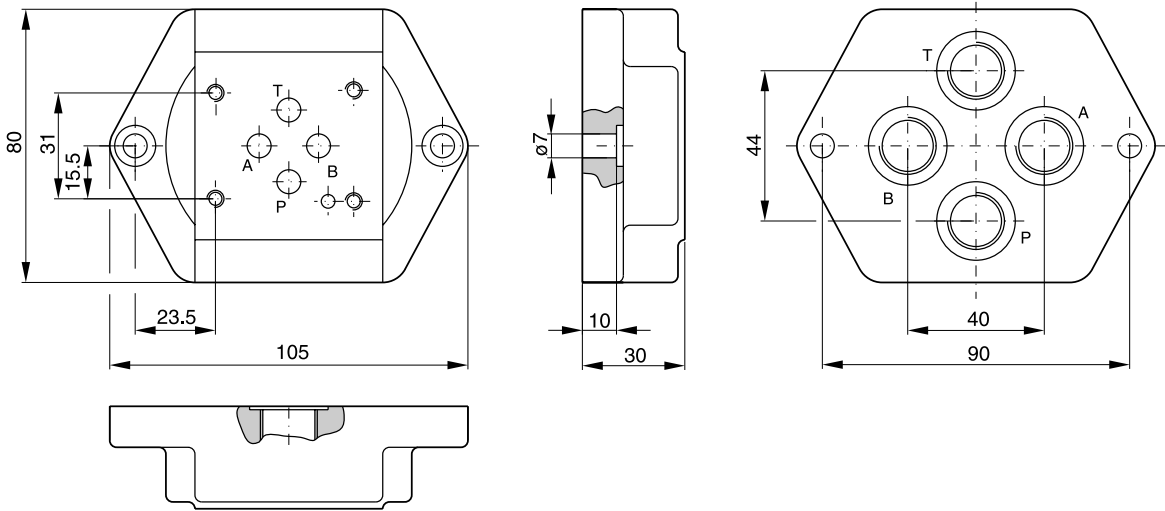


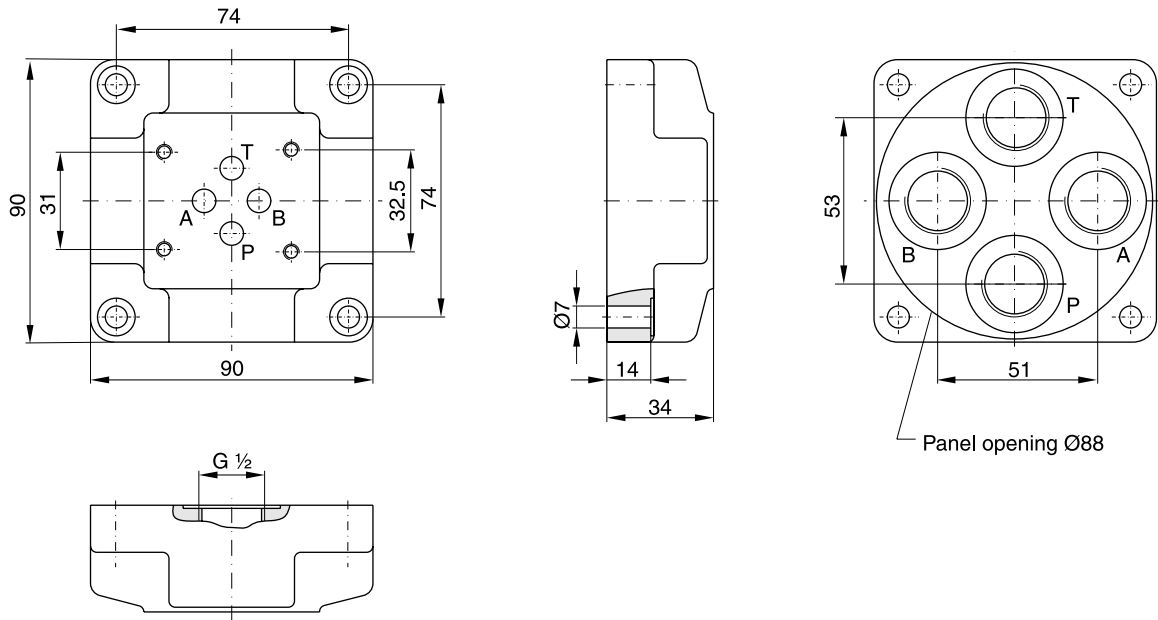
Series	Description	Size										Page
	DIN / ISO	06	10	16	25	32	40	50	63	80		
	Subplates											
SPD	Subplates, BSPP threads, DC valves	•	•	•	•							12-2
A	Subplates, metric threads, DC valves	•	•									12-7
SPP	Subplates, BSPP threads, pressure valves, DIN / ISO		•		•	•						12-8
A102	Subplates for pressure valves, styles VB and VM		•									12-11
MSP	Multi-station manifold, DC valves	•	•									12-12
	Cover, sandwich and adaptor plates											
	Symbols											12-19
PADA	Sandwich and adaptor plates	•	•									12-21
H06	Sandwich plates	•										12-22
CS06	Sandwich and cover plates	•										12-26
D51*	Cover plates	•	•									12-28
CB	Cartridge manifold block			•	•	•	•	•	•	•	•	12-30
	Plates for regenerative- and hybrid circuits, series D3W, D3FB/FP, D31NW/FB/FE/FP											
	Intro											12-32
A10	Adaptor plates size 10		•									12-34
H10	Sandwich plates size 10		•									12-36
	Accessories for manifolds and systems											
BK	Bolt kits											12-38
TK	Tie rod kits											12-39
	Pressure gauge valves											
WM	Pressure gauge selector valve											12-40
	Pressure switches											
PSB	Pressure switches											12-42
SCPSD	Electronic pressure switch											12-47
	Pressure intensifiers											
SD500	Pressure intensifiers											12-53

Valve size DIN NG06, CETOP 03, NFPA D03



Ordering code	
SPD 22 B 910	P, A, B and T = G ¼
SPD 23 B 910	P, A, B and T = G ⅜

Valve size DIN NG06, CETOP 03, NFPA D03

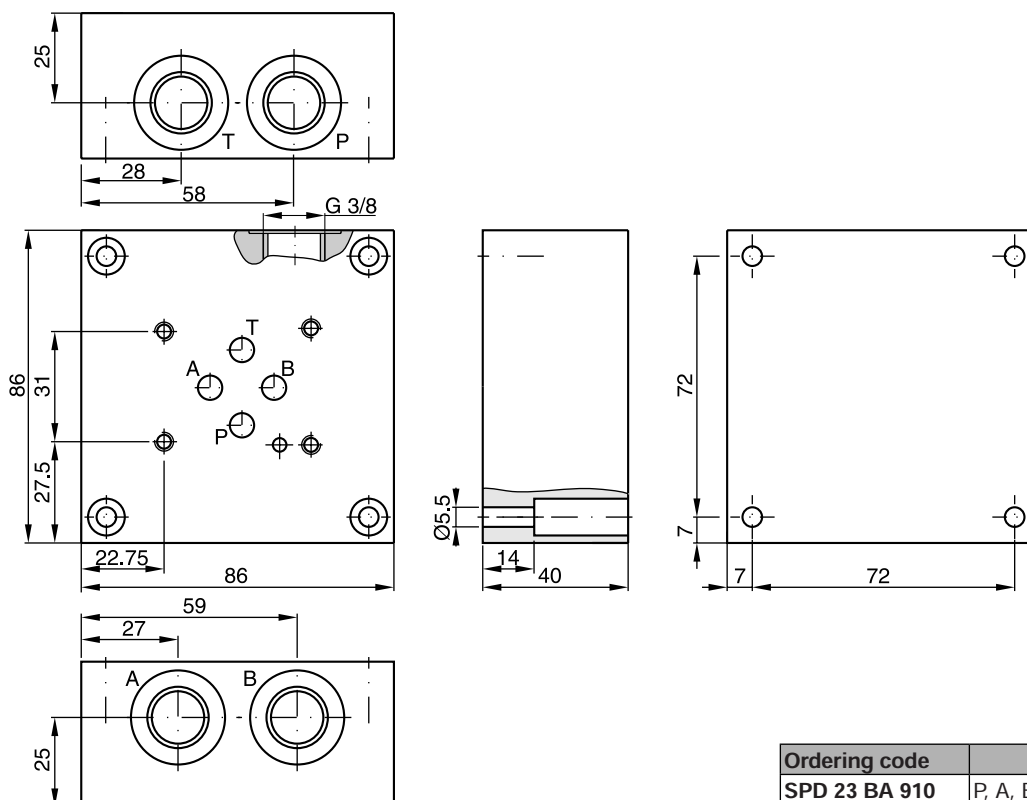


Bold letters =
Short-term availability

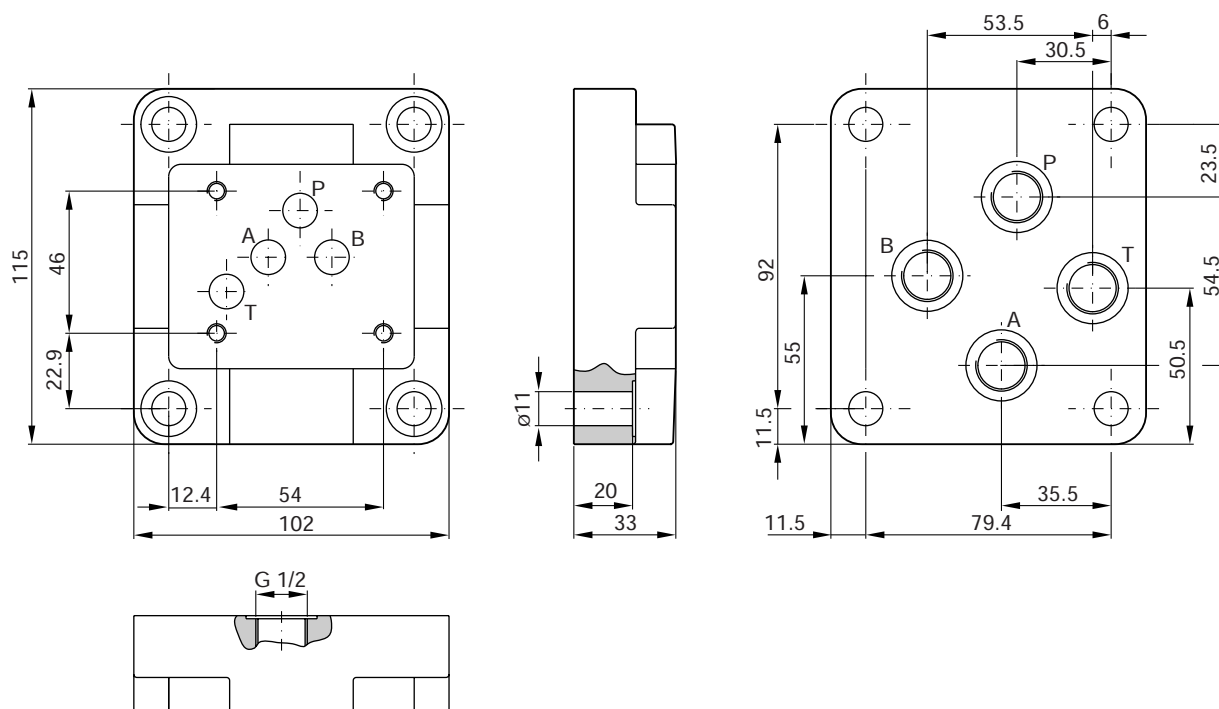
Ordering code	
SPD 24 B 910	P, A, B and T = G ½



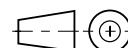
Valve size DIN NG06, CETOP 03, NFPA D03



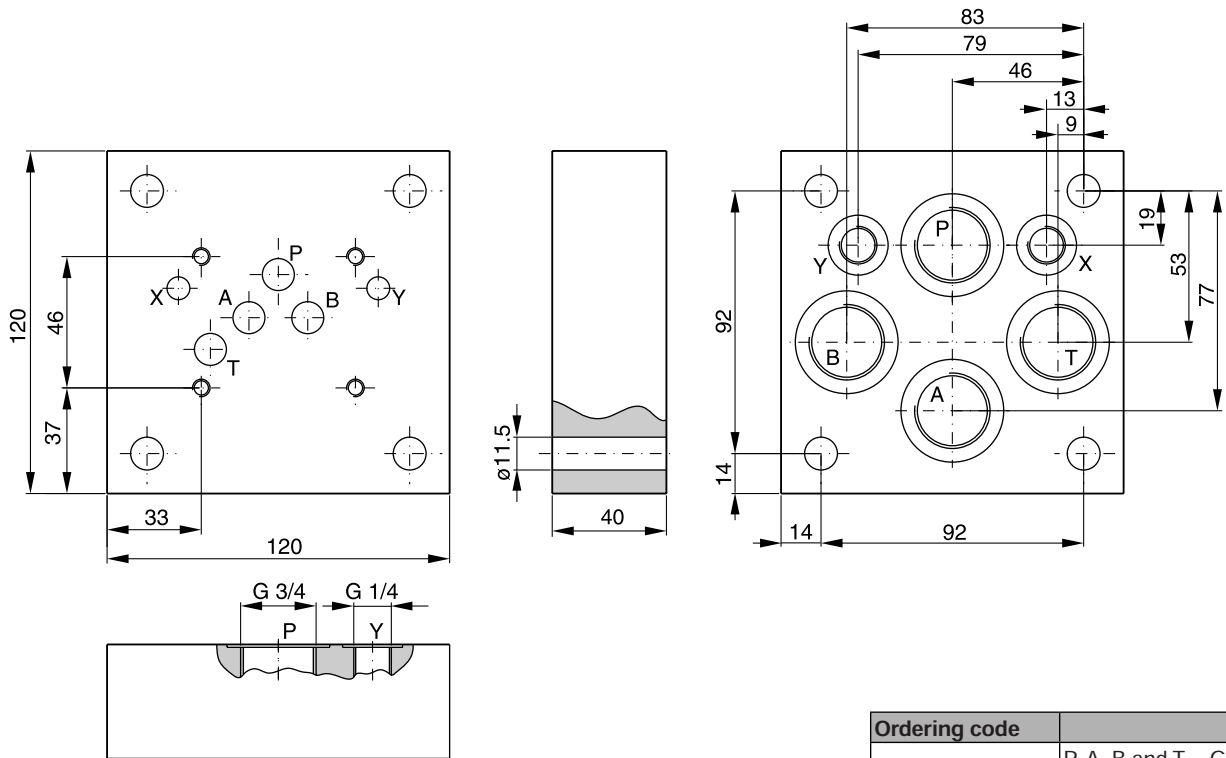
Valve size DIN NG10, CETOP 05, NFPA D05



Bold letters =
Short-term availability

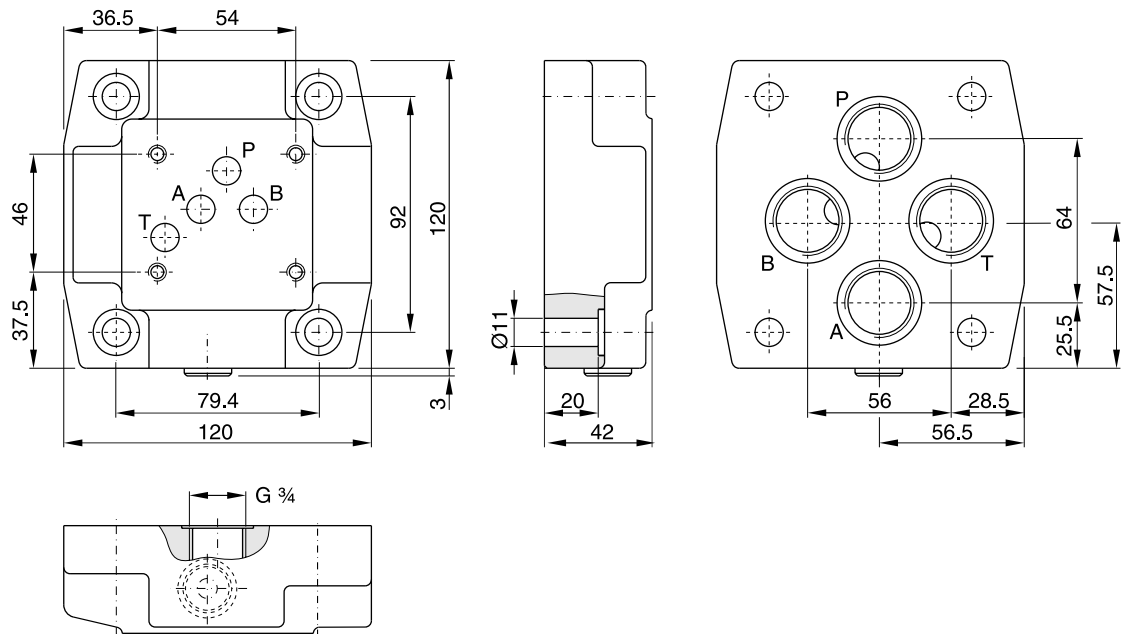


Valve size DIN NG10, CETOP 05, NFPA D05



Ordering code	
SPD 316 B 960	P, A, B and T = G 3/4 X and Y = G 1/4

Valve size DIN NG10, CETOP 05, NFPA D05

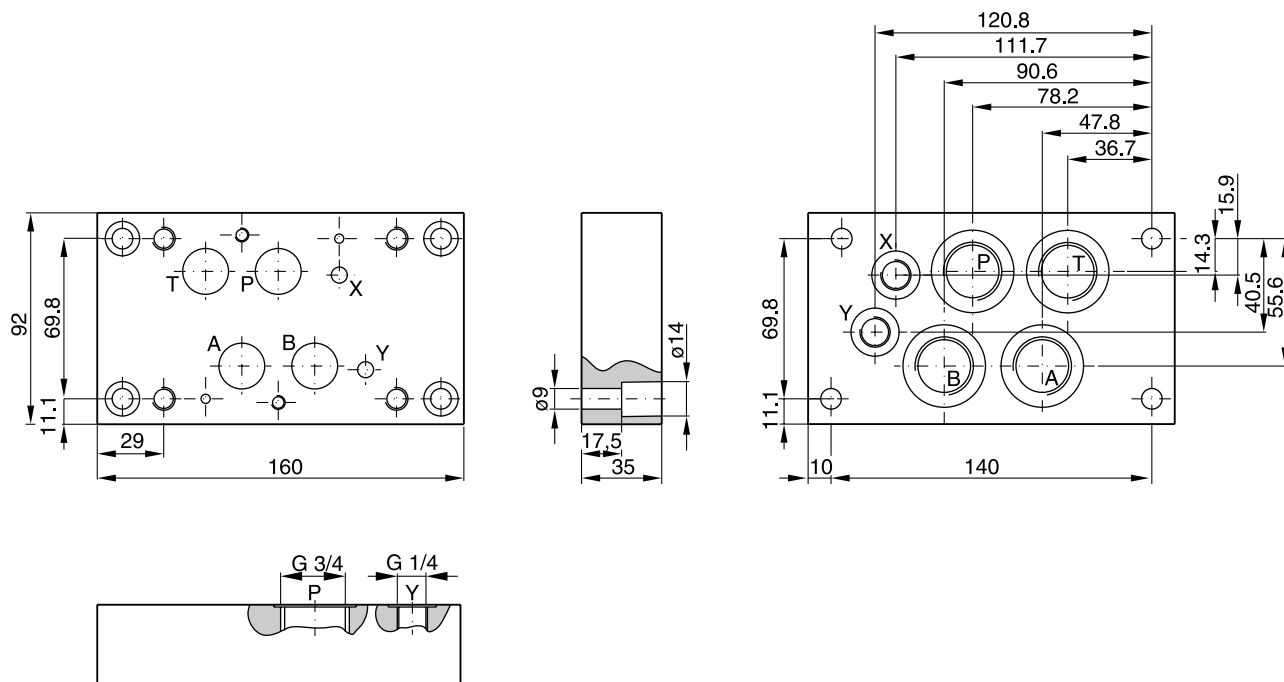


Ordering code	
SPD 36 B 920	P, A, B and T = G 3/4

Bold letters =
Short-term availability

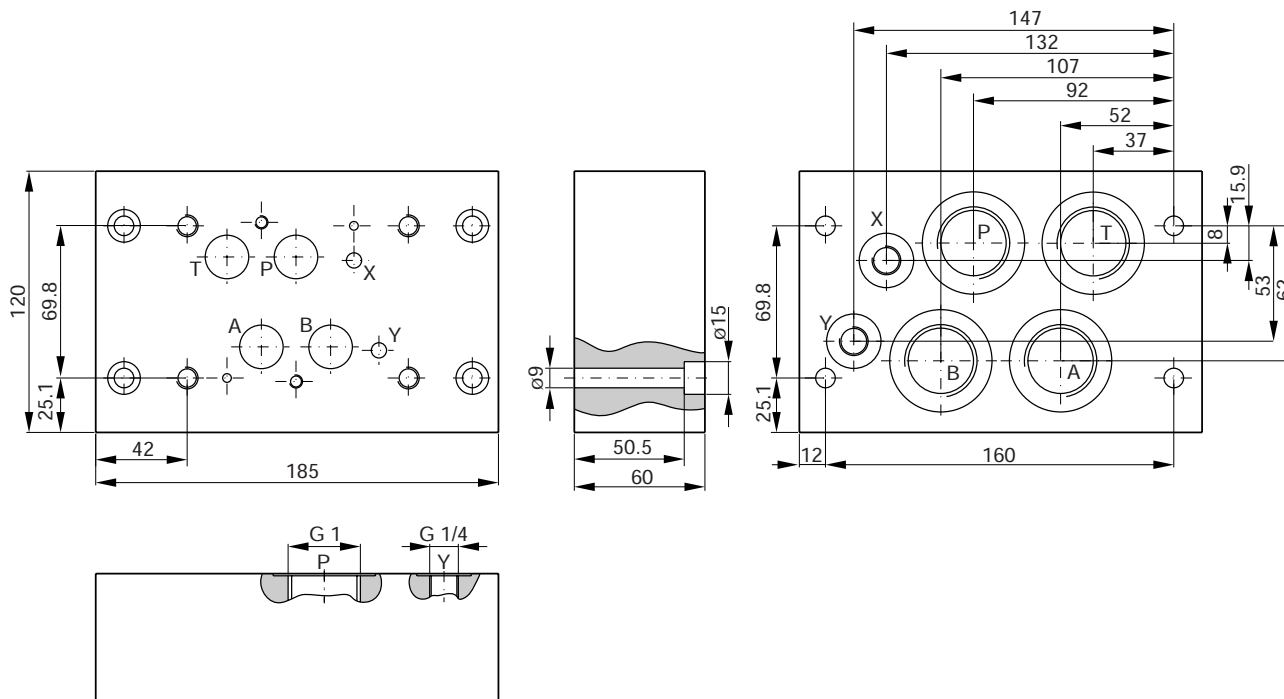


Valve size DIN NG16, CETOP 07, NFPA D07



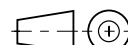
Ordering code	
SPD 46 B 910	P, A, B and T = G 3/4 X and Y = G 1/4

Valve size DIN NG16, CETOP 07, NFPA D07

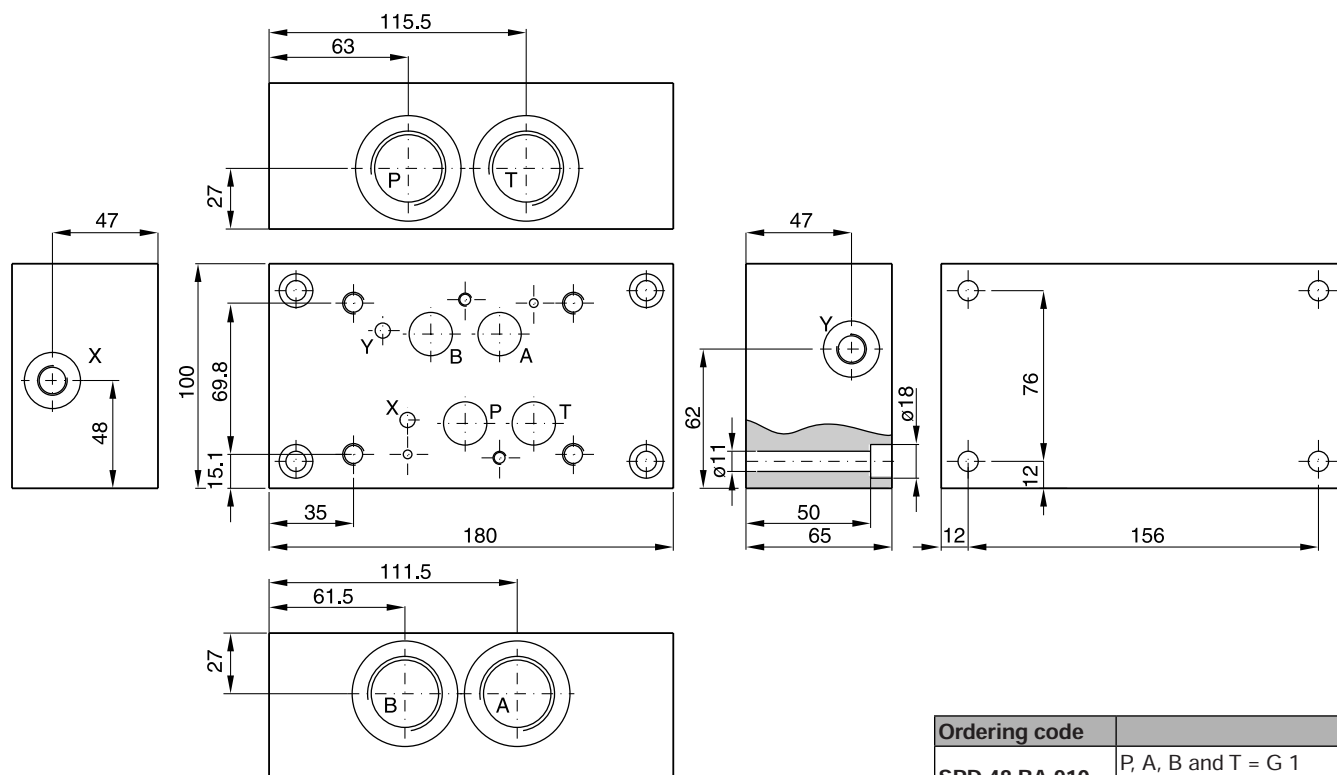


Ordering code	
SPD 48 B 910	P, A, B and T = G 1 X and Y = G 1/4

**Bold letters =
Short-term availability**

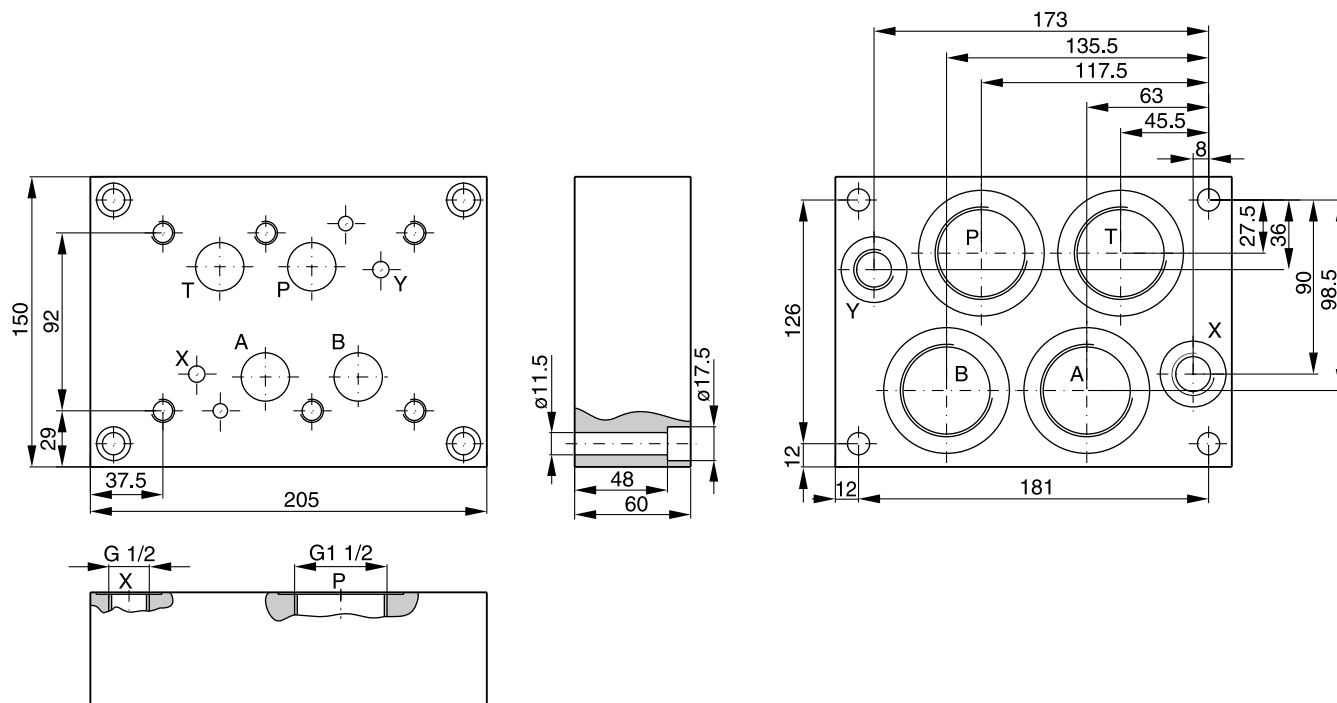


Valve size DIN NG16, CETOP 07, NFPA D07



Ordering code	
SPD 48 BA 910	P, A, B and T = G 1 X and Y = G ¼

Valve size DIN NG25, CETOP 08, NFPA D08

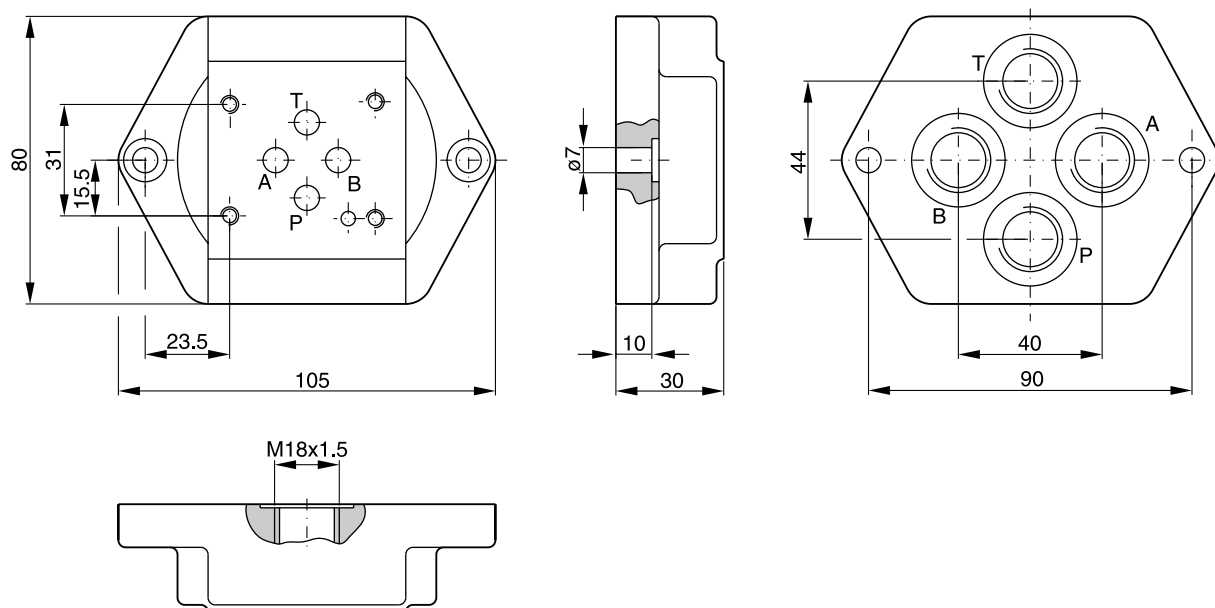


Ordering code	
SPD 612 B 930	P, A, B and T = G 1½ X and Y = G ½

Bold letters =
Short-term availability

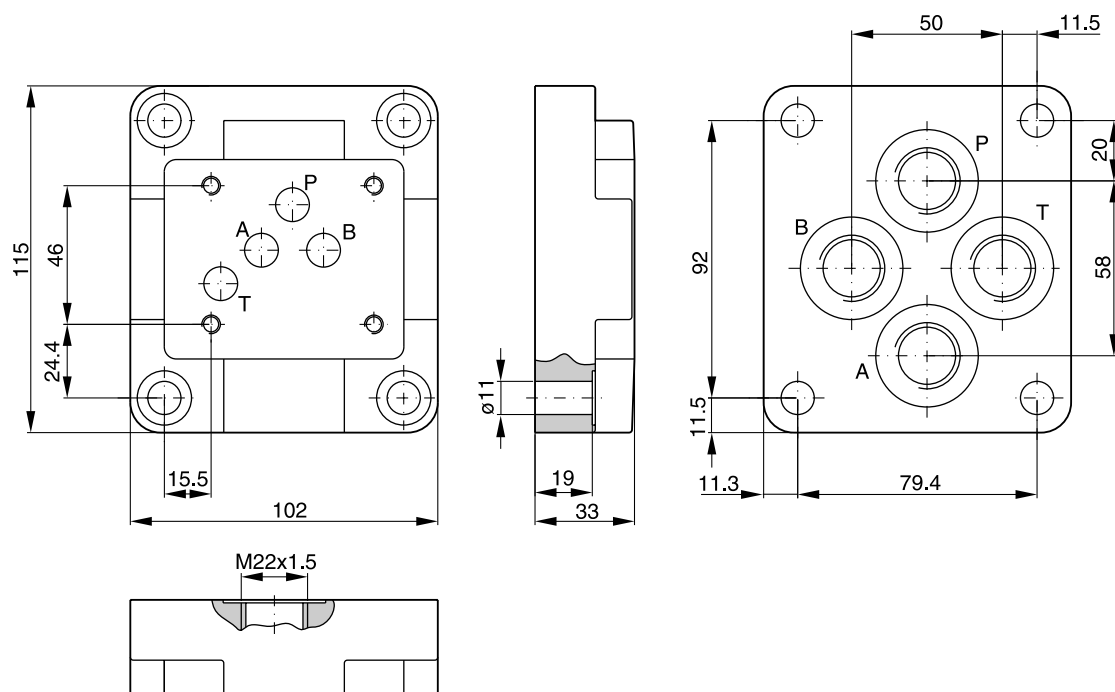


Valve size DIN NG06, CETOP 03, NFPA D03



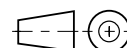
Order. code	
A 064 M	P, A, B and T = M18x1.5 as per ISO 6149

Valve size DIN NG10, CETOP 05, NFPA D05

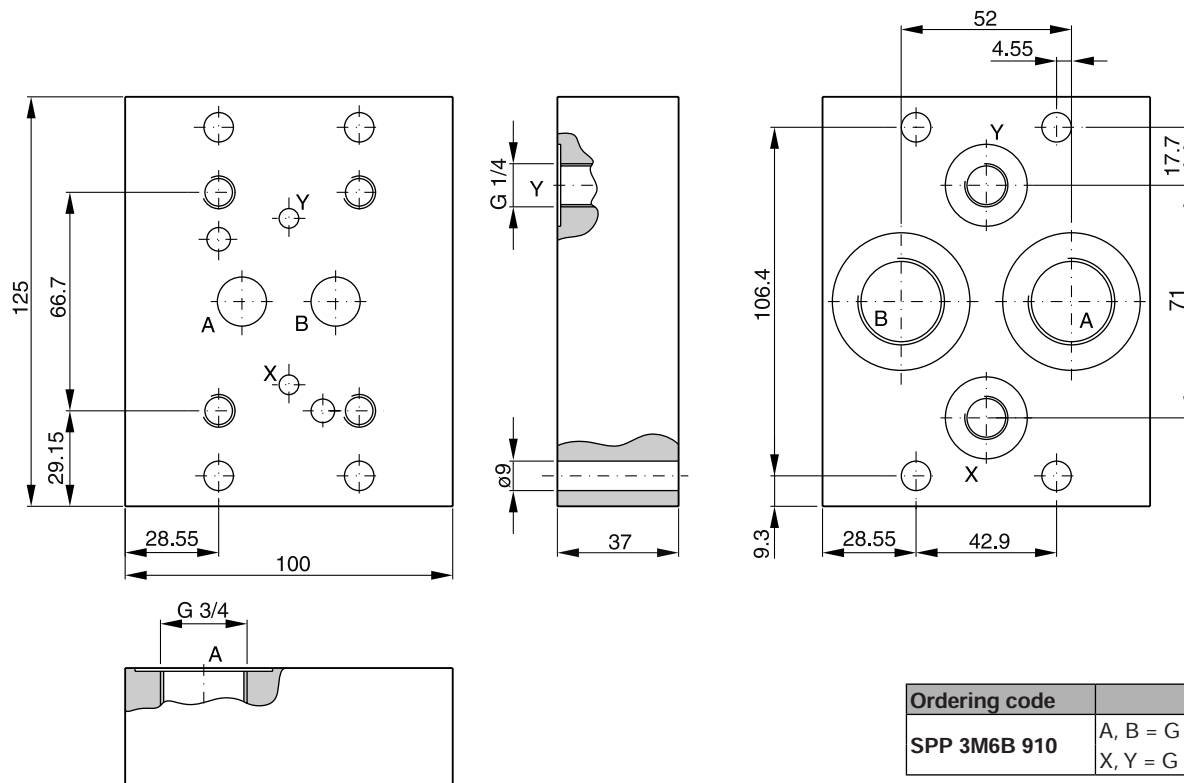


Order. code	
A 104 M	P, A, B and T = M22x1.5 as per ISO 6149

Bold letters =
Short-term availability

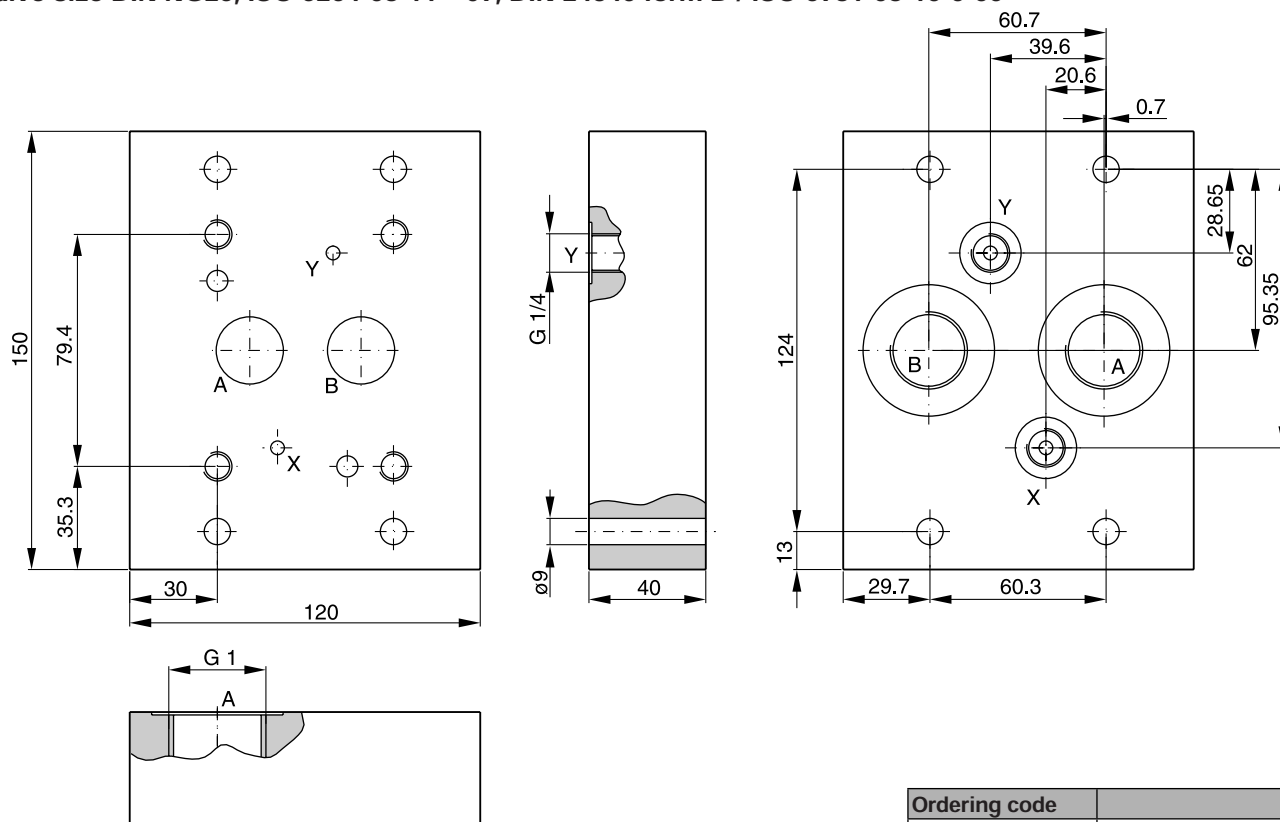


Valve size DIN NG10, ISO 6264-06-07-* -97, DIN 24340 form D / ISO 5781-06-07-0-00



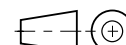
Ordering code	
SPP 3M6B 910	A, B = G 3/4 X, Y = G 1/4

Valve size DIN NG25, ISO 6264-08-11-* -97, DIN 24340 form D / ISO 5781-08-10-0-00

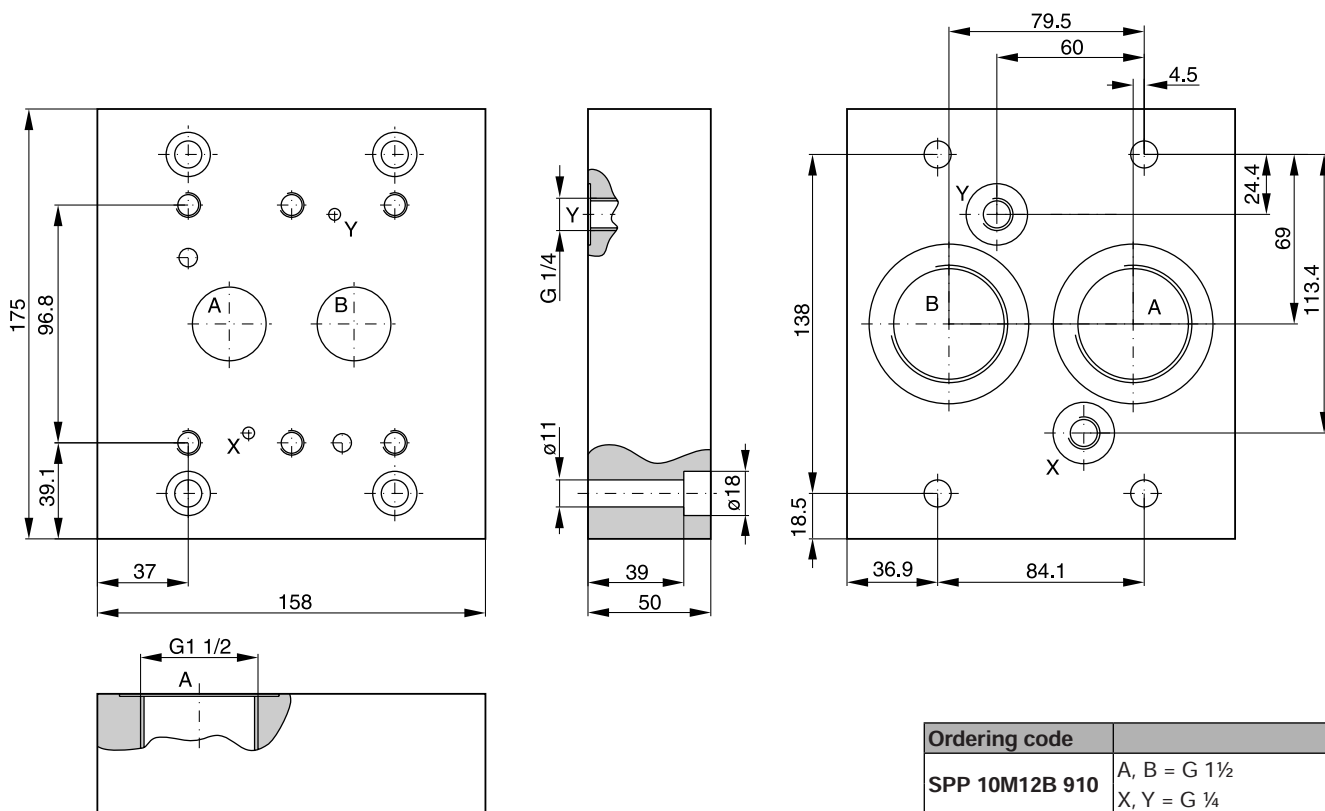


Ordering code	
SPP 6M8B 910	A, B = G 1 X, Y = G 1/4

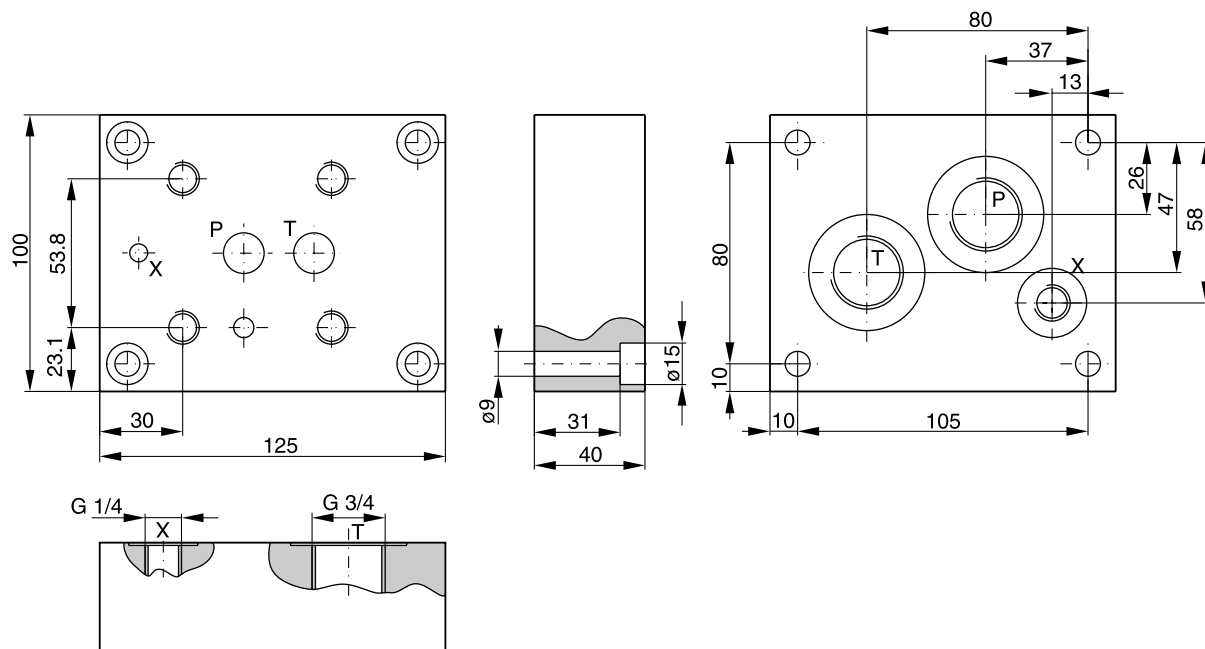
Bold letters =
Short-term availability



Valve size DIN NG32, ISO 6264-10-15-* -97, DIN 24340 form D / ISO 5781-10-13-0-00



Valve size DIN NG10, ISO 6264-06-09-* -97, DIN 24340 form E

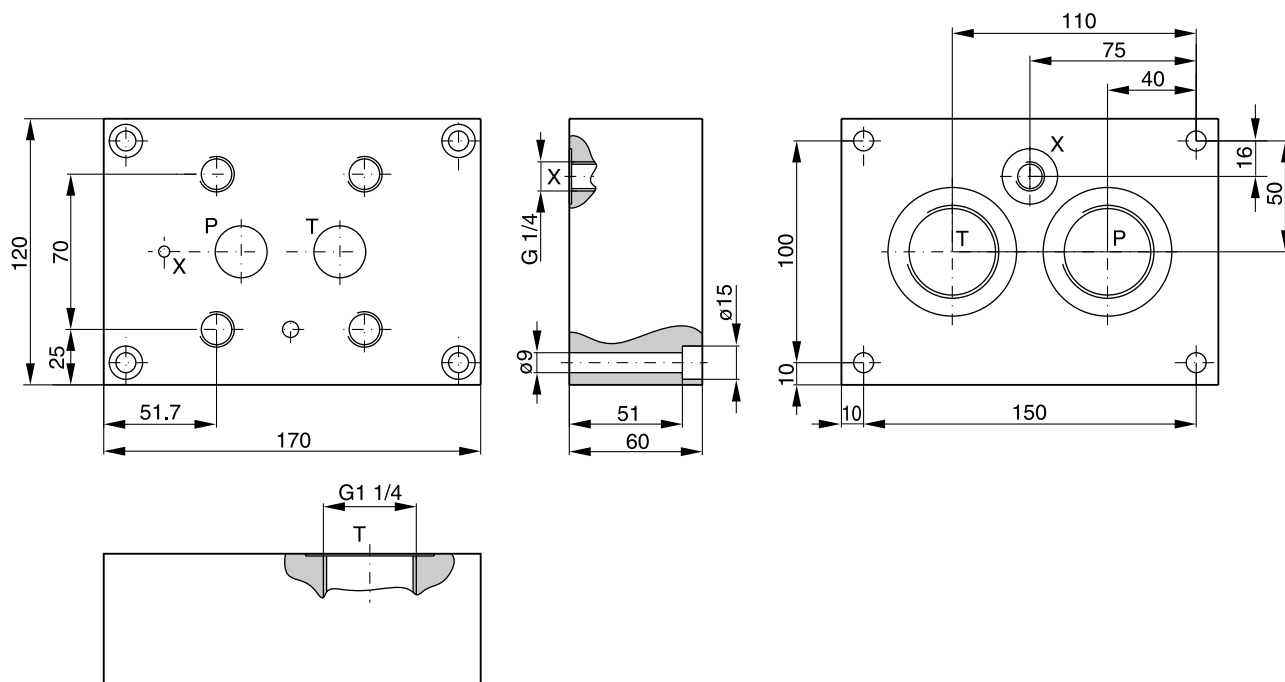


**Bold letters =
Short-term availability**

Ordering code	
SPP 3R6B 910	P, T = G 3/4 X = G 1/4

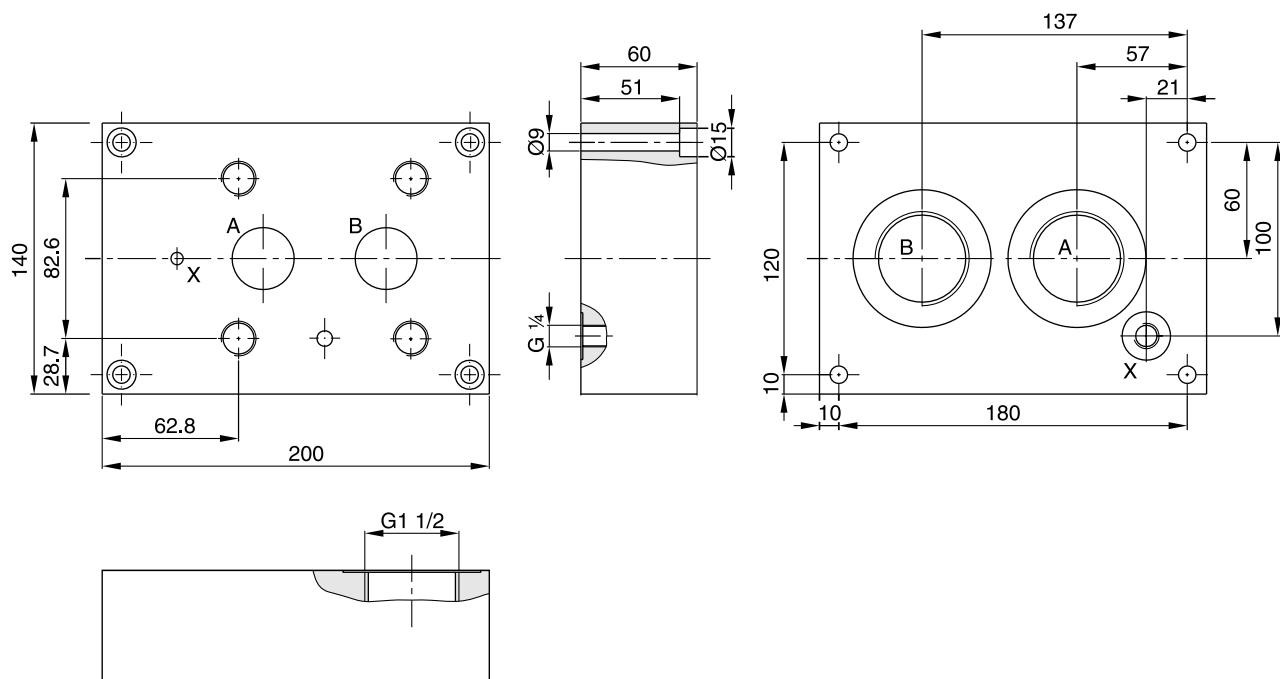


Valve size DIN NG25, ISO 6264-08-13-* -97, DIN 24340 form E



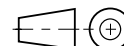
Ordering code	
SPP 6R10B 910	P, T = G 1¼ X = G ¼

Valve size DIN NG32, ISO 6264-10-17-* -97, DIN 24340 form E

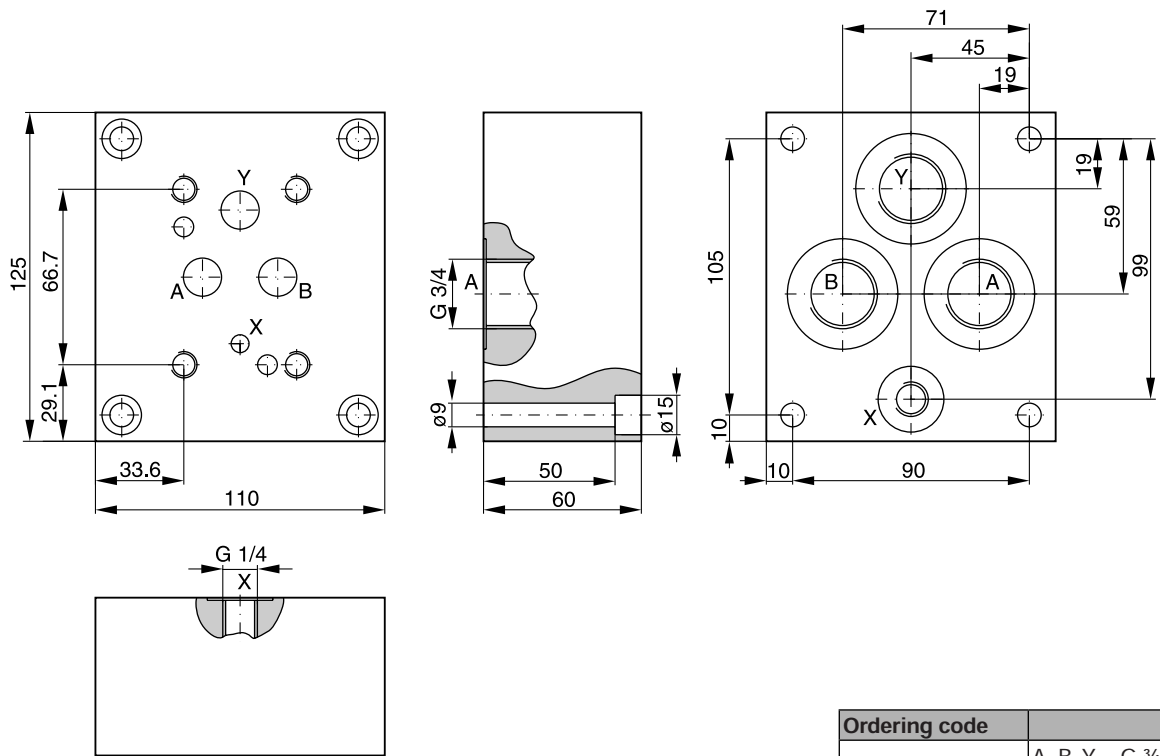


Ordering code	
SPP 10R12B 910	A, B = G 1½ X = G ¼

Bold letters =
Short-term availability



Valve size DIN NG10, for pressure valves VB and VM



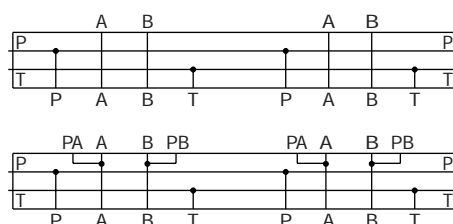
Ordering code	
A102 R3/4-OD1	A, B, Y = G ¾ X = ¼

Multi-station manifolds are used to save space when connecting several directional control valves to a common pressure and return line.

Diverse switching arrangements are possible in combination with sandwich and directional control valves. Plugs without designations must not be removed.

Features

- Very low pressure drop due to large drilling parameters
- P- and T-ports on both faces
- Also available with gauge ports G $\frac{1}{4}$
- Separation in P or T channel optional - please consult your distributor



Ordering code

MSP				B		9		
Multiple subplate, standard	Stations	Nominal size	Port size	BSPP Port thread	Port location	Metric fastening screws	Design series	Gauge port

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

Code	Size
D2	NG06 / CETOP 03
D3	NG10 / CETOP 05

Code	Gauge port
omit	without
C	Port G $\frac{1}{4}$

Code	Design series
10	CETOP 03, NG06
30	CETOP 05, NG10

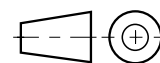
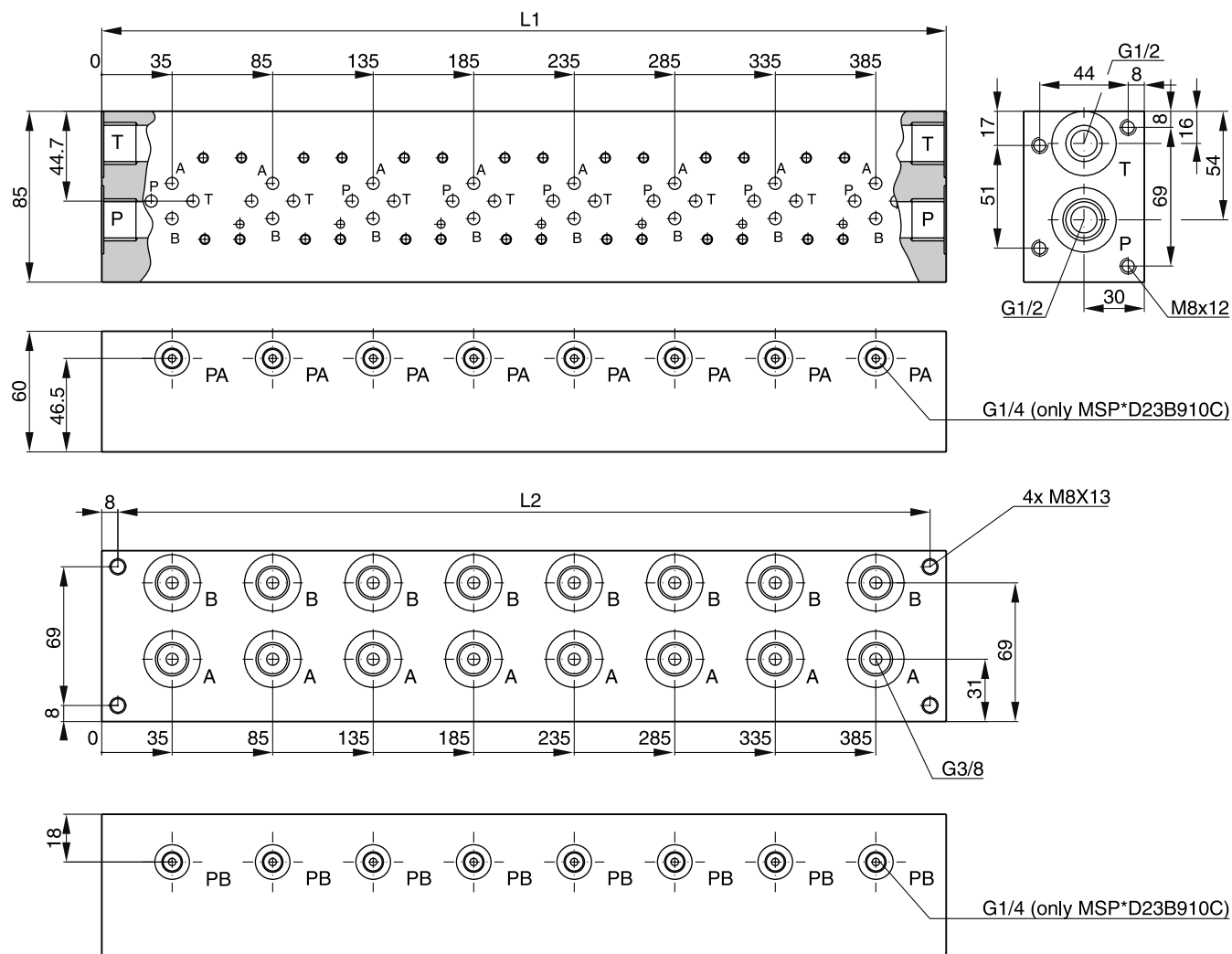
Code	Port location
omit	A + B rear
A	A + B side

Code	Port size
3	CETOP 03 A + B = G 3/8 P + T = G 1/2
4	CETOP 05 A + B = G 1/2 P = G 3/4 T = G1

Bold letters =
Short-term availability

Technical data

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

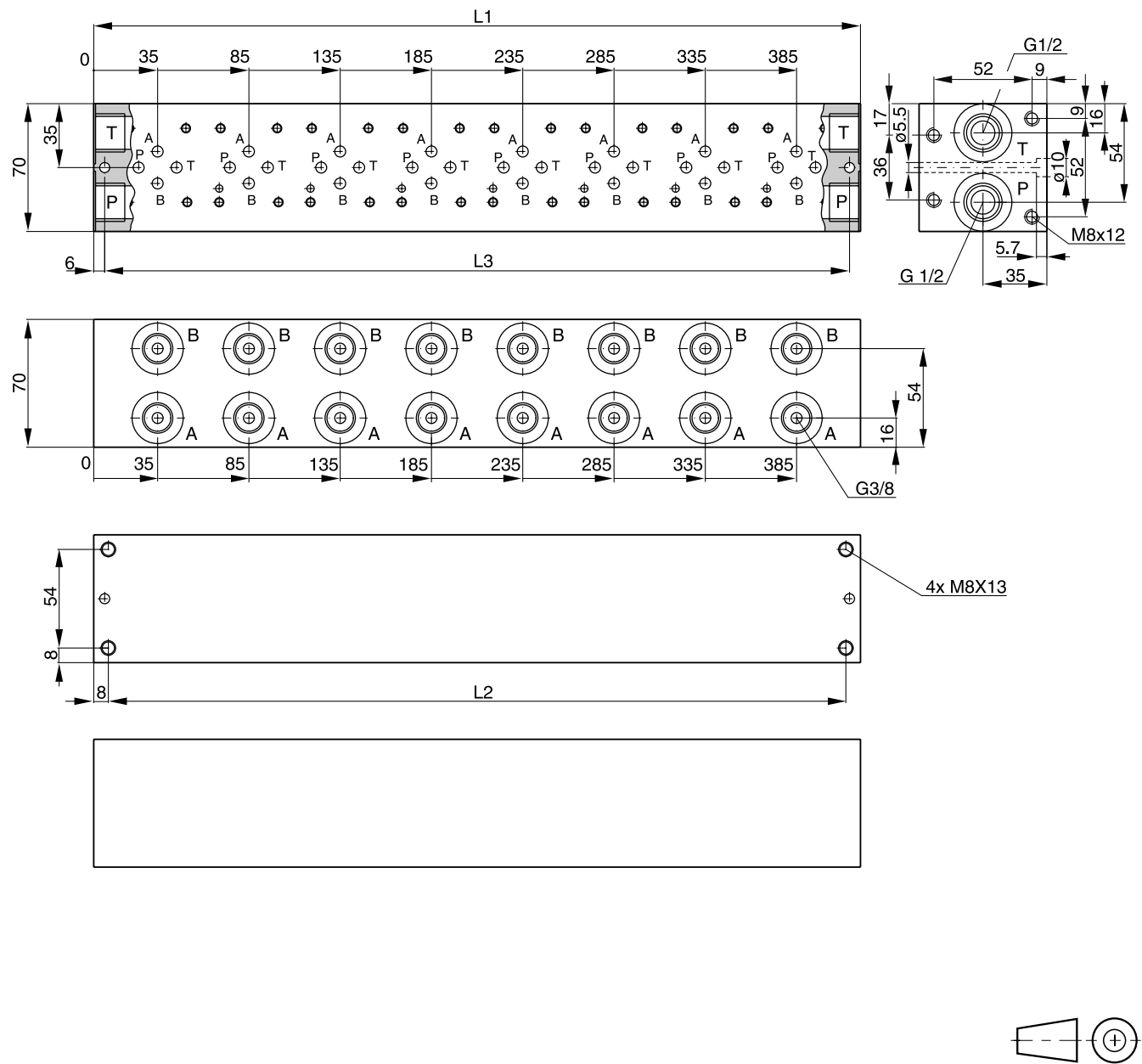
MSP*D23 B910*

Code	Nominal size	Stations	L1 [mm]	L2 [mm]	Port		Gauge port	Weight [kg]
					P, T	A, B		
MSP1 D23 B910*	NG06 CETOP 03	1	70	54	G1/2	G3/8	G1/4 (only MSP*D23B910C)	2.1 (2.1)
MSP2 D23 B910*		2	120	104				3.7 (3.7)
MSP3 D23 B910*		3	170	154				5.4 (5.3)
MSP4 D23 B910*		4	220	204				6.9 (6.9)
MSP5 D23 B910*		5	270	254				8.6 (8.4)
MSP6 D23 B910*		6	320	304				10.3 (10.1)
MSP7 D23 B910*		7	370	354				11.9 (11.7)
MSP8 D23 B910*		8	420	404				13.5 (13.4)

* () only MSP*D23B910C

MSP UK.INDD CM 09.04.13

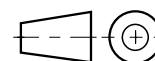
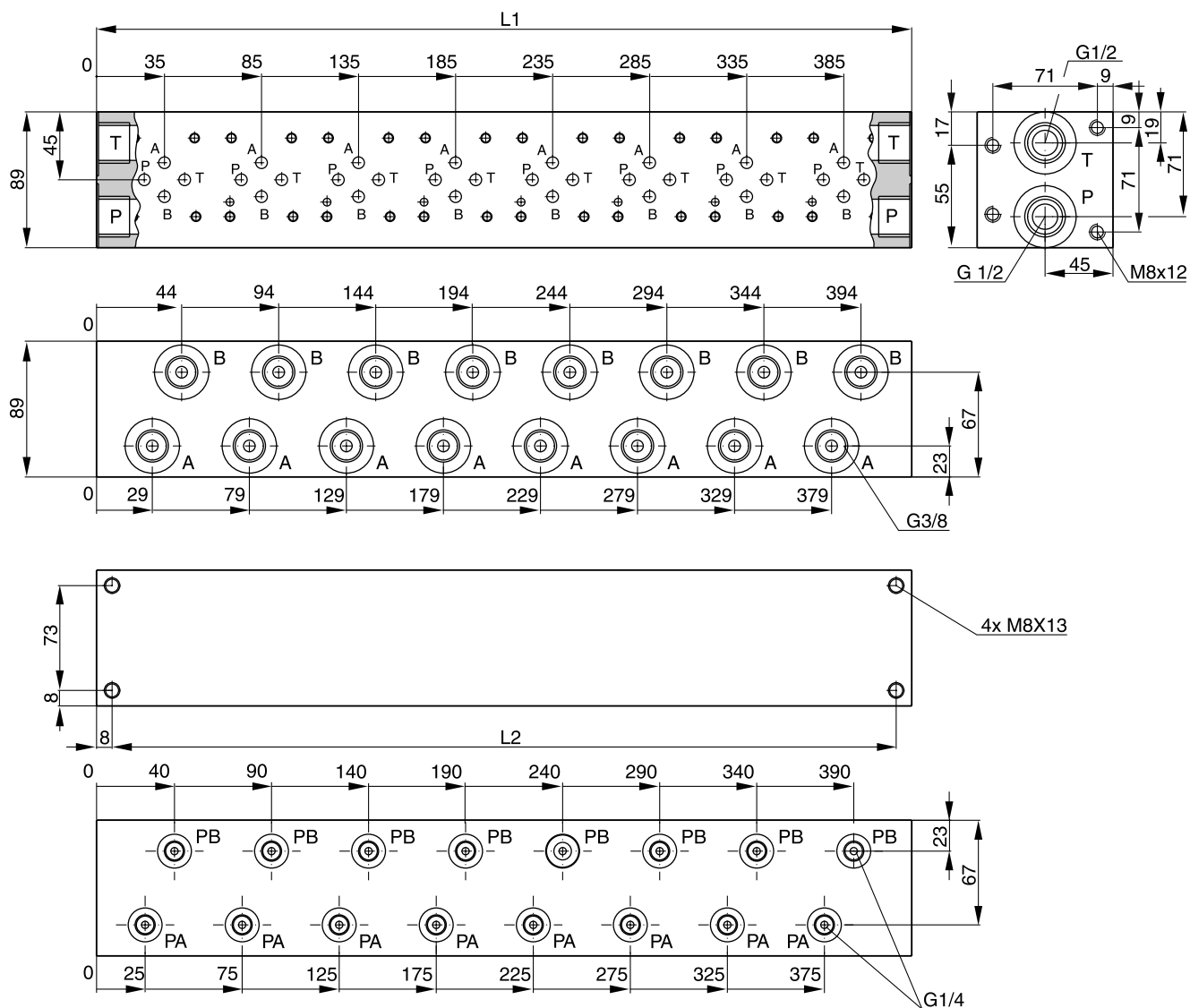
MSP*D23 BA910



12

Code	Nominal size	Stations	L1 [mm]	L2 [mm]	L3 [mm]	Port		Gauge port	Weight [kg]
						P, T	A, B		
MSP1 D23 BA910	NG06 CETOP 03	1	70	54	58	G½	G¾	—	2.0
MSP2 D23 BA910		2	120	104	108				3.5
MSP3 D23 BA910		3	170	154	158				5.0
MSP4 D23 BA910		4	220	204	208				6.6
MSP5 D23 BA910		5	270	254	258				8.1
MSP6 D23 BA910		6	320	304	308				9.6
MSP7 D23 BA910		7	370	354	358				11.2
MSP8 D23 BA910		8	420	404	408				12.7

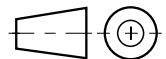
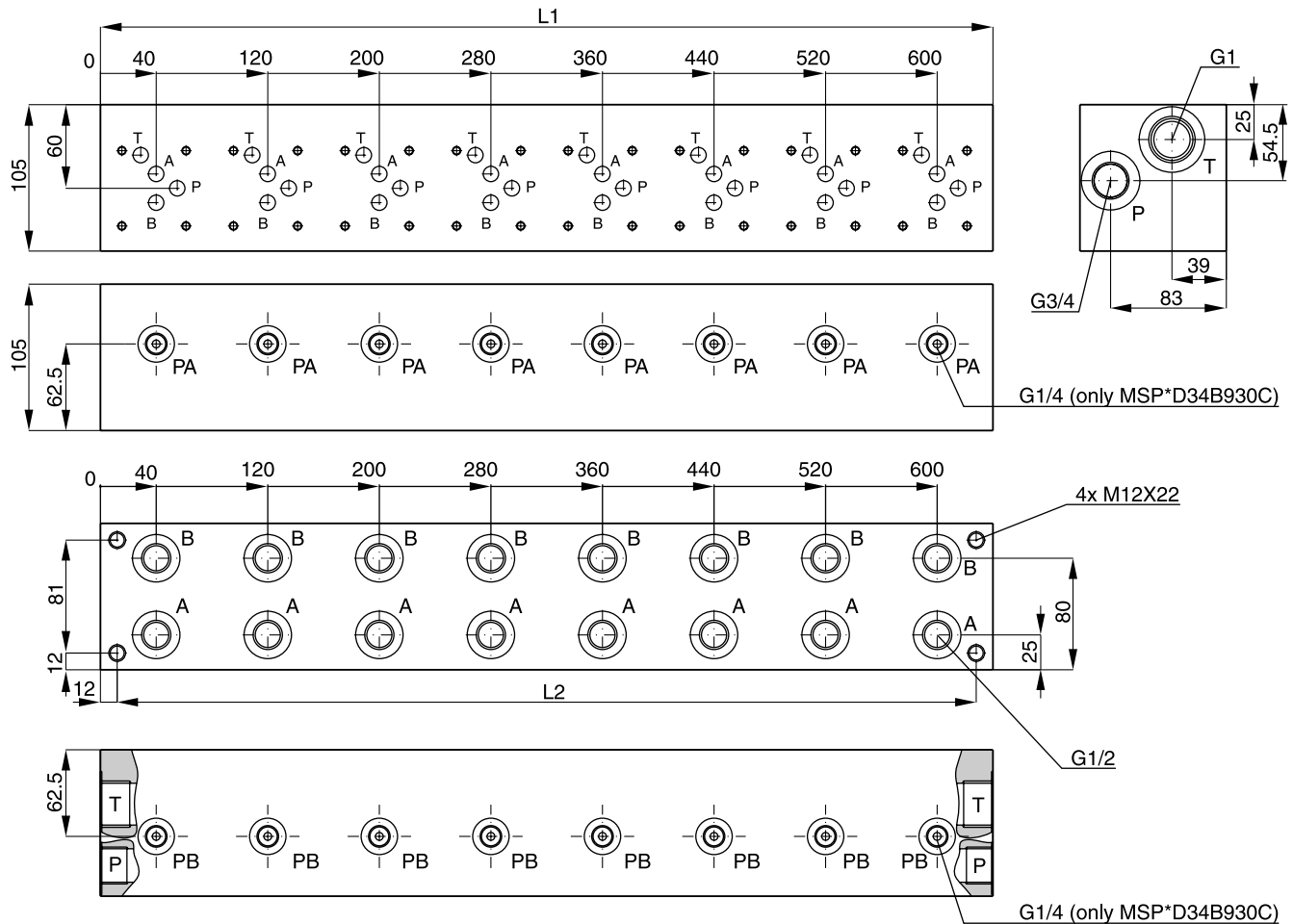
MSP*D23 BA910C



Code	Nominal size	Stations	L1 [mm]	L2 [mm]	Port		Gauge port	Weight [kg]
					P, T	A, B		
MSP1 D23 BA910C	NG06 CETOP 03	1	70	54	G $\frac{1}{2}$	G $\frac{3}{8}$	G $\frac{1}{4}$	3.4
MSP2 D23 BA910C		2	120	104				5.8
MSP3 D23 BA910C		3	170	154				8.4
MSP4 D23 BA910C		4	220	204				10.6
MSP5 D23 BA910C		5	270	254				13.0
MSP6 D23 BA910C		6	320	304				15.7
MSP7 D23 BA910C		7	370	354				18.2
MSP8 D23 BA910C		8	420	404				20.6

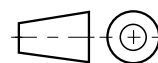
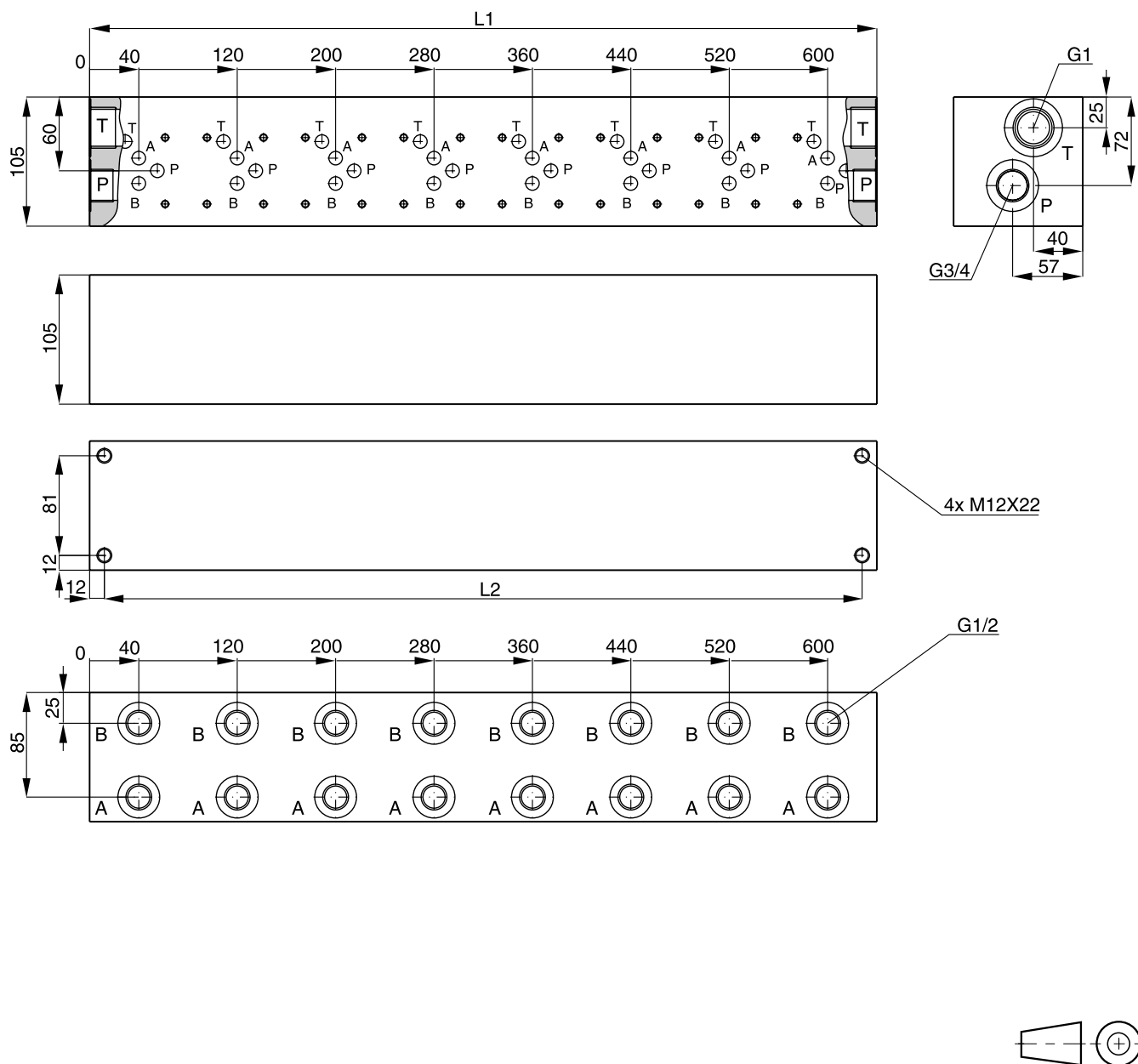
Multi-Station Manifold Series MSP

MSP*D34 B930*



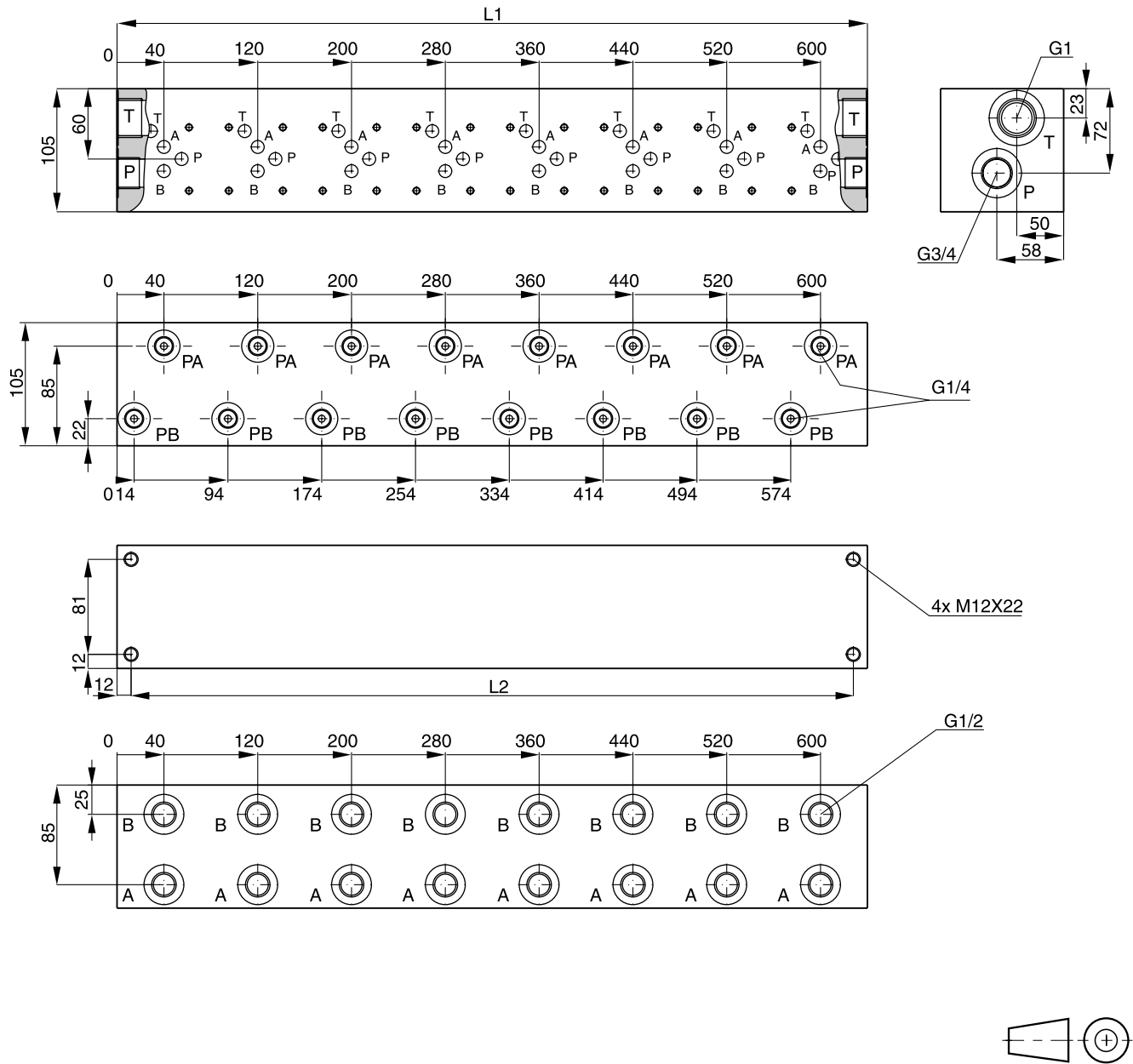
Code	Nominal size	Stations	L1 [mm]	L2 [mm]	Port			Gauge port	Weight [kg]
					P	T	A, B		
MSP1 D34 B930*	NG10 CETOP 05	1	80	56	G¾	G1	G½	G¼ (only MSP*D34B930C)	5.2 (5.1)
MSP2 D34 B930*		2	160	136					10.7 (10.6)
MSP3 D34 B930*		3	240	216					16.2 (16.2)
MSP4 D34 B930*		4	320	296					21.6 (21.6)
MSP5 D34 B930*		5	400	376					27.2 (27.2)
MSP6 D34 B930*		6	480	456					32.5 (32.5)
MSP7 D34 B930*		7	560	536					38.0 (38.0)
MSP8 D34 B930*		8	640	616					43.7 (43.7)

* () only MSP*D34B930C

MSP*D34 BA930

Code	Nominal size	Stations	L1 [mm]	L2 [mm]	Port			Gauge port	Weight [kg]
					P	T	A, B		
MSP1 D34 BA930	NG10 CETOP 05	1	80	56	G $\frac{3}{4}$	G1	G $\frac{1}{2}$	—	5.1
MSP2 D34 BA930		2	160	136					10.6
MSP3 D34 BA930		3	240	216					16.0
MSP4 D34 BA930		4	320	296					21.5
MSP5 D34 BA930		5	400	376					26.9
MSP6 D34 BA930		6	480	456					32.5
MSP7 D34 BA930		7	560	536					37.7
MSP8 D34 BA930		8	640	616					43.4

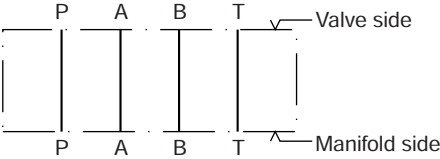
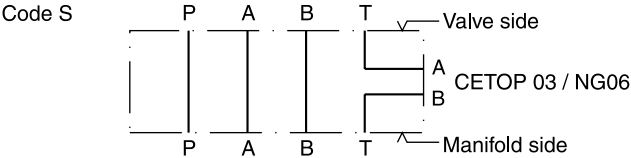
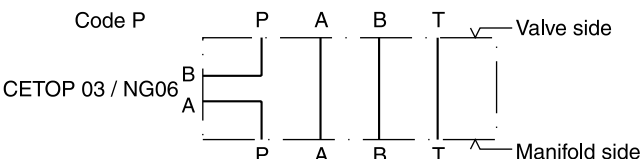
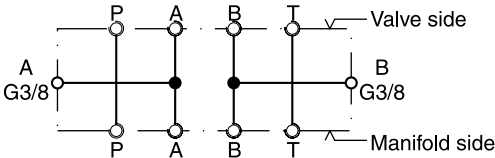
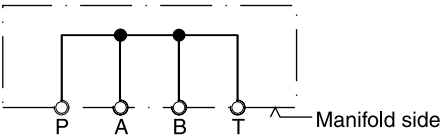
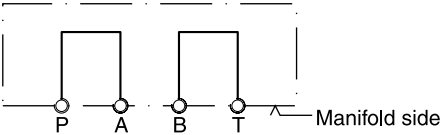
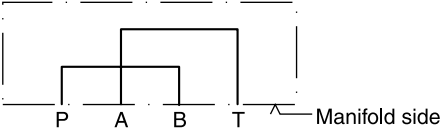
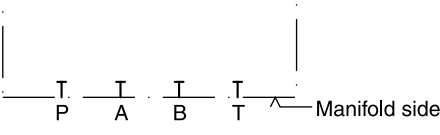
MSP*D34 BA930C



Code	Nominal size	Stations	L1 [mm]	L2 [mm]	Port			Gauge port	Weight [kg]
					P	T	A, B		
MSP1 D34 BA930C	NG10 CETOP 05	1	80	56	G3/4	G1	G1/2	G1/4	5.1
MSP2 D34 BA930C		2	160	136					10.4
MSP3 D34 BA930C		3	240	216					15.8
MSP4 D34 BA930C		4	320	296					21.2
MSP5 D34 BA930C		5	400	376					26.5
MSP6 D34 BA930C		6	480	456					31.9
MSP7 D34 BA930C		7	560	536					37.2
MSP8 D34 BA930C		8	640	616					42.6

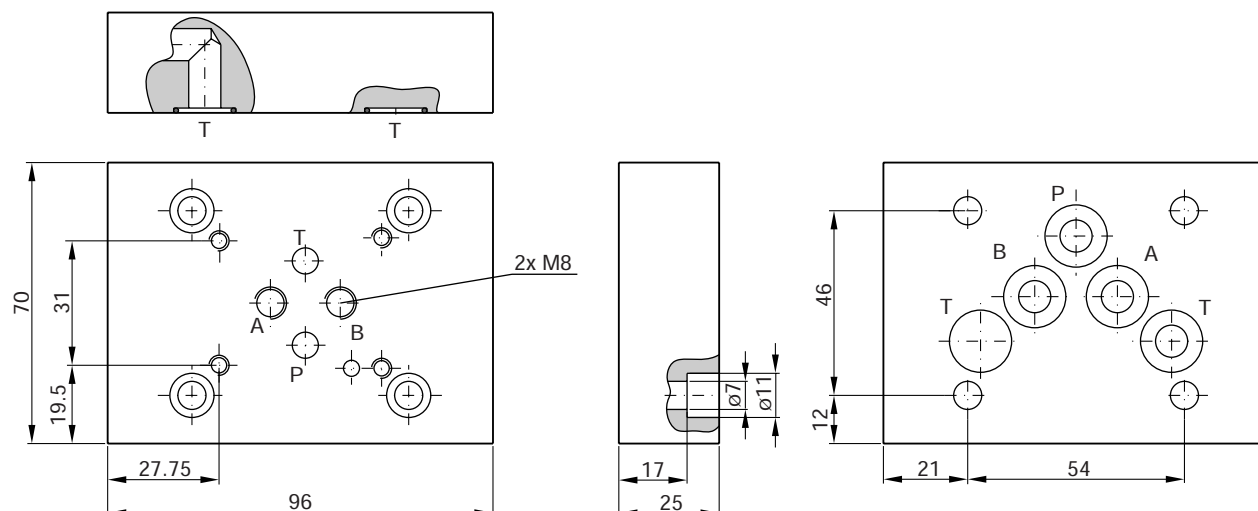
Symbol	Type	Size	Height
	PADA 1007-AA-BB	NG10-NG06	25
	PADA 1007/A-B/B-A	NG10-NG06	25
	H06-1044	NG06	30
	H06-1039	NG06	30
	H06-504	NG06	30
	H06-711	NG06	30
	H06-1274	NG06	30
	H06-1040	NG06	30

Bold letters =
Short-term availability

Symbol	Type	Size	Height
	H06DO-1291	NG06	10
Code S  Code P 	H06DU-814	NG06	71.3
 All ports can be equipped with orifices or plugs (1/16NPT)	CS06040N	NG06	40.3
 All ports can be equipped with orifices or plugs (1/16NPT)	CS06082N	NG06	40.3
 All ports can be equipped with orifices or plugs (1/16NPT)	CS06080N	NG06	40.3
	D51DC071D	NG06	26.3
	D51VP071C D51VP101D	NG06 NG10	26.3 26.9

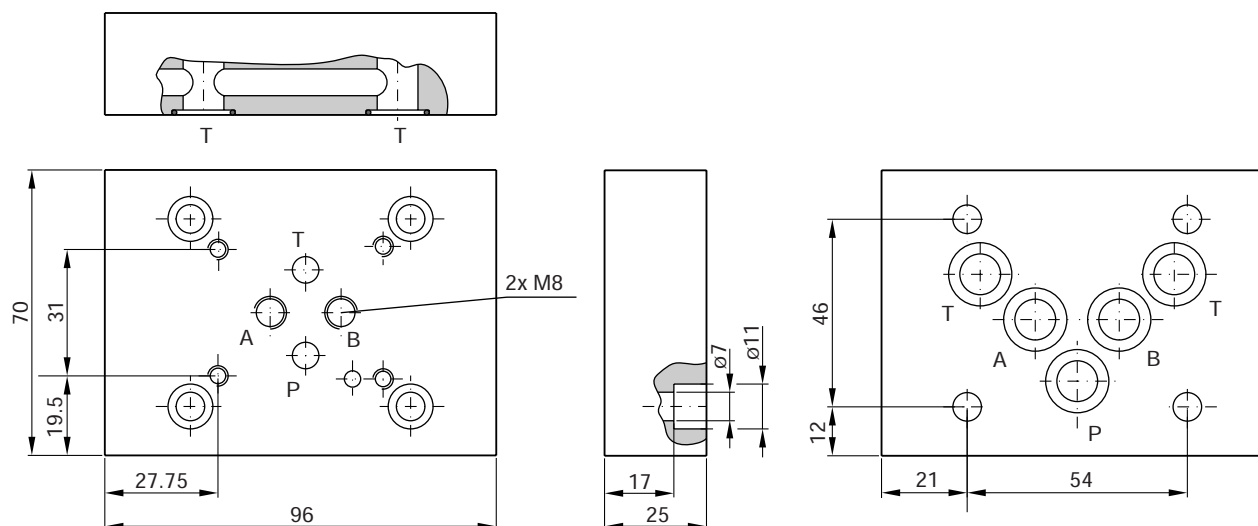
Bold letters =
Short-term availability

Adaptor plate PADA 1007-AA-BB, CETOP 05/03, nominal size NG10 to NG06



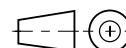
Symbol	Ordering code	Bolt Kit	Bolt dimensions	Torque
	PADA1007-AA-BB CETOP 03/05 (O-rings included in delivery)	BK 408	4x M6x25 ISO 4762-12.9	13.2 Nm $\pm$ 15 %

Adaptor plate PADA 1007/A-B/B-A, CETOP 03/05, nominal size NG10 to NG06

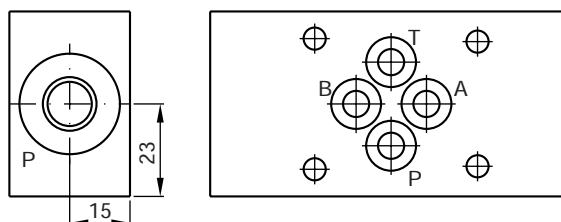
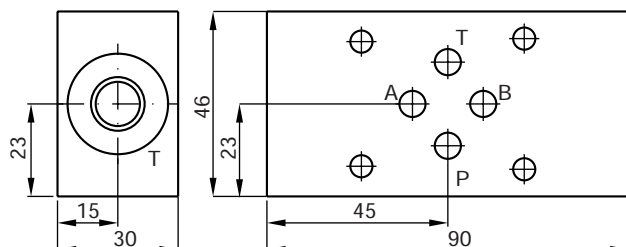
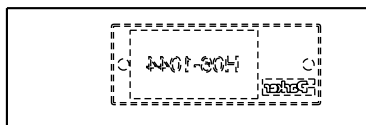


Symbol	Ordering code	Bolt Kit	Bolt dimensions	Torque
	PADA1007/A-B/B-A CETOP 03/05 (O-rings included in delivery)	BK 408	4x M6x25 ISO 4762-12.9	13.2 Nm $\pm$ 15 %

Bold letters =
Short-term availability

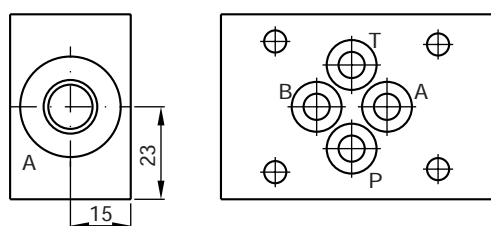
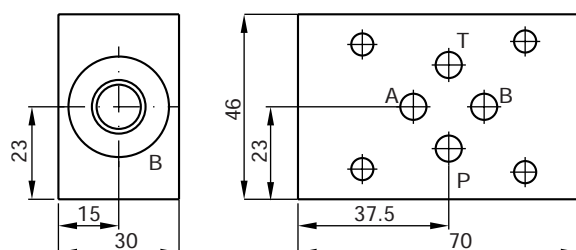
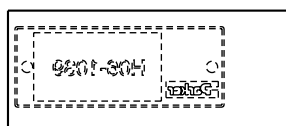


Sandwich plate H06-1044, CETOP 03 / NG06



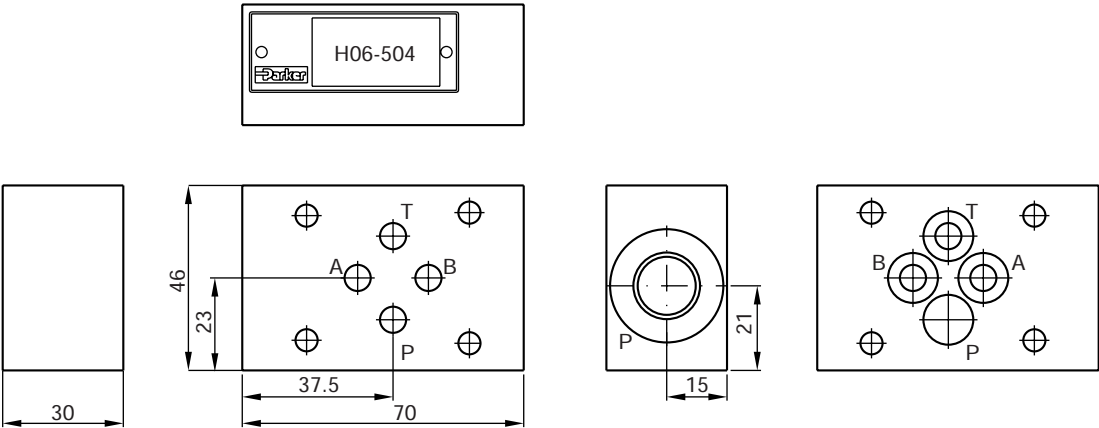
Symbol	Ordering code
Valve side Manifold side	H06-1044 CETOP 03 (O-rings included in delivery)

Sandwich plate H06-1039, CETOP 03 / NG06



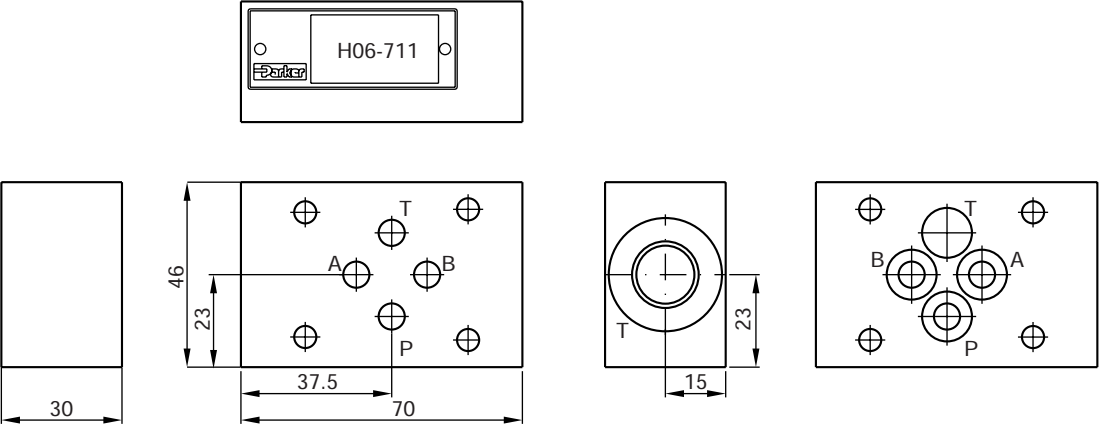
Symbol	Ordering code
	H06-1039 CETOP 03 (O-rings included in delivery)

Sandwich plate H06-504, CETOP 03 / NG06



Symbol	Ordering code
P G3/8 P A B T Valve side Manifold side	H06-504 CETOP 03 (O-rings included in delivery)

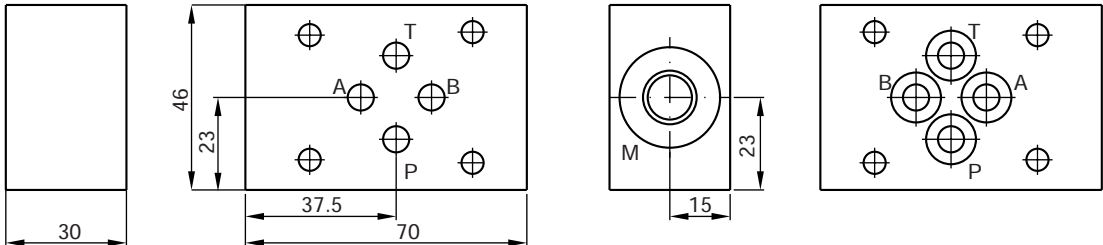
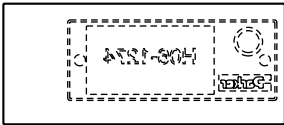
Sandwich plate H06-711, CETOP 03 / NG06



Symbol	Ordering code
P A B T Valve side Manifold side	H06-711 CETOP 03 (O-rings included in delivery)



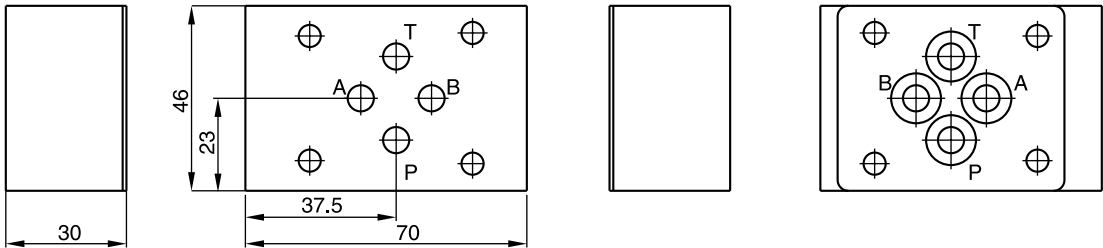
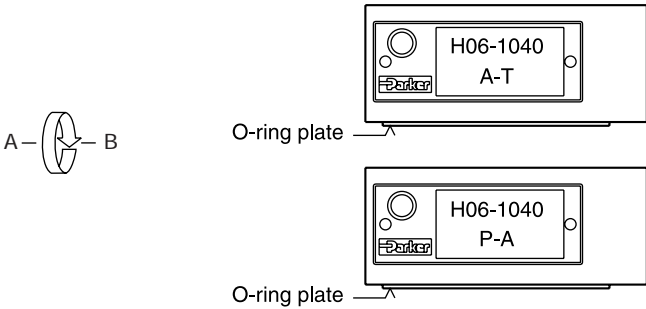
Sandwich plate H06-1274, CETOP 03 / NG06



Symbol	Ordering code
Symbol for sandwich plate H06-1274. It shows a rectangular plate with a central square area containing four ports labeled A, B, P, and T. The plate has a total width of 70 mm and a total height of 46 mm. The central square area has a side length of 37.5 mm. The distance from the top edge to the center of the ports is 23 mm. The distance from the left edge to the center of the ports is 30 mm.	H06-1274 CETOP 03 (O-rings included in delivery)

Sandwich plate H06-1040, CETOP 03 / NG06

The functional change is achieved by rotating the mounting position of the valve 180°.

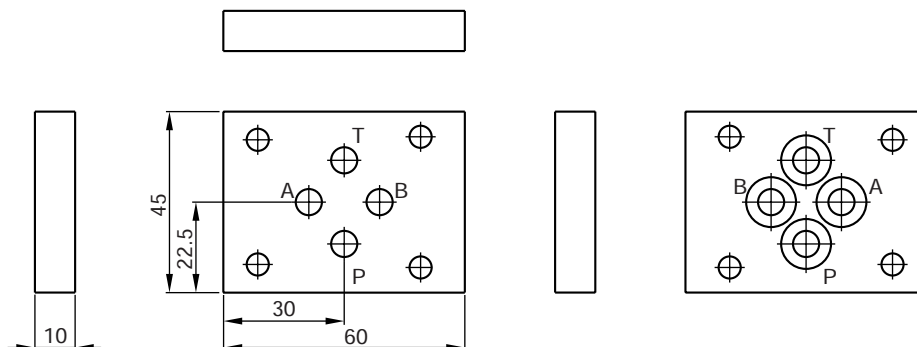


Symbol	Ordering code
Symbol for sandwich plate H06-1040. It shows a rectangular plate with a central square area containing four ports labeled A, B, P, and T. The plate has a total width of 70 mm and a total height of 46 mm. The central square area has a side length of 37.5 mm. The distance from the top edge to the center of the ports is 23 mm. The distance from the left edge to the center of the ports is 30 mm.	H06-1040 CETOP 03 (O-rings and O-ring plate included in delivery)

H06.INDD CM 24.07.13



Sandwich plate H06DO-1291, CETOP 03 / NG06



Symbol	Ordering code
	H06DO-1291 CETOP 03 (O-rings included in delivery)

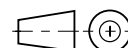
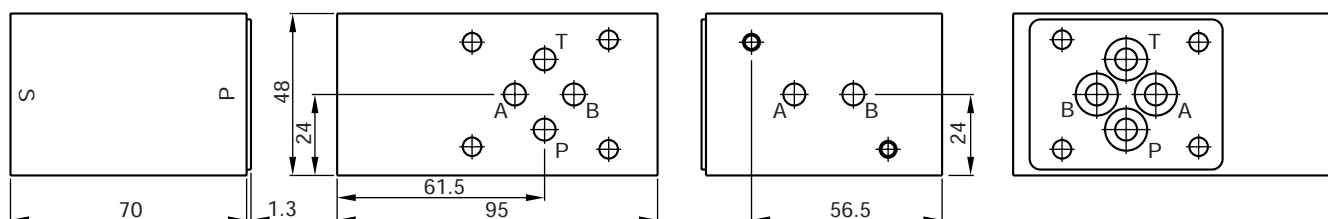
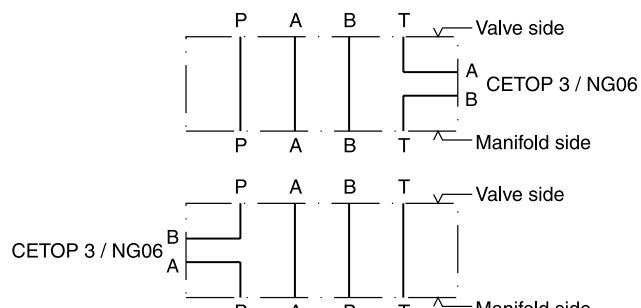
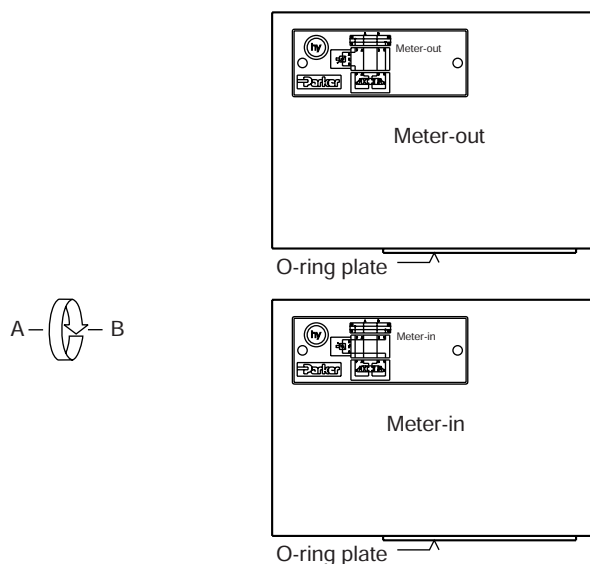
Sandwich plate H06DU-814, CETOP 03 / NG06

To mount a flow control valve GFG for meter-in (code P) or meter-out (code S) control.

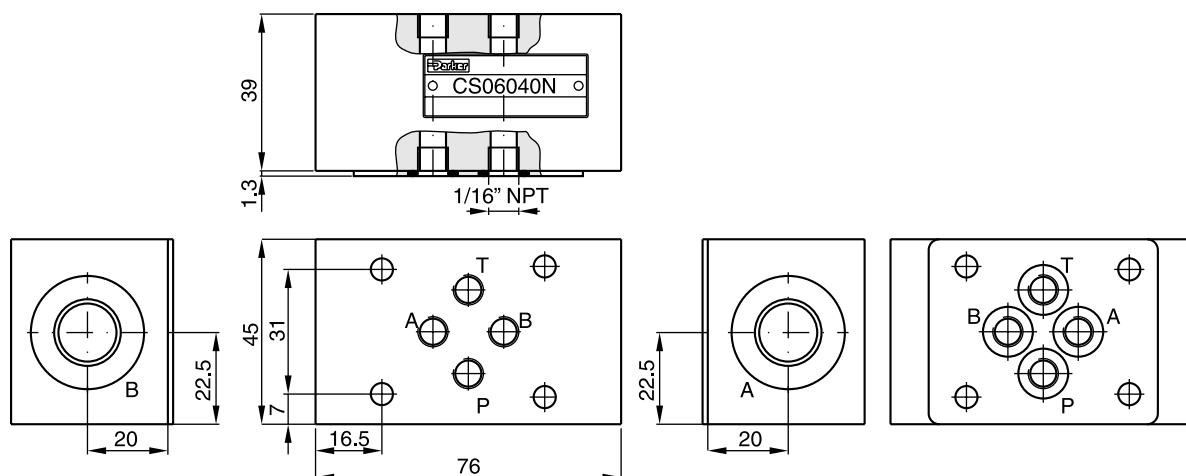
The functional change is achieved by rotating the mounting position of the valve 180°.

For use as secondary control please observe the permitted tank pressure.

Ordering code
H06DU-814 CETOP 03 (O-rings and O-ring plate included in delivery)



Sandwich plate CS06040N, CETOP 03 / NG06

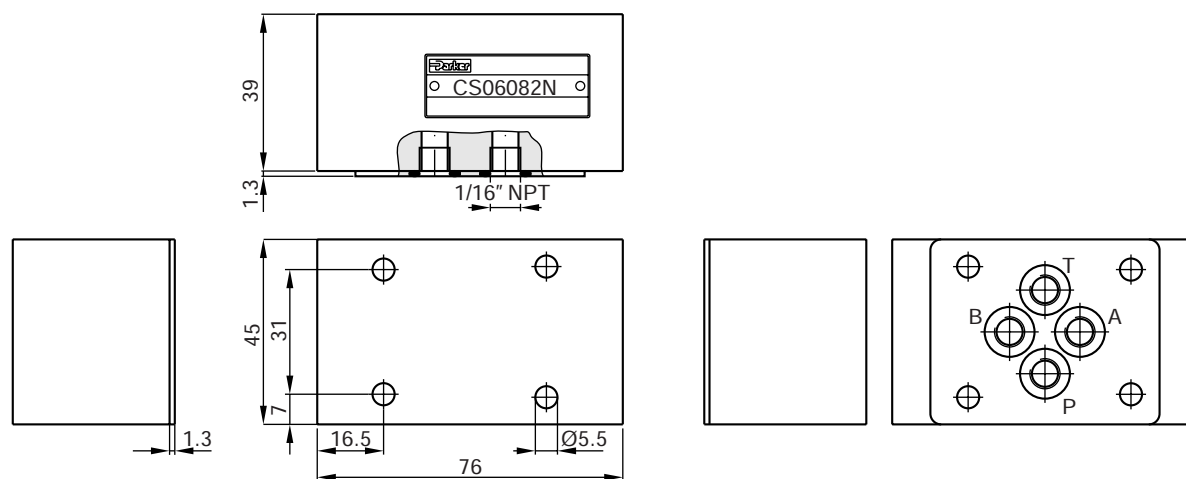


All ports on valve side and manifold side can be equipped with orifices or plugs (1/16 NPT).

For orifice kits see "Accessories" in chapter 8.

Symbol	Ordering code
A G3/8 P A B T Valve side B G3/8 Manifold side	CS06040N CETOP 03 (O-rings and O-ring plate included in delivery)

Cover plate CS06082N, CETOP 03 / NG06

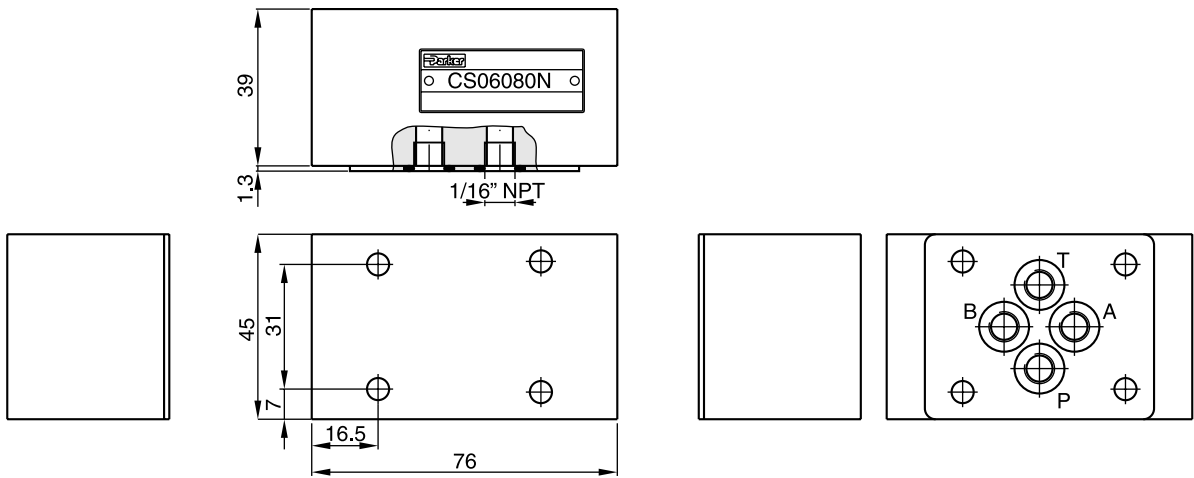


All ports on manifold side can be equipped with orifices or plugs (1/16 NPT).

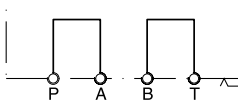
For orifice kits see "Accessories" in chapter 8.

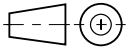
Symbol	Ordering code	Bolt Kit	Bolt dimensions	Torque
	CS06082N CETOP 03 (O-rings and O-ring plate included in delivery)	BK 300	4x M5x50	7.6 Nm ± 15 %

Cover plate CS06080N, CETOP 03 / NG06

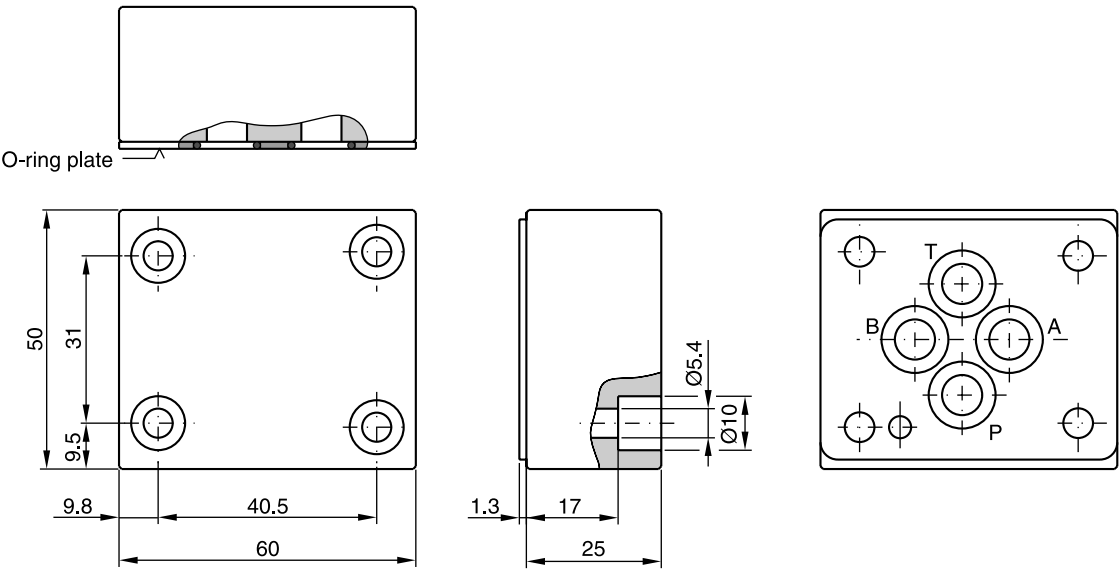


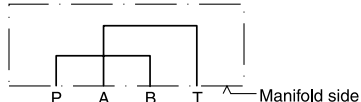
All ports on manifold side can be equipped with orifices or plugs (1/16 NPT).
For orifice kits see "Accessories" in chapter 8.

Symbol	Ordering code	Bolt Kit	Bolt dimensions	Torque
 Manifold side	CS06080N CETOP 03 (O-rings and O-ring plate included in delivery)	BK 300	4x M5x50	7.6 Nm ±15 %

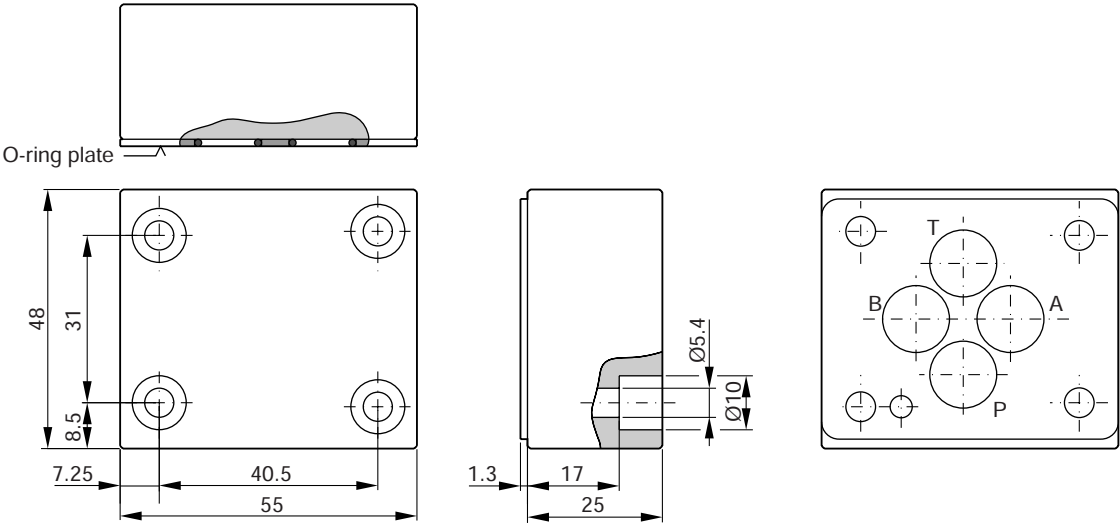


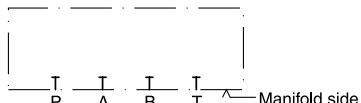
Cover plate D51DC071D, CETOP 03 / NG06



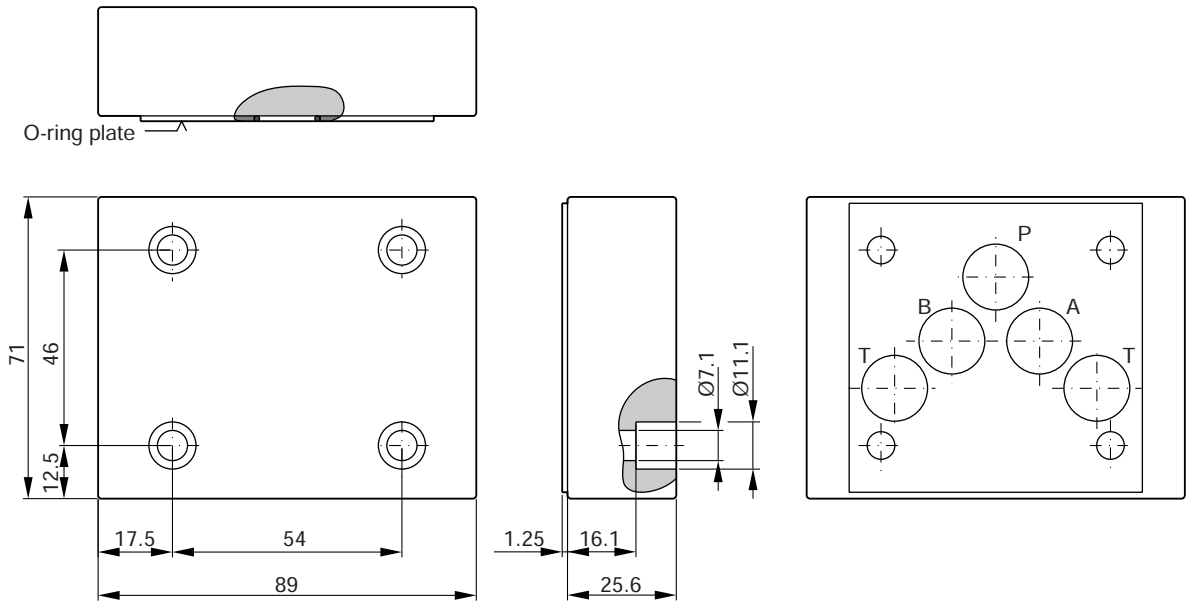
Symbol	Ordering code	Bolt Kit	Bolt dimensions	Torque
	D51DC071D CETOP 03 (O-rings and O-ring plate included in delivery)	BK 399	M5x25 ISO 4762-12.9	7.6 Nm ±15 %

Cover plate D51VP071C, CETOP 03 / NG06

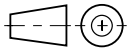


Symbol	Ordering code	Bolt Kit	Bolt dimensions	Torque
	D51VP071C CETOP 03 (O-rings and O-ring plate included in delivery)	BK 399	M5x25 ISO 4762-12.9	7.6 Nm ±15 %

Cover plate D51VP101D, CETOP 05 / NG10



Symbol	Ordering code	Bolt Kit	Bolt dimensions	Torque
Manifold side	D51VP101D CETOP 05 (O-rings and O-ring plate included in delivery)	BK 408	4x M6x25 ISO 4762-12.9	13.2 Nm ±15 %



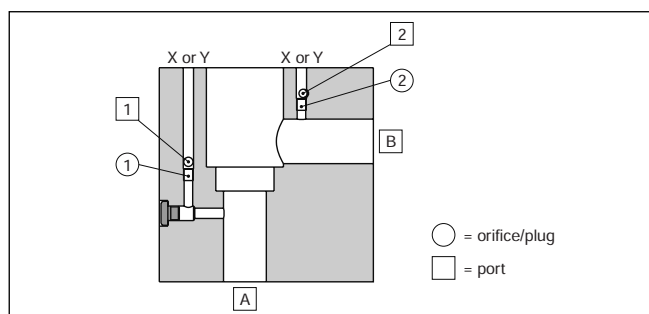
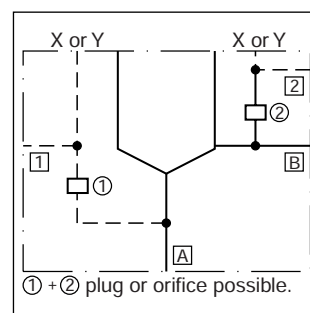
Cartridge manifold blocks are bodies for 2/2-way slip-in cartridge valves. They are used in systems with only one cartridge valve without the need to design a specific manifold block.

The pilot ports X and Y can either be connected to A and B or vice versa by changing the mounting position of the cartridge cover.

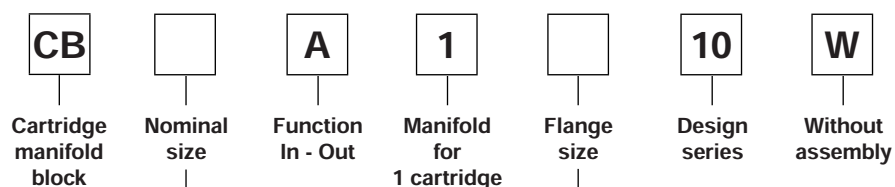
The wide range of Parker slip-in cartridge valves allows to design solutions for all hydraulic requirements.

Features

- Flanges SAE61 or SAE62 respectively CETOP square flange
- 2 options for pilot oil supply and drain
- 7 sizes



Ordering code

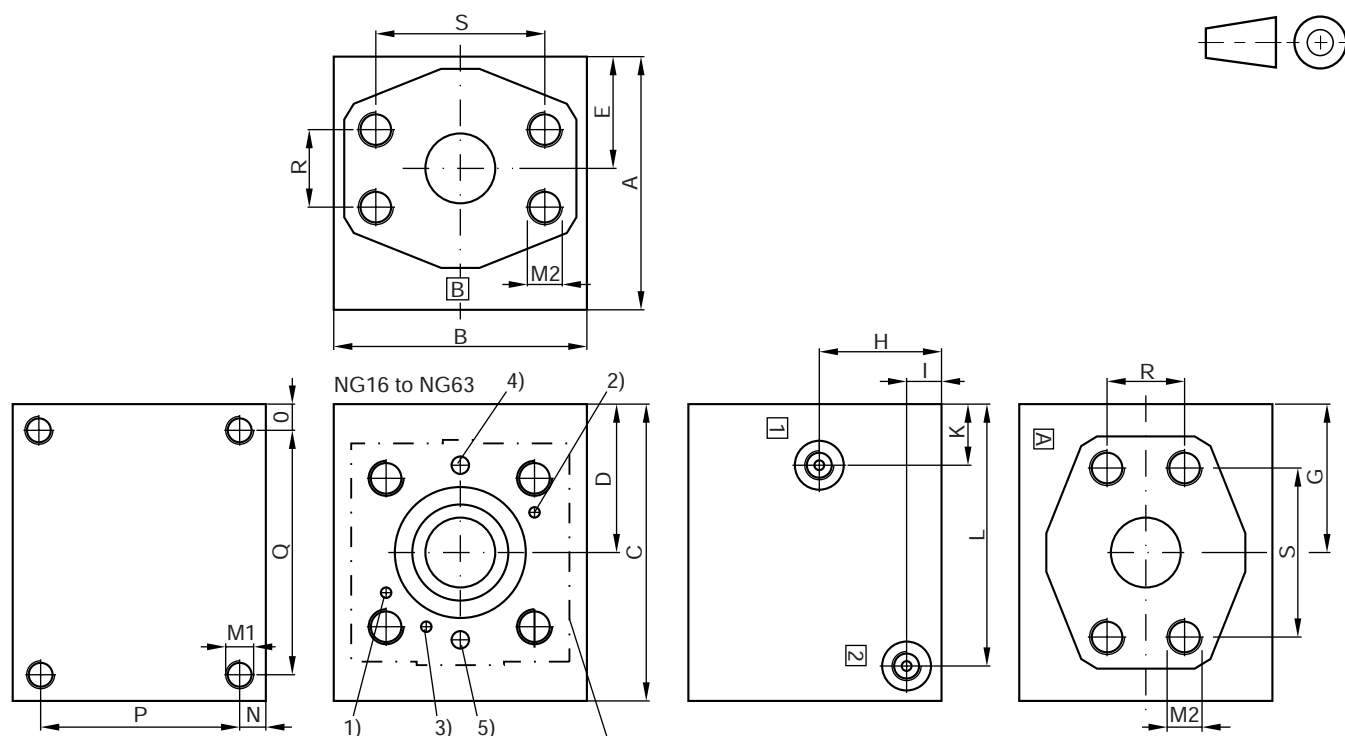
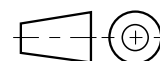


Code	Size
016	NG16
025	NG25
032	NG32
040	NG40
050	NG50
063	NG63
080	NG80

Code	Size	Flange
34	016	1" SAE61
35	025	1 1/4" SAE61
36	032	1 1/2" SAE61
38	040	2" SAE61
310	050	2 1/2" SAE61
312	063	3" SAE61
64	016	1" SAE62
65	025	1 1/4" SAE62
66	032	1 1/2" SAE62
68	040/050	2" SAE62
70	063	3 1/2" PN400
80	080	4" PN400

Technical data

Mounting interface	ISO 7368-B*-2-A/B
Mounting position	unrestricted
Max. operating pressure [bar]	138 to 420 (depending on p _{max} of flanges)
Flanges	SAE61 (3000 PSI series), SAE62 (6000 PSI series) ISO 6162, CETOP-square flange (400 bar series)



- 1) Location pin for X connected to **B** and **2**, Y connected to **A** and **1**
- 2) Location pin for X connected to **A** and **1**, Y connected to **B** and **2**
- 3) Location pin for pressure functions
- 4) X or Y, orifice/plug **1** (connected to **A** and **1**)
- 5) X or Y, orifice/plug **2** (connected to **B** and **2**)

Ordering code	M1	M2	R	S
CB 016 A 1 34 10 W	M8 x 16	M10x20	26.2	52.4
CB 016 A 1 64 10 W	M8 x 16	M12x19	27.8	57.2
CB 025 A 1 35 10 W	M10 x 18	M10x20	30.2	58.7
CB 025 A 1 65 10 W	M10 x 18	M14x22	31.8	66.6
CB 032 A 1 36 10 W	M16 x 30	M12x24	35.7	69.9
CB 032 A 1 66 10 W	M16 x 30	M16x32	36.5	79.3
CB 040 A 1 38 10 W	M16 x 30	M12x24	42.9	77.8
CB 040 A 1 68 10 W	M16 x 30	M20x40	44.5	96.8
CB 050 A 1 310 10 W	M16 x 30	M12x24	50.8	88.9
CB 050 A 1 68 10 W	M16 x 30	M20x40	44.5	96.8
CB 063 A 1 312 10 W	M16 x 30	M16x30	61.9	106.4
CB 063 A 1 70 10 W	M16 x 30	M20x33	102.5	102.5
CB 080 A 1 80 10 W	M16 x 30	M24x50	113.2	113.2

Ordering code	Max. operating pressure [bar]	A	B	C	D	E	G	H	I	K	L	N	O	P	Q	Port A and B	Port 1 and 2	Orifice thread 1 and 2	Weight [kg]
CB 016 A 1 34 10 W	350	105	80	105	38.5	34	38.5	45	13	13.5	75.5	10	10	85	85	1" SAE61	G1/4	M5	6
CB 016 A 1 64 10 W	420	105	80	105	38.5	34	38.5	45	13	13.5	75.5	10	10	85	85	1" SAE62	G1/4	M5	6
CB 025 A 1 35 10 W	280	125	100	125	50	43	50	55	15	17	94.5	10	10	105	105	1-1/4" SAE61	G1/4	M6	11
CB 025 A 1 65 10 W	420	125	100	125	50	43	50	55	15	17	94.5	10	10	105	105	1-1/4" SAE62	G1/4	M6	11
CB 032 A 1 36 10 W	210	125	125	145	72.5	51	72.5	55	15	31.5	125	15	15	95	115	1-1/2" SAE61	G1/4	M6	16
CB 032 A 1 66 10 W	420	125	125	145	72.5	51	72.5	55	15	31.5	125	15	15	95	115	1-1/2" SAE62	G1/4	M6	16
CB 040 A 1 38 10 W	210	145	145	170	85	65	85	70	20	35	150	15	15	115	140	2" SAE61	G3/8	M8	25
CB 040 A 1 68 10 W	420	145	145	170	85	65	85	70	20	35	150	15	15	115	140	2" SAE62	G3/8	M8	25
CB 050 A 1 310 10 W	172	155	155	190	95	70	95	70	20	37	170	15	15	125	160	2-1/2" SAE61	G3/8	M8	32
CB 050 A 1 68 10 W	420	155	155	190	95	70	95	70	20	37	170	15	15	125	160	2" SAE62	G3/8	M8	32
CB 063 A 1 312 10 W	138	192	192	240	120	86.5	120	86.5	20	45	220	15	15	165	210	3" SAE61	G3/8	M8	63
CB 063 A 1 70 10 W	400	192	192	240	120	86.5	120	86.5	20	45	220	15	15	162	210	3-1/2" PN 400	G3/8	M8	63
CB 080 A 1 80 10 W	400	270	270	270	135	120	135	120	20	35	250	15	15	240	240	4" PN 400	G3/8	M8	139

Cartridge manifold blocks are supplied with a set of plugs and orifices

CB.INDD CM 29.08.13

The adaptor plates A10 and sandwich plates H10 allow energy saving circuits for differential cylinders using the following directional control valves NG10:

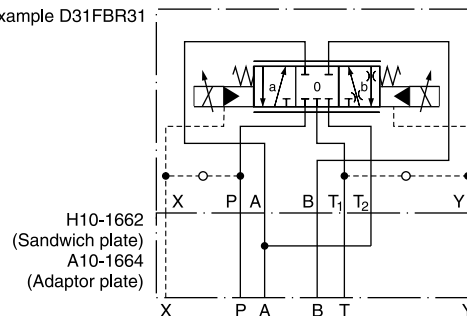
D3DWR*	D3FBR*	D31FBR*
D31NWR*	D3FPR*	D31FER*
		D31FPR*

Features

- To be used in combination with the above-mentioned valves. See also series D31NWR in chapter 2 and series D3FB, D3FP, D31FB, D31FE and D31FP in chapter 3
- Port T1 is used as single tank port. Port T2 is separated from port T1 by the elimination of the tank bridge and is used for regeneration into the A port
- The circuit conception can be integrated into the manifold block as well

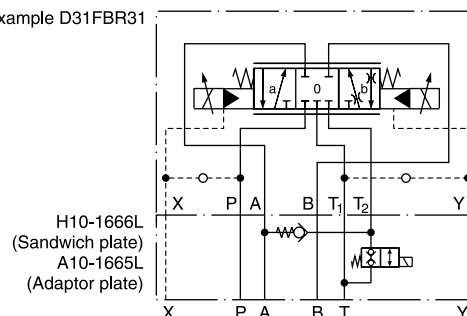
Regenerative function

Example D31FBR31

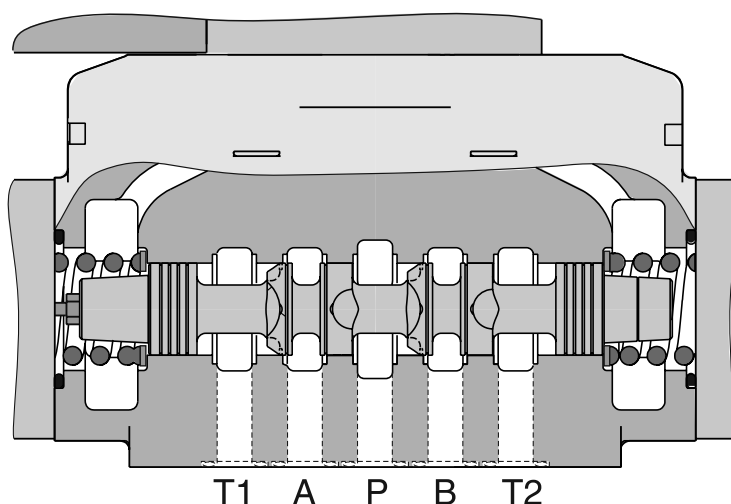


Hybrid function

Example D31FBR31

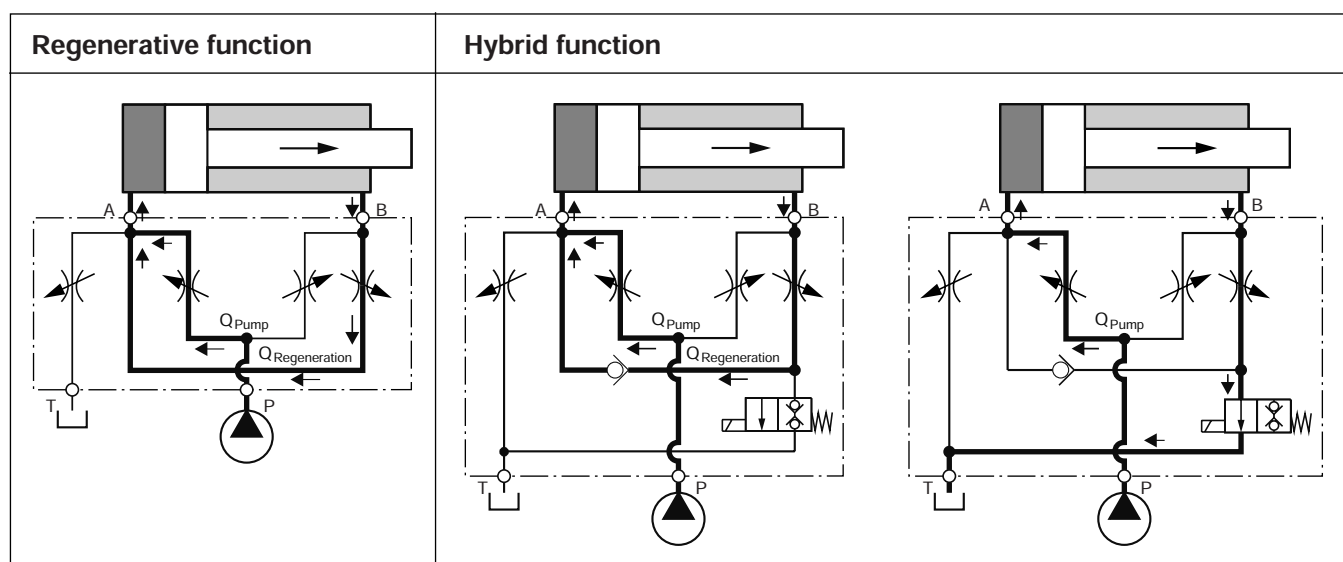


NG10 body without tank bridge – example D31FPR
T2 used as regenerative port.



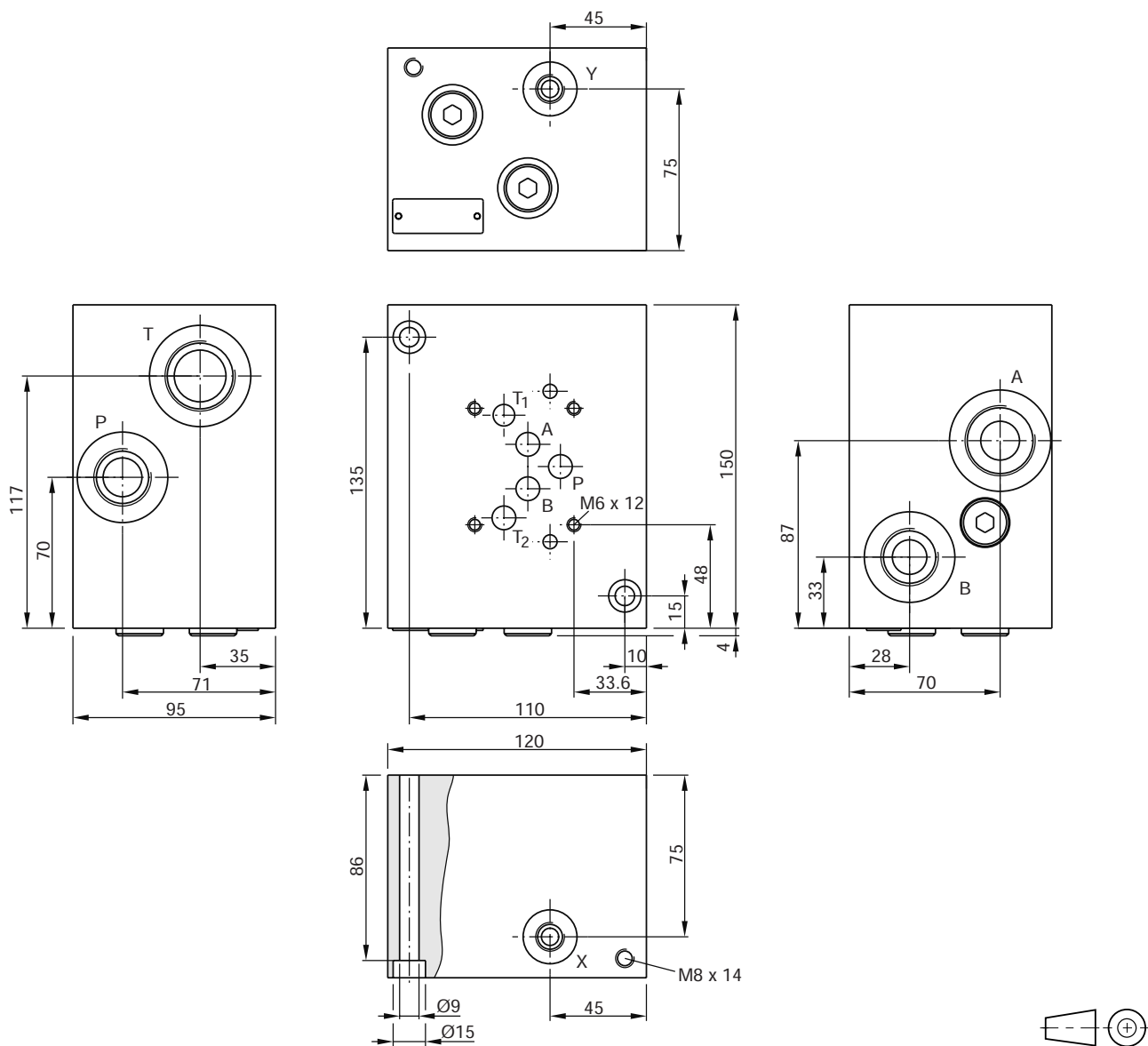
General							
Actuation			Solenoid (only A10-1665L and H10-1666L)				
Size			DIN NG10 / CETOP 05				
Mounting interface			DIN 24340 A10 / ISO 4401 / CETOP RP 121-H / NFPA D05				
Mounting position			unrestricted				
Ambient temperature		[°C]	-25...+50				
MTTF _D value		[years]	150				
			A10-1664	A10-1665L	H10-1662	H10-1666L	
Weight			[kg]	11.9	14.4	2.8	4.9
Hydraulic							
Max. operating pressure			[bar]	350			
Fluid			Hydraulic oil in accordance with DIN 51524...51525				
Fluid temperature			[°C]	-25 ... +70			
Viscosity	permitted	[cSt] / [mm²/s]	2.8...400				
	recommended	[cSt] / [mm²/s]	30...80				
Filtration			ISO 4406 (1999); 18/16/13				
			A10*		H10*		
Flow max.		[l/min]	150		250		
	Regeneration B-A	[l/min]	see diagram				
	Regeneration B-T	[l/min]	75		75		
Electrical characteristics							
Duty ratio			100 %				
Protection class			IP 65 in accordance with EN 60529 (with correctly mounted plug-in connector)				
Supply voltage			[V]	24			
Tolerance supply voltage			[%]	±10			
Current consumption			[A]	1.21			
Power consumption			[W]	29			
Solenoid connection			Connector as per EN 175301-803				
Wiring min.			[mm²]	3 x 1.5 recommended			
Wiring length max.			[m]	50 recommended			

With electrical connections the protective conductor (PE $\downarrow$) must be connected according to the relevant regulations.



Energy saving A-regeneration and switchable hybrid version for NG10 valves

Adaptor plate A10-1664, mounting interface acc. DIN 24340-A10, CETOP 05 / NG10
for A-regeneration

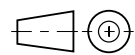
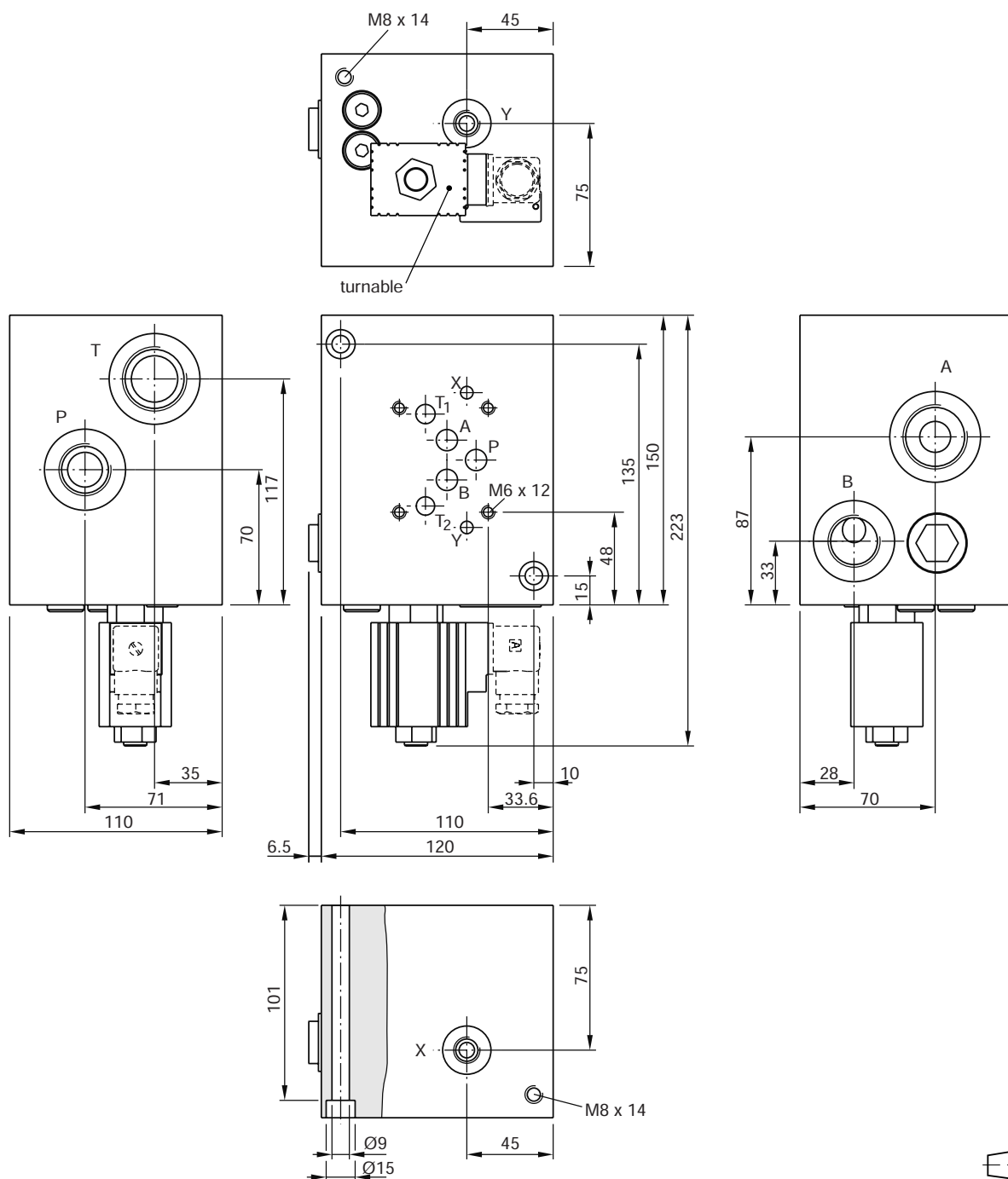


12

Symbol	Ordering code	Port
	A10-1664 CETOP 05	A, T = G1 B, P = G¾ X, Y = G¼

A10 UK.INDD CM 29.08.13

**Adaptor plate A10-1665L, mounting interface acc. DIN 24340-A10, CETOP 05 / NG10
for hybrid function**



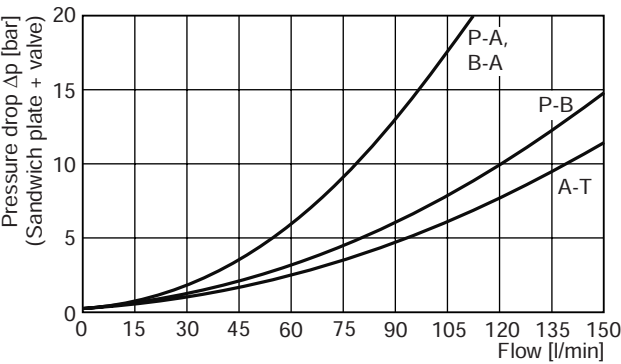
12

Symbol	Ordering code	Port	Kit
	A10-1665L CETOP 05	A, T = G1 B, P = G $\frac{3}{4}$ X, Y = G $\frac{1}{4}$	NBR: SK-A10-1665

Sandwich plate H10-1662, mounting interface acc. DIN 24340-A10, CETOP 05 / NG10 for A-regeneration

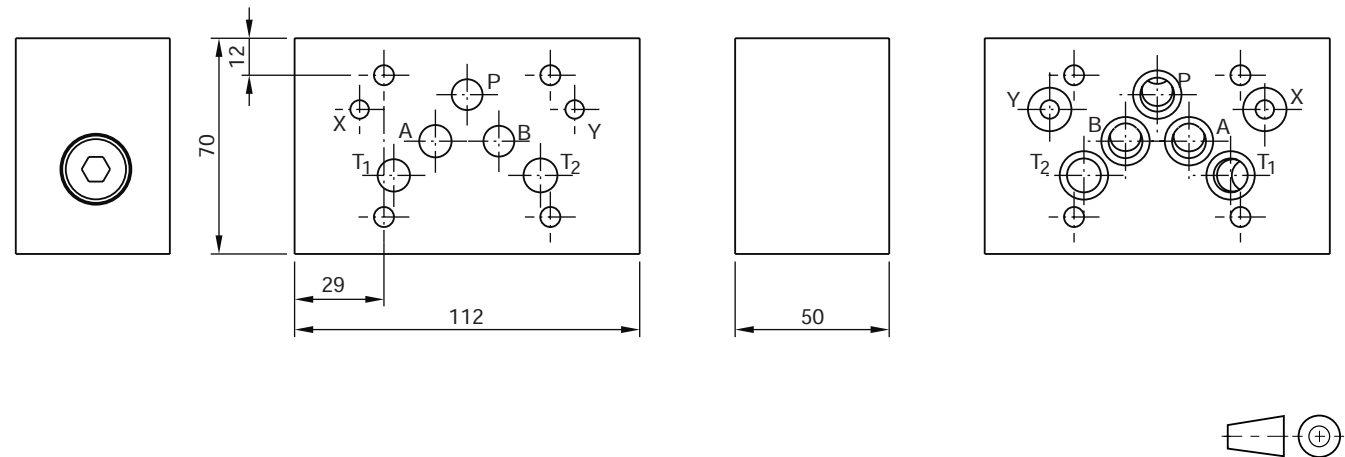
p/Q performance curves

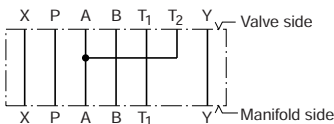
D31FP/FE/FB*



Measured with spool Z31 at command signal 100 %.

Curves for D3W, D31NW, D3FB and D3FP on request.

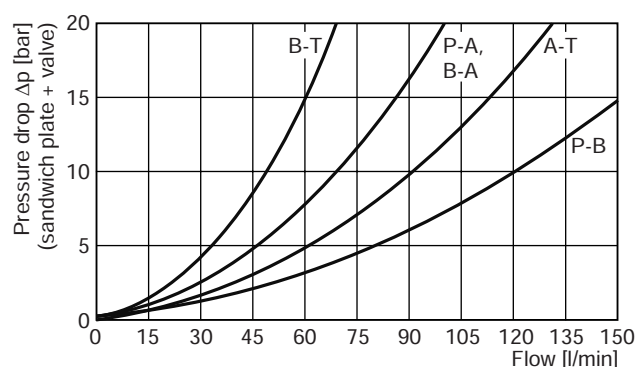


Symbol	Ordering code	 Kit	 Torque	 Kit
 Valve side Manifold side	H10-1662 CETOP 05 (O-rings included in delivery)	BK412	4x M6x90 ISO 4762-12.9 13.2 Nm ±15 %	NBR: SK-H10-1662

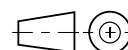
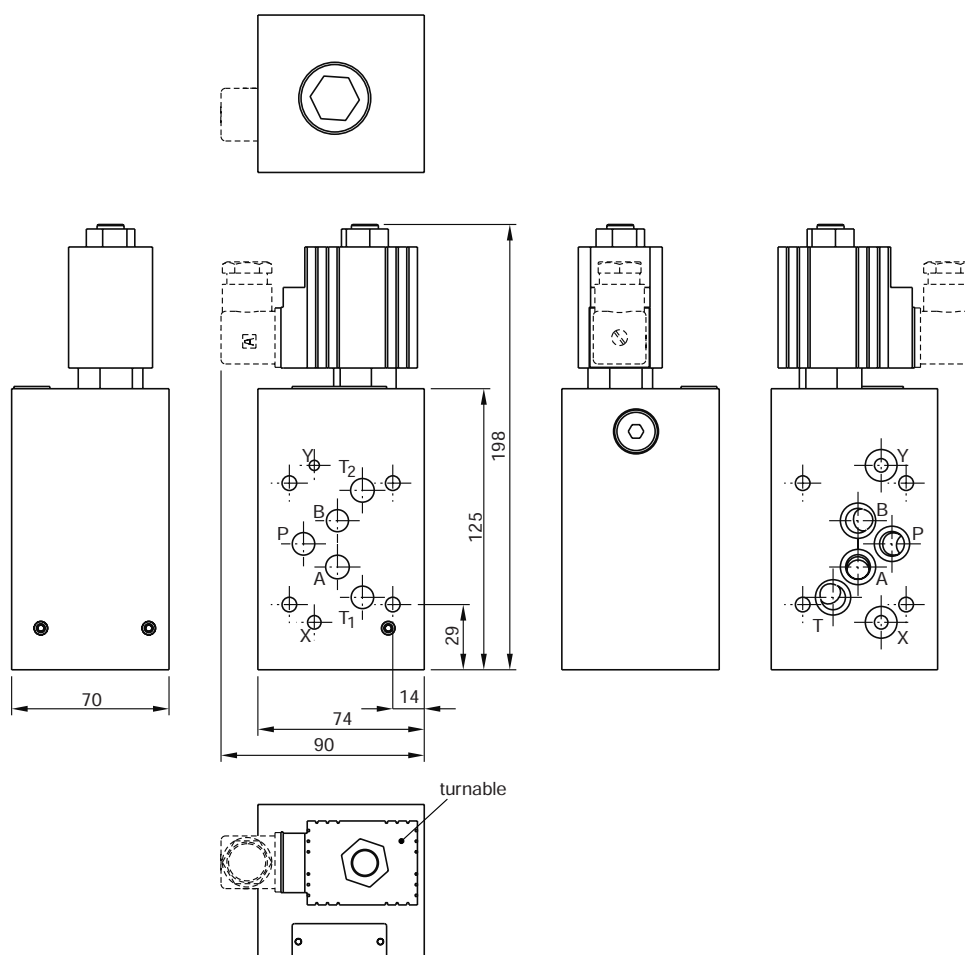
Sandwich plate H10-1666L, mounting interface acc. DIN 24340-A10, CETOP 05 / NG10 for hybrid function

p/Q performance curves

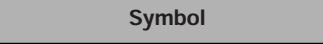
D31FP/FE/FB*



Measured with spool Z31 at command signal 100 %.
 Curves for D3W, D31NW, D3FB and D3FP on request.



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Symbol	Ordering code	 Kit		Torque	 Kit
	H10-1666L CETOP 05 (O-rings included in delivery)	BK528	4x M6x110 ISO 4762-12.9	13.2 Nm ±15 %	NBR: SK-H10-1666

H10 UK.INDD CM 29.08.13

BK bolt kits

Socket head cap screws as per ISO 4762-12.9

Ordering code	Description
BK 399	Bolt kit M5x25
BK 375	Bolt kit M5x30
BK 443	Bolt kit M5x45
BK 300	Bolt kit M5x50
BK 380	Bolt kit M5x60
BK 421	Bolt kit M5x65
BK 400	Bolt kit M5x70
BK 401	Bolt kit M5x75
BK 402	Bolt kit M5x80
BK 444	Bolt kit M5x85
BK 403	Bolt kit M5x90
BK 468	Bolt kit M5x95
BK 404	Bolt kit M5x100
BK 466	Bolt kit M5x100 2 pcs.
BK 405	Bolt kit M5x110
BK 406	Bolt kit M5x115
BK 424	Bolt kit M5x130
BK 408	Bolt kit M6x25
BK 385	Bolt kit M6x40
BK 310	Bolt kit M6x55
BK 422	Bolt kit M6x75
BK 412	Bolt kit M6x90
BK 508	Bolt kit M6x100
BK 311	Bolt kit M6x105
BK 528	Bolt kit M6x110
BK 414	Bolt kit M8x40
BK 441	Bolt kit M8x50
BK 533	Bolt kit M8x90
BK 538	Bolt kit M8x95
BK 510	Bolt kit M8x100
BK 505	Bolt kit M10x35
BK 388	Bolt kit M10x40
BK 485	Bolt kit M10x45
BK 506	Bolt kit M10x45 6 pcs.
BK 389	Bolt kit M10x50
BK 390	Bolt kit M10x50 6 pcs.
BK 320	Bolt kit M10x60 4 pcs. / M6x55 2 pcs.
BK 484	Bolt kit M10x65
BK 539	Bolt kit M10x95
BK 521	Bolt kit M10x120 4 pcs. / M6x120 2 pcs.
BK 494	Bolt kit M12x45
BK 391	Bolt kit M12x50
BK 486	Bolt kit M12x70
BK 525	Bolt kit M12x75
BK 504	Bolt kit M12x100
BK 360	Bolt kit M12x75 6 pcs.
BK 532	Bolt kit M12x90
BK 504	Bolt kit M12x100
BK 522	Bolt kit M12x140 6 pcs.
BK 460	Bolt kit M12x145 6 pcs.
BK 415	Bolt kit M16x55
BK 366	Bolt kit M16x70
BK 526	Bolt kit M16x80
BK 511	Bolt kit M16x90
BK 487	Bolt kit M16x110
BK 512	Bolt kit M16x150
BK 529	Bolt kit M16x100
BK 507	Bolt kit M18x75
BK 529	Bolt kit M16x100
BK 416	Bolt kit M20x70

Ordering code	Description
BK 417	Bolt kit M20x75
BK 527	Bolt kit M20x80
BK 386	Bolt kit M20x90 6 pcs.
BK 481	Bolt kit M20x110
BK 513	Bolt kit M20x110
BK 514	Bolt kit M20x150
BK 515	Bolt kit M20x160
BK 419	Bolt kit M24x120 8 pcs.
BK 534	Bolt kit M20x90
BK 516	Bolt kit M24x150 8 pcs.
BK 530	Bolt kit M24x160 8 pcs.
BK 418	Bolt kit M30x100
BK 536	Bolt kit M30x120
BK 509	Bolt kit M30x130 8 pcs.
BK 420	Bolt kit M30x140 8 pcs.
BK 520	Bolt kit M30x150
BK 517	Bolt kit M30x150 8 pcs.
BK 518	Bolt kit M30x160
BK 531	Bolt kit M30x150 8 pcs.
BK 519	Bolt kit M30x180

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

Thread 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. Consult product chapters.

Torque for plugs

(Specifications $\pm 15\%$) ¹⁾

Metric	[Nm]	BSPP	[Nm]	UNF	[Nm]
M10 x 1	15	1/8	15	5/16	6.9
M12 x 1.5	25	1/4	25	3/8	6.9
M14 x 1.5	25	3/8	40	7/16	25
M18 x 1.5	40	1/2	60	1/2	25
M20 x 1.5	50	3/4	90	9/16	40
M22 x 1.5	60	1	140	3/4	40
M24 x 1.5	65	1 1/4	240	7/8	60
M27 x 2	90	1 1/2	300	1 1/16	90
M33 x 2	140	2	550	1 3/16	140
M42 x 2	240			1 5/16	240
M48 x 2	300			1 5/8	300

¹⁾ The tightening torques refer to counter material steel, cast iron and SG iron by usage of impact wrenches (with torsion bar) and impulse tools. The plugs have to be screwed in slightly oiled in bodys respectively blocks.

For aluminium plugs the specified torque above has to be reduced to one third.

For aluminium blocks should be used 75 % of specified above.

Bold letters =
Short-term availability

TK tie rod kits

Tie rod kits as per DIN 835-10.9

Ordering code	Description	recommended stacking length	
		min.	max.
TK 1455	Tie rod kit M5x70	56	62
TK 1482	Tie rod kit M5x80	66	72
TK 1453	Tie rod kit M5x90	76	82
TK 1484	Tie rod kit M5x100	86	92
TK 1446	Tie rod kit M5x110	96	102
TK 1473	Tie rod kit M5x120	106	112
TK 1474	Tie rod kit M5x130	112	122
TK 1405	Tie rod kit M5x140	122	132
TK 1450	Tie rod kit M5x150	132	142
TK 1409	Tie rod kit M5x160	142	152
TK 1411	Tie rod kit M5x170	152	162
TK 1454	Tie rod kit M5x180	162	172
TK 1415	Tie rod kit M5x190	172	182
TK 1416	Tie rod kit M5x200	182	192
TK 1475	Tie rod kit M5x210	192	202
TK 1407	Tie rod kit M5x220	202	212
TK 1413	Tie rod kit M5x230	212	222
TK 1434	Tie rod kit M5x240	222	232
TK 1436	Tie rod kit M5x250	232	242
TK 1438	Tie rod kit M5x260	242	252
TK 1476	Tie rod kit M5x270	252	262
TK 1485	Tie rod kit M6x80	66	71
TK 1486	Tie rod kit M6x90	76	81
TK 1487	Tie rod kit M6x100	86	91
TK 1418	Tie rod kit M6x110	96	101
TK 1488	Tie rod kit M6x120	106	111
TK 1489	Tie rod kit M6x130	112	121
TK 1490	Tie rod kit M6x140	122	131
TK 1422	Tie rod kit M6x150	132	141
TK 1491	Tie rod kit M6x160	142	151
TK 1423	Tie rod kit M6x170	152	161
TK 1492	Tie rod kit M6x180	162	171
TK 1493	Tie rod kit M6x190	172	181
TK 1427	Tie rod kit M6x200	182	191
TK 1494	Tie rod kit M6x210	192	201
TK 1428	Tie rod kit M6x220	202	211
TK 1460	Tie rod kit M6x230	212	221
TK 1495	Tie rod kit M6x240	222	231
TK 1432	Tie rod kit M6x250	232	241
TK 1496	Tie rod kit M6x260	242	251
TK 1497	Tie rod kit M6x270	252	261
TK 1469	Tie rod kit 4 x M10x170 / 2 x M6x170	152	155
TK 1478	Tie rod kit 4 x M10x190 / 2 x M6x190	172	175
TK 1470	Tie rod kit 4 x M10x220 / 2 x M6x220	202	205
TK 1479	Tie rod kit 4 x M10x250 / 2 x M6x250	232	235

TK-M5 NUT	Nut M5 (10 pcs.)
TK-M6 NUT	Nut M6 (10 pcs.)
TK-M10 NUT	Nut M10 (10 pcs.)

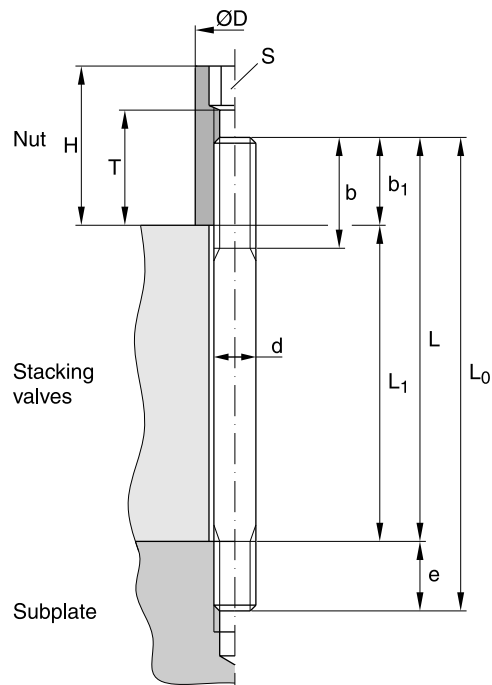
If no other specification is indicated, 1 tie rod kit contains 4 bolts and 4 nuts.

access12.INDD CM 29.08.13

$$b_1 \geq 1.5d$$

$$b_1 < b$$

$$b_1 < T$$



d	D	S	H	T	e	b ¹⁾	b ²⁾	b ³⁾
M5	9	5	25	20	10	16	22	22
M6	10	6	25	20	12	18	24	24
M10	17	10	25	15	15	26	32	45

b¹⁾ $L \leq 120 \text{ mm}$

b²⁾ $130 \text{ mm} \leq L \leq 200 \text{ mm}$

b³⁾ $200 \text{ mm} < L$

Example:

TK1411: M5 x 170 DIN835 =
nominal stud length $L = 170 \text{ mm}$.
stacking length $L_1 = 160 \text{ mm}$
total stud length $L_0 = 180 \text{ mm}$

Note:

The torque for bolt kits or tie rod kits is according to valve type/product. Consult product chapters.

Bold letters =
Short-term availability

The pressure gauge selector valve allows to connect up to 5 or 10 measuring points to one pressure gauge. When measuring is completed, the gauge is pressure-relieved to prevent it from being damaged by pressure surges. The accuracy and life time 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 drain line.

Features

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

Ordering code

WM

A

Pressure gauge selector valve

Measuring points

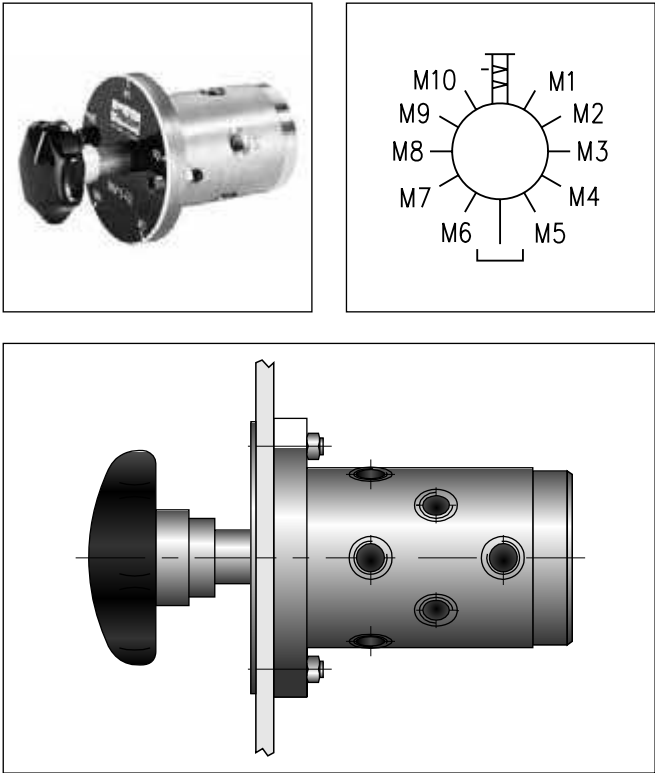
Design

Design series
(not required for ordering)

Code	Measuring
5	5 points
10	10 points

Bold letters =

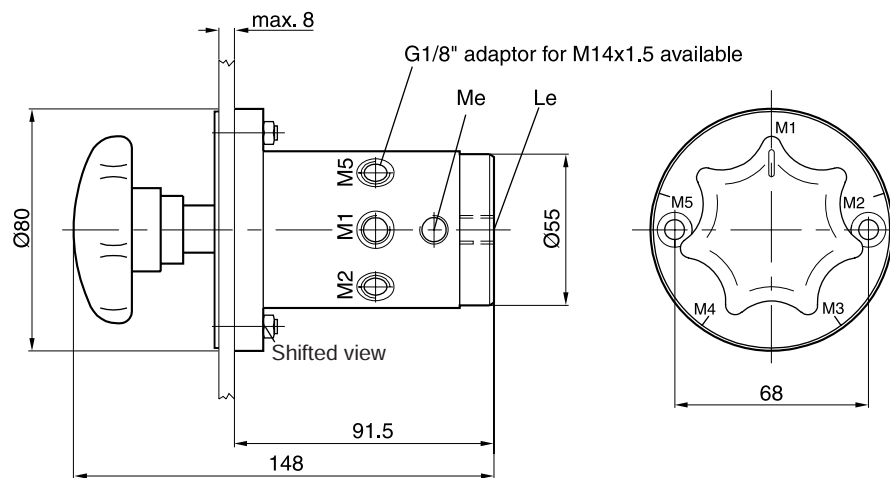
Short-term availability



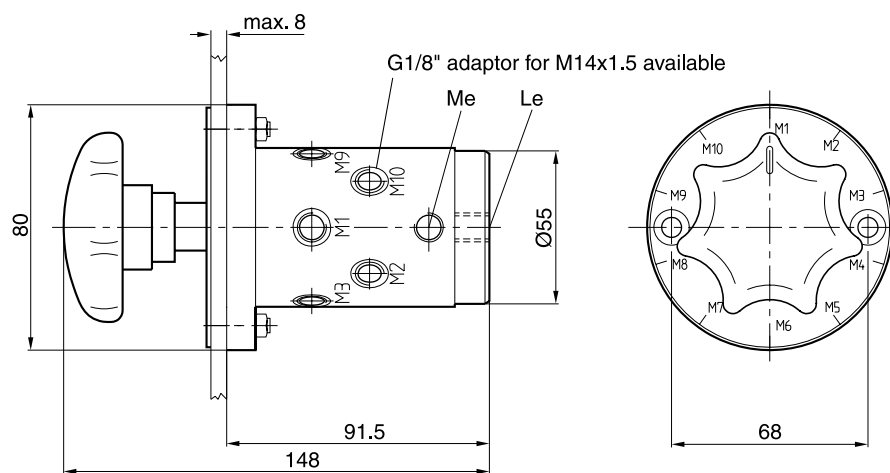
Technical data

Mounting position	unrestricted
Mounting	panel mounted
Connections	G 1/8
Operation	by hand
Seals	Fluorocarbon
Measuring position selection	by turning handle
Weight [kg]	1.8
Max. operating pressure [bar]	315
Viscosity range [cSt]/[mm²/s]	12...230
Max. pressure in drain port Le [bar]	1.0

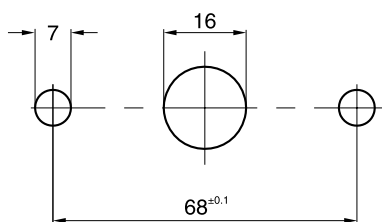
WM 5 A *



WM 10 A *



Mounting opening



The electro-hydraulic pressure switch provides an electric signal when the sensed pressure goes above or below the selected setting.

Function

The spring loaded piston is hydraulically dampened. The PSB provides a very accurate hysteresis between the switching points (see diagram).

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

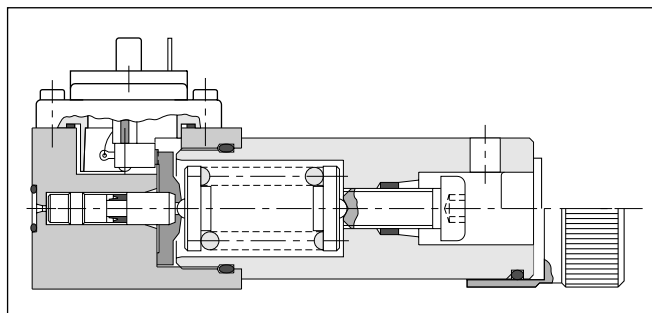
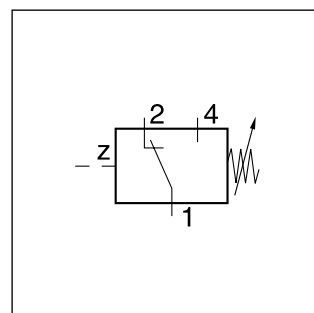
The electrical connection is made with a 3-pole plug-in connector to EN 175301-803 with ground.

Note

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

Features

- Flange or pipe mounting
- 4 pressure ranges
- Can be used as opener or closer
- Cylinder lock optional



Ordering Code

PSB	□	□	□	□	□	□
Pressure switch with manual switching point adjustment	Switching pressure range	Adjustment	Connec- tion	Seal	Design series (not required for ordering)	Lock

Code	Switching pressure range
040	3 to 40 bar
100	10 to 100 bar
160	10 to 160 bar
250	20 to 250 bar

Code	Lock
-	without lock
Z	Cylinder lock (not for scale knob)

Code	Adjustment
A	Hexagon socket
S	Knob with scale

Code	Seal
A	NBR
1	FPM

Code	Connection
F1	Flange (front face)
V1	Fitting (front face, tube Ø6)

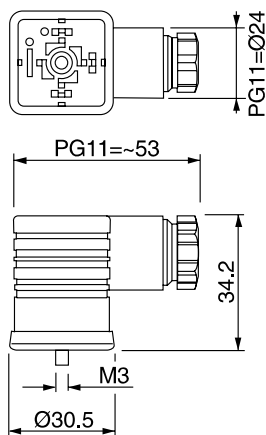
**Bold letters =
Short-term availability**

Technical data

Symbol	DIN 24340
Design	Plunger type switch
Mounting	PSB*F1* flange (front face) PSB*V1 pipe mounting
Mounting position	unrestricted
Weight [kg]	1.0
Operating pressure [bar]	to 315
Actuating pressure difference	see diagram
Duty cycle	max. 1/s
Fluid	Hydraulic oil according to DIN51524...51525
Temperature range [°C]	-20...+80
Viscosity range [mm²/s]	12...400
Filtration	ISO 4406 (1999) 18/16/13
Electrical connection	Plug-in connector to EN 175301-803
Insulation	IP65 as per EN 60529 (with correctly mounted plug-in connector)
Contact load carrying capacity	5 A at 250 VAC; 1 A at 50 VDC; 0.2 A at 250 VDC

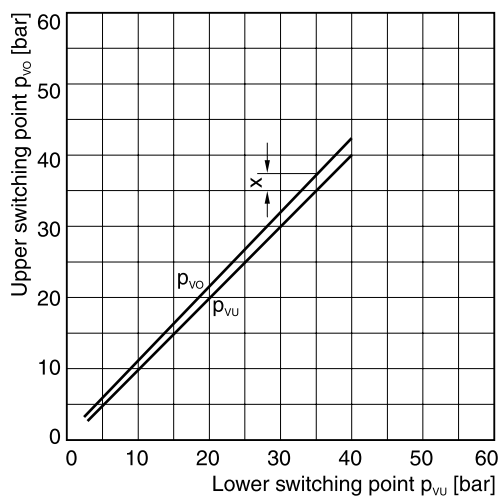
Plug EN 175301-803

Description	Threaded cable joint	Ordering code
Plug EN 175301-803, design type AF, protection class IP 65	PG11	HR 21500157
Plug with LED, 12...230V AC/DC, protection class IP 65	PG11	HR 21502321

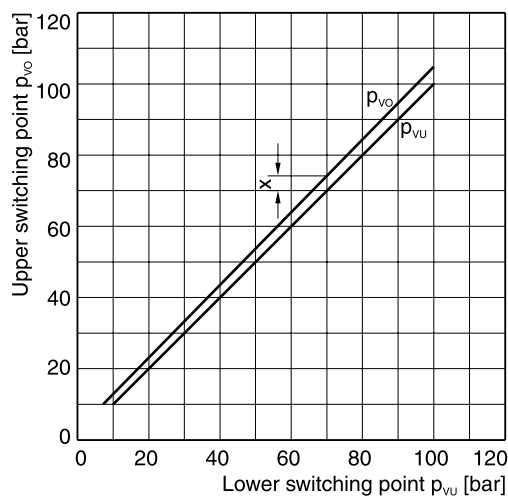


Switching pressure difference

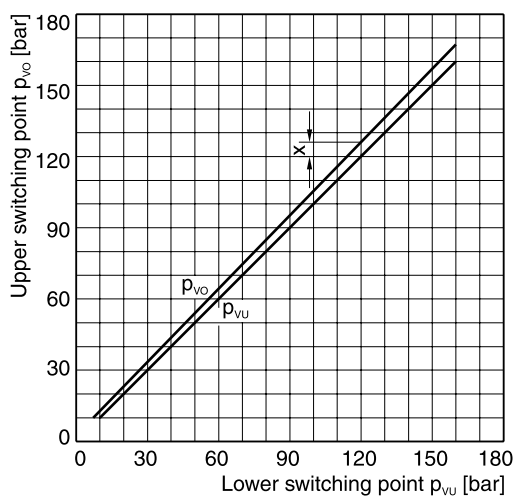
PSB040



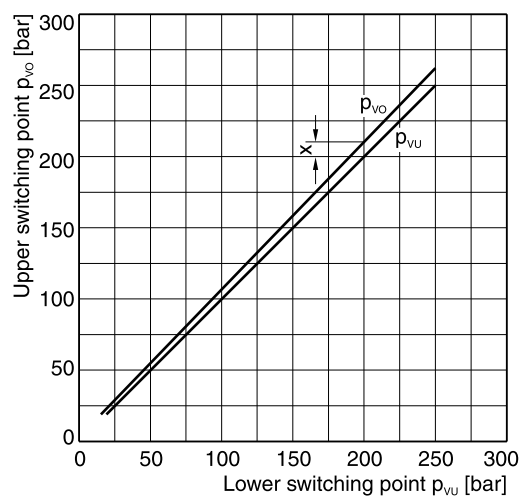
PSB100



PSB160



PSB250

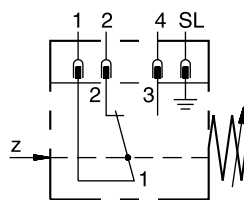


X = switching differential

All characteristic curves measured with HLP46 at 50 °C.

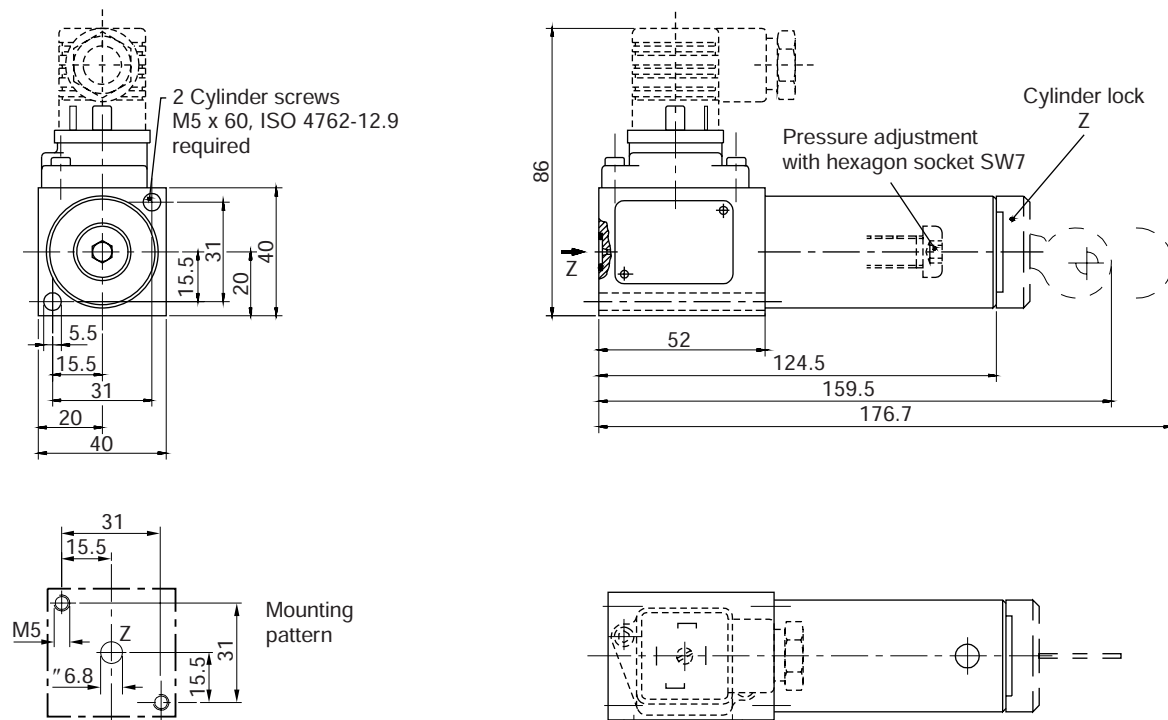
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Electrical connections

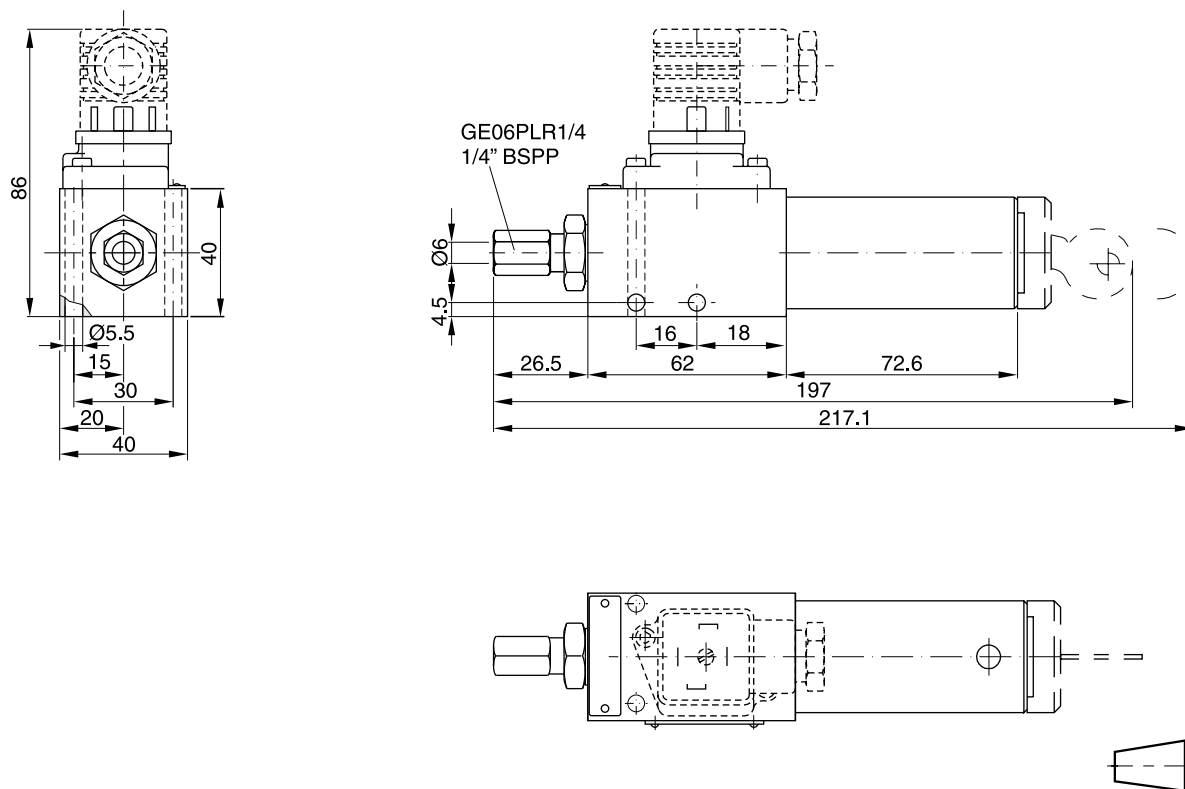


Electrical connection EN175301-803

Type PSB*F1*



Type PSB*V1*

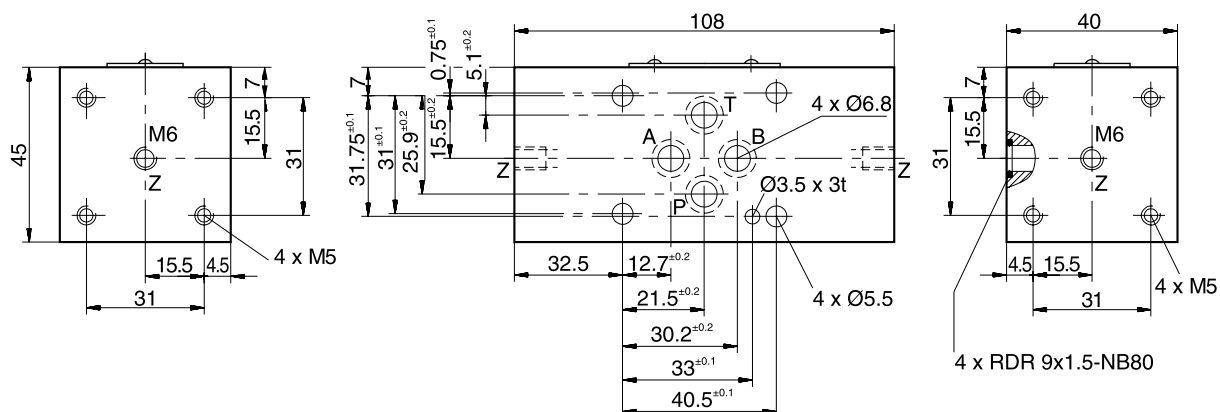


Technical Data

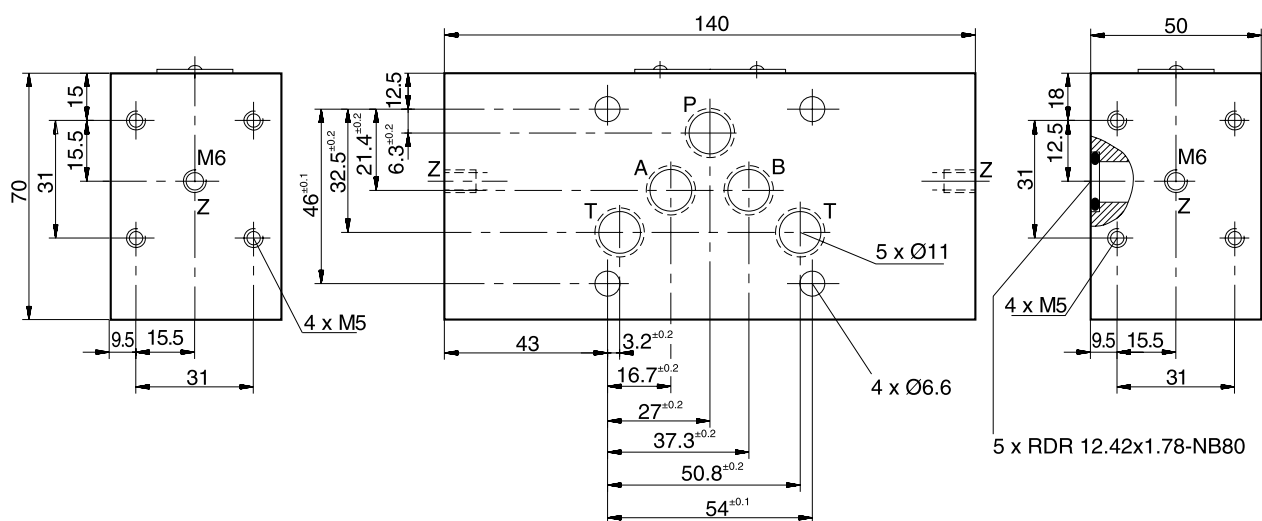
Switch code	Ordering code	Nominal size	Function
	H06PSB-994	06	Pressure switch connection to A or B or A and B: Connections not used are closed by plug.
	H10PSB-996	10	
	H06PSB-993	06	Pressure switch connection to P (left or right mounting is possible). Connection not used is closed by plug.
	H10PSB-995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

Bold letters =
Short-term availability

Dimensions NG06



Dimensions NG10



- Compact
- Rugged
- Reliable
- Easy operation
- Long-term stability
- Excellent interference resistance
- Metal housing
- High protection class
- Many variants
- Rotatable
- Analogue output
- Password
- MPa, bar, psi



The Pressure Controller combines the functions of a pressure switch, a pressure sensor and a display instrument:

- Pressure display (manometer)
- Switching outputs
- Analogue signal

Simple operation, compact design and high reliability are the most important features of the SCPSD. The Pressure Controller offers excellent technical performance and optimum pressure management. It is ideal for permanent use in industrial applications.

Easy to operate

Parameter setting is carried out via the keys or with a programming module.

High functionality

Every switching output can be set individually:

- Normally closed/normally open contacts
- On and off switching pressures
- Delay times
- Hysteresis/window function
- Damping

Intelligent settings which are not possible with a mechanical switch can be achieved with these convenient switch functions. Several switches can be replaced by a single controller.

The analogue output is individually settable

- 0/4...20 mA switchable
- Settable initial pressure
- Settable final pressure

Reliable/safe

Pressure is captured by a measuring cell with long-term stability. Any functional error is monitored and can be processed in accordance with DESINA. Thanks to a password, unauthorized change of parameters is prevented.

Rugged

The housing is made of metal and is resistant to humidity, shock and vibrations. The electronics are protected from reverse polarity, overvoltage and short circuits.

Everything within view

The large illuminated display is readable even from a considerable distance. Pressures are shown in MPa, bar or psi.

Optimum installation possibilities

With its compact design and excellent interference resistance the SCPSD is suitable for installation under critical conditions.

With its directionally settable housing, the display can always be read very easily.

Universal

Many versions are available to suit a wide variety of applications.

- Optical interface
- Switch status display

Everything in view

- Chamfered display
- Digital display
- Large
- Luminescent
- Display
- psi/bar/Mpa
- Actual pressure
- Minimum pressure
- Maximum pressure
- Switching points

Easy to operate

- 3 large keys
- Display of units

Pressure connection

- Stainless steel
- Measuring cell stable long-term
- Wide media tolerance

Rugged

- Metal housing
- Watertight
- High interference resistance
- Vibration resistant
- Shockproof



Flexible installation

- Compact
- Rotatable 290°



Thread

- Internal thread
- External thread



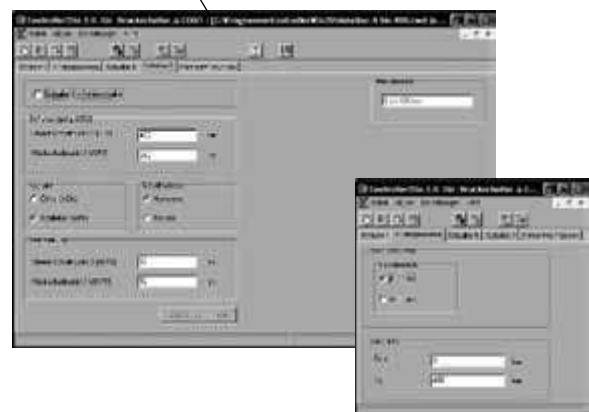
Tube clamp

- Safe mounting with a rugged SCSD-S27 clamp



Programming module

- Can be set with ControllerWIN software



SCPSD	004	010	016	060	100	250	400	600
Pressure range P_n (bar)	-1...4	-1...10	-1...16	0...60	0...100	0...250	0...400	0...600
Overload pressure P_{max} (bar)	10	20	40	120	200	500	800	1200
Burst pressure P_{burst} (bar)	12	25	50	550	800	1200	1700	2200
Measuring element	Ceramic low pressure			DMS thin film high pressure				

Input quantities	
Reversing cycles	≥ 100 Mio.
Scanning rate	≥ 5 ms
Connecting thread	G1/4 BSPP; ED soft seal NBR ¹⁾ (DIN 3852 T2, form X); ED (DIN3852 T11, form E)
Torque	35 Nm
Parts in contact with media	Low pressure: 1.4404 stainless steel; AL2O3 ceramic; NBR high pressure: stainless steels 1.4404; 1.4542
Temperature range of medium	-20 ... +85 °C
Weight	approx. 300 g
Output quantities	
Accuracy	± 0.5 % FS typ.; ± 1 % FS max.
Temperature drift	± 0.02 % FS/°K typ. (at -20...+85 °C) ± 0.03 % FS/°K max.
Long-term stability	± 0.2 % FS/a
Repeat accuracy	± 0.25 % FS
Switching point accuracy	± 0.5 % FS typ.; ± 1 % FS max.
Display accuracy	± 0.5 % FS typ. ± 1 Digit ± 1 % FS max. ± 1 Digit
Response speed	
Switching output	≤ 10 ms
Analogue output	≤ 10 ms
Electrical connection	
Power supply	15...30 VDC nominal 24 VDC; protection class 3
Electrical connection	M12x1; 4-pole; 5-pole with gold-plated contacts. appliance inlet connector DIN EN 175301-803 form A (formerly DIN43650)
Short circuit protection	yes
Reverse polarity protection	yes
Overload protection	yes
Current consumption	< 100 mA

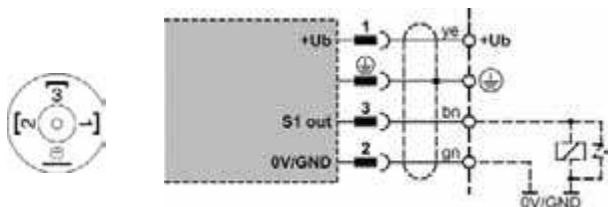
Housing	
	directionally adjustable up to 290°
Material	pressure die-casting Z 410; painted
Foil material	polyester
Display	4-figure 7-segment LED; red; digit height 9 mm
Protection class	IP67 DIN EN 60529; IP65 with plug-in connector DIN EN 175301-803 form A (formerly DIN43650)
Environmental conditions	
Environmental temperature range	-20...+85 °C
Storage temperature range	-40...+100 °C
Vibration resistance	20 g; 10...500 Hz IEC60068-2-6 ²⁾
Shock resistance	50 g; 11 ms IEC60068-2-29 ²⁾
EM compatibility	
Interference emissions	EN 61000-6-3
Interference resistance	EN 61000-6-2
Outputs	
Switching outputs	2 MOSFET high side switches (PNP)
Contact functions	normally open/normally closed; window/hysteresis; freely settable function
Switching voltage	Power supply - 1.5 VDC
Switching current max.	0.5 A per switch
Short circuit current	2.4 A per switch
Analogue output	0/4...20 mA; programmable; freely scalable; $R_L \leq (\text{power supply} - 8 \text{ V}) / 20 \text{ mA} (\leq 500 \Omega)$

¹⁾ Other sealing materials (FPM, EPDM etc.) on request

²⁾ Does not apply to DIN EN 175301-803 form A (formerly DIN43650) version

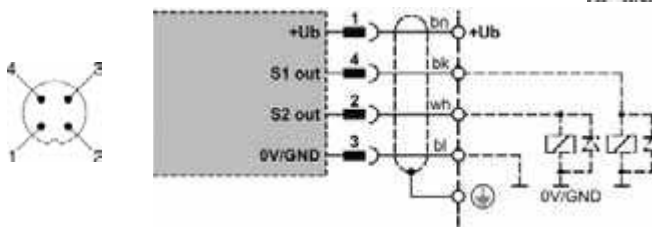
SCPSPD-xxx-04-x6

1 switching output;
DIN EN 175301-803 form A (formerly DIN43650)



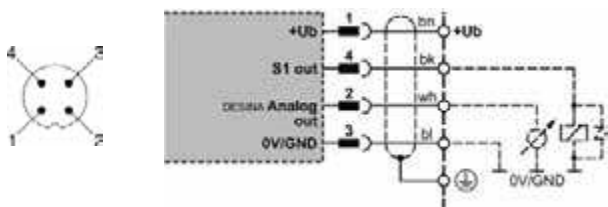
SCPSPD-xxx-14-x7

1 switching output;
1 analogue output;
M12x1; 4-pole



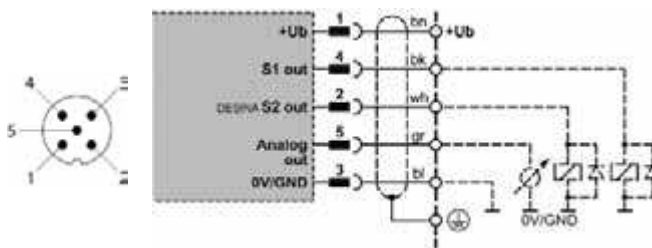
SCPSPD-xxx-04-x7

2 switching outputs;
M12x1; 4-pole



SCPSPD-xxx-14-x5

2 switching outputs;
1 analogue output;
M12x1; 5-pole



ye = yellow gn = green wh = white gr = grey
bn = brown bk = black bl = blue

Measurement range (bar)	Display resolution increment (bar)	Smallest reverse switch value RSP	Greatest switch value SP	Smallest settable difference between SP and RSP (SP-RSP)
-1...4	0.01	-1	4	0.08
-1...10	0.01	-1	10	0.05
-1...16	0.01	-1	16	0.09
0...60	0.1	0	60	0.3
0...100	0.1	0	100	0.6
0...250	1	0	250	2
0...400	1	0	400	3
0...600	1	0	600	3

12

Pressure range selection

With pressure switches the settable pressure is very relevant.

Because a 400 bar pressure switch shows the same resolution (1 bar) as a 600 bar pressure switch (also 1 bar), a 600 bar pressure switch can be deployed even at a smaller nominal pressure (eg. 315 bar).

The positive effects of this are the same accuracy with higher safety and fewer product variants.

External thread

SCPSPD-xxx-x4-1x



High and low pressure
DMS/ceramic

Internal thread

SCPSPD-xxx-x4-2x



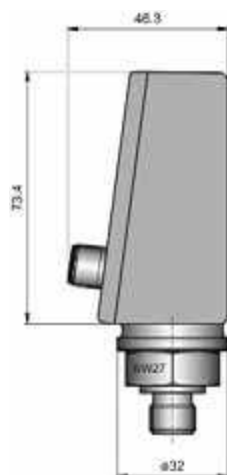
High pressure (from 60 bar)
DMS



Low pressure (up to 16 bar)
Ceramic

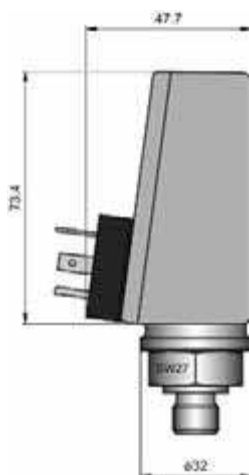
M12 plug-in connector

SCPSPD-xxx-x4-x5



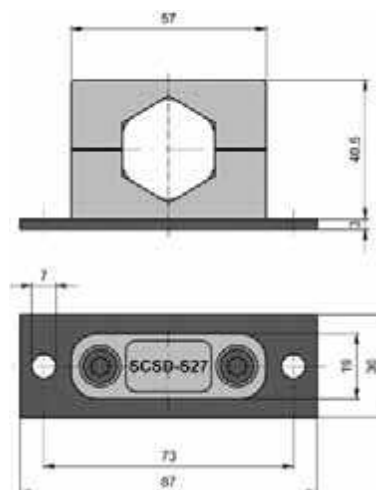
**DIN EN 175301-803 form A
(formerly DIN43650))**

SCPSPD-xxx-04-x6



Accessories

Clamp



SCPSD digital pressure switch

Pressure range 004; 010; 016; 060; 100; 160, 400; 600 bar	
1 switching output; without analogue output DIN EN 175301-803 form A (formerly DIN 43650) plug-in connector	SCPSD - xxx - 04 - x 6
2 switching outputs; without analogue output M12x1 plug-in connector; 4-pole	SCPSD - xxx - 04 - x 7
1 switching output; with analogue output M12x1 plug-in connector; 4-pole	SCPSD - xxx - 14 - x 7
2 switching outputs; with analogue output M12x1 plug-in connector; 5-pole	SCPSD - xxx - 14 - x 5
Type G1/4 BSPP external thread = 1 G1/4 BSPP internal thread = 2	

Ordering examples

SCPSD-100-04-27

Pressure range 100 bar
2 switching outputs
G ¼ BSPP internal thread
M12 plug-in connector



SCPSD-60-14-27

Pressure range 60 bar
1 switching output
1 analogue output
G ¼ BSPP internal thread
M12 plug-in connector



SCPSD-004-14-17

Pressure range 4 bar
2 switching outputs
1 analogue output
G ¼ BSPP external thread
M12 plug-in connector

Accessories

PC programming kit

SCSD-PRG-KIT

Fixing clamp

SCSD-S27

Reducing adaptor M22x1.5

SCA-¼-M22x1.5-ED

Reducing adaptor G ½ BSPP

SCA-¼-ED-½-ED

Damping adaptor

SCA-1/X-EDX-1/X-D

Flange adaptor for mechanical pressure switch

SCAF-¼-40

Connecting cable and separate plugs

Connecting cable, ready-made

(open cable end)

SCK-400-xx-xx

Cable length in m

02 2 m

05 5 m

10 10 m

Plug-in connector

45 M12 cable socket; straight

55 M12 cable socket; 90° angled

56 DIN EN 175301-803 form A plug connector
(formerly DIN 43650)

Separate plugs

M12 cable socket; straight

SCK-145

M12 cable socket; 90° angled

SCK-155

DIN EN 175301-803 Form A plug connector
(formerly DIN 43650)

SCK-006

SCPSD UK.INDD CM 29.08.13

Pressure intensifiers are used wherever a particular section of a hydraulic system has to be pressurized to a substantially higher pressure than the available primary pressure (clamping functions). With an intensification ratio of 1 : 4 (1 : 2, 1 : 6) 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.

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

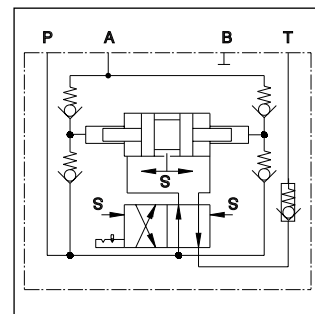
Design

Main functional parts of the pressure intensifier: piston, rocker mechanism, slide valve with lock, 4 check valves which separate the high pressure section from the low pressure section, check valve in the tank port to partition of the tank section from the primary pressure.

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



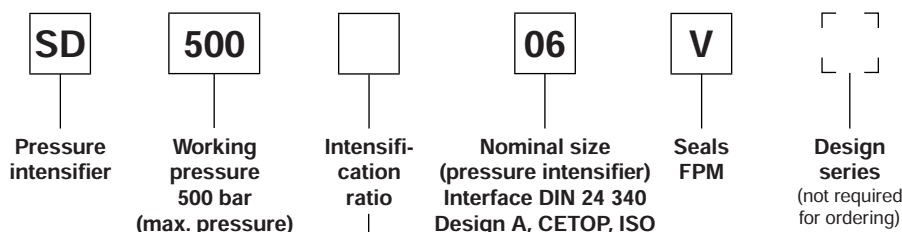
mechanism switches the directional slide valve to the crossed switching position, and the intensifier piston pumps oil from the piston rod area into the high pressure section. The process repeats itself until the pressure ratio corresponding to the surface ratio has lead to a balance of force on the 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, max. 250 bar / 1 : 2 or max. 83 bar / 1 : 6).
- 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.

Ordering code



Code	Intensification ratio
A	1 : 4
B	1 : 2
C	1 : 6

Bold letters =
Short-term availability

Technical data

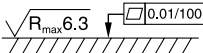
General			
Symbol		DIN 24 300	
Design		Piston and poppet valve in body	
Mounting type		NG6, DIN 24 340, design A, CETOP, ISO	
Ports		Subplate	
Mounting position		unrestricted	
Ambient temperature		[°C]	max. 50
MTTF _D value		[years]	150
Weight		[kg]	3.0 kg
Hydraulic			
Max. operating pressure			
	Port A	[bar]	500,
	Port P, B, T	[bar]	125 (ratio 1:4), 250 (ratio 1:2)
Pressure fluid temperature		[°C]	+ 10 °C...+70
Viscosity range		[mm²/s]	12....230
Filtration		ISO 4406 (1999); 18/16/13	
Flow		see performance curve	
Intensification ratio		p _P : p _A = 1 : 4, 1 : 2, 1 : 6	
Flow volume		Q _P : Q _A = 4 : 1, 2: 1, 6 : 1	
Stroke volume		[cm³]	3 (per double stroke)
Operating		Hydraulic-mechanic automatic control	

Accessories

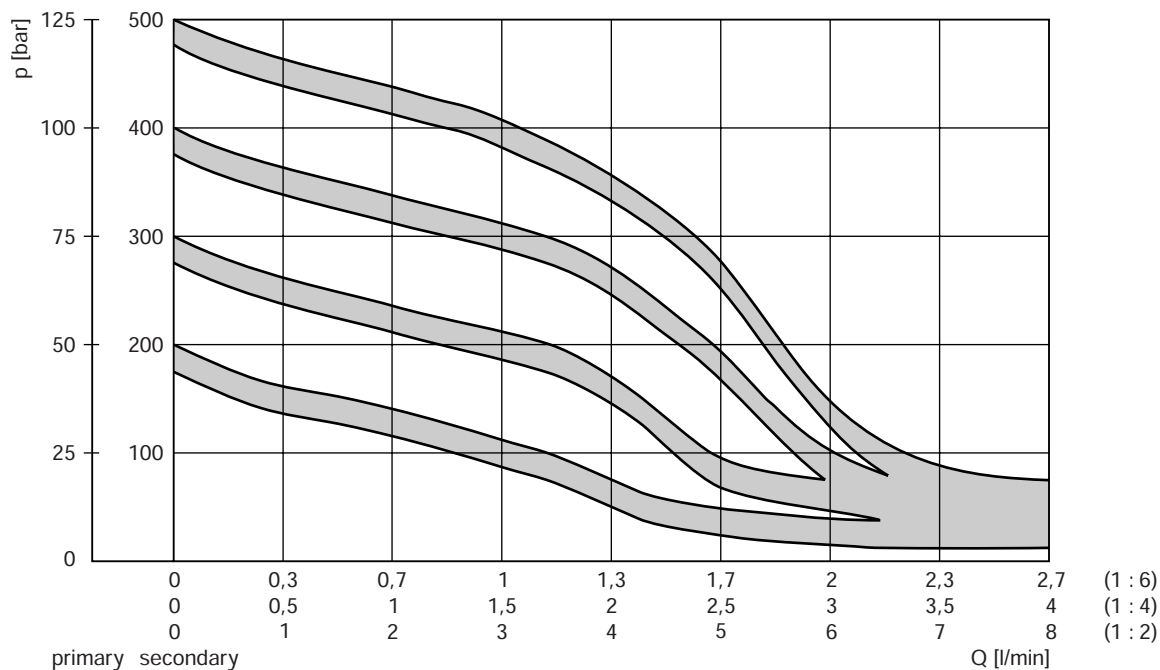
Type	Description	Number
SD 500*06V	Seals	
	9.25 x 1.78	3
	10.82 x 1.78	1
	M5 x 75 ISO 4762-12.9	4

Seals are included in delivery.

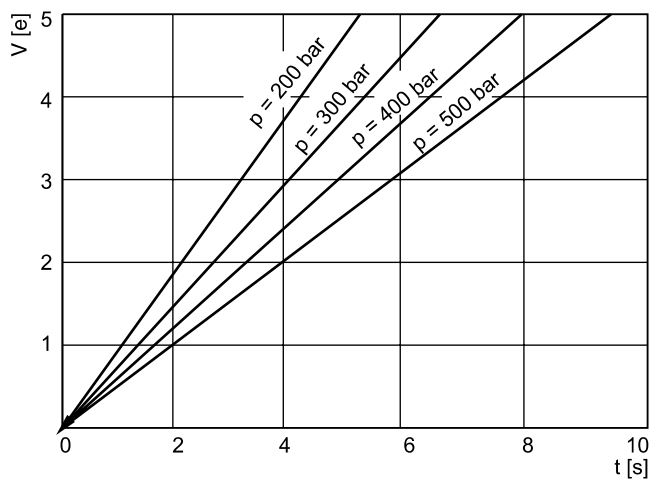
Mounting screws are not included in delivery.

Surface finish	 Kit		
	BK401	4x M5x75 ISO 4762-12.9	9.0 Nm

Flow characteristics

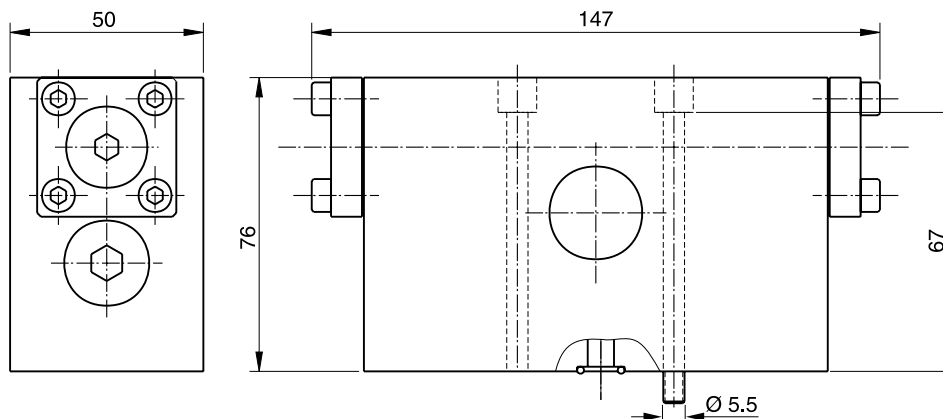


Approximate values of the compression time for compressing a filled volume to target pressure (1 : 4)



All characteristic curves measured with HLP46 at 50 °C.

Dimensions



SD500 UK.INDD CM 29.08.13

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

Ordering code

H06 SDV

Bold letters =
Short-term availability

Accessories

Type	Description	Number
H06SDV	Seals	
	9.25 x 1.78	4
	M5 x 115 ISO 4762-12.9	4

Seals are included in delivery.

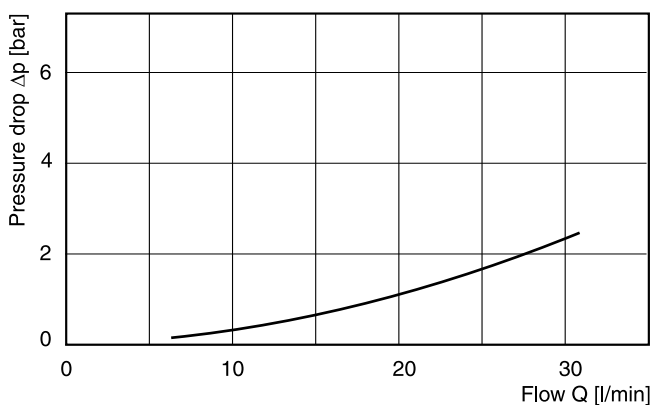
Mounting screws are not included in delivery.

Technical data

General	
Design	Spring loaded ball seat valve
Mounting type	Flange
Mounting position	any
Ambient temp. [°C]	max. 50
Weight [kg]	1.3
Hydraulic	
Operating pressure range	
Port A [bar]	max. 500,
Port P, B, T	max. 125 / 1:4 and 250 / 1:2
Fluid temperature [°C]	+ 10...+70
Viscosity range [mm ² /s]	12...230
Flow	see characteristic curve
Pilot ratio	Main valve 2.5:1, pre-discharge 10:1
Opening pressure [bar]	approx. 0.5

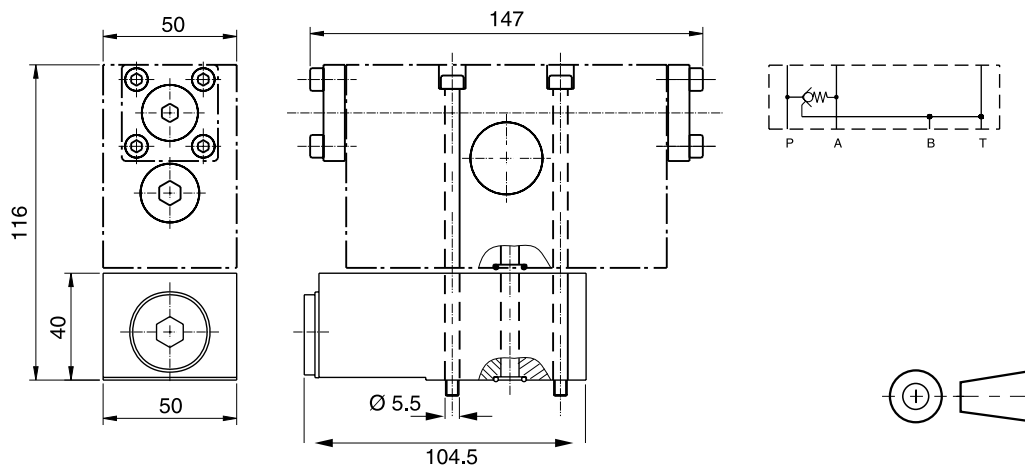
Characteristic curve

Pilot operated check valve



Curve measured with HLP46 at 50 °C.

Dimensions



Surface finish	Kit	4x M5x115 ISO 4762-12.9	9.0 Nm
$\sqrt{R_{max} 6.3}$	BK406		

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

Ordering code

H10 SDV

Accessories

Type	Description	Number
H10SDV	Seals	
	12.24 x 1.78	4
	M5 x 75 ISO 4762-12.9	4
	M6 x 50 ISO 4762-12.9	4

Seals are included in delivery.

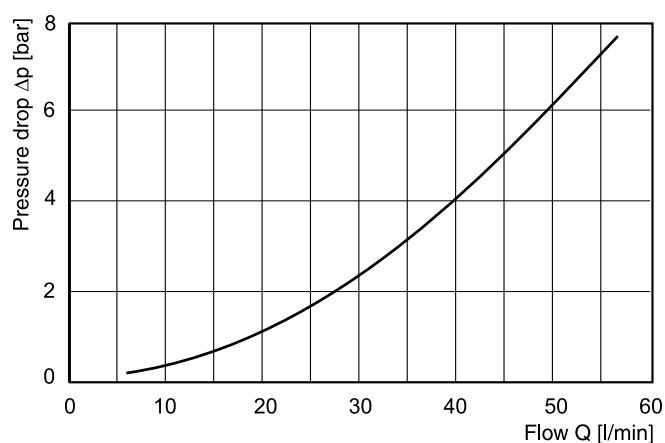
Mounting screws are not included in delivery.

Technical data

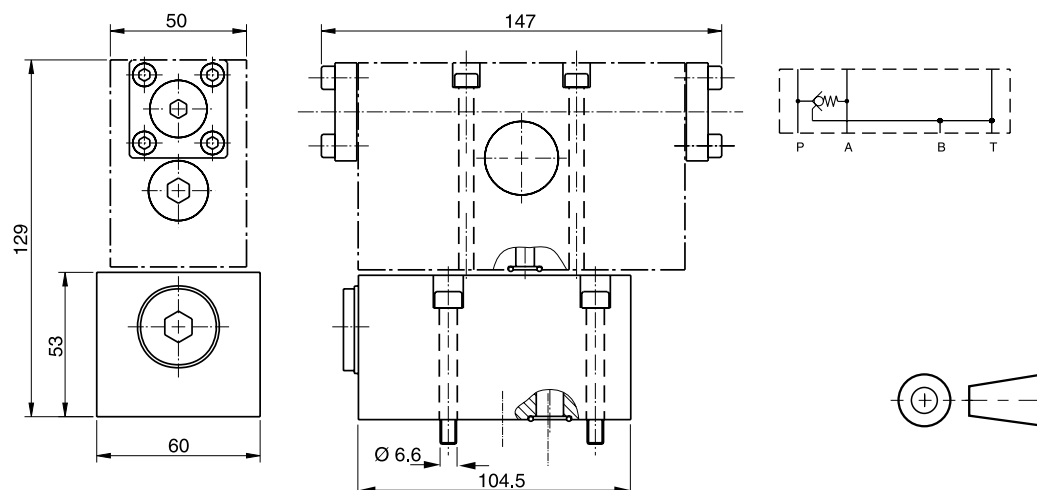
General	
Design	Spring loaded ball seat valve
Mounting type	Flange
Mounting position	any
Ambient temperature [°C]	max. 50
Weight [kg]	2.3
Hydraulic	
Operating pressure range	
Port A [bar]	max. 500,
Port P, B, T	max. 125 / 1:4 and 250 / 1:2
Fluid temperature [°C]	+ 10...+70
Viscosity range [mm ² /s]	12...230
Flow	see characteristic curve
Pilot ratio	Main valve 2.5:1, pre-discharge 10:1
Opening pressure [bar]	approx. 0.5

Characteristic curve

Pilot operated check valve



Curve measured with HLP46 at 50 °C.

Dimensions

Surface finish	Kit		
$\sqrt{R_{max}6.3}$ $\square 0.01/100$	BK490	4x M5x75 4x M6x50 ISO 4762-12.9	9.0 Nm 18.0 Nm

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