for attachment under panel

Valve Dimensions

Dimensions in inches and millimetres (in brackets)

Model RC2, RC3



- 1 Name plate
- 2 2 through mounting holes
- 3 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 90 (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.)	556-0655
	VSTI R3/4-ED (1 pc.)	
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.)	556-0656
	VSTI R3/4-ED - Viton (1 pc.)	
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 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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