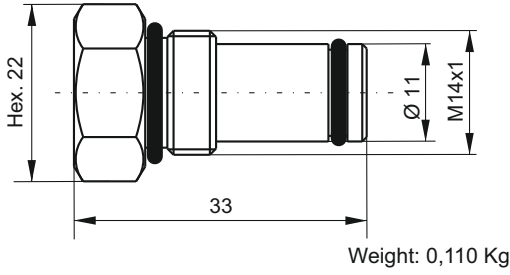
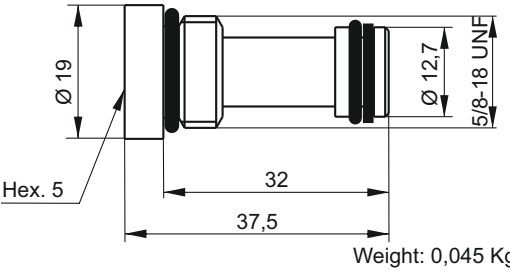
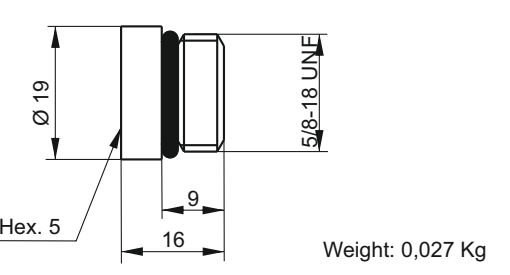
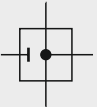


SECTION D

PLUGS

Weight: 0,066 Kg	Hydraulic symbol Spare part code E70100005	PPM assembly code G Mounting cavities <table><tr><td>0</td><td>1</td></tr><tr><td>2</td><td>3</td><td>4</td></tr><tr><td>5</td><td></td><td>7</td><td>8</td></tr></table>	0	1	2	3	4	5		7	8
0	1										
2	3	4									
5		7	8								
Weight: 0,047 Kg	Hydraulic symbol Spare part code E70100003	PPM assembly code H Mounting cavities <table><tr><td>0</td><td>1</td></tr><tr><td>2</td><td>3</td><td>4</td></tr><tr><td>5</td><td></td><td>7</td><td>8</td></tr></table>	0	1	2	3	4	5		7	8
0	1										
2	3	4									
5		7	8								
Weight: 0,045 Kg	Hydraulic symbol Spare part code E70100006	PPM assembly code P Mounting cavities <table><tr><td>0</td><td>1</td></tr><tr><td>2</td><td>3</td><td>4</td></tr><tr><td>5</td><td></td><td>7</td><td>8</td></tr></table>	0	1	2	3	4	5		7	8
0	1										
2	3	4									
5		7	8								
Weight: 0,027 Kg	Hydraulic symbol Spare part code E70100004	PPM assembly code L Mounting cavities <table><tr><td>0</td><td>1</td></tr><tr><td>2</td><td>3</td><td>4</td></tr><tr><td>5</td><td></td><td>7</td><td>8</td></tr></table>	0	1	2	3	4	5		7	8
0	1										
2	3	4									
5		7	8								
Weight: 0,042 Kg	Hydraulic symbol Spare part code E70100002	PPM assembly code N Mounting cavities <table><tr><td>0</td><td>1</td></tr><tr><td>2</td><td>3</td><td>4</td></tr><tr><td>5</td><td></td><td>7</td><td>8</td></tr></table>	0	1	2	3	4	5		7	8
0	1										
2	3	4									
5		7	8								

PLUGS

 Weight: 0,110 Kg	Hydraulic symbol  Spare part code N70200010	PPM assembly code XM Mounting cavities <table><tr><td>0</td><td>1</td></tr><tr><td>2</td><td>3</td><td>4</td></tr><tr><td>5</td><td></td><td>7</td><td>8</td></tr></table>	0	1	2	3	4	5		7	8
0	1										
2	3	4									
5		7	8								
 Weight: 0,045 Kg	Hydraulic symbol  Spare part code N70200007	PPM assembly code MG Mounting cavities <table><tr><td>0</td><td>1</td></tr><tr><td>2</td><td>3</td><td>4</td></tr><tr><td>5</td><td></td><td>7</td><td>8</td></tr></table>	0	1	2	3	4	5		7	8
0	1										
2	3	4									
5		7	8								
 Weight: 0,027 Kg	Hydraulic symbol  Spare part code N70200008	PPM assembly code ML Mounting cavities <table><tr><td>0</td><td>1</td></tr><tr><td>2</td><td>3</td><td>4</td></tr><tr><td>5</td><td></td><td>7</td><td>8</td></tr></table>	0	1	2	3	4	5		7	8
0	1										
2	3	4									
5		7	8								

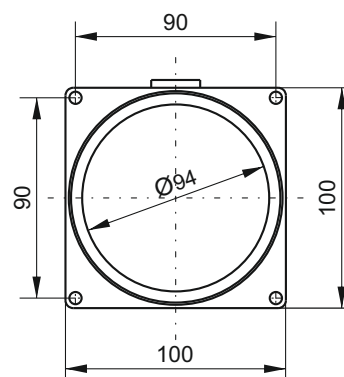
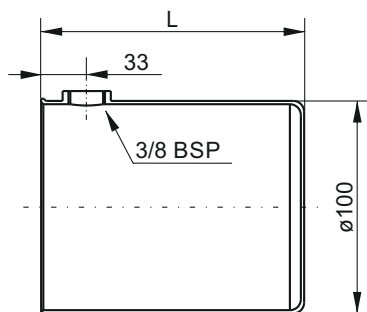
Note: cavities 2 and 3 are machined SAE08 (3/4-16UNF) in central manifold MB and 5/8-18UNF in central manifold MR.
Cavity 2 is machined SAE08-4way in central manifold M4.
Cavity 4 is machined only in reversible central manifold MR.

SECTION E

ROUND STEEL TANKS F & H SERIES



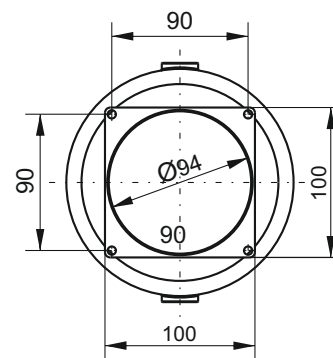
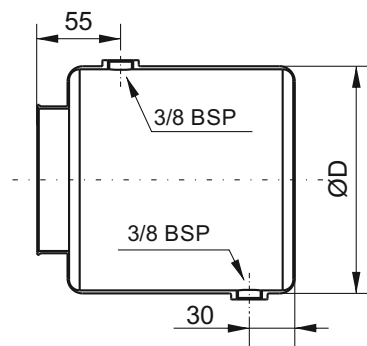
Recommended tightening torque for 3/8" BSPP: 10 Nm



Description	Spare part code	Assembly code	L (mm)	Weight	Actual filling volume (lt)	
					Horizontal	Vertical
0,7 l cylindrical horizontal / vertical mounting	E50403001	0,7F / 0,7FV	120	0,26 Kg	0,75	0,52
1,2 l cylindrical horizontal / vertical mounting	E50403002	1,2F / 1,2FV	186	0,38 Kg	1,1	0,9



Recommended tightening torque for 3/8" BSPP: 10 Nm



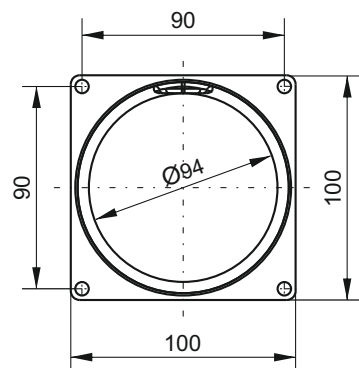
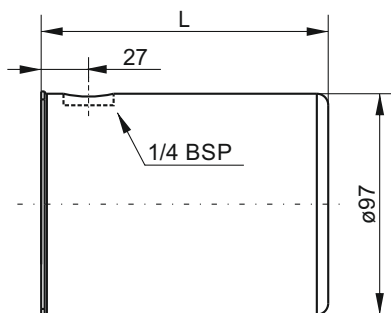
Description	Spare part code	Assembly code	L (mm)	ØD (mm)	Weight	Actual filling volume (lt)	
						Horizon.	Vert.
1,7 l cylindrical horizontal / vertical mounting	E50404004	1,7H / 1,7HV	170	120	0,64 Kg	1,5	1,2
2,4 l cylindrical horizontal / vertical mounting	E50404006	2,4H / 2,4HV	170	150	0,8 Kg	2,4	1,8

Material	Fe P04-EN10130 steel sheet 1,5 mm thickness
Fluid	Mineral based oil ISO/DIN 6743/4
Working temperature	-15 / +70°C

Note: the piping kit, standard suction filter, filler/breather and discharge plug are included when specifying the tank in PPM assembly code

When ordering spare parts, only the discharge plug and filler/breather are included

ROUND PLASTIC TANKS R SERIES



Description	Spare part code	Assembly code	L (mm)	Weight	Actual filling volume (lt)	
					Horizontal	Vertical
0,4 l round horizontal / vertical mounting	H50403001	0,4R / 0,4RV	90	0,07 Kg	0,45	0,35
0,7 l round horizontal / vertical mounting	H50403002	0,7R / 0,7RV	124	0,09 Kg	0,75	0,62
1,2 l round horizontal / vertical mounting	H50403003	1,2R / 1,2RV	186	0,14 Kg	1,17	1,05

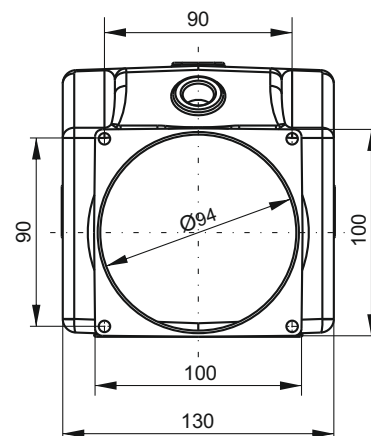
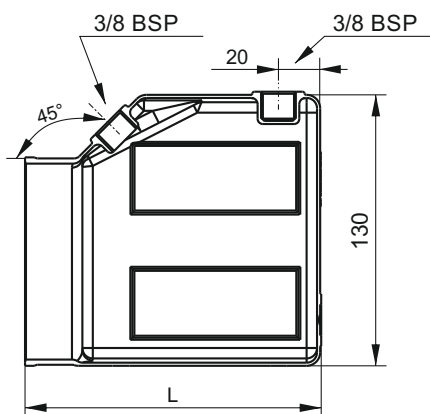
Material	PE-HD neutral / transparent color (DO NOT EXPOSE TO DIRECT SUNLIGHT)
Fluid	Mineral based oil ISO/DIN 6743/4
Working temperature	-15 / +70°C

Note: the piping kit, standard suction filter, filler/breather and discharge plug are included when specifying the tank in PPM assembly code

When ordering spare parts, only the discharge plug and filler/breather are included

SECTION E

SQUARE PLASTIC TANKS T SERIES



Description	Spare part code	Assembly code	L (mm)	Weight	Actual filling volume (lt)	
					Horizontal	Vertical
1 l square horizontal / vertical mounting	H50403005	1T / 1TV	125	0,23 Kg	1,0	0,8
1,5 l square horizontal / vertical mounting	H50403007	1,5T / 1,5TV	150	0,24 Kg	1,4	1,2
2 l square horizontal / vertical mounting	H50403009	2T / 2TV	211	0,34 Kg	2,2	2,0
2,7 l square horizontal / vertical mounting	H50403011	2,7T / 2,7TV	261	0,40 Kg	2,7	2,7
3,5 l square horizontal / vertical mounting	H50403013	3,5T / 3,5TV	326	0,49 Kg	3,7	3,9

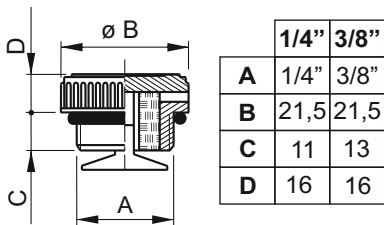
Material	PE-HD neutral / transparent color (DO NOT EXPOSE TO DIRECT SUNLIGHT)
Fluid	Mineral based oil ISO/DIN 6743/4
Working temperature	-15 / +70°C

Note: the piping kit, standard suction filter, filler/breather and discharge plug are included when specifying the tank in YOUM assembly code

When ordering spare parts, only the discharge plug and filler/breather are included

TANK ACCESSORIES

Knurled filler breather with vane 1/4" - 3/8" BSP



Weight: 0,01 Kg

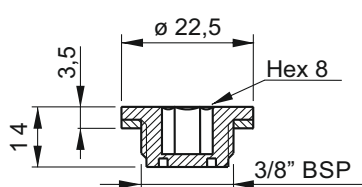
Suitable for R type tanks (1/4" BSPP)
Suitable for F/H/T type tanks (3/8" BSPP)



Spare part code

C75100001 (1/4 BSPP)
C75100002 (3/8 BSPP)

Drain plug



Weight: 0,01 Kg

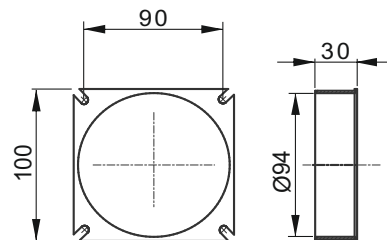
Suitable for F/H/T type tanks



Spare part code

TCNB0702

Bare steel tank adapter



Unpainted, to be welded on custom made tanks

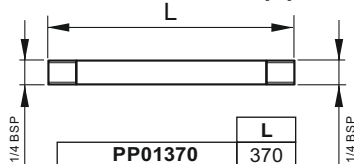
Weight: 0,12 Kg



Spare part code

F80000012

1/4" suction/return pipe



Recommended as suction pipe for PMC02 hand pumps and as return pipe with C3420001 return filter.

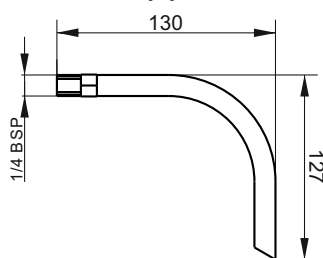
Weight: 0,04 Kg



Spare part code

PP01370

90° Plastic pipe for return line



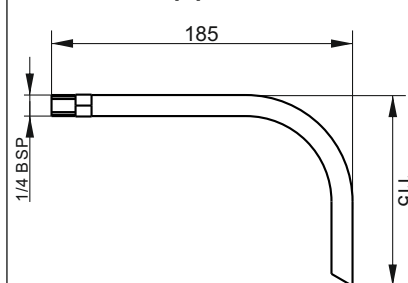
Weight: 0,02 Kg



Spare part code

PP01E130127

90° Plastic pipe for return line



Weight: 0,02 Kg



Spare part code

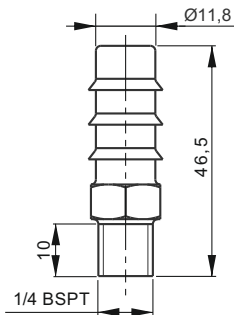
PP01E185115

Notes: Max torque for plastic pipe 5 Nm

SECTION E

TANK ACCESSORIES

**Flexible plastic pipe holder
for return line 1/4" BSPT**



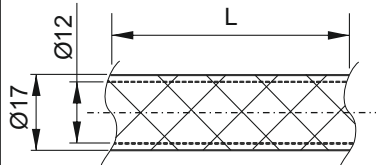
Weight: 0,01 Kg



Spare part code

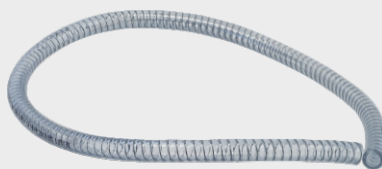
TR0112

Flexible plastic pipe



Recommended as standard return pipe.
To be fixed with TR01-12 and cut to
correct length. To be ordered in meters.

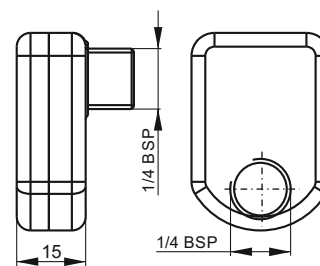
Weight: 0,18 Kg/meter



Spare part code

SF12

Micro inlet filter
Filtration degree: 90 micron



Recommended for pumps gr. 0

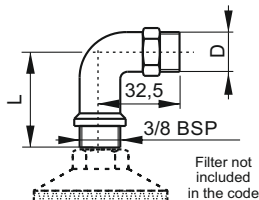
Weight: 0,01 Kg



Spare part code

C34100100

**90° elbow for suction pipe
M 1/4" & 3/8" BSPT - M 3/8" BSP**



	L	D
PP01E40	40	1/4 BSPT
PP01E77	77	1/4 BSPT
PP02E40	40	3/8 BSPT
PP02E77	77	3/8 BSPT

Recommended for horizontal tanks

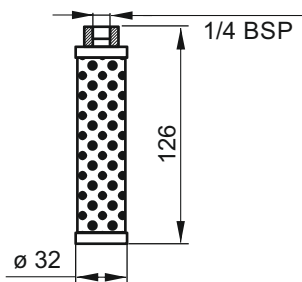
Weight: 0,01 Kg



Spare part code

PP0*E**

In-tank return filter
Filtration degree: 90 micron



Suitable for all tanks over 3l

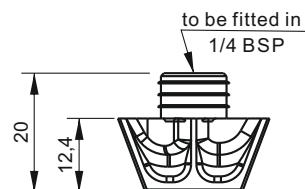
Weight: 0,09 Kg



Spare part code

C34200001

Relief valve diffuser
To be mounted in cavity Tr



It reduces foam and noise when
relief valve is working
Recommended for all vertical
mounted tanks.

Weight: 0,01 Kg



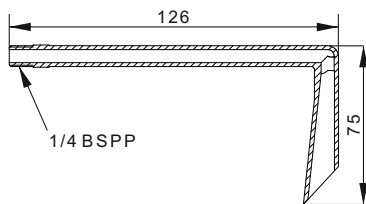
Spare part code

SFEP01D

Notes: Max torque for plastic pipe 5 Nm

TANK ACCESSORIES

Plastic pipe 90 degrees elbow
1/4 BSPP



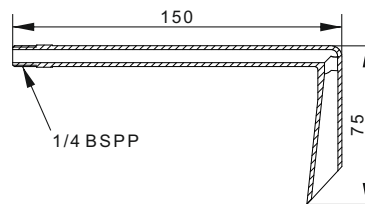
Weight: 0,02 Kg



Spare part code

TADPH00001

Plastic pipe 90 degrees elbow
1/4 BSPP



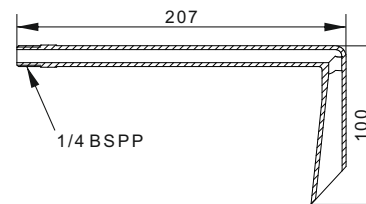
Weight: 0,02 Kg



Spare part code

TADPH00002

Plastic pipe 90 degrees elbow
1/4 BSPP



Weight: 0,03 Kg

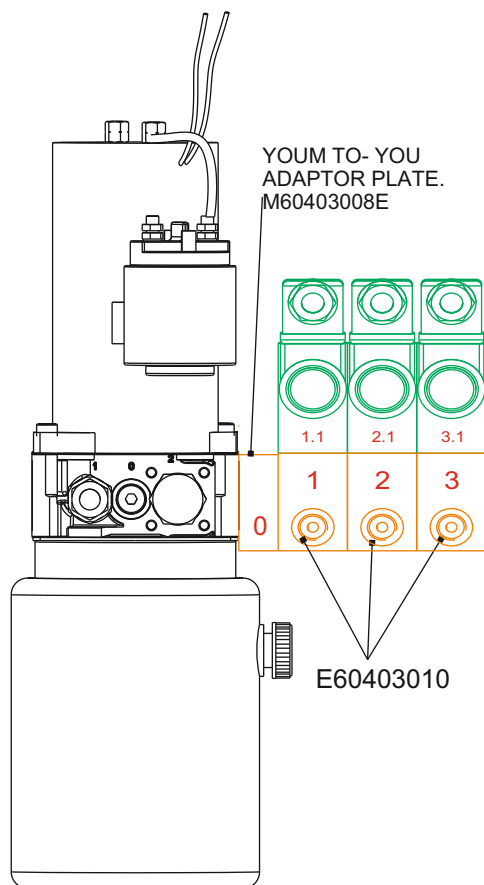


Spare part code

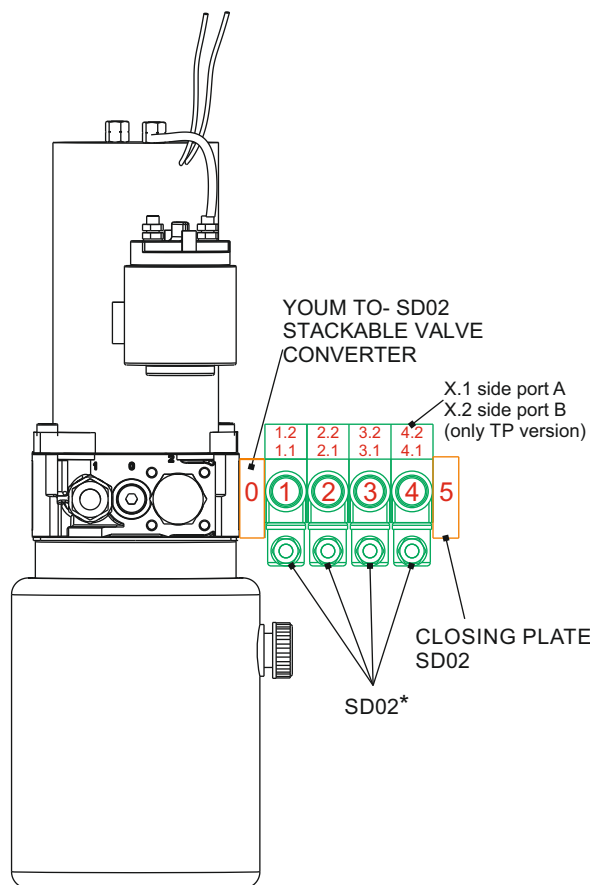
TADPH00003

EXTERNAL MANIFOLDS & VALVE MOUNTING EXAMPLES

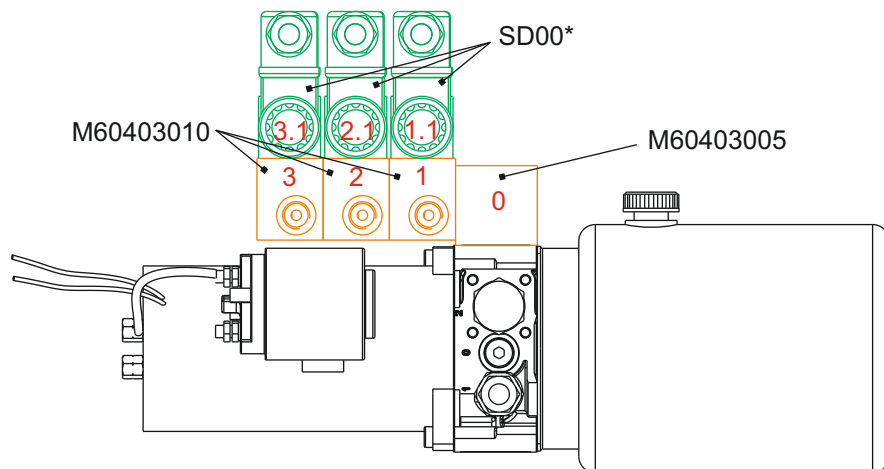
YOUM + YOU MODULAR BLOCKS



YOUM + SD02 STACKABLE VALVES



YOUM + NG3 MICRO BLOCKS & VALVES



The micro powerpack external manifolds and valves are arranged following a stack level logic. Each stack is numbered as n, n.1, n.2, n.3,... where **n** is the basic manifold stack number, n.1 is the first valve mounted on top of manifold n, n.2 is the second one, mounted on top of n.1 one,... See above self-explanatory drawings where **manifolds** are coloured in **orange** and **valves** in **green**. **Stack levels** are numbered in **red**.

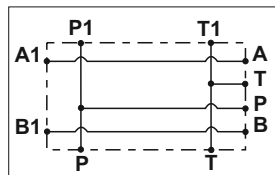
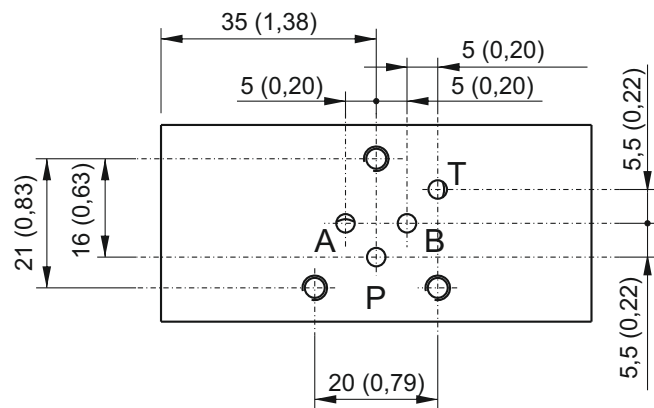
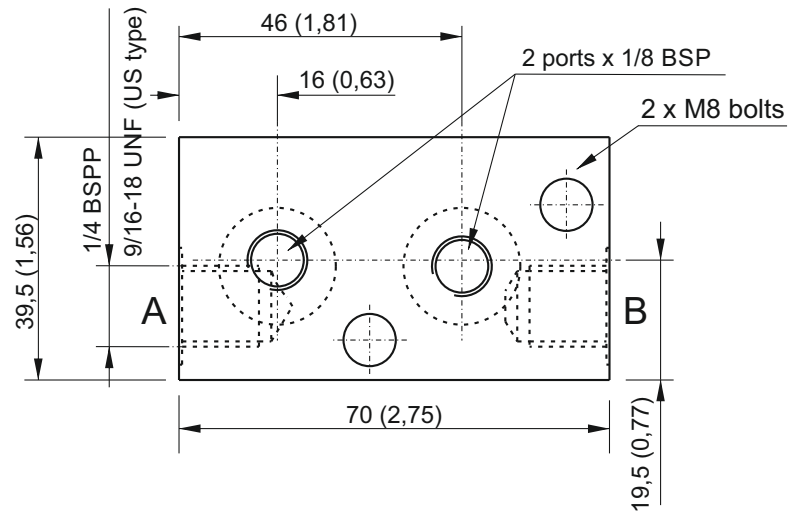
NG3 MICRO MODULAR MANIFOLDS, LATERAL PORTS



Dimensions in mm (inches)

Main features

Max pressure	350 bar
Weight	0,21 Kg (0,46lb)
Fixing bolts	2 M8 tie - rods steel class 8.8 or above



<i>Parallel connection</i>	Spare part code
Lateral ports	M60403010
Lateral ports US execution	M60403010US

Note: to add external manifolds to YOUM assembly code, just add their spare part codes at the end of PPM code. Ex: YOUM-0,8 12DC-MB-J-K0,6-D/280-G-1,5L+**M60403004**+**M60403010**

The NG3 micro valve attachment is on motor side.

Recommended tightening torque for M8 bolts: 16 Nm. Attention! Do not use tie rods with steel class less than 8.8.

SECTION F

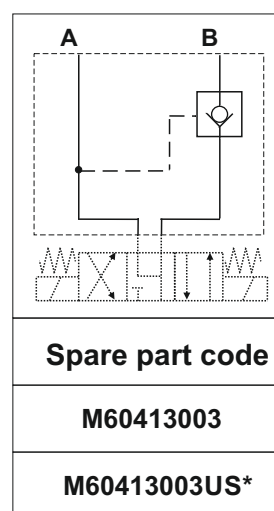
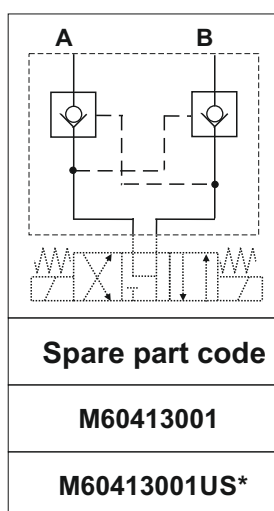
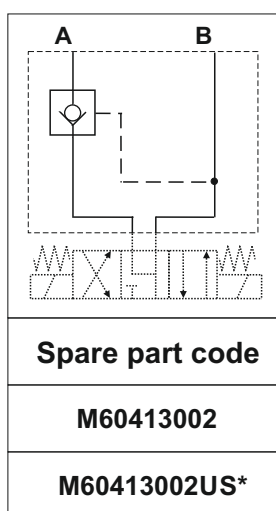
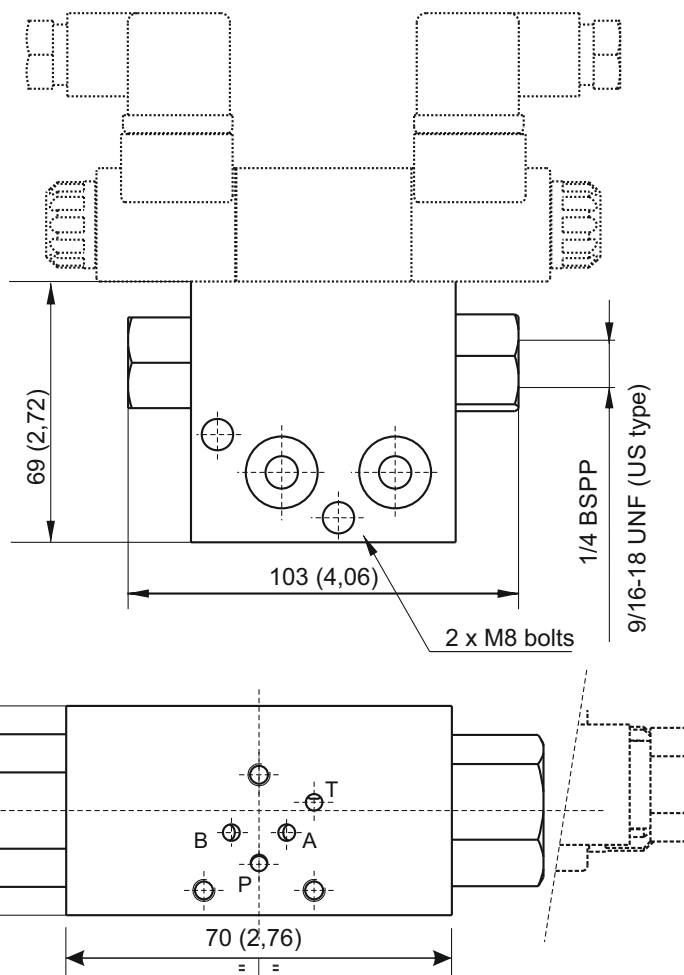
NG3 MODULAR MANIFOLD WITH INTEGRAL PILOT OPERATED CHECK VALVES



Dimensions in mm (inches)

Main features

Max pressure	350 bar
Weight	0,26 Kg (0,57lb)
Fixing bolts	2 M8 tie - rods steel class 8.8 or above



*: US execution with 9/16-18UNF SAE06 exit ports

Code does not include the NG3 valve

Recommended tightening torque for M8 bolts: 16 Nm. Attention! Do not use tie rods with steel class less than 8.8.

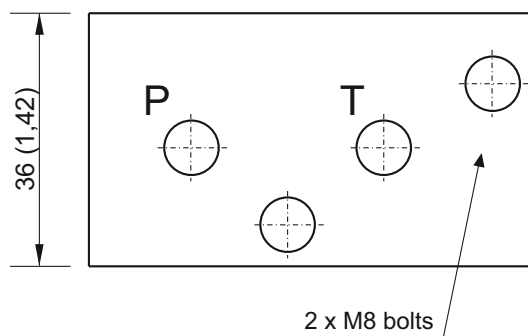
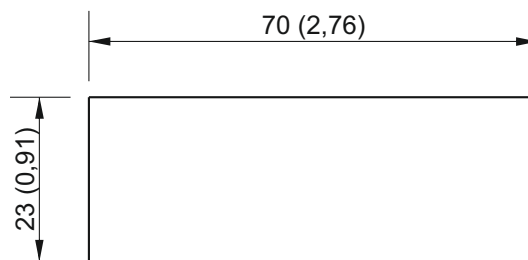
SPACER ELEMENT 23MM



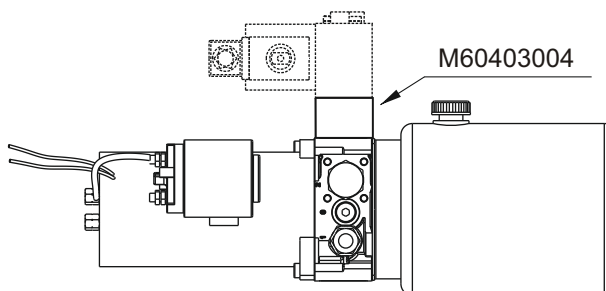
Dimensions in mm (inches)

Main features

Max pressure	350 bar
Weight	0,14 Kg (0,3lb)
Fixing bolts	2 M8 tie - rods steel class 8.8 or above



Mounting example



Spare part code
M60403004

Note: Recommended tightening torque for M8 bolts: 16 Nm. Attention! Do not use tie rods with steel class less than 8.8.

SECTION F

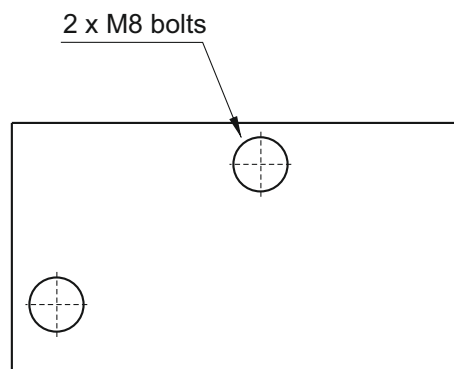
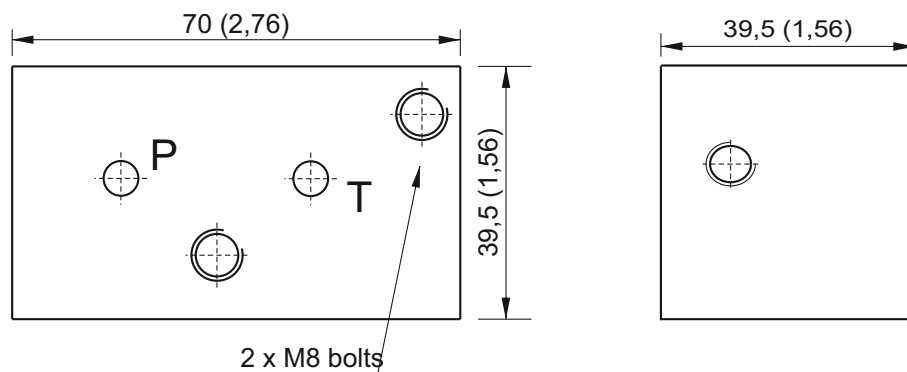
90° ROTATION MANIFOLD 39,5MM



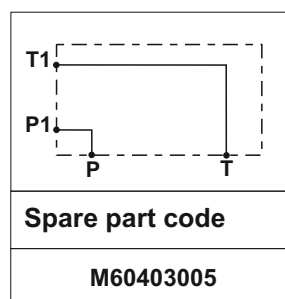
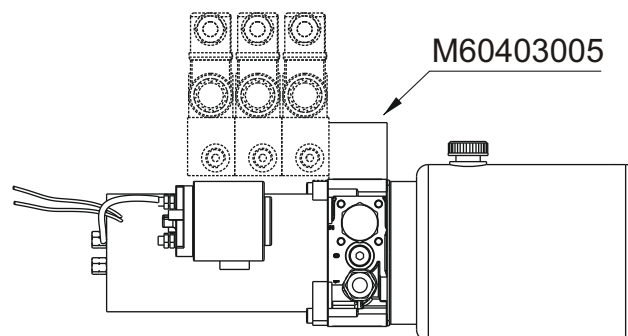
Dimensions in in mm (inches)

Main features

Max pressure	350 bar
Weight	0,26 Kg (0,57lb)
Fixing bolts	2 M8 tie - rods steel class 8.8 or above

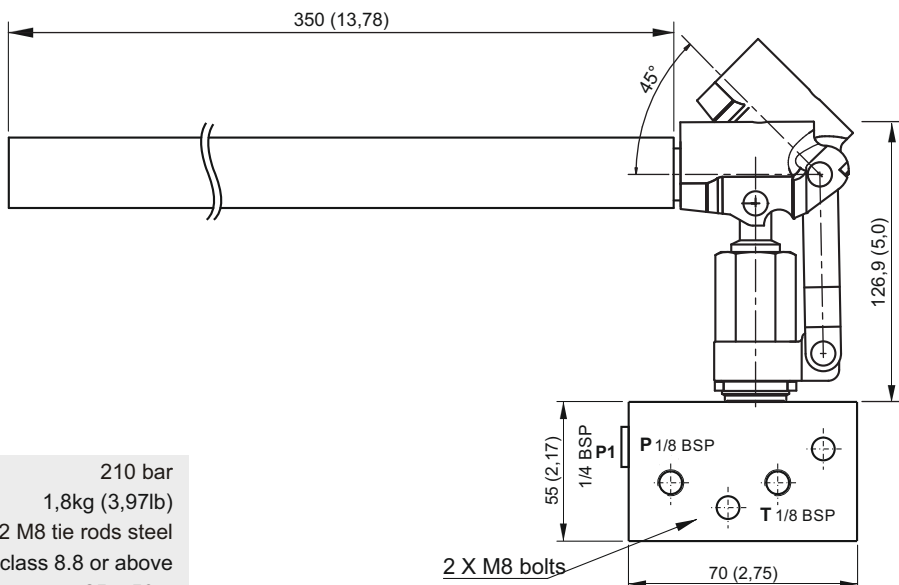


Mounting example



Recommended tightening torque for M8 bolts: 16 Nm. Attention! Don't use tie rods with steel class less than 8.8.

PM09 HAND PUMP MODULAR MANIFOLD



Dimensions in mm (inches)

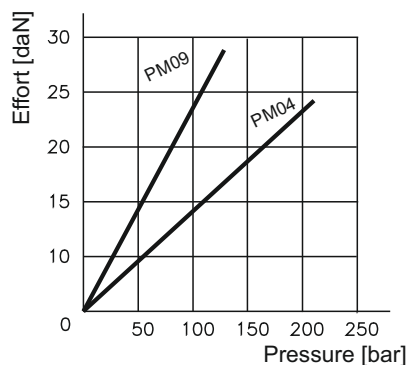
Main features

Max pressure	210 bar
Weight	1,8kg (3,97lb)
Fixing bolts	2 M8 tie rods steel class 8.8 or above
Filtration degree	25 ÷ 50 µ
Temperature range	-20 ÷ +70°C

Block thickness: 39mm (1,54)

Effort (daN)

operating on the end of the standard lever

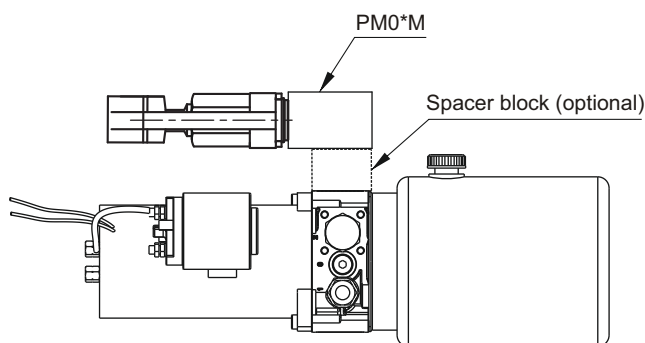
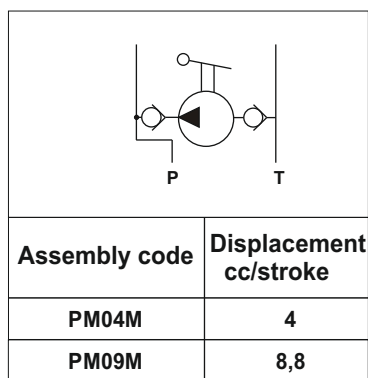


Spare part code without block

CARTPM04L — hand pump cartridge
4 cc 7/8-14 UNF +
lever

CARTPM09L — hand pump cartridge
8,8 cc 7/8-14 UNF +
lever

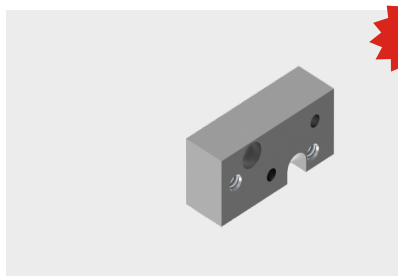
Mounting example



Recommended tightening torque for M8 bolts: 16 Nm. Attention! Do not use tie rods with steel class less than 8.8.

SECTION F

ADAPTOR PLATE YOUM TO YOU



Dimensions in mm (inches)

Main features

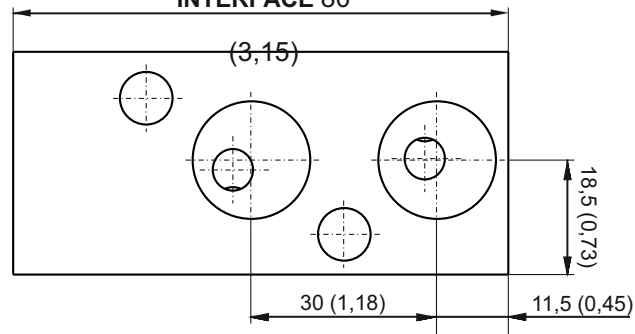
Weight	0,14 Kg (0,31lb)
Fixing bolts	2xM8 tie-rods steel class 8.8 or above

Spare part code

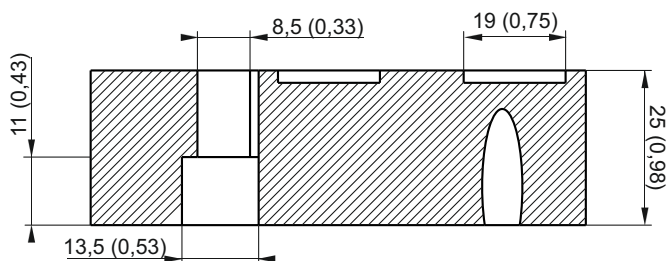
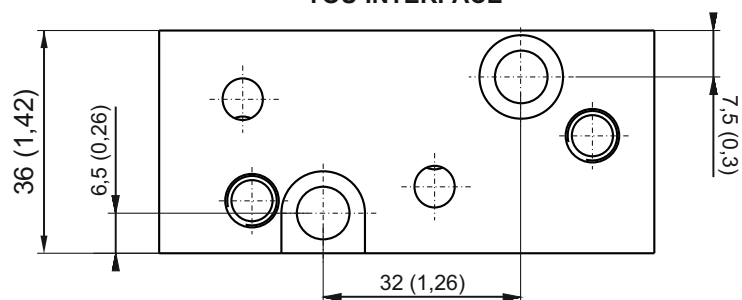
M60403008E

YOUM

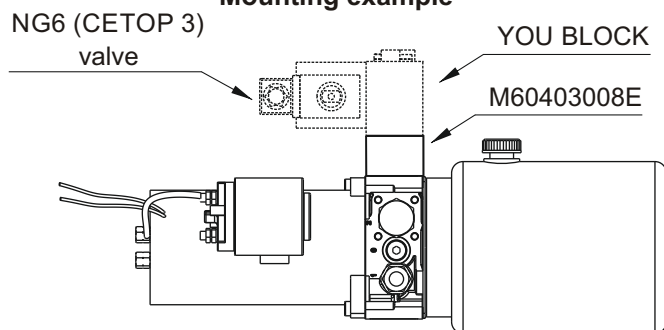
INTERFACE 80



YOU INTERFACE



Mounting example



Attention! Do not use tie rods with steel class less than 8.8.

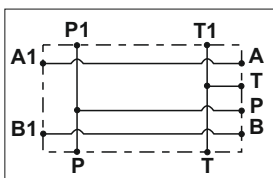
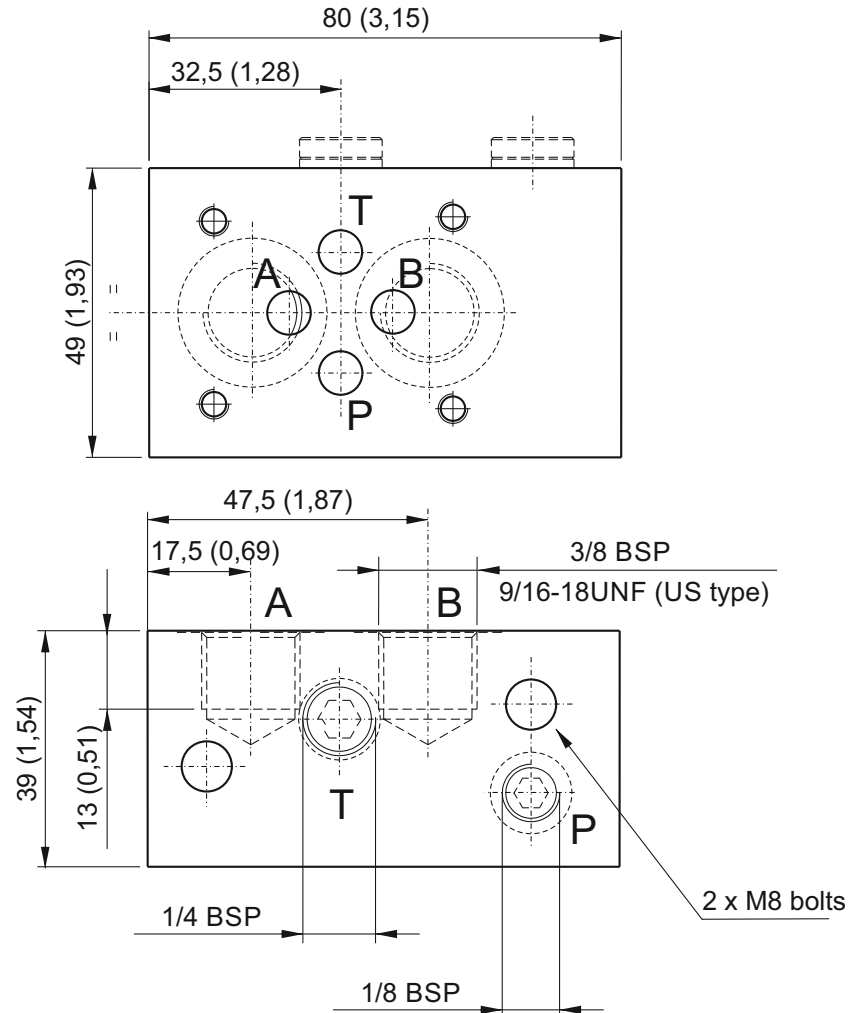
MODULAR MANIFOLDS NG6 (CETOP 3), REAR PORTS



Dimensions in mm (inches)

Main features

Max pressure	350 bar
Weight	0,37 Kg (0,82lb)
Fixing bolts	2 M8 tie - rods steel class 8.8 or above



Parallel connection	Spare part code
Rear ports	E60403001
Rear ports US execution	E60403001US

Option 1/4" BSP P port:
Spare part code
PORTMF0001

Note: Recommended tightening torque for M8 bolts: 16 Nm. Attention! Do not use tie-rods less than 8.8.

To use blocks with a YOU interface on YOUM manifold, the M60403008E block must be used.

*: US execution with 9/16-18UNF SAE06 exit ports

To add external manifolds to a YOUM assembly code, just add their spare part codes at the end of the YOUM code. ex: YOUM-0,8 12DC-MB-J-K0,6-V180-G-RETURN KIT-1,5L+M60403008E+E60403001.

The Cetop attachment is on motor side. Code does not include the Cetop solenoid valve. See NG6 (Cetop 3) valves table in section G.

SECTION F

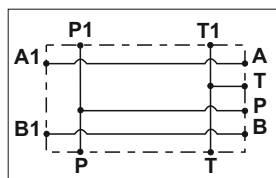
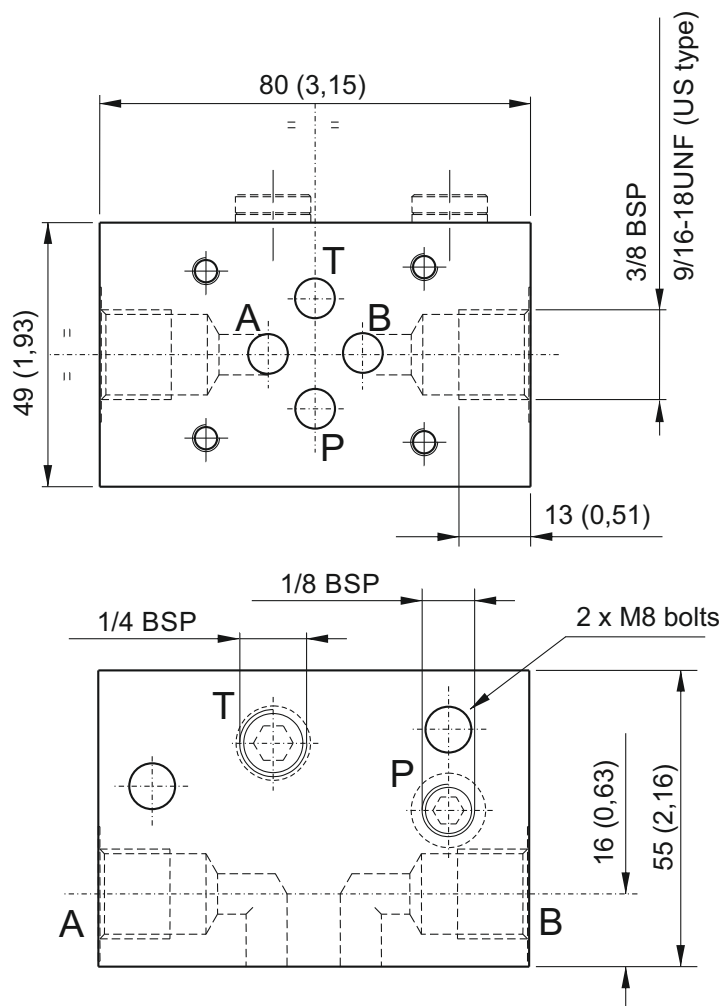
MODULAR MANIFOLDS NG6 (CETOP 3), LATERAL PORTS



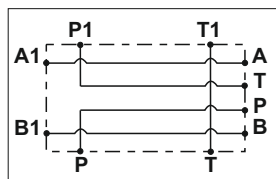
Dimensions in mm (inches)

Main features

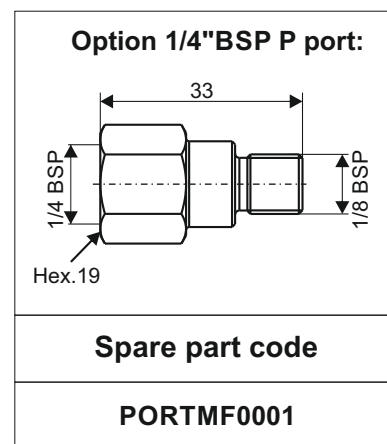
Max pressure	350 bar
Weight	0,56 Kg (1,2lb)
Fixing bolts	2 M8 tie - rods steel class 8.8 or above



<i>Parallel connection</i>	Spare part code
Lateral ports	E60403010
Lateral port US execution	E60403010US



<i>Series connection</i>	Spare part code
Lateral ports	E60403011
Lateral port US execution	E60403011US



Note: Recommended tightening torque for M8 bolts: 16 Nm. Attention! Do not use tie-rods less than 8.8.

To use blocks with a YOU interface on YOUM manifold, the M60403008E block must be used.

*: US execution with 9/16-18UNF SAE06 exit ports

To add external manifolds to a YOUM assembly code, just add their spare part codes at the end of the YOUM code. ex: YOUM-0,8 12DC-MB-J-K0,6-D180-G-RETURN KIT-1,5L+M60403008E+E604030010.

The Cetop attachment is on motor side. Code does not include the Cetop solenoid valve. See NG6 (Cetop 3) valves table in section G.

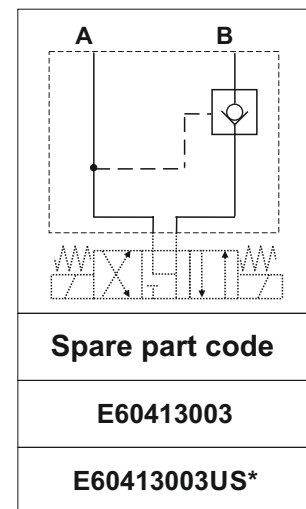
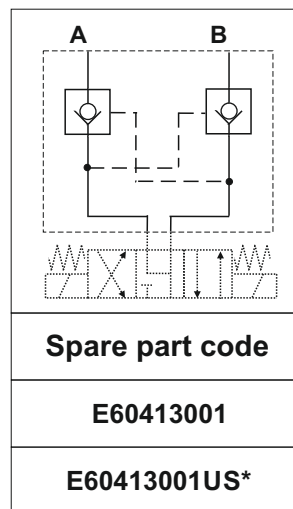
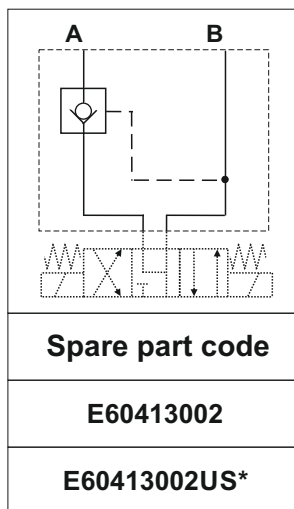
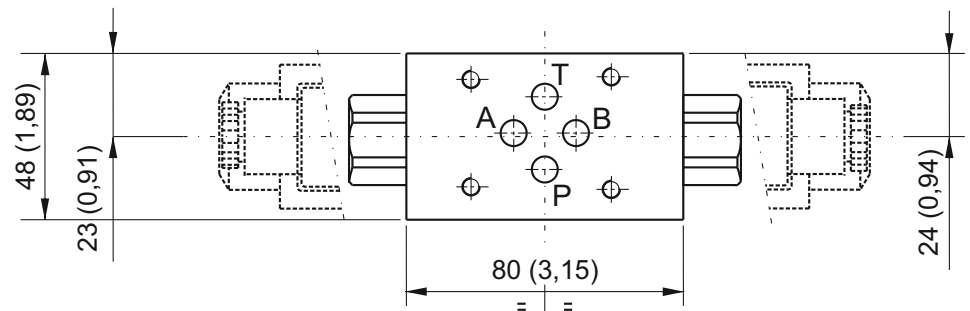
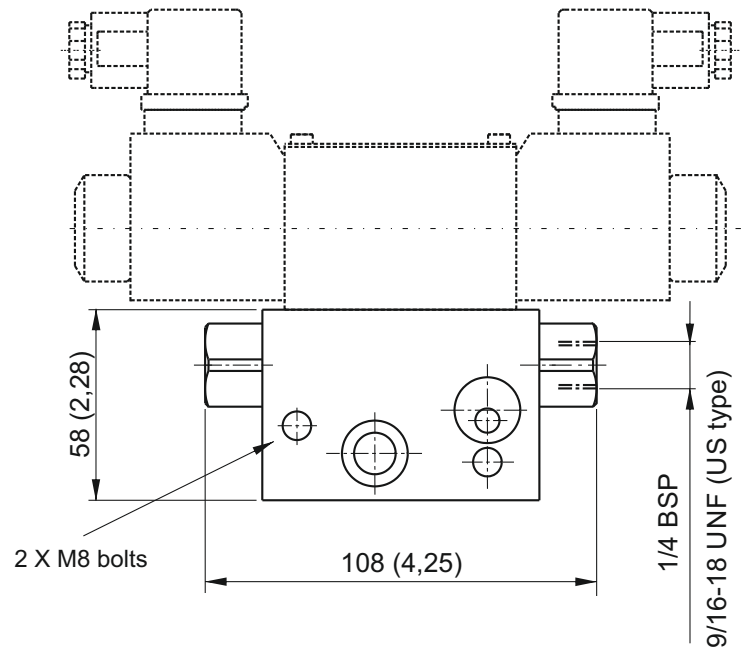
MODULAR MANIFOLDS NG6 (CETOP 3) WITH INTEGRAL PILOT OPERATED CHECK VALVES



Dimensions in mm (inches)

Main features

Max pressure	350 bar
Pilot ratio	1:5,6
Weight	0,71 Kg (1,56lb)
Fixing bolts	2 M8 tie - rods steel class 8.8 or above



Note: Recommended tightening torque for M8 bolts: 16 Nm. Attention! Do not use tie-rods less than 8.8.

To use blocks with a YOU interface on YOUM manifold, the M60403008E block must be used.

*: US execution with 9/16-18UNF SAE06 exit ports

To add external manifolds to a YOUM assembly code, just add their spare part codes at the end of the YOUM code. ex: YOUM-0,8 12DC-MB-J-K0,6-V180-G-RETURN KIT-1,5L+M60403008E+E60413001.

Code does not include the Cetop solenoid valve. See NG6 (Cetop 3) valves table in section G.

SECTION F

MODULAR MANIFOLDS WITH PILOT OPERATED CHECK VALVES



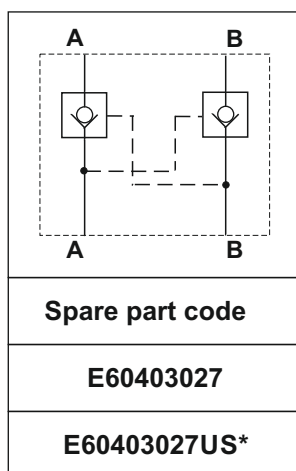
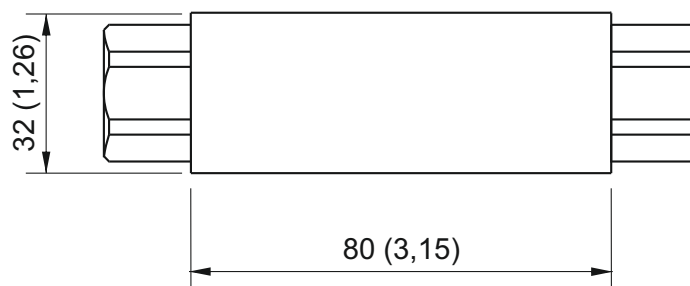
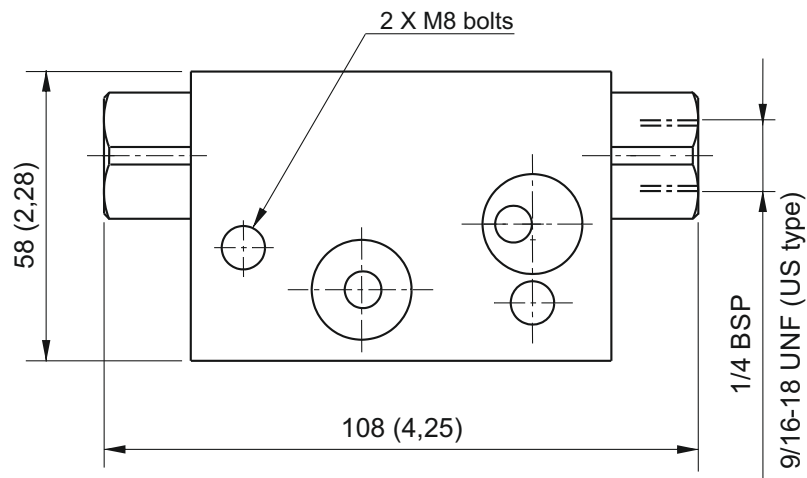
Dimensions in mm (inches)

Suitable for:

- central manifold U4
- central manifold MR

Main features

Max pressure	350 bar
Pilot ratio	1:5,6
Weight	0,5 Kg (1,1lb)
Fixing bolts	2 M8 tie - rods steel class 8.8 or above



Note: Recommended tightening torque for M8 bolts: 16 Nm. Attention! Do not use tie-rods less than 8.8.

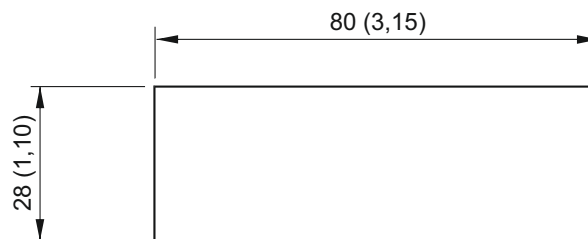
*: US execution with 9/16-18UNF SAE06 exit ports

To use blocks with a YOU interface on YOUM manifold, the M60403008E block must be used.

SPACER ELEMENTS

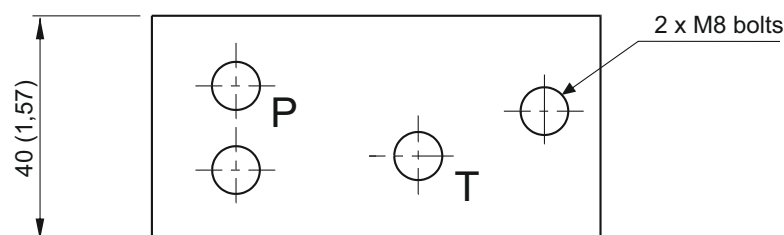


Dimensions in mm (inches)

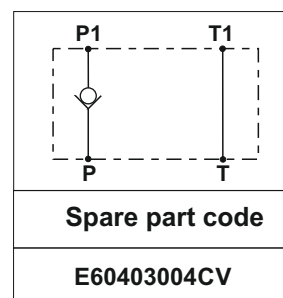
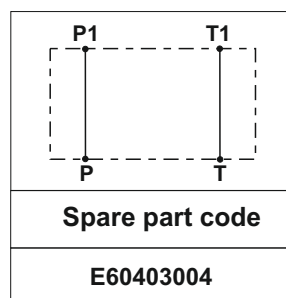
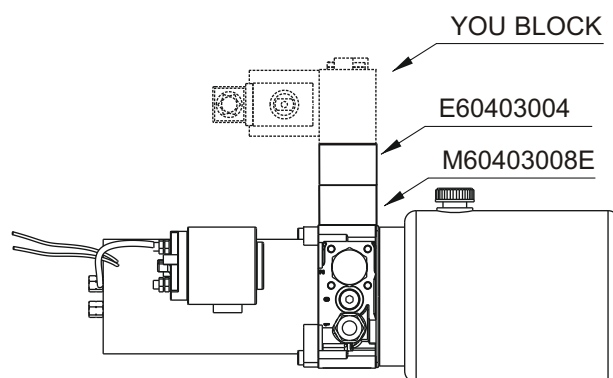


Main features

Max pressure	350 bar
Weight	0,23 Kg (0,5lb)
Fixing bolts	2 M8 tie - rods steel class 8.8 or above



Mounting example



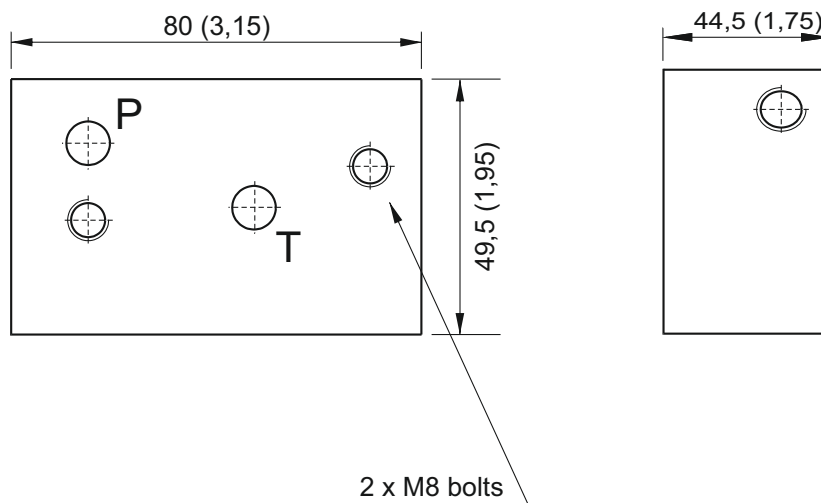
Note: Recommended tightening torque for M8 bolts: 16 Nm. Attention! Do not use tie-rods less than 8.8.

SECTION F

90° ROTATION MANIFOLDS 49MM

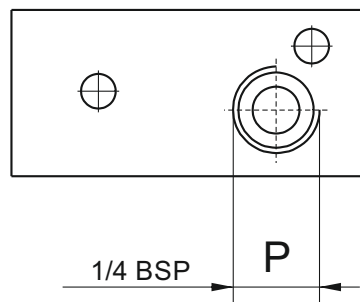


Dimensions in mm (inches)

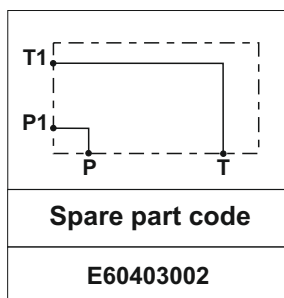
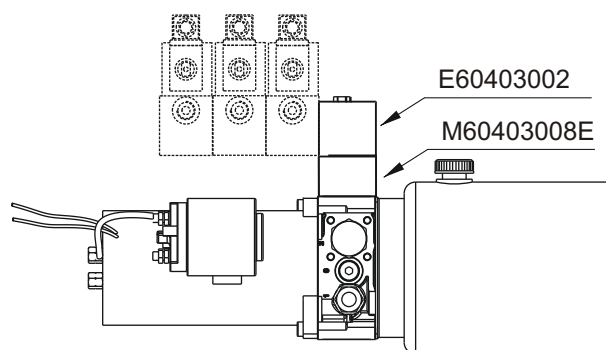


Main features

Max pressure	350 bar
Weight	0,72 Kg (1,59lb)
Fixing bolts	2 M8 tie - rods steel class 8.8 or above



Mounting example

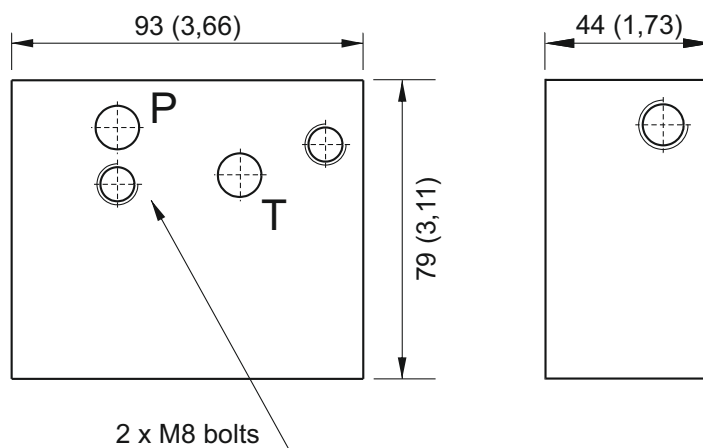


Note: Recommended tightening torque for M8 bolts: 16 Nm. Attention! Do not use tie-rods less than 8.8.

90° ROTATION MANIFOLDS WITH DOUBLE-SIDED ATTACHMENT P & T 79MM

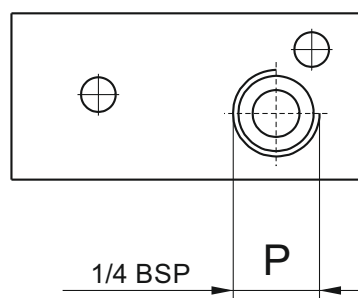


Dimensions in mm (inches)

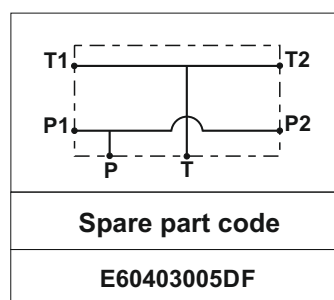
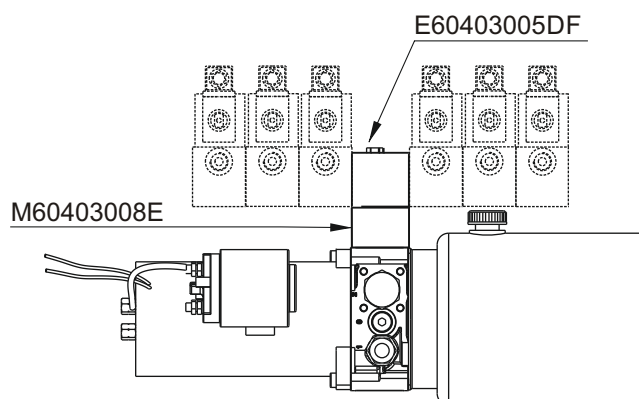


Main features

Max pressure	350 bar
Weight	0,72 Kg (1,59lb)
Fixing bolts	2 M8 tie - rods steel class 8.8 or above



Mounting example



Note: Recommended tightening torque for M8 bolts: 16 Nm. Attention! Do not use tie-rods less than 8.8.

SECTION F

MANIFOLD FOR ADDITIONAL SINGLE ACTING CIRCUIT

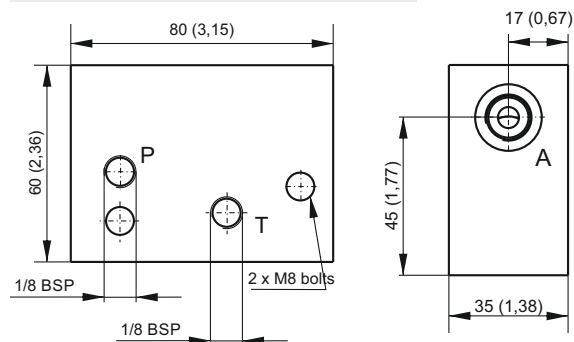


Dimensions in mm (inches)

Typically used to create a single acting circuit in parallel with a double acting circuit

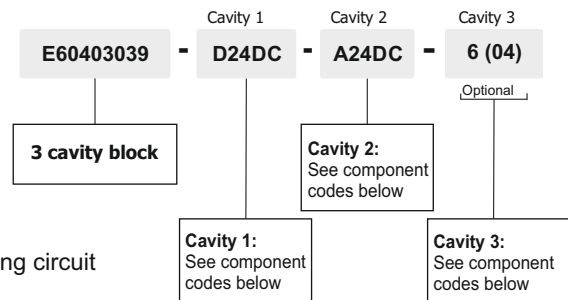
Main features

Max pressure	350 bar
Weight	0,39 Kg (0,88lb)
Fixing bolts	2 M8 tie - rods steel class 8.8 or above

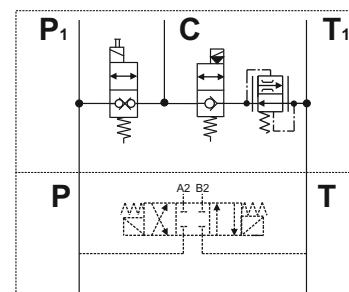


Spare part code
E60403039
E60403039US*

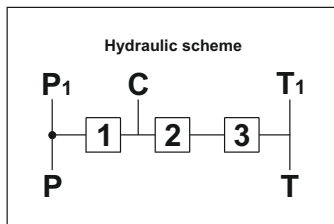
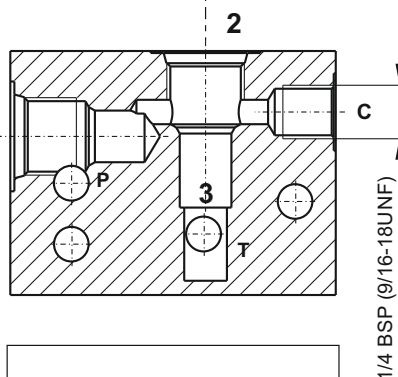
ASSEMBLY CODE - example



Application example



S		CSB	
Z		CPE	
D		MDV30E	
C		MSV31E	
A		MSV30	
B		MSV30E	
T		CSPC15	
L		E70100004	
N		E70100002	



	CSB		S
	CPE		Z
	MDV30E		D
	MSV31E		C
	MSV30		A
	MSV30E		B
	CSPC15		T
	E70100005		G
	E70100006		P
	E70100003		H
	VSC04		*

Note: to add external manifolds to YOUM assembly code, just add their spare part codes at the end of the YOUM code. Example: YOUM-0,8 12DC-MB-KM0,4-JM-DM_280-G-1,5T+M60403008E+E6030010+SD03C2+2x24DC_M160.

NG6 (CETOP 3) SANDWICH MODULAR MANIFOLD FOR SAE08 CARTRIDGE VALVES

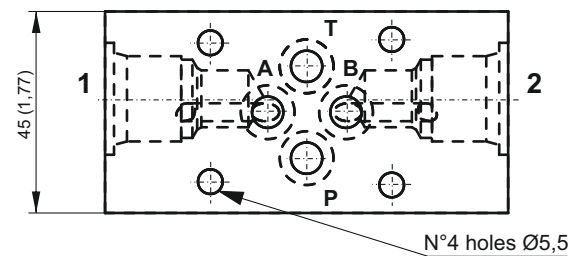
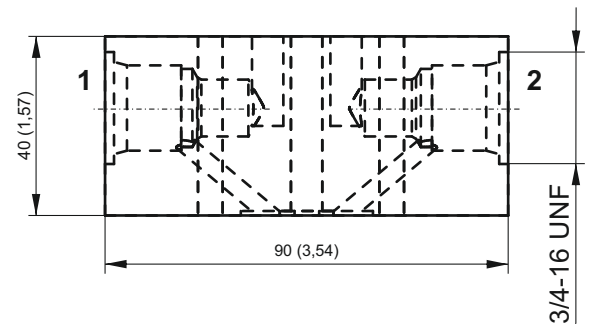
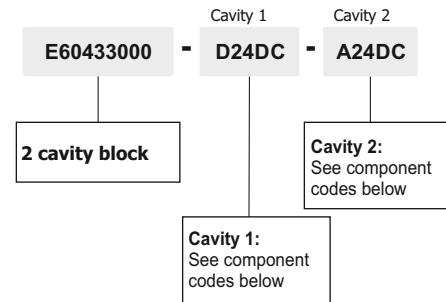


Dimensions in mm (inches)

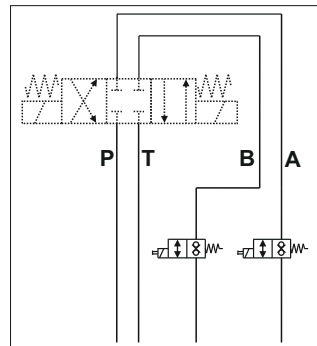
Main features

Max pressure	300 bar
Max flow	up to 40 l/min
Weight	0,4 Kg (0,88lb)
Fixing bolts	4 M5x** bolts. 5Nm torque 10,9 class steel or above
Fluid temperature	-20 ÷ +80°C
Filtration degree	25 ÷ 50 µ

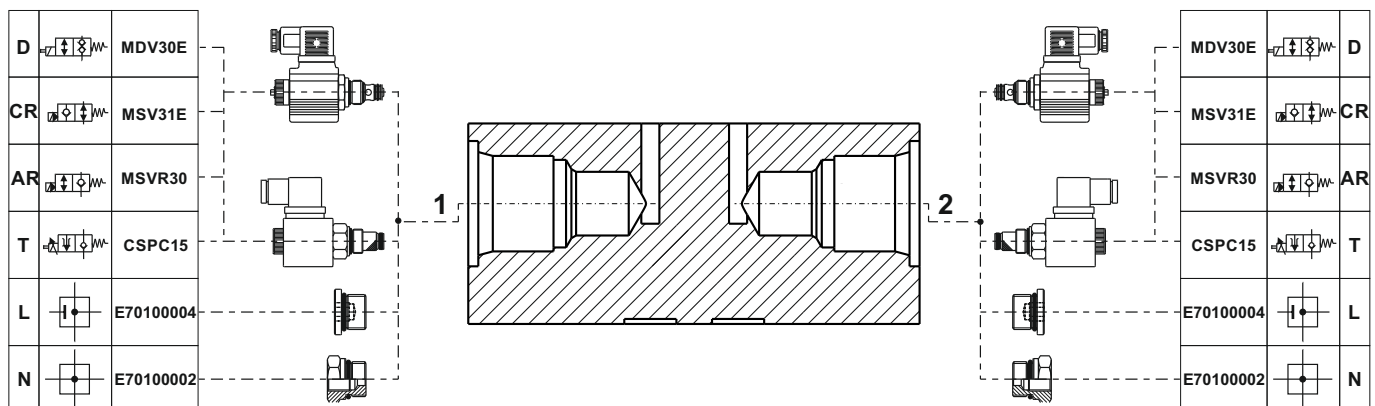
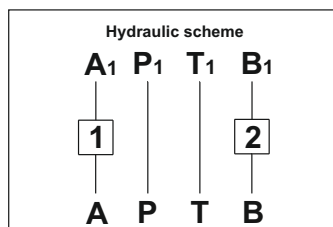
ASSEMBLY CODE - example



Application example

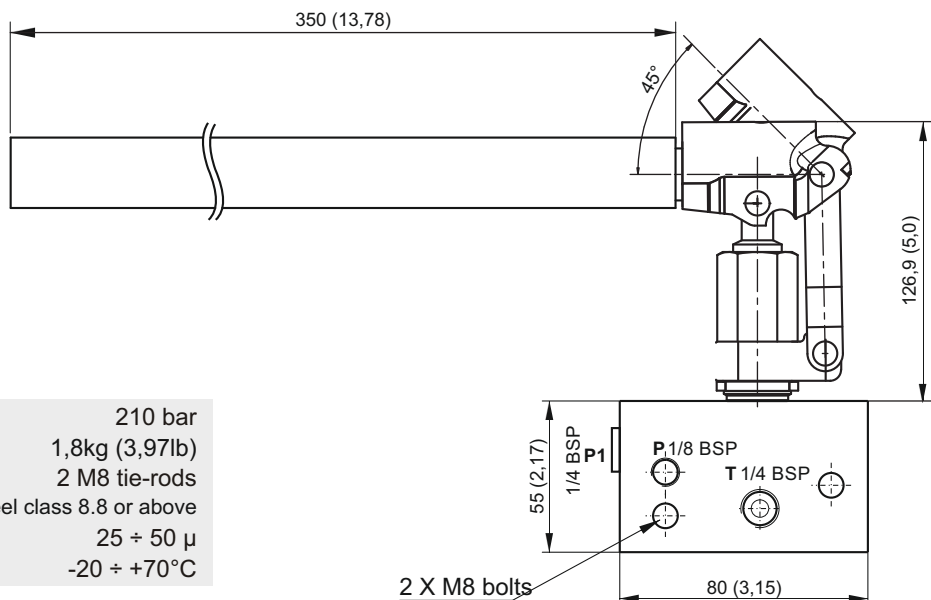


Spare part code
E60433000



Note: to add external manifolds to YOUM assembly code, just add their spare part codes at the end of the YOUM code. Example: YOUM-0,8 12DC-MB-KM0,4-JM-DM_280-G-1,5T+**M60403008E+E6030010+SD03C2+2x24DC_M160**.

HAND PUMP MODULAR MANIFOLD



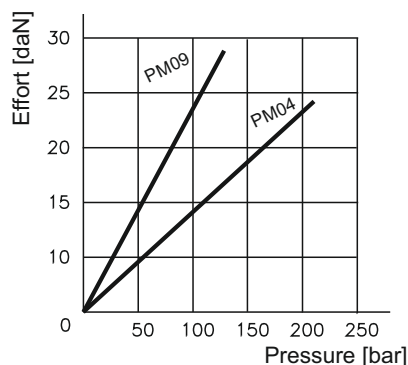
Dimensions in mm (inches)

Main features

Max pressure	210 bar
Weight	1,8kg (3,97lb)
Fixing bolts	2 M8 tie-rods steel class 8.8 or above
Filtration grade	25 ÷ 50 µ
Fluid temperature	-20 ÷ +70°C

Effort (daN)

operating on the top of the lever

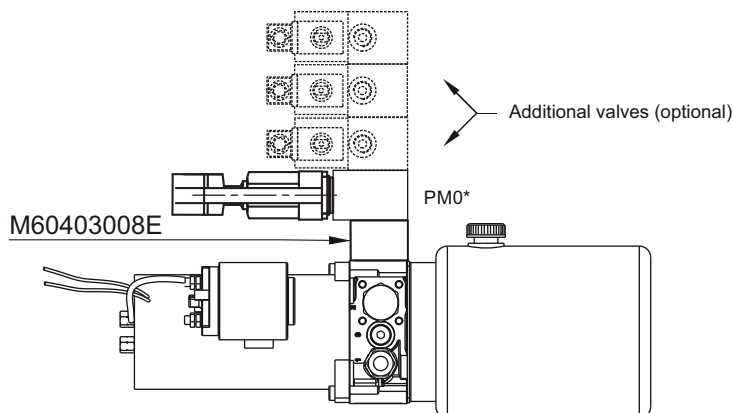


Note: Values are measured only on the valve (no cavity) with oil viscosity of 46 cSt at 50 °C. The drop of the pressure can change by the fluid viscosity and fluid temperature.

Spare part codes - cartridges only

Description	Spare part code
4cc hand pump 7/8-14UNF cartridge + lever	CARTPM04L
8,8cc hand pump 7/8-14UNF cartridge + lever	CARTPM09L

Mounting example



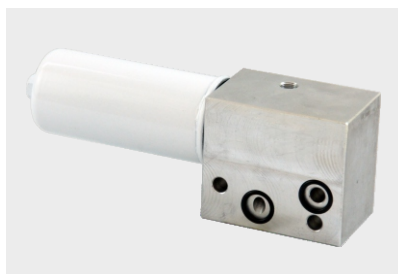
Spare part code	Displacement cc/stroke
PM04	4
PM09	8,8

Note: Recommended tightening torque for M8 bolts: 16 Nm. Attention! Do not use tie-rods less than 8.8.

Commissioning: the pump must be bled by opening the plug of the unused pressure port (P or P1), pumping a few times until all air bubbles and then clean oil come out, then tightening the plug again.

SECTION F

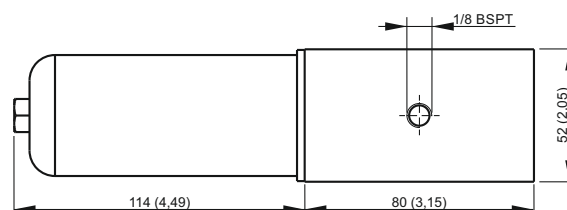
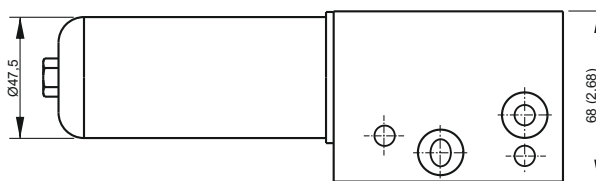
RETURN LINE FILTER MODULAR MANIFOLD



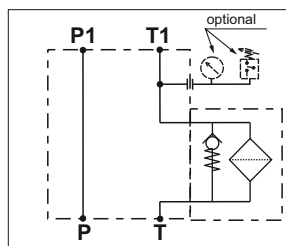
Dimensions in mm (inches)

Main features

Open by-pass valve press.	1 bar
Max flow	20 l/min
Filtration grade	15 μ
Fluid temperature	-30 + + 80 °C
Weight	0,87 kg
Fixing bolts	2 M8 bolts steel class 8.8 or above



Hydraulic scheme



Note: standard code does not include the MIR40 pressure gauge or F4 pressure switch

Spare part code

E60403020

Modular manifold with return filter on T

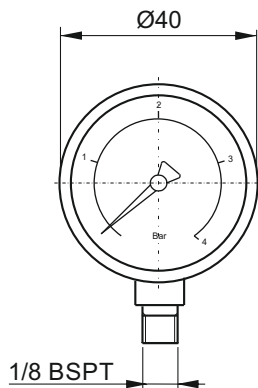
FO201385

15 micron replacement cartridge part number

Note: Recommended tightening torque for M8 bolts: 16 Nm.
Attention! Do not use tie-rods less than 8.8.
Recommended tightening torque for spin on cartridge: 10Nm

OPTIONS

Pressure gauge for return filter manifold

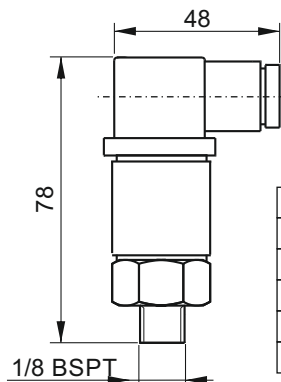


Weight: 0,1 Kg

Spare part code

MIR4004

Pressure switch for return filter manifold

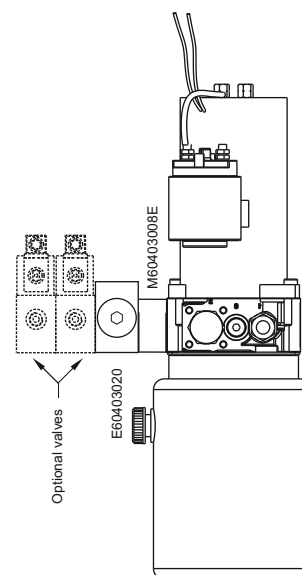


Setting range	0,2 ÷ 2,5 bar
Protection degree	IP 65
Hysteresis	10 ÷ 15 %
Weight	0,05 Kg
Max load	0,5 A a 250 VAC
Electric switch	NO/NC

Spare part code

F4R0M3

Mounting example



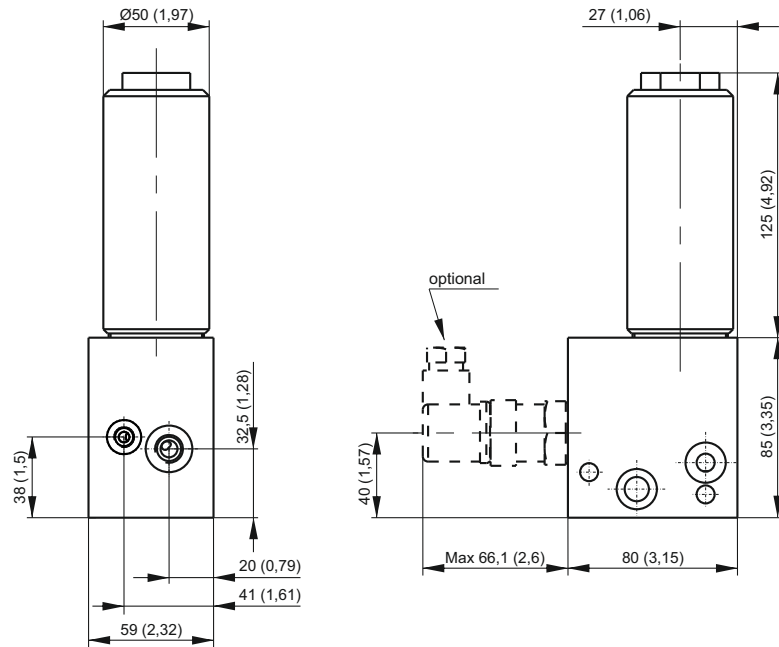
MODULAR BLOCK WITH PRESSURE FILTER



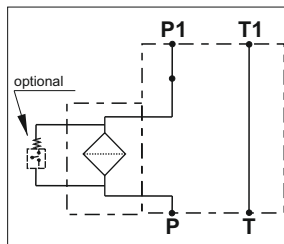
Dimensions in mm (inches)

Main features

Backpressure allowable	21 bar
Max pressure	400 bar
Max flow	32 l/min
Filtration grade	5-15-25 µ
Fluid temperature	-30 ÷ +80 °C
Weight	2,3 kg
Fixing bolts	2xM8 steel 8.8 or better



Hydraulic scheme



Note: standard code does not include the differential electric or visual pressure switch

Spare part code

E60403025* — Modular manifold with pressure filter

B

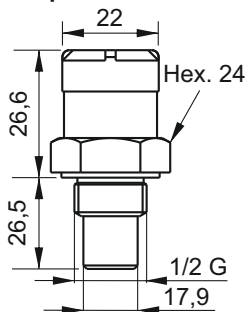
Cartridge filter:

- A = 5 micron fiber reinforced cartridge filter (cartridge spare part code: HPFEHY05)
- B = 15 micron fiber reinforced cartridge filter (cartridge spare part code: HPFEHY15)
- C = 25 micron fiber reinforced cartridge filter (cartridge spare part code: HPFEHY25)

Note: other filtration grades cartridges available on request
Recommended tightening torque for M8 bolts: 16 Nm.
Attention! Do not use tie-rods less than 8.8
Recommended tightening torque for spin on cartridge: 45Nm

OPTIONS

Differential pressure visual indicator

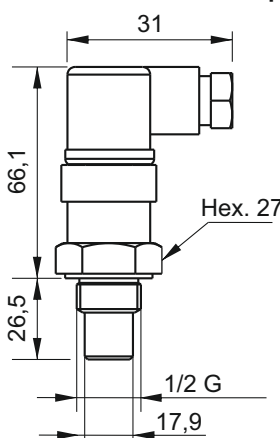


Switching contacts	Red/Green
Ambient temperature	-25 ÷ +80°C
Torque	50 Nm
Proof pressure	675 bar
Max pressure (P1=P2)	400 bar
Pressure rate for set.	10 bar/15 sec
Max different pressure (P1-P2)	200 bar
Diff. pressure setting (horizontal position)	5 bar ± 15%

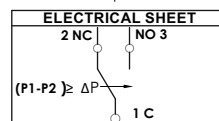
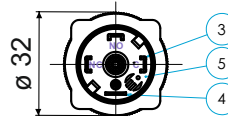
Spare part code

DPV03400

Differential pressure switch



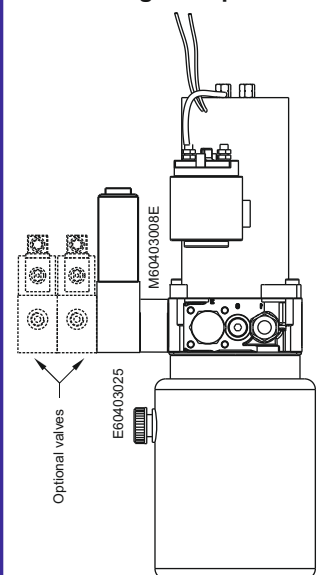
Diff. pressure setting	5 bar ±15%
Protection degree	IP 65
Switching contacts	SPDT
Weight	0,16 Kg
Max different pressure (P1-P2)	200 bar
Proof pressure	675 bar
Max pressure (P1=P2)	450 bar
Torque	50 Nm
Pressure rate for set.	10 bar/15 sec
Ambient temperature	-25 ÷ +85°C
Voltage 14 Vdc	5 (4) A
Voltage 30 Vdc	4 (3) A
Voltage 125 Vdc	5 (3) A
Voltage 250 Vdc	3 (2) A



Spare part code

DPE03400

Mounting example



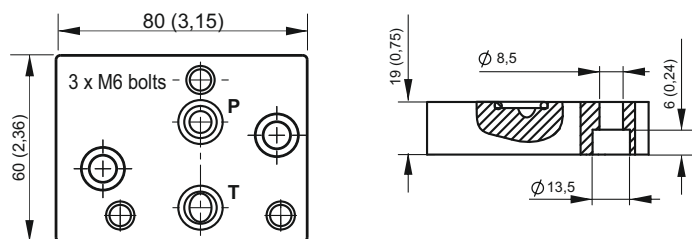
SECTION F

ADAPTOR MANIFOLD FOR SD02 STACKABLE SOLENOID VALVES



Dimensions in mm (inches)

YOU TO SD02 STACKABLE VALVE CONVERTER
(needed to mount SD02 stackable valves)



Fixing system: 2 M8x20 bolts steel class 8.8 or above
Weight: 0,22 Kg

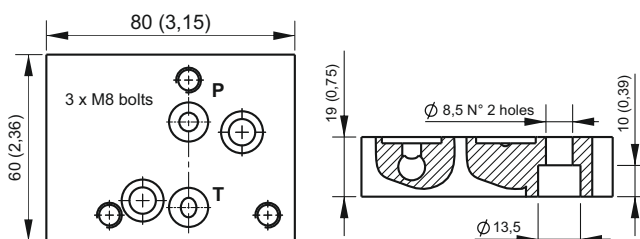
Spare part code

E60403006DN



Dimensions in mm (inches)

YOUM TO SD02 STACKABLE VALVE CONVERTER
(necessary to mount SD02 stackable valves)



Fixing system: 2 M8x20 bolts steel class 8.8 or above
Weight: 0,22 Kg

Spare part code

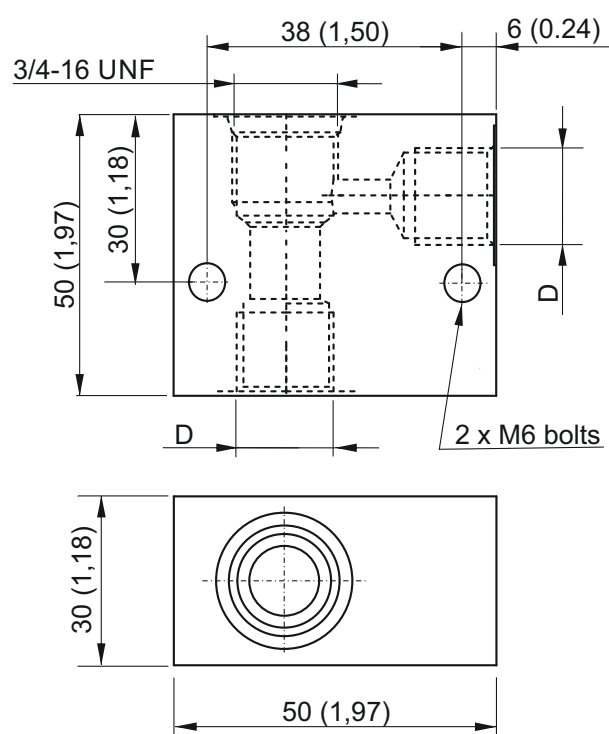
N50403007DN

ACCESSORIES

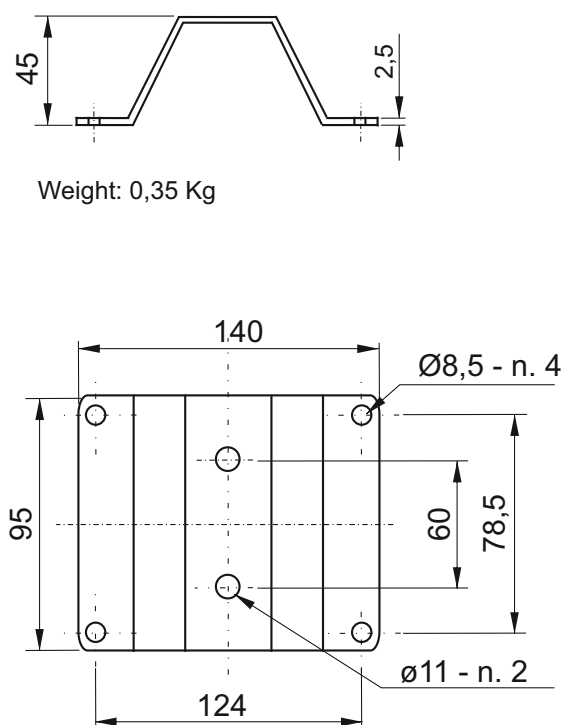


Dimensions in mm (inches)

In line mounting 3/4-16 UNF 2 way manifolds



Foot mounting support

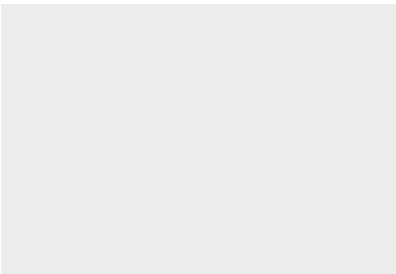


Weight: 0,35 Kg

Spare part code	D	Weight
BFCSAE0801	1/4 BSP	0,16 Kg
BFCSAE0802	3/8 BSP	0,16 Kg

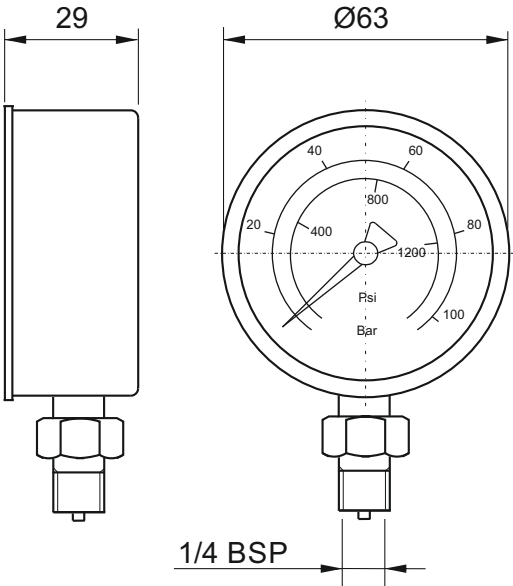
Spare part code
E60543003

ACCESSORIES

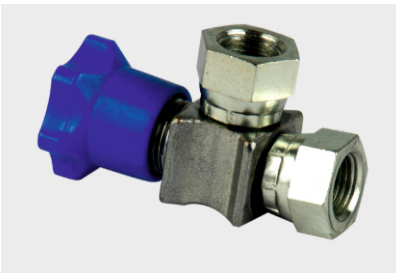


Pressure gauge

Protection degree	IP 65
Thermal drift	±0,04%/1K a 20°C
Weight	0,206 Kg
Static working pressure	75% end of scale
Peak working pressure	end of scale
Fluid temperature	-10 ÷ +60°C
Precision class	cl. 1.6 EN837-1

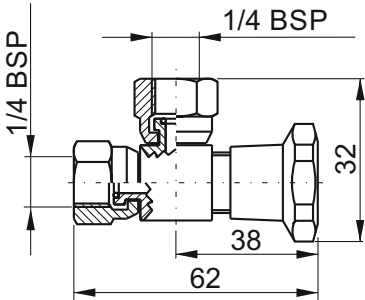


Spare part code
MIR63*** ***: max pressure in bar (60, 160, 250, 315 bar)



Gauge isolator 90° F-F

EM9001C



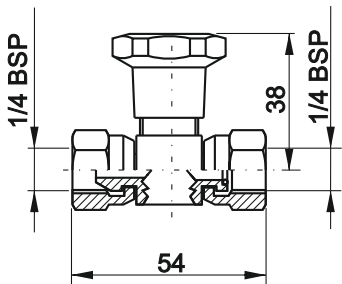
Weight: 0,14 Kg. Max working pressure: 400 bar

Spare part code
EM9001C



Gauge isolator F-F

EMIL01C



Weight: 0,14 Kg. Max working pressure: 400 bar

Spare part code
EMIL01C

SECTION F

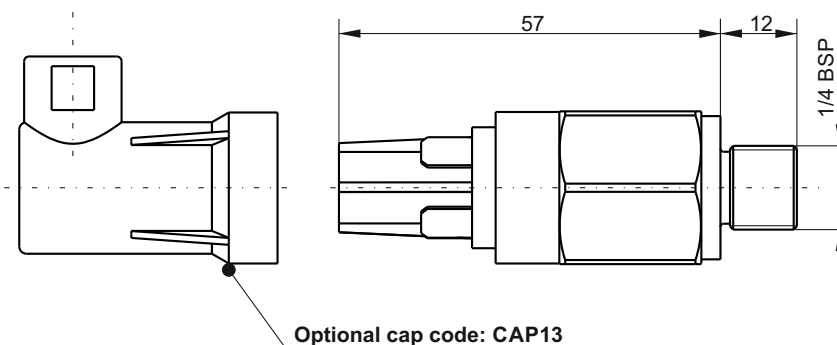
PRESSURE SWITCHES



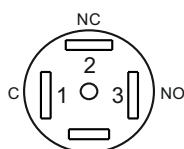
Dimensions in mm (inches)

Main features

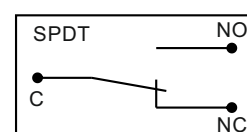
Switch rating resistive	6A / 250 Vca
Switch rating resistive	2A / 24 Vdc
Switch rating inductive	2A / 250 Vca
Switch rating inductive	1A / 24 Vdc
Fluid temperature	-25°C ÷ +80°C
Weight	0,1 Kg
Tightening torque	20 Nm
Hysteresis	~ 15%
Max. pressure	300 bar
Contact	SPDT C/O
Protection (terminals)	IP 00
Protection with connector	IP 65



Pin out scheme



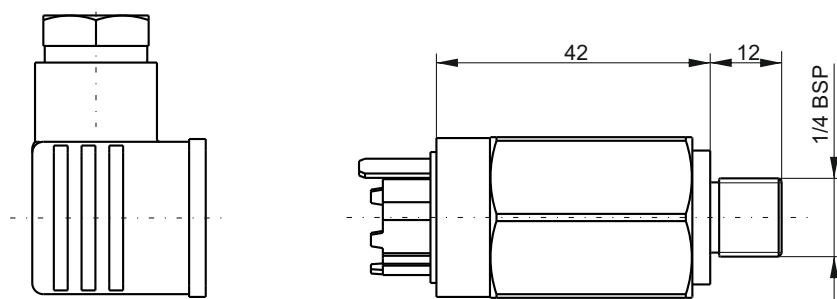
Electrical scheme



Assembly code (including cap)	Spare part code	Pressure (bar)	Tolerance (bar)
PSL01100W	PSL01S0100	10÷100	±3
PSL01300W	PSL01S0300	50÷300	±15



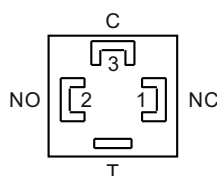
Dimensions in mm (inches)



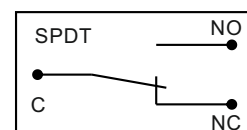
Main features

Max. voltage	250 Vca
Current resistive load	6 A
Current inductive load	2 A
Fluid temperature	-25°C ÷ +80°C
Weight	0,1 Kg
Tightening torque	20 Nm
Hysteresis	adjustable 10% ÷ 30%
Max. pressure	300 bar
Contact	SPDT C/O
Protection with connector	IP 65

Pin out scheme



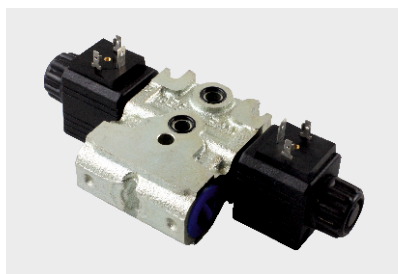
Electrical scheme



Spare part code	Pressure (bar)	Tolerance (bar)
PSH01S0100	10 ÷ 100	±3
PSH01S0300	50 ÷ 300	±15

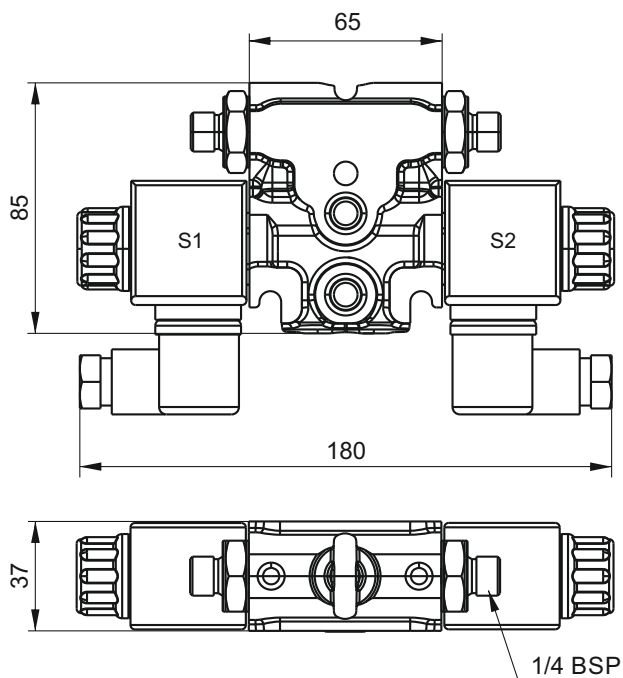
SECTION G

STACKABLE MODULAR DIRECTIONAL SOLENOID VALVES WITH REAR PORTS



Options

Description	Spare part code
Closure plate, to be used as the last element	SD02TOP
Kit 3 tie rods + nut M8 8.8 (x = number of element)	SD020x



Main features

Max pressure	250 bar
Max pressure on T port	50 bar
Max flow	50 l/min
Weight	1,37 Kg (1 solenoid) 1,67 Kg (2 solenoid)
Internal leakage	0,02±0,06 l/min at 100bar, 21 cSt
Fixing bolts	3 TCEI M8 tie-rods 15 Nm torque. 8.8 class steel or above
Coil insulation	Class H
Electric connection	DIN 43650-A / ISO 4400
Protection class	IP 65 / DIN 40050
Duty cycle	ED 100%
Voltage required	+/- 10% nominal voltage
Manual Override	included as standard
Standards	EN50081-1 / EN50082-2 (89/336 CEE electromagnetic comp.) 73/23/CEE / 96/68/CEE (low voltage)
Fluid temperature	-20°C +80°C

Spare part code

SD02	Stackable modular directional solenoid valve
E2	Spool configuration: see below table
RP	Option: - = free outputs RP = outputs with piloted check valves (only spool E2 and C2)
24DC	Supply voltage: see coils table section G

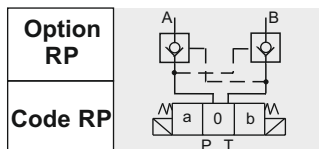
Spool

Double solenoid

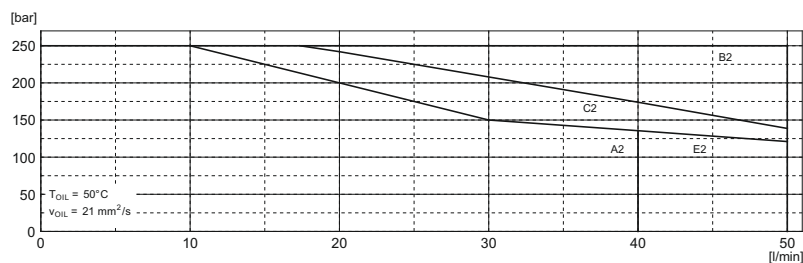
A2	
B2	
C2	
E2	

Single solenoid

A11C	 transitory
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Limits of use

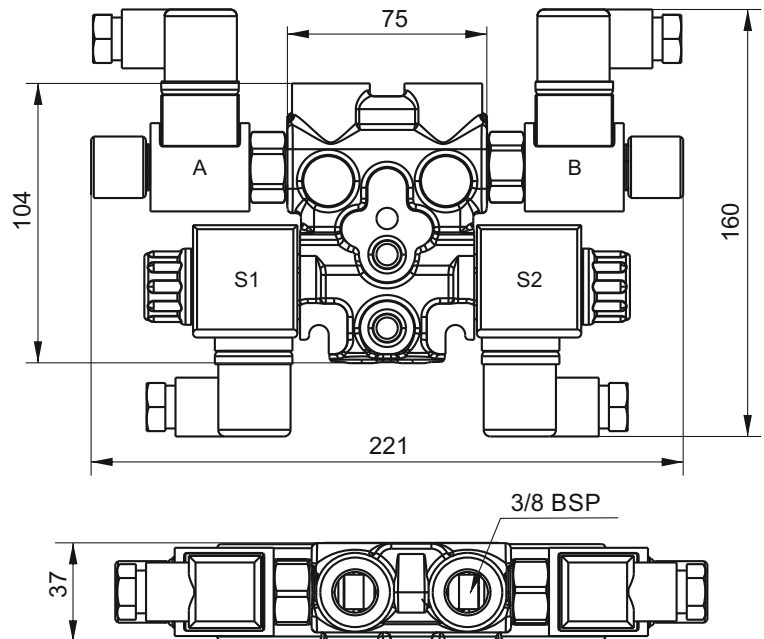


STACKABLE SOLENOID VALVES WITH 3/4-16UNF CAVITY FOR ADDITIONAL VALVES



Options

Description	Spare part code
Closure plate, to be used as the last element	SD02TOP
Kit 3 tie rods + nut M8 8.8 (x = number of element)	SD020x



Main features

Max pressure	250 bar
Max pressure on T port	50 bar
Max flow	50 l/min
Weight	2,08 Kg (1 solenoid) 2,38 Kg (2 solenoid)
Internal leakage	0,02±0,06 l/min at 100bar, 21 cSt
Fixing bolts	3 x M8 tie-rods 15 Nm torque. 8.8 class steel or above
Coil insulation	Class H
Electric connection	DIN 43650-A / ISO 4400
Protection class	IP 65 / DIN 40050
Duty cycle	ED 100%
Voltage required	+/- 10% nominal voltage
Manual Override	included as standard
Standards	EN50081-1 / EN50082-2 (89/336 CEE electromagnetic comp.) 73/23/CEE / 96/68/CEE (low voltage)
Fluid temperature	-20°C +80°C

Note: For limits of use see diagram page G010

Spare part code

SD02	Stackable modular directional solenoid valve + cavity 3/4-16UNF for additional valves
E2	Spool configuration: see table below
TP	Version: TP = parallel ports with 3/4-16 UNF cavity
24DC	Supply voltage: see coils table section G
AR24DC	Cavity A: X = open cavity L = closed plug ARxx = valve 2/2 NC (xx = voltage) S = check flow bidirectional valve
AR24DC	Cavity B: X = open cavity L = closed plug ARxx = valve 2/2 NC (xx = voltage) S = bidirectional flow control valve

Spool

Double solenoid

A2	
B2	
C2	
E2	

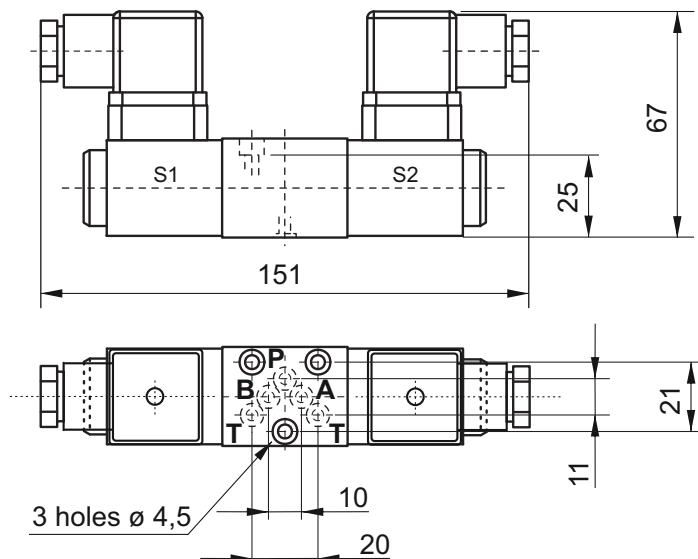
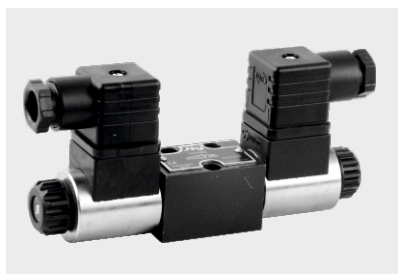
Single solenoid

A11C	
Cavity option	
Code	

Code	A	B
	a	b
	←S2	P T S1→

SECTION G

NG3 MICRO DIRECTIONAL SOLENOID VALVES



Main features

Max pressure	315 bar
Max pressure on T port	100 bar
Max flow	15 l/min
Weight	0,7 kg (2 solenoid) 0,55 kg (1 solenoid)
Internal leakage	< 0,01 l/min at 200bar
Fixing bolts	3 TCEI M4x35 bolts 2,8 Nm torque. 10,9 class steel or above
Coil insulation	Class H
Electric connection	DIN 43650-A / ISO 4400
Protection class	IP 65 / DIN 40050
Duty cycle	ED 100%
Voltage required	+/- 10% nominal voltage
Manual Override	included as standard
Standards	EN50081-1 / EN50082-2 (89/336 CEE electromagnetic comp.) 73/23/CEE / 96/68/CEE (low voltage)

Spare part code

SD00	NG3 micro directional solenoid valve
A2	Spool configuration: see table below
24DC	Supply voltage: see coils table section G
-	Options: - = std

Spool

Double solenoid

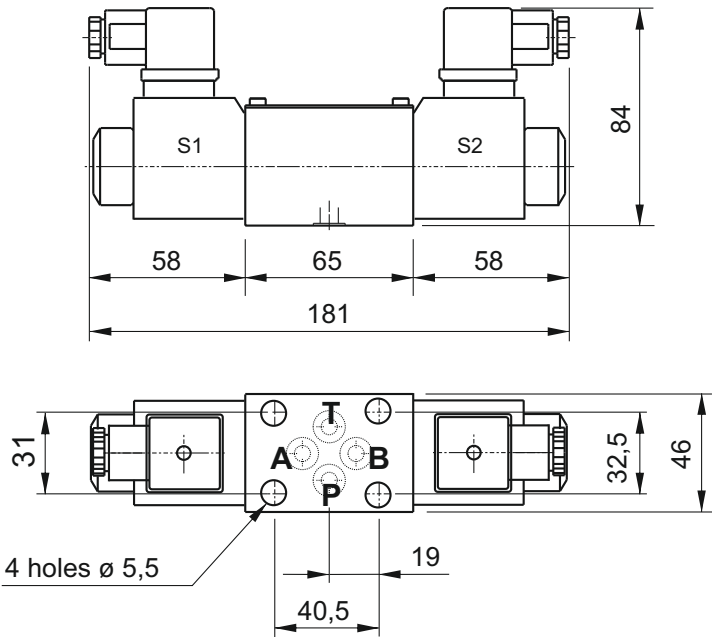
A2	
B2	
C2	
E2	

Single solenoid

A11C	
-------------	--

Code	
-------------	--

NG6 (CETOP 3) DIRECTIONAL SOLENOID VALVES



Main features

Max pressure	280 bar
Max pressure on T port	210 bar static, 180 bar dynamic
Max flow	40 l/min
Weight	1,43 kg (2 solenoid) 1,16 kg (1 solenoid)
Internal leakage	0,04 l/min at 200bar
Fixing bolts	4 M5x30 bolts. 5Nm torque 10,9 class steel or above
Coil insulation	Class H
Electric connection	DIN 43650-A / ISO 4400
Protection class	IP 65 / DIN 40050
Duty cycle	ED 100%
Voltage required	+/- 10% nominal voltage
Manual Override	included as standard
Standards	EN50081-1 / EN50082-2 (89/336 CEE electromagnetic comp.) 73/23/CEE / 96/68/CEE (low voltage)

Spare part code

SD03	Cetop 3 directional solenoid valve
A2	Spool configuration: see table below
24DC	Supply voltage: see coils table section G
-	Options: - = std

Spool

Double solenoid

A2	
B2	
C2	
E2	

Single solenoid

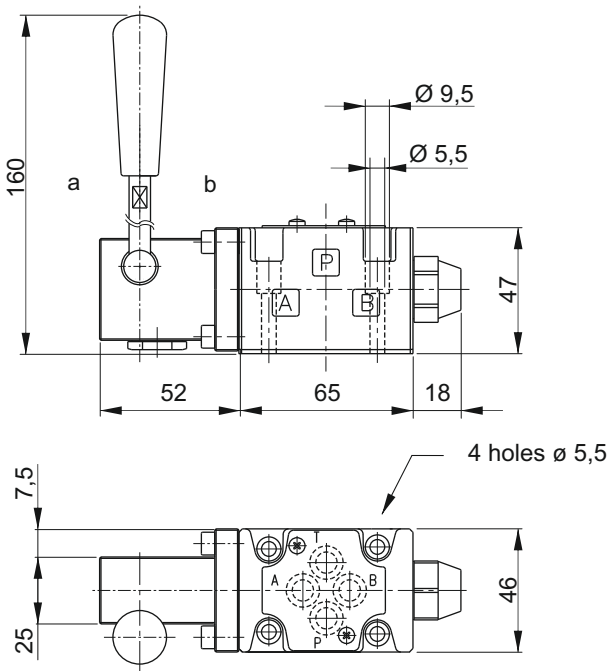
A11C	
------	--

Code	
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NG6 (CETOP 3) MANUAL DIRECTIONAL CONTROL VALVES

Main features

Max pressure	300 bar
Max pressure on T port	150 bar
Max flow	30 l/min
Weight	1,32 kg
Fixing bolts	4 M5x30 bolts 5Nm torque 10,9 class steel or above
Fluid temperature	-20 ÷ +80°C
Filtration degree	25 ÷ 50 µ



Spare part code

HD03	Cetop 3 manual directional control valve
A	Spool control: see table below
1	Spool configuration see table below
-	Options: - = std

Spool control

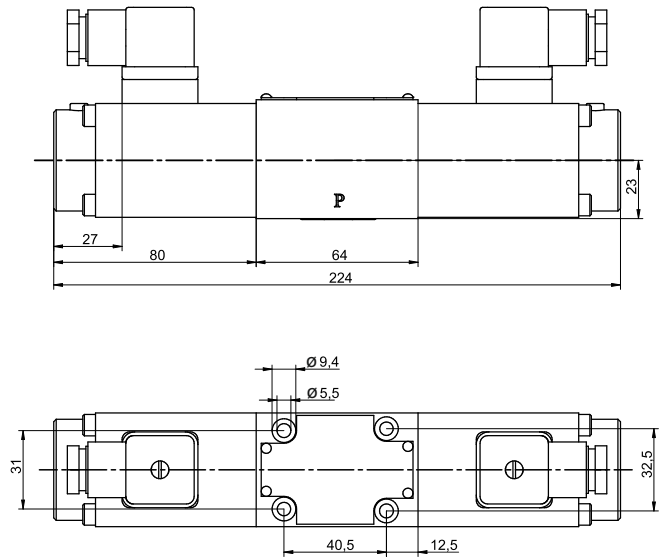
Spool

Code	A	B	
	a	0	b
	P	T	

Spring centered	A	
Detented	D	

1	
2	
3	
4	

CETOP3 (NG6) PROPORTIONAL DIRECTIONAL VALVE



Main features

Max pressure	315 bar
Max pressure on T port	160 bar
Max flow	up to 10 l/min
Weight 2 solenoids	2,5 Kg
Weight 1 solenoid	1,8 Kg
Coil insulation	Class H
Electric connection	DIN 43650-A / ISO 4400
Protection class	IP 65 / DIN 40050
Duty cycle	ED 100%
Voltage required	+/- 10% nominal voltage
Manual Override	push
Standards	EN50081-1 / EN50082-2 (89/336 CEE electromagnetic comp.) 73/23/CEE / 96/68/CEE (low voltage)

Code

SPD03	CETOP3 (NG6) proportional directional valve
E2	Spool configuration: see table below
10	Flow [lpm]
-	Options: - = std

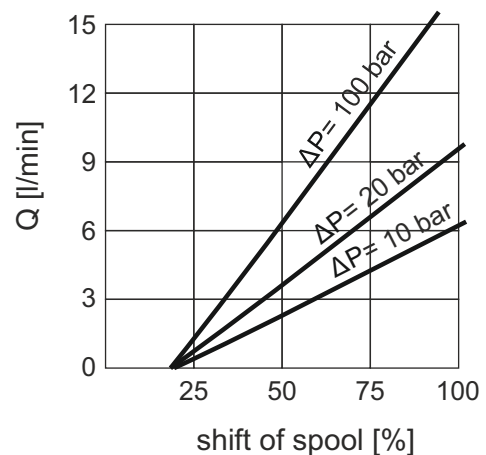
Spool

Code	
-------------	--

E2	
-----------	--

B2	
-----------	--

Flow vs current

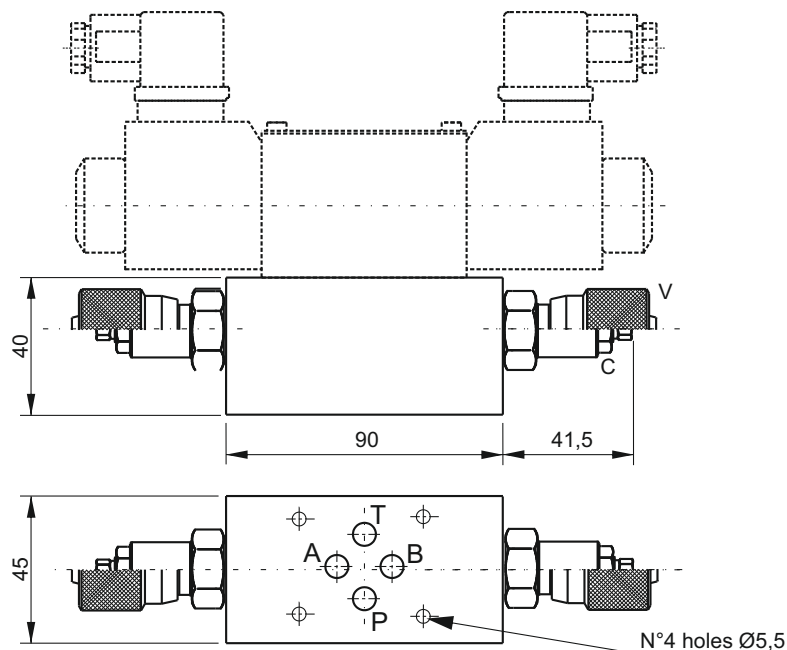
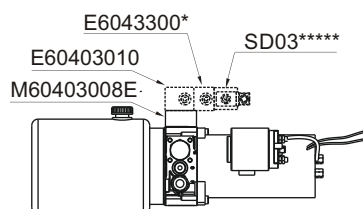


SECTION G

NG6 (CETOP 3) SANDWICH FLOW CONTROL VALVE



Mounting example

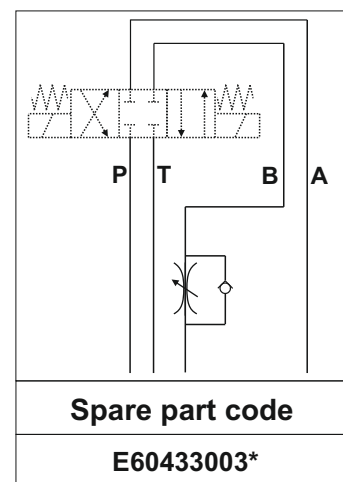
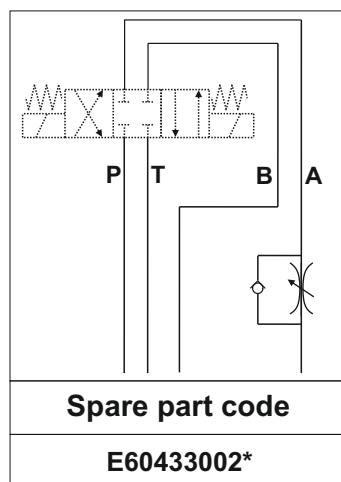
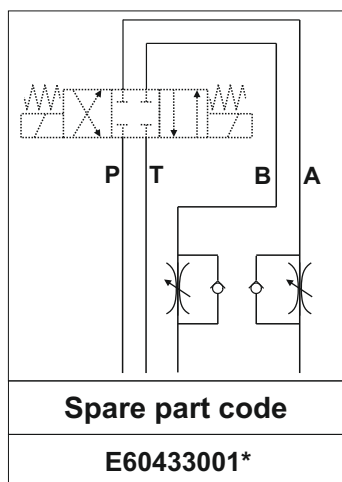


Main features

Max pressure	300 bar
Max flow	15 l/min
Weight	Single valve: 0,52 kg Double valve: 0,64 kg
Fixing bolts	4 M5x° bolts. 5Nm torque 10,9 class steel or above
Fluid temperature	-20 ÷ +80°C
Filtration degree	25 ÷ 50 µ

Spare part code

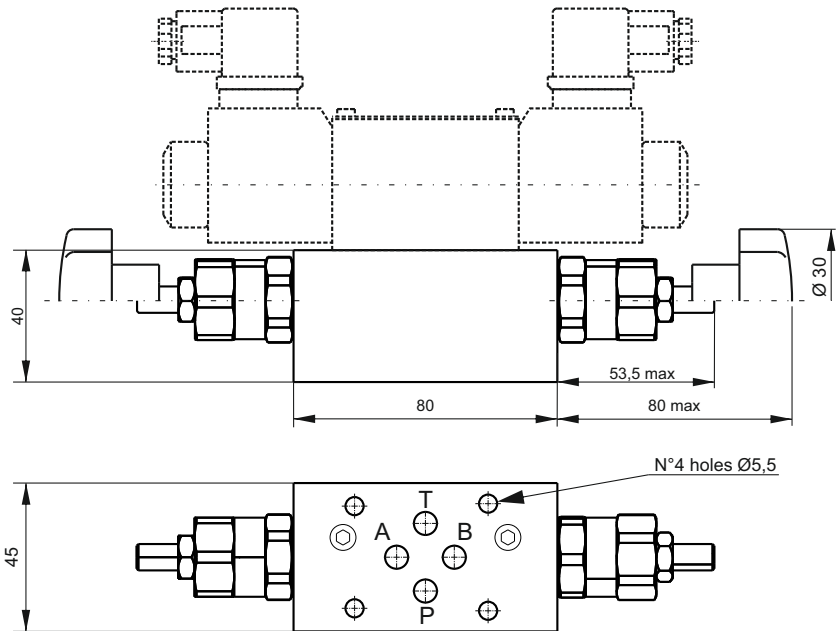
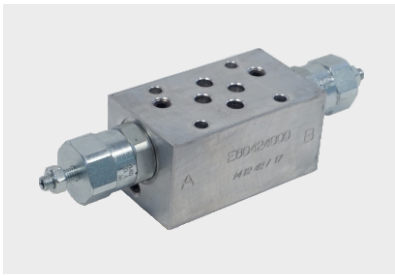
E6043300**	NG6 (Cetop 3) sandwich meter-out flow control valve
1	Type: 1 = on A and B 2 = on A 3 = on B
-	Adjusting device: - = screw (std) V = handwheel



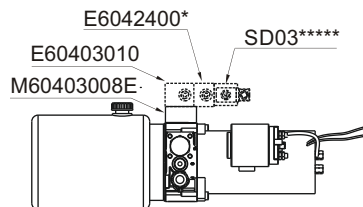
Notes: code does not include the Cetop solenoid valve.

° Bolt length depends on number of modular blocks and type of valve.

NG6 (CETOP 3) SANDWICH RELIEF VALVE



Mounting example



Main features

Max pressure	350 bar
Max flow	20 l/min
Weight	Single valve: 0,52 kg Double valve: 0,64 kg
Fixing bolts	4 M5x° bolts. 5Nm torque 10,9 class steel or above
Fluid temperature	-20 ÷ +80°C
Filtration	25 ÷ 50 µ

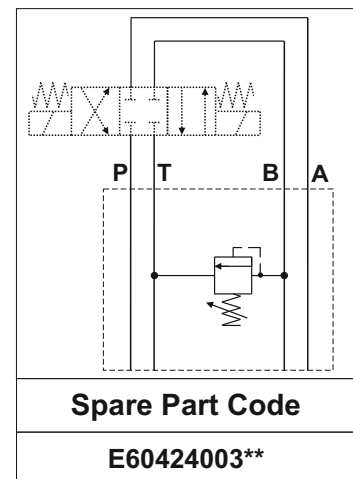
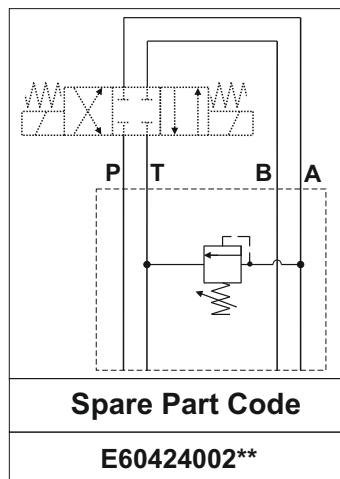
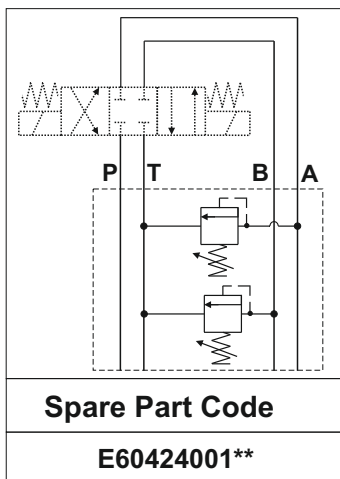
Spare part code

E6042400** — NG6 (Cetop 3) sandwich relief v.

1 — **Type:**
1 = on A and B
2 = on A
3 = on B

B — **Pressure range settings:**
A = 3 ÷ 60 bar
B = 40 ÷ 120 bar
C = 80 ÷ 250 bar
D = 150 ÷ 350 bar

***** — **Option:**
see VMDC20 table in section D



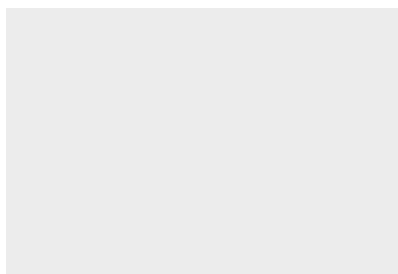
Notes: code does not include the Cetop solenoid valve. When E60423001 relief valves have different pressure ranges, please specify them separately.

eg: E60424001AB=60 bar max for valve on A port, 120bar max for valve on B port.

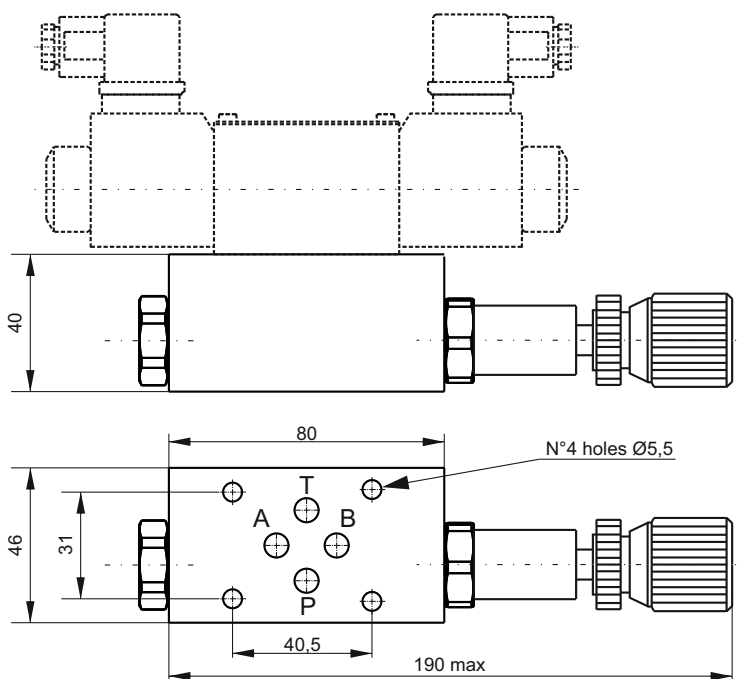
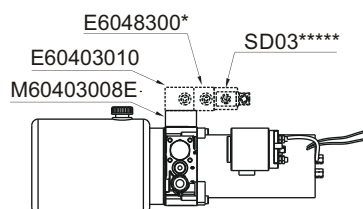
° Bolt length depends on number of modular blocks and type of valve.

SECTION G

NG6 (CETOP 3) SANDWICH PRESSURE REDUCING VALVE



Mounting example



Main features

Max pressure	210 bar
Max flow	35 l/min
Weight	1,3 kg
Fixing bolts	4 M5x** bolts. 5Nm torque 10,9 class steel or above
Fluid temperature	-20 ÷ +80°C
Filtration	25 ÷ 50 µ

Spare part code

E6048300* — NG6 (Cetop 3) pressure reducing valve

1

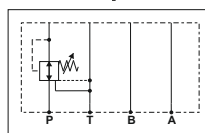
Hydraulic scheme (see below):

- 1: reducing on P
- 2: reducing on A
- 3: reducing on B

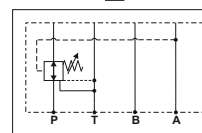
B

Spring range:
B: 7-70 bar
D: 70-210 bar

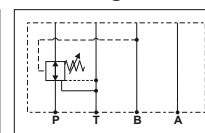
1



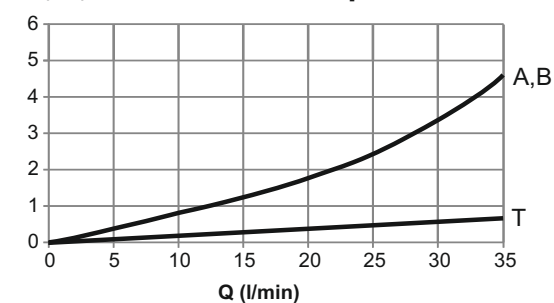
2



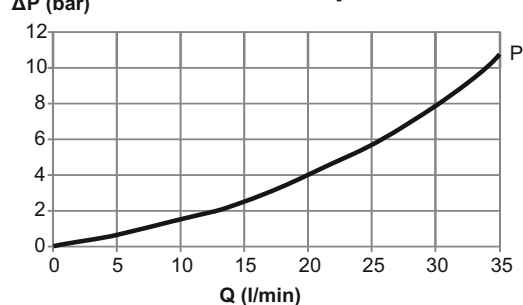
3



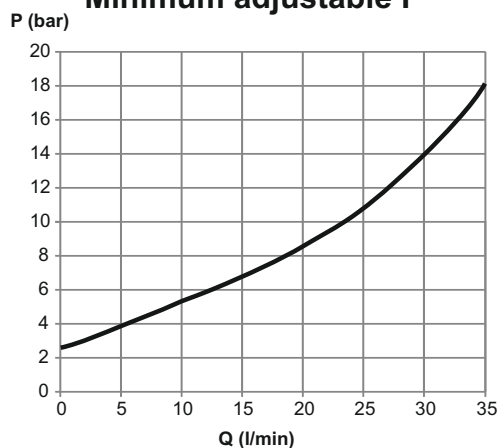
ΔP (bar) **Pressure drop**



ΔP (bar) **Pressure drop**



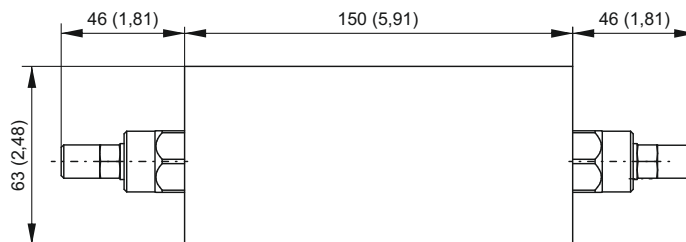
Minimum adjustable P



NG6 (CETOP 3) SANDWICH MODULAR OVERCENTRE VALVE



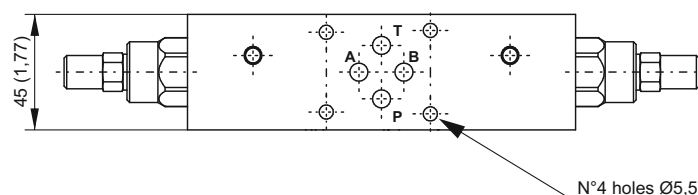
Dimensions in mm (inches)



Main features

Max pressure	350 bar
Max flow	up to 50 l/min
Fixing bolts	4 M5x** bolts. 5Nm torque 10,9 class steel or above
Fluid temperature	-30 ÷ +80°C
Filtration degree	25 ÷ 50 µ
Pilot ratios	4.25:1

Setting pressure must be at least 1,3 times the maximum load induced pressure.

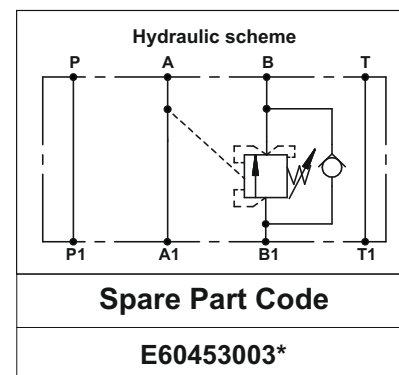
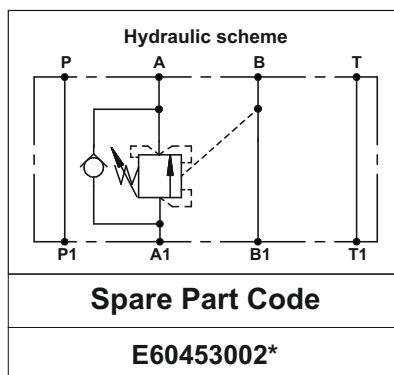
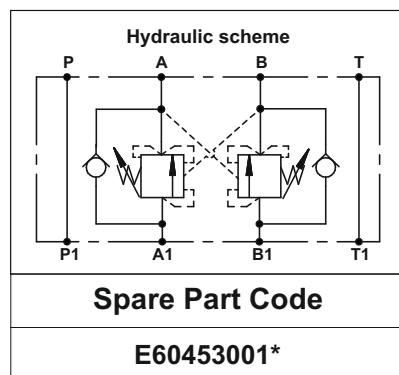


Spare part code

E6045300** — NG6 (Cetop 3) sandwich overcentre valve

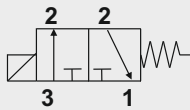
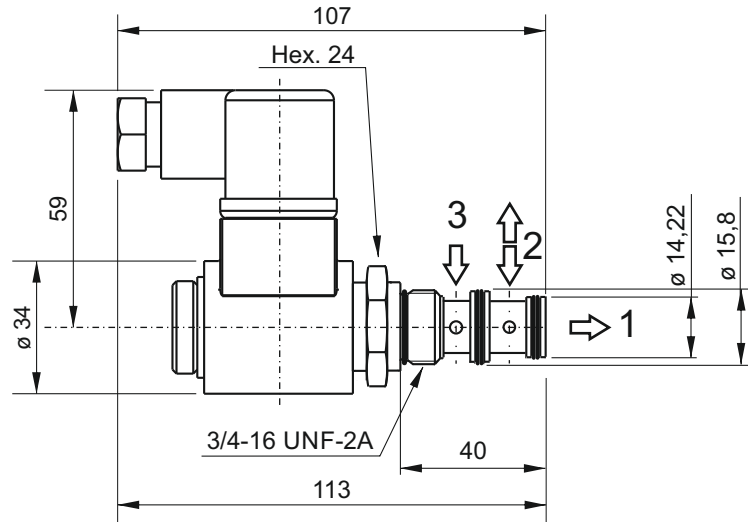
1 — **Type:**
1: on A and B
2: on A
3: on B

A — **Pressure range settings:**
A = 30 ÷ 220 bar
B = 60 ÷ 350 bar



Note: to add external manifolds to YOU assembly code, just add their spare part codes at the end of the YOU code.
ex: YOU-0,8 12DC-UA-J-G1,1-V200-G-RETURN KIT-1,5L+E60403004-E60403010-E60453001+SD03A2 12DC.

MSV3V - DIRECT OPERATED 3/2 WAY DIRECTIONAL SPOOL SOLENOID CARTRIDGE



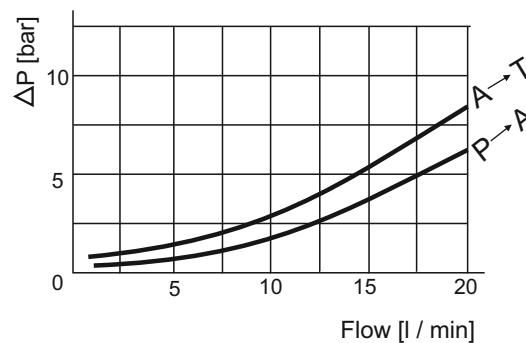
Main features

Max pressure	210 bar
Max flow	12 l/min (20 l/min without block)
Weight	0,35 Kg (with coil)
Coil insulation	Class H
Electric connection	DIN 43650-A / ISO 4400
Protection class	IP 65 / DIN 40050
Duty cycle	ED 100%
Voltage required	+/- 10% nominal voltage
Torque recommended	30 Nm
Fluid temperature	-25 ÷ +70°C

Spare part code

MSV3V	Three-way direct acting solenoid valve
40	Spool type: 40 = std
0	Options: 0 = no options (std)
0000	Supply voltage: 0000 = no coil (std) see coils table

Pressure drop diagram



SECTION G

VALVES COILS

     									
M100		M630/M631		M140		M160		M630DT*	
Supply voltage [V]	Assembly code	Coil type	Spare part code	Spare connector code/type	Holding power [W]	Duty cycle ED [%]	Coil insulation	Weight [g]	Suitable for valves
12DC	12DC_M100	DC	M10040001	KA132000B1 DIN43650/ISO4400	16W	100	H	121	SD00
24DC	24DC_M100	DC	M10040002	KA132000B1 DIN43650/ISO4400	16W	100	H	121	SD00
24AC	24RAC_M100	RC - needs external rectifying connector	M10040002	KA132R11B1 DIN43650/ISO4400	16W	100	H	121	SD00
12DC	12DC_M140	DC	M14040001	KA132000B1 DIN43650/ISO4400	22W	100	H	202	MDV30 MDV31
24DC	24DC_M140	DC	M14040002	KA132000B1 DIN43650/ISO4400	22W	100	H	202	MDV30 MDV31
48DC	48DC_M140	DC	M14040003	KA132000B1 DIN43650/ISO4400	22W	100	H	202	MDV30 MDV31
24AC	24RAC_M140	RC - needs external rectifying connector	M14040002	KA132R11B1 DIN43650/ISO4400	22W	100	H	202	MDV30 MDV31
115AC	110RAC_M140	RC - needs external rectifying connector	M14040004	KA132R12B1 DIN43650/ISO4400	22W	100	H	202	MDV30 MDV31
230AC	220RAC_M140	RC - needs external rectifying connector	M14040005	KA132R13B1 DIN43650/ISO4400	22W	100	H	202	MDV30 MDV31
12DC	12DC_M160	DC	M16040001	KA132000B1 DIN43650/ISO4400	26W	100	H	190	SD03
24DC	24DC_M160	DC	M16040002	KA132000B1 DIN43650/ISO4400	26W	100	H	190	SD03
24AC	24RAC_M160	RC - needs external rectifying connector	M16040002	KA132R11B1 DIN43650/ISO4400	26W	100	H	190	SD03
115AC	110RAC_M160	RC - needs external rectifying connector	M16040004	KA132R12B1 DIN43650/ISO4400	26W	100	H	190	SD03
230AC	220RAC_M160	RC - needs external rectifying connector	M16040005	KA132R13B1 DIN43650/ISO4400	26W	100	H	190	SD03
12DC	12DC_M630	DC	M6306012	KA132000B1 DIN43650/ISO4400	18W	100	H	130	MSV3V MSV30/31 SD02
24DC	24DC_M630	DC	M6306024	KA132000B1 DIN43650/ISO4400	18W	100	H	130	MSV3V MSV30/31 SD02
48DC	48DC_M630	DC	M6306048	KA132000B1 DIN43650/ISO4400	18W	100	H	130	MSV3V MSV30/31 SD02
24AC	24AC_M631	RC with integrated rectifying bridge	M6316024	KA132000B1 DIN43650/ISO4400	18W	100	H	130	MSV3V MSV30/31 SD02
115AC	115AC_M631	RC with integrated rectifying bridge	M6316115	KA132000B1 DIN43650/ISO4400	18W	100	H	130	MSV3V MSV30/31 SD02
230AC	230AC_M631	RC with integrated rectifying bridge	M6316230	KA132000B1 DIN43650/ISO4400	18W	100	H	130	MSV3V MSV30/31 SD02
12DC	12DC_M630DT	DC, Deutsch	M6306012DT	DT06_4S Deutsch	16W	100	H	117	MDV30 MSV30/31 SD00
24DC	24DC_M630DT	DC, Deutsch	M6306024DT	DT06-4S Deutsch	16W	100	H	117	MDV30 MSV30/31 SD00

Standard electric connector: ISO 4400 DIN 43650-A. Other voltages and electric connector types (Amp Junior, flying leads,...) available on request.

Inrush power consumption can be up to 3,5 times higher than the holding power. Coil protection class: IP65.

M160* coils supplied with AC current need an external rectifying connector.

The tests were carried out at the nominal current $\pm 5\%$, at an environmental temperature of 25°C.