

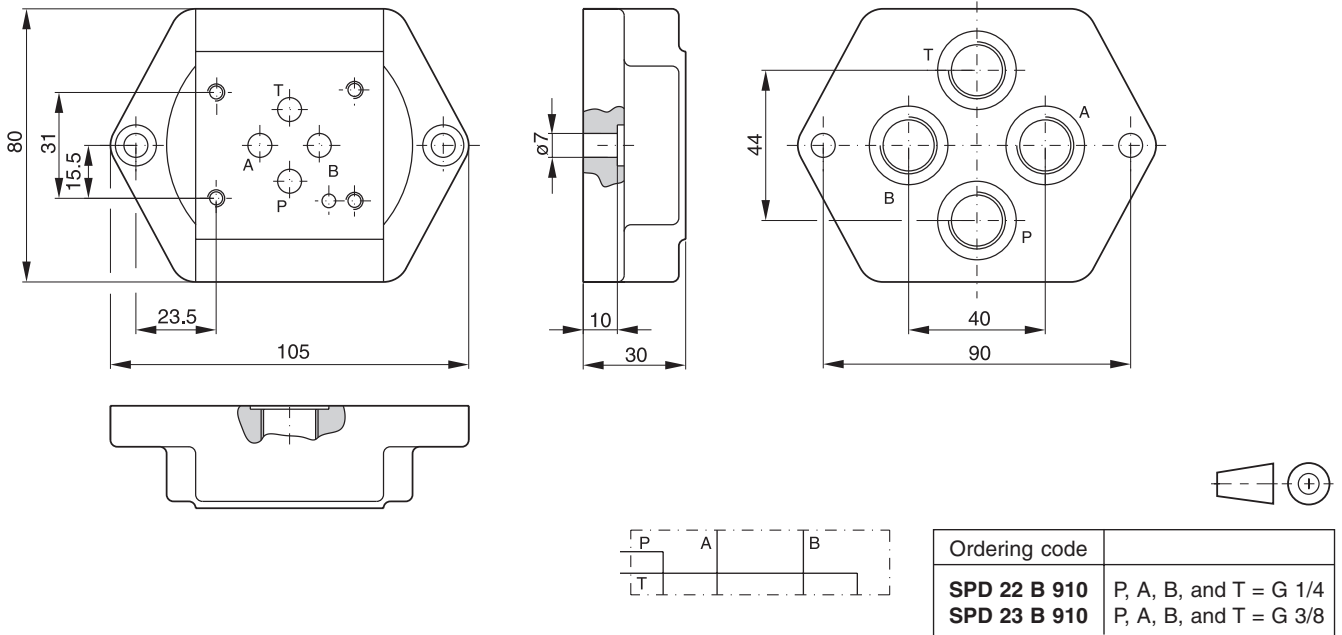
Series	Description	Size NG / CETOP/ISO					Page
		06 3	10 5	16 7	25 8	32 10	
SPD	Subplates, BSPP threads, DC valves	•	•	•	•		8- 3
A	Subplates, metric threads, DC valves	•	•				8- 6
SPP	Subplates, BSPP threads, pressure valves		•		•	•	8- 7
A102	Subplates for pressure valves, styles VB and VM		•				8- 10
MSP	Multi Station Manifolds	•	•				8- 11
PADA	Adaptor Plates	•	•				8- 17
D51	Cover Plates	•	•				8- 18
SA	Multi Station Manifolds for modular Systems	•					8- 19
WM	Pressure gauge selector valves						8- 27
WM1*	Gauge isolator valves						8- 29
PSB	Pressure switches						8- 33
SCPSD	Electronic pressure switches						8- 39
SD500	Pressure intensifiers						8- 43
Accessories	BK Bolt kits						8- 49
	TK Tie rod kits						8- 50

If you are interested in fast delivery, please follow this hint in our ordering codes when choosing your individual product:

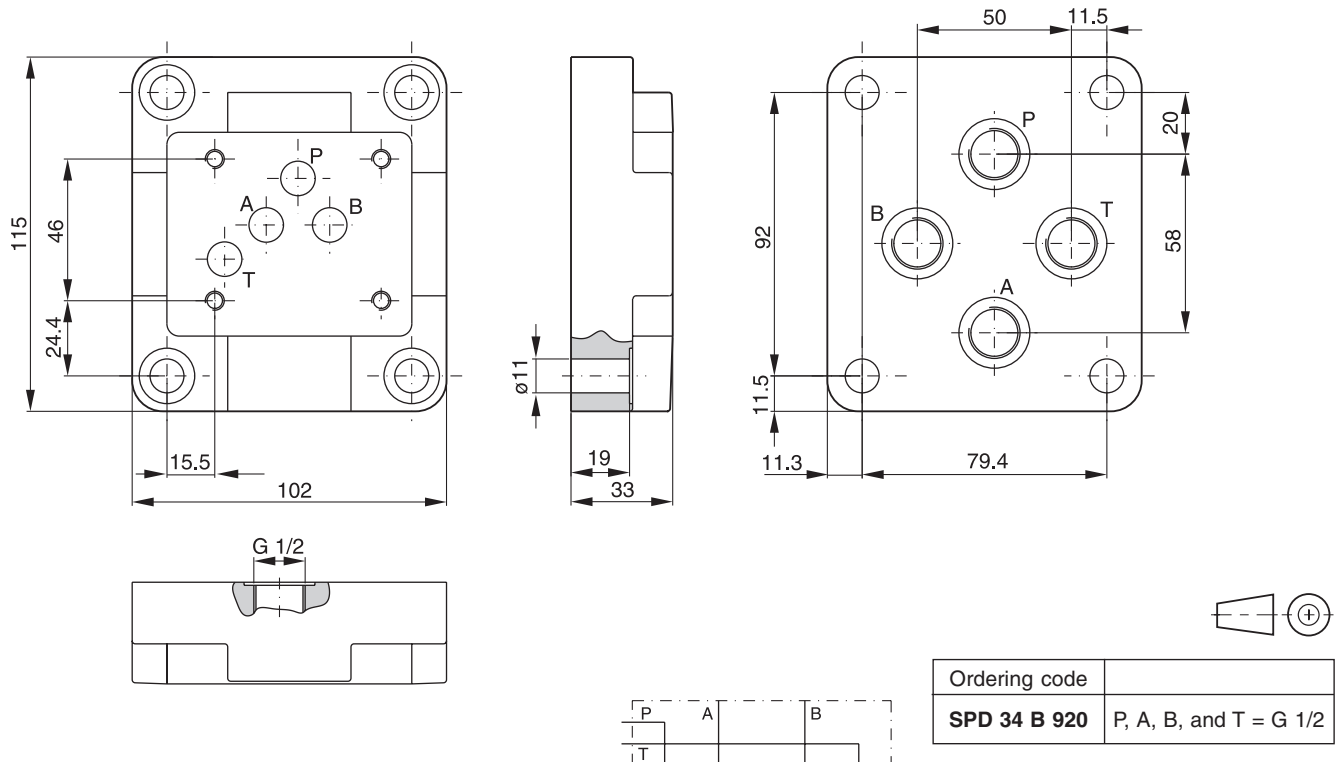
**Bold letters =**  
Short-term availability



**Valve size DIN NG06, CETOP 03, NFPA D03**

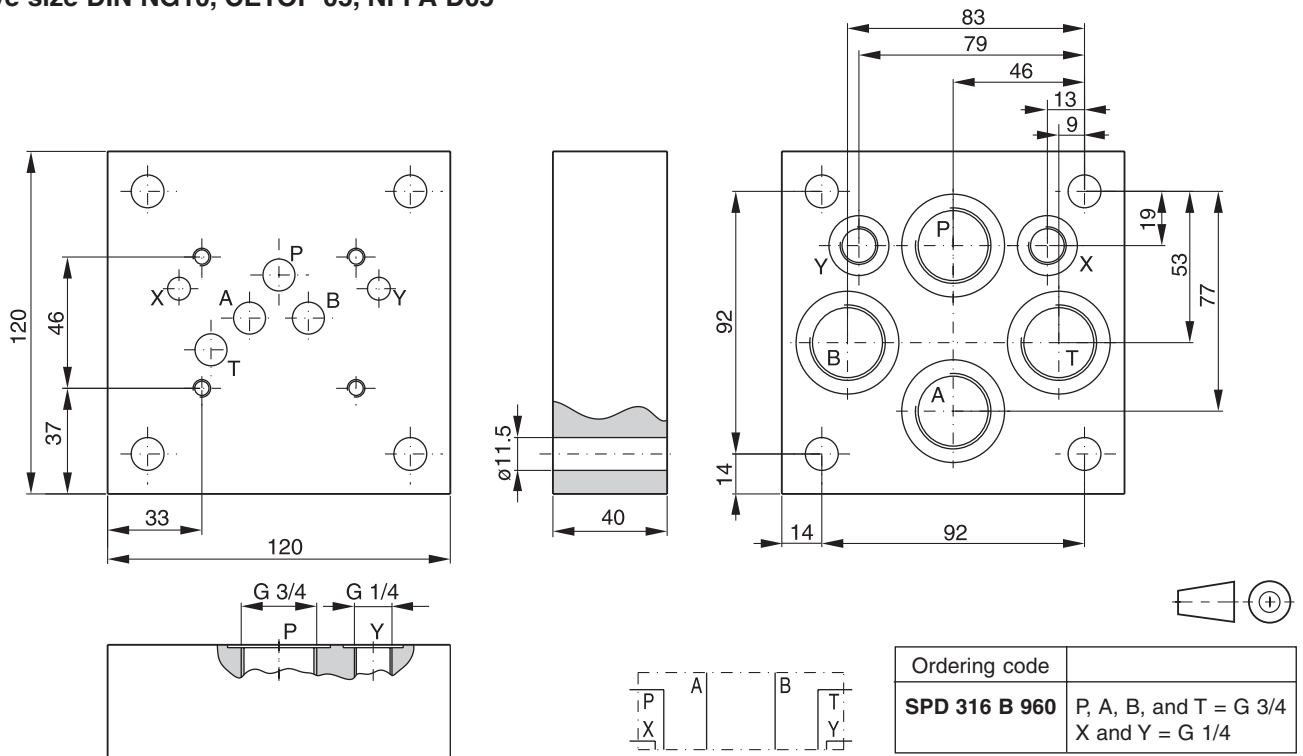


**Valve size DIN NG10, CETOP 05, NFPA D05**

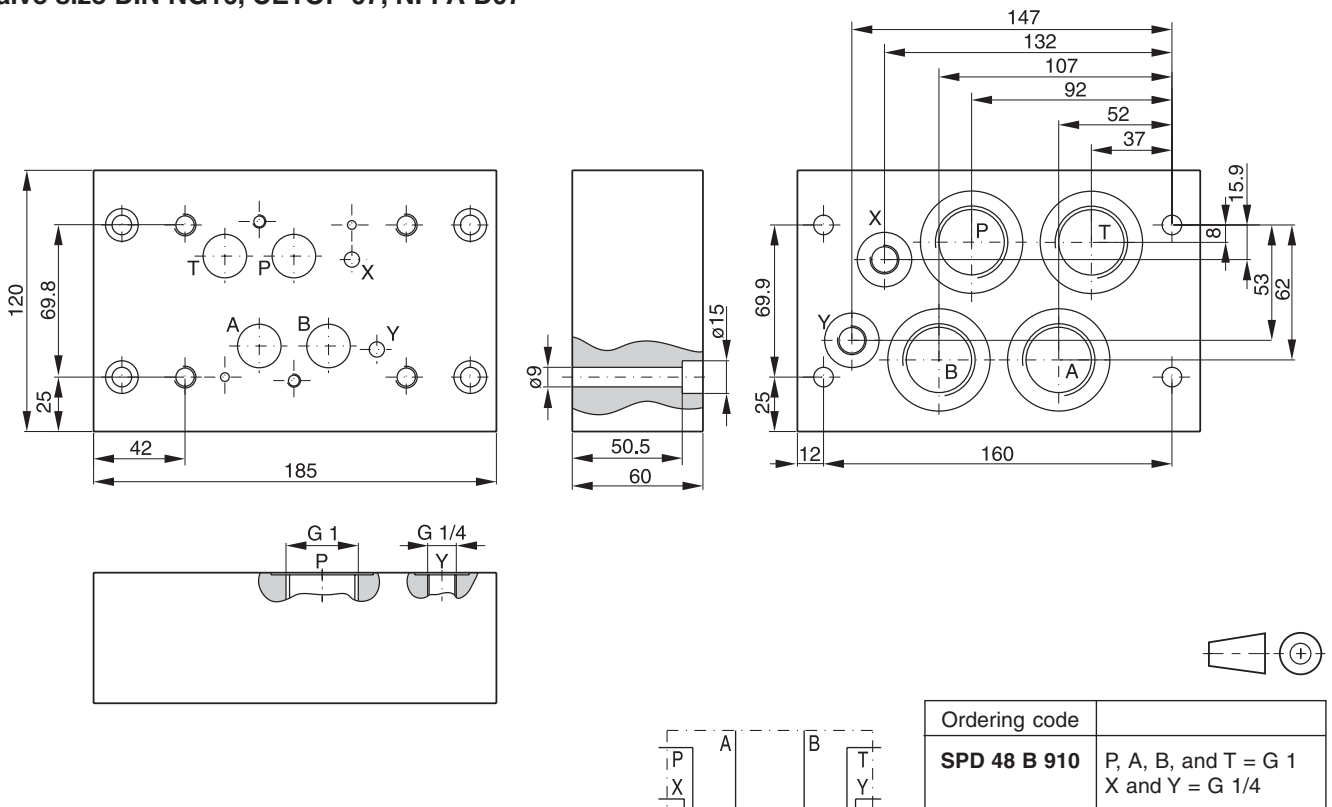


**Bold letters =**  
 Short-term availability

**Valve size DIN NG10, CETOP 05, NFPA D05**

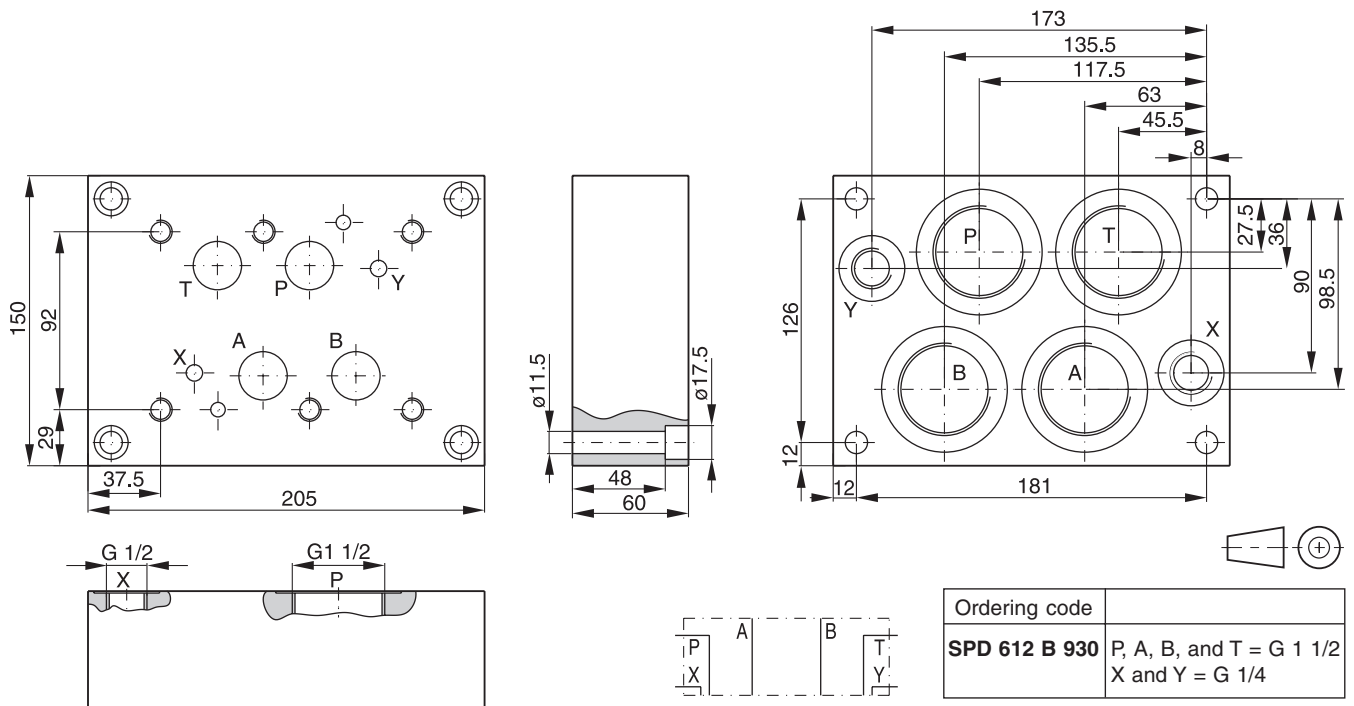


**Valve size DIN NG16, CETOP 07, NFPA D07**



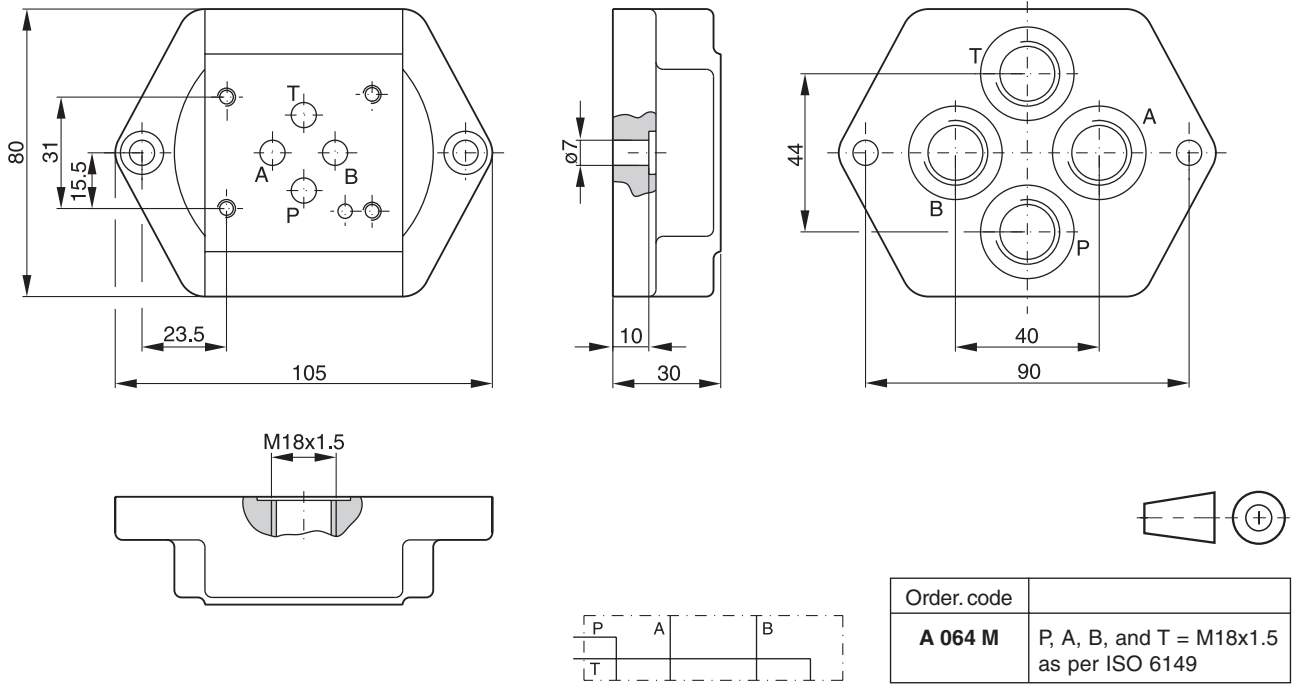
**Bold letters =**  
 Short-term availability

Valve size DIN NG25, CETOP 08, NFPA D08

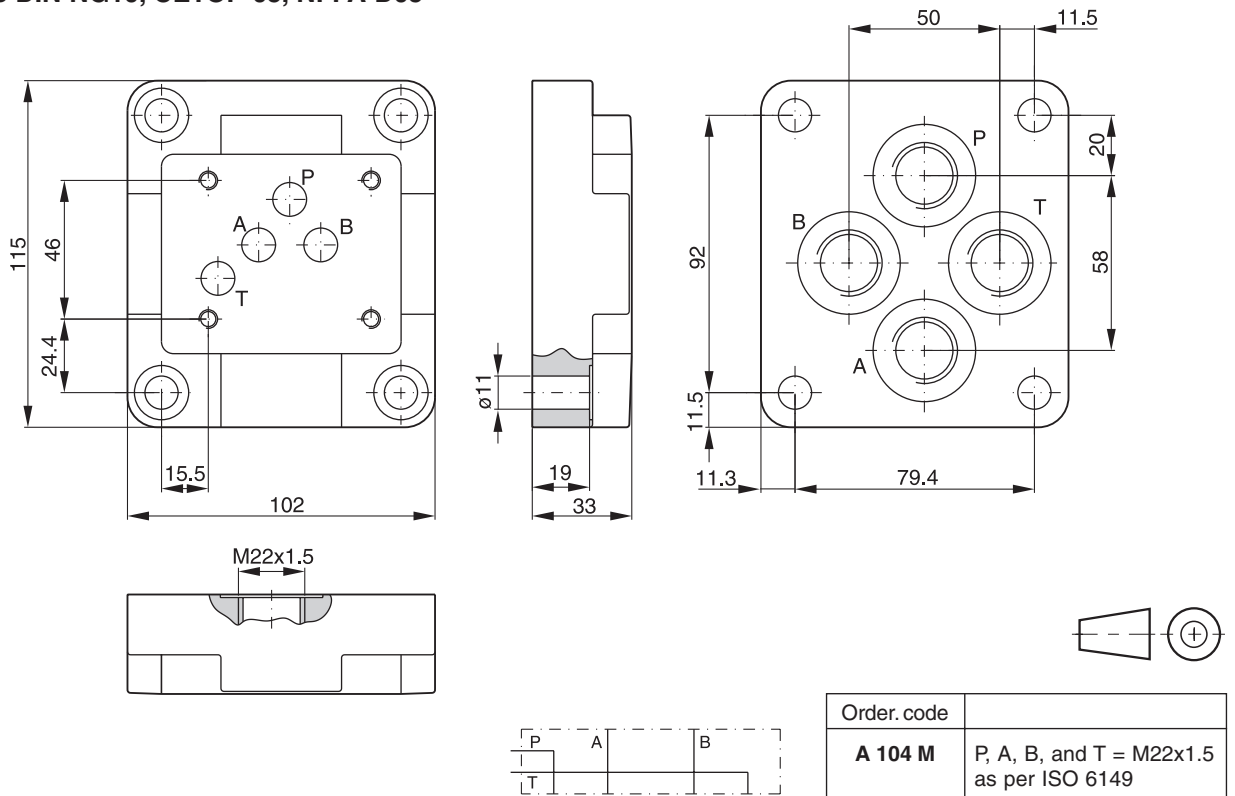


**Bold letters =**  
Short-term availability

**Valve size DIN NG06, CETOP 03, NFPA D03**

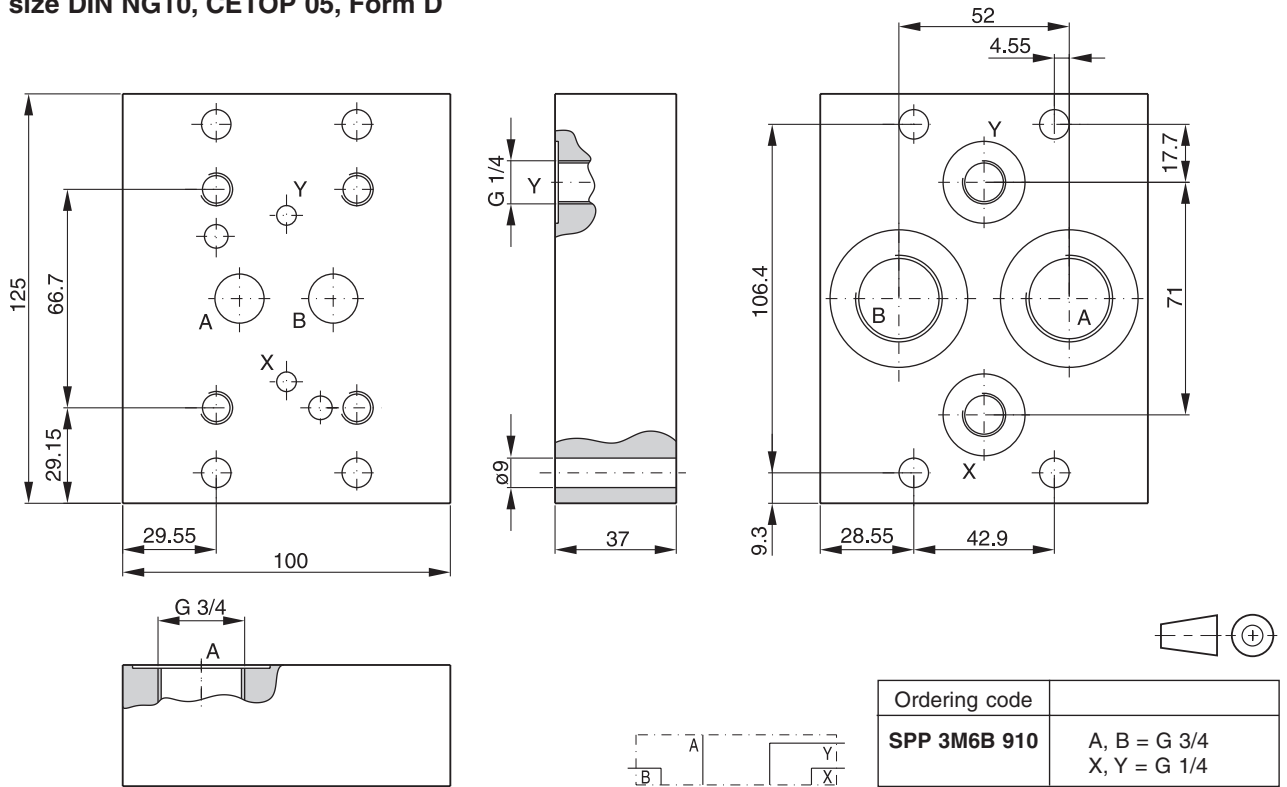


**Valve size DIN NG10, CETOP 05, NFPA D05**

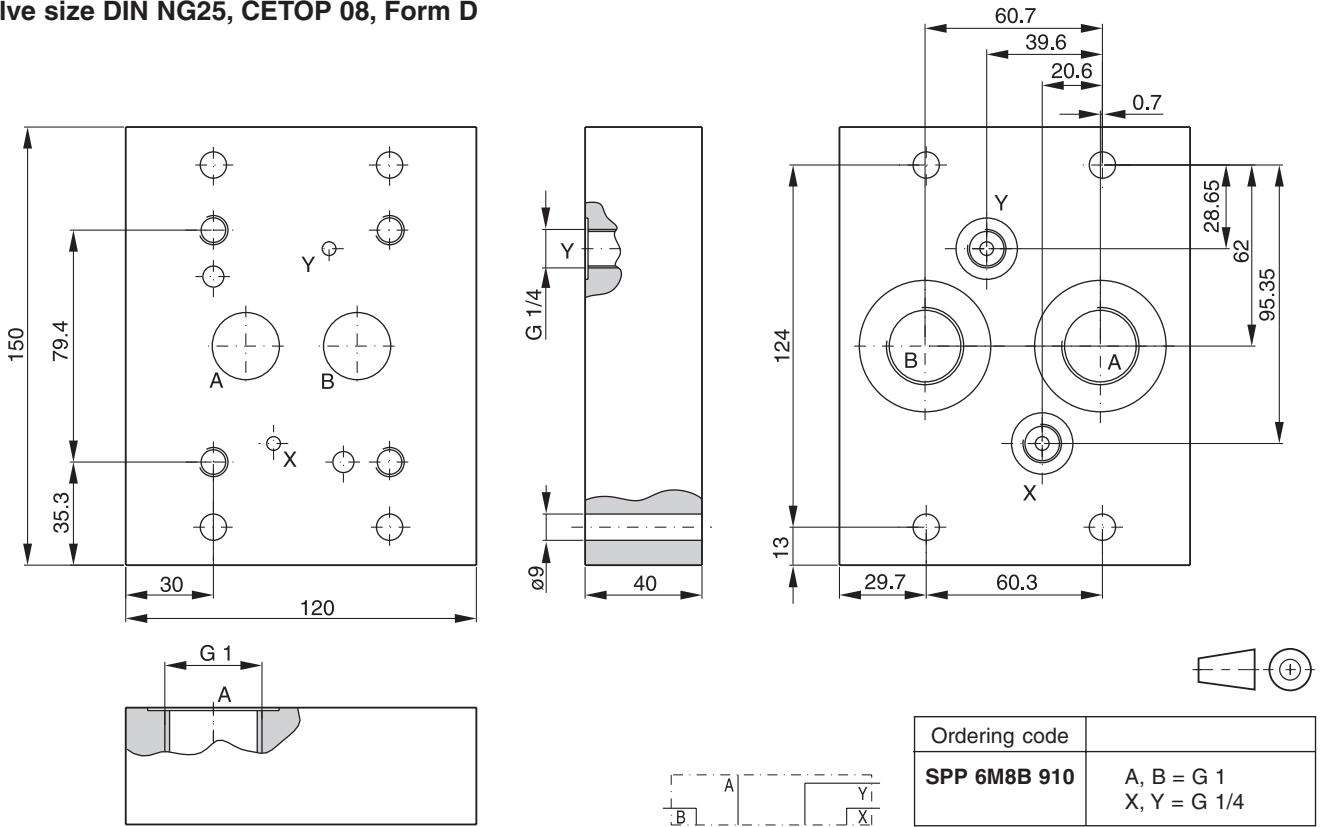


**Bold letters =  
 Short-term availability**

**Valve size DIN NG10, CETOP 05, Form D**

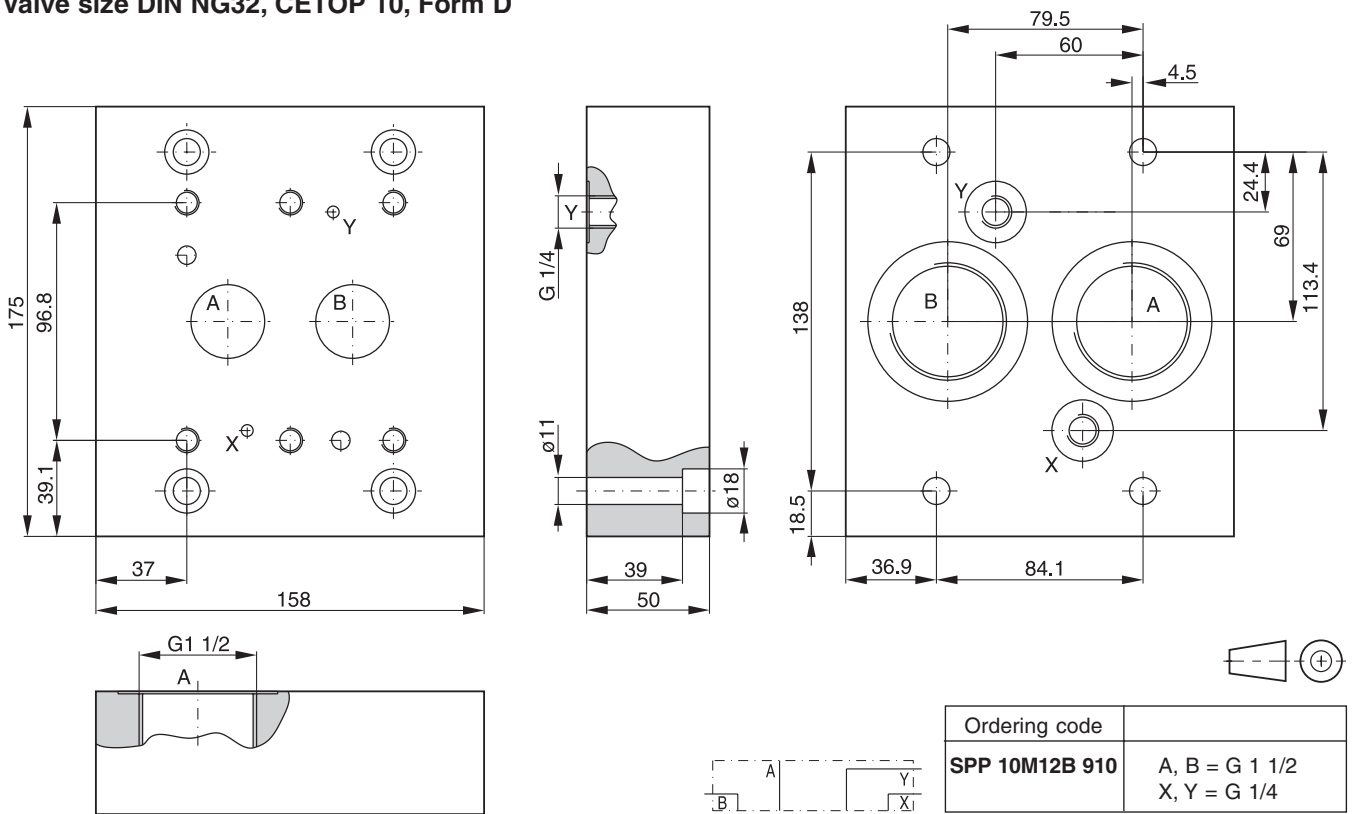


**Valve size DIN NG25, CETOP 08, Form D**

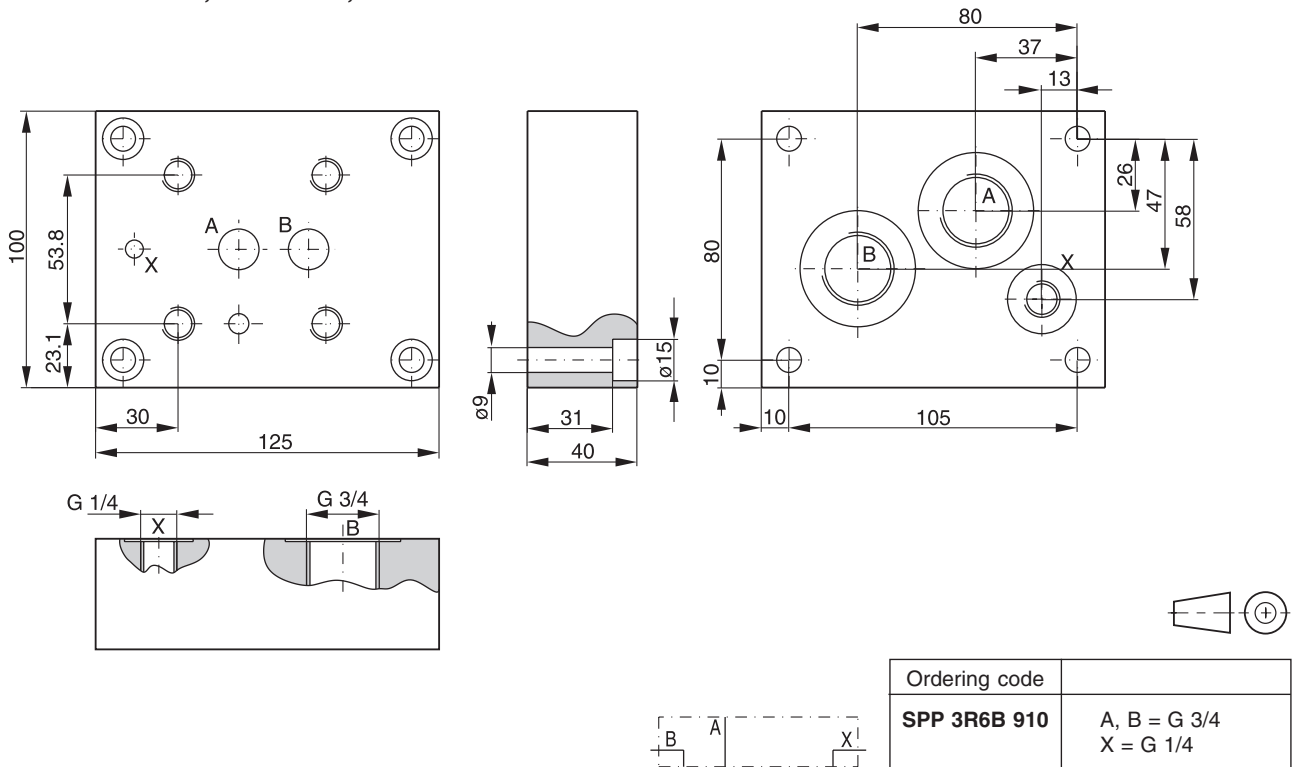


**Bold letters =  
 Short-term availability**

**Valve size DIN NG32, CETOP 10, Form D**



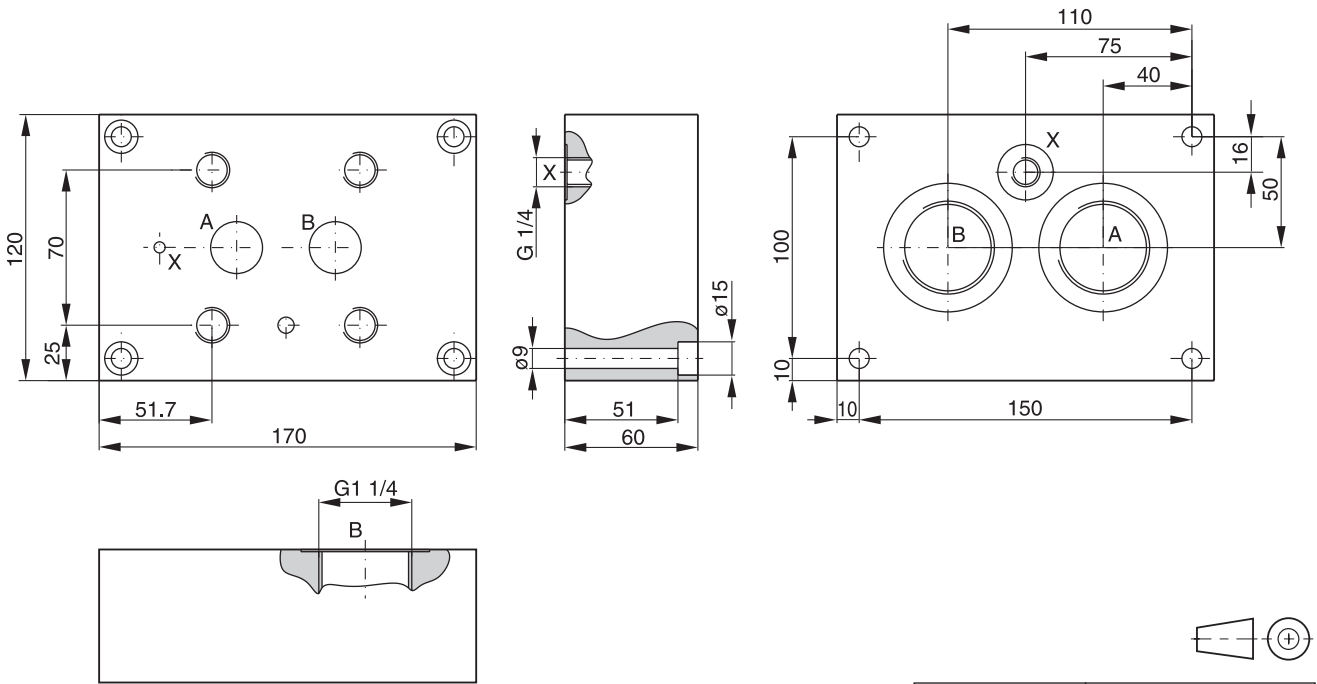
**Valve size DIN NG10, CETOP 05, Form E**



**Bold letters =  
 Short-term availability**



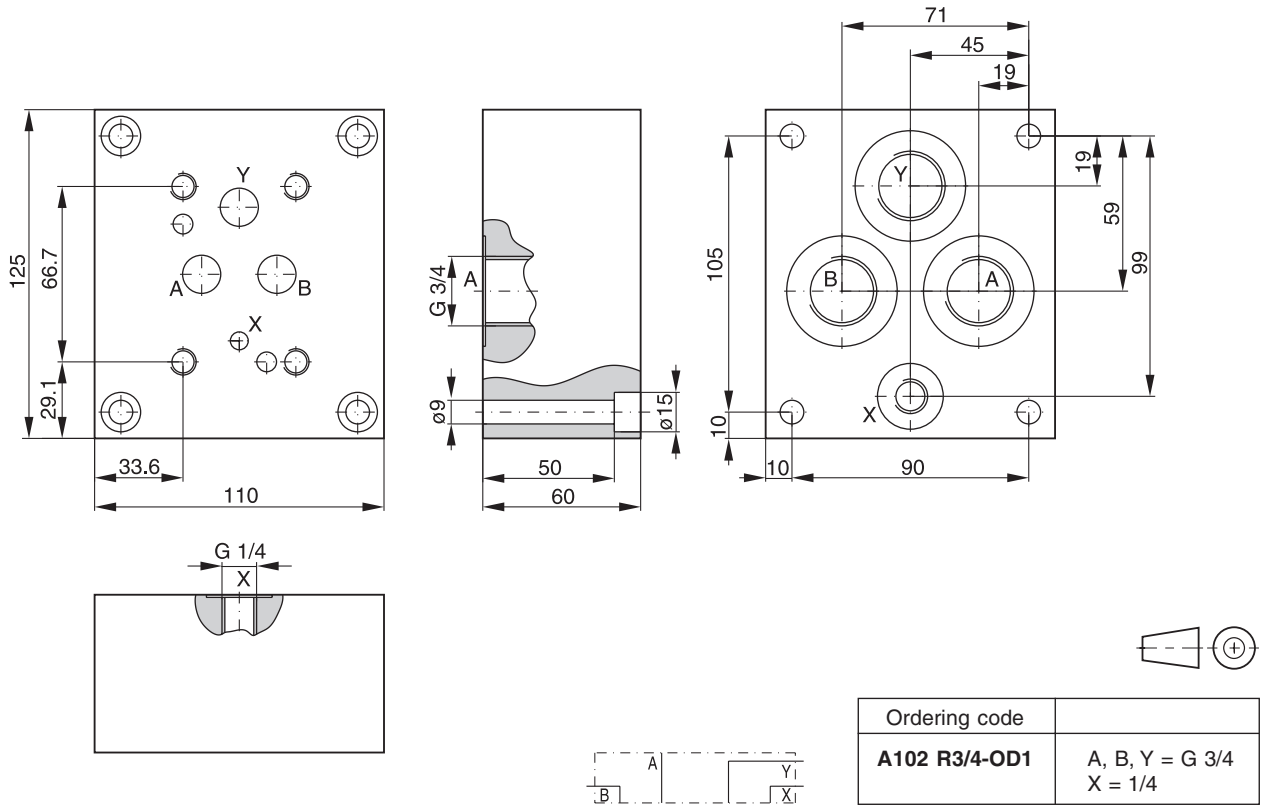
**Valve size DIN NG25, CETOP 08, Form E**



Ordering code	
<b>SPP 6R10B 910</b>	A, B = G 1 1/4 X = G 1/4

**Bold letters =**  
**Short-term availability**

Valve size DIN NG10, for pressure valves VB and VM



**Bold letters =**  
**Short-term availability**

**Characteristics**

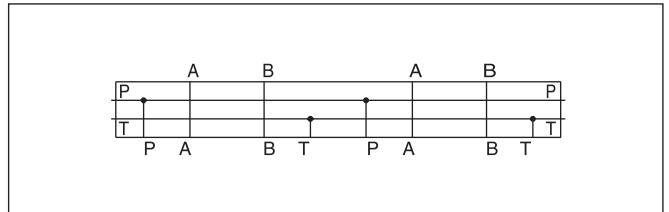
**General**

Manifolds are used to save space when connecting several directional control valves to a common pressure and return line.

Diverse switching arrangements are possible when used in combination with intermediate plate devices and directional control valves. Plugs without designations must not be removed.

**Features**

- Because of the large drilling diameters the pressure drop through the manifold is very low.
- P- and T-ports are located on both front faces.
- All connection ports are designated.



**Technical Data**

Interface	DIN 24340, Form A, CETOP, ISO
Mounting position	unrestricted (valve axis preferably horizontal)
Working pressure	[bar] max. 350

**Ordering code**

**MSP** Multiple subplate, standard

**Stations**

Code	Stations
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8

**Nominal size**

Code	Nominal size
D2	CETOP 3
D3	CETOP 5

**Port size**

**B** BSPP Port thread

**Port location**

Code	Port Location
-	A + B rear
A	A + B side

**9** Metric fastening screws

**Design series**

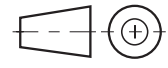
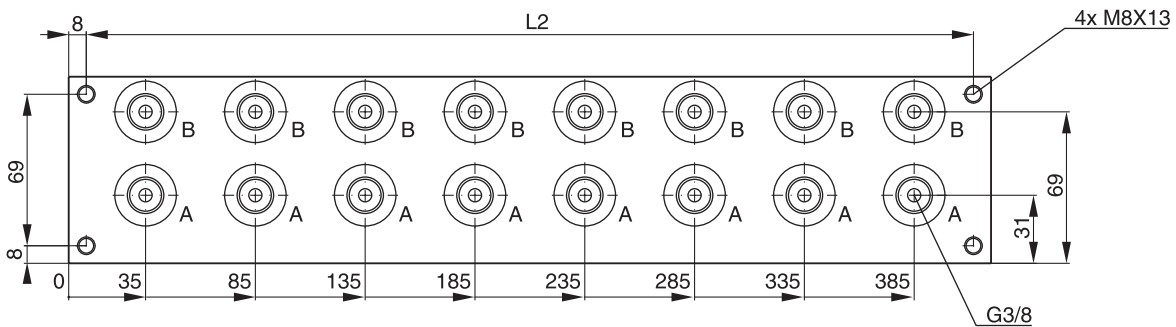
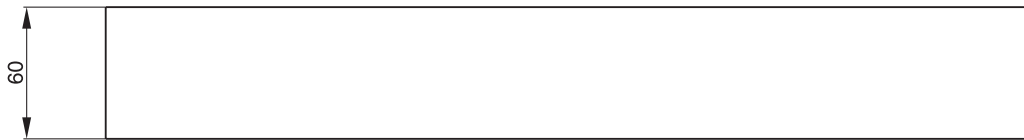
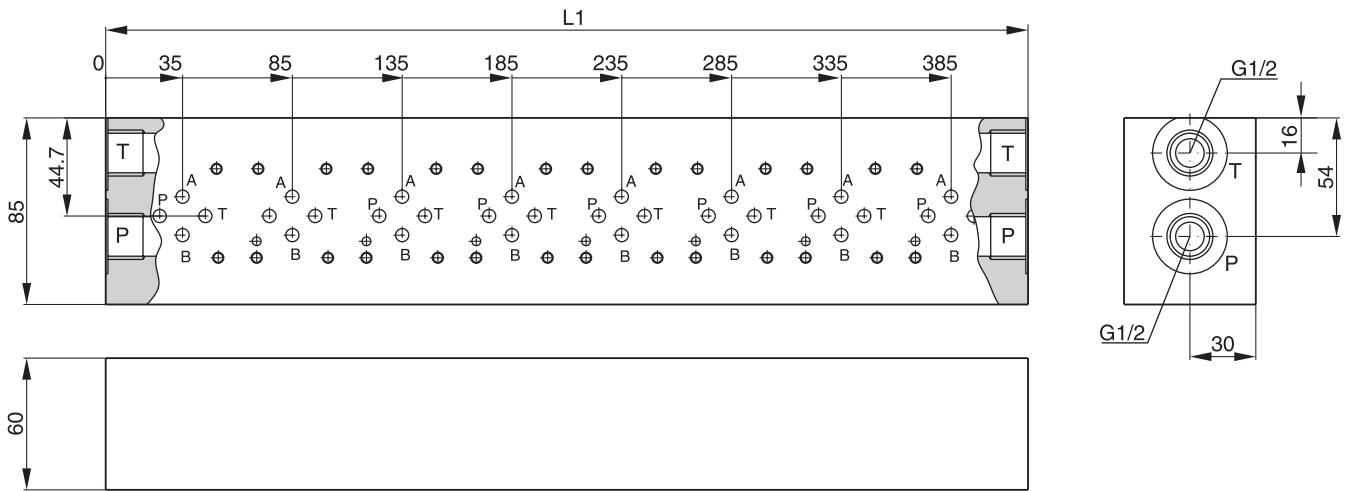
Code	Design series
10	CETOP 3
30	CETOP 5

**Port Size**

Code	Port Size
3	CETOP 3 A + B = G 3/8" P + T = G 1/2"
4	CETOP 5 A + B = G 1/2" P = G 3/4" T = G 1"

**Bold letters =**  
Short-term availability

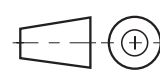
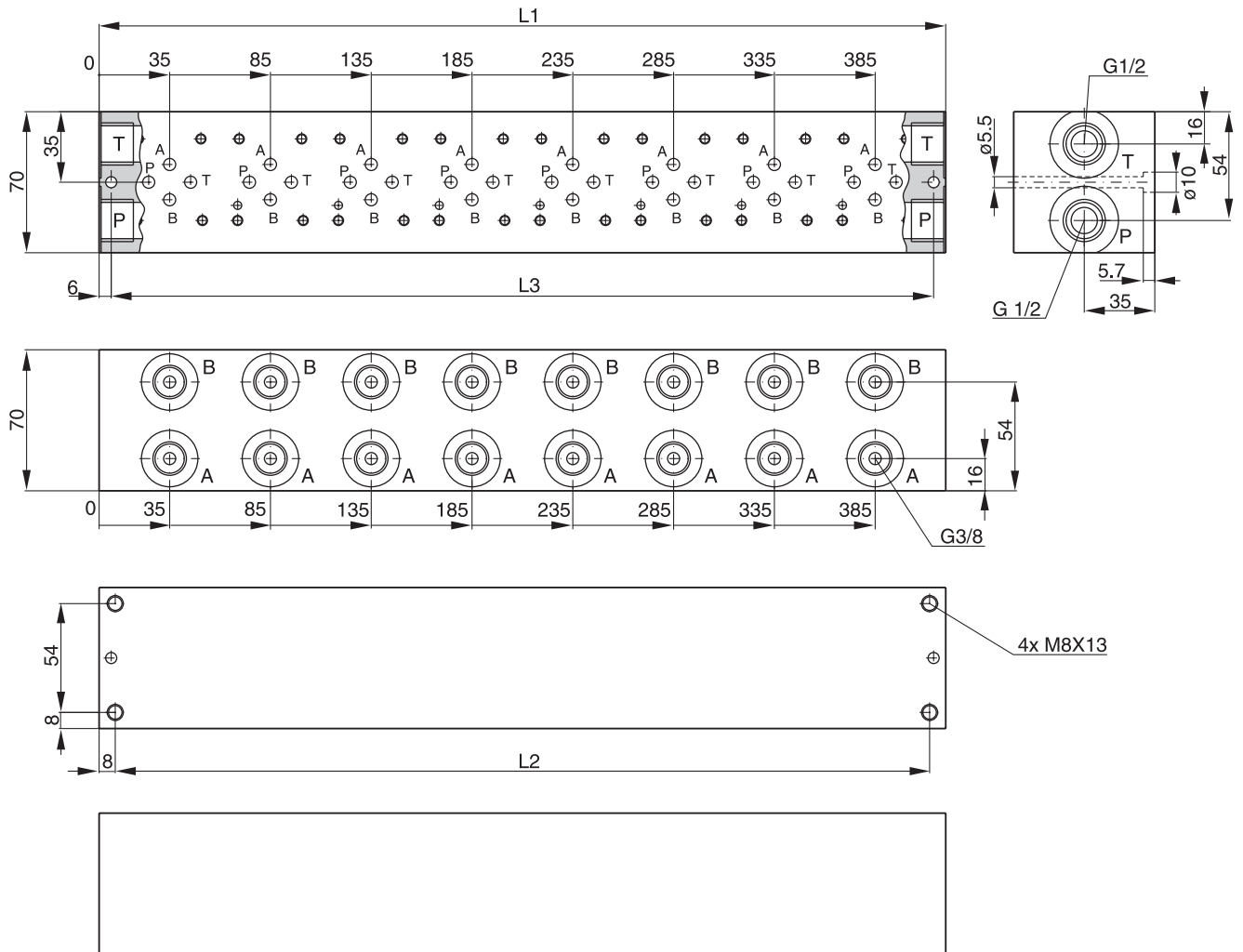
**MSP\*D23 B910**



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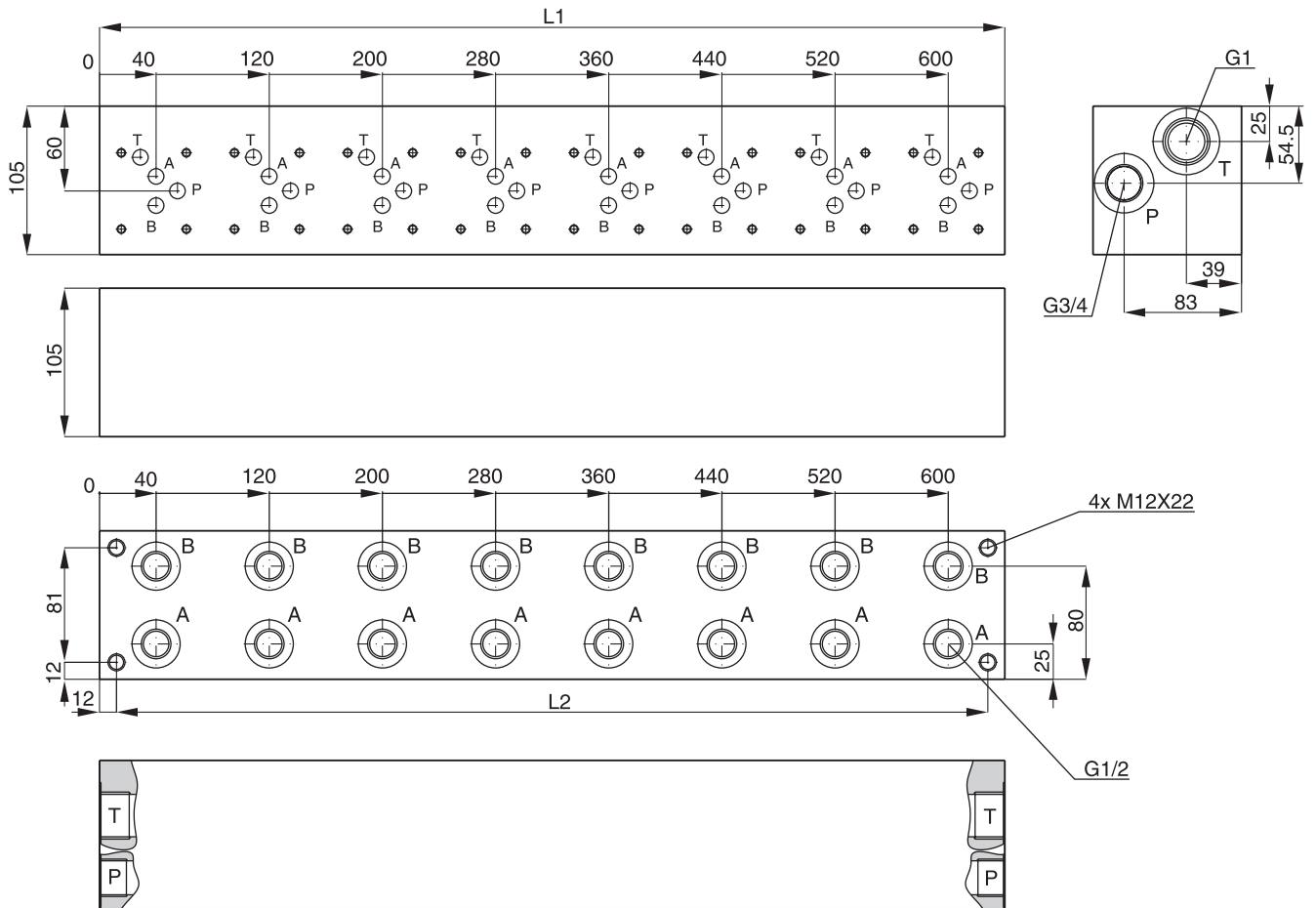
Code	Nominal size	Stations	L1 [mm]	L2 [mm]	Port		Test points	Weight [kg]	Valves	
					P, T	A, B				
MSP1 D23 B910	CETOP 3	1	70	54	G1/2	G3/8	—	2.4	D1VW	
MSP2 D23 B910		2	120	104						4.0
MSP3 D23 B910		3	170	154						5.8
MSP4 D23 B910		4	220	204						7.5
MSP5 D23 B910		5	270	254						9.2
MSP6 D23 B910		6	320	304						10.9
MSP7 D23 B910		7	370	354						12.6
MSP8 D23 B910		8	420	404						14.3

**MSP\*D23 BA910**

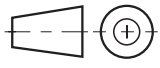


Code	Nominal size	Stations	L1 [mm]	L2 [mm]	L3 [mm]	Port		Test points	Weight [kg]	Valves
						P, T	A, B			
MSP1 D23 BA910	CETOP 3	1	70	54	58	G1/2	G3/8	—	2.3	D1VW
MSP2 D23 BA910		2	120	104	108					
MSP3 D23 BA910		3	170	154	158					
MSP4 D23 BA910		4	220	204	208					
MSP5 D23 BA910		5	270	254	258					
MSP6 D23 BA910		6	320	304	308					
MSP7 D23 BA910		7	370	354	358					
MSP8 D23 BA910		8	420	404	408					

**MSP\*D34 B930**

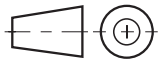
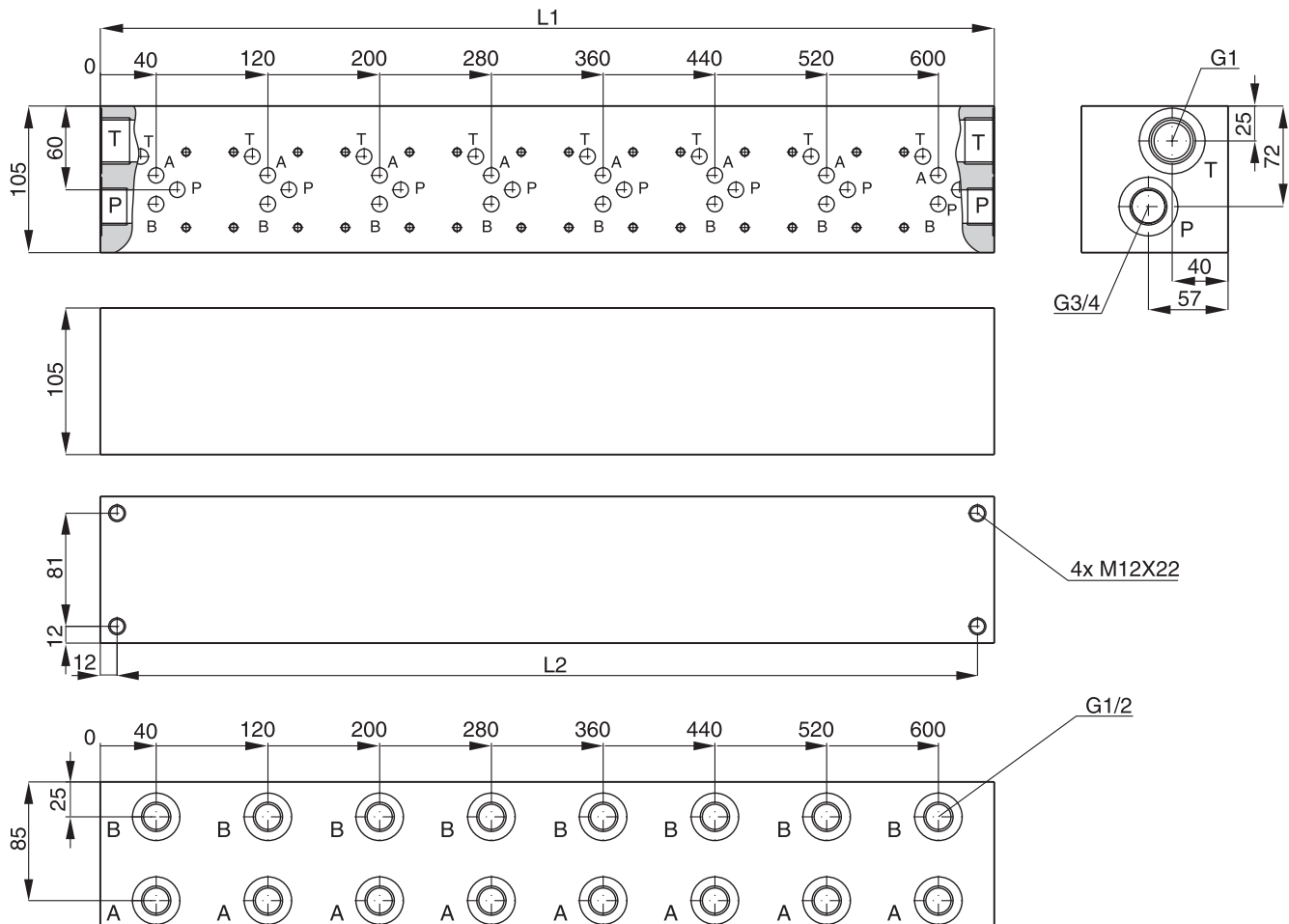


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Code	Nominal size	Stations	L1 [mm]	L2 [mm]	Port			Test points	Weight [kg]	Valves
					P	T	A, B			
MSP1 D34 B930	CETOP 5	1	80	56	G3/4	G1	G1/2	—	5.9	D3W
MSP2 D34 B930		2	160	136						
MSP3 D34 B930		3	240	216						
MSP4 D34 B930		4	320	296						
MSP5 D34 B930		5	400	376						
MSP6 D34 B930		6	480	456						
MSP7 D34 B930		7	560	536						
MSP8 D34 B930		8	640	616						

**MSP\*D34 BA930**

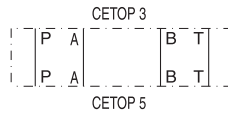
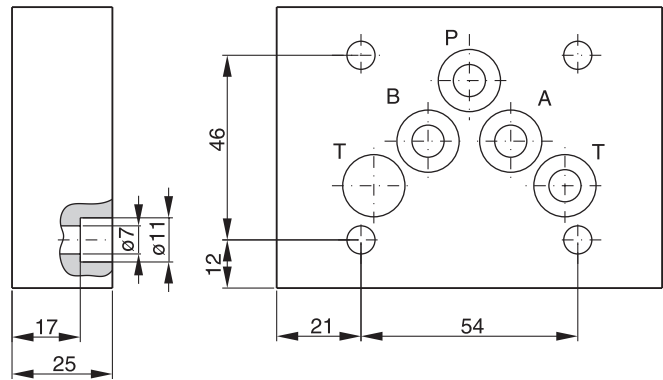
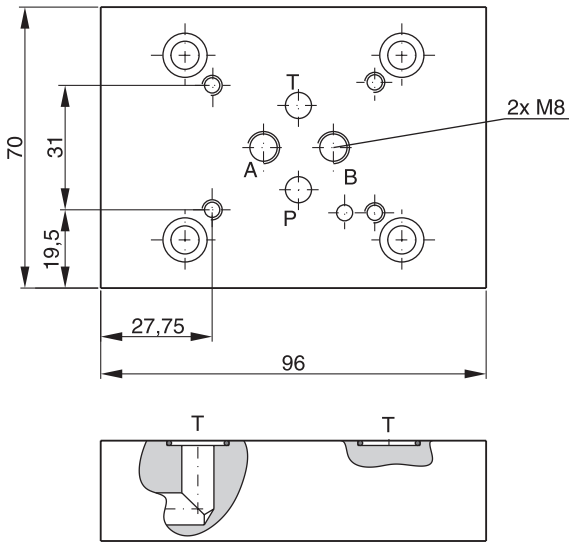


Code	Nominal size	Stations	L1 [mm]	L2 [mm]	Port			Test points	Weight [kg]	Valves
					P	T	A, B			
MSP1 D34 BA930	CETOP 5	1	80	56				—	5.9	D3W
MSP2 D34 BA930		2	160	136						
MSP3 D34 BA930		3	240	216						
MSP4 D34 BA930		4	320	296						
MSP5 D34 BA930		5	400	376	G3/4	G1	G1/2			
MSP6 D34 BA930		6	480	456						
MSP7 D34 BA930		7	560	536						
MSP8 D34 BA930		8	640	616						





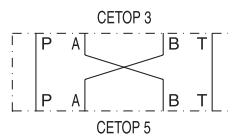
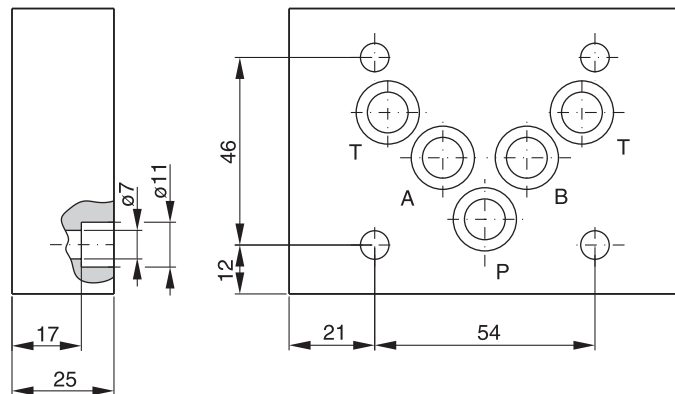
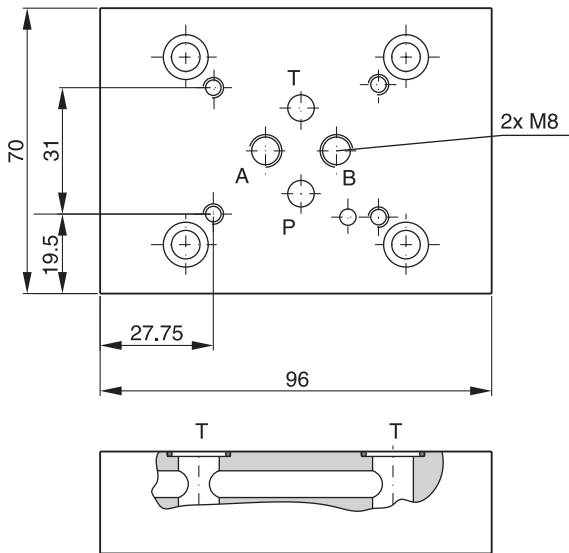
**Adaptor Plate PADA 1007-AA-BB, CETOP 3/5**



Ordering code	
<b>PADA1007-AA-BB</b>	CETOP 3 / 5

O-rings included in delivery.

**Adaptor Plate PADA 1007/A-B/B-A, CETOP 3/5**

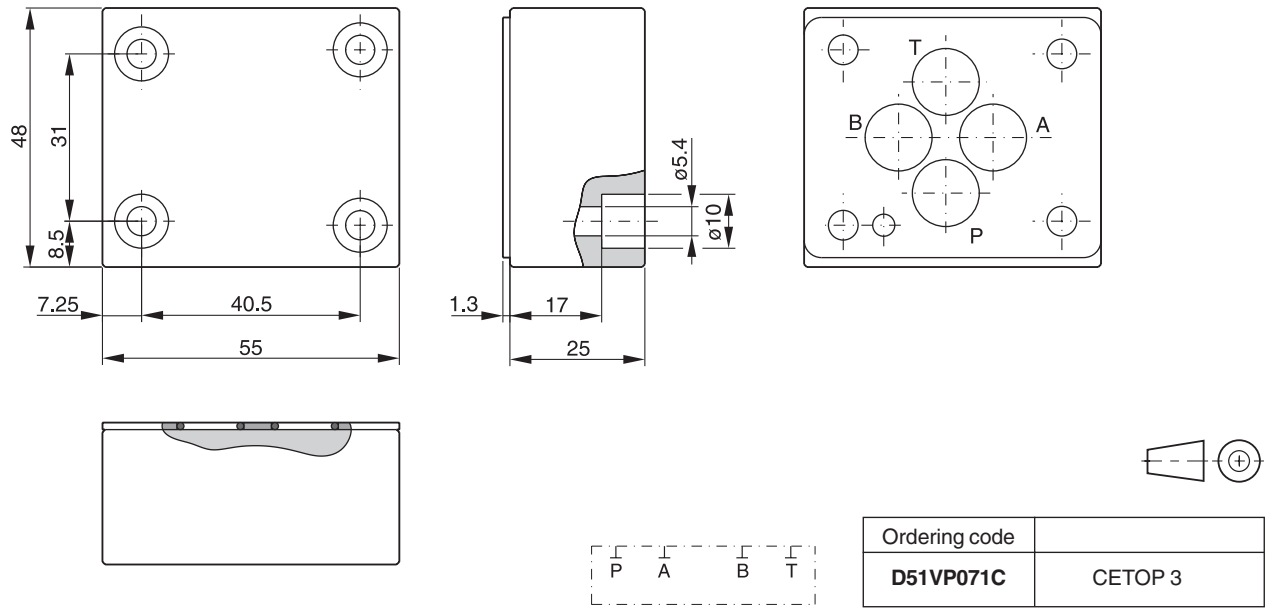


Ordering code	
<b>PADA1007/A-B/B-A</b>	CETOP 3 / 5

O-rings included in delivery.

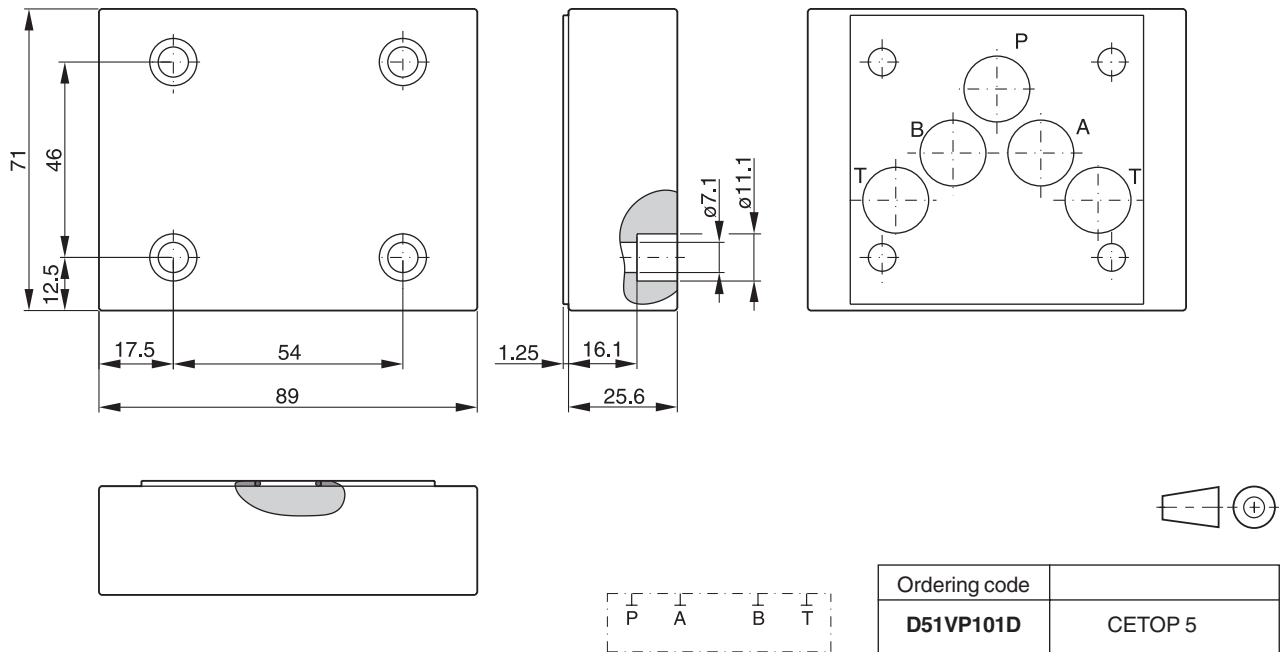
**Bold letters =**  
**Short-term availability**

**Cover Plate D51VP071C, CETOP 3**



O-rings and O-ring plate included in delivery.

**Cover Plate D51VP101D, CETOP 5**



O-rings and O-ring plate included in delivery.

**Bold letters =**  
**Short-term availability**

**Characteristics**

**General**

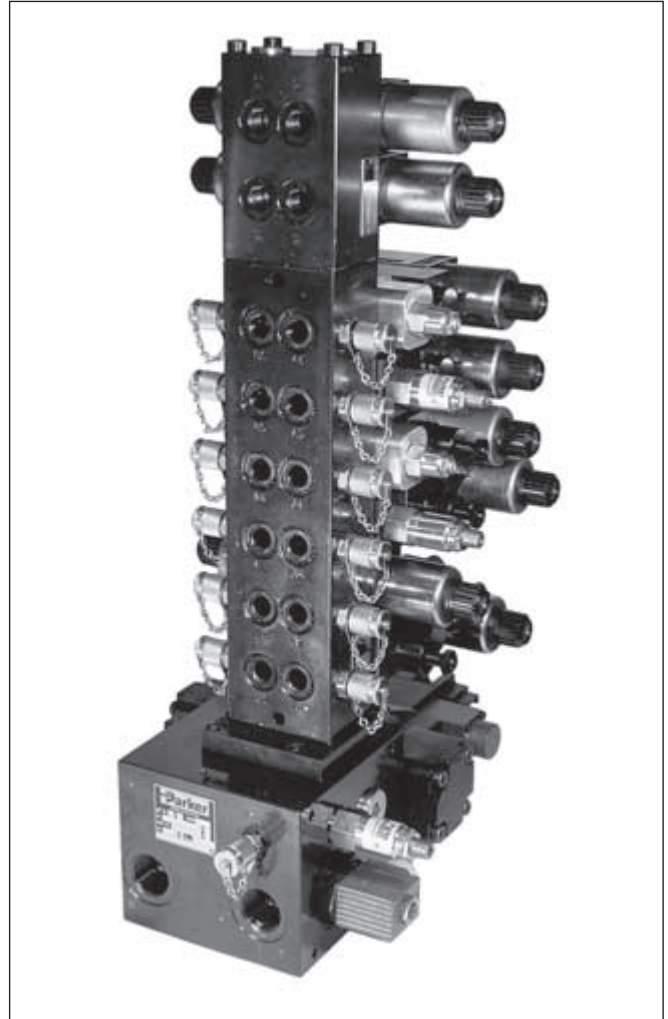
Due to the modular system, Multi Station Manifolds enable the hydraulic specialists to set up an equipment in a very comfortable way.

These manifolds can be combined up to thirteen stations of CETOP 3.

A base block with reference to the application can be assembled through an adaptor.

**Features**

- Because of the large drilling diameters the pressure drop through the manifolds is very low.
- P- and T-ports are located on both front faces.
- All connection ports are designated.

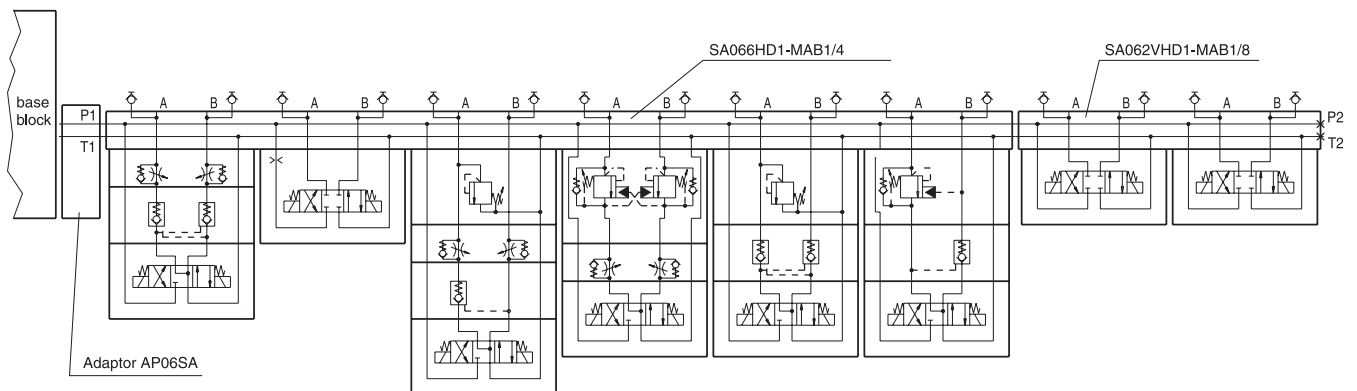


Exemplary arrangement of multi station manifolds and valve equipment.

**Technical Data**

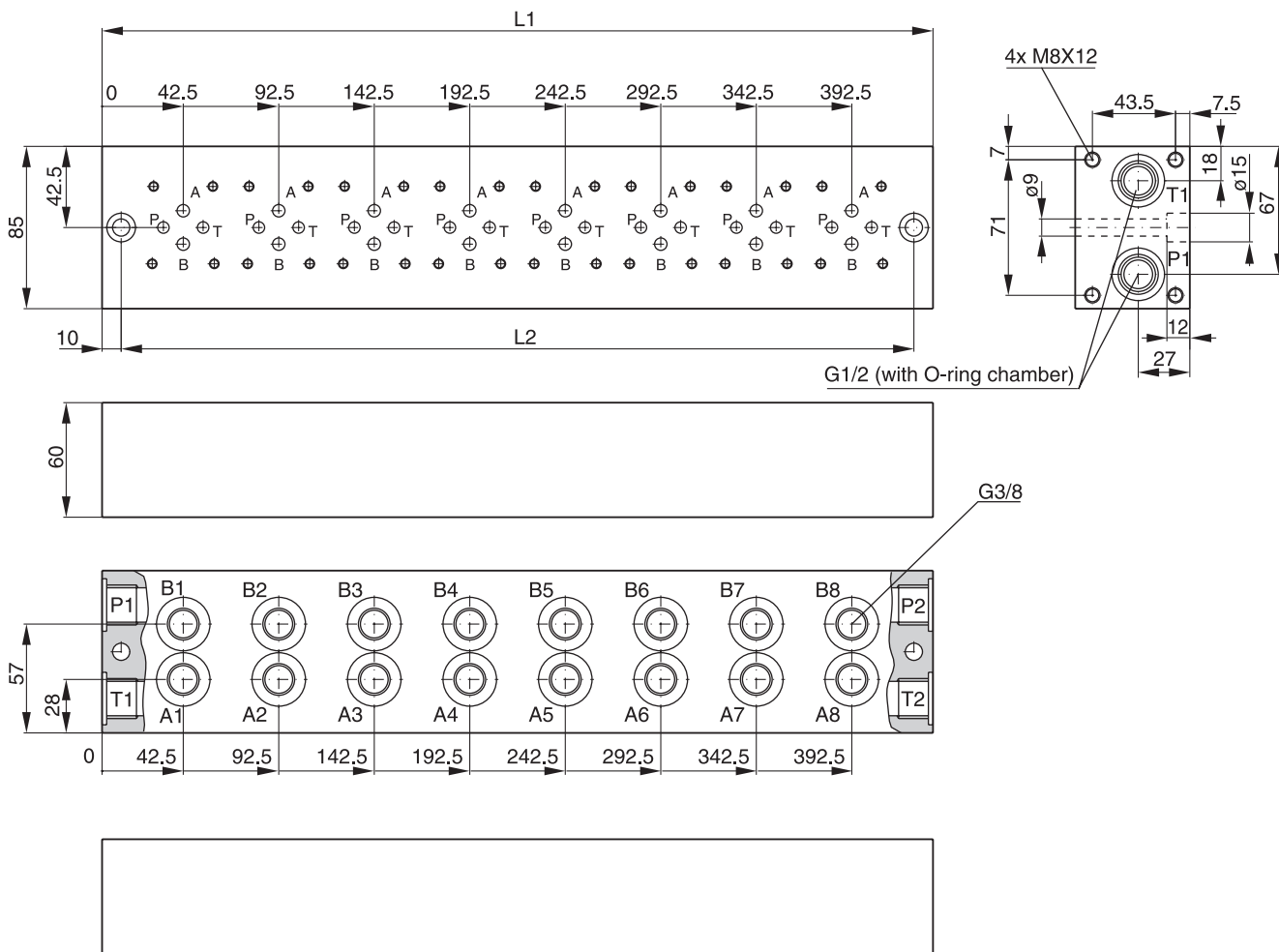
Interface	DIN 24340, Form A, CETOP, ISO
Mounting position	unrestricted, (valve axis preferably horizontal)
Working pressure [bar]	max. 350

**Typical example of a Multi Station Manifold Modular System**



**Dimensions**

**SA 06\* HD1**

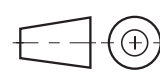
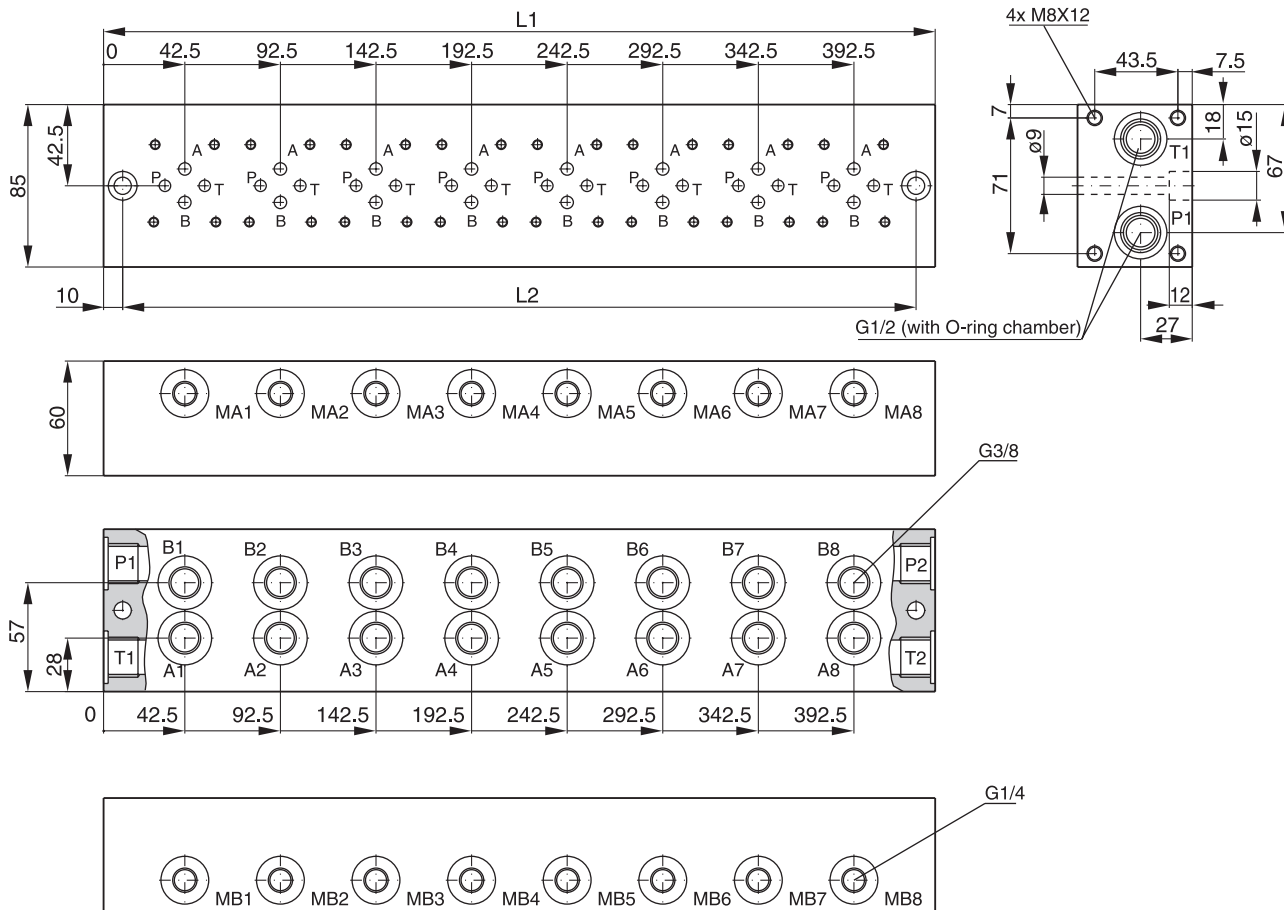


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Ordering code	Nominal size	Stations	L1 [mm]	L2 [mm]	Port		Test points	Weight [kg]	Valves
					P, T	A, B			
SA 062 HD1	CETOP 3	2	135	115	G1/2	G3/8	—	4.6	D1VW
SA 063 HD1		3	185	165					
SA 064 HD1		4	235	215					
SA 065 HD1		5	285	265					
SA 066 HD1		6	335	315					
SA 067 HD1		7	385	365					
SA 068 HD1		8	435	415					
SA 069 HD1		9	485	465					
SA 0610 HD1		10	535	515					

**Dimensions**

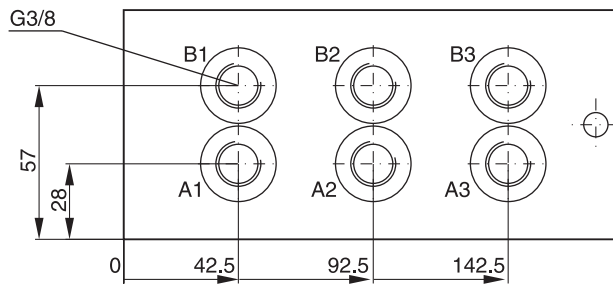
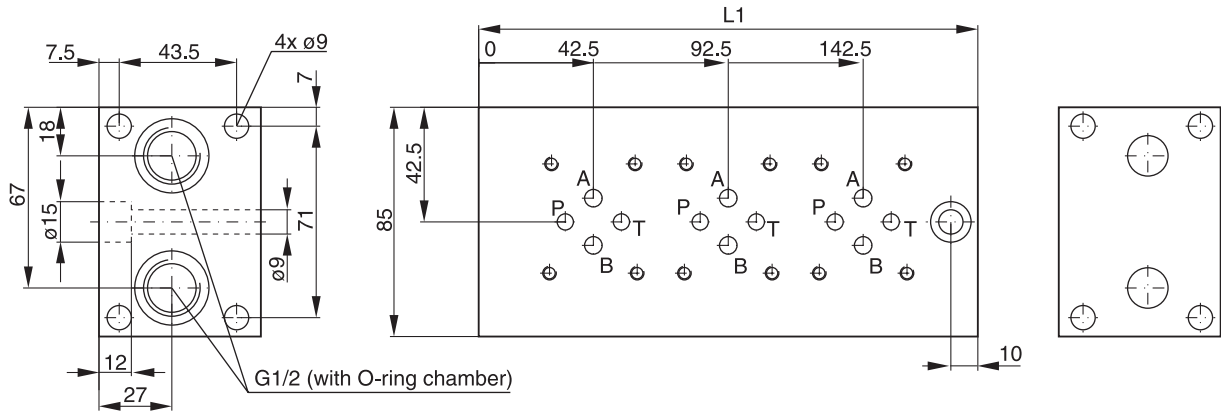
**SA 06\* HD1-MAB1/4**



Ordering code	Nominal size	Stations	L1 [mm]	L2 [mm]	Port		Test points	Weight [kg]	Valves
					P, T	A, B			
SA 062 HD1-MAB $\frac{1}{4}$	CETOP 3	2	135	115	G1/2	G3/8	G1/4	11.4	D1VW
SA 063 HD1-MAB $\frac{1}{4}$		3	185	165					
SA 064 HD1-MAB $\frac{1}{4}$		4	235	215					
SA 065 HD1-MAB $\frac{1}{4}$		5	285	265					
SA 066 HD1-MAB $\frac{1}{4}$		6	335	315					
SA 067 HD1-MAB $\frac{1}{4}$		7	385	365					
SA 068 HD1-MAB $\frac{1}{4}$		8	435	415					
SA 069 HD1-MAB $\frac{1}{4}$		9	485	465					
SA 0610 HD1-MAB $\frac{1}{4}$		10	535	515					

**Dimensions**

**SA 06\* VHD1**

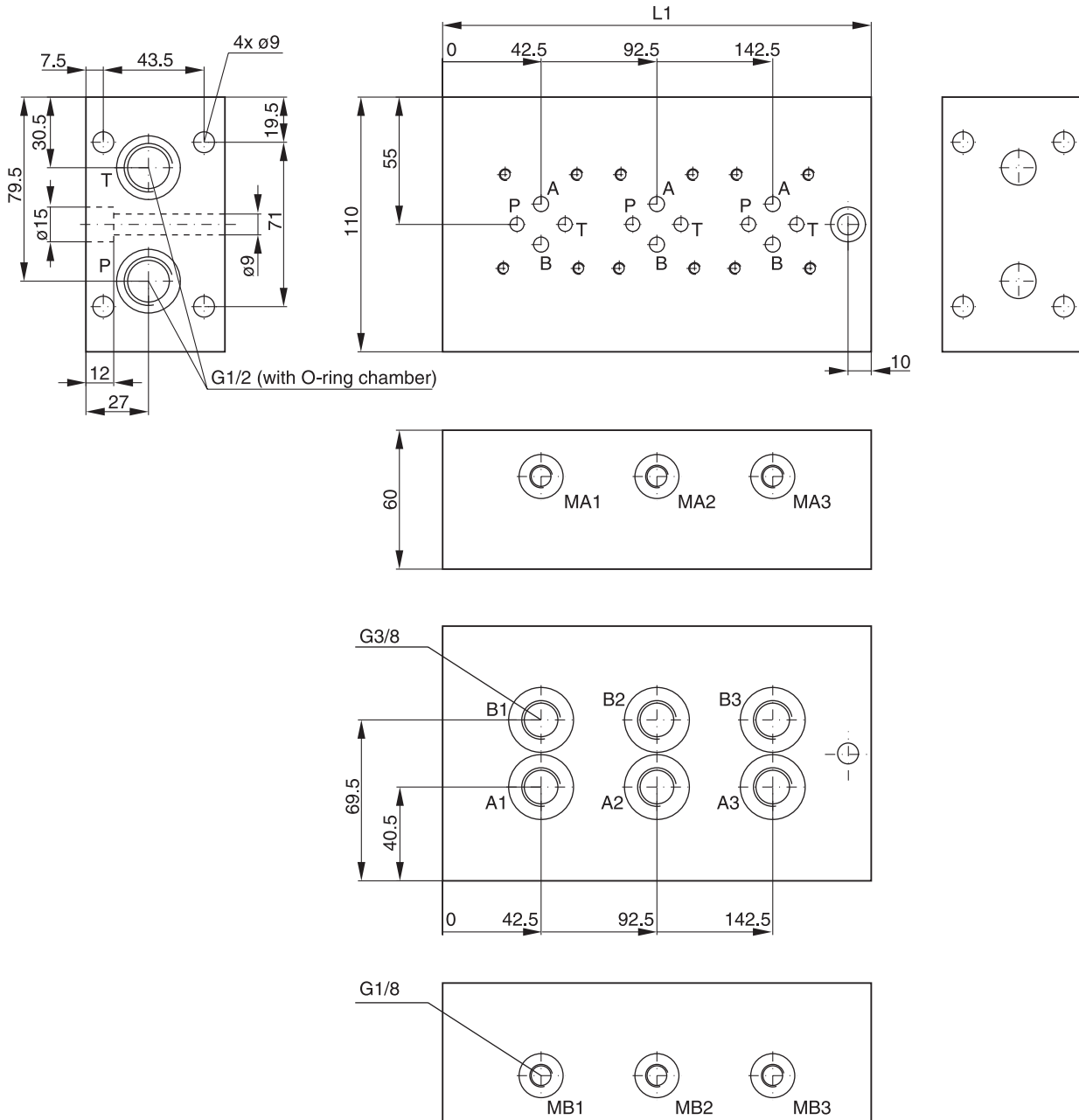


4 fastening screws M8 and 2 O-rings included in delivery.



Ordering code	Nominal size	Stations	L1 [mm]	Port		Test points	Weight [kg]	Valves
				P, T	A, B			
SA 061 VHD1	CETOP 3	1	85	G1/2	G3/8	-	3.4	D1VW
SA 062 VHD1		2	135					
SA 063 VHD1		3	185					

**SA 06\* VHD1-MAB1/8**

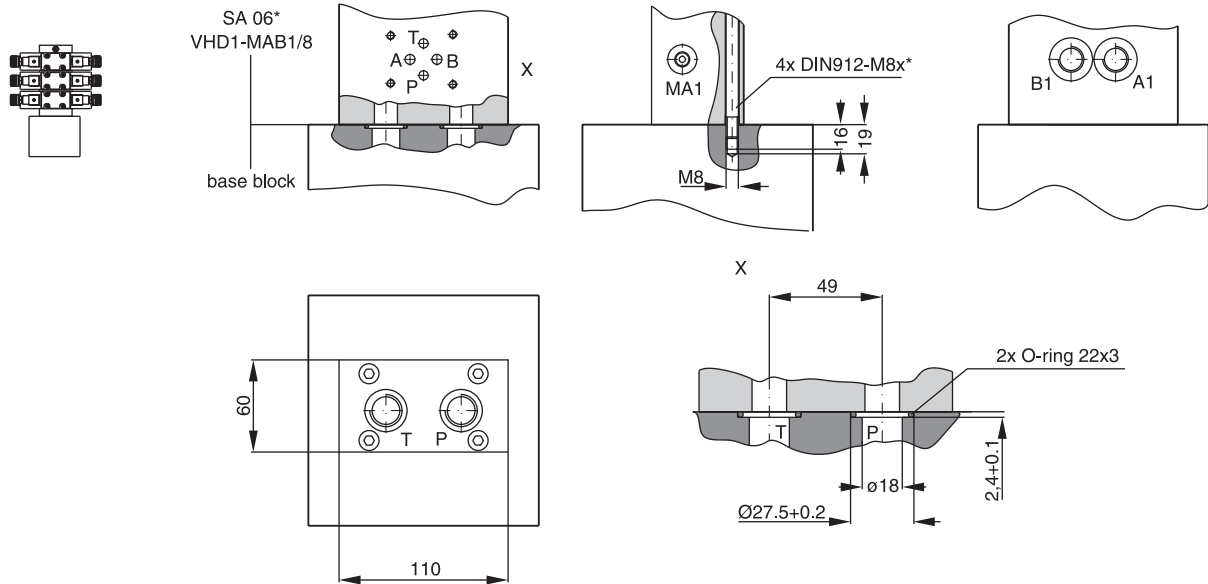


4 fastening screws M8 and 2 O-rings included in delivery.

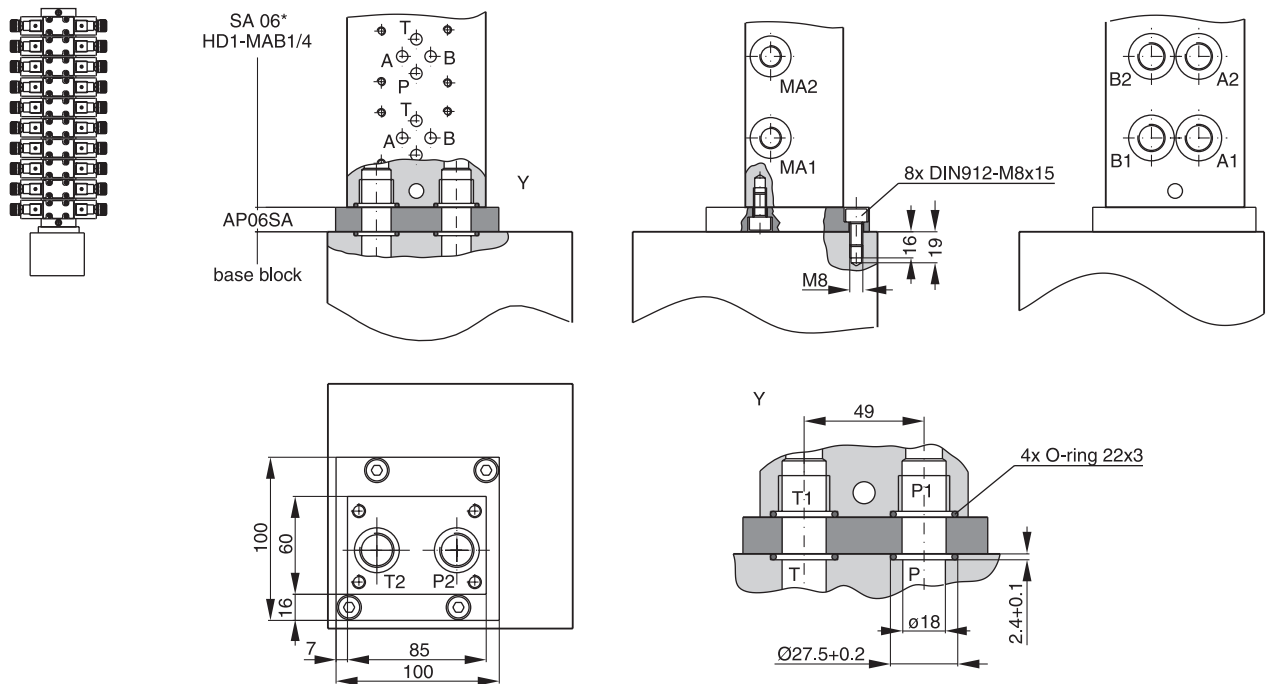


Ordering code	Nominal size	Stations	L1 [mm]	Port		Test points	Weight [kg]	Valves
				P, T	A, B			
SA061 VHD1-MAB1/8	CETOP 3	1	85	G1/2	G3/8	G1/8	4.4	D1VW
SA062 VHD1-MAB1/8		2	135					
SA063 VHD1-MAB1/8		3	185					

**Direct stacking possible, max. 3 positions**

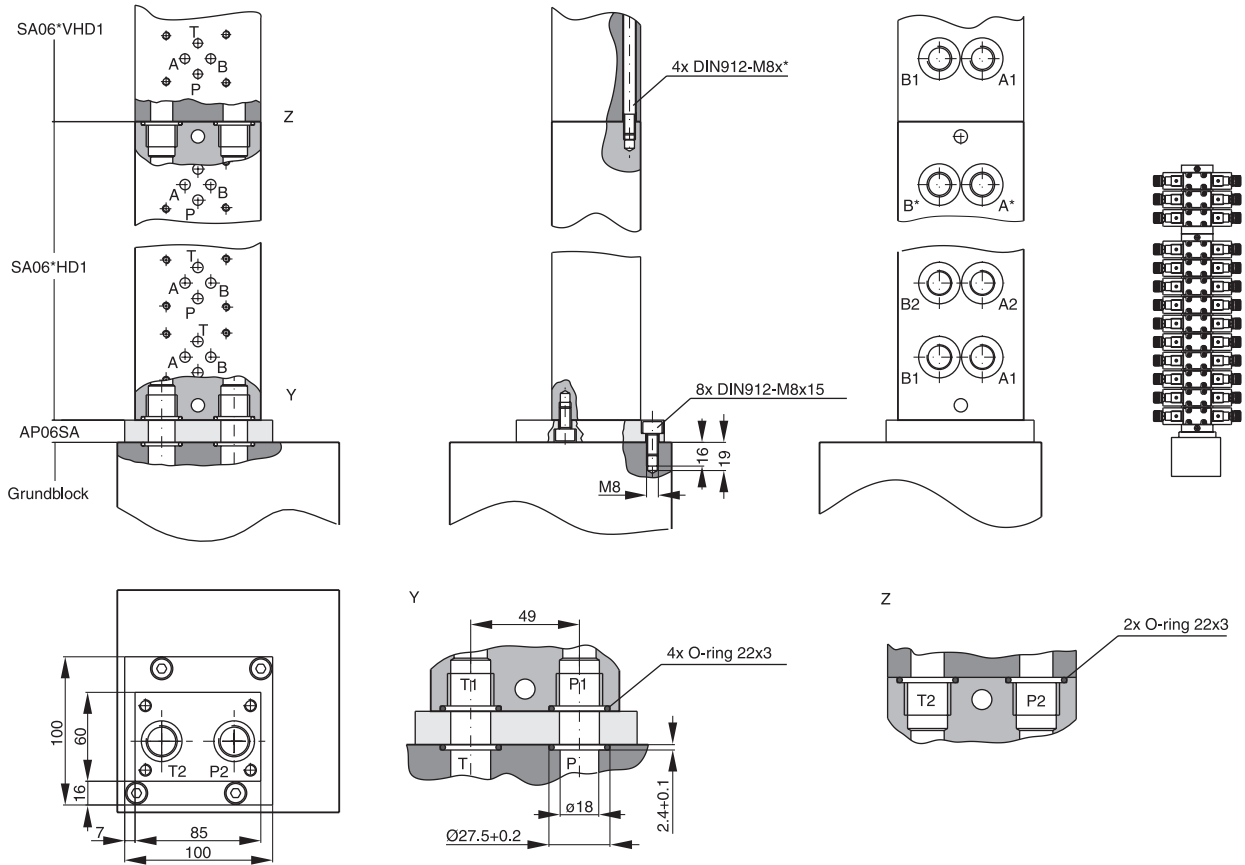


**Stacking possible with adaptor AP06SA, 2-10 positions**





Stacking possible with adaptor AP06SA, 2-10 positions, can be extended by 1-3 positions

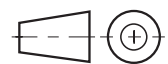
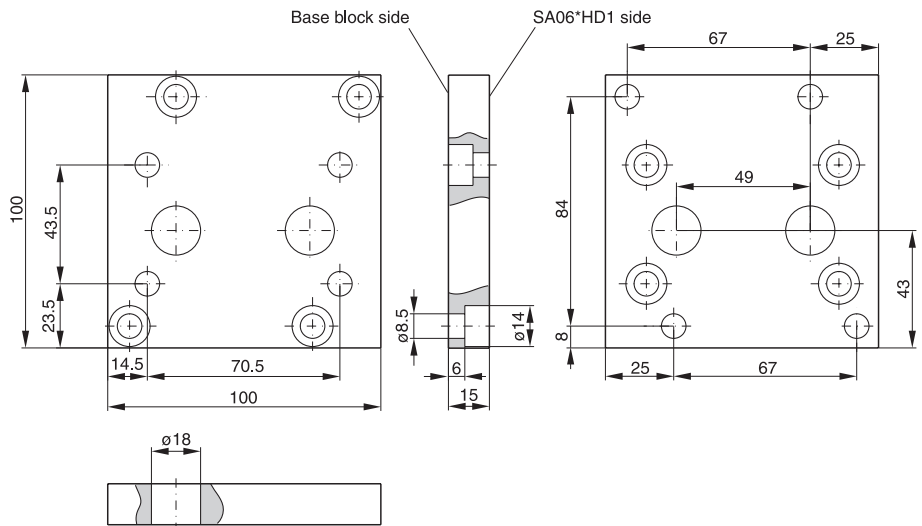


**Adaptor AP06SA**

In order to install the manifold SA06\*HD1 with up to 10 valve positions, the adaptor AP06SA is to be placed on the base block.

Ordering Code
<b>AP06SA</b>

8 fastening screws M8 and 4 O-rings included in delivery.





**General**

By using the pressure gauge selector valve in hydraulic systems, up to 5 or 10 measuring points can be connected to one pressure gauge. When measuring is completed, the gauge is pressure-relieved to prevent it being damaged by pressure surges. The accuracy and life of the pressure gauge are thus increased considerably.

**Design**

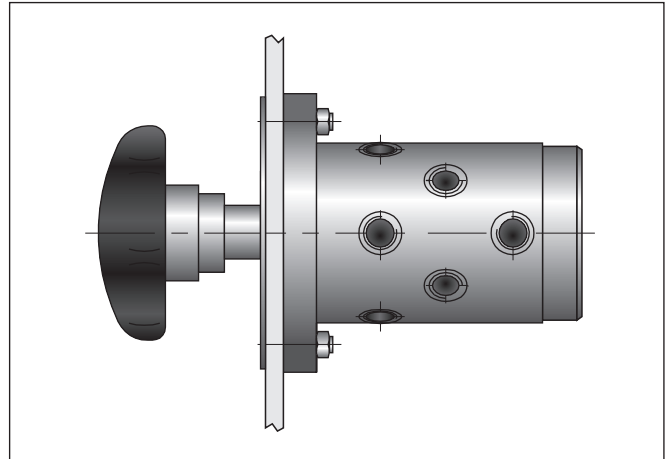
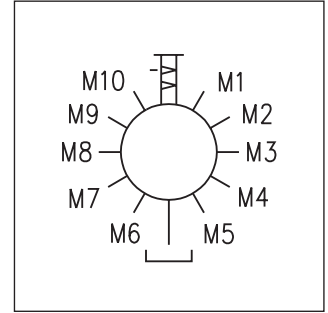
Pressure gauge selector valve with locking, pressure-relieving piston. Measuring point selection by marked rotary handle and graduated dial.

**Function**

To select one of the measuring points from 1 to 5 or 1 to 10, the rotary handle is pulled out fully, and turned to the left or right. When the measuring point is selected by means of the handle marking and the dial, the handle is pushed in and the pressure gauge loaded with the pressure present. The piston is locked in the measuring position by a catch. When measuring is completed, the handle is pulled out, to relieve the pressure gauge via the leakage oil line.

**Features**

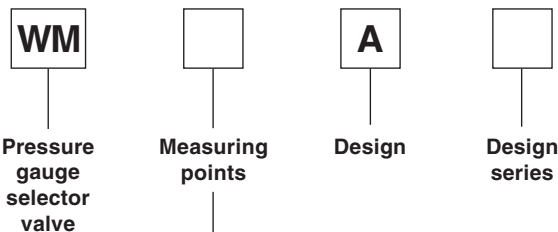
- 5 or 10 measuring positions optional.
- Extends the service life of the manometer by unloading the pressure.



**Technical Data**

Mounting position		unrestricted
Mounting		panel mounted
Connections		G1/8
Operation		by hand
Seals		fluorocarbon
Measuring position selection		by turning handle
Weight	[kg]	1.8
Working pressure	[bar]	max. 315
Viscosity range	[mm <sup>2</sup> /s]	12...230

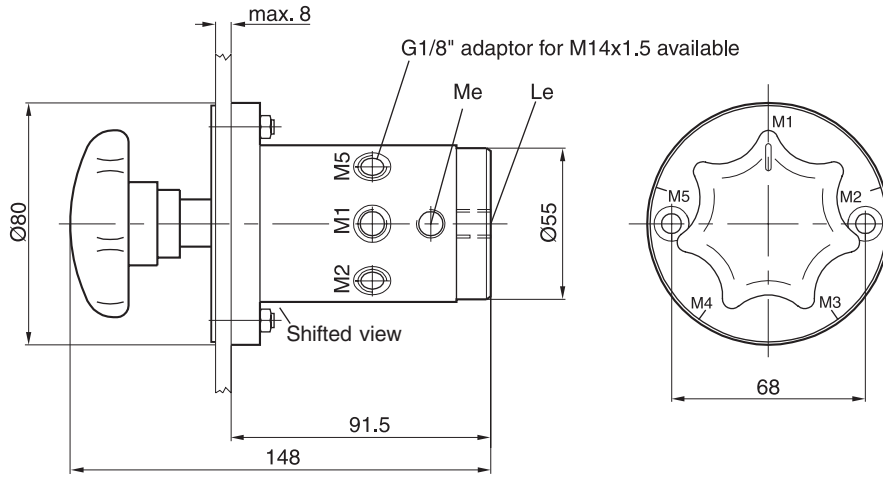
**Ordering code**



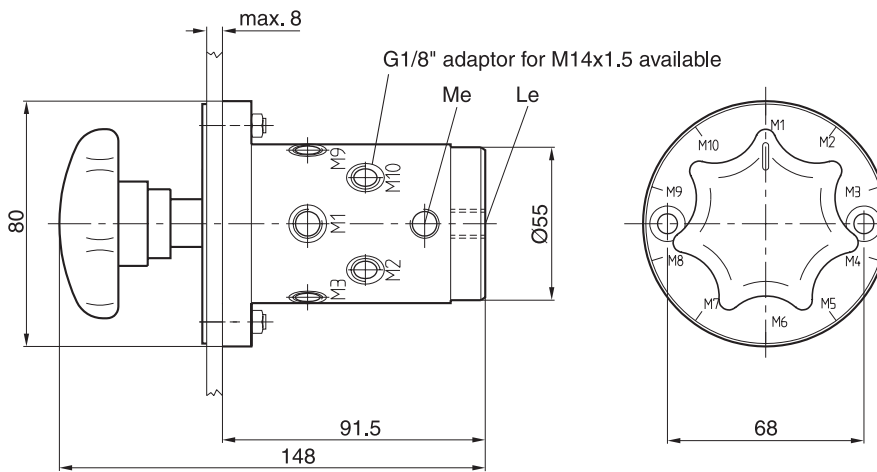
Code	Measuring pos.
<b>5</b>	<b>5 points</b>
<b>10</b>	<b>10 points</b>

**Bold letters =  
 Short-term availability**

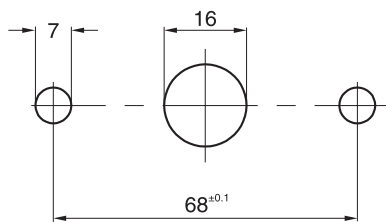
**WM 5 A \***



**WM 10 A \***



**Mounting opening**



**Characteristics**

**General**

The gauge isolator valve protects the gauge against damage from pressure surges.

**Function**

As soon as the button is released the valve automatically bypasses the fluid to the reservoir. This maintains the pressure gauge accuracy and prolongs its life expectancy.

**Features**

**WM1A1**

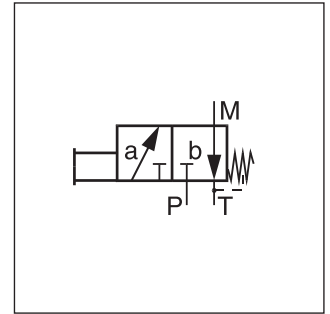
- Protects the manometer from pressure shocks
- Pipeline installation

**WM1-06A1**

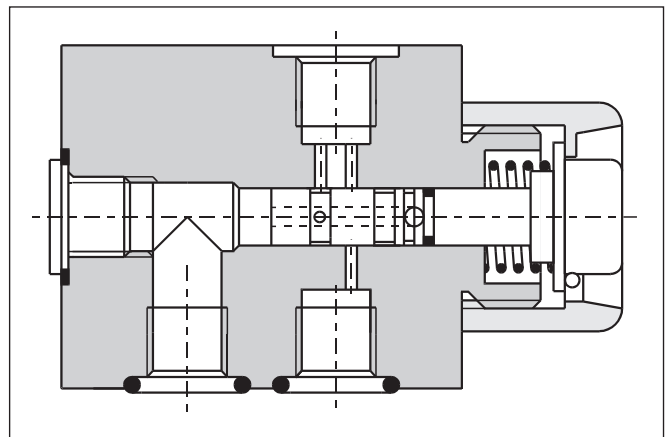
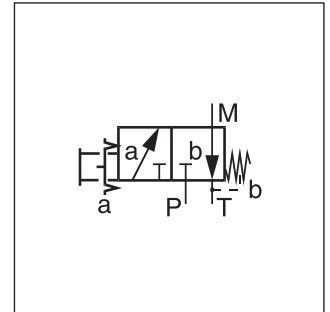
- Protects the manometer from pressure shocks
- Lockable
- Switch box installation, manifold mounting, panel mounting



WM1 A1



WM1-06 A1



WM1-06 A1

**Technical Data**

Code	WM1 A1	WM1-06 A1
Design	Protective valve with knurled knob, body made of casting steel, pipeline installation	Protective valve for switch box installation, manifold mounting, control plate mounting
Connections	G1/4	
Operation	by hand	by hand
Mounting position	unrestricted	unrestricted
Weight [kg]	0.36	1.4
Working pressure [bar]	max. 350	max. 315

Ordering Codes

**WM 1 A 1**

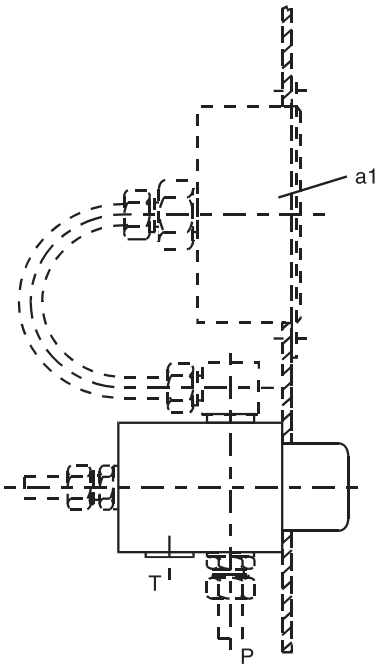
Manometer  
Shut-off  
Valve

**WM 1-06 A1**

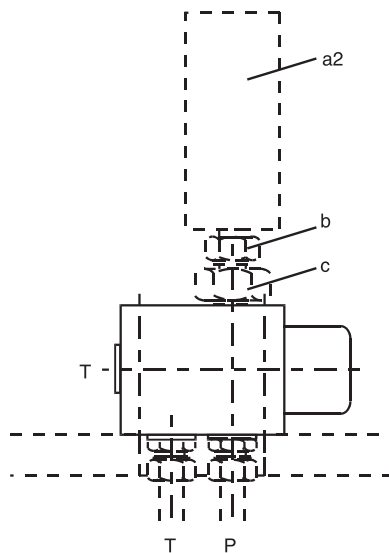
Manometer  
Shut-off  
Valve

**Bold letters =**  
Short-term availability

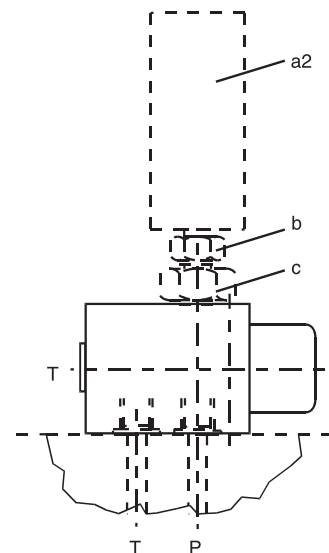
Installation Examples WM 1-06 A1



Switch box installation



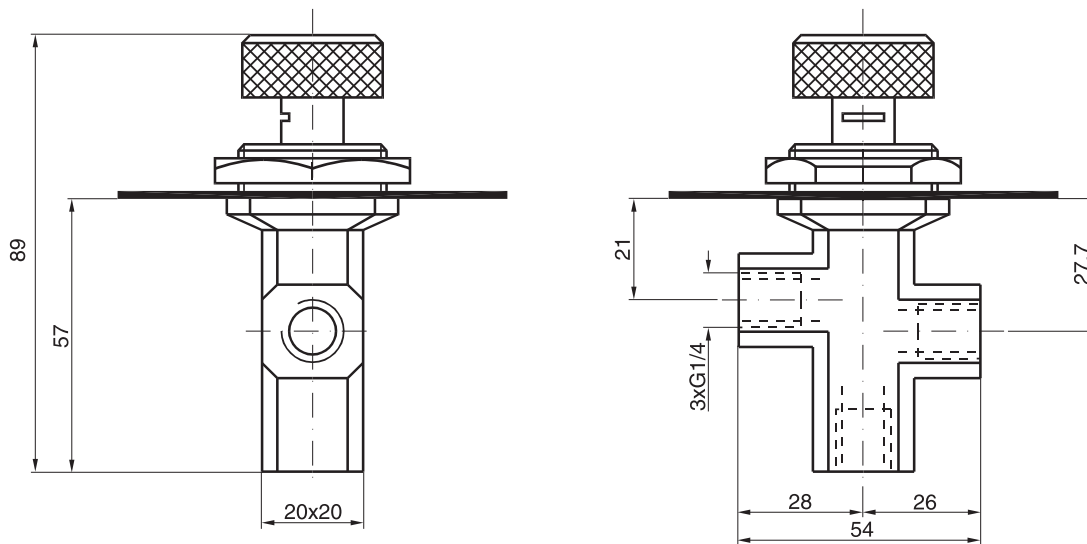
Manifold mounting  
(lined)



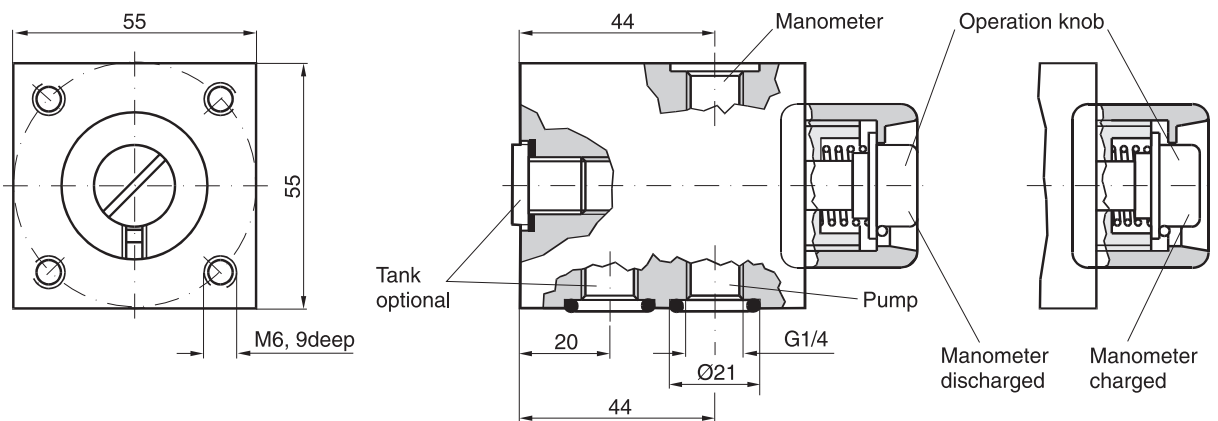
Panel mounting  
(O-ring seal)

- a1 - Manometer as per DIN 18063 form G or L
- a2 - Manometer as per DIN 18063 form A
- b - Fitting GAJ8-SR
- c - Fitting GAJ8-SR-ed

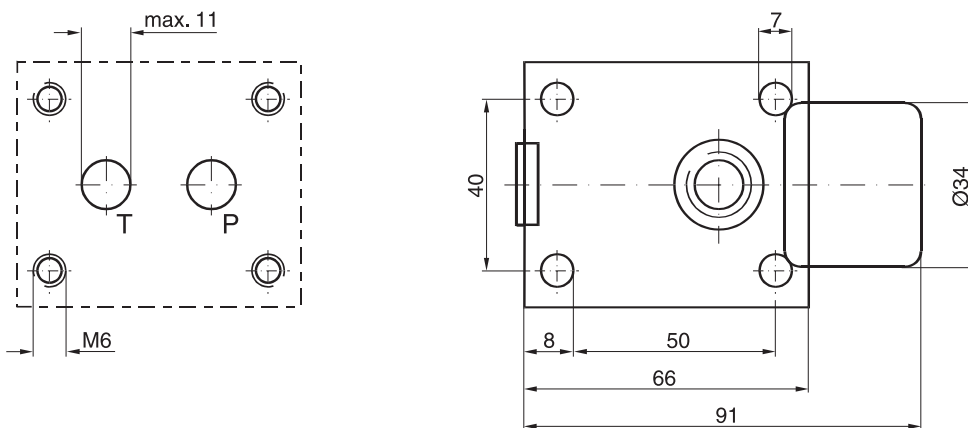
**WM 1 A 1**



**WM 1-06 A1**



**Mounting pattern**







**General**

Electro-hydraulic pressure switch provides an electric signal when sensed pressure rises above or falls below the selected setting.

**Function**

The spring loaded piston is hydraulically dampened. The pressure difference cannot be set, but is given by the switch hysteresis.

The required operating pressure is adjusted by a set-screw. Unauthorised adjustments may be prevented by fitting a cylinder lock. The electric element is a micro switch with snap-action contact. Three terminals permit application as "On", "Off" or "Changeover" switch.

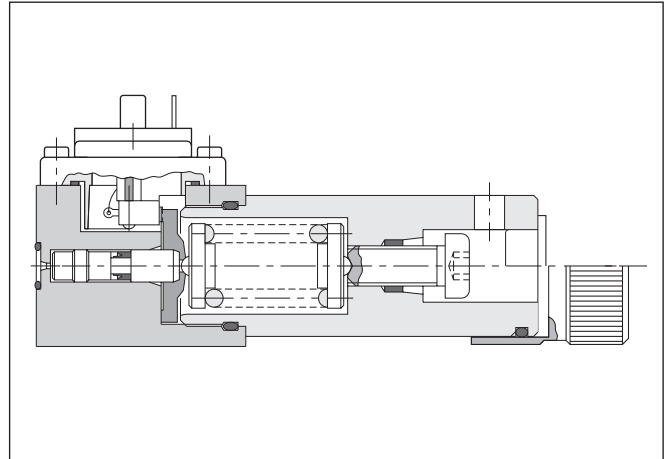
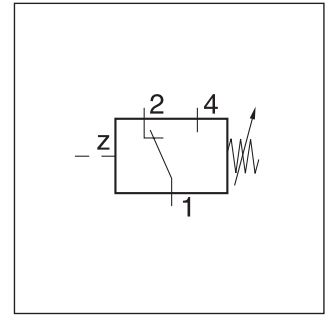
The electrical connection is made with a 3-pole plug-in connector to DIN 43650 with ground. The plug-in connector is also available with an indicator light.

**Features**

- Flange mounting
- Actuating pressure adjustable.
- Can be used as opener or closer.
- Cylinder lock possible.

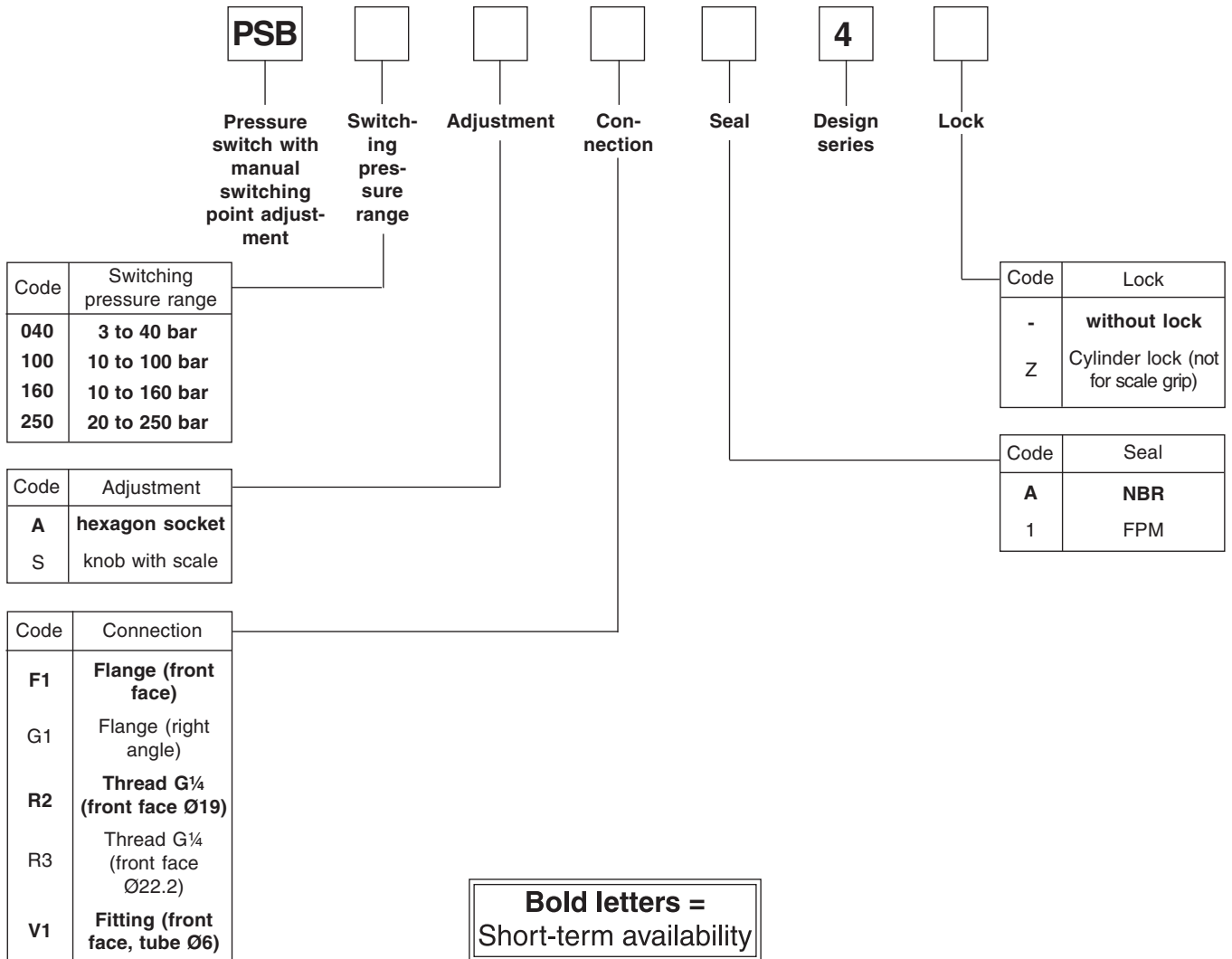
**Note**

For inductive DC loads a spark discharger should be used to increase service life.



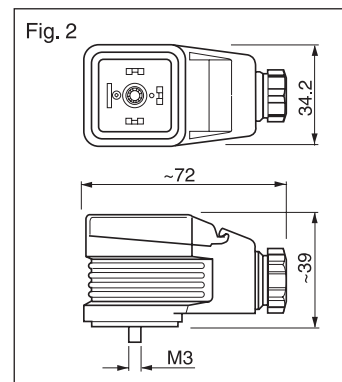
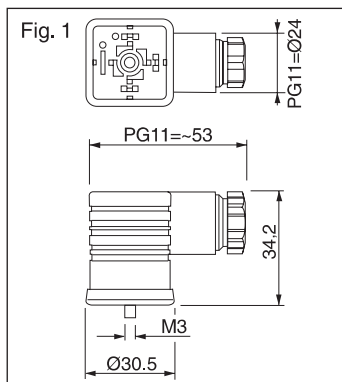
**Technical data**

Symbol		DIN 24340
Design		Plunger type switch
Mounting pattern		PSB*F1* flange (front face) PSB*G1* flange (right angle) PSB*R2* pipe thread G $\frac{1}{4}$ (front face, $\text{\O}19\text{mm}$ ) PSB*R3* pipe thread G $\frac{1}{4}$ (front face, $\text{\O}22\text{mm}$ )
Ports		PSB*F1/G1* via subplate PSB*R2/R3 Pipeline connection
Mounting position		as desired
Weight	[kg]	1.0
Operating pressure	[bar]	to 315
Actuating pressure difference		see diagram
Duty cycle		max. 1/s
Pressure fluid		Mineral oil (HL, HLP) as per DIN 51524, other pressure fluid on request
Temperature range	[ $^{\circ}\text{C}$ ]	0...80
Viscosity range	[ $\text{mm}^2/\text{s}$ ]	12...400
Electrical connection		Plug-in connector to EN 175301-803
Insulation		IP65 as per DIN 40050
Contact load carrying capacity		5A at 250VAC; 1A at 50VDC; 0.2A at 250VDC

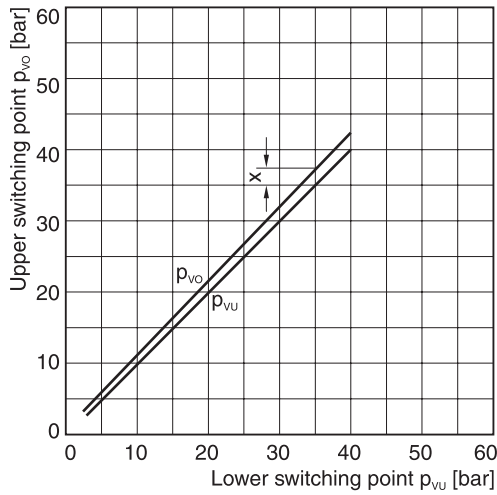


**Plugs EN 175301-803**

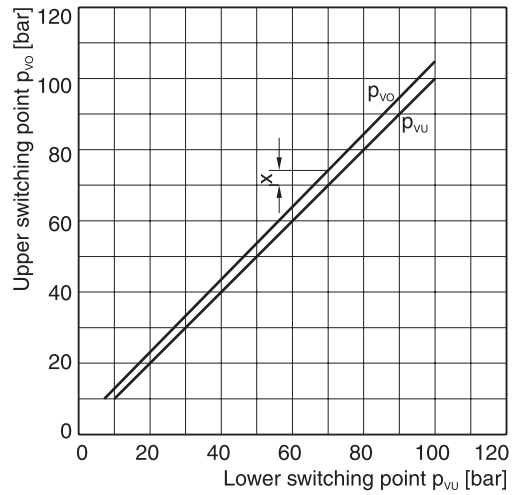
Description	Threaded cable joint	Figures Switching	Ordering Code
Plug EN 175301-803, design type AF, protection class IP 65	PG11	Fig. 1	<b>5001716</b>
Plug with LED insert 24 V DC	PG11	Fig. 2	HR21502321
Plug with lamp insert 120 V AC	PG11	Fig. 2	HR23500089
Plug with lamp insert 230 V AC	PG11	Fig. 2	HR23500090



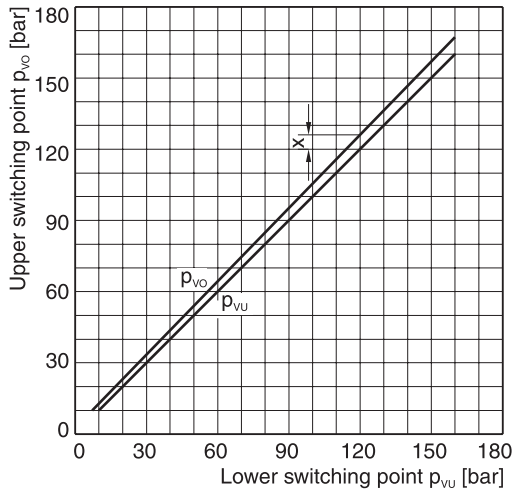
**Switching pressure difference  
 PSB040\***



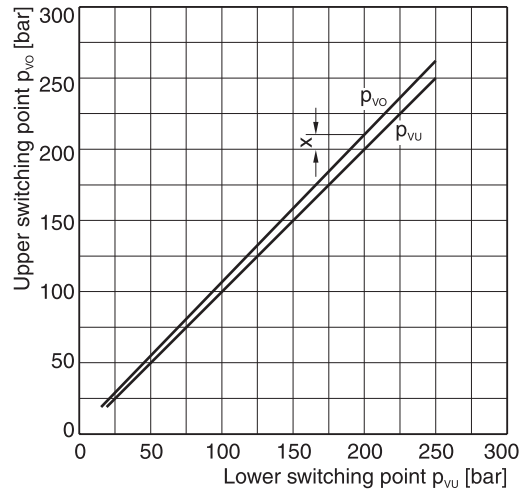
**PSB100\***



**PSB160\***



**PSB250\***



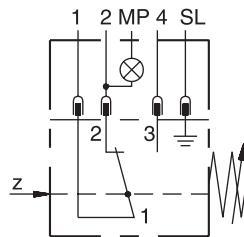
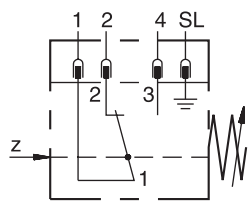
X = switching difference

**Electrical Connections**

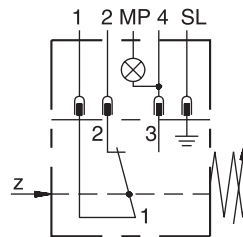
Electrical connection EN175301-803

Electrical connection L

Electrical connection M12x1

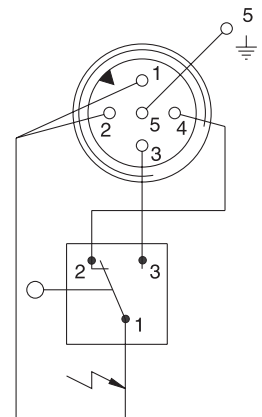


Opener 2

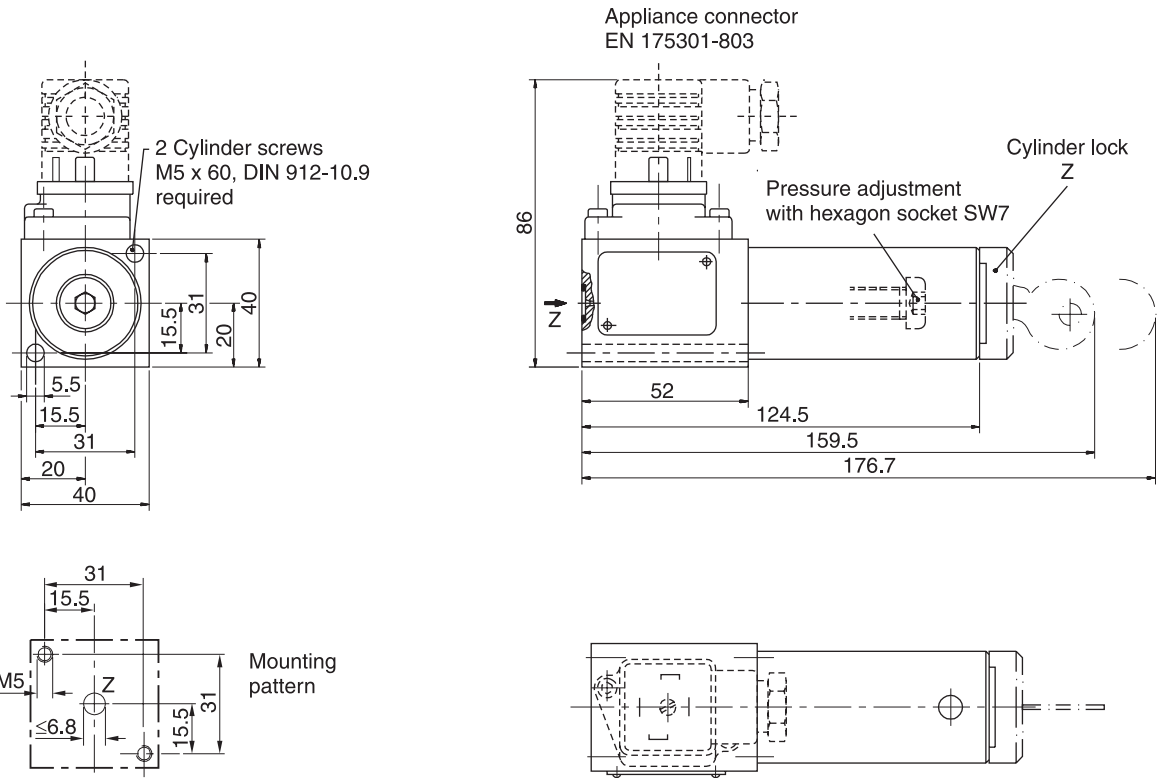


Closer 3

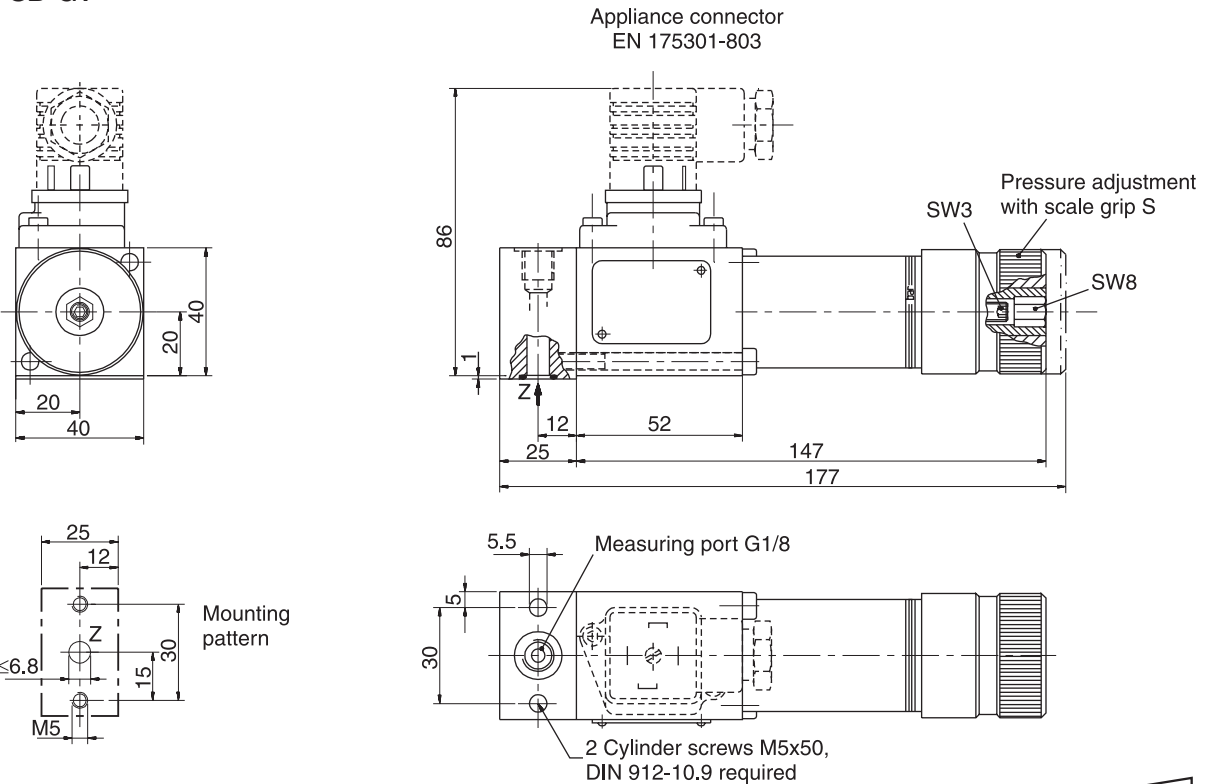
Lamp can be plugged in as required.



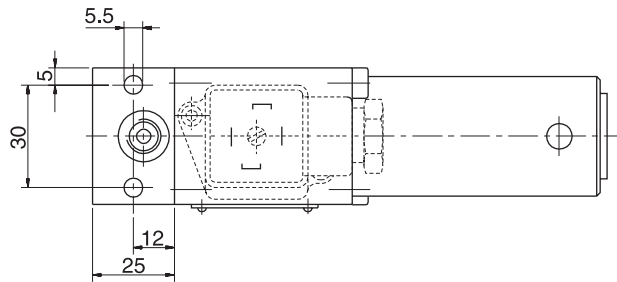
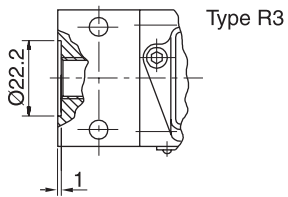
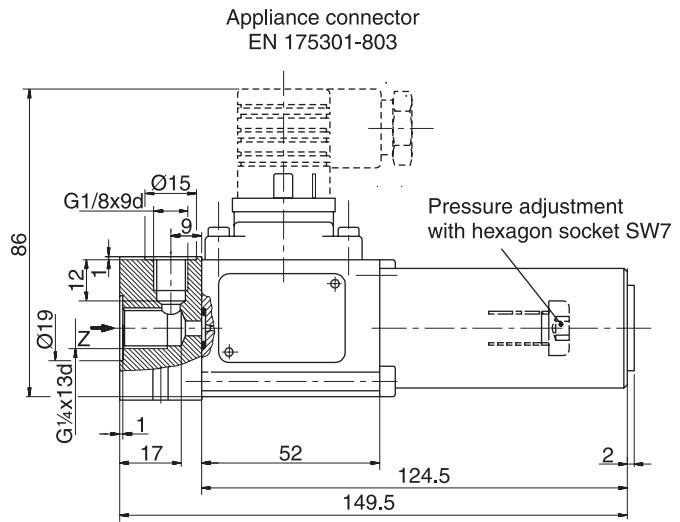
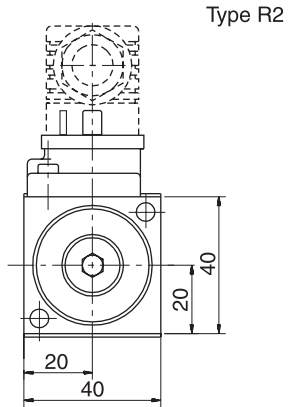
**Type PSB\*F1\***



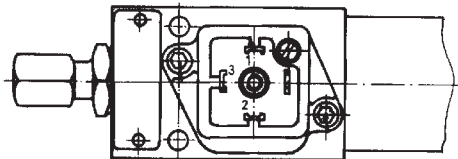
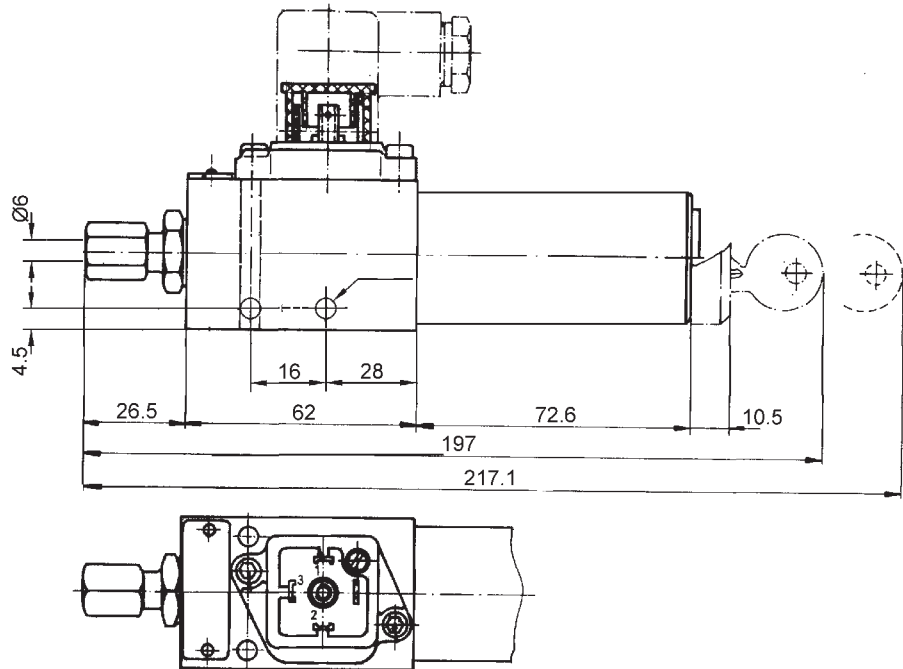
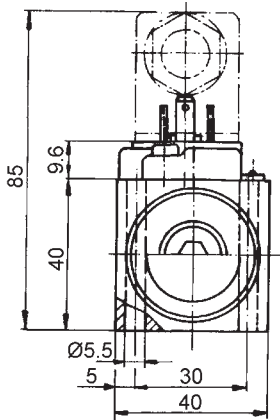
**Type PSB\*G1\***



**Type PSB\*R2/R3\***



**Type PSB\*V1\***

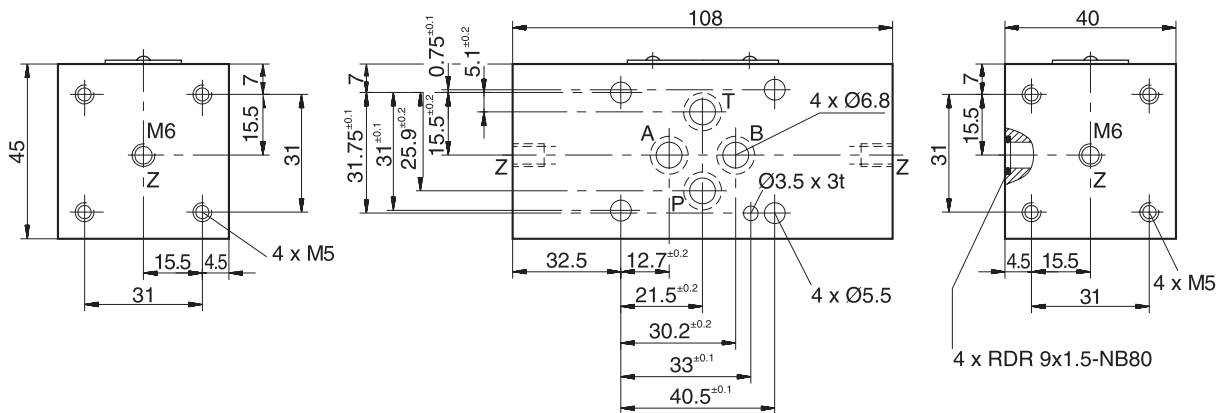


Technical Data

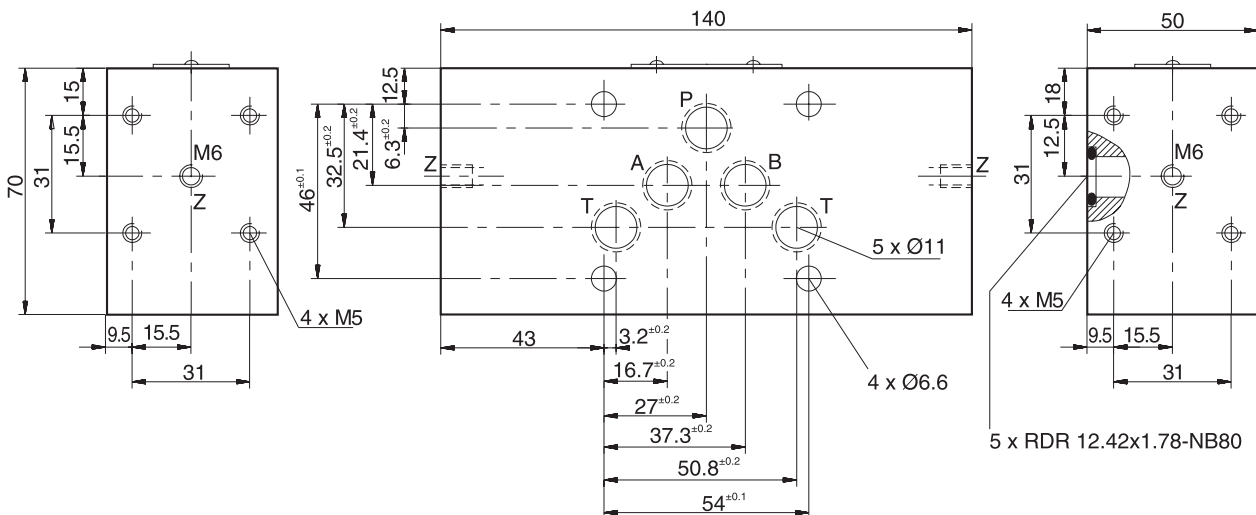
Switch code	Ordering code	Nominal size	Function
	<b>H06PSB-994</b>	<b>06</b>	<b>Pressure switch connection to A or B or A and B: Connections not used are closed by plug.</b>
	<b>H10PSB-996</b>	<b>10</b>	
	H06PSB-993	06	Pressure switch connection to P (left or right mounting is possible). Connection not used is closed by plug.
	H10PSB-995	10	

**Bold letters =  
Short-term availability**

Dimensions NG06



Dimensions NG10



**General**

The SCPSD pressure switch can be used in control, regulating or monitoring systems where rapid pressure-dependent switching or analogue systems are required.

Because of its compact design, durability and high functionality, it excels in tough series installations in hydraulic and pneumatic applications.

The main usage of the SCPSD occurs where long operating life, exact repeatability, high reliability and simple programming are required. Compatibility with existing systems is guaranteed by standard connectors and high functionality.

**Features**

- Reliable measuring element
- Measuring ranges from –1 to 600 bar
- Standard connections
- Digital display
- Universal mounting
- Rotatable
- Waterproof
- Peak value memory
- 2 switch outputs
- Output status indication
- Adjustable hysteresis
- Adjustable filtering
- Opener / closer
- Self diagnosis
- Analogue output
- Simple operation
- Short circuit protected
- Polarity protected
- Password
- International units (MPa, bar, psi)

**Function**

Pressure is captured by a piezoresistive measuring cell, which has outstanding typical zero-point stability and long term stability.

The following pressures in MPa, bar or psi can be shown on the large 4-position digital display:

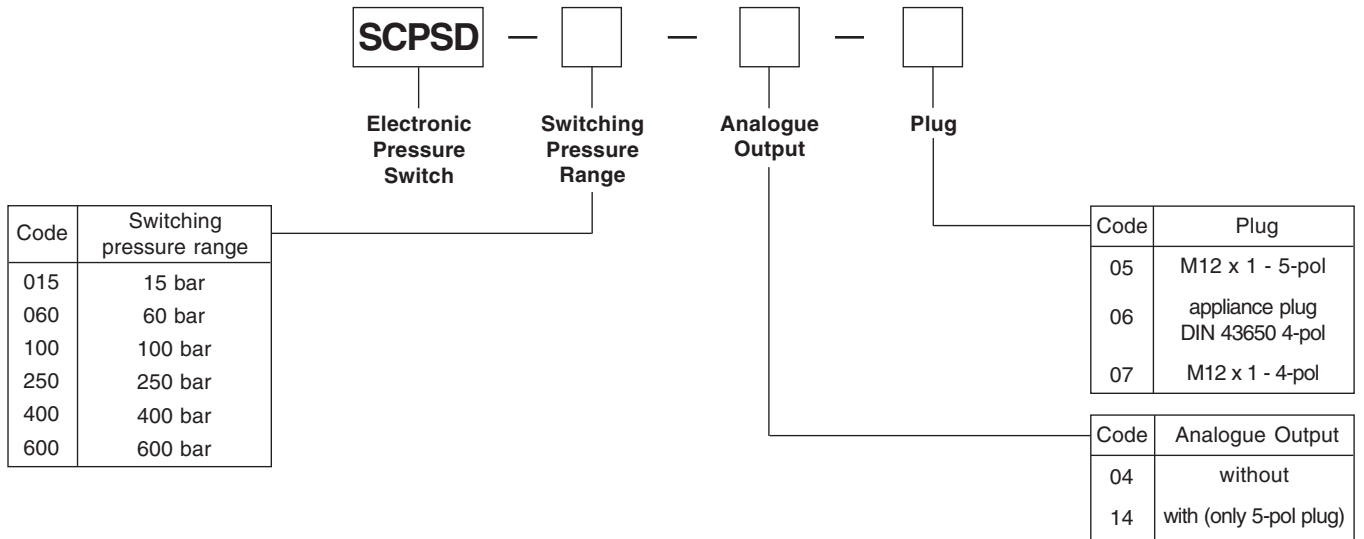
the actual pressure, the lowest or highest stored pressure and also the set switching points.

The display is easily readable, thanks to the waterproof housing which can be rotated through 280°. The menu-driven setting of the parameters is self-explanatory and carried out with 3 keys. Unauthorised parameter changes can be prevented by means of a password. Two programmable switch outputs, each independent of the other, and a readily programmable analogue output are available for connection with electrical controls. To this end, each switch output has two pressure switching points with which on- and off-switching pressures can be readily set (variable hysteresis).

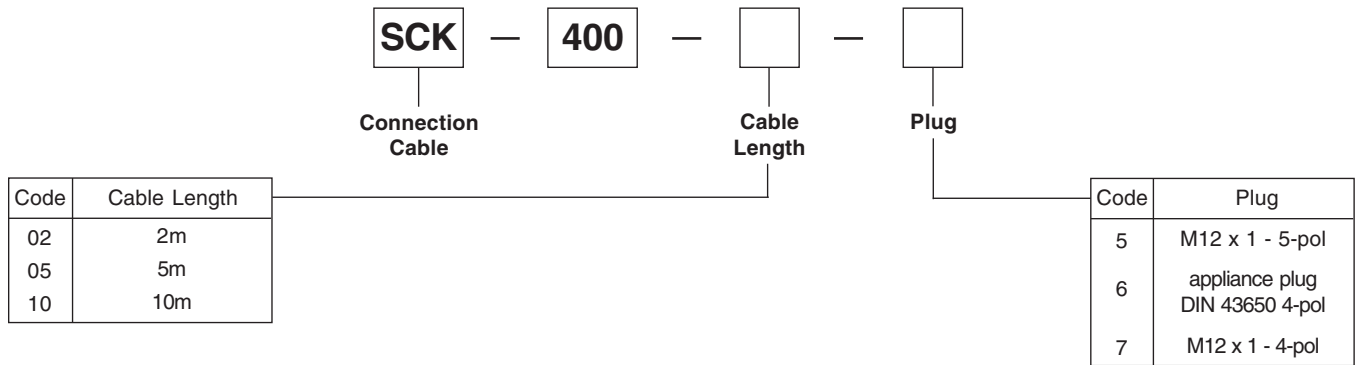
Unwanted pressure peaks of short duration or high frequency can be filtered (attenuated) by means of settable delay times. The switch outputs are switched as opener or closer corresponding to the set switching points, hysteresis or window functions and indicated in the status display.

An apparent function error will be signalled on the digital display and can be further processed in accordance with DESINA. The electronics are protected against reverse polarity, over-voltage and short circuits in a fully cast enclosure, and are thereby resistant to moisture and vibrations. A wide range of media can be accommodated, thanks to the corrosion-resistant stainless steel pressure connection.

**Pressure Switch**

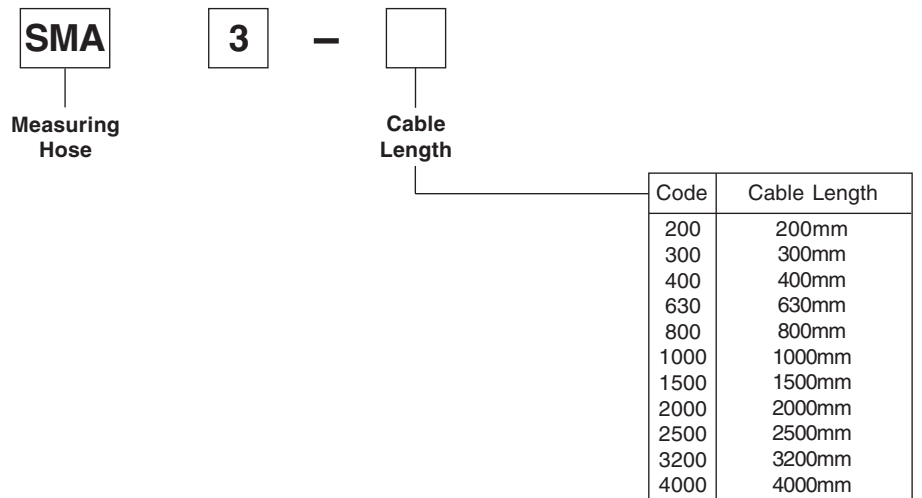


**Connecting Cable**



**Measuring Hose**

8



**Measuring Hose Adaptor:**  
 Code MAV MD1/4-MA3

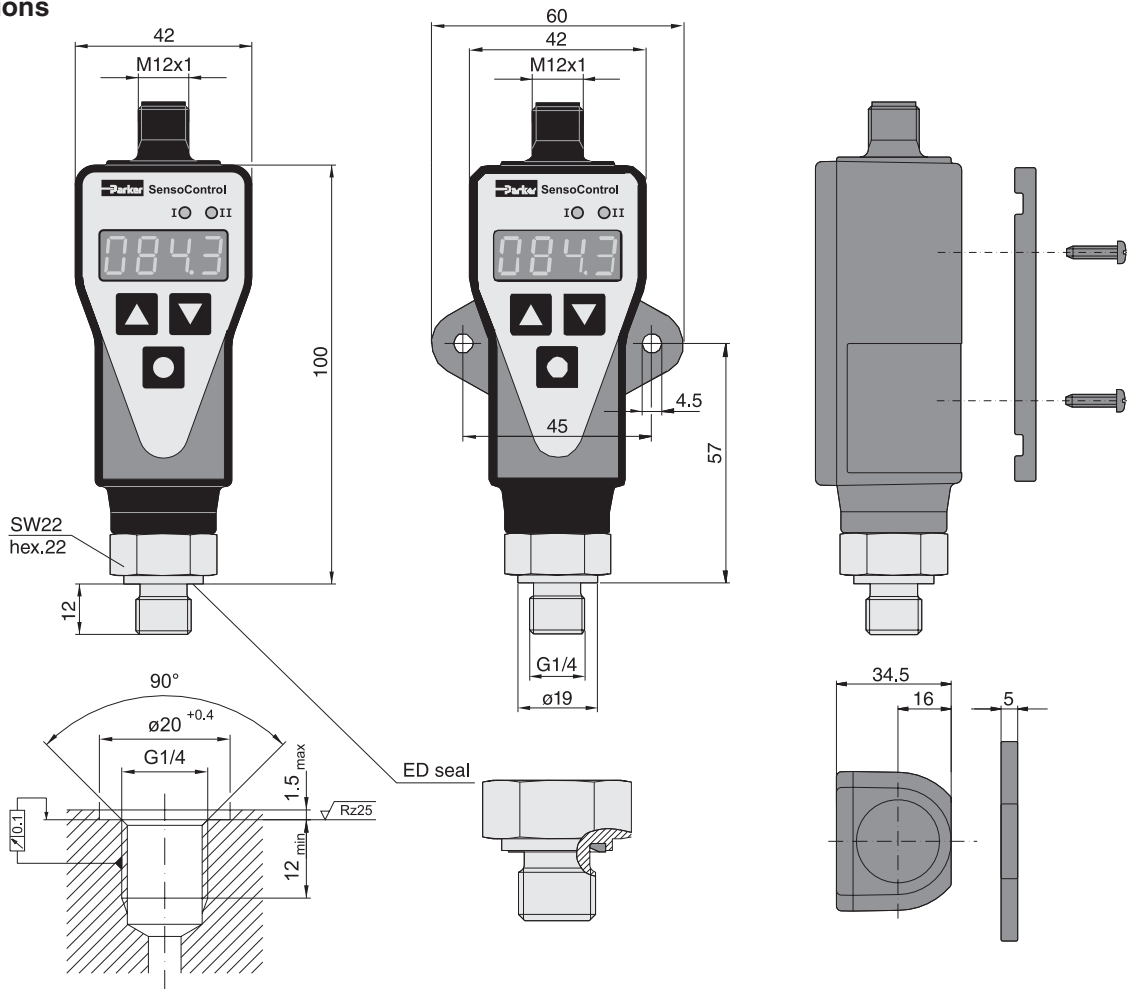


**Technical Data**

<b>Input data</b>		
Measuring element		piezoresistive
Measuring range	[bar]	-1.. 15; 0.. 60; 0.. 100; 0.. 250; 0.. 400; 0.. 600
Overload pressure	[bar]	30; 200; 200; 600; 600; 900
Burst pressure	[bar]	100; 1200; 1200; 1200; 1200; 1200
Switch cycles		> 20 x 10 <sup>6</sup>
<b>Output data</b>		
Accuracy	[%]	± 0.5 FS typ. ± 1% FS max.
Temperature drift	[%]	± 0.02 FS typ / K ( at 0-85°C) ± 0,03% FS max.
Long term stability	[%]	± 0.2 FS / a
Repeat accuracy	[%]	± 0.25 FS
Switching point accuracy	[%]	± 0.5 FS typ. ± 1%FS max.
Typical display accuracy	[%]	± 0.5 FS typ. ± 1 Digit ± 1%FS max . ± 1 Digit
Scanning rate	[ms]	≤ 5
<b>Outputs</b>		
Switch outputs		2 Mosfet high side switches (~PNP)
Contact functions		opener/closer, window, and hysteresis; functions readily programmable
Switch voltage	[V]	supply voltage – 1,5
Switch current	[A]	0.7 per switch
Short circuit current	[A]	2.4 per switch
Analogue output	[mA]	0/4...20, programmable RL ≤ (supply voltage – 8 V) / 20mA (≤ 500 W)
<b>Electrical connection</b>		
Supply voltage	[VDC]	15...30 nominal 24
Electrical connection		M12x1; 4-pol.; 5-pol.; with gold plated contacts appliance plug DIN43650 4-pol.
Short circuit protection		yes
Reverse polarity protection		yes
Overload protection		yes
Current consumption	[mA]	< 100
<b>Housing</b>		
Housing		rotationally adjustable up to 280°
Material		polyamide PA6.6 glass fibre reinforced; black
Display		4-position, digital, LED, 7-segment; red, figure height 9mm
Connector thread		G1/4 (BSPP) ED-soft seal FPM (Fluorocarbon)
Protection system		IP67 EN60529
Parts in contact with media		stainless steel material number 1.4301 (US 316L)
Weight	[g]	300
<b>Ambient conditions</b>		
Temperature of medium	[°C]	-25 to +85
Ambient temperature	[°C]	-25 to +85
Storage temperature	[°C]	-40 to +100
Electromagnetic compatibility		Electromagnetic emitted interference to EN 50081-1 Electromagnetic noise immunity EN 50082-2
Vibration strength		20g; 10...500Hz *; IEC60068-2-6
Shock resistance		50g; 11ms; IEC60068-2-29 *

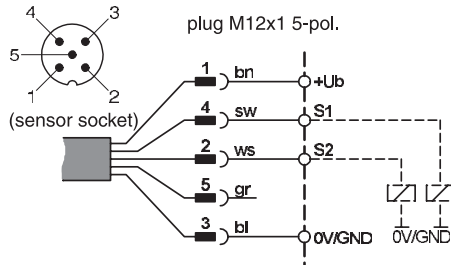
\* Does not apply to appliance plug DIN and assembly with mounting plate

**Dimensions**

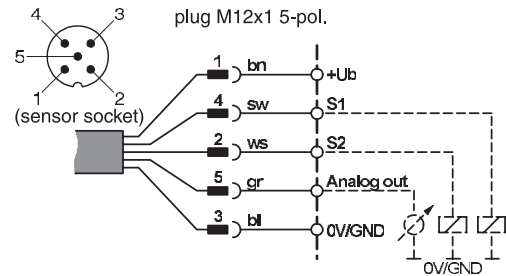


**Electrical Connections**

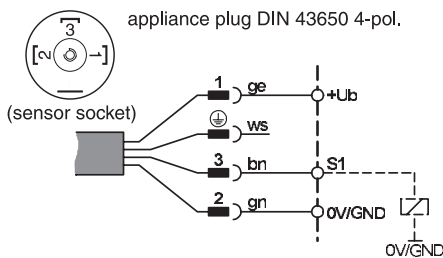
**Wiring connection SCPSD \* -04-05**



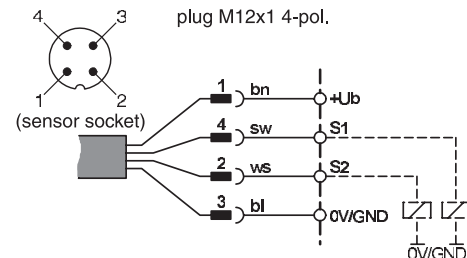
**Wiring connection SCPSD \* -14-05**



**Wiring connection SCPSD \* -04-06**



**Wiring connection SCPSD \* -04-07**



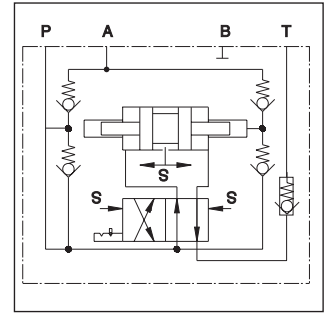
bn = brown, sw = black, ge = yellow, gn = green, ws = white, gr = grey

**General**

Pressure intensifiers are used wherever a particular section of a hydraulic system has to be pressurised to a substantially higher pressure than the available primary pressure allows (clamping functions). With an intensification ratio of 1 : 4 (1 : 2) it enables a cost-effective system solution especially in clamping applications, with primary pressures up to 125 bar. A pilot-operated check valve can be flanged underneath the pressure intensifier for quick filling and decompression of the high pressure section.

**Design**

The important functional parts of the pressure intensifier are the intensifier piston, the rocker mechanism, the slide valve with lock, four check valves, which separate the high pressure section from the low pressure section, as well as a check valve in the tank port, to partition of the tank section from the primary pressure.



**Technical data**

<b>General</b>	
Symbol	DIN 24 300
Design	Piston and poppet valve in body
Mounting type	NG6, DIN 24 340, design A, CETOP, ISO
Ports	Subplate
Mounting position	as desired
Ambient temp.	max. 50°C
Weight	3.0 kg
<b>Hydraulics</b>	
Operating press. range	
Port A	max. 500 bar
Port P, B, T	max. 125 bar
Press. fluid temp.	+ 10°C...+70°C
Viscosity range	12...230 mm <sup>2</sup> /s
Flow	see performance curve
Intensification ratio	$p_p : p_A = 1 : 4, 1 : 2$
Flow volume	$Q_p : Q_A = 4 : 1, 2 : 1$
Stroke volume	3 cm <sup>3</sup> (per double stroke)
Operating	Hydraulic-mech. automatic control

**Features**

- Mounting pattern NG6, DIN 24 340 Design A, CETOP, ISO.
- Check valve attachable to bottom flange.
- High pressure up to 500 bar.
- Volume flow formed with low pulsation.
- Compact design.

**Function**

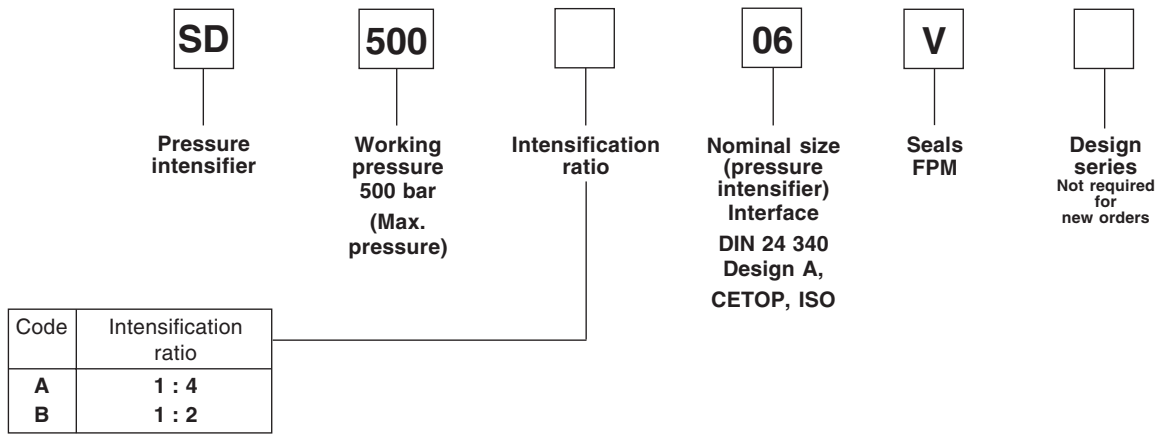
After the high pressure section is filled with oil, (e.g. extension of a clamping cylinder), the pressure intensifier begins operation: The low pressure moves the intensifier piston because of the surface ratio and compresses the oil column in the high pressure section.

At the end of the intensifier's piston stroke, the rocker mechanism switches the directional slide valve to the crossed switching position, and the intensifier piston pumps oil from the piston rod area into the high pressure section. The process repeats itself until the pressure ratio corresponding to the surface ratio has lead to a balance of force on the intensifier piston.

The pressure intensifier switches itself off and immediately on again when the high pressure (e.g. due to external leakage) begins to drop (pay attention to the flow characteristic ). The switching speed of the slide valve is dependent on the operating speed of the intensifier piston.

**Note**

- To avoid exceeding the admissible maximum pressure, a pressure relief or pressure control valve must be fitted on the primary side (pressure setting, max. 125 bar / 1 : 4 or max. 250 bar / 1 : 2).
- There must be no pressure peak on the primary side when operating in the maximum pressure range.
- It is recommended to mount a 10µm filter on the primary side to ensure damage-free operation.






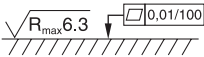
**Accessories**

Type	Description	Number
<b>SD 500*06V</b>	Seals 9.25 x 1.78	3
	10.82 x 1.78	1
	M5 x 75-12.9 DIN 912	4

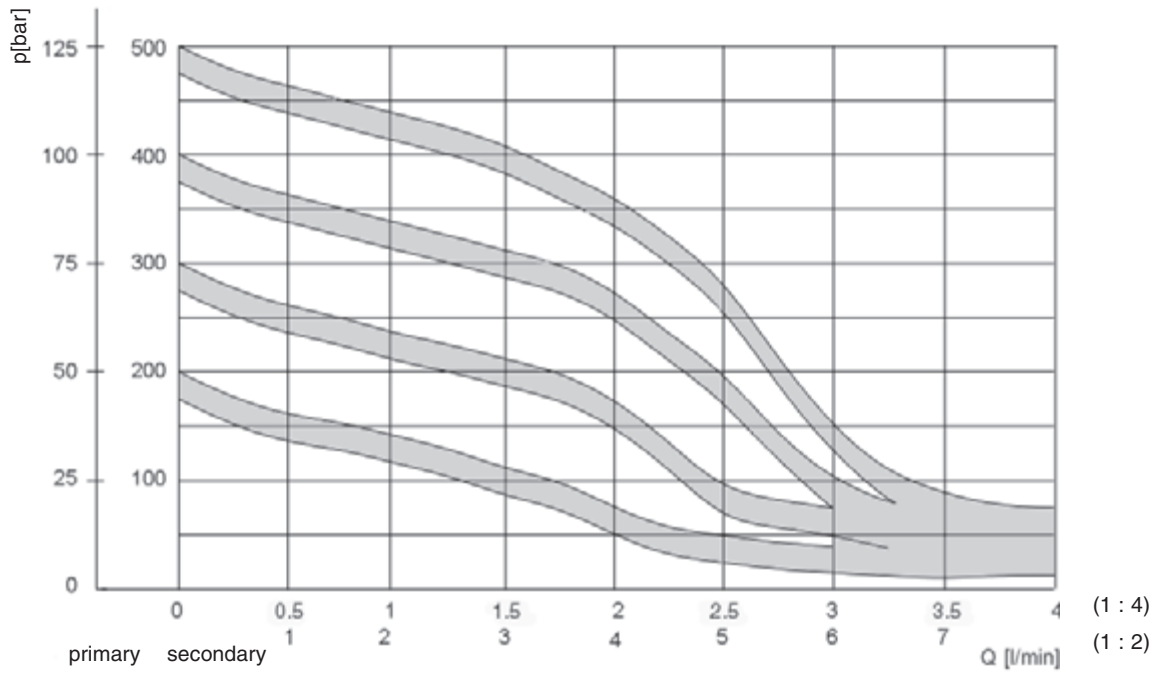
Seals are included as delivered.  
 Mounting screws are not included as delivered.

**Bold letters =  
 Short-term availability**

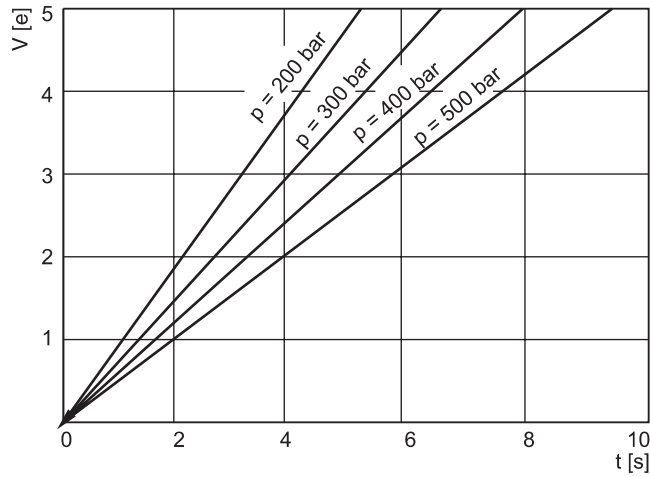
8

Surface finish	 Kit		
	BK401	DIN 912 12.9	9.0 Nm

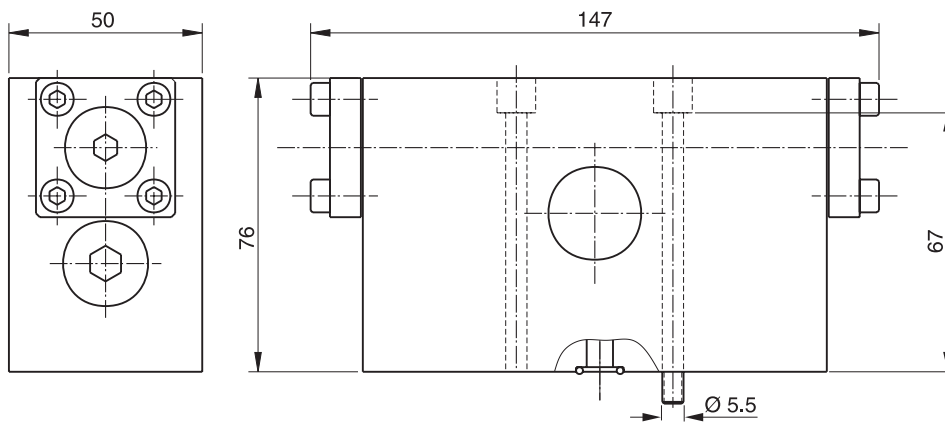
**Flow characteristics**



Approximate values of the compression time for compressing a filled volume to target pressure (1 : 4)



**Dimensions**



SD500.PM6.5 RH

**Pilot-operated check valve plate NG06**

**Description**

Pilot operated check valve plates are flanged under the pressure intensifier for quick filling and decompression.

**Design**

The check valve plate is equipped with a hydraulic, pilot operated check valve.

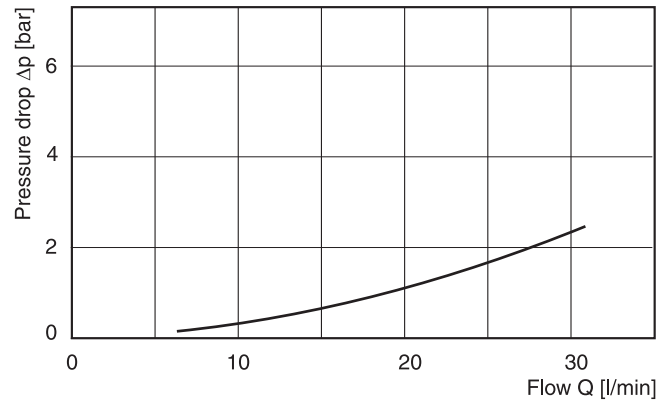
Opening ratio: Main valve 2.5 : 1  
 Pilot ratio 10 : 1

**Technical data**

<b>General</b>	
Design	spring loaded ball seat valve
Mounting type	Flange
Mounting position	any
Ambient temp.	max. 50°C
Weight	1.3 kg
<b>Hydraulics</b>	
Operat. press. range	
Port A	max. 500 bar
Port P, B, T	max. 125 bar / 1:4 bzw. 250 bar / 1:2
Fluid temperature	+ 10°C...+70°C
Viscosity range	12....230 mm <sup>2</sup> /s
Flow	see characteristic curve
Pilot ratio	Main valve 2.5:1, Pre-discharge 10:1
Opening pressure	approx. 0.5 bar

**Characteristic Curve**

Pilot-operated check valve



**Accessories**

Ordering code	Description	Number
<b>H06SDV</b>	Seals	4
	9.25 x 1.78 M5 x 115-12.9 DIN 912	4

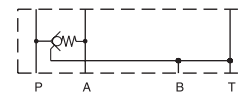
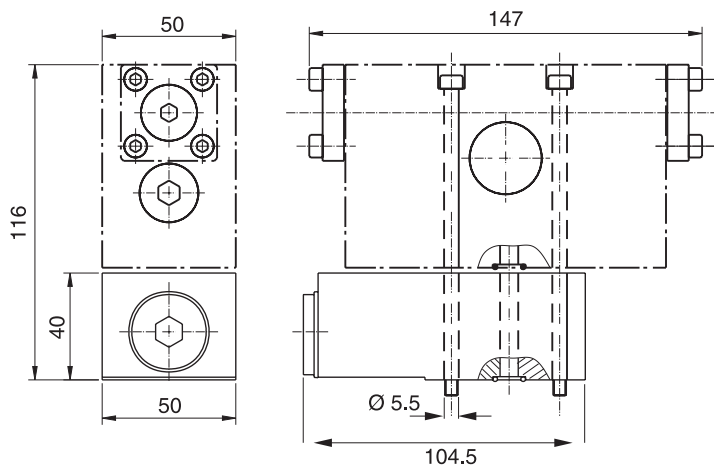
Seals are included in delivery.  
 Mounting screws are not included in delivery.

**Ordering code**

**H06 SDV** (2 design series – not necessary with new orders)

**Bold letters =  
 Short-term availability**

**Dimensions**



<b>Surface finish</b>	<b>Kit</b>	<b>DIN 912 12.9</b>	<b>9.0 Nm</b>
$\sqrt{R_{max} 6.3}$ $\square_{0.01/100}$	<b>BK401</b>	<b>DIN 912 12.9</b>	<b>9.0 Nm</b>

SD500.PM6.5 RH

**Pilot-operated check valve plate NG10**

**Description**

Pilot operated check valve plates are flanged under the pressure intensifier for quick filling and decompression.

**Design**

The check valve plate is equipped with a hydraulic, pilot operated check valve.

Opening ratio: Main valve 2.5 : 1

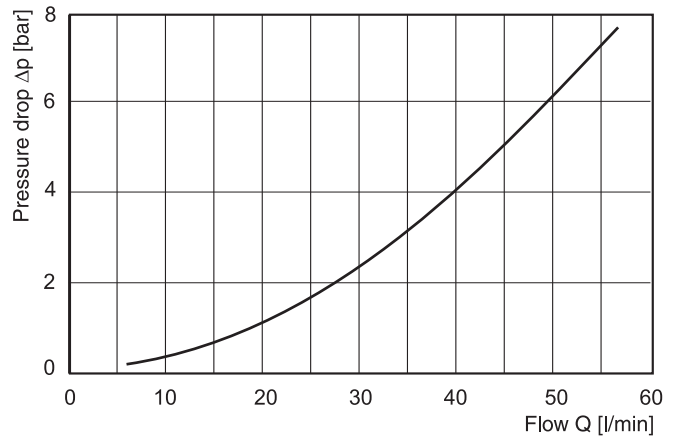
Pilot ratio 10 : 1

**Technical data**

<b>General</b>	
Design	spring loaded ball seat valve
Mounting type	Flange
Ports	subplate
Mounting position	any
Ambient temperature	max. 50°C
Weight	2.3 kg
<b>Hydraulics</b>	
Operating press. range	
Port A	max. 500 bar
Port P, B, T	max. 125 bar / 1:4 bzw. 250 bar / 1:2
Press. fluid temp.	+ 10°C...+70°C
Viscosity range	12....230 mm <sup>2</sup> /s
Flow	see characteristic curve
Pilot ratio	Main valve 2.5:1, Pre-discharge 10:1
Opening pressure	approx. 0.5 bar

**Characteristic curve**

Pilot-operated check valve



**Accessories**

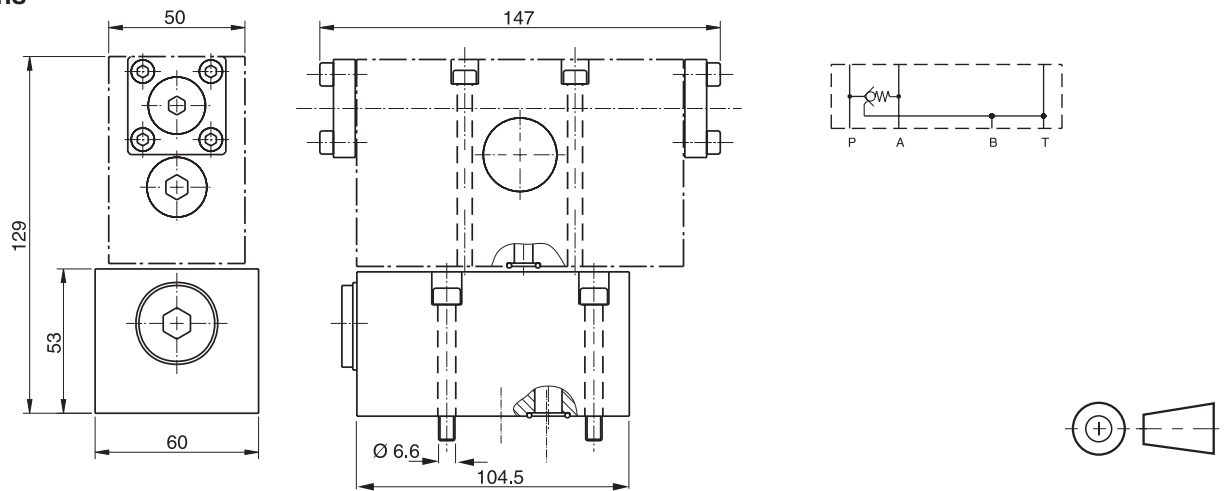
Ordering code	Description	Number
H10SDV	Seals 12.24 x 1.78	4
	M5 x 75-12.9 DIN 912	4
	M6 x 50-12.9 DIN 912	4

Seals are included in delivery.  
 Mounting screws are not included in delivery.

**Ordering code**

H10 SDV (2 design series – not necessary with new orders)

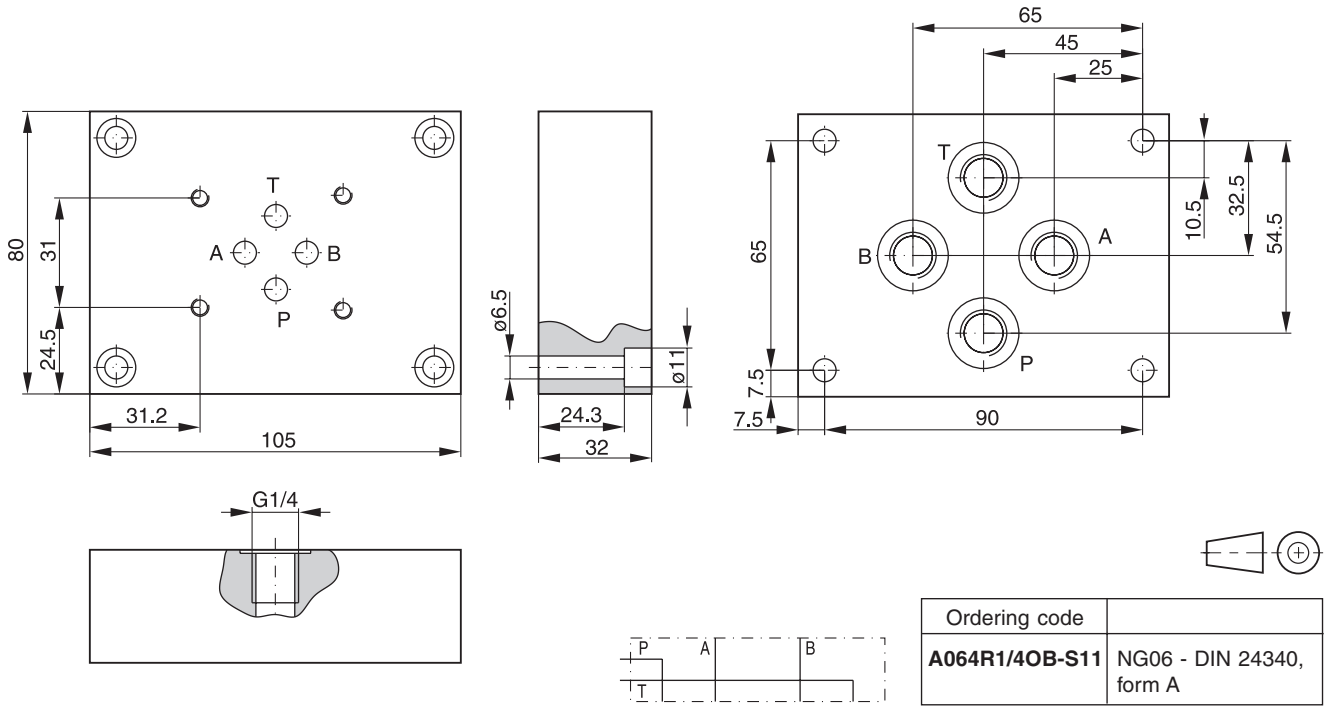
**Dimensions**



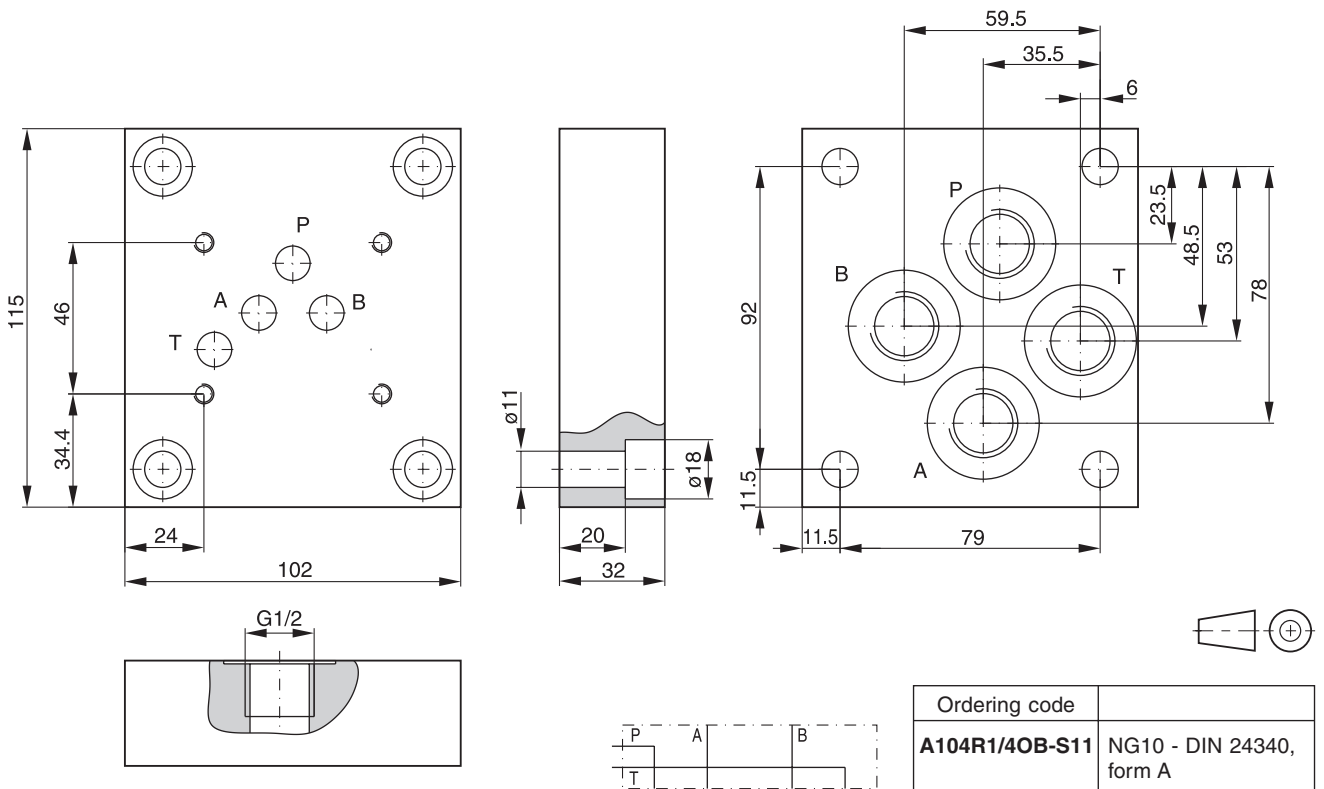
<b>Surface finish</b>	<b>Kit</b>	<b>DIN 912 12.9</b>	<b>9.0 Nm 18.0Nm</b>
	BK490		

SD500.PM6.5 RH

**Dimensions A064R1/4OB-S11**



**Dimensions A104R1/4OB-S11**



**Bold letters =  
 Short-term availability**



**BK bolt kits**

Socket head cap screws as per DIN 912

Ordering code	Description	Material
<b>BK 300</b>	<b>Bolt kit M5x50</b>	<b>12.9</b>
<b>BK 310</b>	<b>Bolt kit M6x55</b>	<b>12.9</b>
<b>BK 311</b>	<b>Bolt kit M6x105</b>	<b>12.9</b>
<b>BK 320</b>	<b>Bolt kit M10x60 4 pcs. / M6x55 2 pcs.</b>	<b>12.9</b>
BK 324	Bolt kit M10x140 4 pcs. / M6x135 2 pcs.	12.9
<b>BK 375</b>	<b>Bolt kit M5x30</b>	<b>12.9</b>
<b>BK 380</b>	<b>Bolt kit M5x60</b>	<b>12.9</b>
<b>BK 385</b>	<b>Bolt kit M6x40</b>	<b>12.9</b>
<b>BK 388</b>	<b>Bolt kit M10x40</b>	<b>12.9</b>
<b>BK 389</b>	<b>Bolt kit M10x50</b>	<b>12.9</b>
BK 390	Bolt kit M10x50 6 pcs.	12.9
<b>BK 391</b>	<b>Bolt kit M12x50</b>	<b>12.9</b>
BK 395	Bolt kit M10x100	12.9
<b>BK 399</b>	<b>Bolt kit M5x25</b>	<b>12.9</b>
<b>BK 400</b>	<b>Bolt kit M5x70</b>	<b>12.9</b>
<b>BK 401</b>	<b>Bolt kit M5x75</b>	<b>12.9</b>
BK 402	Bolt kit M5x80	12.9
<b>BK 403</b>	<b>Bolt kit M5x90</b>	<b>12.9</b>
<b>BK 404</b>	<b>Bolt kit M5x100</b>	<b>12.9</b>
<b>BK 405</b>	<b>Bolt kit M5x110</b>	<b>12.9</b>
<b>BK 406</b>	<b>Bolt kit M5x115</b>	<b>12.9</b>
BK 408	Bolt kit M6x25	12.9
<b>BK 412</b>	<b>Bolt kit M6x90</b>	<b>12.9</b>
<b>BK 414</b>	<b>Bolt kit M8x40</b>	<b>12.9</b>
BK 415	Bolt kit M16x55	12.9
BK 417	Bolt kit M20x75	12.9
BK 421	Bolt kit M5x65	12.9
BK 422	Bolt kit M6x75	12.9
<b>BK 424</b>	<b>Bolt kit M5x130</b>	<b>12.9</b>
<b>BK 430</b>	<b>Bolt kit M6x105</b>	<b>12.9</b>
BK 441	Bolt kit M8x50	12.9
<b>BK 443</b>	<b>Bolt kit M5x45</b>	<b>12.9</b>
BK 444	Bolt kit M5x85	12.9
BK 460	Bolt kit M12x145	12.9
<b>BK 463</b>	<b>Bolt kit M5x60</b>	<b>12.9</b>
<b>BK 466</b>	<b>Bolt kit M5x100 2 pcs.</b>	<b>12.9</b>
BK 468	Bolt kit M5x95	12.9
BK 471	Bolt kit M5x85	12.9
<b>BK 484</b>	<b>Bolt kit M10x65</b>	<b>12.9</b>
BK 485	Bolt kit M10x45	12.9
BK 486	Bolt kit M12x70	12.9
BK 487	Bolt kit M16x110	12.9

If no other specification is indicated, 1 bolt kit contains 4 screws.

**Bold letters =**  
Short-term availability

**Threads Length**

Threads	M5	M6	M10	M12
thread length	1.5 x Ø thread			

**Note**

The torque for bolt kits or tie rod kits is according to valve type/product. See there for detailed information.

**TK tie rod kits**

Tie rod kits as per DIN 835-10.9

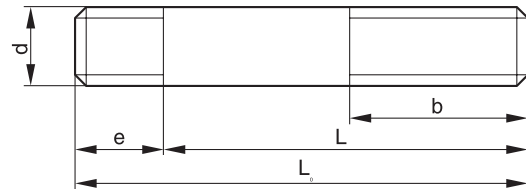
Ordering code	Description
<b>TK 1405</b>	<b>Tie rod kit M5x140</b>
<b>TK 1407</b>	<b>Tie rod kit M5x220</b>
<b>TK 1409</b>	<b>Tie rod kit M5x160</b>
<b>TK 1411</b>	<b>Tie rod kit M5x170</b>
<b>TK 1413</b>	<b>Tie rod kit M5x230</b>
<b>TK 1415</b>	<b>Tie rod kit M5x190</b>
<b>TK 1416</b>	<b>Tie rod kit M5x200</b>
<b>TK 1418</b>	<b>Tie rod kit M6x110</b>
<b>TK 1422</b>	<b>Tie rod kit M6x150</b>
<b>TK 1423</b>	<b>Tie rod kit M6x170</b>
<b>TK 1427</b>	<b>Tie rod kit M6x200</b>
<b>TK 1428</b>	<b>Tie rod kit M6x220</b>
<b>TK 1432</b>	<b>Tie rod kit M6x250</b>
TK 1434	Tie rod kit M5x240
TK 1436	Tie rod kit M5x250
<b>TK 1438</b>	<b>Tie rod kit M5x260</b>
<b>TK 1446</b>	<b>Tie rod kit M5x110</b>
TK 1449	Tie rod kit M6x290
<b>TK 1450</b>	<b>Tie rod kit M5x150</b>
TK 1453	Tie rod kit M5x90
<b>TK 1454</b>	<b>Tie rod kit M5x180</b>
<b>TK 1455</b>	<b>Tie rod kit M5x70</b>
<b>TK 1460</b>	<b>Tie rod kit M6x230</b>
TK 1466	Tie rod kit 4 x M10x110 / 2 x M6x110
TK 1469	Tie rod kit 4 x M10x170 / 2 x M6x170
TK 1470	Tie rod kit 4 x M10x220 / 2 x M6x220
<b>TK 1473</b>	<b>Tie rod kit M5x120</b>
<b>TK 1474</b>	<b>Tie rod kit M5x130</b>
<b>TK 1475</b>	<b>Tie rod kit M5x210</b>
TK 1476	Tie rod kit M5x270
<b>TK 1478</b>	<b>Tie rod kit 4 x M10x190 / 2 x M6x190</b>
TK 1479	Tie rod kit 4 x M10x250 / 2 x M6x250
TK 1480	Tie rod kit 4 x M10x300 / 2 x M6x300
TK 1481	Tie rod kit 4 x M10x360 / 2 x M6x360
<b>TK 1482</b>	<b>Tie rod kit M5x80</b>
<b>TK 1484</b>	<b>Tie rod kit M5x100</b>
TK 1485	Tie rod kit M6x80
<b>TK 1486</b>	<b>Tie rod kit M6x90</b>
<b>TK 1487</b>	<b>Tie rod kit M6x100</b>
TK 1488	Tie rod kit M6x120
<b>TK 1489</b>	<b>Tie rod kit M6x130</b>
<b>TK 1490</b>	<b>Tie rod kit M6x140</b>
<b>TK 1491</b>	<b>Tie rod kit M6x160</b>
<b>TK 1492</b>	<b>Tie rod kit M6x180</b>
<b>TK 1493</b>	<b>Tie rod kit M6x190</b>
<b>TK 1494</b>	<b>Tie rod kit M6x210</b>
<b>TK 1495</b>	<b>Tie rod kit M6x240</b>
<b>TK 1496</b>	<b>Tie rod kit M6x260</b>
TK 1497	Tie rod kit M6x270
TK 1498	Tie rod kit M6x300
HR10048109	Nut M5
HR10048110	Nut M6x25-20
007634	Nut M10

If no other specification is indicated, 1 tie rod kit contains 4 bolts and 4 nuts.

**Bold letters =  
Short-term availability**

**Studs - Nuts**

Threads	Ident-No.	Nut height	Thread depth
M5	HR10048109	25 mm	20 mm
M6	HR10048110	25 mm	20 mm
M10	007634	25 mm	15 mm
M12	10-B-734	35 mm	25 mm



The stud lengths is the sum of the depth of engagement e plus stacking length plus thread depth of the nut.

For nominal size NG06, studs with a sufficient guide (shank diameter 5 mm) may be used only.

The engagement of the stud per DIN 835 is two times diameter d.

Example:

TK1411: M5 x 170 DIN835 =  
 d = 5mm; e = 10mm; L = 170mm,  
 nominal stacking length = 160mm,  
 stud length L<sub>0</sub> = 180mm

**Note**

The torque for bolt kits or tie rod kits is according to valve type/product. See there for detailed information.