



BREVINI®

Motion Systems

FP HYDRAULIC POWER PACK

Technical Catalogue

June
2019

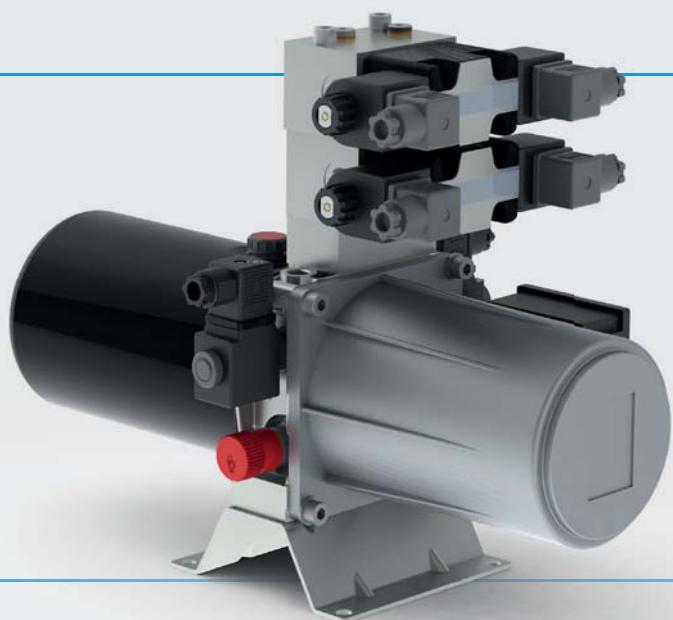


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Use of the products in this catalogue must comply with the operating limits given in the technical specifications. The type of application and operating conditions must be assessed as normal or in malfunction in order to avoid endangering the safety of people and/or items.

Introduction



The FP series power pack is an easy-to-assemble, compact, electro-hydraulic unit. With its versatility and modularity, it offers many combinations of hydraulic circuits to suit various requirements of plant design. This catalogue has been written to help the user choose the components for the power pack required for the specific application. However, the catalogue cannot foresee all the combinations that may be executed, so in some cases it may be necessary to consult our commercial engineering department.

For applications with very complex circuits, standard modular blocks for Cetop valves and other special blocks can be installed on the power pack, or blocks built to order can be included.

A few applications:

- Fork lifts
- Lifting platforms and beds
- Automotive lifts
- Cranes for small trucks
- Snowplows
- Industrial automation (machine tools, food industry, textile industry)

You can chose from a wide variety of components with the following specifications:

- Gear pumps - Group 0.5 / 1 - from 0.25 to 9.8 cc.
- DC motors, 12/24 V, light-duty service, from 0.35 to 3 Kw
- Single and triple-phase motors with power ratings of up to 4 Kw - in a standard version or built to the customer's specifications (with minimum overall dimensions)
- Tanks in sheet steel with capacities of up to 25 litres
- Tanks in plastic with capacities of up to 10 litres

A fundamental part of the power pack is the endhead, which is made of die-cast aluminum alloy. The parts and dimensions of this component are shown below.

Operating limits

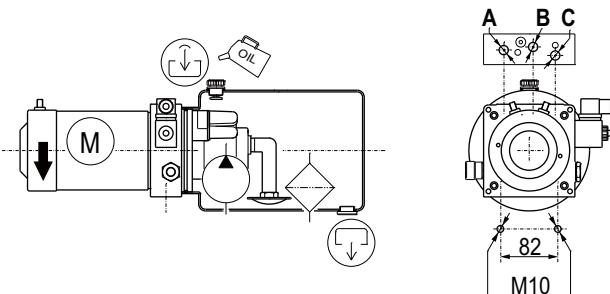
- Intermittent peak pressure: 290 bar (depending on pump type)
- Maximum flow rate: 20 l/min
- Maximum operating temperature:
 - 80°C (with sheet steel tank)
 - 70°C (with polyethylene tank)
 - 60°C (with polypropylene tank)
- Mineral-based hydraulic fluid: ISO 6743-4 (DIN 51524)
 - Minimum viscosity: 12 mm²/s
 - Maximum viscosity: 80 mm²/s
 - Maximum viscosity at start-up: 500 mm²/s
- Minimum ambient temperature -15°C
- Maximum ambient temperature 40°C (with peaks of 50°C)
- The validation of the endhead follows a life-test with 250 bar pulsed pressure repeated for 100.000 cycles



Operating pressure is controlled by the maximum pressure valve and the type of pump used (in terms of performance) may be determined by the maximum pressure valve. Therefore, it is essential not to change the maximum pressure valve. If necessary, contact our technical service department.

Installation

- 1) The power pack must be mounted using the M10 holes on the endhead.
- 2) The power pack must not come into contact with sheet metal, protective guards or any parts that may vibrate and transmit noise.
- 3) The ports on the endhead have been identified by the letters A-B-C. The hydraulic connection must be made with fittings with cylindrical thread and with copper or rubber sealing gaskets (O-rings).
- 4) After the electrical connections have been made, check the direction of motor rotation by executing short pulses of 1 second each (max.); the motor must turn anti-clockwise, as shown in the figure.



The tank must be filled with new mineral-based, ISO 6743/4 fluid: it is important to filter the fluid while filling the tank.

Symbols used in this catalog:

	Important data/information
	Mounting endhead side
	Ground floor
	Electrical connection boxes on AC motors
	Poles and/or starting relays on DC motors
	Fill plug with breather and level stick
	Fill plug with breather
	Standard plug (closed)
	Standard oil fill plug
	Fill plug with breather
	Fill plug
	Fill plug with check valve
	Fill plug with back check
	Drain plug with magnet
	Plug (or level stick) with visual indicator
	Drain plug
*	Fields to be completed

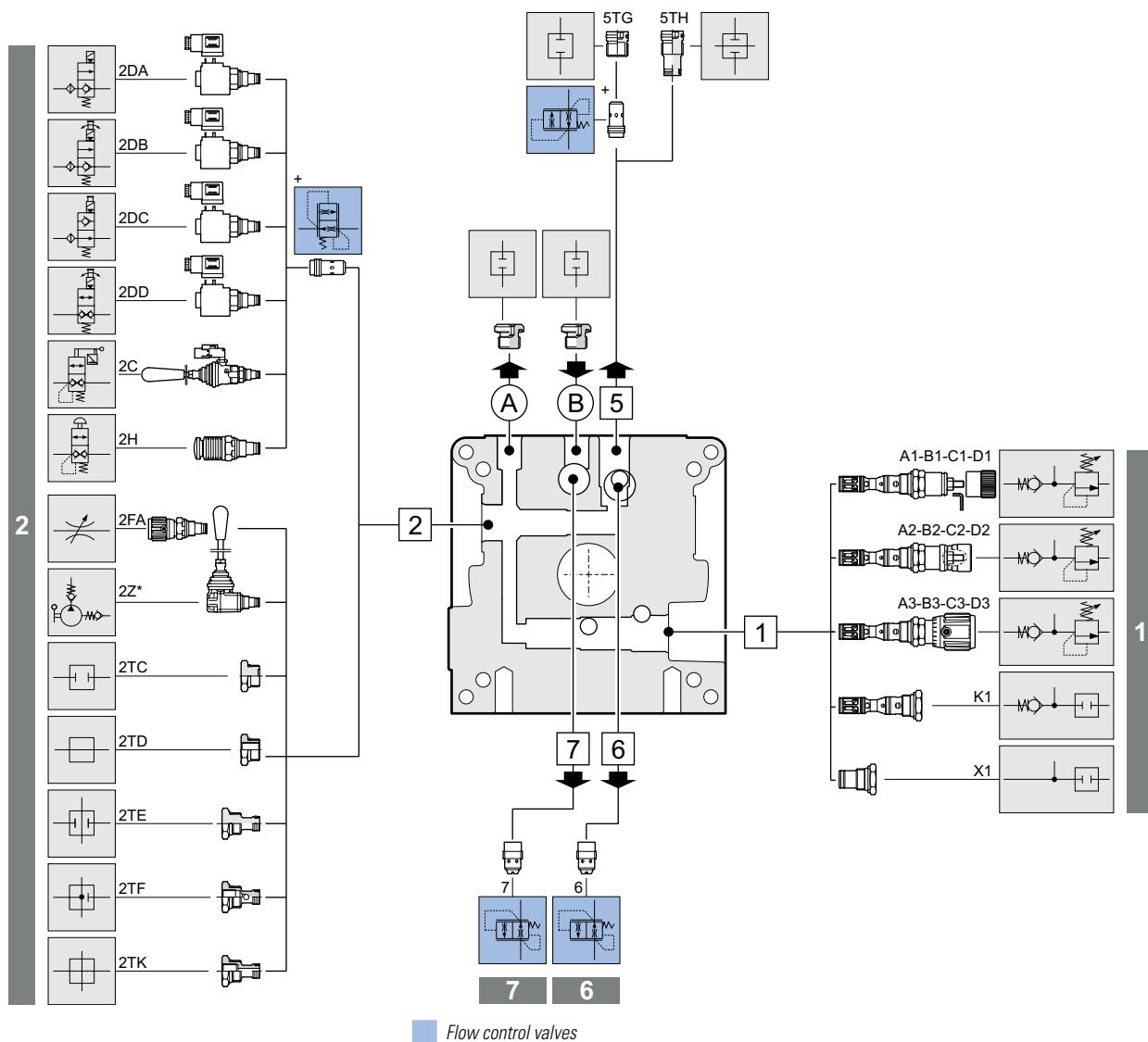
Endhead configuration



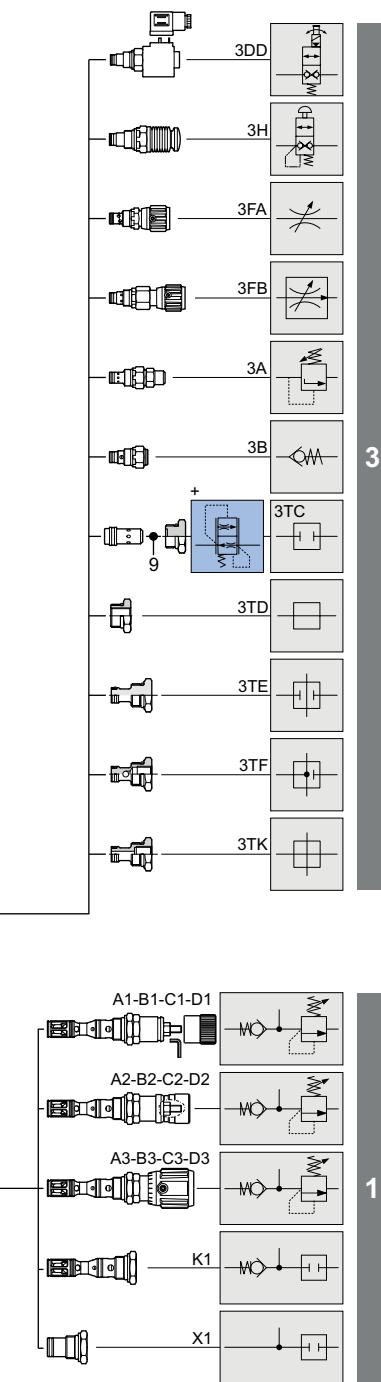
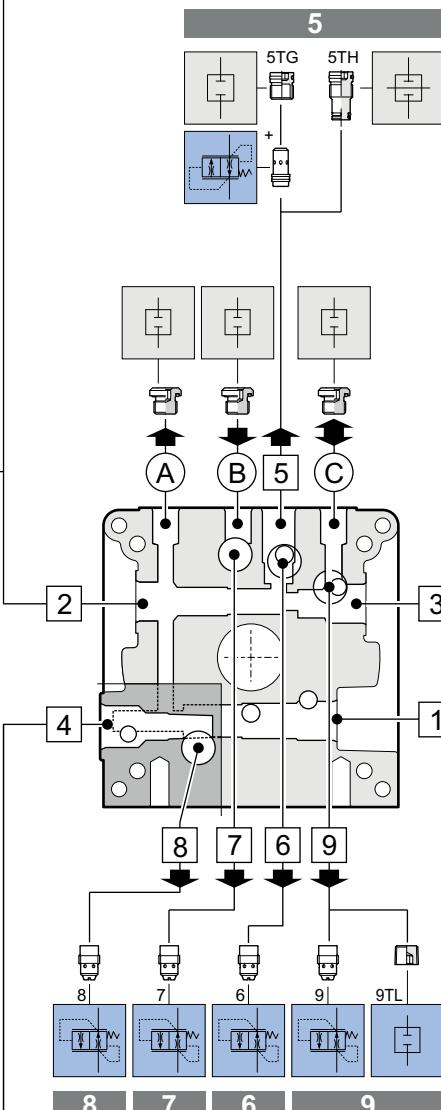
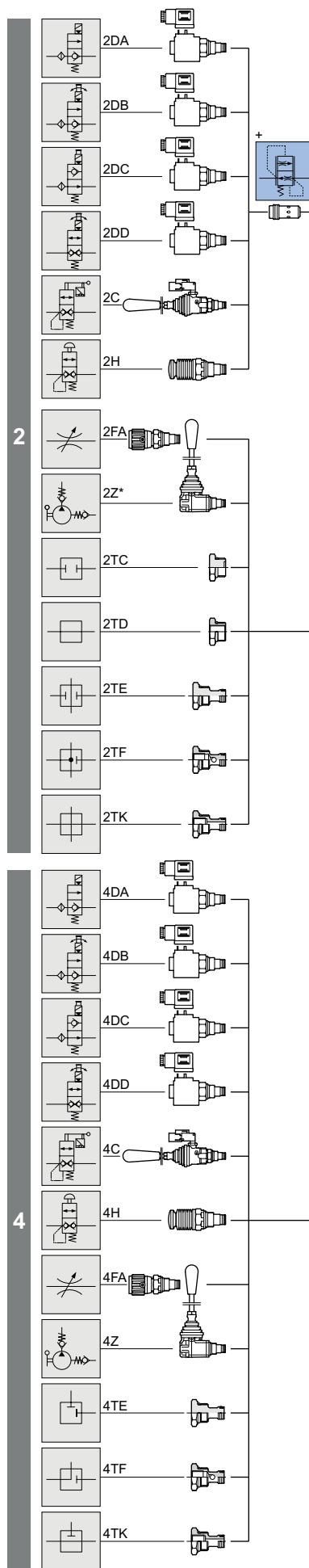
Power pack endhead configuration

FPA

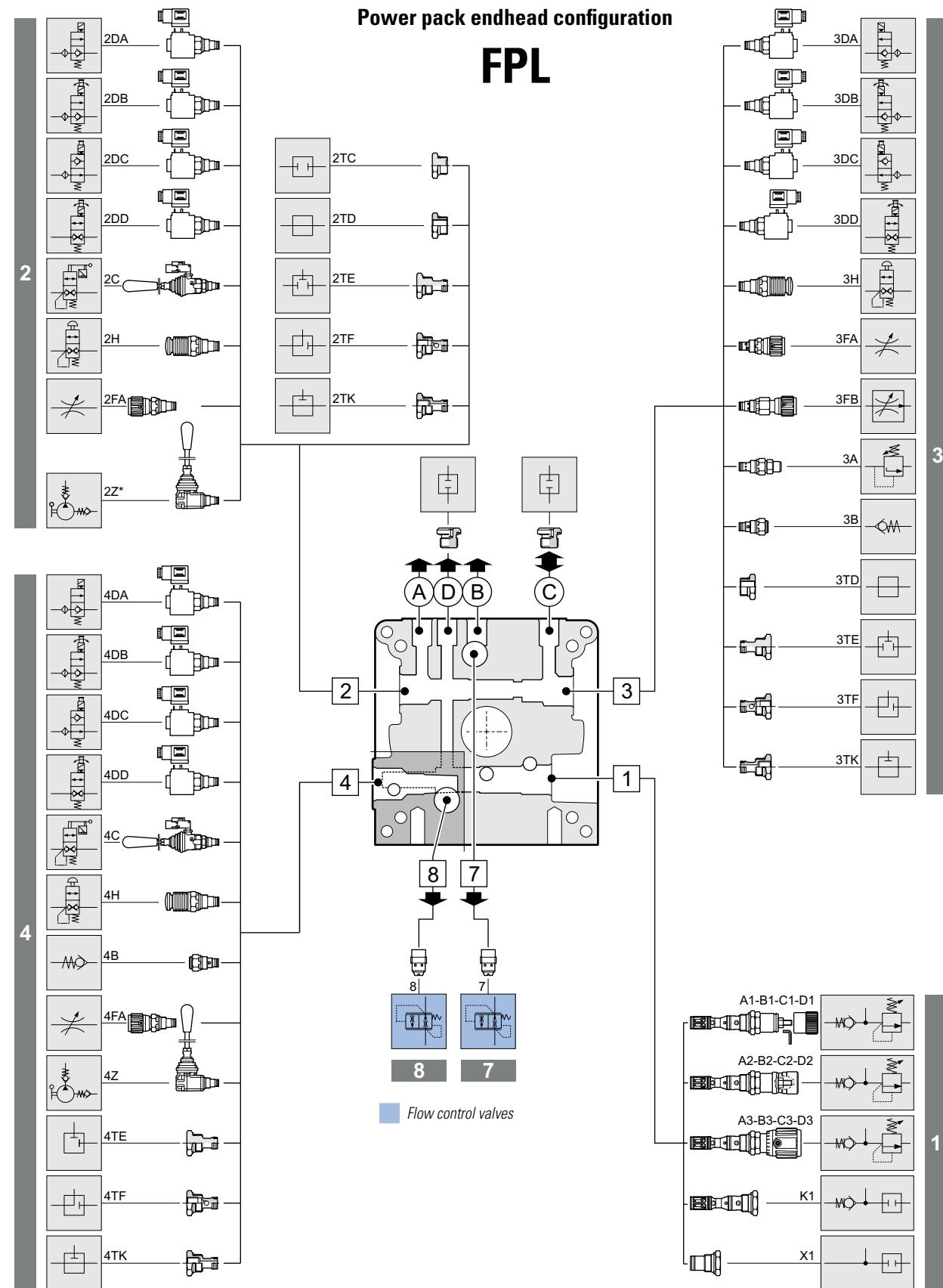
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Endhead configuration



Endhead configuration



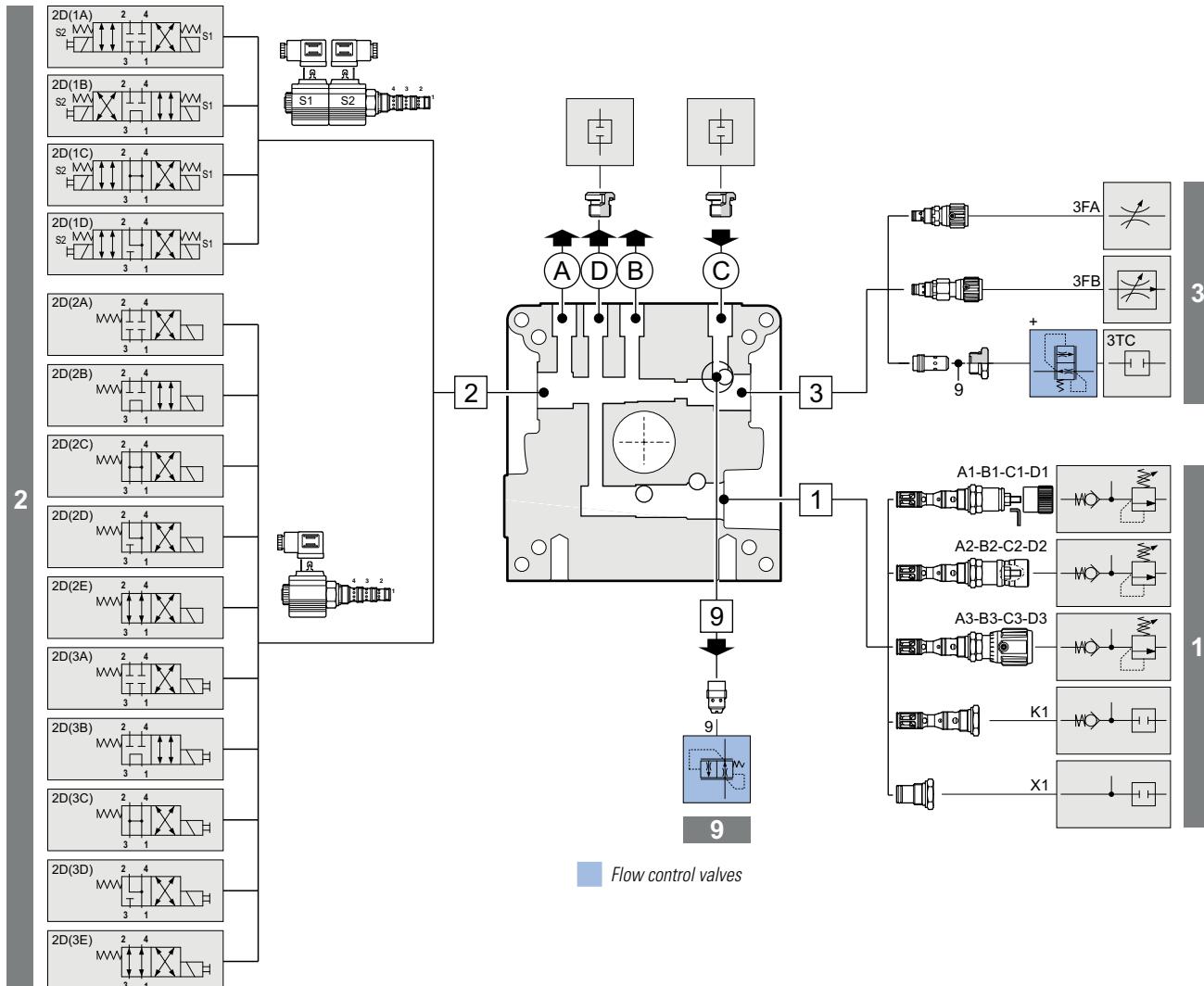
Endhead configuration

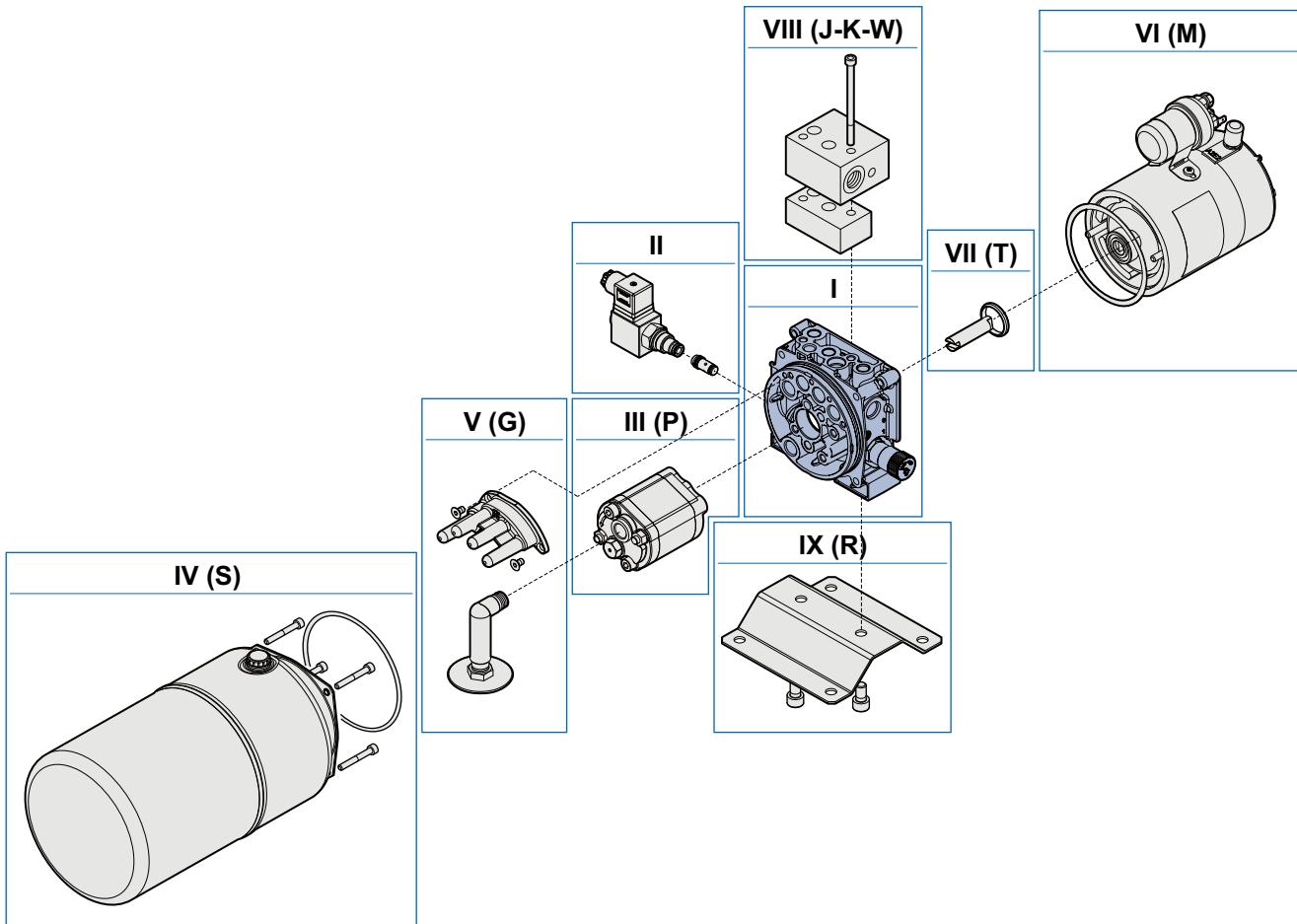


Power pack endhead configuration

FPE

(for directional control valves)





With its great modularity, the FP series of power packs can create multiple configurations which satisfy requirements in a wide range of applications. To make it easier to choose components, the power pack is subdivided into sections.

SECTION I - SERIE, FLANGE TYPE, VALVES ON CAVITY 1

FP Series Powerpacks are based on the Flange features.

The Flange is the core of the unit, on the flange are mounted all the valves, the pump, the motor and the reservoir.

The FP Flange is available in several Versions (with different tooling options). The Flange Version must be chosen depending on the type of Hydraulic Circuit Layout required.

Together with the Flange Version, it is required to select the Valves to be mounted in the Various Cavities.

1 (Main Pressure Relief Valve).

SECTION II - VALVES

Depending on the Type of Hydraulic Circuit Layout to be realized, it is required to Select the Valves for each of the available Cavities.

In order to correctly build up the Ordering Code, it is required to use the following procedure.

Peripheral Cavities (it is mandatory to mention all the Cavities in Numeral Order): starting from Cavity 2, mention all the Cavities and the Valves, Plugs or Fittings to be mounted in said Cavity.

Internal Cavities: normally connected to Tank (It is not mandatory to mention, but if required it should be done in Numeral Order): starting from Cavity 6, mention all the Internal Cavities where a Valve (usually a Return Line Valve) is mounted, Selecting the Valve Type to be mounted in said Cavity. Outputs, see description in the Table.

SECTION III - PUMPS

It is mandatory to mention this section, defined by the letter P.

Depending on the required features, select the pump from the table provided.

SECTION IV - TANKS

This section is defined by the letter S.

Depending on the required features, select the reservoir from the list provided. If no Reservoir is required, and also no Suction / Return Kit is required, please omit this section. If no Reservoir is required, but a Suction / Return Kit is required, please jump to Section V (defined by letter G).

SECTION V - TUBES KIT (suction and return, only for tanks on the catalog)

This section is defined by the letter G.

In order to define this Section, please select the Reservoir Type anyways.

SECTION VI - MOTORS

This section is defined by the letter M.

Depending on the Type of Hydraulic Circuit Layout to be realized, it is required to Select the Motor Type. If no Motor is required, and no Transmission Kit is required, please omit this section. If no Motor is required, but a Transmission Kit is required, please jump to Section VII (defined by letter T).

SECTION VII - TRANSMISSION KIT (only for motors on the catalog)

This section is defined by the letter T.

Select the kit as per Table provided.

SECTION VIII - BLOCKS

This section it is not mandatory, depending on the Type of auxiliary Block required, definition Letter changes:

J, Blocks with CETOP type of interface for Solenoid Valves;

K, Bankable Valves Interface – Horizontal (Parallel to Unit Axis);

W, Bankable Valves Interface – Vertical (Perpendicular to Unit Axis);

SECTION IX - ACCESSORIES

This section it is not mandatory, is defined by the letter R

Check the available options in the list provided.

Accessories must be listed in Alphabetical Order.

Selection code



SECTION I - SERIE, ENDHEAD, VALVES ON CAVITY 1

	Power pack type				
	Endhead type				
	Thread ports				
	Pressure relief valve - Check valve - Plug				
	Setting type (or plug features)				
	Special setting pressure relief valve (omit if not required)				
FP	*	*	*	*	(...)

SECTION II - VALVES

	Cavity 2											
	Type											
	Features											
	Optional flow control valve (omit if not required)											
	Cavity 3											
	Type											
	Features											
	Flow control valve can be combined with plug TC (omit if not required)											
	Cavity 4											
	Type											
	Features											
	Cavity 5											
	Plug											
	Features											
	Flow control valve can be combined with plug TG (omit if not required)											
	Return cavities 6-7-8-9											
	Optional flow control valve (or plug for cavity 9)											
	Combination plugs for ports											
	End section II											
	-											
2 .. **	+*	3 .. **	+*	4 .. **	5 T *	+*	6 *	7 *	8 *	9 *	- **	-

SECTION III - PUMPS

	Pump
	Pump group
	Performance level
	Nominal displacement
	Accessories (omit if not required)
	End section III
	P * (*) ** / *

Selection code



SECTION IV - TANKS / SECTION V - TUBES KIT

						Section:
						S = tank (with tubes kit); G = only with tubes kit, without tank; OMIT if without tank and without tubes kit
						Capacity liters
						Features (material and construction)
						Mounting position: H = horizontal; V = vertical
						Variants 00 = standard, no variant; OMIT if with tubes kit (section "G")
						Orientation OMIT if with tubes kit in vertical mounting position (section "G")
						End section IV and V
*	**	*	(*)	**	/*	-

SECTION VI - MOTORS

						DC motor
						Voltage
						Power / Size
						Version
						Accessories 0 = whitout accessories;
						Orientation
						End section VI
M	*	**	(*)	*	/*	-

OR ..

						AC motor
						Phases
						Poles
						Size
						Power range
						Version
						Orientation
						End section VI
M	*	*	*	*	(*)	/* -

Selection code

SECTION VII - TRANSMISSION KIT (only for motors on the catalog)

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%;">T</td><td style="width: 10%;">**</td><td style="width: 80%;">-</td></tr> </table>	T	**	-	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%;">Transmission kit</td></tr> <tr><td>Type</td></tr> <tr><td>End section VII</td></tr> </table> <p>Specify the transmission kit whether you requested the joint and accessories assembly (without motor).</p>	Transmission kit	Type	End section VII
T	**	-					
Transmission kit							
Type							
End section VII							

SECTION VIII - BLOCKS

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%;">J</td><td style="width: 10%;">*</td><td style="width: 10%;">(00)</td><td style="width: 10%;">-</td><td style="width: 10%;">**</td><td style="width: 10%;">(00)</td><td style="width: 10%;">(..)</td><td style="width: 10%;">(..)</td><td style="width: 10%;">/***/</td><td style="width: 10%;">-</td></tr> </table>	J	*	(00)	-	**	(00)	(..)	(..)	/***/	-	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%;">Blocks</td></tr> <tr><td>Mounting position</td></tr> <tr><td>Accessory</td></tr> <tr><td>Separation line</td></tr> <tr><td>Block type</td></tr> <tr><td>Accessory</td></tr> <tr><td>Pressure relief valve setting on "A" line</td></tr> <tr><td>Pressure relief valve setting on "B" line</td></tr> <tr><td>CETOP valve</td></tr> <tr><td>End section VIII</td></tr> </table>	Blocks	Mounting position	Accessory	Separation line	Block type	Accessory	Pressure relief valve setting on "A" line	Pressure relief valve setting on "B" line	CETOP valve	End section VIII
J	*	(00)	-	**	(00)	(..)	(..)	/***/	-												
Blocks																					
Mounting position																					
Accessory																					
Separation line																					
Block type																					
Accessory																					
Pressure relief valve setting on "A" line																					
Pressure relief valve setting on "B" line																					
CETOP valve																					
End section VIII																					

SECTION IX - ACCESSORIES

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%;">R</td><td style="width: 10%;">*</td><td style="width: 10%;">*</td></tr> </table>	R	*	*	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%;">Accessories (optional)</td></tr> <tr><td>First accessory</td></tr> <tr><td>Second accessory</td></tr> </table>	Accessories (optional)	First accessory	Second accessory
R	*	*					
Accessories (optional)							
First accessory							
Second accessory							

Endhead overall dimensions



Cavities on endhead:

Cavity	Thread	Endhead type			
		FPA	FPC	FPL	FPE
A Ports	G1/4" (1) G3/8" (2)	•	•	•	•
B Ports	G1/4" (1) G3/8" (2)	•	•	•	•
C Ports	G1/4" (1) G3/8" (2)	—	•	•	•
D Ports	G1/4" (1)	—	—	•	•
1 Peripheral	3/4" 16 UNF	•	•	•	•
2 Peripheral	3/4" 16 UNF	•	•	•	•
3 Peripheral	3/4" 16 UNF	—	•	•	•
4 Peripheral	3/4" 16 UNF	—	•	•	—
5 Peripheral (3)	M16x1.5	•	•	—	—
6 Return	G3/8"	•	•	—	—
7 Return	G3/8"	•	•	•	—
8 Return	G3/8"	—	•	•	—
9 Return	G3/8"	—	•	—	•

1) blocks interface

2) available only for FPA - FPC endhead

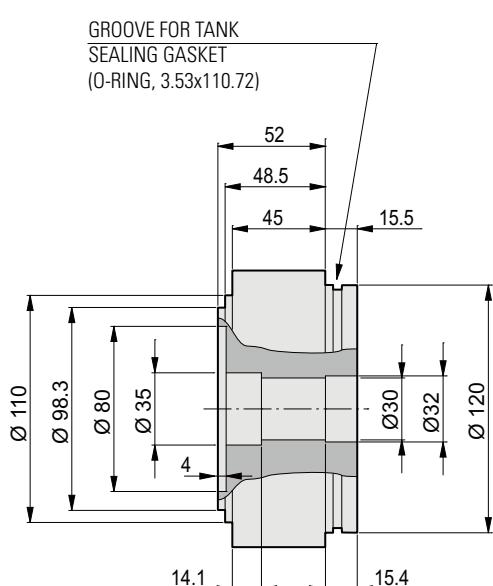
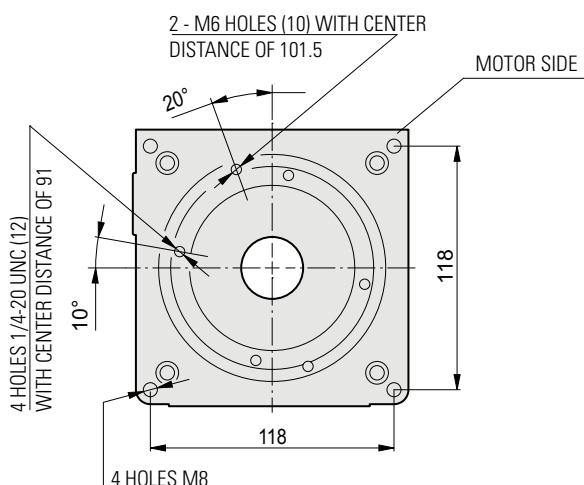
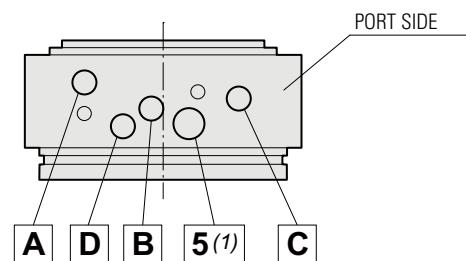
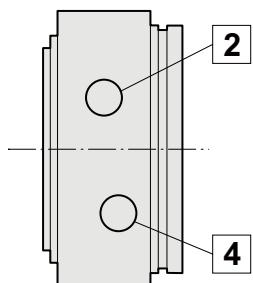
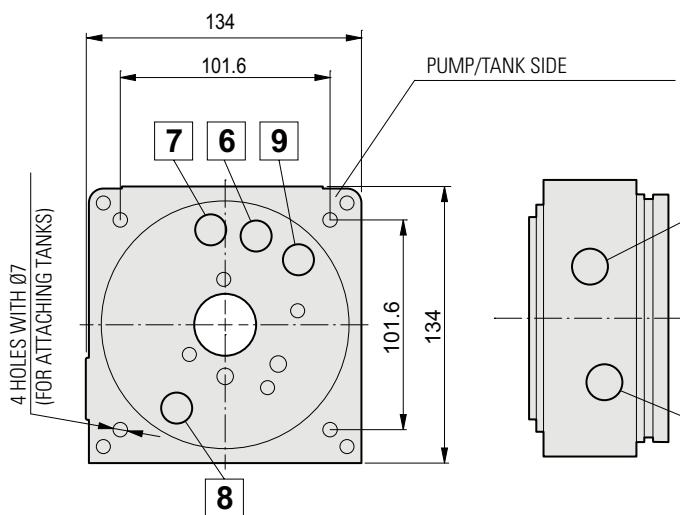
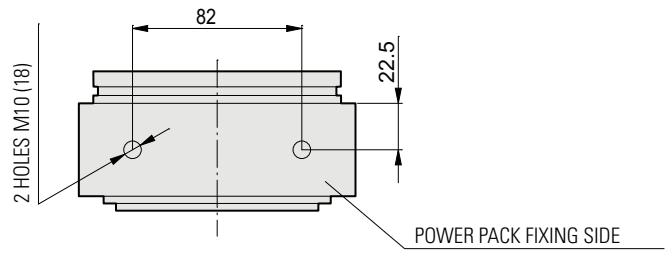
3) the cavity 5 is not accessible with blocks mounted (section IX).

The number of cavities tooled identify the endhead type:

There are three types of cavities:

- **Peripheral cavities**, which can be accessed externally
- **Return cavities**, inside of the tank.
- **Ports**

i



The cavities (1-2-3-4-5) and the ports (A-B-C) are marked on the die-cast endhead. The dimensions on the drawing are the same for all endhead.

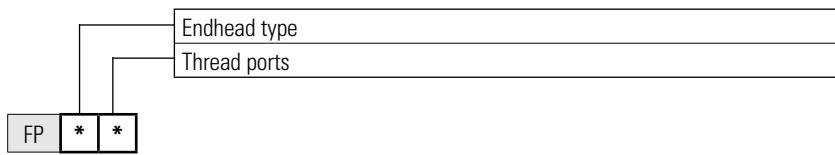
Cavities dimensions



i

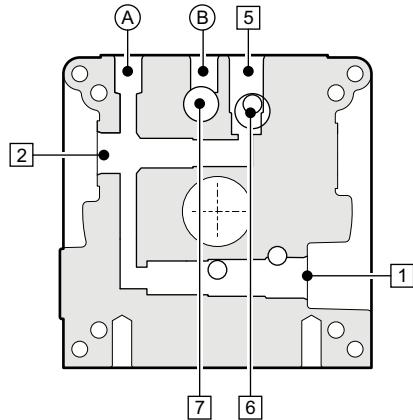
Cavity		Thread	Drawing	Cavity		Filettatura	Drawing
1	Peripheral	3/4 16 UNF	CD018013 	5	Peripheral	M16 x 1.5	
2	Peripheral (FPA-FPC)	3/4 16 UNF	CD018009 	6	Return	G 3/8	
2	Peripheral (FPE)	3/4 16 UNF	CD018001 	7	Return	G 3/8	
3	Peripheral	3/4 16 UNF	CD018014 	8	Return	G 3/8	
4	Peripheral	3/4 16 UNF	CD018014 	9	Return	G 3/8	

Endhead choice

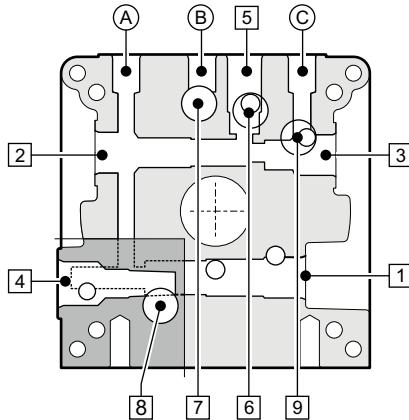


FP

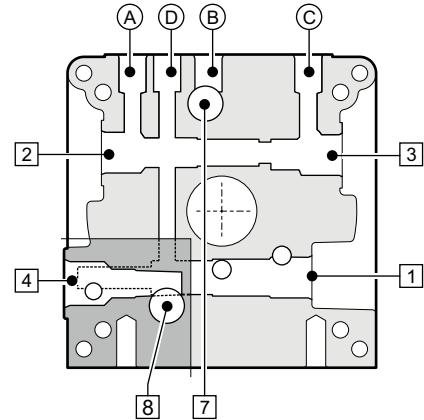
A



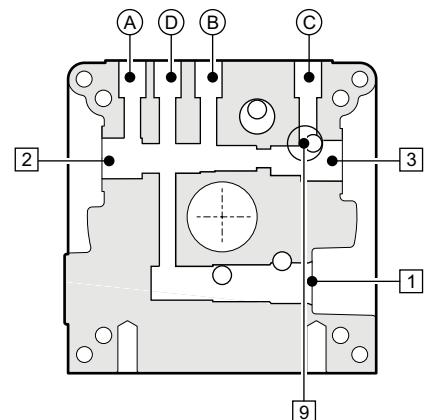
C



L



E



* **Endhead type**

*	Ports	Peripheral	Return
A	n. 2 (A - B)	n. 3 (1 - 2 - 5)	n. 2 (6 - 7)
C	n. 3 (A - B - C)	n. 5 (1 - 2 - 3 - 4 - 5)	n. 4 (6 - 7 - 8 - 9)
L	n. 4 (A - B - C - D)	n. 4 (1 - 2 - 3 - 4)	n. 2 (7 - 8)
E	n. 4 (A - B - C - D)	n. 3 (1 - 2 - 3)	n. 1 (9)

* **Thread ports**

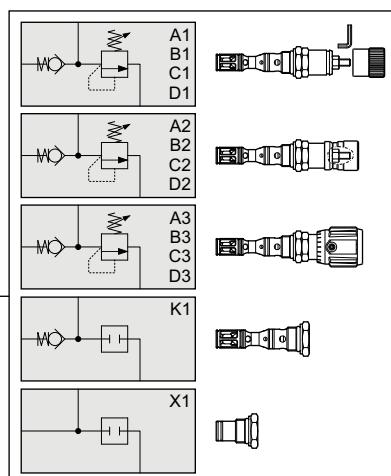
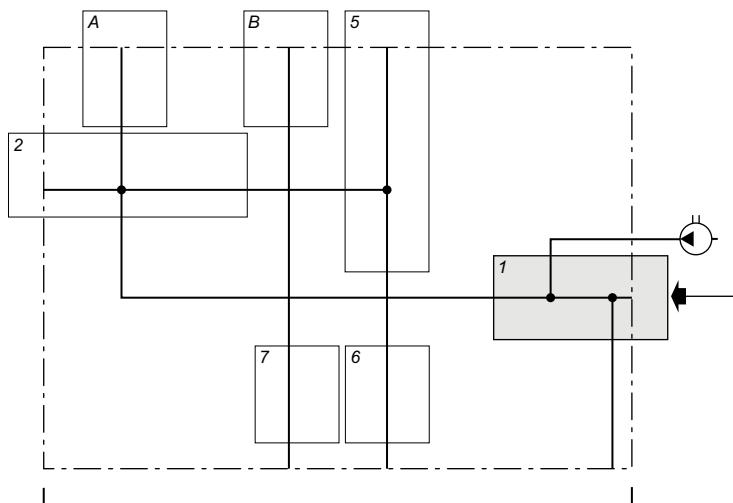
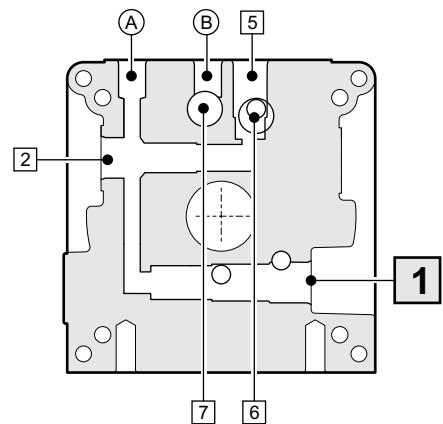
*	Ports thread	Blocks interface
0	G1/4"	YES
1	G3/8"	NO

Endhead codes		
	G1/4"	G3/8"
FPA	78013010.000	78013011.000
FPC	78013014.000	78013015.000
FPL	78013022.000	
FPE	78013016.000	

Sect. I - FPA Cavity 1



FPA**	*	*	(...)	Pressure relief valve - Check valve - Plug Setting type (or plug features) Special setting pressure relief valve (omit if not required)
-------	---	---	-------	---



* * (...) Pressure relief valve with check valve

*	*	Pressure (bar)	STD setting (bar)	(...) Special setting (bar)	Setting type	Code	Symbol	Drawing
D	1	15 ÷ 50	30	15 ÷ 50 (5 to 5)	Detachable closing	CMPR04S00002		
	2				Non removable closing (1)	CMPR04P00002		
	3				Plastic knob	CMPR04M00002		
E	1	35 ÷ 110	50	35 ÷ 110 (5 to 5)	Detachable closing	CMPR04S01002		
	2				Non removable closing (1)	CMPR04P01002		
	3				Plastic knob	CMPR04M01002		
F	1	75 ÷ 220	150	75 ÷ 220 (5 to 5)	Detachable closing	CMPR04S02002		
	2				Non removable closing (1)	CMPR04P02002		
	3				Plastic knob	CMPR04M02002		
G	1	160 ÷ 290	180	160 ÷ 290 (10 to 10)	Detachable closing	CMPR04S03002		
	2				Non removable closing (1)	CMPR04P03002		
	3				Plastic knob	CMPR04M03002		

1 = Supplied assembled. Unassembled, see accessories page 89

* * Check valve and plug

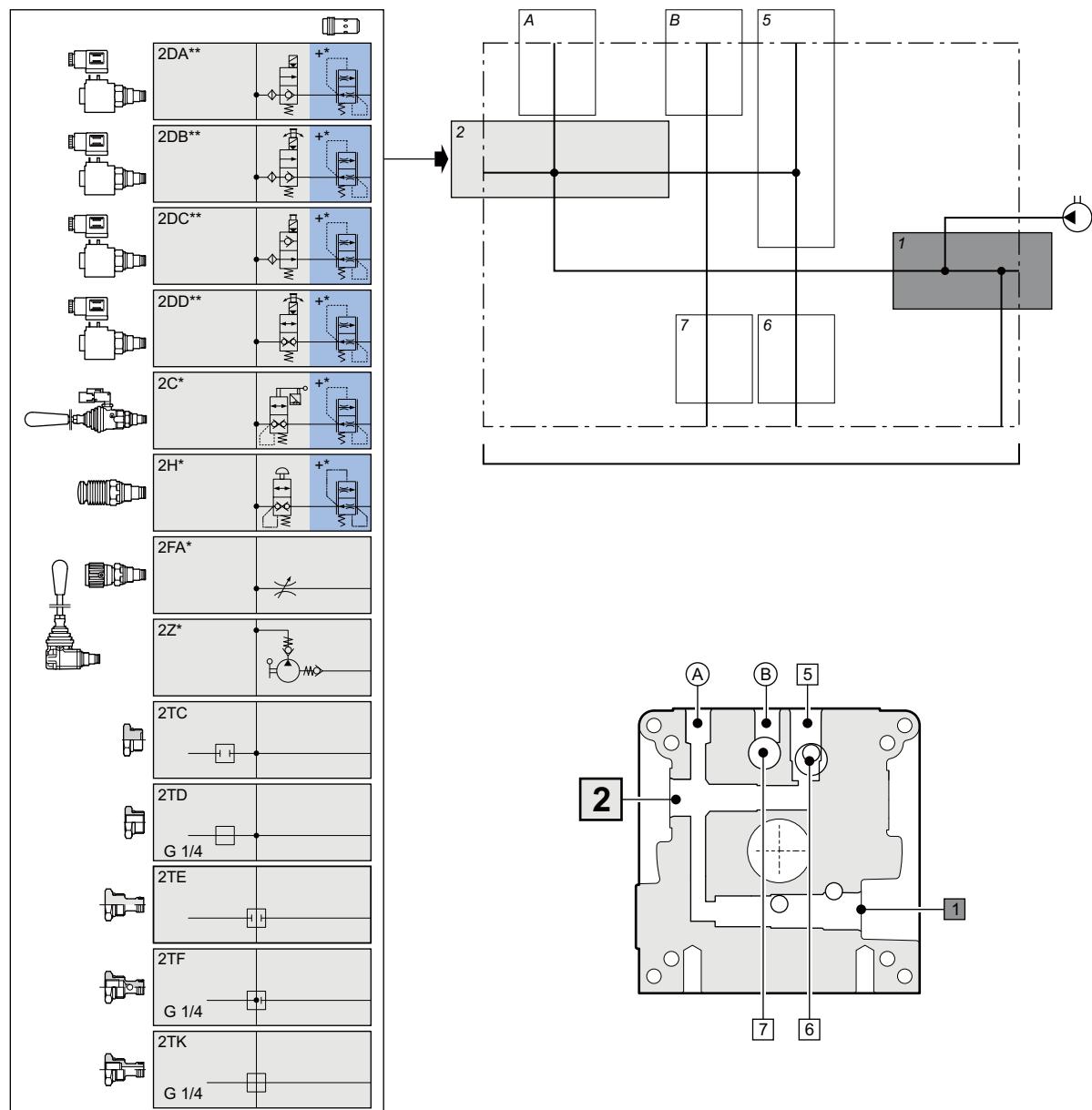
*	*	Description	Code	Symbol	Drawing
K	1	Check valve - Opening pressure 0.5 bar	CRI0400001		
X	1	Plug	R78150100		

Sect. II - FPA Cavity 2



Cavity	
Type	
Features	
Optional flow control valve (omit if not required)	

FPA** ** (...) **2 .. ** +***



Flow control valves

Sect. II - FPA Cavity 2



2 DA ** **Piloted solenoid valves normally closed, without emergency (1)**

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRP0418NCASL003 + V86050002		
AB	Voltage 24 Vdc	CRP0418NCASM003 + V86050002		
AC	Voltage 24 Vac 50 Hz	CRP0418NCASA003 + V86050002		
AD	Voltage 115 Vac 50 Hz	CRP0418NCASJ003 + V86050002		
AE	Voltage 230 Vac 50 Hz	CRP0418NCASI003 + V86050002		

II
FPA

2 DB ** **Piloted solenoid valves normally open, with rotary emergency (1)**

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRP0418NCAEL003 + V86050002		
AB	Voltage 24 Vdc	CRP0418NCAEM003 + V86050002		
AC	Voltage 24 Vac 50 Hz	CRP0418NCAEA003 + V86050002		
AD	Voltage 115 Vac 50 Hz	CRP0418NCAEJ003 + V86050002		
AE	Voltage 230 Vac 50 Hz	CRP0418NCAEI003 + V86050002		

2 DC ** **Piloted solenoid valves normally open, with button emergency (1)**

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRP0418NAAEL003 + V86050002		
AB	Voltage 24 Vdc	CRP0418NAAEM003 + V86050002		
AC	Voltage 24 Vac 50/60 Hz (RAC with rectifier)	CRP0418NAAE2003 + V86200002		
AD	Voltage 115 Vac 50 - 120 Vac 60 Hz (RAC with rectifier)	CRP0418NAAEZ003 + V86200002		
AE	Voltage 230 Vac 50 - 240 Vac 60 Hz (RAC with rectifier)	CRP0418NAAEX003 + V86200002		
AF	Voltage 48 Vdc	CRP0418NAAEN003 + V86050002		

2 DD ** **Direct operated solenoid valve normally closed, with button emergency (1)**

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRD0418NCAEL002 + V86050002		
AB	Voltage 24 Vdc	CRD0418NCAEM002 + V86050002		

2 C * **Lever operated valve**

*	Description	Code	Symbol	Drawing
A	Without microswitch	CMF04L001		
B	With microswitch	CMF04M001		

1 = Valves supplied with connector. Without connector see accessories page 89

Sect. II - FPA Cavity 2



2 H * +* Button operated valves

**	Description	Code	Symbol	Drawing
A	Push-button control	CPE04P000.1		

2 .. ** +* Flow control valves (1)

*	Flow	Code	Symbol	Drawing
+B	1.4 l/min	VSC040101		
+C	2.3 l/min	VSC040201		
+E	2.8 l/min	VSC040301		
+G	4.3 l/min	VSC040401		
+J	5.2 l/min	VSC040601		
+L	6.5 l/min	VSC040801		
+N	8.0 l/min	VSC041101		
+Q	11.1 l/min	VSC041601		

(1) The flow control valves can be installed with solenoid valves, with manual controls and with push-button valves.

II

FPA

2 FA * Bidirectional flow control valves not compensated

*	Description	Code	Symbol	Drawing
A	Screw adjustment	CSB04C0000		
B	Plastic knob adjustment	CSB04V0000		

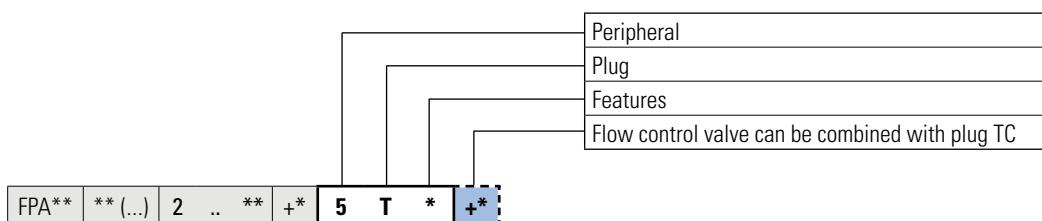
2 Z * Hand pumps

*	Description	Code	Symbol	Drawing
A	Cilindrata 1 cc	CPM0410001		
B	Cilindrata 2 cc	CPM0420001		

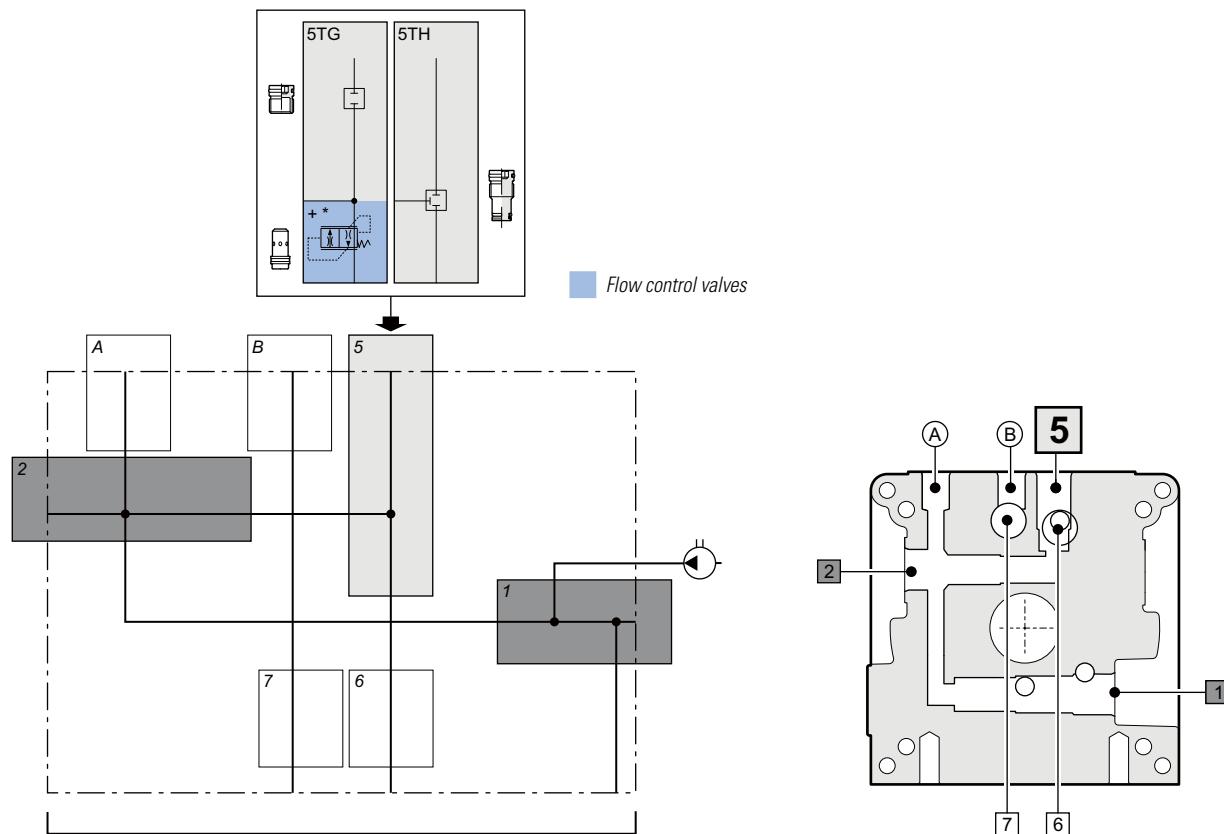
2 T * Plugs and fittings

*	Description	Code	Symbol	Drawing
C	Plug 3/4 16 UNF	R78150099		
D	Fitting 3/4 16 UNF - G1/4	20001700		
E	Long plug 3/4 16 UNF	20003800		
F	Fitting 3/4 16 UNF - G1/4	20009400		
K	Fitting 3/4 16 UNF DIN - G1/4	20018000		

Sect. II - FPA Cavity 5



II
FPA



5	T	*	+*	Plugs
---	---	---	----	-------

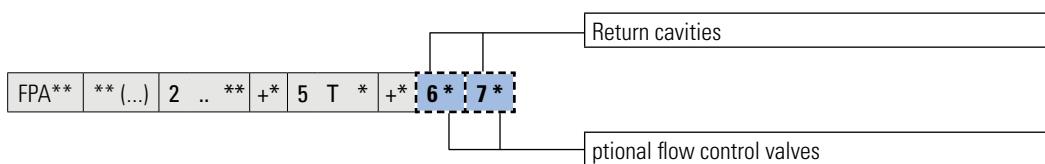
**	Description	Code	Symbol	Drawing
G	Plug M16x1.5 (1)	R78150104		
H	Long plug M16x1.5	R78150101		

2 ..	**	+*	Flow control valves (1)
------	----	----	-------------------------

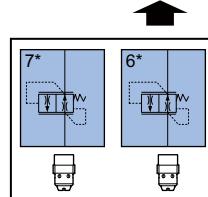
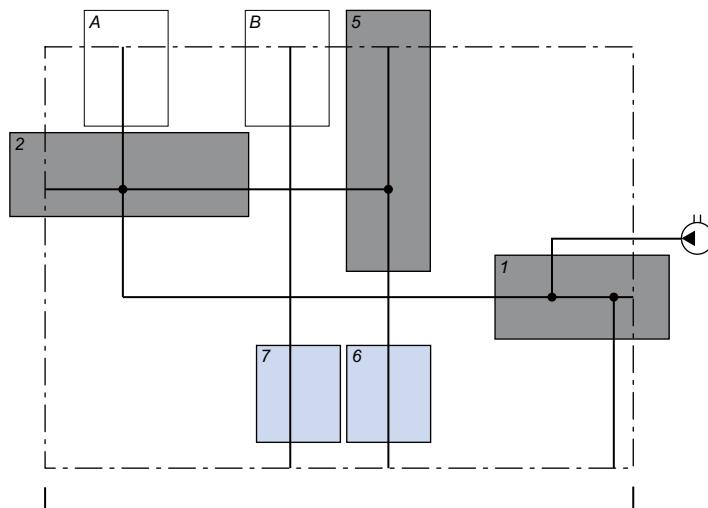
*	Flow	Code	Symbol	Drawing
+B	1.4 l/min	VSC040101		
+C	2.3 l/min	VSC040201		
+E	2.8 l/min	VSC040301		
+G	4.3 l/min	VSC040401		
+J	5.2 l/min	VSC040601		
+L	6.5 l/min	VSC040801		
+N	8.0 l/min	VSC041101		
+Q	11.1 l/min	VSC041601		

(1) Flow control valves can be combined with plug TG.

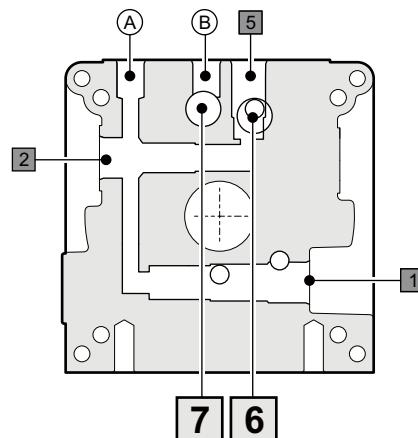
Sect. II - FPA Cavity 6-7



Return cavity, omit if not required flow control valves



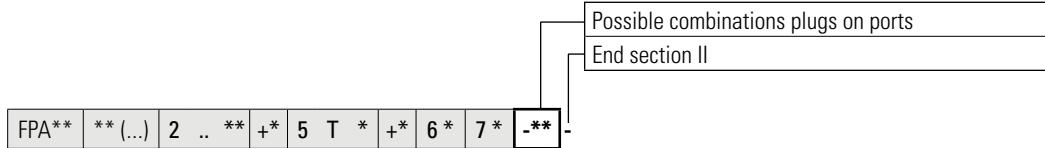
Flow control valves



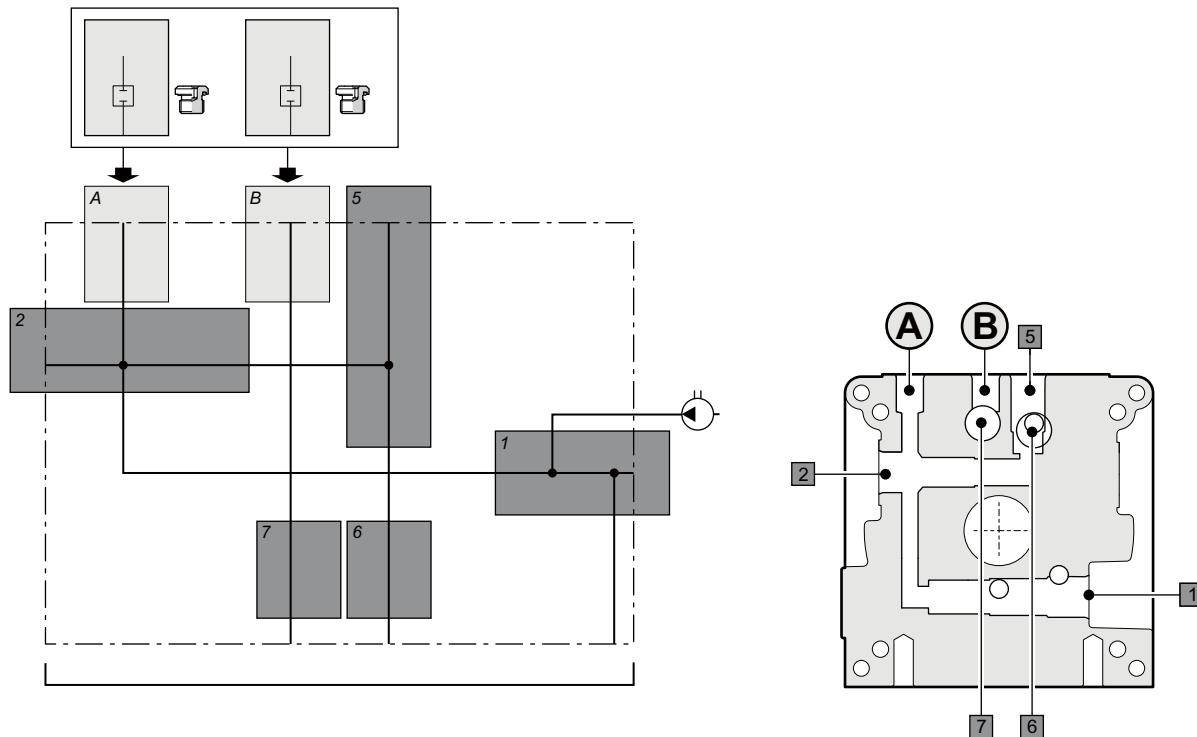
Flow control valves for return cavities "6-7"

6 *	7 *	Nominal flow at 120 bar	Code	Symbol	Drawing
A		0.7 l/min	VSC06100002		
B		1.1 l/min	VSC06120002		
C		2.1 l/min	VSC06130002		
E		3.2 l/min	VSC06150002		
G		4.7 l/min	VSC06190002		
K		6.3 l/min	VSC06220002		
N		7.5 l/min	VSC06240002		
Q		10.0 l/min	VSC06280002		
U		13.2 l/min	VSC06330002		
V		15.7 l/min	VSC06350002		

Sect. II - FPA Ports A-B



II
FPA



-** Combinations plugs on ports A-B

-**	P	T
-00	↑	↑
-02	⊗	↑
-03	↑	⊗
-06	⊗	⊗

Symbols description

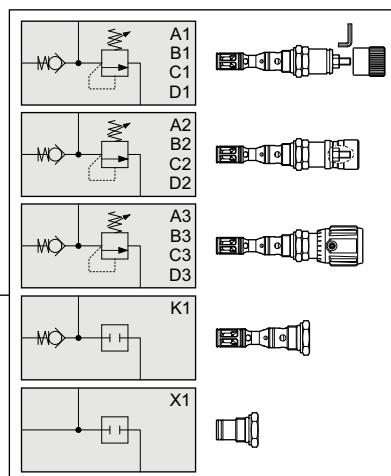
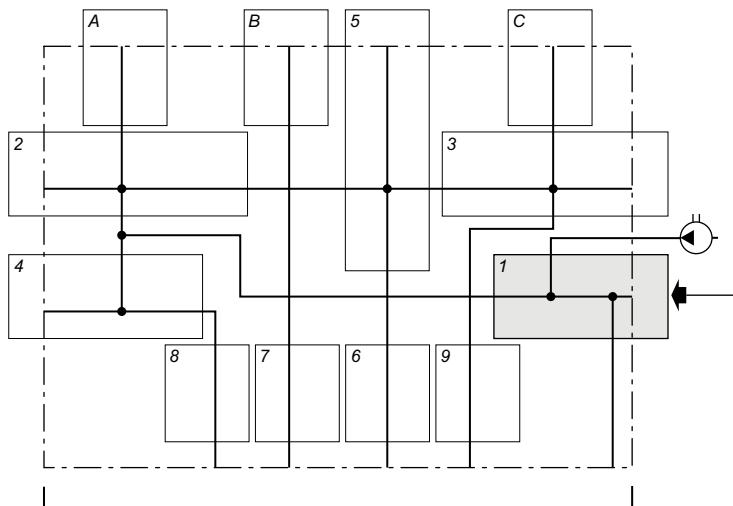
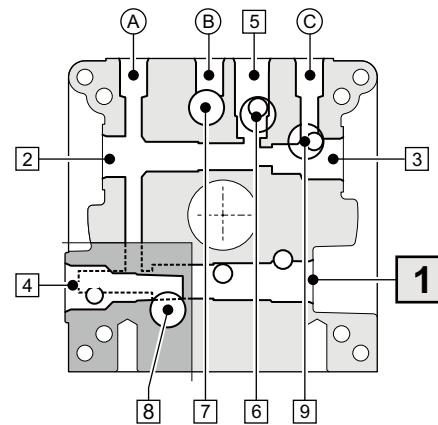
Type	Description	Thread	Code	Symbol	Drawing
⊗	Port closed with plug	G 1/4"	20024000		
		G 3/8"	Q26622255 (plug with OR)		
↑	Port open		—	—	—

Combination -00 to use with the standard blocks (page 85)

Sect. I - FPC Cavity 1



FPC**	*	*	(...)	Pressure relief valve - Check valve - Plug Setting type (or plug features) Special setting pressure relief valve (omit if not required)
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* * (...) Pressure relief valve with check valve

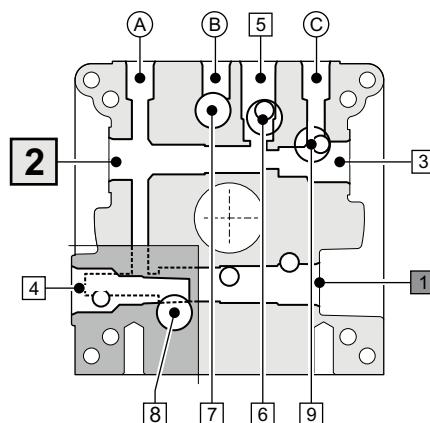
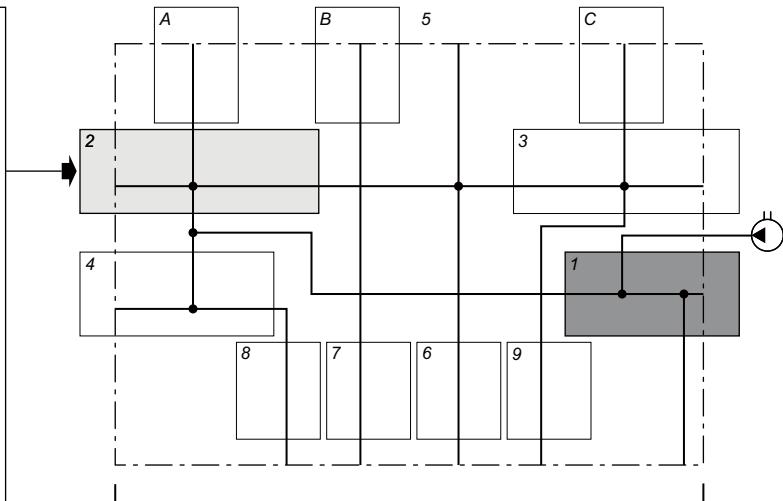
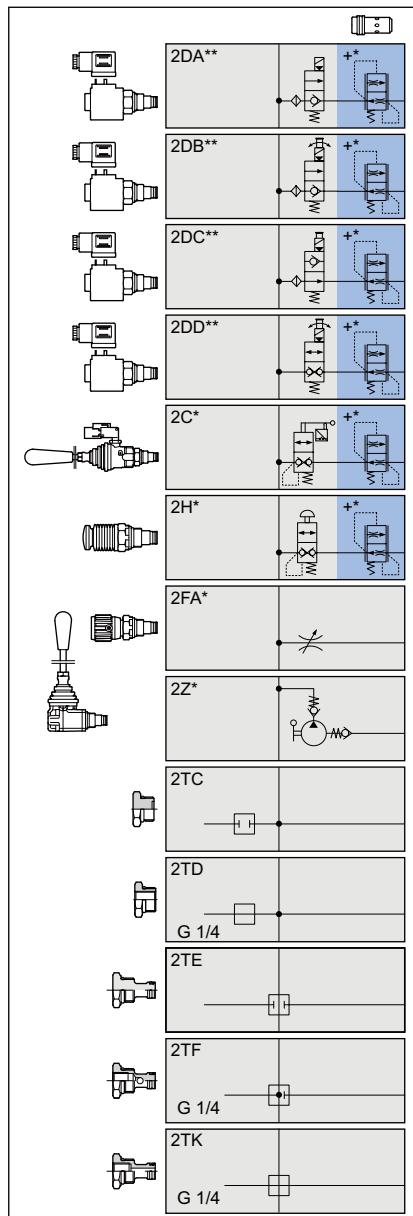
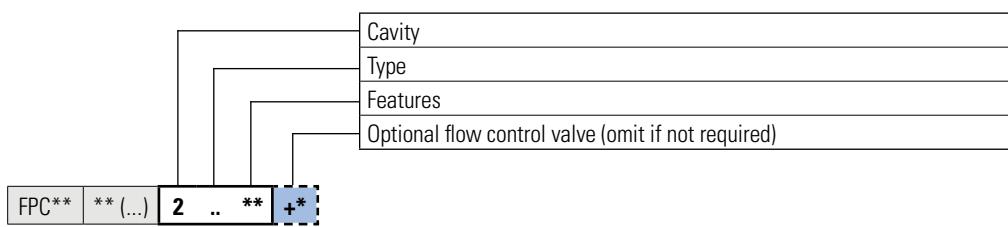
*	*	Pressure (bar)	STD setting (bar)	(...) Special setting (bar)	Setting type	Code	Symbol	Drawing
D	1	15 ÷ 50	30	15 ÷ 50 (5 to 5)	Detachable closing	CMPR04S00002		
	2				Non removable closing (1)	CMPR04P00002		
	3				Plastic knob	CMPR04M00002		
E	1	35 ÷ 110	50	35 ÷ 110 (5 to 5)	Detachable closing	CMPR04S01002		
	2				Non removable closing (1)	CMPR04P01002		
	3				Plastic knob	CMPR04M01002		
F	1	75 ÷ 220	150	75 ÷ 220 (5 to 5)	Detachable closing	CMPR04S02002		
	2				Non removable closing (1)	CMPR04P02002		
	3				Plastic knob	CMPR04M02002		
G	1	160 ÷ 290	180	160 ÷ 290 (10 to 10)	Detachable closing	CMPR04S03002		
	2				Non removable closing (1)	CMPR04P03002		
	3				Plastic knob	CMPR04M03002		

1 = Supplied assembled. Unassembled, see accessories page 89

* * Check valve and plug

*	*	Description	Code	Symbol	Drawing
K	1	Check valve - Opening pressure 0.5 bar	CRI0400001		
X	1	Plug	R78150100		

Sect. II - FPC Cavity 2



Flow control valves

Sect. II - FPC Cavity 2



2 DA ** **Piloted solenoid valves normally closed, without emergency (1)**

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRP0418NCASL003 + V86050002		
AB	Voltage 24 Vdc	CRP0418NCASM003 + V86050002		
AC	Voltage 24 Vac 50 Hz	CRP0418NCASA003 + V86050002		
AD	Voltage 115 Vac 50 Hz	CRP0418NCASJ003 + V86050002		
AE	Voltage 230 Vac 50 Hz	CRP0418NCASI003 + V86050002		

2 DB ** **Piloted solenoid valves normally open, with rotary emergency (1)**

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRP0418NCAEL003 + V86050002		
AB	Voltage 24 Vdc	CRP0418NCAEM003 + V86050002		
AC	Voltage 24 Vac 50 Hz	CRP0418NCAEA003 + V86050002		
AD	Voltage 115 Vac 50 Hz	CRP0418NCAEJ003 + V86050002		
AE	Voltage 230 Vac 50 Hz	CRP0418NCAEI003 + V86050002		

2 DC ** **Piloted solenoid valves normally open, with button emergency (1)**

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRP0418NAAEL003 + V86050002		
AB	Voltage 24 Vdc	CRP0418NAAEM003 + V86050002		
AC	Voltage 24 Vac 50/60 Hz (RAC with rectifier)	CRP0418NAAE2003 + V86200002		
AD	Voltage 115 Vac 50 - 120 Vac 60 Hz (RAC with rectifier)	CRP0418NAAEZ003 + V86200002		
AE	Voltage 230 Vac 50 - 240 Vac 60 Hz (RAC with rectifier)	CRP0418NAAEX003 + V86200002		
AF	Voltage 48 Vdc	CRP0418NAAEN003 + V86050002		

2 DD ** **Direct operated solenoid valve normally closed, with button emergency (1)**

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRD0418NCAEL002 + V86050002		
AB	Voltage 24 Vdc	CRD0418NCAEM002 + V86050002		

2 C * **Lever operated valve**

*	Description	Code	Symbol	Drawing
A	Without microswitch	CMF04L001		
B	With microswitch	CMF04M001		

1 = Valves supplied with connector. Without connector see accessories page 89

Sect. II - FPC Cavity 2



2 H * +* Button operated valves

**	Description	Code	Symbol	Drawing
A	Push-button control	CPE04P000.1		

2 .. ** +* Flow control valves (1)

*	Flow	Code	Symbol	Drawing
+B	1.4 l/min	VSC040101		
+C	2.3 l/min	VSC040201		
+E	2.8 l/min	VSC040301		
+G	4.3 l/min	VSC040401		
+J	5.2 l/min	VSC040601		
+L	6.5 l/min	VSC040801		
+N	8.0 l/min	VSC041101		
+Q	11.1 l/min	VSC041601		

(1) The flow control valves can be installed with solenoid valves, with manual controls and with push-button valves.

2 FA * Bidirectional flow control valves not compensated

*	Description	Code	Symbol	Drawing
A	Screw adjustment	CSB04C0000		
B	Plastic knob adjustment	CSB04V0000		

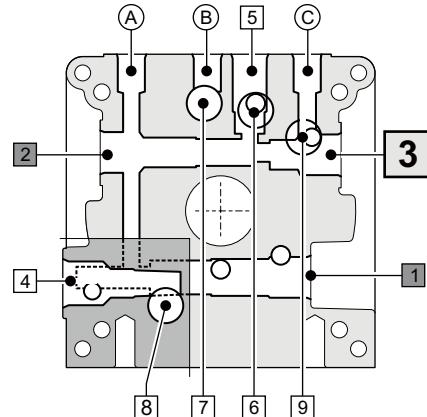
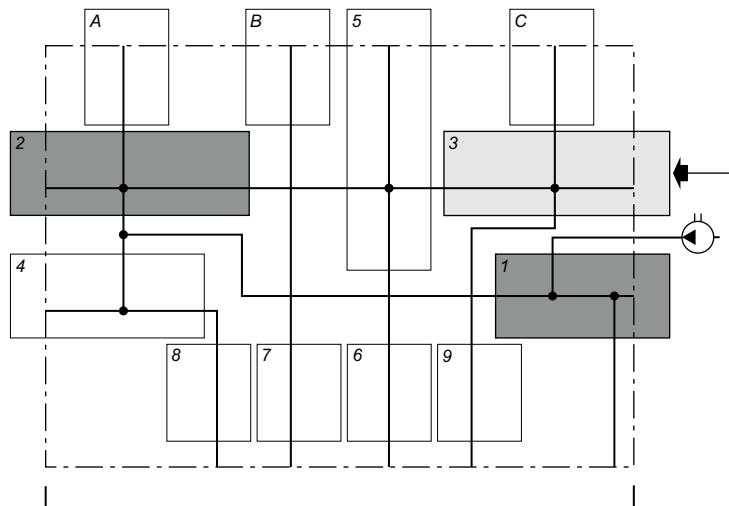
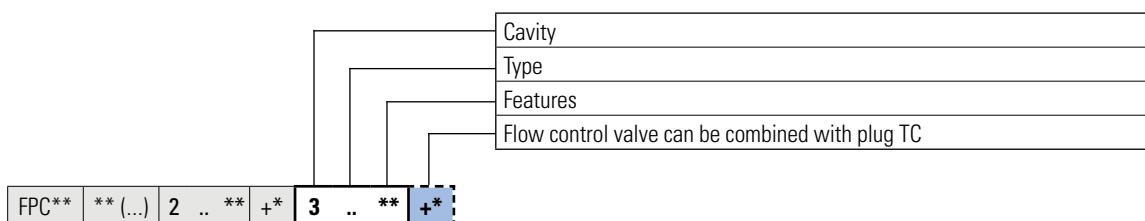
2 Z * Hand pumps

*	Description	Code	Symbol	Drawing
A	Cilindrata 1 cc	CPM0410001		
B	Cilindrata 2 cc	CPM0420001		

2 T * Plugs and fittings

*	Description	Code	Symbol	Drawing
C	Plug 3/4 16 UNF	R78150099		
D	Fitting 3/4 16 UNF - G1/4	20001700		
E	Long plug 3/4 16 UNF	20003800		
F	Fitting 3/4 16 UNF - G1/4	20009400		
K	Fitting 3/4 16 UNF DIN - G1/4	20018000		

Sect. II - FPC Cavity 3



3DD*		
3H*		
3FA*		
3FB*		
3A**		
3B*		
+ * 3TC		
3TD		
3TE		
3TF		
3TK		

Flow control valves

Sect. II - FPC Cavity 3



3 DD **

Piloted solenoid valves normally closed, with emergency (1)

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRD0418NCAEL002 + V86050002		
AB	Voltage 24 Vdc	CRD0418NCAEM002 + V86050002		

3 H *

Button operated valves

*	Descrizione	Codice (elettrovalvola + connettore)	Simbolo	Disegno
A	Push-button control	CPE04P000.1		

II

FPC

3 FA *

Bidirectional flow control valves not compensated

*	Description	Code (valve + connector)	Symbol	Drawing
A	Screw adjustment	CSB04C0000		
B	Plastic knob adjustment	CSB04V0000		

3 FB *

Unidirectional flow control valves compensated

*	Description	Code (valve + connector)	Symbol	Drawing
A	Screw adjustment	CSC04C0000		
B	Plastic knob adjustment	CSC04V0000		

3 A **

Pressure relief valves

**	Description	Regolazione (bar)	Code	Symbol	Drawing
AD	Short screw adjustment	Min 15 - Max 50	CMP04AS0002		
		Min 35 - Max 110	CMP04AS1002		
		Min 75 - Max 220	CMP04AS2002		
		Min 160 - Max 290	CMP04AS3002		
BD	Screw adjustment	Min 15 - Max 50	CMP04AC0002		
		Min 35 - Max 110	CMP04AC1002		
		Min 75 - Max 220	CMP04AC2002		
		Min 160 - Max 290	CMP04AC3002		
CE	Plastic knob adjustment	Min 15 - Max 50	CMP04AM0002		
		Min 35 - Max 110	CMP04AM1002		
		Min 75 - Max 220	CMP04AM2002		
		Min 160 - Max 290	CMP04AM3002		
DE	Short screw + sealed cap	Min 15 - Max 50	CMP04AP0002		
		Min 35 - Max 110	CMP04AP1002		
		Min 75 - Max 220	CMP04AP2002		
		Min 160 - Max 290	CMP04AP3002		

1 = Valves supplied with connector. Without connector see accessories page 89

Sect. II - FPC Cavity 3



3 B * One-way check valves

*	Description	Code (valve + connector)	Symbol	Drawing
A	0.7 bar (Standard)	CRU0400002	—○—	
B	4.5 bar	CRU0404002		
C	10 bar	CRU0410002		

3 T * +* Plugs and fittings

*	Description	Code	Symbol	Drawing
C	Plug 3/4 16 UNF (1)	R78150099		
D	Fitting 3/4 16 UNF - G1/4	20001700		
E	Long plug 3/4 16 UNF	20003800		
F	Fitting 3/4 16 UNF - G1/4	20009400		
K	Fitting 3/4 16 UNF - DIN G1/4	20018000		

3 T C +* Flow control valves (1)

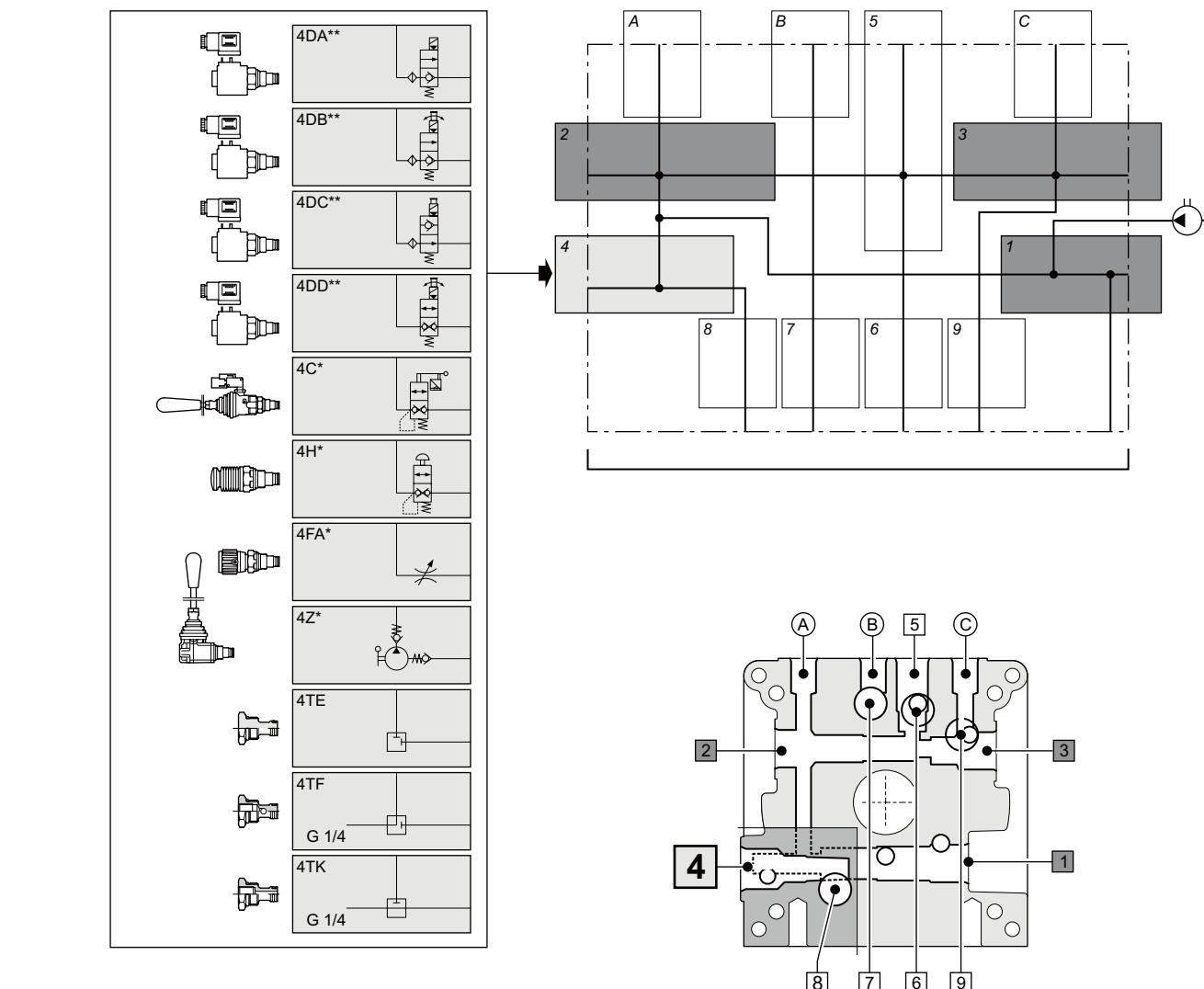
*	Flow	Code	Symbol	Drawing
+B	1.4 l/min	VSC040101		
+C	2.3 l/min	VSC040201		
+E	2.8 l/min	VSC040301		
+G	4.3 l/min	VSC040401		
+J	5.2 l/min	VSC040601		
+L	6.5 l/min	VSC040801		
+N	8.0 l/min	VSC041101		
+Q	11.1 l/min	VSC041601		

(1) The flow control valves can be installed with the plug TC.

Sect. II - FPC Cavity 4



FPC** ** (...) 2 .. ** +* 3 .. ** +* **4 .. ****



Sect. II - FPC Cavity 4



4 DA **

Piloted solenoid valves normally closed, without emergency (1)

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRP0418NCASL003 + V86050002		
AB	Voltage 24 Vdc	CRP0418NCASM003 + V86050002		
AC	Voltage 24 Vac 50 Hz	CRP0418NCASA003 + V86050002		
AD	Voltage 115 Vac 50 Hz	CRP0418NCASJ003 + V86050002		
AE	Voltage 230 Vac 50 Hz	CRP0418NCASI003 + V86050002		

4 DB **

Piloted solenoid valves normally open, with rotary emergency (1)

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRP0418NCAEL003 + V86050002		
AB	Voltage 24 Vdc	CRP0418NCAEM003 + V86050002		
AC	Voltage 24 Vac 50 Hz	CRP0418NCAEA003 + V86050002		
AD	Voltage 115 Vac 50 Hz	CRP0418NCAEJ003 + V86050002		
AE	Voltage 230 Vac 50 Hz	CRP0418NCAEI003 + V86050002		

II

FPC

4 DC **

Piloted solenoid valves normally open, with button emergency (1)

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRP0418NAAEL003 + V86050002		
AB	Voltage 24 Vdc	CRP0418NAAEM003 + V86050002		
AC	Voltage 24 Vac 50/60 Hz (RAC with rectifier)	CRP0418NAAE2003 + V86200002		
AD	Voltage 115 Vac 50 - 120 Vac 60 Hz (RAC with rectifier)	CRP0418NAAEZ003 + V86200002		
AE	Voltage 230 Vac 50 - 240 Vac 60 Hz (RAC with rectifier)	CRP0418NAAEX003 + V86200002		
AF	Voltage 48 Vdc	CRP0418NAAEN003 + V86050002		

4 DD **

Direct operated solenoid valve normally closed, with button emergency (1)

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRD0418NCAEL002 + V86050002		
AB	Voltage 24 Vdc	CRD0418NCAEM002 + V86050002		

1 = Valves supplied with connector. Without connector see accessories page 89

Sect. II - FPC Cavity 4



4 C * Lever operated valve

*	Description	Code	Symbol	Drawing
A	Without microswitch	CMF04L001		
B	With microswitch	CMF04M001		

4 H * Button operated valves

**	Description	Code	Symbol	Drawing
A	Push-button control	CPE04P000.1		

II
FPC

4 FA * Bidirectional flow control valves not compensated

*	Description	Code	Symbol	Drawing
A	Screw adjustment	CSB04C0000		
B	Plastic knob adjustment	CSB04V0000		

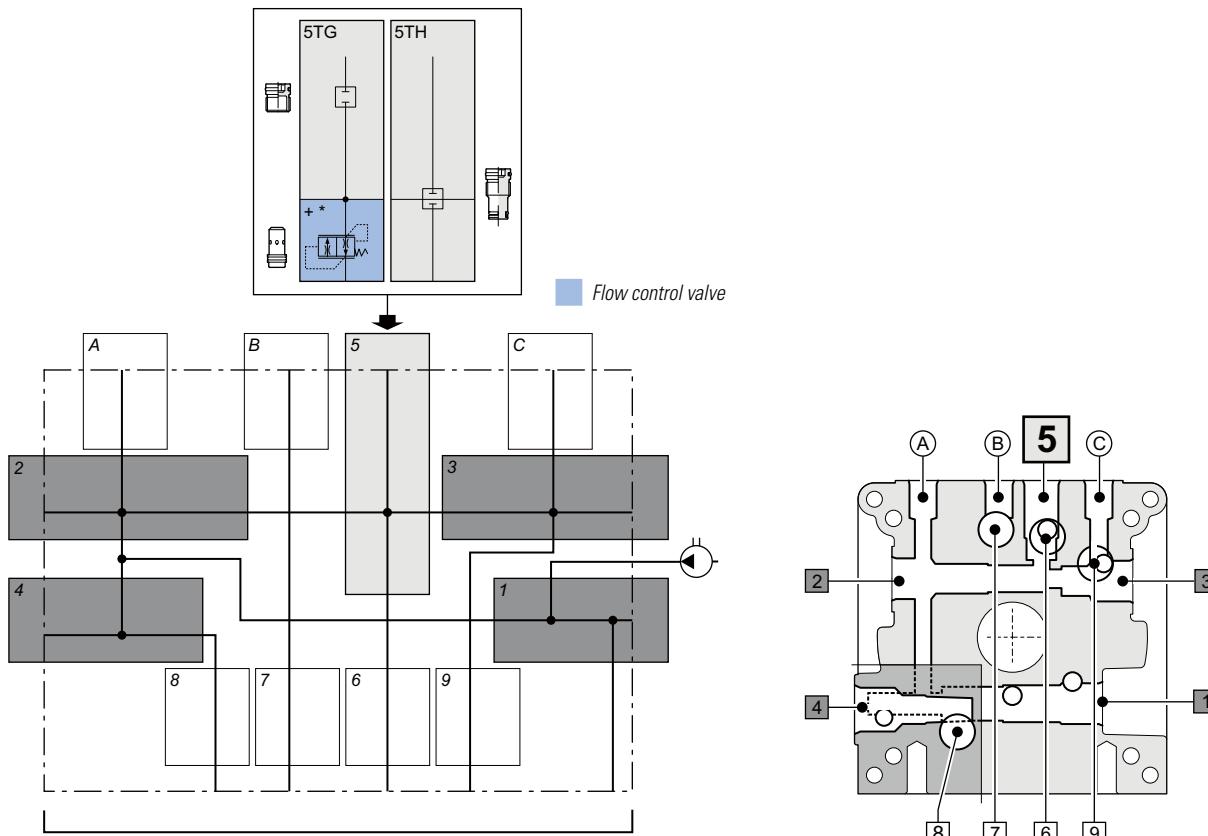
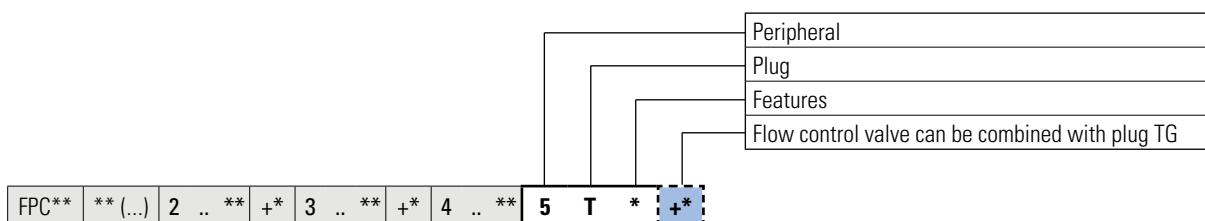
4 Z * Hand pumps

*	Description	Code	Symbol	Drawing
A	Cilindrata 1 cc	CPM0410001		
B	Cilindrata 2 cc	CPM0420001		

4 T * Plugs and fittings

*	Description	Code	Symbol	Drawing
E	Long plug 3/4 16 UNF	20003800		
F	Fitting 3/4 16 UNF - G1/4	20009400		
K	Fitting 3/4 16 UNF DIN - G1/4	20018000		

Sect. II - FPC Cavity 5



5 T * +* Plugs

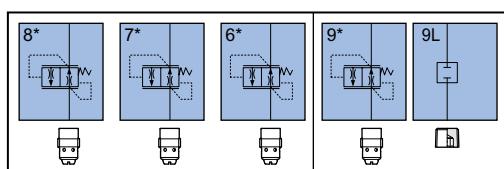
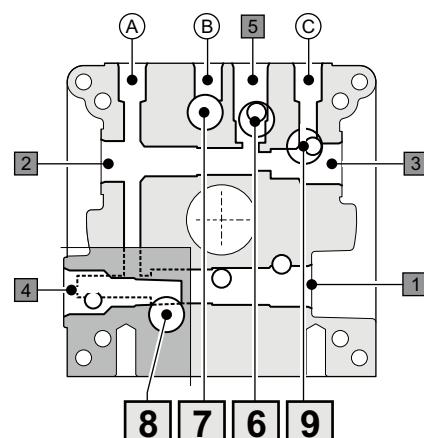
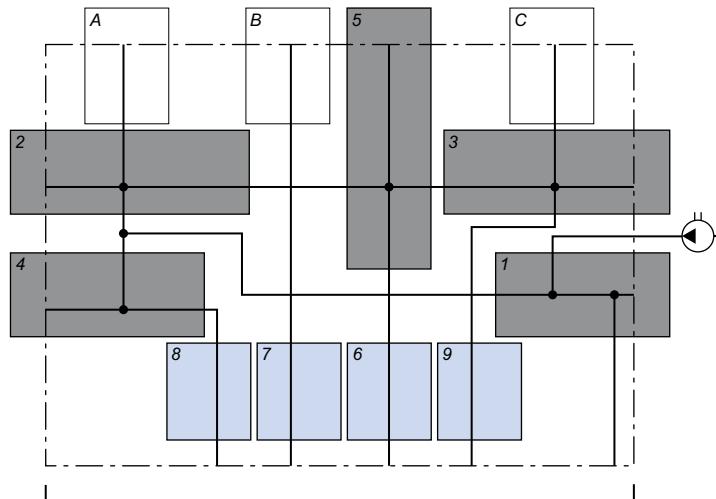
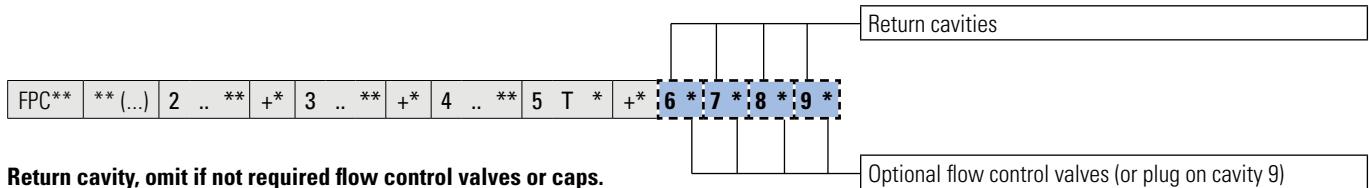
*	Description	Code	Symbol	Drawing
G	Plug M16x1.5 (1)	R78150104		
H	Long plug M16x1.5	R78150101		

5 T G +* Flow control valves (1)

*	Flow	Code	Symbol	Drawing
+B	1.4 l/min	VSC040101		
+C	2.3 l/min	VSC040201		
+E	2.8 l/min	VSC040301		
+G	4.3 l/min	VSC040401		
+J	5.2 l/min	VSC040601		
+L	6.5 l/min	VSC040801		
+N	8.0 l/min	VSC041101		
+Q	11.1 l/min	VSC041601		

(1) The flow control valves can be installed with the plug TG.

Sect. II - FPC Cavity 6-7-8-9



Optional flow control valves (or plug on cavity 9).

6	*
7	*
8	
9	
A	
B	
C	
E	
G	
K	
N	
Q	
U	
V	

Flow control valves for return cavities 6-7-8-9"

Nominal flow at 120 bar	Code	Symbol	Drawing
0.7 l/min	VSC06100002		
1.1 l/min	VSC06120002		
2.1 l/min	VSC06130002		
3.2 l/min	VSC06150002		
4.7 l/min	VSC06190002		
6.3 l/min	VSC06220002		
7.5 l/min	VSC06240002		
10.0 l/min	VSC06280002		
13.2 l/min	VSC06330002		
15.7 l/min	VSC06350002		

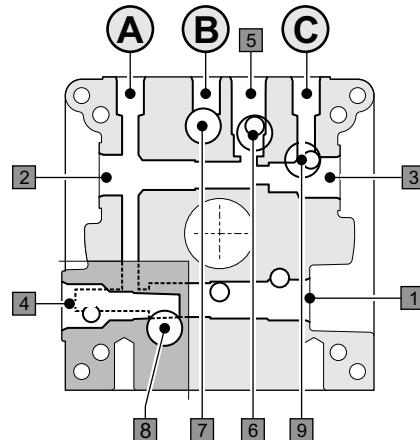
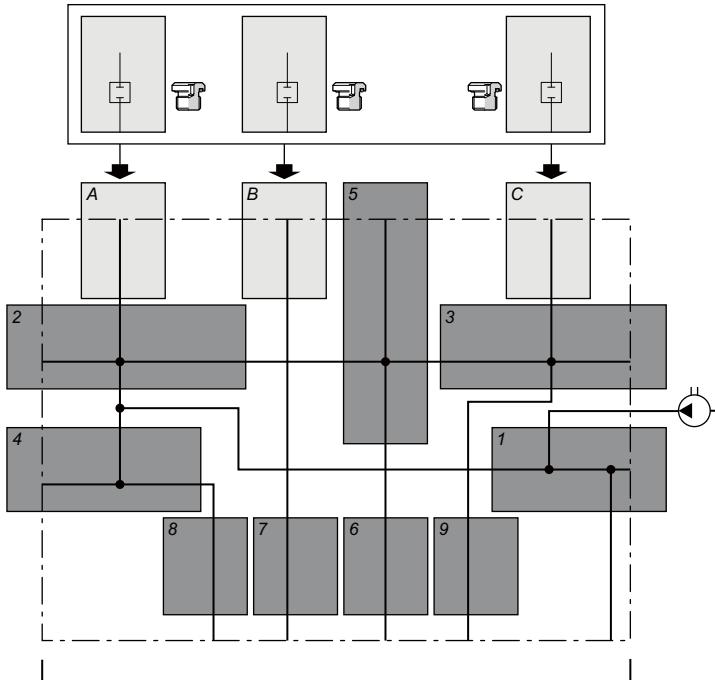
9 T	*
M	Conical plug G3/8

Plugs for return cavity "9"

Description	Code	Symbol	Drawing
Conical plug G3/8	Q26620350		

FPC** ** (...) 2 .. ** +* 3 .. ** +* 4 .. ** 5 T * +* 6 * 7 * 8 * 9 * -** -

Combinations plugs on ports
End section II



-** Combinations plugs on ports A-B-C

-**	A	B	C
-00	↑	↑	⊗
-01	↑	↑	↑
-02	⊗	↑	↑
-03	↑	⊗	↑
-05	↑	⊗	⊗
-06	⊗	⊗	↑
-07	⊗	↑	⊗
-08	⊗	⊗	⊗

Symbols description

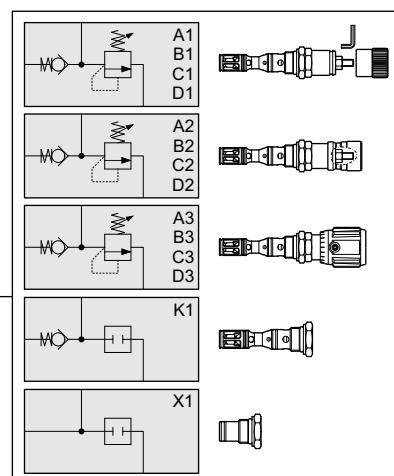
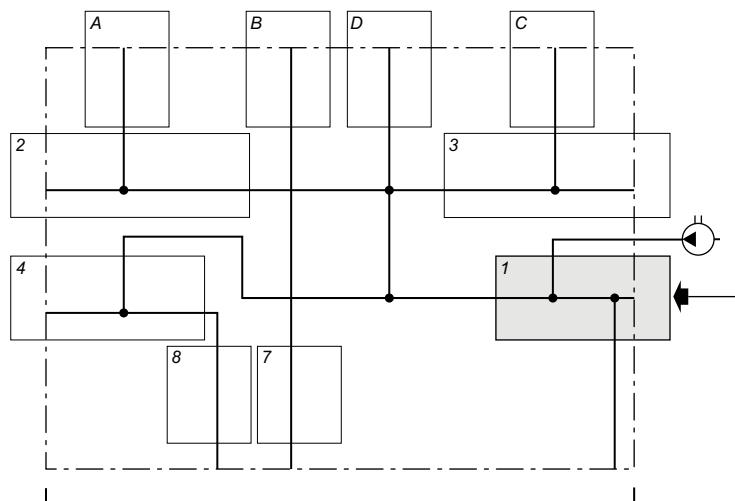
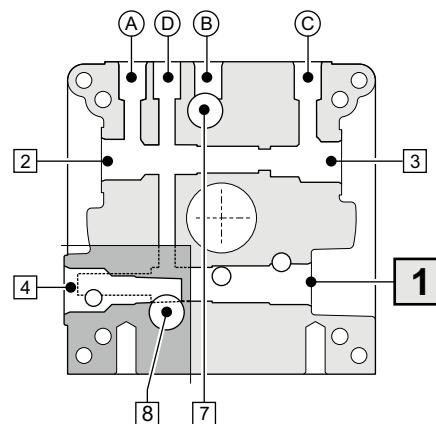
Type	Description	Thread	Code	Symbol	Drawing
⊗	Port closed with plug	G 1/4"	20024000		
		G 3/8"	Q26630006 (plug with OR)		
↑	Port open		—	—	—

Combination -00 to use with the standard blocks (page 85)

Sect. I - FPL Cavity 1



FPL**	*	*	(...)	Pressure relief valve - Check valve - Plug Setting type (or plug features) Special setting pressure relief valve (omit if not required)
-------	---	---	-------	---



* * (...) Pressure relief valve with check valve

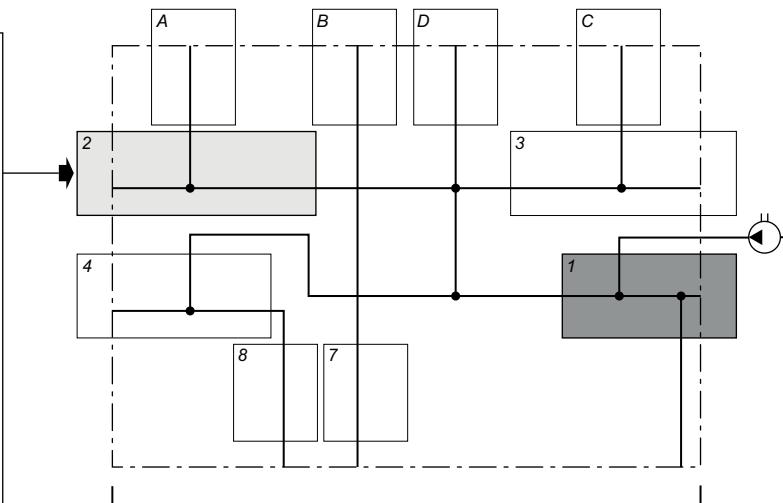
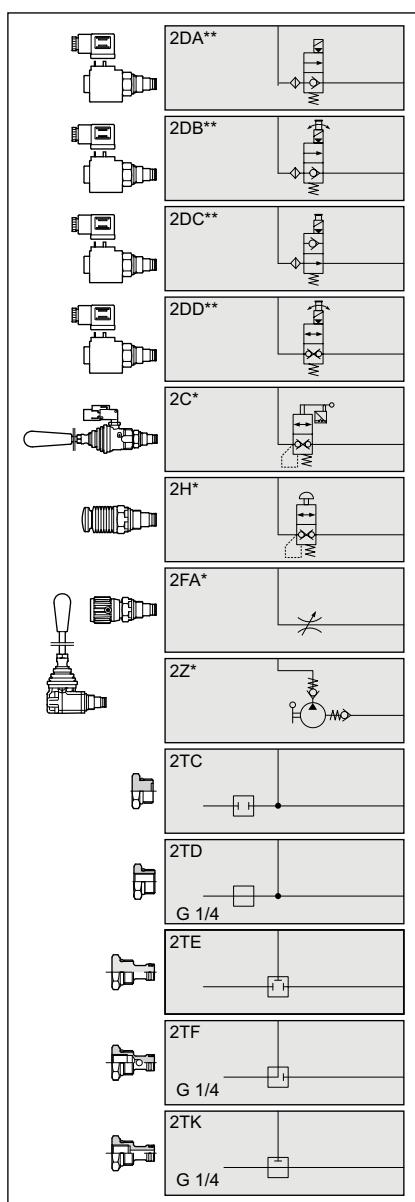
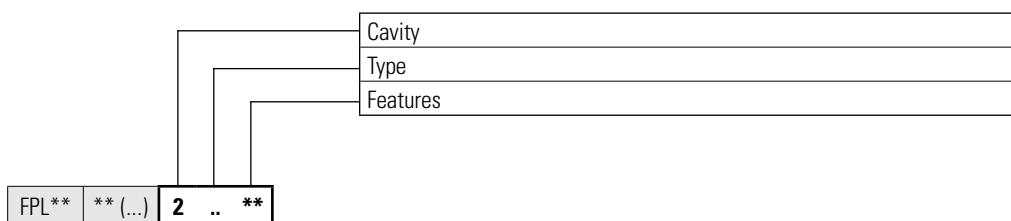
*	*	Pressure (bar)	STD setting (bar)	(...) Special setting (bar)	Setting type	Code	Symbol	Drawing
D	1	15 ÷ 50	30	15 ÷ 50 (5 to 5)	Detachable closing	CMPR04S00002		
	2				Non removable closing (1)	CMPR04P00002		
	3				Plastic knob	CMPR04M00002		
E	1	35 ÷ 110	50	35 ÷ 110 (5 to 5)	Detachable closing	CMPR04S01002		
	2				Non removable closing (1)	CMPR04P01002		
	3				Plastic knob	CMPR04M01002		
F	1	75 ÷ 220	150	75 ÷ 220 (5 to 5)	Detachable closing	CMPR04S02002		
	2				Non removable closing (1)	CMPR04P02002		
	3				Plastic knob	CMPR04M02002		
G	1	160 ÷ 290	180	160 ÷ 290 (10 to 10)	Detachable closing	CMPR04S03002		
	2				Non removable closing (1)	CMPR04P03002		
	3				Plastic knob	CMPR04M03002		

1 = Supplied assembled. Unassembled, see accessories page 89

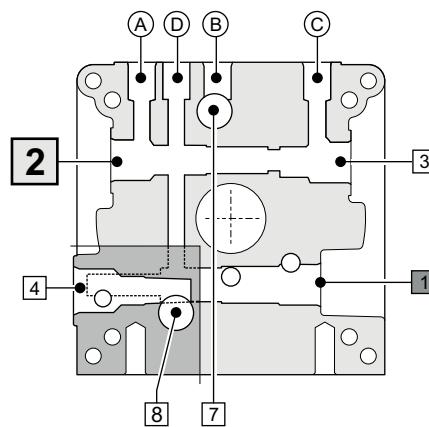
* * Check valve and plug

*	*	Description	Code	Symbol	Drawing
K	1	Check valve - Opening pressure 0.5 bar	CRI0400001		
X	1	Plug	R78150100		

Sect. II - FPL Cavity 2



II
FPL



Sect. II - FPL Cavity 2



2 DA **

Piloted solenoid valves normally closed, without emergency (1)

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRP0418NCASL003 + V86050002		
AB	Voltage 24 Vdc	CRP0418NCASM003 + V86050002		
AC	Voltage 24 Vac 50 Hz	CRP0418NCASA003 + V86050002		
AD	Voltage 115 Vac 50 Hz	CRP0418NCASJ003 + V86050002		
AE	Voltage 230 Vac 50 Hz	CRP0418NCASI003 + V86050002		

2 DB **

Piloted solenoid valves normally open, with rotary emergency (1)

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRP0418NCAEL003 + V86050002		
AB	Voltage 24 Vdc	CRP0418NCAEM003 + V86050002		
AC	Voltage 24 Vac 50 Hz	CRP0418NCAEA003 + V86050002		
AD	Voltage 115 Vac 50 Hz	CRP0418NCAEJ003 + V86050002		
AE	Voltage 230 Vac 50 Hz	CRP0418NCAEI003 + V86050002		

II

FPL

2 DC **

Piloted solenoid valves normally open, with button emergency (1)

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRP0418NAAEL003 + V86050002		
AB	Voltage 24 Vdc	CRP0418NAAEM003 + V86050002		
AC	Voltage 24 Vac 50/60 Hz (RAC with rectifier)	CRP0418NAAE2003 + V86200002		
AD	Voltage 115 Vac 50 - 120 Vac 60 Hz (RAC with rectifier)	CRP0418NAAEZ003 + V86200002		
AE	Voltage 230 Vac 50 - 240 Vac 60 Hz (RAC with rectifier)	CRP0418NAAEX003 + V86200002		
AF	Voltage 48 Vdc	CRP0418NAAEN003 + V86050002		

2 DD **

Direct operated solenoid valve normally closed, with button emergency (1)

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRD0418NCAEL002 + V86050002		
AB	Voltage 24 Vdc	CRD0418NCAEM002 + V86050002		

2 C *

Lever operated valve

*	Description	Code	Symbol	Drawing
A	Without microswitch	CMF04L001		
B	With microswitch	CMF04M001		

1 = Valves supplied with connector. Without connector see accessories page 89

Sect. II - FPL Cavity 2



2 H * Button operated valves

**	Description	Code	Symbol	Drawing
A	Push-button control	CPE04P000.1		

2 FA * Bidirectional flow control valves not compensated

*	Description	Code	Symbol	Drawing
A	Screw adjustment	CSB04C0000		
B	Plastic knob adjustment	CSB04V0000		

2 Z * Hand pumps

*	Description	Code	Symbol	Drawing
A	Cilindrata 1 cc	CPM0410001		
B	Cilindrata 2 cc	CPM0420001		

II

FPL

2 T * Plugs and fittings

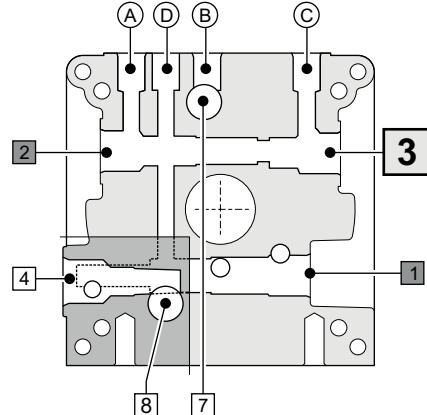
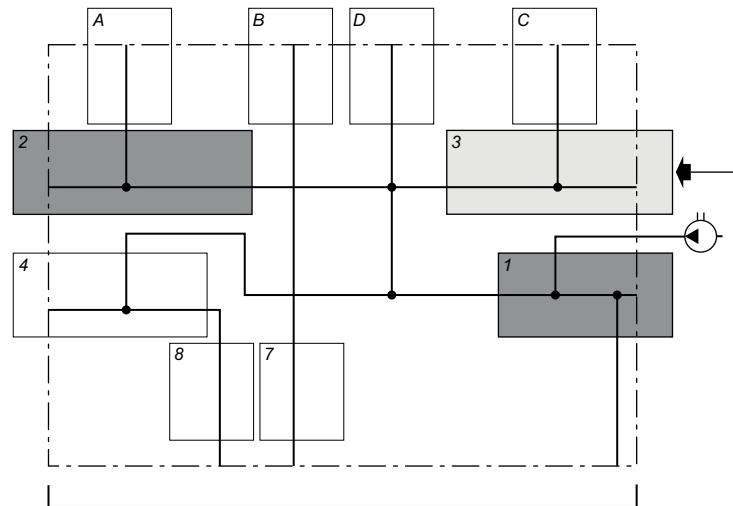
*	Description	Code	Symbol	Drawing
C	Plug 3/4 16 UNF	R78150099		
D	Fitting 3/4 16 UNF - G1/4	20001700		
E	Long plug 3/4 16 UNF	20003800		
F	Fitting 3/4 16 UNF - G1/4	20009400		
K	Fitting 3/4 16 UNF DIN - G1/4	20018000		

Sect. II - FPL Cavity 3



FPL** ** (...) 2 .. ** 3 .. **

Cavity
Type
Features



3DA*		
3DB*		
3DC*		
3DD*		
3H*		
3FA*		
3FB*		
3A**		
3B*		
3TD		
3TE		
3TF		
3TK		

Sect. II - FPL Cavity 3



3 DA **

Piloted solenoid valves normally closed, without emergency (1)

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRP0418NCASL003 + V86050002		
AB	Voltage 24 Vdc	CRP0418NCASM003 + V86050002		
AC	Voltage 24 Vac 50 Hz	CRP0418NCASA003 + V86050002		
AD	Voltage 115 Vac 50 Hz	CRP0418NCASJ003 + V86050002		
AE	Voltage 230 Vac 50 Hz	CRP0418NCASI003 + V86050002		

3 DB **

Piloted solenoid valves normally open, with rotary emergency (1)

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRP0418NCAEL003 + V86050002		
AB	Voltage 24 Vdc	CRP0418NCAEM003 + V86050002		
AC	Voltage 24 Vac 50 Hz	CRP0418NCAEA003 + V86050002		
AD	Voltage 115 Vac 50 Hz	CRP0418NCAEJ003 + V86050002		
AE	Voltage 230 Vac 50 Hz	CRP0418NCAEI003 + V86050002		

3 DC **

Piloted solenoid valves normally open, with button emergency (1)

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRP0418NAAEL003 + V86050002		
AB	Voltage 24 Vdc	CRP0418NAAEM003 + V86050002		
AC	Voltage 24 Vac 50/60 Hz (RAC with rectifier)	CRP0418NAAE2003 + V86200002		
AD	Voltage 115 Vac 50 - 120 Vac 60 Hz (RAC with rectifier)	CRP0418NAAEZ003 + V86200002		
AE	Voltage 230 Vac 50 - 240 Vac 60 Hz (RAC with rectifier)	CRP0418NAAEX003 + V86200002		
AF	Voltage 48 Vdc	CRP0418NAAEN003 + V86050002		

3 DD **

Direct operated solenoid valve normally closed, with button emergency (1)

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRD0418NCAEL002 + V86050002		
AB	Voltage 24 Vdc	CRD0418NCAEM002 + V86050002		

3 H *

Button operated valves

*	Descrizione	Codice (elettrovalvola + connettore)	Simbolo	Disegno
A	Push-button control	CPE04P000.1		

3 FA *

Bidirectional flow control valves not compensated

*	Description	Code (valve + connector)	Symbol	Drawing
A	Screw adjustment	CSB04C0000		
B	Plastic knob adjustment	CSB04V0000		

1 = Valves supplied with connector. Without connector see accessories page 89

Sect. II - FPL Cavity 3



3 FB * Unidirectional flow control valves compensated

*	Description	Code (valve + connector)	Symbol	Drawing
A	Screw adjustment	CSC04C0000		
B	Plastic knob adjustment	CSC04V0000		

3 A ** Pressure relief valves

**	Description	Regolazione (bar)	Code	Symbol	Drawing
AD	Short screw adjustment	Min 15 - Max 50	CMPAS0002		
		Min 35 - Max 110	CMPAS1002		
		Min 75 - Max 220	CMPAS2002		
		Min 160 - Max 290	CMPAS3002		
BE	Screw adjustment	Min 15 - Max 50	CMPAC0002		
		Min 35 - Max 110	CMPAC1002		
		Min 75 - Max 220	CMPAC2002		
		Min 160 - Max 290	CMPAC3002		
CE	Plastic knob adjustment	Min 15 - Max 50	CMPAM0002		
		Min 35 - Max 110	CMPAM1002		
		Min 75 - Max 220	CMPAM2002		
		Min 160 - Max 290	CMPAM3002		
DD	Short screw + sealed cap	Min 15 - Max 50	CMPAP0002		
		Min 35 - Max 110	CMPAP1002		
		Min 75 - Max 220	CMPAP2002		
		Min 160 - Max 290	CMPAP3002		

3 B * One-way check valves

*	Description	Code (valve + connector)	Symbol	Drawing
A	0.7 bar (Standard)	CRU0400002		
B	4.5 bar	CRU0404002		
C	10 bar	CRU0410002		

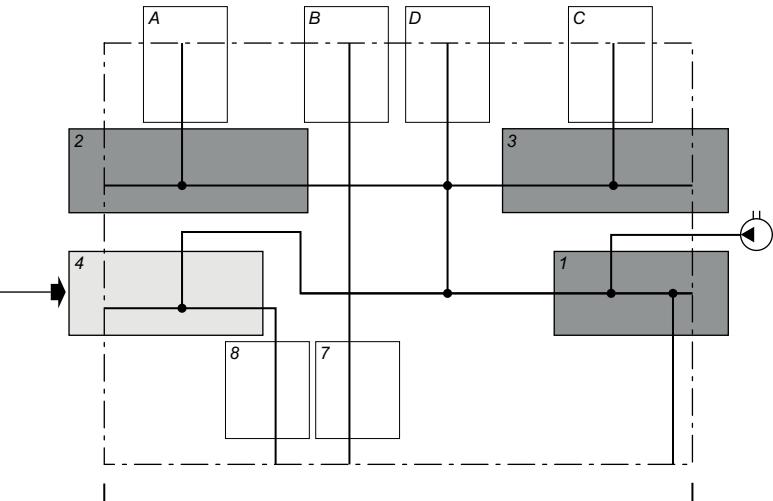
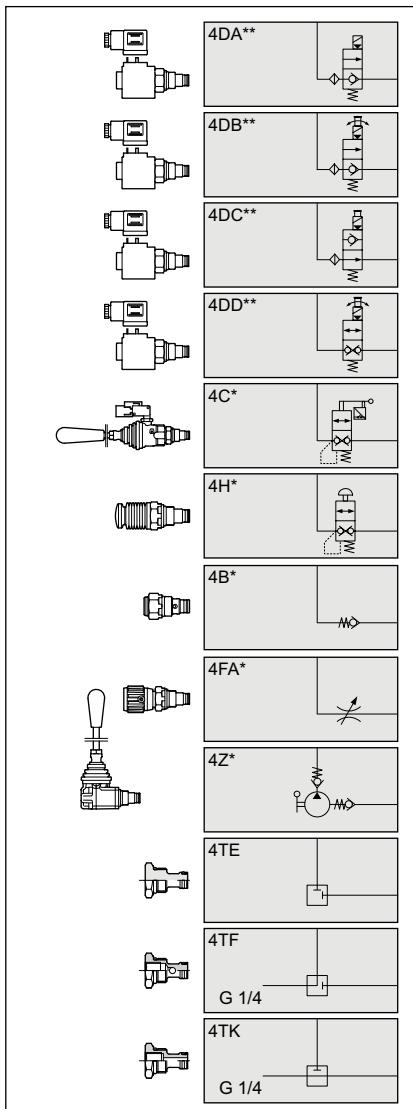
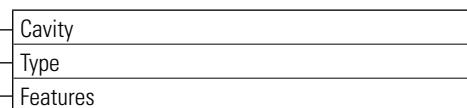
3 T * Plugs and fittings

*	Description	Code	Symbol	Drawing
D	Fitting 3/4 16 UNF - G1/4	20001700		
E	Long plug 3/4 16 UNF	20003800		
F	Fitting 3/4 16 UNF - G1/4	20009400		
K	Fitting 3/4 16 UNF - DIN G1/4	20018000		

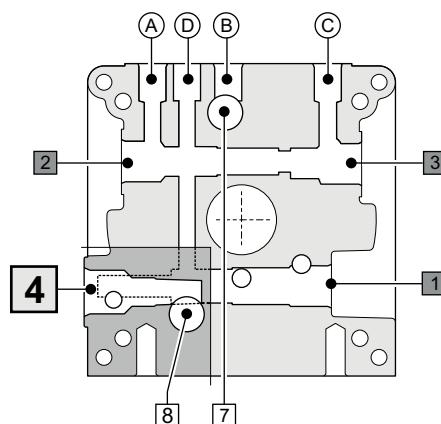
Sect. II - FPL Cavity 4



FPL** ** (...) 2 .. ** 3 .. ** 4 .. **



II
FPL



Sect. II - FPL Cavity 4



4 DA **

Piloted solenoid valves normally closed, without emergency (1)

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRP0418NCASL003 + V86050002		
AB	Voltage 24 Vdc	CRP0418NCASM003 + V86050002		
AC	Voltage 24 Vac 50 Hz	CRP0418NCASA003 + V86050002		
AD	Voltage 115 Vac 50 Hz	CRP0418NCASJ003 + V86050002		
AE	Voltage 230 Vac 50 Hz	CRP0418NCASI003 + V86050002		

4 DB **

Piloted solenoid valves normally open, with rotary emergency (1)

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRP0418NCAEL003 + V86050002		
AB	Voltage 24 Vdc	CRP0418NCAEM003 + V86050002		
AC	Voltage 24 Vac 50 Hz	CRP0418NCAEA003 + V86050002		
AD	Voltage 115 Vac 50 Hz	CRP0418NCAEJ003 + V86050002		
AE	Voltage 230 Vac 50 Hz	CRP0418NCAEI003 + V86050002		

II

FPL

4 DC **

Piloted solenoid valves normally open, with button emergency (1)

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRP0418NAAEL003 + V86050002		
AB	Voltage 24 Vdc	CRP0418NAAEM003 + V86050002		
AC	Voltage 24 Vac 50/60 Hz (RAC with rectifier)	CRP0418NAAE2003 + V86200002		
AD	Voltage 115 Vac 50 - 120 Vac 60 Hz (RAC with rectifier)	CRP0418NAAEZ003 + V86200002		
AE	Voltage 230 Vac 50 - 240 Vac 60 Hz (RAC with rectifier)	CRP0418NAAEX003 + V86200002		
AF	Voltage 48 Vdc	CRP0418NAAEN003 + V86050002		

4 DD **

Direct operated solenoid valve normally closed, with button emergency (1)

**	Description	Code (valve + connector)	Symbol	Drawing
AA	Voltage 12 Vdc	CRD0418NCAEL002 + V86050002		
AB	Voltage 24 Vdc	CRD0418NCAEM002 + V86050002		

4 C *

Lever operated valve

*	Description	Code	Symbol	Drawing
A	Without microswitch	CMF04L001		
B	With microswitch	CMF04M001		

1 = Valves supplied with connector. Without connector see accessories page 89

Sect. II - FPL Cavity 4



4 B * One-way check valves

*	Description	Code (valve + connector)	Symbol	Drawing
A	0.7 bar (Standard)	CRU0400002		
B	4.5 bar	CRU0404002		
C	10 bar	CRU0410002		

4 H * Button operated valves

**	Description	Code	Symbol	Drawing
A	Push-button control	CPE04P000.1		

4 FA * Bidirectional flow control valves not compensated

*	Description	Code	Symbol	Drawing
A	Screw adjustment	CSB04C0000		
B	Plastic knob adjustment	CSB04V0000		

4 Z * Hand pumps

*	Description	Code	Symbol	Drawing
A	Cilindrata 1 cc	CPM0410001		
B	Cilindrata 2 cc	CPM0420001		

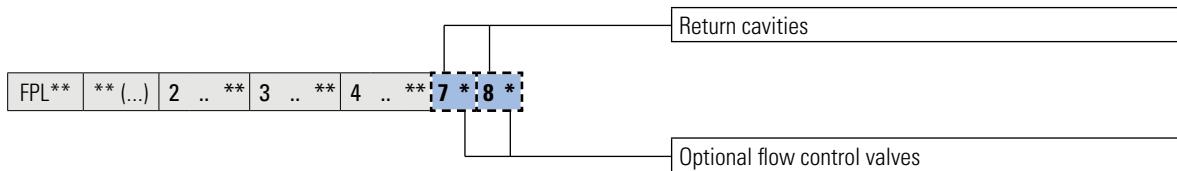
4 T * Plugs and fittings

*	Description	Code	Symbol	Drawing
E	Long plug 3/4 16 UNF	20003800		
F	Fitting 3/4 16 UNF - G1/4	20009400		
K	Fitting 3/4 16 UNF DIN - G1/4	20018000		

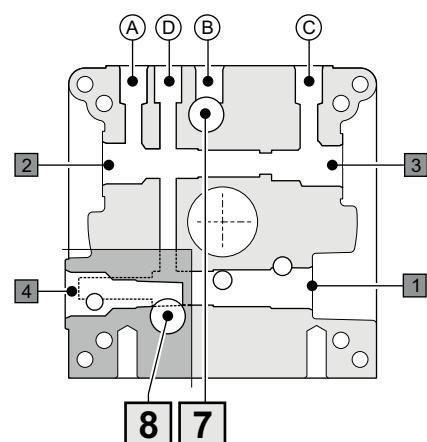
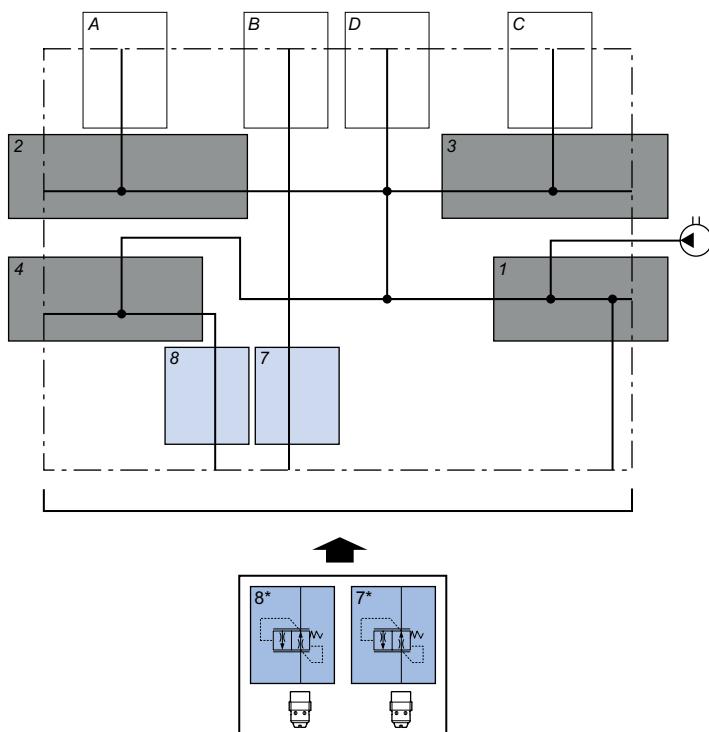
II

FPL

Sect. II - FPL Cavity 7-8



Return cavity, omit if not required flow control valves.



Optional flow control valves.

7	*
8	*

Flow control valves for return cavities "7-8"

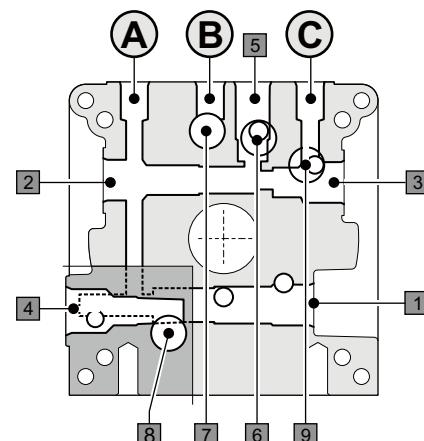
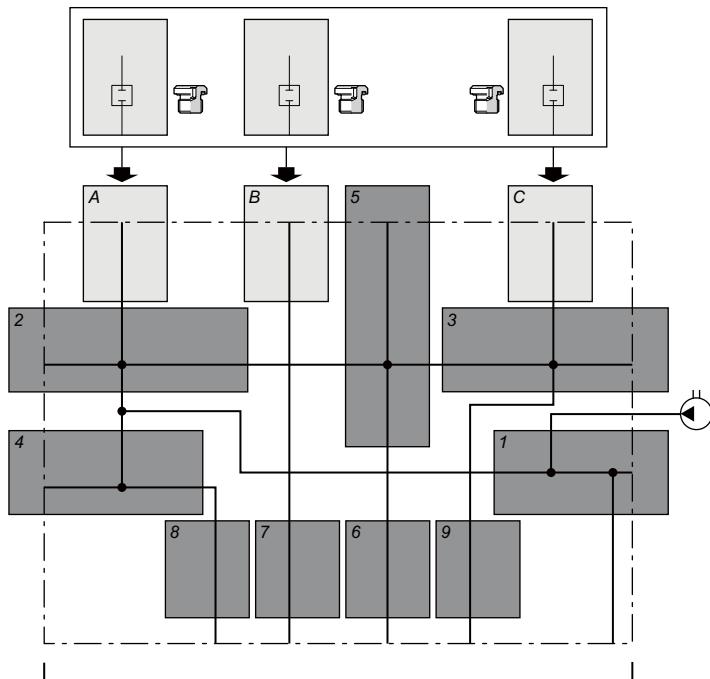
	Nominal flow at 120 bar	Code	Symbol	Drawing
A	0.7 l/min	VSC06100002		
B	1.1 l/min	VSC06120002		
C	2.1 l/min	VSC06130002		
E	3.2 l/min	VSC06150002		
G	4.7 l/min	VSC06190002		
K	6.3 l/min	VSC06220002		
N	7.5 l/min	VSC06240002		
Q	10.0 l/min	VSC06280002		
U	13.2 l/min	VSC06330002		
V	15.7 l/min	VSC06350002		

Sect. II - FTL Ports A-B-C-D



FPL** ** (...) 2 .. ** 3 .. ** 4 .. ** 7 * 8 * -**

Combinations plugs on ports
End section II



II
FPL

-** Combinations plugs on ports A-B-C-D

-**	A	B	C	D
-00	↑	⊗	↑	⊗
-01	↑	↑	↑	↑
-03	↑	⊗	↑	↑
-04	↑	↑	↑	⊗

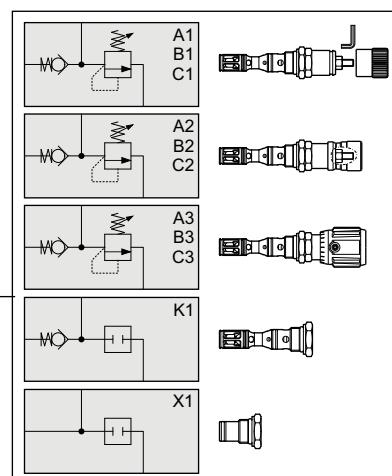
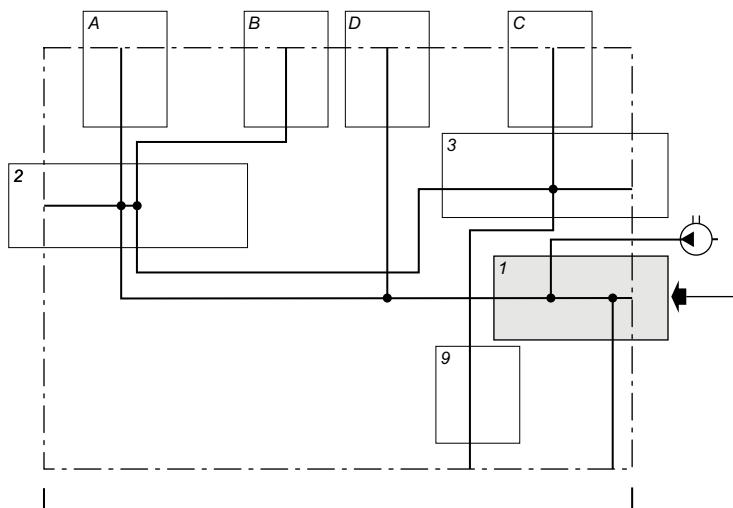
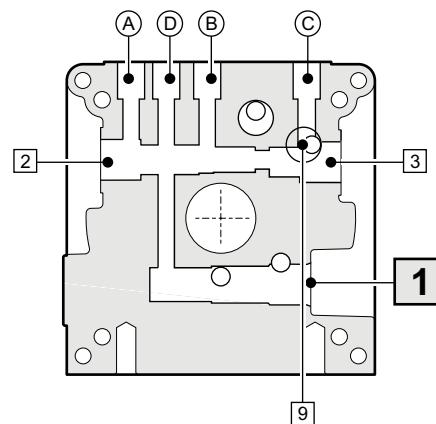
Symbols description

Type	Description	Thread	Code	Symbol	Drawing
⊗	Port closed with plug	G 1/4"	20024000		
↑	Port open		—	—	—

Sect. I - FPE Cavity 1



FPE**	*	*	(...)	Pressure relief valve - Check valve - Plug Setting type (or plug features) Special setting pressure relief valve (omit if not required)
-------	---	---	-------	---



* * (...) Pressure relief valve with check valve

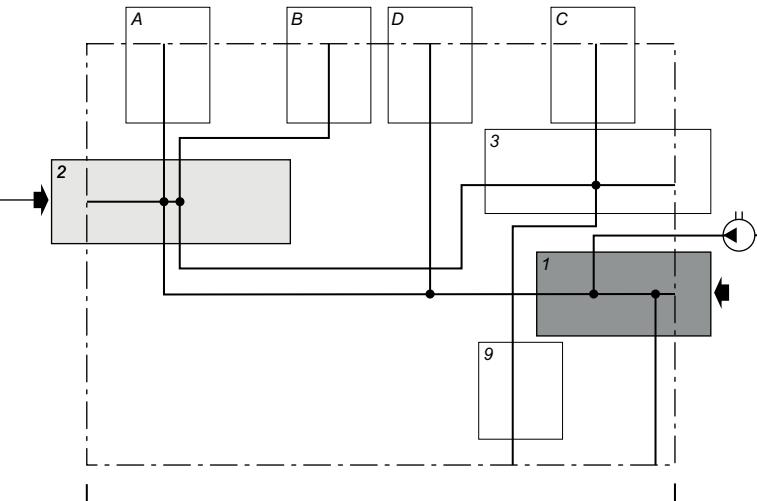
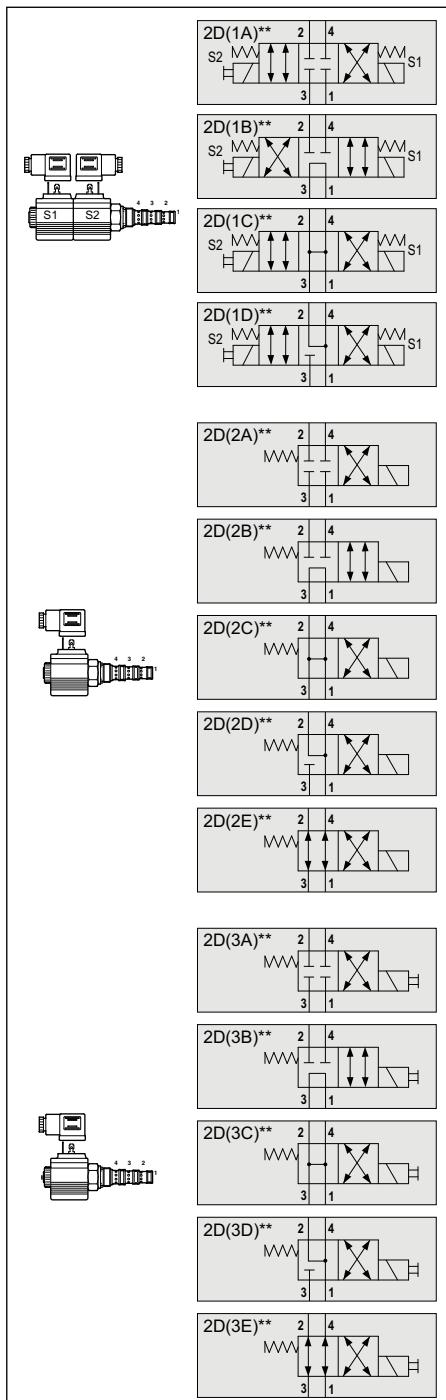
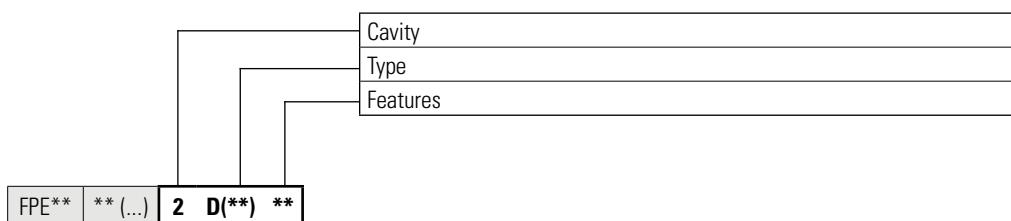
*	*	Pressure (bar)	STD setting (bar)	(...) Special setting (bar)	Setting type	Code	Symbol	Drawing
D	1	15 ÷ 50	30	15 ÷ 50 (5 to 5)	Detachable closing	CMPR04S00002		
	2				Non removable closing (1)	CMPR04P00002		
	3				Plastic knob	CMPR04M00002		
E	1	35 ÷ 110	50	35 ÷ 110 (5 to 5)	Detachable closing	CMPR04S01002		
	2				Non removable closing (1)	CMPR04P01002		
	3				Plastic knob	CMPR04M01002		
F	1	75 ÷ 220	150	75 ÷ 220 (5 to 5)	Detachable closing	CMPR04S02002		
	2				Non removable closing (1)	CMPR04P02002		
	3				Plastic knob	CMPR04M02002		
G	1	160 ÷ 290	180	160 ÷ 290 (10 to 10)	Detachable closing	CMPR04S03002		
	2				Non removable closing (1)	CMPR04P03002		
	3				Plastic knob	CMPR04M03002		

1 = Supplied assembled. Unassembled, see accessories page 89

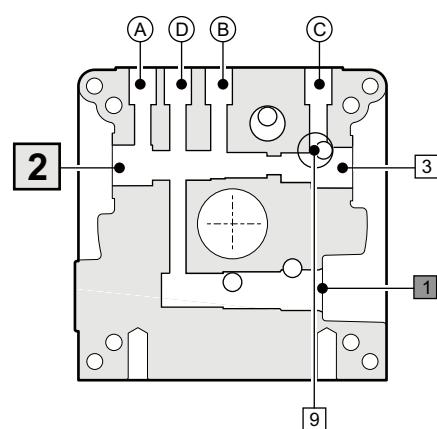
* * Check valve and plug

*	*	Description	Code	Symbol	Drawing
K	1	Check valve - Opening pressure 0.5 bar	CRI0400001		
X	1	Plug	R78150100		

Sect. II - FPE Cavity 2



II
FPE



Sect. II - FPE Cavity 2



2 D() ****

Solenoid valves 4 way 3 positions with emergency (1)

(**) **	Description	Code (valve + connectors)	Symbol	Drawing
(1A)AA	Voltage 12 Vdc (closed centre "C" spool)	C4V0422C3FEL001 + V86050002 (x2)		
(1A)AB	Voltage 24 Vdc (closed centre "C" spool)	C4V0422C3FEM001 + V86050002 (x2)		
(1B)AA	Voltage 12 Vdc (open centre "A" spool)	C4V0422A3FEL001 + V86050002 (x2)		
(1B)AB	Voltage 24 Vdc (open centre "A" spool)	C4V0422A3FEM001 + V86050002 (x2)		
(1C)AA	Voltage 12 Vdc (centre "H" spool)	C4V0422H3FEL001 + V86050002 (x2)		
(1C)AB	Voltage 24 Vdc (centre "H" spool)	C4V0422H3FEM001 + V86050002 (x2)		
(1D)AA	Voltage 12 Vdc (centre "Y" spool)	C4V0422Y3FEL001 + V86050002 (x2)		
(1D)AB	Voltage 24 Vdc (centre "Y" spool)	C4V0422Y3FEM001 + V86050002 (x2)		

II
FPE

2 D() ****

Solenoid valves 4 way 2 positions without emergency (1)

(**) **	Description	Code (valve + connector)	Symbol	Drawing
(2A)AA	Voltage 12 Vdc (closed centre "C" spool)	C4V0422C2FSL001 + V86050002		
(2A)AB	Voltage 24 Vdc (closed centre "C" spool)	C4V0422C2FSM001 + V86050002		
(2B)AA	Voltage 12 Vdc (open centre "A" spool)	C4V0422A2FSL001 + V86050002		
(2B)AB	Voltage 24 Vdc (open centre "A" spool)	C4V0422A2FSM001 + V86050002		
(2C)AA	Voltage 12 Vdc (centre "H" spool)	C4V0422H2FSL001 + V86050002		
(2C)AB	Voltage 24 Vdc (centre "H" spool)	C4V0422H2FSM001 + V86050002		
(2D)AA	Voltage 12 Vdc (centre "Y" spool)	C4V0422Y2FSL001 + V86050002		
(2D)AB	Voltage 24 Vdc (centre "Y" spool)	C4V0422Y2FSM001 + V86050002		
(2E)AA	Voltage 12 Vdc (direct "D" spool)	C4V0422D2FSL001 + V86050002		
(2E)AB	Voltage 24 Vdc (direct "D" spool)	C4V0422D2FSM001 + V86050002		

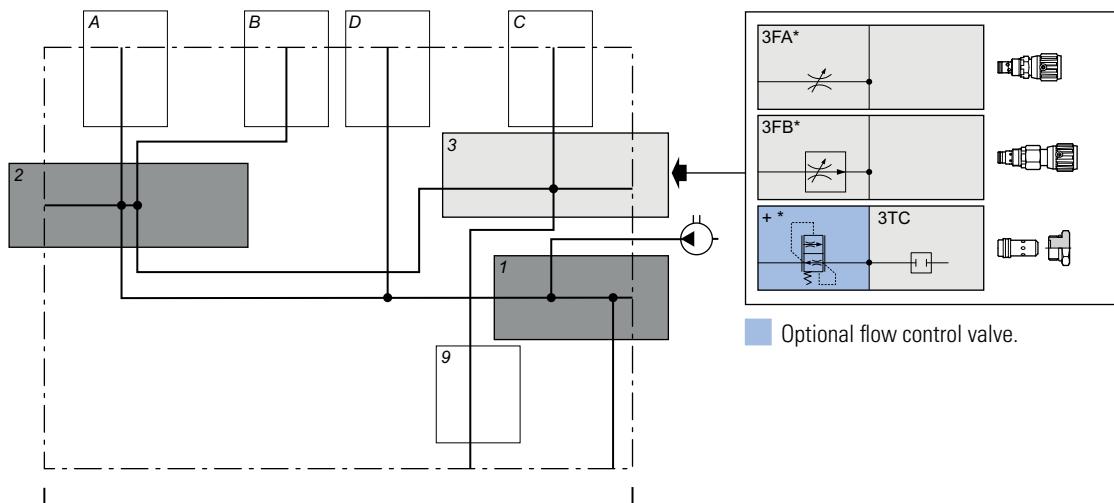
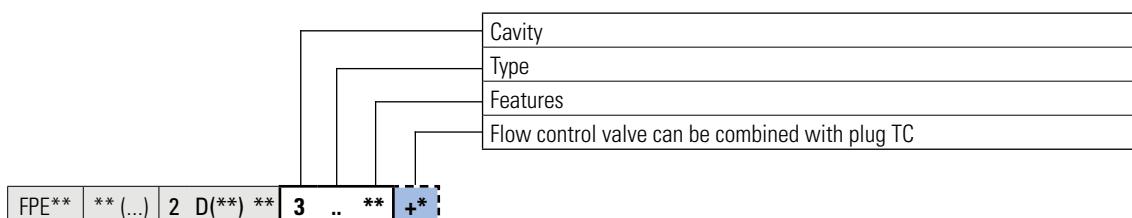
2 D() ****

Solenoid valves 4 way 2 positions with emergency (1)

(**) **	Description	Code (valve + connector)	Symbol	Drawing
(3A)AA	Voltage 12 Vdc (closed centre "C" spool)	C4V0422C2FEL001 + V86050002		
(3A)AB	Voltage 24 Vdc (closed centre "C" spool)	C4V0422C2FEM001 + V86050002		
(3B)AA	Voltage 12 Vdc (open centre "A" spool)	C4V0422A2FEL001 + V86050002		
(3B)AB	Voltage 24 Vdc (open centre "A" spool)	C4V0422A2FEM001 + V86050002		
(3C)AA	Voltage 12 Vdc (centre "H" spool)	C4V0422H2FEL001 + V86050002		
(3C)AB	Voltage 24 Vdc (centre "H" spool)	C4V0422H2FEM001 + V86050002		
(3D)AA	Voltage 12 Vdc (centre "Y" spool)	C4V0422Y2FEL001 + V86050002		
(3D)AB	Voltage 24 Vdc (centre "Y" spool)	C4V0422Y2FEM001 + V86050002		
(3E)AA	Voltage 12 Vdc (direct "D" spool)	C4V0422D2FEL001 + V86050002		
(3E)AB	Voltage 24 Vdc (direct "D" spool)	C4V0422D2FEM001 + V86050002		

1 = Valves supplied with connector. Without connector see accessories page 89

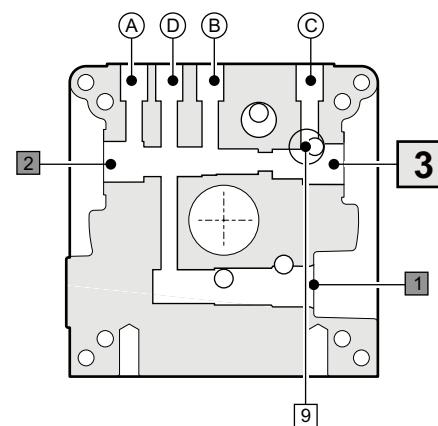
Sect. II - FPE Cavity 3



Optional flow control valve.

II

FPE



Sect. II - FPE Cavity 3



3 FA * Bidirectional flow control valves not compensated

*	Description	Code (valve + connector)	Symbol	Drawing
A	Screw adjustment	CSB04C0000		
B	Plastic knob adjustment	CSB04V0000		

3 FB * Unidirectional flow control valves compensated

*	Description	Code (valve + connector)	Symbol	Drawing
A	Screw adjustment	CSC04C0000		
B	Plastic knob adjustment	CSC04V0000		

3 T * +* Plug

**	Description	Code	Symbol	Drawing
C	Plug 3/4 16 UNF (1)	R78150099		

II

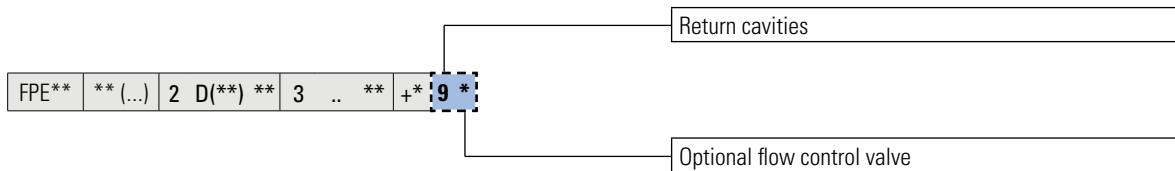
FPE

3 T C +* Flow control valves (1)

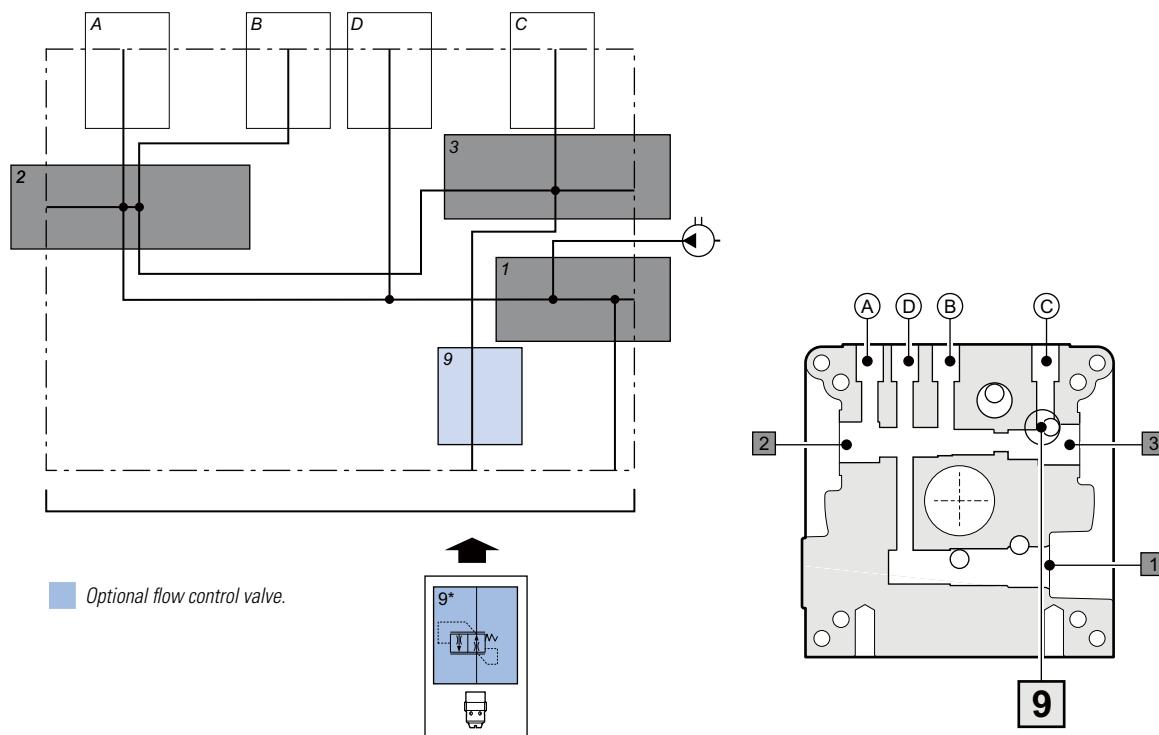
*	Flow	Code	Symbol	Drawing
+B	1.4 l/min	VSC040101		
+C	2.3 l/min	VSC040201		
+E	2.8 l/min	VSC040301		
+G	4.3 l/min	VSC040401		
+J	5.2 l/min	VSC040601		
+L	6.5 l/min	VSC040801		
+N	8.0 l/min	VSC041101		
+Q	11.1 l/min	VSC041601		

(1) The flow control valves can be installed with the plug TC.

Sect. II - FPE Cavity 9



Return cavity, omit if not required flow control valves.



II
FPE

9 * Flow control valves

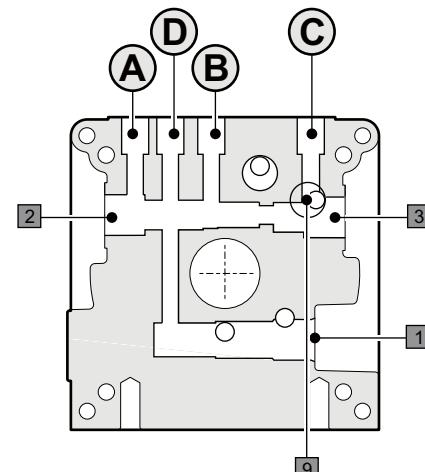
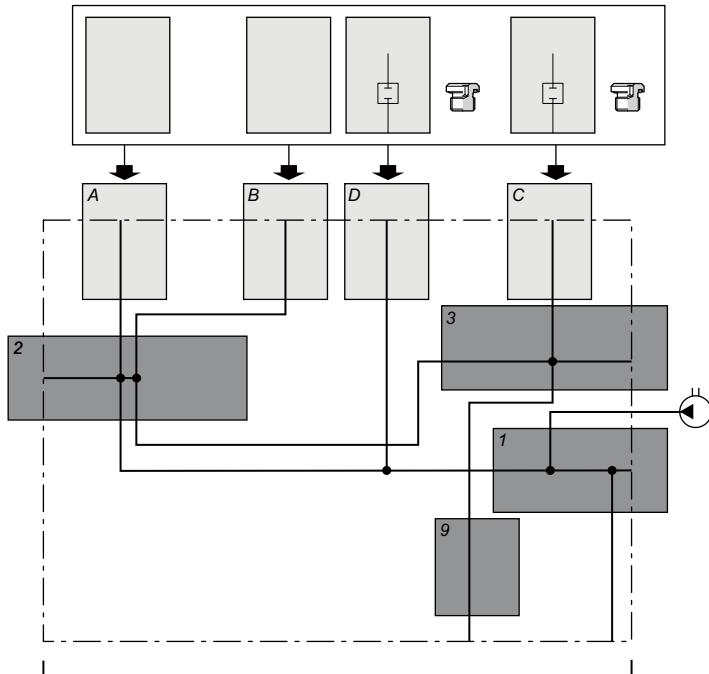
*	Nominal flow at 120 bar	Code	Symbol	Drawing
A	0.7 l/min	VSC06100002		
B	1.1 l/min	VSC06120002		
C	2.1 l/min	VSC06130002		
E	3.2 l/min	VSC06150002		
G	4.7 l/min	VSC06190002		
K	6.3 l/min	VSC06220002		
N	7.5 l/min	VSC06240002		
Q	10.0 l/min	VSC06280002		
U	13.2 l/min	VSC06330002		
V	15.7 l/min	VSC06350002		

Sect. II - FTE Ports A-B-C-D



FPE** ** (...) 2 D(**) ** 3 .. ** +* 9 * -** -

Combinations plugs on ports
End section II



-** Combinations plugs on ports A-B-C-D

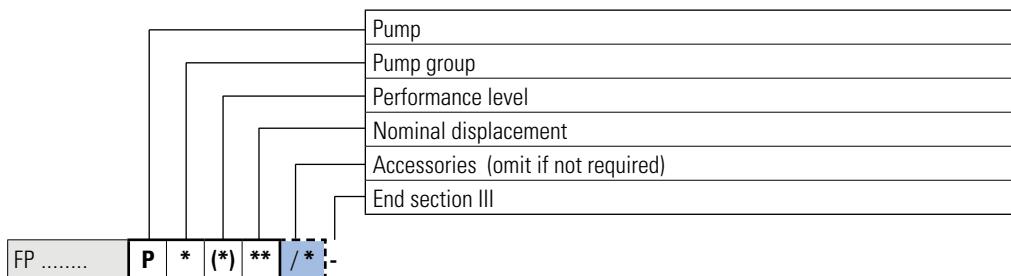
-**	A	B	C	D
-00	↑	↑	⊗	↑
-01	↑	↑	↑	⊗
-03	↑	⊗	↑	⊗
-04	↑	↑	⊗	⊗

Symbols description

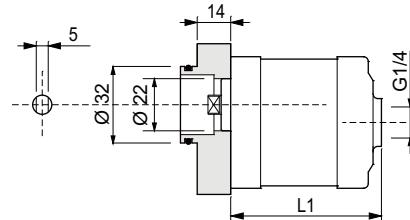
Type	Description	Thread	Code	Symbol	Drawing
⊗	Port closed with plug	G 1/4"	20024000		
↑	Port open		—	—	—

With the FPE hydraulic power pack, cannot be mounted the standard blocks.

Sect. III - Pumps



P 0 (1) ** Pumps group 05 - Performance level 1



**	Nominal displacement	Tolerance on geometric displacement	P2 bar	P3 bar	Code complete kit	L1 mm	Tanks not compatible (•)				Motors not compatible
							S01A (H) (V)	S09E (H) (V)	S02G (H) (V)	All (H) (V)	
02	0.25 cc	0.25 ÷ 0.33	230	270	17050037.035	54					M4FB(1) - M4GJ(1) MM*PA(1)
04	0.45 cc	0.45 ÷ 0.55	230	270	17050036.035	55.7					M*AA(1)D - M*AA(1)G M*AA(1)H
05	0.56 cc	0.56 ÷ 0.68	230	270	17050039.035	56.7	•	•			M*AB(1)D - M*AB(1)G M*AB(1)H
07	0.75 cc	0.69 ÷ 0.82	230	270	17050038.035	58.5	•	•			
09	0.92 cc	0.83 ÷ 0.95	230	270	17050053.035	59.8	•	•			

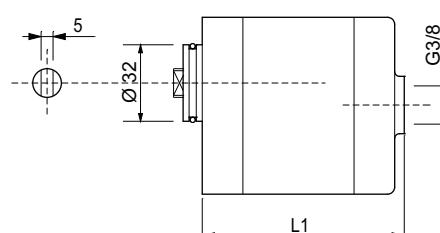
P2 = Intermittent operating pressure

P3 = Intermittent peak pressure (20 sec. max)

Tanks not compatible (as dimensions, see page 55)

Motors not compatible (interface and transmission not supplied, see pages 71 - 77)

P 1 (1) ** / * Pumps group 1 - Performance level 1



**	Nominal displacement	Tolerance on geometric displacement	P2 bar	P3 bar	Code complete kit	L1 mm	Tanks not compatible (•)				Motors not compatible
							S01A (H) (V)	S09E (H) (V)	S02G (H) (V)	All (H) (V)	
07	0.80 cc	0.69 ÷ 0.82	170	210	17050107.018	72.4	•				
10	1.00 cc	0.96 ÷ 1.09	170	210	17050088.018	73.5	•				
12	1.20 cc	1.10 ÷ 1.30	250	290	17050005.018	74.8	•				
17	1.70 cc	1.50 ÷ 1.70	250	290	17050006.018	76.2	•				
22	2.20 cc	2.10 ÷ 2.30	250	290	17050007.018	78.2	•				
26	2.60 cc	2.50 ÷ 2.70	250	290	17050008.018	79.7	•	•			
32	3.20 cc	3.10 ÷ 3.32	250	290	17050009.018	82.0	•	•			
38	3.80 cc	3.60 ÷ 3.99	250	290	17050010.018	84.0	•	•			
43	4.30 cc	4.00 ÷ 4.35	250	290	17050011.018	86.6	•	•			
48	4.80 cc	4.85 ÷ 4.95	225	260	17050033.018	88.1	•	•			
60	6.00 cc	5.62 ÷ 6.02	185	215	17050012.018	92.2	•	•	•	•	
78	7.80 cc	7.48 ÷ 7.90	140	160	17050013.018	98.9	•	•	•	•	
98	9.80 cc	9.60 ÷ 10.00	110	125	17050054.018	107.2	•	•	•	•	

P2 = Intermittent operating pressure

P3 = Intermittent peak pressure (20 sec. max)

Tanks not compatible (as dimensions, see page 55).

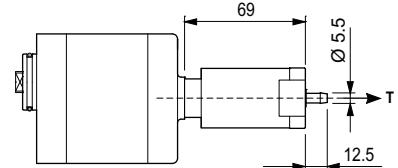
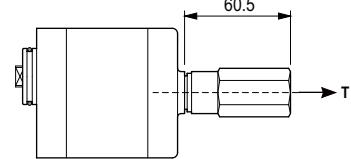
Sect. III - Pumps



P | 1 | (1) ** / *

Accessories for pumps group 1

*	Description	Type	Code	Symbol
/A	Single-phase motor start valve - on auxiliary outlet	0.8 ÷ 2.5 l/min	VAM0400L	
		> 2.5 ÷ 8.0 l/min	VAM0400M	
		> 8.0 ÷ 14 l/min	VAM0400H	
/D	Soft start valve - on auxiliary outlet	hole Ø 0.4 mm	VAMS0404001	



**	With accessory	Tanks not compatible (•)			
		S01A	S09E	S02G	All
09	/A /B /C				
	/D	•	•	•	
12	/A /B /C				
	/D	•	•	•	
17	/A /B /C				
	/D	•	•	•	
22	/A /B /C				
	/D	•	•	•	
26	/A /B /C				
	/D	•	•	•	
32	/A /B /C				
	/D	•	•	•	
38	/A /B /C				
	/D	•	•	•	
43	/A /B /C				
	/D	•	•	•	

Tanks not compatible (as dimensions, see page 55).

Sect. IV - Tanks / Sect. V - Tubes kit



Tank (S = with tank and tubes kit; G = only tubes kit, without tank; OMIT if without tank and without tubes kit)
Capacity liters
Features (material and construction)
Mounting position: (H = horizontal; V = vertical)
Variants (00 = standard, no variant) - OMIT if with tubes kit
Orientation - OMIT if with tubes kit in vertical mounting position
End section IV and V

FP * ** * (*) ** /* -

**	Liters	*	Dimensions (mm)	Material	(*) Mounting	** Variants	Page	* Orientation	Page
01	1		A Ø 123 - L 141	Sheet steel	(H) (V)	00 00	56		
02	1,5		G Ø 130x140 - L 135	Polyethylene	(H) (V)	00 00	65		
	2		A Ø 123 - L 200	Sheet steel	(H) (V)	00 00	56		
03	2,5		G Ø 130x140 - L 235	Polyethylene	(H) (V)	00 00	65		
	3		A Ø 123 - L 330	Sheet steel	(H) (V)	00 00	56		
04	4		G Ø 130x140 - L 295	Polyethylene	(H) (V)	00 00	65		
	4		L Ø 180 - L 210	Polyethylene	(H) (V)	00 00	66		
05	5		B Ø 175 - L 246	Sheet steel	(H) (V)	00-01-02-03-04 00	57		
	5		C Ø 200 - L 210	Sheet steel	(H) (V)	00 00	58		
	5		F Ø 180 - L 240	Polypropylene	(H) (V)	00 00	64		
06	6		B Ø 175 - L 308	Sheet steel	(H) (V)	00-04 00	57		
07	7		E Ø 154x188 - L 299	Sheet steel	(H) (V)	00-01 00	60		
	7		F Ø 180 - L 308	Polypropylene	(H) (V)	00 00	64		
07	7		L Ø 180 - L 310	Polyethylene	(H) (V)	00 00	67		
	7		M Ø 180 - L 335	Polietilene	(H) (V)	00 00	68		
08	8		B Ø 175 - L 370	Sheet steel	(H) (V)	00-04 00	57		
	8		C Ø 200 - L 306	Sheet steel	(H) (V)	00 00	58		
09	9		E Ø 230x130 - L 350	Sheet steel	(H) (V)	00 00	61		
			L Ø 180 - L 370	Polietilene	(H) (V)	00 00	67		
10	10		C Ø 200 - L 373	Sheet steel	(H) (V)	00 00	58		
	10		D Ø 217 - L 273	Sheet steel	(H) (V)	00 00	59		
10	10		L Ø 180 - L 410	Polyethylene	(H) (V)	00 00	67		
			D Ø 217 - L 370	Sheet steel	(H) (V)	00 00	59		
12	12		E Ø 255x193 - L 366	Sheet steel	(H) (V)	00-01 00-01	62		
14	14		E Ø 250x255 - L 436	Sheet steel	(H) (V)	00-01 00-01	63		

/1(std)
/2
/3
/4

IV
V

69

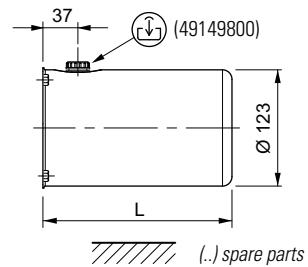
Sect. IV - Tanks / Sect. V - Tubes kit



* ** * (H) ** * - **Tanks Ø 123 - Sheet steel, capacity 1-2-3 liters - Horizontal mounting (black painted)**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plug)	Tank fixing kit (screws and O-Ring)	
				L (mm)	Nominal	Full	Usable		
01				141	1	1.0	0.7	90310000	17010080
02	A	(H)	00	200	2	1.6	1.5	90310001	
03				330	3	3	2.8	90310002	

(1) Variant - OMIT if without tank but with tubes kit



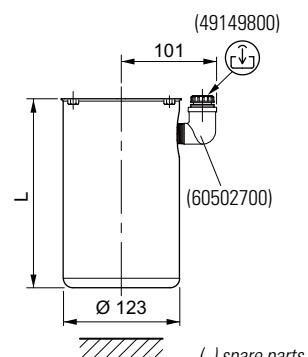
Other variants

Variant	Tank	Variant	Tank	Variant	Tank	Variant	Tank

* ** * (V) ** * - **Tanks Ø 123 - Sheet steel, capacity 1-2-3 liters - Vertical mounting (black painted)**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plug)	Tank fixing kit (screws and O-Ring)	
				L (mm)	Nominal	Full	Usable		
01				141	1	0.9	0.7	90310009	17010080
02	A	(V)	00	200	2	1.6	1.5	90310010	
03				330	3	2.9	2.9	90310011	

(1) Variant - OMIT if without tank but with tubes kit



Other variants

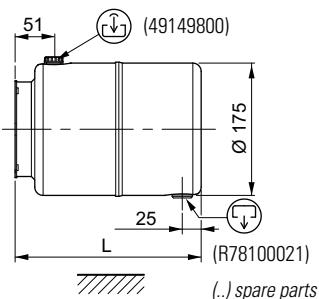
Variant	Tank	Variant	Tank	Variant	Tank	Variant	Tank

Sect. IV - Tanks / Sect. V - Tubes kit



Tanks Ø 175 - Sheet steel, capacity 5-6-8 liters - Horizontal mounting (black painted)

Capacity		Features		Mounting		Variant (I)	Capacity (liters)			Tank (with plugs)	Tank fixing kit (screws and O-Ring)		
	05						Nominal	Full	Usable				
06	B (H)	00	246	5	4.7	4.5	90310003			17010080			
08			308	6	6	5.9	90310004						
			370	8	8	7.3	90310005						



(1) Variant - OMIT if without tank but with tubes kit

Other variants

Variant		Tank
05	B (H)	90310003
06		
08		01

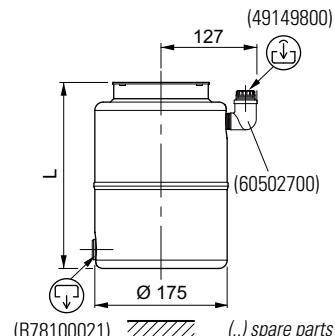
Variant		Tank
05	B (H)	90310149
06		
08		02

Variant		Tank
05	B (H)	90310134
06		90310062
08		90310069

Variant		Tank
05	B (H)	90310176
06		
08		04

Tanks Ø 175 - Sheet steel, capacity 5-6-8 liters - Vertical mounting (black painted)

Capacity		Features			Mounting		Variant (1)		L (mm)	Capacity (liters)	Tank (with plugs)	Tank fixing kit (screws and O-Ring)
05	06	B	(V)	00	Nominal	Full	Usable					
246	5	4.3	4.1		90310012	17010080						
308	6	5.8	5.5		90310013							
370	8	7.5	7.2		90310015							



(1) Variant - OMIT if without tank but with tubes kit

Other variants

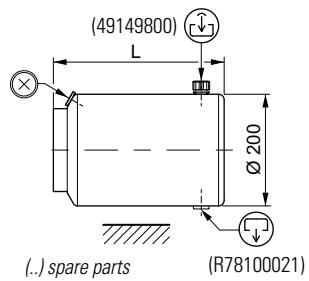
Sect. IV - Tanks / Sect. V - Tubes kit



* ** * (H) ** * - **Tanks Ø 200 - Sheet steel, capacity 5-8-10 liters - Horizontal mounting (black painted)**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plugs)	Tank fixing kit (screws and O-Ring)	
				L (mm)	Nominal	Full	Usable		
05				205	5	5.3	5.0	90310425	17010080
08	C	(H)	00	301	8	8.0	7.7	90310428	
10				368	10	10	9.3	90310431	

(1) Variant - OMIT if without tank but with tubes kit



Other variants

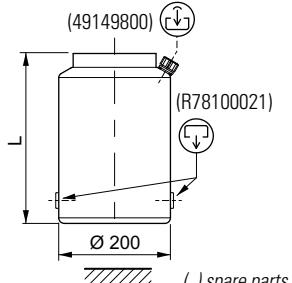
Variant	Tank	Variant	Tank	Variant	Tank	Variant	Tank
				05	90310453		
				08	90310443		
				10	90310483		

(49107500) (R78100021)

* ** * (V) ** * - **Tanks Ø 200 - Sheet steel, capacity 5-8-10 liters - Vertical mounting (black painted)**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plugs)	Tank fixing kit (screws and O-Ring)	
				L (mm)	Nominal	Full	Usable		
05				205	5	4.6	4.3	90310444	17010080
08	C	(V)	00	301	8	7.5	7.1	90310437	
10				368	10	9.5	9.1	90310439	

(1) Variant - OMIT if without tank but with tubes kit



Other variants

Variant	Tank	Variant	Tank	Variant	Tank	Variant	Tank

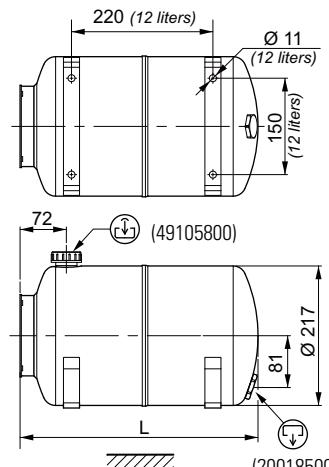
Sect. IV - Tanks / Sect. V - Tubes kit



* ** * (H) ** * - **Tanks Ø 217 - Sheet steel, capacity 10-12 liters - Horizontal mounting (black painted)**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plugs)	Tank fixing kit (screws and O-Ring)	
				L (mm)	Nominal	Full	Usable		
10	D	(H)	00	273	10	8	7.6	90310006	17010080
12				370	12	12	11	90310058	

(1) Variant - OMIT if without tank but with tubes kit



(..) spare parts

(20018500)

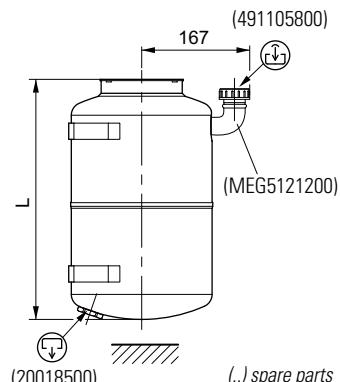
Other variants

Variant	Tank	Variant	Tank	Variant	Tank	Variant	Tank

* ** * (V) ** * - **Tanks Ø 217 - Sheet steel, capacity 10-12 liters - Vertical mounting (black painted)**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plugs)	Tank fixing kit (screws and O-Ring)	
				L (mm)	Nominal	Full	Usable		
10	D	(V)	00	273	10	7	6.8	90310029	17010080
12				370	12	10.3	10.1	90310100	

(1) Variant - OMIT if without tank but with tubes kit



(..) spare parts

Other variants

Variant	Tank	Variant	Tank	Variant	Tank	Variant	Tank

IV
V

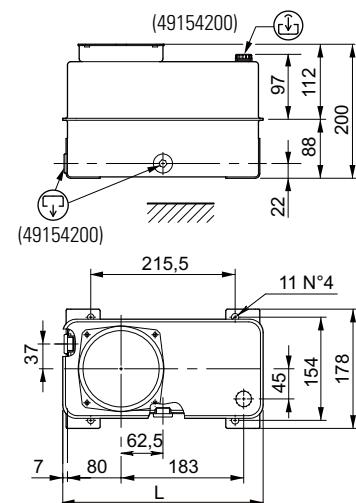
Sect. IV - Tanks / Sect. V - Tubes kit



* ** * (V) ** * - **Rectangular tanks - Sheet steel, capacity 7 liters - Vertical mounting (black painted)**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plugs)	Tank fixing kit (screws and O-Ring)	
				Nominal	Full	Usable			
07	E	(V)	00	299	7	5.5	5.1	90310014	17010080

(1) Variant - OMIT if without tank but with tubes kit



(..) spare parts

Other variants

Variant	Tank	Variant	Tank	Variant	Tank	Variant	Tank
07 E (V) 01	90310036						

(49107500) (49154200)

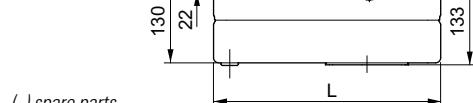
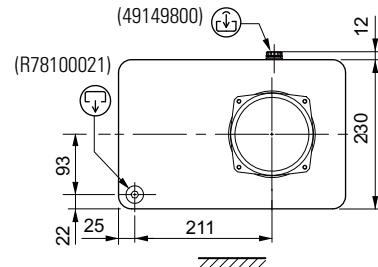
Sect. IV - Tanks / Sect. V - Tubes kit



* ** * (H) ** * - **Rectangular tanks - Sheet steel, capacity 9 liters - Horizontal mounting (black painted)**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plugs)	Tank fixing kit (screws and O-Ring)	
				L (mm)	Nominal	Full	Usable		
09	E	(H)	00	350	9	9	8	90310142	17010080

(1) Variant - OMIT if without tank but with tubes kit



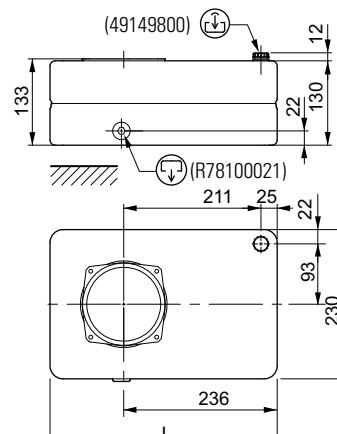
Other variants

Variant	Tank	Variant	Tank	Variant	Tank	Variant	Tank

* ** * (V) ** * - **Rectangular tanks - Sheet steel, capacity 9 liters - Vertical mounting (black painted)**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plugs)	Tank fixing kit (screws and O-Ring)	
				L (mm)	Nominal	Full	Usable		
09	E	(V)	00	350	9	8.6	7.5	90310142	17010080

(1) Variant - OMIT if without tank but with tubes kit



(..) spare parts

Variant	Tank	Variant	Tank	Variant	Tank	Variant	Tank

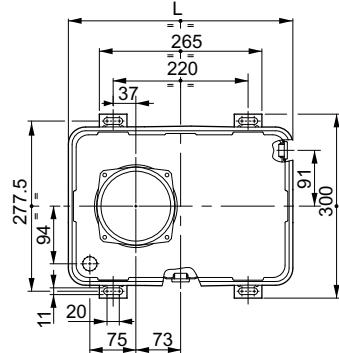
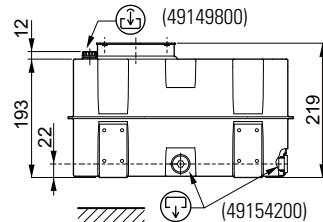
Sect. IV - Tanks / Sect. V - Tubes kit



* ** * (*) ** * - *Rectangular tanks - Sheet steel, capacity 14 liters - Vertical mounting (black painted)*

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plugs)	Tank fixing kit (screws and O-Ring)	
				L (mm)	Nominal	Full	Usable		
14	E	(V)	00	366	14	14	13	90310045	17010080

(1) Variant - OMIT if without tank but with tubes kit



(..) spare parts

Other variants

Variant	Tank	Variant	Tank	Variant	Tank	Variant	Tank
14 E (V) 01	90310046						

Technical drawing showing the dimensions of the tank assembly. The tank height is 277.5 mm, width is 265 mm, and depth is 300 mm. The tank is mounted on a base with a height of 94 mm. The tank fixing kit (49107500) is shown with its dimensions: height 277.5 mm, width 265 mm, and depth 94 mm. A callout indicates the part number (49154200) for the base plate.

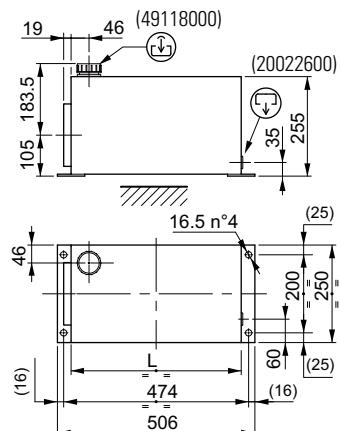
Sect. IV - Tanks / Sect. V - Tubes kit



* ** * (*) ** * - **Rectangular tanks - Sheet steel, capacity 25 liters - Horizontal mounting (black painted)**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plugs)	Tank fixing kit (screws and O-Ring)	
				L (mm)	Nominal	Full	Usable		
25	E	(H)	00	436	25	22	21	90310060	17010080

(1) Variant - OMIT if without tank but with tubes kit



(..) spare parts

Other variants

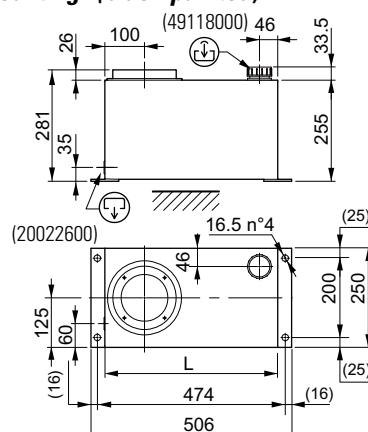
Variant 25 E (H) 01	Tank 90310083	Variant	Tank	Variant	Tank	Variant	Tank

Diagram showing a vertical tank with a tube assembly. The tube has a height of 200 and a top cap with a height of 46. The tank itself has a height of 255 and a top cap with a height of 19. The base plate has a height of 105.

* ** * (*) ** * - **Rectangular tanks - Sheet steel, capacity 25 liters - Vertical mounting (black painted)**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plugs)	Tank fixing kit (screws and O-Ring)	
				L (mm)	Nominal	Full	Usable		
25	E	(V)	00	436	25	25	22	90310071	17010080

(1) Variant - OMIT if without tank but with tubes kit



(..) spare parts

Other variants

Variant 25 E (V) 01	Tank 90310124	Variant	Tank	Variant	Tank	Variant	Tank

Diagram showing a vertical tank with a tube assembly. The tube has a height of 200 and a top cap with a height of 46. The tank itself has a height of 255 and a top cap with a height of 19. The base plate has a height of 125.

IV
V

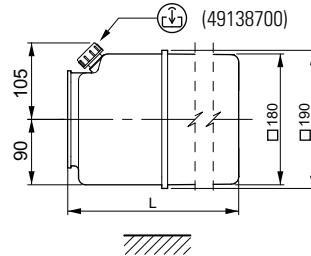
Sect. IV - Tanks / Sect. V - Tubes kit



* ** * (H) ** * - **Square polypropylene tanks capacity 5-7 liters - Horizontal mounting**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plug, brackets, nuts)	Tank fixing kit (screws and O-Ring)	
				L (mm)	Nominal	Full	Usable		
05	F	(H)	00	242	5	5.4	4.5	90310313	17010083
07				308	7	7.4	6.5	90310289	

Operating temperature -10°C ÷ +60°C - (1) Variant - OMIT if without tank but with tubes kit

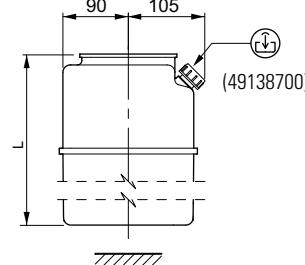


(..) spare parts

* ** * (V) ** * - **Square polypropylene tanks capacity 5-7 liters - Vertical mounting**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plug, brackets, nuts)	Tank fixing kit (screws and O-Ring)	
				L (mm)	Nominal	Full	Usable		
05	F	(V)	00	242	5	5.4	4.5	90310313	17010083
07				306	7	7.4	6.5	90310289	

Operating temperature -10°C ÷ +60°C - (1) Variant - OMIT if without tank but with tubes kit



(..) spare parts

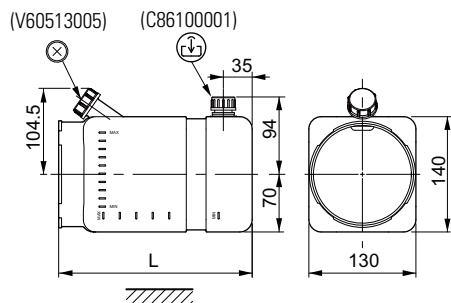
Sect. IV - Tanks / Sect. V - Tubes kit



* ** * (H) ** * - **Square polyethylene tanks capacity 1.5-2.5-4 liters - Horizontal mounting**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plugs, clamp, nuts)	Tank fixing kit collar Ø123 (screws and O-Ring)
				Nominal	Full	Usable		
02	G (H)	00		135	1.5	1.3	1	90310491
03				235	2.5	2.5	2	90310484
04				295	4	3.4	2.5	90310422

Operating temperature -10°C ÷ +70°C - (1) Variant - OMIT if without tank but with tubes kit



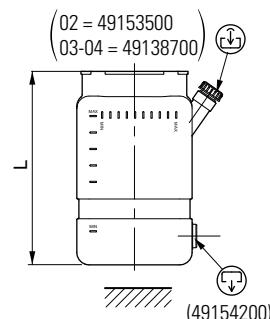
Other variants

Variant	Tank	Variant	Tank	Variant	Tank	Variant	Tank

* ** * (V) ** * - **Square polyethylene tanks capacity 1.5-2.5-4 liters - Vertical mounting**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plugs, clamp, nuts)	Tank fixing kit collar Ø123 (screws and O-Ring)
				Nominal	Full	Usable		
02	G (V)	00		135	1.5	1.1	0.7	90310486
03				235	2.5	2.7	2.3	90310419
04				296	4	3.5	3.1	90310402

Operating temperature -10°C ÷ +70°C - (1) Variant - OMIT if without tank but with tubes kit



Other variants

Variant	Tank	Variant	Tank	Variant	Tank	Variant	Tank

IV
V

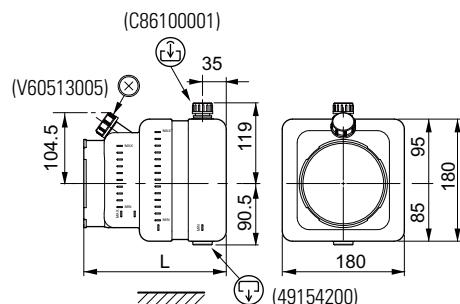
Sect. IV - Tanks / Sect. V - Tubes kit



* ** * (H) ** * - **Square polyethylene tanks capacity 4 liters - Horizontal mounting**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plugs, clamp, nuts)	Tank fixing kit collar Ø123 (screws and O-Ring)	
				L (mm)	Nominal	Full	Usable		
04	L	(H)	00	210	4	3.6	3	90310331	17010081

Operating temperature -10°C ÷ +70°C - (1) Variant - OMIT if without tank but with tubes kit



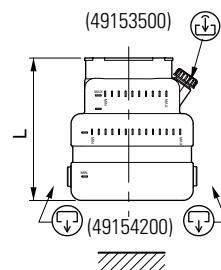
Other variants

Variant	Tank	Variant	Tank	Variant	Tank	Variant	Tank

* ** * (V) ** * - **Square polyethylene tanks capacity 4 liters - Vertical mounting**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plugs, clamp, nuts)	Tank fixing kit collar Ø123 (screws and O-Ring)	
				L (mm)	Nominal	Full	Usable		
04	L	(V)	00	210	4	3.7	3	90310332	17010081

Operating temperature -10°C ÷ +70°C - (1) Variant - OMIT if without tank but with tubes kit



Other variants

Variant	Tank	Variant	Tank	Variant	Tank	Variant	Tank
04 L (V) 01	90310433						

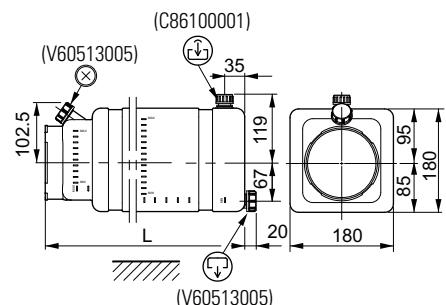
Sect. IV - Tanks / Sect. V - Tubes kit



* ** * (*) ** * - **Square polyethylene tanks capacity 7-10 liters - Horizontal mounting**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plugs, clamp, nuts)	Tank fixing kit collar Ø123 (screws and O-Ring)	
				L (mm)	Nominal	Full	Usable		
07	L	(H)	00	310	7	6.7	5.5	90310330	17010081
				410	10	8.7	7.5	90310339	

Operating temperature -10°C ÷ +70°C - (1) Variant - OMIT if without tank but with tubes kit

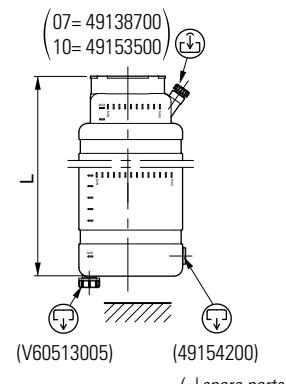


(..) spare parts

* ** * (*) ** * - **Square polyethylene tanks capacity 7-10 liters - Vertical mounting**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plugs, clamp, nuts)	Tank fixing kit collar Ø123 (screws and O-Ring)	
				L (mm)	Nominal	Full	Usable		
07	L	(V)	00	310	7	6.7	6	90310403	17010081
				410	10	9.8	9	90310338	

Operating temperature -10°C ÷ +70°C - (1) Variant - OMIT if without tank but with tubes kit



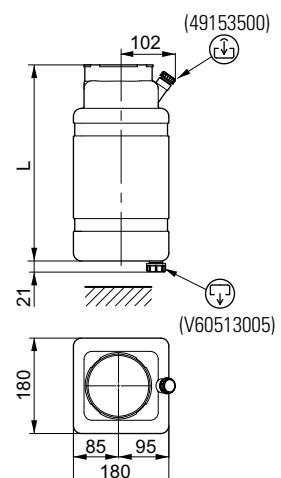
(..) spare parts

IV
V

* ** * (*) ** * - **Square polyethylene tanks capacity 9 liters - Vertical mounting**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plugs, clamp, nuts)	Tank fixing kit collar Ø123 (screws and O-Ring)	
				L (mm)	Nominal	Full	Usable		
09	L	(V)	00	370	9	8.6	8	90310371	17010081

Operating temperature -10°C ÷ +70°C - (1) Variant - OMIT if without tank but with tubes kit



(..) spare parts

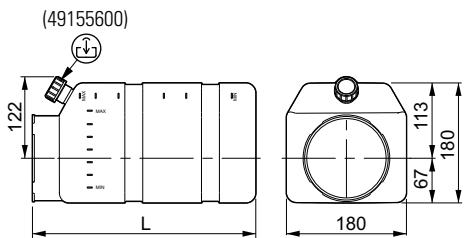
Sect. IV - Tanks / Sect. V - Tubes kit



* ** * (H) ** * - **Special square polyethylene tanks capacity 7 liters - Horizontal mounting**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plugs, clamp, nuts)	Tank fixing kit collar Ø123 (screws and O-Ring)	
				L (mm)	Nominal	Full	Usable		
07	M	(H)	00	335	7	7.3	6.6	90310380	17010081

Operating temperature -10°C ÷ +70°C - (1) Variant - OMIT if without tank but with tubes kit



(..) spare parts

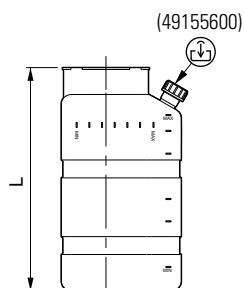
Other variants

Variant	Tank	Variant	Tank	Variant	Tank	Variant	Tank

* ** * (V) ** * - **Special square polyethylene tanks capacity 7 liters - Vertical mounting**

Capacity	Features	Mounting	Variant (1)	Capacity (liters)			Tank (with plugs, clamp, nuts)	Tank fixing kit collar Ø123 (screws and O-Ring)	
				L (mm)	Nominal	Full	Usable		
07	M	(V)	00	335	7	7.2	6.4	90310380	17010081

Operating temperature -10°C ÷ +70°C - (1) Variant - OMIT if without tank but with tubes kit



(..) spare parts

Other variants

Variant	Tank	Variant	Tank	Variant	Tank	Variant	Tank

Sect. IV - Tanks / Sect. V - Tubes kit



* ** * (*) ** /* - *Tanks orientation according to the mounting position*

For tanks			(*)	Mounting position	/* Orientation			
S	**	A B C D	(H)	Horizontal	/1 (standard)	/2	/3	/4

For tanks			(*)	Mounting position	/* Orientation			
S	09	E	(H)	Horizontal	/1 (standard)			

For tanks			(*)	Mounting position	/* Orientation			
S	25	E	(H)	Horizontal	/1 (standard)			

For tanks			(*)	Mounting position	/* Orientation			
S	**	F G L	(H)	Horizontal	/1 (standard)	/2	/3	/4

(1) Orientation TO BE USED with blocks

Sect. IV - Tanks / Sect. V - Tubes kit



* ** * (*) ** /* - *Tanks orientation according to the mounting position*

For tanks			(*)	Mounting position	/1 (standard)	/* Orientation		
S	**	A B C D F G L	(V)	Vertical		/2	/3	/4

For tanks			(*)	Mounting position	/1 (standard)	/* Orientation		
S	07	E	(V)	Vertical		/2	/3	/4

For tanks			(*)	Mounting position	/1 (standard)	/* Orientation		
S	09	E	(V)	Vertical		/2	/3	/4

For tanks			(*)	Mounting position	/1 (standard)	/* Orientation		
S	14	E	(V)	Vertical		/2	/3	/4

(1) Orientation TO BE USED with blocks

(2) D Orientation DO NOT USE with blocks

Sect. VI - DC Motors



	Motor									
	Voltage									
	Power / Size									
	Version									
	Accessories									
	Orientation									
	End section VI									
All motors are equipped with a transmission kit (coupling and components for the assembly)										
FP	M * ** (*) * /* -									
*	Voltage	**	Power	Size	(*)	Version	Page	* Accessories	/ * Orientation	Page
2	12 VDC	GA	350 W	Ø 80	(1)	Std	72	O - B	/1 /2 Std /3 /4	76
		GC	700 W	Ø 80	(1)	Std	72	O - B		
		AA	1500 W	Ø 115	(1)	Std	73	O - B - C - D - F - G - H		
		EN	1600 W	Ø 115	(1)	Std	73	O - B - C - E		
		GN	1600 W	Ø 115	(1)	Std	74	O - B - C - E		
4	24 VDC	GB	400 W	Ø 80	(1)	Std	72	O - B		
		GD	800 W	Ø 80	(1)	Std	72	O - B		
		AB	2000 W	Ø 115	(1)	Std	73	O - B - C - D - F - G - H		
		ES	2200 W	Ø 115	(1)	Std	73	O - B - C - E		
		GP	2200 W	Ø 115	(1)	Std	74	O - B - C - E		
		GJ	3000 W	Ø 125	(1)	Std	74	O - B - C - E		
		FB	3000 W	Ø 125	(1)	Std	74	O - B - C - E		
*	Accessories description	Page								
O	Without accessories	—								
B	Starting switch	75								
C	Thermal protection	—								
D (•)	Ventilation	75								
E	Starting switch + thermal protection	—								
F (•)	Starting switch + ventilation	—								
G	Thermal protection + ventilation	—								
H (•)	Starting switch + thermal protection + ventilation	—								

(•)= IP protection level becomes effective after installation on power pack.
Acquires IP 10 level with "ventilation" accessory.

For more details, features and performances DC motors, see catalog Dana code DOC00053.

Sect. VI - DC Motors

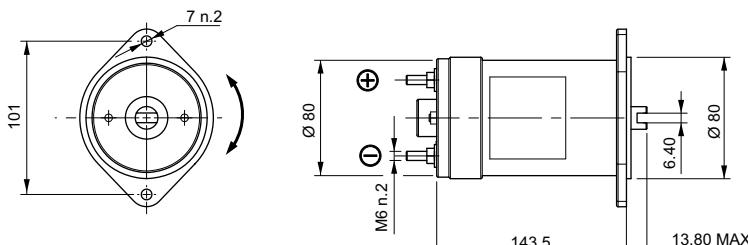


Motors: 12 VDC 350 W / 24 VDC 400 W (permanent magnets)

Voltage	W	A	rpm	Nm	S2 min	S3%	IP	IC	Ø mm	Code (⊗)	
M 2 GA (1) * /*	12 VDC	350	40	3300	1.0	10	35	54	F	80	25021400
M 4 GB (1) * /*	24 VDC	400	30	3100	1.2	5	20	54	F	80	25021500

IP protection level becomes effective after installation on power pack.

(⊗) Motor without accessories



M * ** (*) * /* - Accessories (page 75)

*	Description
0	Without accessories
B	Starting switch 120A fixing with clamp

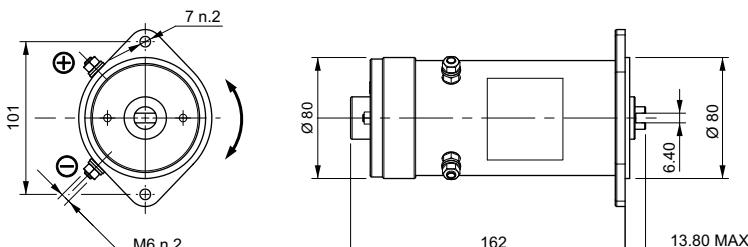
Code transmission kit: page 83

Motors: 12 VDC 700 W / 24 VDC 800 W (permanent magnets)

Voltage	W	A	rpm	Nm	S2 min	S3%	IP	IC	Ø mm	Code (⊗)	
M 2 GC (1) * /*	12 VDC	700	90	3300	2.0	2.5	10	54	F	80	25021600
M 4 GD (1) * /*	24 VDC	800	70	3000	2.5	2	5	54	F	80	25021700

IP protection level becomes effective after installation on power pack.

(⊗) Motor without accessories



M * ** (*) * /* - Accessories (page 75)

*	Description
0	Without accessories
B	Starting switch 120A

Code transmission kit: page 83

For more details, features and performances DC motors, see catalog Dana code DOC00053.

Sect. VI - DC Motors

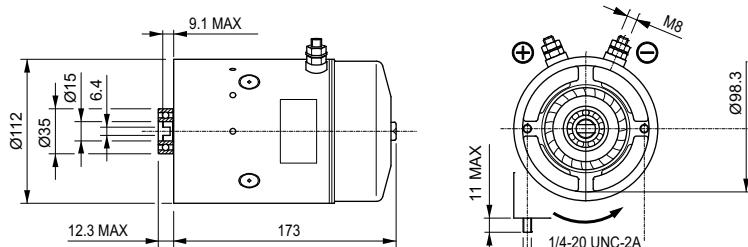


Motors: 12 VDC 1500 W / 24 VDC 2000 W (wound field compound)

Voltage	W	A	rpm	Nm	S2 min	S3%	IP	IC	Ø mm	Code (⊗)	
M 2 AA (1) * /*	12 VDC	1500	225	2500	5.5	1	5	54	F	115	25022200
M 4 AB (1) * /*	24 VDC	2000	150	2250	8	2	5	54	F	115	25022300

IP protection level becomes effective after installation on power pack.

(⊗) Motor without accessories



Code transmission kit: page 83

M * ** (*) * /* - Accessories (page 75)

*	Description
0	Without accessories
B	Starting switch 120A
D	Ventilation
F	Ventilation + Starting switch
G	Ventilation + Thermal protection
H	Ventilation + Thermal protection + Starting switch

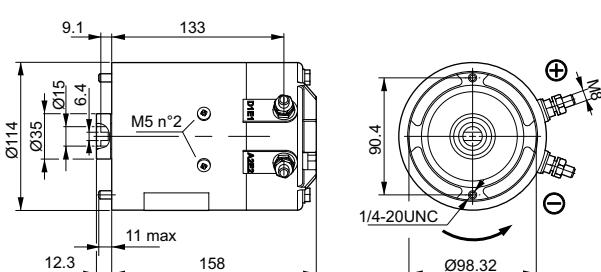
Acquires IP 10 protection level with "ventilation" accessory.

Motors: 12 VDC 1600 W / 24 VDC 2200 W (wound field compound)

Voltage	W	A	rpm	Nm	S2 min	S3%	IP	IC	Ø mm	Code (⊗)	
M 2 EN (1) * /*	12 VDC	1600	230	2600	5	2	10	54	F	115	25021100
M 4 ES (1) * /*	24 VDC	2200	140	2700	8	1.2	5	54	F	115	25021200

IP protection level becomes effective after installation on power pack.

() Motor without accessories



Code transmission kit: page 83

M * ** (*) * /* - Accessories (page 75)

*	Description
0	Without accessories
B	Starting switch 120A
C	Thermal protection
E	Starting switch + thermal protection

For more details, features and performances DC motors, see catalog Dana code DOC00053.

Sect. VI - DC Motors

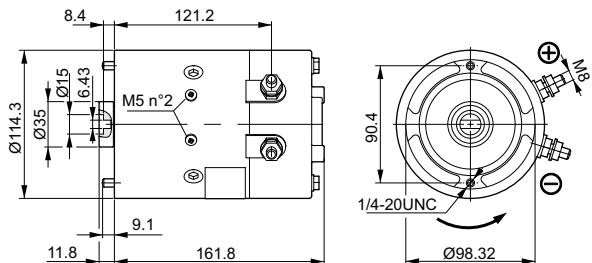


Motors: 12 VDC 1600 W / 24 VDC 2200 W (wound field serie)

Voltage	W	A	rpm	Nm	S2 min	S3%	IP	IC	Ø mm	Code (⊗)	
M 2 GN (1) * /*	12 VDC	1600	220	2600	6	4	8	54	F	115	25022600
M 4 GP (1) * /*	24 VDC	2200	140	2600	6	2	7.5	54	F	115	25022700

IP protection level becomes effective after installation on power pack.

(⊗) Motor without accessories



M * ** (*) * /* - Accessories (page 75)

*	Description
0	Without accessories
B	Starting switch 120A

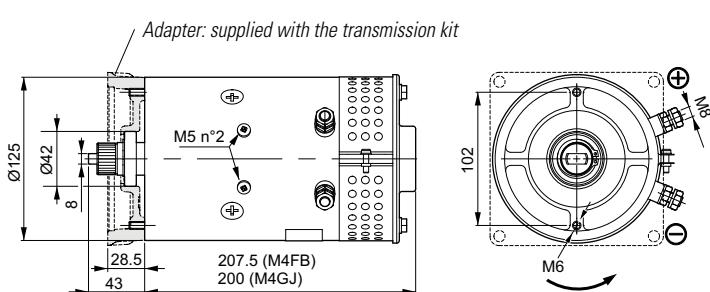
Code transmission kit: page 83

Motors: 24 VDC 3000 W (wound field compound)

Voltage	W	A	rpm	Nm	S2 min	S3%	IP	IC	Ø mm	Code (⊗)	
M 4 FB (1) * /*	24 VDC	3000	200	3300	8.5	4	15	20	F	125	25021300
M 4 GJ (1) * /*	24 VDC	3000	180	3500	8.5	3.5	15	20	F	125	25022400

IP protection level becomes effective after installation on power pack.

(⊗) Motor without accessories



M * ** (*) * /* - Accessories (page 75)

**	*	Description
FB GJ	0	Without accessories
	B	Starting switch 150A
	D	Ventilation
	F	Ventilation + Starting switch
FB	G	Ventilation + Thermal protection
	H	Ventilation + Thermal protection + Starting switch

Code transmission kit: page 83

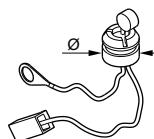
For more details, features and performances DC motors, see catalog Dana code DOC00053.

Sect. VI - DC Motors

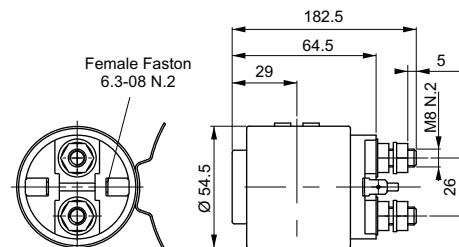
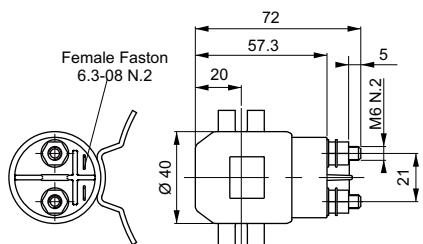


M * ** (*) C /* - Accessory: Thermal protection

Thermal protection		
Code	Ø mm	For motors
90340009	16	M2EN - M4ES



M * ** (*) B /* - Accessory: Starting switch



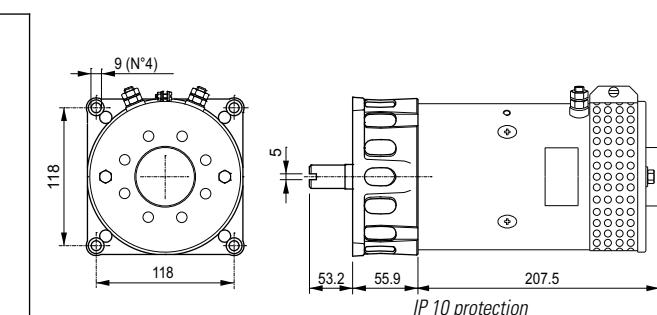
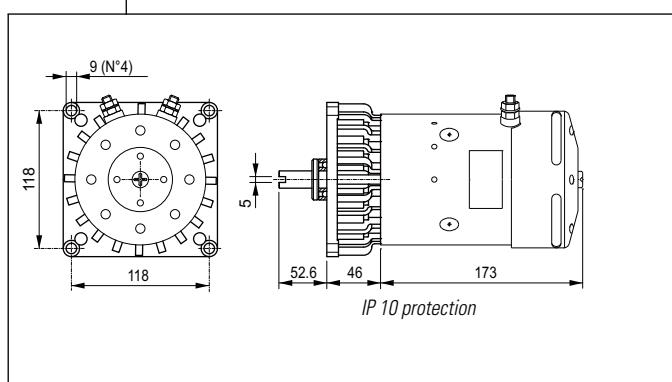
120A starting switch		
Code (*)	VDC	For motors
KIT07012.027	12	M2GA - M2GC
KIT07012.032	24	M4GB - M4GD
KIT07012.033	12	M2AA
KIT07012.034	24	M4AB
KIT07012.025	12	M2EN - M2GN
KIT07012.026	24	M4ES - M2GP

150A starting switch		
Code (*)	VDC	For motors
KIT07012.019	24	M4FB - M4GJ

(*) Complete kit with all assembly components.

For more details, features and performances DC motors, see catalog Dana code DOC00053.

M * ** (*) * /* - Accessory: Ventilation (motor included)



*	Code (*)	VDC	For motors
D	KIT09008.061	12	M2AA
G	KIT09008.062	12	M2AA + thermal protection
D	KIT09008.031	24	M4AB
G	KIT09008.063	24	M4AB + thermal protection

*	Code (*)	VDC	For motors
D	KIT09008.029	24	M4FB

(*) Complete kit with all assembly components (motor, transmission kit, etc).

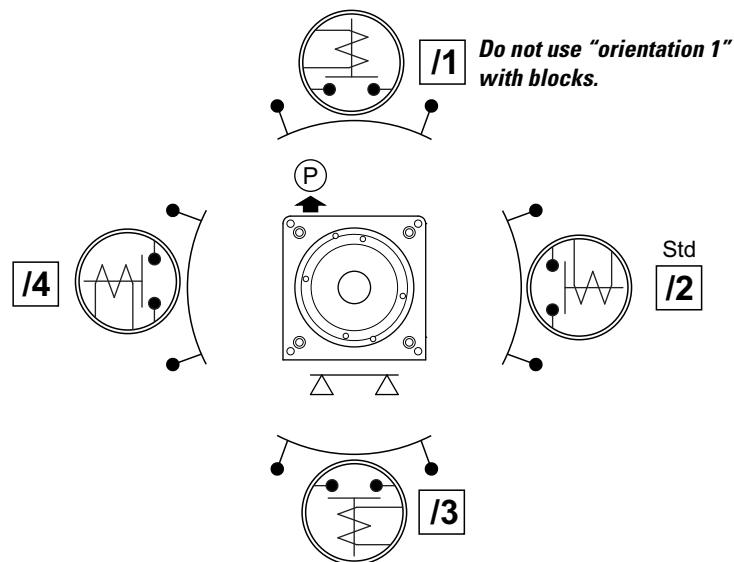
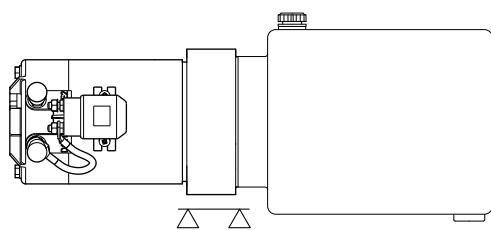
For more details, features and performances DC motors, see catalog Dana code DOC00053.

Sect. VI - DC Motors

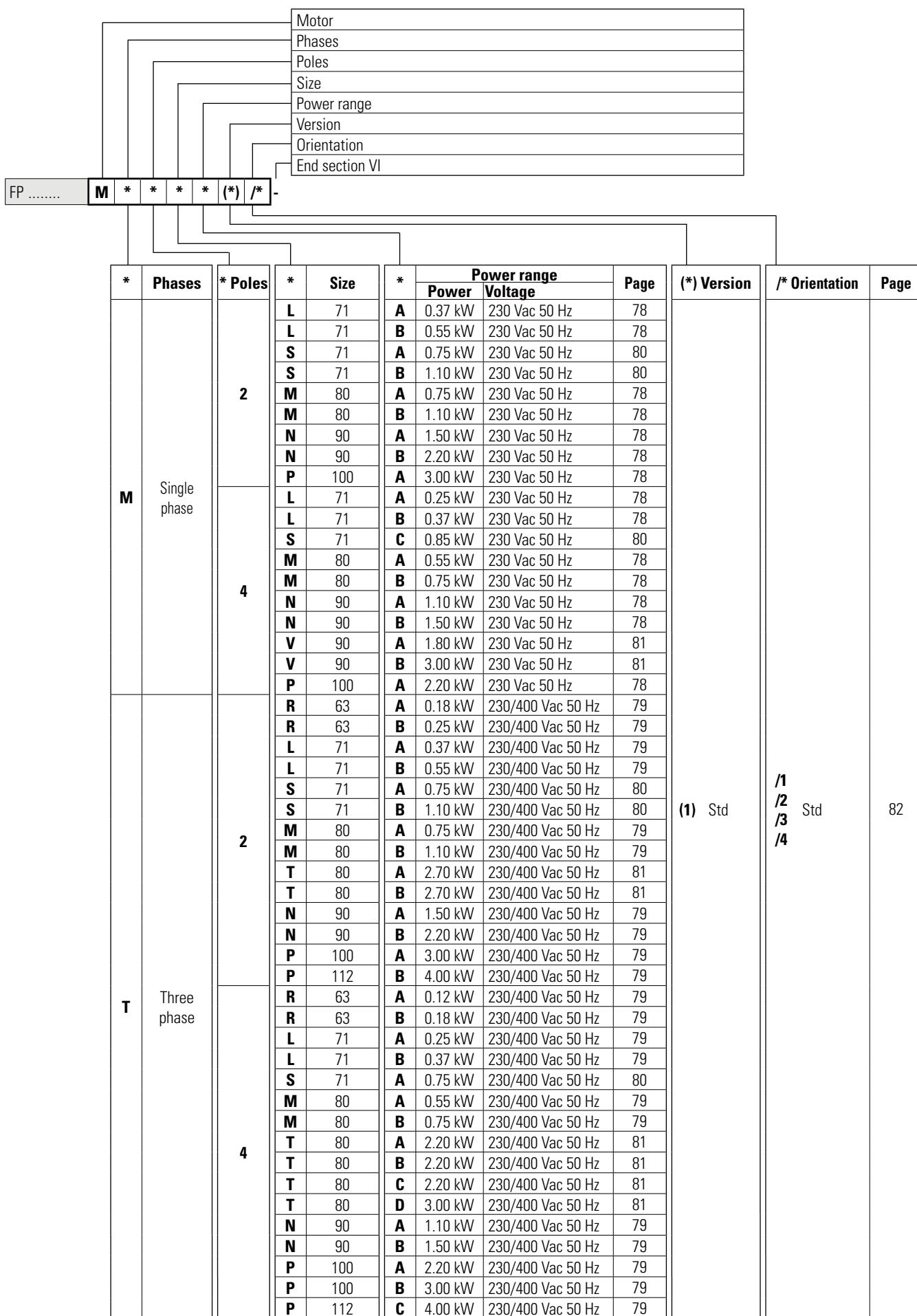


M * ** (*) * /* - **Motor orientation**

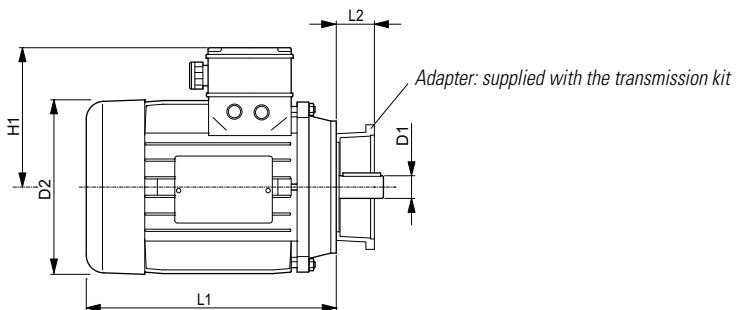
Starting switch and poles position.



Sect. VI - AC Motors



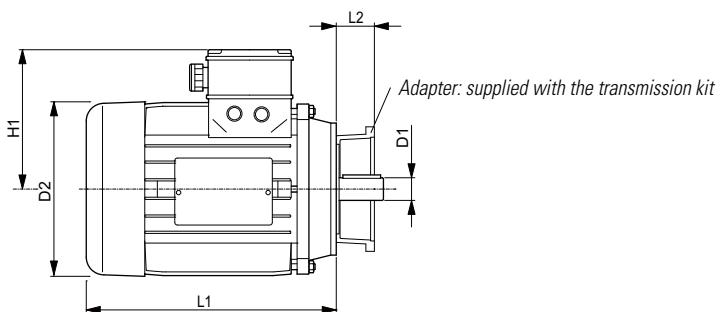
Motors supplied with all assembly components (transmission kit, coupling, etc).



Single-phase motors 2-4 Poles - 230 Vac 50Hz - Version B14

Phases	Poles	Size	D1 (•)	D2 (•)	H1 (•)	L1 (•)	Power range			Cable gland metric thread	Adapter			Single Motor	Transmission kit (for pump)								
							Power kW	Voltage	IP		IC	S1	Code	Screw UNI 5931									
M	M	2	L	A	(1)	2	2	71	14	148	115	208	0.37	230 Vac 50 Hz	54	F	Si	20-25	61000700	M6x20	19.5	M12E2000	KIT08019.011 (Gr.05)
M	M	2	L	B	(1)	2	2	71	14	148	115	208	0.55	230 Vac 50 Hz	54	F	Si	20-25	61000700	M6x20	19.5	M12F2000	KIT08019.012 (Gr.1)
M	M	2	M	A	(1)	2	2	80	19	170	126	234	0.75	230 Vac 50 Hz	54	F	Si	20-25	61000800	M6x20	30.4	M13G2000	KIT08019.013 (Gr.05)
M	M	2	M	B	(1)	2	2	80	19	170	126	234	1.10	230 Vac 50 Hz	54	F	Si	20-25	61000800	M6x20	30.4	M13H2000	KIT08019.014 (Gr.1)
M	M	2	N	A	(1)	2	2	90	24	185	142	247	1.50	230 Vac 50 Hz	54	F	Si	20-25	61000900	M8x21	40.4	M14L2000	KIT08019.015 (Gr.05)
M	M	2	N	B	(1)	2	2	90	24	185	142	272	2.20	230 Vac 50 Hz	54	F	Si	20-25	61000900	M8x21	40.4	M14N2000	KIT08019.016 (Gr.1)
M	M	2	P	A	(1)	2	2	100	28	210	155	310	3.00	230 Vac 50 Hz	54	F	Si	25-32	61001000	M8x28	75	M15P2000	KIT08019.017 (Gr.05)
																					KIT08019.018 (Gr.1)		
M	M	4	L	A	(1)	2	4	71	14	148	115	208	0.25	230 Vac 50 Hz	54	F	Si	20-25	61000700	M6x20	19.5	M12D4000	KIT08019.011 (Gr.05)
M	M	4	L	B	(1)	2	4	71	14	148	115	208	0.37	230 Vac 50 Hz	54	F	Si	20-25	61000700	M6x20	19.5	M12E4000	KIT08019.012 (Gr.1)
M	M	4	M	A	(1)	2	4	80	19	170	126	234	0.55	230 Vac 50 Hz	54	F	Si	20-25	61000800	M6x20	30.4	M13F4000	KIT08019.013 (Gr.05)
M	M	4	M	B	(1)	2	4	80	19	170	126	234	0.75	230 Vac 50 Hz	54	F	Si	20-25	61000800	M6x20	30.4	M13G4000	KIT08019.014 (Gr.1)
M	M	4	N	A	(1)	2	4	90	24	185	142	247	1.10	230 Vac 50 Hz	54	F	Si	20-25	61000900	M8x21	40.4	M14H4000	KIT08019.015 (Gr.05)
M	M	4	N	B	(1)	2	4	90	24	185	142	272	1.50	230 Vac 50 Hz	54	F	Si	20-25	61000900	M8x21	40.4	M14L4000	KIT08019.016 (Gr.1)
M	M	4	P	A	(1)	2	4	100	28	210	155	310	2.20	230 Vac 50 Hz	54	F	Si	25-32	61001000	M8x28	75	M15N4000	KIT08019.017 (Gr.05)
																					KIT08019.018 (Gr.1)		

(•)= Approximate dimensions

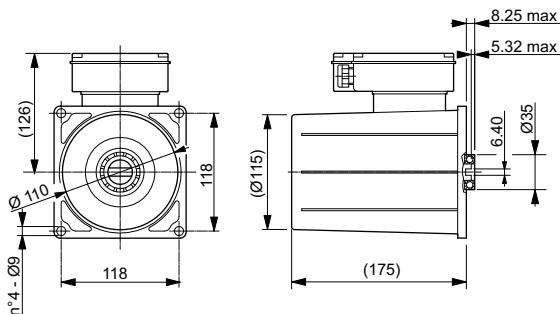


Three-phase motors 2-4 Poles - 230/400 Vac 50Hz - Version B14

Phases	Poles	Size	D1 (•)	D2 (•)	H1 (•)	L1 (•)	Power range				Cable gland metric thred	Adapter				Single Motor	Transmission kit (for pump)						
							Power kW	Voltage	IP	IC	S3	Code	Screw UNI 5931	L2									
M	T	2	R	A	(1)	3	2	63	11	125	95	189	0.18	230/400 Vac 50 Hz	54	F	60%	16-20	61004300	M5x16	19.5	M31C2000	KIT08019.009 (Gr.05)
M	T	2	R	B	(1)	3	2	63	11	125	95	189	0.25	230/400 Vac 50 Hz	54	F	60%	16-20	61004300	M5x16	19.5	M31D2000	KIT08019.010 (Gr.1)
M	T	2	L	A	(1)	3	2	71	14	148	115	208	0.37	230/400 Vac 50 Hz	54	F	60%	20-25	61000700	M6x20	19.5	M32E2000	KIT08019.011 (Gr.05)
M	T	2	L	B	(1)	3	2	71	14	148	115	208	0.55	230/400 Vac 50 Hz	54	F	60%	20-25	61000700	M6x20	19.5	M32F2000	KIT08019.012 (Gr.1)
M	T	2	M	A	(1)	3	2	80	19	170	126	234	0.75	230/400 Vac 50 Hz	54	F	60%	20-25	61000800	M6x20	30.4	M33G2000	KIT08019.013 (Gr.05)
M	T	2	M	B	(1)	3	2	80	19	170	126	234	1.10	230/400 Vac 50 Hz	54	F	60%	20-25	61000800	M6x20	30.4	M33H2000	KIT08019.014 (Gr.1)
M	T	2	N	A	(1)	3	2	90	24	185	142	247	1.50	230/400 Vac 50 Hz	54	F	60%	20-25	61000900	M8x21	40.4	M34L2000	KIT08019.015 (Gr.05)
M	T	2	N	B	(1)	3	2	90	24	185	142	272	2.20	230/400 Vac 50 Hz	54	F	60%	20-25	61000900	M8x21	40.4	M34N2000	KIT08019.016 (Gr.1)
M	T	2	P	A	(1)	3	2	100	28	210	155	310	3.00	230/400 Vac 50 Hz	54	F	60%	25-32	61001000	M8x28	75	M35P2000	KIT08019.017 (Gr.05)
M	T	2	P	B	(1)	3	2	112	28	225	182	325	4.00	230/400 Vac 50 Hz	54	F	60%	25-32	61001000	M8x28	75	M36Q2000	KIT08019.018 (Gr.1)
M	T	4	R	A	(1)	3	4	63	11	125	95	189	0.12	230/400 Vac 50 Hz	54	F	60%	16-20	61004300	M5x16	19.5	M31B4000	KIT08019.009 (Gr.05)
M	T	4	R	B	(1)	3	4	63	11	125	95	189	0.18	230/400 Vac 50 Hz	54	F	60%	16-20	61004300	M5x16	19.5	M31C4000	KIT08019.010 (Gr.1)
M	T	4	L	A	(1)	3	4	71	14	148	115	208	0.25	230/400 Vac 50 Hz	54	F	60%	20-25	61000700	M6x20	19.5	M32D4000	KIT08019.011 (Gr.05)
M	T	4	L	B	(1)	3	4	71	14	148	115	208	0.37	230/400 Vac 50 Hz	54	F	60%	20-25	61000700	M6x20	19.5	M32E4000	KIT08019.012 (Gr.1)
M	T	4	M	A	(1)	3	4	80	19	170	126	234	0.55	230/400 Vac 50 Hz	54	F	60%	20-25	61000800	M6x20	30.4	M33F4000	KIT08019.013 (Gr.05)
M	T	4	M	B	(1)	3	4	80	19	170	126	234	0.75	230/400 Vac 50 Hz	54	F	60%	20-25	61000800	M6x20	30.4	M33G4000	KIT08019.014 (Gr.1)
M	T	4	N	A	(1)	3	4	90	24	185	142	247	1.10	230/400 Vac 50 Hz	54	F	60%	20-25	61000900	M8x21	40.4	M34H4000	KIT08019.015 (Gr.05)
M	T	4	N	B	(1)	3	4	90	24	185	142	272	1.50	230/400 Vac 50 Hz	54	F	60%	20-25	61000900	M8x21	40.4	M34L4000	KIT08019.016 (Gr.1)
M	T	4	P	A	(1)	3	4	100	28	210	155	310	2.20	230/400 Vac 50 Hz	54	F	60%	25-32	61001000	M8x28	75	M35N4000	KIT08019.017 (Gr.05)
M	T	4	P	B	(1)	3	4	100	28	210	155	310	3.00	230/400 Vac 50 Hz	54	F	60%	25-32	61001000	M8x28	75	M35P4000	
M	T	4	P	C	(1)	3	4	112	28	225	182	325	4.00	230/400 Vac 50 Hz	54	F	60%	25-32	61001000	M8x28	75	M36Q4000	KIT08019.018 (Gr.1)

(•)= Approximate dimensions

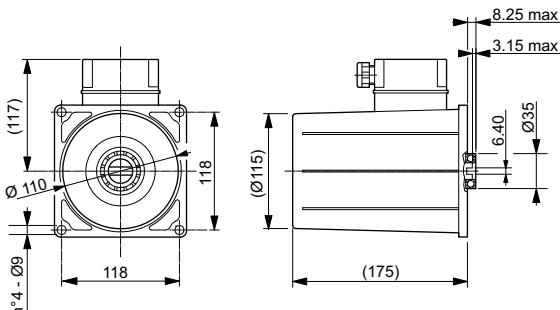
Sect. VI - AC Motors



Single-phase motors 2-4 Poles - 230 Vac 50Hz - Special housing

Phases	Poles	Size	Power range					Cable gland metric thread	Single Motor	Transmission kit	Note		
			Power kW	Voltage	IP	IC	Service						
M	M	2 S A (1)	2	2	71	0.75	230 Vac 50 Hz	54	F	Light-duty	20	M12GY3FF.001 KIT08019.005 (for pumps Gr.1) KIT08019.006 (for pumps Gr.0.5)	Without fan
M	M	2 S B (1)	2	2	71	1.10	230 Vac 50 Hz	54	F	Light-duty	20	M12HY3FF.000 KIT08019.005 (for pumps Gr.1) KIT08019.006 (for pumps Gr.0.5)	Without fan
M	M	4 S C (1)	2	4	71	0.85	230 Vac 50 Hz	54	F	Light-duty	20	M12YY3FF.001 KIT08019.005 (for pumps Gr.1) KIT08019.006 (for pumps Gr.0.5)	Without fan

IP protection level becomes effective after installationon on power pack.



Three-phase motors 2-4 Poles - 230/400 Vac 50Hz - Direct fixing

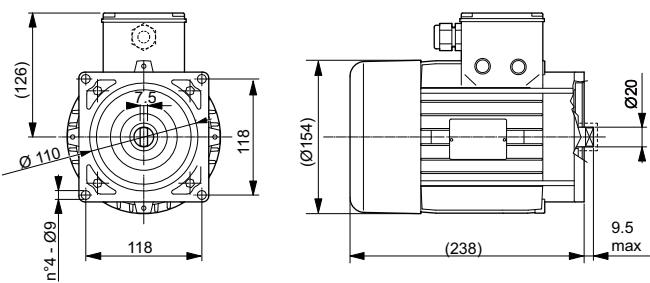
Phases	Poles	Size	Power range					Cable gland metric thread	Single Motor	Transmission kit	Note		
			Power kW	Voltage	IP	IC	Service						
M	T	2 S A (1)	3	2	71	0.75	230/400 Vac 50 Hz	54	F	Light-duty	20	M32GY3FL.003 KIT08019.005 (for pumps Gr.1) KIT08019.006 (for pumps Gr.0.5)	Without fan
M	T	2 S B (1)	3	2	71	1.10	230/400 Vac 50 Hz	54	F	Light-duty	20	M32HY3FL.001 KIT08019.005 (for pumps Gr.1) KIT08019.006 (for pumps Gr.0.5)	Without fan
M	T	4 S A (1)	3	4	71	0.75	230/400 Vac 50 Hz	54	F	Light-duty	20	M32GY3FL.002 KIT08019.005 (for pumps Gr.1) KIT08019.006 (for pumps Gr.0.5)	Without fan

IP protection level becomes effective after installationon on power pack.

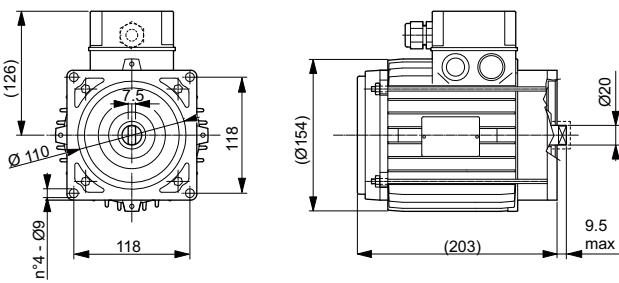
Sect. VI - AC Motors



With fan



Without fan

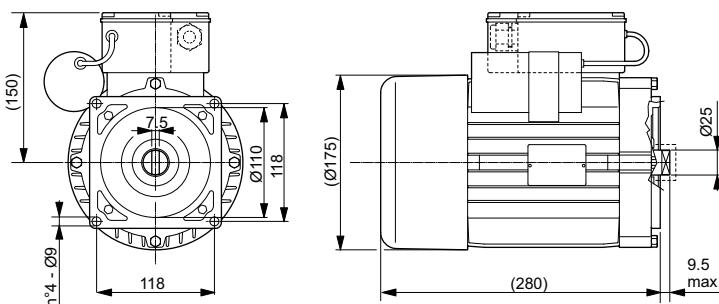


Three-phase motors 2-4 Poles - 230/400 Vac 50Hz - Direct fixing

Phases	Poles	Size	Power range					Cable gland metric thread	Single Motor	Transmission kit	Note
			Power kW	Voltage	IP	IC	Service				
M	T	2	2.7	230/400 Vac 50 Hz	44	F	Light-duty	20-25	M33YD1FF.000	KIT08019.007 (for pumps Gr.0.5) KIT08019.008 (for pumps Gr.1)	With fan
M	T	2	2.7	230/400 Vac 50 Hz	44	F	Light-duty	20-25	M33YD1FF.001	KIT08019.007 (for pumps Gr.0.5) KIT08019.008 (for pumps Gr.1)	Without fan
M	T	4	2.2	230/400 Vac 50 Hz	44	F	S3 - 4%	20-25	M33NF1FF.001	KIT08019.007 (for pumps Gr.0.5) KIT08019.008 (for pumps Gr.1)	Without fan
M	T	4	2.2	230/400 Vac 50 Hz	55	F	S3 - 4%	20-25	M33NF4FF.000	KIT08019.007 (for pumps Gr.0.5) KIT08019.008 (for pumps Gr.1)	With fan
M	T	4	2.2	230/400 Vac 50 Hz	44	F	S3 - 4%	20-25	M33NF1FF.000	KIT08019.007 (for pumps Gr.0.5) KIT08019.008 (for pumps Gr.1)	With fan
M	T	4	3.0	230/400 Vac 50 Hz	54	F	Light-duty	20-25	M33PF3FF.000	KIT08019.007 (for pumps Gr.0.5) KIT08019.008 (for pumps Gr.1)	With fan

IP protection level becomes effective after installation on power pack.

VI
AC



Single-phase motors 4 Poles - 230 Vac 50Hz - Direct fixing

Phases	Poles	Size	Power range					Cable gland metric thread	Single Motor	Transmission kit	Note
			Power kW	Voltage	IP	IC	Service				
M	M	4	1.8	230 Vac 50 Hz	44	F	Light-duty	20-25	M14MF1FF.001	KIT08019.007 (for pumps Gr.0.5) KIT08019.008 (for pumps Gr.1)	With fan Start torque 13Nm
M	M	4	3.0	230 Vac 50 Hz	55	F	S3 - 7%	20-25	M14PF4FF.000	KIT08019.007 (for pumps Gr.0.5) KIT08019.008 (for pumps Gr.1)	With fan

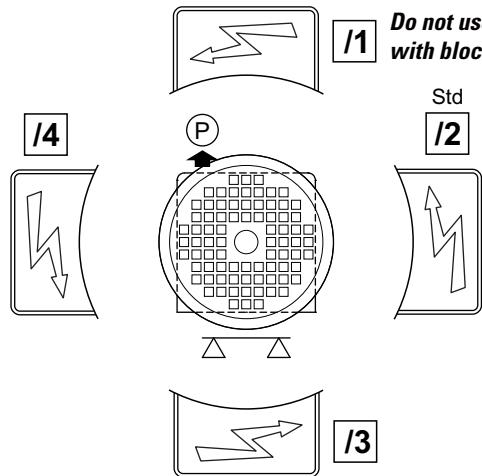
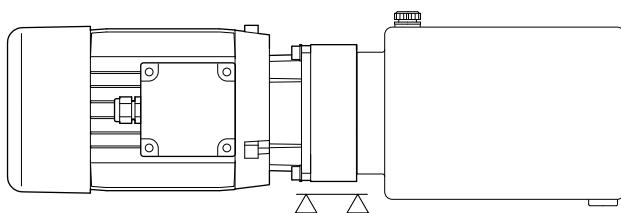
IP protection level becomes effective after installation on power pack.

Sect. VI - AC Motors



M * * * (*) /* - **Motor orientation**

Connector box position on power pack.



VI
AC

Sect. VII - Transmission kit DC motors



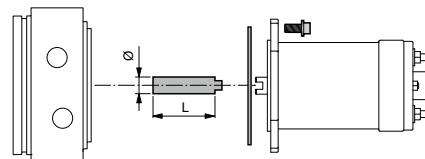
Transmission kit (only for motors on the catalog)
Type
End section VII

Specify the transmission kit whether you requested the joint and accessories assembly (without motor).

FP **T** ** -

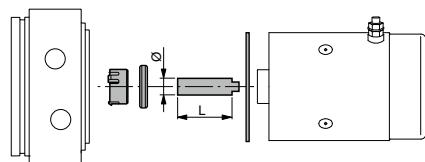
Transmission kit				
	Code	Pump	L	Ø
01	KIT08019.000	Gr. 0.5	63.3	14
	KIT08019.001	Gr. 1	46.9	14

For DC motors				
GA (350 W - Ø 80 - Page 72)				
GC (700 W - Ø 80 - Page 72)				
GB (400 W - Ø 80 - Page 72)				
GD (800 W - Ø 80 - Page 72)				



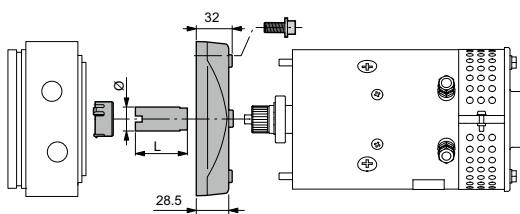
Transmission kit				
	Code	Pump	L	Ø
02	KIT08019.002	Gr. 0.5	64.5	14
	KIT08019.003	Gr. 1	48.2	14

For DC motors				
AA (1500 W - Ø 115 - Page 73)				
EN (1600 W - Ø 115 - Page 73)				
AB (2000 W - Ø 115 - Page 73)				
ES (2200 W - Ø 115 - Page 73)				
GN (1600 W - Ø 115 - Page 74)				
GP (2200 W - Ø 115 - Page 74)				



Transmission kit				
	Code	Pump	L	Ø
03	KIT08019.004	Gr. 1	45.4	20

For DC motors				
GJ (3000 W - Ø 125 - Page 74)				
FB (3000 W - Ø 125 - Page 74)				



Note: in ventilated motors (accessory "D" page 74) the transmission is included in the kit ventilation

Sect. VII - Transmission kit AC motors



Transmission kit (only for motors on the catalog)

Type

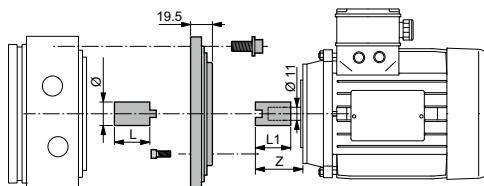
End section VII

Specify the transmission kit whether you requested the joint and accessories assembly (without motor).

FP **T** ** -

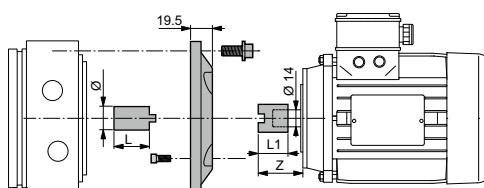
Transmission kit					
	Code	Pump	L	Ø	L1
1R	KIT08019.009	Gr. 0.5	47.1	14	30
	KIT08019.010	Gr. 1	30.6	20	30

	For AC motors	Page
Ref.	Size	
R	63 (B14)	79



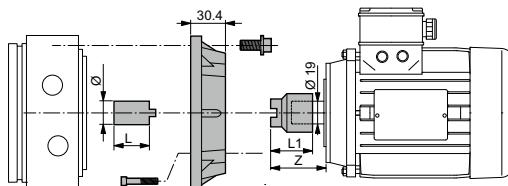
Transmission kit					
	Code	Pump	L	Ø	L1
1L	KIT08019.011	Gr. 0.5	47.1	14	26.5
	KIT08019.012	Gr. 1	30.7	20	26.5

	For AC motors	Page
Ref.	Size	
L	71 (B14)	78
		79



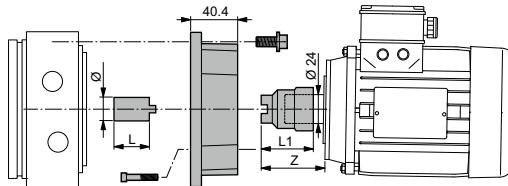
Transmission kit					
	Code	Pump	L	Ø	L1
1M	KIT08019.013	Gr. 0.5	47.1	14	38
	KIT08019.014	Gr. 1	30.7	20	38

	For AC motors	Page
Ref.	Size	
M	80 (B14)	78
		79



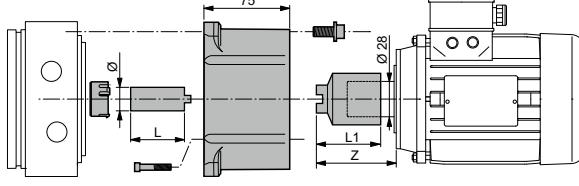
Transmission kit					
	Code	Pump	L	Ø	L1
1N	KIT08019.015	Gr. 0.5	47.1	14	45.4
	KIT08019.016	Gr. 1	30.7	20	45.4

	For AC motors	Page
Ref.	Size	
N	90 (B14)	78
		79



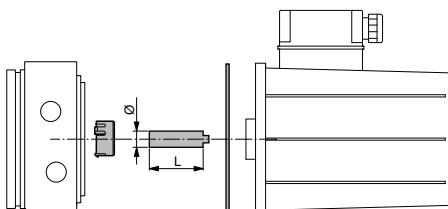
Transmission kit					
	Code	Pump	L	Ø	L1
1P	KIT08019.017	Gr. 0.5	62.9	14/20	57
	KIT08019.018	Gr. 1	46.6	20	57

	For AC motors	Page
Ref.	Size	
P	100-112 (B14)	78
		79



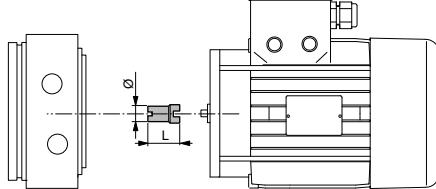
Transmission kit					
	Code	Pump	L	Ø	L1
1S	KIT08019.005	Gr. 0.5		64.5	14
	KIT08019.006	Gr. 1		48.2	14

	For AC motors	Page
Ref.	Size	
S	71 (direct fixing)	80



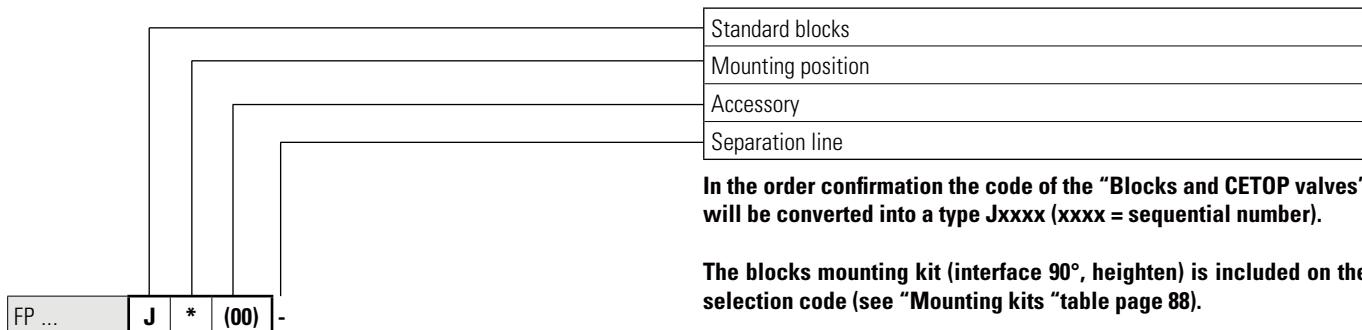
Transmission kit					
	Code	Pump	L	Ø	L1
1T	KIT08019.007	Gr. 0.5		68	14
	KIT08019.008	Gr. 1		51.7	20

	For AC motors	Page
Ref.	Size	
T V	80-90 (direct fixing)	81

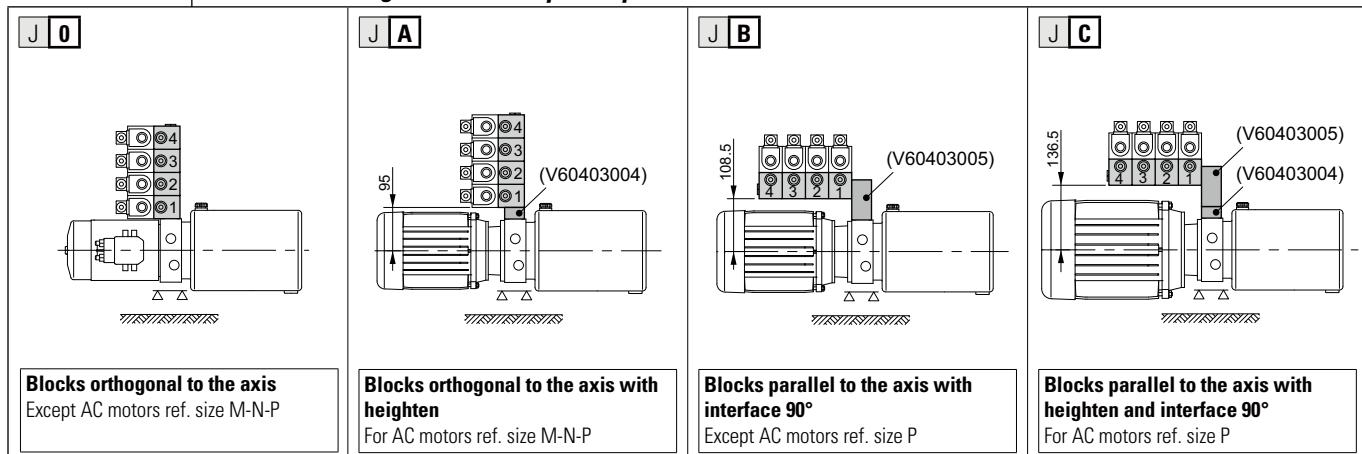


"Z" : dimension of the coupling side motor

Sect. VIII - Blocks and CETOP valves

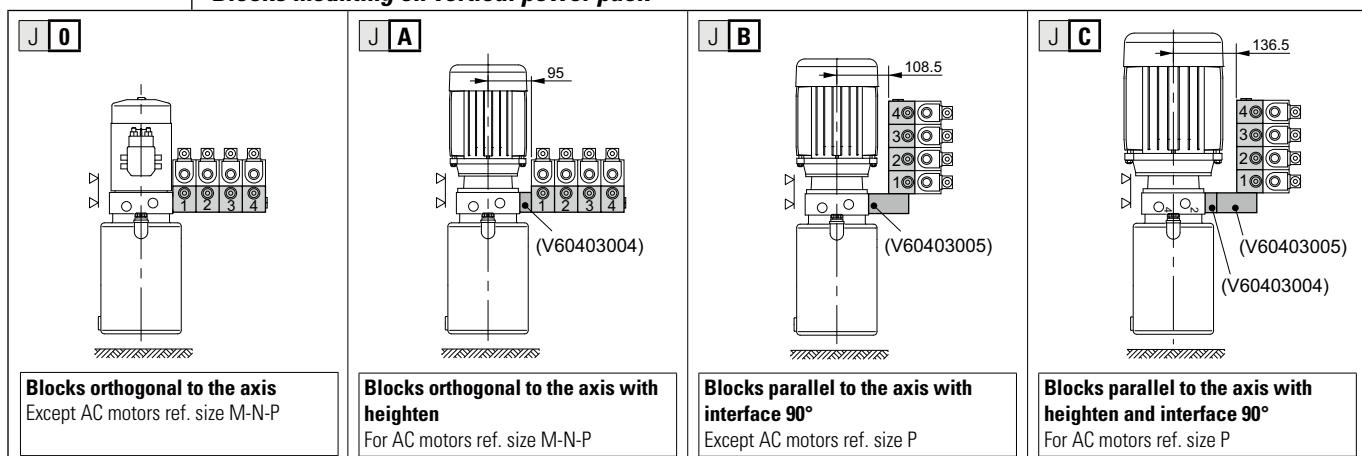


Blocks mounting on horizontal power pack



The blocks can not be mounted with motors oriented in position "1" (DC motors, see page 76. AC motors, see page 82).

Blocks mounting on vertical power pack



The blocks can not be mounted with motors oriented in position "1" - DC motors, see page 76. AC motors, see page 82.

Sect. VIII - Blocks and CETOP valves



	Block type
	Accessory
	Pressure relief valve setting on "A" line
	Pressure relief valve setting on "B" line
	CETOP valve
	End section VIII

FP ..J*(00)	**	(00)	(..)	(..)	/***/	-
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Repeat for each block (max.5)

** (00) (..) (..) /***/ - **Block type**

**	(00)	(..)	(..)	Description	Code	Drawing	Scheme
A2	(00)	(0)	(0)	Middle parallel - Lateral ports G3/8"	V60403010		
A3	(00)	(0)	(0)	Middle parallel - Rear ports G3/8"	V60403001		
B2	(00)	(0)	(0)	Middle series - Lateral ports G3/8"	V60403011		
B3	(00)	(0)	(0)	Middle series - Rear ports G3/8"	V60403003		
E1	(00)	(0)	(0)	With pilot check valve on "A" port. Rear ports G1/4"	V60413002		
E2	(00)	(0)	(0)	With pilot check valve on "B" port. Rear ports G1/4"	V60413003		
E3	(00)	(0)	(0)	With pilot check valve on "A" and "B" ports. Rear ports G1/4"	V60413001		

P1 - T1: thread, closing with plug G1/8" (Plug Q26622251 + Washer Q51435012)

Sect. VIII - Blocks and CETOP valves



** (00) (..) (..) /***/ - **Block type**

**	(00)	(..)	(..)	Description	Code	Drawing	Scheme
F1	(00)	(D)	(0)	With pressure relief valve on "A" port Setting 15 ÷ 50 bar - Lateral ports G1/4"	1318828		
		(E)	(0)	With pressure relief valve on "A" port Setting 50 ÷ 110 bar - Lateral ports G1/4"	1318829		
		(F)	(0)	With pressure relief valve on "A" port Setting 110 ÷ 220 bar - Lateral ports G1/4"	1318830		
		(G)	(0)	With pressure relief valve on "A" port Setting 220 ÷ 290 bar - Lateral ports G1/4"	1318831		
F2	(00)	(0)	(D)	With pressure relief valve on "B" port Setting 15 ÷ 50 bar - Lateral ports G1/4"	1318832		
		(0)	(E)	With pressure relief valve on "B" port Setting 50 ÷ 110 bar - Lateral ports G1/4"	1318833		
		(0)	(F)	With pressure relief valve on "B" port Setting 110 ÷ 220 bar - Lateral ports G1/4"	1318834		
		(0)	(G)	With pressure relief valve on "B" port Setting 220 ÷ 290 bar - Lateral ports G1/4"	1318835		
F3	(00)	(D)	(D)	With pressure relief valve on "A" and "B" Setting 15 ÷ 50 bar - Lateral ports G1/4"	1318836		
		(E)	(E)	With pressure relief valve on "A" and "B" Setting 50 ÷ 110 bar - Lateral ports G1/4"	1318837		
		(F)	(F)	With pressure relief valve on "A" and "B" Setting 110 ÷ 220 bar - Lateral ports G1/4"	1318838		
		(G)	(G)	With pressure relief valve on "A" and "B" Setting 220 ÷ 290 bar - Lateral ports G1/4"	1318839		

P1 - T1: thread, closing with plug G1/8" (Plug Q26622251 + Washer Q51435012)

Sect. VIII - Blocks and CETOP valves



Mounting kits

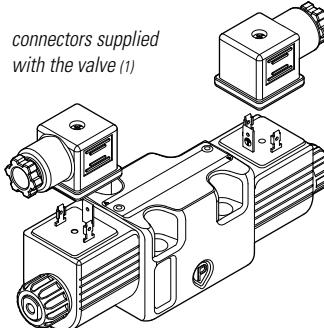
Mounting kit: blocks	For No. blocks	Code
Mounting position 0-2-3	1	V60513007
	2	V60513008
	3	V60513009
	4	V60513010
Mounting position 1 (with heighten)	1	V60513011
	2	V60513012
	3	V60513013
	4	V60513014

Mounting kit: interface 90°	Code
Mounting position 2	V60513051

Mounting kit: interface 90° with heighten	Code
Mounting position 3	V60513049

The blocks mounting kit (interface 90°, heighten) is included on the selection code (see mounting position, page 85).

** (00) (..) (..) /***/ - **CETOP 3 valves**



/***/	Voltage	Code	Spool (2)			Screw kit for valve mounting	
			Type	Mounting	Scheme		
/000/	Without valve						
/001/	24 VDC (M)	ADC3E01CM001	01	C		V60513015	
/002/	12 VDC (L)	ADC3E01CL001					
/003/	24 VDC (M)	ADC3E02CM001	02	C			
/004/	12 VDC (L)	ADC3E02CL001					
/005/	24 VDC (M)	ADC3E03CM001	03	C			
/006/	12 VDC (L)	ADC3E03CL001					
/007/	24 VDC (M)	ADC3E04CM001	04	C			
/008/	12 VDC (L)	ADC3E04CL001					

1 = Valves supplied with connector. Without connector see accessories page 89

2 = More details, features and performances, see catalog Dana "Valves and Electronics" code DOC00078

Sect. IX - Accessories

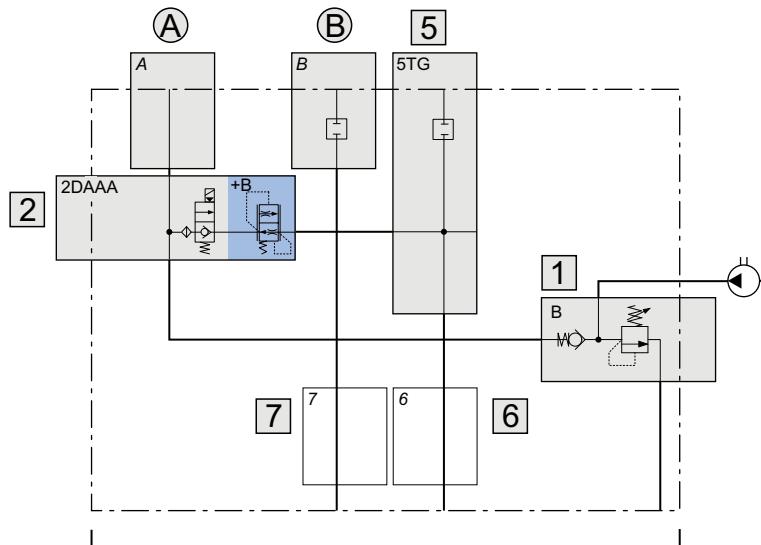


		Accessories (optional)		
		First accessory		
		Second accessory		
FP		R * * *		
*	Description	Drawing	Code	Note
A	Standard foot, (galvanized sheet steel) thickness 2.5 mm (unassembled)		Kit (foot and screws): 17010075	All motors are compatible except orientation / 3 Tanks compatible (except for orientation / 3) S**A S**B S**C S**G S**L
B	Non-removable red plastic plug for pressure relief valve (unassembled)		Plug: 60309200	
C	Protection device for DC motors (supplied assembled)		Kit (protectin, nut, tierods, washers): 17010048	For motors: M2EN M4ES With blocks, please add the block code 91006000.000
D	High foot, (galvanized sheet steel) thickness 2 mm (unassembled)		Kit (foot and screws): 17010053	All motors are compatible except orientation / 3 Tanks compatible (except for orientation / 3) S**A S**B S**C S**D S**F S**G S**L
E	Collar in welded sheet steel, thickness 2 mm (unassembled)		Collar: 25000300 Tank fixing kit (screws and O-Ring): 17010080	
F	Without valves connectors			

Examples

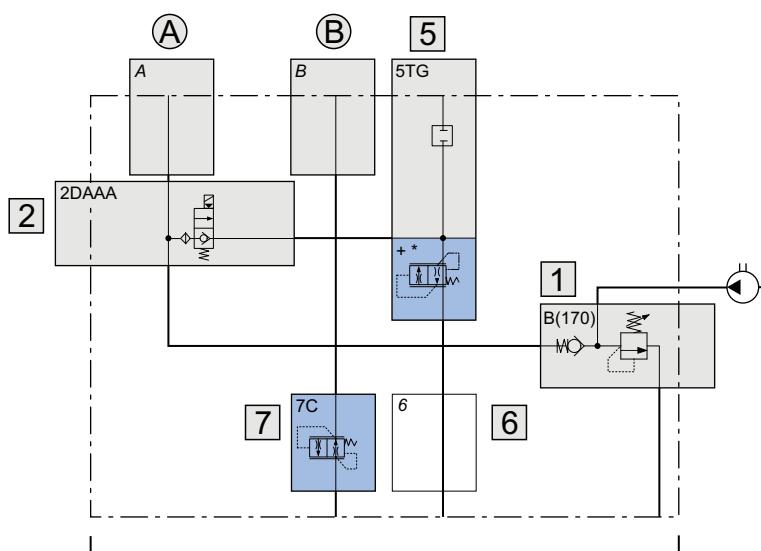


Examples with FPA endhead



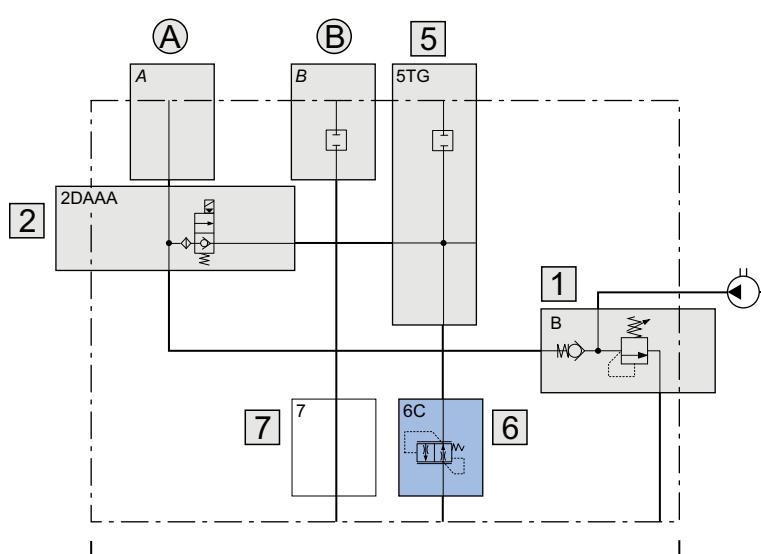
FPA 0 F1 2DAAA+B 5TG -03 - ..

Cavity	Code	Description	Page
-	0	Thread ports P-T G1/4" (blocks interface)	13
1	F1	Pressure relief valve with check valve (75 ÷ 220 bar) with screw and detachable closing, standard setting 150 bar	14
2	2DAAA +B	Piloted solenoid valve normally closed, without emergency. Voltage 12 VDC + Flow control valve 1.4 l/min	16
5	5TG	Plug	18
6-7		Not specified, return lines 6 and 7 open	—
A-B	-03	Combinations plugs on ports (A= open; B= with plug)	20
-	-	End section	—



FPA 0 E1(90) 2DAAA 5TG+B 7C -00 - ..

Cavity	Code	Description	Page
-	0	Thread ports P-T G1/4" (blocks interface)	13
1	E1(90)	Pressure relief valve with check valve with screw and detachable closing, special setting 90 bar	14
2	2DAAA	Piloted solenoid valve normally closed, without emergency. Voltage 12 VDC	16
5	5TG +B	Plug + Flow control valve 1.4 l/min	18
6		Not specified, return line 6 open	—
7	7C	Flow control valve on return 7, flow 2.1 l/min	19
A-B	-00	Combinations plugs on ports (A,B= open)	20
-	-	End section	—



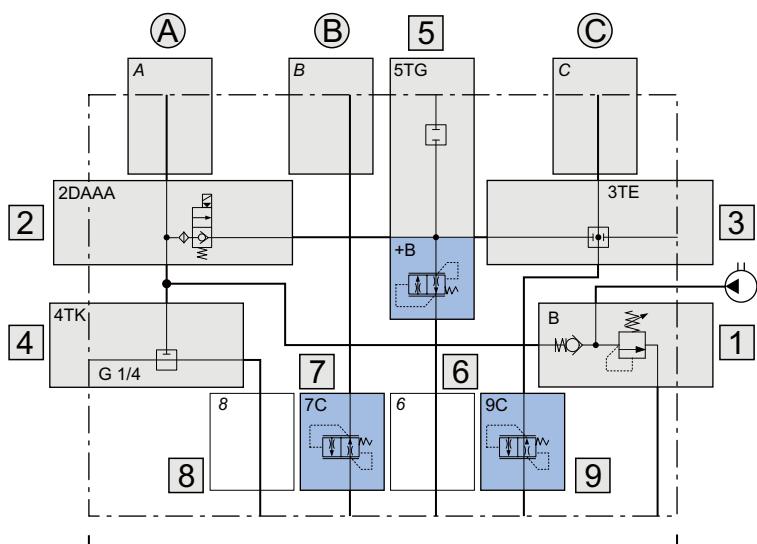
FPA 0 F1 2DAAA 5TG 6C -03 - ..

Cavity	Code	Description	Page
-	0	Thread ports P-T G1/4" (blocks interface)	13
1	F1	Pressure relief valve with check valve (75 ÷ 220 bar) with screw and detachable closing, standard setting 150 bar	14
2	2DAAA	Piloted solenoid valve normally closed, without emergency. Voltage 12 VDC	16
5	5TG	Plug	18
6	6C	Not specified, return line 6 open	19
7		Not specified, return line 7 open	—
A-B	-03	Combinations plugs on ports (A= open; B= with plug)	20
-	-	End section	—

Examples

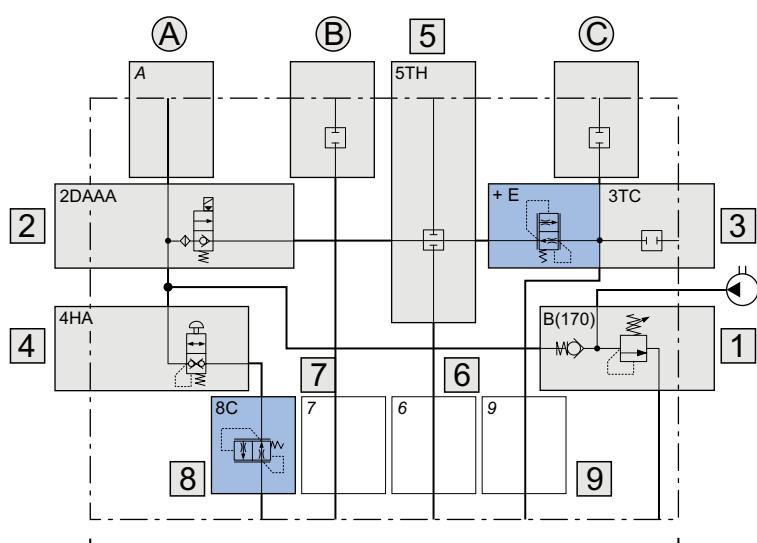


Examples with FPC endhead



FPC | 0 | F1 | 2DAAA | 3TE | 4TK | 5TG+B | 7C | 9C | -01 | - ..

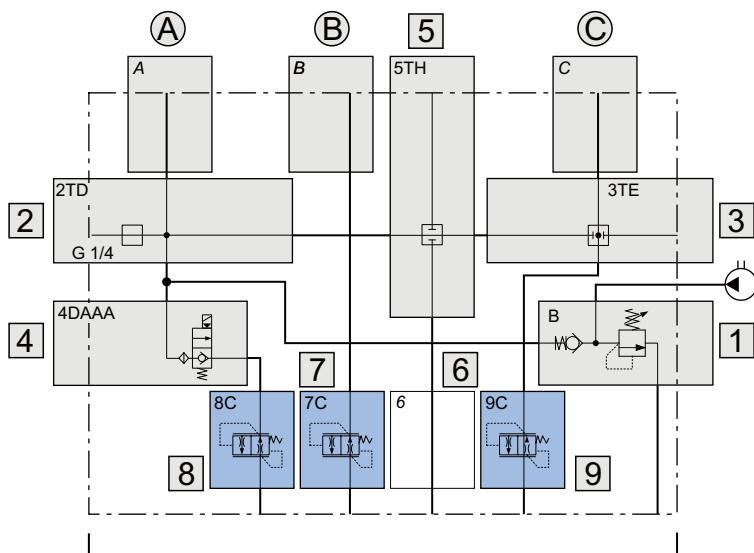
Cavity	Code	Description	Page
-	0	Thread ports P-T G1/4" (blocks interface)	13
1	F1	Pressure relief valve with check valve (75 ÷ 220 bar) with screw and detachable closing, standard setting 150 bar	21
2	2DAAA	Piloted solenoid valve normally closed, without emergency. Voltage 12 VDC	23
3	3TE	Plug	27
4	4TK	Plug (union G1/4)	30
5	5TG +B	Plug + Flow control valve 1.4 l/min	31
6		Not specified, return line 6 open	—
7	7C	Flow control valve 2.1 l/min	32
8		Not specified, return line 8 open	—
9	9C	Flow control valve 2.1 l/min	32
A-B-C	-01	Combinations plugs on ports (A-B-C= open)	33
-	-	End section	—



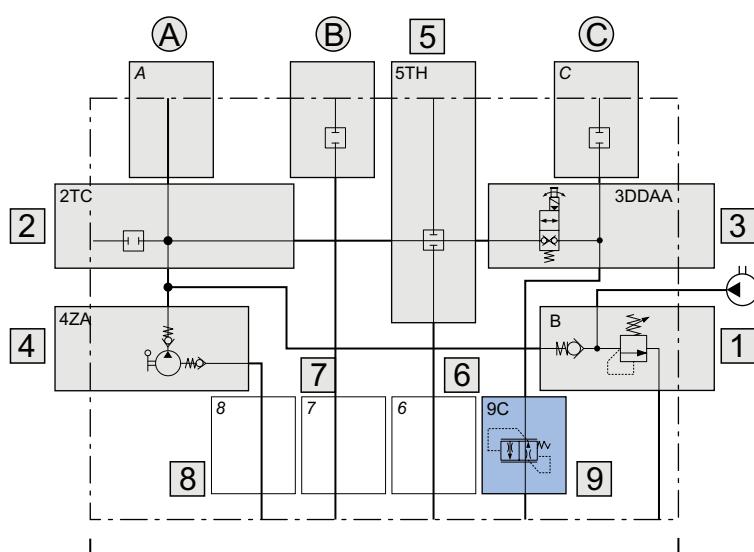
FPC | 0 | E1(90) | 2DAAA | 3TC+B | 4HA | 5TH | 8C | -05 | - ..

Cavity	Code	Description	Page
-	0	Thread ports P-T G1/4" (blocks interface)	13
1	E1(90)	Pressure relief valve with check valve with screw and detachable closing, special setting 90 bar	21
2	2DAAA	Piloted solenoid valve normally closed, without emergency. Voltage 12 VDC	23
3	3TG +B	Plug + Flow control valve 1.4 l/min	27
4	4HA	Push-button control	30
5	5TH	Plug	31
6-7		Not specified, return lines 6 and 7 open	—
8	8C	Flow control valve 2.1 l/min	—
9		Not specified, return 9 open	32
A-B-C	-05	Combinations plugs on ports (A = open; B-C= with plug)	33
-	-	End section	—

Examples



FPC	0	F1	2TD	3TE	4DAAAA	5TH	7C	8C	9C	-01	- ..
Cavity	Code	Description									Page
-	0	Thread ports P-T G1/4" (blocks interface)									13
1	F1	Pressure relief valve with check valve (75 ÷ 220 bar) with screw and detachable closing, standard setting 150 bar									21
2	2TD	Plug (union G1/4)									24
3	3TE	Plug									27
4	4DAAA	Piloted solenoid valve normally closed, without emergency. Voltage 12 VDC									29
5	5TH	Plug									31
6		Not specified, return line 6 open									—
7	7C	Flow control valve 2.1 l/min									32
8	8C	Flow control valve 2.1 l/min									32
9	9C	Flow control valve 2.1 l/min									32
A-B-C	-01	Combinations plugs on ports (A-B-C= open)									33
-	-	End section									—

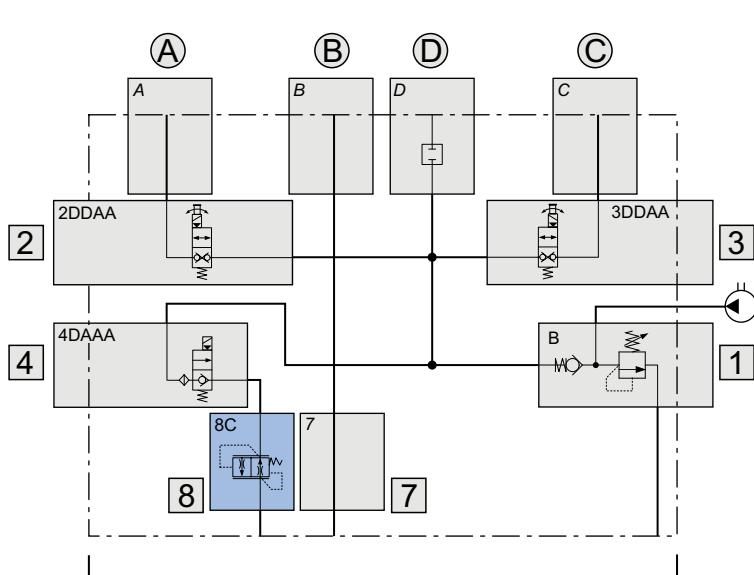


FPC	0	F1	2TC	3DDAA	4ZA	5TH	9C	-05	- ..
Cavity	Code	Description							Page
-	0	Thread ports P-T G1/4" (blocks interface)							13
1	F1	Pressure relief valve with check valve (75 ÷ 220 bar) with screw and detachable closing, standard setting 150 bar							21
2	2TC	Plug							24
3	3DDAA	Piloted solenoid valve normally closed, with emergency. Voltage 12 VDC							26
4	4ZA	Hand pump displacement 1cc							30
5	5TH	Plug							31
6-7-8		Not specified, return lines 6-7-8 open							—
9	9C	Flow control valve 2.1 l/min							32
A-B-C	-05	Combinations plugs on ports (A = open; B-C= with plug)							33
-	-	End section							—

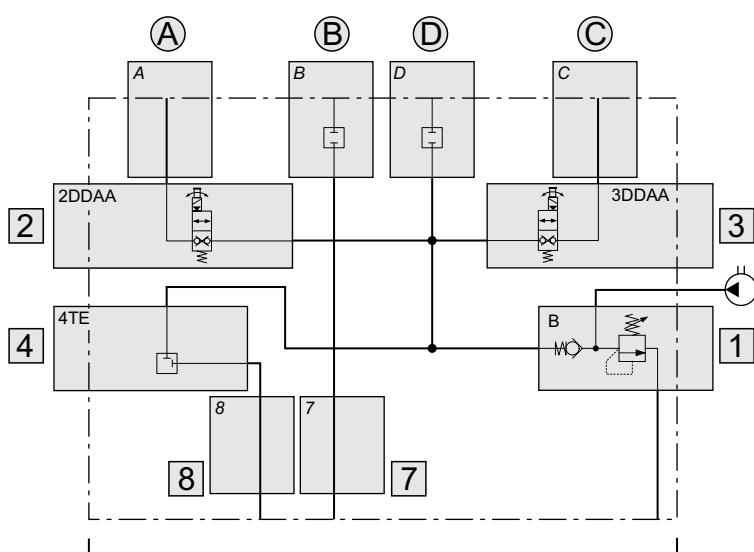
Examples



Examples with FPL endhead



FPL	0	F1	2DDAA	3DDAA	4DAAA	8C	-04	- ..
Cavity	Code	Description					Page	
-	0	Thread ports P-T G1/4" (blocks interface)					13	
1	F1	Pressure relief valve with check valve (75 ÷ 220 bar) with screw and detachable closing, standard setting 150 bar					34	
2	2DDAA	Direct operated solenoid valve normally closed, with emergency Voltage 12 VDC					36	
3	3DDAA	Direct operated solenoid valve normally closed, with emergency Voltage 12 VDC					39	
4	4DAAA	Piloted solenoid valve normal closed, without emergency. Voltage 12 VDC					42	
7		Not specified, return line 7 open					—	
8	8C	Flow control valve 2.1 l/min					44	
A-B-C-D	-04	Combinations plugs on ports (A-B-C= open; D= with plug)					45	
-	-	End section					—	

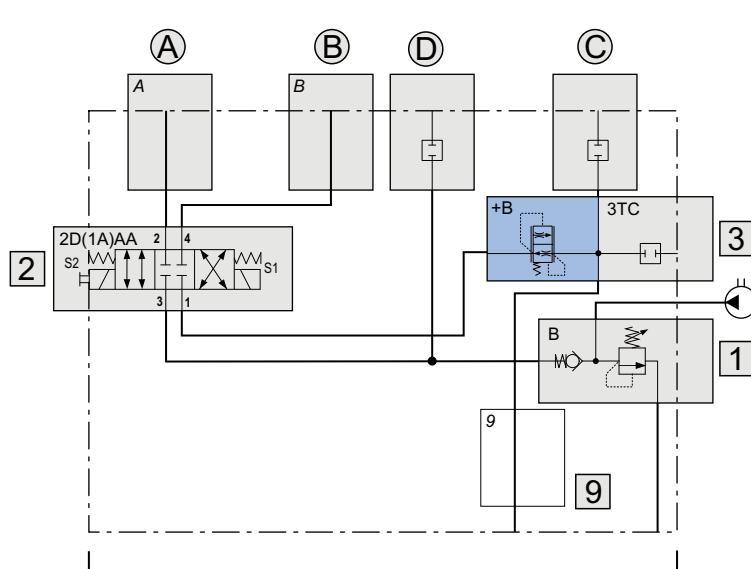


FPL	0	F1(100)	2DDAA	3DDAA	4TE	-04	- ..
Cavity	Code	Description					Page
-	0	Thread ports P-T G1/4" (blocks interface)					13
1	F1(100)	Pressure relief valve with check valve with screw and detachable closing, special setting 100 bar					34
2	2DDAA	Direct operated solenoid valve normally closed, with emergency Voltage 12 VDC					36
3	3DDAA	Direct operated solenoid valve normally closed, with emergency Voltage 12 VDC					39
4	4TE	Piloted solenoid valve normal closed, without emergency. Voltage 12 VDC					43
7-8		Not specified, return lines 7-8 open					—
A-B-C-D	-04	Combinations plugs on ports (A-C= open; B-D= with plug)					45
-	-	End section					—

Examples

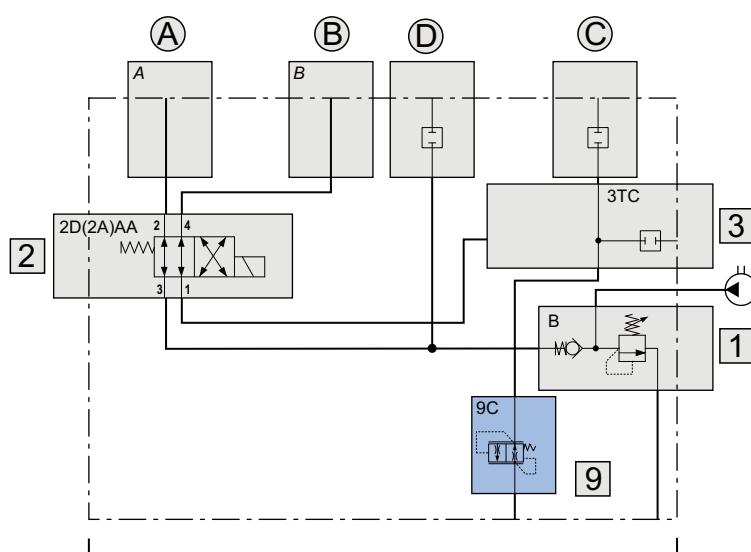


Examples with FPE endhead



FPE | 0 | F1 | 2D(1A)AA | 3TC+B | -04 | ..

Cavity	Code	Description	Page
-	0	Thread ports P-T G1/4" (blocks interface)	13
1	F1	Pressure relief valve with check valve (75 ÷ 220 bar) with screw and detachable closing, standard setting 150 bar	46
2	2D(1A) AA	Directional control valve 4 way 3 positions with emergency. Voltage 12 Vdc (closed centre "C" spool)	48
3	3TC +B	Plug + Flow control valve 1.4 l/min	50
9		Not specified, return 9 open	—
A-B-C-D	-04	Combinations plugs on ports (A-B= with protection; C-D= with plug)	52
-	-	End section	—



FPE | 0 | F1 | 2D(2A)AA | 3TC | 9C | -04 | ..

Cavity	Code	Description	Page
-	0	Thread ports P-T G1/4" (blocks interface)	13
1	F1	Pressure relief valve with check valve (75 ÷ 220 bar) with screw and detachable closing, standard setting 150 bar	46
2	2D(2A) AA	Directional control valve 4 way 3 positions with emergency. Voltage 12 Vdc (closed centre "C" spool)	48
3	3TC	Plug	50
9	9C	Flow control valve 2.1 l/min	51
A-B-C-D	-04	Combinations plugs on ports (A-B= with protection; C-D= with plug)	52
-	-	End section	—

Note



Note





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