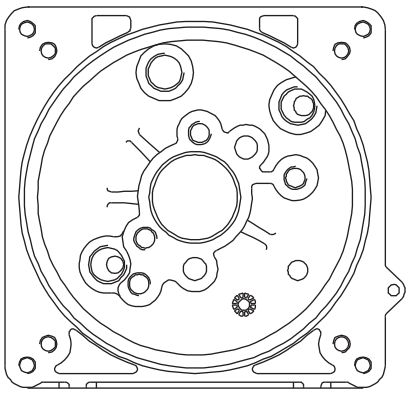
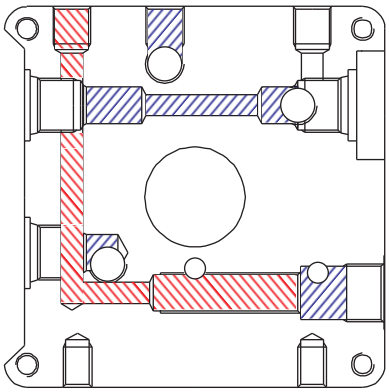
Power Packs Compact series





The central manifold is the core part of our mini power packs system.
Its advanced design offers four main advantages:
high integration, modularity, performance and market compatibility

HIGH INTEGRATION AND SYSTEM MODULARITY

- Modular system of sub-parts assembled to realize thousands of different configurations at the same time offering to distributors the possibility to optimize their stock thanks to the reduced number of parts.
- Only two central manifold executions with multiple configurations available: integral relief valve, check valve, pressure compensated flow controls, solenoid valves, hand pump,... to realize either the simpliest or the most complex hydraulic power unit, DC or AC, for single or double effect cylinders, with plastic or steel tanks. Up to eight devices can be integrated into the central manifold for maximum design flexibility and circuit compactness.
- All components are single-piece pre-assembled and pre-tested cartridges: no springs, washers, poppets messing up when finally assembling the complete power pack.
- Possibility to mount integral AC and DC motor directly on the central manifold without additional flanges and couplings. For example with one single coupling you can mount all available integral AC motors with power ranging from 0,25 to 4 kW.
- Compact and lightweight aluminium die-casting technology (central manifold with only 1,1 kg weight).

PERFORMANCE

- The gear pumps are manufactured with pressure balanced compensation plates. This technology reduces the mechanical clearings at the pressure increase, thus greatly improving the hydraulic efficiency, reducing heat generation and consumption.
- The integral motors are designed and their electric performance optimized for typical mini power applications (high starting torque, high power density).
- The central aluminum manifold is impregnated with special resins to guarantee leakage-free operation during the life of the product.
- The functional components are made with hardened steel parts for best reliability and long life.

MARKET COMPATIBILITY

- Our sales policy includes the possibility to supply power packs in kit of loose parts, in order to offer assembling flexibility to local distributors and simplify worldwide spare parts procurement and post-sale service.
- Tanks with Ø123 mm flange with two different bolts attachments can be fitted.
- Gear pump group 1 with tang drive shaft clockwise or anticlockwise rotation, reversible or double execution can be mounted. Standard pumps have clockwise rotation.
- Standard B14 electric motors, clockwise or anticlockwise rotation can be mounted.
- Screw-in cartridge valves are fitted in ¾-16UNF-2B standard cavities.
- The main relief valve is fitted in a M20x1,5 standard cavity.
- Compensated flow regulators on the oil return lines are fitted in standard 1/4" BSPP cavities.

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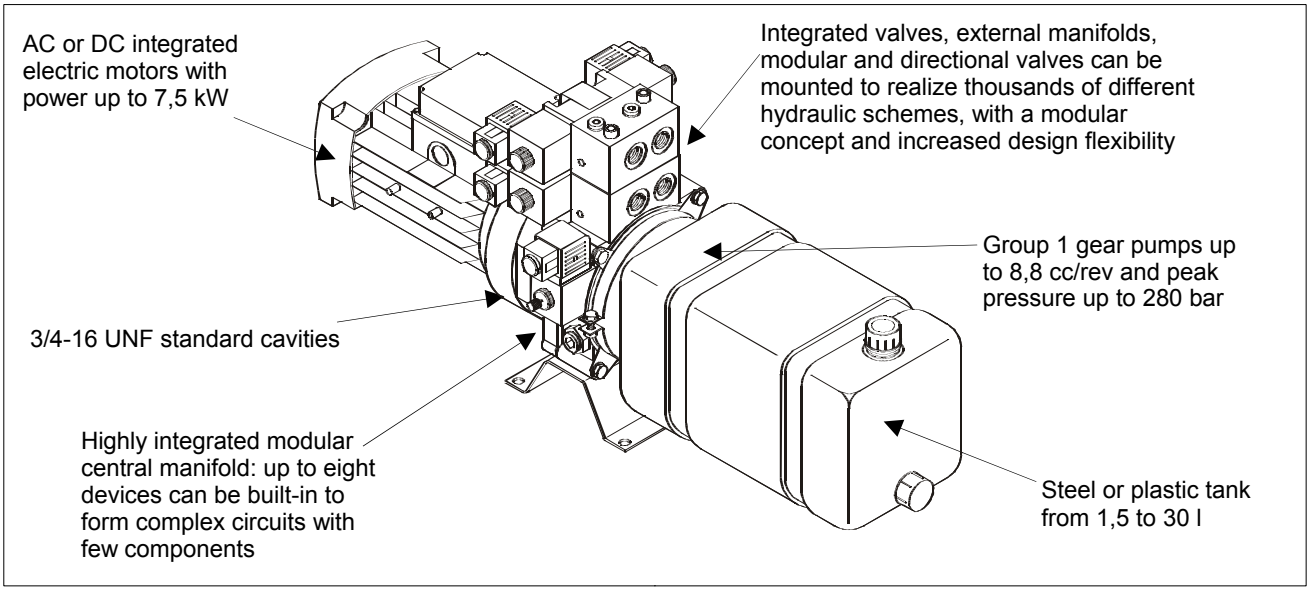
Power Packs Compact series



1 - *MODEL CODE*

PPC - 2,2 24DC /S - B - G111 - D/200 - A 24DC / X / U - X / X / 2 / X - 5BV + ...

Power Pack Compact series	Electric motor power (kW) code (see sec 3.1+3.2): **AC 3-4P**: 3-phase 4P 230 ÷ 400AC 50/60 Hz **AC S-4P**: single phase 4pole 230/50 Hz **12DC (/S /T)**: 12VDC (/start relay /thermal switch) **24DC (/S /T)**: 24VDC (/start relay /thermal switch) **No motor:** specify flange + coupling kit	Central manifold type: **A** or **B** See section 3.3	Gear pump group and displacement: **G1****: 0,8 ÷ 8,8 cc/rev **G1****+1****: double pump See section 3.4	Relief valve type / setting pressure. See sect. 3.5 **X**: no relief - open port **XP**: no relief - plugged	Central manifold built-in valves & voltage for cavity 2 / 3 / 4 respectively. See section 3.5	Return line flow control valve flow (l/min) for cavity 5 / 6 / 7 / 8 respectively. See section 3.5 **X**: no flow control	Tank volume (l) and type: **A**, **B**, **C**, **E** in steel **L**, **M** in plastic **V** vertical mounting **X**: no tank. See section 3.6	Additional manifolds and options: see section 3.7

2 - *APPLICATION EXAMPLES*

3 – *RANGE: quick reference guide*

3.1: AC motors

3.1.1: AC integral motors: this is the preferred engineered solution to construct compact and optimised power units. The AC motor is directly flanged to the central manifold. A single coupling -see below- can suit all AC motor sizes and powers. See table U020.40.04.

Integral AC motor frame size	kW	HP	Motor code 4 pole (~1450 rpm)	Motor code 2 pole (~2900 rpm)	Spare coupling code (only for spare parts orders)
Three-phase					
71	0,25	0,35	**E 0,25 AC 3-4P 71**		**E36100000**
	0,35	0,5	**E 0,35 AC 3-4P 71**	**E 0,35 AC 3-2P 71**	
	0,55	0,75	**E 0,55 AC 3-4P 71**	**E 0,55 AC 3-2P 71**	
	0,75	1	**E 0,75 AC 3-4P 71 S3**		
80	0,75	1	**E 0,75 AC 3-4P 80**	**E 0,75 AC 3-2P 80**	
	1,1	1,5	**E 1,1 AC 3-4P 80**	**E 1,1 AC 3-2P 80**	
	1,5	2	**E 1,5 AC 3-4P 80 S3**	**E 1,5 AC 3-2P 80 S3**	
	2,2	3		**E 2,2 AC 3-2P 80 S3**	
90	1,8	2,5	**E 1,8 AC 3-4P 90**		
	2,2	3	**E 2,2 AC 3-4P 90**		
	2,6	3,5	**E 2,6 AC 3-4P 90 S3**		
	3	4	**E 3 AC 3-4P 90 S3**	**E 3 AC 3-2P 90**	
	3,3	4,5	**E 3,3 AC 3-4P 90 S3**		
Single-phase					
71	0,18	0,25	**E 0,18 AC S-4P 71**		**E36100000**
	0,25	0,35	**E 0,25 AC S-4P 71**		
	0,35	0,5	**E 0,35 AC S-4P 71**		
	0,55	0,75		**E 0,55 AC S-2P 71**	
80	0,55	0,75	**E 0,55 AC S-4P 80**		
	0,75	1	**E 0,75 AC S-4P 80**	**E 0,75 AC S-2P 80**	
	1,1	1,5		**E 1,1 AC S-2P 80**	
	1,5	2		**E 1,5 AC S-2P 80 S3**	
90	1,1	1,5	**E 1,1 AC S-4P 90**		
	1,5	2	**E 1,5 AC S-4P 90**	**E 1,5 AC S-2P 90**	
	1,8	2,5		**E 1,8 AC S-2P 90**	

Above table includes a selection of standard motors. They must be electrically connected for counter-clockwise rotation. Other power / frame sizes and special motor types are available on request. Ask our technical office: we will offer optimised solutions for either intermittent or heavy duty applications.

In the PPC ordering code just specify the motor power and type. The coupling is provided as standard. When ordering spare motors the coupling is not included and must be ordered separately.

Note: motor with codes ending with “S3” are for intermittent duty.

3.1.2: B14 AC motors:
We supply high power B14 AC motors with 100/112 frame optimised for mini power packs applications.

B14 AC motor frame size	kW	HP	Motor code 4 pole (~1450rpm)	Motor code 2 pole (~2900rpm)	Spare mounting kit (only for spare parts orders)
Three-phase					
100/112	3	4	**3 AC 3-4P 100**	**3 AC 3-2P 100**	**F27010004 + E36100004 + E36100000**
	4	5,5	**4 AC 3-4P 100**	**4 AC 3-2P 100**	
	5,5	7,5	**5,5 AC 3-4P 112**	**5,5 AC 3-2P 112**	
	7,5	10	**7,5 AC 3-4P 112**		

In PPC ordering code just specify the motor power and type. The relevant mounting flange and coupling are provided as standard. When ordering spare motors, the relevant flange and couplings are not included and must be ordered separately.

3.1.3: other B14 AC motors:
For market compatibility, any standard B14 AC motor from 71 frame to 100/112 frame can be fitted. In this case two-piece couplings and additional flanges (see tables U020.40.06, .07, .08 and .09) must be fitted as per following table:

B14 AC motor frame size	Typical power range [kW]	Spare flange code	Spare coupling code	Flange + couplings code (to be indicated in PPC code)
71	0,25 ÷ 0,75	**F27010001**	**E36100001 + E36100000**	**XB14-71**
80	0,55 ÷ 1,5	**F27010002**	**E36100002 + E36100000**	**XB14-80**
90	1,1 ÷ 3,3	**F27010003**	**E36100003 + E36100000**	**XB14-90**
100/112	2,2 ÷ 5,5	**F27010004**	**E36100004 + E36100000**	**XB14-100**

When choosing units with no motor, in case a standard B14 AC motor must be fitted, specify in the PPC ordering code the flange + couplings kit code (last column) only.

3.1.4: Special motors: specially designed for specific applications. For example:
- Scissor lift integrated power packs with motor controller, safety switch, return solenoid valve control and hand operated remote control in a single sealed highly engineered package. Ask to our technical office for details.
- Cap start / cap run or single capacitor single-phase motors optimised for high peak start-up power to satisfy demanding applications like heavy truck lifts.

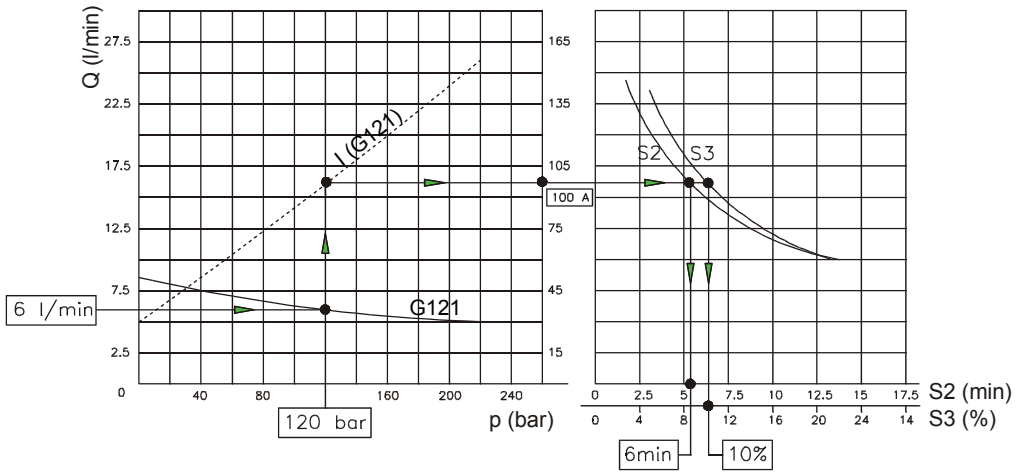
3.2: DC motors:
Starting from application's flow (l/min), pressure (bar) and requested duty cycle, you can use provided diagrams to select the DC motor (see section 3.2.1). In PPC ordering code just specify the motor power and type; the relevant coupling is provided as standard. See table U020.40.01 and .2 for available range and codes.

B14 DC motors are also available on request, for heavy duty and special applications, also with fan cooling or thermal switch (see table U020.40.03). Standard integral DC motors can be mounted directly on our central manifolds with just one piece coupling and no adaptor flanges; B14 DC motors can be mounted with the same standard B14 kits used for AC B14 motors (see section 3.1.3). When choosing units with no DC motor, specify coupling or flange + coupling kit code in place of motor code.

3.2.1: DC motor choice:
Once required pressure and flow and available voltage (12 or 24V DC) are known, you can select the motor checking on each provided diagram if a pump displacement is available at the intersection of pressure and flow values. On the relevant “I” curve you obtain the absorbed current. When the intersection point is not exactly on a pump curve, choose the closer pump.

On the right hand diagram, from the current value, you can easily obtain the maximum allowed S2 (min) and S3 (%) values. S2 gives the allowable motor continuous running time in minutes, S3 gives the allowable running time in % of the total cycle.

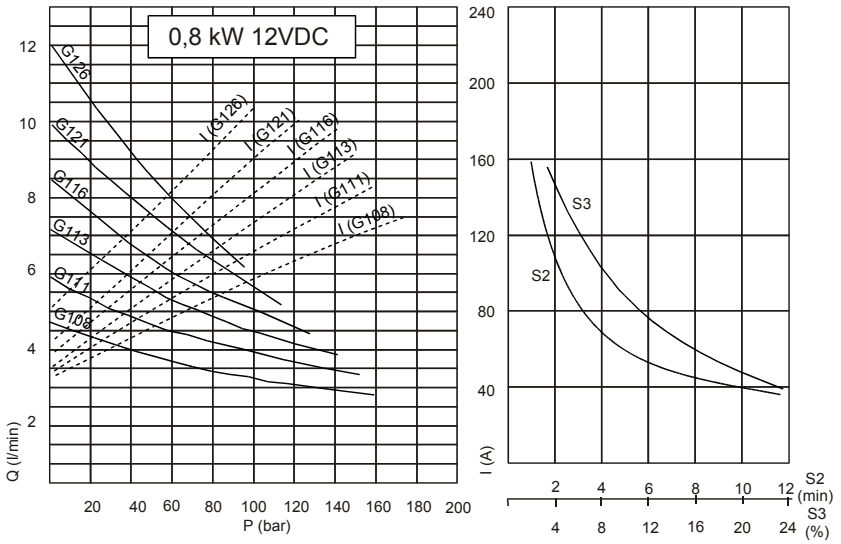
If obtained S2 and S3 value are not enough for required duty cycle, choose a bigger motor and repeat the calculation on the new motor curves.

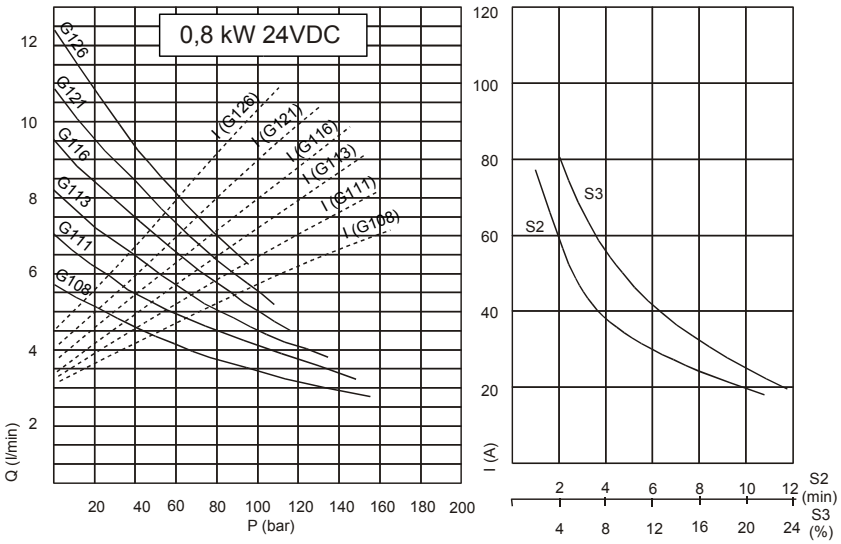


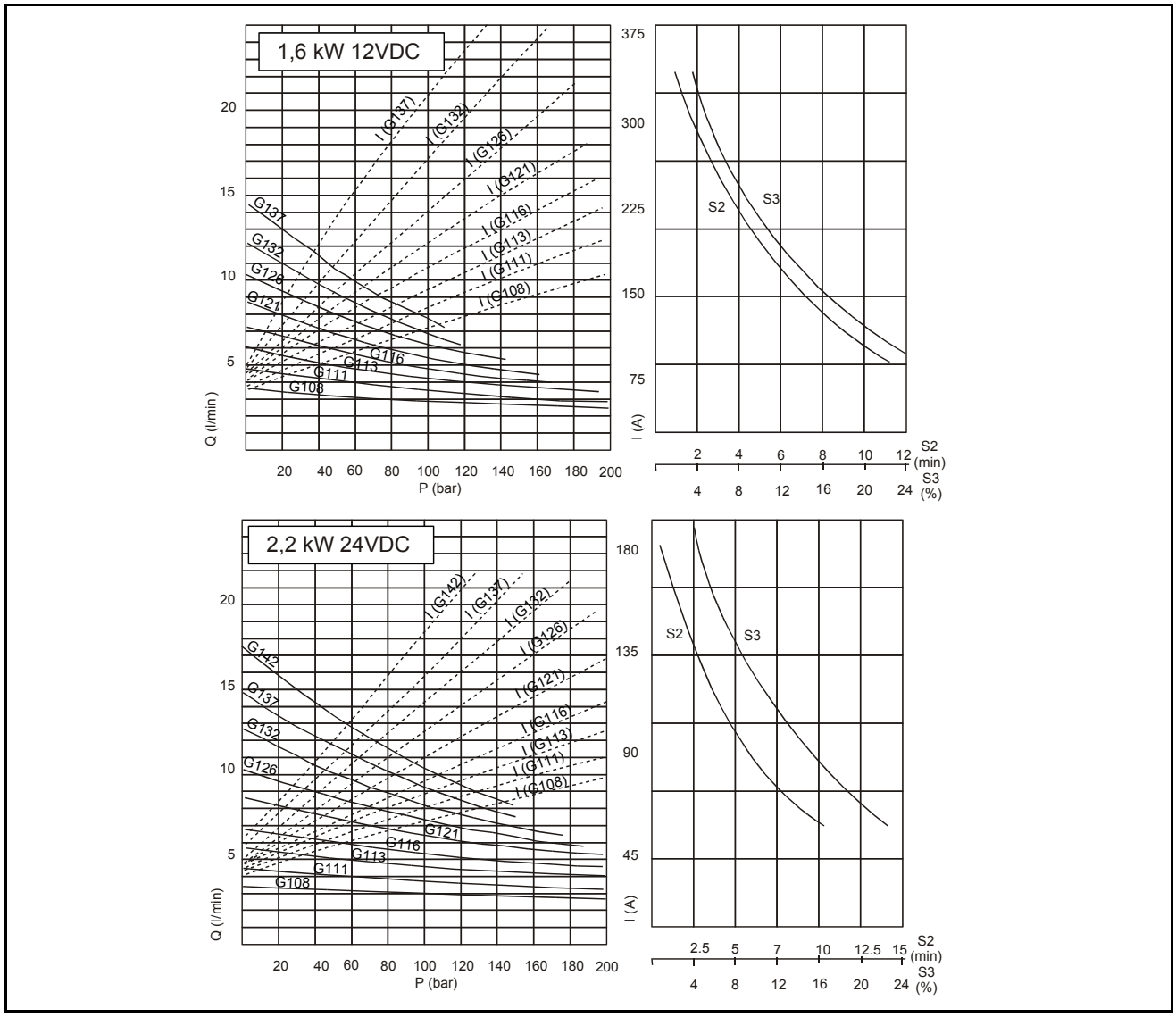
Example:
For our application we have following data:
flow = 6 l/min, max pressure = 120 bar, not clearly defined duty cycle.

- We check on above diagram and see there is a pump available.
- We choose from pump curves G121: a 2,1 cm^3/rev pump. On the corresponding “I” curve we read 100 A absorbed current. In these conditions on the S2 / S3 diagram we read that the DC motor can work for maximum 6 min (S2), that is 10% (S3) of the total cycle, i.e. after 6 min working, the motor should cool down for at least 54 min.
- The total cycle time is calculated adding the working time and the idle time (10% working time plus 90% idle time), in this case 60 min. If this duty cycle is not adequate for our application, we must choose a higher power DC motor and check the relevant diagram again.

Here below you can find a selection of DC motors diagrams. For other motors, ask our technical office.

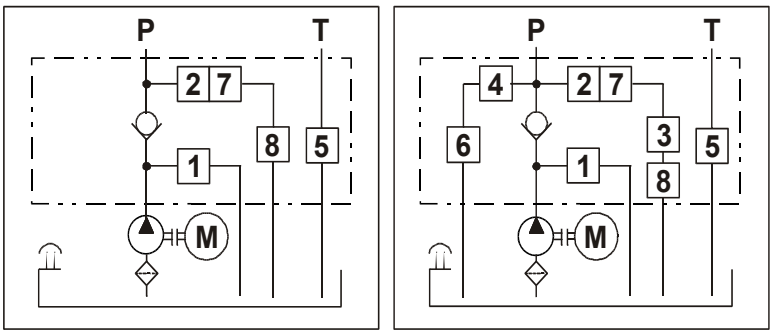






3.3: central manifolds

A type **B type**



PPC central manifolds are highly configurable and modularly designed to build complex circuits with few components. See section 3.5 for a full choice of central manifold integral valves and components:

A type central manifold: widely used in systems with single or double acting cylinders. Cavity **1** (M20x1,5 + 1/4" BSPP) is for relief & check valve, which can be housed both at the same time. Cavity **2** (3/4-16 UNF) is in line with cavity **7** (Ø12,7) and can accept a pressure compensated flow control valve together with a wide range of directional control cartridges or a hand pump. Cavities **5** and **8** (1/4" BSPP) can accept a pressure compensated flow control valve. If no valves are fitted in cavity **2**, a plug G or other type must be specified.

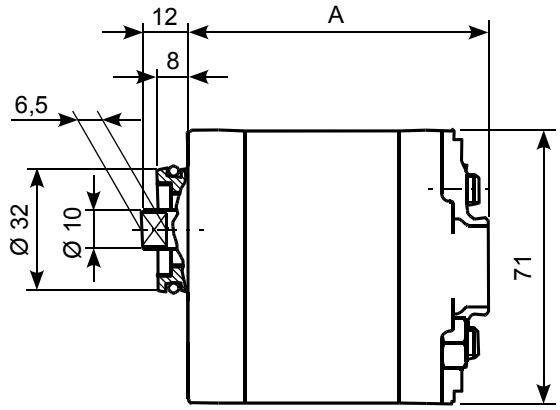
B type central manifold: used with more complex systems, allows higher integration of components. Cavities **1**, **2**, **5**, **7** and **8** are the same as A type manifold. Cavity **3** (3/4-16 UNF) can accept various directional control cartridges and adjustable flow controls, including pressure compensated ones, or a relief valve. Cavity **4** (3/4-16 UNF) can accept various directional control cartridges or a hand pump. Cavity **6** (1/4" BSPP) can accept pressure compensated flow control valves. If no valves are fitted in cavity **2**, **3** or **4**, plugs type G or others must be used.
Both A and B manifolds have an attachment to mount external manifolds with various circuits, with or without integrated cartridges, Cetop3 attachment,.... See tables U020.30.01, .02, .03.

3.4: gear pumps: functional characteristics at 1500 rpm, using mineral oil with 24mm²/s viscosity at 40°C.

PPC code	Displacement (cc/rev)	A (mm) see picture below	Continuous pressure (bar)	Intermittent pressure (bar)	Peak pressure (bar)	Max rotation speed (rpm)	Spare part code (only for spare parts orders)
G108	0,8	74	230	250	270	6000	**E60603001**
G111	1,1	74	230	250	270	6000	**E60603002**
G113	1,3	75	230	250	270	6000	**E60603003**
G116	1,6	76	230	250	270	6000	**E60603035**
G121	2,1	78	230	250	270	6000	**E60603004**
G126	2,6	80	230	250	270	6000	**E60603005**
G132	3,2	82	210	230	250	5000	**E60603006**
G137	3,7	84	210	230	250	4500	**E60603007**
G142	4,2	86	210	230	250	4000	**E60603008**
G148	4,8	88	190	210	230	3500	**E60603009**
G158	5,8	92	190	210	230	3000	**E60603010**
G179	7,9	100	160	180	200	2500	**E60603012**
G188	8,8	105	100	120	140	2500	**E60603013**

The table shows nominal pump displacements and indicative dimensions; actual specifications can change slightly.
Standard pumps have clockwise rotation.
For counter-clockwise, double, reversible or special pumps, please contact our technical office.

Gear pump dimensions



3.5: Central manifold valves assembling and setting

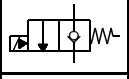
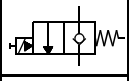
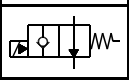
See the detailed valve assembling scheme for A type central manifold on section U020.10.01 and for B type central manifold on section U020.10.02.

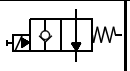
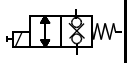
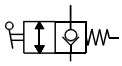
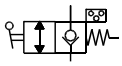
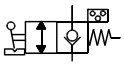
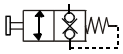
Check valve code for cavity 1:
VUI01 is mounted in-line with the relief valve in the same cavity 1 and normally supplied already fitted within the central manifold block. It is not necessary to mention it when purchasing assembled power packs but it must be purchased separately when ordering loose components.

Relief valve code / setting for cavity 1:
Relief valves are of direct acting type and normally supplied with screw adjustment. Hand wheel and sealing devices are available on request, too.

PPC code	Description	Spare valve code	Flow (l/min)	Working range (bar)
D/200	direct acting relief valve with balanced poppet	**VMDC35B1**	35	20 - 200
D/350	direct acting relief valve with balanced poppet	**VMDC35C1**	35	35 - 350
X	no relief valve, open port	**-**	-	-
XP	no relief valve, plug	**E70100010**	-	-

Built-in valves / voltage for cavities 2 / 3 / 4:

PPC code	Description	Flow (l/min)	Pressure (bar)	Standard coils and voltages	Hydraulic symbol	Mounting cavity
A	MSV30: 2 way / 2 position solenoid normally closed valve	20	210	12, 24, 48DC 18W 115/50, 230/50AC 20VA		2 - 4
B	MSV30E: 2 way / 2 position solenoid normally closed valve with emergency	20	210	12, 24, 48DC 18W 115/50, 230/50AC 20VA		2 - 4
F	MSV31: 2 way / 2 position solenoid normally open valve	20	210	12, 24, 48DC 18W 110, 220RAC 18W		2 - 4

PPC code	Description	Flow (l/min)	Pressure (bar)	Standard coils and voltages	Hydraulic symbol	Mounting cavity
C	MSV31E: 2 way / 2 position solenoid normally open valve with emergency	20	210	12, 24, 48DC 18W 110, 220RAC 18W		2 - 4
D	MDV30E: 2 way / 2 position solenoid normally closed double locking valve	15	210	12, 24, 48DC 22W 115/50, 230/50AC 32VA		2 - 3 - 4
E	CM04L: lever operated valve	25	320			2 - 4
EM	CM04M: lever operated valve and micro-switch	25	320			2 - 4
ED	CM04D: lever operated valve with stop in central position and micro-switch	25	320			2 - 4
G	Plug G: closed plug	-	350			2 - 3 - 4
H	Plug H: ¼ BSPP outlet port for gauge	-	350			2 - 3 - 4
L	Plug L: ¾-16 UNF basic plug	-	350			2 - 3
J	VUC20: ¾-16 UNF check valve	20	300			2 - 3
R	CSC04C: ¾-16 UNF adjustable. pressure comp. uni-directional flow control	15	250			3
S	CSB04C: ¾-16 UNF adjustable non compensated bi-directional flow control	15	300			3
U	PMC02: ¾-16 UNF 2cc/stroke single acting hand pump	-	200			2 - 4
V250	VMDC20/250: ¾-16 UNF relief valve	20	250			3
Z	CPE04P: 2 way / 2 position hand operated NC double locking valve	25	320			2 - 3 - 4

Note: normally open valves (type F and C) can be supplied with AC current only through rectifying bridge connectors. 110RAC solenoids can be supplied through a rectifying bridge connector by 110AC/50Hz or by 120AC/60Hz voltages, 220RAC solenoids can be supplied through a rectifying bridge connector by 220AC/50Hz or by 240AC/60Hz voltages. DIN 43650/A black connectors are supplied together with valves as standard. Other voltages available on request.

Return line pressure compensated fixed flow control valves for cavities 5 / 6 / 7 / 8:
Please specify for each cavity the required nominal flow control adjustment: (l/min).
Effective flow can be different depending on working conditions. See tables U020.20.06 and 07.

Code (= nominal flow in l/min)	Description	Max flow (l/min) / pressure (bar)	Spare part code	Mounting cavity
0 / 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9,5 / 12	BSPP 1/4”	12 / 250	**VSC01***	5 - 6 - 8
0 / 2 / 2,5 / 4 / 5 / 6,5 / 7,5 / 9,5 / 12	Ø12,7 with o-ring	12 / 250	**VSC04**01**	7
X	No flow control	-	-	-

3.6: oil tanks:

Choose tank volume, type and mounting style. See section U020.50.

PPC code	Description	Spare tank code
Steel tanks		
1,5A / 1,5AV	1,5l, cylindrical, horizontal / vertical mounting	**E60303001**
2,5A / 2,5AV	2,5l, cylindrical, horizontal / vertical mounting	**E60303004**
5B / 5BV	5l, cylindrical, horizontal / vertical mounting	**E60303006**
8B / 8BV	8l, cylindrical, horizontal / vertical mounting	**E60303009**
10B / 10BV	10l, cylindrical, horizontal / vertical mounting	**E60303011**
12B / 12BV	12l, cylindrical, horizontal / vertical mounting	**E60303003**

PPC code	Description	Spare tank code
20EV	20l, square, vertical mounting	**E60303015**
30EV	30l, square, vertical mounting	**E60303048**
Plastic tanks		
1,5L / 1,5LV	1,5l, square, horizontal / vertical mounting	**E60303016**
2,5L / 2,5LV	2,5l, square, horizontal / vertical mounting	**E60303018**
3,5L / 3,5LV	3,5l, square, horizontal / vertical mounting	**E60303020**
6M / 6MV	6l, square 180mm, horizontal / vertical mounting	**E60303030**
10M / 10MV	10l, square 180mm, horizontal / vertical mounting	**E60303035**

Filler / breather port and drain plug, graduated oil level (square steel tanks), standard suction filter, inlet pipe, outlet pipe, stainless steel clamp and clamp brackets (plastic tanks), depending on code, are included in the standard assembly.

When ordering spare tanks only basic plugs and filler / breather are included. Fixing kits, piping and filters are to be ordered separately.
When choosing units with no tank, specify **X** in the code; in this case the inlet - outlet piping kit and filter are not supplied. A steel tank adapter to be welded to your custom made reservoir can be supplied; in this case specify code **F80000001** in place of tank code.

3.7: options and modular external manifolds

Many options and additional components are available to customise PPC units for any application. They must be added at the end of PPC code.

PPC & spare parts code	Description	See technical table
E60543006	Steel foot mounting support	U020.50.05
E60403004	28mm spacer sub-plate	U020.30.02
E60403005	90° rotation manifold	
E60403001	Cetop3 parallel manifold with rear ports	U020.30.01
E60403010	Cetop3 parallel manifold with lateral ports	
E60403003	Cetop3 serial manifold with rear ports	U020.30.01
E60403011	Cetop3 serial manifold with lateral ports	
E60413001	Cetop3 manifold with piloted check valves on A and B port	U020.30.03
E60413002	Cetop3 manifold with piloted check valve on A port	
E60413003	Cetop3 manifold with piloted check valve on B port	
E60403030	Manifold for ¾-16UNF MSV and MDV directional valves	U020.30.02

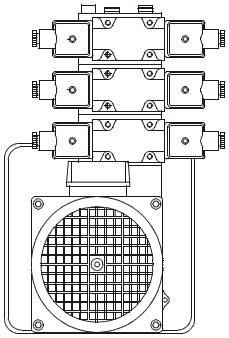
To build customised hydraulic circuits please send an inquiry to our technical office with full technical and commercial specifications (kind of application, hydraulic system, max / peak pressure, flow, duty cycle, required quantities,…).

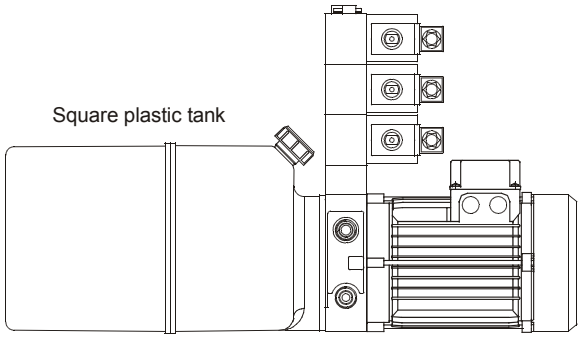
4 - *MAIN CHARACTERISTICS*

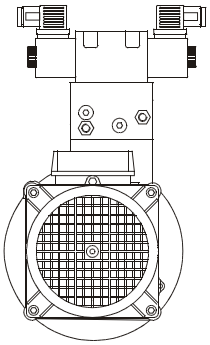
Installation position	Any
Ambient temperature	-15 ÷ +50°C
Hydraulic fluid	Hydraulic oil ISO 6743/4 / DIN 51519, viscosity 15÷100 mm^2/s ISO 3448 (recommended viscosity 22÷46 mm^2/s)
Fluid temperature	-20° ÷ +70 °C unless otherwise stated
Contamination degree	Must be higher than class 18/14 ISO 4406
Commissioning	- After having connected the electric motor and the hydraulic piping, check the pump rotation with short bursts of 1÷2 sec. For standard pumps motor rotation must be clockwise looking from motor fan side. Never reverse rotation. - Bleed the hydraulic installation and flush the circuit in order to remove eventual impurities. - Check the hydraulic fluid level and, if necessary, fill-up to maximum. - To ensure proper working and long life, check the hydraulic fluid and replace it after first 100h and then every 3000h operation and/or at least every year.
Threads recommended tightening torques	M5: 4÷5,5 Nm, M6: 8÷10 Nm, M8: 16÷20 Nm, M8 pump: 20÷25 Nm, M10: 35÷40 Nm, VUI01 check valve: 6 Nm, ¼ BSPP valves: 6÷20 Nm, ¾-16 UNF valves: 8÷40 Nm, M20x1,5 main relief valve: 50 Nm

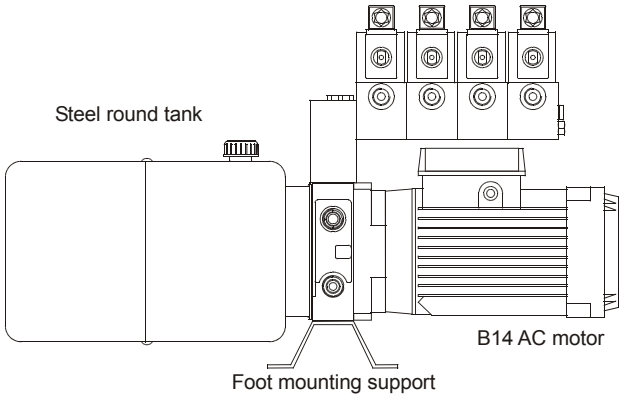
For more details on commissioning, use and maintenance, see PPC Use and Maintenance Handbook.

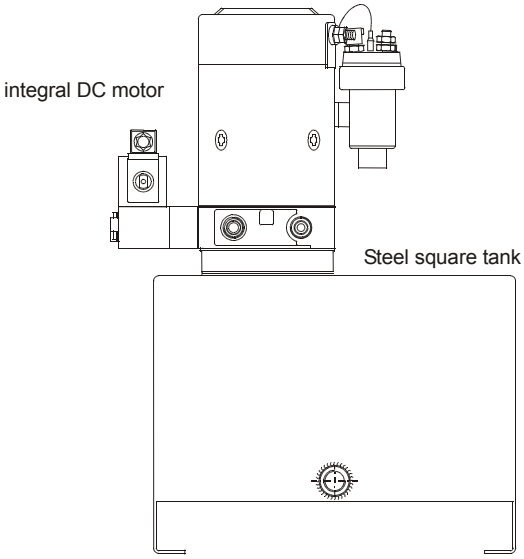
5 – MOUNTING EXAMPLES



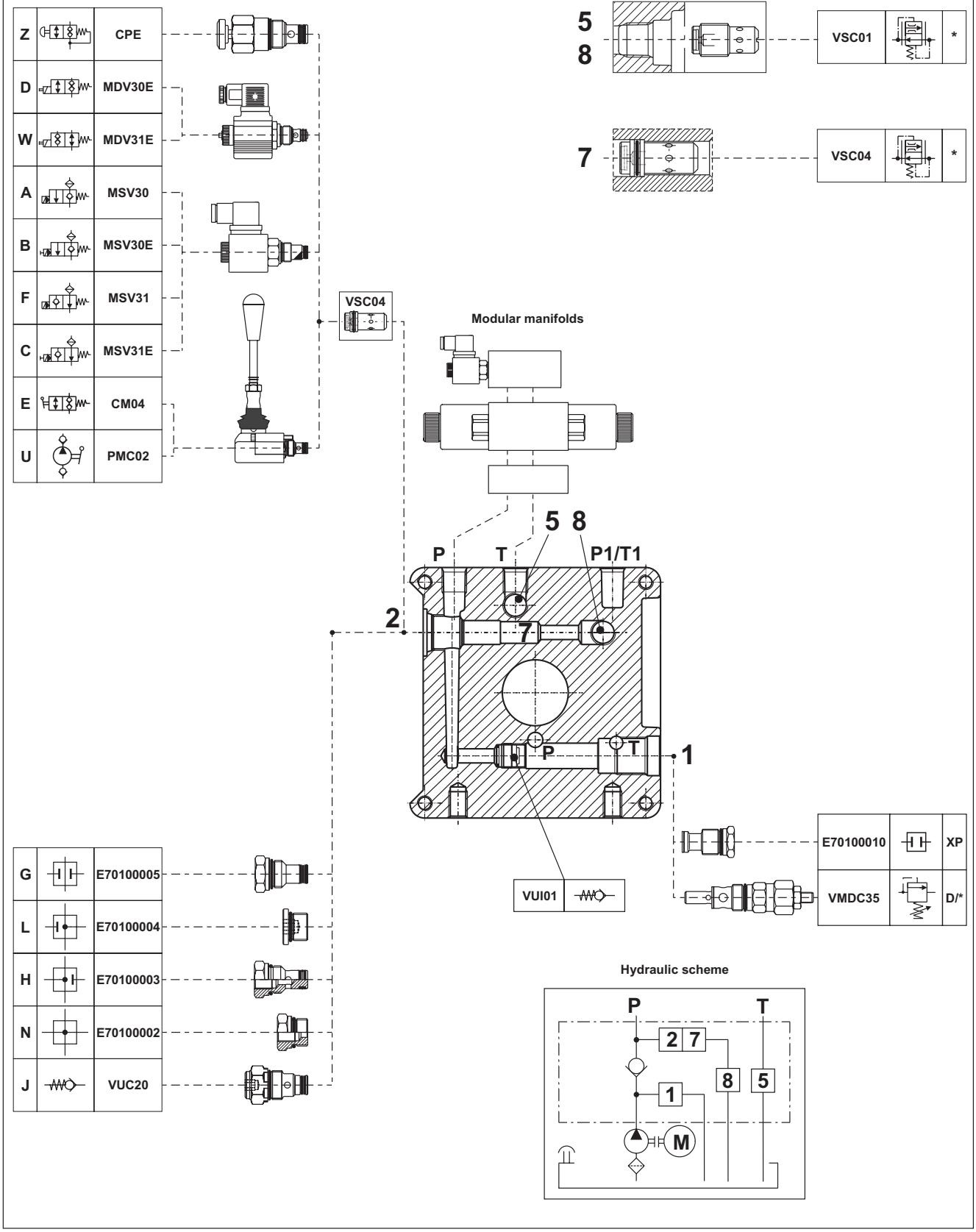




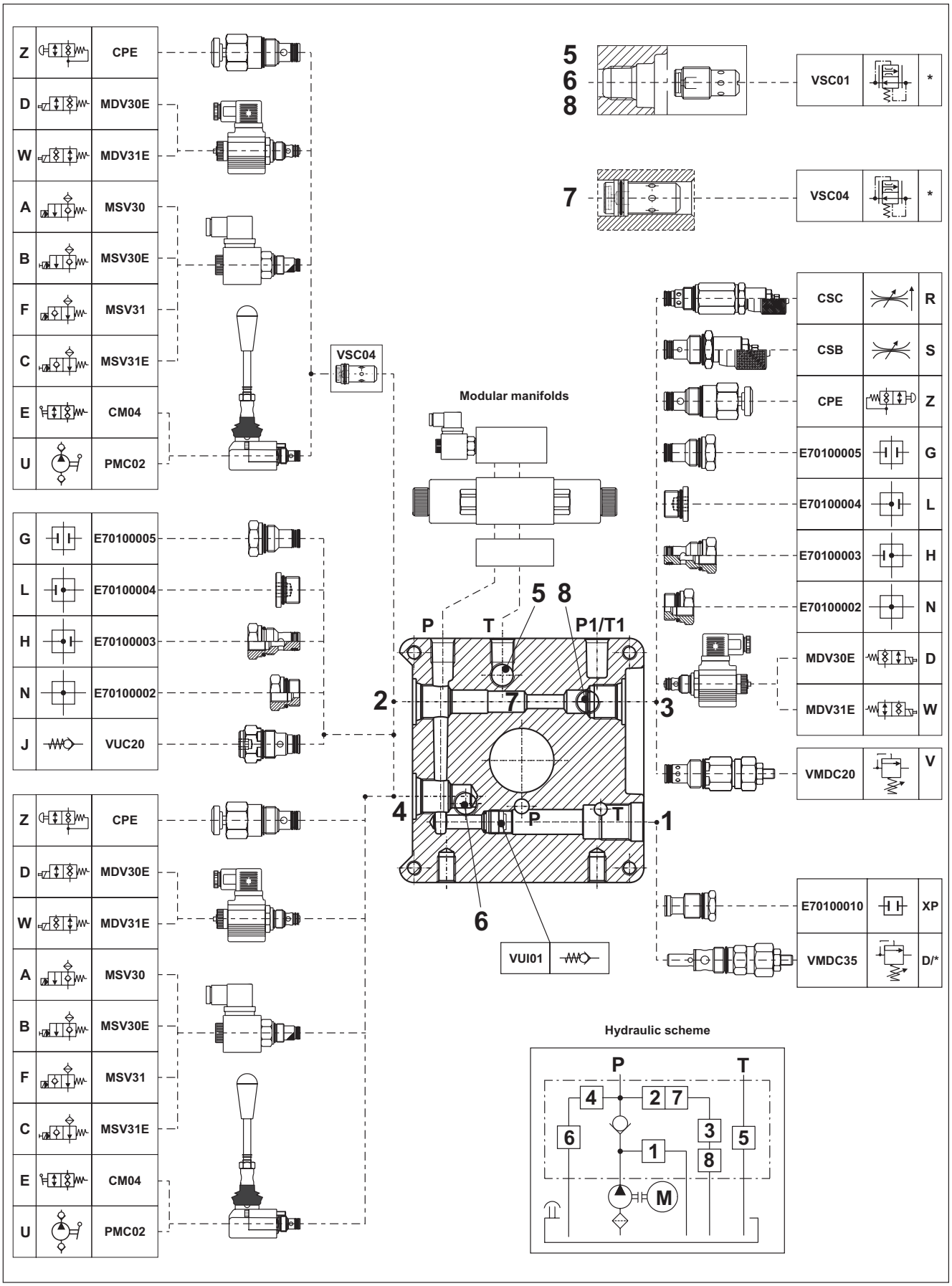




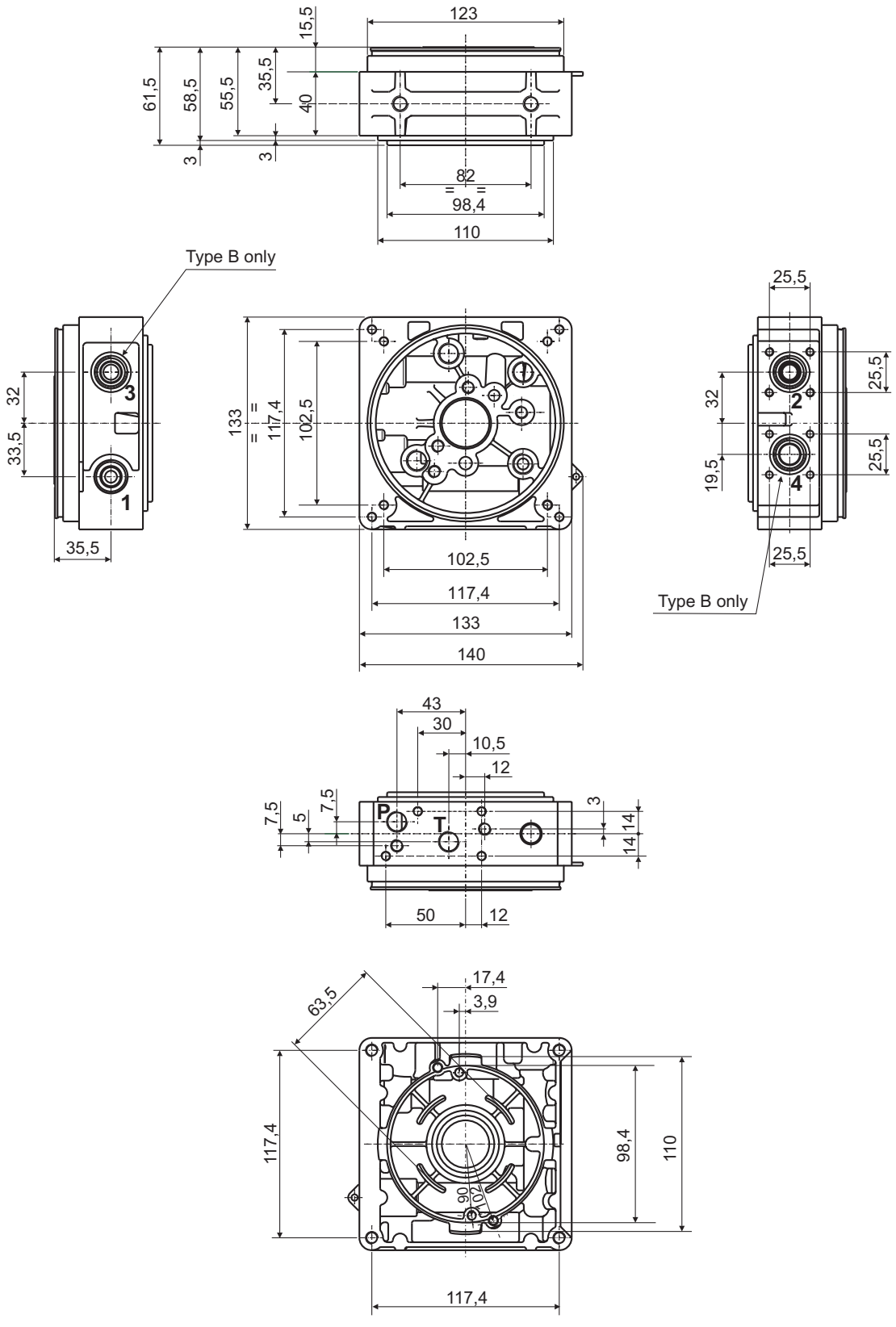
Central manifold “A” type assembly



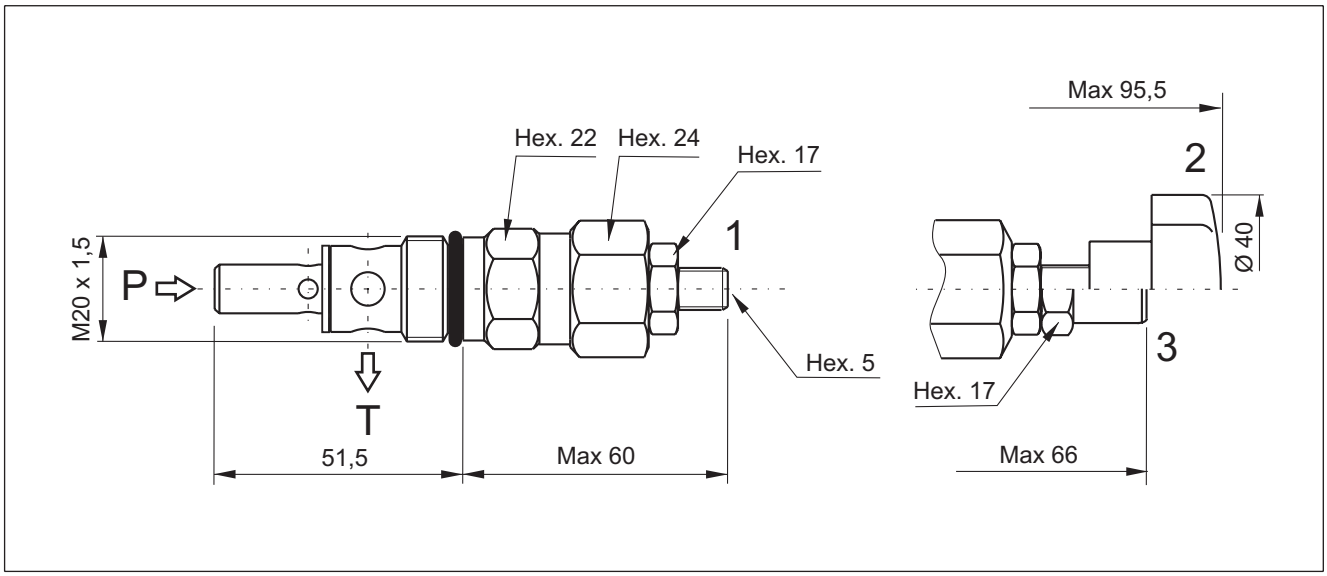
Central manifold “B” type assembly



Central manifolds overall dimensions



VMDC35 - Direct acting main relief valve



Spare part code

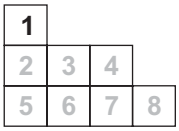
VMDC	**Direct acting main relief valve**
35	**Nominal size:** 35 = 35 l/min
B	**Working range:** B = 20 ÷ 200 bar, C = 35 ÷ 350 bar
1	**Adjusting device:** 1 = screw (std), 2 = handknob, 3 = with cap, 4 = plastic seal
00	**Series**

PPC assembly code

D/*

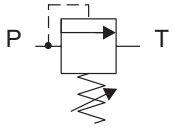
where *** stands for max setting pressure [bar]. Ex. D/200

Mounting cavities



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

Hydraulic symbol

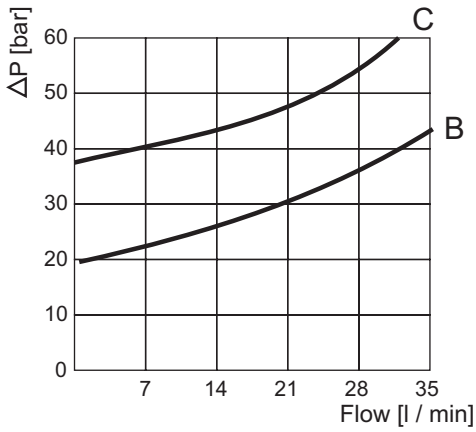


Main features

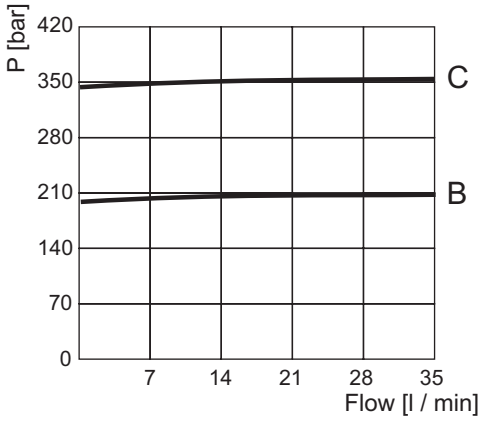
Max pressure	450 bar
Max flow	35 l/min
Weight	0,16 kg

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

Minimum setting pressure

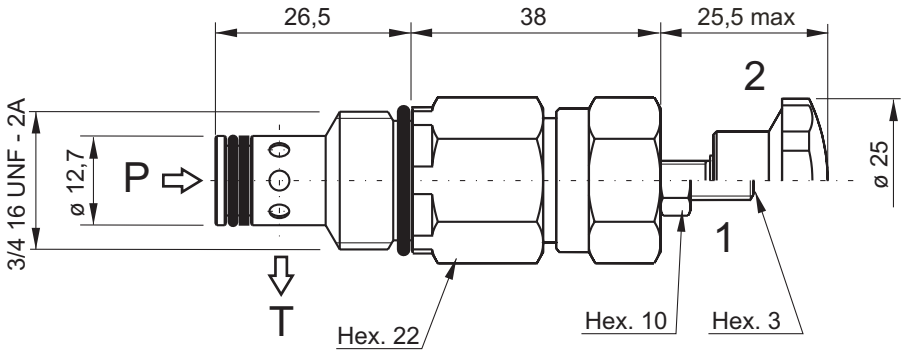


Pressure vs flow



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

VMDC20 - Direct acting relief valve



Spare part code

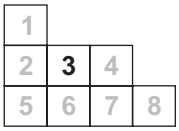
VMDC	**Direct acting relief valve**
20	**Nominal size:** 20 = 20 l/min
B	**Working range:** B = 20 ÷ 140 bar C = 30 ÷ 250 bar D = 70 ÷ 350 bar
1	**Adjusting device:** 1 = screw (std) 2 = handknob
01	**Series**

PPC assembly code

V***

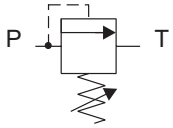
where *** stands for max setting pressure [bar]. Ex. V250

Mounting cavities



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

Hydraulic symbol

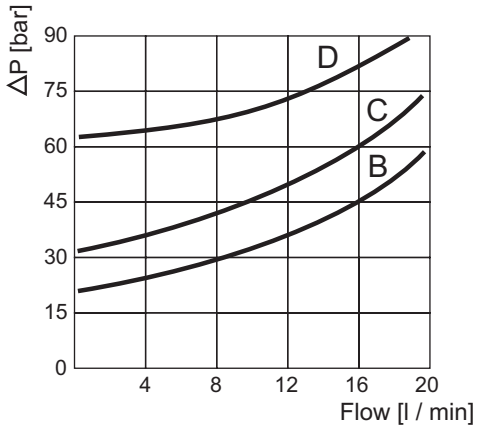


Main features

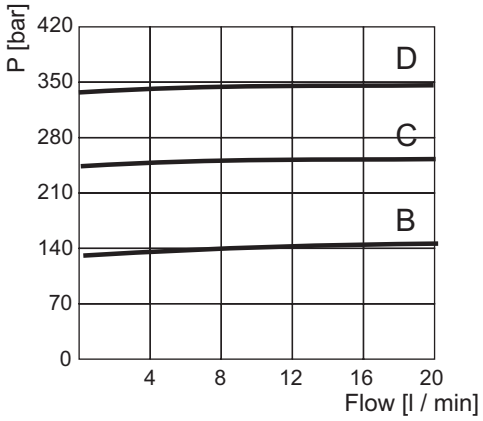
Max pressure	350 bar
Max flow	20 l/min
Weight	0,16 kg

Recommended tightening torque: 40 Nm
Recommended filtration settings: 30 ÷ 50 micron
Oil temperature: -30 ÷ + 80 °C

Minimum setting pressure

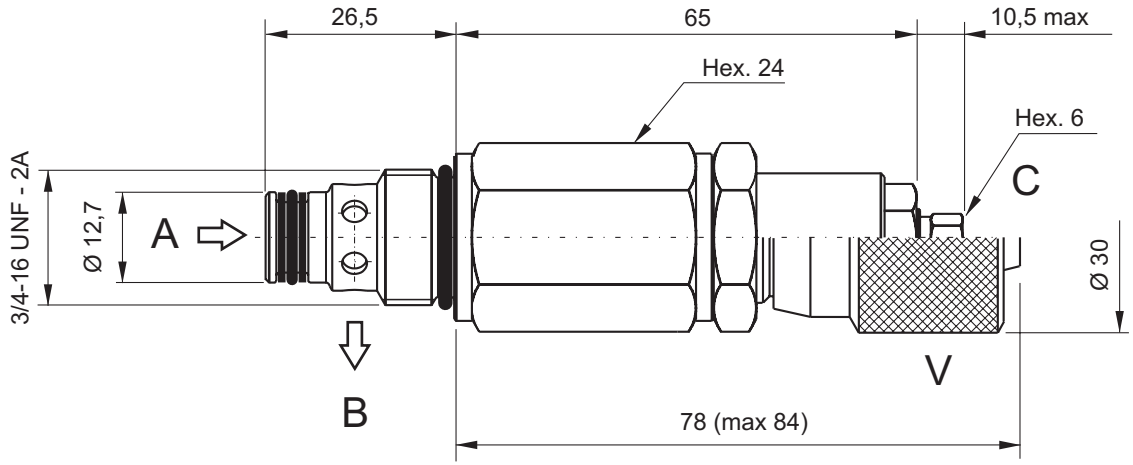


Pressure vs flow



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

CSC - Pressure compensated flow control valve



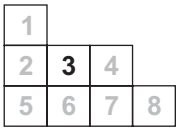
Spare part code

CSC	**Flow control valve pressure compensated**
04	**Nominal size:** 04 = 3/4-16UNF
C	**Adjustment:** C = screw (std) V = hand wheel
00	**Series**

PPC assembly code

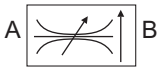
R

Mounting cavities



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

Hydraulic symbol

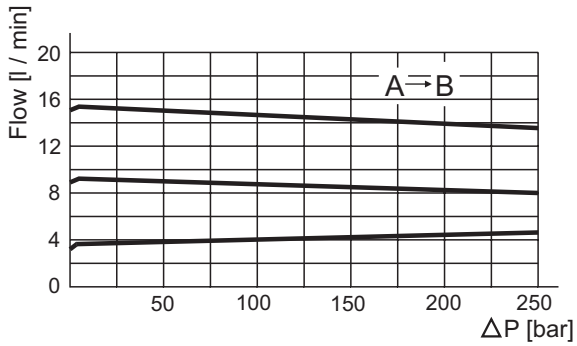


Main features

Max pressure	250 bar
Max flow	15 l/min
Weight	0,19 Kg

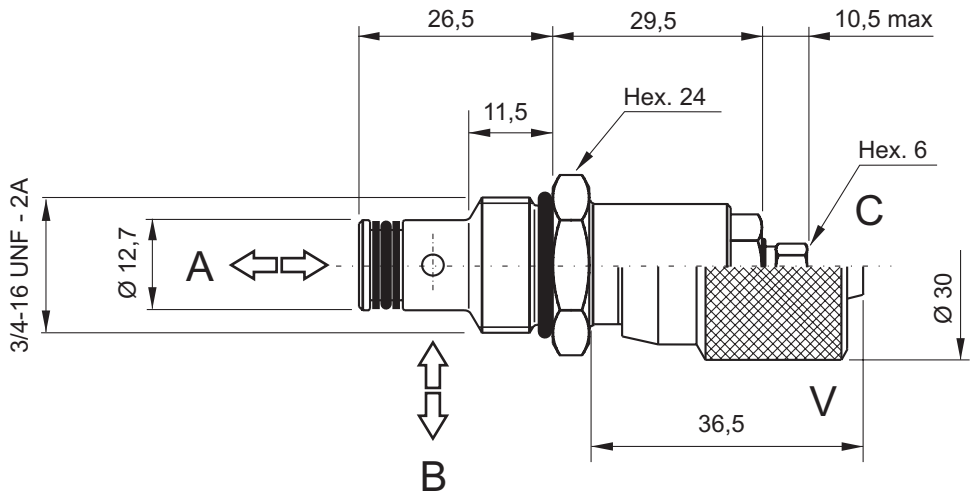
Recommended tightening torque: 25 Nm
Recommended filtration settings: 30 ÷ 50 micron
Oil temperature: -30 ÷ + 80 °C

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

CSB - Bidirectional flow control valve



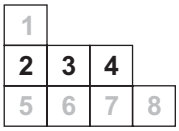
Spare part code

CSB	**Flow control valve**
04	**Nominal size:** 04 = 3/4-16 UNF
C	**Adjustment:** C = screw (std) V = hand wheel
00	**Series**

PPC assembly code

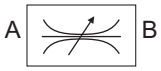
S

Mounting cavities



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

Hydraulic symbol

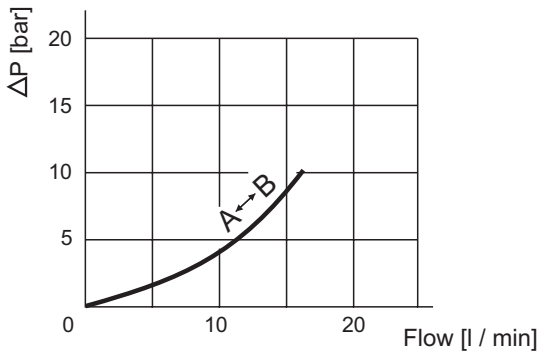


Main features

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

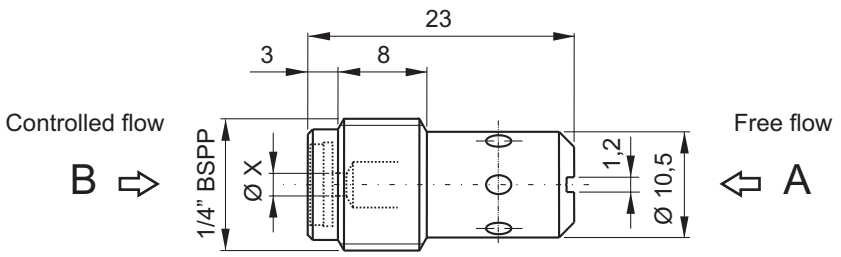
Recommended tightening torque: 25 Nm
Recommended filtration settings: 30 ÷ 50 micron
Oil temperature: -30 ÷ + 80 °C

Pressure drop diagram

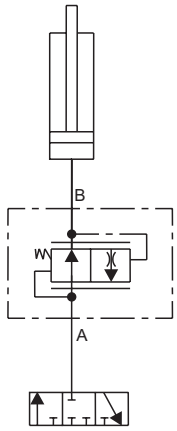


Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature

VSC01 - Pressure compensated flow control valve



Typical application



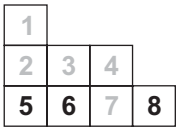
Spare part code

VSC	Flow control valve pressure compensated
01	Nominal size: 01= 1/4" BSPP
E	Controlled flow: 00, A, B, C, D, E, F H, L, M, N
01	Series

PPC assembly code

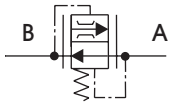
Nominal controlled flow [l/min]

Mounting cavities



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

Hydraulic symbol



Main features

Max pressure	250 bar
Max flow	14 l/min
Weight	0,015 kg

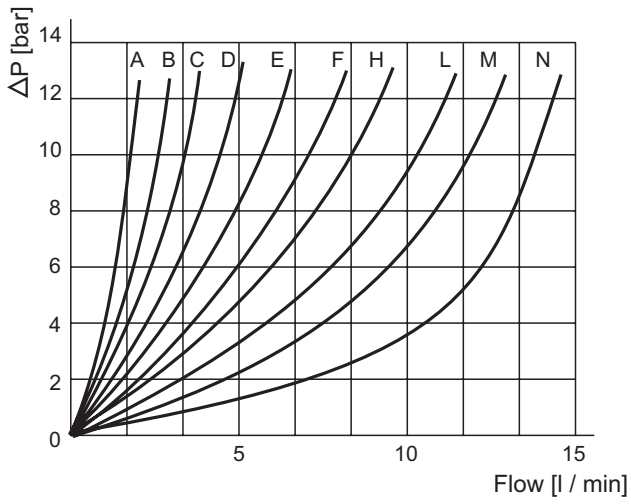
Recommended tightening torque: 6 Nm
Recommended filtration settings: 30 ÷ 50 micron
Oil temperature: -30 ÷ + 80 °C

Controlled flow through X port B → A

Spare part code	Ø X [mm]	Nominal controlled flow [l/min]
VSC0100	closed	0
VSC01A	0,75	1
VSC01B	1	2
VSC01C	1,3	3
VSC01D	1,5	4
VSC01E	1,7	5
VSC01F	1,9	6
VSC01H	2,1	8
VSC01L	2,3	10
VSC01M	2,5	12
VSC01N	3	14

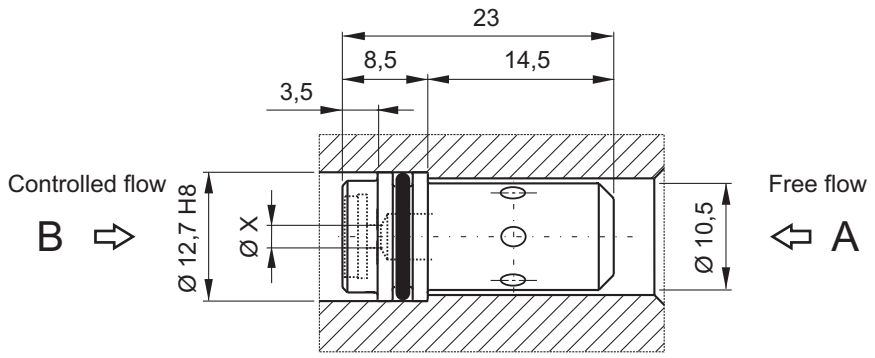
Note: nominal controlled flow, measured at 50 bar, are to be taken as general reference values and must be tested on the field

Free flow pressure drop A → B

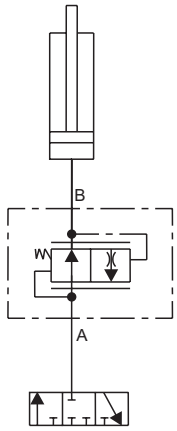


Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature

VSC04 - Pressure compensated flow control valve



Typical application



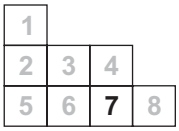
Spare part code

VSC	**Flow control valve pressure compensated**
04	**Nominal size:** 04
02	**Controlled flow:** 00, 01, 02, 03, 04, 06, 08, 11, 16
01	**Series**

PPC assembly code

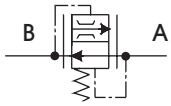
Nominal controlled flow [l/min]

Mounting cavities



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

Hydraulic symbol



Main features

Max pressure	250 bar
Max flow	14 l/min
Weight	0,015 kg

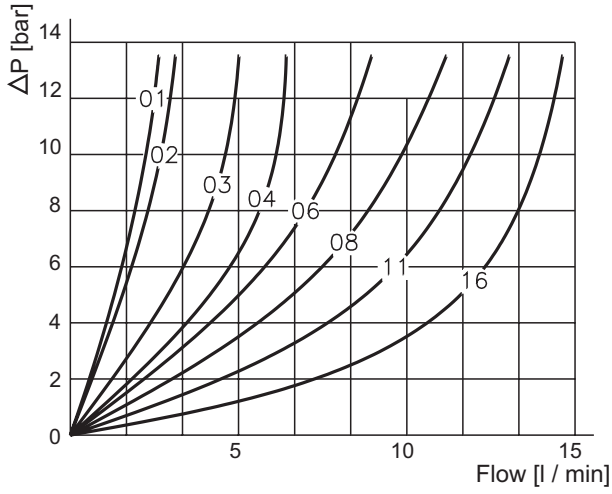
Recommended filtration settings: 30 ÷ 50 micron
Oil temperature: -30 ÷ + 80 °C

Controlled flow through X port B → A

Spare part code	Ø X [mm]	Nominal controlled flow [l/min]
VSC040001	closed	0
VSC040101	1	1
VSC040201	1,25	2
VSC040301	1,5	3
VSC040401	1,75	4
VSC040601	2	6
VSC040801	2,25	8
VSC041101	2,5	11
VSC041601	3	16

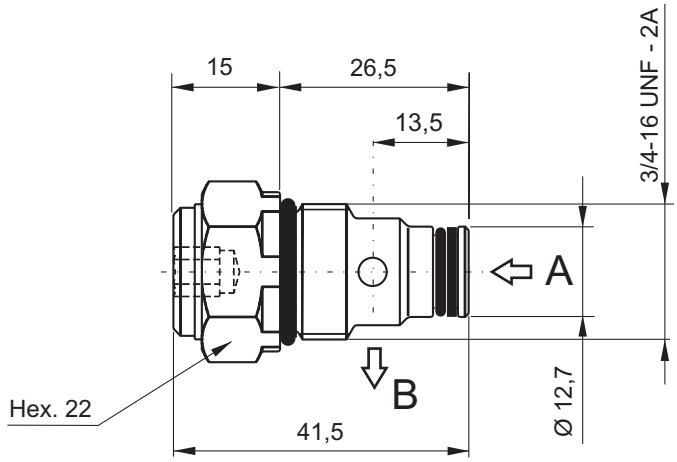
Note: nominal controlled flow, measured at 50 bar, are to be taken as general reference values and must be tested on the field

Free flow pressure drop A → B



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

VUC20 - Check valve



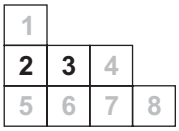
Spare part code

VUC	Check valve
20	Nominal size: 20
0	Series

PPC assembly code

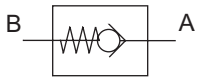
J

Mounting cavities



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

Hydraulic symbol

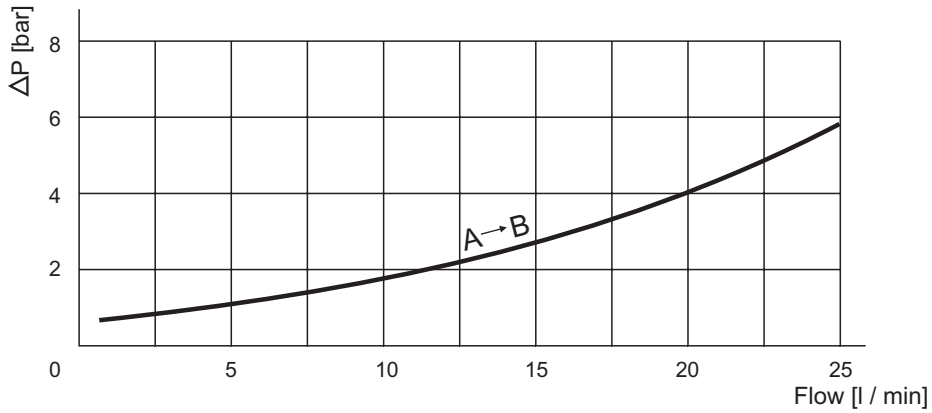


Main features

Max pressure	350 bar
Max flow	25 l/min
Weight	0,1 Kg
Cracking pressure	1 bar

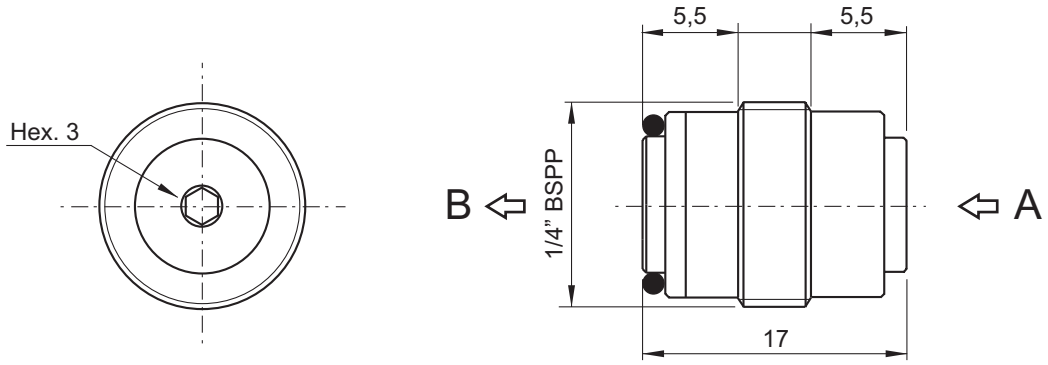
Recommended tightening torque: 25 Nm
Recommended filtration settings: 30 ÷ 50 micron
Oil temperature: -30 ÷ + 80 °C

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

VUI01 - Basic check valve



Spare part code

VUI	Cartridge check valve
01	Nominal size 01 = 1/4" BSPP
0	Series

PPC assembly code

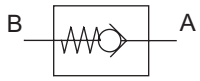
It is not necessary to specify the VUI01 check valve in assembled PPC code since it is always mounted as standard in the central manifold. When purchasing spare components, VUI01 must be ordered separately.

Mounting cavities

1			
2	3	4	
5	6	7	8

Notes: VUI01 valve is fitted in cavity 1, before the main relief valve. Cavities 3, 4 and 6 are present on central manifold type B only.

Hydraulic symbol

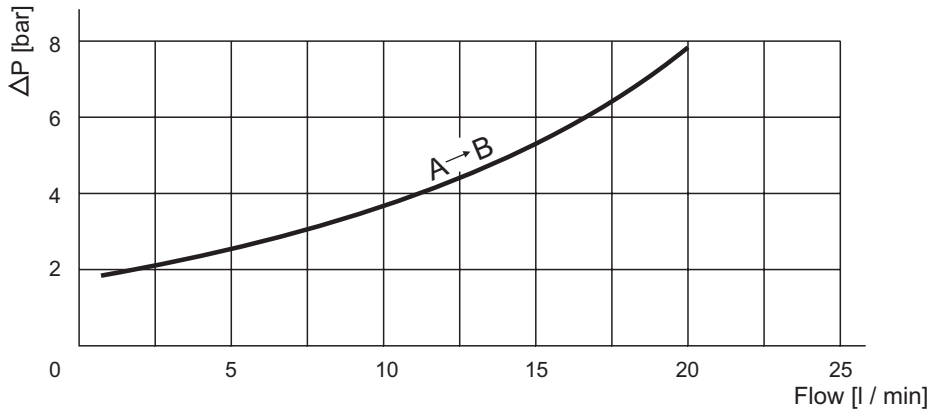


Main features

Max pressure	350 bar
Max flow	20 l/min
Weight	15 g

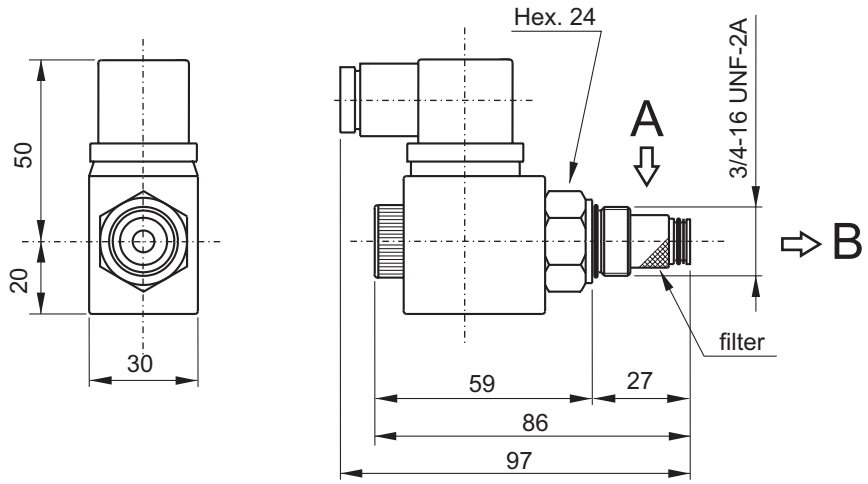
Recommended tightening torque: 6 Nm
Recommended filtration settings: 30 ÷ 50 micron
Oil temperature: -30 ÷ + 80 °C

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

MSV - Pilot operated two-way single locking solenoid valve



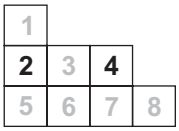
Spare part code

MSV	**Two-way pilot operated solenoid valve**
30	**Operation:** 30 = normally closed 31 = normally open
0	**Options:** 0 = no options (std) E = emergency
0000	**Coil voltage:** 0000 = no coil (std) see below table
0	**Series**

PPC assembly code

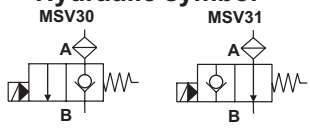
A (MSV30)
B (MSV30E)
F (MSV31)
C (MSV31E)

Mounting cavities



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

Hydraulic symbol



Main features

Max pressure	210 bar (up to 300bar*)
Max flow	20 l/min
Weight	0,27 Kg (with coil)
Coil thermal insulation	Class F - VDE 0585
Electric connection	DIN 43650-A / ISO 4400
Coil protection degree	IP 65 / DIN 40050
Duty cycle	ED 100%
Voltage required	+/- 10% nominal voltage

*: with M140 series coils. See table U020.20.11

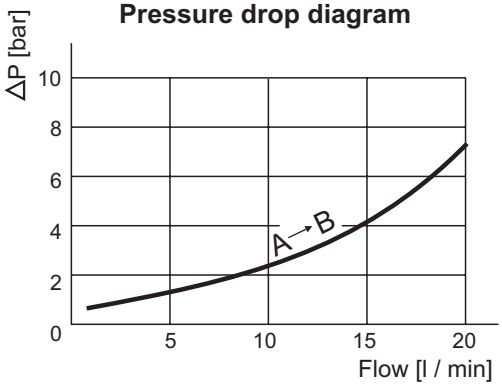
Coils selection

Coil voltage	Spare coil code	Spare connector code	Holding power consumption
12DC	M13040001	KA132000B1	18W
24DC	M13040002	KA132000B1	18W
48DC	M13040003	KA132000B1	18W
110RC	M13040004	KA132R12B1	18W
220RC	M13040005	KA132R13B1	18W
115/50AC	M13040006	KA132000B1	28VA
230/50AC	M13040007	KA132000B1	28VA

Normally closed valves can be equipped with DC, RC and AC coils. MSV31 normally open valves can be equipped with DC or RC coils only. You can supply AC voltage to normally open valves with RC coils through proper rectifying bridge connectors (110AC, 50 or 60Hz, to 110RC coils and 220AC, 50 or 60Hz, to 220RC coils). Other voltages and electric connection types available on request.
Inrush power consumption can be up to 3,5 times higher than the holding one.

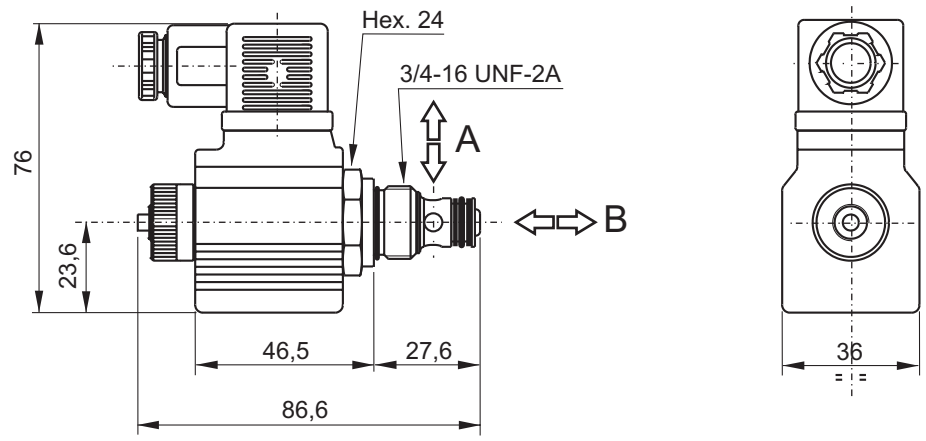
Recommended tightening torque: 25 Nm
Recommended filtration settings: 30 ÷ 50 micron
Oil temperature: -30 ÷ + 80 °C

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

MDV - Direct operated two-way double locking solenoid valve



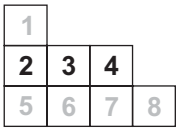
Spare part code

MDV	**Two-way double locking solenoid valve**
30	**Operation:** 30 = normally closed 31 = normally open
E	**Options:** E = emergency (std)
0000	**Coil voltage:** 0000 = no coil (std) see below table
0	**Series**

PPC assembly code

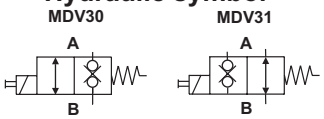
D (MDV30E)
P (MDV31E)

Mounting cavities



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

Hydraulic symbol



Main features

Max pressure	210 bar
Max flow	15 l/min
Weight	0,35 Kg (with coil)
Coil thermal insulation	Class F - VDE 0585
Electric connection	DIN 43650-A / ISO 4400
Coil protection degree	IP 65 / DIN 40050
Duty cycle	ED 100%
Voltage required	+/- 10% nominal voltage

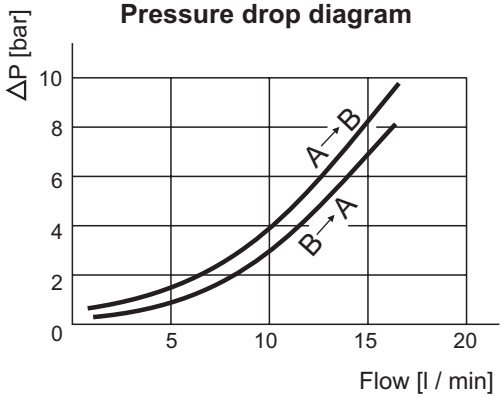
Coils selection

Coil voltage	Spare coil code	Spare connector code	Holding power consumption
12DC	M14040001	KA132000B1	22W
24DC	M14040002	KA132000B1	22W
48DC	M14040003	KA132000B1	22W
110RC	M14040004	KA132R12B1	22W
220RC	M14040005	KA132R13B1	22W

Normally closed valves can be equipped with DC, RC and AC coils. MDV31 normally open valves can be equipped with DC or RC coils only. You can supply AC voltage to normally open valves with RC coils through proper rectifying bridge connectors (110AC, 50 or 60Hz, to 110RC coils and 220AC, 50 or 60Hz, to 220RC coils). Other voltages and electric connection types available on request.
Inrush power consumption can be up to 3,5 times higher than the holding one.

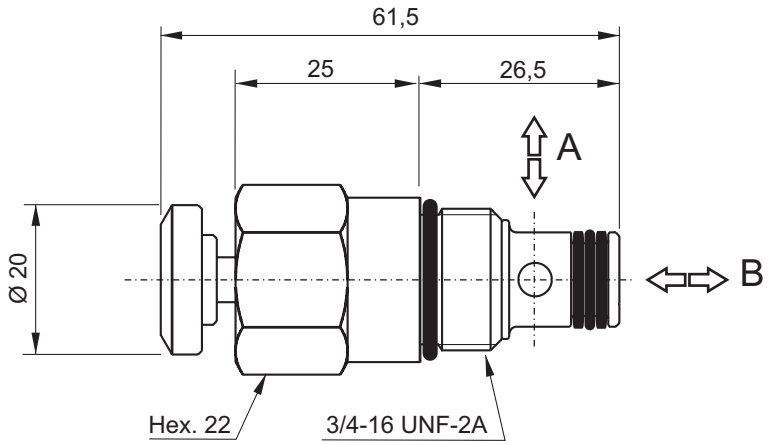
Recommended tightening torque: 25 Nm
Recommended filtration settings: 30 ÷ 50 micron
Oil temperature: -30 ÷ + 80 °C

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

CPE - Manual emergency valve



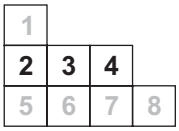
Spare part code

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

PPC assembly code

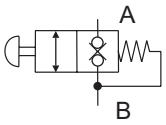
Z

Mounting cavities



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

Hydraulic symbol

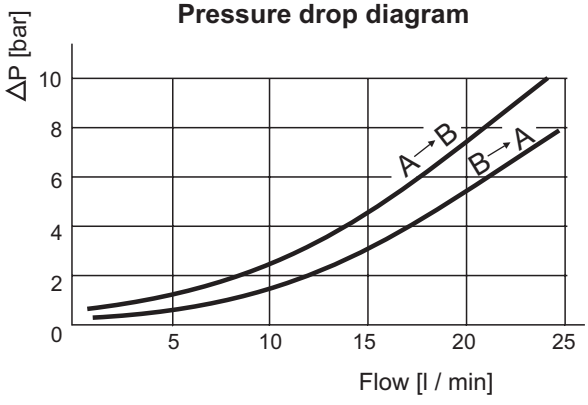


Main features

Max pressure	300 bar
Max flow	25 l/min
Weight	0,15 Kg

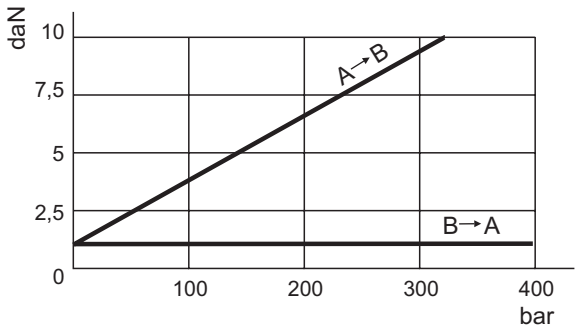
Recommended tightening torque: 25 Nm
Recommended filtration settings: 30 ÷ 50 micron
Oil temperature: -30 ÷ + 80 °C

Pressure drop diagram

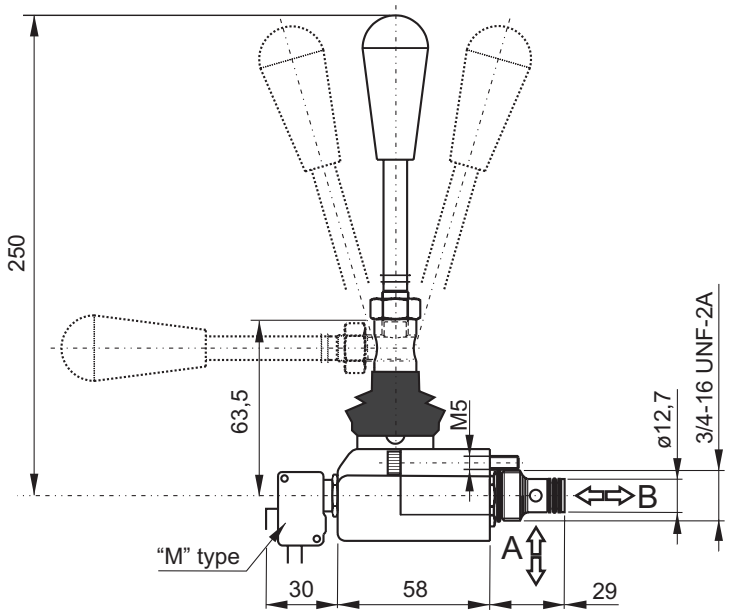


Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature

Operating force (daN) on the press button



CM - Manual lever valve



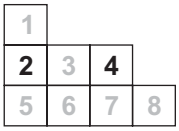
Spare part code

CM	**Two-way manual lever valve**
04	**Nominal size:** 04 = 3/4-16 UNF
L	**Type:** L = lever (std) M = with micro D = M + safety lever
000	**Options**
0	**Series**

PPC assembly code

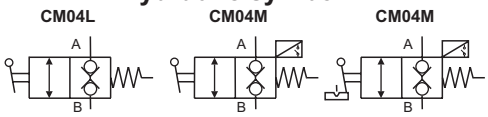
E (CM04L)
EM (CM04M)
ED (CM04D)

Mounting cavities



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

Hydraulic symbol

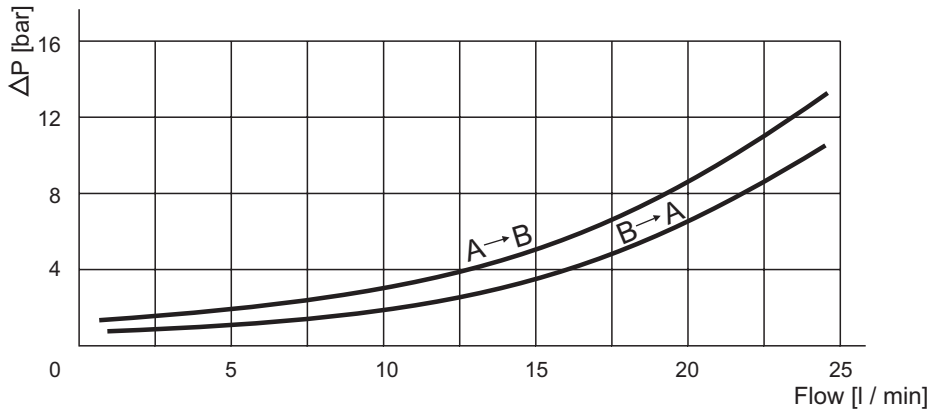


Main features

Max pressure	320 bar
Max flow	25 l/min
Weight	0,7 Kg

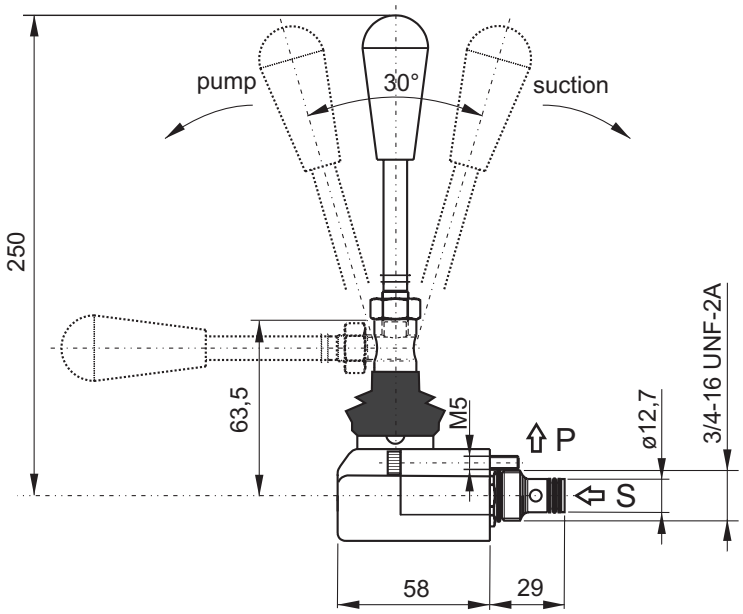
Recommended tightening torque: 15 Nm
Recommended filtration settings: 30 ÷ 50 micron
Oil temperature: -30 ÷ + 80 °C

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



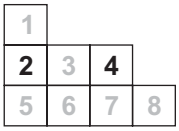
Spare part code

PMC	Hand pump
02	Nominal size: 02 = 2 cc/stroke
000	Options
0	Series

PPC assembly code

U

Mounting cavities



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

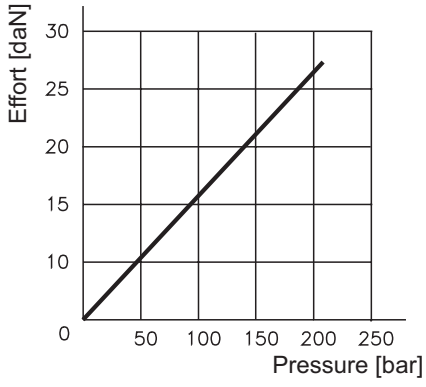
Hydraulic symbol

Main features

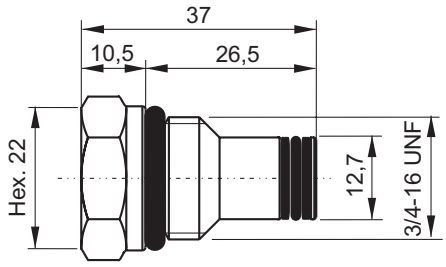
Max pressure	200 bar
Max flow	-
Weight	0,7 Kg

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

Effort (daN)
operating on the lever end



Plugs



Hydraulic symbol

Spare part code

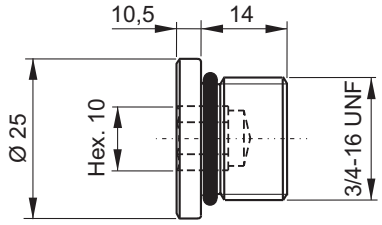
E70100005

PPC assembly code

G

Mounting cavities

1			
2	**3**	**4**	
5	6	7	8



Hydraulic symbol

Spare part code

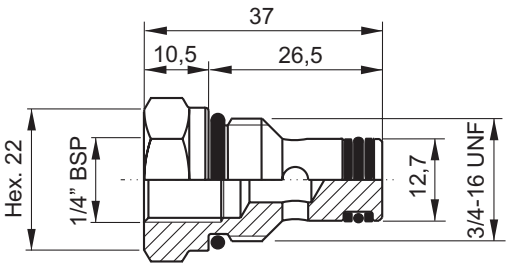
E70100004

PPC assembly code

L

Mounting cavities

1			
2	**3**	**4**	
5	6	7	8



Hydraulic symbol

Spare part code

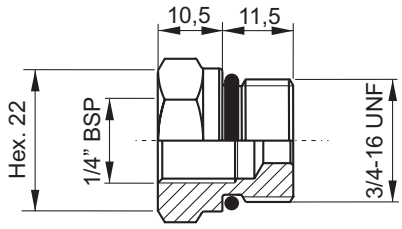
E70100003

PPC assembly code

H

Mounting cavities

1			
2	**3**	**4**	
5	6	7	8



Hydraulic symbol

Spare part code

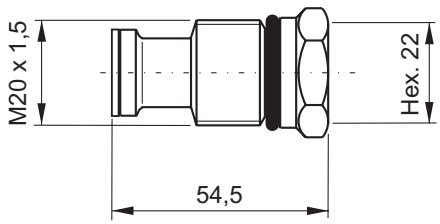
E70100002

PPC assembly code

N

Mounting cavities

1			
2	**3**	**4**	
5	6	7	8



Hydraulic symbol

P T

Spare part code

E70100010

PPC assembly code

XP

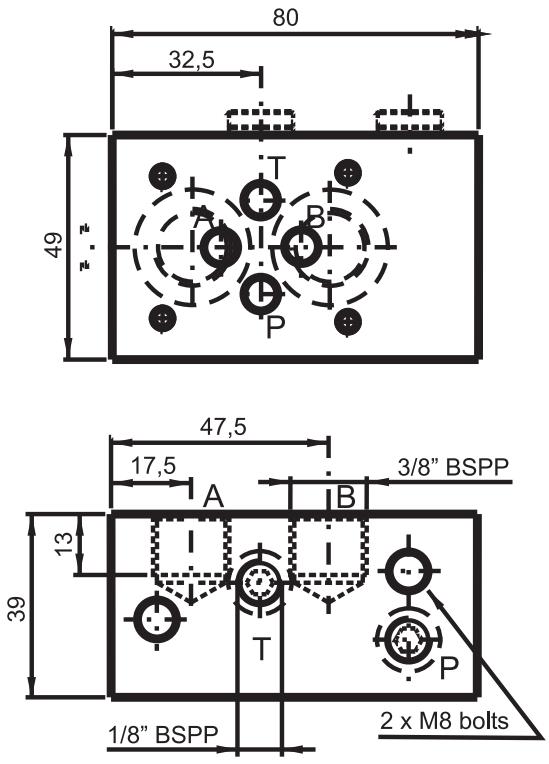
Mounting cavities

1			
2	3	4	
5	6	7	8

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

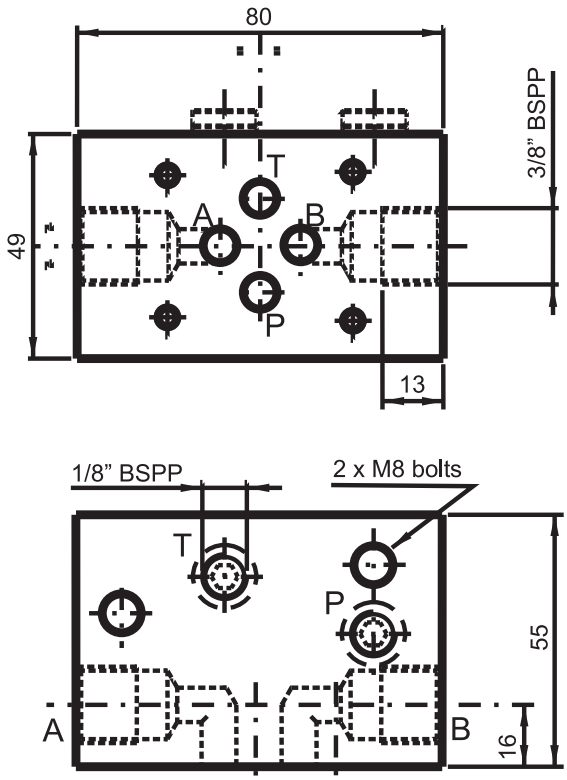
Cetop 3 modular manifolds

Rear ports

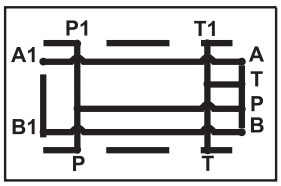


Weight: 0,35 kg

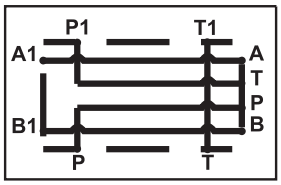
Lateral ports



Weight: 0,55 kg



Parallel connection	Spare part code
Rear ports	E60403001
Lateral ports	E60403010



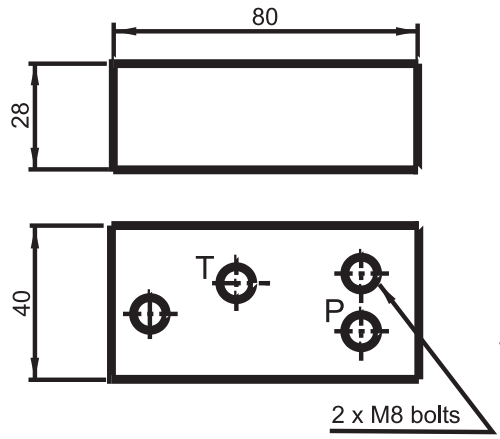
Serial connection	Spare part code
Rear ports	E60403003
Lateral ports	E60403011

Note: to add external manifolds to PPC assembly code, just add their spare part codes at the end of PPC code. Ex: PPC-0,8 12DC-A-G108-D/200-G-1,5L+E60403004+E60403010

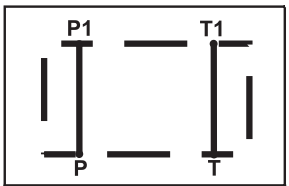
The Cetop attachment is on motor side. With AC motor frames bigger than 71, always add a spacer manifold E60403004 (see next page) below the Cetop manifold to avoid interference between the Cetop valve and the motor.

Other modular manifolds

Spacing element

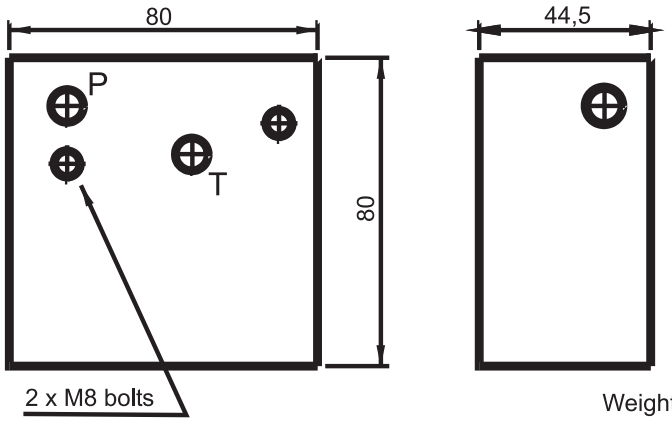


Weight: 0,25 kg

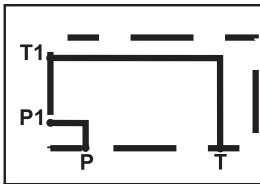


Spare part code
E60403004

90° rotation manifold

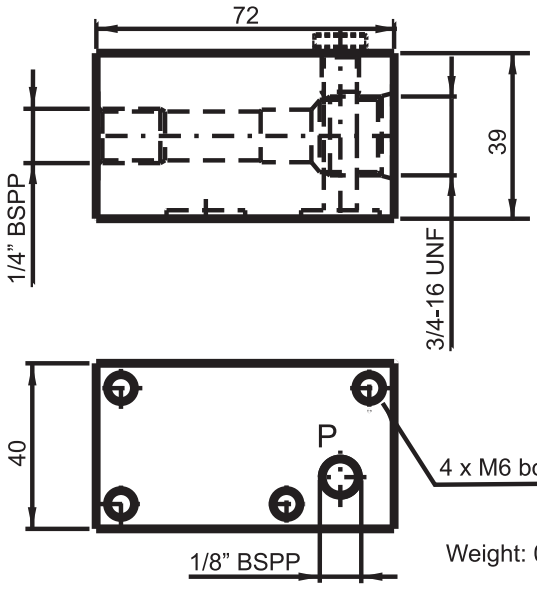


Weight: 0,6 kg



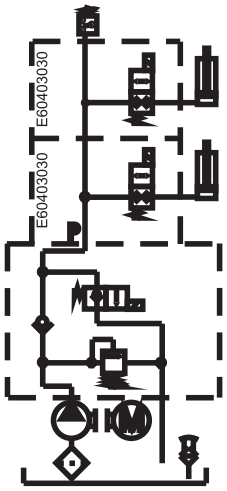
Spare part code
E60403005

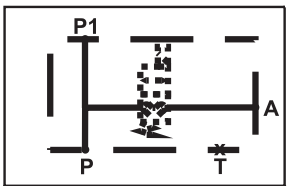
Manifold for MSV and MDV valves



Weight: 0,25 kg

Circuit example



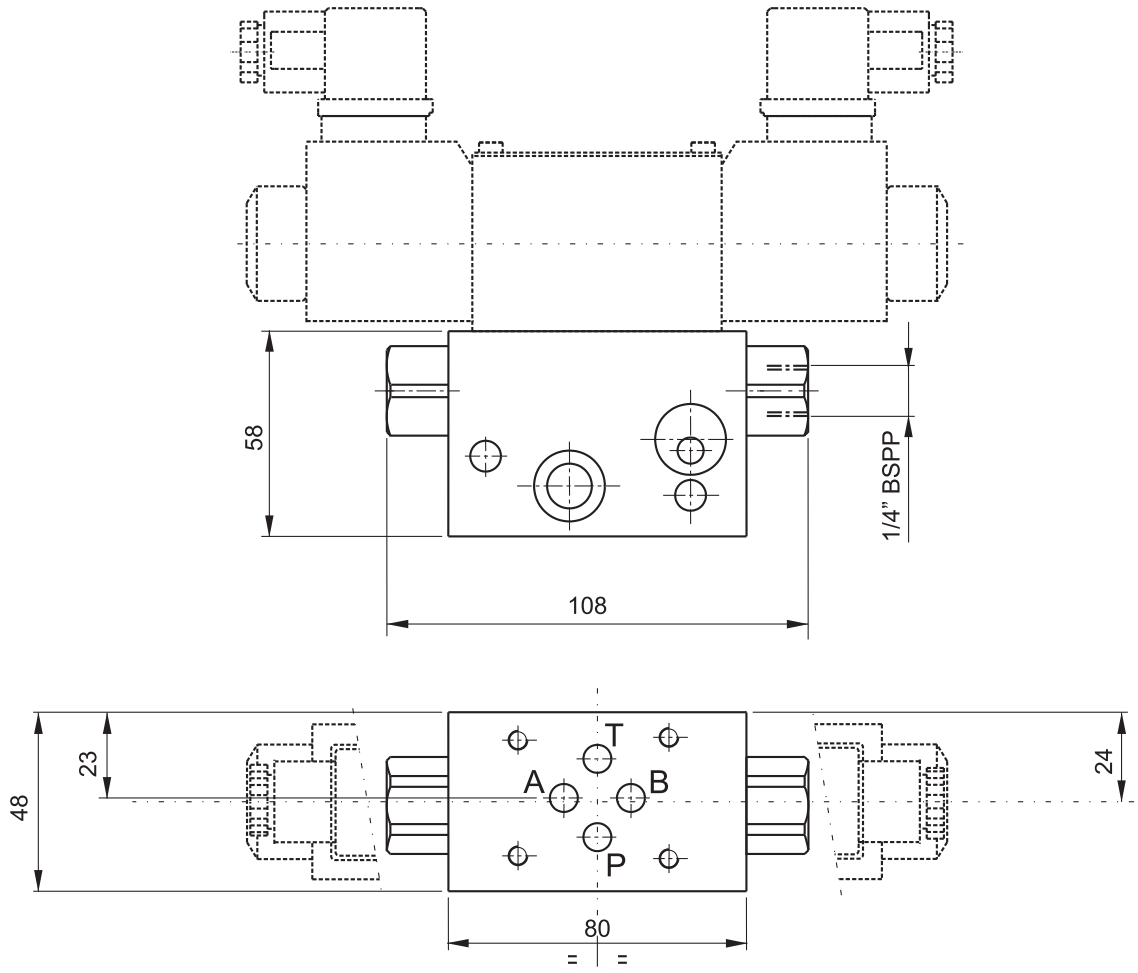


Spare part code
E60403030

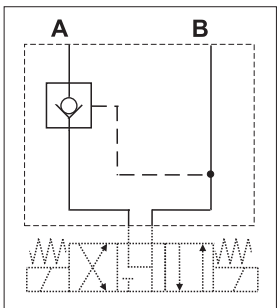
Note: code does not include the MSV or MDV solenoid valve.

Hydronit
www.hydronit.com
E-mail: sales@hydronit.com
Fax +39 0362 759725

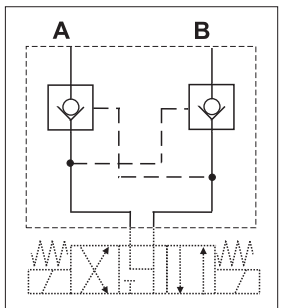
Cetop 3 manifolds with pilot operated check valves



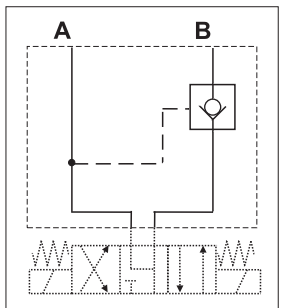
Weight: 0,7 kg



Spare part code
E60413002



Spare part code
E60413001



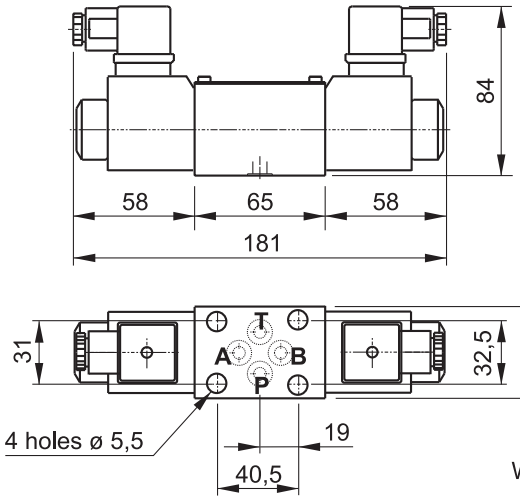
Spare part code
E60413003

Note: code does not include the Cetop solenoid valve.

Hydronit
www.hydronit.com
E-mail: sales@hydronit.com
Fax +39 0362 759725

EOS Technologies

Cetop 3 solenoid valves



Weight: 1,42 kg (2 sol), 1,15 kg (1 sol)

Spare part code

SD03	Cetop 3 solenoid directional control valve
A2	Spool and scheme: see side table
24DC	Coil type: see below table
00	Options: 00 = std
**	Series

Code	A B / a 0 b / P T

Double solenoid

A2*	
B2	
C2	
E2	

Single solenoid

A11C	
A11S*	
B11C	
C11A	

Single solenoid

E11C	
N11C*	
A12C	
A12S*	
B13C	
C13A	
E12C	
N12C*	

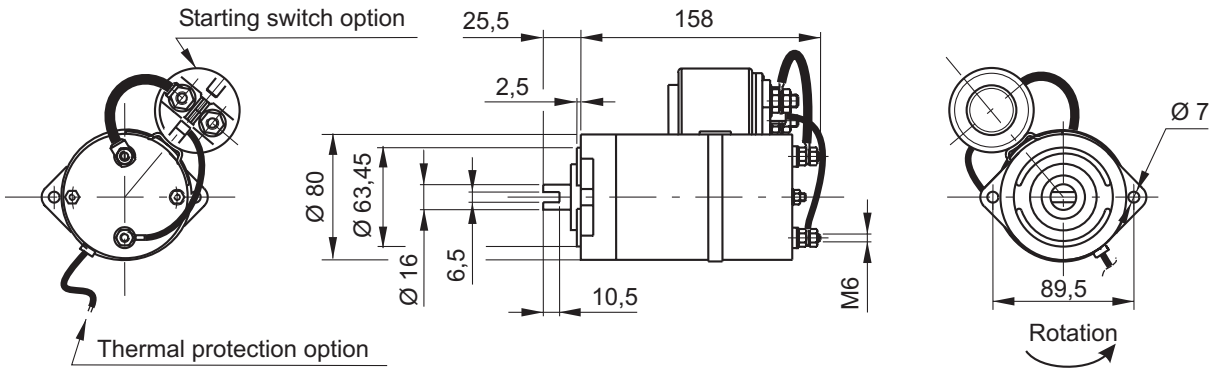
* = spools with price additional

Coil voltage	Spare coil code	Spare connector code	Holding power consumption
12DC	M16040001	KA132000B1	27W
24DC	M16040002	KA132000B1	27W
110RC	M16040004	KA132R12B1	29W
220RC	M16040005	KA132R13B1	29W
115/50AC	M16040006	KA132000B1	32VA
230/50AC	M16040007	KA132000B1	32VA

To supply AC voltage to RC coils (110AC, 50 or 60Hz, to 110RC coils and 220AC, 50 or 60Hz, to 220RC coils), proper rectifying bridge connectors as per above table must be applied.
Other voltages and electric connection types available on request.
Inrush power consumption can be up to 3,5 times the holding one.

Max pressure	250 bar
Max p on T port	210 bar static, 180 bar dynamic
Max flow	40 l/min
Fixing bolts	4 TCEI M5x30. 5Nm torque.
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
Normatives	EN50081-1 / EN50082-2 (89/336 CEE electromagnetic comp.) 73/23/CEE / 96/68/CEE (low voltage)

Integral DC motors Ø 80



Weight: 2,6 kg

Code

Description	PPC assembly code	Spare part code	Nominal duty cycle	Nominal rotational speed
800W 12 V DC motor	**0,8 12DC**	**M46I1S008**	S2: 4min S3: 10% ED	4000 rpm
800W 24 V DC motor	**0,8 24DC**	**M46I2S008**	S2: 4min S3: 10% ED	4500 rpm

Options

Description	PPC assembly code	Spare part code
Starting switch 80A 12 or 24 V DC	**/S**	**M47IC0001** (12 V DC) **M47IC0002** (24 V DC)
800W 12DC motor with thermal protection	**0,8 12DC/T**	**M46I1ST08**
800W 24DC motor with thermal protection	**0,8 24DC/T**	**M46I2ST08**

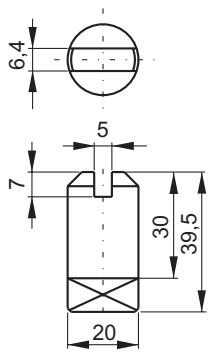
Note: the starting switch electric connection is provided when specifying the **/S** in PPC assembly code.
It is not supplied when ordering spare starting switches.

Coupling

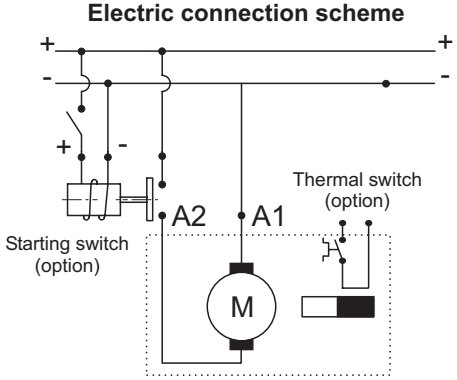
Description	PPC assembly code	Spare part code
Shaft coupling for Ø 80 DC motors	**X80**	**E36200002**

Note: the coupling is already included when specifying the motor in PPC assembly code.
X80 to be indicated only when ordering PPC with no motor but with coupling.

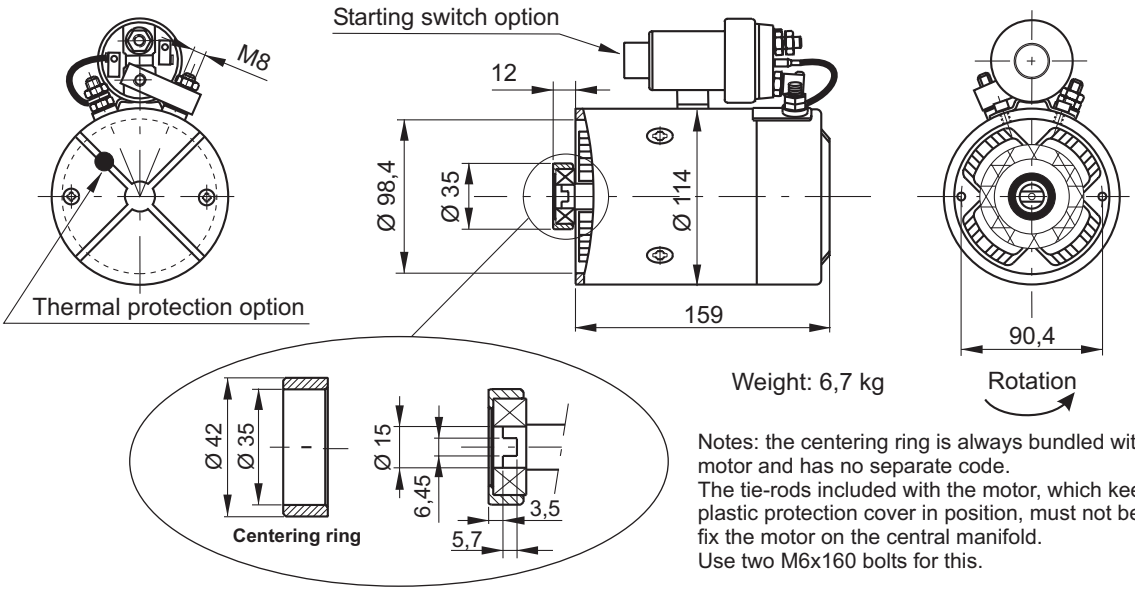
Coupling



Electric connection scheme



Integral DC motors Ø 114



Notes: the centering ring is always bundled with the motor and has no separate code.
The tie-rods included with the motor, which keep the plastic protection cover in position, must not be used to fix the motor on the central manifold.
Use two M6x160 bolts for this.

Code

Description	PPC assembly code	Spare part code	Nominal duty cycle	Nominal rotational speed
1600W 12 V DC motor	**1,6 12DC**	**M46I1S016**	S2: 3min S3: 7,5% ED	2600 rpm
2200W 24 V DC motor	**2,2 24DC**	**M46I2S022**	S2: 1,2min S3: 4,5% ED	2750 rpm

Options

Description	PPC assembly code	Spare part code
Starting switch 200A 12 or 24 V DC	**/S**	**M47ZC0001** (12 V DC) **M47ZC0002** (24 V DC)
Thermal protection	**/T**	**-**

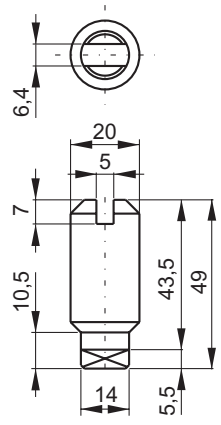
Note: the starting switch electric connection is provided when specifying the **/S** in PPC assembly code.
It is not supplied when ordering spare starting switches.

Coupling

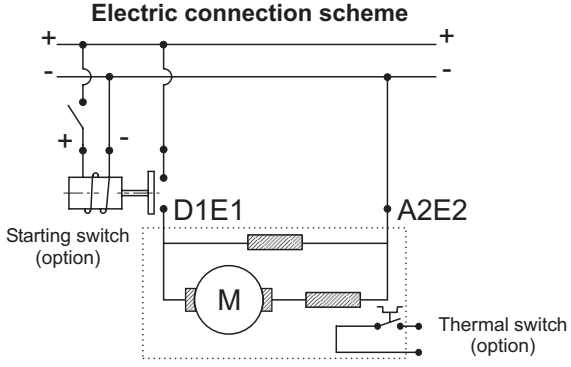
Description	PPC assembly code	Spare part code
Shaft coupling for Ø 114 DC motors	**X114**	**E36200001**

Note: the coupling is already included when specifying the motor in PPC assembly code.
X114 to be indicated only when ordering PPC with no motor, but with coupling.

Coupling



Electric connection scheme

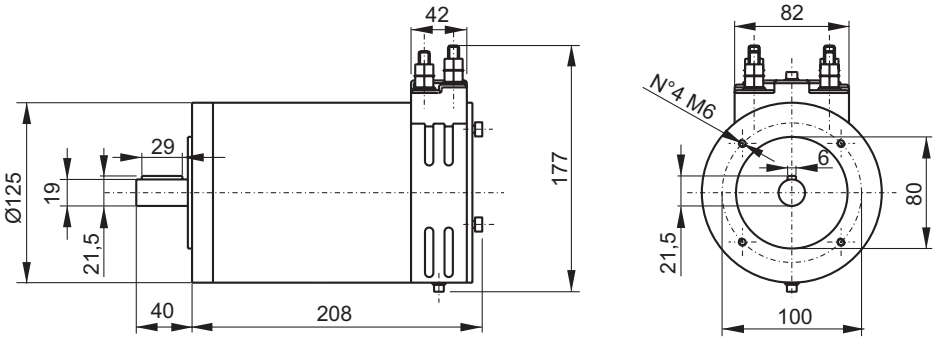


B14 DC motors for heavy duty or special applications

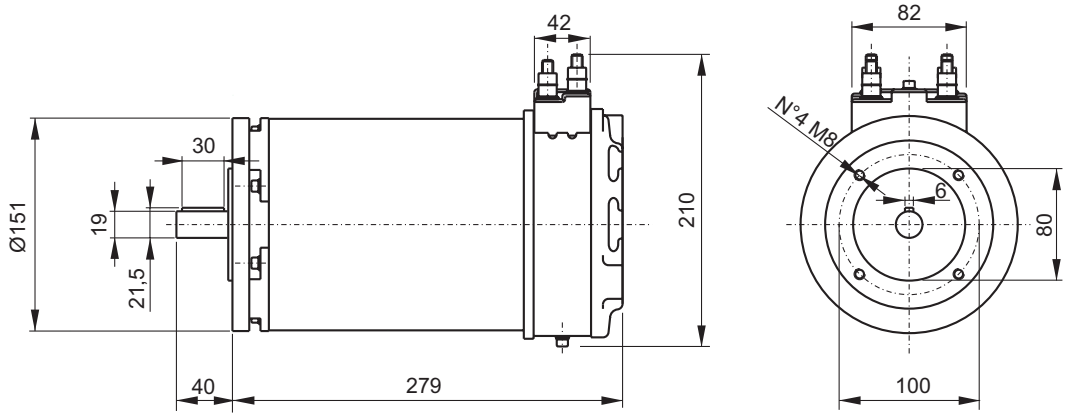
B14 DC motors for heavy duty or special applications: they are available with Ø125, Ø151 or Ø191 in multiple executions, engineered to perform heavy duty cycles and tailor made to suit each specific application, with or without fan cooling or thermal protection. They are mounted on the central manifold with B14 standard mounting kits (see tables U020.40.06 and following).
To properly choose these motors, following minimum information must be provided to our technical office: 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.

Some examples:

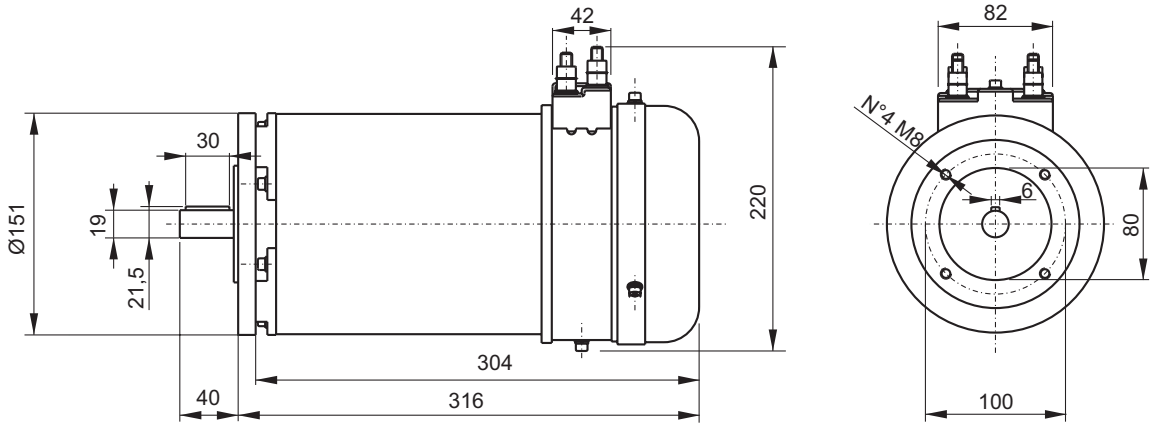
Cod. MB14M1S010: 1000W 12V DC frame 80 B14 motor



Cod. MB14M2S020: 2000W 24V DC frame 80 B14 motor

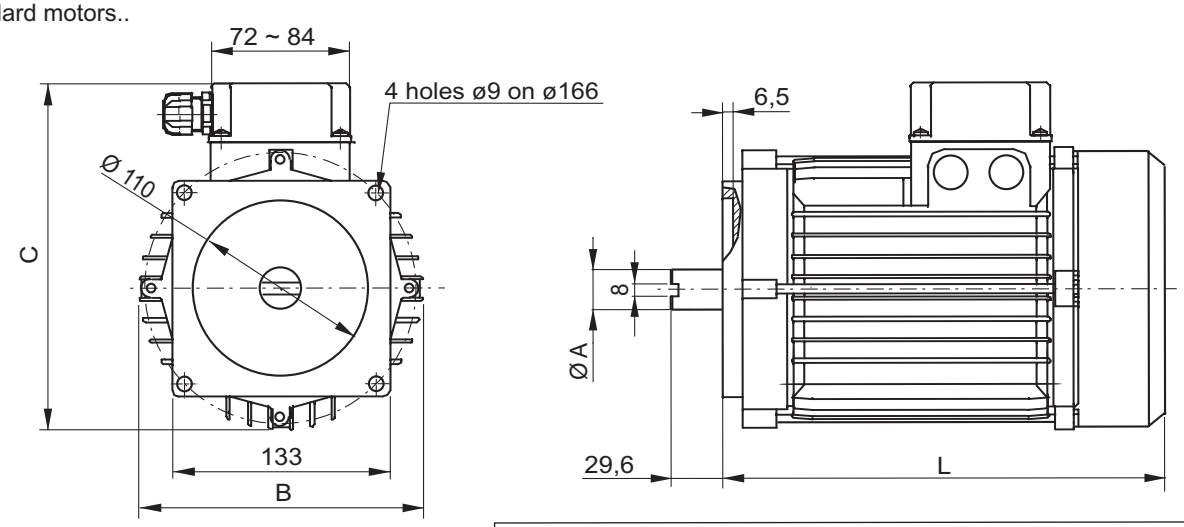


Cod. MB14M2S030: 3000W 24V DC frame 80 B14 fan cooled motor



Integral AC motors

Integral AC motors: the engineered solution for compact and optimised power units from 0,18 to 4 kW. The AC motors are directly flanged on the central manifold. A single coupling -see below- can suit all sizes and powers.
We suggest to adopt these advanced motors because of these peculiar advantages over standard B14 AC motors and because they are designed specifically for use on our mini power packs, offering an higher power density than market standard motors..

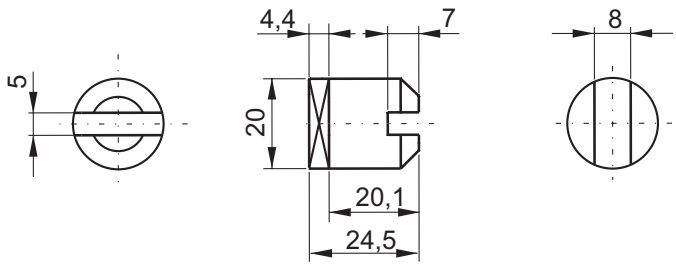


PPC motor assembly code

E	**AC integral motor**
1,5	**Power [kW]**
AC	**Alternate current**
3	**Phase: 3** = three phase **S** = single phase
4P	**Poles: 4P** = four pole **2P** = two pole
80	**Frame size**
-	**Duty factor: -** = ED 100% (S1) **S3** = intermittent duty

Coupling spare part code	**E36100000**

A single coupling can be applied on all motor frame sizes. This is also the semi-coupling included in B14 motors mounting kit.
The coupling is already included when specifying an integral AC motor in PPC assembly code. When ordering spare motors, the coupling is not included and must be ordered separately.



A selection of three phase - 4 poles

MOTOR FRAME SIZE	kW	HP	Ø A	B	C	L	Weight Kg
71	0,25	0,35	17	144	180	210	6,4
	0,35	0,5	17	144	180	210	8,5
	0,55	0,75	17	144	180	210	8,7
	0,75*	1*	17	144	180	210	8,7
80	0,75	1	19	162	202	234	10
	1,1	1,5	19	162	202	234	11
	1,5*	2*	19	162	202	234	11
90	1,8	2,5	24	175	217	279	20
	2,2	3	24	175	217	279	20
	2,6*	3,5*	24	175	217	279	20
90	3*	4*	24	175	217	279	21
	3,3*	4,5*	24	175	217	279	21

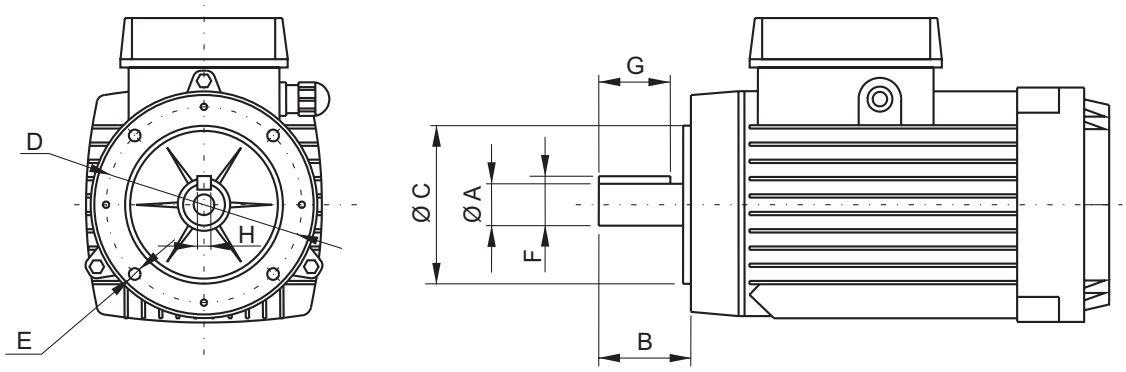
A selection of single phase - 4 poles

MOTOR FRAME SIZE	kW	HP	Ø A	B	C	L	Weight Kg
71	0,18	0,25	17	144	180	210	6
	0,25	0,35	17	144	180	210	8
80	0,55	0,75	19	162	202	234	9
	0,75	1	19	162	202	234	10
90	1,1	1,5	24	175	217	279	18
	1,5	2	24	175	217	279	20

Above motors are a selection of the most used powers and types, normally available ex-stock. Other power/frame size pairs are available. Ask our technical office: we will offer optimized solutions for either intermittent or heavy duty applications.
Note*: motors for intermittent duty.
Above drawing is for three phase motors, single phase motors electric box has different shape (since includes capacitors).

B14 AC motors

B14 motors: for market compatibility, any standard B14 AC motor with frame 71, 80, 90 or 100/112 can be mounted. In this case two-pieces couplings and additional adaptor flanges as per tables U020.40.06, .07, .08 and .09 must be mounted.



Motors overall dimensions are not indicated since they can vary substantially depending on the motor brand

B14 standard dimensions

MOTOR FRAME SIZE	Typically available power range	ØA	B	ØC	D	E	F	G	H	Mounting kit
71	0,25 ~ 0,37 kW 0,35 ~ 0,5 HP	14	30	70	85	M6	16	30	5	**XB14-71**
80	0,55 ~ 0,75 kW 0,75 ~ 1 HP	19	40	80	100	M6	21,5	40	6	**XB14-80**
90	1,1 ~ 1,5 kW 1,5 ~ 2 HP	24	50	95	115	M8	27	50	8	**XB14-90**
100/112	2,2 ~ 5,5 kW 3 ~ 7,5 HP	28	60	110	130	M8	31	60	8	**XB14-100**

PPC B14 motor assembly code

7,5	**Power [kW]**
AC	**Alternate current**
3	**Phase: 3** = three phase **S** = single phase
4P	**Poles: 4P** = four pole **2P** = two pole
112	**Frame size**
-	**Duty factor: -** = ED 100% (S1) **S3** = intermittent duty

Mounting kits spare parts

The B14 mounting kits are made of:
- a semi-coupling E36100000 (the same used for integral AC motors) on pump shaft side
- a semi-coupling on motor shaft side, which is different for any frame size
- an adaptor flange to suit the central manifold, which is also different for any frame size.

For detailed dimensions and codes see tables U020.40.06, .07, .08 and .09.
The mounting kit is already included when specifying a B14 AC motor in PPC assembly code. When ordering spare motors, the relevant mounting kit is not included and must be ordered separately.

A selection of 3 phase 4 pole B14 AC motors

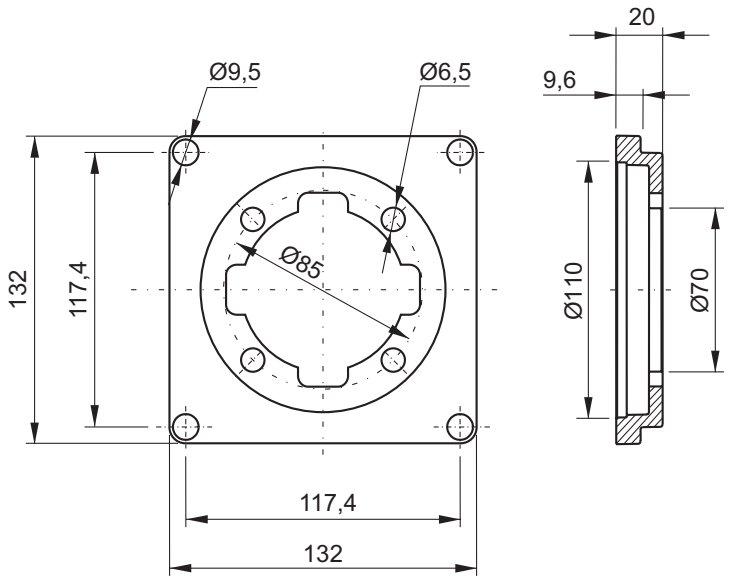
MOTOR FRAME SIZE	kW	HP	Weight Kg
100	3	4	25
	4	5,5	35
112	5,5	7,5	40
	7,5	10	43

Above motors are a selection of the most used powers and types. Other power/frame size pairs are available. Ask our technical office: we will offer optimized solutions for either intermittent or heavy duty applications.

Table U020.40.06.01

Mounting kit for frame 71 B14 motors

Adaptor flange

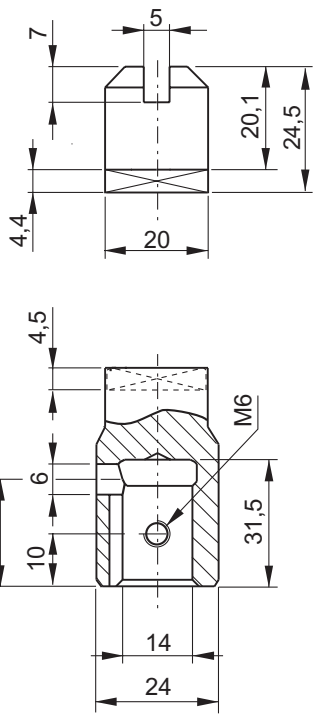


Description	PPC assembly code*	Spare part code
B14 71 motor side semi-coupling	XB14-71	**E36100001**
B14 pump side semi-coupling		**E36100000**
B14 71 adaptor flange		**F27010001**

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

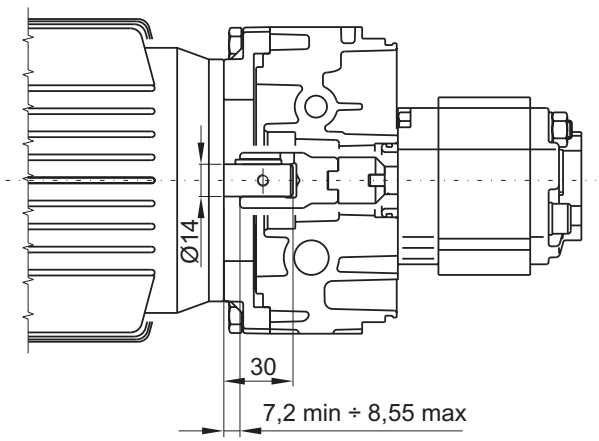
Coupling

Pump side



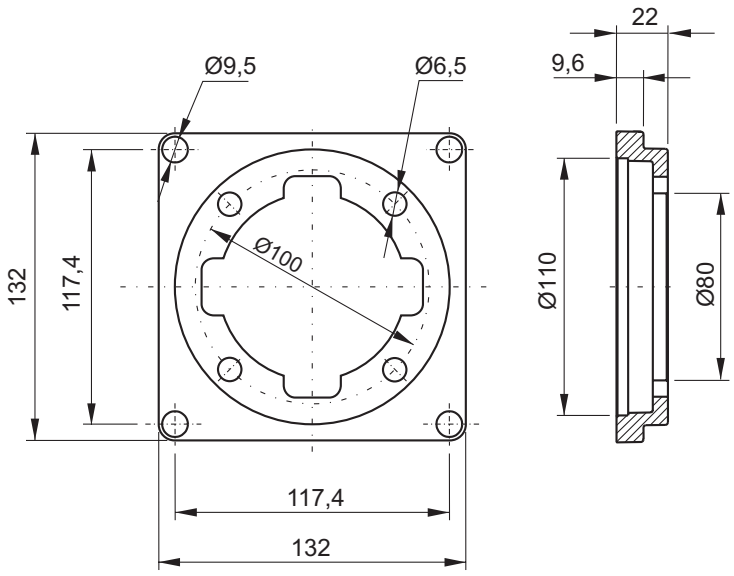
Motor side

When assembling frame 71 B14 motors with X-B14 flange + couplings kit, please respect following positioning measures:



Mounting kit for frame 80 B14 motors

Adaptor flange

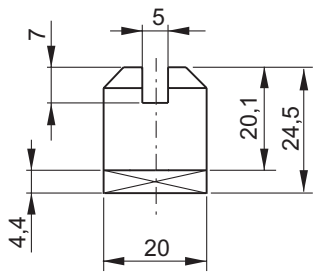


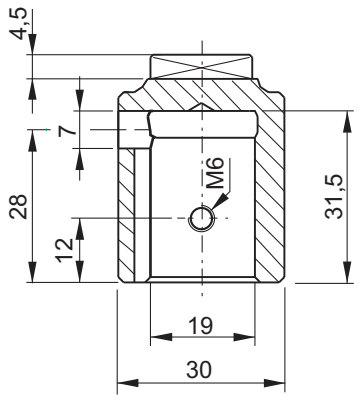
Description	PPC assembly code*	Spare part code
B14 80 motor side semi-coupling	XB14-80	**E36100002**
B14 pump side semi-coupling		**E36100000**
B14 80 adaptor flange		**F27010002**

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

Coupling

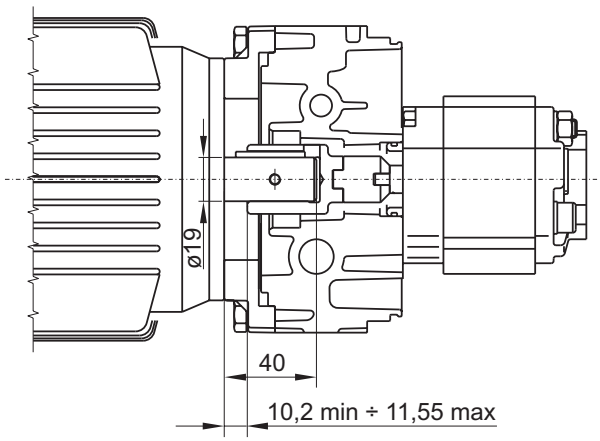
Pump side





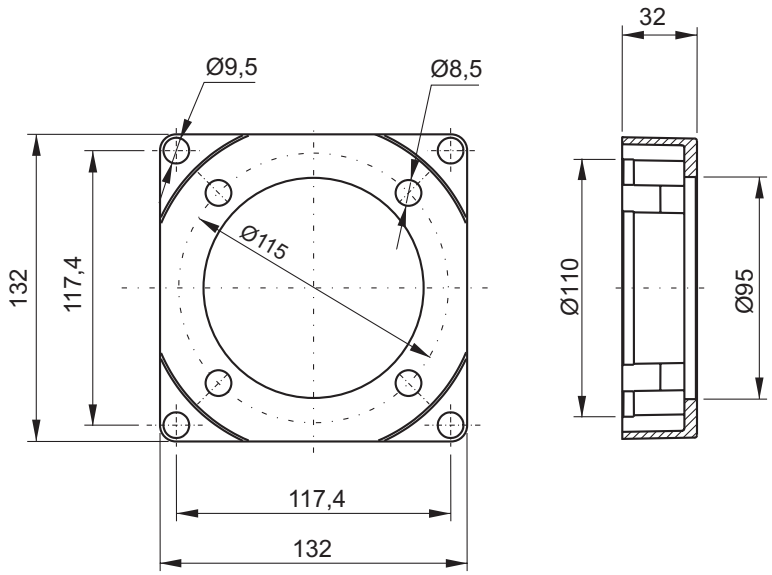
Motor side

When assembling frame 80 B14 motors with X-B14 flange + couplings kit, please respect following positioning measures:



Mounting kit for frame 90 B14 motors

Adaptor flange

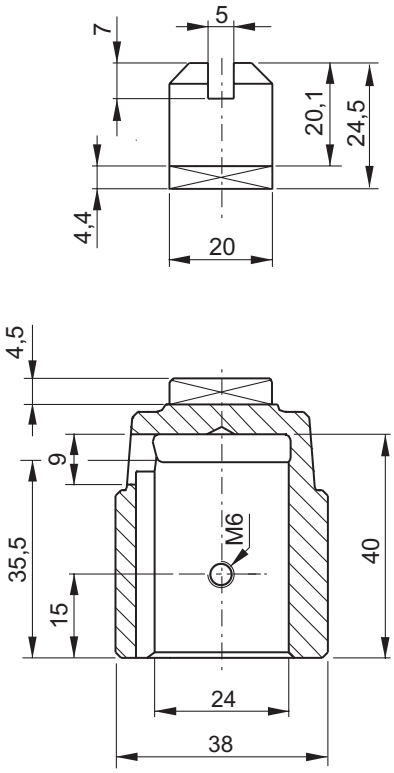


Description	PPC assembly code*	Spare part code
B14 90 motor side semi-coupling	XB14-90	E36100003
B14 pump side semi-coupling		E36100000
B14 90 adaptor flange		F27010003

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

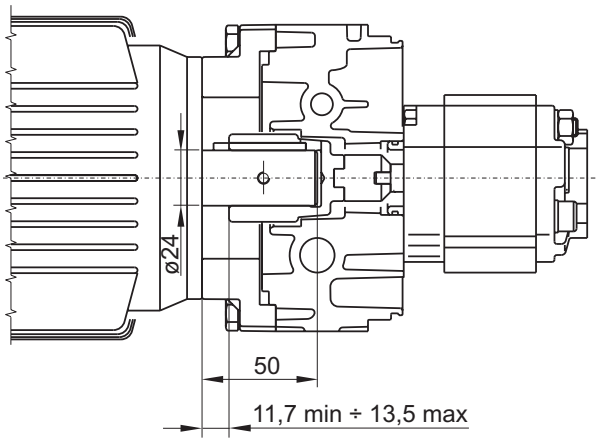
Coupling

Pump side



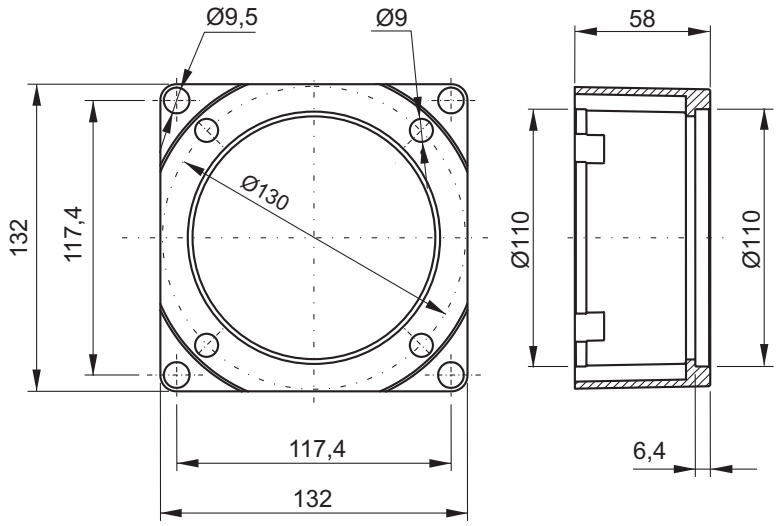
Motor side

When assembling frame 90 B14 motors with X-B14 flange + couplings kit, please respect following positioning measures:



Mounting kit for frame 100/112 B14 motors

Adaptor flange

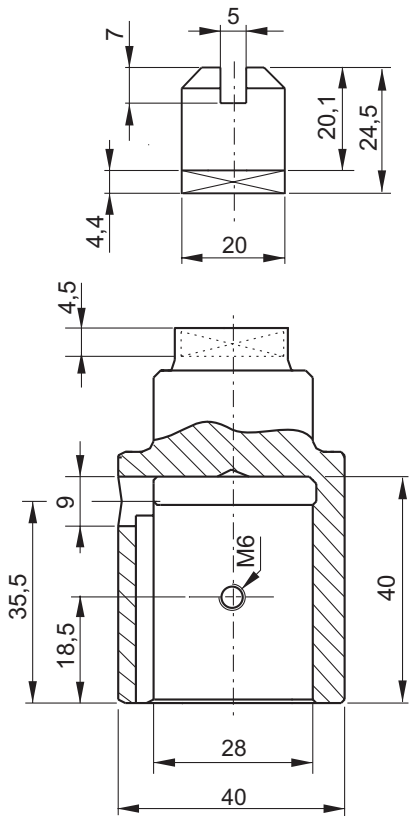


Description	PPC assembly code*	Spare part code
B14 100 motor side semi-coupling	XB14-100	E36100004
B14 100 pump side semi-coupling		E36100000
B14 100 adaptor flange		F27010004

* Note: the coupling+ flange kit is already included when specifying a B14 motor in PPC assembly code. XB14-100 code to be indicated only when ordering PPC with no motor but with coupling + flange kit.

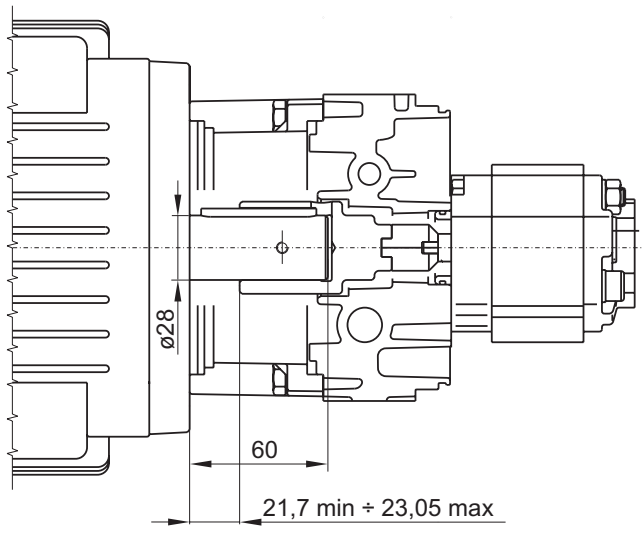
Coupling

Pump side

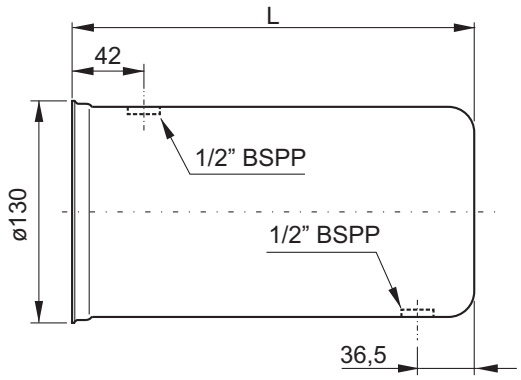


Motor side

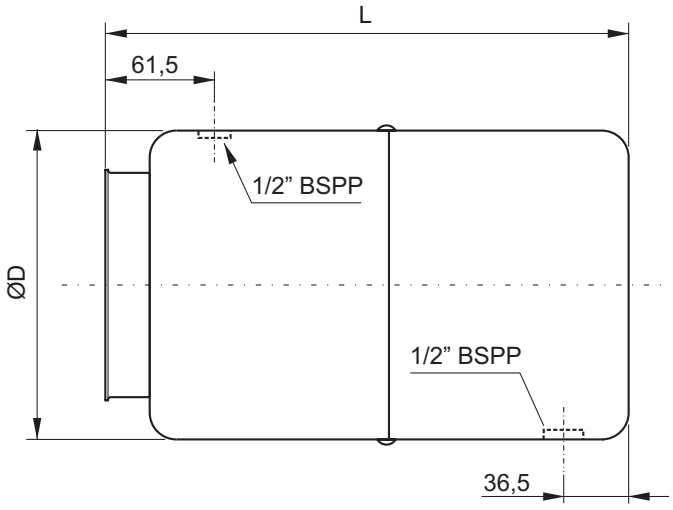
When assembling frame 100 B14 motors with X-B14 flange + couplings kit, please respect following positioning measures:



Round steel reservoires



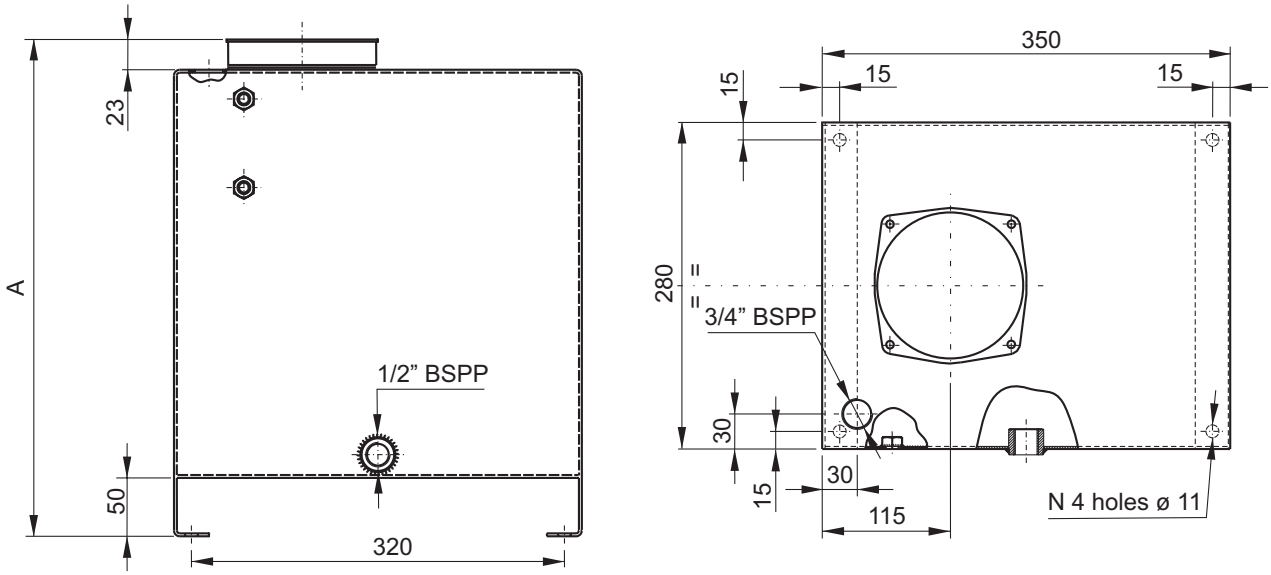
Description	PPC assembly code	Spare part code	L
1,5 l, cylindrical horizontal / vertical mounting	**1,5A / 1,5AV**	**E60303001**	150mm
2,5 l, cylindrical horizontal / vertical mounting	**2,5A / 2,5AV**	**E60303004**	235mm



Description	PPC assembly code	Spare part code	L	ØD
5 l, cylindrical horizontal / vertical mounting	**5B / 5BV**	**E60303006**	295mm	174mm
8 l, cylindrical horizontal / vertical mounting	**8B / 8BV**	**E60303009**	419mm	174mm
10 l, cylindrical horizontal / vertical mounting	**10B / 10BV**	**E60303011**	262mm	224mm
12 l, cylindrical horizontal / vertical mounting	**12B / 12BV**	**E60303013**	380mm	224mm

Note: the piping kit, standard suction filter, filler, breather and plugs are included when specifying the tank in PPC assembly code.
When ordering spare parts only basic plugs and breather are included. See accessories table U020.50.05.

Square welded steel reservoires



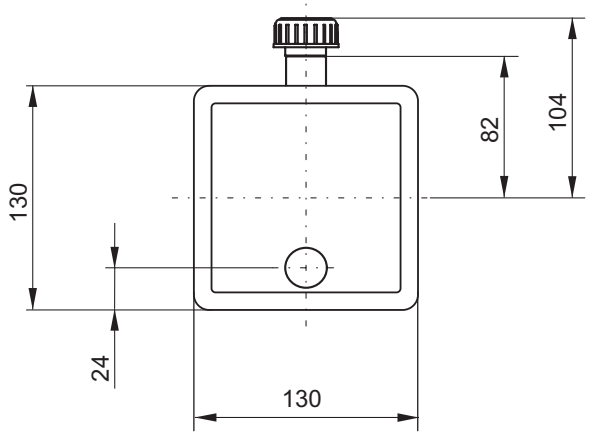
Description	PPC assembly code	Spare part code	A
20 l, squared vertical mounting	**20EV**	**E60303015**	293
30 l, squared vertical mounting	**30EV**	**E60303048**	423

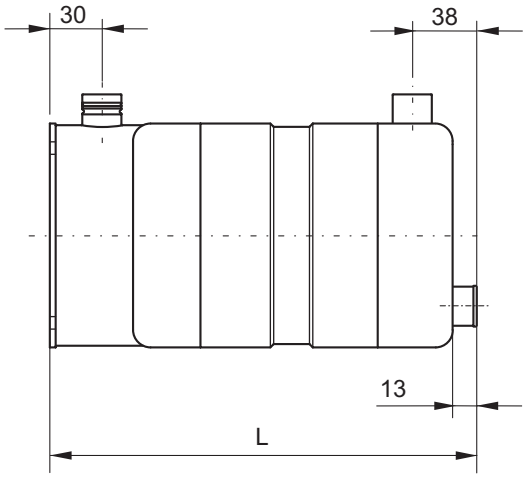
All measures in mm

Notes: the piping kit, standard suction strainer, filler / breather, level gauge and plugs are included when specifying the tank in PPC assembly code.
When ordering spare tanks, only basic plugs, filler/breather and level gauge are included. See accessories table U020.50.05.

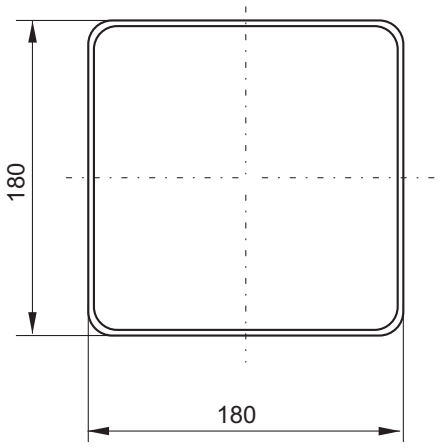
On request special square welded tanks can be realized. Send an inquiry to our technical department with indication of quantities.

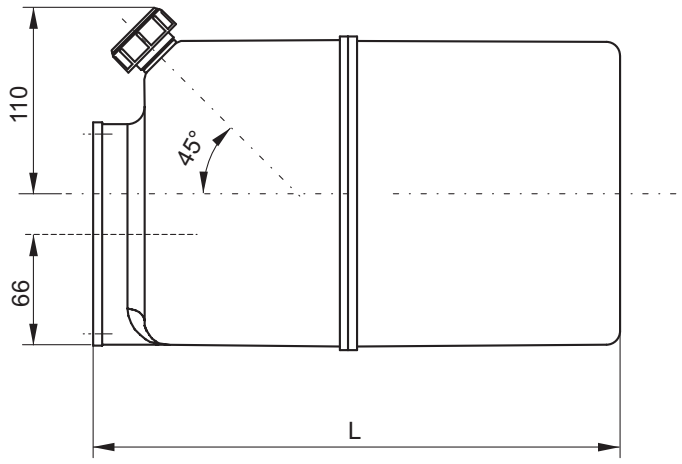
Square plastic reservoires





Description	PPC assembly code	Spare part code	L
1,5 l, squared horizontal / vertical mounting	**1,5L / 1,5LV**	**E60303016**	145mm
2,5 l, squared horizontal / vertical mounting	**2,5L / 2,5LV**	**E60303018**	248mm
3,5 l, squared horizontal / vertical mounting	**3,5L / 3,5LV**	**E60303020**	313mm

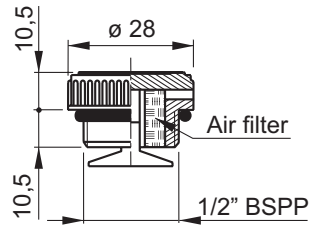




Description	PPC assembly code	Spare part code	L
6 l, squared horizontal / vertical mounting	**6M / 6MV**	**E60303030**	310mm
10 l, squared horizontal / vertical mounting	**10M / 10MV**	**E60303035**	420mm

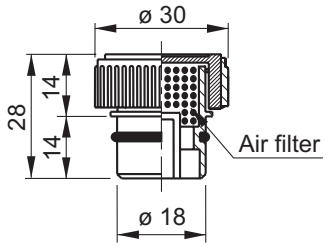
Accessories

Knurled filler breather with vane ½" BSPP



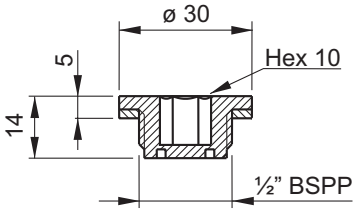
Spare part code
C86100001E

Filler breather slip-in



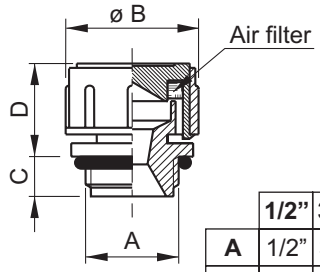
Spare part code
C86200001

Drain plug



Spare part code
TCNB0800

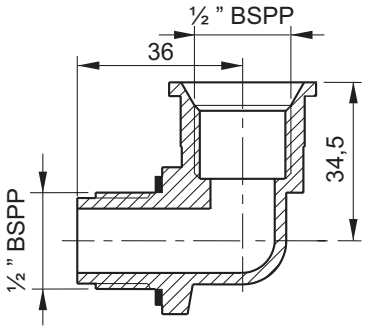
Filler breather ½" - 3/4" BSPP



	1/2"	3/4"
A	1/2"	3/4"
ø B	30	47
C	10	17
D	21	17

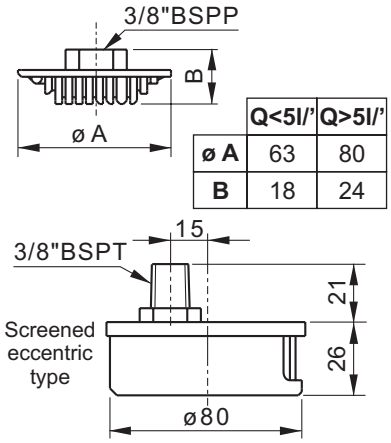
Spare part codes
½": C86100001 3/4": C86100002

90° adapter for vertical tanks



Spare part code
E60513004

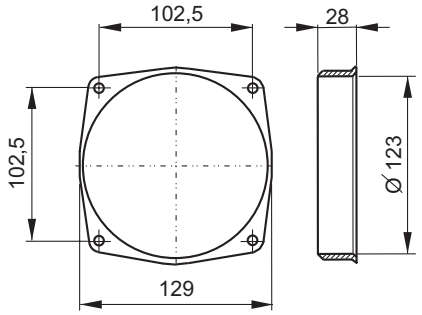
Inlet strainers



	Q<5l/'	Q>5l/'
ø A	63	80
B	18	24

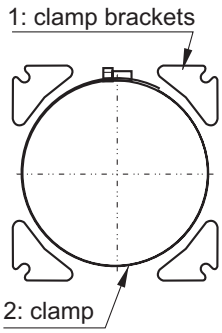
Spare part codes
<5l/': C34100003, >5l/': C34100002 screened eccentric : C34100001

Steel tank adapter



Spare part code
F80000001

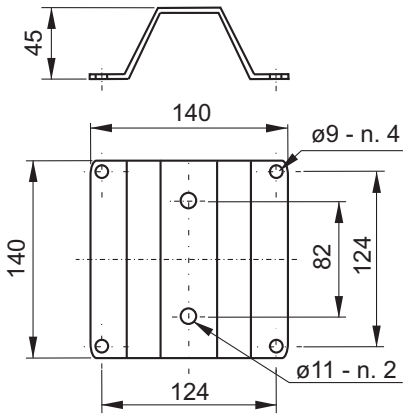
Clamps for plastic tanks



3mm washer to be added below the clamp brackets to keep them in proper position

Spare part codes
1 (each): E60513022 2: E60513021

Foot mounting support



Spare part code
E60543006