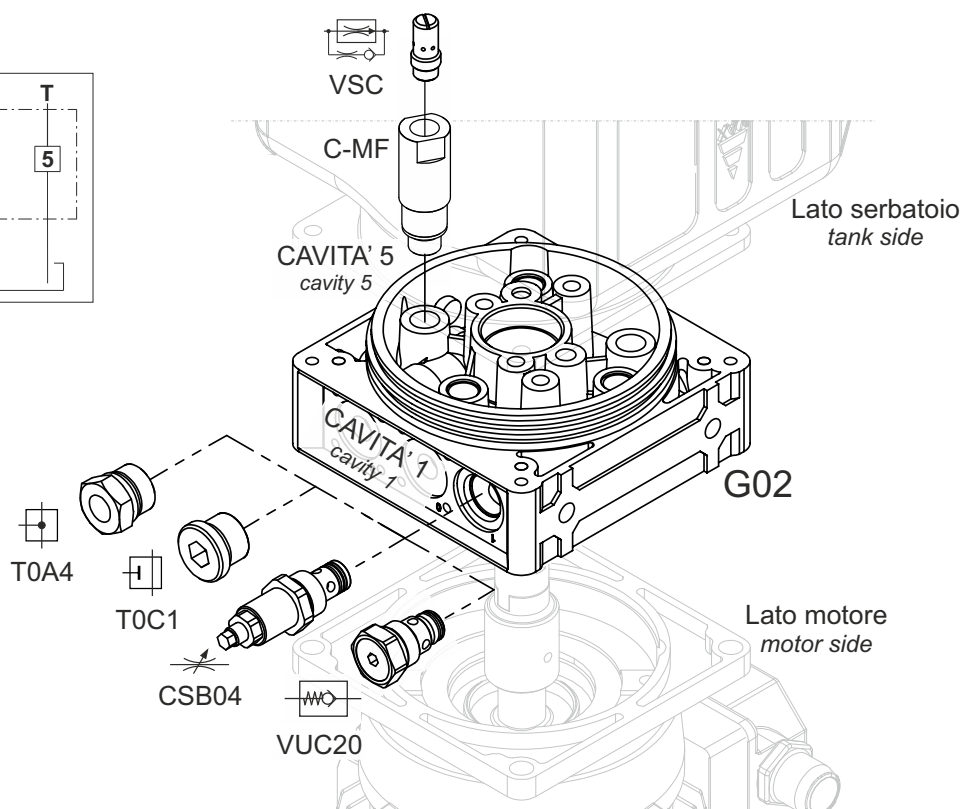
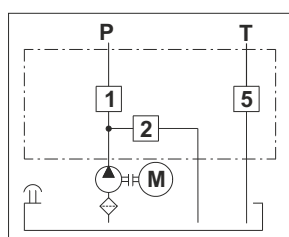
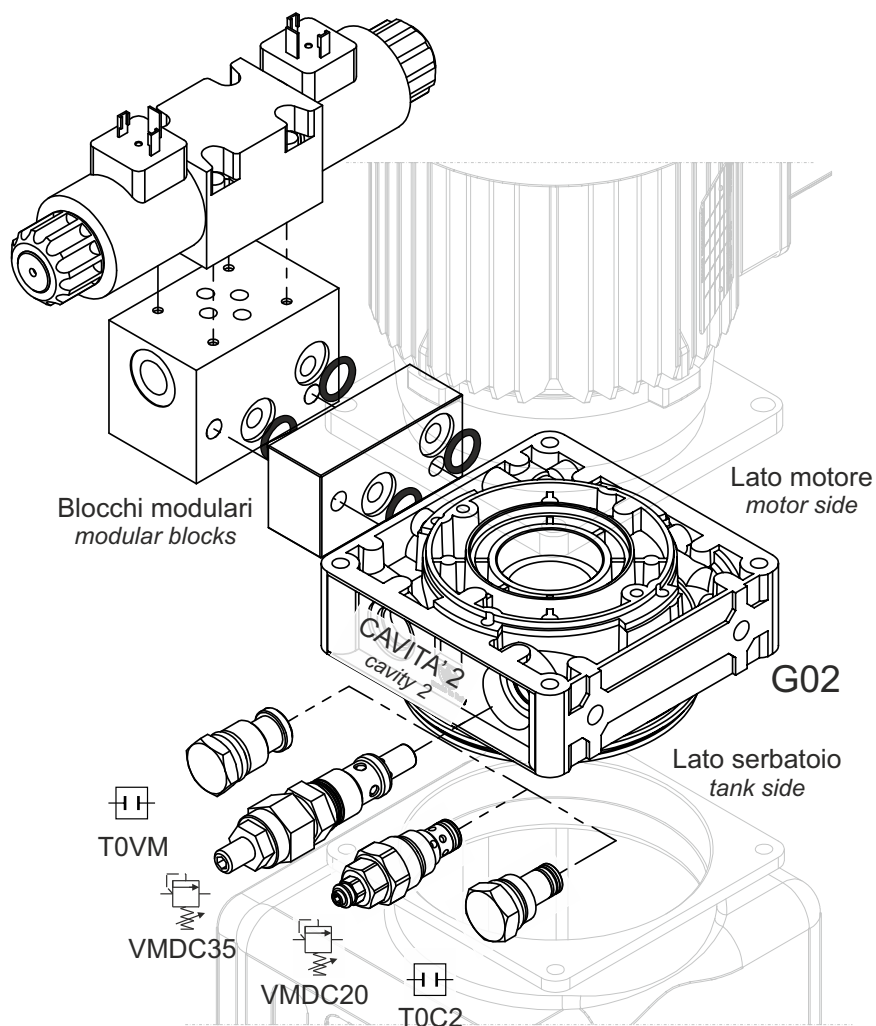
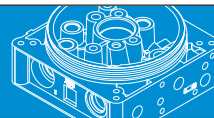
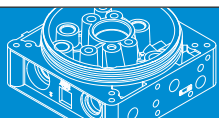
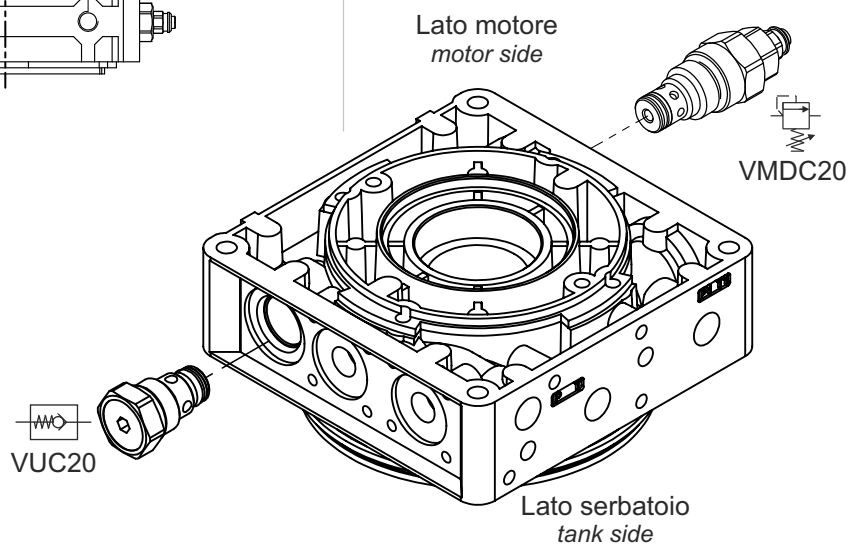
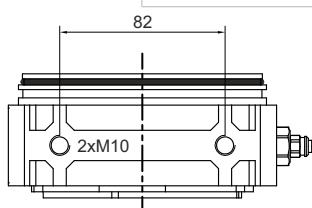
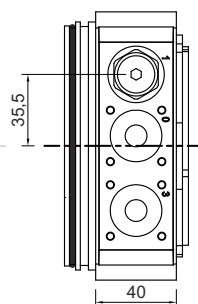
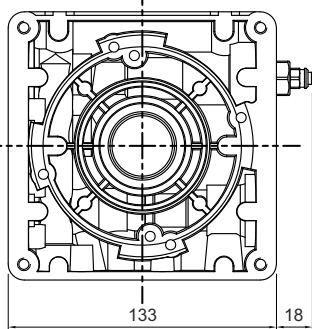
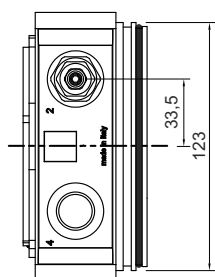
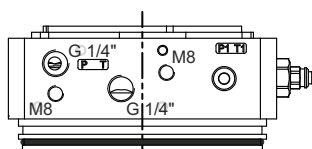
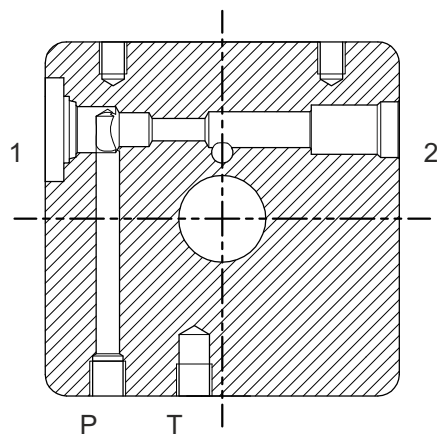
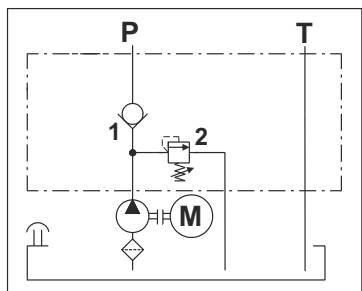


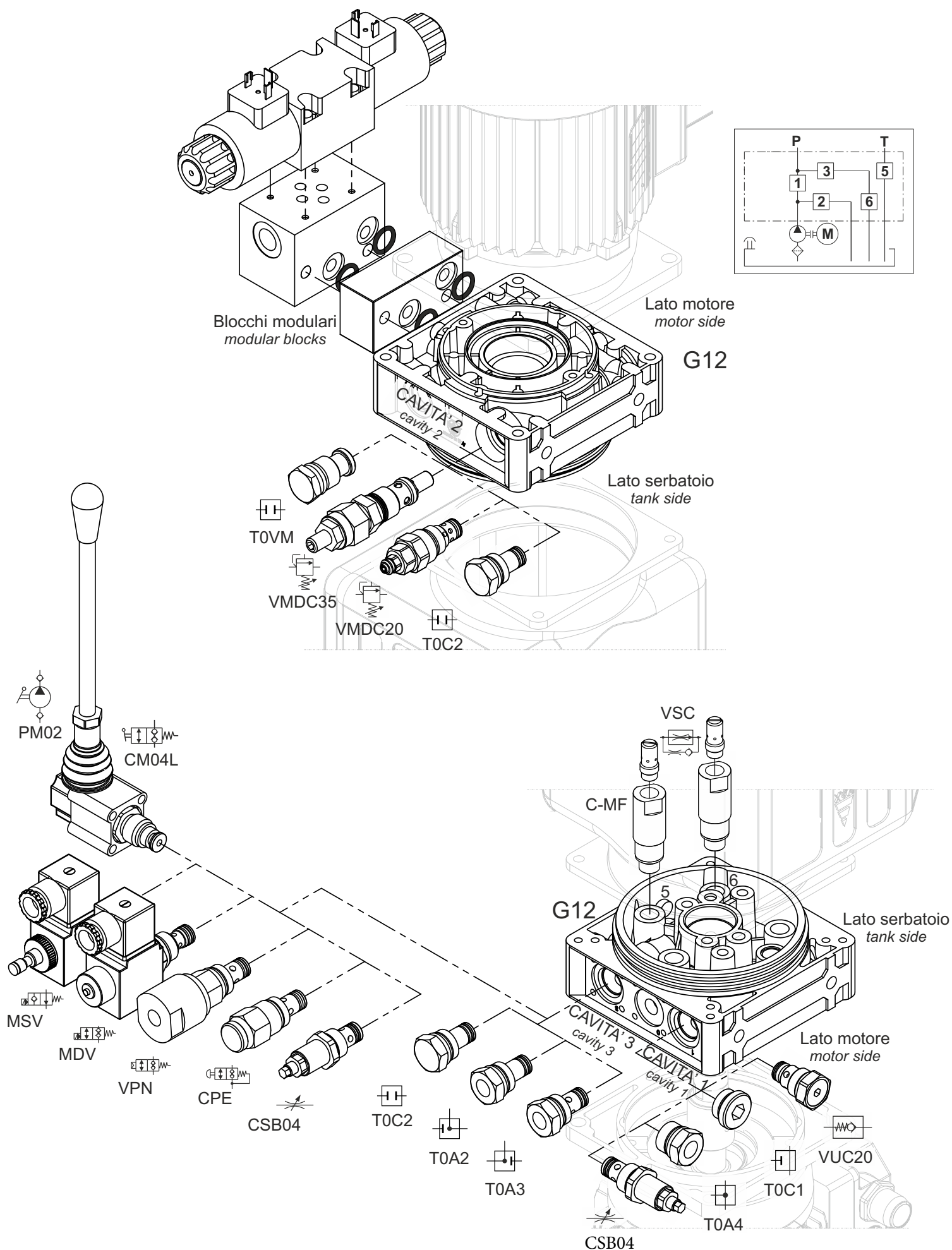
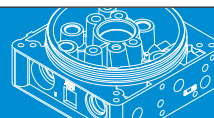


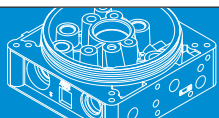


Collettori minicentrali "YOU"

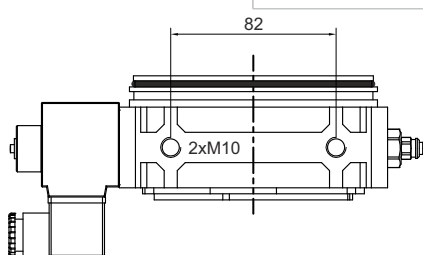
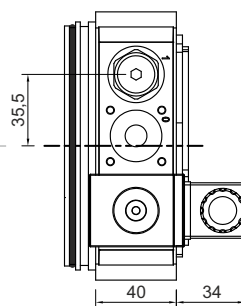
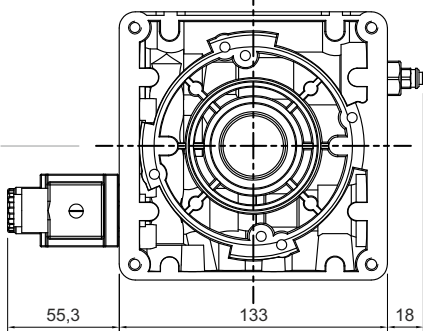
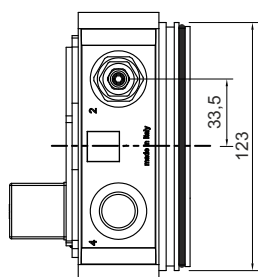
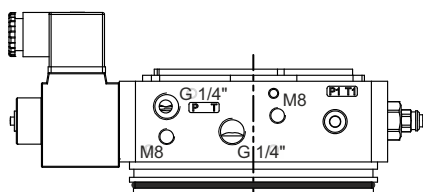
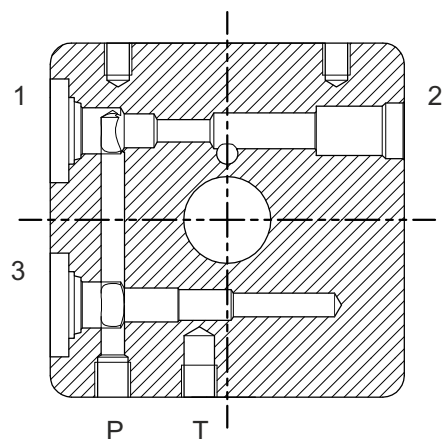
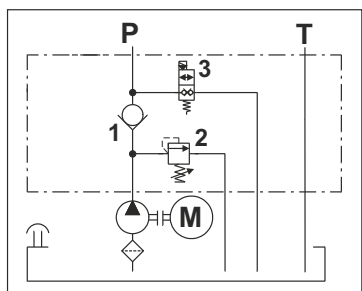


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Collettori minicentrali "YOU"



2xM10

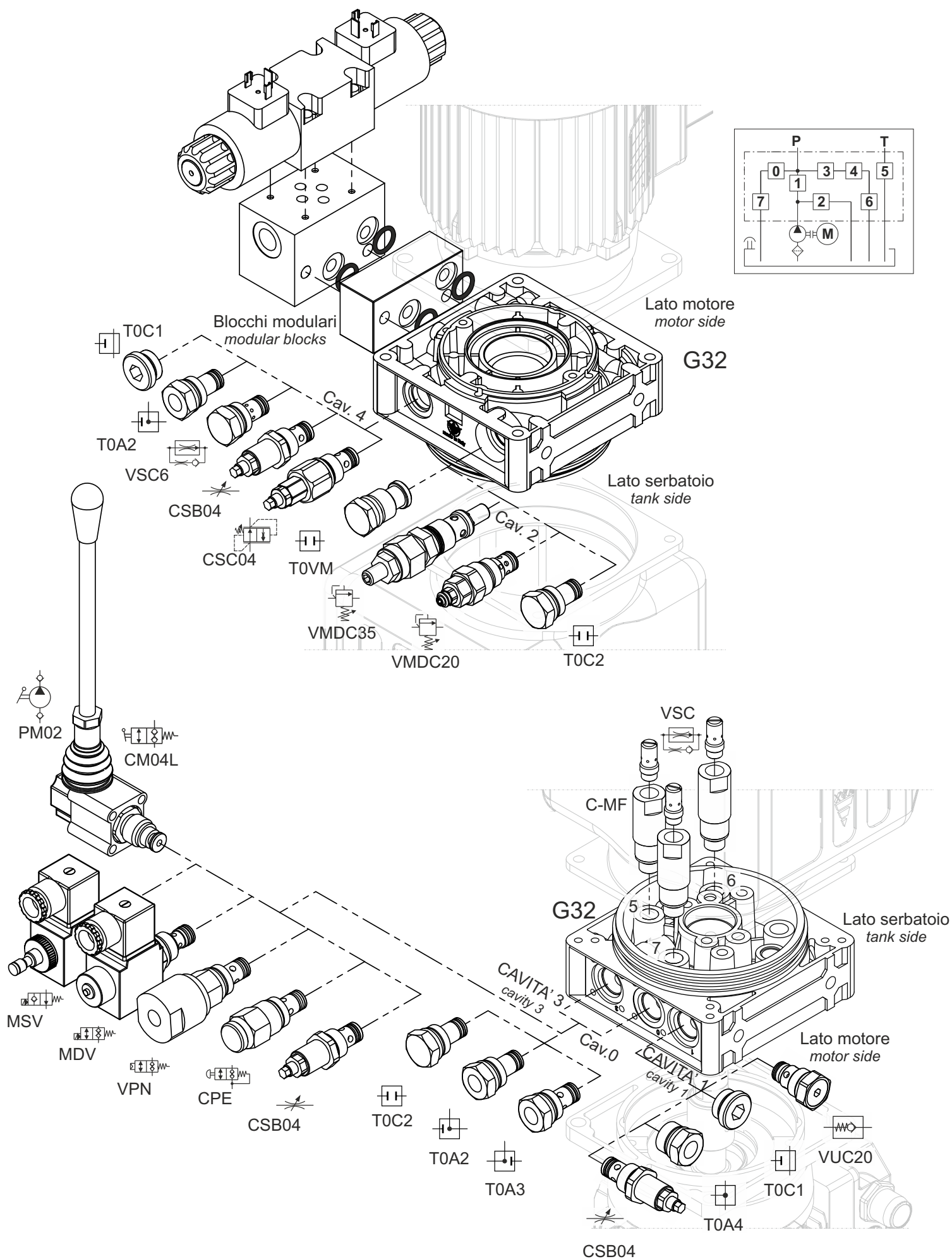
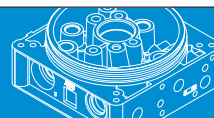
Lato motore
motor side

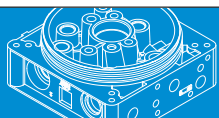
VMDC20

VUC20

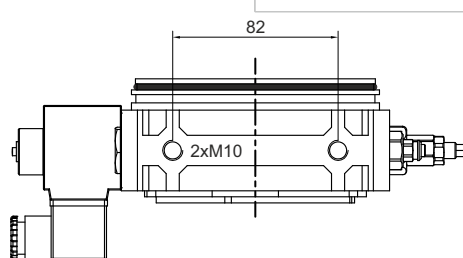
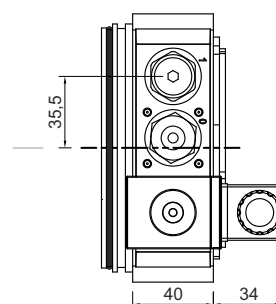
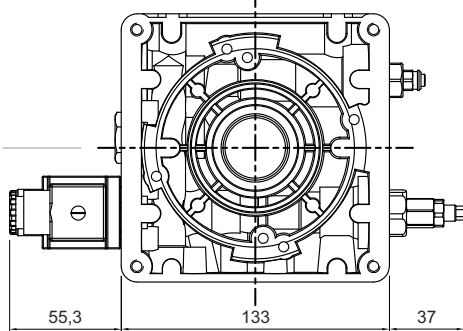
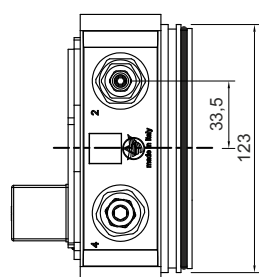
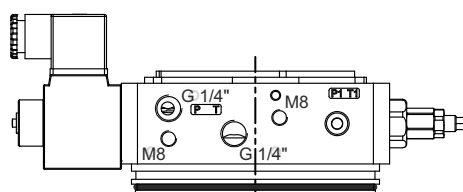
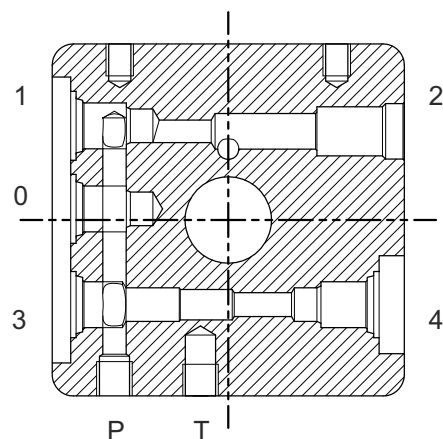
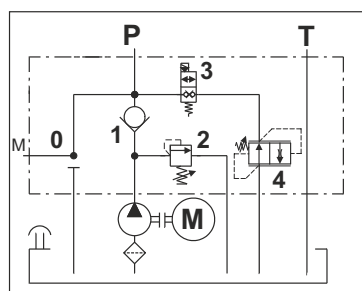
MDV

Lato serbatoio
tank side





Collettori minicentrali "YOU"



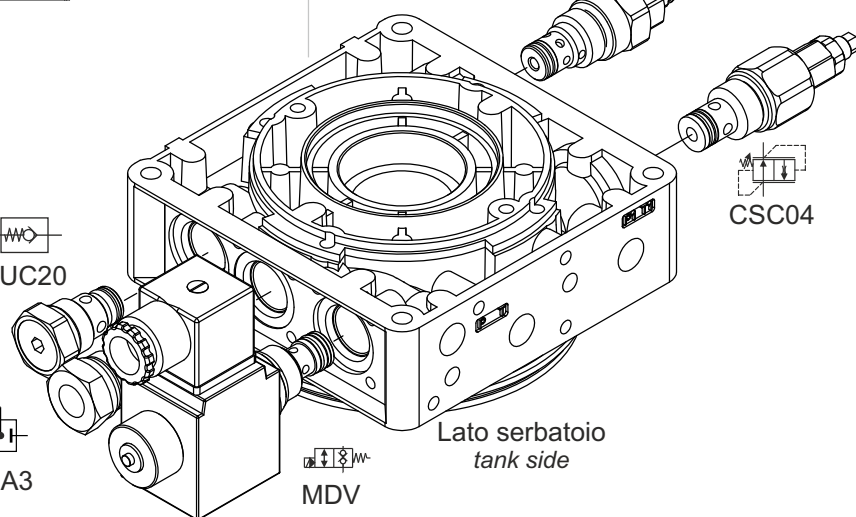
Lato motore
motor side

VMDC20

CSC04

Lato serbatoio
tank side

MDV

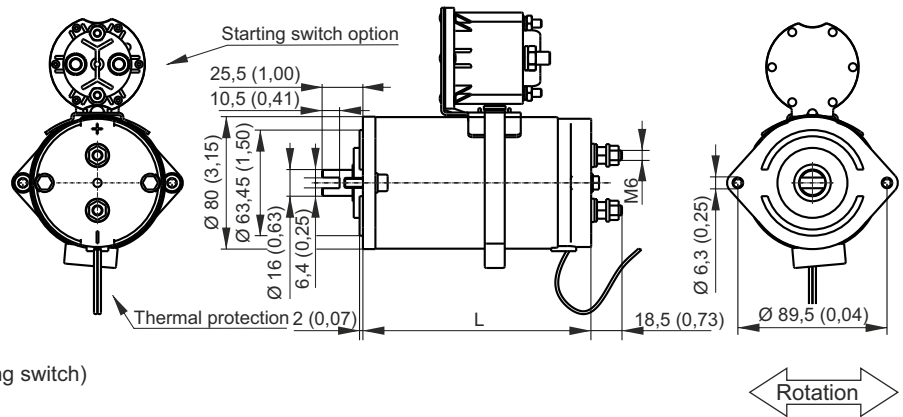


SECTION A

INTEGRAL DC MOTORS Ø80



Permanent magnets
Protection degree: IP54
Insulation class: F
Weight 300W/500W/800W: 2,6 kg (without starting switch)
Weight 150W: 2 kg (without starting switch)



Code

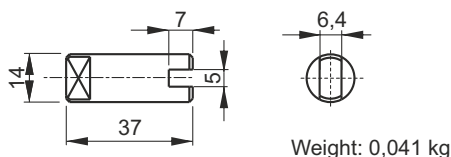
Description	Assembly code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current	L
150W 12V DC + thermal protection	0,15 12DC_T	M46C1ST01	S2: 20 min S3: 30% ED	1200 rpm	28 A	108 mm
150W 24V DC + thermal protection	0,15 24DC_T	M46C2ST01	S2: 20 min S3: 30% ED	1650 rpm	12 A	108 mm
300W 12V DC + thermal protection	0,3 12DC_T	M46C1ST03	S2: 9 min S3: 18% ED	1800 rpm	39 A	137 mm
300W 24V DC + thermal protection	0,3 24DC_T	M46C2ST03	S2: 9 min S3: 18% ED	1800 rpm	20 A	137 mm
500W 12V DC + thermal protection	0,5 12DC_T	M46C1ST05	S2: 5 min S3: 15% ED	2400 rpm	68 A	137 mm
500W 24V DC + thermal protection	0,5 24DC_T	M46C2ST05	S2: 5 min S3: 15% ED	2500 rpm	31 A	137 mm
800W 12V DC + thermal protection	0,8 12DC_T	M46C1ST08	S2: 3 min S3: 10% ED	2800 rpm	119 A	137 mm
800W 24V DC + thermal protection	0,8 24DC_T	M46C2ST08	S2: 3 min S3: 10% ED	3100 rpm	52 A	137 mm

Options & couplings

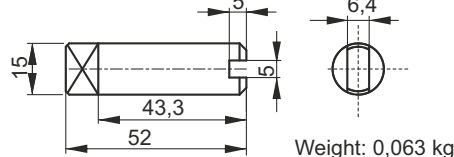
Description	Assembly code	Spare part code
12V DC 150 Amp start relay + mounting kit	S150T 12DC 80	M47TC0001+M47SK0801
24V DC 150 Amp start relay + mounting kit	S150T 24DC 80	M47TC0002+M47SK0801
12VDC 100 Amp start relay (reversible)	R100 12DC*	M47NB0001
24VDC 100 Amp start relay (reversible)	R100 24DC*	M47NB0002
Coupling for Ø 80 DC motors and gr.1 pump	E36200002	
Coupling for Ø 80 DC motors and gr.0 pump	E36200006	
Wired remote control with 2 buttons and 3m cable	P0201 (single acting)	
Wired remote control with 4 buttons and 3m cable	P0202 (double acting)	

Notes:
The starting switch mounting kit is provided when specifying the /S150 as motor option in the PPC assembly code. When ordering spare starting switches, they must be ordered separately (code: M47SK0801). The coupling is already included when specifying the motor in the PPC assembly code. It is to be indicated only when ordering PPC with no motor but with a coupling.

Coupling E36200002

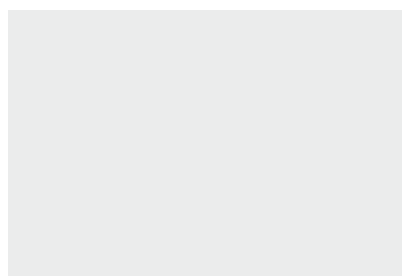


Coupling E36200006

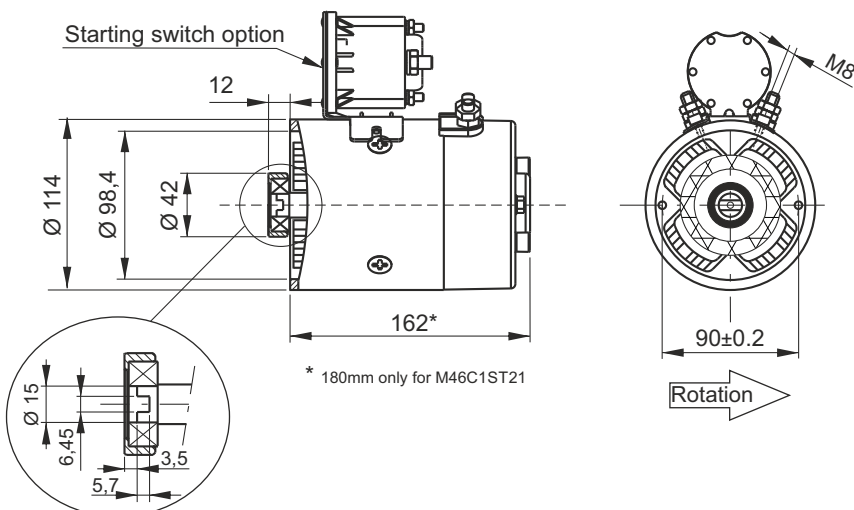


The reversible start switch cannot be mounted on the motor. It must be fixed on the machine

INTEGRAL DC MOTORS Ø114



Compound wound
Protection degree: IP54
Insulation class: F
Weight: 7,05 kg (without starting switch)



Code

Description	Assembly code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current
1600W 12V DC + thermal protection	1,6 12DC_T	M46C1ST16	S2: 3 min S3: 10% ED	2800 rpm	210 A
2100W 12V DC + thermal protection	2,1 12DC_T	M46C1ST21	S2: 2,5 min S3: 10% ED	2400 rpm	300 A
2200W 24V DC + thermal protection	2,2 24DC_T	M46C2ST22	S2: 3,5 min S3: 15% ED	2400 rpm	130 A

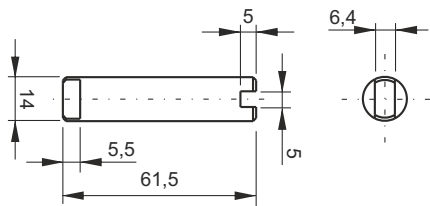
Options & couplings

Description	Assembly code	Spare part
12V DC 150 Amp start switch + mounting kit	S150T 12DC 112	M47TC0001 + M47SK1121
24V DC 150 Amp start switch + mounting kit	S150T 24DC 112	M47TC0002 + M47SK1121
Plastic protection cover for Ø114 motors	MC	F16000001
Coupling for Ø114 motors and gr.0 pump	E36200005	
Coupling for Ø114 motors-Ø125DC motors and gr.1 pump	E36200001	
Remote wired control with 2 buttons and 3m cable	P0201 (single acting)	
Remote wired control with 4 buttons and 3m cable	P0202 (double acting)	

Notes: the starting switch mounting kit is provided when specifying the /S150 as motor option in PPC assembly code.
When ordering spare starting switches, it must be ordered separately (code: M47SK1121).

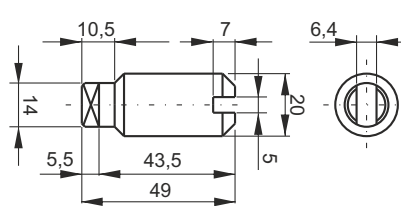
The coupling is already included when specifying the motor in PPC assembly code.
It is to be indicated only when ordering PPC with no motor but with coupling.

Coupling E36200005



Weight: 0,068 kg

Coupling E36200001



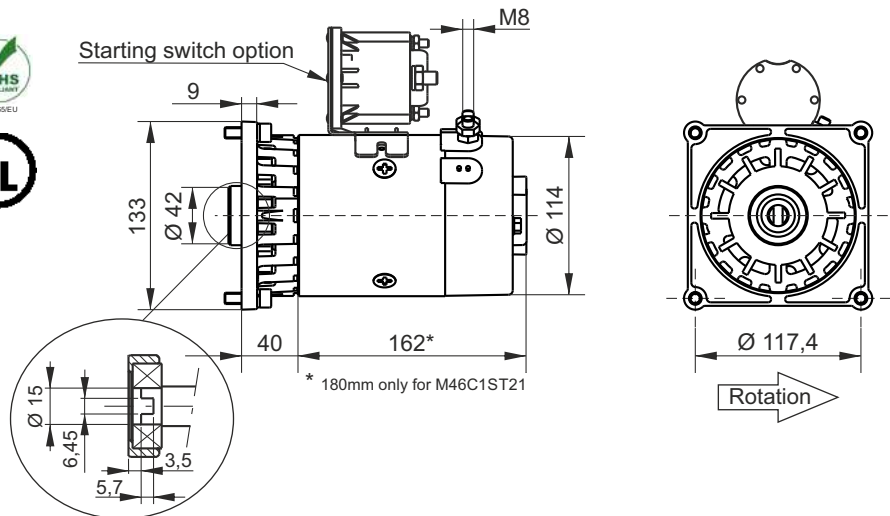
Weight: 0,094 kg

SECTION A

INTEGRAL DC MOTORS Ø114 WITH COOLING FAN



Compound wound
Protection degree: IP20
Insulation class: F
Weight: 8,0 kg (without starting switch)



Code

Description	Assembly code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current
1600W 12V DC with cooling fan + thermal protection	1,6 12DC_TF	M46C1SF16	S2: 4 min S3: 10% ED	2800 rpm	210 A
2100W 12V DC with cooling fan + thermal protection	2,1 12DC_TF	M46C1SF21	S2: 3,5 min S3: 10% ED	2400 rpm	300 A
2200W 24V DC with cooling fan + thermal protection	2,2 24DC_TF	M46C2SF22	S2: 4,5 min S3: 15% ED	2400 rpm	130 A

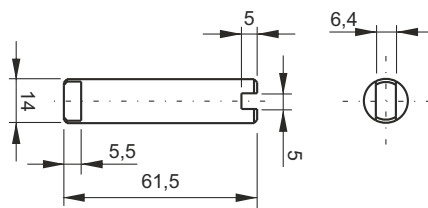
Options & couplings

Description	Assembly code	Spare part
12V DC 150 Amp start switch + mounting kit	S150T 12DC 112	M47TC0001 + M47SK1121
24V DC 150 Amp start switch + mounting kit	S150T 24DC 112	M47TC0002 + M47SK1121
Plastic protection cover for Ø114 motors	MC	F16000001
Coupling for Ø114 motors and gr.0 pump	E36200005	
Coupling for Ø114 motors-Ø125DC motors and gr.1 pump	E36200001	
Remote wired control with 2 buttons and 3m cable	P0201 (single acting)	
Remote wired control with 4 buttons and 3m cable	P0202 (double acting)	

Notes: the starting switch mounting kit is provided when specifying the /S150 as motor option in PPC assembly code.
When ordering spare starting switches, it must be ordered separately (code: M47SK1121).

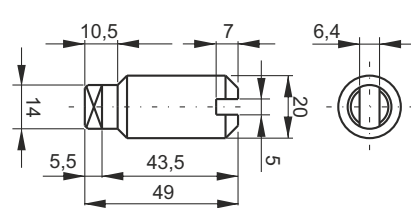
The coupling is already included when specifying the motor in PPC assembly code.
It is to be indicated only when ordering PPC with no motor but with coupling.

Coupling E36200005



Weight: 0,068 kg

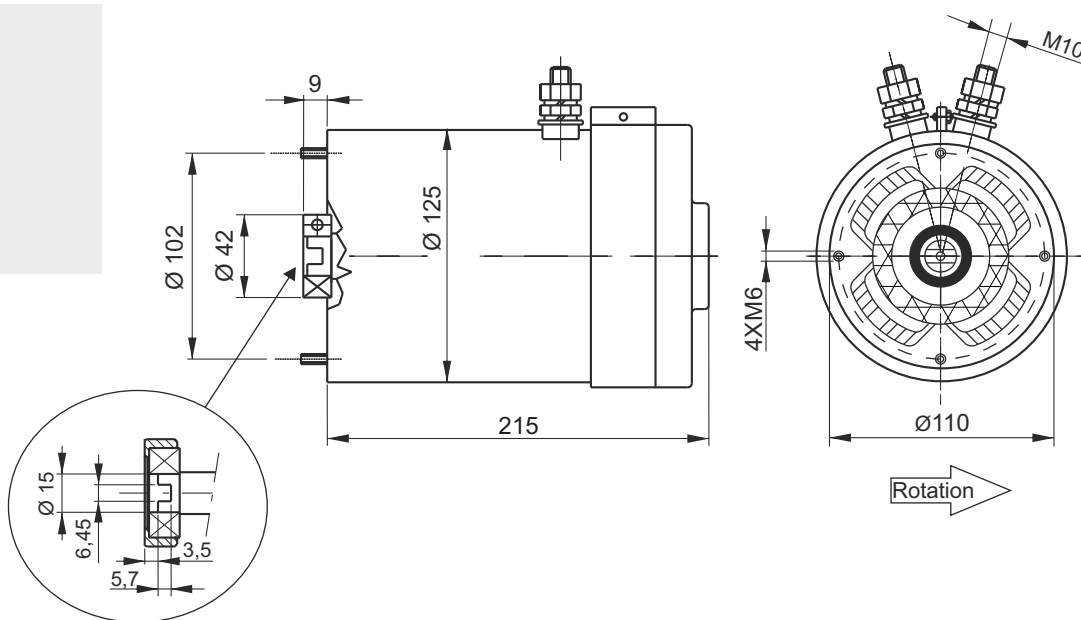
Coupling E36200001



Weight: 0,094 kg

INTEGRAL DC MOTORS Ø125

Compound wound
Protection degree: IP42
Insulation class: F
Weight: 11kg (without starter)



Code

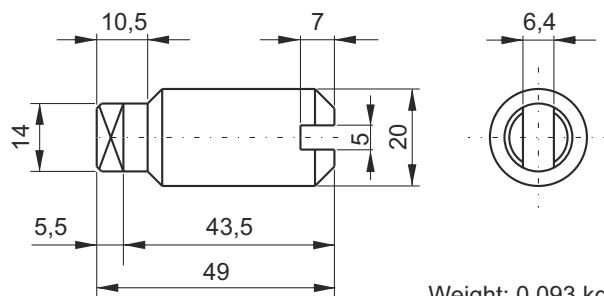
Description	Assembly code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current
3000W 24 V DC + thermal protection	3 24DC_T	M46C2ST30	S2: 4min S3: 8% ED	2600 rpm	180 A
4000W 24 V DC + thermal protection	4 24DC_T	M46C2ST40	S2: 3min S3: 6% ED	3500 rpm	230 A

Options & couplings

Description	Assembly code	Spare part code
24V DC 200 Amp start switch + mounting kit	S200 24DC 125_151	M47ZC0002 + M47SK1251
Coupling for Ø114 motors-Ø125DC motors and gr.1 pump	E36200001	
Remote wired control with 2 buttons and 3m cable	P0201 (single acting)	
Remote wired control with 4 buttons and 3m cable	P0202 (double acting)	

The coupling is already included when specifying the motor in PPC assembly code.
It is to be indicated on the order only when ordering PPC with no motor but with coupling.

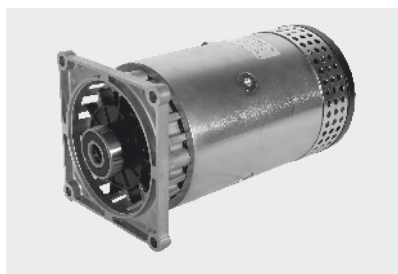
Coupling E36200001



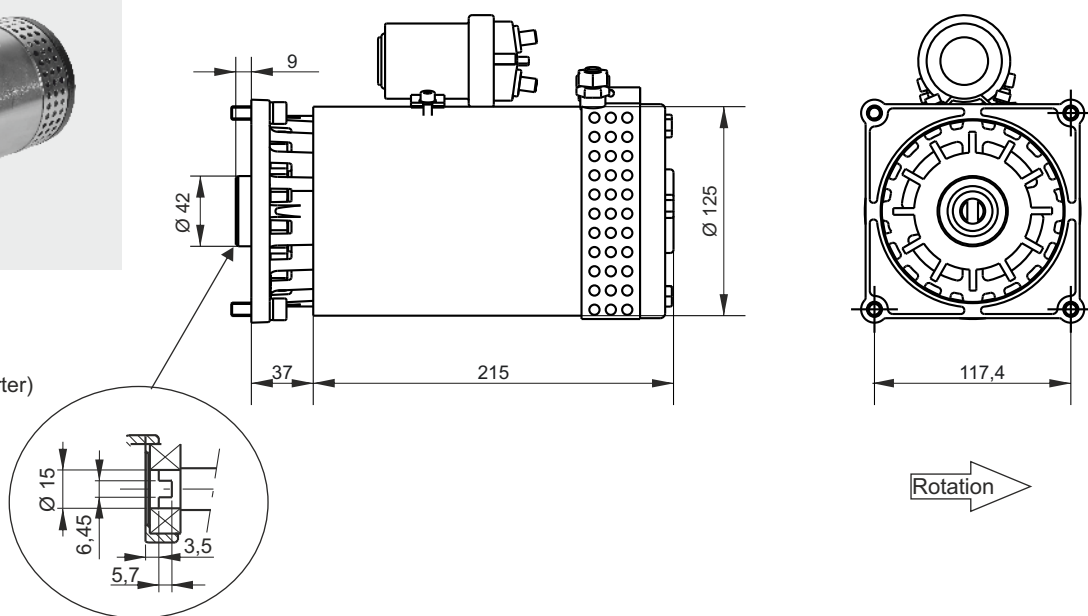
Weight: 0,093 kg

SECTION A

INTEGRAL DC MOTORS Ø125 WITH COOLING FAN



Compound wound (3kW)
Series wound (4kW)
Protection degree: IP20
Insulation class: F
Weight: 11,45kg (without starter)



Code

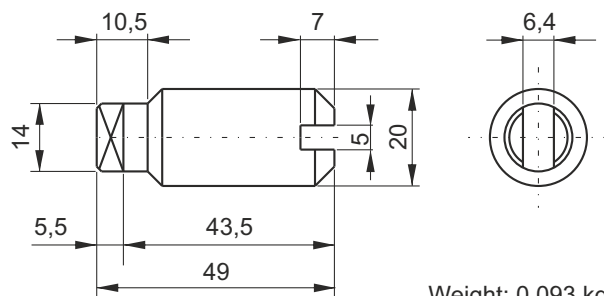
Description	Assembly code	Spare part code	Nomional duty cycle	Nominal speed	Nominal current
3000W 24 V DC with cooling fan + thermal protection	3 24DC_TF	M46C2SF30	S2: 5min S3: 8% ED	2600 rpm	180 A
4000W 24 V DC with cooling fan + thermal protection	4 24DC_TF	M46C2SF40	S2: 4min S3: 6% ED	3500 rpm	230 A

Options & couplings

Description	Assembly code	Spare part code
24V DC 200 Amp start switch + mounting kit	S200 24DC 125_151	M47ZC0002 + M47SK1251
Coupling for Ø114 motors-Ø125DC motors and gr.1 pump	E36200001	
Remote wired control with 2 buttons and 3m cable	P0201 (single acting)	
Remote wired control with 4 buttons and 3m cable	P0202 (double acting)	

The coupling is already included when specifying the motor in PPC assembly code.
It is to be indicated on the order only when ordering PPC with no motor but with coupling.

Coupling E36200001

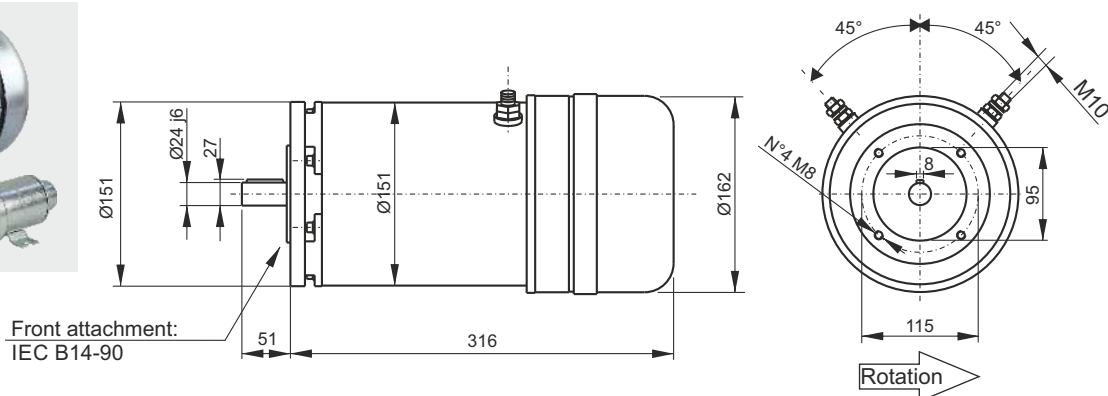


Weight: 0,093 kg

HEAVY DUTY DC MOTORS Ø 151 WITH COOLING FAN



Series wound
Protection degree: IP20
Insulation class: F
Weight: 21,5 kg



Code

Description	Assembly code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current	Mounting kit
2500W 12V DC motor + thermal protection & fan	2,5HD 12DC_T	MB14C1ST25	S2: 16 min S3: 20%	1700 rpm	290 A	XB14 90-1
3000W 24V DC motor + thermal protection & fan	3HD 24DC_T	MB14C2ST30	S2: 16 min S3: 20%	1700 rpm	170 A	XB14 90-1
4000W 24V DC motor + thermal protection & fan	4HD 24DC_T	MB14C2ST40	S2: 10 min S3: 15%	2000 rpm	240A	XB14 90-1

Mounting kit & options

Description	Assembly code	Spare part code
12V DC 200 Amp start switch + mounting kit	S200 12DC 125_151	M47ZC0001 + M47SK1251
24V DC 200 Amp start switch + mounting kit	S200 24DC 125_151	M47ZC0002 + M47SK1251
Remote wired control with 2 buttons and 3m cable	P0201 (single acting)	
Remote wired control with 4 buttons and 3m cable	P0202 (double acting)	
Mounting kit for motors B14 IEC frame 90	XB14 90-1	E36100003 + E36100000 + F27010003

The mounting kit is already included when specifying the motor in PPC assembly code.

When ordering spare motors, the mounting kit must be ordered separately.

For B14 motors the relay is not normally mounted on the motor.

Other B14 DC motors for heavy duty or special applications

They are available in sizes Ø125, Ø151 or Ø191 in multiple executions, engineered to perform heavy duty cycles and tailor made to suit each specific application, with or without cooling fan and thermal protection. They are normally mounted on the central manifold with B14 standard mounting kits.

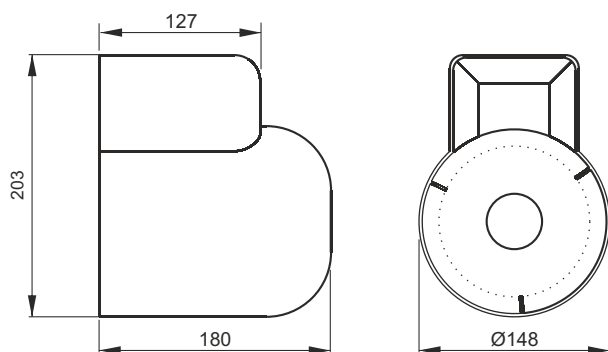
To properly select these motors, the following minimum information must be provided: 1) motor power and voltage, 2) application type, 3) duty factors: S2 [min] - continuous running time and S3 [%] - percentage of running time on total cycle time, 4) required motor speed, 5) quantity to be supplied.

SECTION A

DC MOTOR OPTIONS



Plastic cover for DC motors Ø 114
Weight: 0,27 kg



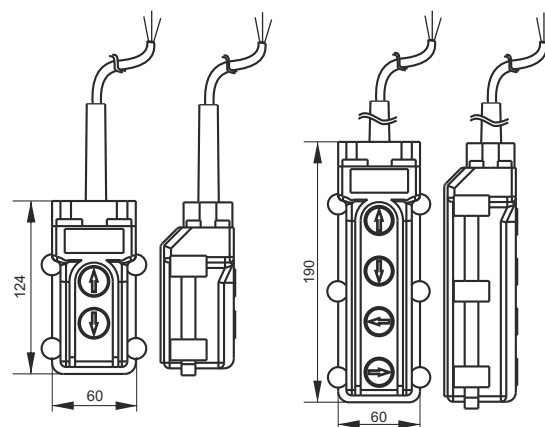
Assembly code	Spare part code
MC	F16000001



Wired remote control

Weight: 0,60 kg
Protection degree: IP65

Max Current @ Voltage:
2A@400VAC; 5A@220VAC/24VDC/12VDC

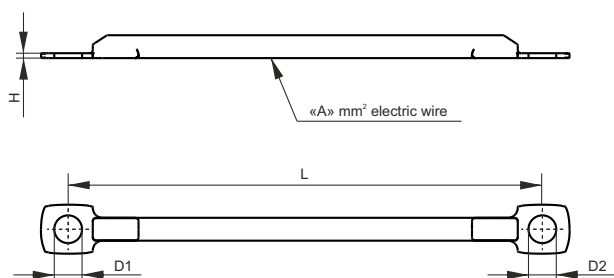


Description	Spare part code
Wired remote control with 2 buttons single/double acting	P0201
Wired remote control with 4 buttons double acting	P0202



Mounting kit for DC motors

Motor Type	Mounting Kit code	Mounting kit sub-parts	
		Power cable	Fixing system
Ø 80	M47SK0801	M47SK000A	Clamp band E60513080
Ø 114	M47SK1121	M47SK000C	Screws TCEIM5X10 + washer WASHL05
Ø 125 - 151	M47SK1251	M47SK000E	Screws TCEIM5X10 + washer WASHL05



Power Cables

Spare part	L (mm)	A (mm²)	D1 (mm)	D2 (mm)	H (mm)
M47SK000A	130	10	6	8	1,5
M47SK000B	130	2	6	5	1,5
M47SK000C	130	16	8	8	2
M47SK000D	130	2	8	5	1,5
M47SK000E	130	25	10	8	2
M47SK000F	130	2	10	Faston 6,3 mm	1,5

DC MOTOR OPTIONS



Starting relay 150A
for motors Ø80 - Ø114

Weight: 0,38kg
Protection degree: IP67
Max current draw: 2,07A@12VDC - 0,99A@24VDC (20°C)
Standard temperature range: -40°C to +82°C

Nominal current	Peak Current (3ms)	Spare part code
150A	800A	M47TC0001 (12V DC) M47TC0002 (24V DC)

Coils	M47TC0001 12V DC	M47TC0002 24V DC
Max Sustained Duty Cycle	25%	25%
Max On-Time at nominal current	6 min	6 min
Pull In Voltage	7,6 V	15,5 V
Hold minimum Voltage	3,5 V	7,0 V
Coil Resistance [Ohms]	5,7 Ω	20,1 Ω



Starting relay 200A
for motors Ø125 and 151

Weight: 0,5kg 12V - 0,7kg 24V
Protection degree: IP54
Max current draw: 1,6A@12VDC - 0,7A@24VDC
Max environment temperature: 60°C

Nominal current	Peak Current (5s)	Spare part code
200A	800A	M47ZC0001 (12V DC) M47ZC0002 (24V DC)



Starting relay (reversible) 100A
for reversible motors and pumps

Weight: 0,5kg
Protection degree: IP65
Max current draw: 1A@12VDC - 0,5A@24VDC
Max environment temperature: 40°C

Nominal current	Peak Current (40ms)	Spare part code
100A	400A	M47NB0001 (12V DC) M47NB0002 (24V DC)

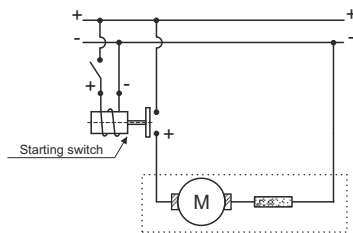
Recommended working position: either horizontal or vertical with poles set upwards.

SECTION A

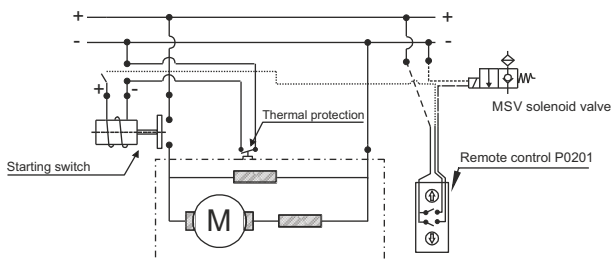
DC MOTOR CHOICE AND ELECTRIC CONNECTION SCHEME

Electrical connection scheme

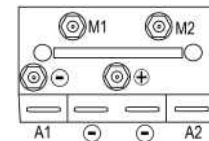
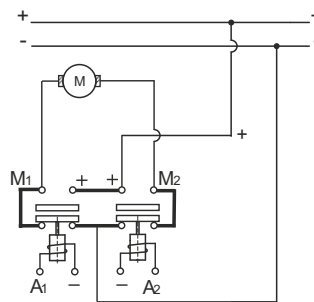
M47*C000*



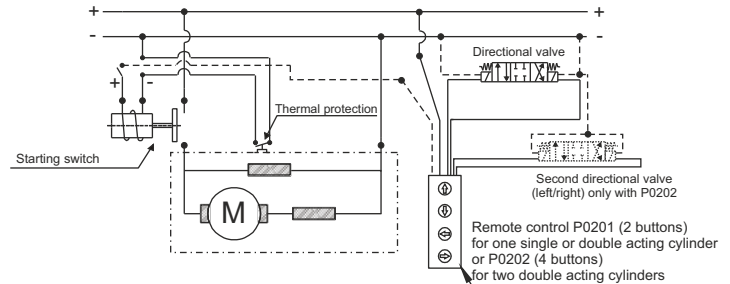
Single acting cylinder



M47NB000*



Double acting cylinder



DC motors selection

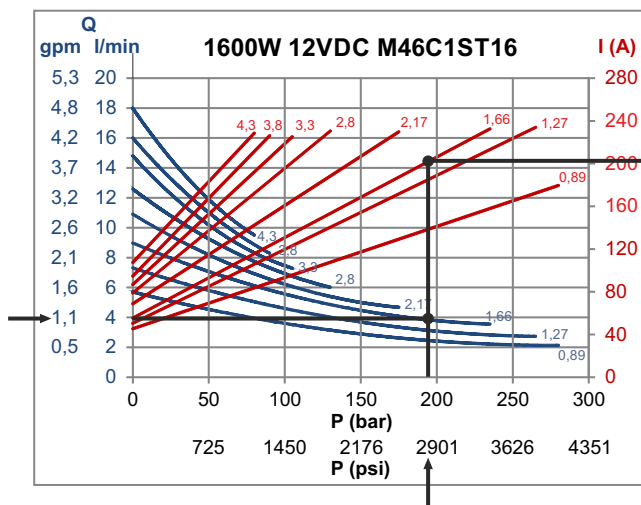
DC motor selection is a critical step for the proper power pack definition. Required Pressure, Required Flow, Service Factor (or Duty Cycle) should be known before starting the motor selection. Please note that DC motors speed is **not** constant and depends on torque. Once you choose a motor, look at Motor-Pump Performance diagram if a pump displacement (blue curve) is available at the **intersection** of required pressure and flow values. On the relevant "I" axis (red curve) you obtain the current drawn. When the intersection point is not exactly on a pump curve, select a smaller pump. On Motor Ratings diagram you can easily obtain the maximum allowed Service Factor: S2, Short Time Duty (min); S3, Intermittent Periodic Duty (% of total cycle). If the obtained Service values are not sufficient to meet required performances, choose a higher power or heavier duty motor and repeat the calculation on the new motor curves.

Example:

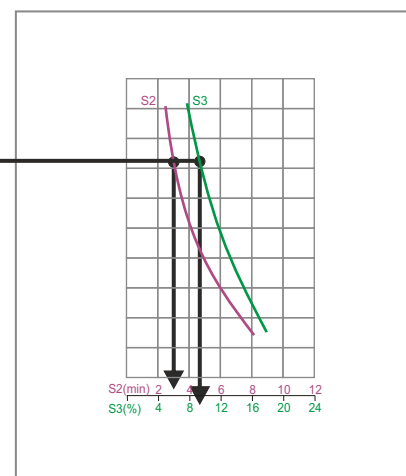
an application requires the following data: flow = 4 l/min, max pressure = 195 bar, duty cycle is unknown.

- check on 1,6 Kw 12V DC motor diagram: the 1,66 cc pump curve meet the intersection of 4 liters/minutes and 195 bar
- choose from curves a 1,66 cm³/rev pump. the corresponding "I" curve declares 200 A drawn current at 195 bar.
- project horizontally the current drawn to the Motor Rating diagram: the DC motor can work for maximum 3 min (S2) and S3 is about 9% of the total cycle, i.e. after 3 min working, the motor should cool down for at least 30 min.
- The total cycle time is calculated by adding the working time and the idle time (9% working time plus 91% idle time), in this case 33 min. If this duty cycle is not adequate for our application, we must choose a higher power or higher duty DC motor and check the relevant diagram again.

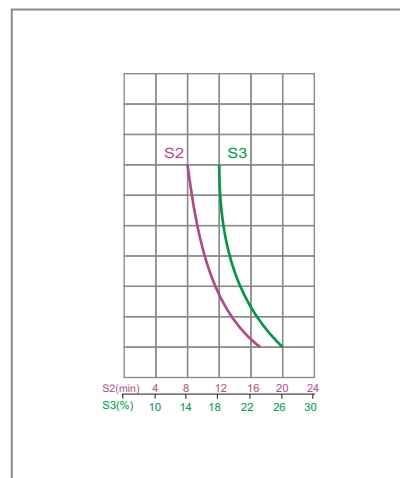
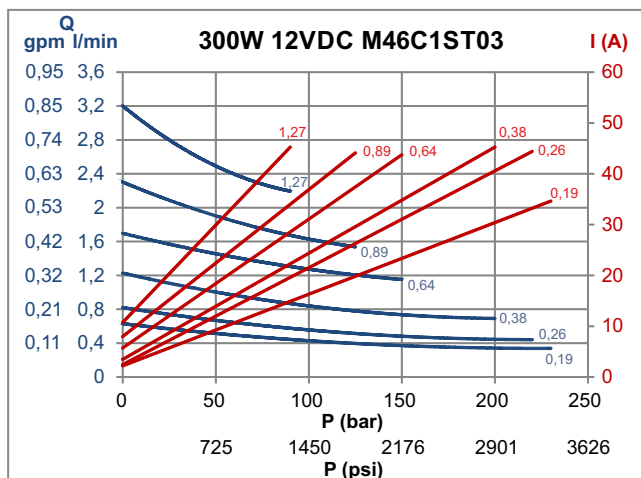
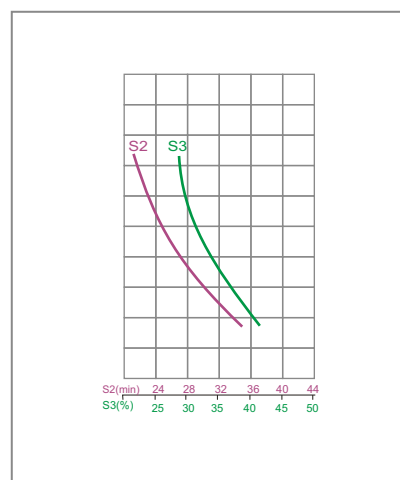
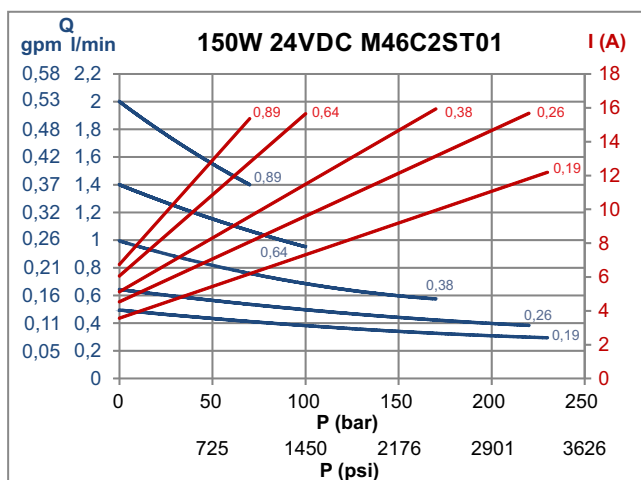
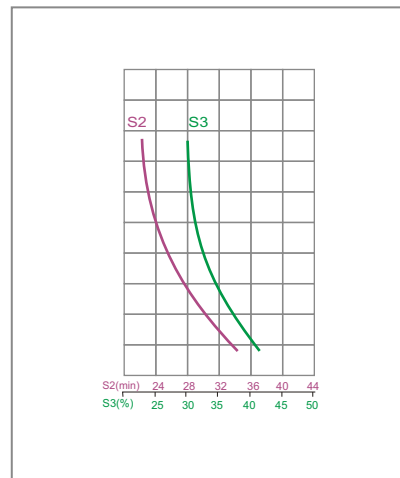
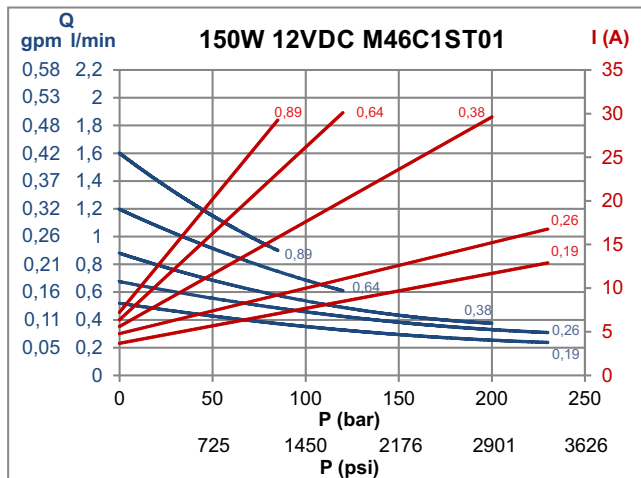
Motor-Pump Performances



Motor Ratings



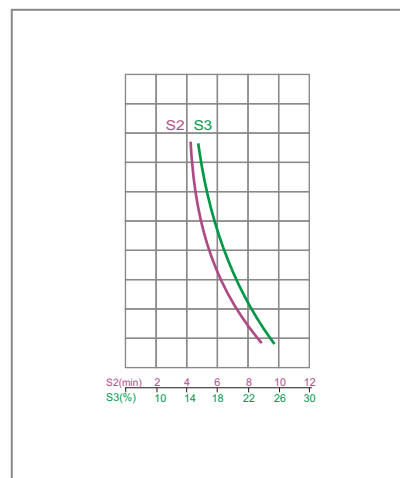
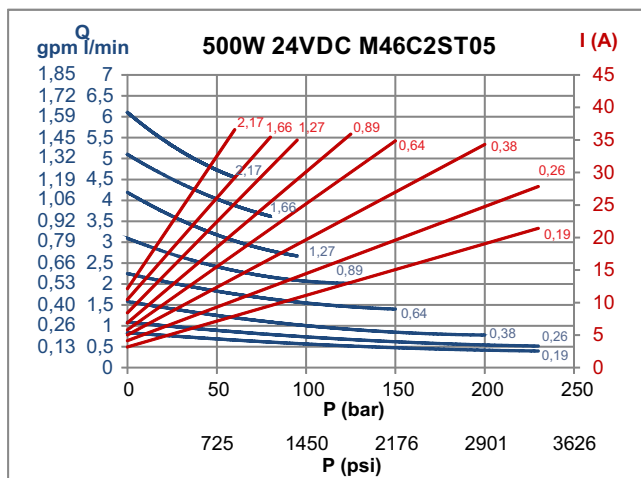
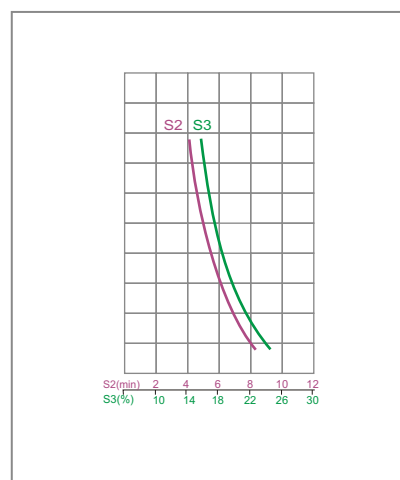
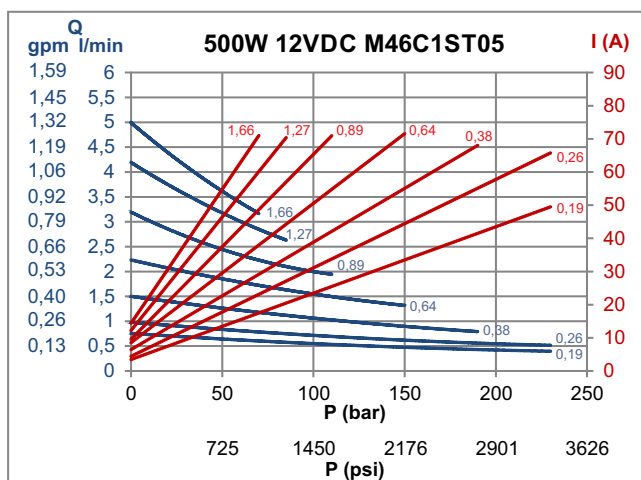
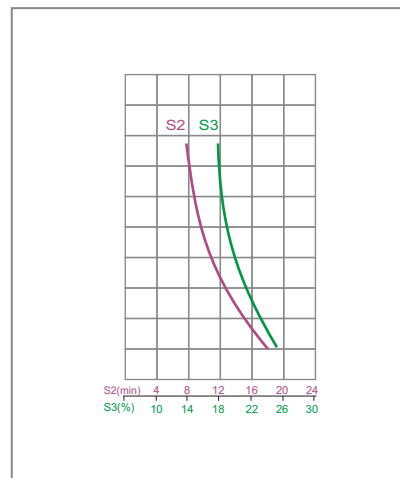
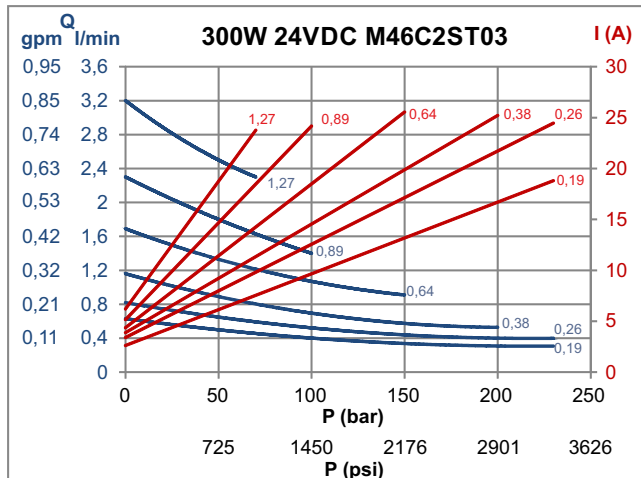
DC MOTORS Ø80 DIAGRAMS



Tests made with rectified current supplied at nominal motor voltage (measured at the motor connection terminals) and oil ISO VG46 at 40°C

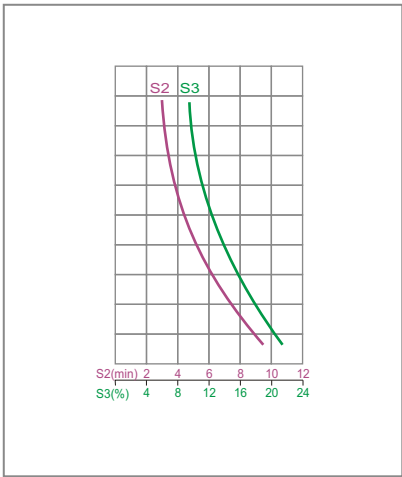
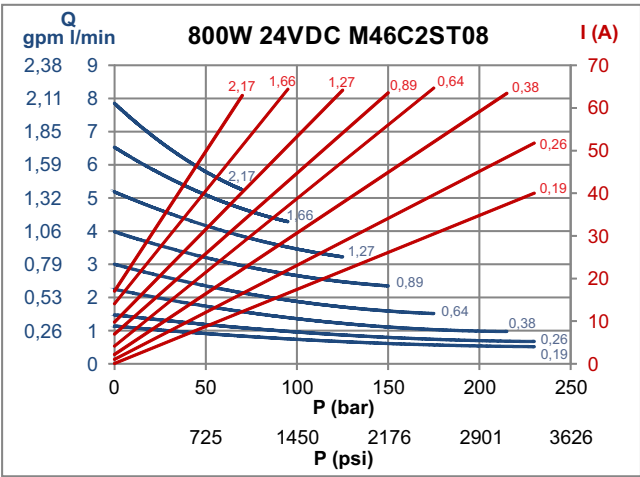
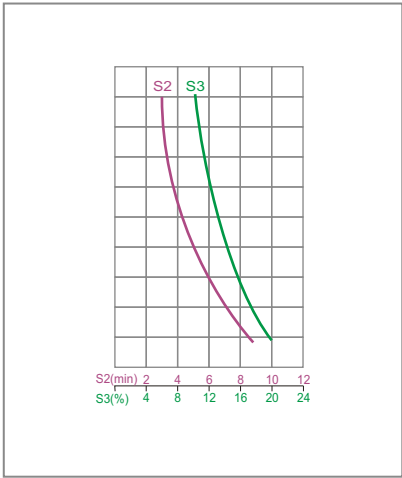
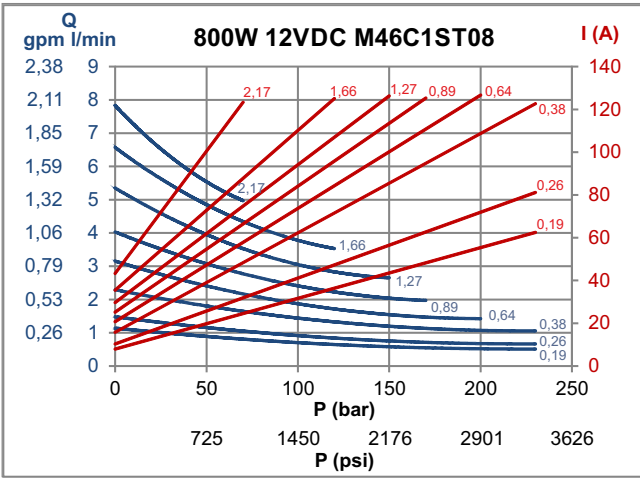
SECTION A

DC MOTORS Ø80 DIAGRAMS



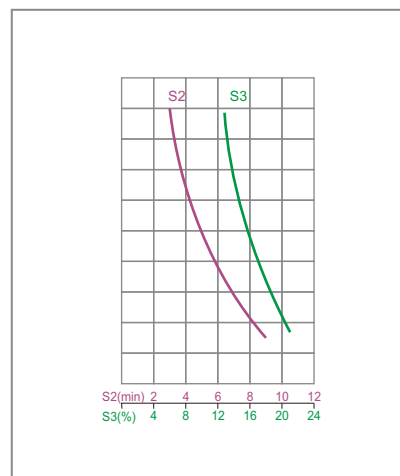
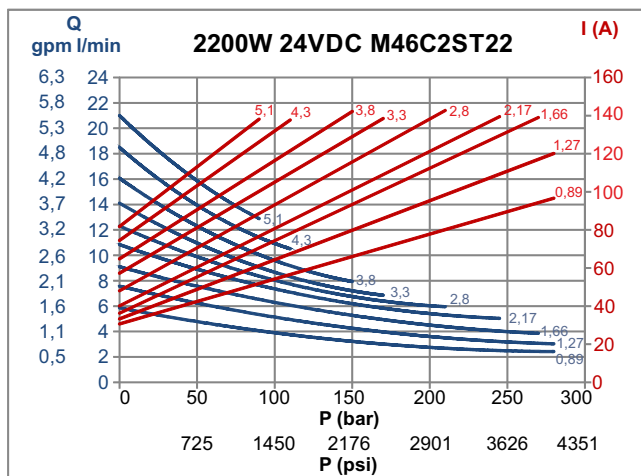
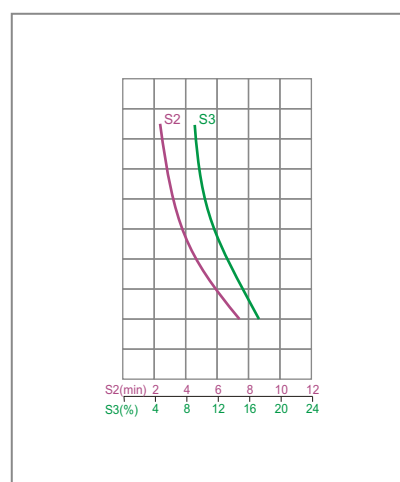
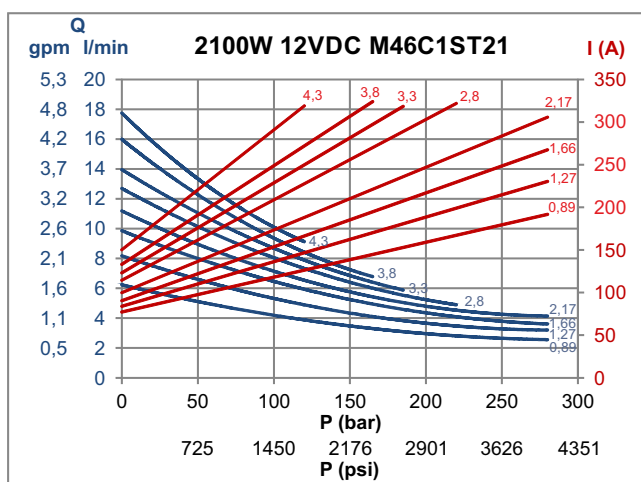
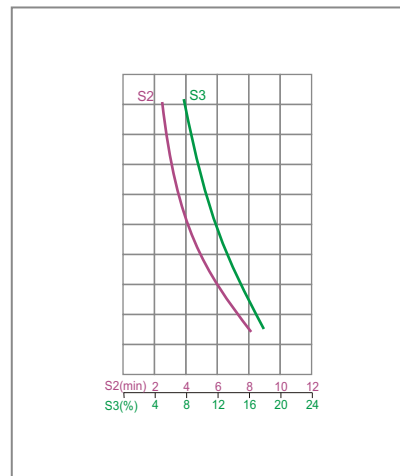
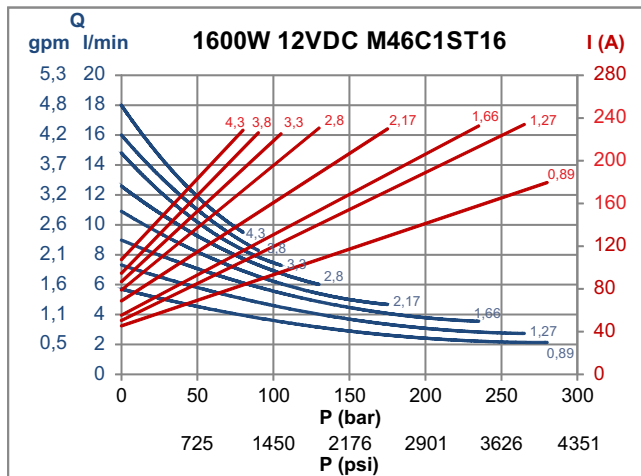
Tests made with rectified current supplied at nominal motor voltage (measured at the motor connection terminals) and oil ISO VG46 at 40°C

DC MOTORS Ø80 DIAGRAMS



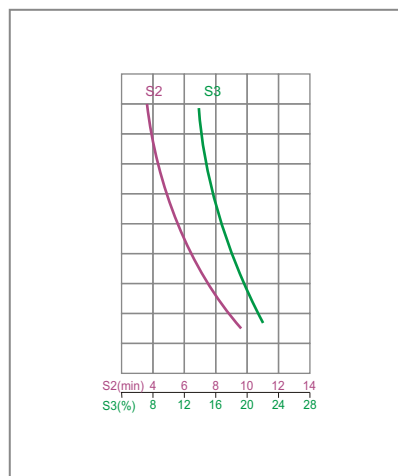
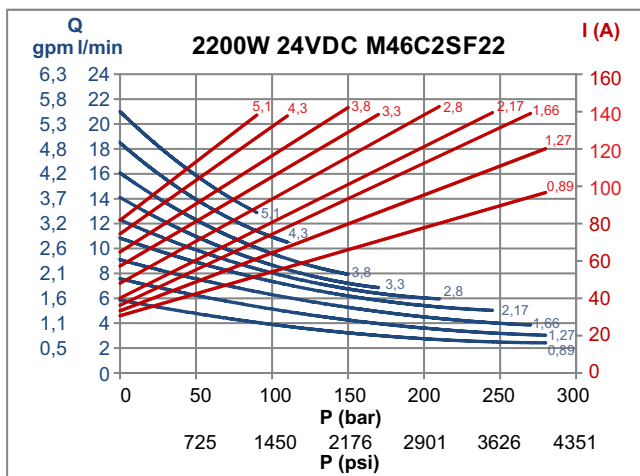
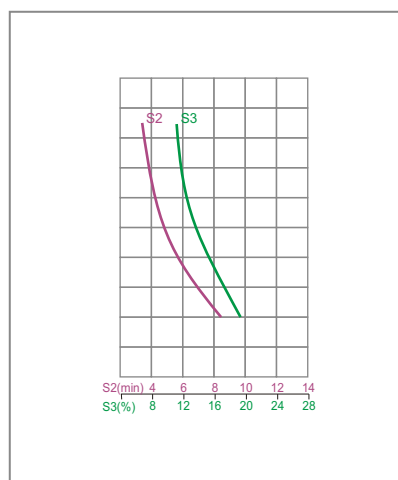
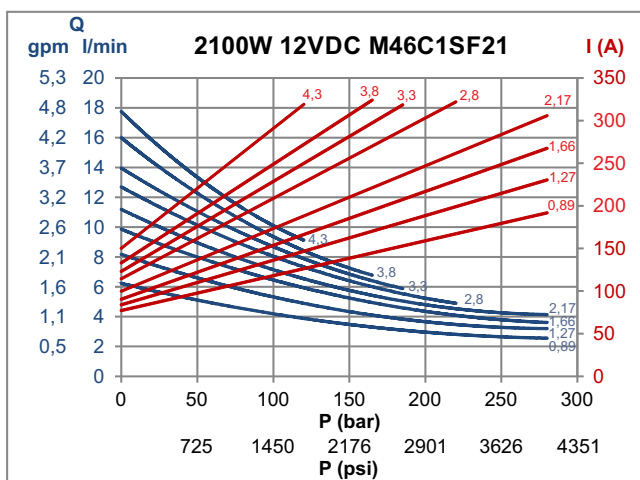
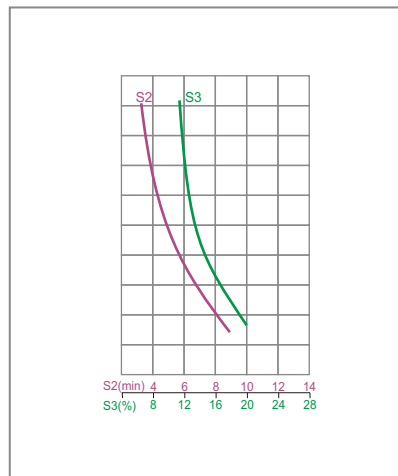
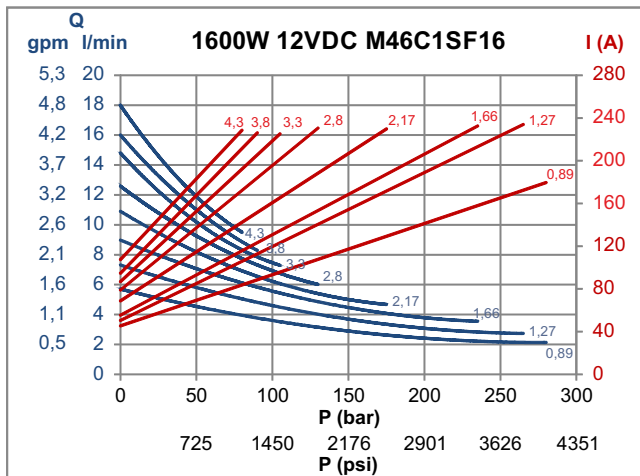
SECTION A

DC MOTORS Ø114 DIAGRAMS



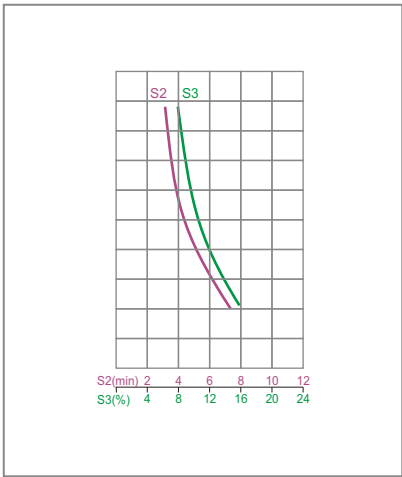
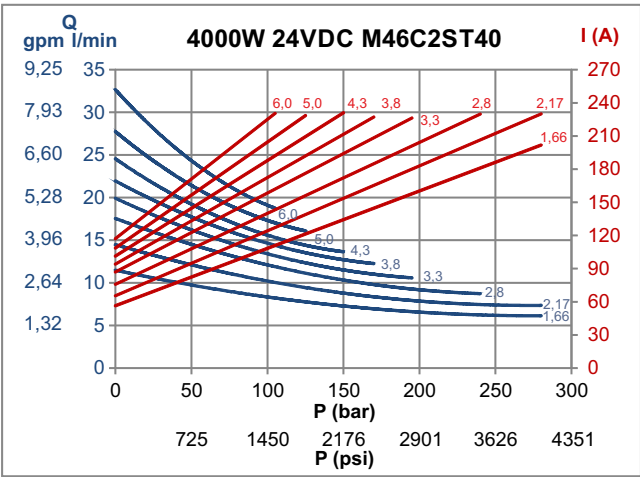
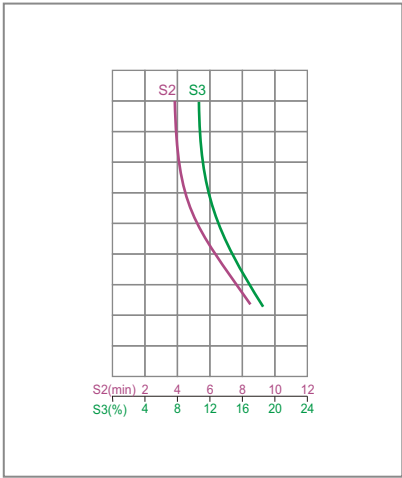
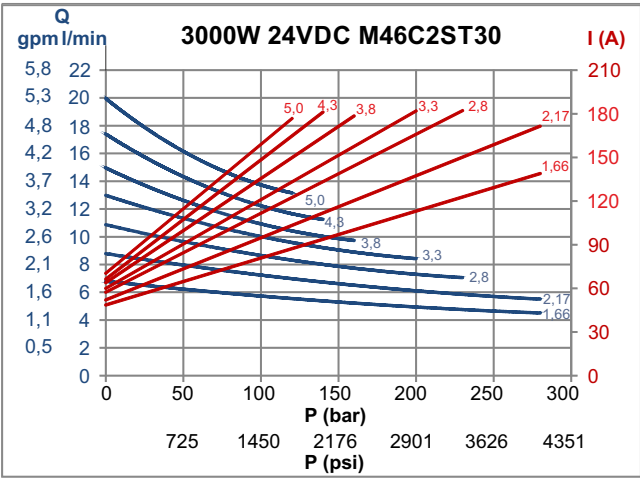
Tests made with rectified current supplied at nominal motor voltage (measured at the motor connection terminals) and oil ISO VG46 at 40°C

DC MOTORS Ø114 DIAGRAMS



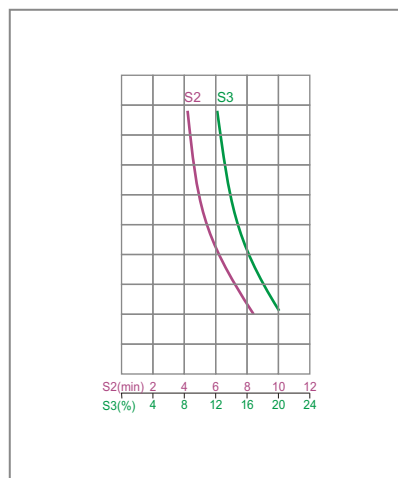
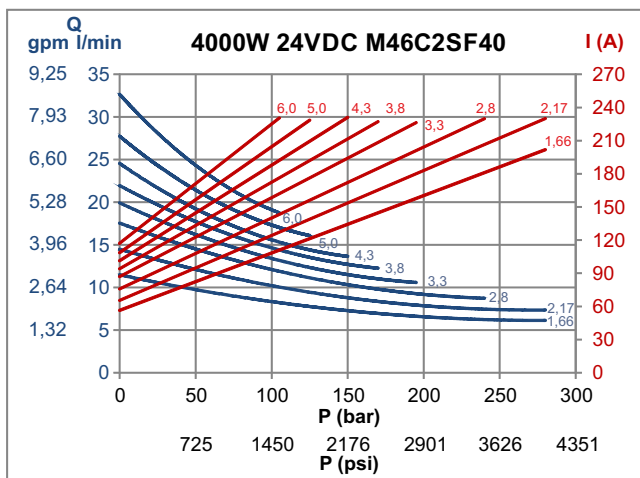
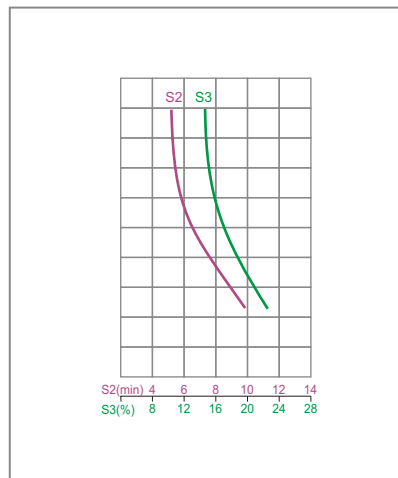
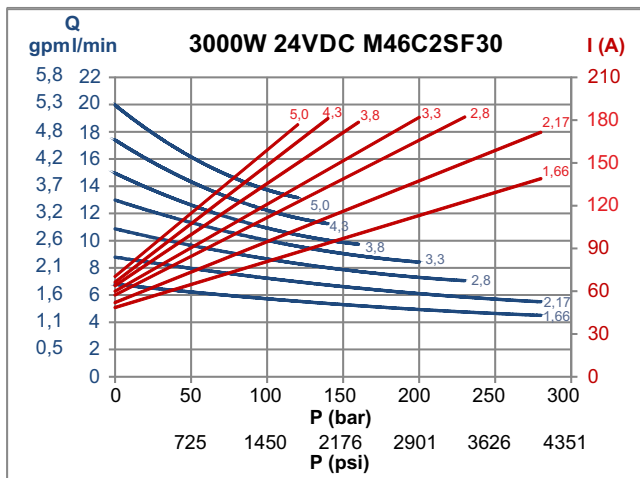
SECTION A

DC MOTORS Ø125 DIAGRAMS



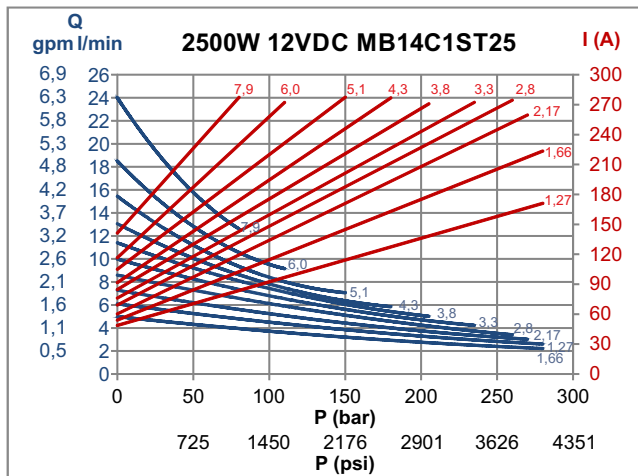
Tests made with rectified current supplied at nominal motor voltage (measured at the motor connection terminals) and oil ISO VG46 at 40°C

DC MOTORS Ø125 DIAGRAMS



SECTION A

DC MOTORS Ø151 DIAGRAMS



INTEGRAL AC MOTORS

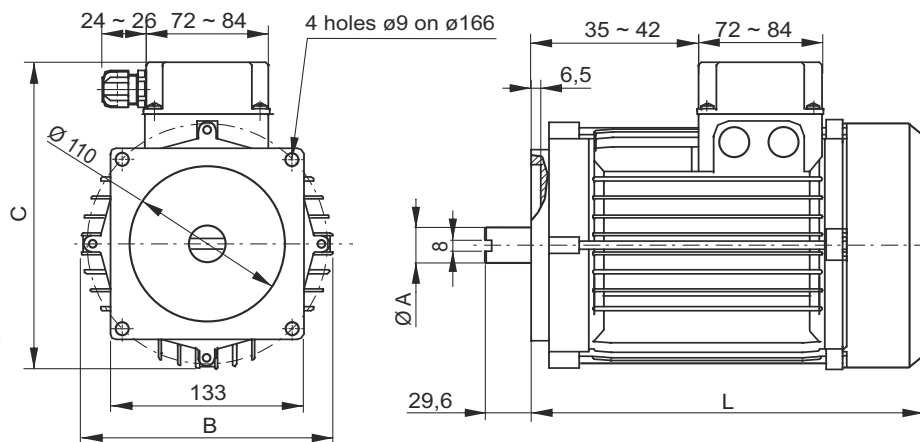
Integral motors: these are motors with a peculiar square flange and tang drive shaft, specifically engineered and manufactured for our mini power packs, featuring high power density and direct connection to the YOU central manifold. They are available in single phase or three phase execution, in frame 71, 80, 90 and 100, with square flange and tang drive shaft.

Additional nominal powers and/or special designs are available on request. Standard motors are for intermittent use: **S3 40%** means a typical duty cycle consisting of up to six cycles (on-off) in one hour with the motor ON and OFF for 4 min to 6 min. These motors can be used in emergency situations even in continuous use at a reduced power (30% less than the nominal value S3).



Drawings show typical three phase motors. Single phase motors have a larger wiring box which also contains the capacitor(s) or can have an external capacitor(s).

Protection degree: IP54
Insulation class: F
Type of duty: S3 = intermittent duty



YOU motor assembly code

E	AC integral motor
1,5	Maximum Power [kW]
AC	Alternate current
3	Phase: 3 = three phase S = single phase
4	Poles: 4 = four poles 2 = two poles
90	Frame

See a table of available motors on next page

A single tang drive coupling fits all motor frame sizes. This is the same coupling (pump side) included in the B14 motors mounting kit. The coupling is already included when specifying an integral AC motor in the YOU assembly code. When ordering spare motors, the coupling is not included and must be ordered separately.

Coupling code	Coupling code
E36100000 For gr.1 pumps	E36100006 For gr.0 pumps
Weight: 0,046 Kg	Weight: 0,040 kg

OPTIONS



Start-up valve for single phase electric motors

It allows single-phase motors starting under load, overcoming the inherent limitation of single phase induction motors. It should be mounted in cavity 9 of the central manifold, after appropriate machining has been made.

For more details see SUV01* technical table in section D.

SECTION A

INTEGRAL AC MOTORS

Three-phase 4 poles (~1450 rpm at 50Hz)

Frame size	Maximum Power (S3 40%)	Assembly code	Spare part code	Ø A	B	C	L	Weight kg
71	0,37kW (0,5HP)	E0,37AC 34 71	E037AC341S3	17	138	180	214	5,5
	0,55kW (0,75HP)	E0,55AC 34 71	E055AC341S3	17	138	180	214	5,5
	0,75kW (1HP)	E0,75AC 34 71	E075AC341S3	17	138	180	214	5,5
80	1,1kW (1,5HP)	E1,1AC 34 80	E110AC342S3	19	156	202	251	10,5
90	1,5kW (2HP)	E1,5AC 34 90	E150AC343S3	24	176	217	277	14
	2,2kW (3HP)	E2,2AC 34 90	E220AC343S3	24	176	217	277	15
	3kW (4HP)	E3,0AC 34 90	E300AC343S3	24	176	217	277	16
100	4kW (5,5HP)	E4,0AC 34 100	E400AC344S3	25	191	248	321	25
	5,5kW (7,5HP)	E5,5AC 34 100	E550AC344S3	25	191	248	321	32

Three-phase 2 poles (~2900 rpm at 50Hz)

Frame size	Maximum Power (S3 40%)	Assembly code	Spare part code	Ø A	B	C	L	Weight kg
71	0,55kW (0,75HP)	E0,55AC 32 71	E055AC321S3	17	138	180	214	5
	0,75kW (1HP)	E0,75AC 32 71	E075AC321S3	17	138	180	214	5
80	1,1kW (1,5HP)	E1,1AC 32 80	E110AC322S3	19	156	202	251	10
	1,5kW (2HP)	E1,5AC 32 80	E150AC322S3	19	156	202	251	11
	2,2kW (3HP)	E2,2AC 32 80	E220AC322S3	19	156	202	251	12
90	3kW (4HP)	E3,0AC 32 90	E300AC323S3	24	176	217	277	16
	4kW (5HP)	E4,0AC 32 90	E400AC323S3	24	176	217	277	16
100	5,5kW (7,5HP)	E5,5AC 32 100	E550AC324S3	25	191	248	321	35

Single-phases 4 poles (~1450 rpm at 50Hz)

Frame size	Maximum Power (S3 40%)	Assembly code	Spare part code	Ø A	B	C	L	Weight kg
71	0,37kW (0,5HP)	E0,37AC S4 71	E037ACS41S3	17	138	180	214	6,5
	0,55kW (0,75HP)	E0,55AC S4 71	E055ACS41S3	17	138	180	214	7,2
80	0,75kW (1HP)	E0,75AC S4 80	E075ACS42S3	19	156	202	251	10
90	1,1kW (1,5HP)	E1,1AC S4 90	E110ACS43S3	24	176	217	277	13
	1,5kW (2HP)	E1,5AC S4 90	E150ACS43S3	24	176	217	277	15
	2,2kW (3HP)	E2,2AC S4 90	E220ACS43S3	24	176	217	277	15,5
100	3kW (4HP)	E3,0AC S4 100	E300ACS44S3	25	191	248	321	25

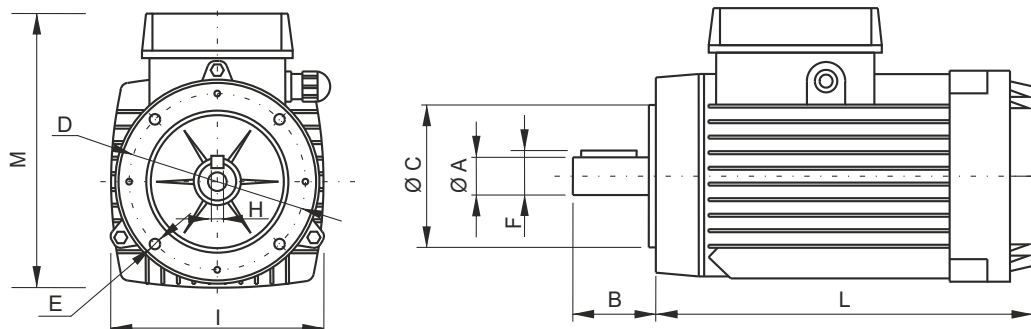
Single-phase 2 poles (~2900 rpm at 50Hz)

Frame size	Maximum Power (S3 40%)	Assembly code	Spare part code	Ø A	B	C	L	Weight kg
71	0,55kW (0,75HP)	E0,55AC S2 71	E055ACS21S3	17	138	180	214	6
	0,75kW (1HP)	E0,75AC S2 71	E075ACS21S3	17	138	180	214	6,5
80	1,1kW (1,5HP)	E1,1AC S2 80	E110ACS22S3	19	156	202	251	10
	1,5kW (2HP)	E1,5AC S2 80	E150ACS22S3	19	156	202	251	11
90	2,2kW (3HP)	E2,2AC S2 90	E220ACS23S3	24	176	217	277	15

B14 IEC AC MOTORS

B14 IEC motors: for market compatibility, any IEC standard B14 AC motor with frame 63, 71, 80, 90, 100 or 112 can be mounted. These motors are normally procured and mounted by the customer himself. Two-piece couplings and additional adaptor flanges as per following tables must be fitted. YOUINDUSTRY can supply frame 112 B14 AC 3-phase motors

Motor overall dimensions are not indicated since they can vary substantially depending on the motor brand selected.



B14 standard dimensions

Frame size	Typical powers	ØA	B	ØC	D	E	F	H	Mounting kit
63	0,12 ~ 0,18 kW 0,18 ~ 0,25 HP	11 j6	23	60	75	M5	12,5	4	XB14 63-0 (gr. 0) XB14 63-1 (gr.1)
71	0,25 ~ 0,37 kW 0,37 ~ 0,5 HP	14 j6	30	70	85	M6	16	5	XB14 71-0 (gr. 0) XB14 71-1 (gr.1)
80	0,55 ~ 0,75 kW 0,75 ~ 1 HP	19 j6	40	80	100	M6	21,5	6	XB14 80-0 (gr. 0) XB14 80-1 (gr. 1)
90	1,1 ~ 1,5 kW 1,5 ~ 2 HP	24 j6	50	95	115	M8	27	8	XB14 90-1
100/112	2,2 ~ 7,5 kW 3 ~ 10 HP	28 j6	60	110	130	M8	31	8	XB14 100-1

Three-phase 4 poles (~1450 rpm at 50Hz)

Frame size	Typical powers (S3 40%)	Assembly code	Spare part code	Ø A	I	L	M	Weight kg
112	7,5kW (10HP)	7,5AC 34 112	B14750AC345S3	28 j6	216	327	219	35

Three-phase 2 poles (~2900 rpm at 50Hz)

Frame size	Typical powers (S3 40%)	Assembly code	Spare part code	Ø A	I	L	M	Weight kg
112	7,5kW (10HP)	7,5AC 32 112	B14750AC325S3	28 j6	216	327	219	38

Mounting kits - spare parts

The B14 mounting kits are made of:

- a half-coupling E36100000 (for pumps gr. 1) or E36100006 (for pumps gr. 0) on pump shaft side, the same as used for integral AC motors.
- a half-coupling on motor shaft side, which is different for each frame size.
- an adaptor flange to suit the central manifold, which is also different for each frame size.

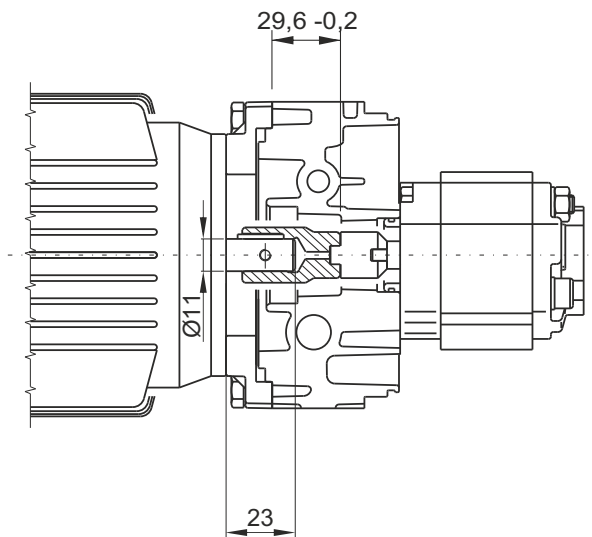
The mounting kit is already included when specifying a B14 AC motor in YOU assembly code. When ordering spare motors, the relevant mounting kit is not included and must be ordered separately.

SECTION A

MOUNTING KIT FOR FRAME 63 B14 IEC MOTORS

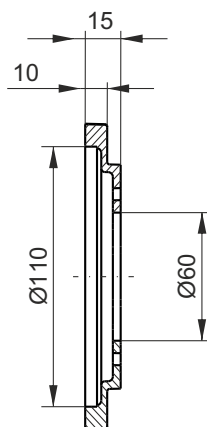
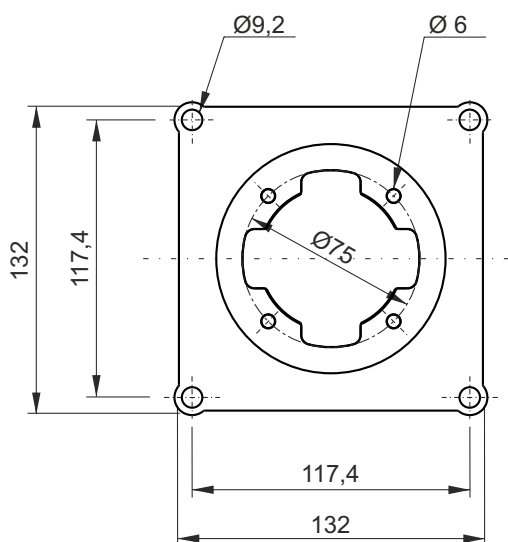


Kit weight: 0,26 Kg



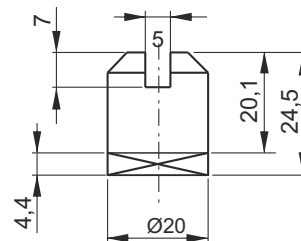
Adaptor flange

Adaptor flange **F27010011** Weight: 0,16 Kg

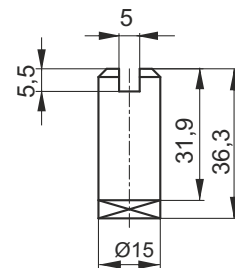


Couplings

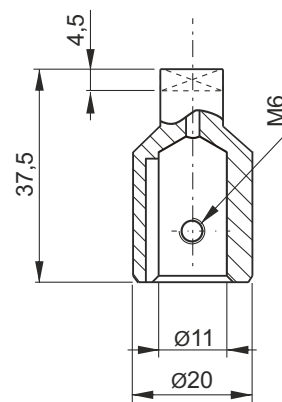
Pump side (group1) **E36100000** Weight: 0,05 Kg



Pump side (group0) **E36100006** Weight: 0,04 Kg



Motor side **M36100011**



Description	Assembly code*	Spare part code
B14 63 motor side half-coupling	XB14 63 -0 (gr.0) -1 (gr.1)	M36100011
B14 pump side half-coupling		E36100006 (gr.0) E36100000 (gr.1)
B14 63 adaptor flange		F27010011

* Note: The coupling+flange kit is already included when specifying a B14 motor in PPC assembly code. XB14 63 code has to be indicated only when ordering PPC with no motor but with coupling+flange kit.

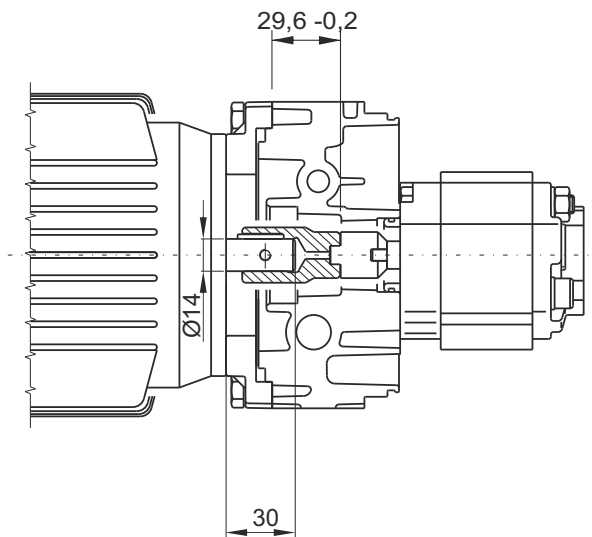
For increased IP protection degree with B14 flanges you can add the optional bracket code MP001.

Attention! When assembling frame 63 B14 motors with XB14 flange+couplings kit, please respect positioning tolerances as per top drawing. Failure to do so can cause malfunctioning or component failure.

MOUNTING KIT FOR FRAME 71 B14 IEC MOTORS

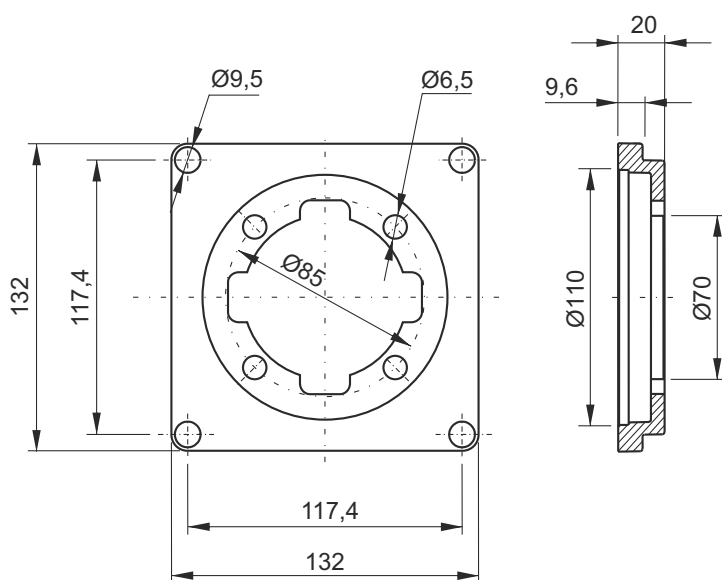


Kit weight: 0,32 Kg



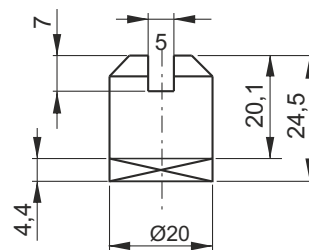
Adaptor flange

Adaptor flange **F27010001** Weight: 0,18 Kg

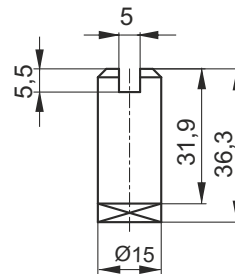


Couplings

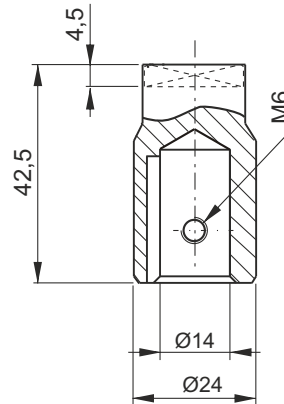
Pump side (group1) **E36100000** Weight: 0,05 Kg



Pump side (group0) **E36100006** Weight: 0,04 Kg



Motor side **E36100001** Weight: 0,08 Kg



Description	Assembly code*	Spare part code
B14 71 motor side half-coupling	XB14 71 -0 (gr.0) -1 (gr.1)	E36100001
B14 pump side half-coupling		E36100006 (gr.0) E36100000 (gr.1)
B14 71 adaptor flange		F27010001

* Note: The coupling+flange kit is already included when specifying a B14 motor in PPC assembly code. XB14 71 code has to be indicated only when ordering PPC with no motor but with coupling+flange kit.

For increased IP protection degree with B14 flanges you can add the optional bracket code MP001.

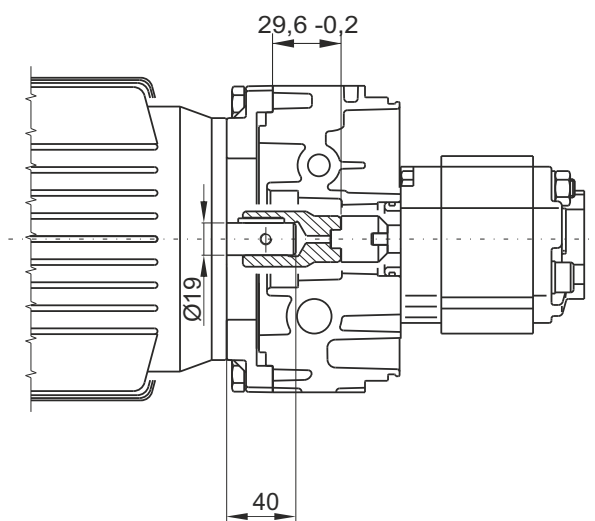
Attention! When assembling frame 71 B14 motors with XB14 flange+couplings kit, please respect positioning tolerances as per top drawing. Failure to do so can cause malfunctioning or component failure.

SECTION A

MOUNTING KIT FOR FRAME 80 B14 IEC MOTORS

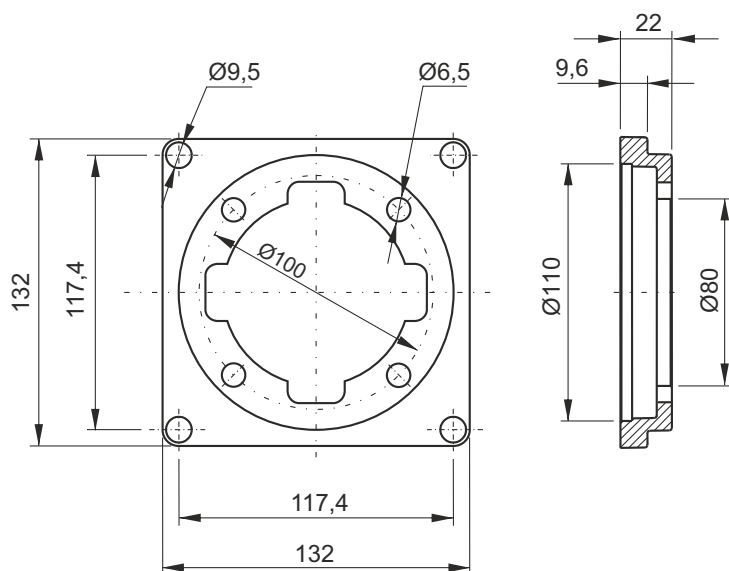


Kit weight: 0,36 Kg



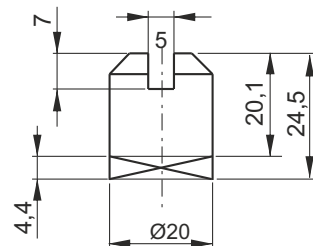
Adaptor flange

Adaptor flange **F27010002** Weight: 0,21 Kg

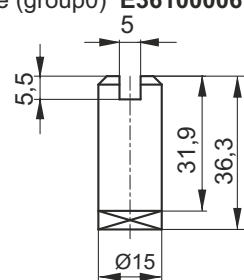


Couplings

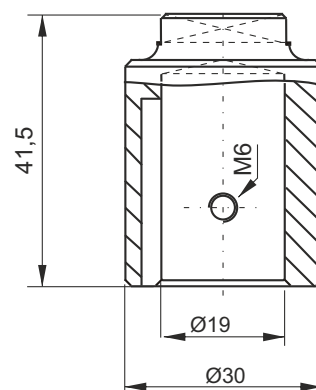
Pump side (group1) **E36100000** Weight: 0,05 Kg



Pump side (group0) **E36100006** Weight: 0,04 Kg



Motor side **E36100002** Weight: 0,12 Kg



Description	Assembly code*	Spare part code
B14 80 motor side half-coupling	XB14 80 -0 (gr.0) -1 (gr.1)	E36100002
B14 pump side half-coupling		E36100006 (gr.0) E36100000 (gr.1)
B14 80 adaptor flange		F27010002

* Note: The coupling+flange kit is already included when specifying a B14 motor in PPC assembly code. XB14 80 code has to be indicated only when ordering PPC with no motor but with coupling+flange kit.

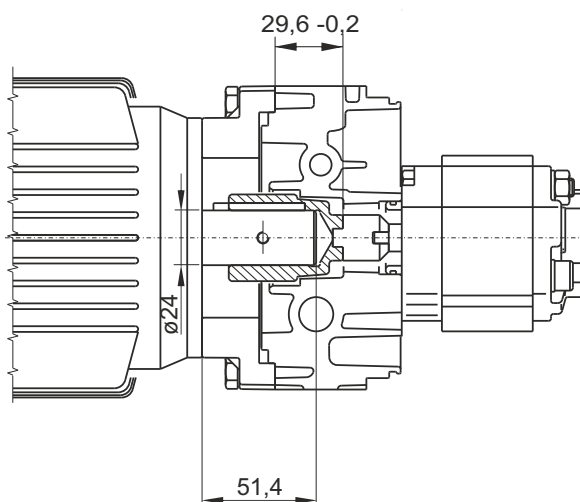
For increased IP protection degree with B14 flanges you can add the optional bracket code MP001.

Attention! When assembling frame 80 B14 motors with XB14 flange+couplings kit, please respect positioning tolerances as per top drawing. Failure to do so can cause malfunctioning or component failure.

MOUNTING KIT FOR FRAME 90 B14 IEC MOTORS

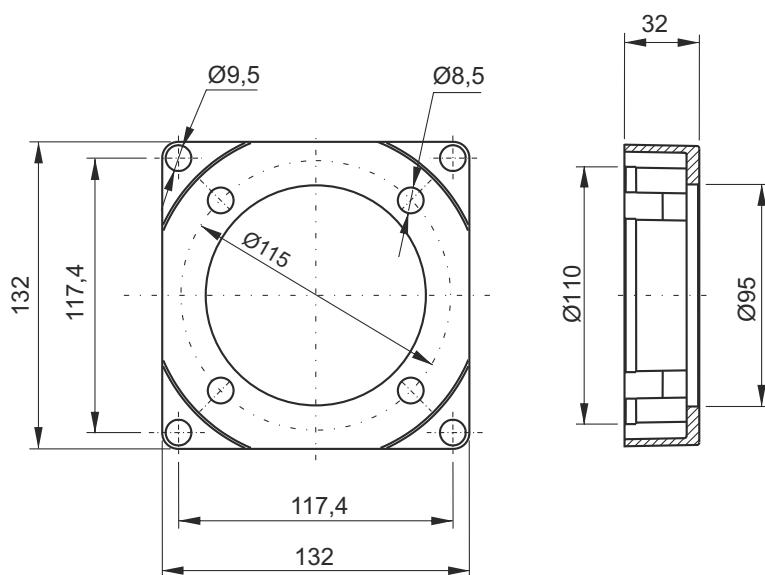


Kit weight: 0,59 Kg



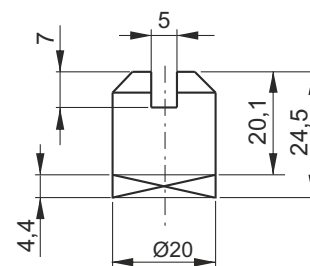
Adaptor flange

Adaptor flange **F27010003** Weight: 0,35 Kg

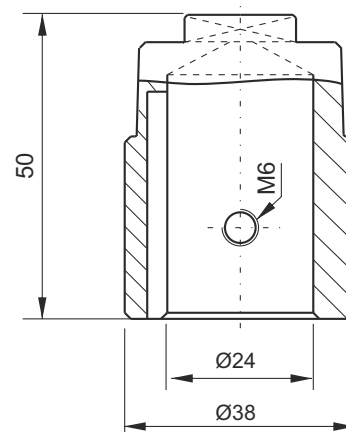


Couplings

Pump side **E36100000** Weight: 0,05 Kg



Motor side **E36100003** Weight: 0,22 Kg



Description	Assembly code*	Spare part code
B14 90 motor side half-coupling	XB14 90-1	E36100003
B14 pump side half-coupling		E36100000
B14 90 adaptor flange		F27010003

* Note: The coupling+flange kit is already included when specifying a B14 motor in PPC assembly code. XB14 90 code has to be indicated only when ordering PPC with no motor but with coupling+flange kit.

For increased IP protection degree with B14 flanges you can add the optional bracket code MP001.

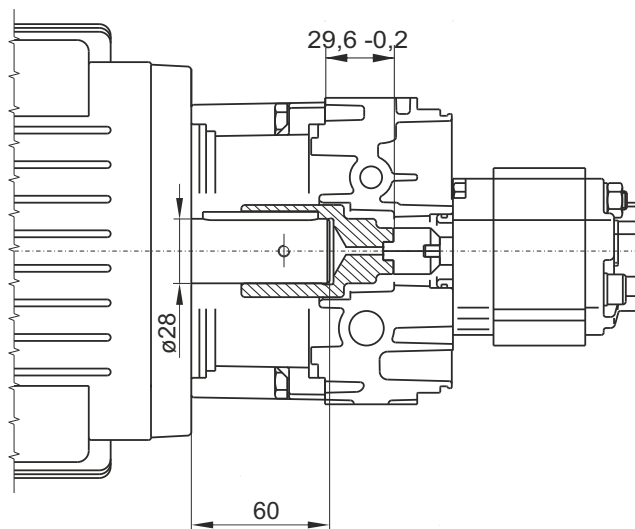
Attention! When assembling frame 90 B14 motors with XB14 flange+coupling kit, please respect positioning tolerances as per top drawing. Failure to do so can cause malfunctioning or component failure.

SECTION A

MOUNTING KIT FOR FRAME 100/112 B14 IEC MOTORS

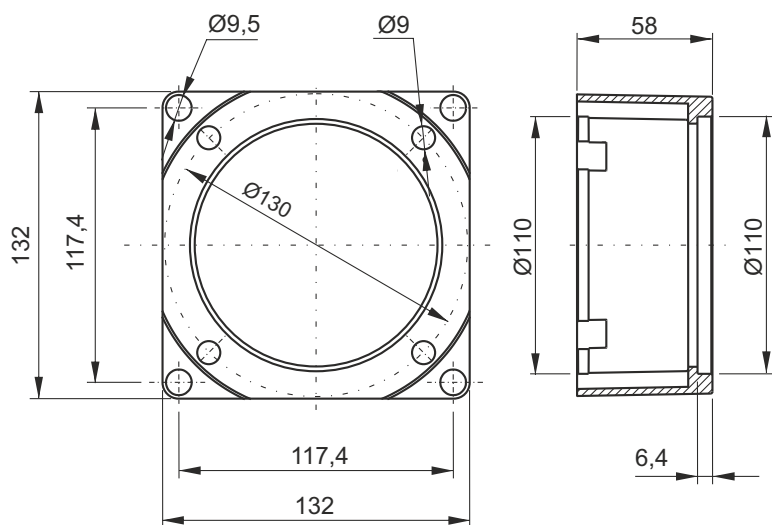


Kit weight: 0,99 Kg



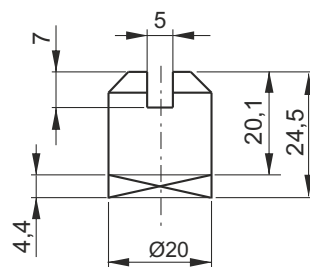
Adaptor flange

Adaptor flange **F27010004** Weight: 0,66 Kg

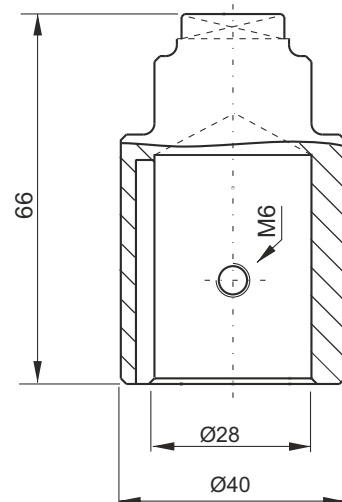


Couplings

Pump side **E36100000** Weight: 0,05 Kg



Motor side **E36100004** Weight: 0,31 Kg



Description	Assembly code*	Spare part code
B14 100 motor side half-coupling	XB14 100-1	E36100004
B14 pump side half-coupling		E36100000
B14 100 adaptor flange		F27010004

* Note: The coupling+flange kit is already included when specifying a B14 motor in PPC assembly code. XB14 90 code has to be indicated only when ordering PPC with no motor but with coupling+flange kit.

For increased IP protection degree with B14 flanges you can add the optional bracket code MP001.

Attention! When assembling frame 100 B14 motors with XB14 flange+coupling kit, please respect positioning tolerances as per top drawing. Failure to do so can cause malfunctioning or component failure.

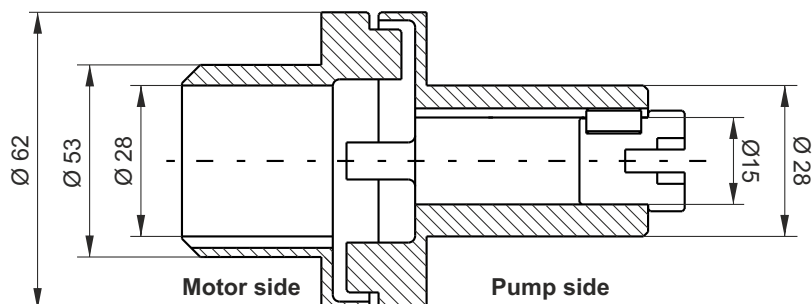
ELASTIC MOUNTING KIT FOR FRAME 100 B14 IEC MOTORS



Kit weight: 1,9 Kg

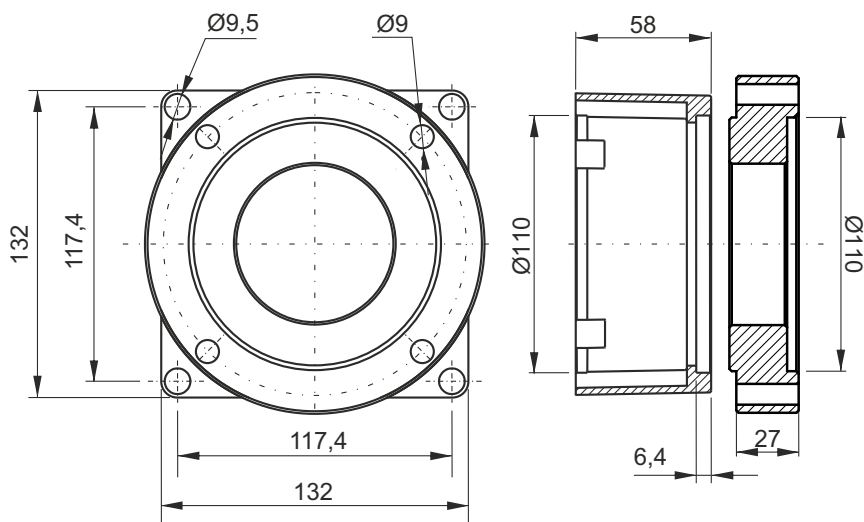
Elastic coupling

Elastic coupling **T54001100** Weight: 0,36 Kg



Adaptor flange

Adaptor flange **FTE270100** Weight: 1,54 Kg



Description	Assembly code*	Spare part code
Elastic coupling	XB14E 100	T54001100
B14 mounting flanges		FTE270100

* Note: The coupling+flange kit is already included when specifying a B14 motor in PPC assembly code. XB14E 100 code has to be indicated only when ordering YOU with no motor but with coupling+flange kit. For increased IP protection degree with B14 flanges you can add the optional bracket code MP001. Other couplings for different motor sides are available on request.

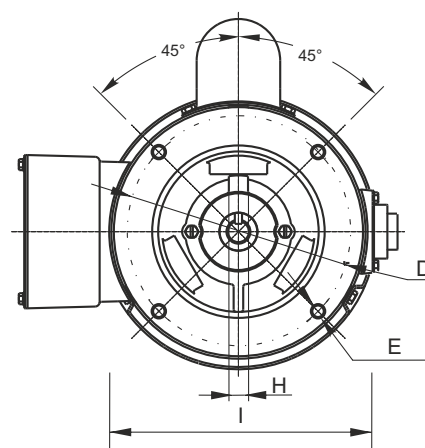
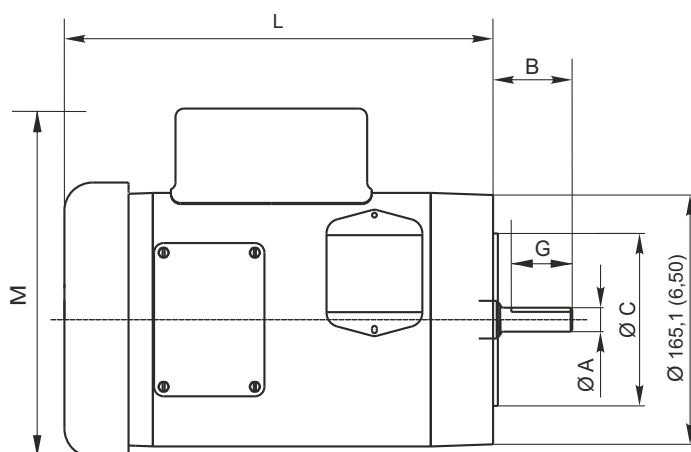
Attention! When assembling frame B14 motors with XB14 flange+coupling kit, please respect positioning tolerances as per top drawing. Failure to do so can cause malfunctioning or component failure.

SECTION A

NEMA AC MOTORS



Nema motors: for market compatibility, any Nema 56C and 184TC face standard AC motor can be mounted. These motors are normally procured by the customer himself.
Two-piece couplings and additional adaptor flanges as per following tables must be fitted.



NEMA standard dimensions in mm (inches)

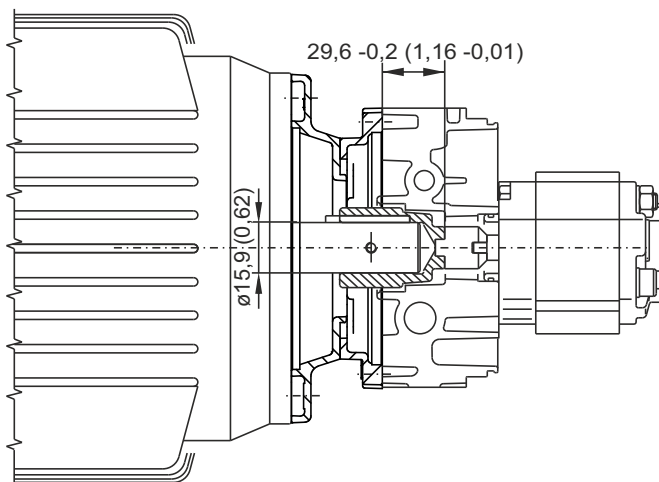
Frame size	Typical powers	ØA	B	ØC	D	E	G	H	I max	L max	M max	Mounting kit
56C	0,18 ~ 1,1 kW 0,25 ~ 1,5 HP	15,87 (0,6)	52,3 (2,1)	114,3 (4,5)	149,3 (5,9)	3/8-16 UNF	35 (1,4)	4,83 (0,2)	144,5 (5,7)	284 (11,2)	200 (7,9)	X56C-0 (gr. 0) X56C-1 (gr.1)
184TC	1,1 ~ 3,7 kW 1,5 ~ 5 HP	28,57 (1,1)	66,55 (2,6)	215,9 (8,5)	184,15 (7,3)	1/2-13 UNF	44,5 (1,8)	6,35 (0,2)	268 (10,6)	406 (16)	296 (11,7)	X184TC-1 (gr.1)

Motor overall dimensions can vary substantially depending on the motor brand.
These dimensions are given only as general indicative references.

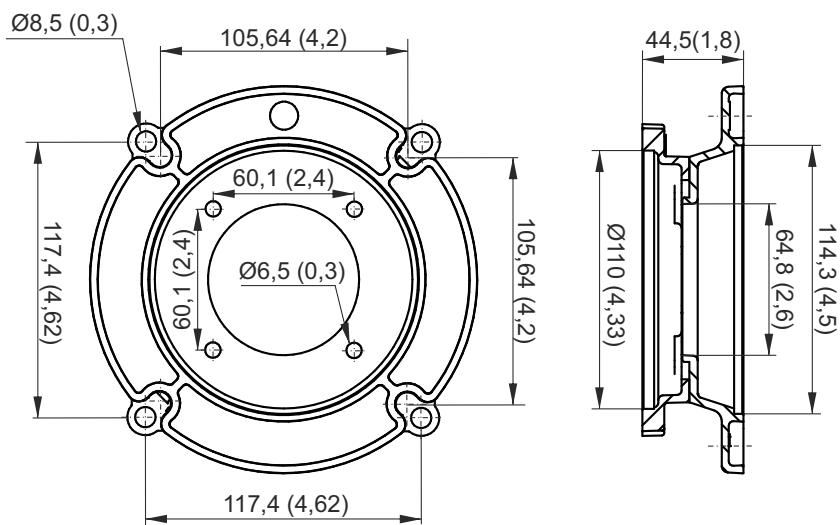
MOUNTING KIT FOR NEMA 56C AC MOTORS



Kit weight: 0,81 kg (1,8 lbs)



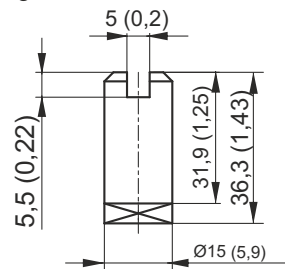
Adaptor flange



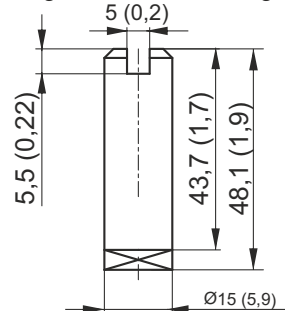
Weight: 0,41kg (0,9 lbs)

Couplings

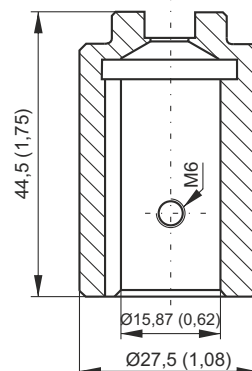
Pump side gr.1 side **E36100006** Weight: 0,04 kg



Pump side gr.0 **E36100009** Weight: 0,05 kg



Motor side **E36156C01** Weight: 0,36 kg



Description	Assembly code*	Spare part code
Nema 56C motor side half-coupling	X56C -0 (pumps gr.0) -1 (pumps gr.1)	E36156C01
Pump side half-coupling		E36100009 (gr.0) E36100006 (gr.1)
Nema 56C adaptor flange		F27056C03

* Note: The coupling+flange kit is already included when specifying a Nema 56C motor in PPC assembly code. Nema 56C flange assembly code has to be indicated only when ordering PPC with no motor but with coupling+flange kit.

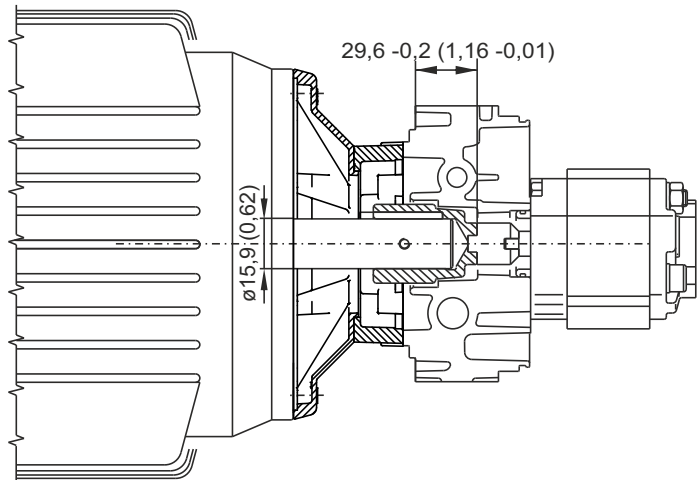
Attention! When assembling Nema 56C-face motors with XB56C-1 flange+couplings kit, please respect positioning tolerances as per top drawing. Failure to do so can cause malfunctioning or component failure.

SECTION A

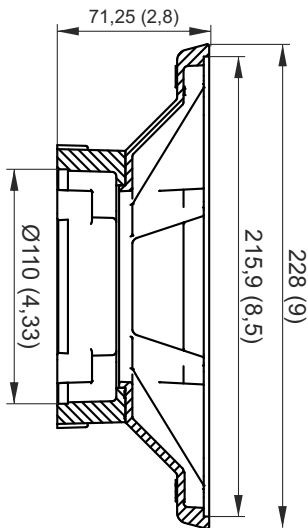
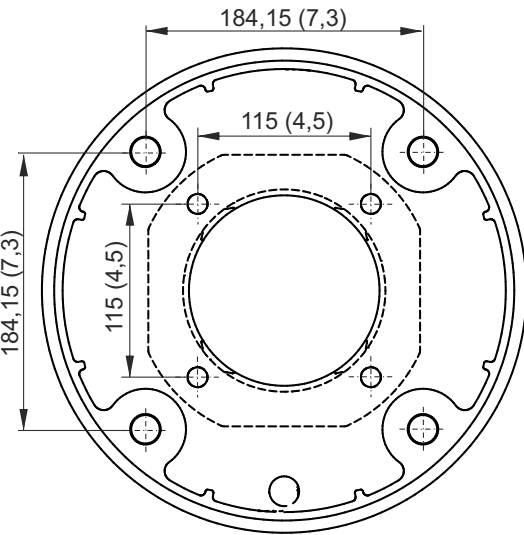
MOUNTING KIT FOR NEMA 184TC AC MOTORS



Kit weight: 1,85 kg (4,1 lbs)



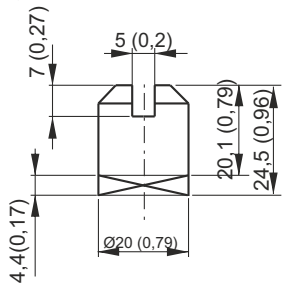
Adaptor flange



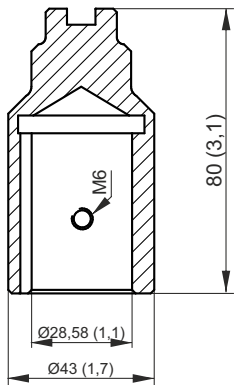
Weight: 1,4 kg (3,1 lbs)

Couplings

Pump side gr.1 side **E36100000** Weight: 0,05 kg



Motor side **C184TC** Weight: 0,36 kg



Description	Assembly code*	Spare part code
Nema 184TC motor side half-coupling	X184TC -1 (pumps gr.1)	C184TC
Pump side half-coupling		E36100000 (gr.1)
Nema 184TC adaptor flange		X184TC03

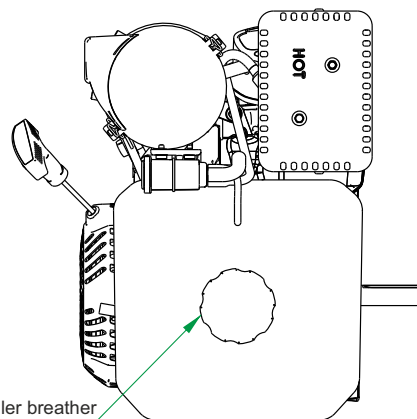
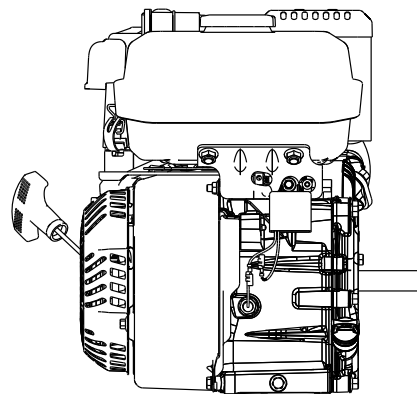
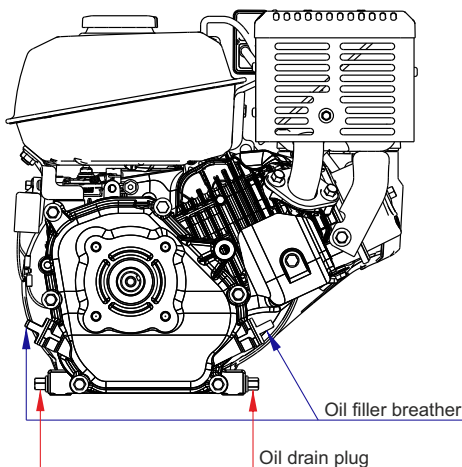
* Note: The coupling+flange kit is already included when specifying a Nema 184TC motor in YOU assembly code. Nema 184TC flange assembly code has to be indicated only when ordering PPC with no motor but with coupling+flange kit.

Attention! When assembling Nema 184TC-face motors with XB184TC-1 flange+couplings kit, please respect positioning tolerances as per top drawing. Failure to do so can cause malfunctioning or component failure.

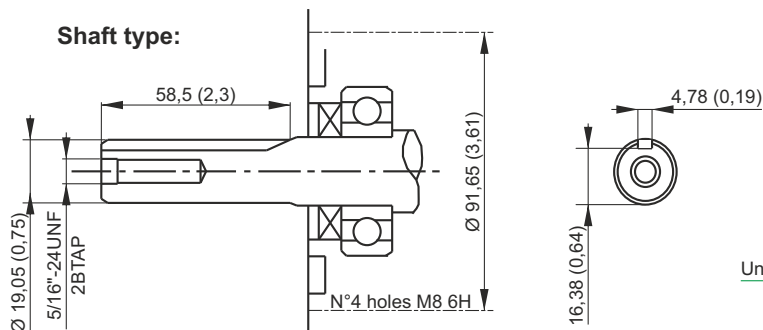
GASOLINE ENGINE



Engine type: single-cylinder, air-cooled, 4 stroke.
 Power: 5 kW
 Displacement: 208 cc
 Nominal speed: 3600 rpm
 Compression ratio: 8,2:1
 Recoil start
 Fuel: unleaded gasoline
 Fuel capacity: 3 l
 Oil: SAE 10W-40
 Oil capacity: 0,5 l
 Oil alert system
 Dry air filter
 Dry weight: 16 Kg
 Max angle of operation: 25°
 Overall dimension (mm): 400 x 360 x 400



Shaft type:



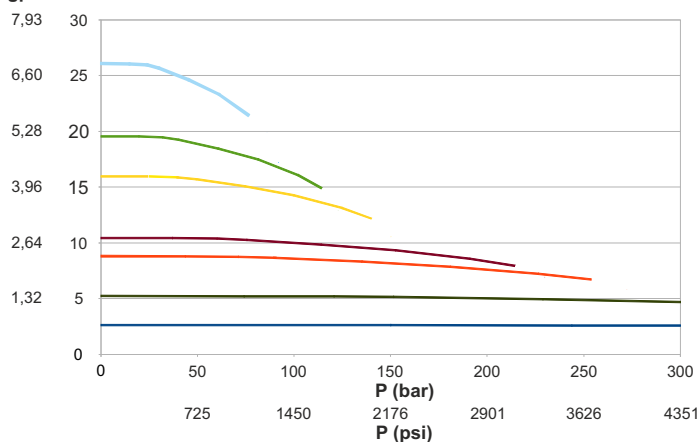
The gasoline engine is sold with no oil. Attention! FILL oil before operating the engine.
 With gasoline engines we suggest to use plastic tanks.

Code

Description	Assembly code	Spare part code
5000W gasoline engine + oil alert protection	MG50	MGE00ST50

Q
gpm l/min

GASOLINE ENGINE DIAGRAM



- Displacement 8 cc/rev
- Displacement 6 cc/rev
- Displacement 4,9 cc/rev
- Displacement 3,2 cc/rev
- Displacement 2,7 cc/rev
- Displacement 1,6 cc/rev
- Displacement 0,8 cc/rev

Flow-pressure curves parameterized on the pump displacement.
 Choose the correct motor-pump coupling according to the hydraulics required pressure value.
 Diagrams made using ISO VG46 fluid at 10°C environmental temperature.

SECTION A

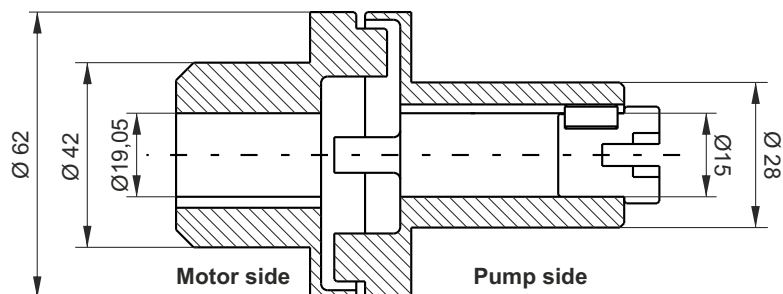
ELASTIC MOUNTING KIT FOR GASOLINE ENGINE



Kit weight: 1,9 Kg

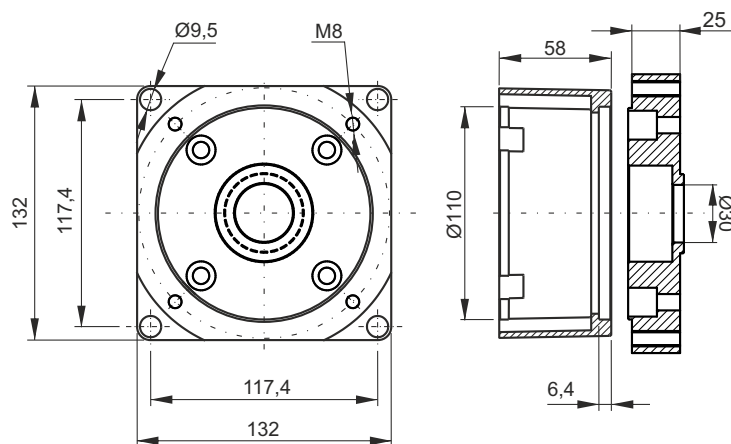
Elastic coupling

Elastic coupling **T54001010** Weight: 0,34 Kg



Adaptor flanges

Adaptor flange **FTE270000** Weight: 1,56 Kg



Description	Assembly code*	Spare part code
Elastic coupling	XB14E GE	T54001010
Gasoline engine adaptor kit flange		FTE270000

This elastic mounting kit for gasoline engine can be used also for other types of engine. For example:

- Honda GTX with Q shaft
- Kohler with 3/4" shaft
- Yanmar with E-D L48N shaft
- Yamaha with PTO type A and M. face A shaft
- Subaru with 3/4" shaft

* Note: The coupling+flange kit is already included when specifying a B14 motor in PPC assembly code. XB14GE code has to be indicated only when ordering PPC with no motor but with coupling+flange kit. For increase IP protection degree with B14 flanges you can add the optional bracket code MP001.

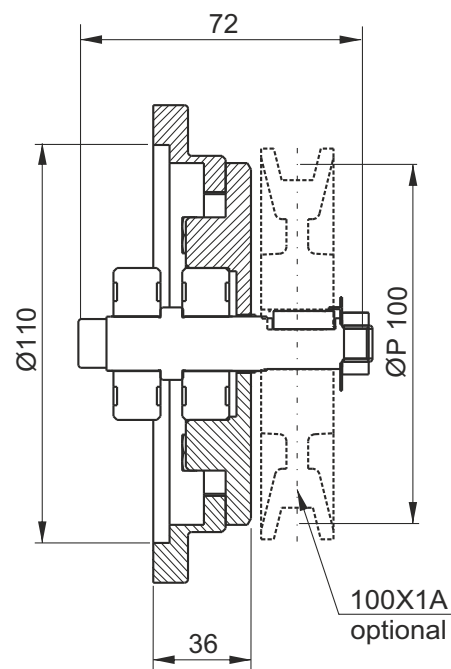
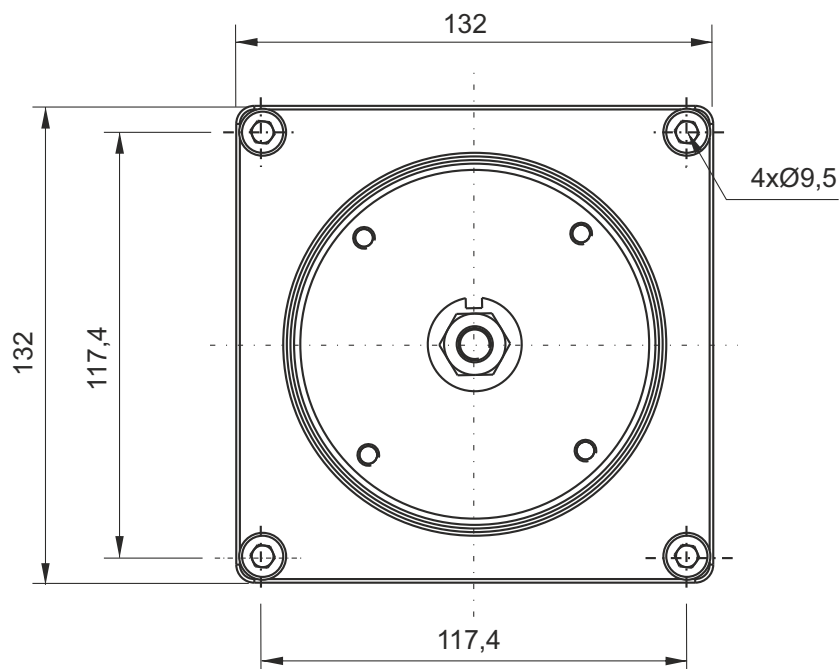
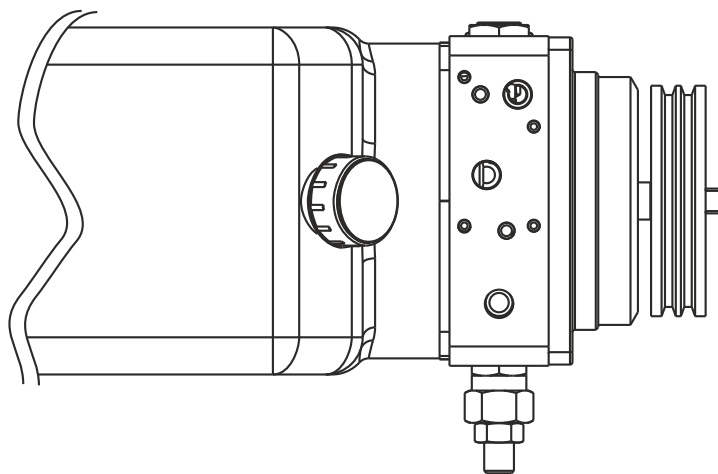
Attention! When assembling frame B14 motors with XB14 flange+coupling kit, please respect positioning tolerances as per top drawing. Failure to do so can cause malfunctioning or component failure.

PULLEY DRIVE



For pulleys mounted on shaft
Ø14mm with 5mm key

Weight: 0,70 Kg

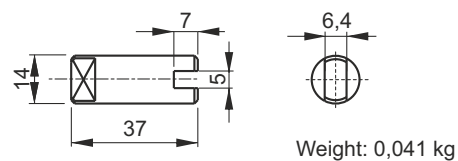


Description	Assembly code	Spare part code
Kit shaft and flange for mounting pulley	XPU1401-0 (pompa gr.0)	P46FP1401
B14 pump side half-coupling		E36200006 (gr. 0) E36200002 (gr. 1)
B14 71 adaptor flange	XPU1401-1 (pompa gr.1)	F27010001

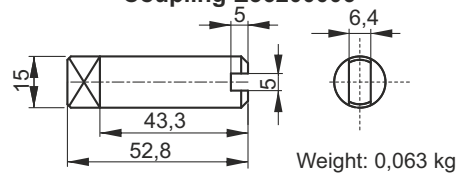
Note: The pulley kit excludes the pulley which is available on request.
The standard model has 100X1A code, suitable for V-belts with nominal diameter 100mm, 1 throat, section type A. Pulley weight 100X1A: 0,265 kg

Couplings

Pump side gr. 1
Coupling E36200002



Pump side gr. 0
Coupling E36200006



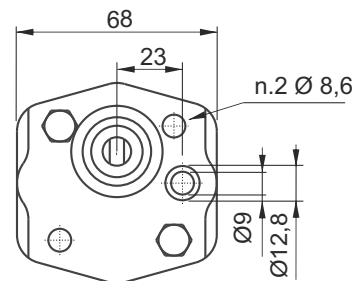
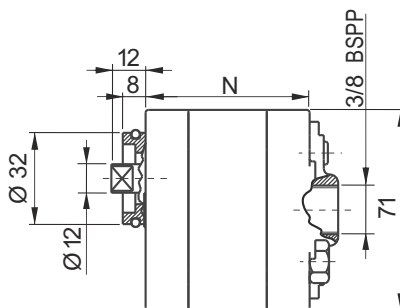
SECTION A

SUMMARY TABLE - PUMP/MOTOR COUPLING KITS

Motor	Pump	Group 0 pump	Group 1 pump
DC Ø 80		E36200006	E36200002
DC Ø 114		E36200005	E36200001
DC Ø 125		E36200005	E36200001
DC Ø 151		n/a	XB1490-1
INTEGRAL AC		E36100006	E36100000
AC B14 63		XB14 63-0 (M36100011+E36100006+F27010011)	XB14 63-1 (M36100011+E36100000+F27010011)
AC B14 71		XB14 71-0 (E36100001+E36100006+F27010001)	XB14 71-1 (E36100001+E36100000+F27010001)
AC B14 80		XB1480-0 (E36100002+E36100006+F27010002)	XB1480-1 (E36100002+E36100000+F27010002)
AC B14 90		n/a	XB1490-1 (E36100003+E36100000+F27010003)
AC B14 100/112		n/a	XB14100-1 (E36100004+E36100000+F27010004)
XB14E 100		n/a	XB14E 100 (T54001100+FTE2700100)
AC NEMA 56C		X56C-0 (E36156C01+E36100009+F27056C03)	X56C-1 (E36156C01+E36100006+F27056C03)
AC NEMA 184TC		n/a	X184TC-1 (C184TC+E36100000+X184TC03)
XB14E GE		n/a	XB14E GE (T54001010+FTE270000)
PULLEY		XPU1401-0 (P46FP1401+E36100006+F27010001)	XPU1401-1 (P46FP1401+E36100000+F27010001)

SECTION C

G SERIES GEAR PUMPS, GROUP 1



Main features

Oil temperature	-15 ÷ +80 °C
Inlet pressure	0,7 < P < 3,0 bar (absolute pressure)
Fixing bolts	2 x M8 8.8 class steel tightening torque: 21 ÷ 25 Nm
Pressure definition	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON

Standard rotation direction: clockwise (from shaft side).
Counterclockwise rotation pumps can be mounted on request.
Ask our sales department.

Spare part code

Type: 60 = Group 1	E60 60 30 **		Reference code: see below table
	Series: 30 = G		

Assembly code

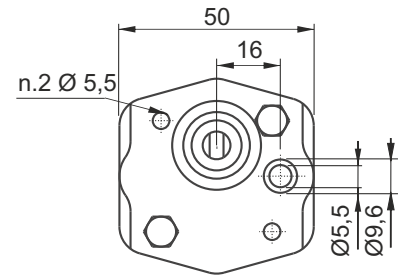
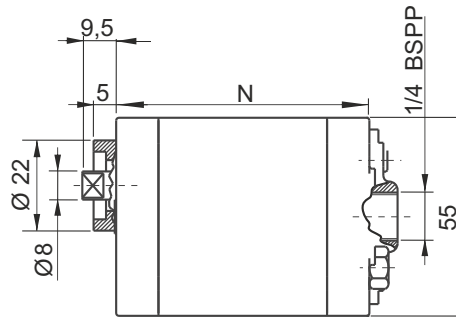
G	Series: G = Group 1 G series
1,1	Size

Available range

Nominal size	Displacement [cc/rev]	Peak pressure [bar]	Intermittent pressure [bar]	Continuous pressure [bar]	Max speed [rpm]	N [mm]	Bolts* [mm]	Code marked on pump	Spare part code	Weight [Kg]
G0,8	0,85	250	230	210	6000	36,3	M8x55	EK1PD1.3G	E60603001	0,49
G1,1	1,15	250	230	210	6000	36,7	M8x55	EK1PD1.6G	E60603002	0,50
G1,3	1,3	250	230	210	6000	37,7	M8x55	EK1PD2G	E60603003	0,51
G1,6	1,6	250	230	210	6000	38,7	M8x55	EK1PD2.5G	E60603035	0,52
G2,1	2,1	250	230	210	6000	40,2	M8x55	EK1PD3.3G	E60603004	0,54
G2,6	2,6	250	230	210	6000	42,2	M8x60	EK1PD4.2G	E60603005	0,56
G3,2	3,2	230	210	190	5000	43,7	M8x60	EK1PD5G	E60603006	0,58
G3,7	3,7	230	210	190	4500	45,7	M8x60	EK1PD5.8G	E60603007	0,61
G4,2	4,2	230	210	190	4000	47,1	M8x65	EK1PD6.7G	E60603008	0,63
G4,9	4,9	210	190	170	3500	49,2	M8x65	EK1PD7.5G	E60603009	0,65
G6,0	6,0	210	190	170	3000	52,8	M8x70	EK1PD9.2G	E60603010	1,01
G7,9	7,9	200	180	160	2100	88,2	M8x105	K1PD11.5G	E60603012	1,12
G9,8	9,8	170	150	130	1700	95,1	M8x110	K1PD15G	E60603014	1,27

* One or more washers are always fitted to secure the bolt engagement

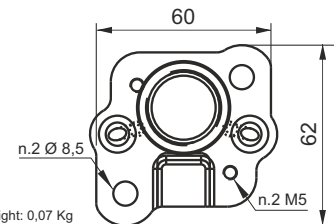
G SERIES GEAR PUMPS, GROUP 0



Main features

Oil temperature	-15 ÷ +80 °C
Inlet pressure	0,7 < P < 3,0 bar (absolute pressure)
Fixing bolts	2 x M5 8.8 class steel tightening torque: 8 ÷ 9,5 Nm
Pressure definition	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON

Aluminium adapter flange for group 0 Code: E60513025



Standard rotation direction: clockwise (from shaft side).
Counterclockwise rotation pumps can be mounted on request.
Ask our sales department.

Spare part code

Type: 50 = Group 0	E60 50 30 **	Reference code: see below table
	Series: 30 = G	

Assembly code

G	Series: G = Group 0 G series
0,4	Size

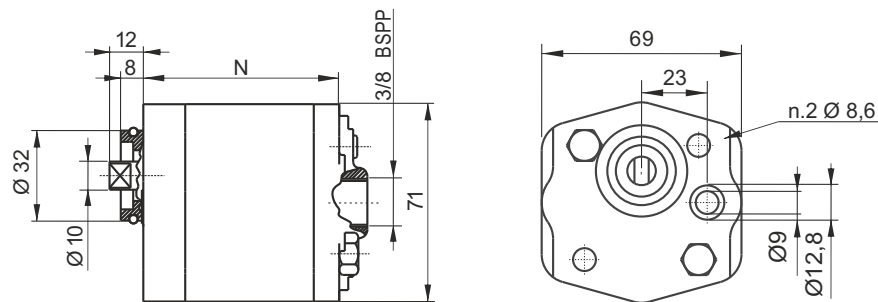
Available range

Nominal size	Displacement [cc/rev]	Peak pressure [bar]	Intermittent pressure [bar]	Continuous pressure [bar]	Max speed [rpm]	N [mm]	Bolts* [mm]	Code marked on pump	Spare part code	Weight [Kg]
G0,1	0,19	230	210	190	7000	43,6	M5x55	UK0,25D18G	E60503001	0,49
G0,2	0,26	230	210	190	7000	44,6	M5x55	UK0,25D24G	E60503002	0,50
G0,4	0,38	230	210	190	7000	46,6	M5x60	UK0,25D36G	E60503004	0,51
G0,6	0,64	230	210	190	7000	53,5	M5x65	UK0,5D0,75G	E60503006	0,52

* One or more washers are always fitted to secure the bolt engagement
Other pumps with different displacement/pressure/speed are available on request.

SECTION C

K SERIES GEAR PUMPS, GROUP 1

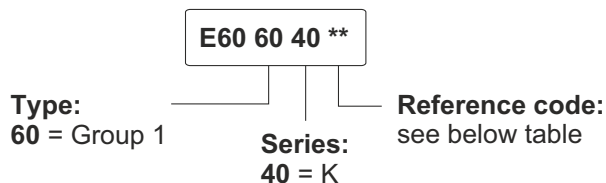


Main features

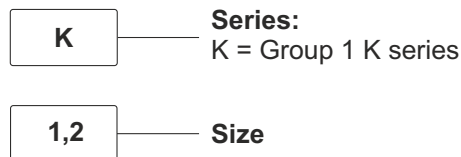
Oil temperature	-15 ÷ +80 °C
Inlet pressure	0,7 < P < 3,0 bar (absolute pressure)
Fixing bolts	2 x M8 8.8 class steel tightening torque: 21 ÷ 25 Nm
Pressure definition	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON

Standard rotation direction: clockwise (from shaft side).
Counterclockwise rotation pumps can be mounted on request.
Ask our sales department.

Spare part code



Assembly code

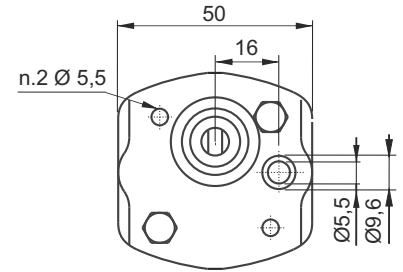
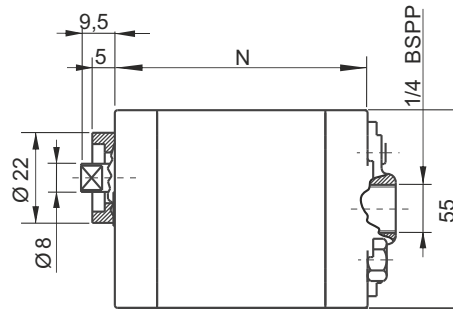


Available range

Nominal size	Displacement [cc/rev]	Peak pressure [bar]	Intermittent pressure [bar]	Continuous pressure [bar]	Max speed [rpm]	N [mm]	Bolts* [mm]	Spare part code	Weight [Kg]
K0,9	0,89	250	230	210	4500	61,6	M8x80	E60604001	0,73
K1,2	1,27	250	230	210	4500	63,1	M8x80	E60604002	0,75
K1,6	1,66	250	230	210	4500	64,6	M8x80	E60604035	0,77
K2,1	2,17	250	230	210	4500	66,3	M8x85	E60604004	0,79
K2,7	2,8	250	230	210	4500	68,8	M8x85	E60604005	0,82
K3,2	3,3	250	230	210	4500	70,4	M8x85	E60604006	0,86
K3,7	3,8	230	210	180	3600	72,5	M8x90	E60604007	0,88
K4,2	4,3	230	210	180	3600	74,3	M8x90	E60604008	0,90
K5,0	5,1	210	180	140	3000	77,3	M8x95	E60604009	0,94
K6,0	6,0	210	180	140	3000	81,3	M8x100	E60604010	0,98
K7,9	7,9	180	140	100	2800	88,9	M8x105	E60604012	1,10

* One or more washers are always fitted to secure the bolt engagement

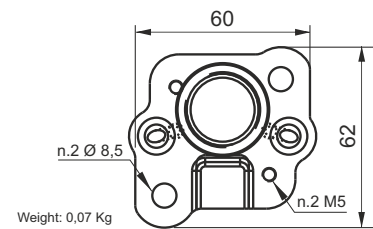
K SERIES GEAR PUMPS, GROUP 0



Main features

Oil temperature	-15 ÷ +80 °C
Inlet pressure	0,7 < P < 3,0 bar (absolute pressure)
Fixing bolts	2 x M5 8.8 class steel tightening torque: 8 ÷ 9,5 Nm
Pressure definition	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON

Aluminium adapter flange for group 0 Code: E60513025



Standard rotation direction: clockwise (from shaft side).
Counterclockwise rotation pumps can be mounted on request.
Ask our sales department.

Spare part code

E60 50 40 **	
Type: 50 = Group 0	Reference code: see below table
Series: 40 = K	

Assembly code

K	Series: K = Group 0 K series
0,4	Size

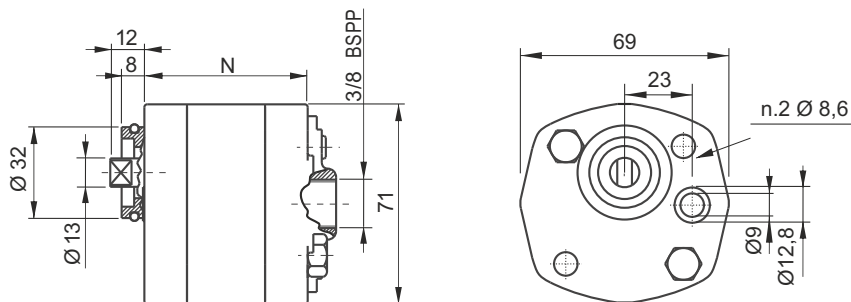
Available range

Nominal size	Displacement [cc/rev]	Peak pressure [bar]	Intermittent pressure [bar]	Continuous pressure [bar]	Max speed [rpm]	N [mm]	Bolts* [mm]	Spare part code	Weight [Kg]
K0,2	0,26	200	180	160	6000	51,9	M5x65	E60504002	0,33
K0,4	0,38	200	180	160	6000	52,9	M5x65	E60504004	0,35
K0,6	0,64	200	180	160	6000	54,9	M5x65	E60504006	0,40

* One or more washers are always fitted to secure the bolt engagement
Other pumps with different displacement/pressure/speed are available on request.

SECTION C

H SERIES HIGH PRESSURE GEAR PUMPS, GROUP 1

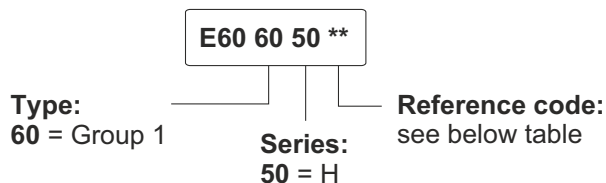


Main features

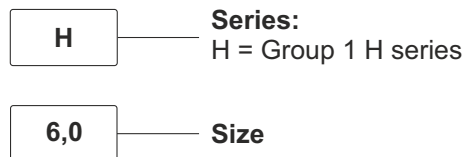
Oil temperature	-15 ÷ +80 °C
Inlet pressure	0,7 < P < 3,0 bar (absolute pressure)
Fixing bolts	2 x M8 8.8 class steel tightening torque: 21 ÷ 25 Nm
Pressure definition	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON

Standard rotation direction: clockwise (from shaft side).
Counterclockwise rotation pumps can be mounted on request.
Ask our sales department.

Spare part code



Assembly code

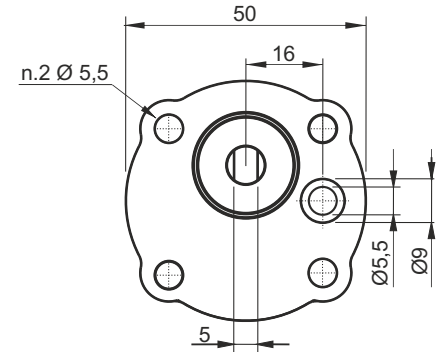
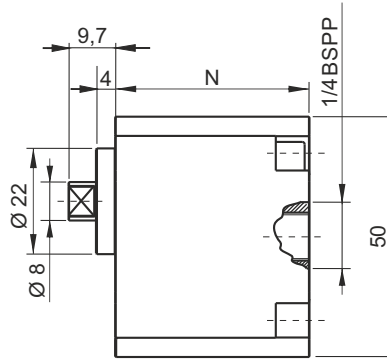


Available range

Nominal size	Displacement [cc/rev]	Peak pressure [bar]	Intermittent pressure [bar]	Continuous pressure [bar]	Max speed [rpm]	N [mm]	Bolts* [mm]	Spare part code	Weight [Kg]
H1,2	1,2	280	270	250	5000	39,8	M8x55	E60605002	0,50
H1,7	1,7	210	200	190	4500	41,5	M8x60	E60605035	0,52
H2,2	2,2	280	270	250	4500	44,4	M8x60	E60605004	0,54
H2,6	2,6	280	270	250	4500	45,8	M8x60	E60605005	0,56
H3,2	3,2	280	270	250	4000	52,2	M8x70	E60605006	0,58
H3,8	3,8	280	270	250	3800	54,2	M8x70	E60605007	0,61
H4,2	4,3	280	270	250	3500	54,7	M8x70	E60605008	1,05
H4,7	4,7	320	310	300	3200	84,0	M8x100	E60605009	1,12
H6,0	6,0	280	270	250	3000	87,3	M8x105	E60605010	1,22
H7,4	7,4	230	210	190	2000	97,4	M8x115	E60605012	1,80

* One or more washers are always fitted to secure the bolt engagement

H SERIES HIGH PRESSURE GEAR PUMPS, GROUP 0

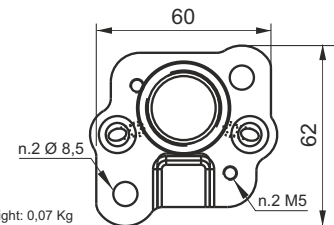


Main features

Oil temperature	-15 ÷ +80 °C
Inlet pressure	0,7 < P < 3,0 bar
Fixing bolts	2 x M5 8.8 steel class tightening torque: 25 Nm
Pressure definition	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON

Aluminium adapter flange for group 0

Code: E60513025



Weight: 0,07 Kg

Standard rotation direction: clockwise rotation (from shaft side).
Counterclockwise rotation pumps can be mounted on request.
Ask our sales department.

Spare part code

Type:	E60 50 50 **		Reference code: see below table
	50 = Group 0	Series: 50 = H	

Assembly code

H	Series: H = Group 0 H series
0,6	Size

Available range

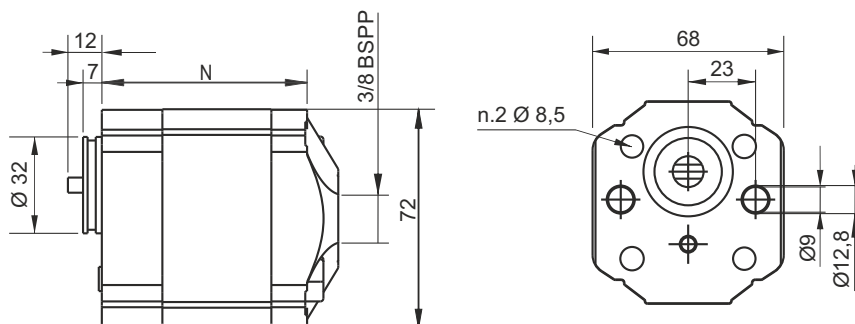
Nominal size	Displacement [cc/rev]	Peak pressure [bar]	Intermittent pressure [bar]	Continuous pressure [bar]	Max speed [rpm]	N [mm]	Bolts* [mm]	Spare part code	Weight [Kg]
H0,1	0,2	280	270	250	7000	36,4	M5x50	E60505001	0,26
H0,2	0,26	280	270	250	7000	36,8	M5x50	E60505002	0,27
H0,4	0,38	280	270	250	7000	37,8	M5x50	E60505004	0,27
H0,6	0,64	280	270	250	7000	39,5	M5x50	E60505006	0,28

* One or more washers are always fitted to secure the bolt engagement

Other pumps with different displacement/pressure/speed are available on request.

SECTION C

R SERIES BIDIRECTIONAL GEAR PUMPS, GROUP 1



Main features

Oil temperature	-15 ÷ +80 °C
Inlet pressure	0,7 < P < 3,0 bar (absolute pressure)
Fixing bolts	2 x M8 8.8 class steel tightening torque: 21 ÷ 25 Nm
Pressure definition	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON

Spare part code

E60 60 35 **		Reference code: see below table
Type: 60 = Group 1	Series: 35 = R	

Assembly code

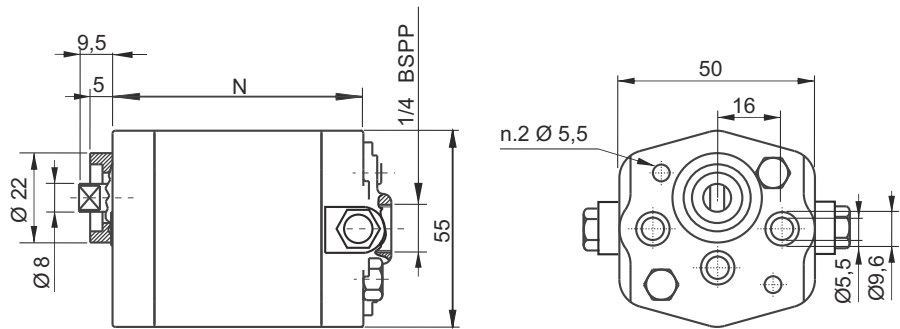
R	Series: R = Group 1 R series
3,2	Size

Available range

Nominal size	Displacement [cc/rev]	Peak pressure [bar]	Intermittent pressure [bar]	Continuous pressure [bar]	Max speed [rpm]	N [mm]	Bolts* [mm]	Spare part code	Weight [Kg]
R2,1	2,2	270	260	250	4000	68,7	M8x85	E60603504	0,92
R2,6	2,6	270	260	250	4000	70,5	M8x85	E60603505	0,95
R3,2	3,2	240	230	220	4000	72,8	M8x90	E60603506	0,98
R4,3	4,3	150	140	130	4000	76,4	M8x95	E60603508	1,05
R6,5	6,5	120	110	100	3500	83,2	M8x100	E60603510	1,32

* One or more washers are always fitted to secure the bolt engagement
Other pumps with different displacement/pressure/speed are available on request.

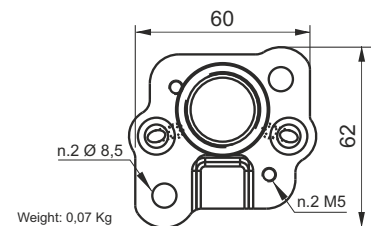
R SERIES BIDIRECTIONAL GEAR PUMPS, GROUP 0



Main features

Oil temperature	-15 ÷ +80 °C
Inlet pressure	0,7 < P < 3,0 bar (absolute pressure)
Fixing bolts	2 x M5 8.8 class steel tightening torque: 8 ÷ 9,5 Nm
Pressure definition	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON

Aluminium adapter flange for group 0 Code: E60513025



Spare part code

Type: 50 = Group 0	E60 50 35 **	Reference code: see below table
	Series: 35 = R	

Assembly code

R	Series: R = Group 0 R series
1,3	Size

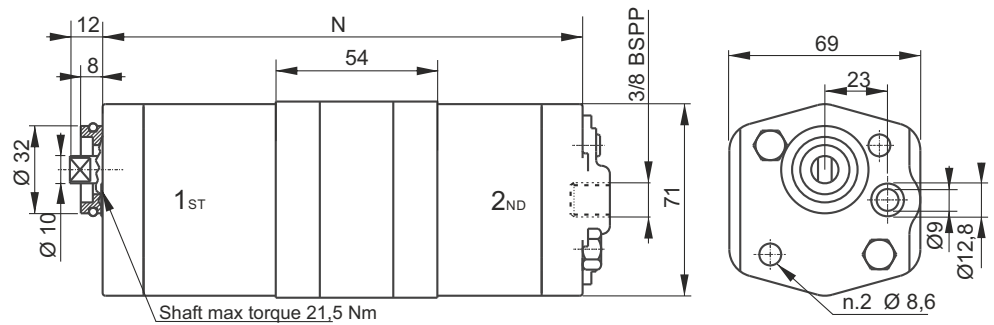
Available range

Nominal size	Displacement [cc/rev]	Peak pressure [bar]	Intermittent pressure [bar]	Continuous pressure [bar]	Max speed [rpm]	N [mm]	Bolts* [mm]	Spare part code	Weight [Kg]
R0,1	0,19	190	170	150	7000	44,5	M5x55	E60503501	038
R0,2	0,26	190	170	150	7000	45,6	M5x55	E60503502	0,39
R0,3	0,32	190	170	150	7000	46,5	M5x60	E60503503	0,42
R0,4	0,38	190	170	150	7000	47,7	M5x60	E60503504	0,43
R0,5	0,51	190	170	150	7000	49,6	M5x60	E60503505	0,44
R0,7	0,64	190	170	150	7000	55,6	M5x65	E60503506	0,46
R0,9	0,88	190	170	150	7000	56,6	M5x70	E60503509	0,48
R1,3	1,25	190	170	150	5000	59,6	M5x70	E60503513	0,49
R1,5	1,5	190	170	150	4000	61,6	M5x75	E60503515	0,58

* One or more washers are always fitted to secure the bolt engagement
Other pumps with different displacement/pressure/speed are available on request.

SECTION C

K SERIES TANDEM GEAR PUMPS, GROUP 1



Common 3/8" BSPP inlet port (on the rear cover) alternatively individual side inlet ports are available

Main features

Oil temperature	-15 ÷ +80 °C
Inlet pressure	0,7 < P < 3,0 bar (absolute pressure)
Fixing bolts	2 x M8 8.8 class steel tightening torque: 21 ÷ 25 Nm
Pressure definition	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON

Choosing the right pump combination:

- Check that the power absorption of the front element is equal to or higher than the rear one
- Pump performance and features are the same as the details of the corresponding single pumps
- Tandem pump maximum rotation speed is determined by the lowest speed between maximum rotation speeds of each single pump.
- Torque applied on the shaft of the front pump is the sum of the torques absorbed by the two pumps (see above diagram); this value must never go over the limit allowed for the shaft (21,5 Nm).

Spare part code

Type:
60 = Group 1

Reference code:
see below table

Series:
HL = Hi-Lo

E60 60 ** ** HL

Assembly code

K — **Series:**
K = Group 1 K series

1,2 — **Size 1st section**

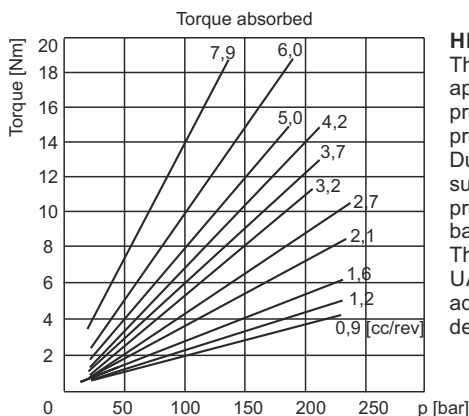
+

5 — **Size 2nd section**

HL — **Option:**
Hi - Lo execution

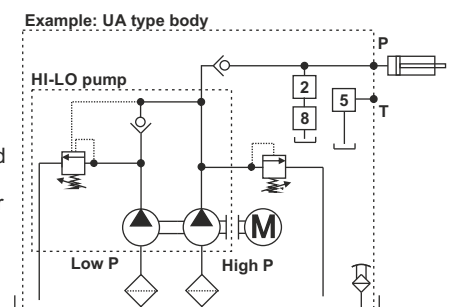
Available range

Nominal size	Displacement [cc/rev]	Peak pressure [bar]	Intermittent pressure [bar]	Continuous pressure [bar]	Preset unloading pressure* [bar]	Max speed [rpm]	N [mm]	Bolts** [mm]	Spare part code	Weight [Kg]
K0,9+3,2HL	0,89 + 3,3	250	230	210	42±5	1750	133,2	M8x150	E60600932HL	2,12
K1,2+5,0HL	1,27 + 5,1	250	230	210	42±5	1750	141,3	M8x160	E60601250HL	2,29



HI-LO

This is an efficient and energy saving solution for applications where a fast approach and a high pressure working phase are needed (industrial presses, garbage compactors, balers,...). During the high speed phase both pumps are supplying flow to the system while during the high pressure phase, the low pressure pump is discharged back to tank with no load. This solution can be conveniently assembled with our UA or UB or U4 central manifold without any additional kit. Ask to our technical office for more details.

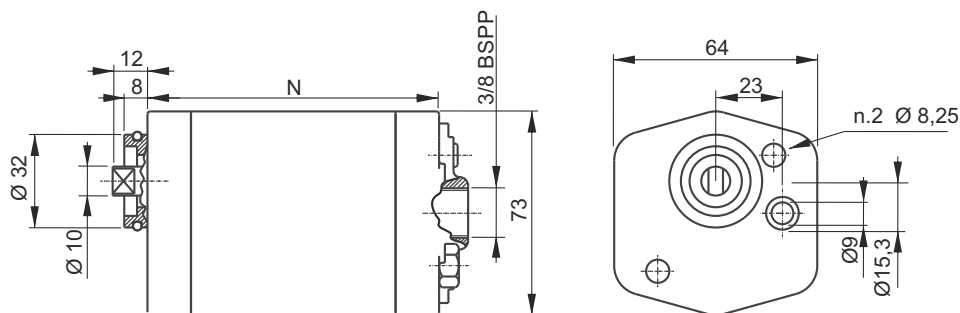


* One or more washers are always fitted to secure the bolt engagement

Other pumps with different displacement/pressure/speed are available on request.

* Preset value of the unloading valve can be adjusted between 15 - 60 bar.

S SERIES HELICOIDAL GEAR SILENT PUMPS, GROUP 1



Main features

Oil temperature	-15 ÷ +80 °C
Inlet pressure	0,7 < P < 3,0 bar (absolute pressure)
Fixing bolts	2 x M8 8.8 class steel tightening torque: 21 ÷ 25 Nm
Pressure definition	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON

Standard rotation direction: clockwise (from shaft side).
Counterclockwise rotation pumps can be mounted on request.
Ask our sales department.

Spare part code

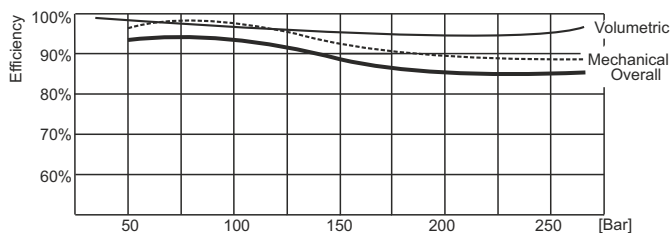
Series: S = Silent	S60 60 30 **	Reference code: see below table
	Type: 60 = Group 1	

Assembly code

S	Series: S = Group 1 S series
5,0	Size

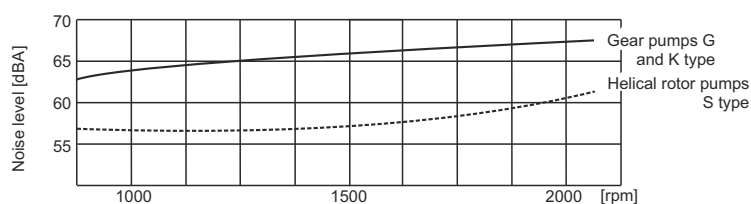
Available range

Nominal size	Displacement [cc/rev]	Peak pressure [bar]	Intermittent pressure [bar]	Continuous pressure [bar]	Max speed [rpm]	N [mm]	Bolts* [mm]	Noise level [dBA]**	Spare part code	Weight [Kg]
S2,2	2,2	280	250	210	3500	66,4	M8x85	50	S60603004	0,85
S3,2	3,2	280	250	210	3200	70,2	M8x85	51	S60603006	0,9
S4,3	4,3	280	250	210	2800	81,8	M8x100	52	S60603008	0,95
S5,0	5,0	260	235	210	2000	83,8	M8x100	52	S60603009	1,1
S6,0	6,4	210	190	180	2000	87	M8x105	57	S60603010	2,03
S8,3	8,3	210	190	150	3600	98,0	M8x115	57	S60603012	2,08
S10	10,2	190	170	126	3600	103,0	M8x120	57	S60603014	2,12
S13	12,9	160	140	99	3600	108,9	M8x125	57	S60603016	2,15



Note: reference values measured at 1500rpm with oil ISO VG 46 cSt at 40 °C.

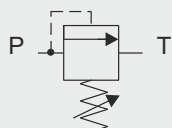
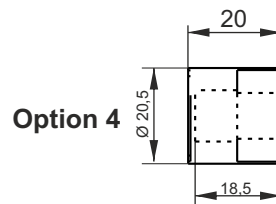
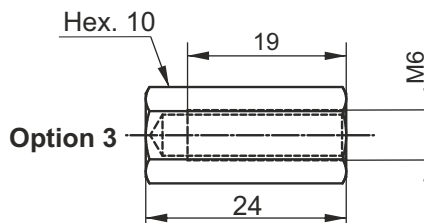
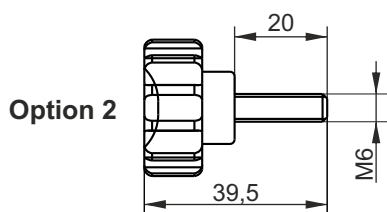
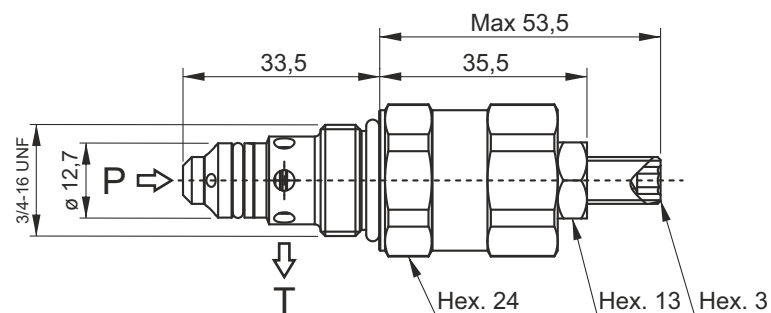
* One or more washers are always fitted to secure the bolt engagement



** The noise level is for guidance only since it depends on the values of the resonance of the mounting structure and other components of the system.

SECTION D

VMDC20 - DIRECT ACTING MAIN RELIEF VALVE



Main features

Max pressure	350 bar
Max flow	20 l/min
Weight	0,14 kg

Recommended tightening torque: 40 Nm
Recommended filtration: 25 + 50 μ
Oil temperature: -30 + + 80 °C

Spare part code

VMDC	Relief valve
20	Nominal size: 20 = 20 l/min
B	Working range: A = 3 ÷ 60 bar B = 40 ÷ 120 bar C = 80 ÷ 250 bar D = 150 ÷ 350 bar
1	Option: 1 = M6 screw (std) 2 = handwheel 3 = with cap 4 = plastic seal

Assembly code

V*** "

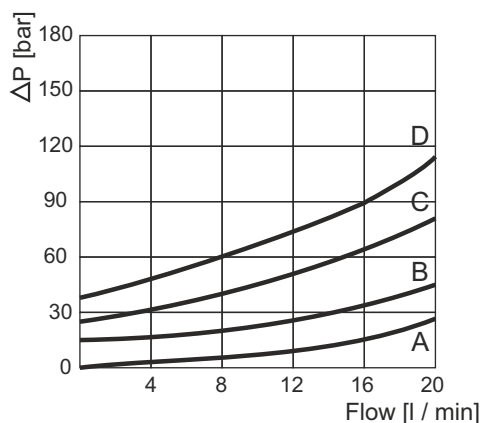
where *** stands for max setting pressure [bar]. Ex. V200
where " is the option

Mounting cavities

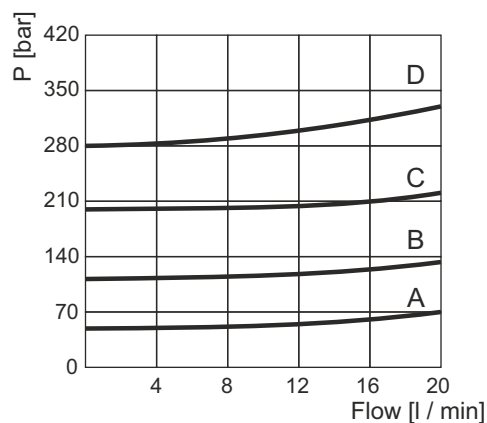
0	1		
2	3	4	
5	6	7	8

Note: cavities 3, 4 and 6 are present on central manifold type UB only.

Minimum setting pressure

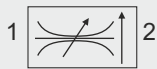
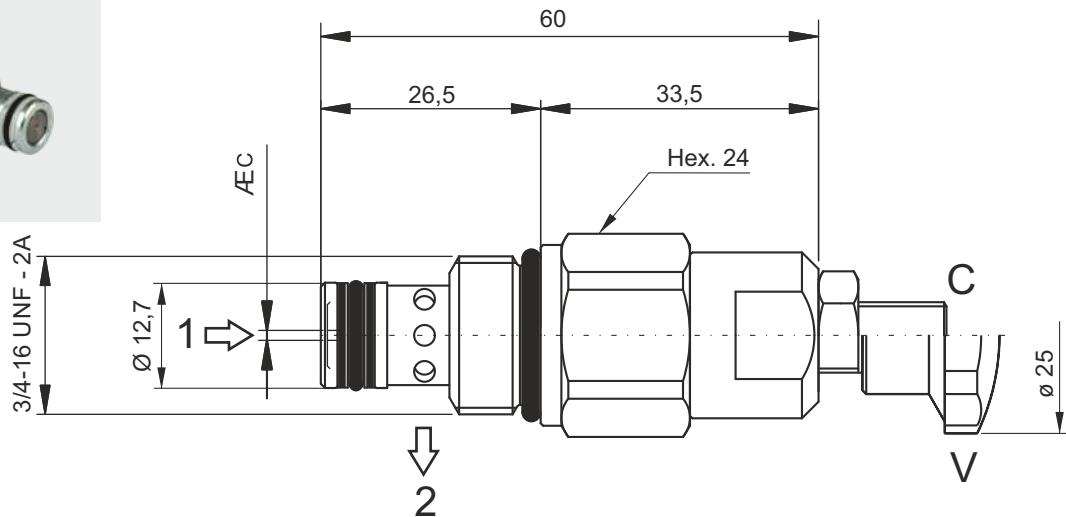


Pressure vs Flow



Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature

VCF6 - PRESSURE COMPENSATED FLOW CONTROL VALVE



Main features

Max pressure	350 bar
Max flow	18 l/min
Weight	0,11 kg

Recommended tightening torque: 25 Nm
Recommended filtration: 25 ÷ 50 µ
Oil temperature: -30 ÷ + 80 °C

Spare part code

VCF6	Flow control valve pressure compensated
*	Nominal dimension: see below table
C	Adjustment: C = screw (std) V = handwheel

Assembly code

R *

Where * stands for nominal dimension

Mounting cavities

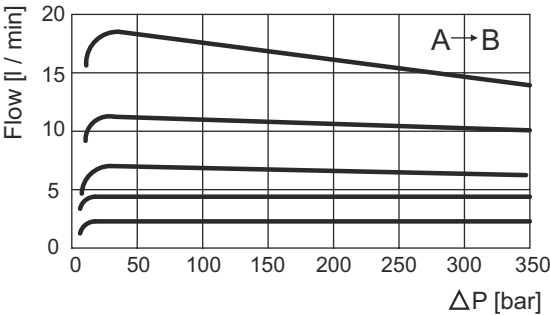
0	1		
2	3	4	
5	6	7	8

Note: cavities 3, 4 and 6 are present on central manifold type UB only.

Range available

Nominal dimension	Æ C	Controlled flow at 100 bar ± 10% l/min
2	0,6	1,0 ÷ 2,2
3	1,0	1,6 ÷ 4,0
4	1,2	2,5 ÷ 5,0
5	1,8	3,0 ÷ 7,0
6	2,8	4,9 ÷ 10,8
7	4,8	8,0 ÷ 18,5

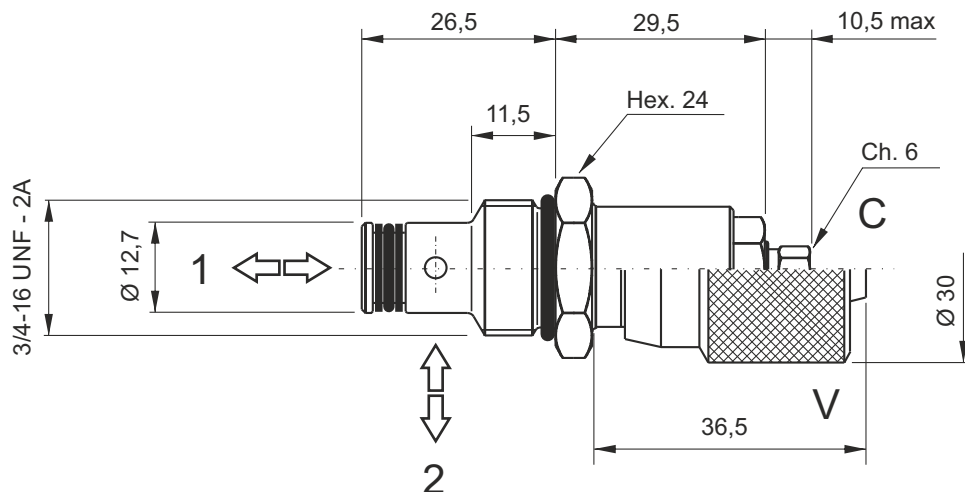
Pressure drop diagram



Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature

SECTION D

CSB - BIDIRECTIONAL FLOW CONTROL VALVE



Main features

Max pressure	300 bar
Max flow	15 l/min
Weight	0,08 kg

Recommended tightening torque: 25 Nm
Recommended filtration: 25 + 50 μ
Oil temperature: -30 + 80 °C

Spare part code

CSB	Flow control valve
04	Nominal size: 04 = 3/4-16 UNF
C	Adjustment: C = screw (std) V = handwheel

Assembly code

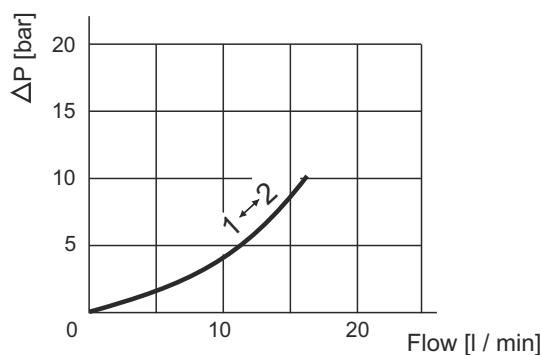
S

Mounting cavities

0	1		
2	3	4	
5	6	7	8

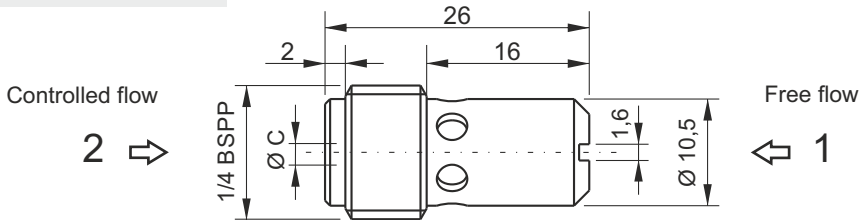
Note: cavities 3, 4 and 6 are present on central manifold type UB only.

Pressure drop diagram

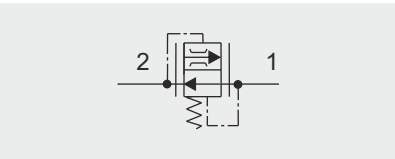
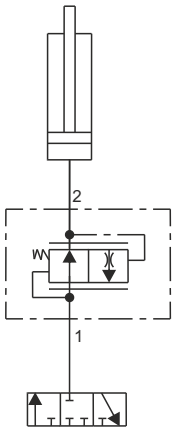


Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature

VSC01 - PRESSURE COMPENSATED FIXED FLOW CONTROL VALVE



Typical application



Main features

Max pressure	300 bar
Max flow	22 l/min
Weight	0,012 kg

Recommended tightening torque: 15 Nm
Recommended filtration settings: 25 ÷ 50 µ
Oil temperature: -30 ÷ + 80 °C

Spare part code

VSC	Flow control valve pressure compensated
01	Nominal size: 01
*	Controlled flow: see below table

Assembly code

*(01)

Where * stands for controlled flow
[l/min]

Mounting cavities

0	1		
2	3	4	
5	6	7	8

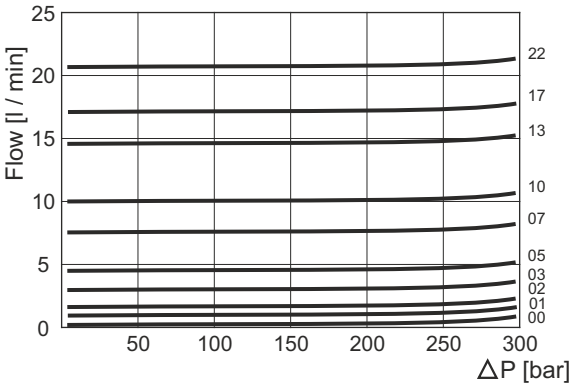
Note: cavities 3, 4 and 6 are present
on central manifold type UB only.

Controlled flow

Spare part code	Ø C [mm]	Portata [l/min]
VSC0100	0,8	1
VSC0101	1	1,5
VSC0102	1,25	2
VSC0103	1,5	3
VSC0105	1,75	5
VSC0107	2	7
VSC0110	2,5	10
VSC0113	2,75	13
VSC0117	3	17
VSC0122	3,5	22

Note: nominal controlled flows, measured at 100 bar with an oil viscosity of 46 cSt at 50 °C, are to be taken as general reference values and must be tested in the field.

Pressure drop diagram



Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature

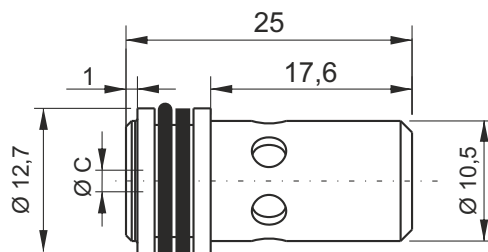
SECTION D

VSC04 - PRESSURE COMPENSATED FIXED FLOW CONTROL VALVE



Controlled flow

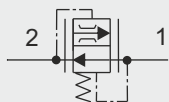
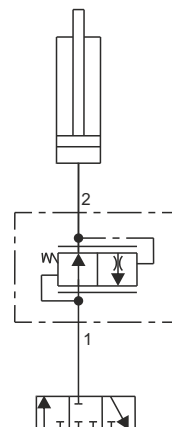
2 →



Free flow

← 1

Typical application



Main features

Max pressure	300 bar
Max flow	22 l/min
Weight	0,012 kg

Spare part code

VSC	Flow control valve pressure compensated
04	Nominal size: 04
*	Controlled flow: see below table

Assembly code

*(04)

Where * stands for controlled flow [l/min]

Mounting cavities

0	1		
2	3	4	
5	6	7	8

Note: cavities 3, 4 and 6 are present on central manifold type UB only.

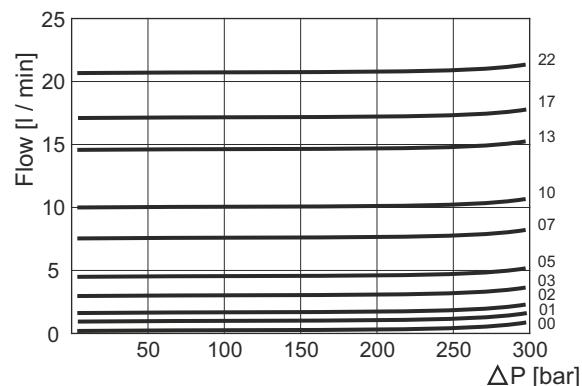
Mounting cavity dimension: 12,7 H8
Recommended filtration settings: 25 ÷ 50 µ
Oil temperature: -30 ÷ + 80 °C

Controlled flow

Spare part code	Ø C [mm]	Portata [l/min]
VSC0400	0,8	1
VSC0401	1	1,5
VSC0402	1,25	2
VSC0403	1,5	3
VSC0405	1,75	5
VSC0407	2	7
VSC0410	2,5	10
VSC0413	2,75	13
VSC0417	3	17
VSC0422	3,5	22

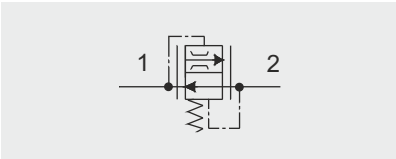
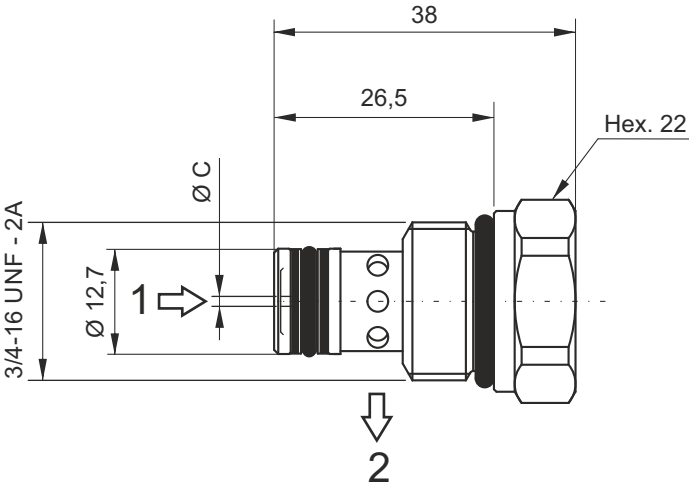
Note: nominal controlled flows, measured at 100 bar with an oil viscosity of 46 cSt at 50 °C, are to be taken as general reference values and must be tested in the field.

Pressure drop diagram



Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature

VSC6 - PRESSURE COMPENSATED FIXED FLOW CONTROL VALVE



Main features

Max pressure	350 bar
Max flow	22 l/min
Weight	0,06 kg

Recommended tightening torque: 25 Nm
Recommended filtration: 25 + 50 µ
Oil temperature: -30 + + 80 °C

Spare part code

VSC	Flow control valve pressure compensated
6	Nominal size: 6
*	Controlled flow: see below table

Assembly code

F*

Where * stands for controlled flow [l/min]

Mounting cavities

0	1		
2	3	4	
5	6	7	8

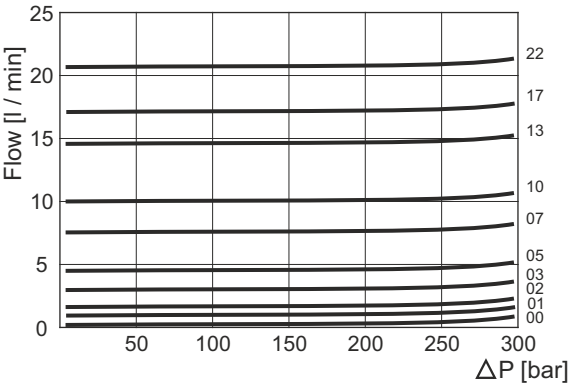
Note: cavities 3, 4 and 6 are present on central manifold type UB only.

Controlled flow

Spare part code	Ø C [mm]	Portata [l/min]
VSC600	0,8	1
VSC601	1	1,5
VSC602	1,25	2
VSC603	1,5	3
VSC605	1,75	5
VSC607	2	7
VSC610	2,5	10
VSC613	2,75	13
VSC617	3	17
VSC622	3,5	22

Note: nominal controlled flows, measured at 100 bar with an oil viscosity of 46 cSt at 50 °C, are to be taken as general reference values and must be tested in the field.

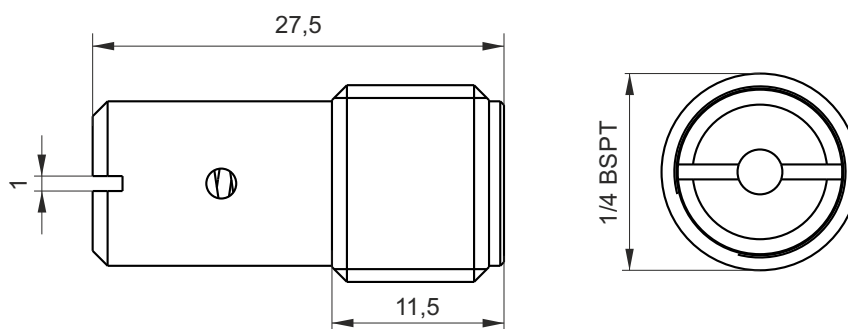
Pressure drop diagram



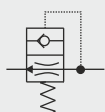
Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature

SECTION D

SUV01 - START-UP VALVE FOR SINGLE PHASE ELECTRIC MOTORS



SUV01 valve is to be mounted in cavity 9 of the central manifold, after its proper machining (drilling and threading). The function of this valve is to discharge the pressure inside the central manifold line between the pump and the check valve in cavity 0, when the power pack is off. It is typically used with single-phase motor starting under load, overcoming the inherent limitation of single phase AC induction motors.



Main features

Max pressure	300 bar
Max flow	22 l/min
Min flow	2 l/min
Weight	0,0025 kg

Recommended tightening torque: 15 Nm
Recommended filtration: 25 ÷ 50 µ
Oil temperature: -10 ÷ + 80 °C

Spare part code

SUV	Start-up valve for single phase electric motors
01	Nominal size: 01 = 1/4 BSPP
A	Flow reference: see below table for the proper choice depending on pump flow and fluid temperature

Assembly code

S01*

Where * stands for the setting

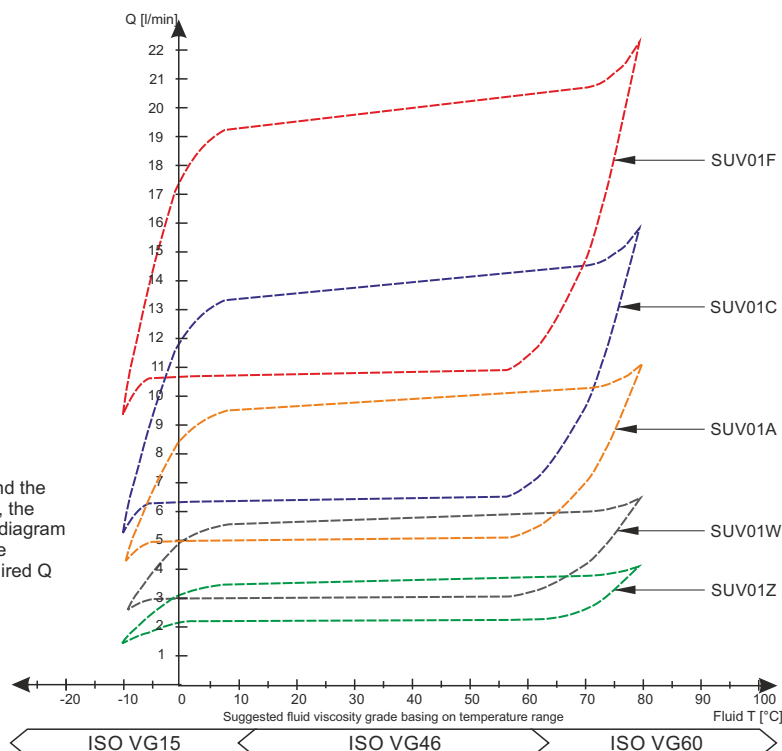
Mounting cavities

0	1			
2	3	4		
5	6	7	8	9

Note: cavities 3, 4 and 6 are present on central manifold type UB only.

Working limits diagram

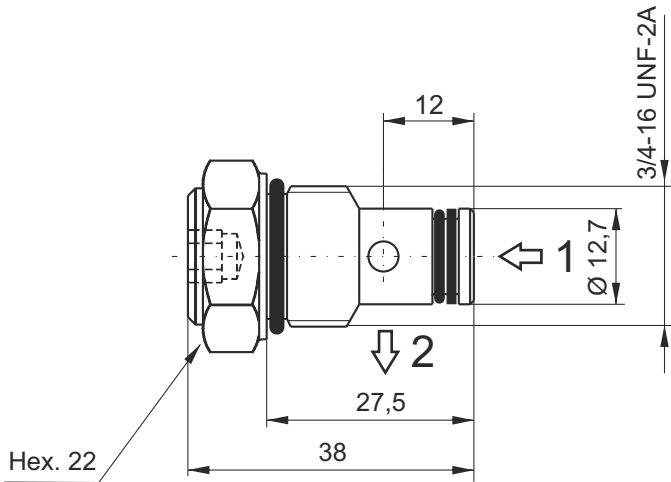
Once the required power pack flow and the fluid working temperature are defined, the proper valve can be chosen from the diagram aside. Try to choose the valve with the working area most centered with required Q and T.



VUC20 - MAIN CHECK VALVE



The optional pressure port "F" may be used to connect a gauge to measure static pressures. Due to the nature of this Check Valve it will not always capture instantaneous pressure.



Main features

Max pressure	350 bar
Max flow	25 l/min
Weight	0,052 kg
Pressione di apertura	0,5 bar

Recommended tightening torque: 25 Nm
Recommended filtration: 25 + 50 μ
Oil temperature: -30 + 80 °C

Spare part code

VUC	Check valve
20	Nominal size: 20
*	Options: - = no options F = pressure port F 1/4 BSP FP = pressure port closed with a 1/4 BSP plug

Assembly code

J *

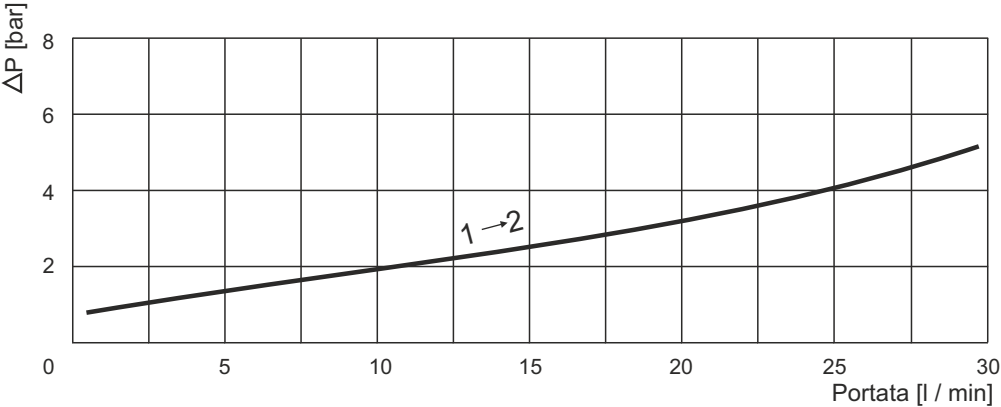
where * is the option

Mounting cavities

0	1		
2	3	4	
5	6	7	8

Note: cavities 3, 4 and 6 are present on central manifold type UB only.

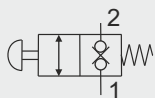
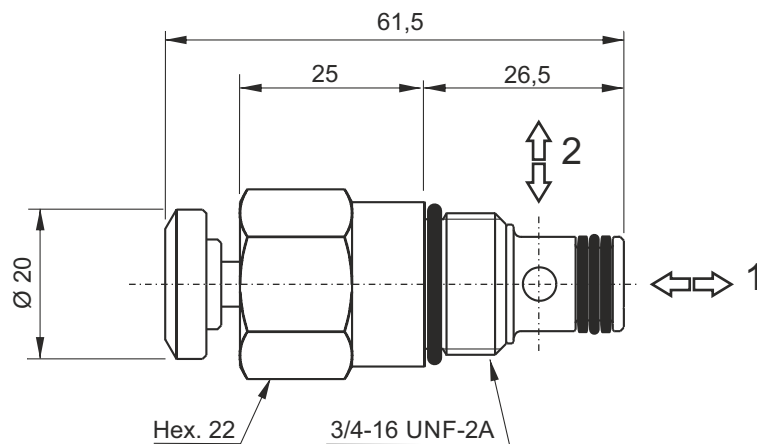
Pressure drop diagram



Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature

SECTION D

CPE - MANUAL EMERGENCY VALVE



Main features

Max pressure	300 bar
Max flow	25 l/min
Weight	0,12 kg

Recommended tightening torque: 25 Nm
Recommended filtration: 25 + 50 µ
Oil temperature: -30 + + 80 °C

Spare part code

CPE	Two-way manual emergency valve
04	Nominal size: 04 = 3/4-16 UNF
P	Operating device: P = press button

Assembly code

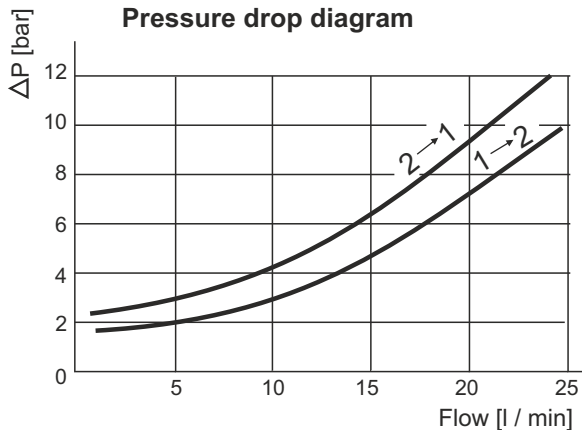
Z

Mounting cavities

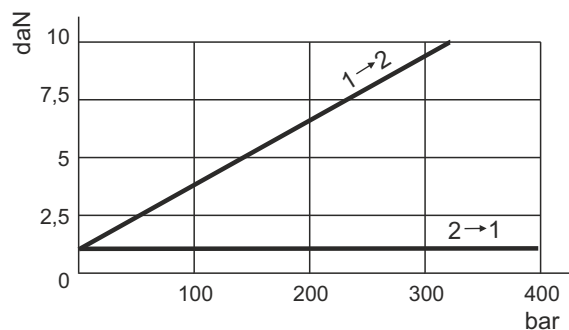
0	1		
2	3	4	
5	6	7	8

Note: cavities 3, 4 and 6 are present on central manifold type UB only.

Pressure drop diagram

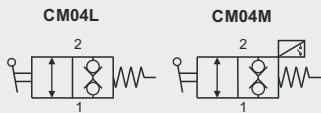
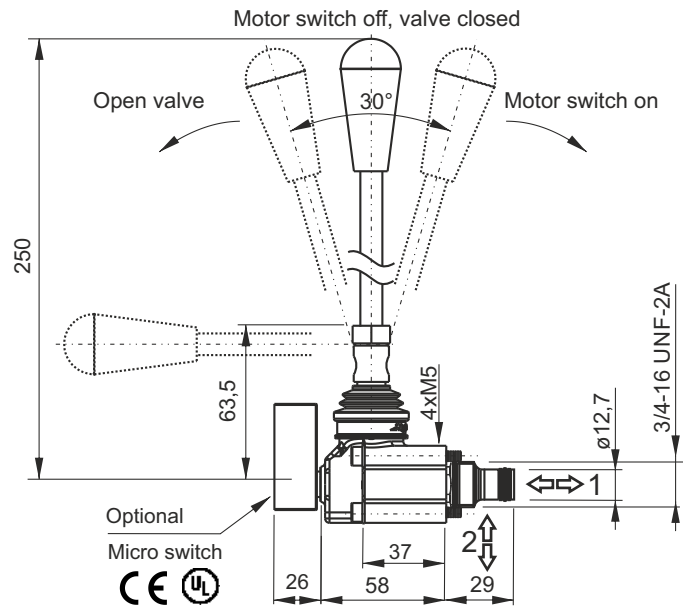
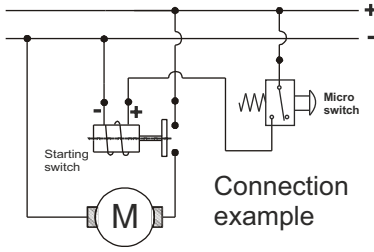


Operating force (daN) on the button



Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature

CM - MANUAL LEVER VALVE



Main features

Max pressure	300 bar
Max flow	25 l/min
Weight	0,34 kg
Max current	10 A - 400 V
Protection	IP20 (up to IP65 on request)
Room temp.	-25°C ÷ +85°C (higher temperature on request)

Fixing bolts: 4 x M5x45 (torque 5Nm)
 Cartridge tightening torque: 25Nm
 Recommended filtration: 25 ÷ 50 µ
 Oil temperature: -30 ÷ + 80 °C

Spare part code

CM	Two-way manual lever valve
04	Nominal size: 04 = 3/4-16 UNF
L	Type: L = lever (std) M = lever+micro switch

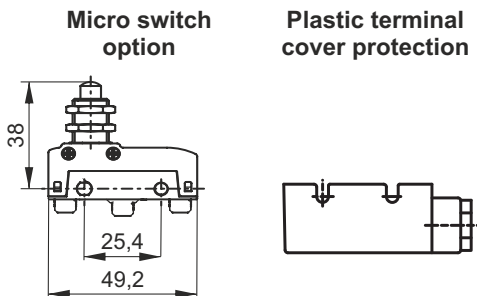
Assembly code

E (CM04L)
 EM (CM04M)

Mounting cavities

0	1		
2	3	4	
5	6	7	8

Note: cavities 3, 4 and 6 are present on central manifold type UB only.



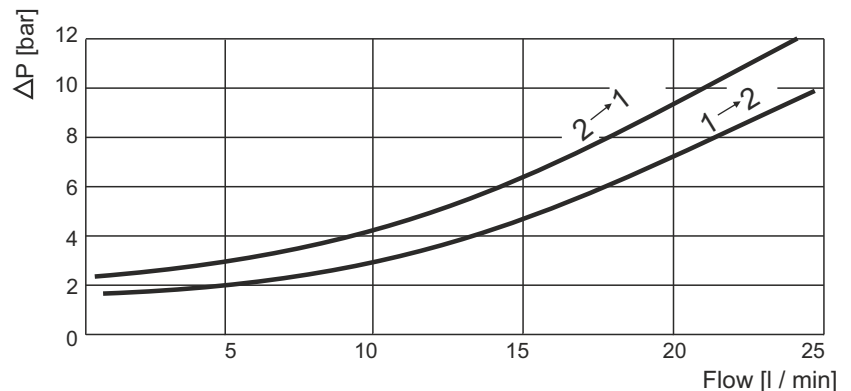
Spare part code

MCR1222

Spare part code

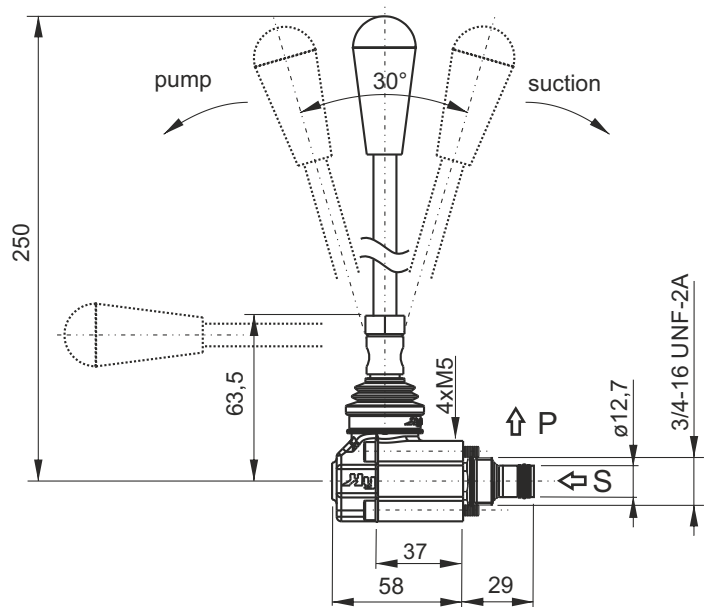
VFC02

Pressure drop diagram



Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature

PMC - CARTRIDGE HAND PUMP



Main features

Max pressure	180 bar
Max flow	-
Weight	0,34 kg

Fixing bolts: 4x M5x45 (tightening torque: 5Nm)
Cartridge tightening torque: 25Nm
Recommended filtration: 25 + 50 μ
Oil temperature: -30 + + 80 °C

Spare part code

PMC	Hand pump
02	Nominal size: 02 = 2 cc/stroke
L	Type: L = lever (std)

Assembly code

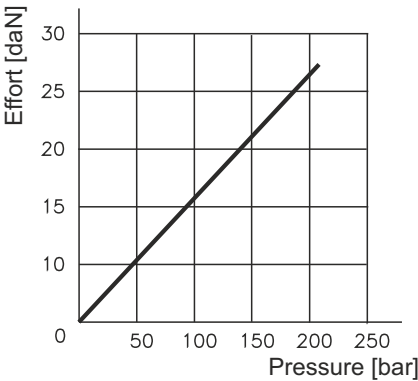
U

Mounting cavities

0	1		
2	3	4	
5	6	7	8

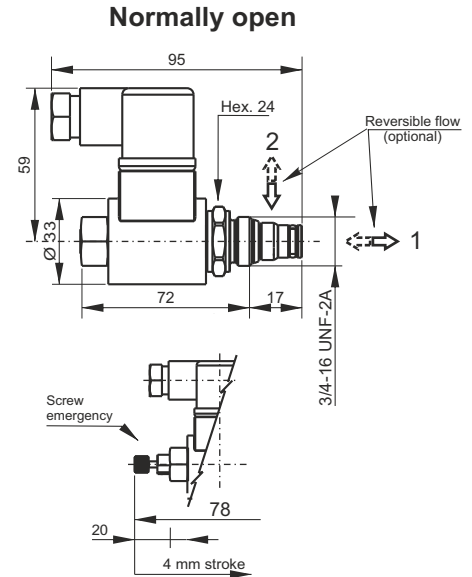
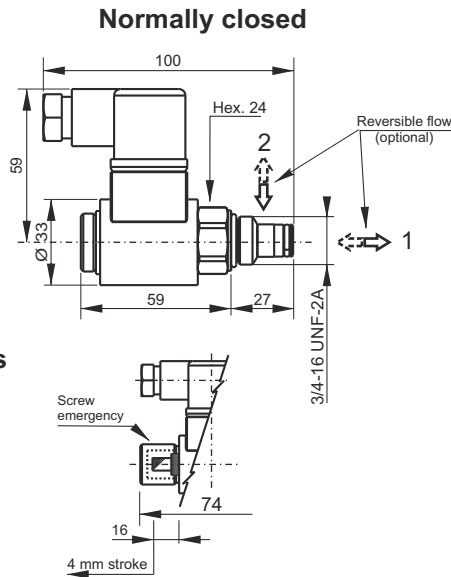
Note: cavities 3, 4 and 6 are present on central manifold type UB only.

Effort (daN)
operating on the lever end

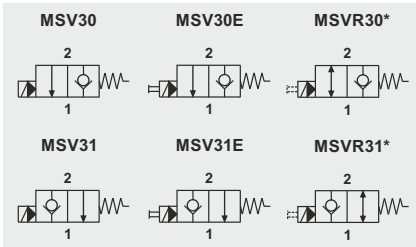
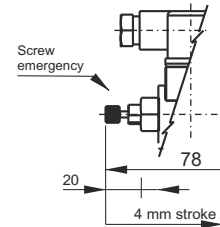
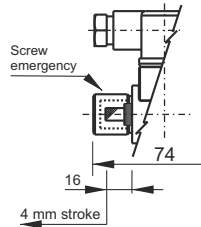


Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature

MSV - PILOT OPERATED TWO-WAY SINGLE LOCKING SOLENOID VALVES



Options



Main features

Max pressure	up to 350 bar
Max flow	up to 40 l/min
Weight	0,11 Kg (without coil)
Internal leakage	5 drops/min at 350bar
Response time	30ms (energizing) 50ms (de-energizing)
Available voltages	12VDC 24VDC 24VAC 110RAC 220RAC
Coils (see coils table)	M630 series M631 series
Standards	EN50081-1/EN50082-2 (89/336 CEE electromagnetic comp.) 73/23/CEE / 96/68/CEE (low voltage)

Recommended tightening torque: 25 Nm
Recommended filtration settings: 25 + 50 µ
Oil temperature: -30 + 80 °C

Spare part code

MSV	Pilot Operated 2-way Single Locking Valve
-	Options: R = with reversible flow
30	Operation: 30 = normally closed 31 = normally open
0	Emergency override: 0 = no emergency (std) E = emergency
0000	Supply voltage: 0000 = no coil (std) see coils table

Assembly code

A (MSV30)	Voltage
B (MSV30E)	Voltage
Q (MSV31)	Voltage
C (MSV31E)	Voltage

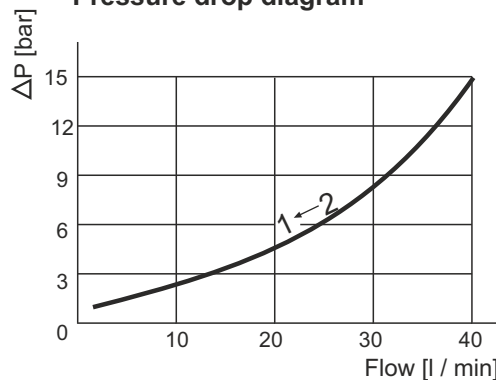
Ex: A12DC

Mounting cavities

0	1		
2	3	4	
5	6	7	8

Note: cavities 3, 4 and 6 are present on central manifold type UB only.

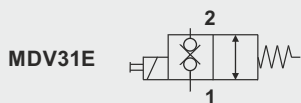
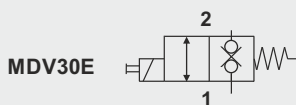
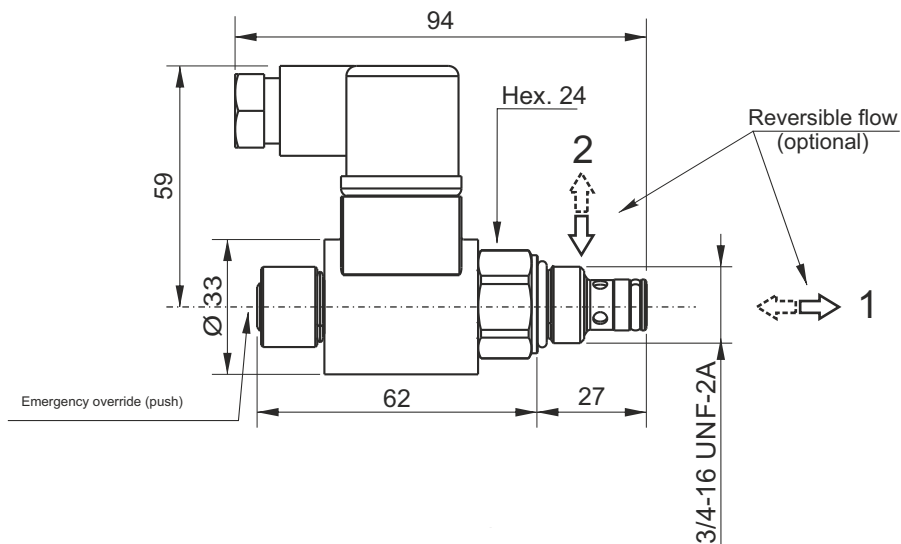
Pressure drop diagram



Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature

SECTION D

MDV - DIRECT OPERATED TWO-WAY DOUBLE LOCKING SOLENOID VALVES



Main features

Max pressure	up to 250 bar
Max flow	up to 40 l/min
Weight	0,11 Kg (without coil)
Internal leakage	5 drops/min at 350bar
Response time	30ms (energizing) 50ms (de-energizing)

Available voltage	12VDC 24VDC 24VAC 110RAC 220RAC
-------------------	---

Coils (see page D180)

M130 series
M630 series
M631 series

Normatives

EN50081-1/EN50082-2
(89/336 CEE
electromagnetic comp.)
73/23/CEE / 96/68/CEE
(low voltage)

Recommended tightening torque: 25 Nm
Recommended filtration: 25 ÷ 50 µ
Oil temperature: -30 ÷ + 80 °C

Spare part code

MDV	Two-way double blocking solenoid valve
30	Operation: 30 = normally closed 31 = normally open
E	Option: E = emergency (std)
0000	Supply voltage: 0000 = no coil (std) see coils table

Assembly code

D (MDV30E) **Voltage**
M (MDV31E) **Voltage**

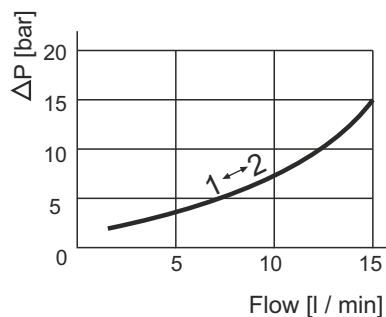
Ex: D12DC

Mounting cavities

0	1		
2	3	4	
5	6	7	8

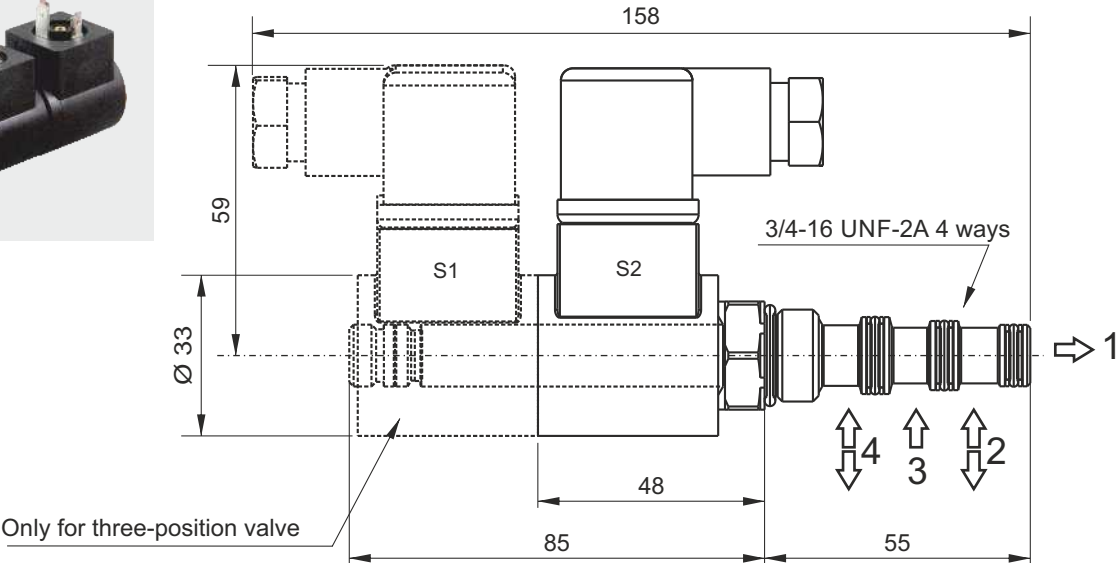
Note: cavities 3, 4 and 6 are present on central manifold type UB only.

Pressure drop diagram



Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature

MSV4V - DIRECT OPERATED 4/3 OR 4/2 DIRECTIONAL SPOOL SOLENOID VALVES



Main features

Max pressure	210 bar
Max flow	11,5 l/min
Weight	0,37 Kg (1 solenoid) 0,64 Kg (2 solenoid)
Internal leakage	278 cc/min at 210 bar
Minimum pull-in voltage	85% of nominal
Available voltage	12VDC 24VDC 24VAC 110RAC 220RAC
Coils (see page D190)	M630 series M631 series
Normatives	EN50081-1/EN50082-2 (89/336 CEE electromagnetic comp.) 73/23/CEE / 96/68/CEE (low voltage)

Spare part code

MSV4V	4/3 or 4/2 directional spool solenoid valve
A2	Spool configuration: see below table
00	Option: 00 = std
0000	Supply voltage: 0000 = no coil (std) see coils table

Assembly code

4VA2 Voltage
Ex: 4VA2 24DC

Mounting cavities

0	1		
2	3	4	
5	6	7	8

Note: MS4V may only be fitted to
type U4 central manifold

Note: cavities 3, 4 and 6 are present
on central manifold type UB only.

Spools

Double solenoid

A2	
B2	
C2	
E2	

Single solenoid

A11C	
------	--

Recommended tightening torque: 25 Nm
Recommended filtration: 25 ÷ 50 µ
Oil temperature: -30 ÷ + 80 °C

Code	
------	--

SECTION D

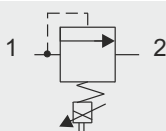
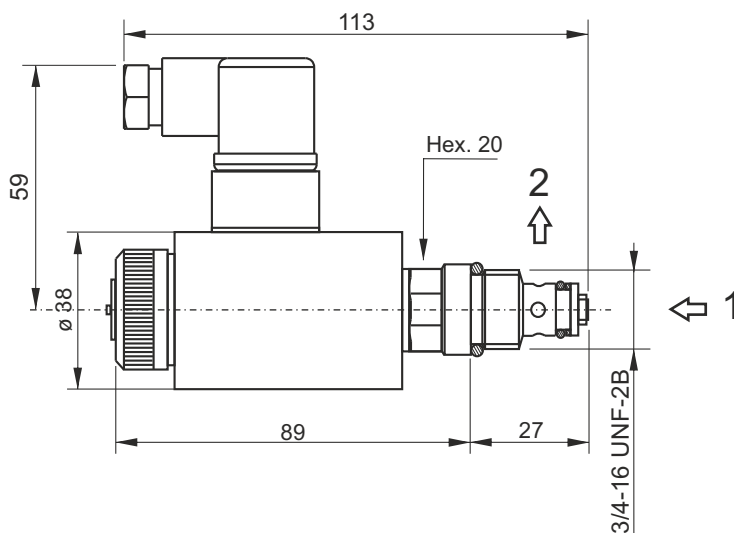
VMPC2 - PROPORTIONAL PRESSURE RELIEF VALVE



Coils

Supply Voltage	Coil code	Connector code
12DC	98001190	KA132000B1
24DC	98002190	KA132000B1

For the controller see the VPC table in D section



Main features

Max pressure	350 bar
Max flow	2 l/min
Weight	0,46 Kg
PWM	120Hz
Hysteresis	5%
Duty cycle	ED 100%
Voltage	+/- 10% nominal voltage

Normatives EN50081-1/EN50082-2(89/336 CEE electr. comp.) - 73/23/CEE / 96/68/CEE (low voltage)

Spare part code

VMPC	Direct acting proportional relief valve
2	Nominal size: 2 = 2 l/min
C	Working range: A = 2 ÷ 80 bar C = 4 ÷ 250 bar
E	Options: E = emergency (std)
0000	Supply voltage: - 0000 = no coil - 12DC - 24DC see coils table

Assembly code

P* Voltage**

where *** stands for max setting pressure [bar]. eg. P25012DC

Mounting cavities

0	1	
2	3	4
5	6	7

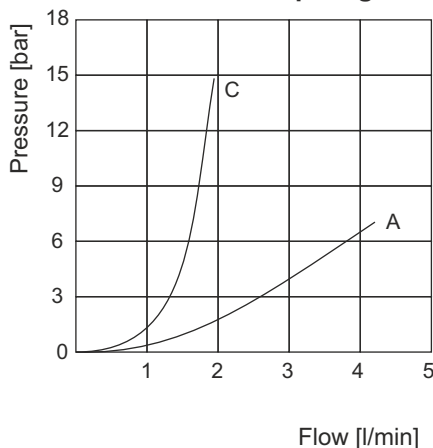
Note: cavities 3, 4 and 6 are present on central manifold type UB only.

Recommended tightening torque: 25Nm
Recommended filtration: 25 ÷ 50 µ
Oil temperature: -30 ÷ + 80 °C

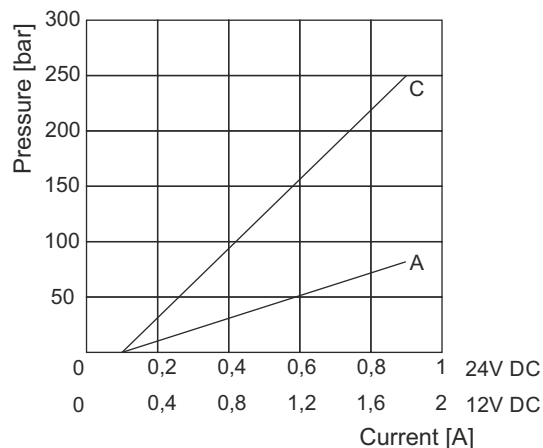
For the controller see table D170

Note: Supplying current to the coil from 0 to I max (see diagram), a proportional pressure variation is obtained on port P.

Pressure drop diagram



Pressure vs current



Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature.

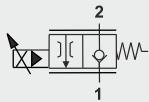
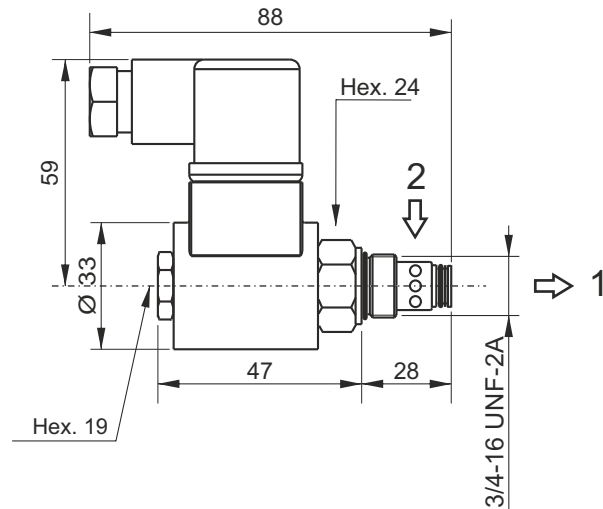
CSPC15 - PROPORTIONAL FLOW CONTROL VALVE



Coils

Supply voltage	Coil code	Connector code
12DC	M6306012	KA132000B1
24DC	M6306024	KA132000B1

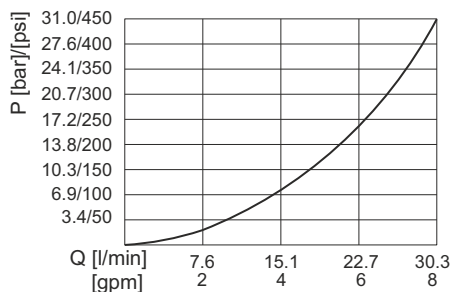
For the controller see the VPC table in D section



Main features

Max press.	210 bar
Max flow	22 l/min
Weight	0,1 Kg (without coil)
PWM	120Hz
Hysteresis	5% (10% above 85% I _{max})
Duty cycle	ED 100%
Voltage	+/- 10% nominal voltage
Normatives	EN50081-1/EN50082-2 (89/336 CEE) 73/23/CEE / 96/68/CEE
Oil temperature	-40 - +120°C
Filtration	10 + 25 µ
Tightening torque	30Nm

Pressure Drop 2 > 1 with fully open valve



Spare part code

CSPC	Proportional flow control valve
15	Nominal size: 15 = 15 l/min
0	Option: 0 = no option
0000	Supply voltage: - 0000 = no coil (std) - 12DC - 24DC see coils table

Assembly code

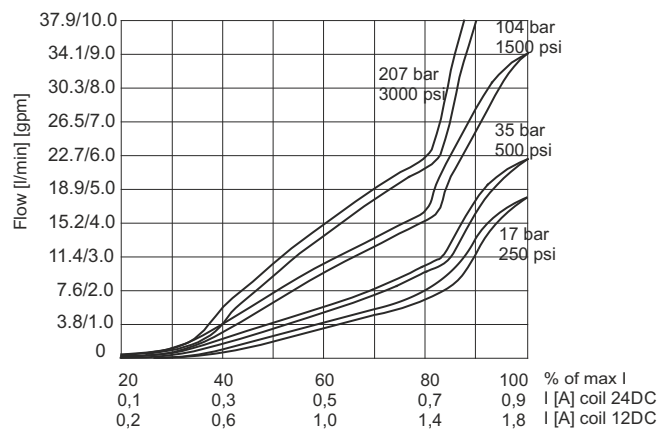
T* Voltage**
eg: T12DC

Mounting cavities

0	1		
2	3	4	
5	6	7	8

Note: cavities 3, 4 and 6 are present on central manifold type UB only.

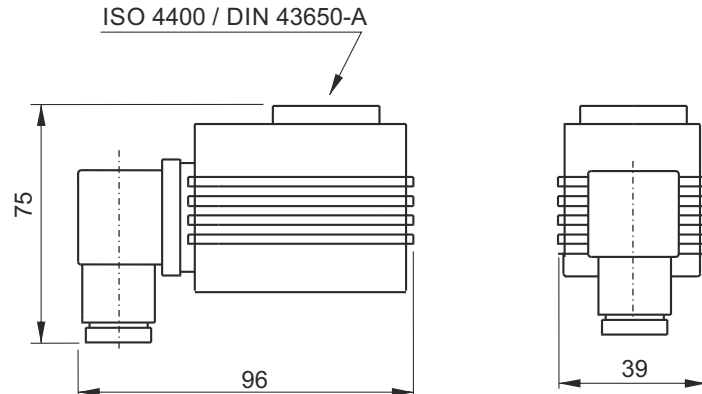
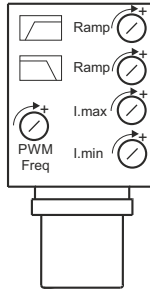
Flow vs current at different pressure drops



Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature.

SECTION D

VPC - ELECTRONIC AMPLIFIER FOR PROPORTIONAL SOLENOID VALVES



Main features

Supply voltage	12 / 24V DC
Voltage input signal range	0 ~ 10 V
Max current range	2,5A
PWM (optionally adjustable)	120 Hz (50 ÷ 400 Hz)
Ramp adjustment (independent)	5%
Input impedance	100 kohm
Voltage	+/- 10% nominal voltage
Weight	0,11 kg
Normatives	EN50081-1/EN50082-2 (89/336 CEE electromagnetic comp.) 73/23/CEE / 96/68/CEE (low voltage)

Spare part code

VPC

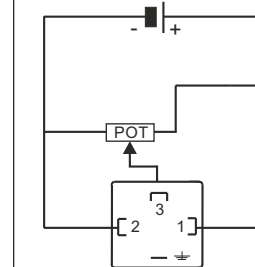
**Electronic amplifier
for solenoid valves**

00

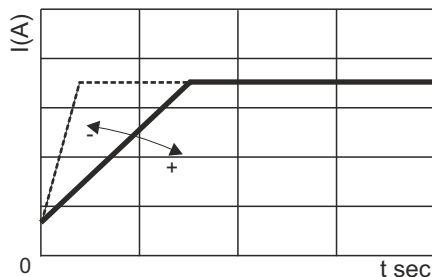
Options

Suitable for:
 · CSPC15**** proportional flow control valve
 · VMPC2**** proportional pressure relief valve
 · other proportional valves

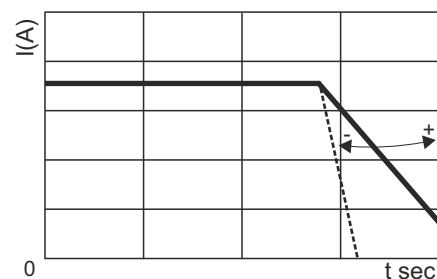
Electric circuit



Ramp adjustment (up)



Ramp adjustment (down)



Instruction for use:

- 1) turn the "I MIN" trimmer fully counterclockwise;
- 2) adjust the external voltage input signal to the desired initial regulating (flow or pressure) value;
- 3) turn "I MIN" trimmer in a clockwise direction until valve just starts regulating;
- 4) adjust the external voltage input signal to the max value and adjust "I MAX" trimmer until the valve regulates the maximum flow or pressure on the hydraulic system.

COILS FOR SOLENOID VALVES



M630* / M631*



9800*



M630DT*



Supply voltage [V]	Assembly code	Coil type	Spare part code	Spare connector code	Holding Power [W]	Duty charge ED [%]	Prot. class	Wt [g]	Suitable for valves
12DC	12DC_M630	DC	M6306012	KA132000B1 DIN43650/ISO4400	18W	100	H	130	MSV30/31 MDV MSV4V CSPC15
24DC	24DC_M630	DC	M6306024	KA132000B1 DIN43650/ISO4400	18W	100	H	130	MSV30/31 MDV MSV4V CSPC15
24AC	24AC_M631	RC with integrated rectifying bridge	M6316024	KA132000B1 DIN43650/ISO4400	18W	100	H	130	MSV30/31 MDV MSV4V
115AC	115AC_M631	RC with integrated rectifying bridge	M6316115	KA132000B1 DIN43650/ISO4400	18W	100	H	130	MSV30/31 MDV MSV4V
230AC	230AC_M631	RC with integrated rectifying bridge	M6316230	KA132000B1 DIN43650/ISO4400	18W	100	H	130	MSV30/31 MDV MSV4V
12DC	12DC_M630DT	DC, Deutsch	M6306012DT	DT06-4S Deutsch	16W	100	H	117	MSV30/31 MDV30/31 SD00
24DC	24DC_M630DT	DC, Deutsch	M6306024DT	DT06-4S Deutsch	16W	100	H	117	MSV30/30 MDV30/31 SD00
12DC	Embedded in the VMPC2 proportional valve code	DC	98001190	KA132000B1 DIN43650/ISO4400	36W	100	H	257	VMPC2
24DC	Embedded in the VMPC2 proportional valve code	DC	98002190	KA132000B1 DIN43650/ISO4400	36W	100	H	247	VMPC2

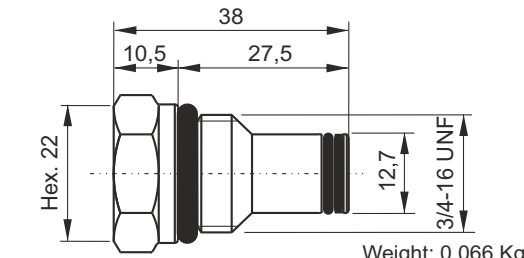
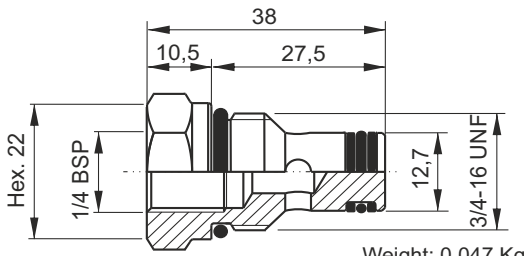
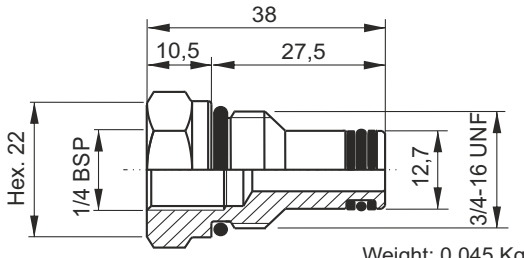
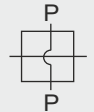
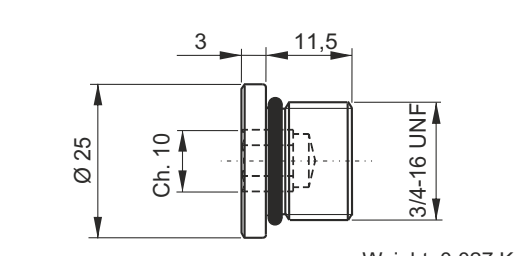
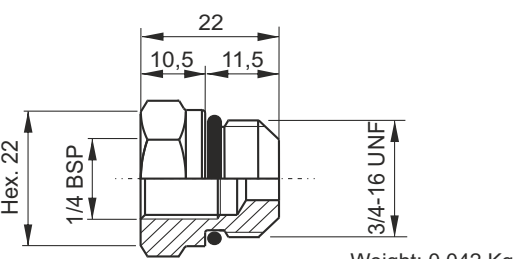
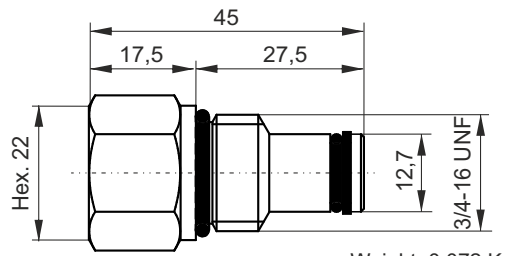
Other voltages and electric connector types (Amp Junior, flying leads,...) available on request.

Inrush power consumption can be up to 3,5 times higher than holding power.

Coil thermal insulation: Class H. Electric connection: DIN 43650-A / ISO 4400. Coil protection degree: Ip65

SECTION D

PLUGS

 Weight: 0,066 Kg	Hydraulic symbol  Spare part code E70100005	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>6</td><td>7</td><td>8</td></tr></table>	0	1	2	3	4	5	6	7	8
0	1										
2	3	4									
5	6	7	8								
 Weight: 0,047 Kg	Hydraulic symbol  Spare part code E70100003	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>6</td><td>7</td><td>8</td></tr></table>	0	1	2	3	4	5	6	7	8
0	1										
2	3	4									
5	6	7	8								
 Weight: 0,045 Kg	Hydraulic symbol  Spare part code E70100006	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>6</td><td>7</td><td>8</td></tr></table>	0	1	2	3	4	5	6	7	8
0	1										
2	3	4									
5	6	7	8								
 Weight: 0,027 Kg	Hydraulic symbol  Spare part code E70100004	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>6</td><td>7</td><td>8</td></tr></table>	0	1	2	3	4	5	6	7	8
0	1										
2	3	4									
5	6	7	8								
 Weight: 0,042 Kg	Hydraulic symbol  Spare part code E70100002	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>6</td><td>7</td><td>8</td></tr></table>	0	1	2	3	4	5	6	7	8
0	1										
2	3	4									
5	6	7	8								
 Weight: 0,072 Kg	Hydraulic symbol  Spare part code E70200010	Assembly code XP 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>6</td><td>7</td><td>8</td></tr></table>	0	1	2	3	4	5	6	7	8
0	1										
2	3	4									
5	6	7	8								

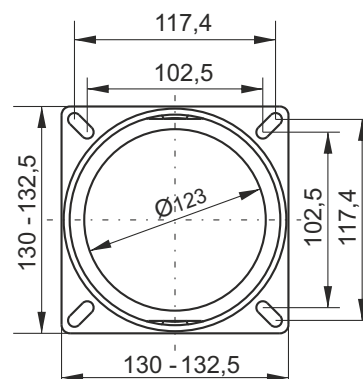
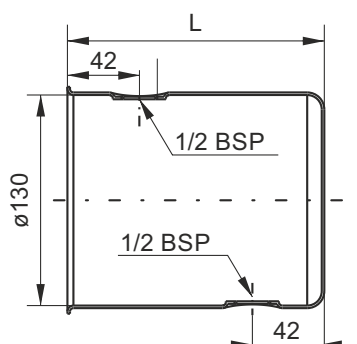
Note: cavities 3, 4 and 6 are present on central manifold type UB only.

SECTION E

CYLINDRICAL STEEL TANKS A & B SERIES



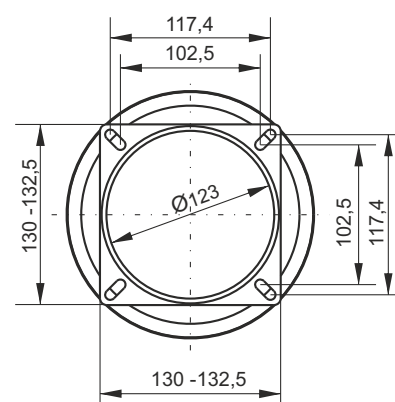
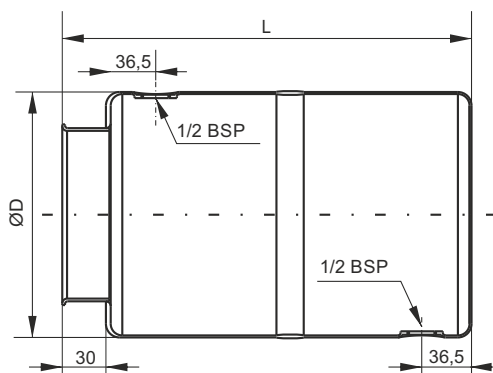
Recommended tightening torque for Filler Cap: 5 Nm



Description	Spare part code	Assembly code	L (mm)	Weight	Actual filling volume (lt)	
					Horizontal	Vertical
1,5 l cylindrical horizontal / vertical mounting	E60303001	1,5A / 1,5AV	150	0,78 Kg	1,5	1,0
2,5 l cylindrical horizontal / vertical mounting	E60303004	2,5A / 2,5AV	235	1,04 Kg	2,5	2,0



Recommended tightening torque for Filler Cap: 5 Nm



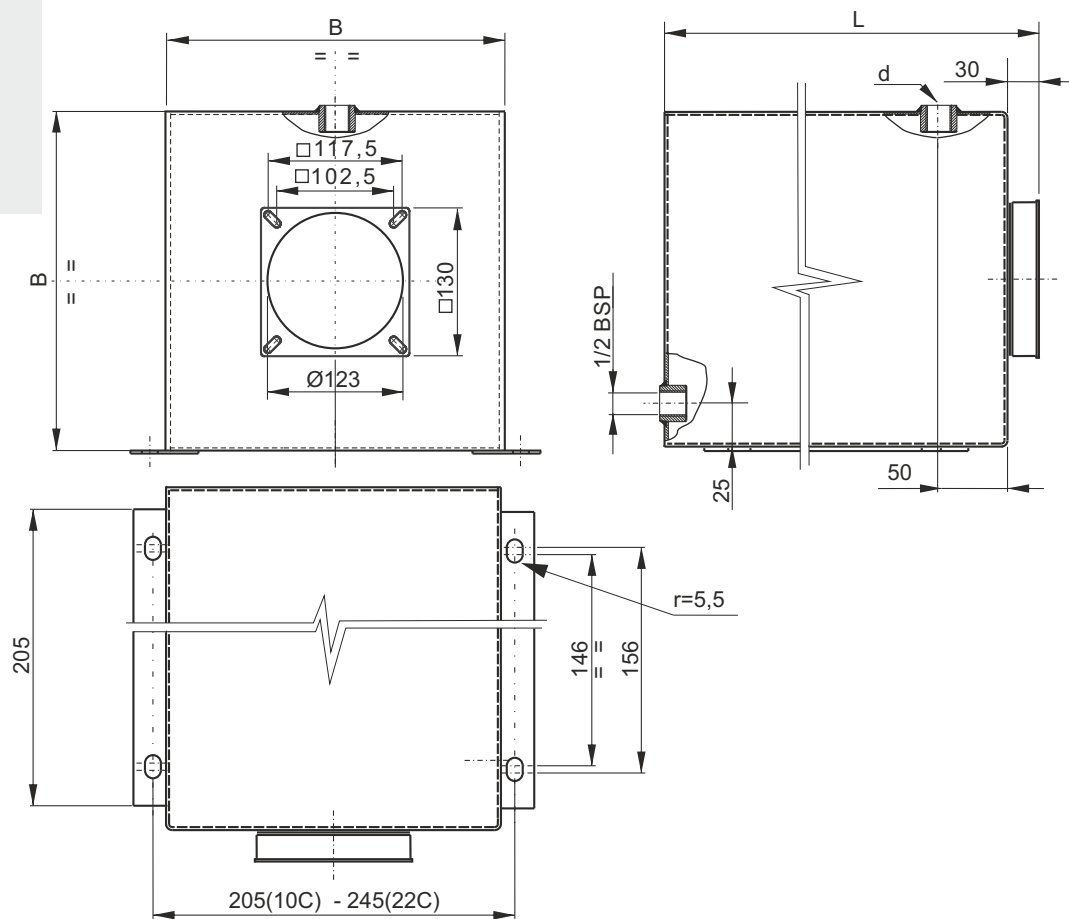
Description	Spare part code	Assembly code	L (mm)	ØD (mm)	Weight	Actual filling volume (lt)	
						Horiz.	Vert.
5 l cylindrical horizontal / vertical mounting	E60303006	5B / 5BV	300	180	1,82 Kg	6,3	5,1
10 l cylindrical horizontal / vertical mounting	E60303011	10B / 10BV	262	220	2,01 Kg	8,3	6,3
12 l cylindrical horizontal / vertical mounting	E60303012	12B / 12BV	380	220	2,47 Kg	12,5	10,9

All dimensions are in mm

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

Notes: the piping kit, standard suction filter, filler/breather and drain plug are included when specifying the tank in PPC assembly code. When ordering spare parts, only the drain plug and filler/breather are included.

HORIZONTAL/VERTICAL SQUARE WELDED STEEL TANKS C SERIES



Description	Spare part code	Assembly code	L (mm)	B (mm)	ØD (mm)	Weight	Actual filling volume (lt)	
							Horiz.	Vertical
10 l square horiz. / vert. mounting	E60303042	10C / 10CV	330	185	1/2 BSP	5,50 Kg	9,6	8,1
22 l square horiz. / vert. mounting	E60303044	22C / 22CV	470	223	3/4 BSP	6,80 Kg	20,6	18,5

All dimensions are in mm

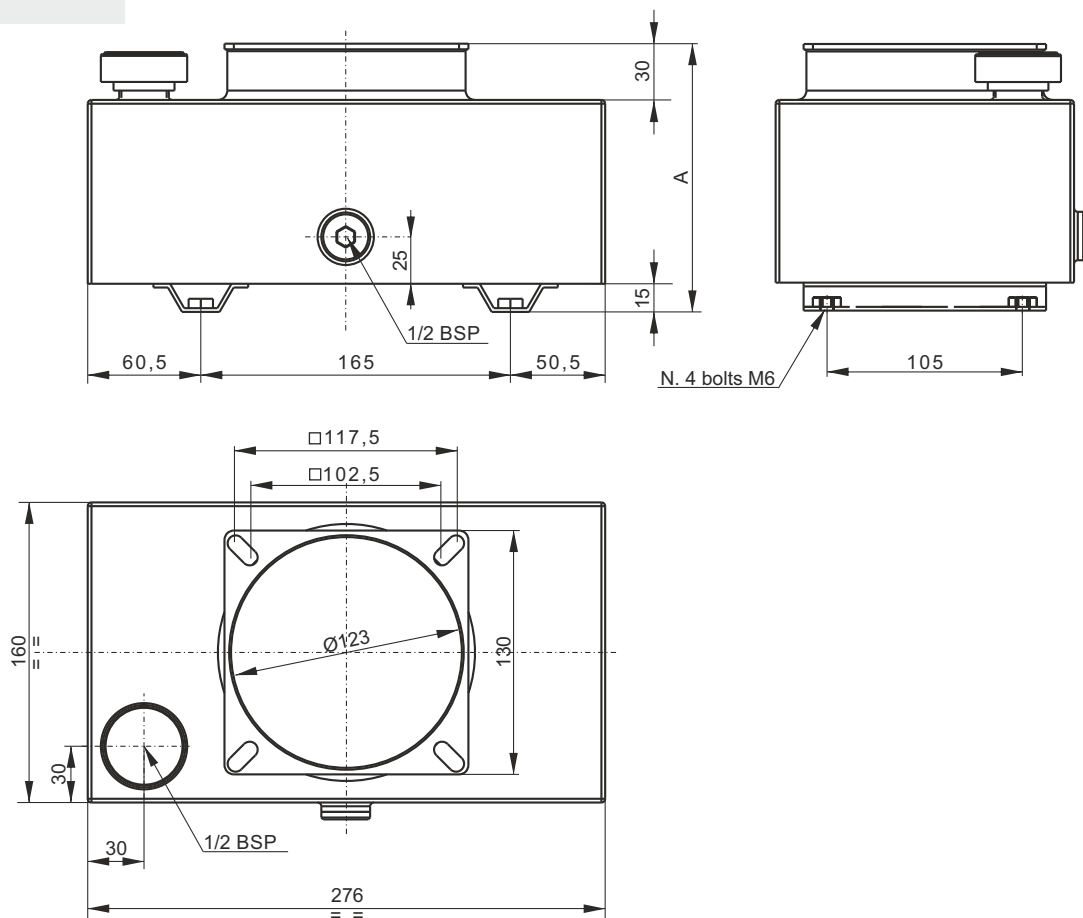
Material	Fe P04-EN10130 steel sheet 1,5mm thickness
Fluid	Mineral based oil ISO/DIN 6743/4
Working temperature	-15 / +70°C

Notes: the piping kit, standard suction filter, filler/breather and drain plug are included when specifying the tank in PPC assembly code. When ordering spare parts, only the drain plug and filler/breather are included.

On request special square welded tanks can be manufactured. An inquiry must be sent to our technical department with indication of quantities.

SECTION E

SMALL SIZE SQUARE WELDED STEEL TANKS E SERIES



Description	Spare part code	Assembly code	A (mm)	Weight	Actual filling volume (lt)	
					Horizontal	Vertical
3 l square vertical mounting	E60303053	3EV	128	3,09 Kg	-	4,2
7 l square vertical mounting	E60303057	7EV	220	4,32 Kg	-	8,3

All dimensions are in mm

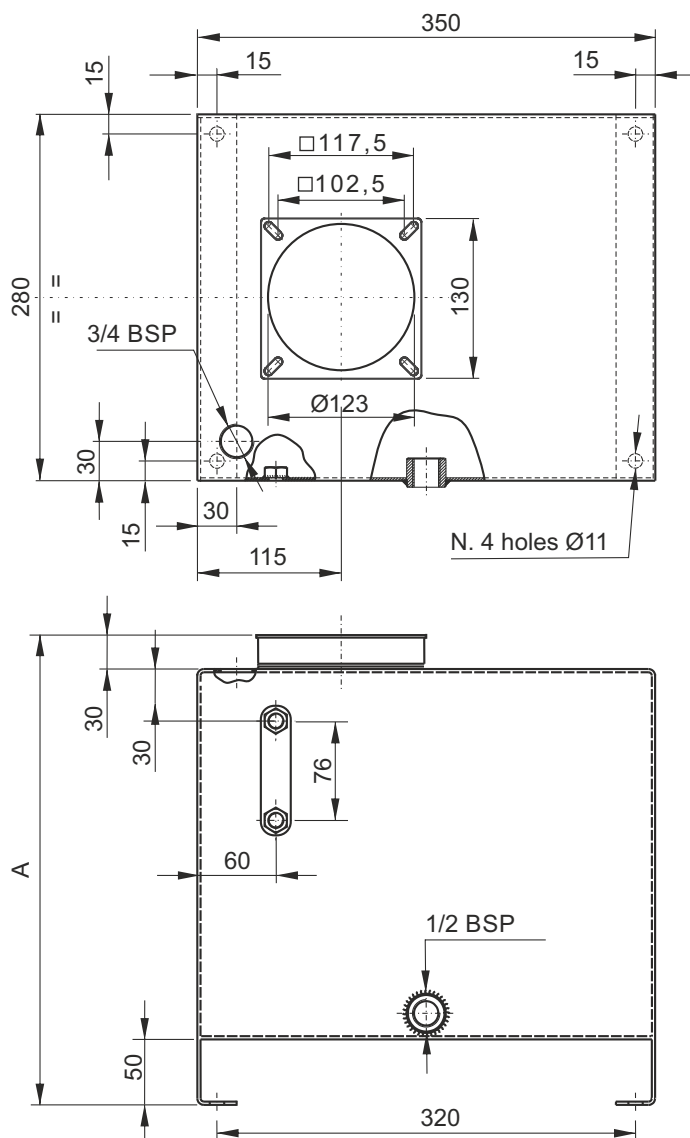
Material	Fe P04-EN10130 steel sheet 1,5mm thickness
Fluid	Mineral based oil ISO/DIN 6743/4
Working temperature	-15 / +70°C

Notes: the piping kit, standard suction filter, filler/breather and drain plug are included when specifying the tank in PPC assembly code. When ordering spare parts, only the drain plug and filler/breather are included.

Notes: the piping kit, standard suction filter, filler/breather and drain plug are included when specifying the tank in PPC assembly code. When ordering spare parts, only the drain plug and filler/breather are included.

SECTION E

SQUARE WELDED STEEL TANKS E SERIES



Description	Spare part code	Assembly code	A (mm)	Weight	Actual filling volume (lt)	
					Horizontal	Vertical
20 l square vertical mounting	E60303015	20EV	293	6,50 Kg	-	20,8
30 l square vertical mounting	E60303048	30EV	423	8,50 Kg	-	33,5

All dimensions are in mm

Material	Fe P04-EN10130 steel sheet 2,5mm thickness on top and side, 1,5mm thickness front and rear
Fluid	Mineral based oil ISO/DIN 6743/4
Working temperature	-15 / +70°C

Notes: the piping kit, standard suction strainer, filler/breather, level gauge and drain plug are included when specifying the tank in PPC assembly code.

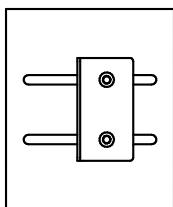
When ordering spare tanks, only the drain plug, filler/breather and level gauge are included.

On request special square welded tanks can be manufactured. An inquiry must be sent to our technical department with indication of quantities.

HEAVY DUTY SQUARE ALUMINIUM TANK



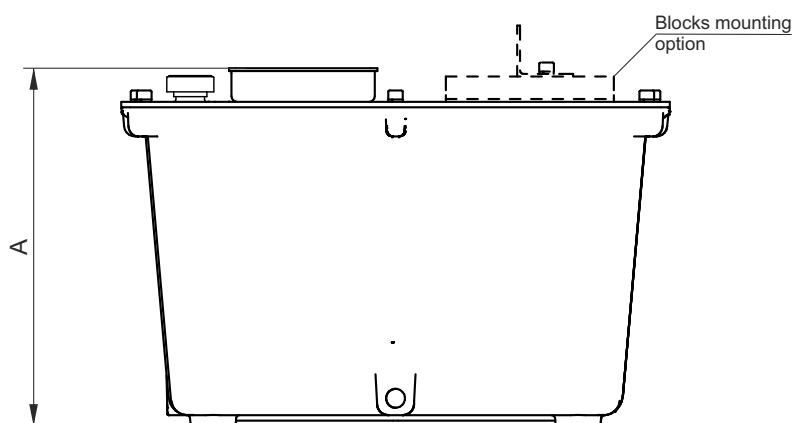
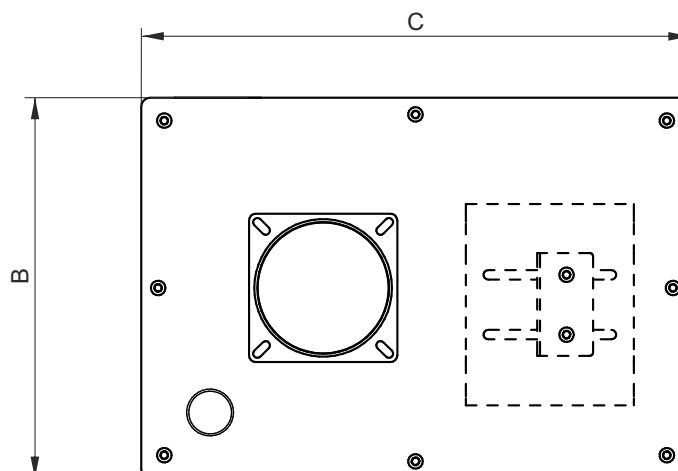
Blocks mounting option



Option code

ART003

All dimensions are in mm



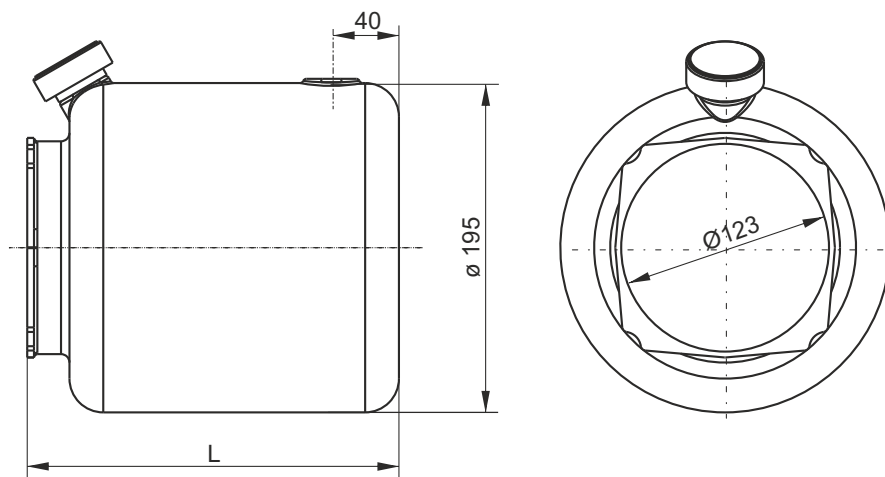
Description	Spare part code	Assembly code	A [mm]	B [mm]	C [mm]	Weight [kg]	Actual filling volume [l]
10 l square aluminium vertical mounting tank	S602010HD	10HD	255	250	340	4	8,5
10 l square aluminium vertical tank with blocks mounting support ART003	S602010HDS	10HDS	255	250	340	4,5	8,5
25 l square aluminium vertical mounting tank	S602025HD	25HD	315	340	490	13	21
25 l square aluminium vertical tank with blocks mounting support ART003	S602025HDS	25HDS	315	340	490	13,5	21

Material	Die cast aluminium, tank top lid 3 mm steel sheet
Fluid	Mineral based oil ISO/DIN 6743/4
Working temperature	-15 / +70°C

Notes: the piping kit, standard suction strainer, filler/breather and are included when specifying the tank in PPC assembly code. When ordering spare tanks, only the filler/breather are included.

SECTION E

CYLINDRICAL PLASTIC TANKS P SERIES



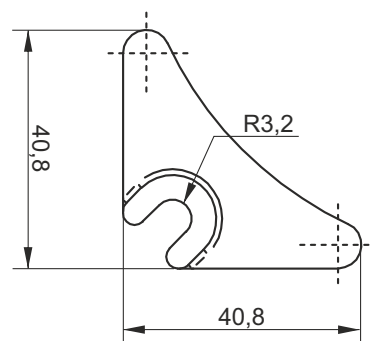
Description	Spare part code	Assembly code	L (mm)	Weight	Actual filling volume (lt)	
					Horizontal	Vertical
5 l cylindrical horizontal / vertical mounting	H60303028	5P / 5PV	219	0,60 Kg	5,0	4,2
7 l cylindrical horizontal / vertical mounting	H60303030	7P / 7PV	271	0,61 Kg	6,0	5,5
9 l cylindrical horizontal / vertical mounting	H60303032	9P / 9PV	323	0,76 Kg	7,2	6,5
11 l cylindrical horizontal / vertical mounting	H60303035	11P / 11PV	453	1,06 Kg	9,0	10,5

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

Clamping brackets



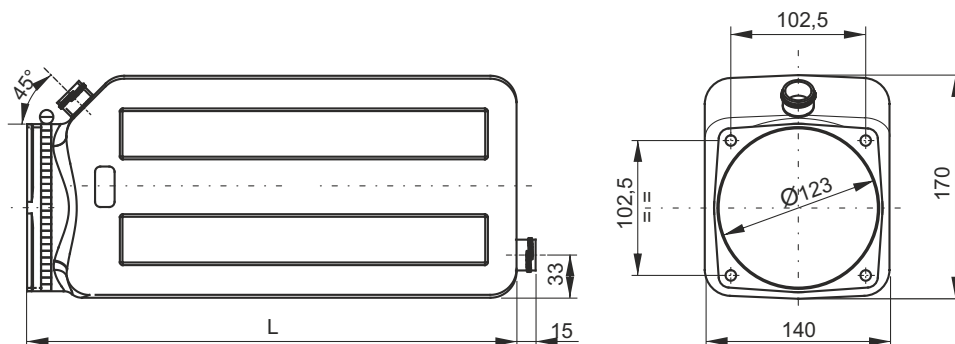
Clamp code
E60513022



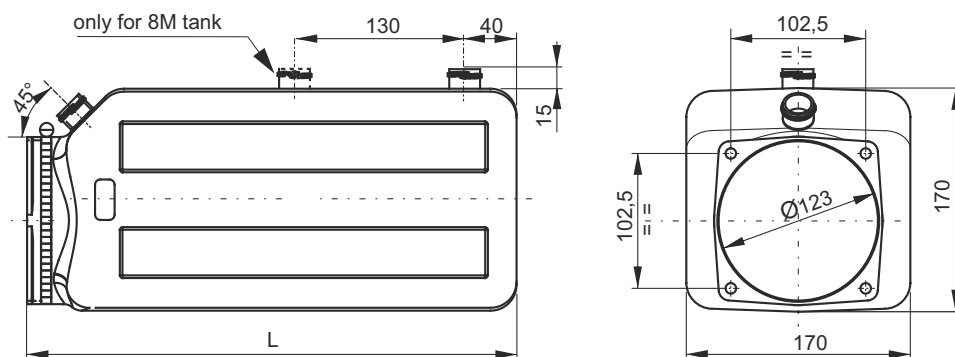
Notes: 4 x E60513022 mounting clamp brackets and a clamp band are required to fix P series cylindrical plastic tanks.

Notes: the piping kit, standard suction strainer and filler/breather are included when specifying the tank in PPC assembly code. When ordering spare tanks, only the filler/breather C86100001, E60513022 plate and clamp band are included. Discharge ports are normally moulded blind. On request these tanks are available with an offset collar. Ask for details.

SQUARE PLASTIC TANKS L & M SERIES



Description	Spare part code	Assembly code	L (mm)	Weight	Actual filling volume (lt)	
					Horizontal	Vertical
1,5 l square horizontal / vertical mounting	H60303016	1,5L / 1,5LV	135	0,32 Kg	2,4	1,5
3 l square horizontal / vertical mounting	H60303018	3L / 3LV	250	0,42 Kg	4,4	4,2
6 l square horizontal / vertical mounting	H60303020	6L / 6LV	350	0,63 Kg	6,2	6,6



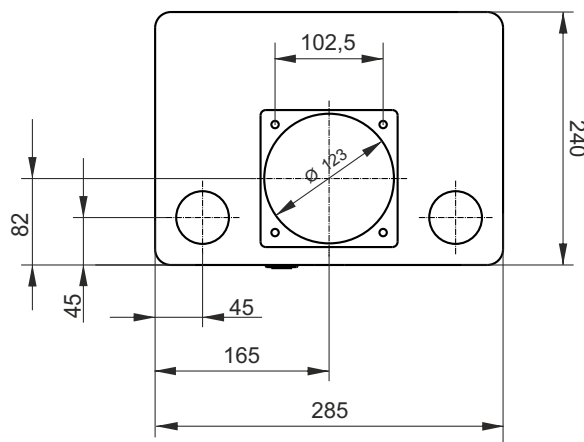
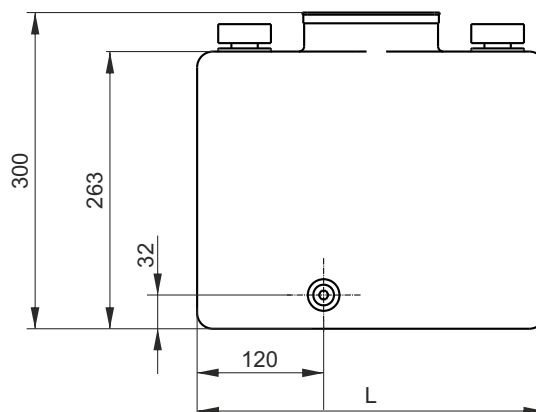
Description	Spare part code	Assembly code	L (mm)	Weight	Actual filling volume (lt)	
					Horizontal	Vertical
5 l square horizontal / vertical mounting	H60303025	5M / 5MV	270	0,60 Kg	5,8	5,7
8 l square horizontal / vertical mounting	H60303033	8M / 8MV	375	0,76 Kg	8,1	8,8

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

Notes: the piping kit, standard suction strainer and filler/breather are included when specifying the tank in PPC assembly code. When ordering spare tanks, only the filler/breather C86100003 and clamp band are included. Discharge ports are normally moulded blind.

SECTION E

SQUARE PLASTIC TANKS N SERIES



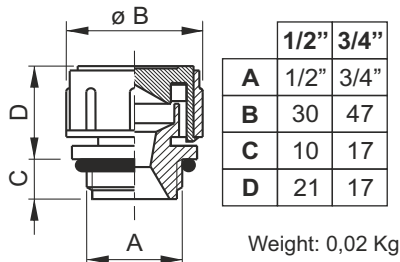
Description	Spare part code	Assembly code	L (mm)	Weight	Actual filling volume (lt)	
					Horizontal	Vertical
15 l plastic square vertical mounting	E20201800	15NV	330	1,53 Kg	-	16,8

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

Notes: the piping kit, standard suction strainer and filler/breather are included when specifying the tank in PPC assembly code. When ordering spare tanks, only the filler/breather and drain plug are included. Enquire for more details.

TANKS PLUGS

**Filler breather
1/2" - 3/4" BSP**

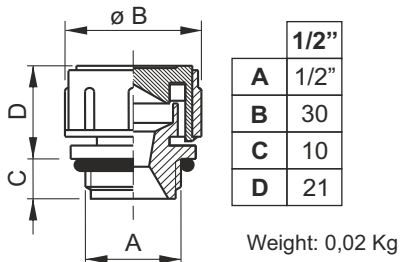


Suitable for B/BV type tanks (1/2" BSP)
Suitable for EV type tanks (3/4" BSP)

Spare part code

C86100001 (1/2 BSP)
C86100002 (3/4 BSP)

**Filler breather with check valve
1/2" BSP**

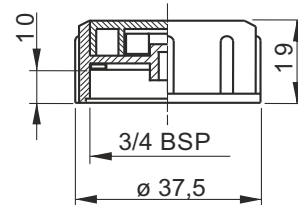


Suitable for B/BV type tanks (1/2" BSP)

Spare part code

C86100001CV

**Filler breather
3/4" BSP female**



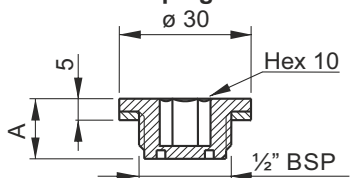
Suitable for all series plastic tanks

Weight: 0,01 Kg

Spare part code

C86100003

Drain plug



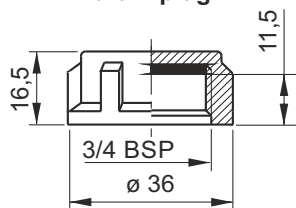
	A	
TCNB0800	15	Weight: 0,01 Kg
TB050801	19	Weight: 0,04 Kg

Suitable for all steel tanks

Spare part code

TCNB0800 (plastic)
TB050801 (steel)

**3/4" BSP female
drain plug**



Suitable for all series plastic tanks

Weight: 0,01 Kg

Spare part code

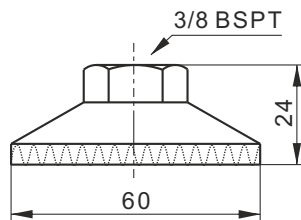
E60513005

SECTION E

TANK ACCESSORIES

Standard inlet strainer filter

Filtration degree: 90 micron



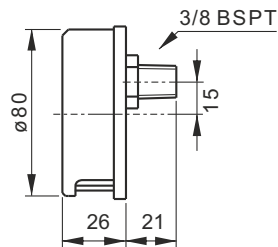
Weight: 0,01 Kg

Spare part code

C34100005

Inlet eccentric filter

Filtration degree: 90 micron



Recommended for 1,5 l tanks horizontal mounting

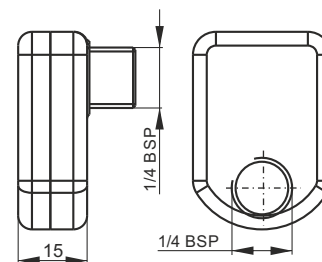
Weight: 0,13 Kg

Spare part code

C34100001

Micro inlet filter

Filtration degree: 90 micron



Recommended for pumps gr. 0

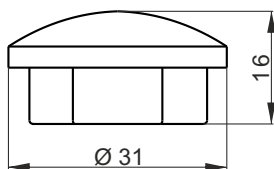
Weight: 0,01 Kg

Spare part code

C34100100

Micro inlet strainer filter

Filtration degree: 90 micron



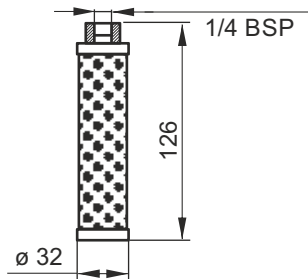
Weight: 0,02 Kg

Spare part code

C34100006

In-tank return filter

Filtration degree: 90 micron



Suitable for all tanks over 3l

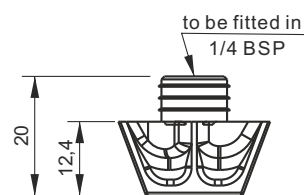
Weight: 0,09 Kg

Spare part code

C34200001

Relief valve diffuser

To be mounted in cavity Tr



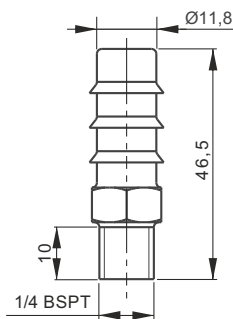
It reduces foam and noise when relief valve is working
Recommended for all vertical mounted tanks.

Weight: 0,01 Kg

Spare part code

SFEP01D

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

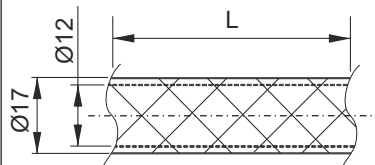


Weight: 0,01 Kg

Spare part code

TR0112

Flexible plastic pipe



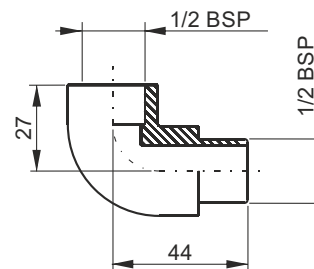
Recommended as standard return pipe.
To be fixed with TR01-12 and cut to correct length. To be ordered in meters.

Weight: 0,18 Kg/meter

Spare part code

SF12

90° adapter for vertical tanks

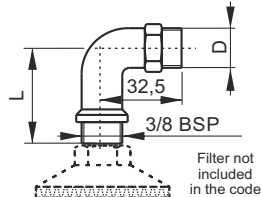


Weight: 0,02 Kg

Spare part code

E60513004

TANK ACCESSORIES

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

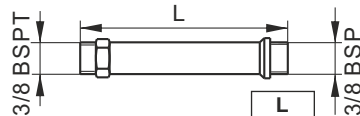
Recommended for horizontal tanks

Weight: 0,01 Kg

Spare part code

PP0*E**

3/8" suction pipe



	L
PP0242	42
PP0268	68
PP02105	105
PP02125	125
PP02142	142
PP02165	165
PP02180	180
PP02190	190
PP02237	237
PP02320	320
PP02370	370

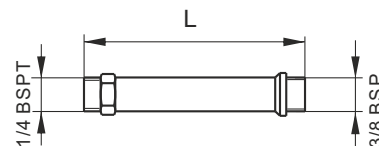
To fit inlet strainers C34100005 to Gr.1 pumps

Weight: 0,02 Kg

Spare part code

PP02**

1/4" - 3/8" suction pipe



	L
PP0130	30
PP0180	80
PP01120	120

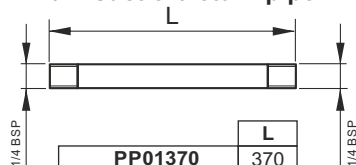
To fit inlet strainers C34100005 to Gr.0 pumps

Weight: 0,01 Kg

Spare part code

PP01**

1/4" suction/return pipe

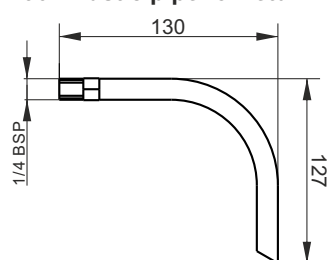
Recommended as suction pipe for
PMC02 hand pumps and as return
pipe with C3420001 return filter.

Weight: 0,04 Kg

Spare part code

PP01370

90° Plastic pipe for return line

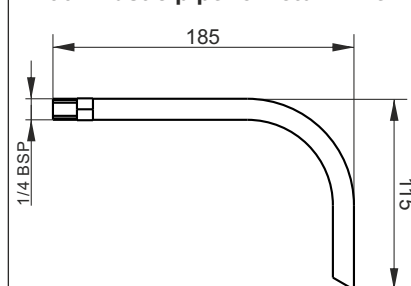


Weight: 0,02 Kg

Spare part code

PP01E130127

90° Plastic pipe for return line

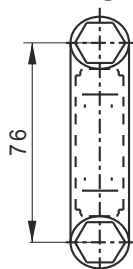


Weight: 0,02 Kg

Spare part code

PP01E185115

Level gauge

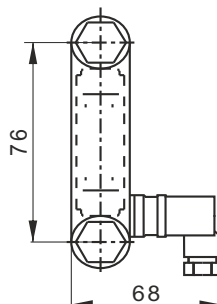


Fixing holes Ø 10,5 mm Weight: 0,10 Kg

Spare part code

SLV76

Electric thermostatic level gauge

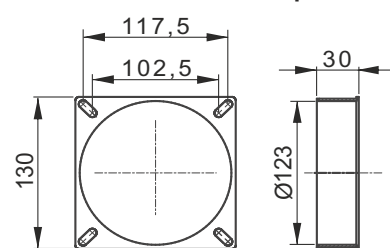


Fixing holes Ø 10,5 mm Weight: 0,16 Kg

Spare part code

GTL76TE

Bare steel tank adapter

Unpainted, to be welded on custom
made tanks

Weight: 0,18 Kg

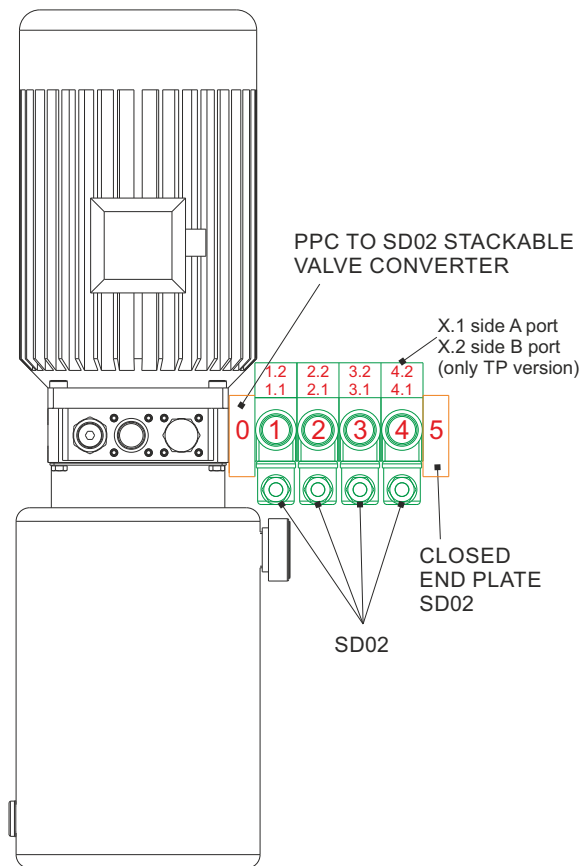
Spare part code

F80000001

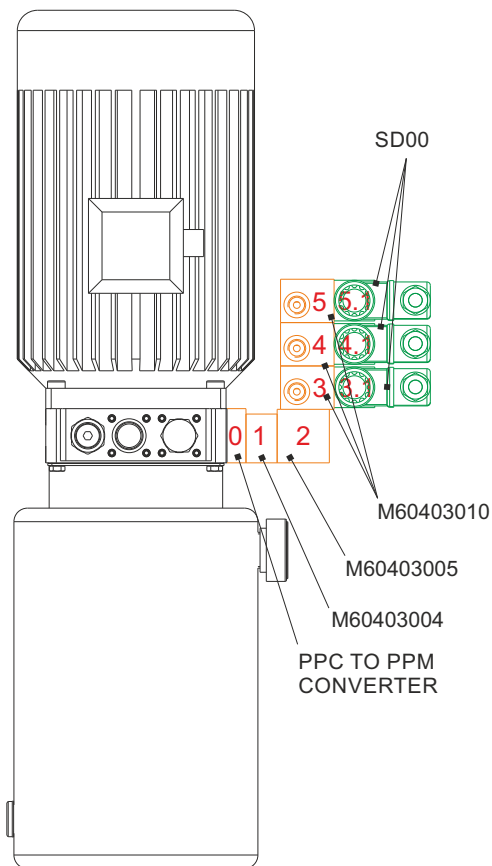
SECTION F

EXTERNAL MANIFOLDS & VALVE MOUNTING EXAMPLES

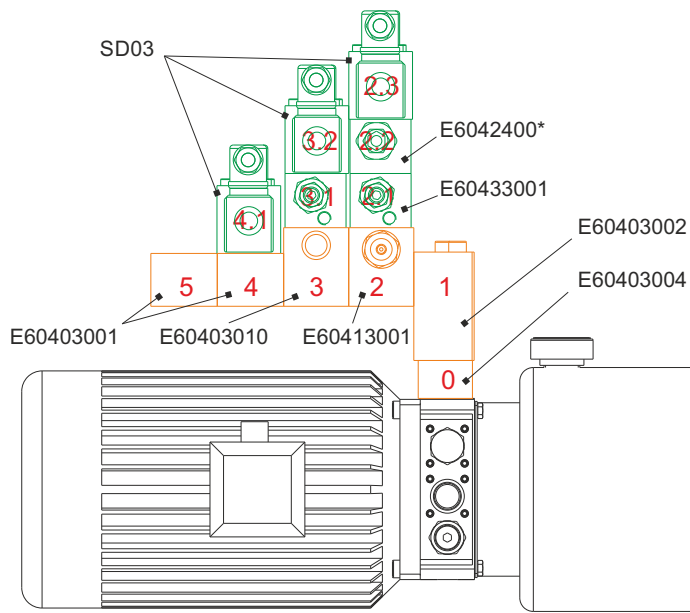
PPC + SD02 STACKABLE VALVES



PPC + NG3 MICRO BLOCKS & VALVES



PPC + NG6 (CETOP 3) BLOCKS & VALVES



The mini powerpack external manifolds and valves are arranged following a stack level logic. Each stack is numbered eg. 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,... See above self-explanatory drawings where manifolds are coloured in orange and valves in green. Stack levels are numbered in red.

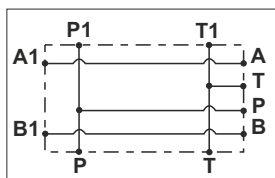
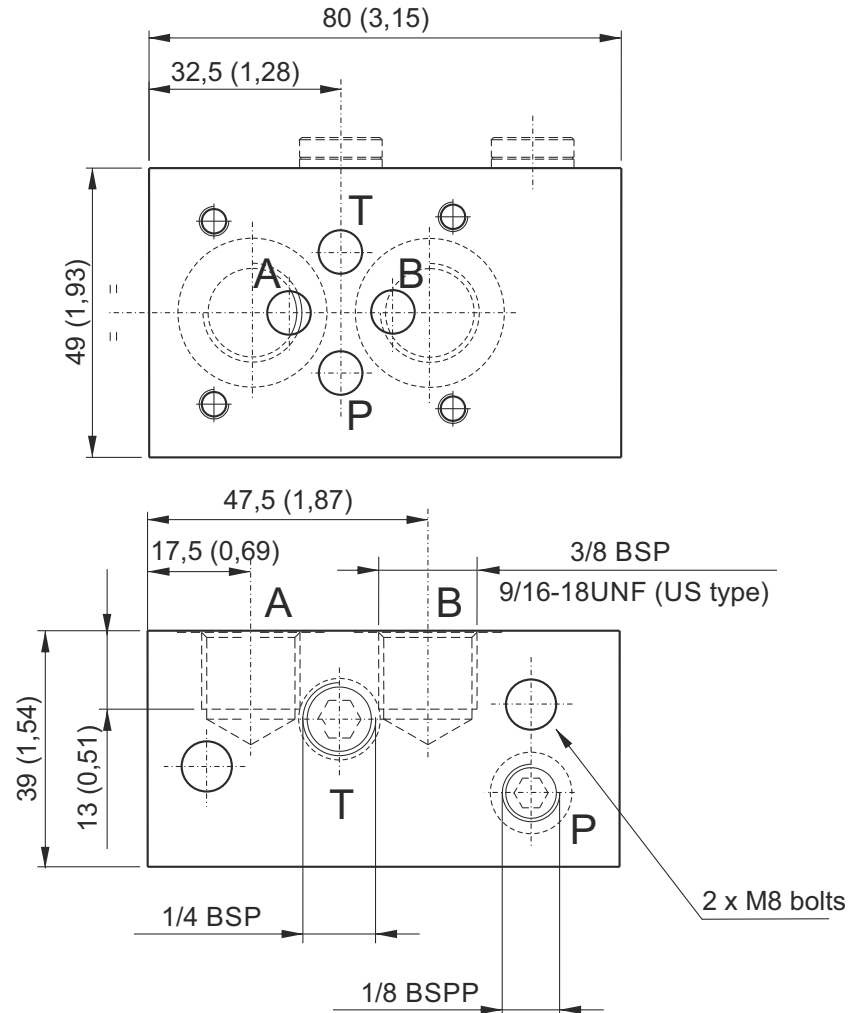
MODULAR MANIFOLDS NG6 (CETOP 3), REAR PORTS



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



<i>Parallel connection</i>	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.

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

To add external manifolds to a PPC assembly code, just add their spare part codes at the end of the PPC code. eg: PPC-0,8 12DC-MB-J-K0,6-V200-G-RETURN KIT-1,5L+E60403004+E60403001.

The Cetop attachment is on motor side. With AC motor frames bigger than 71 and DC motors bigger than dia. 125mm, always add a spacer manifold (see E60403004 code in F section) below the Cetop manifold to avoid interference between the valve and the motor. Code does not include the Cetop solenoid valve. See NG6 (Cetop 3) valves table in section G.

SECTION F

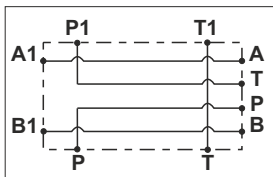
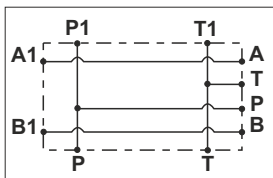
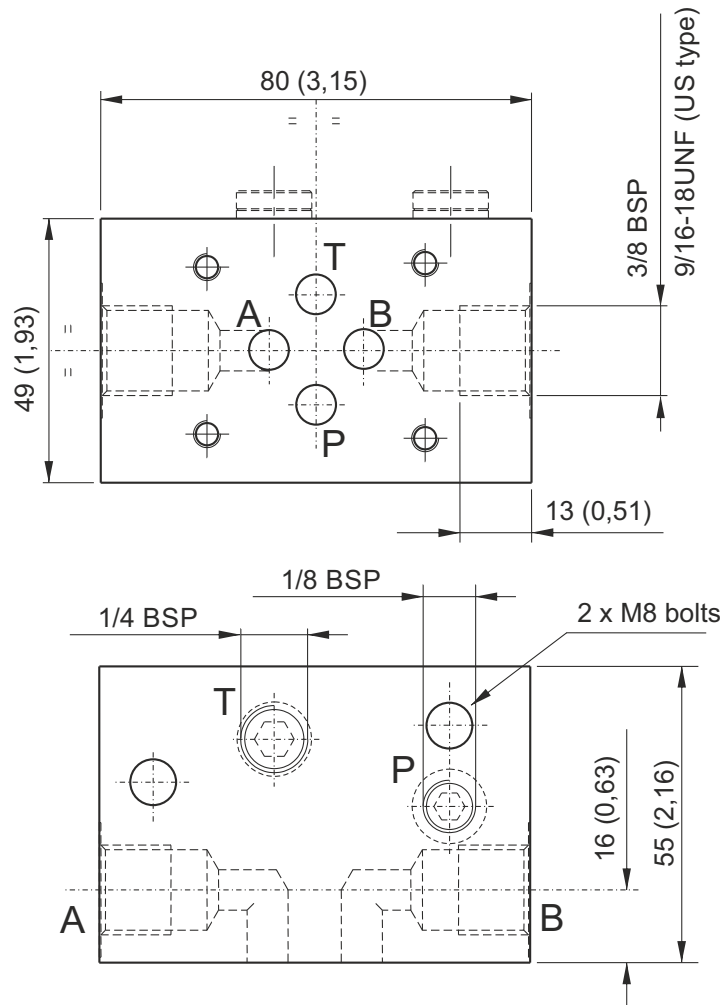
MODULAR MANIFOLDS NG6 (CETOP 3), LATERAL PORTS



Dimensions in mm (inches)

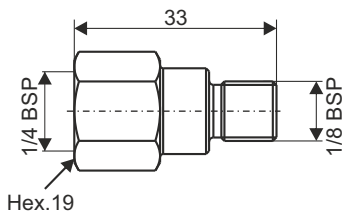
Main features

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
Rear ports	E60403010
Rear port US execution	E60403010US

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

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.

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

To add external manifolds to a PPC assembly code, just add their spare part codes at the end of the PPC code. eg: PPC-0,8 12DC-MB-J-K0,6-V200-G-RETURN KIT-1,5L+E60403004+E60403010.

The Cetop attachment is on motor side. With AC motor frames bigger than 71 and DC motors bigger than dia. 125mm, always add a spacer manifold (see E60403004 code in F section) below the Cetop manifold to avoid interference between the valve and the motor. Code does not include the Cetop solenoid valve. See NG6 (Cetop 3) valves table in section G.

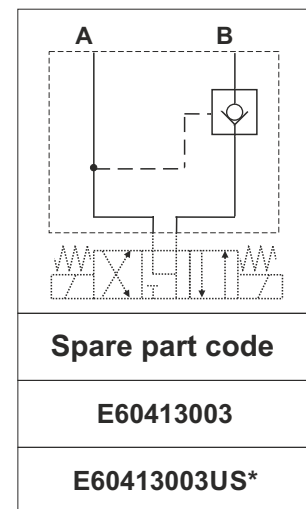
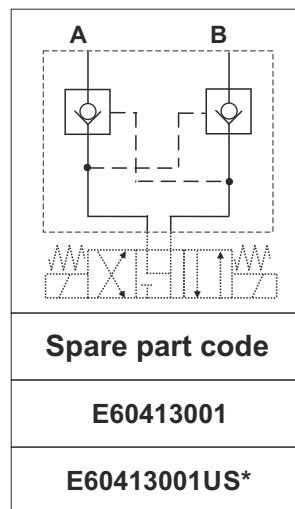
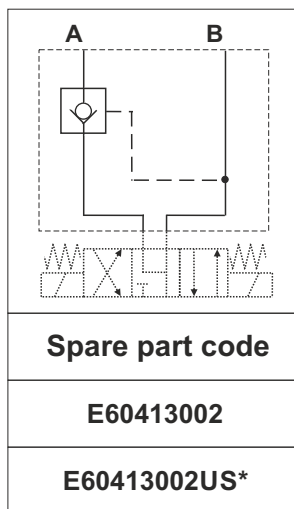
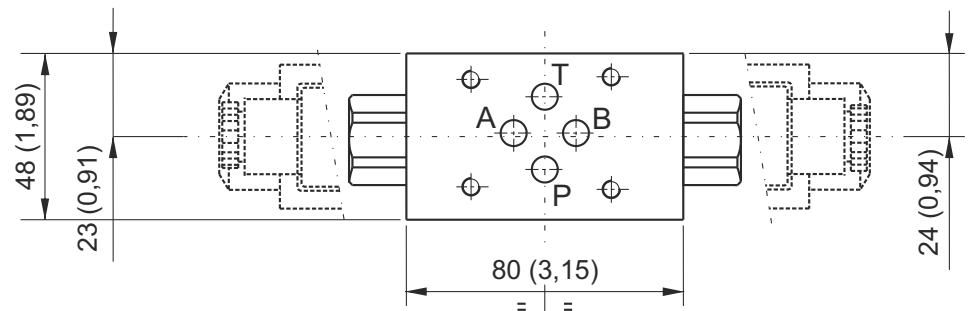
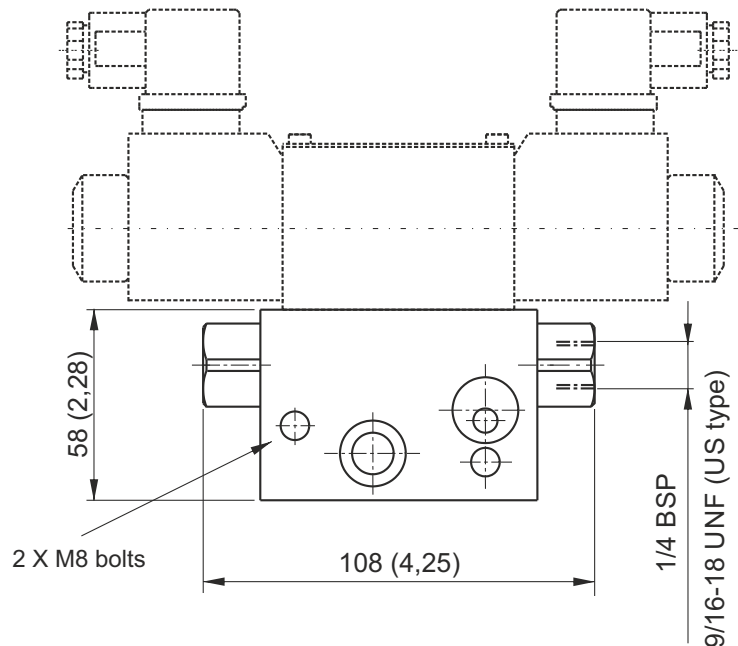
MODULAR MANIFOLDS NG6 (CETOP 3) WITH INTEGRAL PILOT OPERATED CHECK VALVES



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.

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

To add external manifolds to a PPC assembly code, just add their spare part codes at the end of the PPC code. eg: PPC-0,8 12DC-MB-J-K0,6-V200-G-RETURN KIT-1,5L+E60403004+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



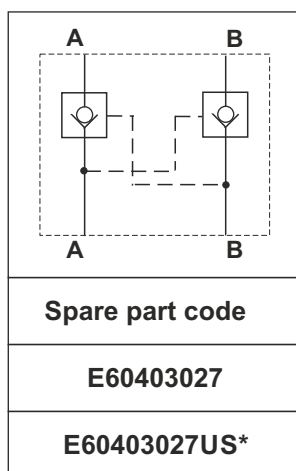
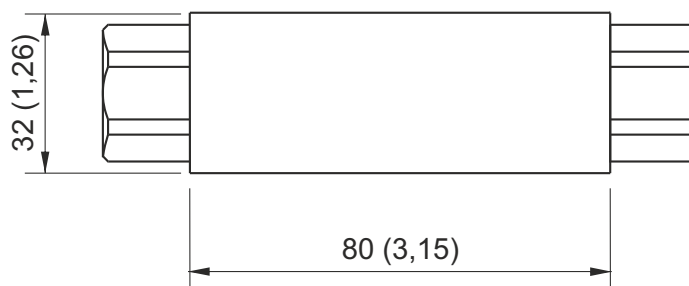
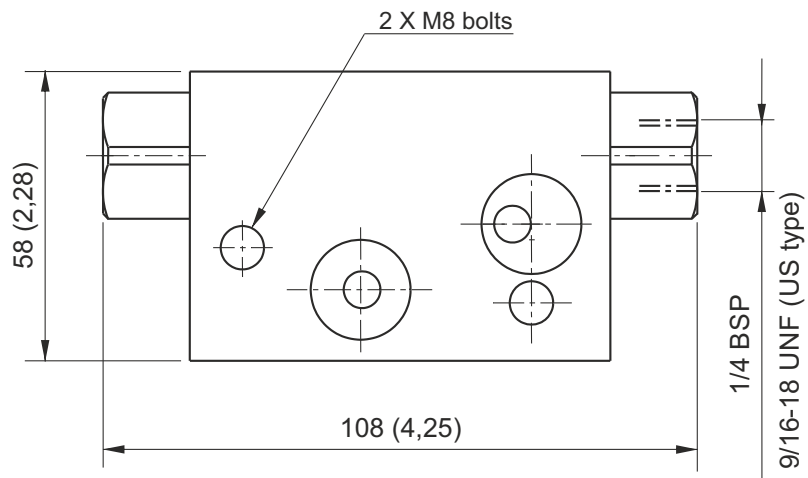
Dimensions in mm (inches)

Suitable for:

- central manifold U4
- central manifold UR

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



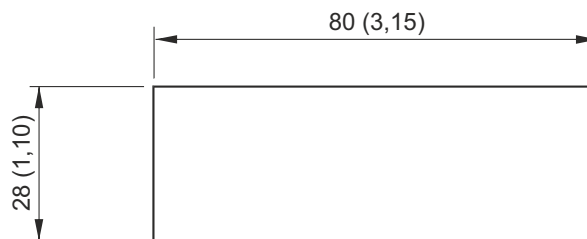
Note: Recommended tightening torque for M8 bolts: 16 Nm. Attention! Do not use tie-rods less than 8.8.

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

SPACER ELEMENTS

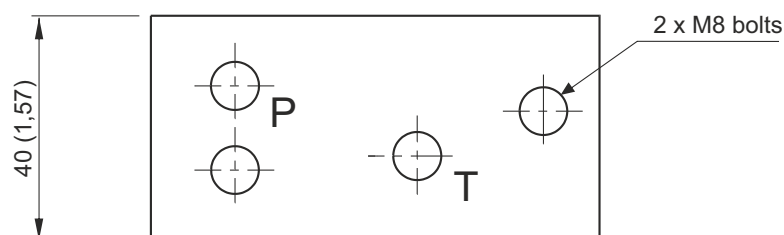


Dimensions in mm (inches)

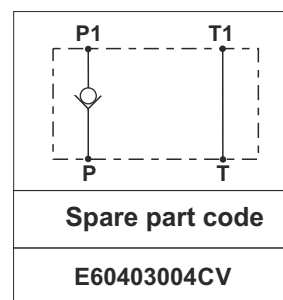
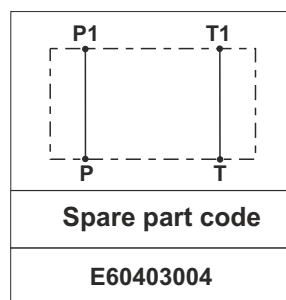
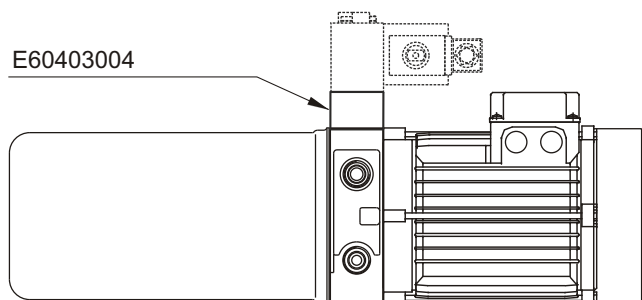


Main features

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



Mounting example



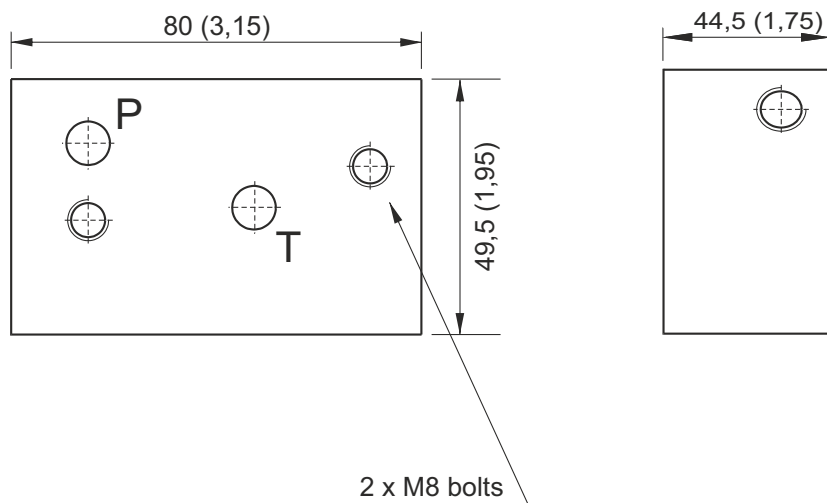
Note: Recommended tightening torque for M8 bolts: 16 Nm. Attention! Do not use tie-rods less than 8.8. Suitable with AC motor frames bigger than 71 and DC motors bigger than dia. 125, to avoid interference between the valves and the motor.

SECTION F

90° ROTATION MANIFOLDS 49MM

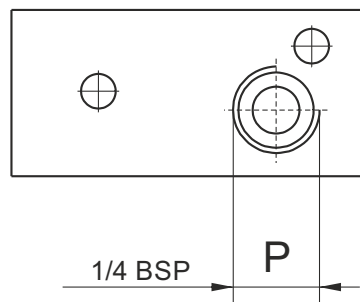


Dimensions in mm (inches)

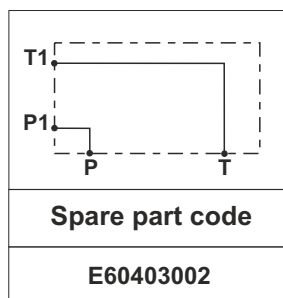
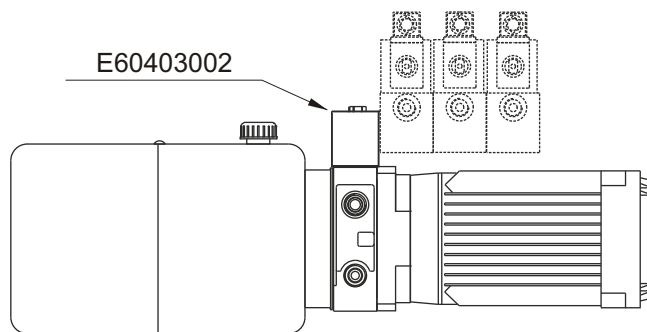


Main features

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



Mounting example

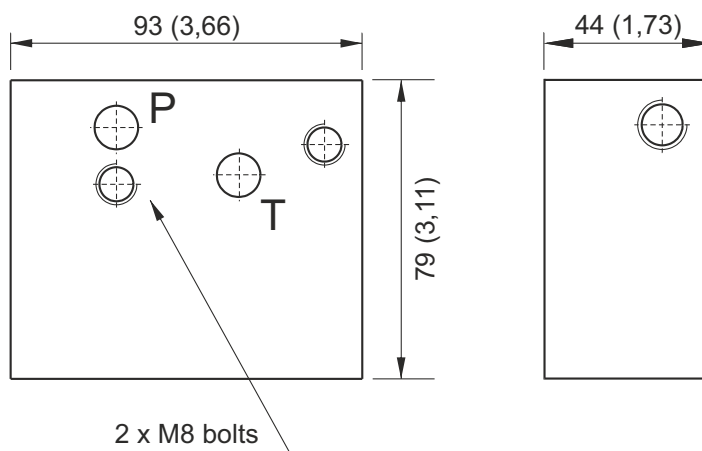


Note: Recommended tightening torque for M8 bolts: 16 Nm. Attention! Do not use tie-rods less than 8.8.
With AC motor frames bigger than 90 and DC motors bigger than dia. 151, always add a spacer manifold (see E60403004 code in F section) below the modular block to avoid interference between the valve and the motor.

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

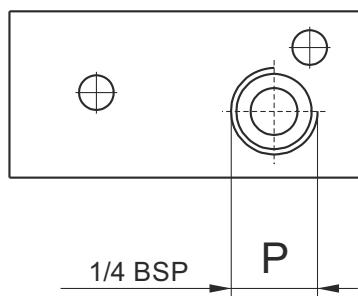


Dimensions in mm (inches)

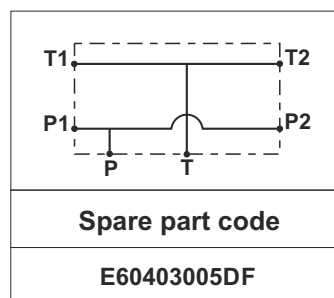
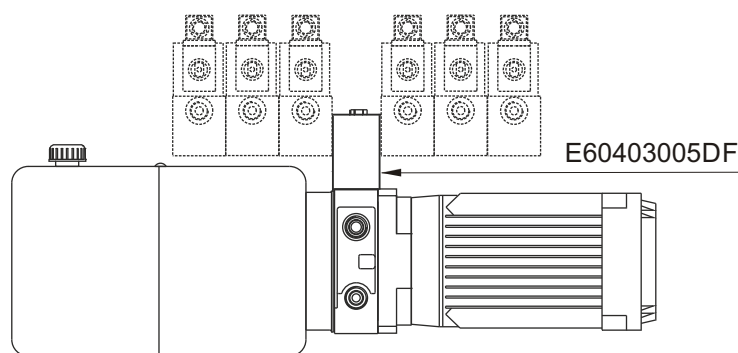


Main features

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.
With AC motor frames bigger than 90 and DC motors bigger than dia. 151, always add a spacer manifold (see E60403004 code in F section) below the modular block to avoid interference between the valve and the motor.

SECTION F

MANIFOLD FOR ADDITIONAL SINGLE ACTING CIRCUIT

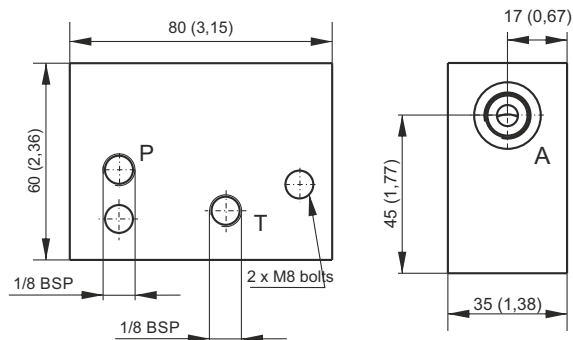


Dimensions in mm (inches)

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

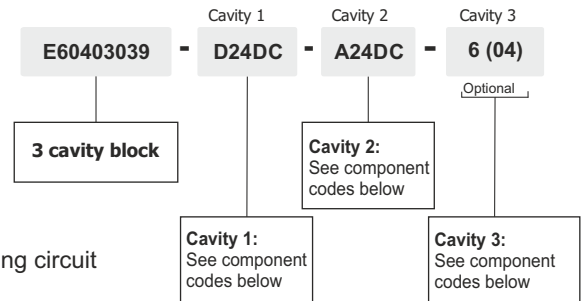
Main features

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

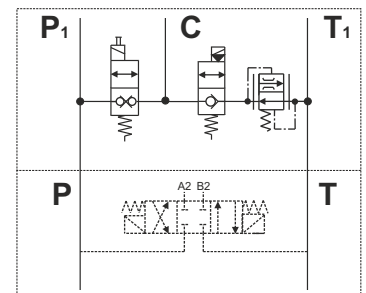


Spare part code
E60403039
E60403039US*

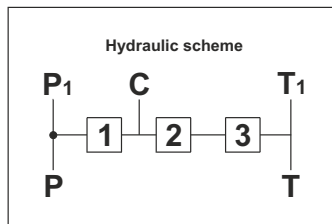
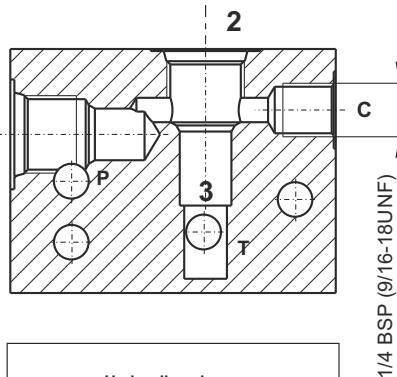
ASSEMBLY CODE - example



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 PPC assembly code, just add their spare part codes at the end of the PPC code.

Example: PPC-0,8 12DC-UA-J-G1,1-V200-G-RETURN KIT-G-1,5L+E60403039-D24DC-A24DC-6(04).

The valve attachment is on the motor side. With AC motor frames bigger than 71 and DC motors bigger than dia. 125, always add a spacer manifold (see E60403004 code in F section) below the modular block to avoid interference between the valve and the motor.

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

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

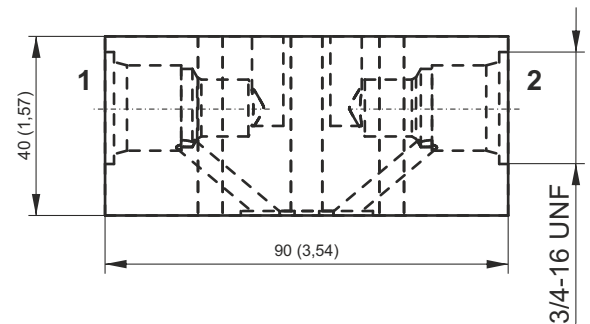
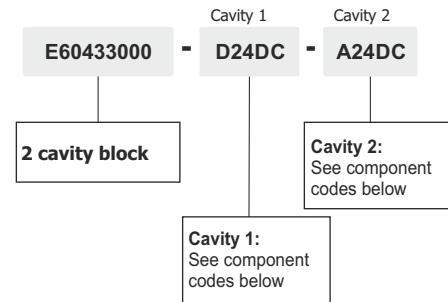


Dimensions in mm (inches)

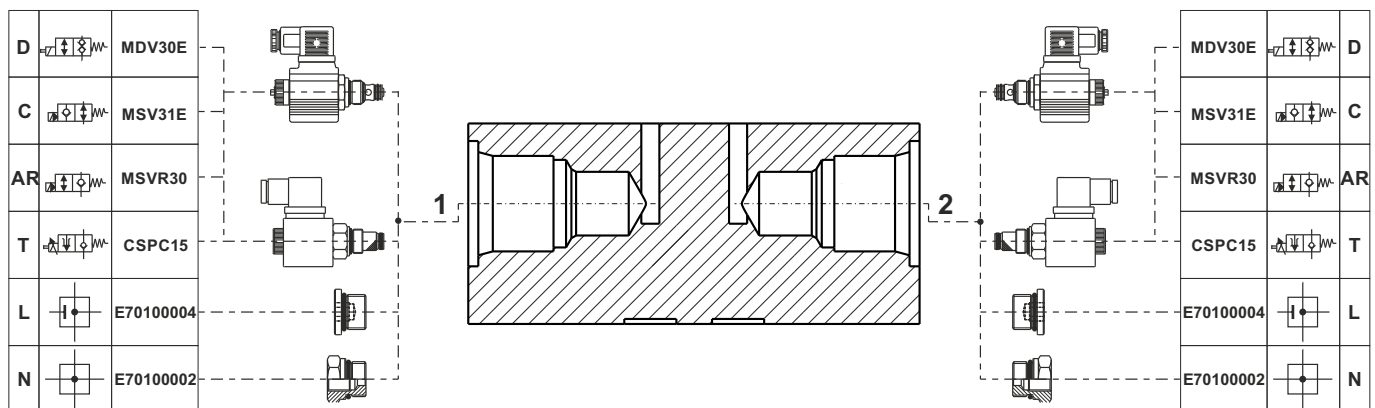
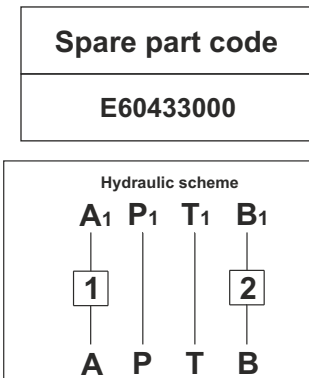
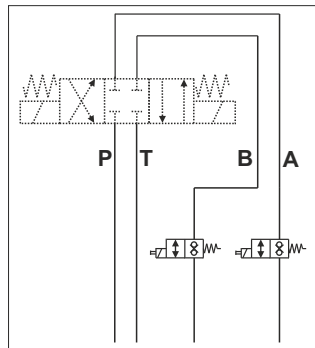
Main features

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



Note: to add external manifolds to PPC assembly code, just add their spare part codes at the end of the PPC code.

Example: PPC-0,8 12DC-UA-G1,1-J-V200-G-RETURN KIT-1,5L+E60403010+E60433000+MDV30E000+24DC_M630+MSV300000+24DC_M630+SD03C2+2x24DC_M160.

For more info and for a mounting example, please see E60433001 code (NG6 CETOP 3 flow control sandwich valve) in G section. The Cetop valve attachment is on the motor side. With AC motor frames bigger than 71 and DC motors bigger than dia. 125, always add a spacer manifold (see E60403004 code in F section) below the modular block to avoid interference between the valve and the motor.

SECTION F

MODULAR MANIFOLD WITH DISCHARGE VALVE FOR DIFFERENTIAL AREA CYLINDER

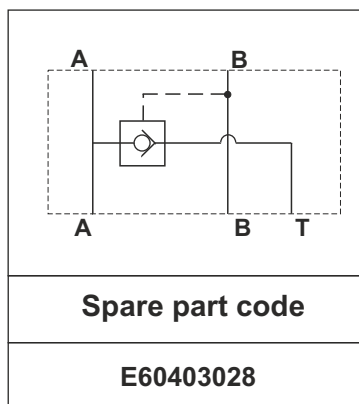
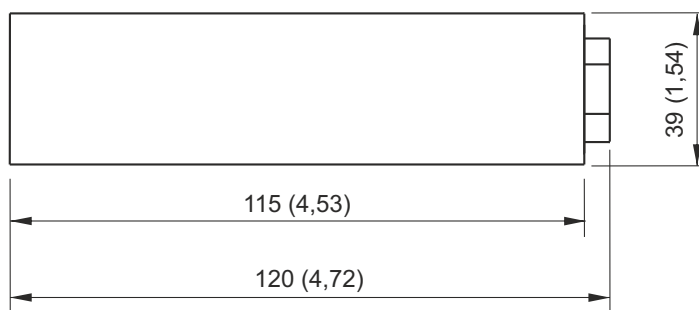
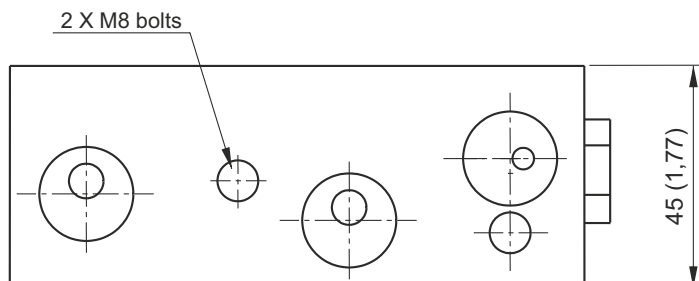


Dimensions in mm (inches)

Suitable for reversible power packs with UR manifold and differential area cylinders. T1 port must be drilled before mounting E60403028 manifold.

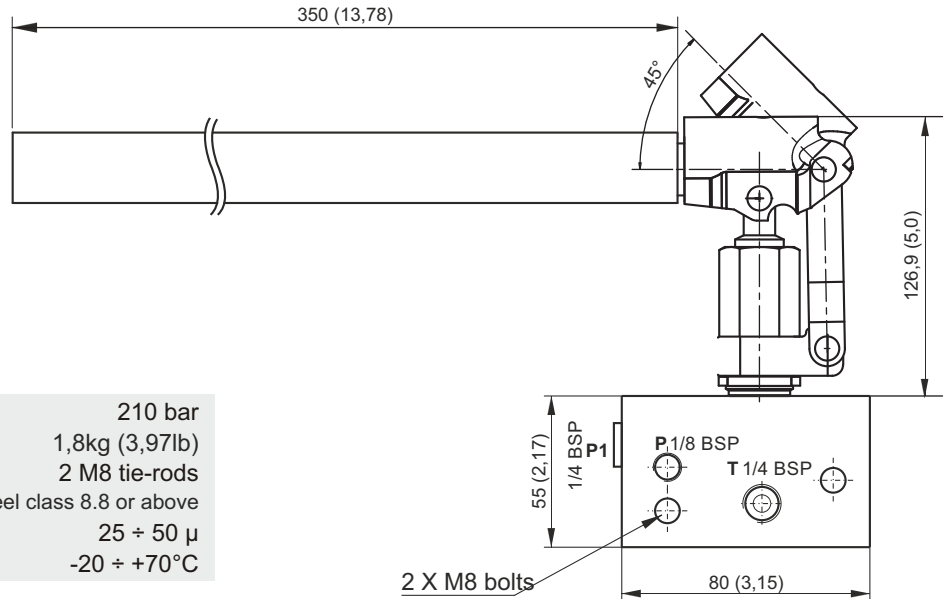
Main features

Max pressure	350 bar
Pilot ratio	1:5,3
Weight	0,23 Kg (0,5lb)
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.

HAND PUMP MODULAR MANIFOLD



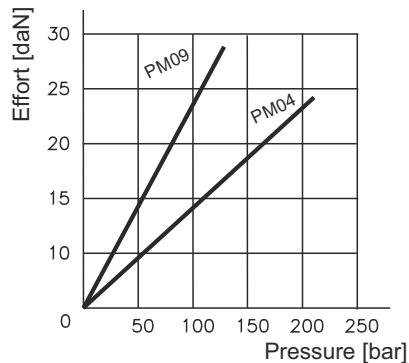
Dimensions in mm (inches)

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

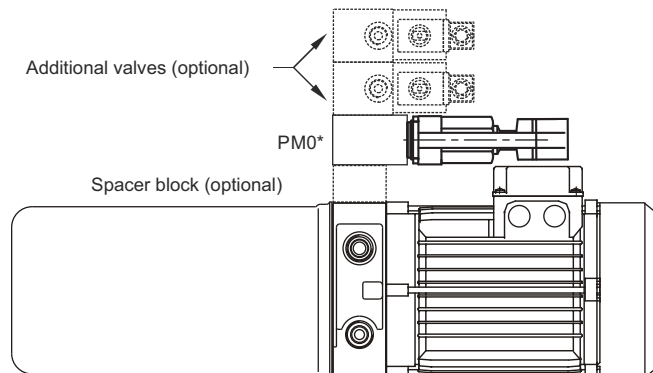


Note: Values are measured only on the valve (no cavity) with oil viscosity of 46 cSt at 50 °C. The drop of the pressure can change by the fluid viscosity and fluid temperature.

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

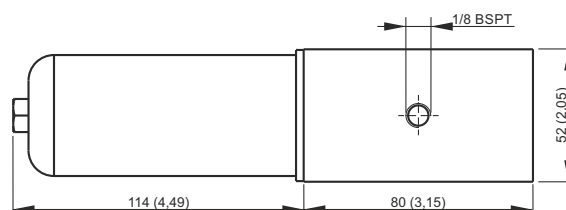
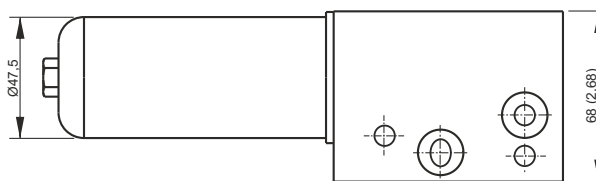
RETURN LINE FILTER MODULAR MANIFOLD



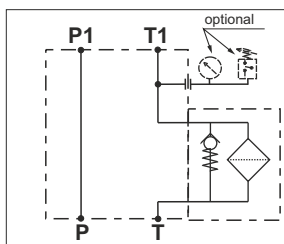
Dimensions in mm (inches)

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

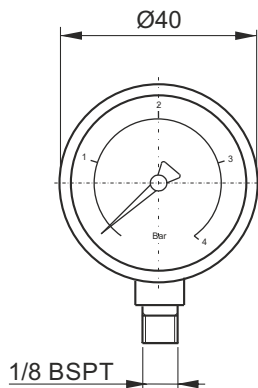
Spare part code

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

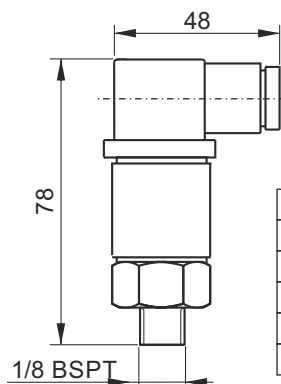


Weight: 0,1 Kg

Spare part code

MIR4004

Pressure switch for return filter manifold

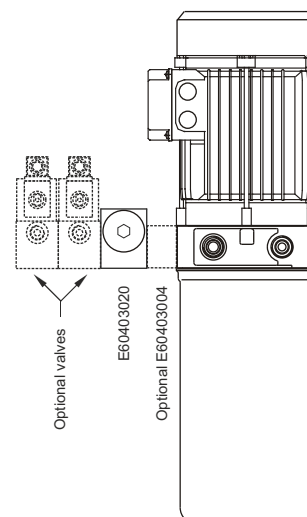


Setting range	0,2 ÷ 2,5 bar
Protection degree	IP 65
Hysteresis	10 ÷ 15 %
Weight	0,05 Kg
Max load	0,5 A a 250 VAC
Electric switch	NO/NC

Spare part code

F4R0M3

Mounting example



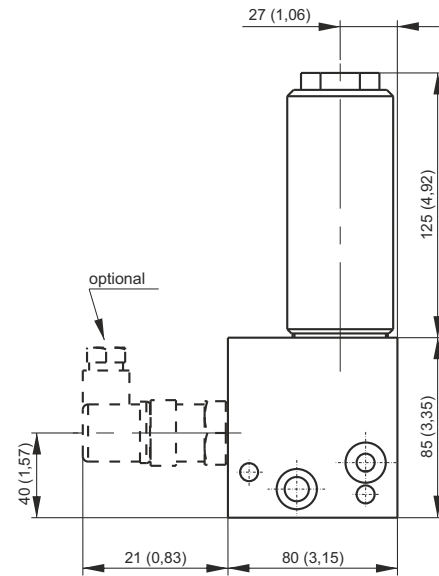
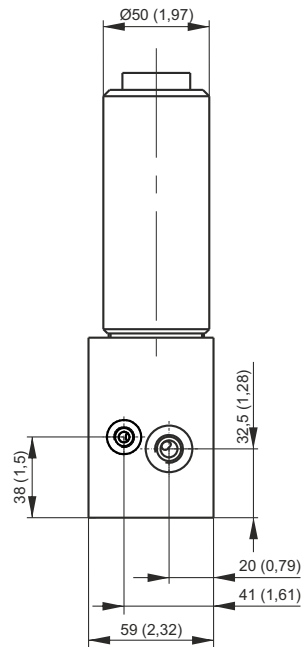
MODULAR BLOCK WITH PRESSURE FILTER



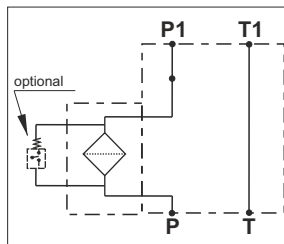
Dimensions in mm (inches)

Main features

Backpressure allowable	21 bar
Max pressure	400 bar
Max flow	32 l/min
Filtration grade	15 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

HPFEHY15 — 15 micron fiber reinforced cartridge filter not included. To be ordered separately.

Note: other filtration grades cartridges available on request

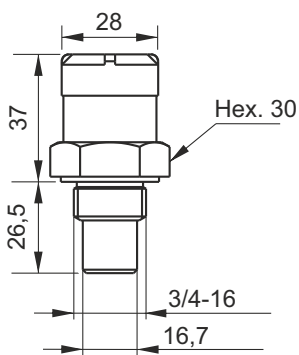
Recommended tightening torque for M8 bolts: 16 Nm.

Attention! Do not use tie-rods less than 8.8

Recommended tightening torque for spin on cartridge: 45Nm

OPTIONS

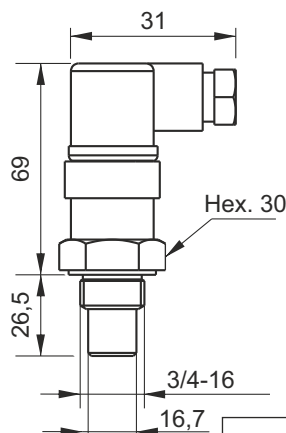
Differential pressure visual indicator



Spare part code

DPV04400

Differential pressure switch

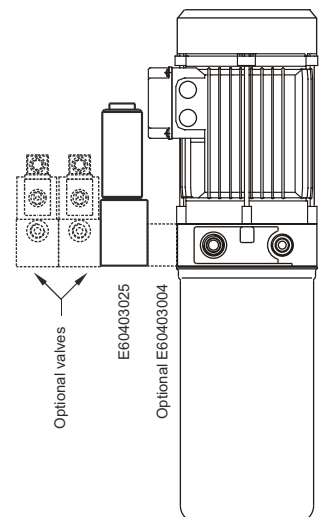


Setting range	1,3 ÷ 8 bar
Protection degree	IP 65
Tolerance	10 %
Weight	0,16 Kg
Max load	0,5 A a 250 VAC
Electric switch	NO/NC

Spare part code

DPE04400

Mounting example



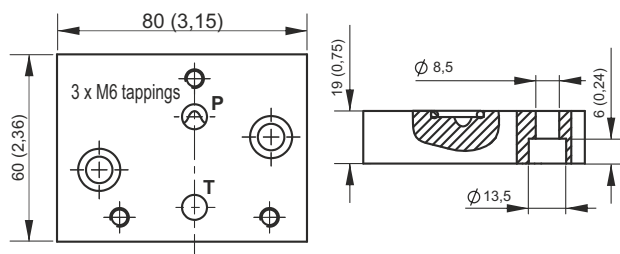
SECTION F

BASE MANIFOLD CONVERTERS



Dimensions in mm (inches)

PPC TO SD01 STACKABLE VALVE CONVERTER (needed to mount SD01 stackable valves)



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

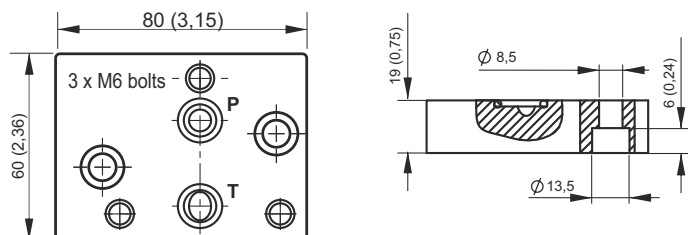
Spare part code

E60403006



Dimensions in mm (inches)

PPC 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



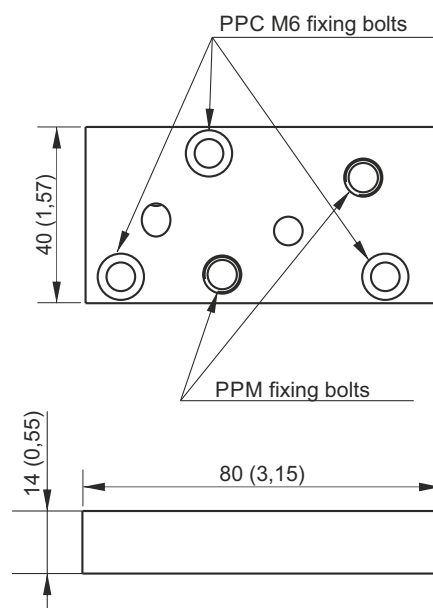
Dimensions in mm (inches)

PPC TO PPM BASE CONVERTER (needed to mount PPM NG3 MICRO blocks range)

Fixing system: 3 M6x20 bolts steel class 8.8 or above
Weight: 0,11 Kg

Spare part code

E60403008M



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

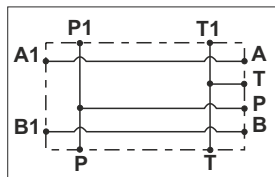
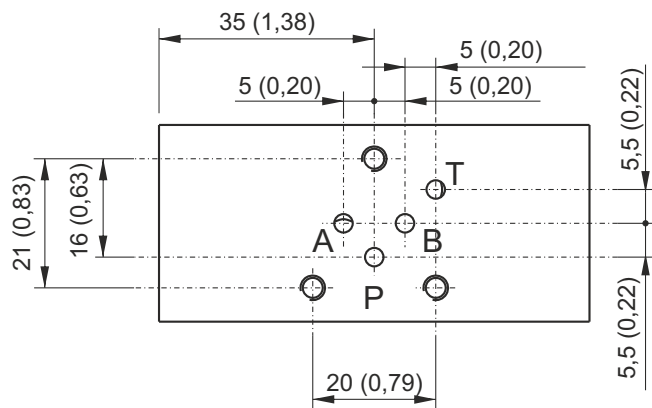
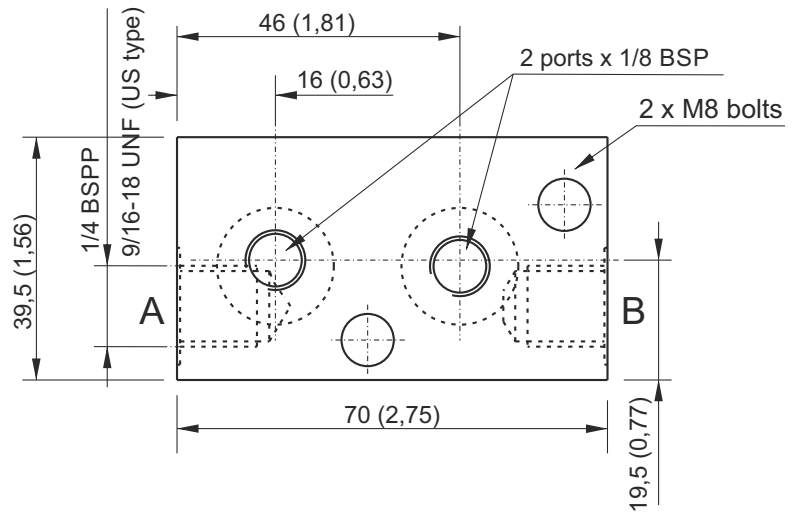
NG3 MICRO MODULAR MANIFOLDS, LATERAL PORTS



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: Recommended tightening torque for M8 bolts: 16 Nm. Attention! Do not use tie-rods less than 8.8.
To add NG3 MICRO external manifolds to a PPC assembly code, just add the converter PPC to PPM first, then the additional manifolds spare part codes at the end of the PPC code. eg: PPC-0,8 12DC-MB-J-K0,6-V200-G-RETURN KIT-1,5L+E60403008M+M60403004+M60403010.
The NG3 micro valve attachment is on motor side.

SECTION F

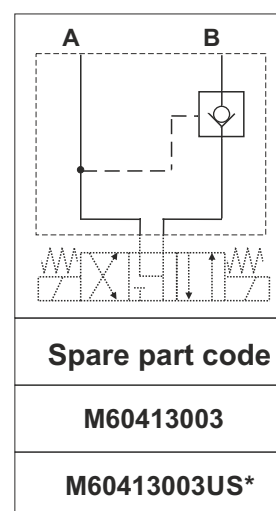
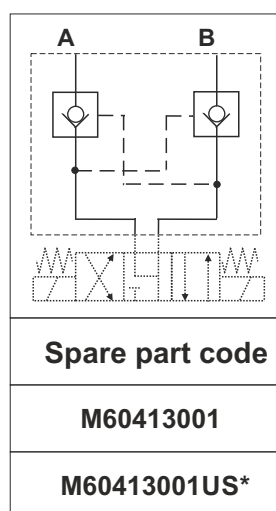
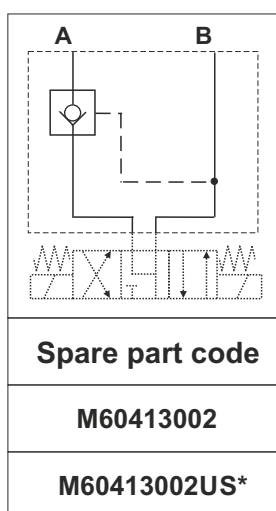
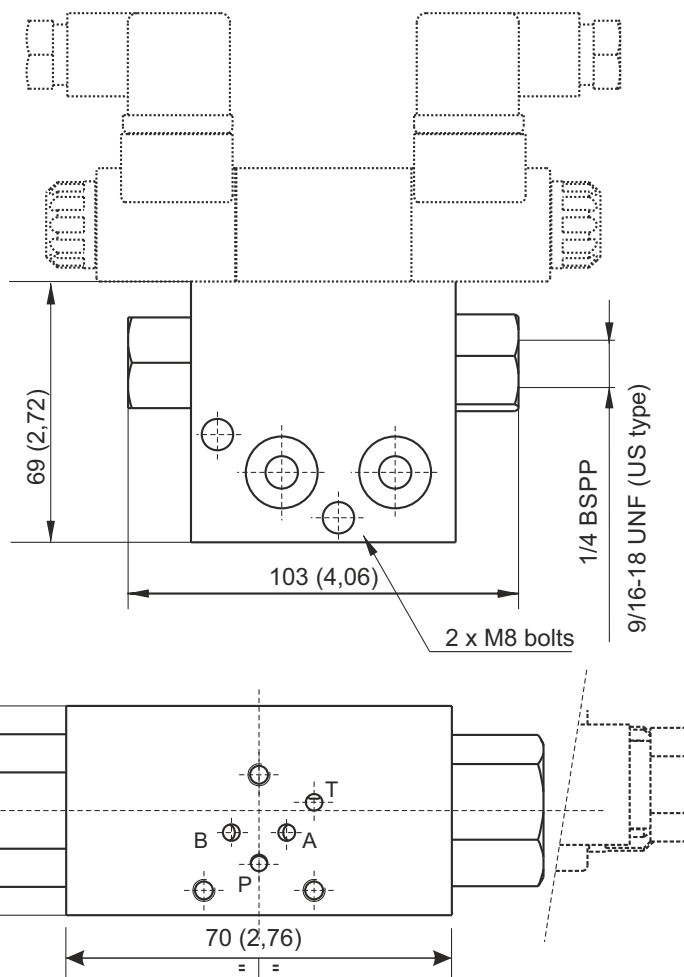
NG3 MODULAR MANIFOLD WITH INTEGRAL PILOT OPERATED CHECK VALVES



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



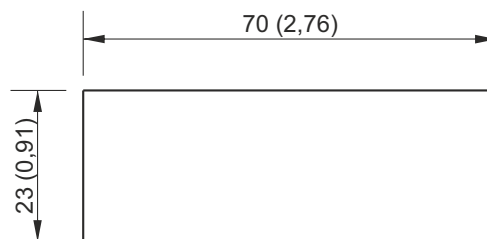
Note: Recommended tightening torque for M8 bolts: 16 Nm. Attention! Do not use tie-rods less than 8.8.

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

To add NG3 MICRO external manifolds to a PPC assembly code, just add the converter PPC to PPM first, then the additional manifolds spare part codes at the end of the PPC code. eg: PPC-0,8 12DC-MB-J-K0,6-V200-G-RETURN KIT-1,5L+E60403008M+M60403004+M60403010.

Code does not include the NG3 valve. See SD00 NG3 valves table in section G.

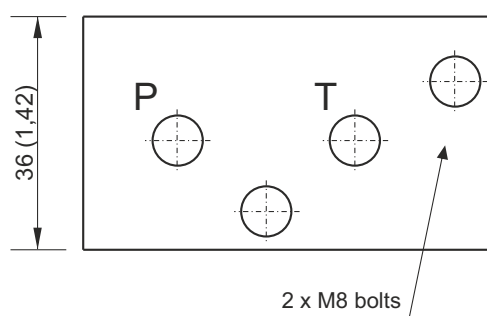
PPM SPACER ELEMENT 23MM



Dimensions in mm (inches)

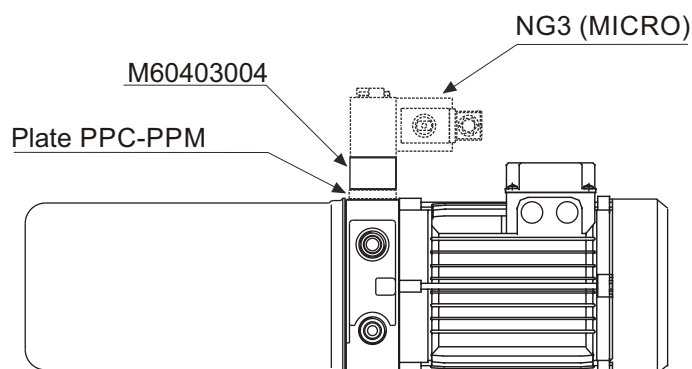
Main features

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



Spare part code
M60403004

Mounting example



Note: Recommended tightening torque for M8 bolts: 16 Nm. Attention! Do not use tie-rods less than 8.8.
To add NG3 MICRO external manifolds to a PPC assembly code, just add the converter PPC to PPM first, then the additional manifolds spare part codes at the end of the PPC code. eg: PPC-0,8 12DC-MB-J-K0,6-V200-G-RETURN KIT-1,5L+E60403008M+M60403004+M60403010.

SECTION F

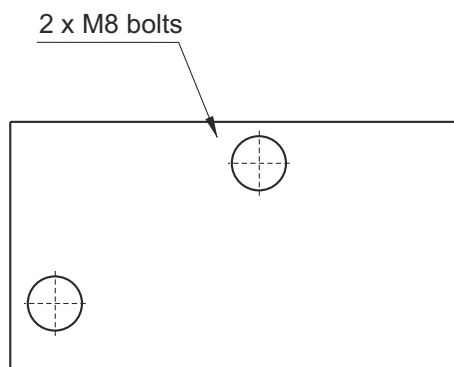
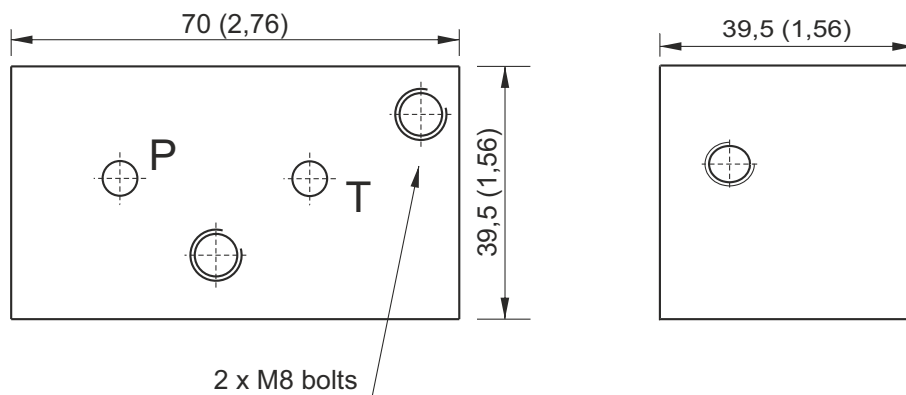
PPM 90° ROTATION MANIFOLD



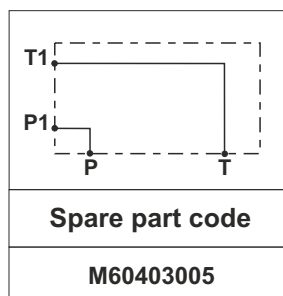
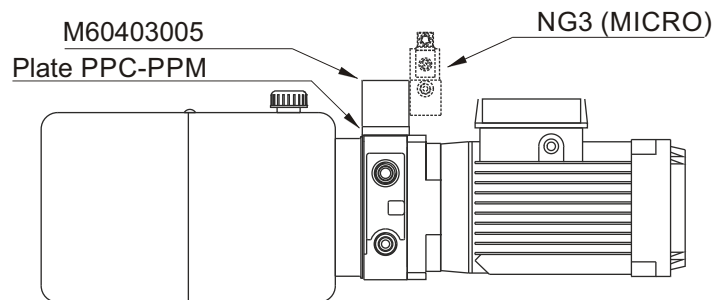
Dimensions in in mm (inches)

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



Note: Recommended tightening torque for M8 bolts: 16 Nm. Attention! Do not use tie-rods less than 8.8.
To add NG3 MICRO external manifolds to a PPC assembly code, just add the converter PPC to PPM first, then the additional manifolds spare part codes at the end of the PPC code. eg: PPC-0,8 12DC-MB-J-K0,6-V200-G-RETURN KIT-1,5L+E60403008M+M60403004+M60403010.

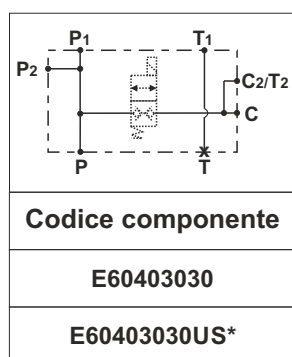
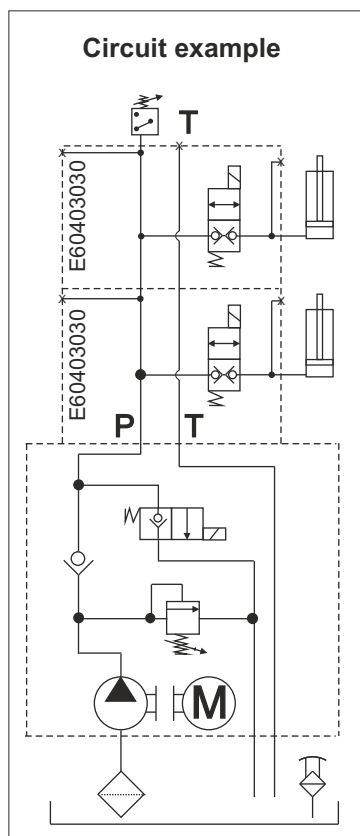
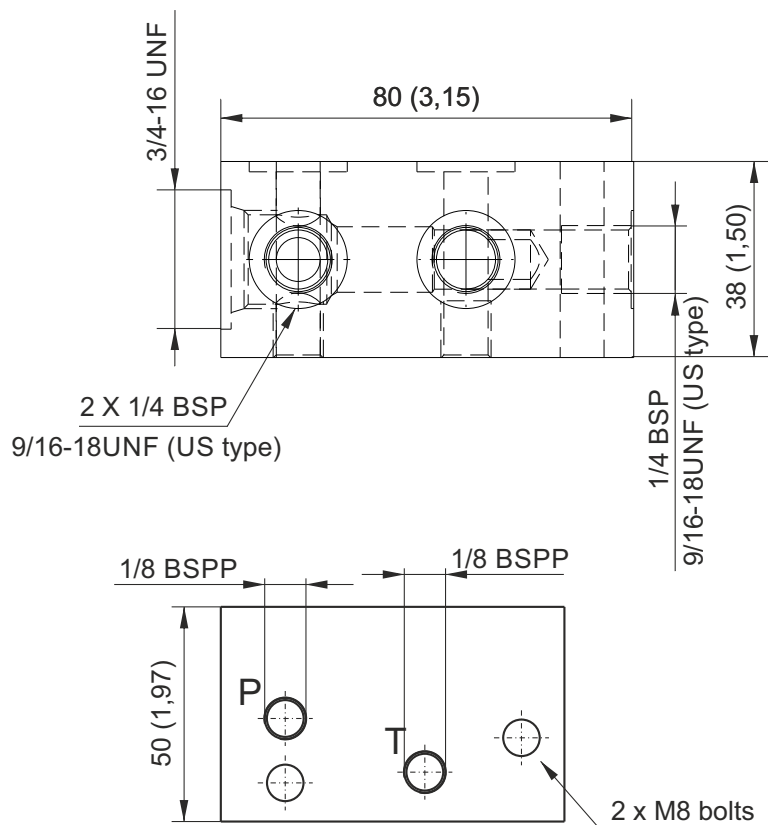
MODULAR MANIFOLD FOR 3/4-16 UNF CARTRIDGES, TWO WAY



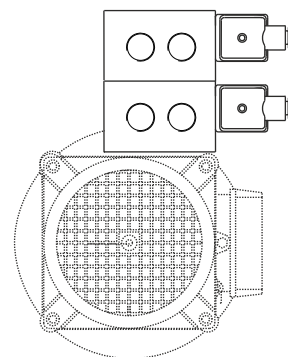
Dimensions in mm (inches)

Main features

Max pressure	350 bar
Weight	0,35 Kg (0,78lb)
Fixing bolts	2 M8 tie - rods steel class 8.8 or above



Mounting example



Note: code does not include the MSV or MDV solenoid valves. See valves tables in section D.

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

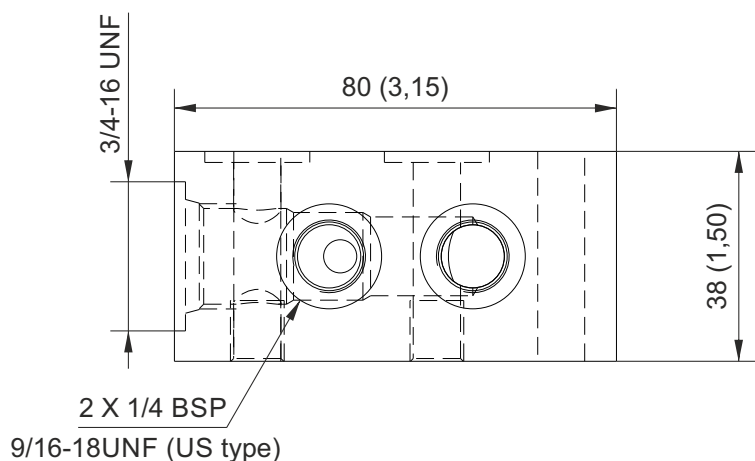
*: US execution with 9/16-18 UNF SAE06 exit ports.

SECTION F

MODULAR MANIFOLD FOR 3/4-16 UNF CARTRIDGES, THREE WAY

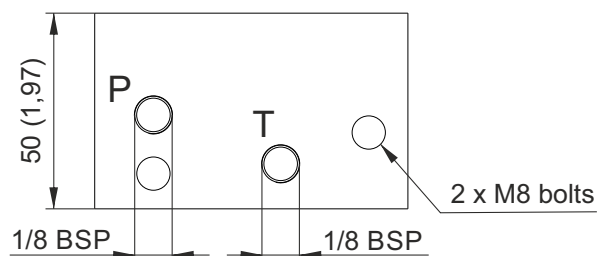


Dimensions in mm (inches)

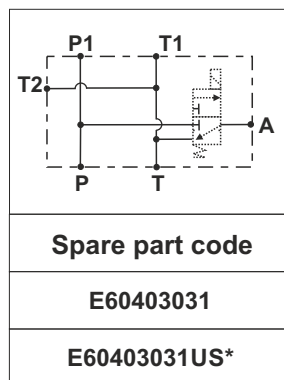
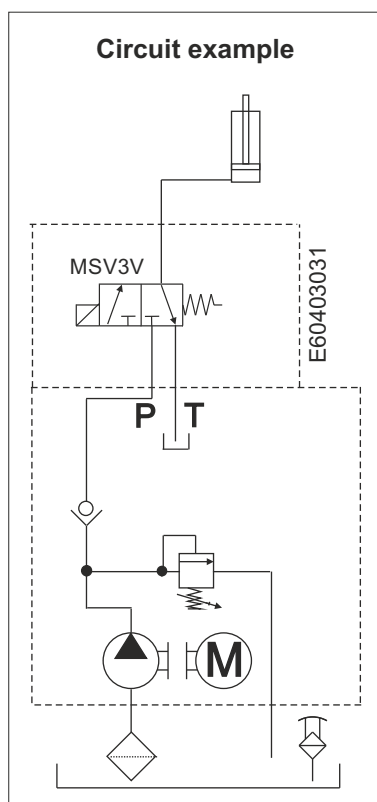


Main features

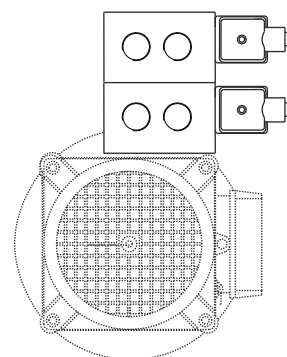
Max pressure	350 bar
Weight	0,32 Kg (0,7lb)
Fixing bolts	2 M8 tie - rods steel class 8.8 or above



Circuit example



Mounting example



Note: code does not include the MSV3V solenoid valve.
See MSV3V table in section G

Note: Recommended tightening torque for M8 bolts: 16 Nm. Attention! Do not use tie-rods less than 8.8.
The three way block is not compatible with square vertical tanks.
*: US execution with 9/16-18 UNF SAE06 exit ports.

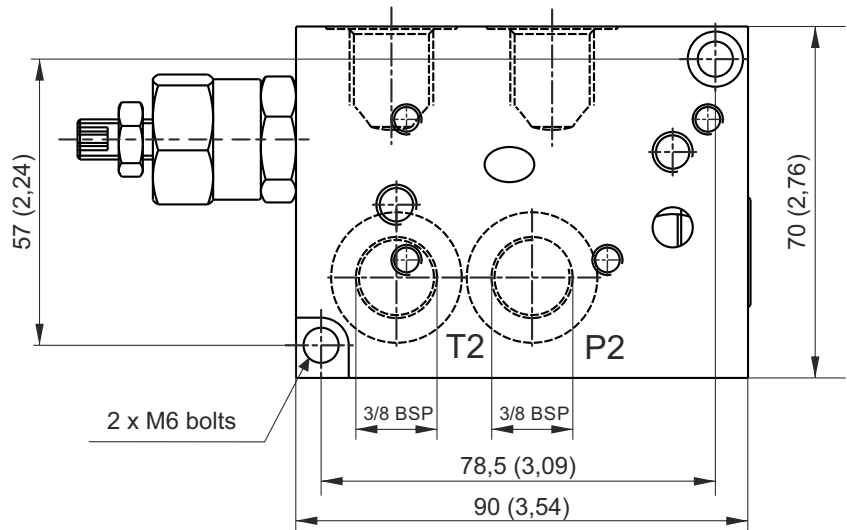
IN-LINE MOUNTING BASE PLATE FOR MODULAR BLOCKS



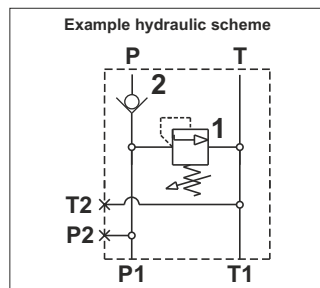
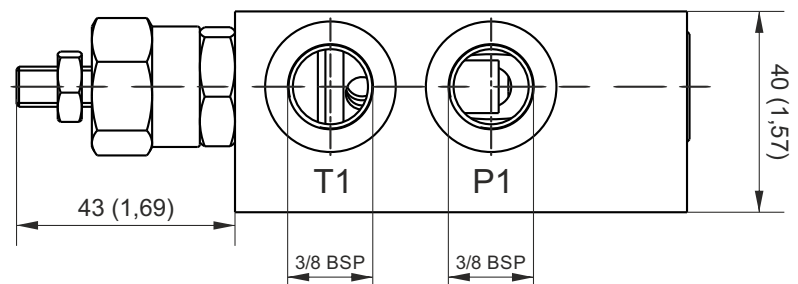
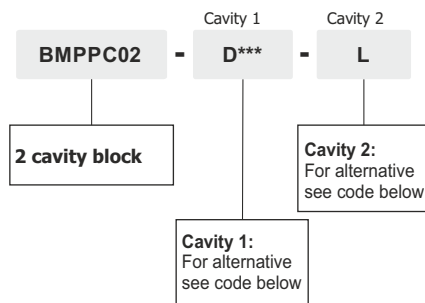
Dimensions in mm (inches)

Main features

Max flow	40 l/min
Max pressure	350 bar
Weight	0,58 Kg (1,28 lb)
Fixing bolts	2 M8 or 4xM6 tie - rods steel class 8.8 or above



ASSEMBLY CODE - example



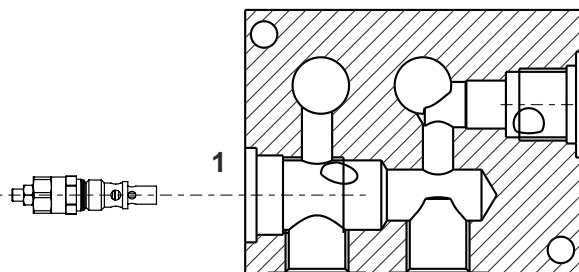
BMPPC02 allows you to mount off-line the entire system of YOUINDUSTRY modular blocks and valves.

A typical application is to use it on a conventional powerpack, where the control block and the valve are separated from the engine driven pump. P1 and T1 ports are closed by 3/8" BSP plugs in standard configuration. You can use these ports dismounting the plugs and using the same to close P2 and T2 ports.

See cavity 1 VMDC35 table in section G.

See cavity 2 components and plugs tables in section D.

D60		VMDC35L1	L1
D180		VMDC35A1	A1
D310		VMDC35B1	B1
D350		VMDC35C1	C1



	VUC20		J
	CSB04		S
	E70100004		L
	E70100002		N

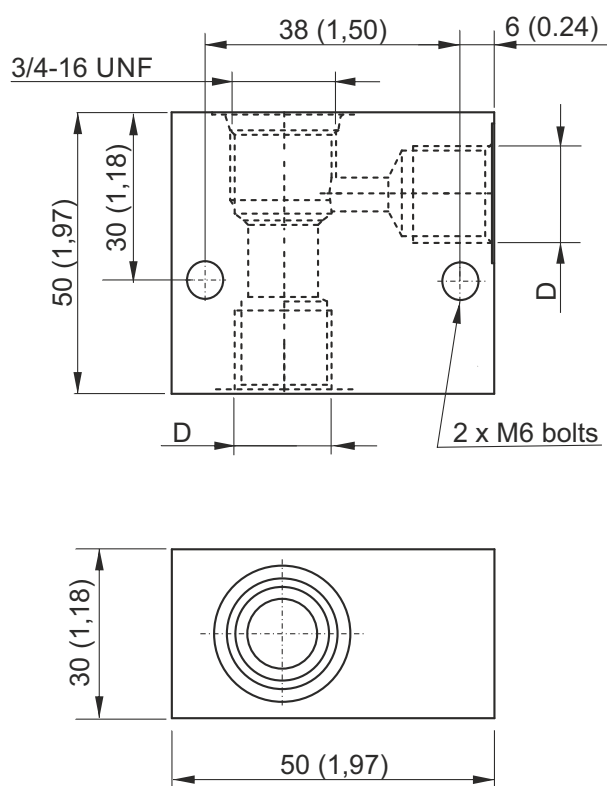
SECTION F

ACCESSORIES

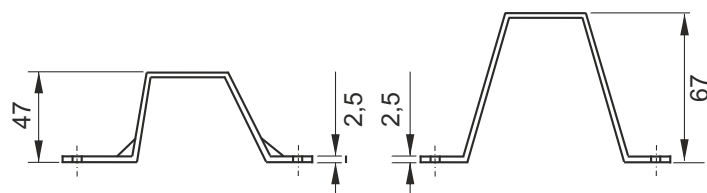


Dimensions in mm (inches)

In line mounting SAE 8 manifold

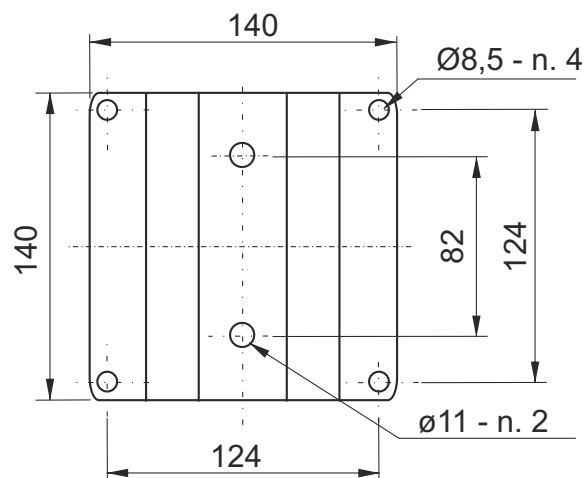


Foot mounting support



E60543006
Weight: 0,5 Kg

E60543007
Weight: 0,6 Kg

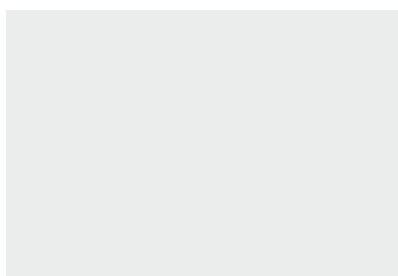


E60543006: suitable for all tanks except for E60303044

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

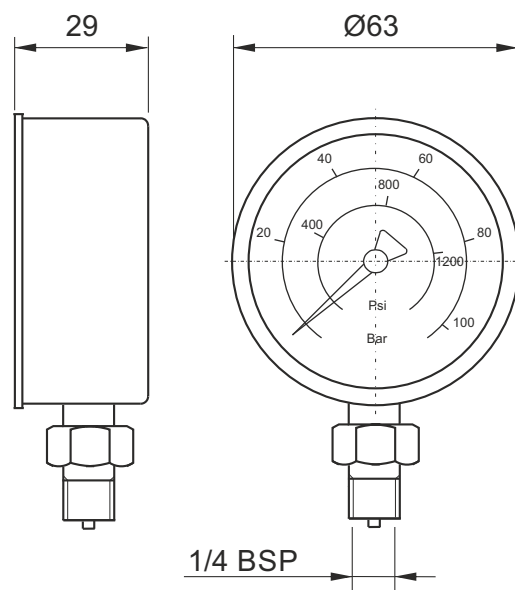
Spare part code	
E60543006	E60543007

ACCESSORIES



Pressure gauge

Protection degree	IP 65
Thermal drift	$\pm 0,04\%/1K$ a $20^{\circ}C$
Weight	0,206 Kg
Static working pressure	75% end of scale
Peak working pressure	end of scale
Fluid temperature	$-10 \div +60^{\circ}C$
Precision class	cl. 1.6 EN837-1

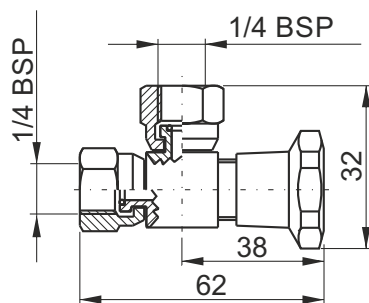


Spare part code
MIR63*** ***: max pressure in bar (60, 160, 250, 315 bar)



Gauge isolator 90° F-F

EM9001C



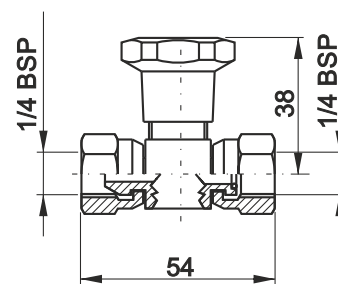
Weight: 0,14 Kg. Max working pressure: 400 bar

Spare part code
EM9001C



Gauge isolator F-F

EMIL01C



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

Spare part code
EMIL01C

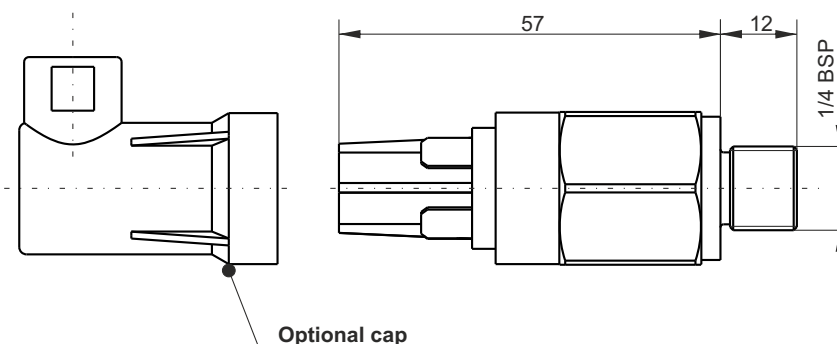
PRESSURE SWITCHES



Dimensions in mm (inches)

Main features

Switch rating	6(2)A / 250 Vca
Switch rating	2(1)A / 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



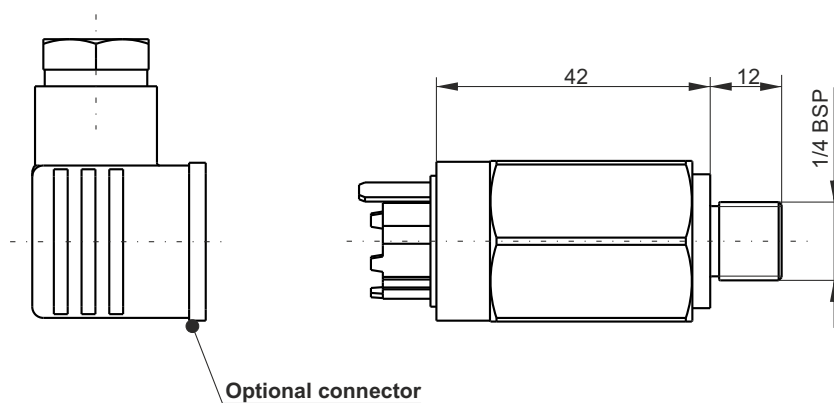
Spare part code	Pressure (bar)	Tolerance (bar)
PSL01S0100	10 ÷ 100	±3
PSL01S0300	50 ÷ 300	±15



Dimensions in mm (inches)

Main features

Max. voltage	250 Vca
Current	6 (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



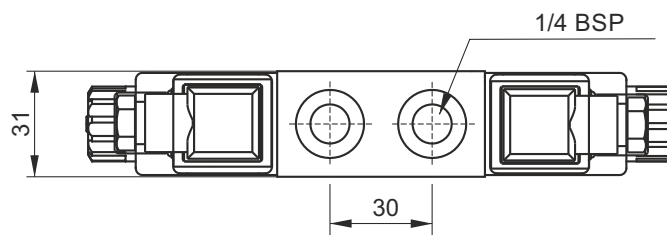
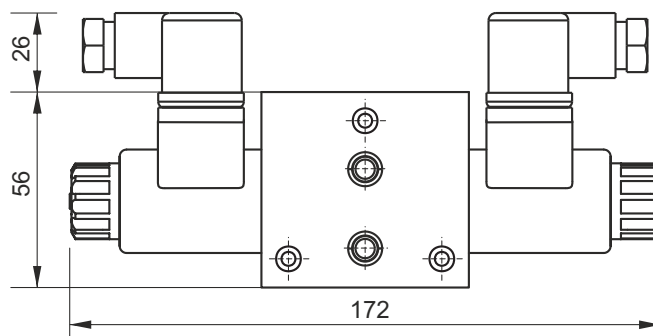
Spare part code	Pressure (bar)	Tolerance (bar)
PSH01S0100	10 ÷ 100	±3
PSH01S0300	50 ÷ 300	±15

SECTION G

STACKABLE DIRECTIONAL SOLENOID VALVES



Dimensions in mm (inches)



Main features

Max pressure	250 bar
Press. max port T	210 bar static, 140 bar dynamic
Max flow	20 l/min
Weight	0,89 Kg (1 solenoid) 1,09 Kg (2 solenoid)
Fixing bolts	3 x M6 tie-rods 6 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)
Fluid temperature	-20°C +80°C

Spool

Double solenoid

A2	
B2	
C2	
E2	

Single solenoid

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

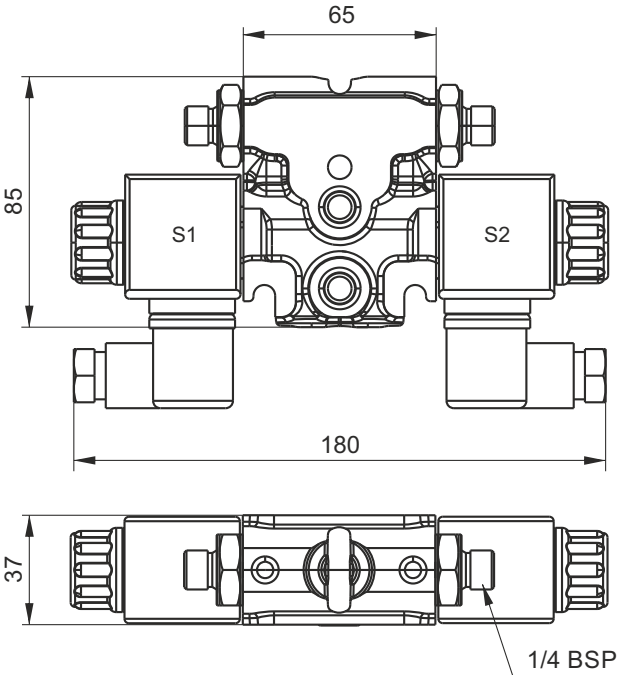
Spare part code

SD01	Stackable directional solenoid valve
A2	Spool configuration: see table below
24DC	Supply voltage: see coils table section G
-	Position type: - = intermediate C = closing end valve with P and T closed

Type C valve must be used to blank off the valve stack. If only 1 valve in stack then type C must be used.

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

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

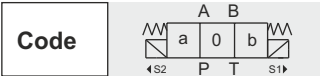
Max pressure	250 bar
Max pressure on T port	50 bar
Max flow	25 l/min
Weight	1,67 Kg (1 solenoid) 1,37 Kg (2 solenoid)
Internal leakage	0,02 l/min at 200bar
Fixing bolts	3 TCEI M8 tie-rods 15 Nm torque. 8.8 class steel or above
Coil insulation	Class H
Electric connection	DIN 43650-A / ISO 4400
Protection 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	
Option RP	
Code RP	

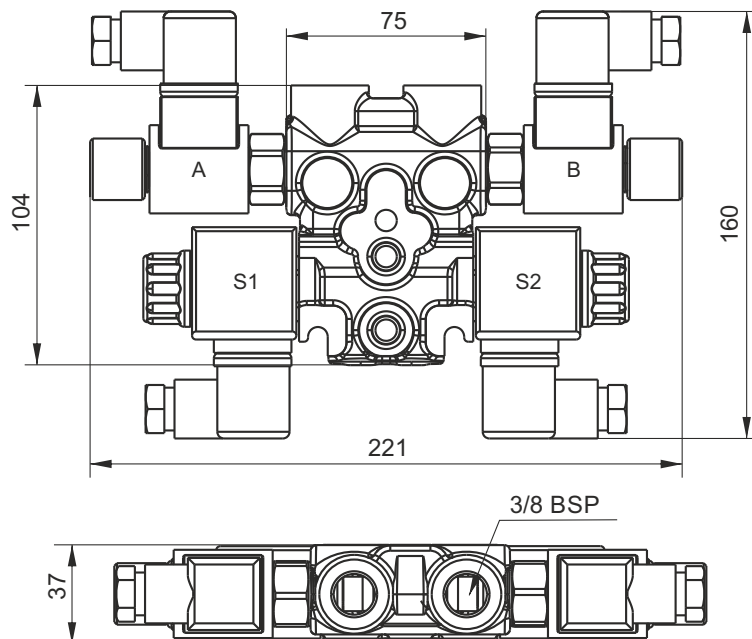
SECTION G

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	25 l/min
Weight	2,08 Kg (1 solenoid) 2,38 Kg (2 solenoid)
Internal leakage	0,02 l/min at 200bar
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

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

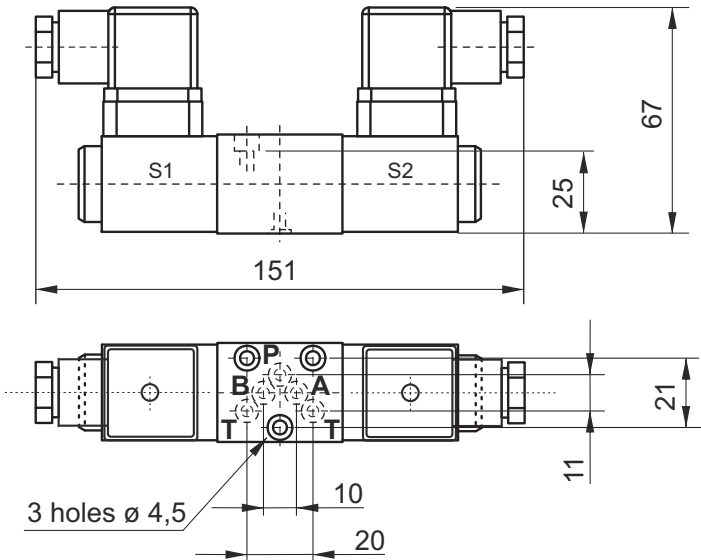
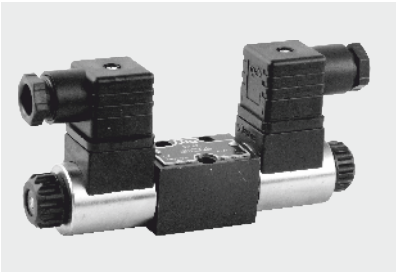
A2	
B2	
C2	
E2	

Single solenoid

A11C	
Cavity option	
Code	

Code	A B
	a 0 b
	← S2 P T S1 →

NG3 MICRO DIRECTIONAL SOLENOID VALVES



Main features

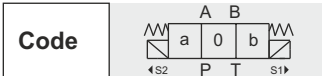
Max pressure	315 bar
Max pressure on T port	100 bar
Max flow	15 l/min
Weight	0,7 kg (2 solenoid) 0,55 kg (1 solenoid)
Internal leakage	< 0,01 l/min at 200bar
Fixing bolts	3 TCEI M4x30 bolts 2,8 Nm torque. 10,9 class steel or above
Coil insulation	Class H
Electric connection	DIN 43650-A / ISO 4400
Protection 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

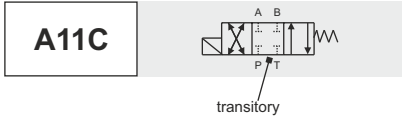
Spool

Double solenoid



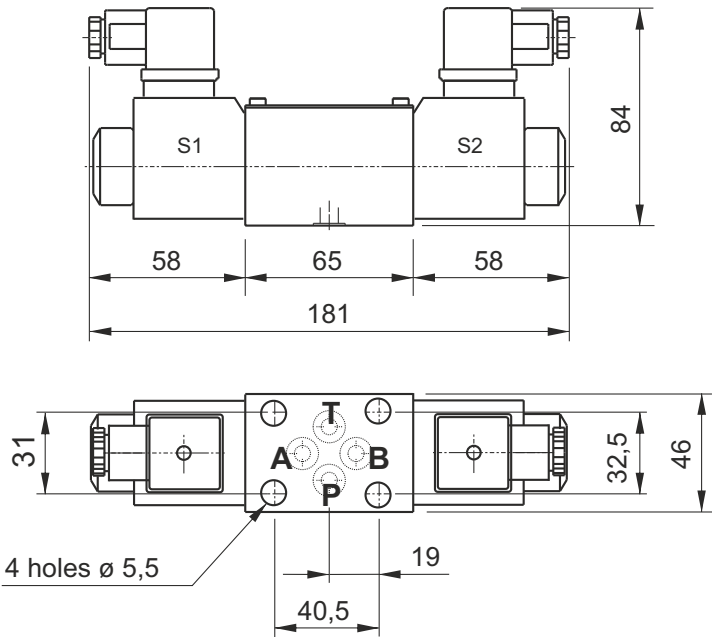
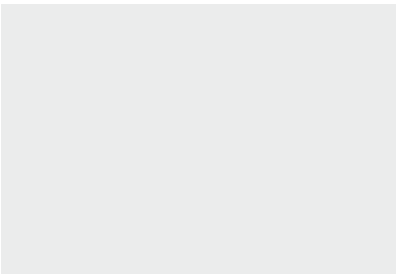
A2	
B2	
C2	
E2	

Single solenoid



SECTION G

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

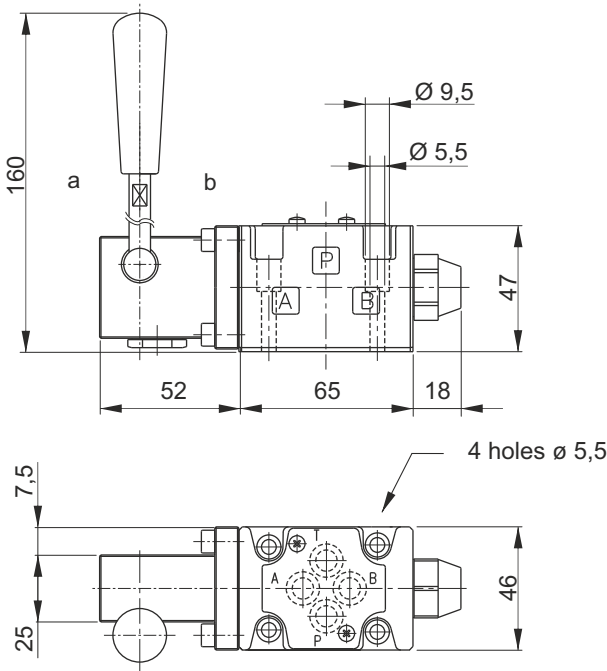
A11C	
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Code	
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NG6 (CETOP 3) MANUAL DIRECTIONAL CONTROL VALVES

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	<table><tr><td>A</td><td>B</td></tr><tr><td>a</td><td>0</td></tr><tr><td>P</td><td>T</td></tr></table>	A	B	a	0	P	T
A	B						
a	0						
P	T						

Spring centered	A	
Detented	D	

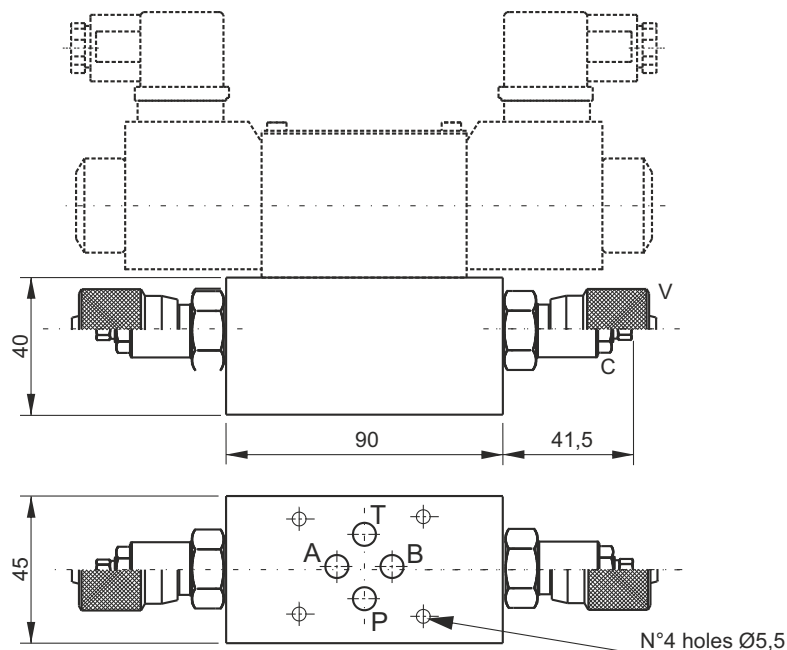
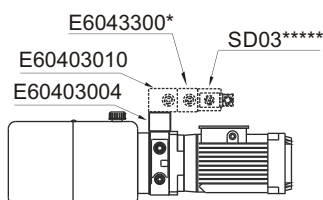
1	
2	
3	
4	

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

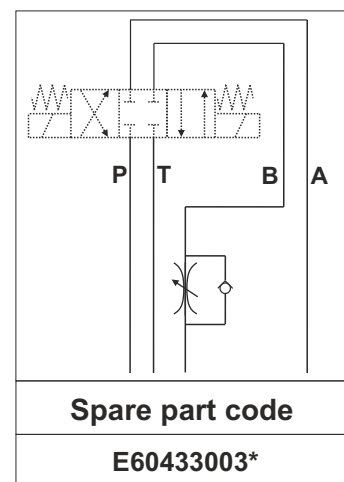
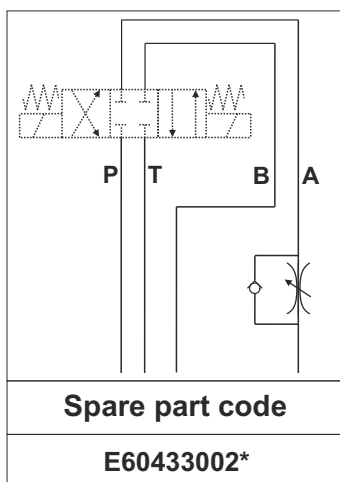
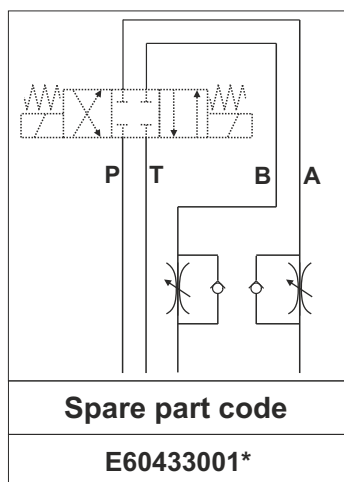
E6043300** — NG6 (Cetop 3) sandwich meter-out flow control valve

1 — Type:

- 1 = on A and B
- 2 = on A
- 3 = on B

- — Adjusting device:

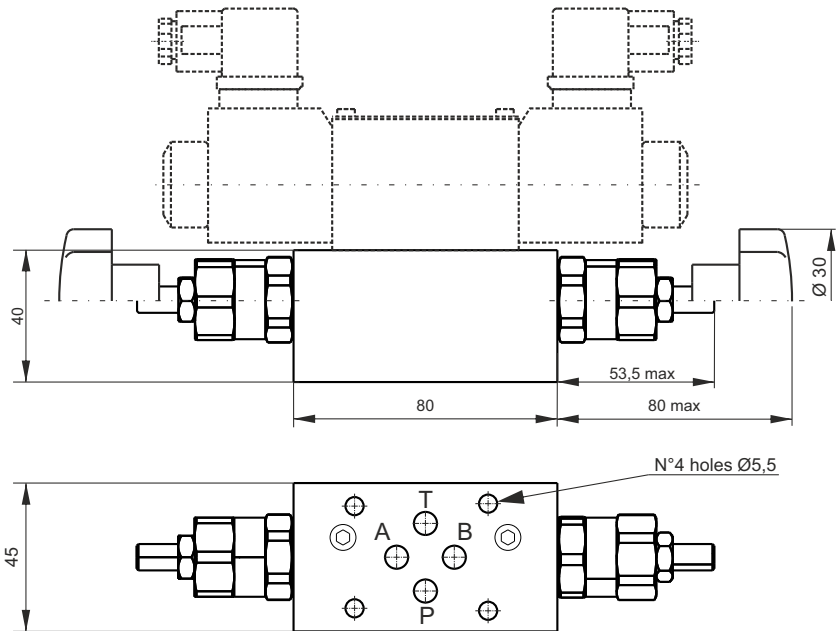
- = screw (std)
- V = handwheel



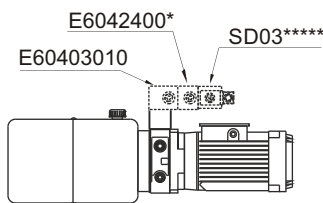
Notes: code does not include the Cetop solenoid valve.

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

NG6 (CETOP 3) SANDWICH RELIEF VALVE



Mounting example

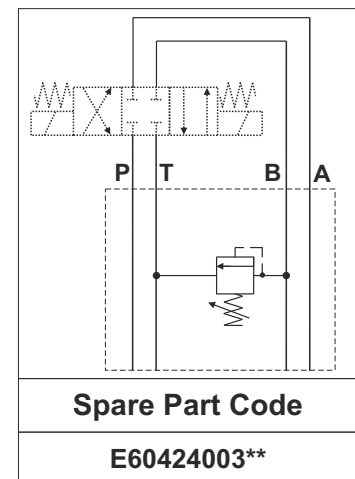
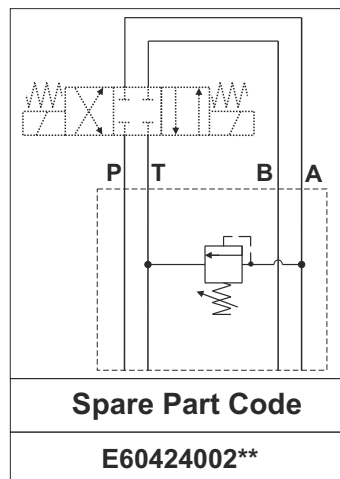
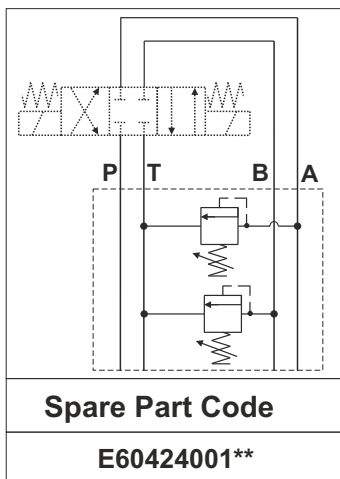


Main features

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



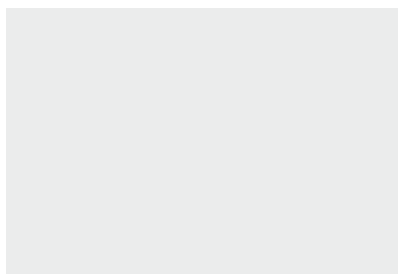
Notes: code does not include the Cetop solenoid valve. When E60423001 relief valves have different pressure ranges, please specify them separately.

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

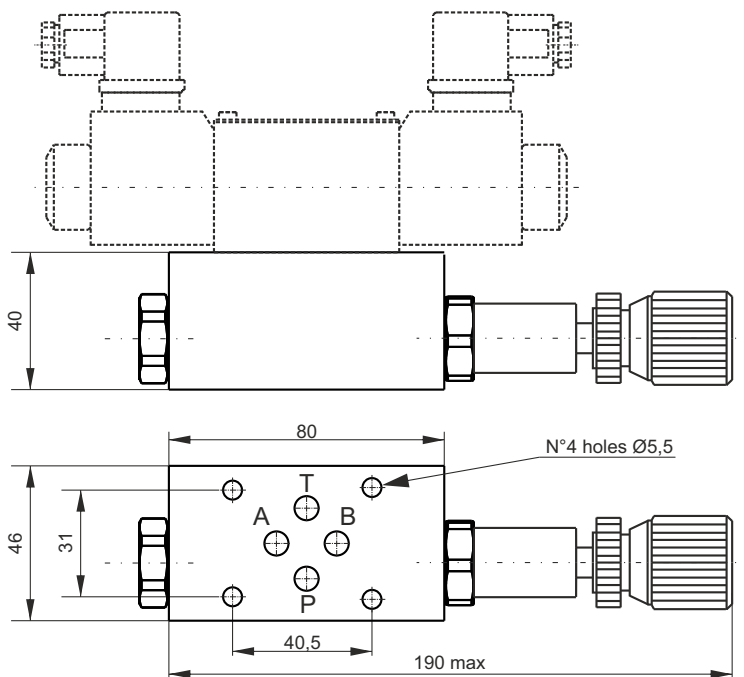
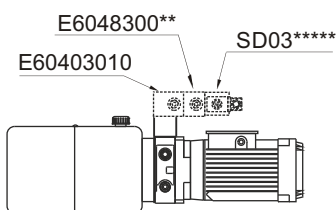
° Bolt length depends on number of modular blocks and type of valve.

SECTION G

NG6 (CETOP 3) SANDWICH PRESSURE REDUCING VALVE



Mounting example



Main features

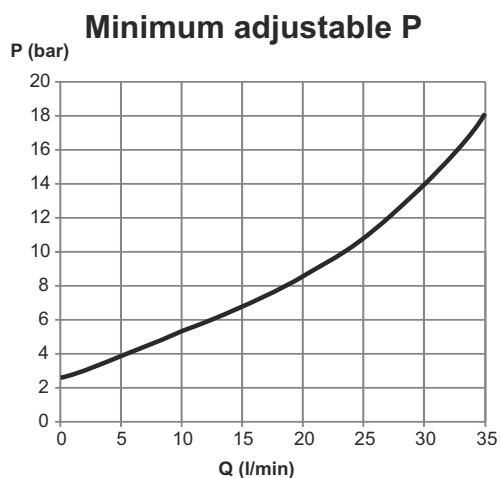
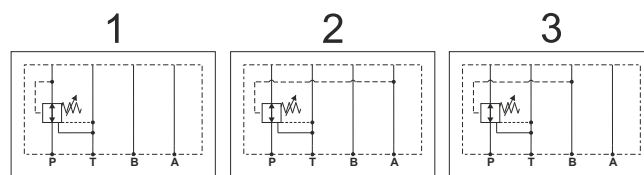
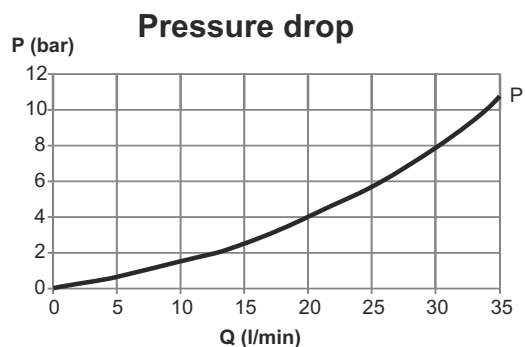
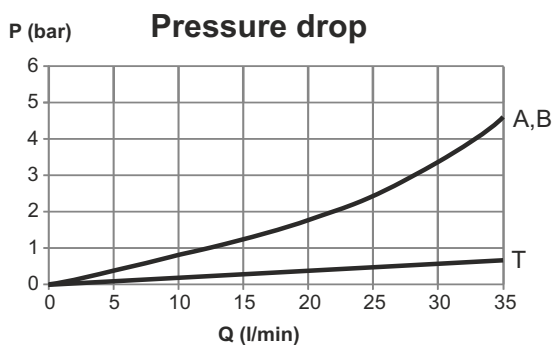
Max pressure	210 bar
Max flow	35 l/min
Weight	1,3 kg
Fixing bolts	4 M5x** bolts. 5Nm torque 10,9 class steel or above
Fluid temperature	-20 ÷ +80°C
Filtration	25 ÷ 50 µ

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

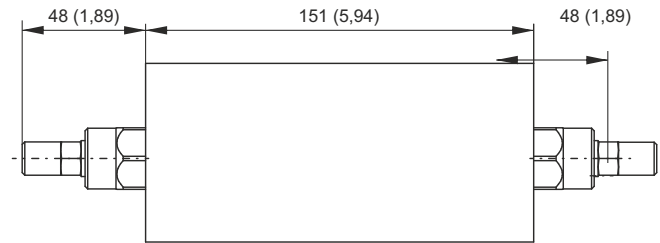
B — Spring range:
B: 7-70 bar
D: 70-210 bar



NG6 (CETOP 3) SANDWICH MODULAR OVERCENTRE VALVE

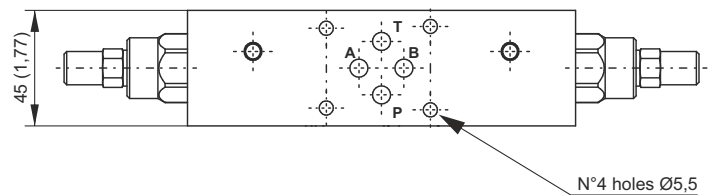


Dimensions in mm (inches)



Main features

Max pressure	350 bar
Max flow	up to 60 l/min
Fixing bolts	4 M5x** bolts. 5Nm torque 10,9 class steel or above
Fluid temperature	-20 ÷ +80°C
Filtration degree	25 ÷ 50 μ



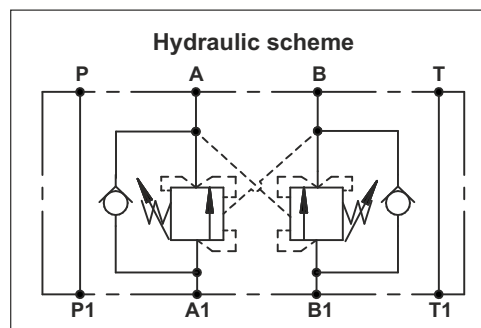
Spare part code

E60453001* — NG6 (Cetop 3) sandwich overcentre valve

A

Pressure range settings:

A = 120 ÷ 230 bar
B = 230 ÷ 350 bar

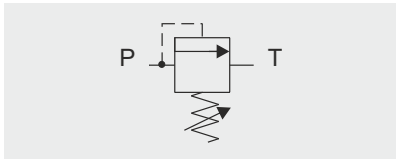
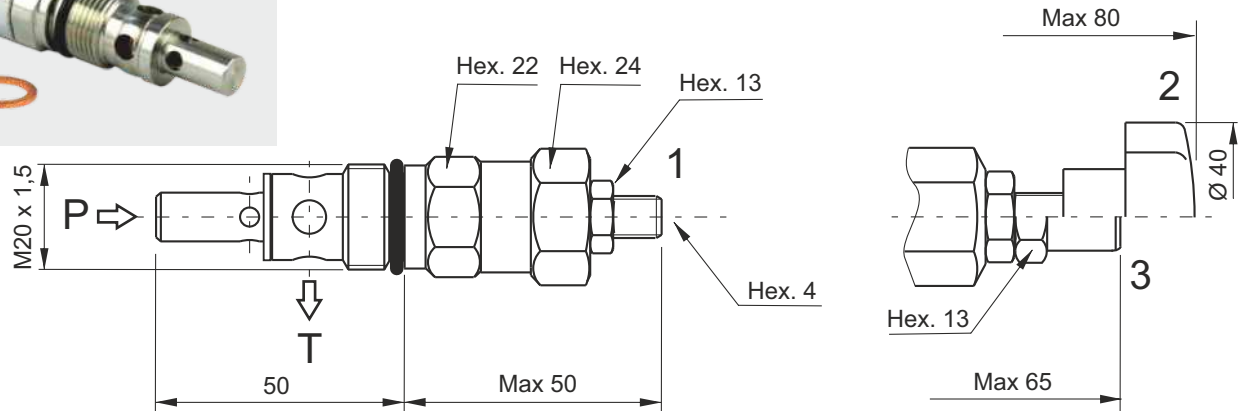


Note: to add external manifolds to YOU assembly code, just add their spare part codes at the end of the PPC code.
eg: PPC-0,8 12DC-UA-J-G1,1-V200-G-RETURN KIT-1,5L+E60403004-E60403010-E60453001+SD03A2 12DC.

The Cetop valve attachment is on the motor side. With AC motor frames bigger than 71 and DC motors bigger than dia. 125, always add a spacer manifold (see E60403004 code in F section) below the modular block to avoid interference between the valve and the motor.

SECTION G

VMDC35 - DIRECT ACTING RELIEF VALVE



Main features

Max pressure	450 bar
Max flow	35 l/min
Weight	0,16 kg

Recommended tightening torque: 50 Nm
Recommended filtration: 25 ÷ 50 µ
Oil temperature: -30 ÷ + 80 °C

Spare part code

VMDC	Relief valve
35	Nominal size: 35 = 35 l/min
B	Working range: L = 5 ÷ 60 bar A = 10 ÷ 180 bar B = 35 ÷ 310 bar
1	Option: 1 = screw (std) 2 = handwheel 3 = with cap 4 = plastic seal

Assembly code

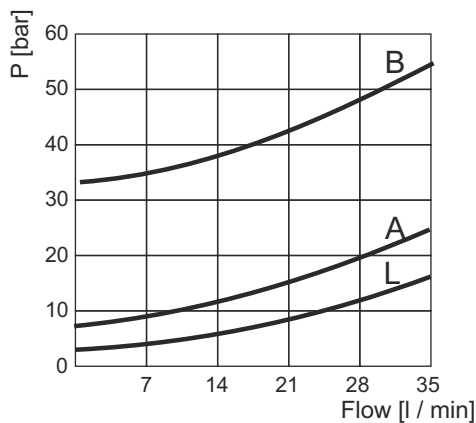
D_***

where *** stands for max setting pressure [bar]. eg. D_310
where . is the option

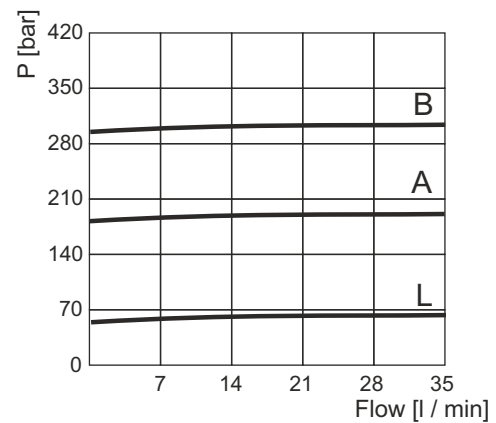
Mounting:

Only in BMPPC02 block, see F section

Minimum setting pressure

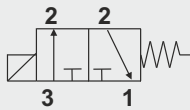
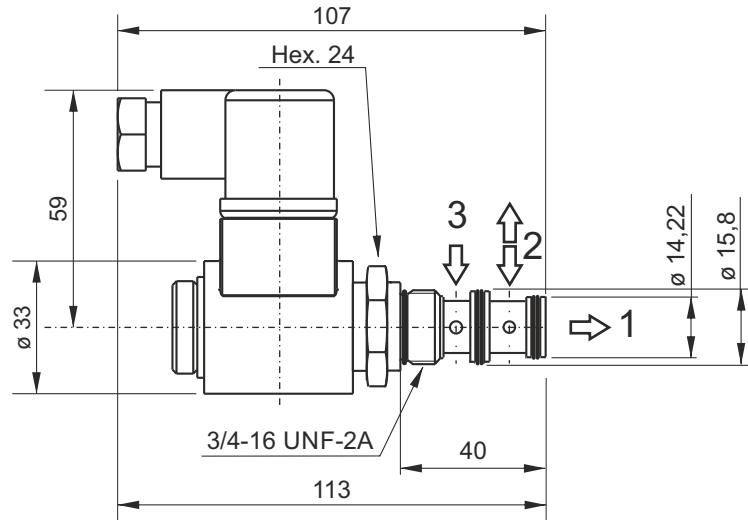


Pressure vs Flow



Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature

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



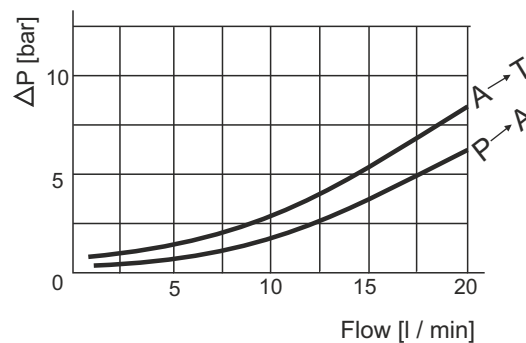
Main features

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) E = manual override
0000	Supply voltage: 0000 = no coil (std) see coils table

Pressure drop diagram



SECTION G

VALVES COILS



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_M120	DC	M12040001	KA132000B1 DIN43650/ISO4400	22W	100	H	134	SD01
24DC	24DC_M120	DC	M12040002	KA132000B1 DIN43650/ISO4400	22W	100	H	134	SD01
24AC	24RAC_M120	RC - needs external rectifying connector	M12040002	KA132R11B1 DIN43650/ISO4400	22W	100	H	134	SD01
230AC	220RAC_M120	RC - needs external rectifying connector	M12040005	KA132R13B1 DIN43650/ISO4400	22W	100	H	134	SD01
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
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	MDV30/31 MSV30/31 SD00
24DC	24DC_M630DT	DC, Deutsch	M6306024DT	DT06-4S Deutsch	16W	100	H	117	MDV30/31 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.