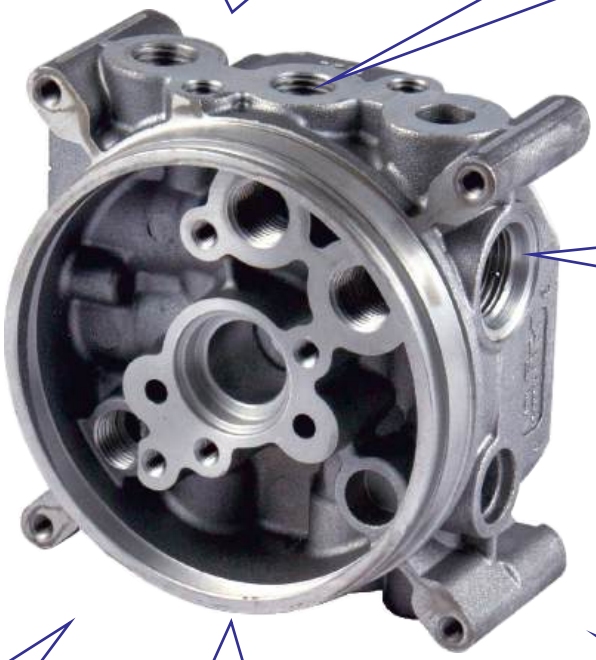
MICRO CENTRAL MANIFOLD

A single **Micro die-cast aluminium** central manifold in 4 different executions is the core part to realize extremely small power units in industrial, mobile and marine fields. It features the **highest integration and flexibility** on the market, with up to **seven devices** which can be fitted inside, plus a wide selection of manifold blocks which can be connected to cartridge type valves or NG3 valves

The **interface** to hose fittings or external additional manifolds is **unified**. The P and T port tappings for the hose fittings are **1/4" BSP** (International standard) or **9/16-18UNF** (SAE06) for the American standard



Lateral cavities are according **SAE08 standard** (3/4-16UNF), except for the main check valve (5/8-18UNF) and main relief valve (M14)

The **interfaces** to tanks and motors are **unified**. All plastic or steel tanks have the same interface and can be easily swapped.
All AC or DC motors can be fitted easily either directly to the central manifold or through adaptor flanges (B14 IEC standard motors)

Clockwise (our standard) or counterclockwise or bidirectional rotation tang drive shaft **standard gear pumps** can be mounted

The maximum flow is **6 l/min**, with a **low pressure drop**, and maximum motor power is 2,2kW, well above the average of other alternative products on the market

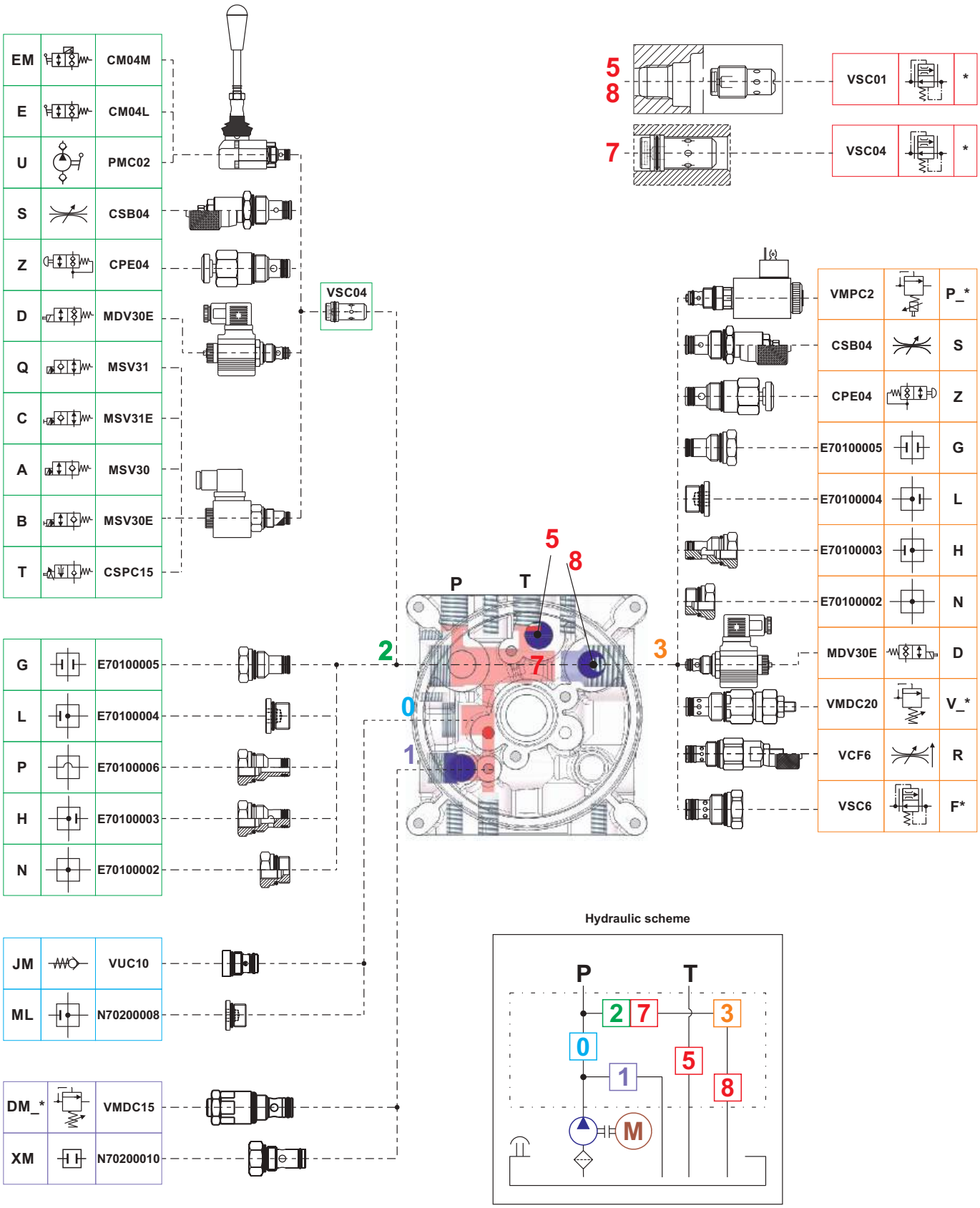
Q & A

Which micro central manifold execution should I choose?
MB type is the most widely applied for single acting or double acting circuits. M4 execution is recommended for compact and cost effective double acting circuits with a single cylinder while MR is for bidirectional pump and may integrate double relief valve, double pilot operated check valves and also an extra pilot operated check valve to ensure that differential cylinder circuits function properly (this extra valve discharges excess return flow from the piston side of the cylinder).

Do I need special tools to assemble the components within the central manifold?
No. All valves are screw-in type in a single piece construction (no loose nuts, washers, springs,... difficult to assemble and falling apart). The components are easily assemblable with simple hand tools and hexagon keys.

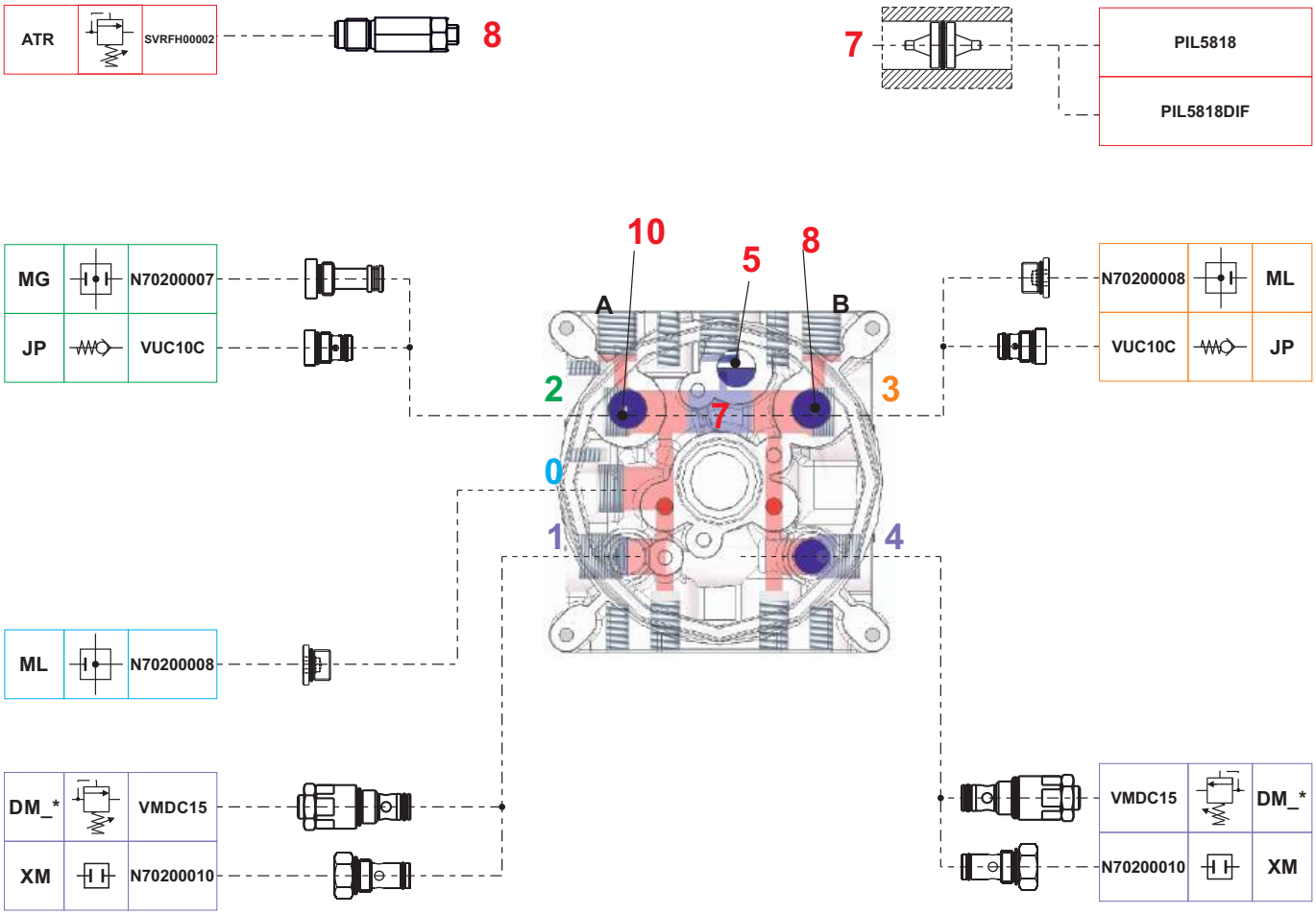
Is the central manifold available as a loose component?
Yes. We can supply either fully assembled and tested power packs or kits of loose components, which can be kept in stock by our worldwide distributors and easily assembled to satisfy local market demand quickly and effectively. Central manifolds and core other components are 100% tested even when supplied as loose parts.

MICRO CENTRAL MANIFOLD «MB»

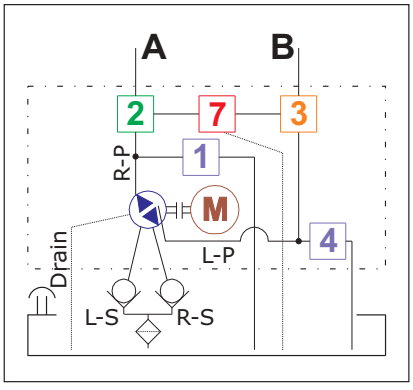


Hydraulic scheme

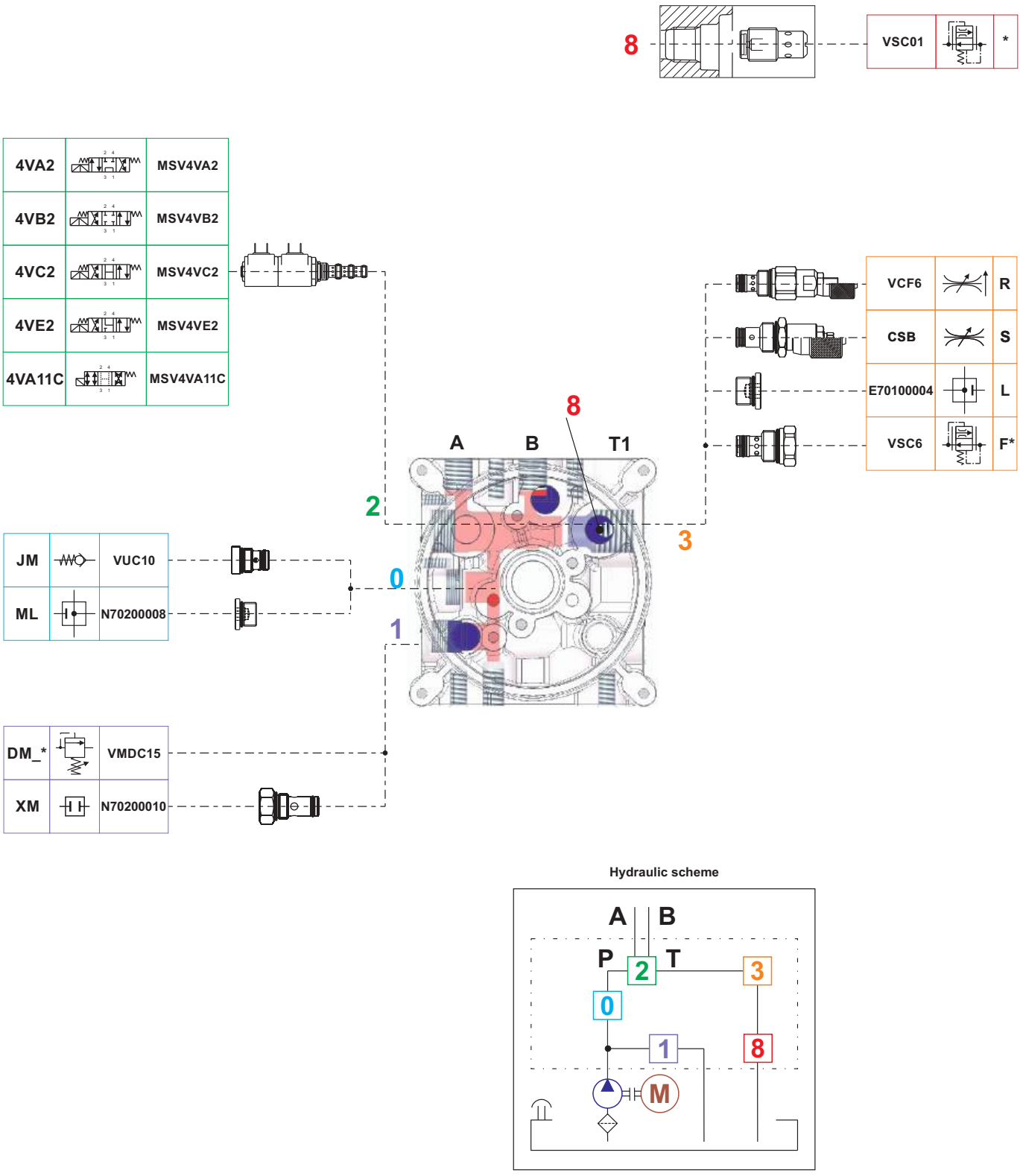
MICRO CENTRAL MANIFOLD «MR»



Hydraulic scheme



MICRO CENTRAL MANIFOLD «M4»

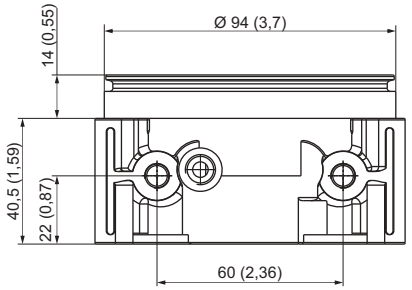


Hydraulic scheme

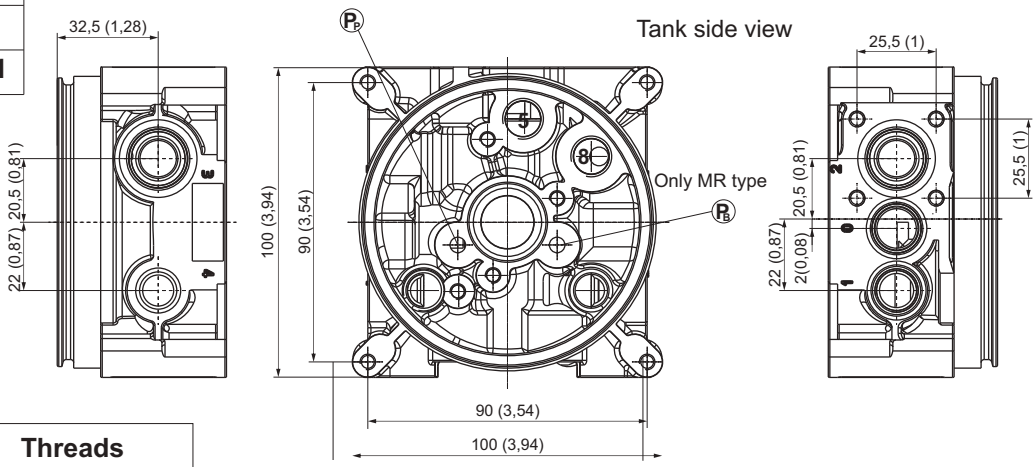
MICRO CENTRAL MANIFOLD OVERALL DIMENSIONS

Type	Spare part code
MB	E60102031
MR	E60102032
MRD	E60102032-S01
M4	E60102033
MBUS	E60102031US
MRUS	E60102032US
M4US	E60102033US
MRDUS	E60102032US-S01

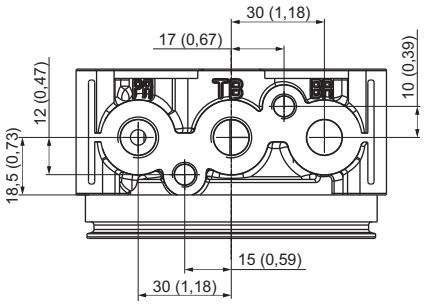
Notes:
- codes ending with US are intended for the American market and machined with 9/16-18 UNF (SAE06) exit ports.
- all dimensions in mm and (inches)

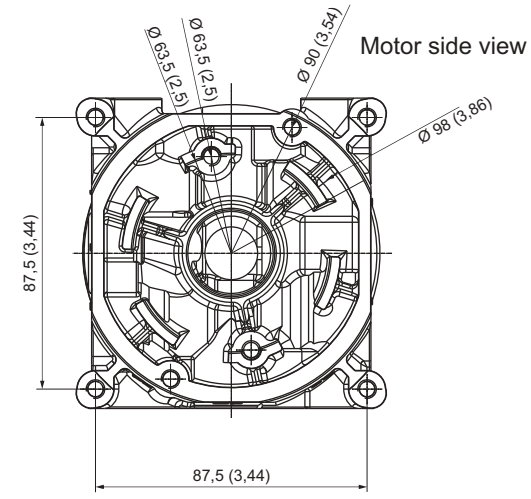


Weight: 0,60 kg (1,32 lb)



Cavity	Threads
1, 4 (MR type)	M14x1 (relief valve)
0	5/8-18 UNF
2, 3	3/4-16 UNF (SAE 08) 5/8-18 UNF (MR type)
P-T, A-B, T1 (threaded on request only)	1/4 BSP 9/16-18 UNF (US type)
5, 8	1/4 BSP
External manifold attachment	2 M8 tie-rods
Tank attachment	4 bolts M5x10
Integral AC motor attachment	4 bolts M6x20
DC motor attachment	2 bolts M6x14 or M6 tie-rods
Pump attachment	2 bolts M5x** (see pump length on the relevant tables)
Foot mounting support attachment	2 bolts M8x16 5/16-24UNF (US type)
PMC hand pump / CM lever valve cap attachments	4 bolts M5x45



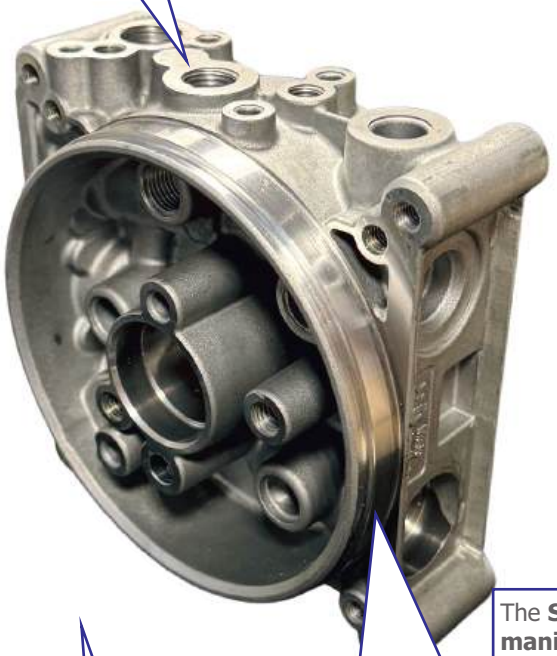


CENTRAL MANIFOLDS for PPC

The **Universal central manifold** with up to 5 lateral cavities in 3 main executions

Two **die-cast aluminium central manifold**s in eight main executions is the core part of all power units for all industrial, mobile and marine applications. They feature the **highest integration and flexibility** on the market, with up to **eleven cavities** where valves and components can be fit

The **interface** to hose fittings or external additional manifolds is **standardised**. The P and T ports are **1/4" BSP** threaded (International standard) or **9/16-18UNF** (SAE06 - American standard) for direct connection of hose fittings.



The **Smart central manifold** with up to 6 lateral cavities in 5 main executions

Lateral cavities are conform to **SAE08 standard** (3/4-16UNF)

Clockwise (our standard) or counterclockwise tang drive shaft **external gear pumps** can be mounted. **Double pumps**, including those with an integral **HI-LO circuit**, and **low noise helicoidal gear pumps** are also available. The maximum flow is **25l/min** (6,5GPM), with a **low pressure drop**. Electric motor power up to 7,5kW.

The **interfaces** to tanks and motors are **unified.** All plastic and steel tanks can be easily interchanged.
AC or DC motors can be fit.
B14 IEC or NEMA 56C and 184TC standard motors interfaces are available

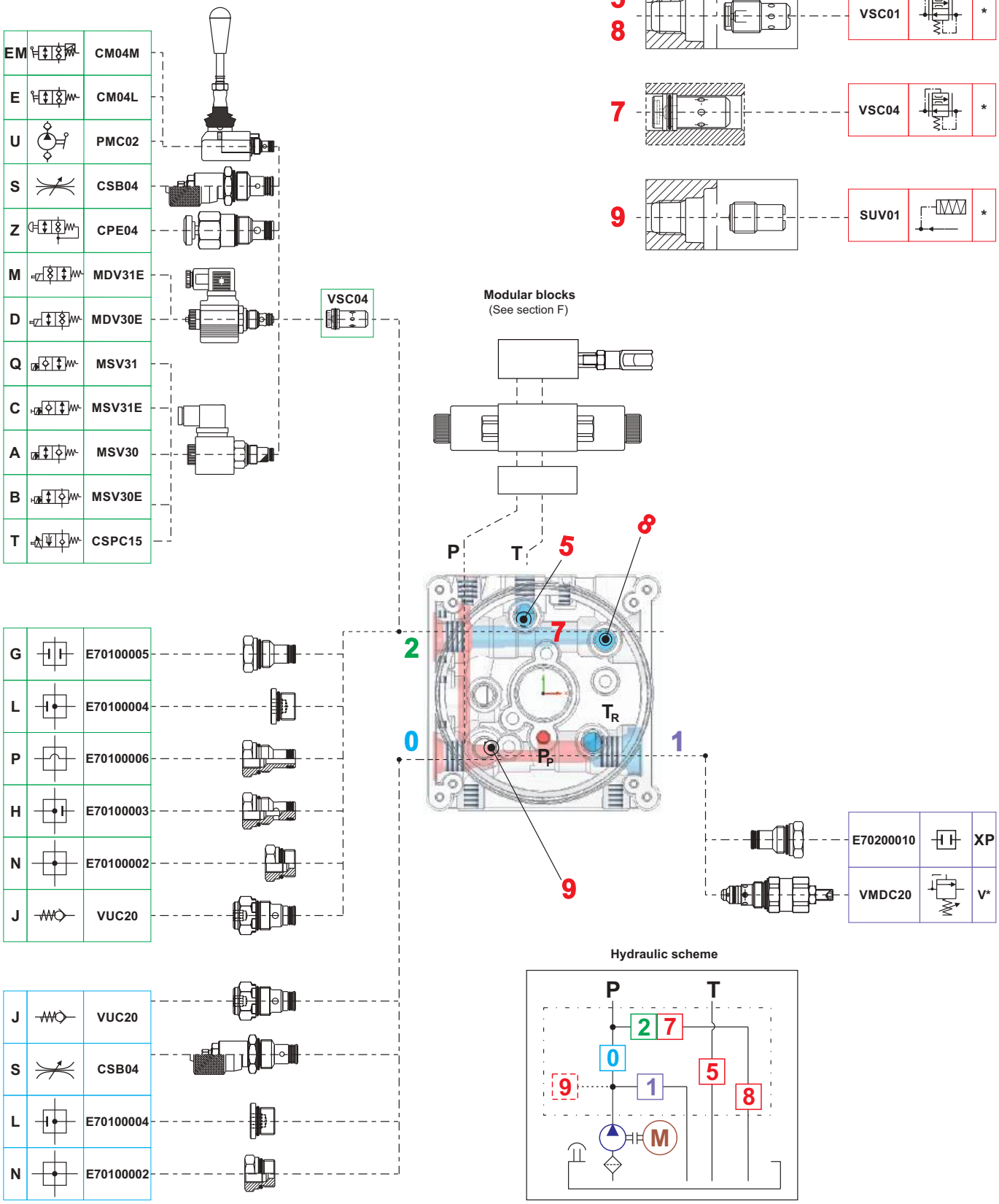
Q & A

Which central manifold type and execution should I choose?
UA type is the most widely applied for single acting or double acting circuits. UB is the real «Universal» central manifold since, in addition to UA type features, there are two extra lateral cavities to mount, for example, an integrated emergency hand pump and an externally adjustable flow control. U4 is recommended for compact and cost effective double acting circuits with a single cylinder.
SR type is used with bidirectional pumps and can integrate P.O. check valves and differential cylinder vent valve (SRD version), SB3 is for circuits with 3-way hydraulic operated valve for automatic venting when the electric motor is off, SB is applied for single acting or double acting circuits with alternative components location than the UB and additional features. S4 is recommended for driving up to two double acting cylinders with integrated cartridge valves. SX* are for SPU. Further exectutions are available on request.

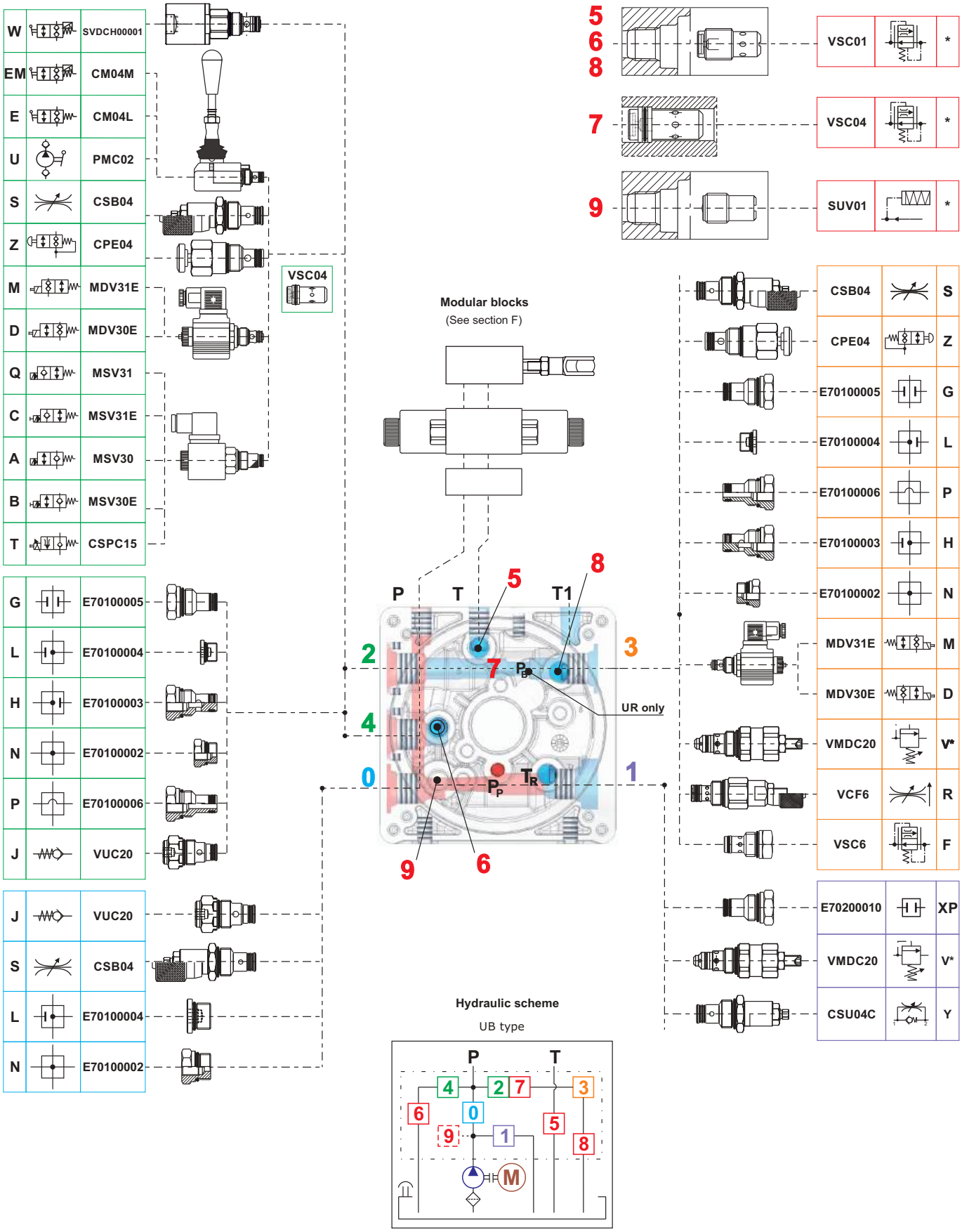
Do I need special tools to assemble the components within the central manifold?
No. All valves are screw-in type in a single piece construction (no loose nuts, washers, springs; nothing difficult to assemble or fall apart). The components can be easily assembled with simple hand tools and hexagon or Allen wrenches.

Is the central manifold available as a loose component?
Yes. We can supply either fully assembled and tested power packs or kits of loose components which can be kept in stock by our worldwide distributors and easily assembled to satisfy local market demand quickly and effectively. Central manifolds and other components are 100% tested even when supplied as loose parts.

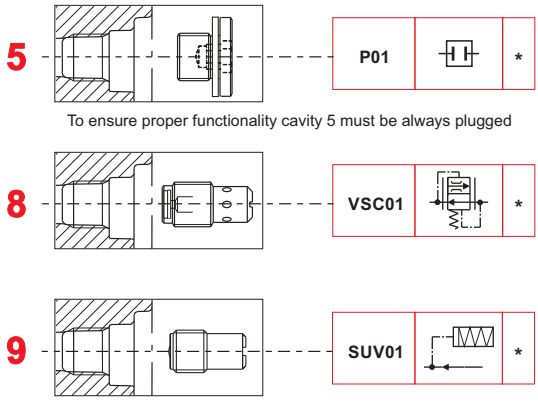
UNIVERSAL CENTRAL MANIFOLD «UA»



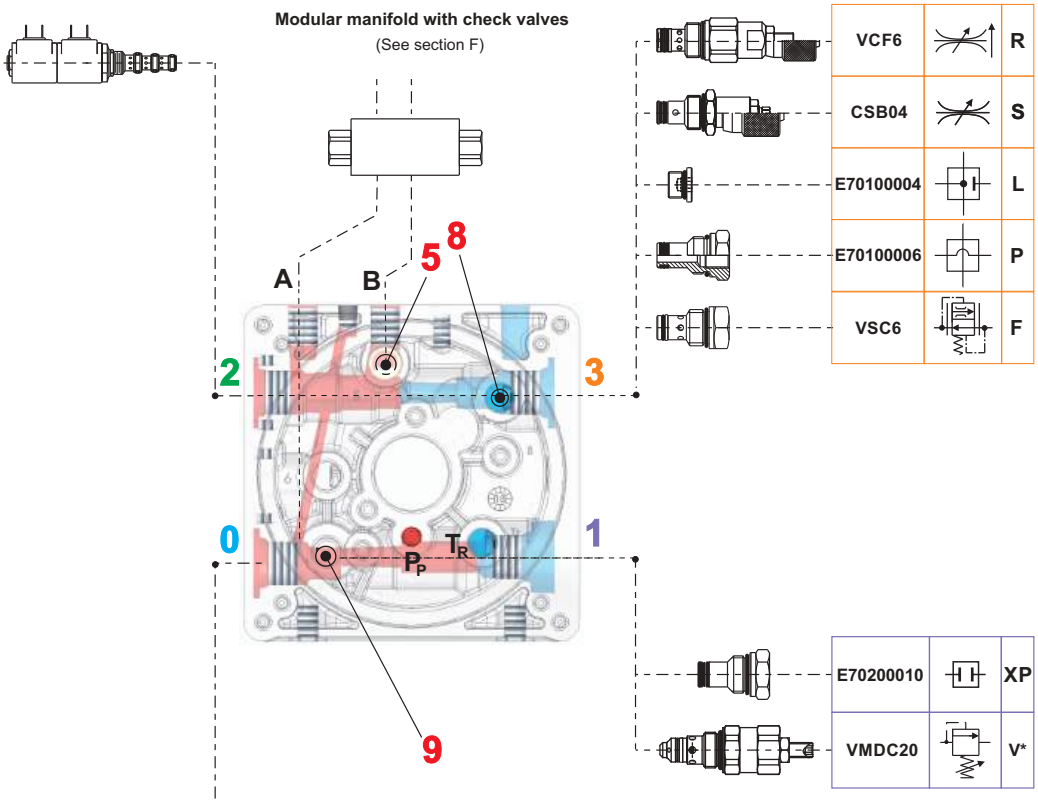
UNIVERSAL CENTRAL MANIFOLD «UB»



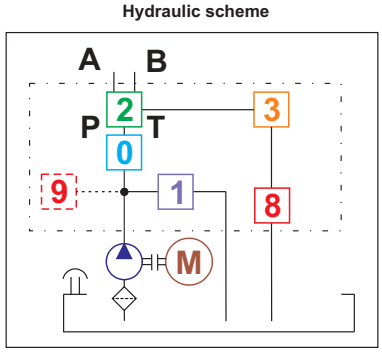
UNIVERSAL CENTRAL MANIFOLD «U4»



4VA2		MSV4VA2
4VB2		MSV4VB2
4VC2		MSV4VC2
4VE2		MSV4VE2
4VA11C		MSV4VA11C

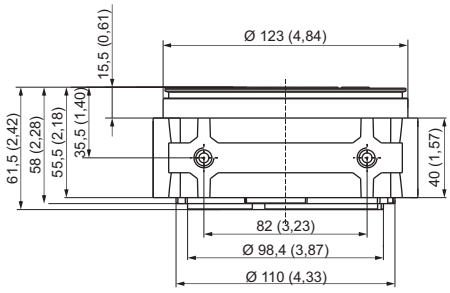


J		VUC20
S		CSB04
L		E70100004
N		E70100002



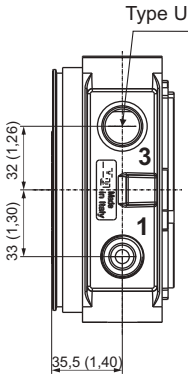
UNIVERSAL CENTRAL MANIFOLDS - OVERALL DIMENSIONS

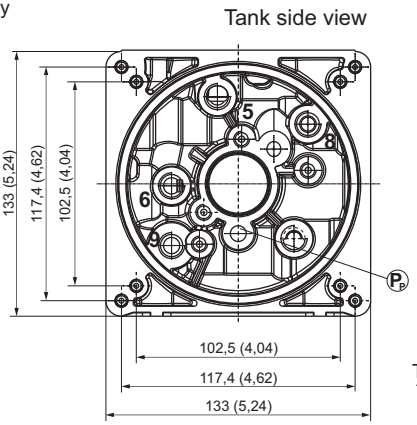
Type	Spare part code
UA	C30401000
UB	C30402000
U4	C30404000
UAUS	C30401010
UBUS	C30402010
U4US	C30404010

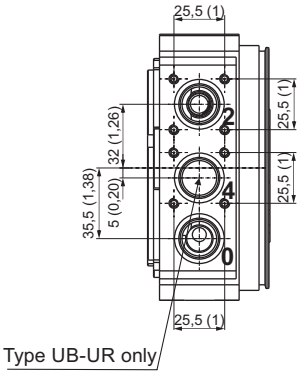


Weight: 1,2 kg (2,65 lb)

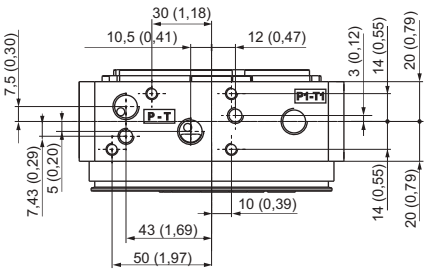
Notes:
- codes ending with **US** are according American standards, machined with 9/16-18 UNF (SAE06) P-T exit ports.
- all dimensions in mm (inches)

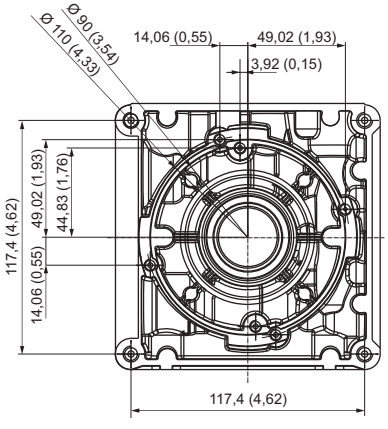






Cavity	Thread
0, 1, 2, 3, 4	3/4-16 UNF (SAE08)
P-T	1/4 BSP 9/16-18UNF (SAE06 - US type)
P_1-T_1	1/4 BSP (threaded on request only)
5, 6, 8, 9	1/4 BSP (cavity 9 threaded on request only)
External manifolds fixings	2 tie rods M8 4 tie rods M6 (UB type only)
Tank fixings	4 screws M6x14
Integral AC motors and B14 flanges fixings	4 screws M8x25
DC motors fixings	2 screws M6x14 or tie rods M6
Pumps fixings	2 screws M8 (see pump lenghts on the relevant tables)
Mounting Foot fixings	2 screws M10x18 3/8-16 UNC US type
PMC hand pump and CM lever valve fixings	4 screws M5x45

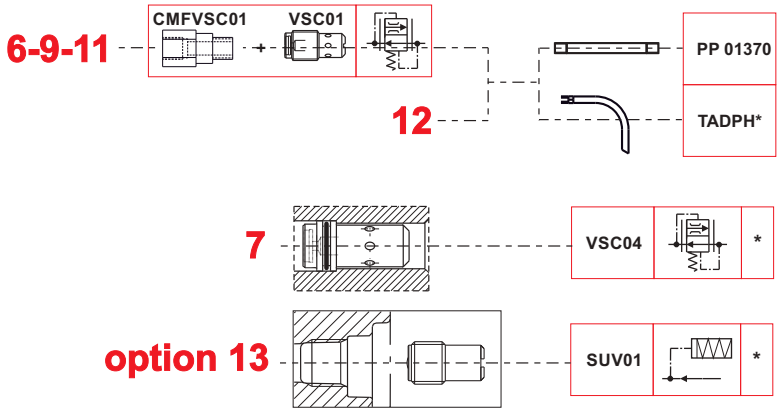


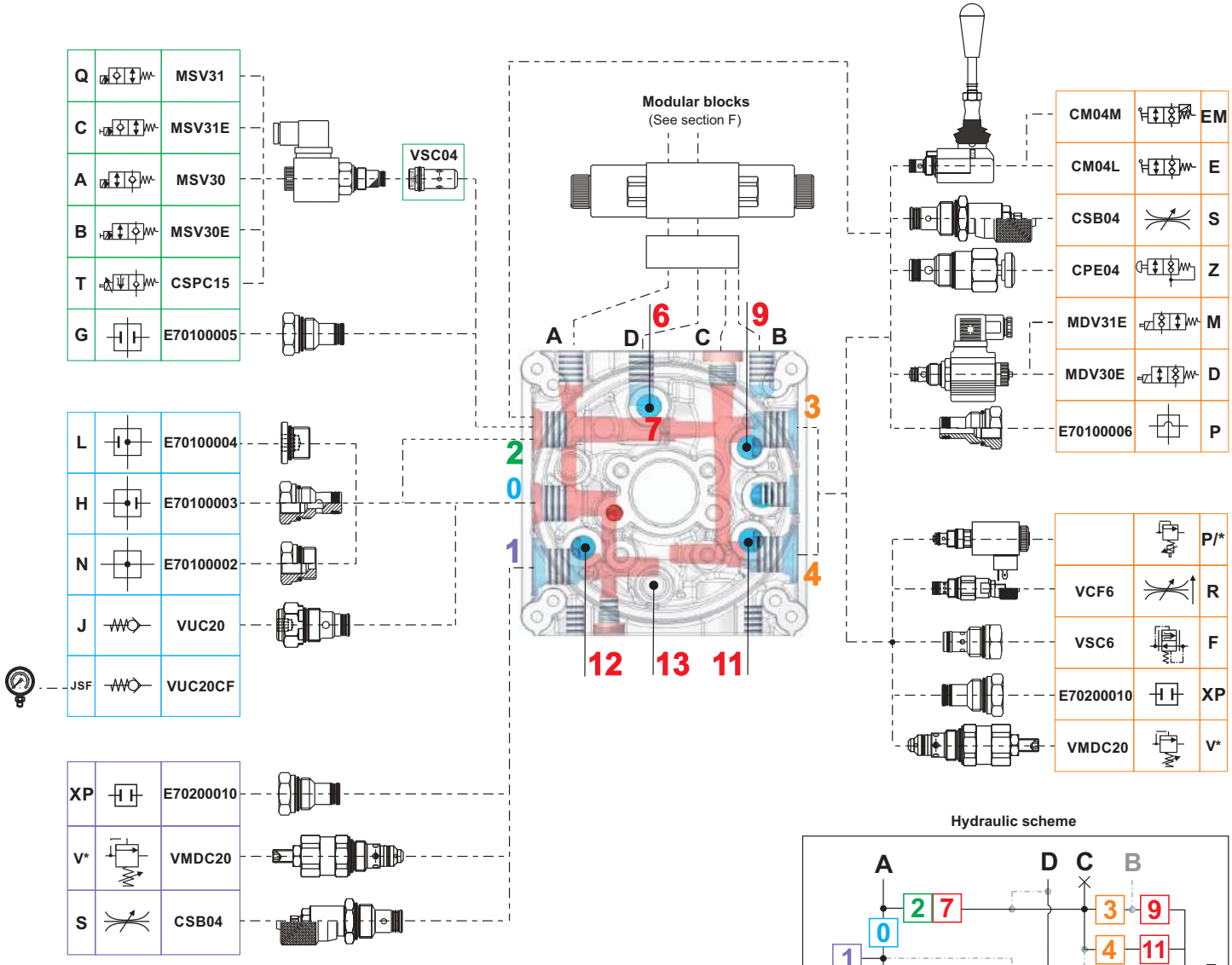


Motor side view

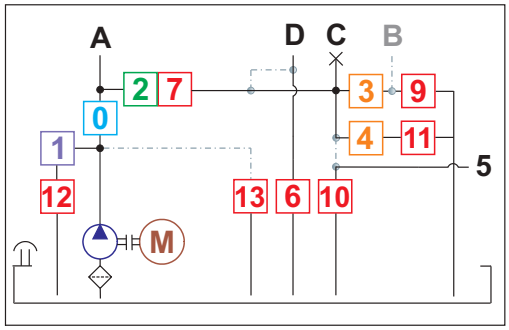
SMART CENTRAL MANIFOLD «SB»

NEW



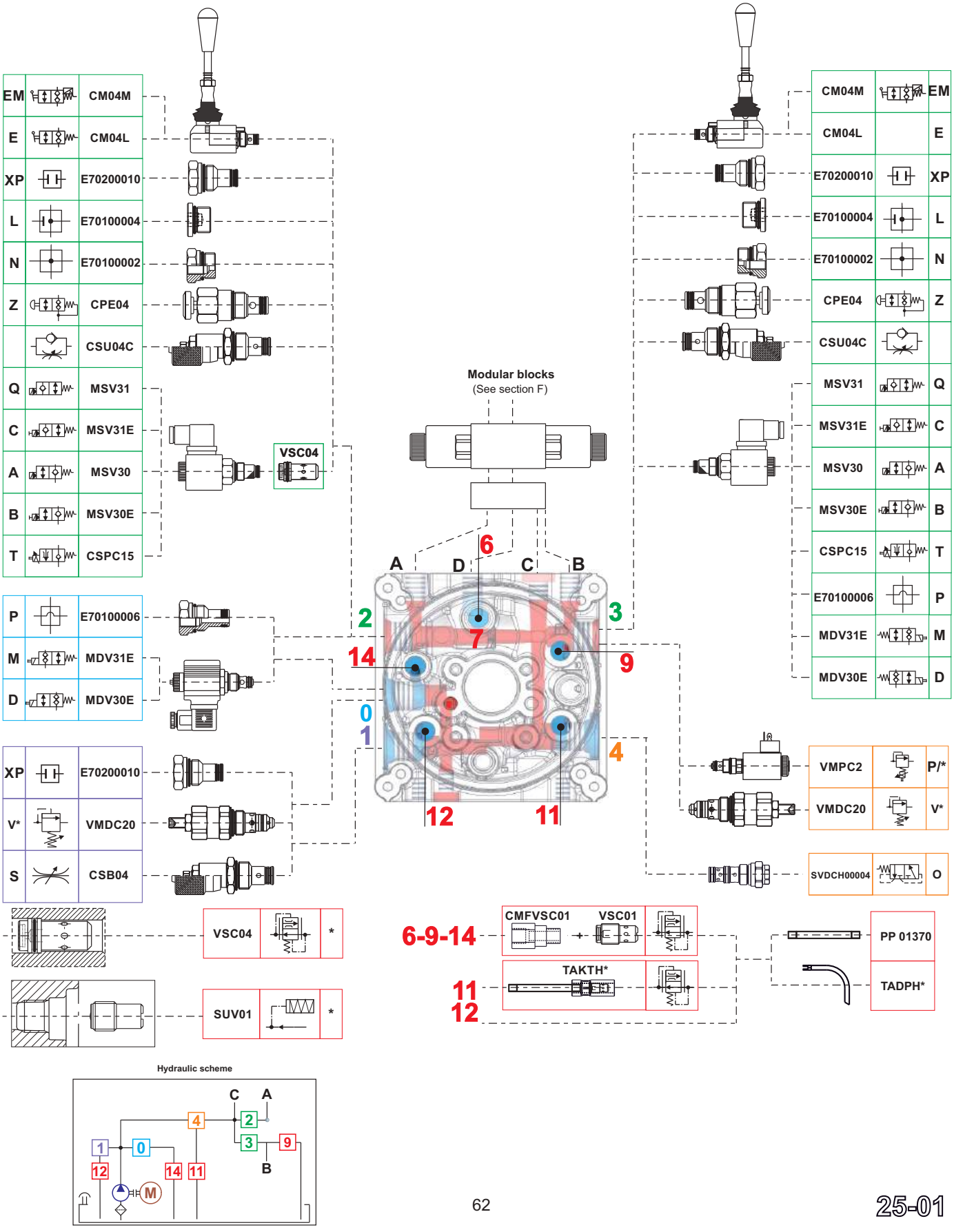


Hydraulic scheme



SMART CENTRAL MANIFOLD «SB3»

NEW



SMART CENTRAL MANIFOLDS «SR, SRD, SRT & SRDT»

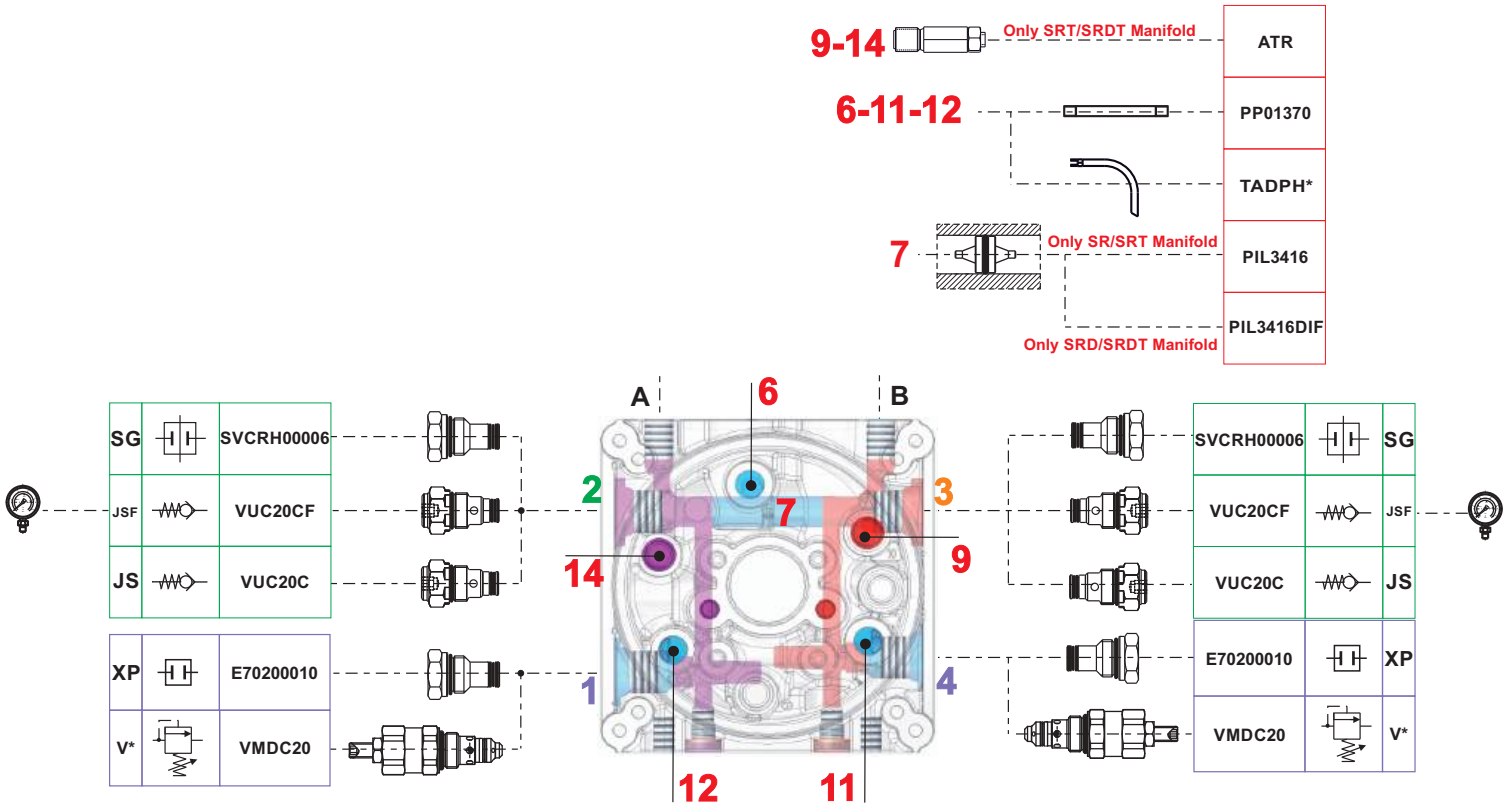
NEW

SR: Smart Central Manifold for reversible applications with cylinder area ratio equal to 1

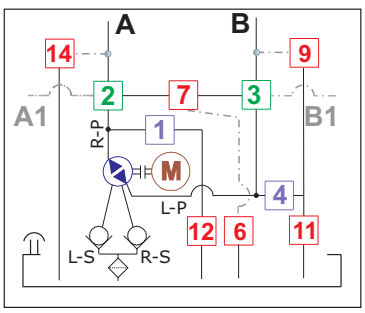
SRD: Smart Central Manifold for reversible applications with differentialarea cylinder area

SRT: Smart Central Manifold for reversible applications with cylinder area ratio equal to 1 plus termal valves

SRDT: Smart Central Manifold for reversible applications with differential area cylinder plus termal valves



Hydraulic scheme

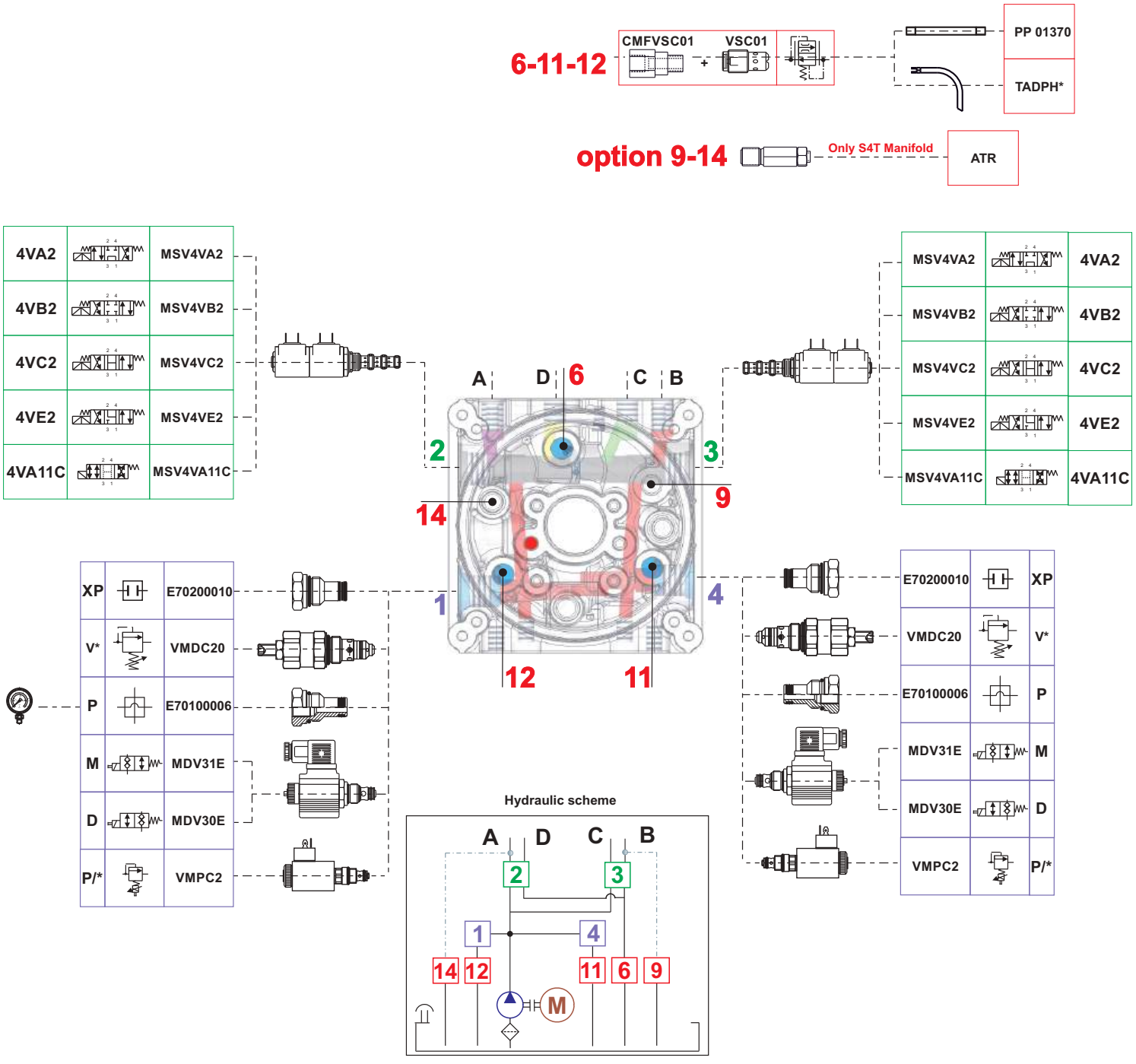


SMART CENTRAL MANIFOLDS «S4 & S4T»

NEW

S4: Smart Central Manifold with double 4/3 cartridges

S4T: Smart Central Manifold with double 4/3 cartridges plus thermal valves



SMART CENTRAL MANIFOLDS «SX1 & SX2»

NEW

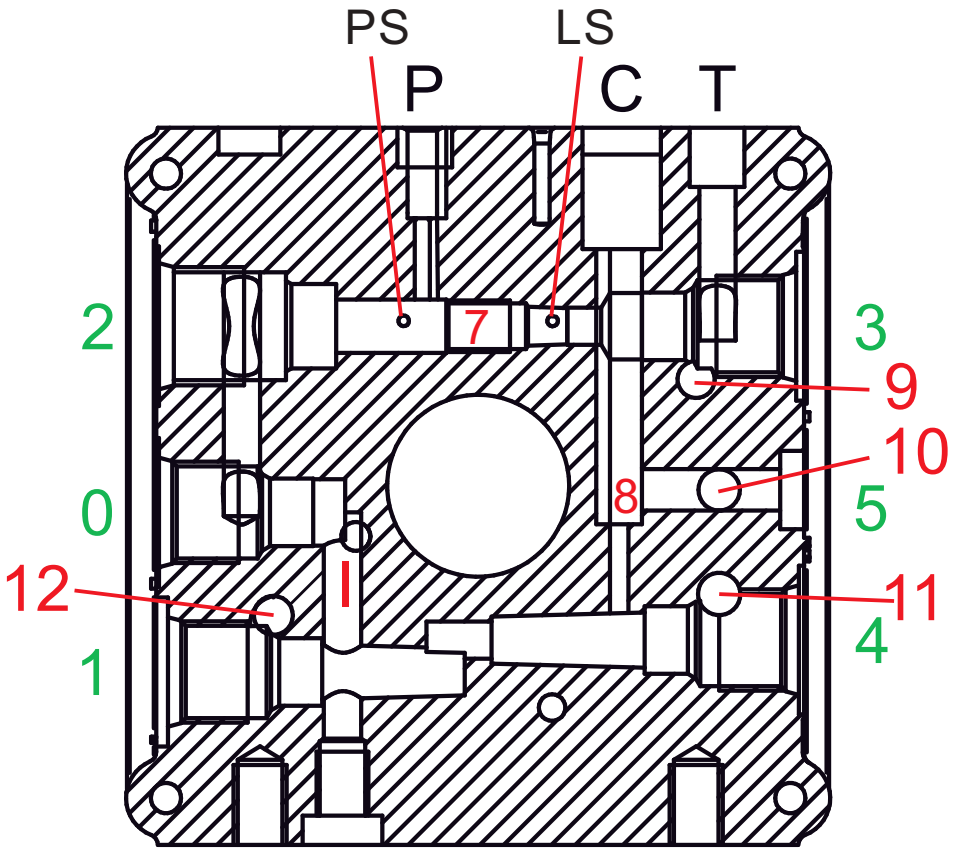
The **cavity #2** can accomodate SAE08 or SAE10 proportional flow control or standard on-off valves, for higher flow, specifically designed for the Smart Power Unit functionality.

The **die-cast aluminium Smart central manifold** is the core part of all power units for all industrial, mobile and marine applications, requiring the embedded electronics and sensors provided by the HPC02 unit. Proportional flow, proportional pressure, or both PQ, and load sensing option.

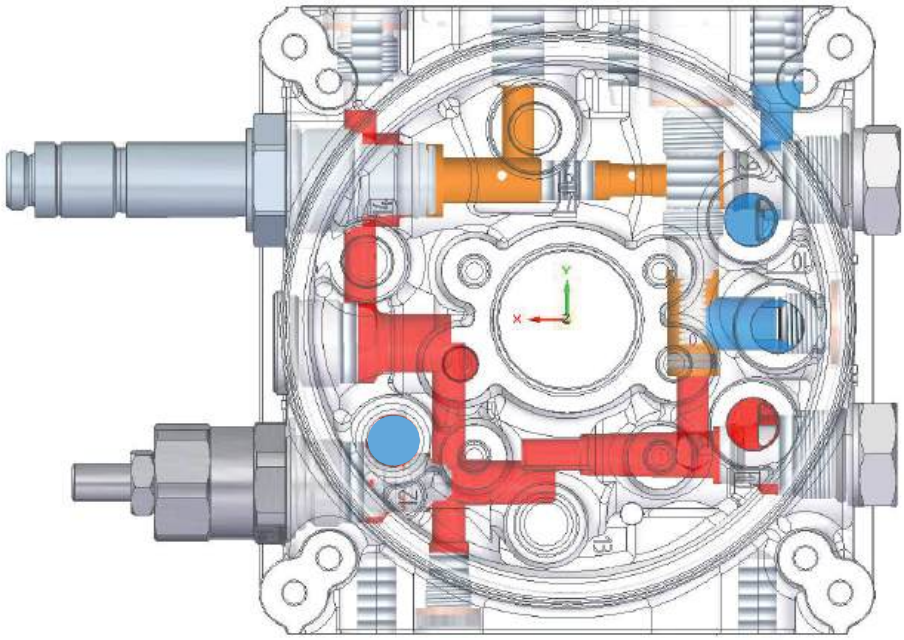
Embeded pressure and motor shaft speed sensors allow closed loop full control of the application, by a proper software code

SMART CENTRAL MANIFOLD «SX*Q» WITH PROPORTIONAL METER-IN FLOW CONTROL

NEW

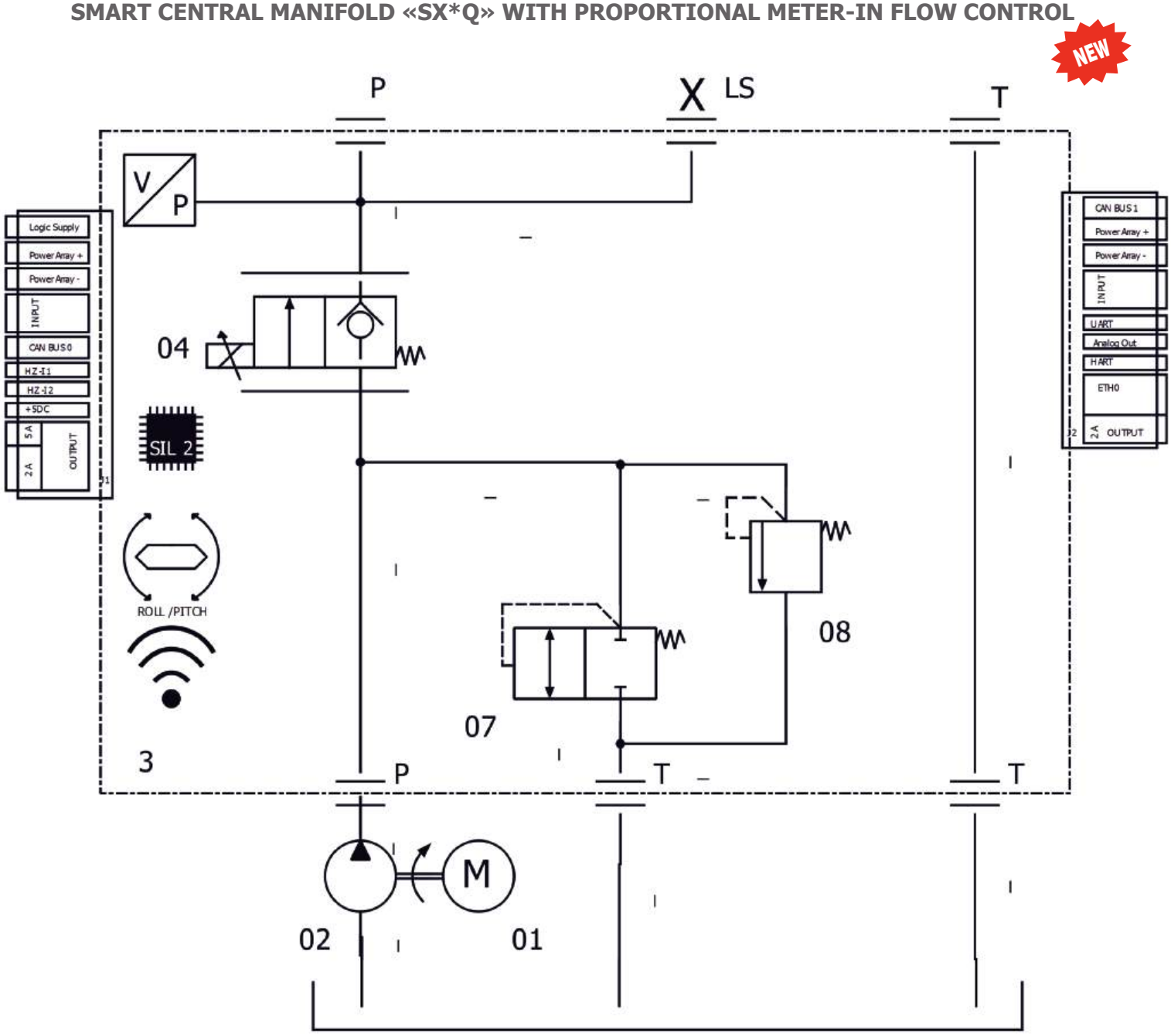


0) Plug
1) Relief valve or plug
2) Proportional flow valve
3) Plug
4) Relief valve or plug
5) Plug
7) Calibrated orifice
8) 3 way compensator
9) Return pipe
10) Return pipe
11) Empty or Relief valve return line
12) Empty or Relief valve return line
PS) Pressure transducer
LS) Pressure transducer on LS line
C) Plug



P line
Return line
Reduced pressure line

SMART CENTRAL MANIFOLD «SX*Q» WITH PROPORTIONAL METER-IN FLOW CONTROL



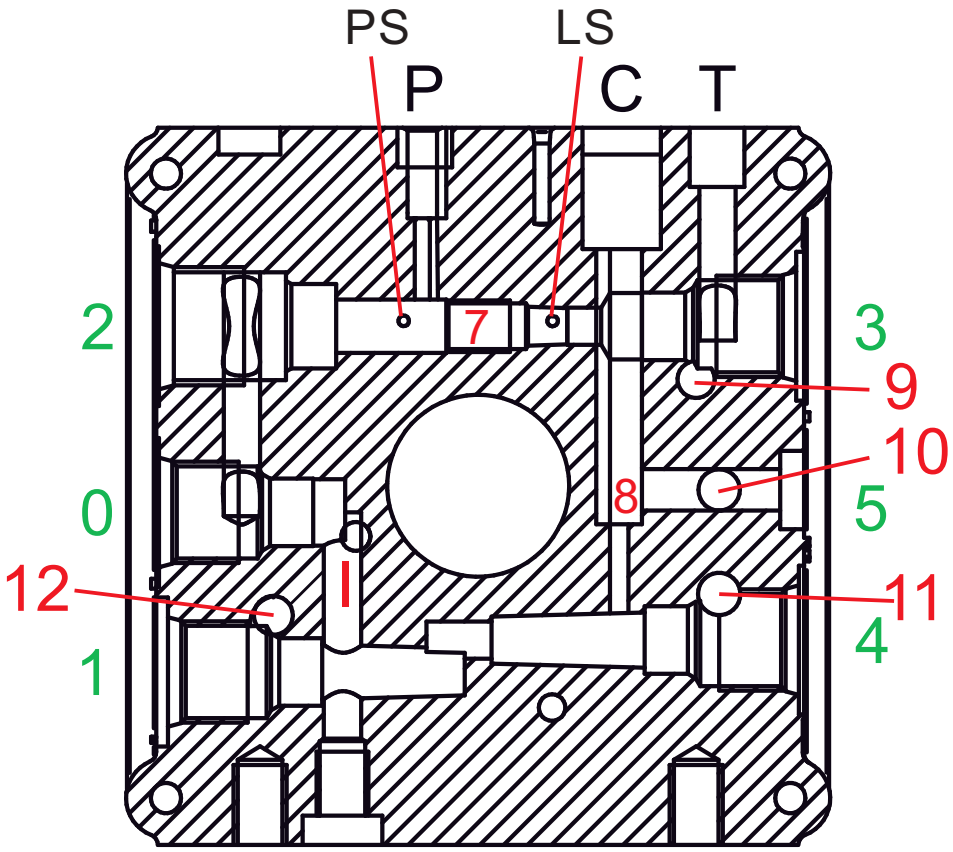
HPC02:** Hydraulic Diagrams with meter-in proportional Flow control

The Q type diagram is useful for sequential motion in automation, normally the Q manifold feeds an array of ON-OFF directional valves, regulating the common flow and the max pressure. Q system allows just sequential asynchronous movements. Typical applications are: personal lift equipment, small cranes,...

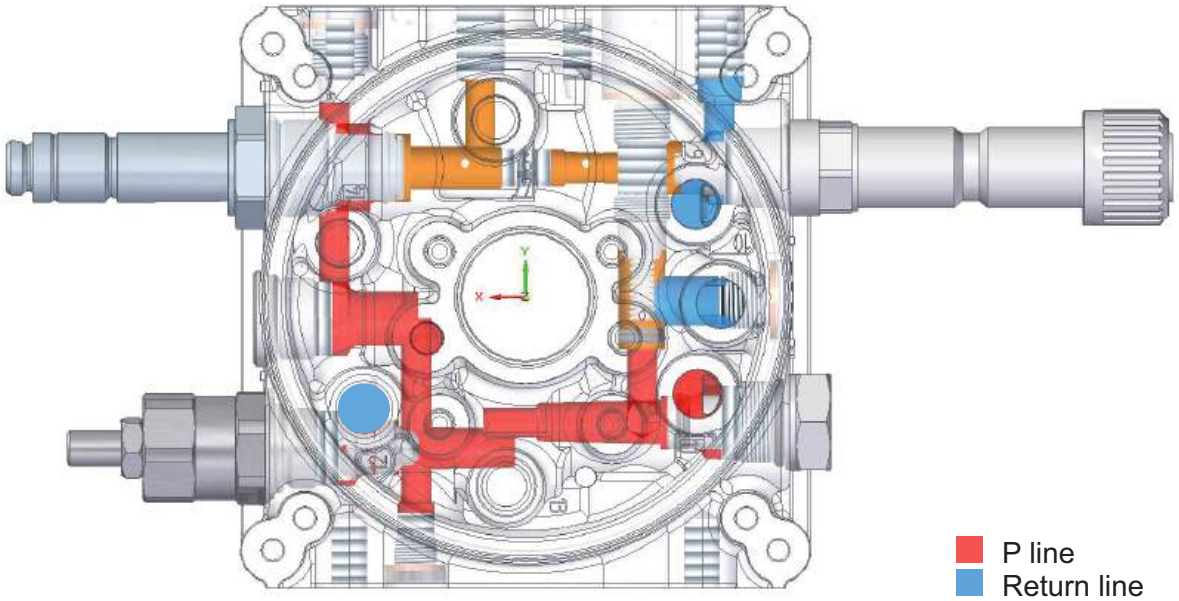
The Manifold contains a 3rd way pre-compensator wich is sensing pressure across the proportional flow regulator. The proportional pressure relief valve is limiting the max pressure allowed on the system. Pressure sensors (rated for 300 bar) sense Delivery line (P) or Load Sensing Line (the other line being plugged); pressure sensor is rated for max 5 bar and senses the return line pressure.
They are installed and electrically connected inside the manifold to the Logic controller. The Electronic Programmable controller drives the proportional valves according to the application software.

SMART CENTRAL MANIFOLD «SX*PQ» WITH PROPORTIONAL PQ CONTROL

NEW



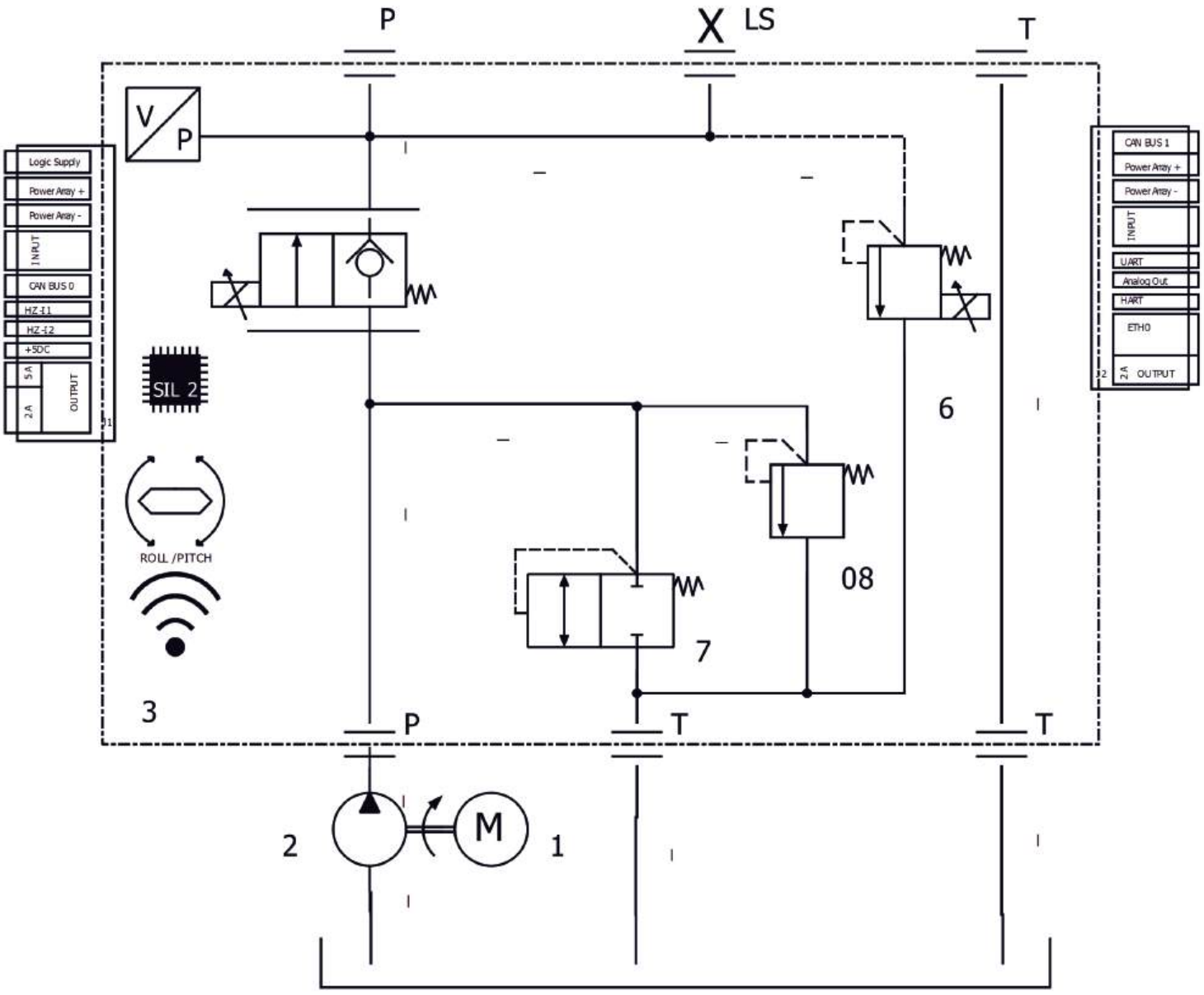
0) Plug
1) Relief valve or plug
2) Proportional flow valve
3) Proportional relief valve
4) Relief valve or plug
5) Plug
7) Calibrated orifice
8) 3 way compensator
9) Return pipe
10) Return pipe
11) Empty or Relief valve return line
12) Empty or Relief valve return line
PS) Pressure transducer
LS) Pressure transducer on LS line
C) Plug



P line
Return line
Reduced pressure line

SMART CENTRAL MANIFOLD «SX*PQ» WITH PROPORTIONAL PQ CONTROL

NEW



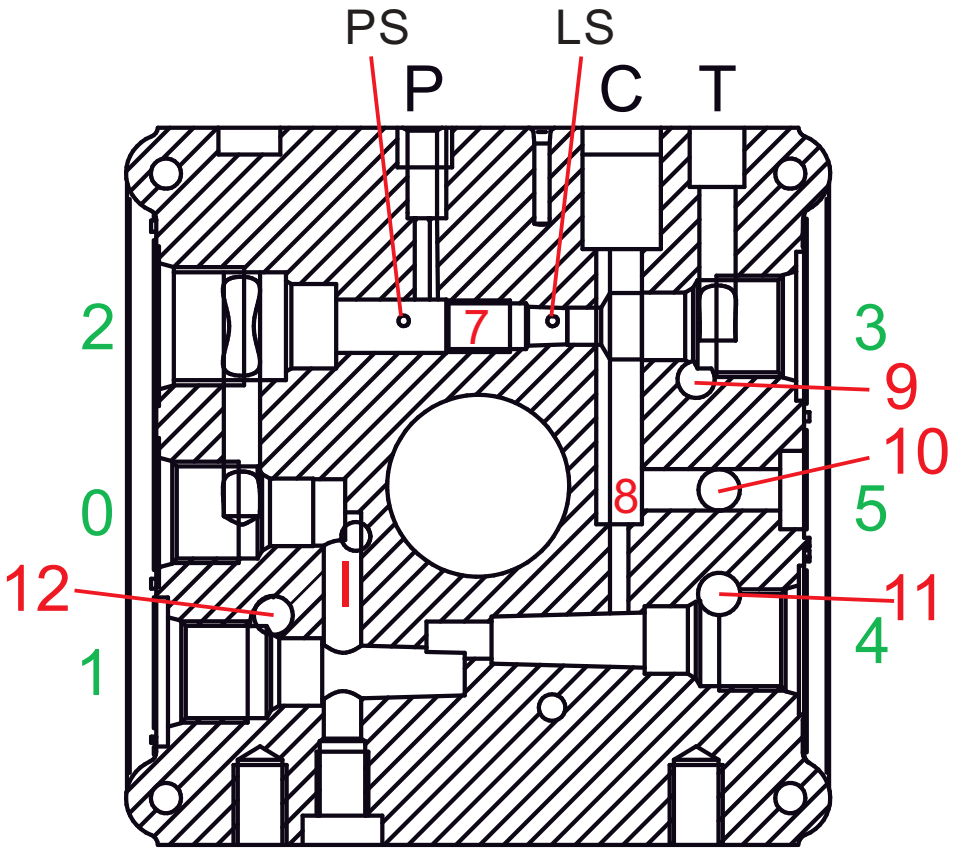
HPC02PQ: Hydraulic Diagram

The PQ type diagram is useful for sequential motion in automation, normally the PQ manifold feeds an array of ON-OFF directional valves, regulating the common flow and the max pressure. PQ system allows just sequential asynchronous movements. Typical applications are: personal lift equipment, small cranes,...

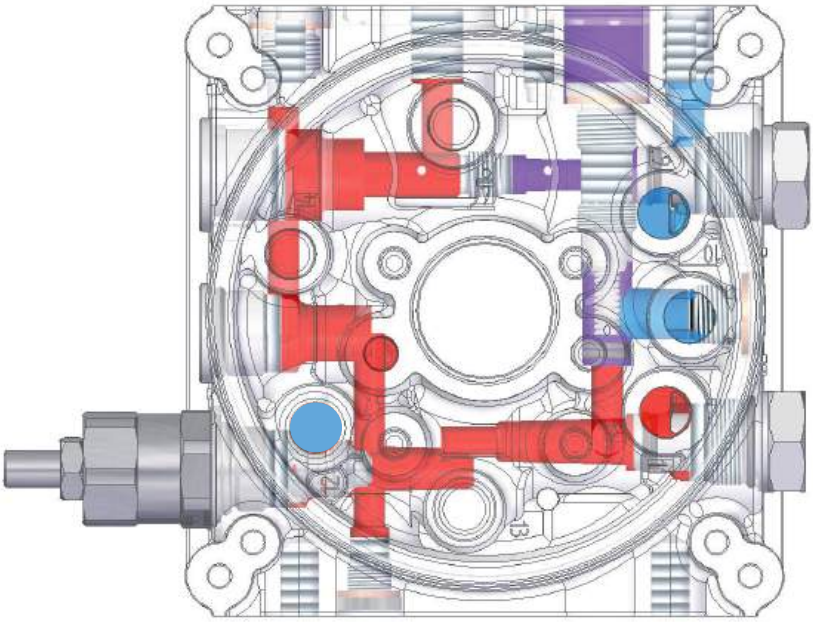
The Manifold contains a 3rd way pre-compensator wich is sensing pressure across the proportional flow regulator. The proportional pressure relief valve is limiting the max pressure allowed on the system. Pressure sensors (rated for 300 bar) sense Delivery line (P) or Load Sensing Line (the other line being plugged); pressure sensor is rated for max 5 bar and senses the return line pressure.
They are installed and electrically connected inside the manifold to the Logic controller. The Electronic Programmable controller drives the proportional valves according to the application software.

SMART CENTRAL MANIFOLD «SX*LS» WITH LOAD SENSING

NEW

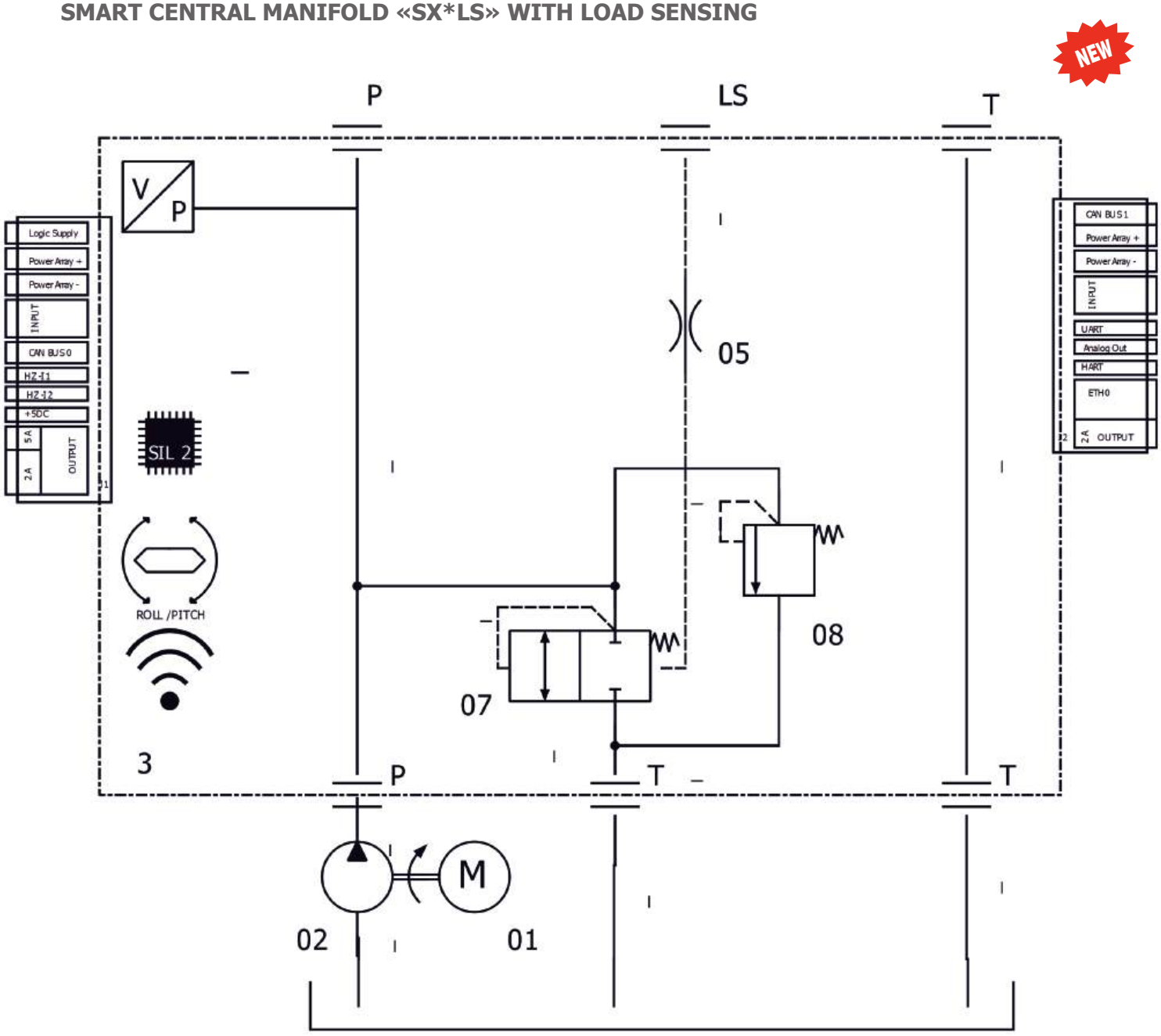


0) Plug
1) Relief valve or plug
2) 7/8"-14 UNF Plug
3) Plug
4) Relief valve or plug
5) Plug
7) Calibrated orifice
8) 3 way compensator
9) Return pipe
10) Return pipe
11) Empty or Relief valve return line
12) Empty or Relief valve return line
PS) Pressure transducer
LS) Pressure transducer on LS line
C) Special Plug



P line
Return line
LS line

SMART CENTRAL MANIFOLD «SX*LS» WITH LOAD SENSING

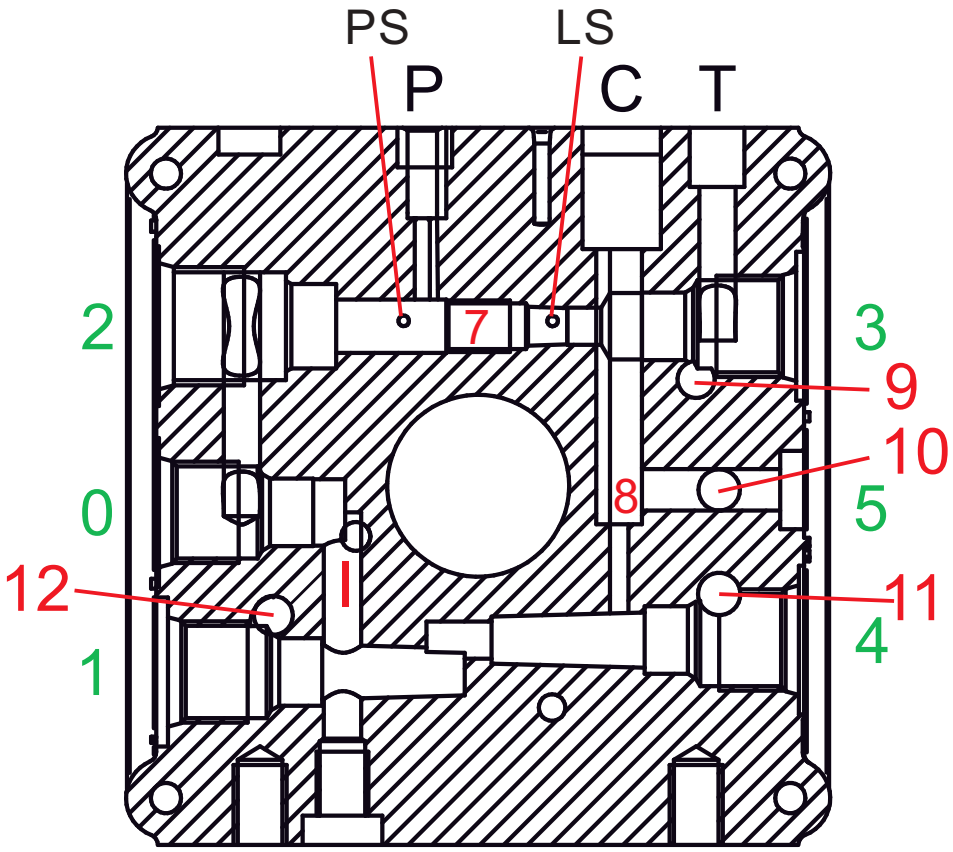


HPC02LS: Hydraulic Diagrams with Load Sensing for external proportional LS valves (type SDP02):

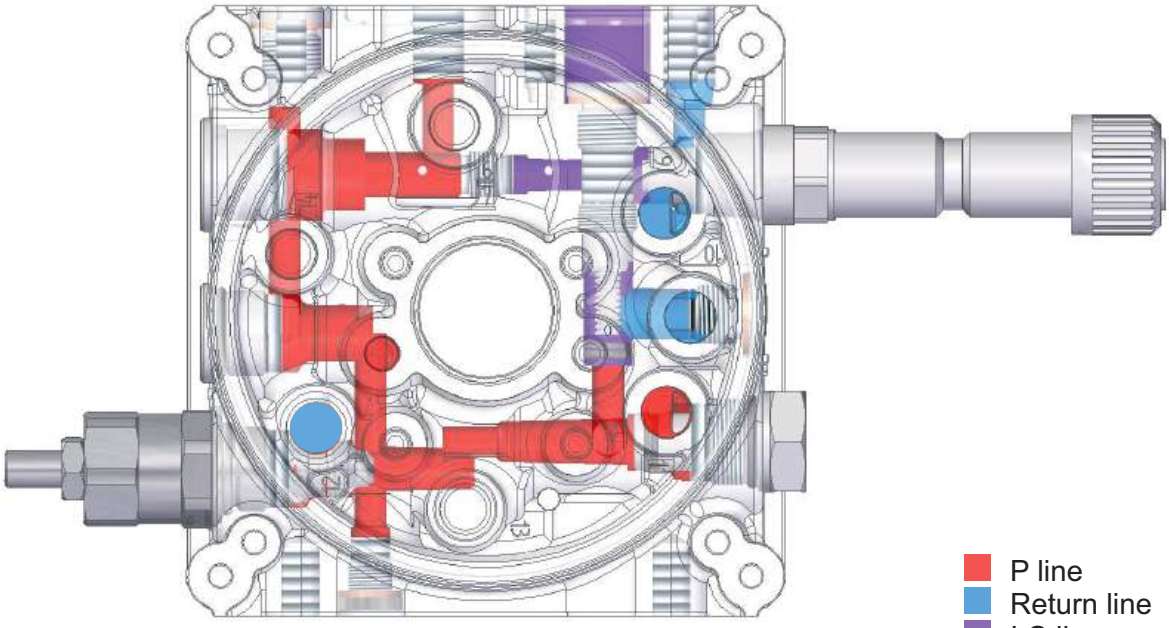
By replacing the Proportional Flow Control valve or/and the Proportional Pressure Relief valve with the related manual adjustment valves, and plugging/unplugging the LS lines, additional hydraulic configurations are available as well.
HPC02 is equipped with SAE08 normalised cavities in order to offer the maximum flexibility in configuration.
Also available with ON/OFF valves.
The Manifold contains a 3rd way pre-compensator wich is sensing the load driven by LS line of the highest loaded valve.
Pressure sensors (rated for 300 bar) sense the Load Sensing Line (the other line being plugged); pressure sensor is rated for max 5 bar and senses the return line pressure.
They are installed and electrically connected inside the manifold to the Logic controller. The Electronic Programmable controller drives the proportional valves according to the application software.

SMART CENTRAL MANIFOLD «SX*LSP» WITH LS AND PROPORTIONAL P CONTROL

NEW



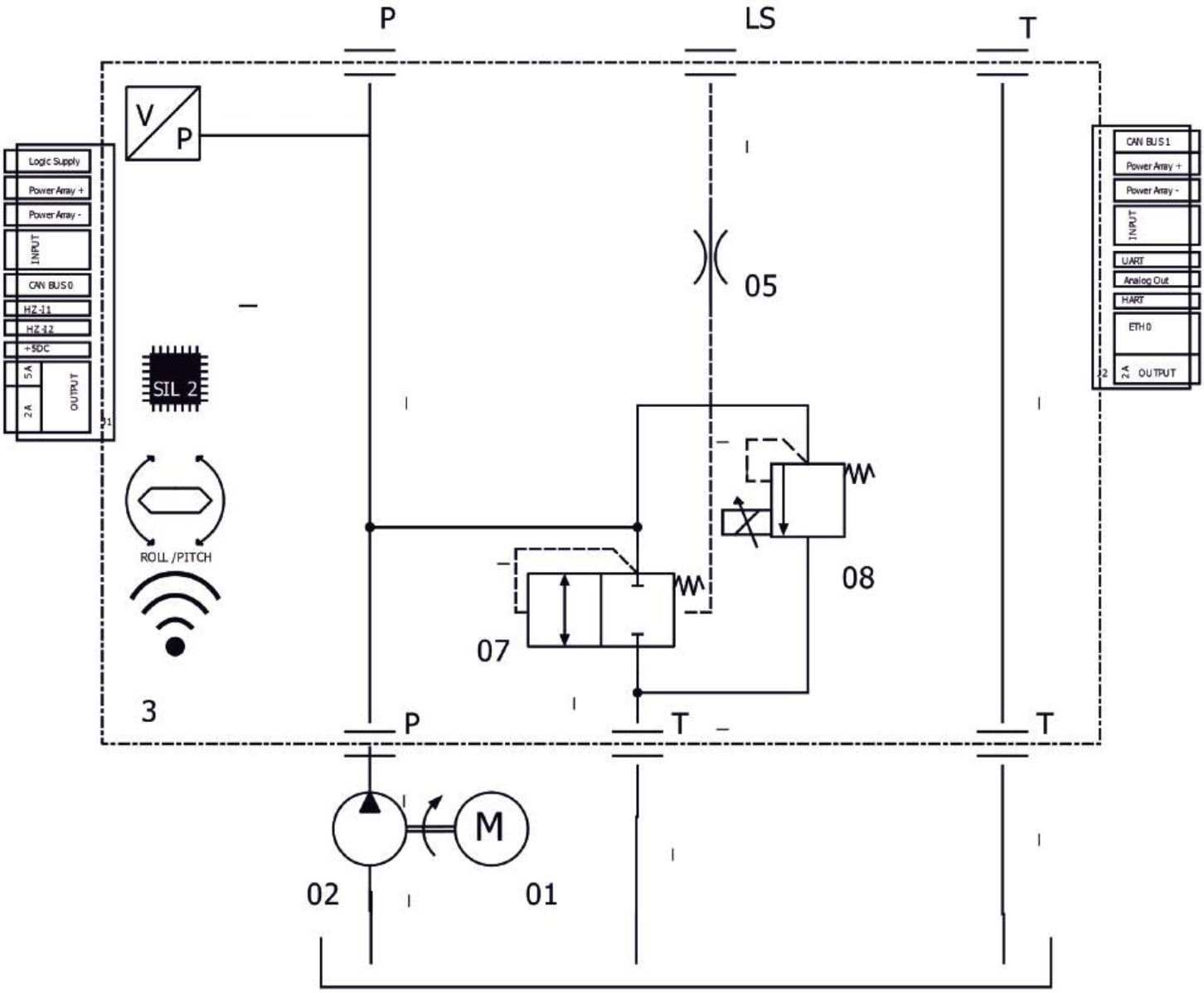
0) Plug
1) Relief valve or plug
2) 7/8"-14 UNF Plug
4) Relief valve or plug
5) Plug
7) Calibrated orifice
8) 3 way compensator
9) Return pipe
10) Return pipe
11) Empty or Relief valve return line
12) Empty or Relief valve return line
PS) Pressure transducer
LS) Pressure transducer on LS line
C) Special Plug



P line
Return line
LS line

SMART CENTRAL MANIFOLD «SX*LSP» WITH LS AND PROPORTIONAL P CONTROL

NEW



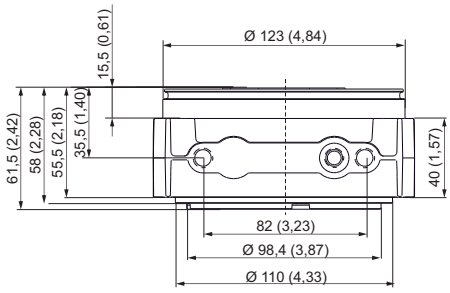
HPC02LSP: Hydraulic Diagram LS type for external proportional LS valves (type SDP02):

The LS type diagram is useful for simultaneous motion in automation, normally the PQ manifold feeds an array of Proportional or ON-OFF LS pre-compensated valves, regulating the common flow and the max pressure in the classic LoadSensing architecture. Contemporary movements are possible.

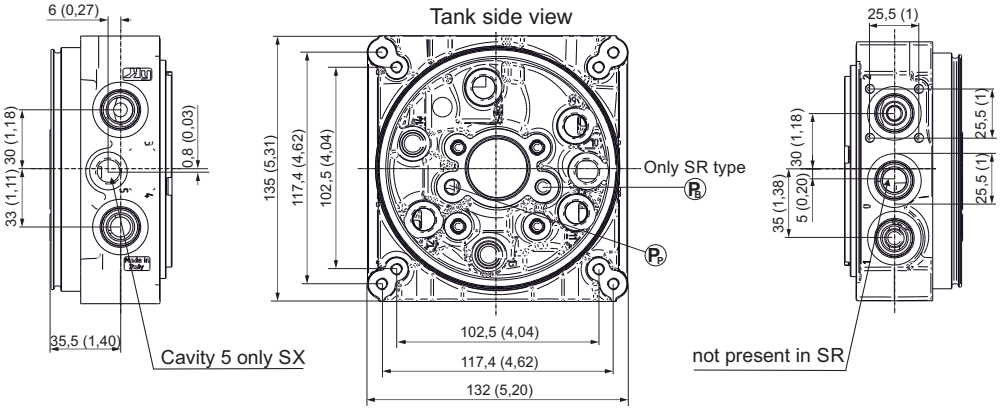
The Manifold contains a 3rd way pre-compensator wich is sensing pressure across the proportional flow regulator. The proportional pressure relief valve is limiting the max pressure allowed on the system. Pressure sensors (rated for 300 bar) sense Delivery line (P) or Load Sensing Line (the other line being plugged); pressure sensor is rated for max 5 bar and senses the return line pressure.
They are installed and electrically connected inside the manifold to the Logic controller. The Electronic Programmable controller drives the proportional valves according to the application software.

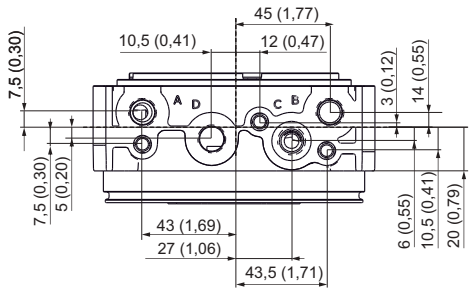
SMART CENTRAL MANIFOLDS - OVERALL DIMENSIONS

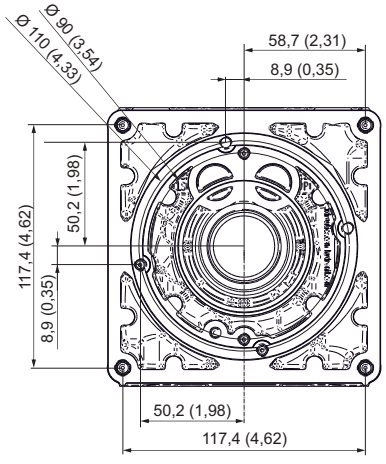
Type	Spare part code
SR	CMABH00003
SR2	CMABH00021
SRD	CMABH00013
SRT	CMABH00014
SRDT	CMABH00015
SB	CMABH00001
SB3	CMABH00002
S4	CMABH00006
S4T	CMABH00016
SX1	CMABH00004
SX2	CMABH00005
SRUS	CMABH00009
SRDUS	CMABH00017
SRDTUS	CMABH00019
SBUS	CMABH00007
SB3US	CMABH00008
S4US	CMABH00012
S4TUS	CMABH00020
SX1US	CMABH00010
SX2US	CMABH00011



Weight: 1,25 kg (2,75 lb)







Motor side view

Cavity	Thread
0, 1, 2, 3, 4	3/4-16 UNF (SAE08)
A-B-C-D	1/4 BSP 9/16-18UNF (SAE06 - US type). Presence depends on the body type.
5,6,9,11,12,13,14	1/4 BSP (presence depends on the body type)
External manifolds fixings	3 tie rods M8
Tank fixings	4 screws M6x14
Integral AC motors and B14 flanges fixings	4 screws M8x25
DC motors fixings	2 screws M6x14 or tie rods M6
Pumps fixings	2 screws M8 (see pump lenghts on the relevant tables). Only right pumps.
Mounting Foot fixings	2 screws M10x18 3/8-16 UNC US type
PMC hand pump and CM lever valve fixings	4 screws M5x45

Notes:
- codes ending with **US** are according American standards, machined with 9/16-18 UNF (SAE06) P-T exit ports.- all dimensions in mm (inches)

CENTRAL FLANGES for ELECTROPUMPS

Two flanges to cover all DC motors Hydronit range, from frame 80 up to frame 151mm.

The mid flange E10103010 allows the mounting of frame 80, 114 and 125 DC motors. Less parts in stock allow savings and flexibility.

Standard gear pumps, as mounted in the power packs PPC and PPM ranges, can be mounted here too, thanks to the lateral P port on the flange. **Double pumps**, including those with an integral **HI-LO circuit**, are also available.

Q & A

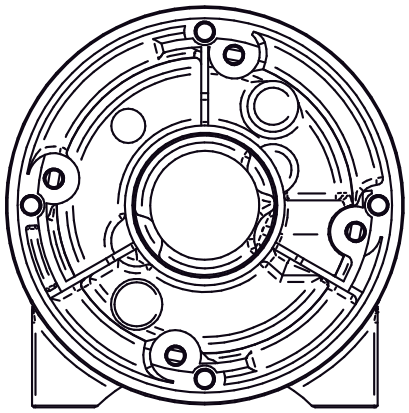
Which gear pump / central flange combination should I choose?
Depending on the motor frame you have multiple options:
• for frame 80 DC motors (power up to 1200W) you have only the choice of group 0 pumps. these are the same used in PPM and PPC power packs (front flange P port and rear flange suction port). Lateral ports group 0 KL series pumps can be fit too.
• for frame 114 and 125 DC motors (1600W up to 4000W), the same central flange can accomodate standard power pack pumps, either group 0 (with an adapter) or group 1, with the front flange P port, connected to the lateral 1/4 BSPP exit port. As alternative, the classical group 1 KL series pumps with lateral ports are available. These can be fitted with P and T ports which can be rotated 180°, when configuring the power pack, in order to allow ports positioning flexibility.
• for frame 125 (DC motors 2500W, 3000W and 4000W), a standard B14 bell housing and coupling is used. Only KL lateral ports pumps are usable.

Is the central flange available as a loose component?
Yes. We can supply either fully assembled and tested electropumps or kits of loose components which can be kept in stock by our worldwide distributors and easily assembled to satisfy local market demand quickly and effectively.

DC MOTORS Ø80 -Ø114 - Ø125 CENTRAL FLANGE - OVERALL DIMENSIONS

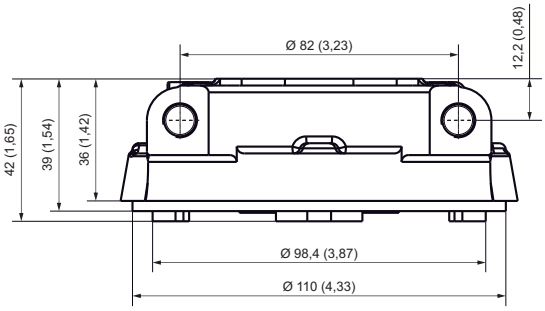
Spare part code	
E10103010	
Cavity	**Threads**
P	1/4 BSPP
DC motors attachment	tie rods M6
Pumps attachment	2 bolts M8x** (see pump lenghts on the relevant tables)
Mounting Foot attachment	2 bolts M10x18

Motor side

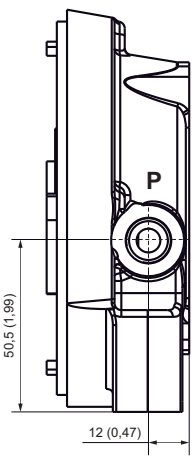


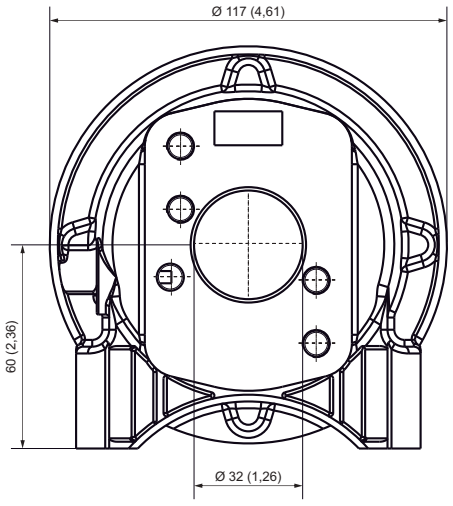
Notes:
- all dimensions in mm + (inches)

Weight:
0,357 kg (0,79 lb)



Pump side

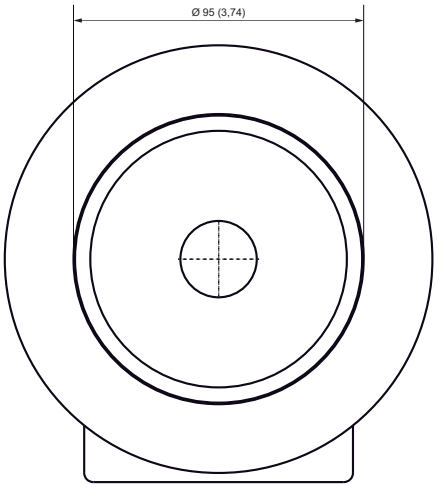




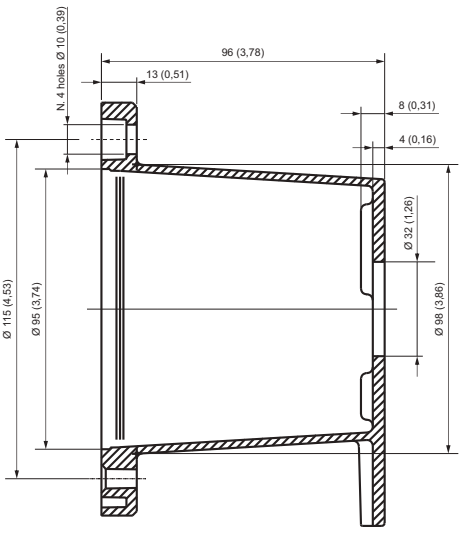
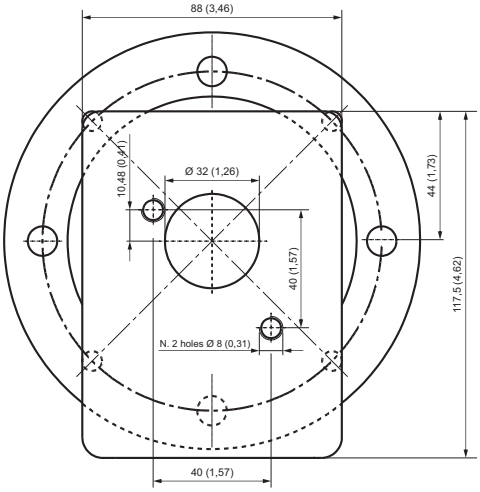
DC MOTORS Ø151 CENTRAL FLANGE - OVERALL DIMENSIONS

Spare part code	
E10105010	
Cavity	**Threads**
DC motors attachment	tie rods M8
Pumps attachment	2 bolts M8x** (see pump lenghts on the relevant tables)

Motor side



Notes:
- all dimensions in mm + (inches)

Weight:
0,448 kg (0,99 lb)

Pump side