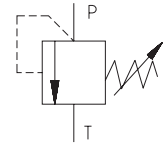


- Screw-in cartridge, modular and in-line design
- Six pressure ranges
- Two pressure adjustment options
- Subplates see data sheet HA 0002

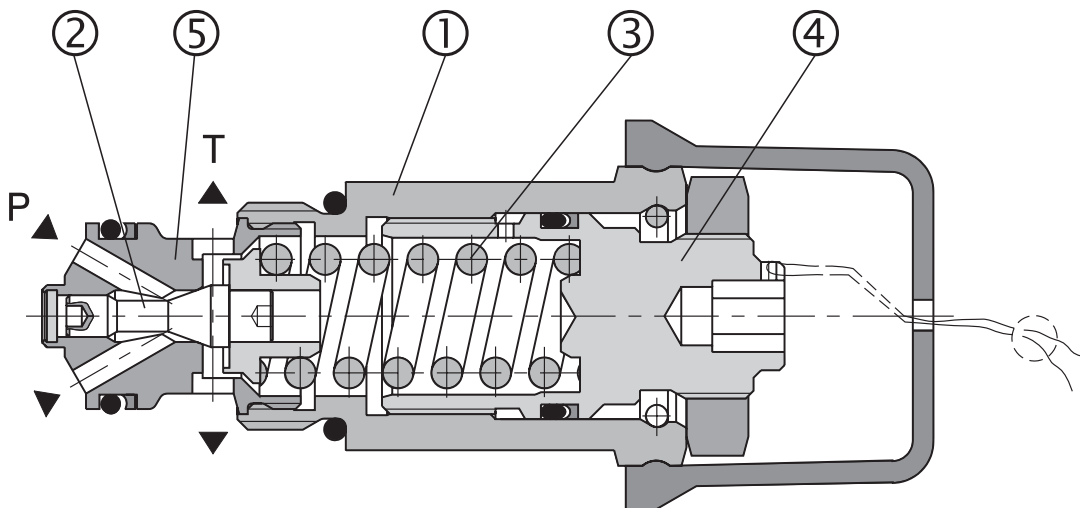


## Functional Description

Pressure relief valves VPP2-04 were designed for applications requiring a safety valve or a pressure regulating valve working over a wide range of pressures and flow rates.

The valve basically consists of the valve body (1), poppet with damping spool (2) and compression spring (3). The spring pushes the poppet onto the seat (5) holding the valve in its normally closed position. When the force, caused by the pressure acting on the exposed surface area of the poppet, exceeds the spring force, the valve

opens and the flow passes from port P to port T. To optimize the valve performance, six pressure ranges are available. Choosing the closest range is recommended. The design enables the valve to be used as a screw-in cartridge for manifold mounting, or in a subplate and/or in-line mounted housing. The valve body and the adjustment screw are zinc coated. With models M and R the valve bodies are phosphate coated.



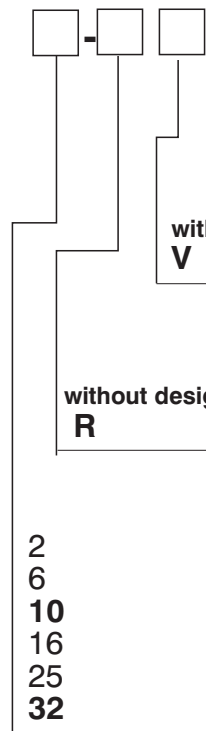
# Ordering Code

**Directly Operated Pressure Relief Valve**

**Model**

- screw in cartridge
- modular valve, connection A - T
- modular valve, connection B - T
- modular valve, connection P - T
- modular valve, connection A - B and B - A
- modular valve, connection A - T and B - T
- modular valve, connection A - T
- modular valve, connection B - T
- modular valve, connection P - T
- modular valve, connection A - B and B - A
- modular valve, connection A - T and B - T
- in-line valve, thread G3/8 - P1, P2, T
- in-line valve, thread G1/2 - P1, P2, T
- in-line valve, thread G3/8 - P, T
- in-line valve, thread G1/2 - P, T

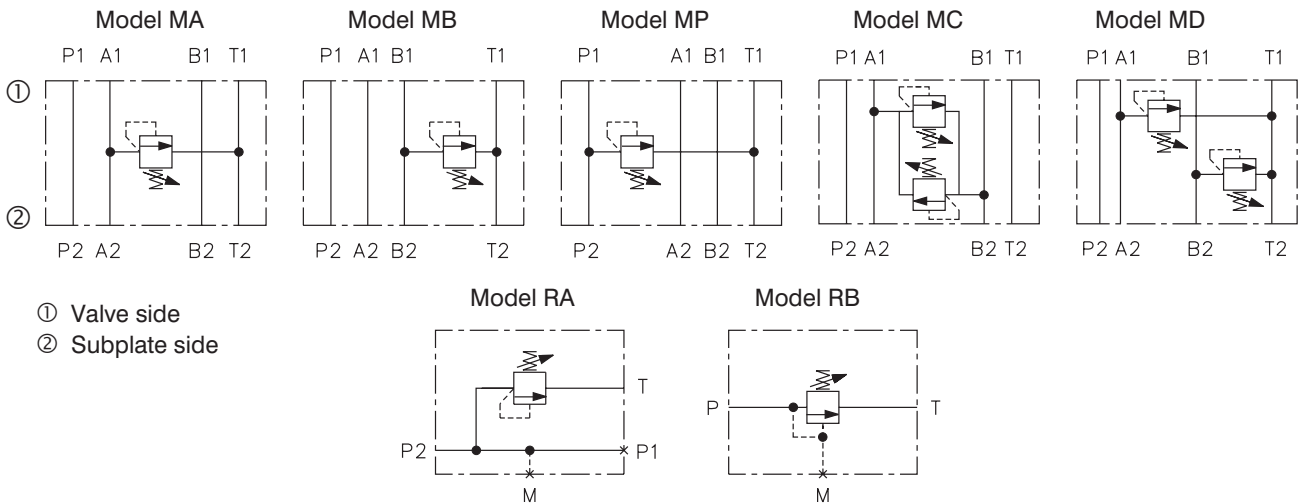
- S**
- MA04
- MB04
- MP04**
- MC04
- MD04
- MA06
- MB06
- MP06**
- MC06
- MD06
- RA1
- RA2**
- RB1
- RB2



- without designation**
- V**
- Seals**  
NBR  
Viton (FPM)
- without designation**
- R**
- Adjustment option**  
Hexagon set screw locknut  
Adjustable handknob
- Pressure range**  
2 up to 25 bar  
6 up to 63 bar  
**10** up to 100 bar  
16 up to 160 bar  
25 up to 250 bar  
**32** up to 320 bar

**FOR PREFERRED TYPES SEE BOLD TYPING IN ORDERING CODE AND TABLE OF PREFERRED TYPES ON PAGE 11**

## 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
MA04-VP	15907500	MA04-VP/V	22501800
MB04-VP	15907600	MB04-VP/V	22501900
MP04-VP	15907700	MP04-VP/V	22502000
MC04-VP	15907800	MC04-VP/V	22502100
MD04-VP	15907900	MD04-VP/V	22502200
Valve body for modular valve - NBR	Ordering number	Valve body for modular valve - Viton	Ordering number
MA06-VP	15988600	MA06-VP/V	22949600
MB06-VP	15988800	MB06-VP/V	16661700
MP06-VP	15989000	MP06-VP/V	22949800
MC06-VP	15989200	MC06-VP/V	16758800
MD06-VP	15989300	MD06-VP/V	22950100

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

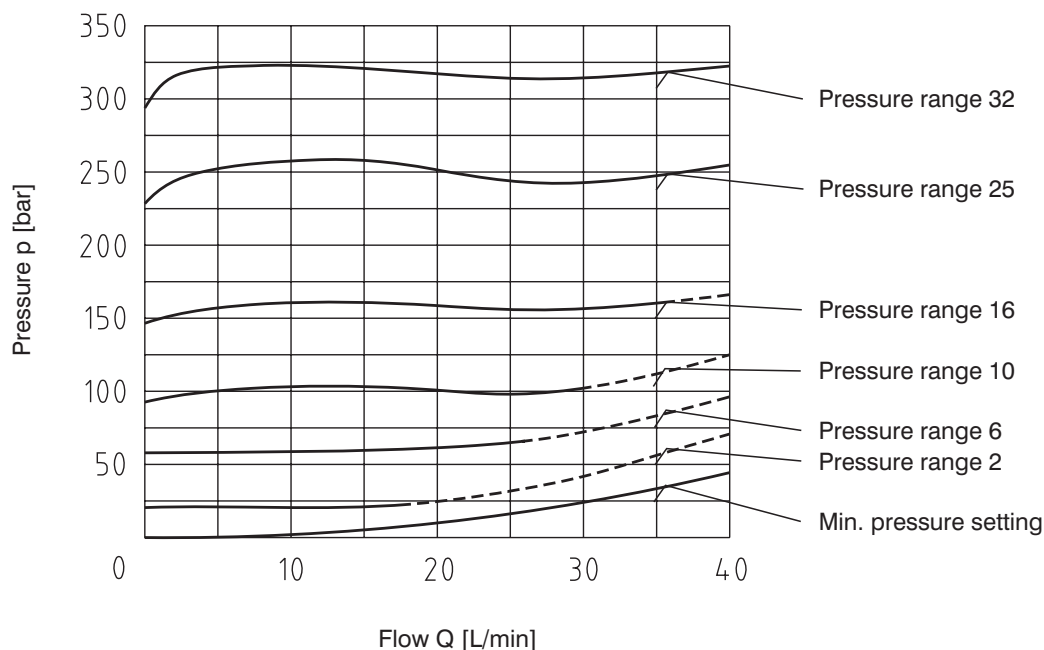
Valve body for in-line valve - NBR	Ordering number	Valve body for in-line valve - Viton	Ordering number
RA1-06-VP	15989400	RA1-06-VP/V	22950200
RA2-06-VP	15989500	RA2-06-VP/V	22950300
RB1-06-VP	15989600	RB1-06-VP/V	22950400
RB2-06-VP	15989700	RB2-06-VP/V	22950500

### Technical Data for Model S

Nominal size	mm	04
Max. flow rate	L/min	40
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 51 524	
Fluid temperature range for standard sealing (NBR)	°C	-30 ... +100
Fluid temperature range for Viton sealing (FPM)	°C	-20 ... +120
Viscosity range	mm <sup>2</sup> /s	20 ... 400
Max. degree of fluid contamination	Class 21/18/15 according to ISO 4406 (1999)	
Weight - model S	kg	0,17
Weight - models MA04, MB04, MP04 - models MC04, MD04 - models MA06, MB06, MP06 - models MC06, MD06 - models RA1, RA2, RB1, RB2	kg	0.82
		1.32
		1.12
		1.42
		1.17
Mounting position	optional	

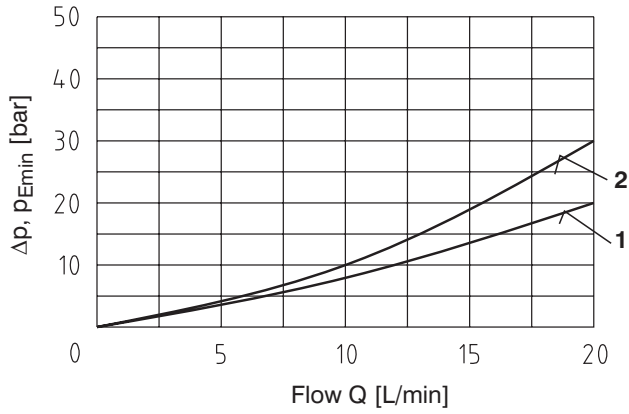
### p-Q Characteristics for Model S

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

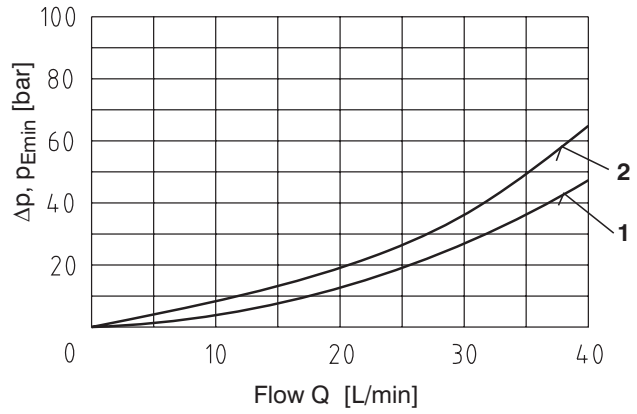


# Δp-Q Characteristics (min. pressure setting)

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



1 - MA04, MB04, MP04, MD04  
2 - MC04

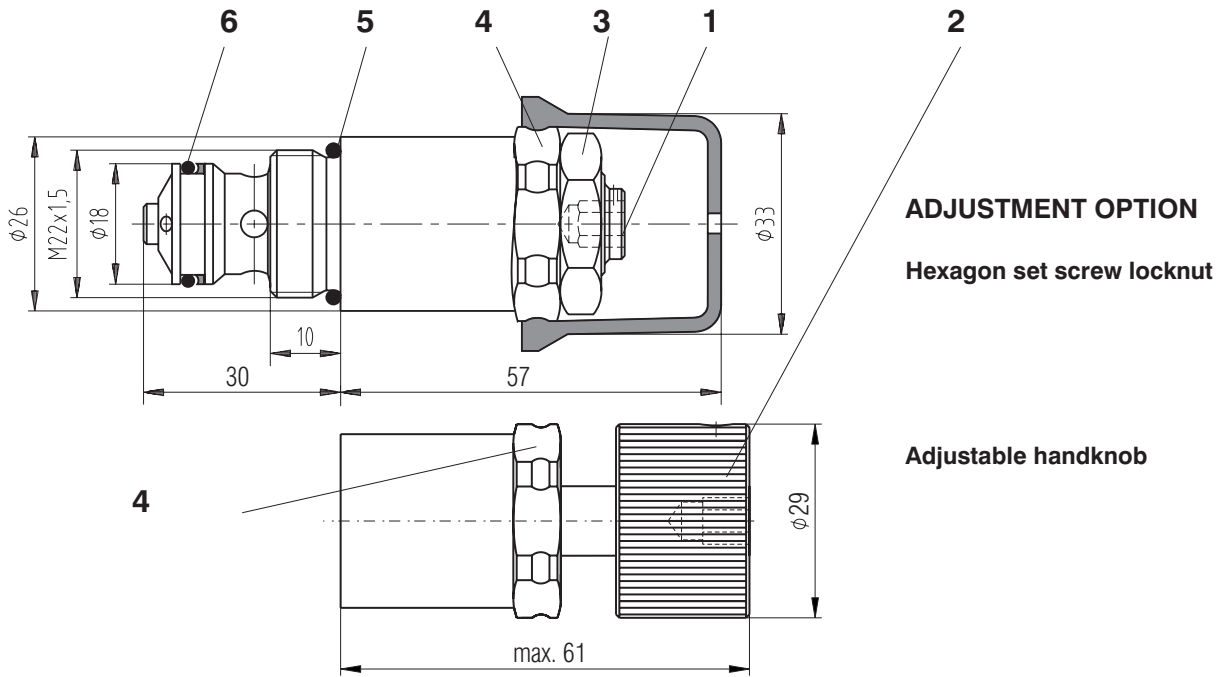


1 - MA06, MB06, MP06, MD06  
2 - MC06

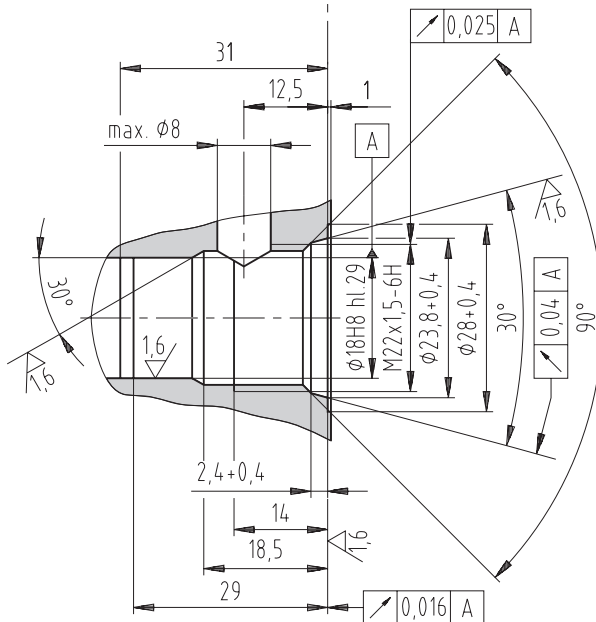
## Valve Dimensions

Dimensions in millimetres

### Model S



### Cavity



Dimensions in millimeters:

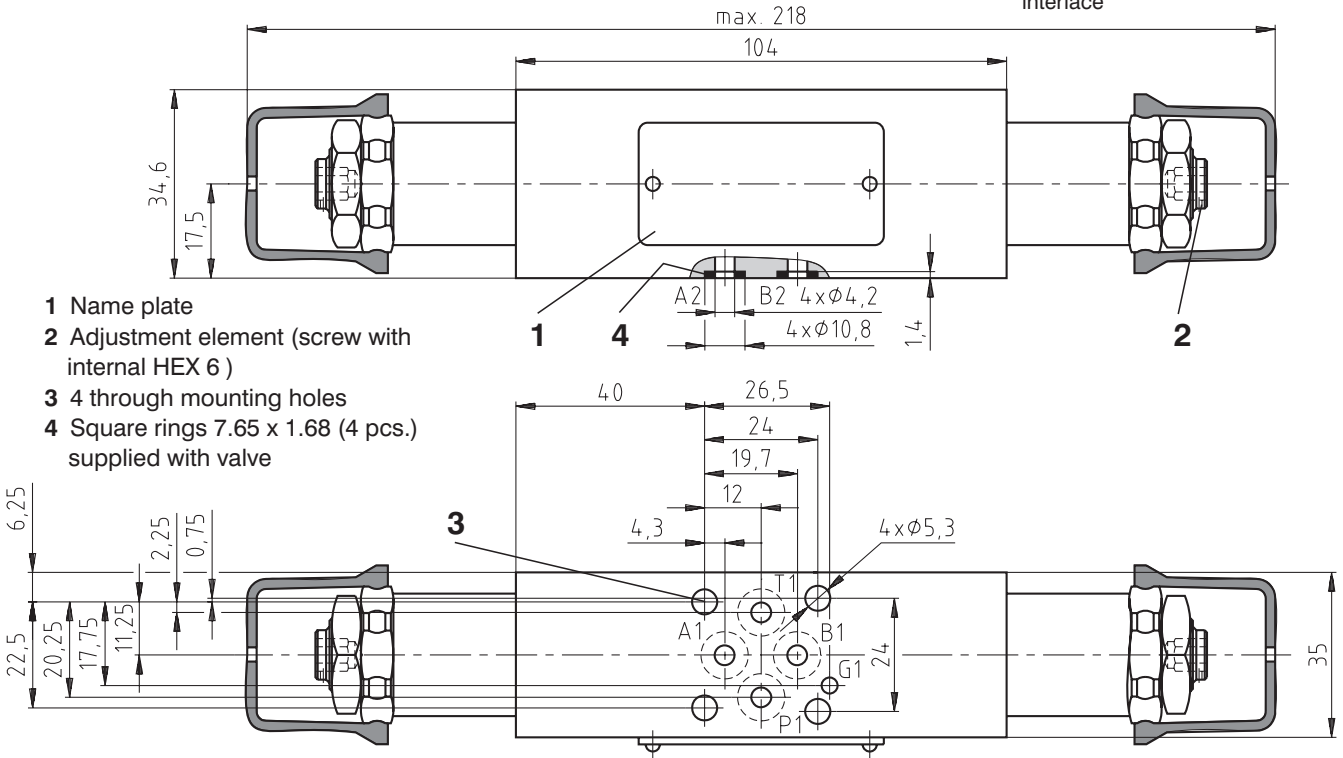
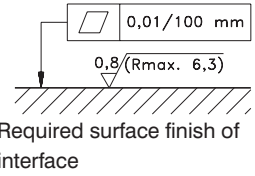
- 1 Adjustment element (screw with internal HEX 6)  
- clockwise rotation - pressure increase  
- anticlockwise rotation - pressure decrease
- 2 Adjustable handknob model "R"
- 3 Locknut HEX 24
- 4 Wrench flats HEX 27  
- tightening torque 30 Nm
- 5 O-ring 19.4 x 2.1 (1 pc.)  
supplied with valve
- 6 Combined seal:  
O-ring 14 x 1.78 (1 pc.)  
Back-up ring BBP80B015-N9  
14,73 x 17,43 x 1,14 (1 pc.)  
supplied with valve



# Valve Dimensions

Dimensions in millimetres

## Models MC, MD



- 1 Name plate
- 2 Adjustment element (screw with internal HEX 6)
- 3 4 through mounting holes
- 4 Square rings 7.65 x 1.68 (4 pcs.) supplied with valve

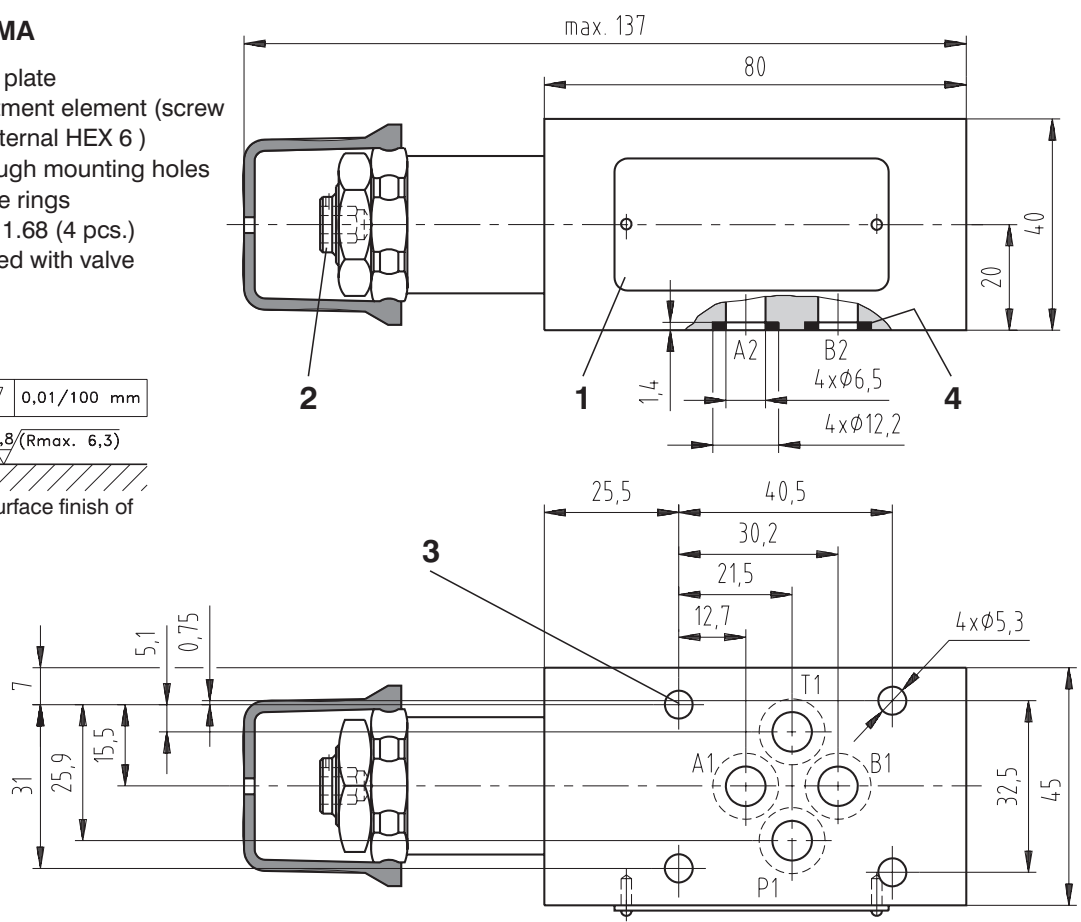
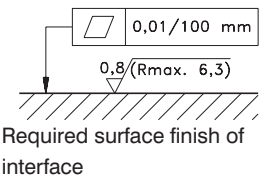
# Valve Dimensions

Dimensions in millimetres

## Size 06 (Installation dimensions to ISO 4401, DIN 24 340)

### Model MA

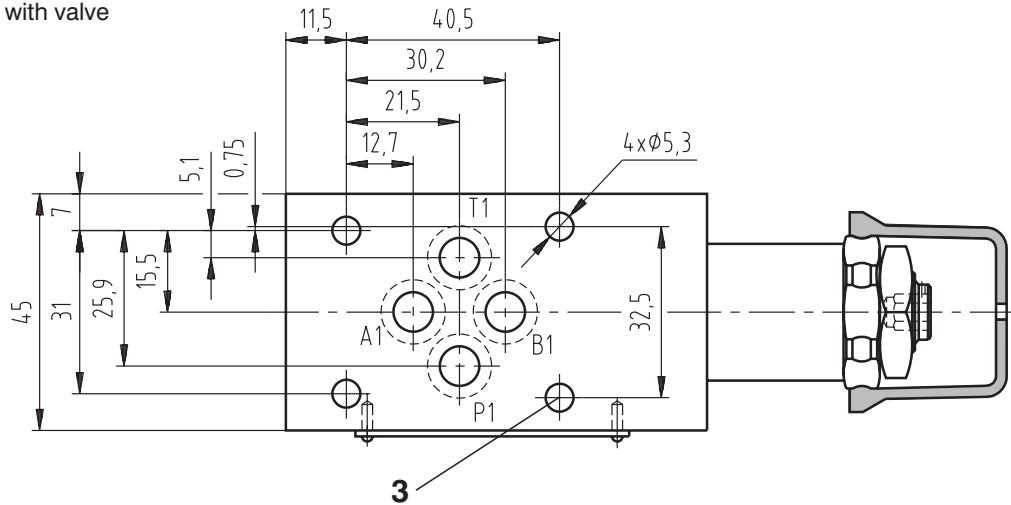
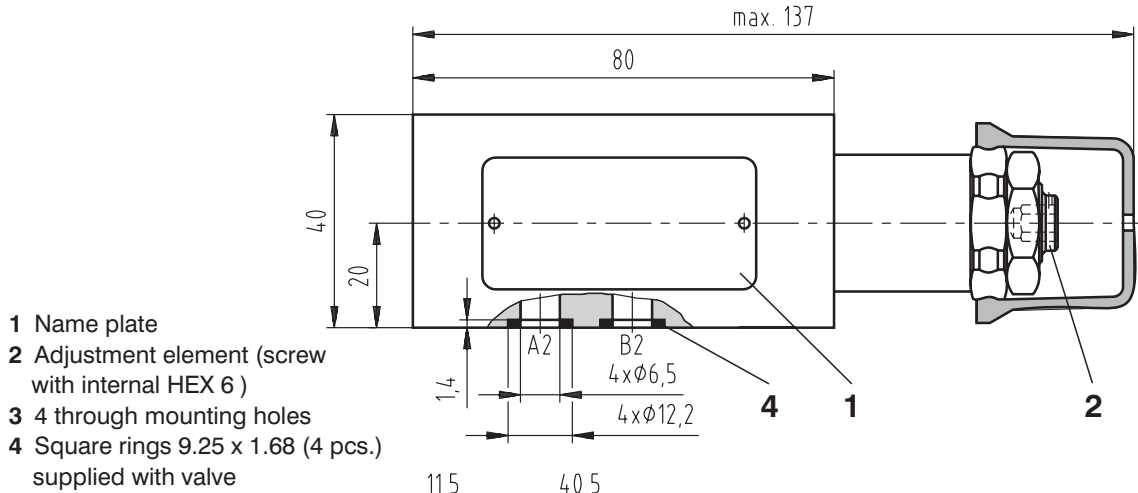
- 1 Name plate
- 2 Adjustment element (screw with internal HEX 6)
- 3 4 through mounting holes
- 4 Square rings 9.25 x 1.68 (4 pcs.) supplied with valve



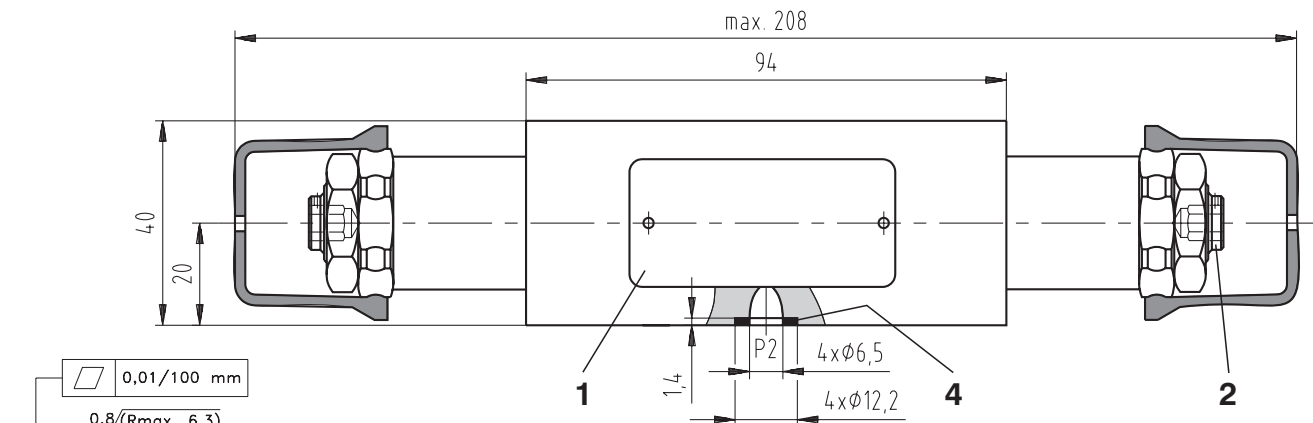
# Valve Dimensions

Dimensions in millimetres

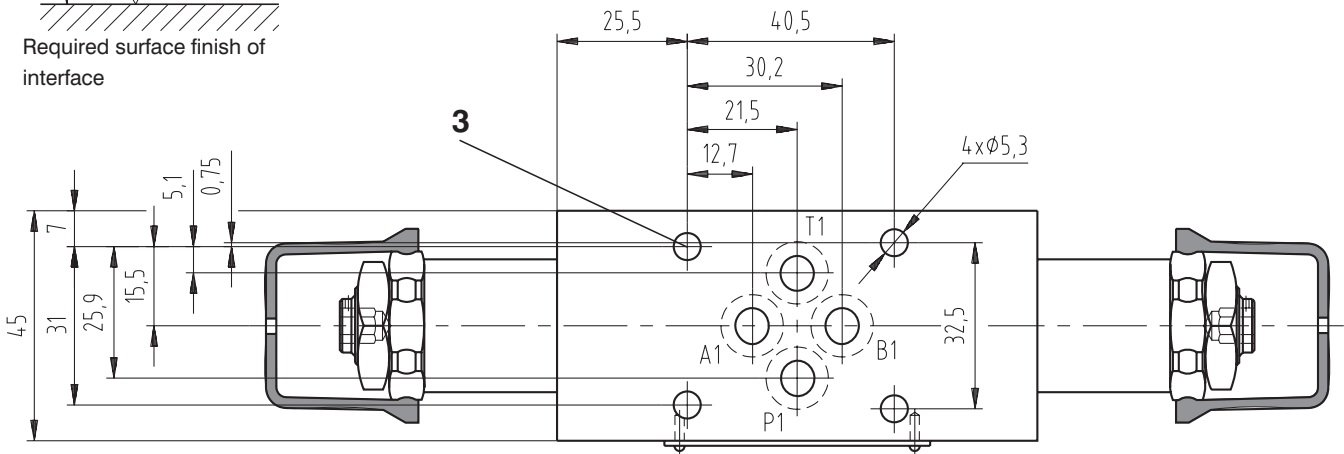
## Models MB, MP



## Models MC, MD



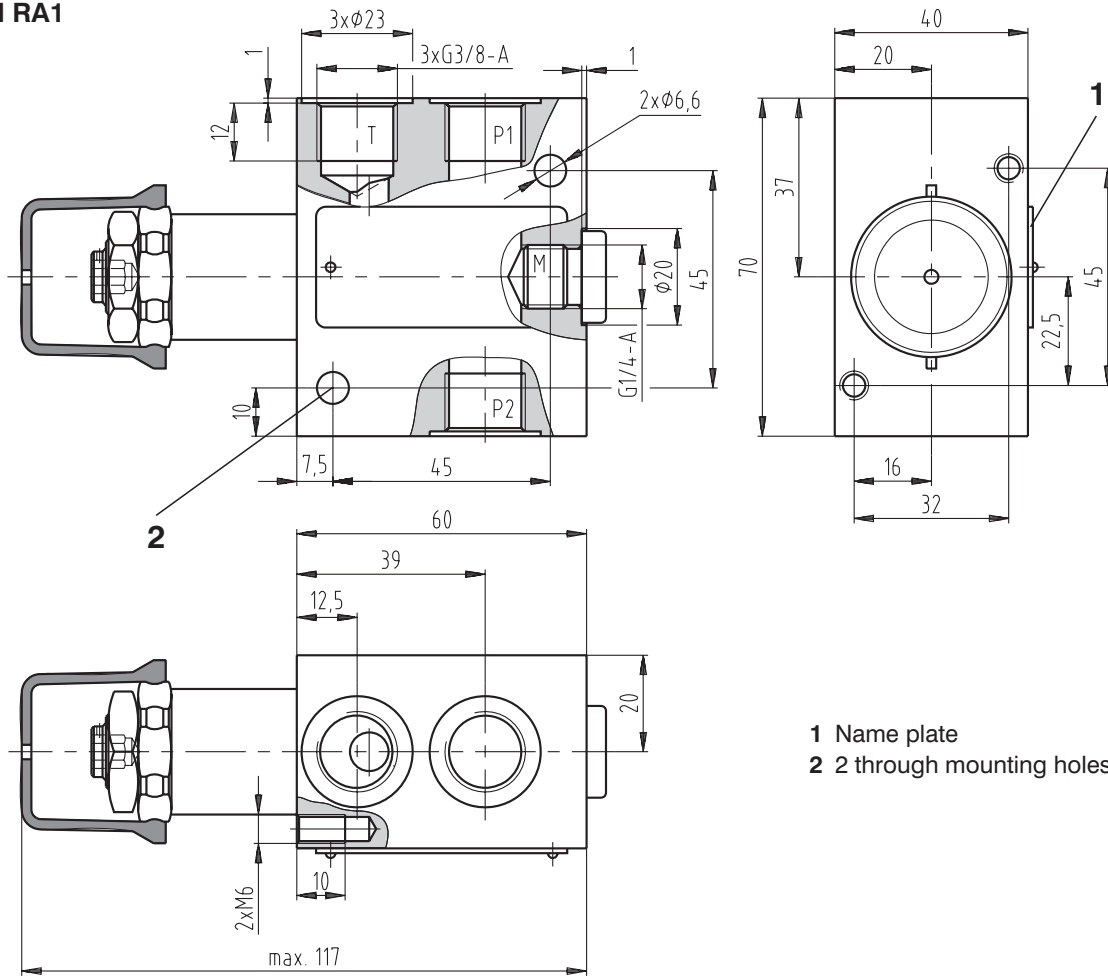
0,01/100 mm  
 0,8 (Rmax. 6,3)  
 Required surface finish of interface



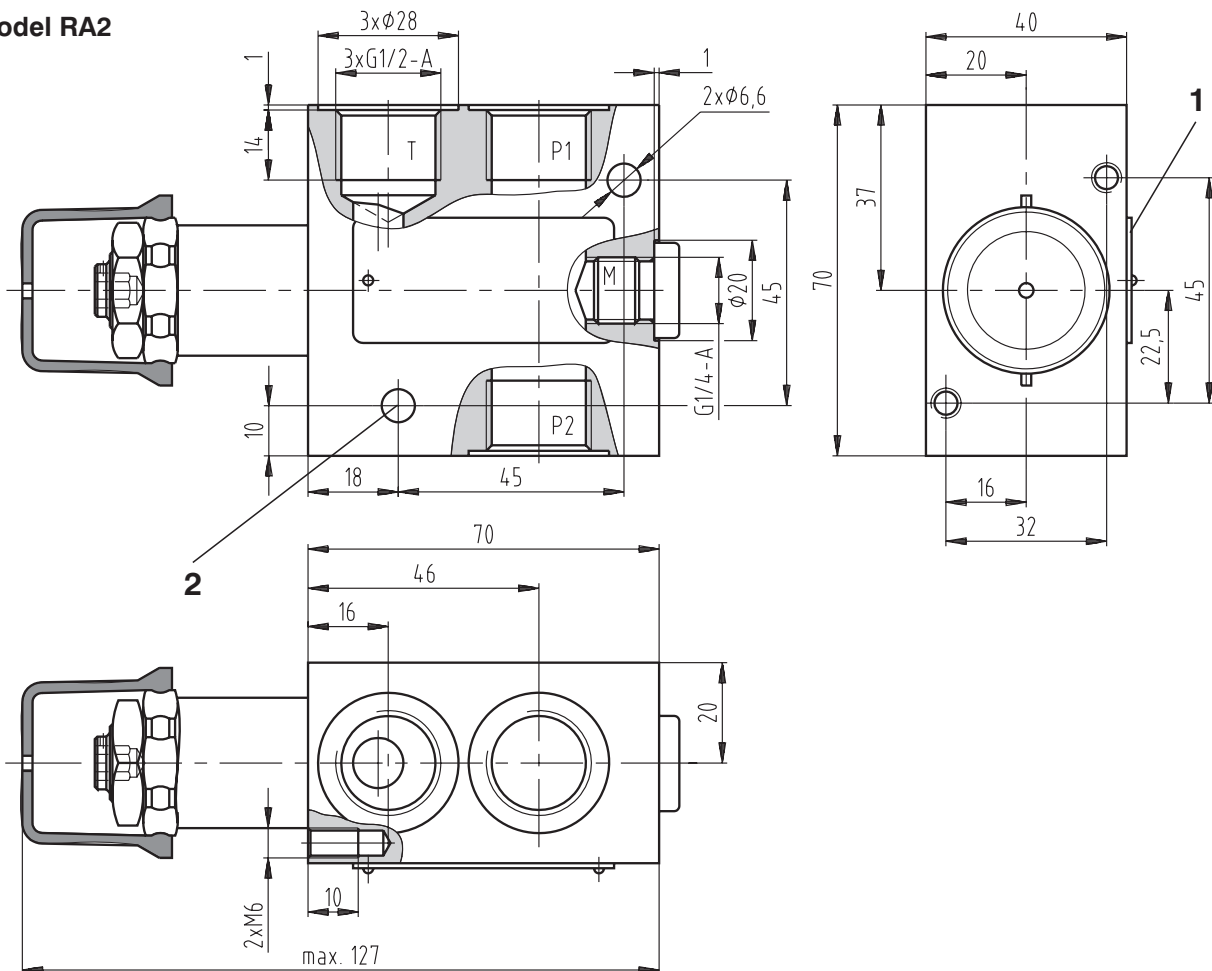
# Valve Dimensions

Dimensions in millimetres

## Model RA1



## Model RA2

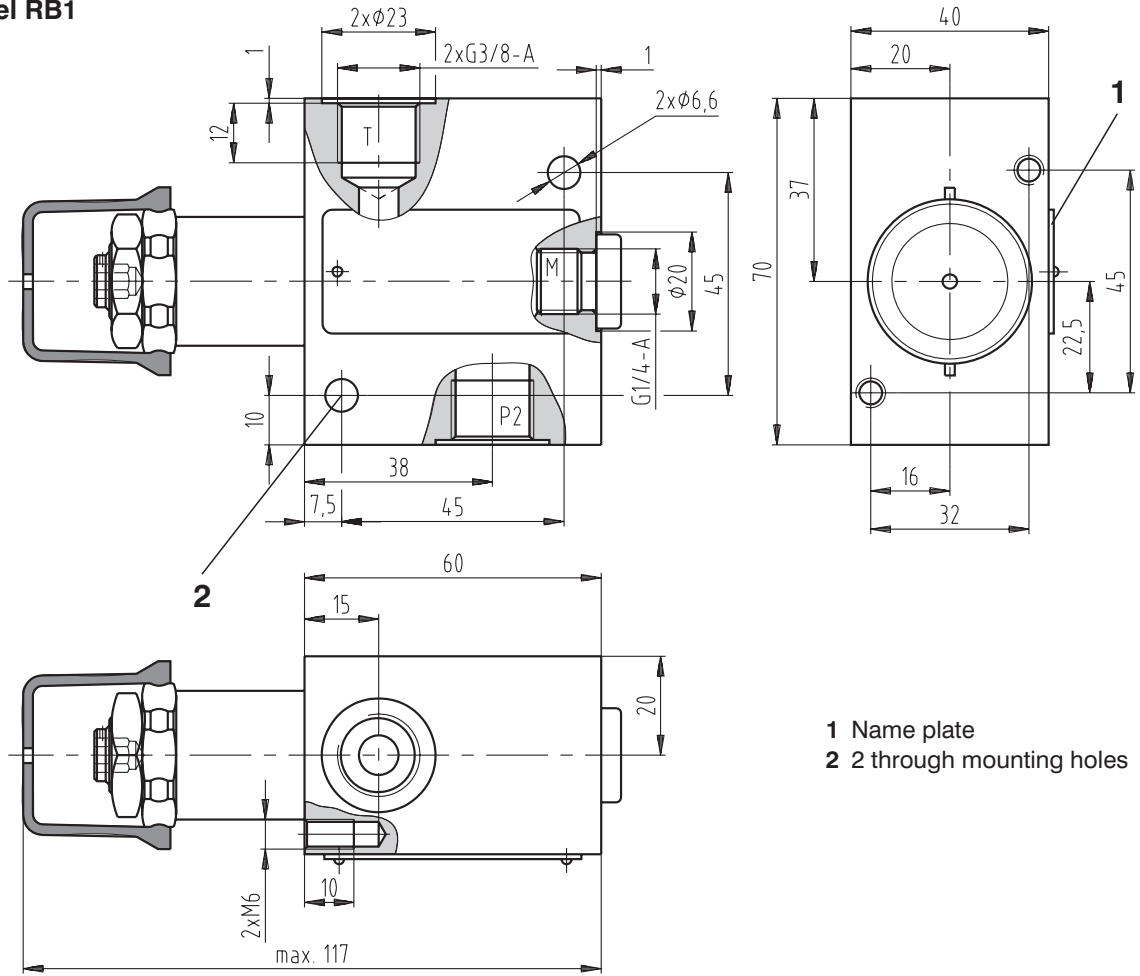




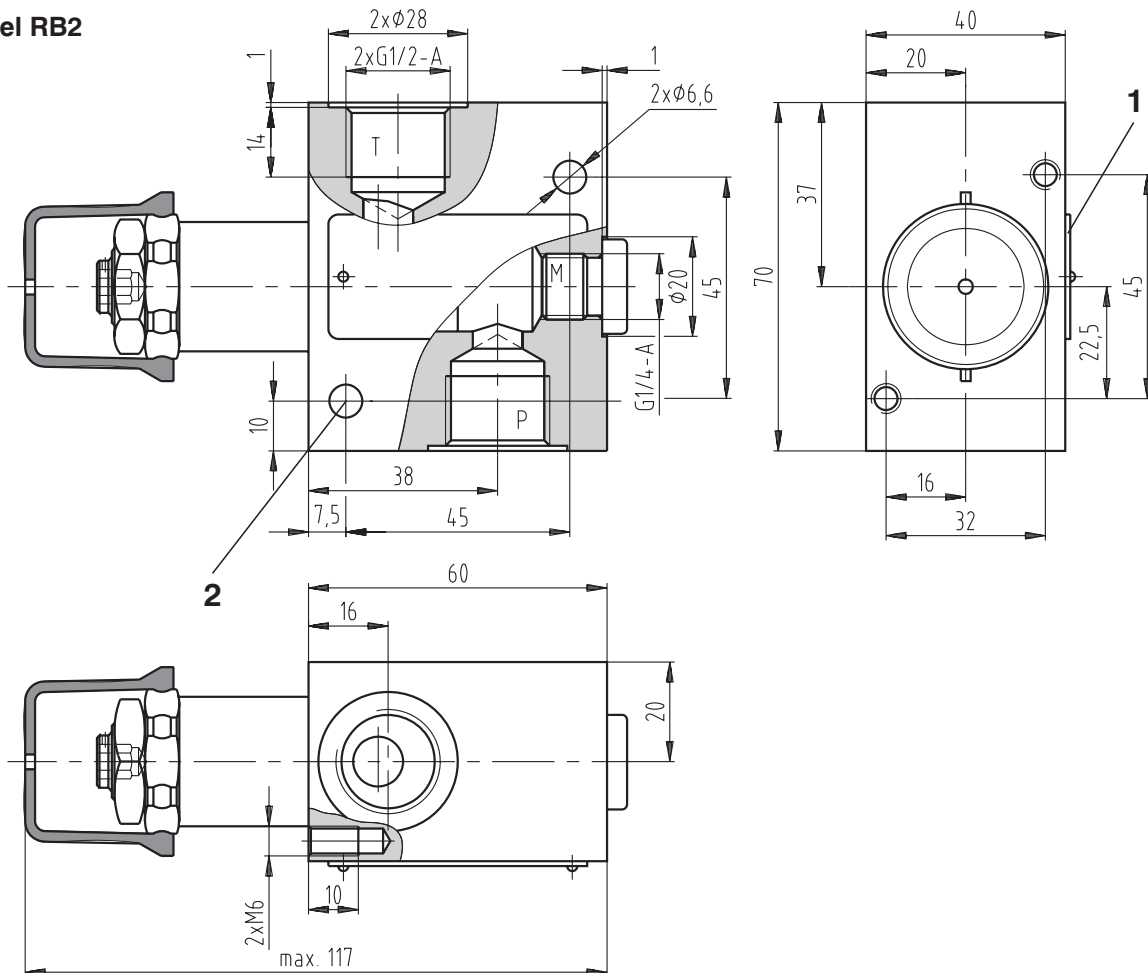
# Valve Dimensions

Dimensions in millimetres

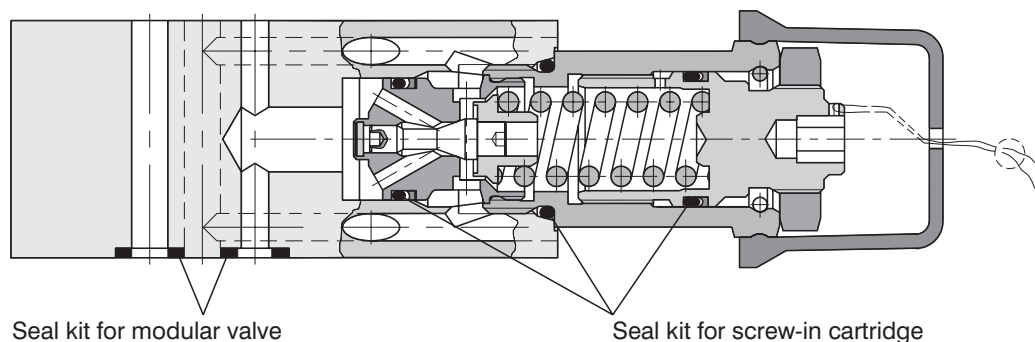
## Model RB1



## Model RB2



## Spare Parts



Model	Dimensions, quantity	Ordering number
Screw-in cartridge - NBR	O-ring 14 x 1.78 NBR 90 (1 pc.)	15908000
	O-ring 17 x 1.8 NBR 70 (1 pc.)	
	O-ring 19.4 x 2.1 NBR 80 (1 pc.)	
	Back-up ring BBP80B015-N9 14.73 x 17.43 x 1.14 (1 pc.)	
	Back-up ring BBP80B016-N9 16.33 x 19.03 x 1.14 (1 pc.)	
Screw-in cartridge - Viton	O-ring 14 x 1.78 (1 pc.)	15908100
	O-ring 17.17 x 1.78 (1 pc.)	
	O-ring 19.4 x 2.1 (1 pc.)	
	Back-up ring BBP80B015 14.73 x 17.43 x 1.14 (1 pc.)	
	Back-up ring BG1300174-PT00 17.4 x 1.3 (1 pc.)	
Model	Dimensions, quantity	Ordering number
Modular valve size 04 - NBR	Square ring 7.65 x 1.68 (4 pcs.)	15908200
Modular valve size 04 - Viton	O-ring 7.65 x 1.78 (4 pcs.)	22502600
Modular valve size 06 - NBR	Square ring 9.25 x 1.68 (4 pcs.)	15991700
Modular valve size 06 - Viton	O-ring 9.25 x 1.78 (4 pcs.)	22944700
Model	Typ, quantity	Ordering number
In-line valve RA1 - NBR	VSTI R1/4-ED (1 pc.)	22944600
	VSTI R3/8-ED (1 pc.)	
In-line valve RA2 - NBR	VSTI R1/4-ED (1 pc.)	22944400
	VSTI R1/2-ED (1 pc.)	
In-line valve RB1 - NBR	VSTI R1/4-ED (1 pc.)	22944500
In-line valve RB2 - NBR		
In-line valve RA1 - Viton	VSTI R1/4-ED - Viton (1 pc.)	22944300
	VSTI R3/8-ED - Viton (1 pc.)	
In-line valve RA2 - Viton	VSTI R1/4-ED - Viton (1 pc.)	22944100
	VSTI R1/2-ED - Viton (1 pc.)	
In-line valve RB1 - Viton	VSTI R1/4-ED - Viton (1 pc.)	22944200
In-line valve RB2 - Viton		

## Preferred Types of Valves

Type	Ordering Number	Type	Ordering Number
VPP2-04/S-10	15906300	VPP2-04/MP06-10	15909300
VPP2-04/S-25	15906700	VPP2-04/MP06-25	15911600
VPP2-04/S-32	15907000	VPP2-04/MP06-32	15912700
VPP2-04/MP04-10	22507400	VPP2-04/RA2-10	22509900
VPP2-04/MP04-25	15911100	VPP2-04/RA2-25	22516100
VPP2-04/MP04-32	15912100	VPP2-04/RA2-32	22519400

## Caution!

- The packing foil is recyclable.
- The protecting plate can be returned to the manufacturer.
- Mounting studs must be ordered separately. Tightening torques are: size 04 - 5 Nm, size 06 - 8.9 Nm.
- 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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