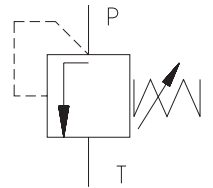


- Single-stage pressure relief valve
- Cartridge in threaded housing - with metric or BSP threads
- Cartridge in subplate mounted housing
- Four pressure adjustment options
- Six pressure ranges
- Subplates - see catalogue HA 0002

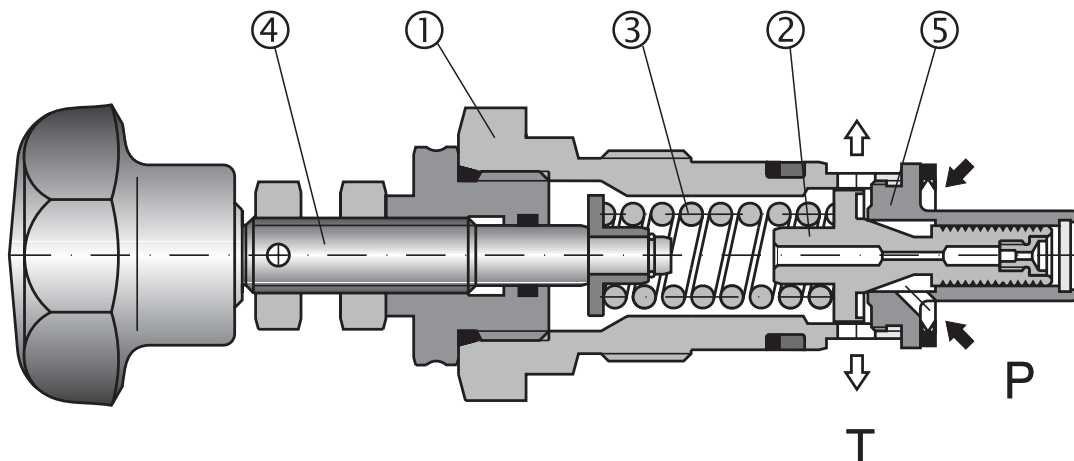


## Functional Description

Pressure relief valves VPP1 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). Pressure is manually set by an adjustment screw (4). The spring pushes the poppet into 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, five 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, built into a threaded housing or in a subplate mounted housing. Both the threaded and the subplate mounted housings can be delivered either with metric or pipe threads. The basic surface treatment of the valve body and the adjustment screw are zinc coated.



# Ordering Code

VPP1-□-□□/□□

**Direct operated relief pressure valve**

**Nominal size**  
 Size 06 **06**  
 Size 08 - only models M and G valve is congruent with size 10 **08**  
 Size 10 **10**

**Adjustment option**  
 Hexagon set screw locknut 0.197 in (5 mm) **S**  
 Adjustable handknob **R**  
 Lockable cylindrical handknob **O**  
 Non-lockable cylindrical handknob **N**

without designation **V**  
**Seals**  
 NBR  
 FPM (Viton)

**Pressure range in PSI (bar)**  
**2.5** up to 363 (25)  
**6.3** up to 913 (63)  
**10** up to 1450 (100)  
**16** up to 2321 (160)  
**25** up to 3625 (250)  
**32** up to 4641 (320)

**Model**  
**V** screw-in cartridge valve  
**M** cartridge in threaded housing - with metric threads  
**G** cartridge in threaded housing - with BSP threads  
**P** cartridge in subplate mounted housing

## Technical Data

Nominal size	mm	06	10
Maximum flow	US GPM (L/min)	13.2 (50)	4.724 (120)
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 seals (FPM)	°F (°C)	-4 ... +176 (-20 ... +80)	
Viscosity range	SUS (mm <sup>2</sup> /s)	98 ... 1840 (20 ... 400)	
Maximum degree of fluid contamination		Class 21/18/15 to ISO 4406 (1999)	
Weight - screw-in cartridge valve other models	lbs (kg)	0.879 (0.4) 3.297 (1.5)	1.099 (0.5) 8.132 (3.7)
Mounting position		optional	

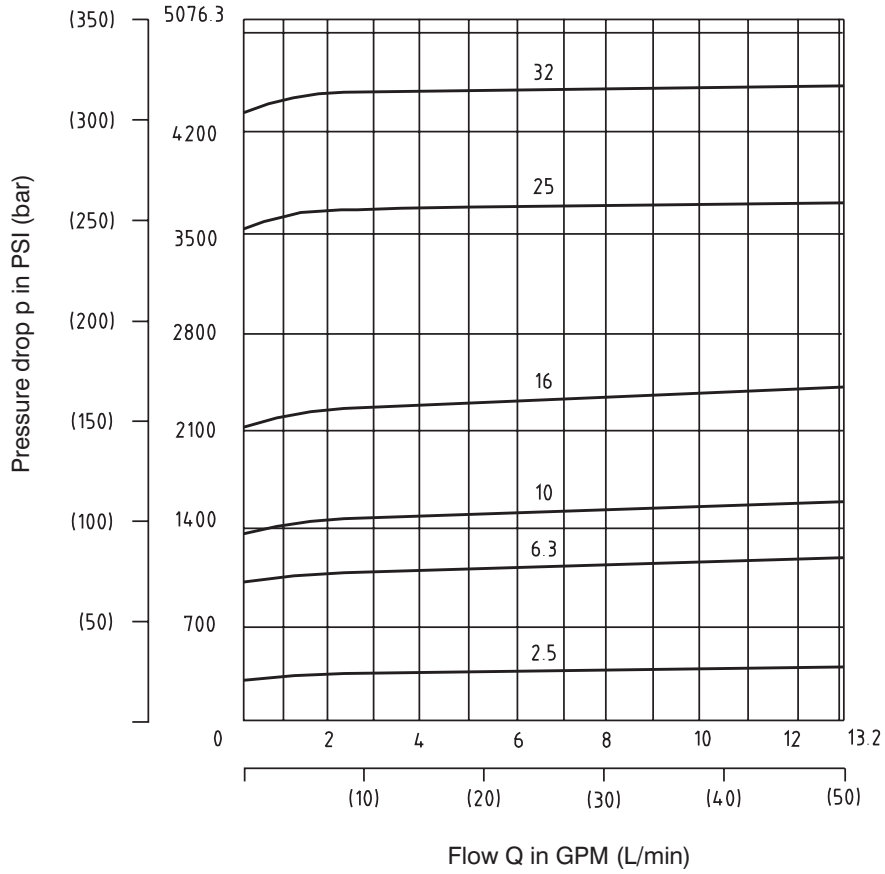
## Caution!

- The packing foil is recyclable.
- For applications outside these parameters, please consult 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.

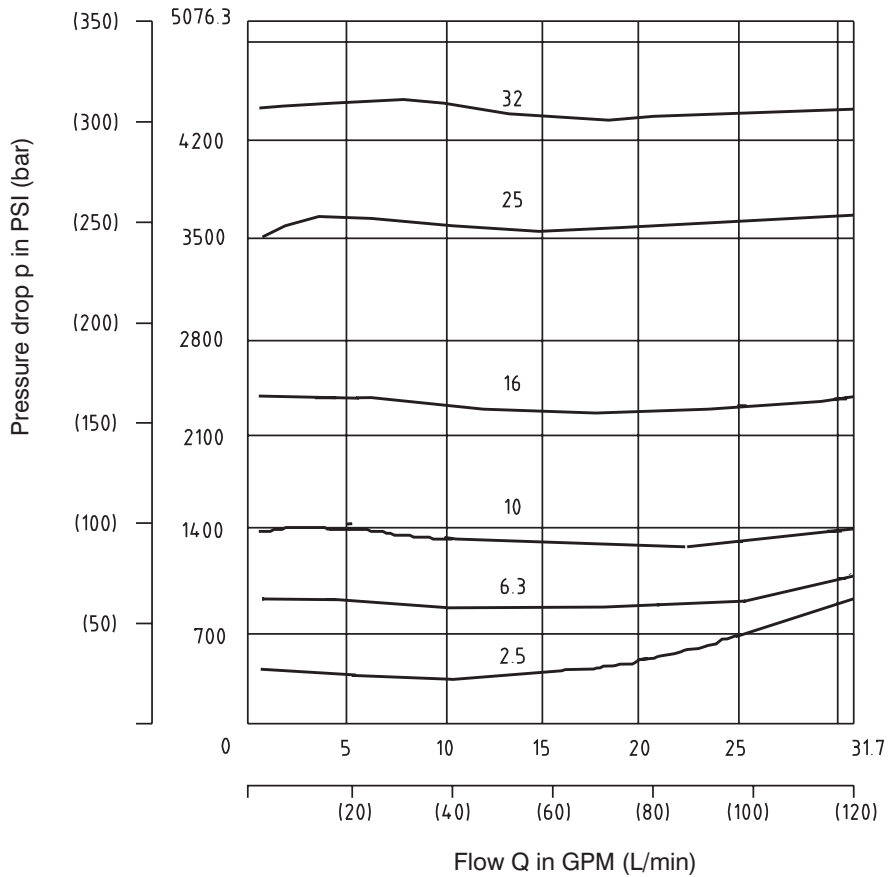
**p-Q Characteristics**

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

**Size 06**



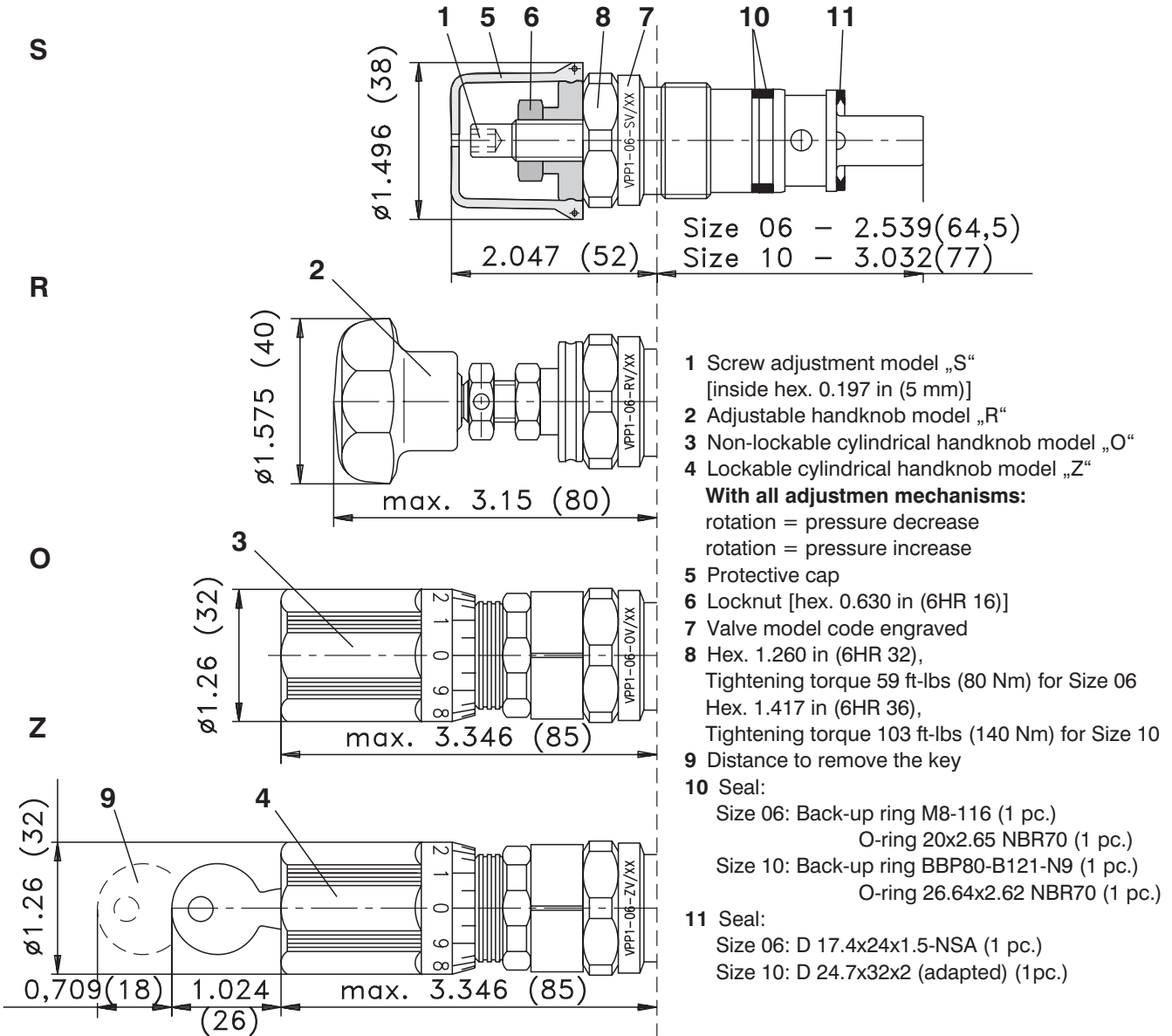
**Size 10**



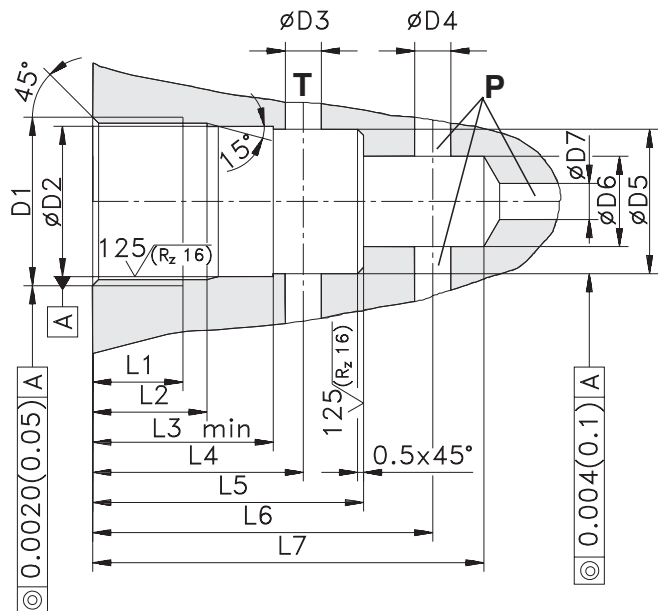
# Valve Dimensions

Dimensions in inches and millimeters (in brackets)

## Cartridge valve - model „V“

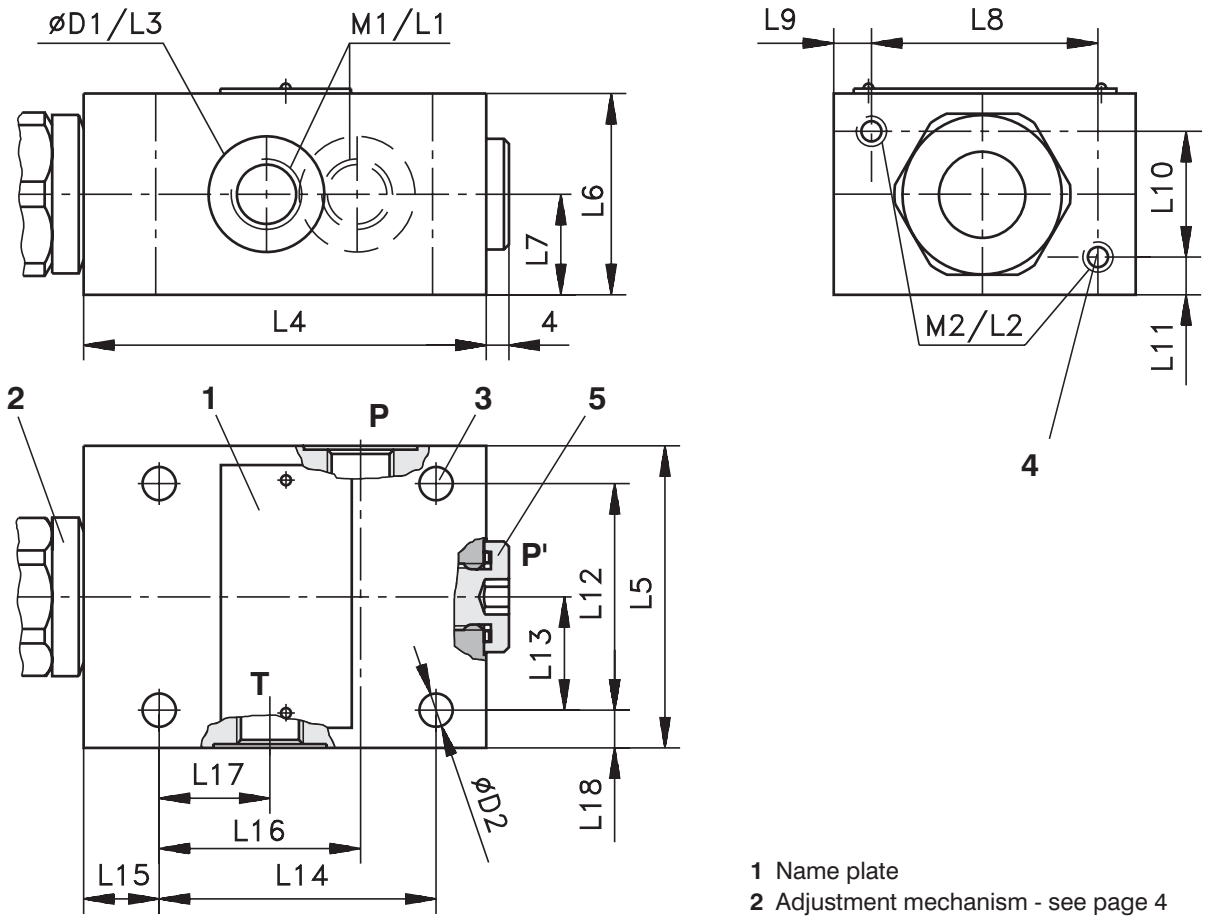


## Installation Cavity



	Size 06	Size 10
	Dimensions in inches (millimeters)	Dimensions in inches (millimeters)
D1	M28x1.5	M35x1.5
$\phi D2$	0.984+0.0021 (25 H9)	1.260+0.0021 (32 H9)
$\phi D3$	0.236 (6)	0.394 (10)
$\phi D4$	0.236 (6)	0.394 (10)
$\phi D5$	0.980 (24.9)	1.256 (31.9)
$\phi D6$	0.591 (15)	0.728 (18.5)
$\phi D7$	0.236 (6)	0.394 (10)
L1	0.591 (15)	0.709 (18)
L2	0.748 (19)	0.906 (23)
L3	1.260 (32)	1.378 (35)
L4	1.378 (35)	1.614 (41)
L5	1.772 (45)	2.047 (52)
L6	2.224±0.217 (56.5±5.5)	2.658±0.295 (67.5±7.5)
L7	2.560 (65)	3.150 (80)

**Cartridge in threaded housing - models „M“ and „G“**

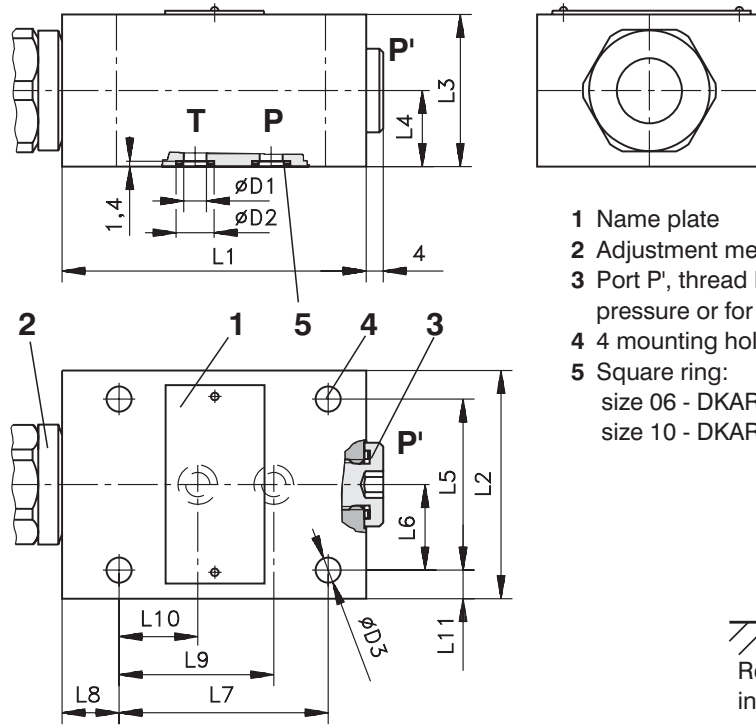


- 1 Name plate
- 2 Adjustment mechanism - see page 4
- 3 4 mounting holes
- 4 2 threaded holes (other mounting possibility)
- 5 Port P' (as input can be used P or P' thread M1/L1)

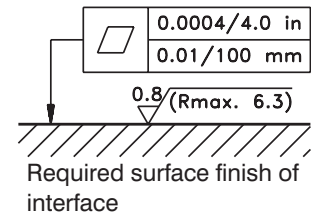
Model	M1	M2	$\varnothing D1$	$\varnothing D2$	L1	L2	L3	L4	L5	L6
VPP1-06-xM/x	M14 x 1.5	M6	0.984	0.260 (6.6)	0.472 (12)	0.394 (10)	0.020 (0.5)	3.150 (80)	2.362 (60)	1.575 (40)
VPP1-06-xG/x	G 1/4									
VPP1-08-xM/x	M18 x 1.5	M8	1.181 (30)	0.354 (9)	0.630 (16)	0.787 (20)	0.020 (0.5)	3.937 (100)	3.150 (80)	2.362 (60)
VPP1-08-xG/x	G 3/8		1.102 (28)							
VPP1-10-xM/x	M22 x 1.5		1.339 (34)							
VPP1-10-xG/x	G 1/2									

Model	L7	L8	L9	L10	L11	L12	L13	L14	L15	L16	L17	L18
VPP1-06-xM/x	0.787 (20)	1.770 (45)	0.295 (7.5)	0.984 (25)	0.295 (7.5)	1.772 (45)	0.886 (22.5)	2.165 (55)	0.591 (15)	1.575 (40)	0.787 (20)	0.295 (7.5)
VPP1-06-xG/x												
VPP1-08-xM/x	1.181 (30)	2.362 (60)	0.394 (10)	1.575 (40)	0.394 (10)	2.362 (60)	1.181 (30)	2.756 (70)	0.787 (20)	1.929 (49)	0.827 (21)	0.394 (10)
VPP1-08-xG/x												
VPP1-10-xM/x												
VPP1-10-xG/x												

**Cartridge in subplate mounted housing - model „P“**



- 1 Name plate
- 2 Adjustment mechanism - see page 4
- 3 Port P', thread M1/H1 can be used as input pressure or for measuring
- 4 4 mounting holes
- 5 Square ring:  
size 06 - DKAR 00011 [7.65x1.68 (2 pcs.)]  
size 10 - DKAR 00014 [12.42x1.68 (2 pcs.)]



Model	M1	H1	∅D1	∅D2	∅D3	L1	L2	L3
VPP1-06-xP/x	G 1/4	0.472	0.236 (6)	0.425 (10.8)	0.260 (6.6)	3.150 (80)	2.362 (60)	1.575 (40)
VPP1-10-xP/x		(12)	0.394 (10)	0.614 (15.6)	0.354 (9)	3.937 (100)	3.150 (80)	2.362 (60)
Model	L4	L5	L6	L7	L8	L9	L10	L11
Vpp1-06-xP/x	0.787 (20)	1.772 (45)	0.886 (22.5)	2.165 (55)	0.591 (15)	1.575 (40)	0.787 (20)	0.295 (7.5)
Vpp1-10-xP/x	1.181 (30)	2.362 (60)	1.181 (30)	2.756 (70)	0.787 (20)	1 772 (45)	0.827 (21)	0.394 (10)

**Spare Parts**

**Accessories** (delivered with subplate model „P“)

	Bolt kit	Square rings
<b>Size 06</b>	M6x50 DIN 912-10.9 (4 pcs.) Tightening torque 6.6 ft-lbs (8.9 Nm)	DKAR 00011 7.65 x 1.68 (2 pcs.)
<b>Size 10</b>	M8x70 DIN 912-10.9 (4 pcs.) Tightening torque 11.13 ft-lbs (15 Nm)	DKAR 00014 12.42 x 1.68 (2 pcs.)

**Seak kit for cartridge valve**

Type	Dimensions, quantity			Ordering number	
	O-ring	Back-up ring	U-Seal		
<b>Size 06</b>	Standard NBR	8 x 1.8 (1 pc.)	19.43 x 23.79 x 1.14 (1 pc.)	17.4 x 24 x 1.5 (1 pc.)	551-0091
		20 x 2.65 (1 pc.)	-	-	
		20 x 2 (1 pc.)	-	-	
	Viton	20 x 2 (1 pc.)	19.43 x 23.79 x 1.14 (1 pc.)	17.4 x 24 x 1.5 (1 pc.)	551-0089
		20.29 x 2.62 (1 pc.)	-	-	
<b>Size 10</b>	Standard NBR	8 x 1.8 (1 pc.)	BBP 80-B121-N9 (1 pc.)	24.7 x 32 x 2 (1 pc.)	551-0092
		20 x 2 (1 pc.)	-	-	
		26.64 x 2.62 (1 pc.)	-	-	
	Viton	20 x 2 (1 pc.)	BBP 80-B121 (1 pc.)	24.7 x 32 x 2 (1 pc.)	551-0090
		7.65 x 1.78 (1 pc.)	-	-	
		26.64 x 2.62 (1 pc.)	-	-	

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