



PRESSURE RELIEF VALVES
MODEL VPM 1-06, 10; VP2M 1-06, 10

KE 3007

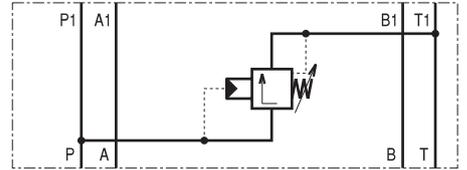
11/02

D_n 06; 10

p_n 320 bar

Q_n 32; 63 L/min

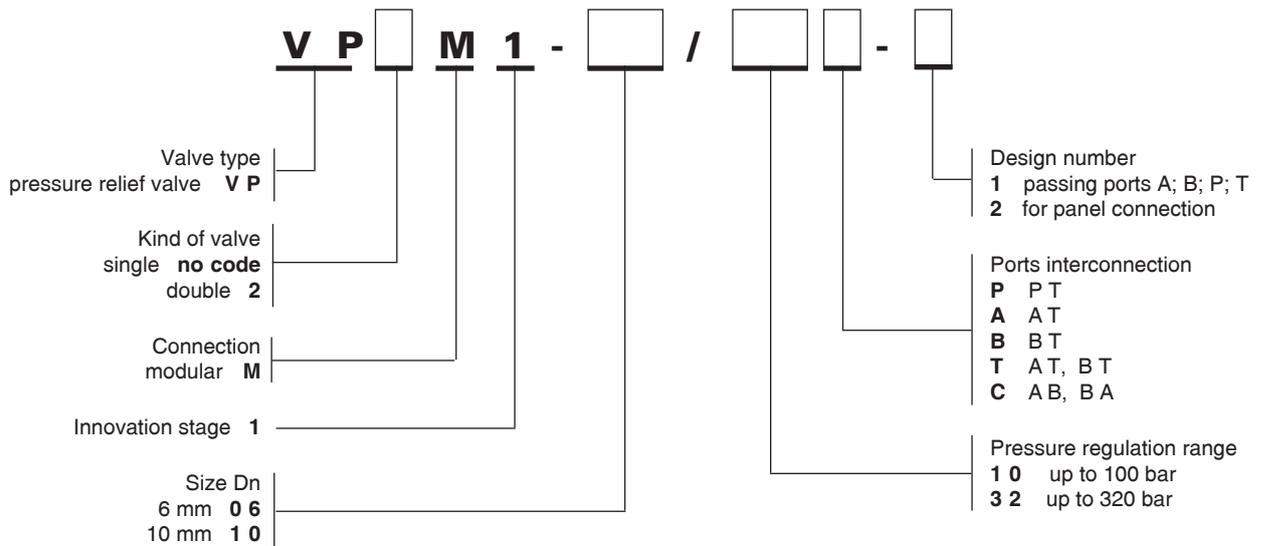
replaces 07/97



Application benefits

- suitable for modular kits
- mounting surface according to CETOP 3, 5; ISO 4401, DIN 24 340
- numerous of interconnection.

ORDERING CODE



APPLICATION

They are used for the hold of the adjusted pressure in hydraulic systems. Adjusted pressure is hold in certain limit according to flow (see characteristics). Mostly they are used in the hydraulic

systems where is necessary to control the force value of the hydraulic cylinders or for the torque control of rotary hydraulic motors.

INSTALLATION , SERVICE AND MAINTENANCE

The VP(2)M valves can be installed in any (horizontal or vertical) position. They can be mounted into modular stacking assemblies of hydraulic components. Dn 06 valve, design number 2 is possible to install individually directly to panel. Other modifications of Dn06 size and Dn10 valves must be combined with some type of clos-

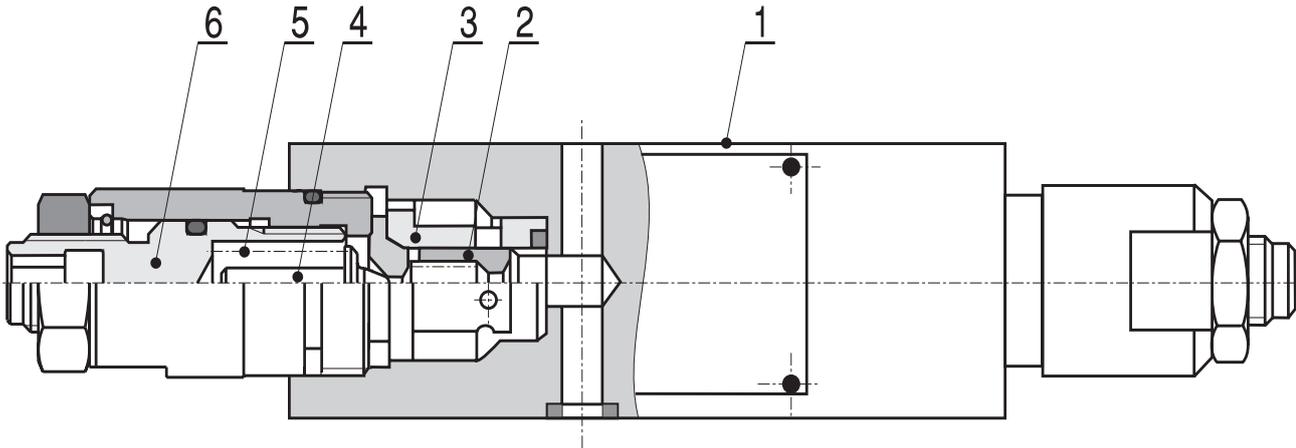
ing subplate if they are used separately. Clarity as well as scratch free of matching surface should be checked before assembling operation. Sealing rings have to be deformation free and non destroyed. Cover subplates must be removed immediately before assembling operation to avoid a dropping of impurities valve inside.

GENERAL DESCRIPTION AND FUNCTION

The relief valves model VP(2)M are pilot operated valves of spool design equipped with control seat valve. Armature of the control valve is located into the same housing **1** together with spool **2** and valve case **3**. Double valves have two armatures built-in to the housing **1**.

Pursuant to valve modification the pressure fluid is fed through ports P, A or B. From the input port the pressure runs through boring in the spool **2**

under seat **4** of control valve. The cone is hold in its seat by means of preloading of spring **5** with adjustable screw **6**. If adjusted pressure of working fluid is reached the fluid is bypassed over the control cone **4**. The pressure drop is created onto the control spool **2** and it is moved from its former position. Then it starts with bypassing of the working fluid from working port P, A or B (according to valve modification).

**DELIVERY, MATERIAL, SURFACE TREATMENT**

Relief hydrostatic valves are sold in assembly configuration including sealing rings. Surface is phosphated. The valve top coat can be carried out in agreement with producer. Instruction man-

ual is delivered with each valve. Neither spare parts nor fixing bolts are delivered. Production materials used are cast iron, steel.

TECHNICAL DATA

Technical data	Symbol	Units	Size 06	Size 10		
Nominal size	D_n	mm	6	10		
Nominal pressure	p_n	bar	320			
Maximal pressure	p_{max}	bar	350			
Pressure regulation range		bar	up to 100	up to 320	up to 100	up to 320
Min. adjustable pressure	p_{min}	bar	curve No. 10		curve No. 40	
Max. exceeding of adjusted pressure when system pressure is suddenly increased	p	bar	6 % from p_n			
Pressure drop / flow dependence $\Delta p = f(Q)$	Δp		curve No. 2, 3		curve No č. 5, 6	
Nominal flow	Q_n	L/min	32		63	
Maximal flow	Q_{max}	L/min	60		100	
Hydraulic medium			mineral oil (HL, HLP) by DIN 51 524			
Fluid temperature range	t_{po}	°C	-20 up to + 80			
Environment temperature range	t_k	°C	-20 up to + 70			
Oil viscosity range	ν	m^2/s	$10 \cdot 10^{-6}$ up to $400 \cdot 10^{-6}$			
Fluid filtration			a) class 9 according to NAS 1638, 18/15 according to ISO 4406 b) fluid filtration with $\beta_{20} \geq 100$ is recommended			
Weight	m	kg	1.2 up to 1.75		2.6 up to 3.6	

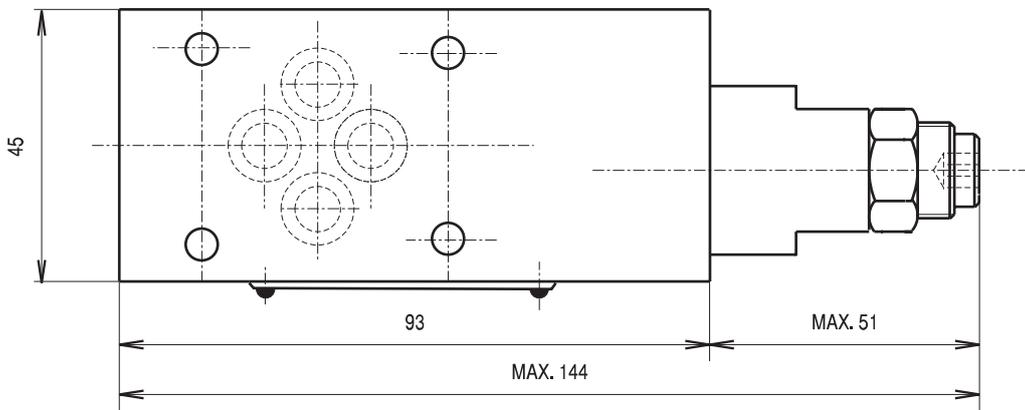
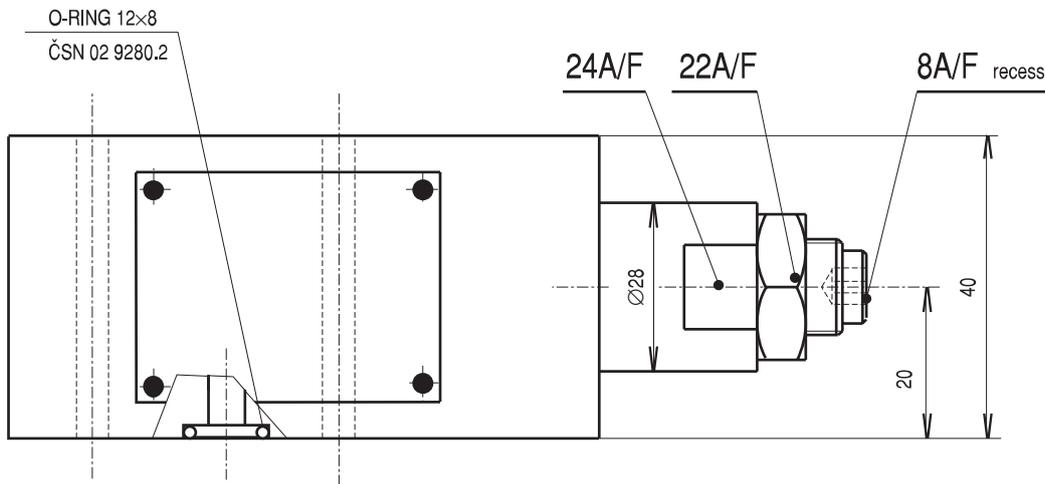
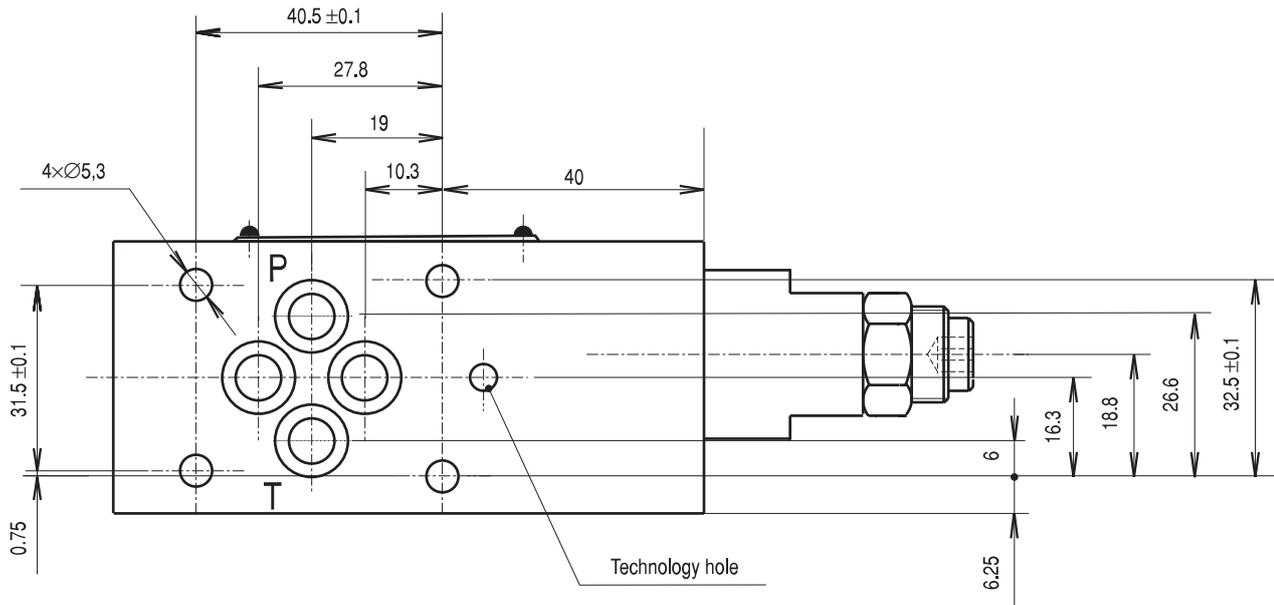
MODEL CODES	
Model codes	Symbol
VPM1-06/32 P-1 VPM1-06/10 P-1	
VP2M1-06/32 T-1 VP2M1-06/10 T-1	
VP2M1-06/32 C-1 VP2M1-06/10 C-1	
VPM1-06/32 A-1 VPM1-06/10 A-1	
VPM1-06/32 B-1 VPM1-06/10 B-1	
VPM1-06/32 P-2 VPM1-06/10 P-2	
VPM1-10/32 P-1 VPM1-10/10 P-1	
VP2M1-10/32 T-1 VP2M1-10/10 T-1	
VP2M1-10/32 C-1 VP2M1-10/10 C-1	

PRESSURE RELIEF VALVE Dn 06

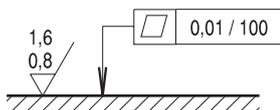
TYP **VPM1-06/x P-2**

WEIGHT 1.25 kg

all dimensions in [mm]

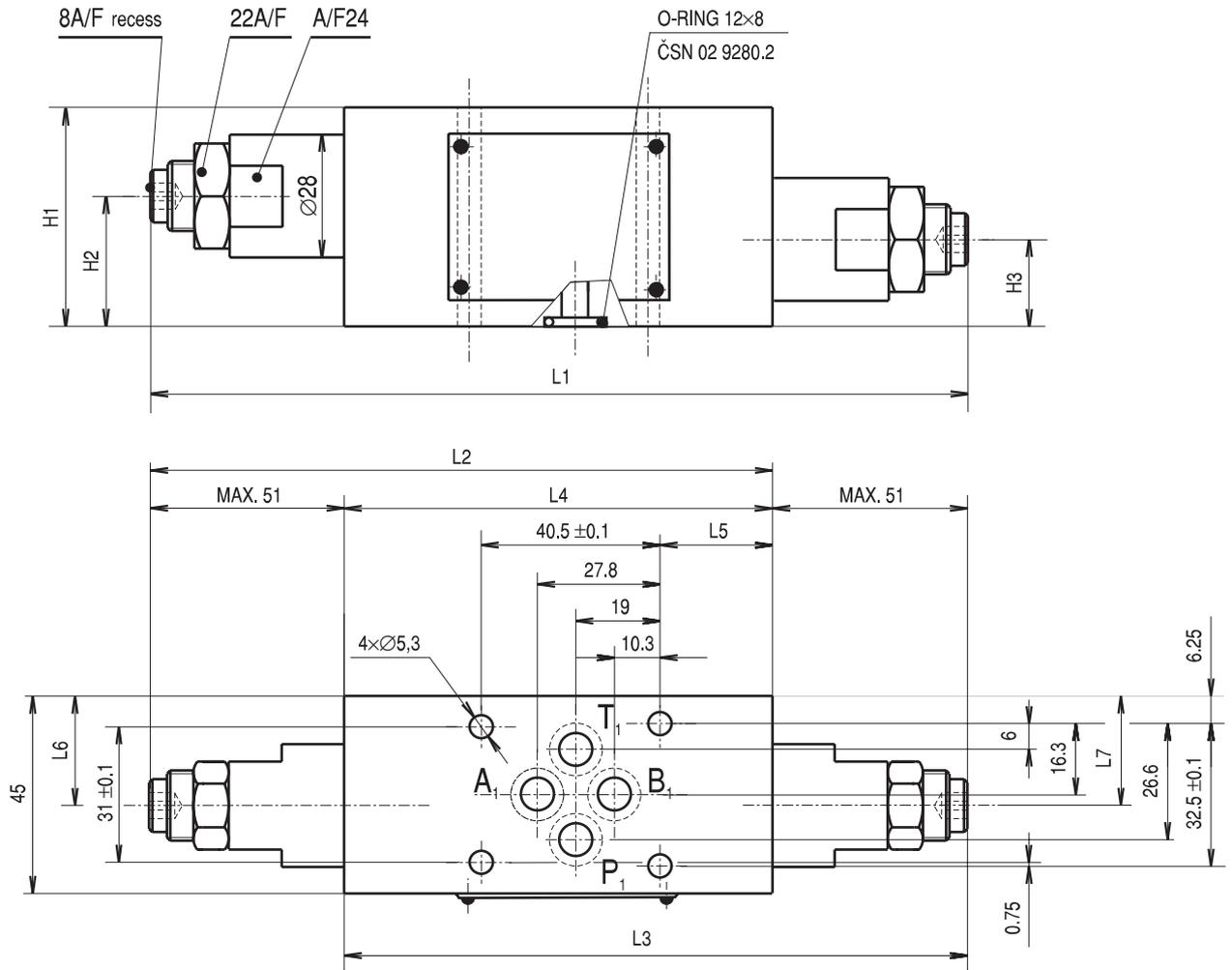


Ports A, B are closed
Required surface treatment quality

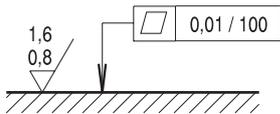


PRESSURE RELIEF VALVE Dn 06

all dimensions in [mm]



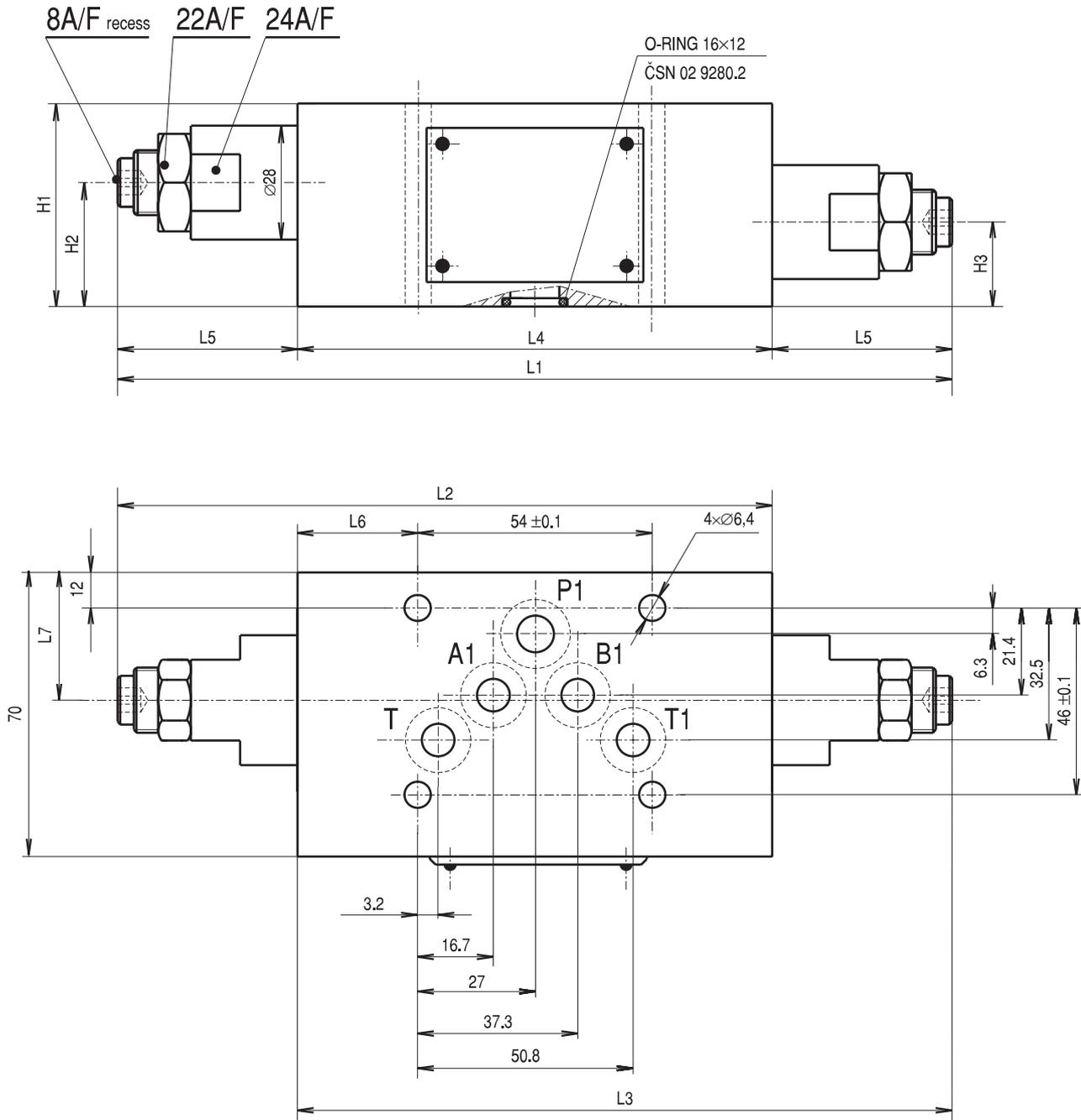
Required surface treatment quality



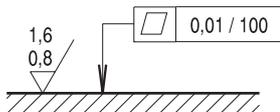
Type	L1 max.	L2 max.	L3 max.	L4	L5	L6	L7	H1	H2	H3	Weight kg
VPM1-06/x A-1	–	144	–	93	17	24.5	–	40	20	–	1.2
VPM1-06/x B-1	–	–	144	93	36	–	24.5	40	–	20	1.2
VPM1-06/x P-1	–	–	144	93	40	–	25	40	–	20	1.25
VP2M1-06/x C-1	214	–	–	112	36	20.5	24.5	47	30	19	1.75
VP2M1-06/x T-1	214	–	–	112	36	24.5	24.5	40	20	20	1.4

PRESSURE RELIEF VALVE Dn 10

all dimensions in [mm]



Required surface treatment quality



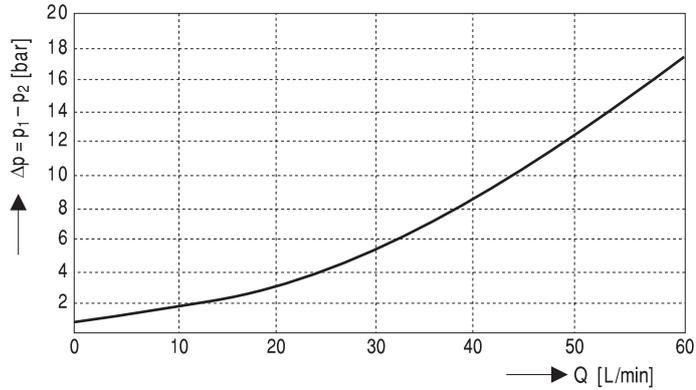
Type	L1 max.	L2 max.	L3 max.	L4	L5 max.	L6	L7	H1	H2	H3	Weight kg
VPM1-10/x P-1	–	153	–	102	51	30	33.5	55	28	–	2.6
VP2M1-10/x C-1	185	138	138	91	47	18.5	32	85	53	32	3.6
VP2M1-10/x T-1	222	171	171	120	51	33	33.5	50	25	25	2.9

INFORMATIVE STATIC CURVES

Minimal adjustable curve: VPM1-06/10x-1 VPM1-06/10x-2
 VPM1-06/32x-1 VPM1-06/32x-2

curve No. 1

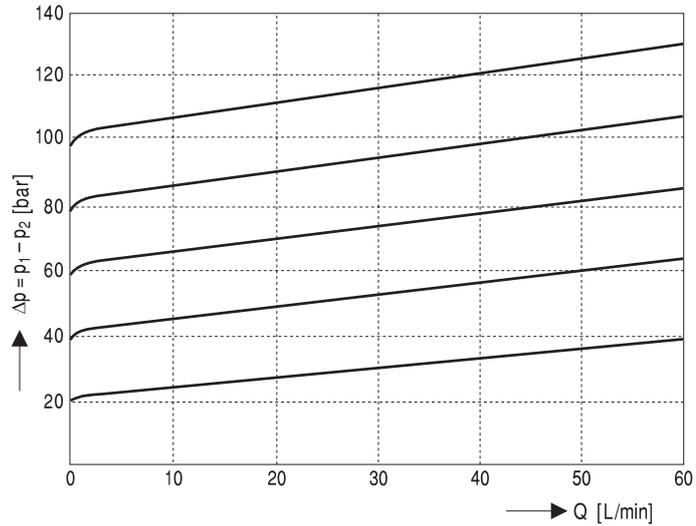
T = 50 ± 2°C oil OH-HM 46
 p₁ = input pressure p₂ = output pressure



Δp = f(Q): VPM1-06/10x-1 VPM1-06/10x-2
 VP2M1-06/10x-1

curve No. 2

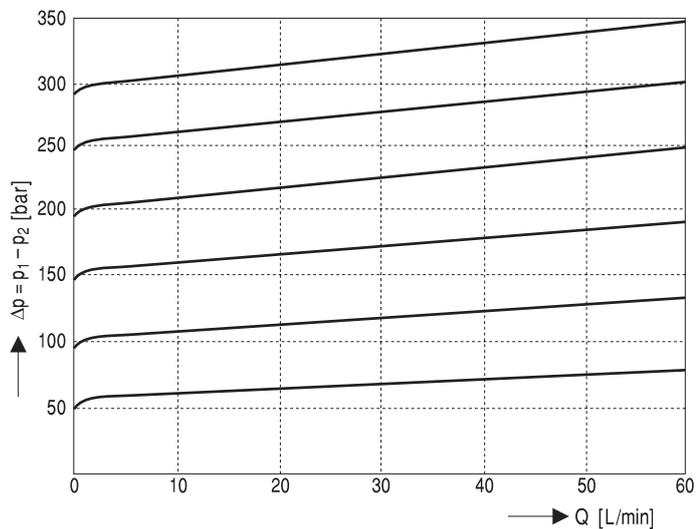
T = 50 ± 2°C oil OH-HM 46
 p₁ = input pressure p₂ = output pressure



Δp = f(Q): VPM1-06/32x-1 VPM1-06/32x-2
 VP2M1-06/32x-1

curve No. 3

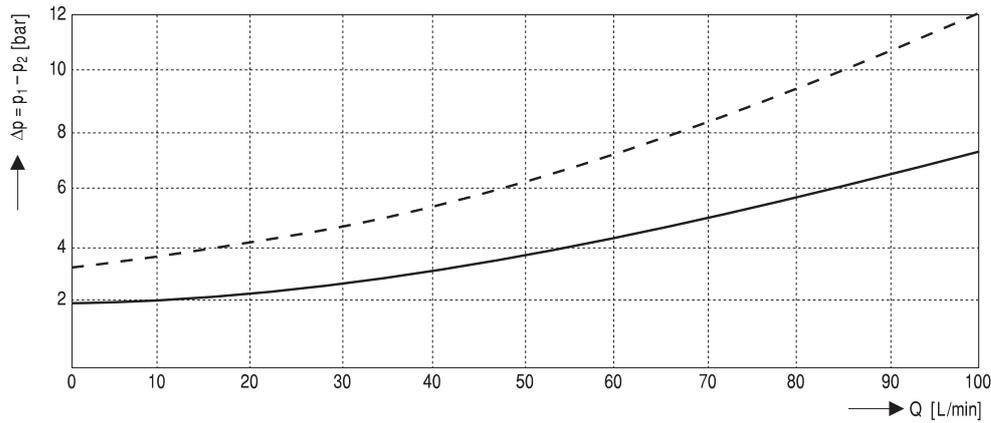
T = 50 ± 2°C oil OH-HM 46
 p₁ = input pressure p₂ = output pressure



Minimal adjustable curve: VPM1-10/10P-1
VPM1-10/32P-1

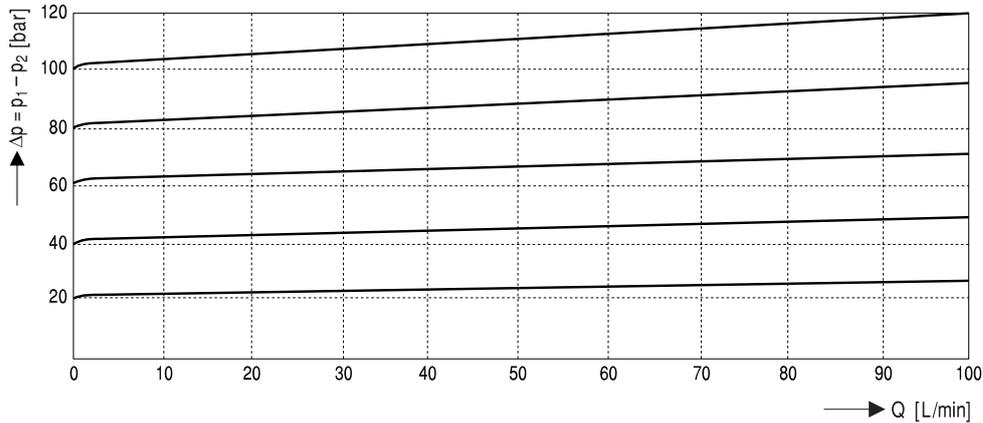
curve No. 4

T = 50 ± 2°C oil OH-HM 46
p₁ = input pressure p₂ = output pressure



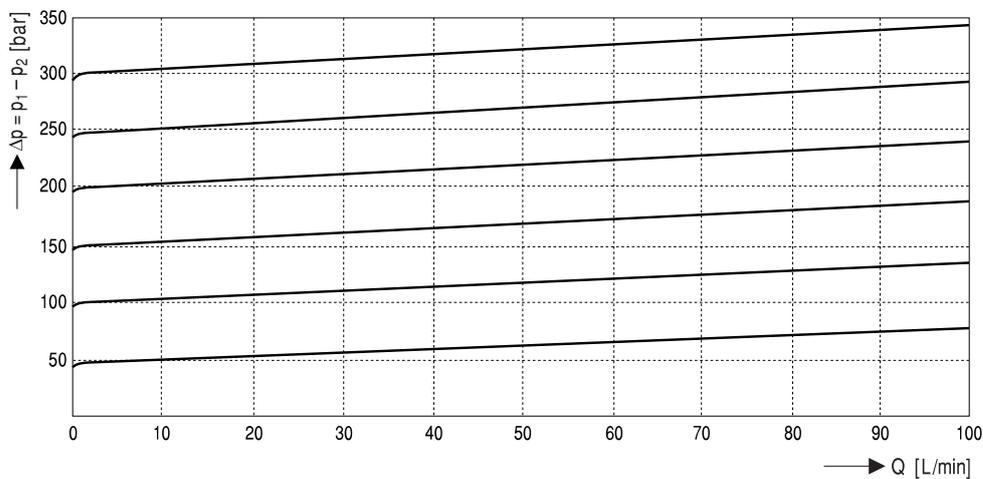
Δp = f(Q): VPM1-10/10x-1
VP2M1-10/10x-1
T = 50 ± 2°C oil OH-HM 46
p₁ = input pressure p₂ = output pressure

curve No. 5



Δp = f(Q): VPM1-10/32x-1
VP2M1-10/32x-1
T = 50 ± 2°C oil OH-HM 46
p₁ = input pressure p₂ = output pressure

curve No. 6



All curves Δp = f(Q) are in average values with acceptable tolerance ± 10%.

Consultation service provided by

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