oil sistem

Rexroth
Bosch Group

Compact power module catalogue

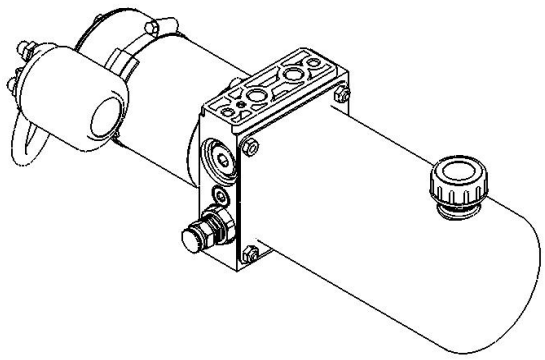
RE 00198/02.07

The Drive & Control Company

Introduction

Oil Sistem, the power module's division in Bosch Rexroth Oil Control, is a leader in production of hydraulic compact power units and offers a wide range of solutions suitable for every type of application. Oil Sistem developed in years of experience a high evoluted modular system that became powerful, flexible and economically competitive. This catalogue is intended to be an almost complete reference for the available power modules types.

In its easier configuration a *power module* is an assembly of electric motor, pump, central manifold with valves, oil tank and few other connection elements. You will notice that a large variety of driving circuits would be realizable with only the central manifold and its built-in valves. If more complex circuits are needed, modular blocks will be mounted on the central manifold to extend its capabilities.



Typical applications

- Passenger lift
- Fork lift
- Car and motorcycle lift
- Lift table
- Dumper
- Tail gate
- Scissor lift
- Tyre changer
- Home lift
- Gangway and davits for boats
- Material handling
- Press machine
- Dock leveller
- Building crane

General characteristics

Max working pressure	From 150 to 300 bar *(from 2175 to 4350 psi)*, according to pump version.
Pump type	External gear pump.
Pump displacement	From 0,18 cm^3/rev to 9,9 cm^3/rev *(from 0,01 to 0,6 in^3/rev)*.
Electric motors	D.C. from 150 to 3000 W, A.C. from 90 to 4000 W *(from 0,12 to 5,35 hp)*
Oil tank capacity	From 0,5 to 60 litres *(from 0,13 to 15,85 gal)*

Direction for use

Installation
There are no limits in mounting positions, just avoid any installation that could compromise pump's suction.
When power module is to be fitted on structures liable to vibrations, it is better to place vibration-clamping blocks in fixing points.
Oil tank and temperature
Tank size should always be enough to assure proper pump's suction and advised maximum working temperature of 60°C. The gaskets of these power modules allow a correct working between -15°C and 80°C. After the first setting in motion it is necessary to rest the oil level. You must use oil for hydraulic units having viscosity in 15 ÷ 68 cSt (1 cSt = 1 mm^2/s), suggested between 25 and 40 cSt (3.5°E ÷ 5.5°E). Different oil grades must be chosen according to ambient temperature and to which temperature would be reached during the unit activity.
Cleaning and maintenance
The set must be cleaned in each part because the group has only one suction filter. In case of defective work, you should check:
- oil level and conditions;
- pump efficiency;
- valves calibrations;
- battery and electric equipment efficiency.

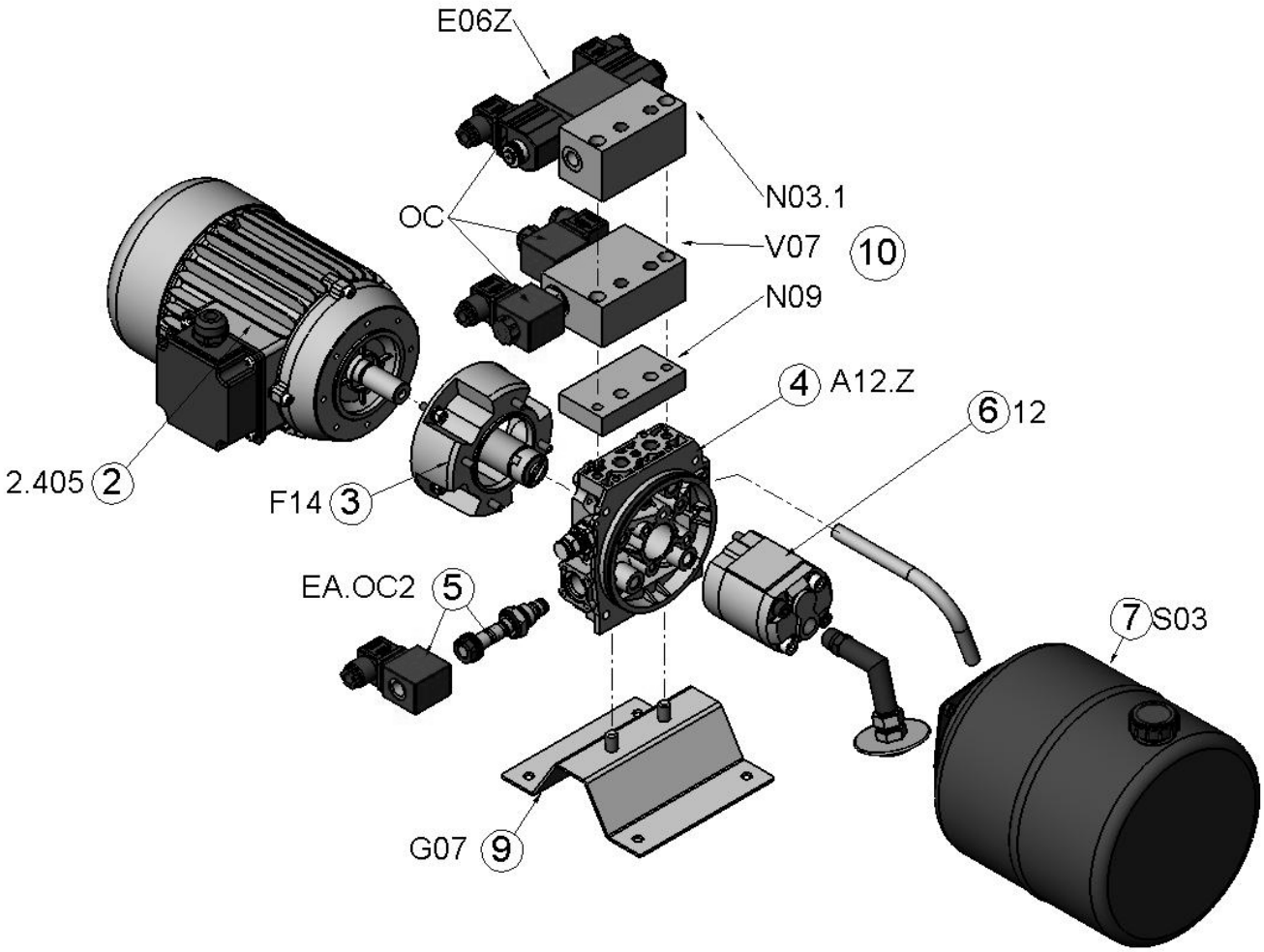
You have to substitute the oil after 100 hours of duty the first time, and then every 3000 hours of duty (in any case at least once a year).
Wiring and starting
The wiring between batteries and electric control panel must be chosen according to the electrical inputs indicated in diagrams. THE STARTING MUST ASSURE PROPER PUMP DIRECTION OF ROTATION. IT IS STRICTLY FORBIDDEN TO INVERT THE DIRECTION OF ROTATION.

How to order

Example code:

KE	1 - C91 - B0	TR51	M04 . Z	B - MC.17 - TC2 - TC4	13	S248	O1 - R4	G80	N22
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

1. Power Module type
2. Motor + starting relay and plastic protection for D.C. motors
3. Junction elements
4. Central manifold and relief valve setting
5. Built-in valves
6. Pump
7. Oil tank
8. Mounting position
9. Mounting brackets
10. Modular elements



Code:	K	2 - 405	F14	A12.Z	F - EA.OC	12	S03	O1	G07	N09-V07-N03/1-E06Z.OC
	1	2	3	4	5	6	7	8	9	10

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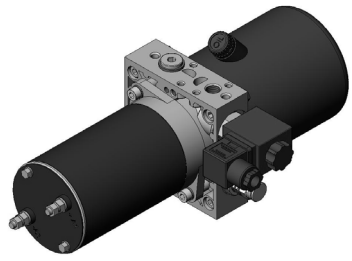
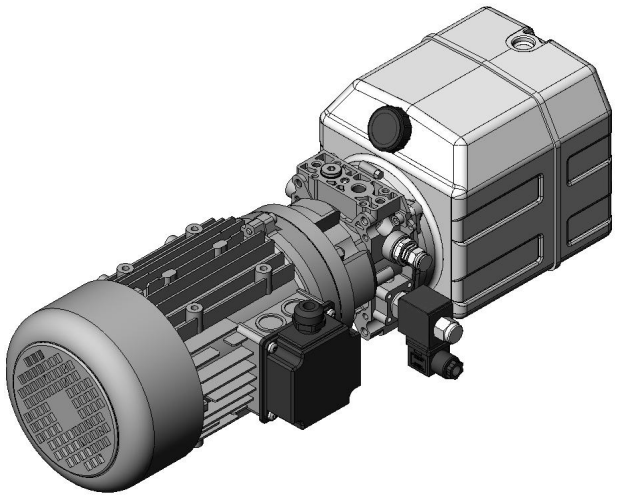


ME

- **Smallest overall dimensions**
- DC motors up to 2200 W
- AC motors up to 1100 W *(1,5 hp)*
- Pump displacement up to 1,50 cm^3 (0,09 in^3)
- Pressures up to 250 bar *(3625 psi)*

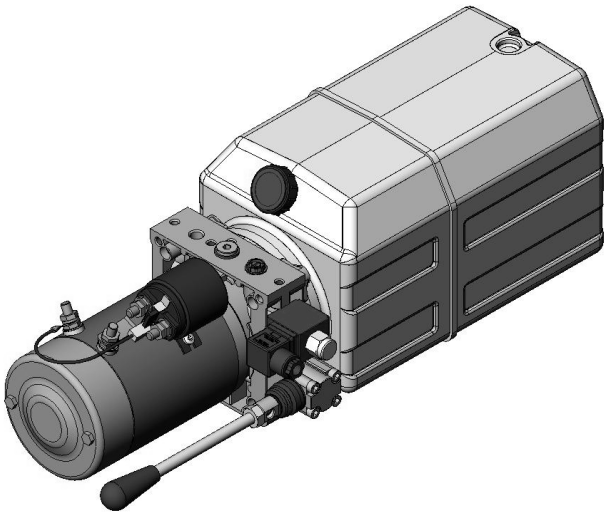


K

- **Standardized central manifold for simple hydraulic circuits**
- DC motors up to 3000 W
- AC motors up to 4000 W *(5,5 hp)*
- Pump displacement up to 9,9 cm^3 (0,6 in^3)
- Pressures up to 300 bar *(4350 psi)*

Optionals:

- double pump
- elastic coupling

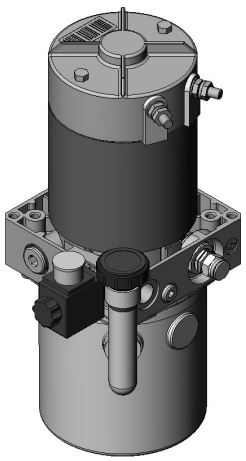


KE

- **Complex circuits, direct flange AC motors**
- DC motors up to 3000 W
- AC motors up to 4000 W *(5,5 hp)*
- Pump displacement up to 9,9 cm^3 (0,6 in^3)
- Pressures up to 300 bar *(4350 psi)*

Optionals:

- Start-up valve
- 4-ways solenoid operated valve inside
- AC electric motor with direct coupling for smaller dimensions



KS

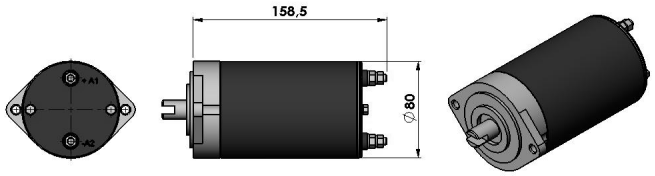
- **Designed for lifting applications**
- Ready solution for simple acting circuits with the possibility of unloading valve
- DC motors up to 3000 W
- AC motors up to 4000 W *(5,5 hp)*
- Pump displacement up to 9,9 cm^3 (0,6 in^3)
- Pressures up to 300 bar *(4350 psi)*

Please note that every power module type can be mounted in horizontal or vertical position.

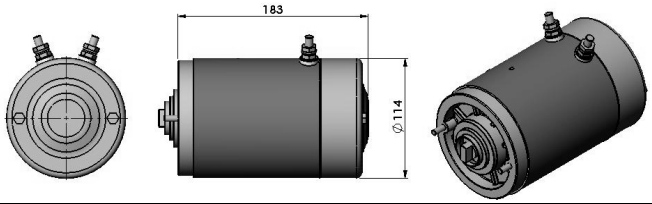
2 Electric motor

Code	Voltage (V)	Power (W)	Duty cycles S3%S2min	Thermal switch	Protection Index	Direction	Code	Voltage (V)	Power (W)	Duty cycles S3%S2min	Thermal switch	Protection Index	Direction
Direct current motors													
C105	12	150	50% 25min	no	IP65	← →	**C41**	24	500	17% 5min	no	IP54	← →
C40	12	500	17% 5min	no	IP54	← →	**C94**	24	800	8% 2,5min	no	IP54	← →
C67	12	800	9% 4min	no	IP54	← →	**C122**	24	800	10% 4min	yes	IP54	→
C123	12	800	9% 4min	yes	IP54	→	**C97**	24	2000	5% 2min	no	IP54	→
C98	12	1500	8% 2min	no	IP54	→	**C145**	24	2000	5% 2min	yes	IP54	→
C144	12	1500	8% 2min	yes	IP54	→	**C92**	24	2200	5% 2min	no	IP54	→
C91	12	1600	10% 2min	no	IP54	→	**C103**	24	2200	5% 2min	yes	IP54	→
C102	12	1600	10% 2min	yes	IP54	→	**C151**	24	3000	8% 4min	no	IP54	→
C96	12	2400	8% 1min	yes	IP54	→	**C140**	24	3000	8% 4min	yes	IP54	→
Direct current motors with ventilation													
C78	12	1500	14% 4min	no	IP23	→							
C79	24	2000	10%4,5min	no	IP23	→							
C111	24	3000	20% 6min	no	IP12	→							

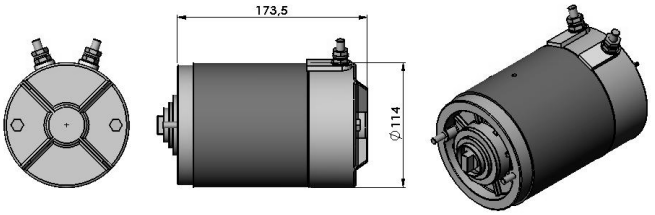
C105-C40-C41-C67-C123-C94-C122



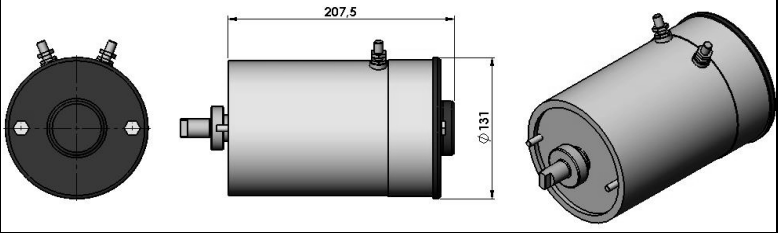
C97-C98-C144-C145



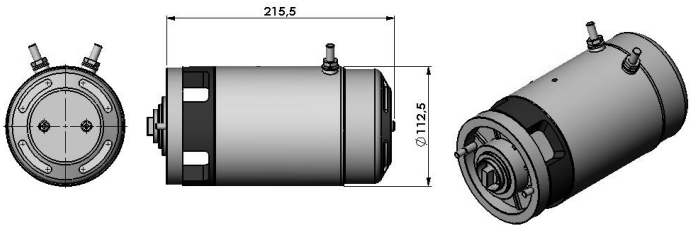
C91-C102-C92-C103



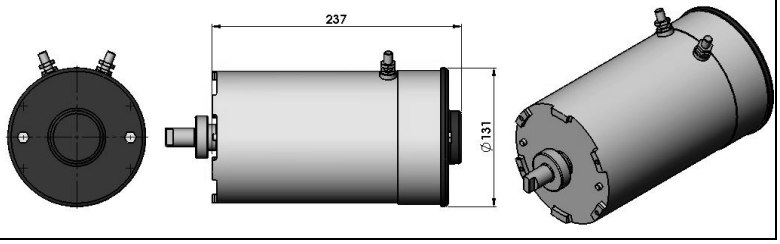
C96-C151-C140



C78-C79

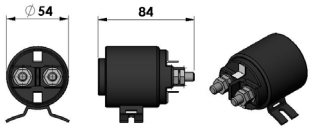


C111



Starting relay

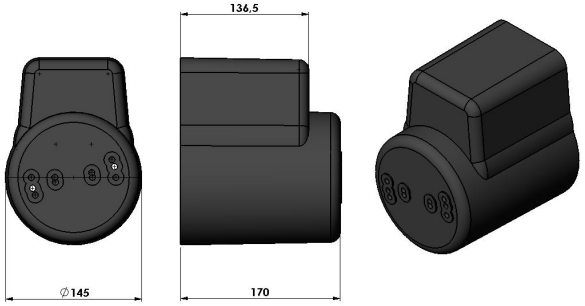
Code	Voltage (V)	Nominal current (A)	Short time current (A)
A	Without relay		
B	12	80	350
C	12	150	350
D	24	80	350
E	24	150	350



Plastic protection

Code	
0	No
1	Yes

Only for C97-C98-C144-C145-C91-C102-C92-C103



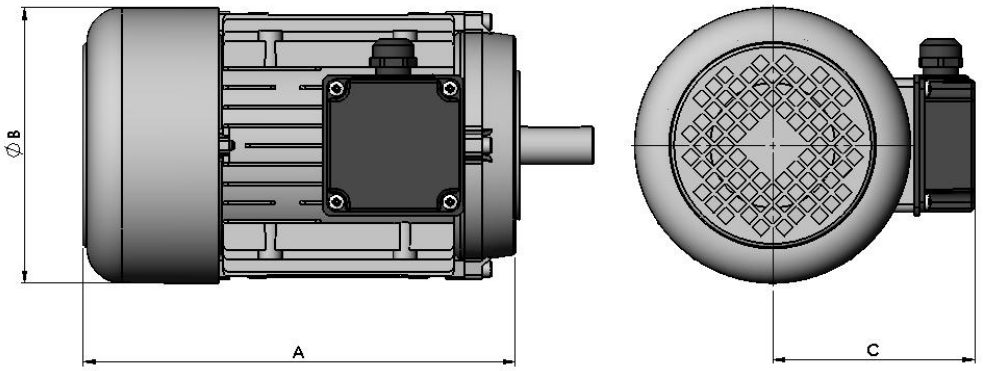
Alternate current motors 2 poles (2900 rpm at 50Hz)

Three phase motors (230-400V 50Hz IP54)									Single phase motors (220V 50Hz IP54)								
Code	Power (kW)	Power (hp)	Duty cycle	Size IEC	A (mm)	ØB (mm)	C (mm)	D (mm)	Code	Power (kW)	Power (hp)	Duty cycle	Size IEC	A (mm)	ØB (mm)	C (mm)	D (mm)
200	0,13	0,175	S1	56	169	110	95	56	**200M**	0,13	0,175	S1	56	169	110	95	56
201	0,25	0,34	S1	63	189	124	104	63	**201M**	0,25	0,34	S1	63	189	124	104	63
202	0,37	0,5	S1	71	218	140	109	71	**202M**	0,37	0,5	S1	71	218	140	109	71
203	0,55	0,75	S1	71	218	140	109	71	**203M**	0,55	0,75	S1	71	218	140	109	71
204	0,75	1	S1	80	237	156	123	80	**204M**	0,75	1	S1	80	237	156	123	80
205	1,1	1,5	S1	80	237	156	123	80	**205M**	1,1	1,5	S1	80	237	156	123	80
206	1,5	2	S1	90	255	178	128	90	**206M**	1,5	2	S1	90	255	178	128	90
207	2,2	3	S1	90	279	178	128	90	**207M**	2,2	3	S1	90	279	178	128	90
208	3	4	S1	90	279	178	128	90									
210	4	5,5	S1	112	331	219	150	112									

Alternate current motors 4 poles (1450 rpm at 50Hz)

Three phase motors (230-400V 50Hz IP54)									Single phase motors (220V 50Hz IP54)								
Code	Power (kW)	Power (hp)	Duty cycle	Size IEC	A (mm)	ØB (mm)	C (mm)	D (mm)	Code	Power (kW)	Power (hp)	Duty cycle	Size IEC	A (mm)	ØB (mm)	C (mm)	D (mm)
400	0,09	0,12	S1	56	169	110	95	56	**400M**	0,09	0,12	S1	56	169	110	95	56
401	0,18	0,25	S1	63	189	124	104	63	**401M**	0,18	0,25	S1	63	189	124	104	63
402	0,25	0,35	S1	71	218	140	109	71	**402M**	0,25	0,35	S1	71	218	140	109	71
403	0,37	0,5	S1	71	218	140	109	71	**403M**	0,37	0,5	S1	71	218	140	109	71
404	0,55	0,75	S1	80	237	156	123	80	**404M**	0,55	0,75	S1	80	237	156	123	80
405	0,75	1	S1	80	237	156	123	80	**405M**	0,75	1	S1	80	237	156	123	80
406	1,1	1,5	S1	90	255	178	128	90	**406M**	1,1	1,5	S1	90	255	178	128	90
407	1,5	2	S1	90	279	178	128	90	**407M**	1,5	2	S1	90	279	178	128	90
408	2,2	3	S1	90	279	178	128	90	**408M**	2,2	3	S1	100	309	194	137	100
409	3	4	S1	100	309	194	137	100									
410	4	5,5	S1	112	331	219	150	112									

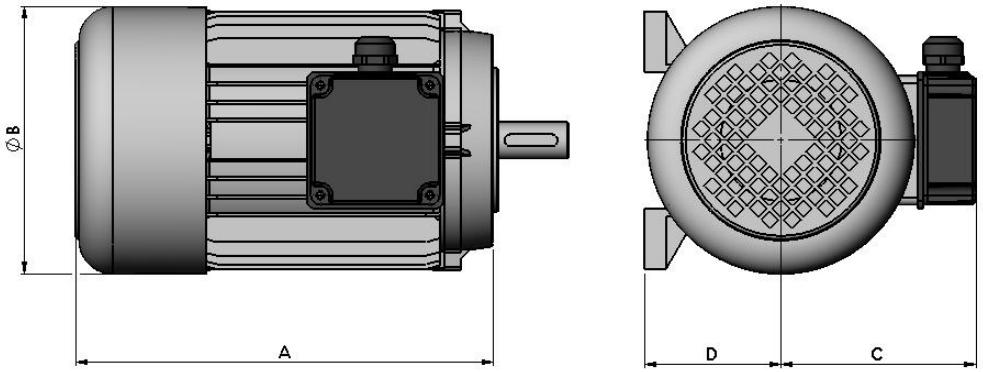
Standard A.C. motors in B14 form.



Our standard A.C. motors are in B14 form.

On request the same motors in B34 form are available.

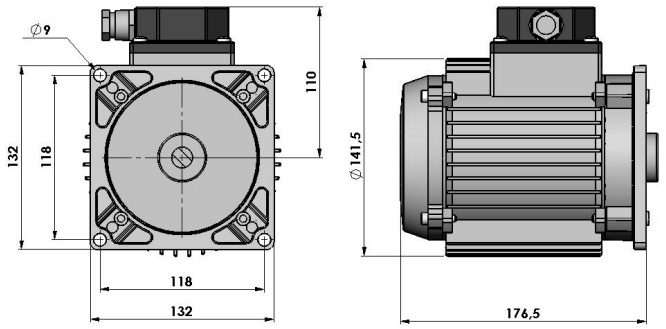
In this cases, please put “B34” after the code of the motor when filling in the description. Example “408MB34”



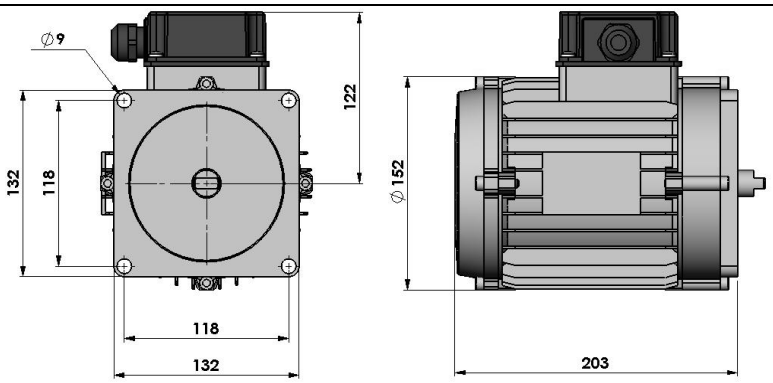
Alternate current motors compact mounting style only for KE and KS

These motors are designed to reduce the overall dimensions and are available three phase or single phase, 2 poles or 4 poles 50Hz and 60Hz, with power range from 0,75 to 3 kW. Sizes from IEC71 to IEC90 and duty service S3 = 30%.

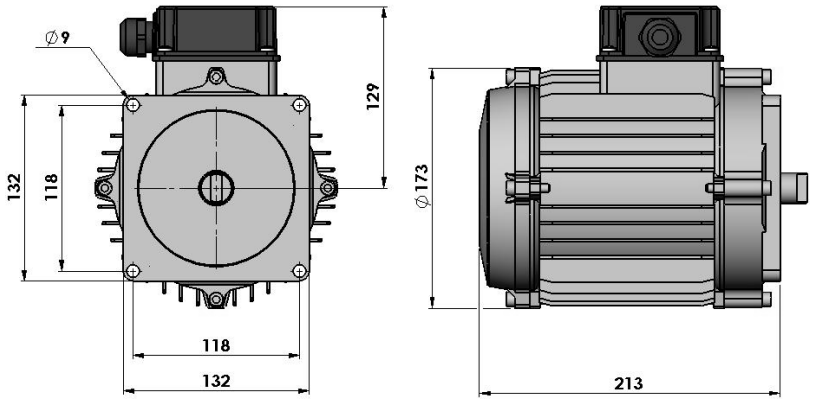
PLEASE CONTACT OUR SALES DEPARTMENT TO RECEIVE FURTHER INFORMATION



Size IEC 71



Size IEC 80



Size IEC 90

3 Junction elements

Junctions for power modules ME

D.C. Motors

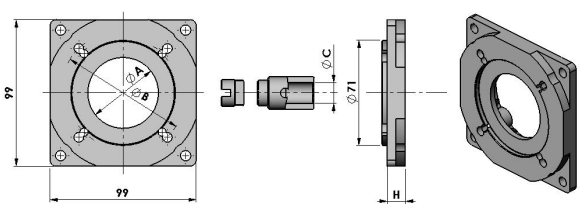
Code	Motor codes
E67	**C40-C41-C67-C94-C105-C122-C123**
E31	**C91-C92-C97-C98-C102-C103-C144-C145**

No intermediate flanges are needed for these D.C. motors

D.C. Motors bigger than Ø114 and ventilated motors are not available for ME

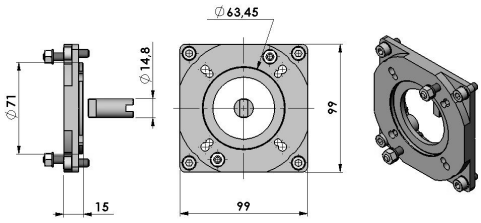
A.C. Motors

Code	Motor codes	Size IEC	A (mm)	B (mm)	C (mm)	H (mm)
F88	**200-200M-400-400M**	56	50	65	9	12,5
F89	**201-201M-401-401M**	63	60	75	11	12,5
F90	**202-202M-402-402M**	71	70	85	14	12,5
	203-203M-403-403M					
F95	**204-204M-404-404M**	80	80	100	19	45
	205-205M-405-405M					

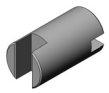


D.C. Motors

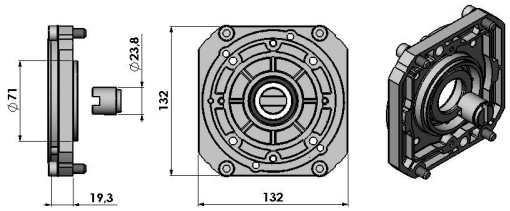
Code	Motor codes
E55	C40-C41-C67-C94-C105-C122-C123
E31	C78-C79-C91-C92-C97-C98-C102-C103-C144-C145
E62	C96-C151-C140
E63	C111



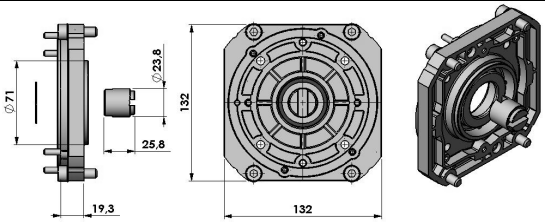
E55



E31



E62

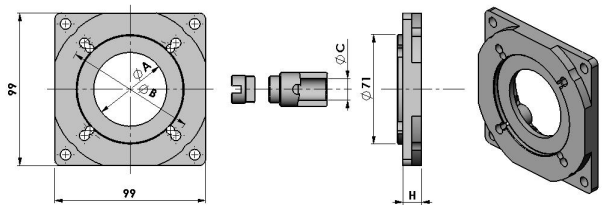


E63

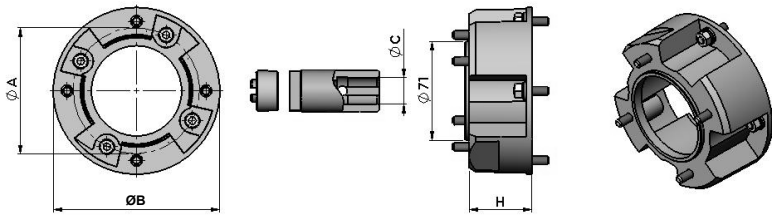
A.C. Motors

Standard couplings

Code	Motor codes	Size IEC	A (mm)	B (mm)	C (mm)	H (mm)
F69	201-201M-401-401M	63	60	-	11	12,5
F68	202-202M-402-402M	71	70	-	14	12,5
	203-203M-403-403M					
F14	204-204M-404-404M	80	80	120	19	45
	205-205M-405-405M					
F16	206-206M-406-406M	90	95	140	24	57
	207-207M-407-407M					
	208-208M-408-408M					
F18	409	100	110	160	28	67
	210--410	112				



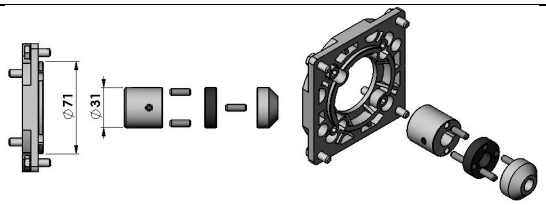
F68-F69



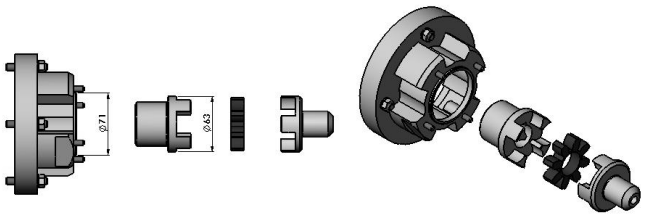
F14-F16-F18

Elastic couplings

Code	Motor codes	Size IEC
F82	202-202M-402-402M	71
	203-203M-403-403M	
F24	204-204M-404-404M	80
	205-205M-405-405M	
F25	206-206M-406-406M	90
	207-207M-407-407M	
	208-208M-408-408M	
F26	409	100
	210-410	112



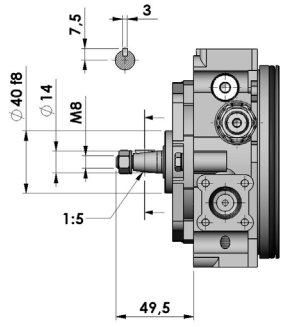
F82



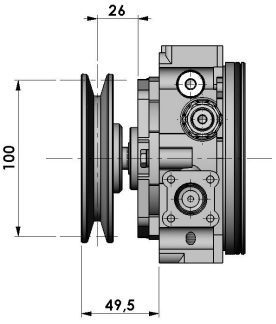
F24-F25-F26

Alternative drives

Code	Description
T02	Direct drive
TC1	Direct drive with "A" belt pulley Ø100



T02



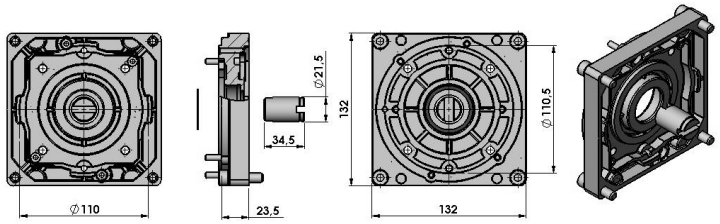
TC1

D.C. Motors

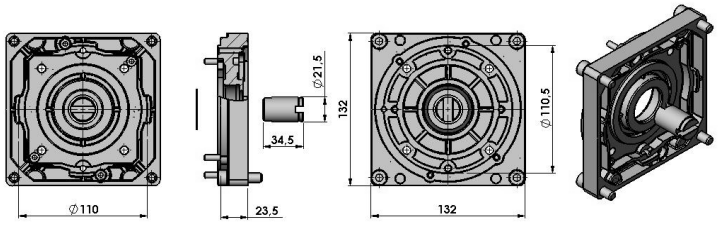
Code	Motor codes
TR51	C78-C79-C91-C92-C97-C98-C102-C103-C144-C145
TR54	C96-C151-C140
TR53	C111

TR51

TR53



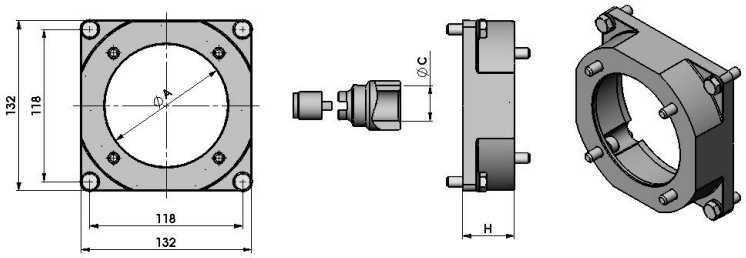
TR54 (differs from the TR53 because of the internal spacer dimensions)



A.C. Motors

Standard couplings

Code	Motor codes	Size IEC	A (mm)	C (mm)	H (mm)
TR02	202-202M-402-402M	71	70	14	20.5
	203-203M-403-403M				
TR03	204-204M-404-404M	80	80	19	29
	205-205M-405-405M				
TR04	206-206M-406-406M	90	95	24	40
	207-207M-407-407M				
	208-208M-408-408M				
TR05	409	110	110	28	57
	210-410	112			

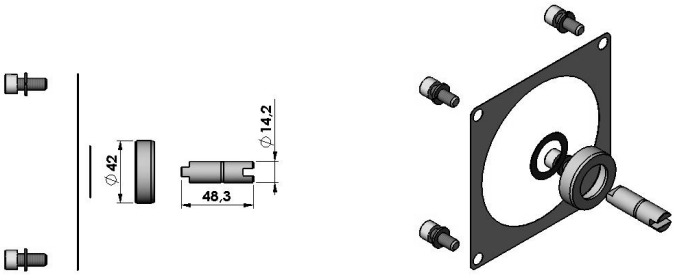


A.C. Motors

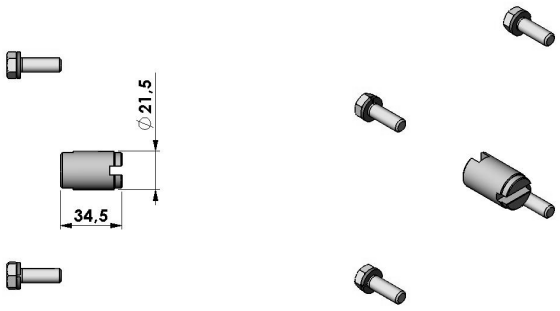
Couplings for compact mounting style motors

Code		Size IEC			
TR06		71			
TR08		80			
		90			

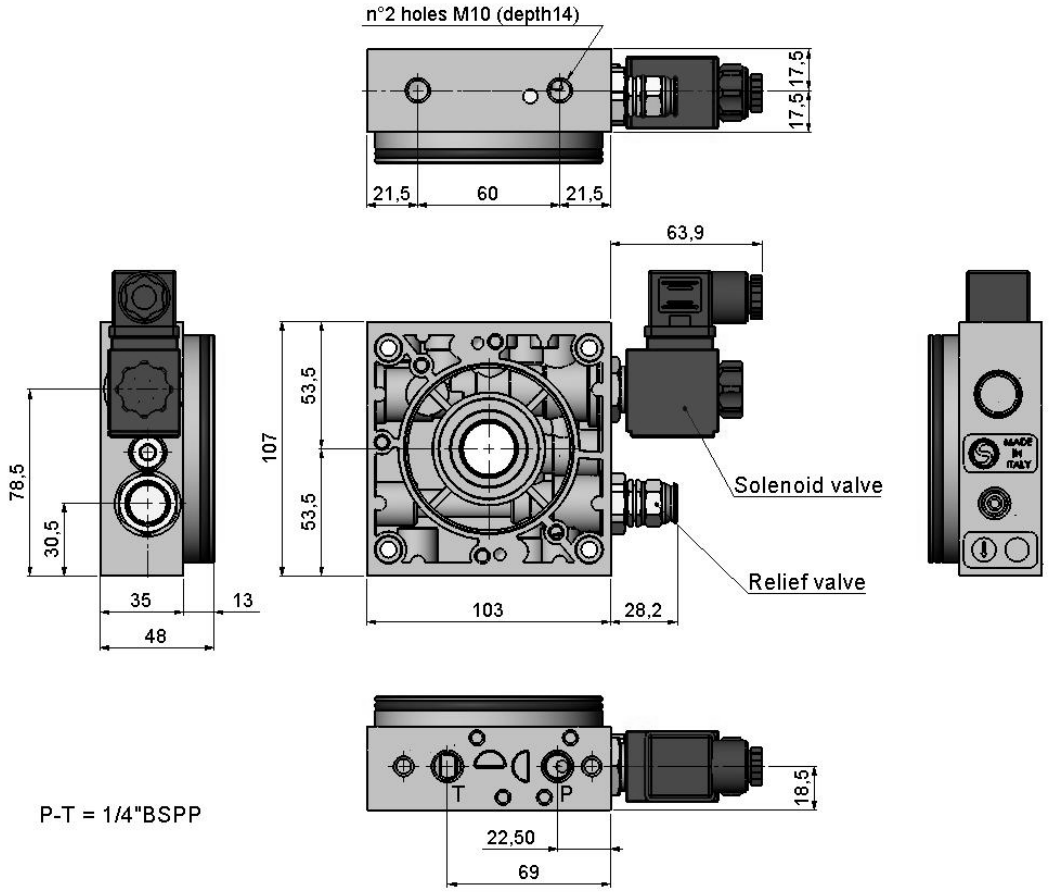
TR06



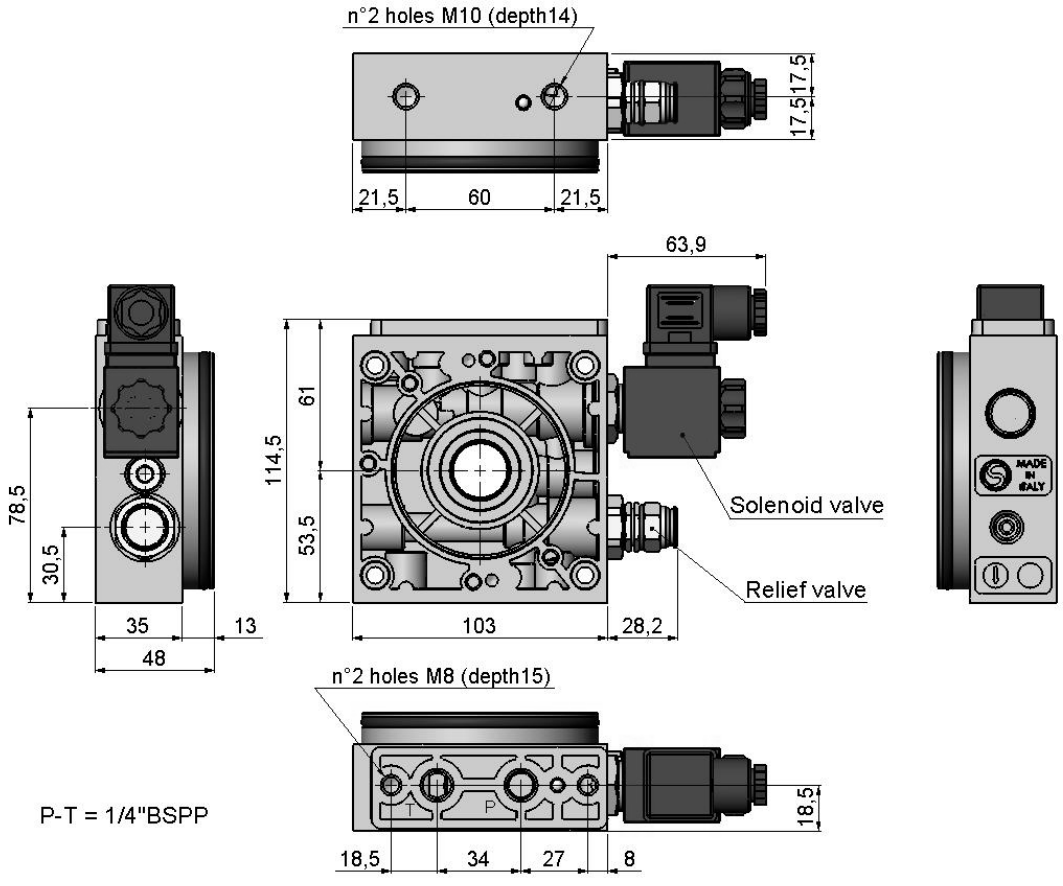
TR08



M52

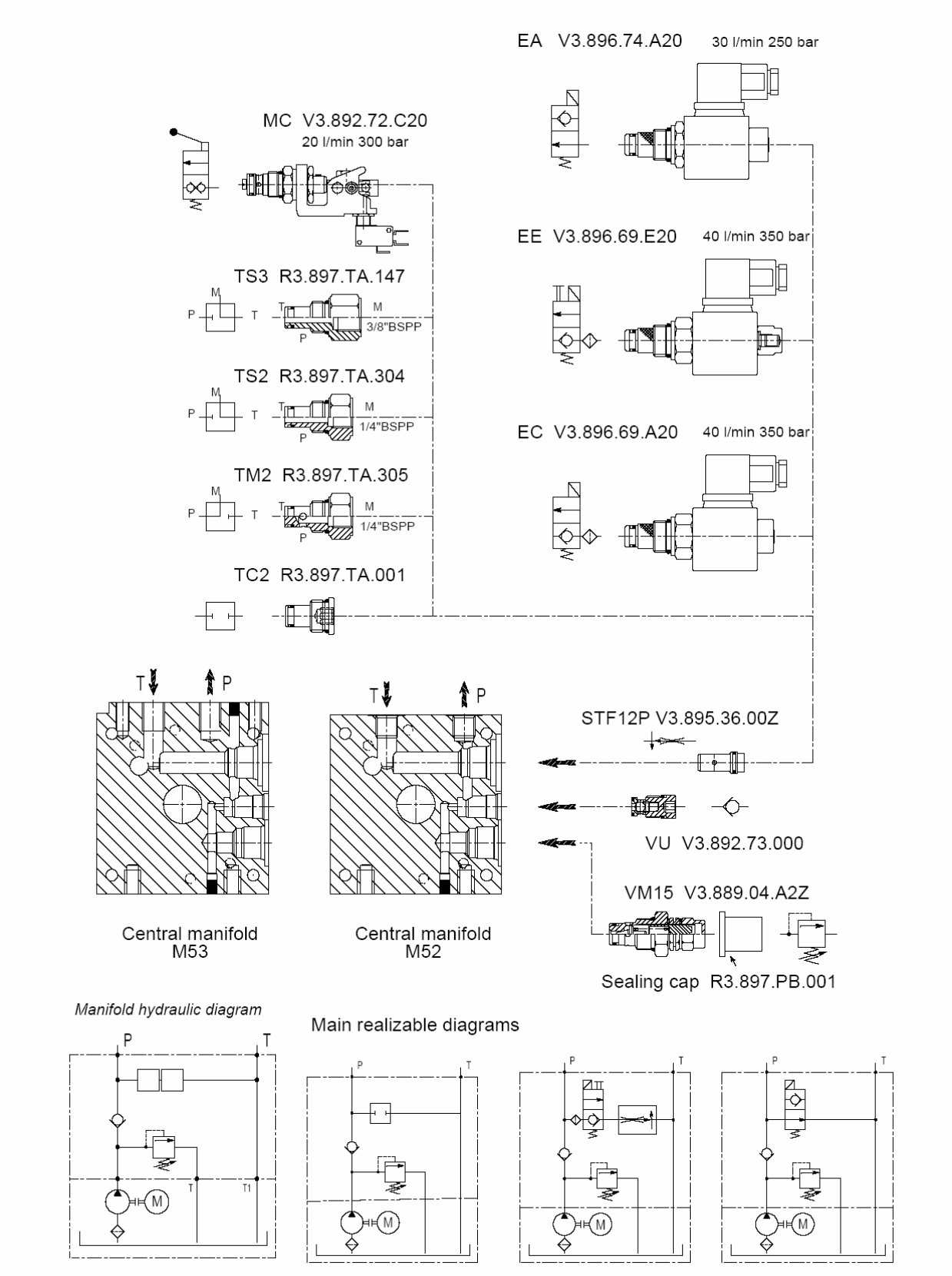

n°2 holes M10 (depth14)
17,5
17,5
21,5
60
21,5
63,9
53,5
107
53,5
78,5
30,5
35
13
48
103
28,2
Solenoid valve
Relief valve
MADE IN ITALY
T
P
18,5
22,50
69
P-T = 1/4"BSPP

M53

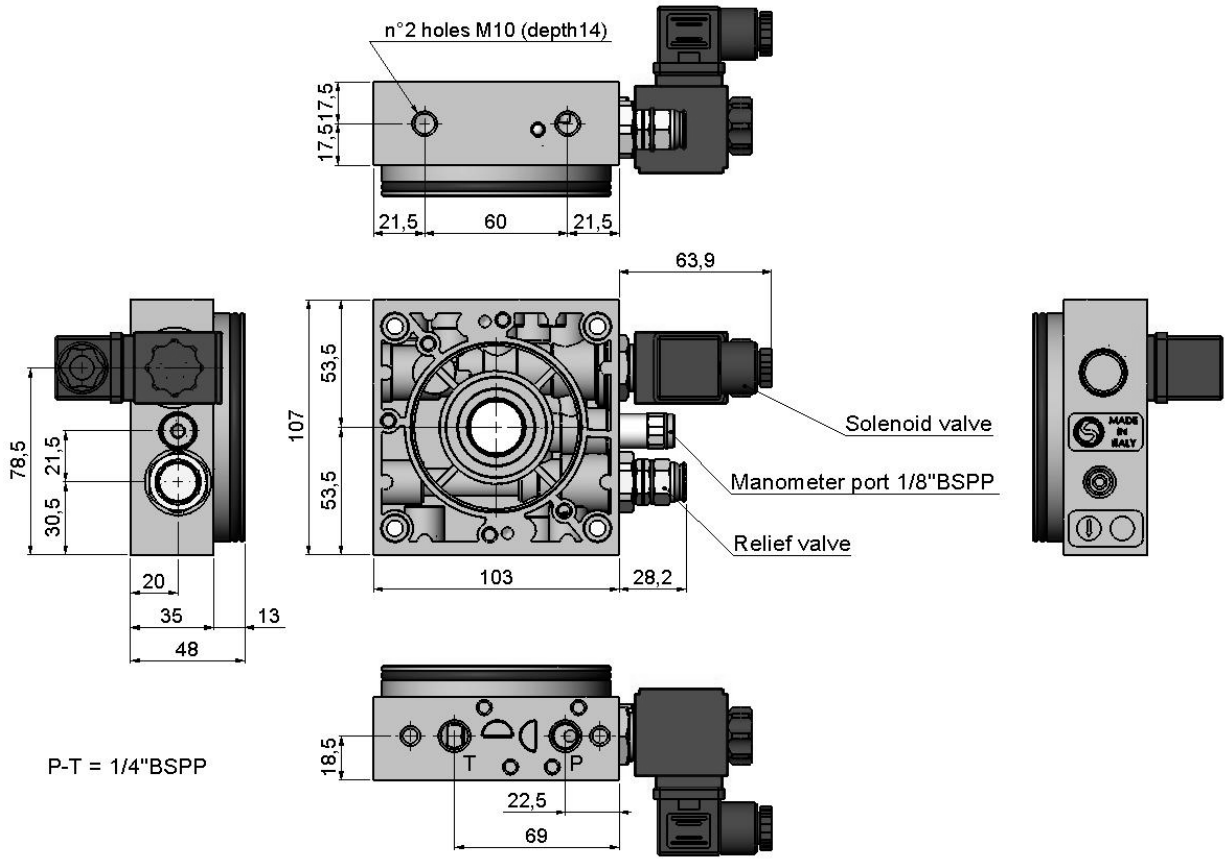

n°2 holes M10 (depth14)
17,5
17,5
21,5
60
21,5
63,9
61
114,5
53,5
78,5
30,5
35
13
48
103
28,2
Solenoid valve
Relief valve
MADE IN ITALY
n°2 holes M8 (depth15)
T
P
18,5
18,5
34
27
8
P-T = 1/4"BSPP

Relief valve		Pressure range (bar)
VMP15	W	5 ÷ 50
	Y	30 ÷ 120
	Z	80 ÷ 250

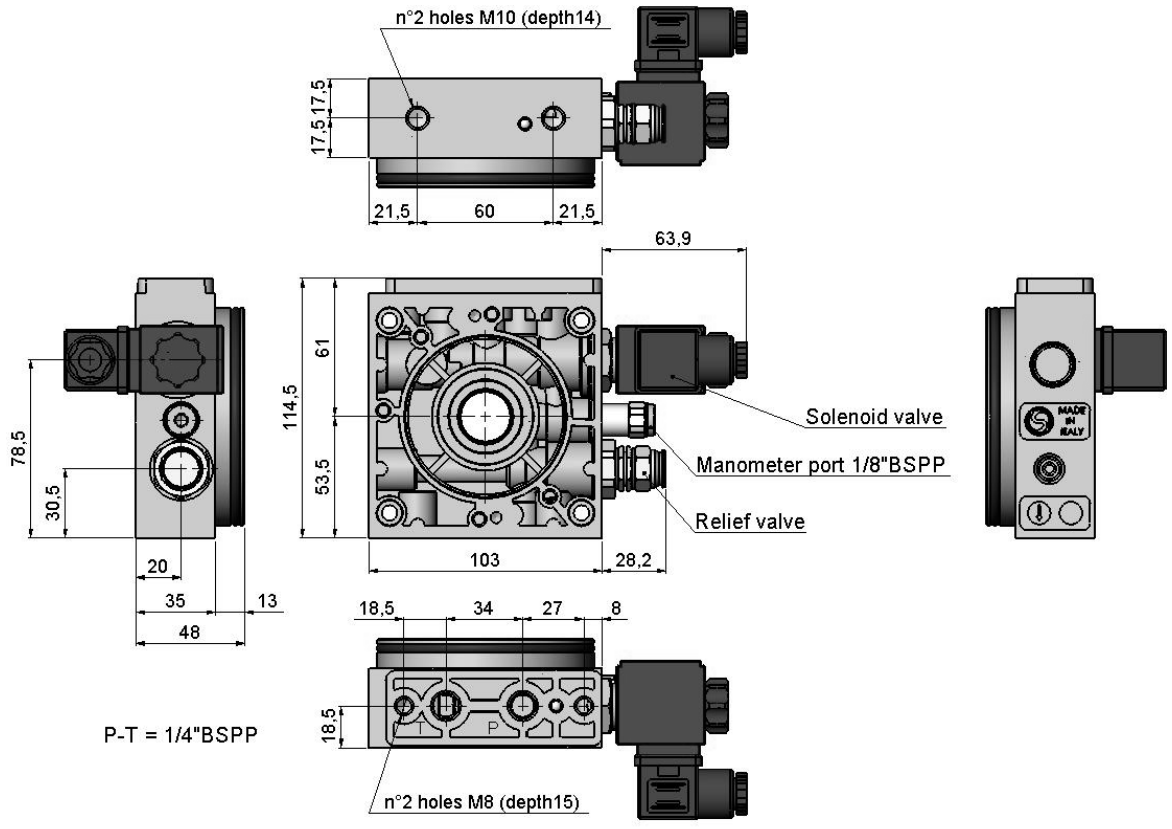
M52-M53 with valves



M55

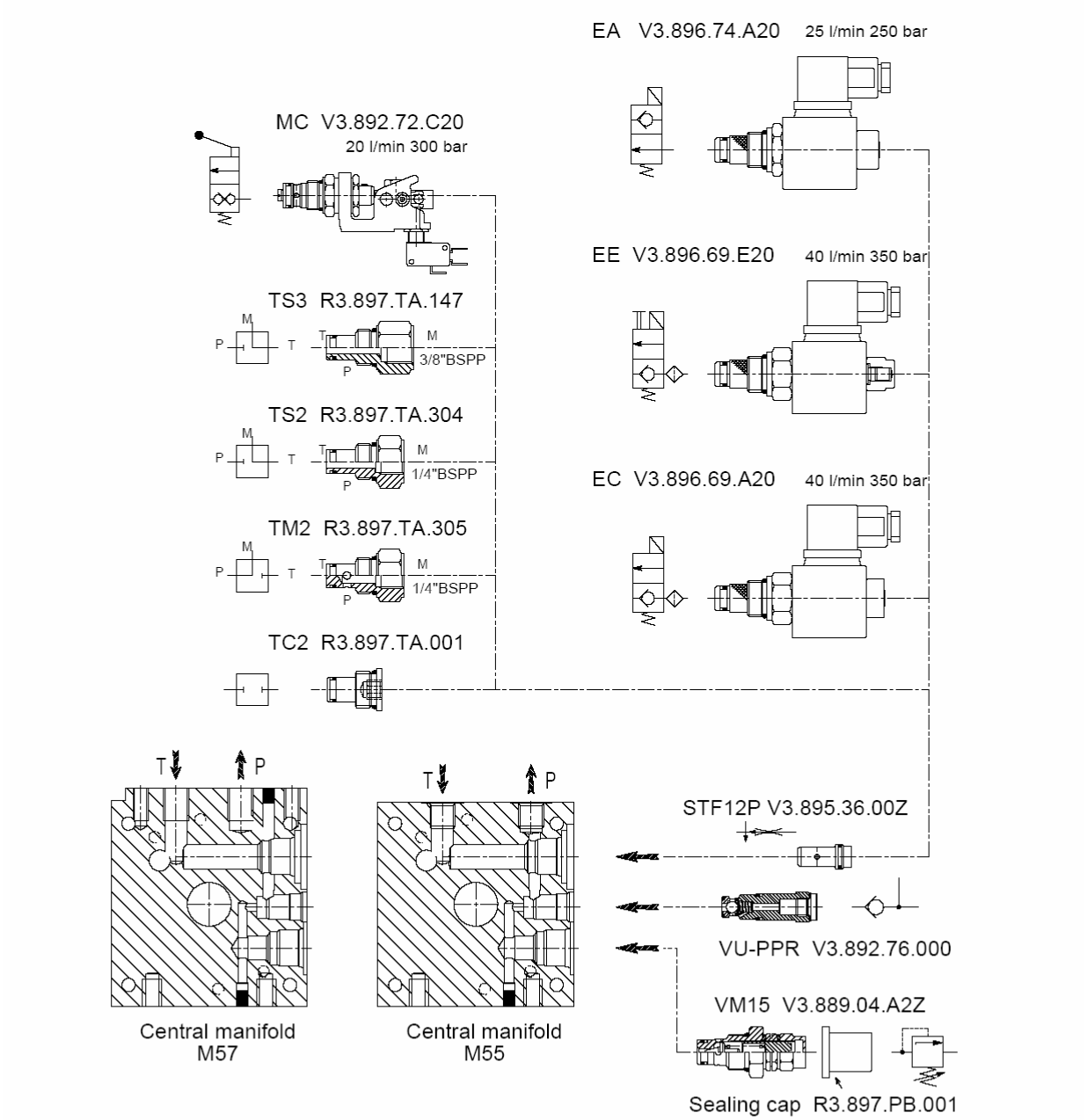

n°2 holes M10 (depth14)
17,5
17,5
21,5
60
21,5
63,9
53,5
107
53,5
78,5
21,5
30,5
20
35
13
48
Solenoid valve
Manometer port 1/8"BSPP
Relief valve
103
28,2
18,5
T
P
22,5
69
P-T = 1/4"BSPP

M57

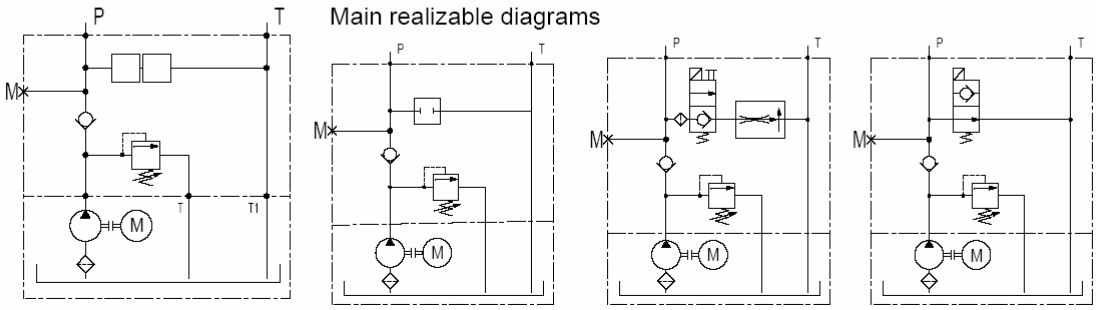

n°2 holes M10 (depth14)
17,5
17,5
21,5
60
21,5
63,9
61
114,5
53,5
78,5
30,5
20
35
13
48
Solenoid valve
Manometer port 1/8"BSPP
Relief valve
103
28,2
18,5
34
27
8
18,5
T
P
n°2 holes M8 (depth15)
P-T = 1/4"BSPP

Relief valve		Pressure range (bar)
VMP15	W	5 ÷ 50
	Y	30 ÷ 120
	Z	80 ÷ 250

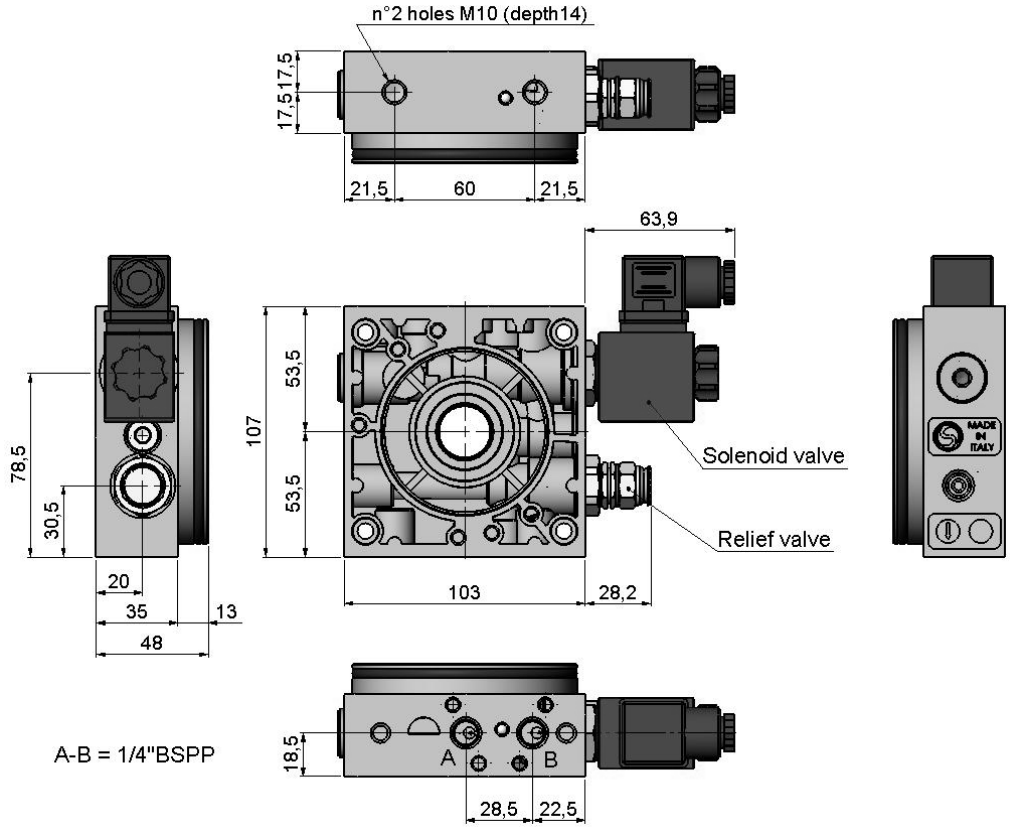
M55-M57 with valves

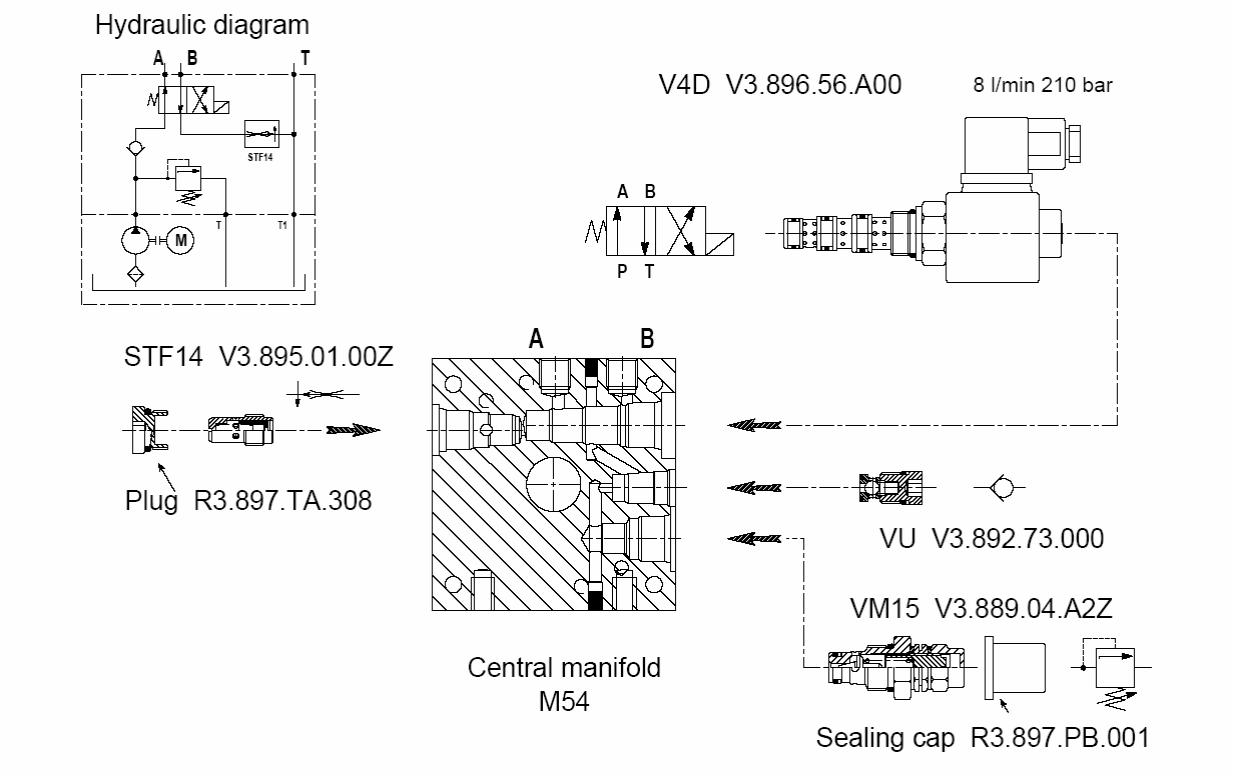


Manifold hydraulic diagram



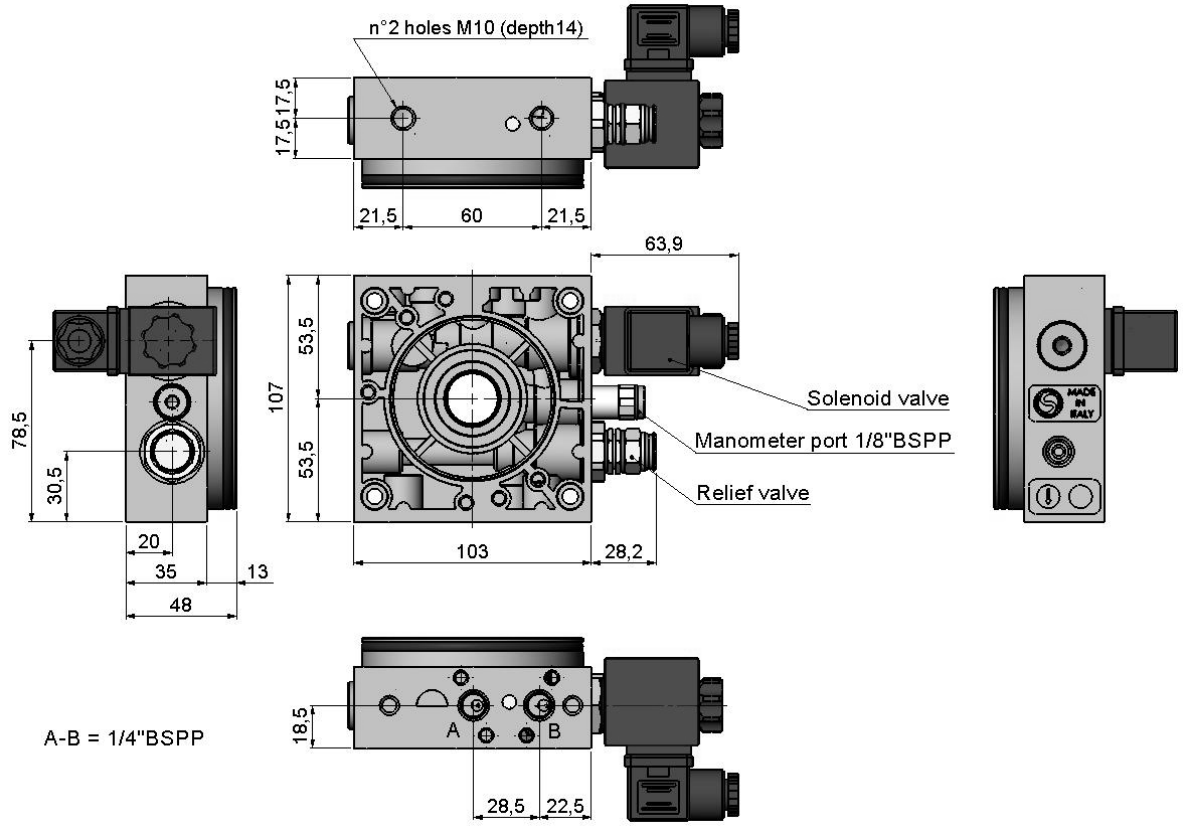
M54



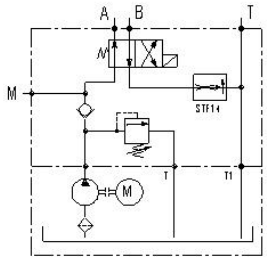


Relief valve		Pressure range (bar)
VMP15	W	5 ÷ 50
	Y	30 ÷ 120
	Z	80 ÷ 250

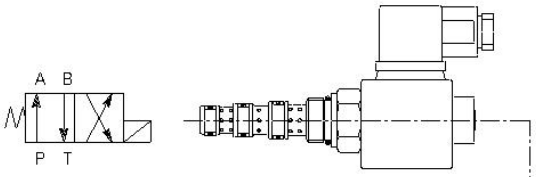
M58



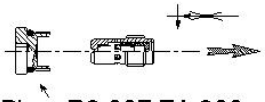
Hydraulic diagram



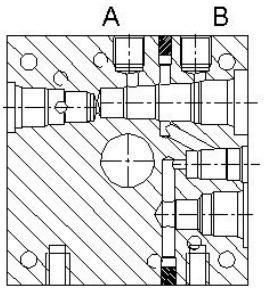
V4D V3.896.56.A00 8 l/min 210 bar



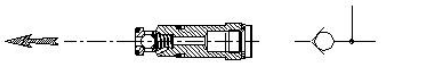
STF14 V3.895.01.00Z



Plug R3.897.TA.308

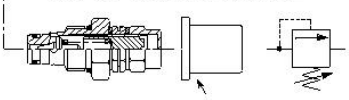


Central manifold
M58



VU-PPR V3.892.76.000

VM15 V3.889.04.A2Z

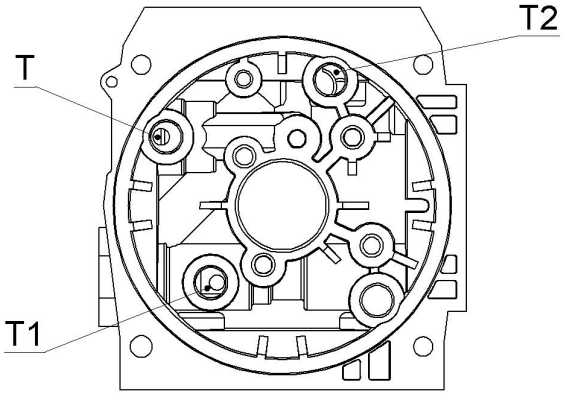


Sealing cap R3.897.PB.001

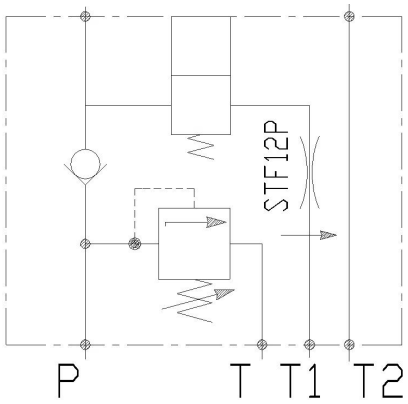
Relief valve		Pressure range (bar)
VMP15	W	5 ÷ 50
	Y	30 ÷ 120
	Z	80 ÷ 250

A16

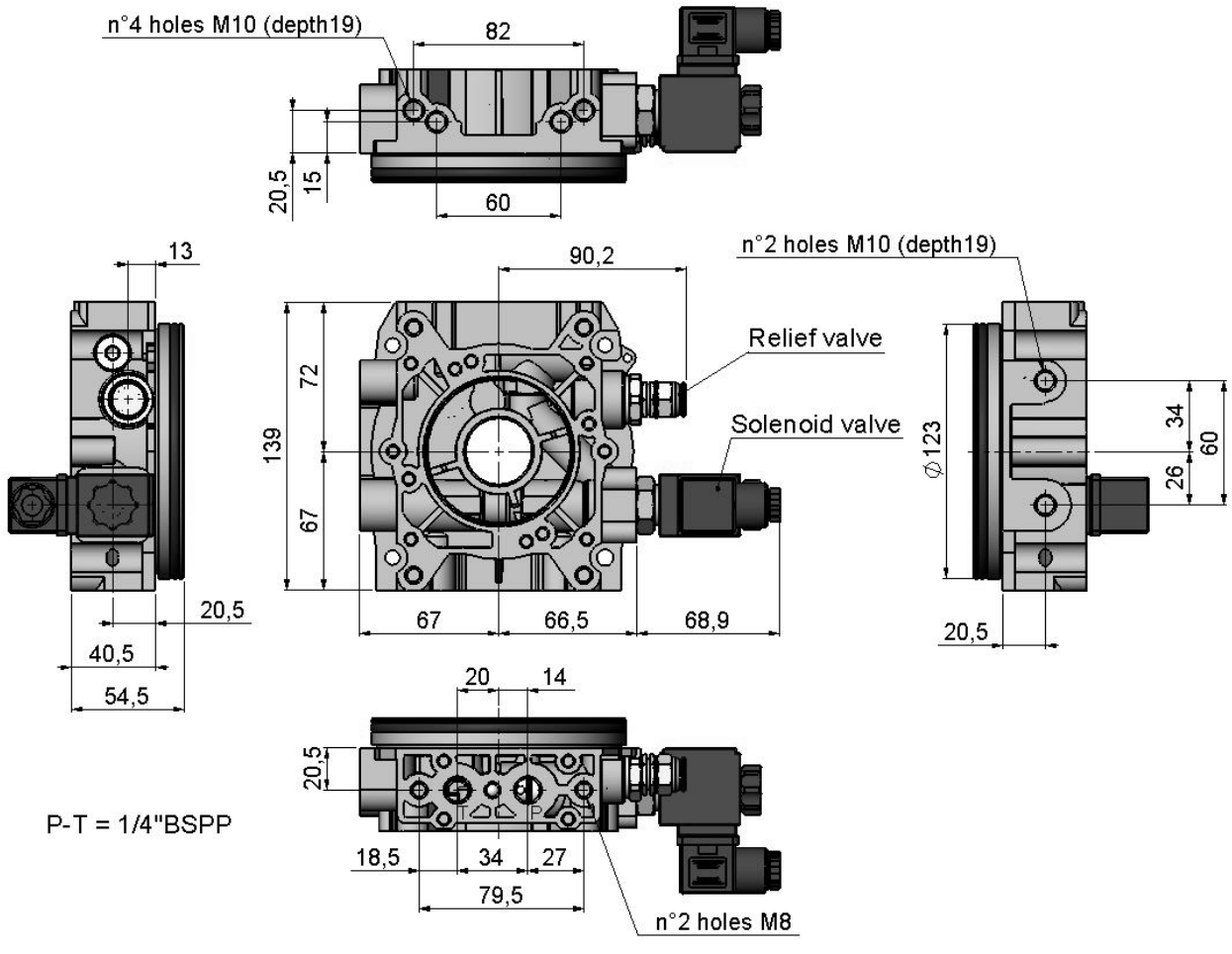
Relief valve		Pressure range (bar)
VM15 *standard*	**W**	5 ÷ 50
	Y	30 ÷ 120
	Z	80 ÷ 250
VM25 *optional*	**W**	5 ÷ 50
	Y	10 ÷ 100
	Z	40 ÷ 200
	X	70 ÷ 350



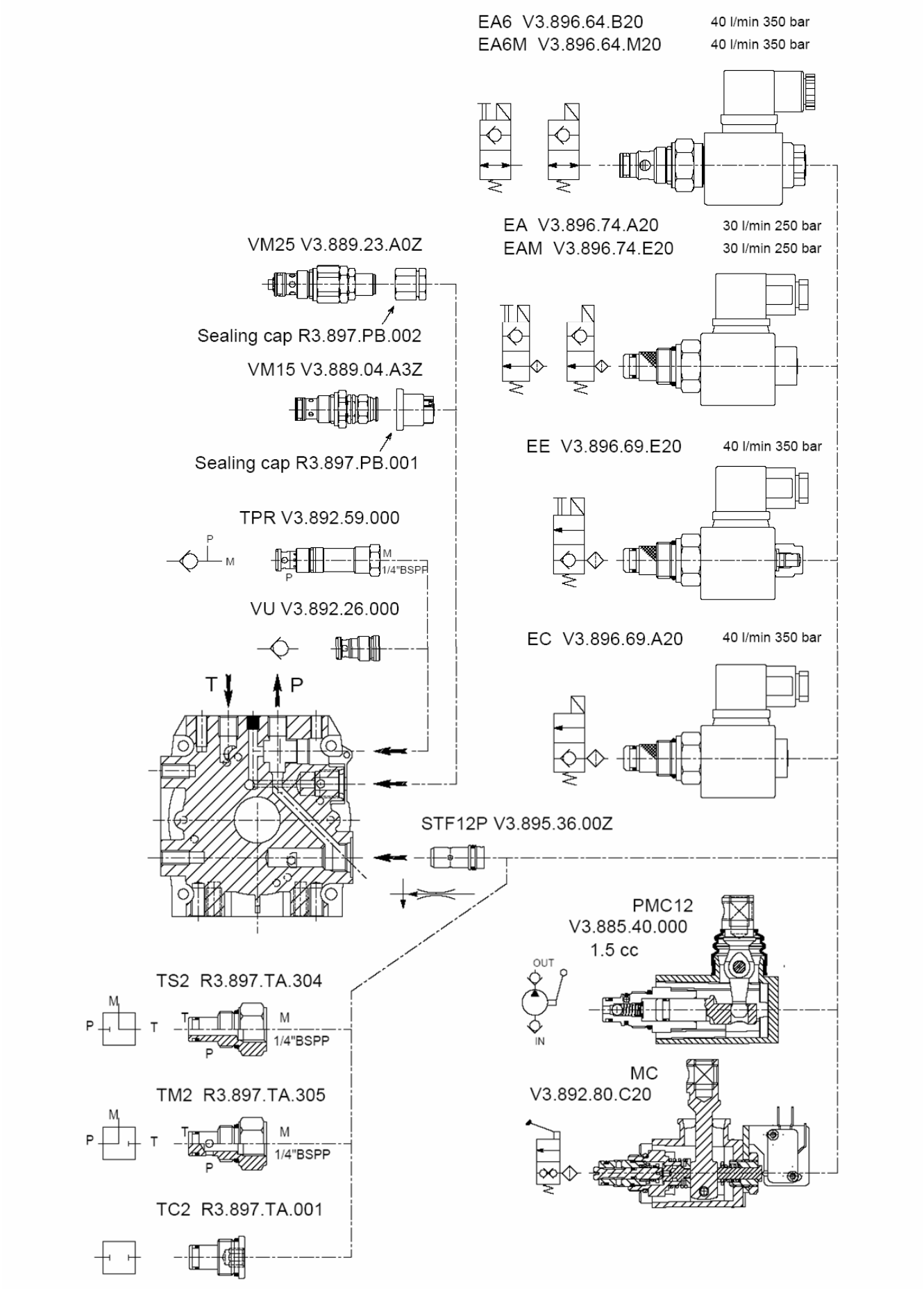
Manifold hydraulic diagram



With pump group 05

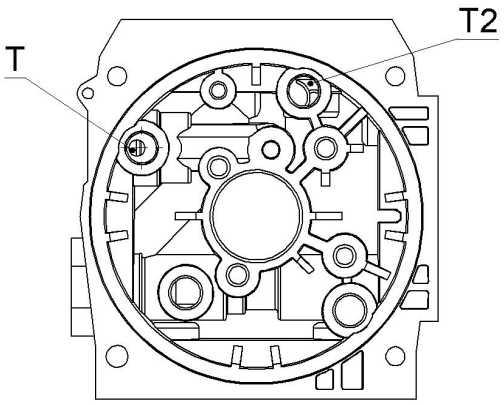


A16 with valves

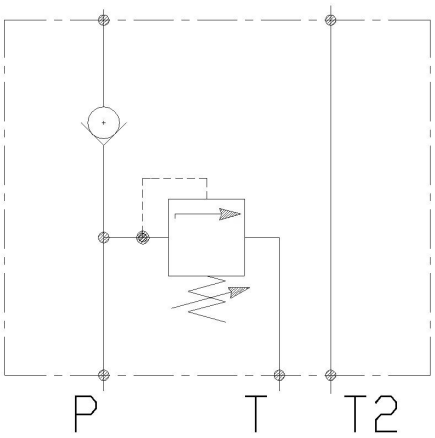


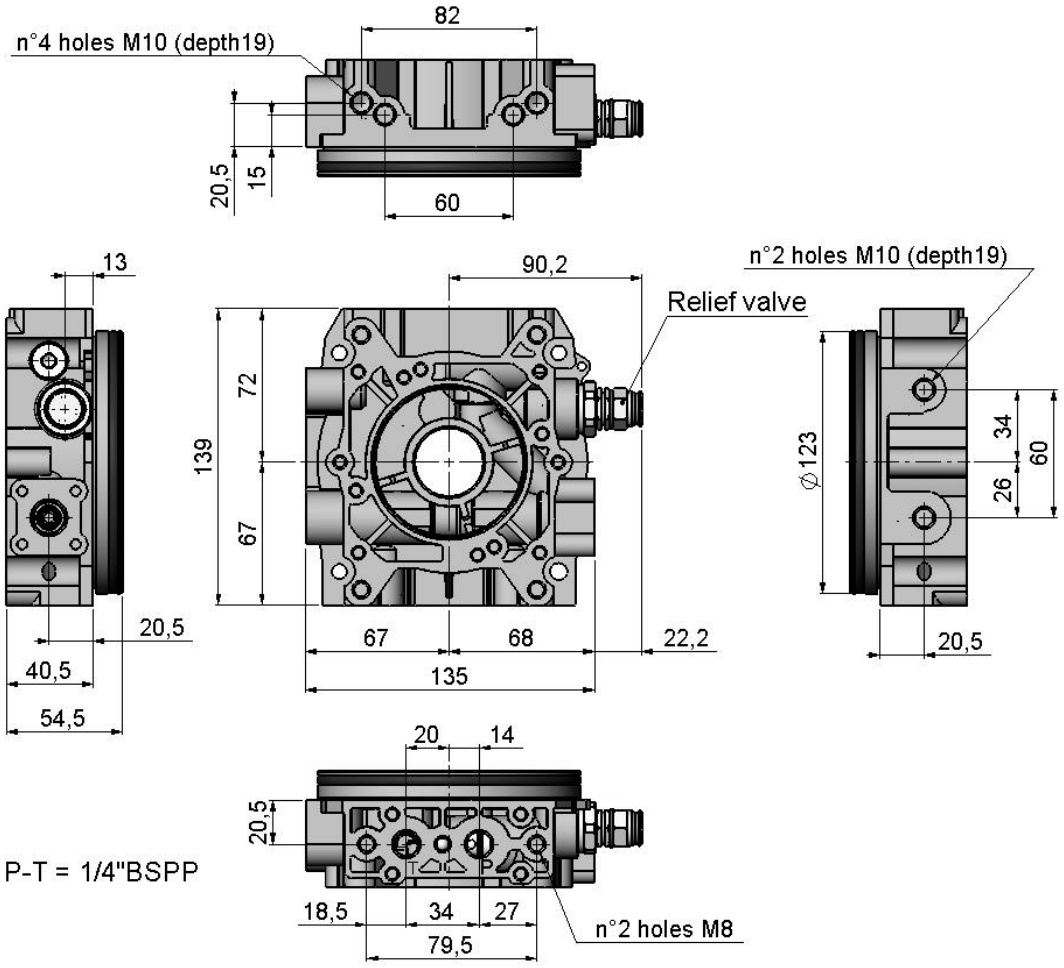
A1

Relief valve		Pressure range (bar)
VM15 *standard*	**W**	5 ÷ 50
	Y	30 ÷ 120
	Z	80 ÷ 250
VM25 *optional*	**W**	5 ÷ 50
	Y	10 ÷ 100
	Z	40 ÷ 200
	X	70 ÷ 350

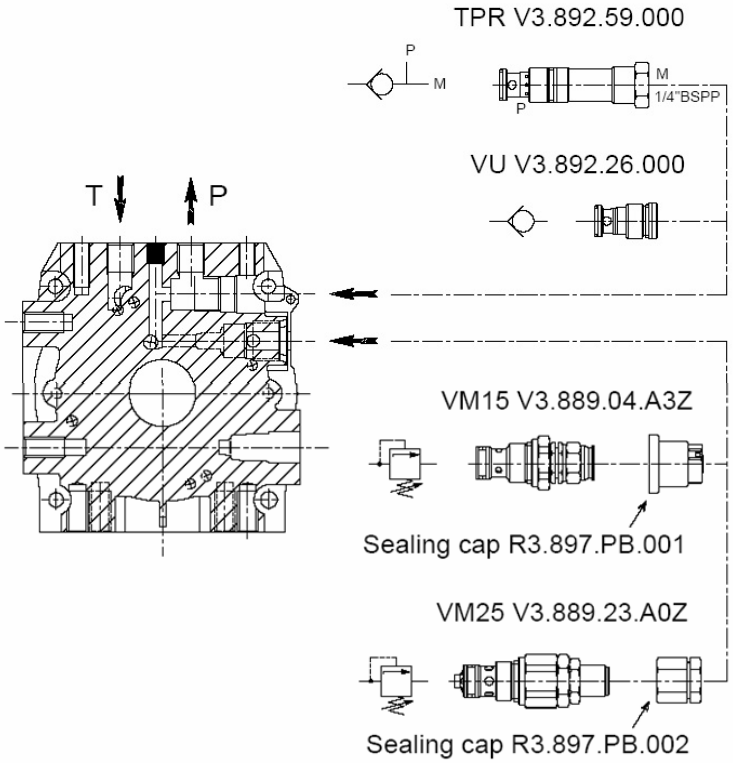


Manifold hydraulic diagram



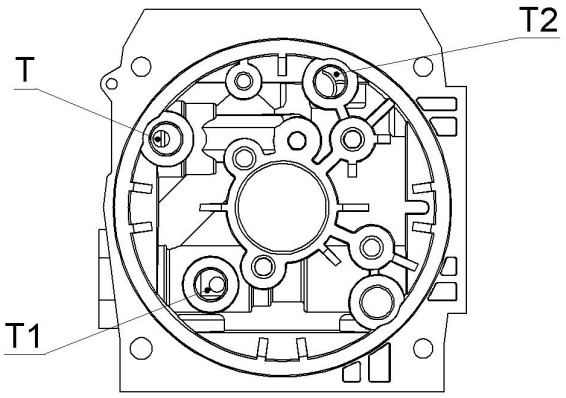


A1 with valves

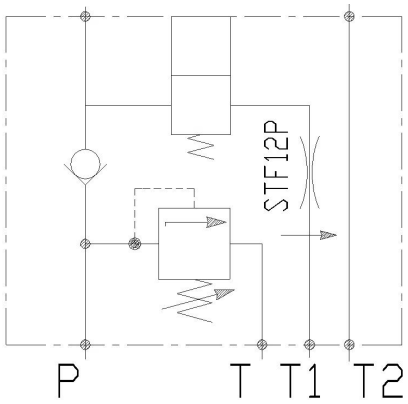


A12

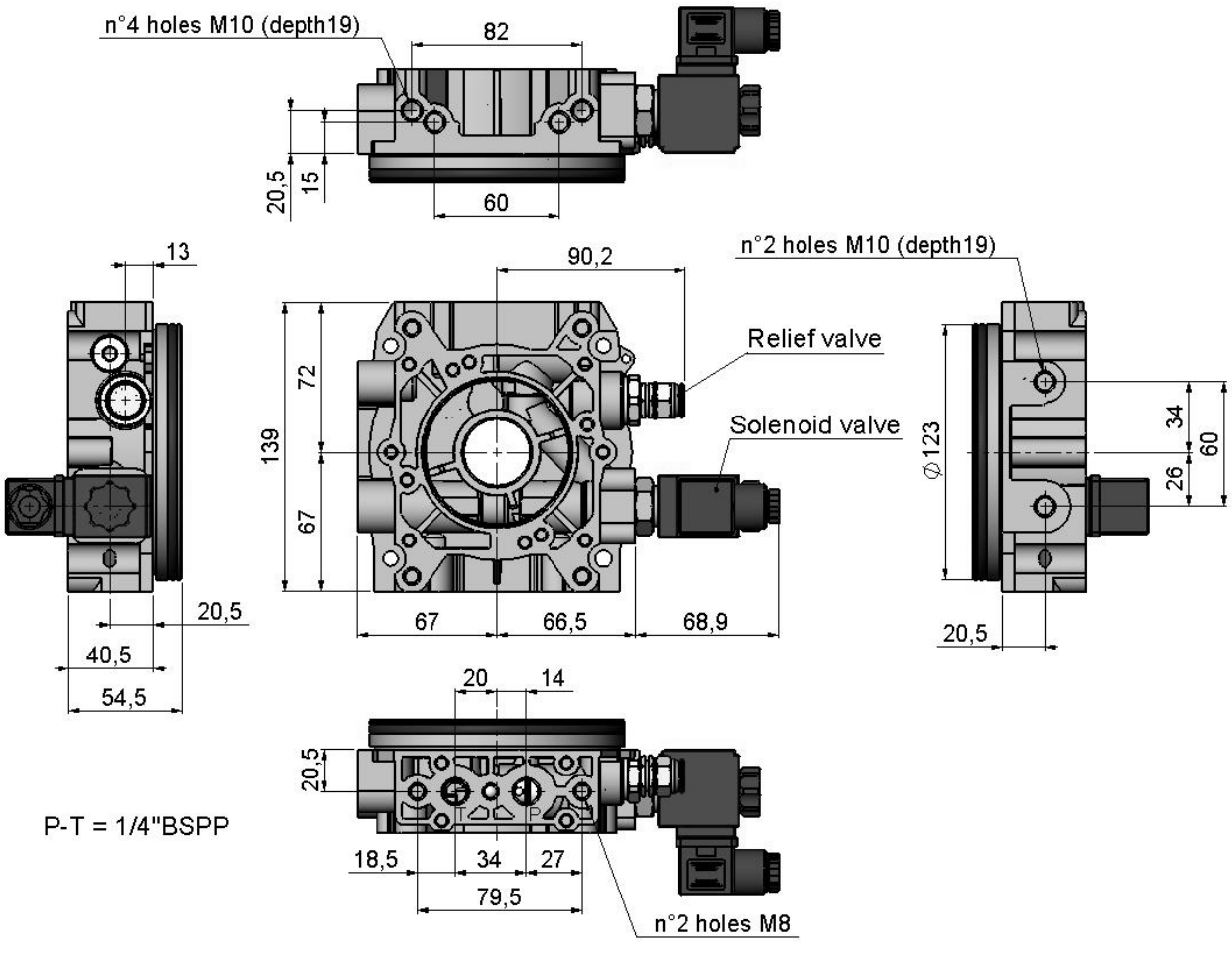
Relief valve		Pressure range (bar)
VM15 *standard*	**W**	5 ÷ 50
	Y	30 ÷ 120
	Z	80 ÷ 250
VM25 *optional*	**W**	5 ÷ 50
	Y	10 ÷ 100
	Z	40 ÷ 200
	X	70 ÷ 350



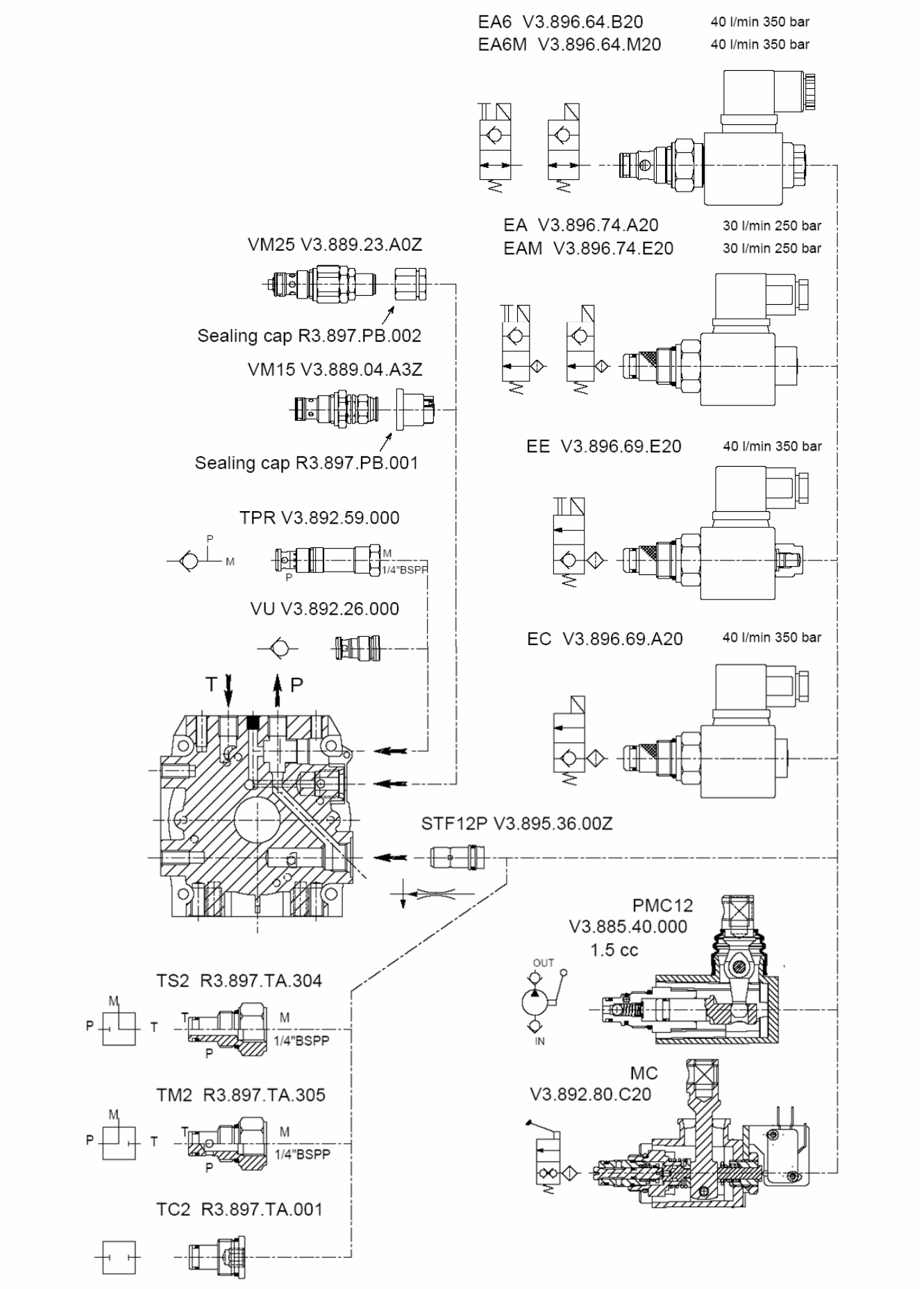
Manifold hydraulic diagram



With pump group 1

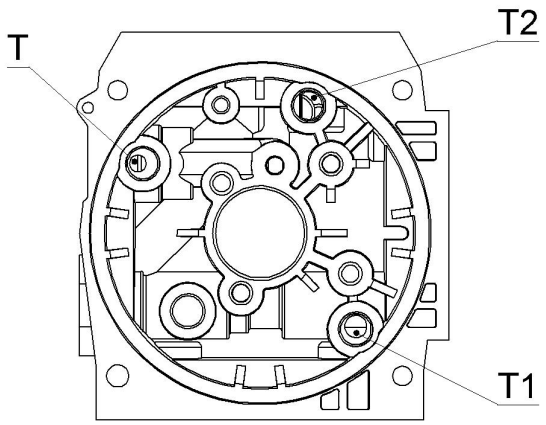


A12 with valves

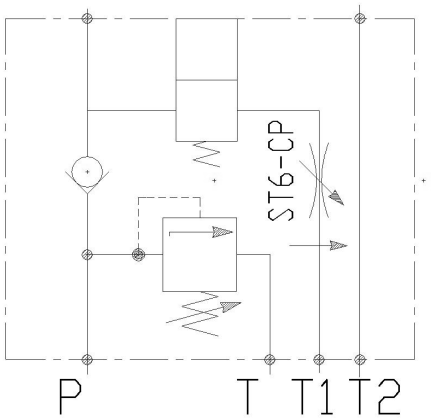


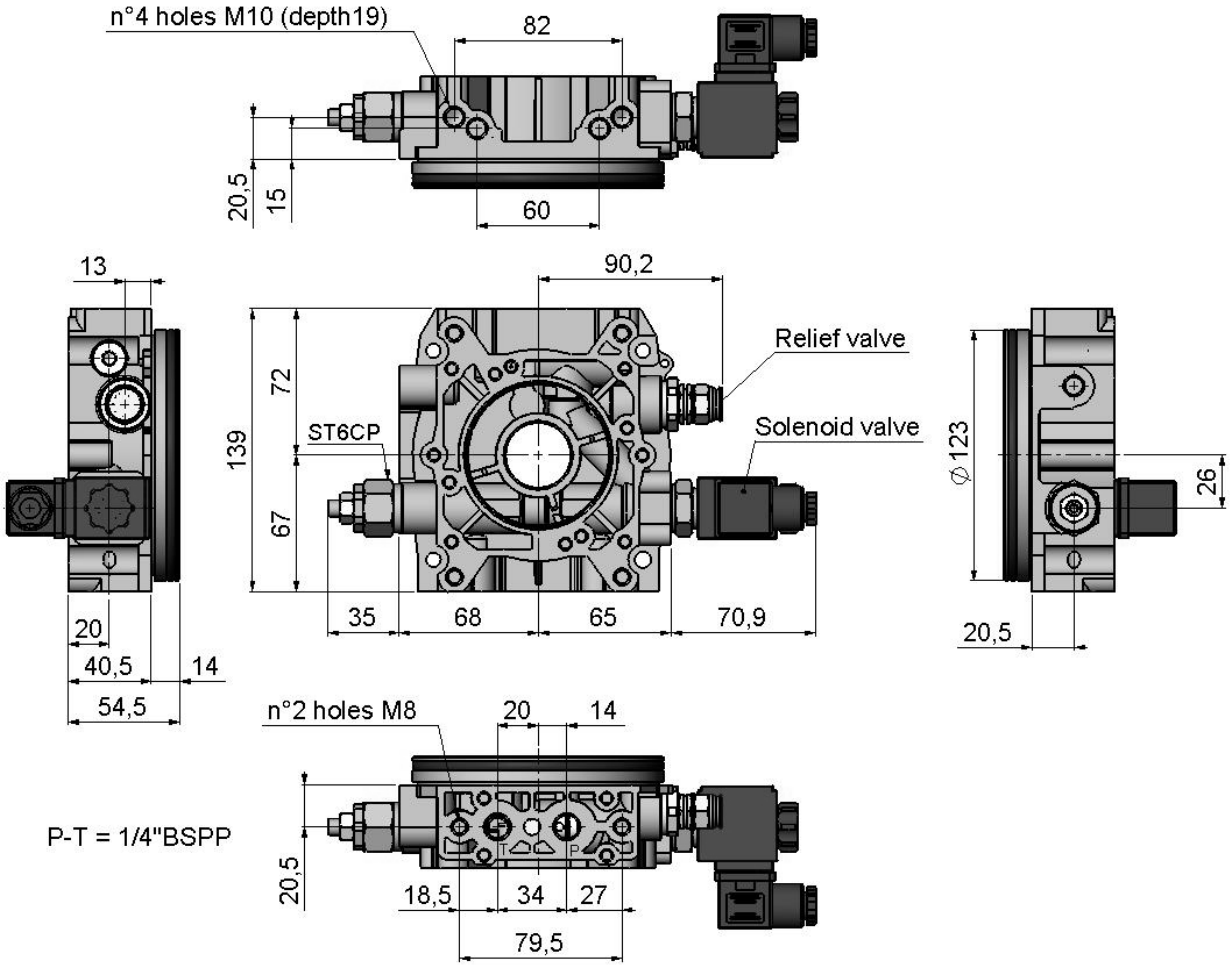
A14

Relief valve		Pressure range (bar)
VM15 *standard*	**W**	5 ÷ 50
	Y	30 ÷ 120
	Z	80 ÷ 250
VM25 *optional*	**W**	5 ÷ 50
	Y	10 ÷ 100
	Z	40 ÷ 200
	X	70 ÷ 350

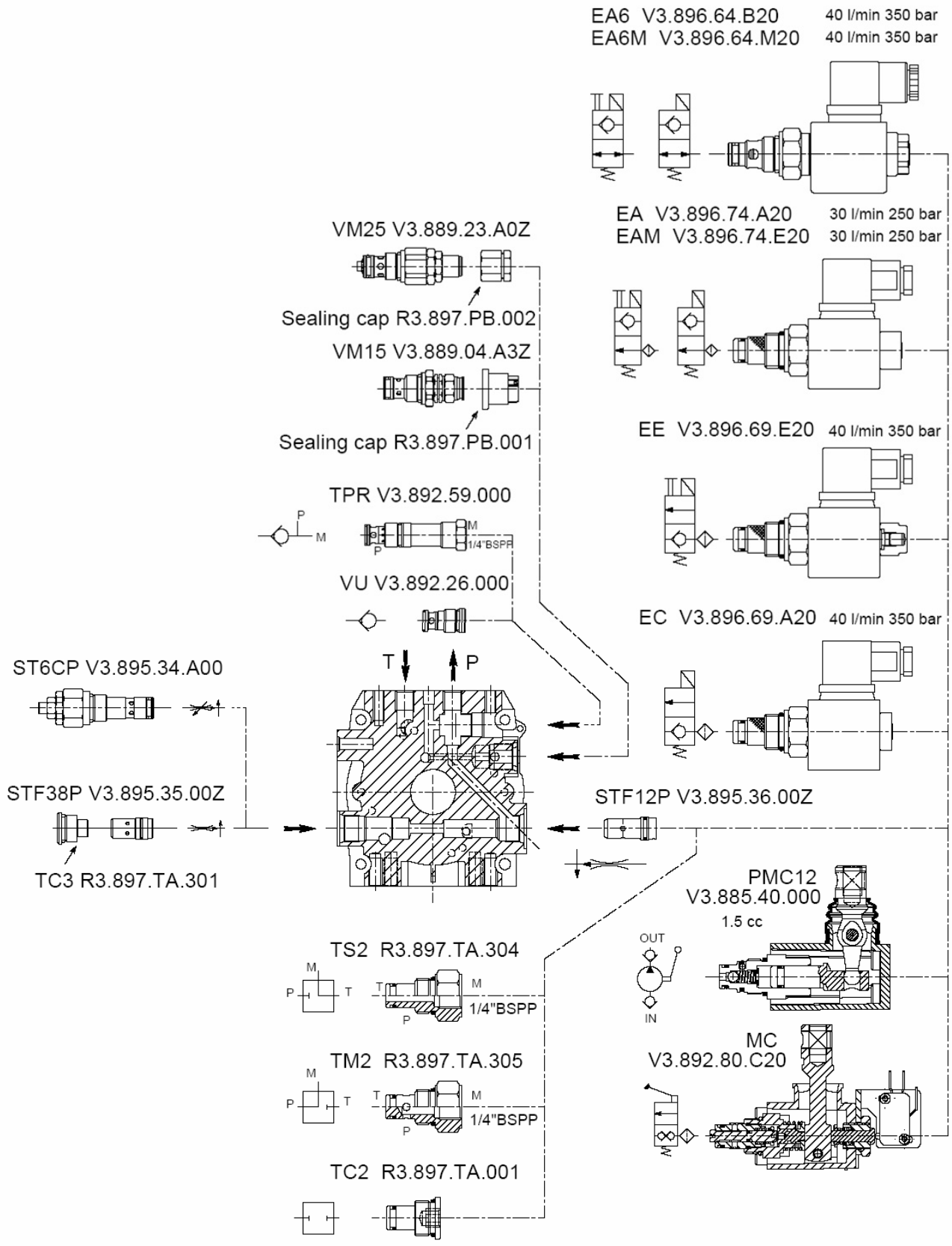


Manifold hydraulic diagram



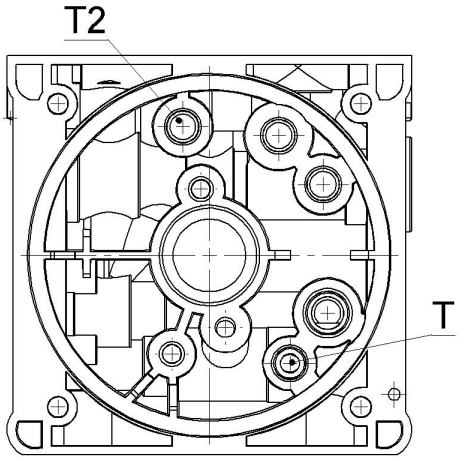


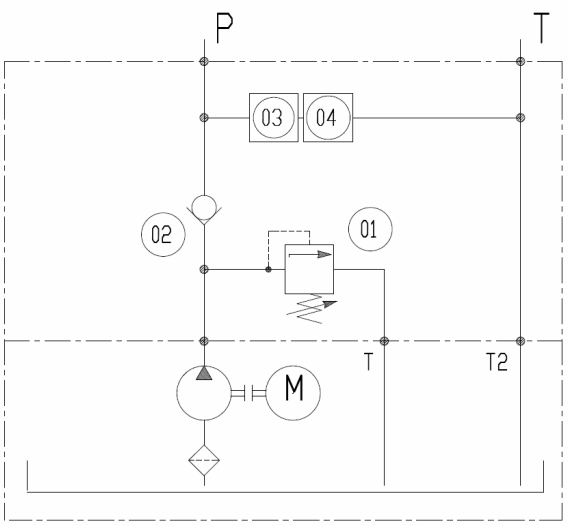
A14 with valves

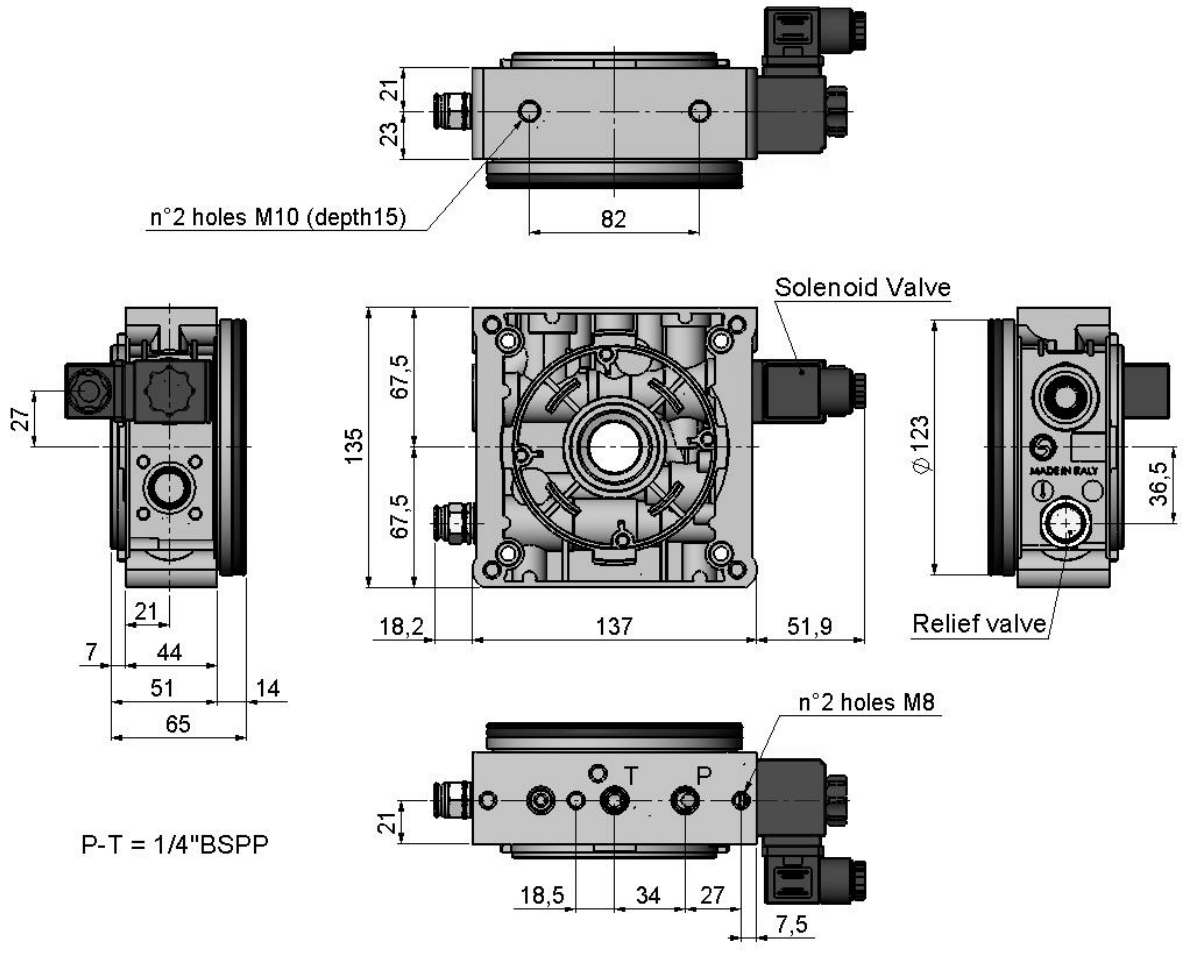


M02

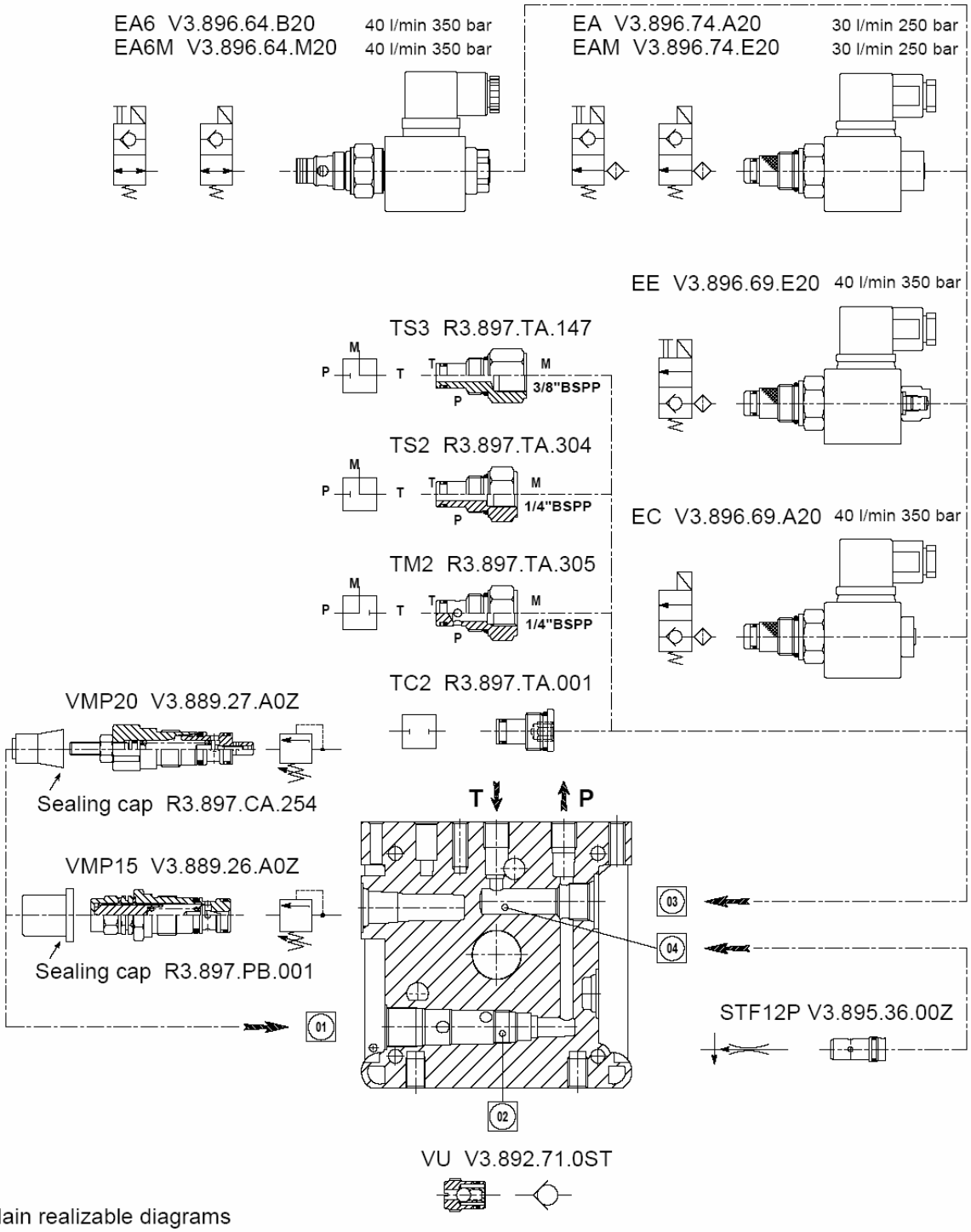
Relief valve		Pressure range (bar)
VMP15	W	5 ÷ 50
	Y	30 ÷ 120
	Z	80 ÷ 250
VMP20	Y	20 ÷ 80
	Z	60 ÷ 220
	X	100 ÷ 350



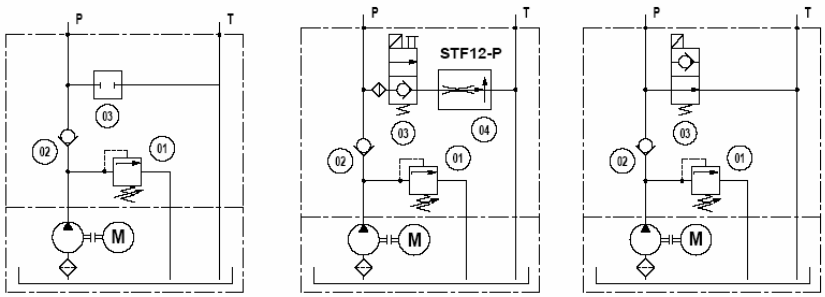




M02 with valves

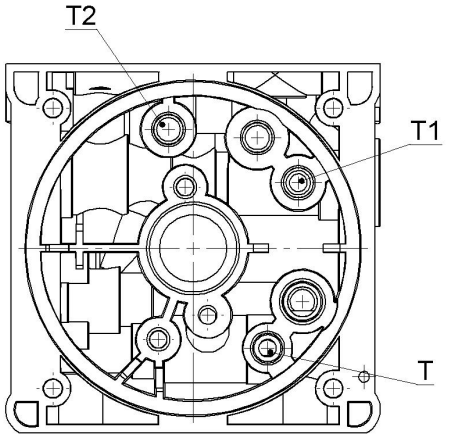


Main realizable diagrams

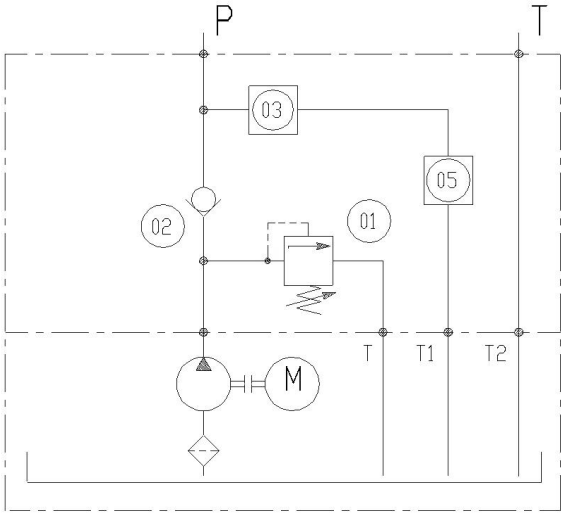


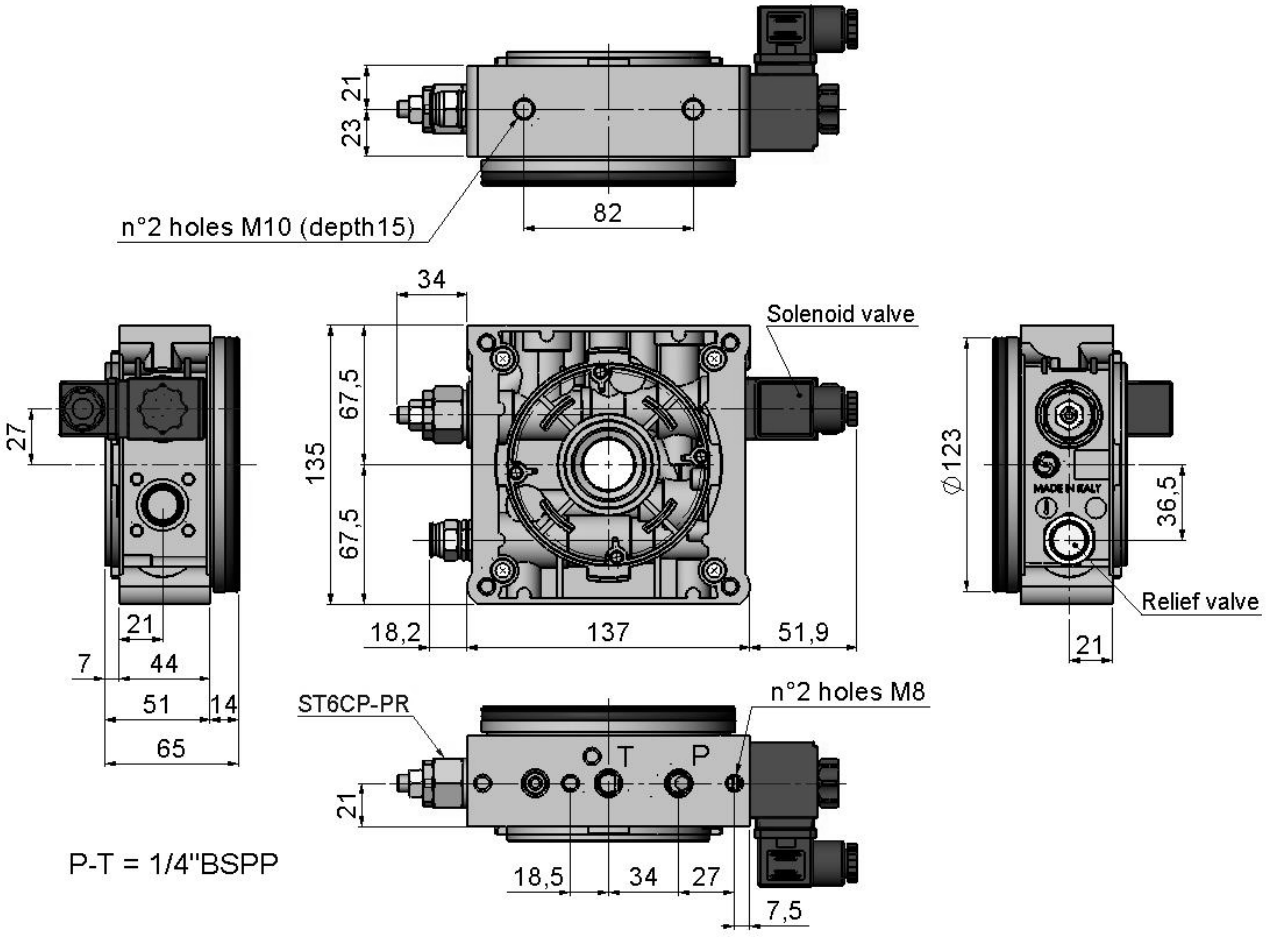
M03

Relief valve		Pressure range (bar)
VMP15	W	5 ÷ 50
	Y	30 ÷ 120
	Z	80 ÷ 250
VMP20	Y	20 ÷ 80
	Z	60 ÷ 220
	X	100 ÷ 350

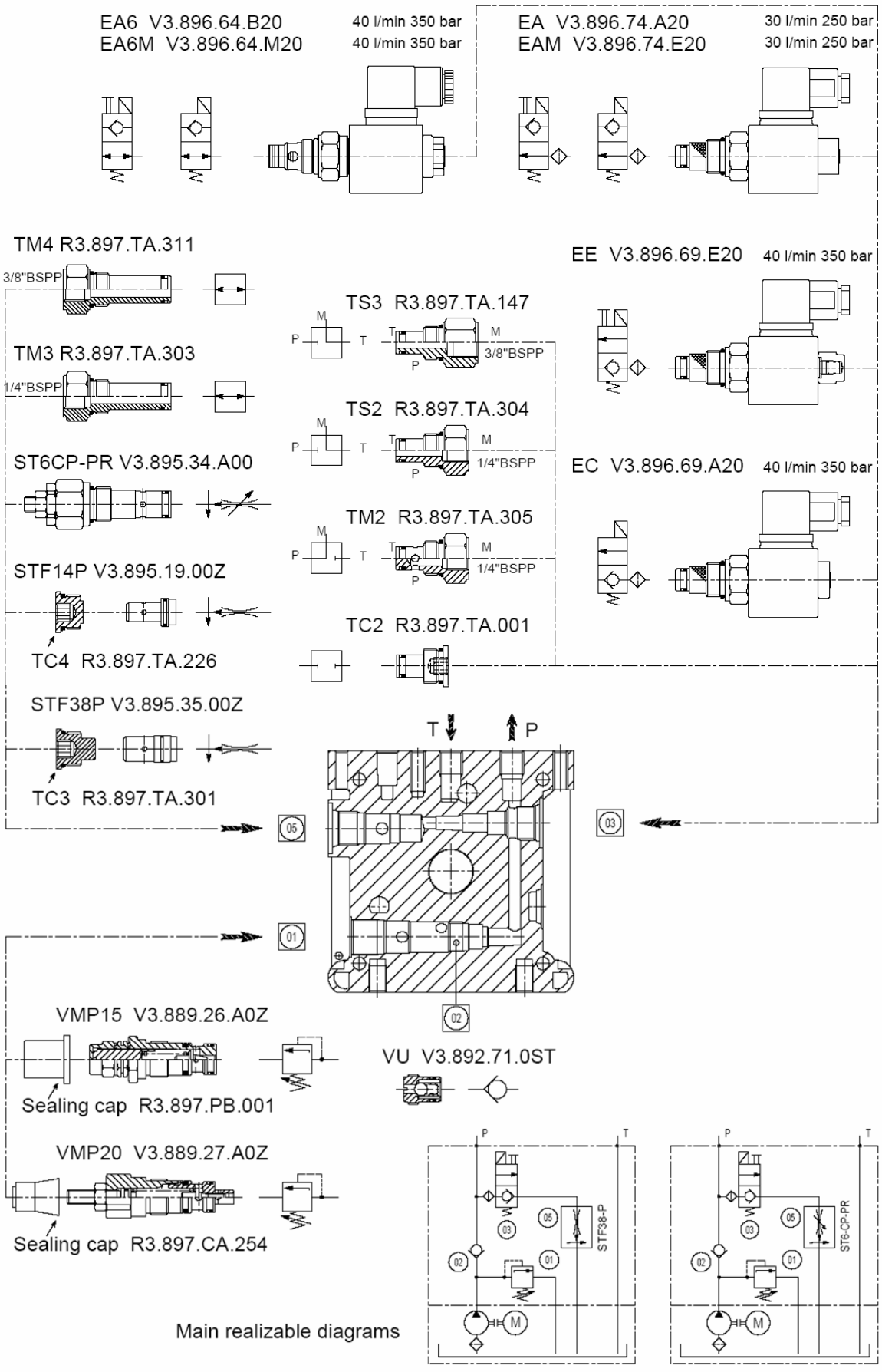


Manifold hydraulic diagram



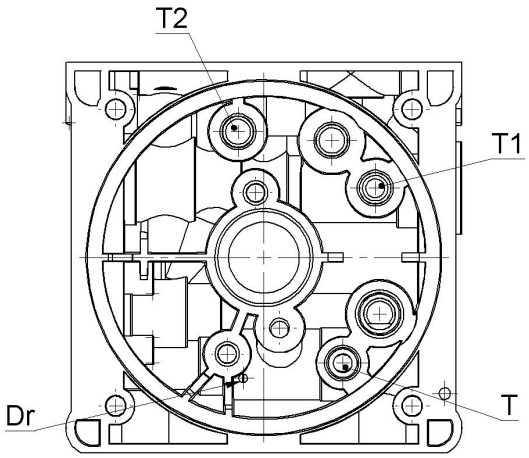


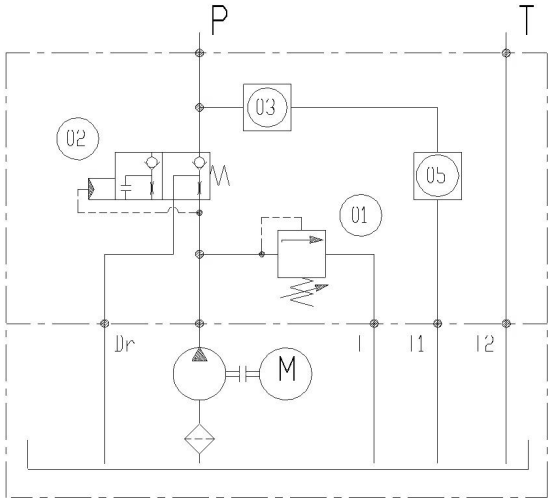
M03 with valves

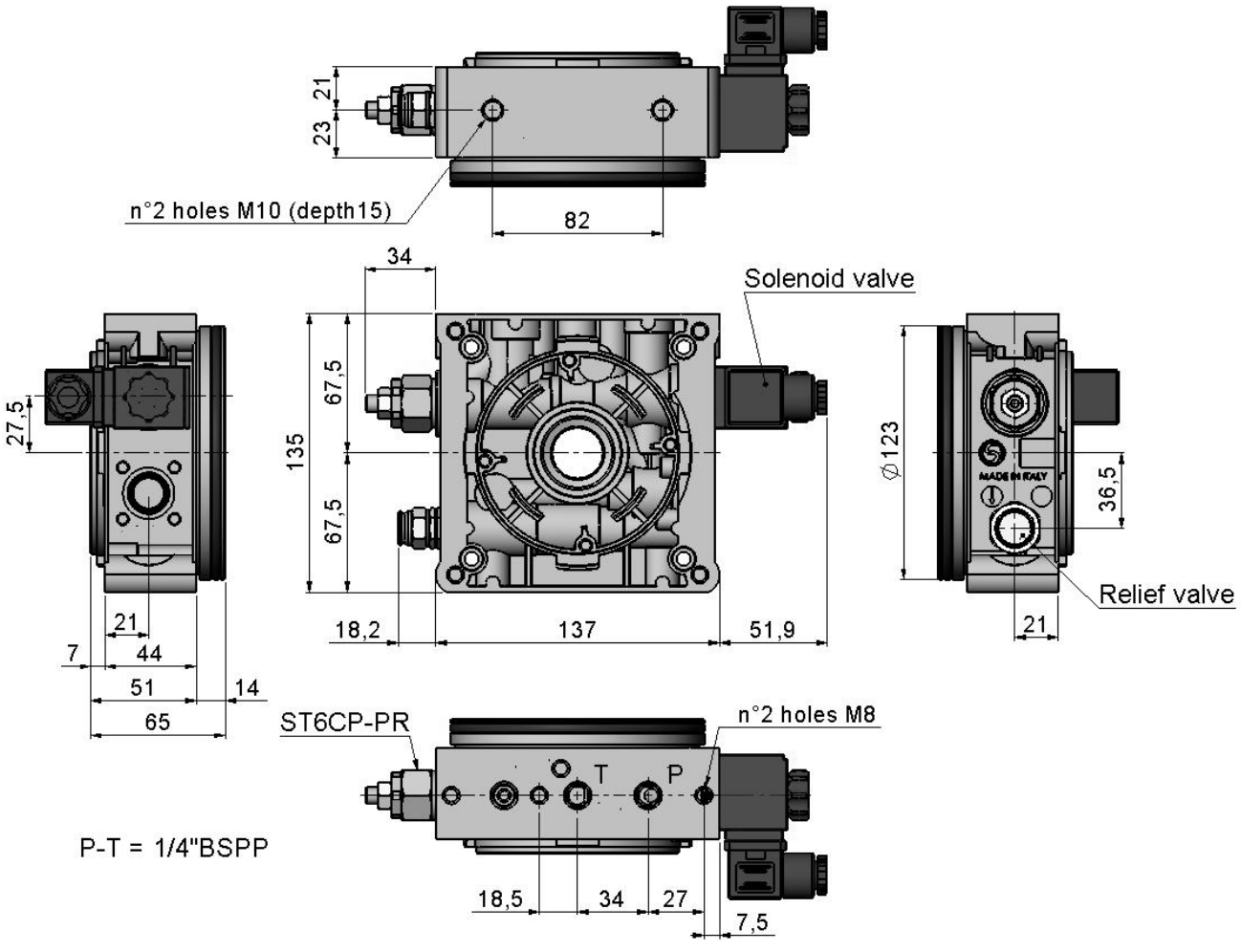


M09

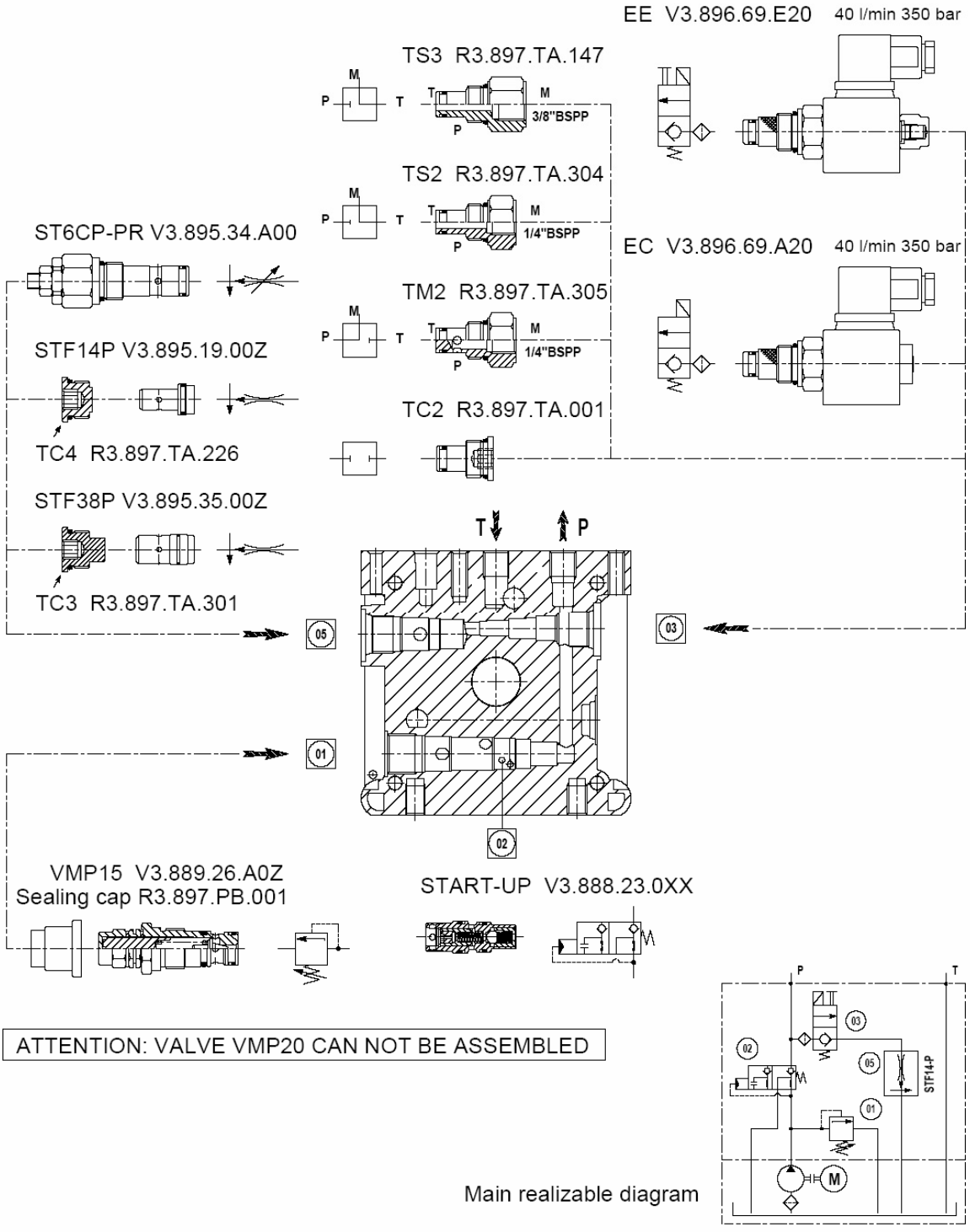
Relief valve		Pressure range (bar)
VMP15	W	5 ÷ 50
	Y	30 ÷ 120
	Z	80 ÷ 250
VMP20	*NOT AVAILABLE*	







THIS CENTRAL MANIFOLD HAS BEEN DESIGNED TO SOLVE THE "HIGH TORQUE" STARTING PROBLEM ON SINGLE PHASE MOTOR APPLICATIONS.

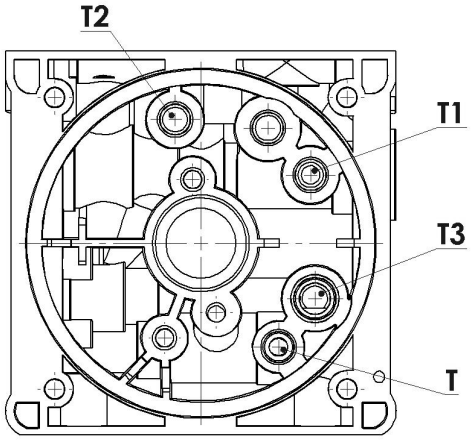


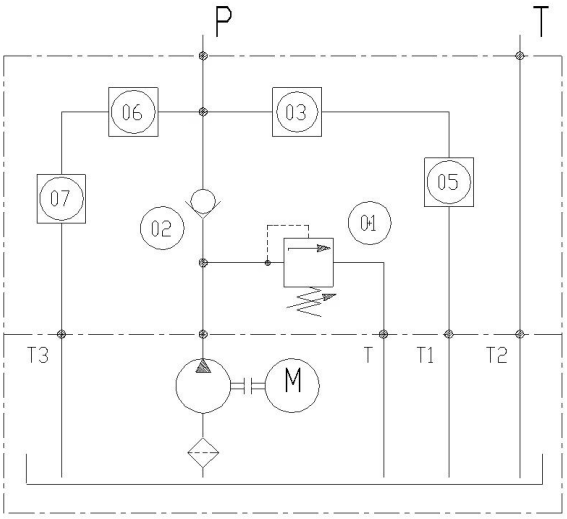
ATTENTION: VALVE VMP20 CAN NOT BE ASSEMBLED

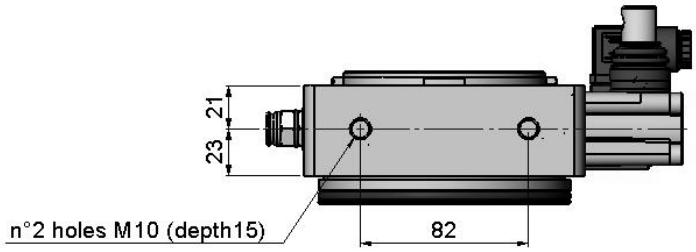
Main realizable diagram

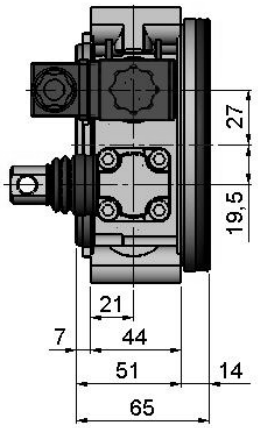
M04

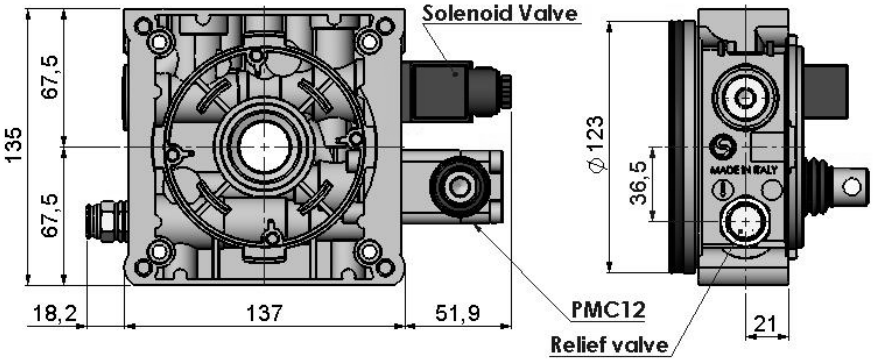
Relief valve		Pressure range (bar)
VMP15	W	5 ÷ 50
	Y	30 ÷ 120
	Z	80 ÷ 250
VMP20	Y	20 ÷ 80
	Z	60 ÷ 220
	X	100 ÷ 350

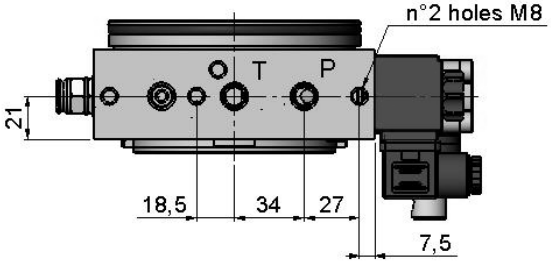






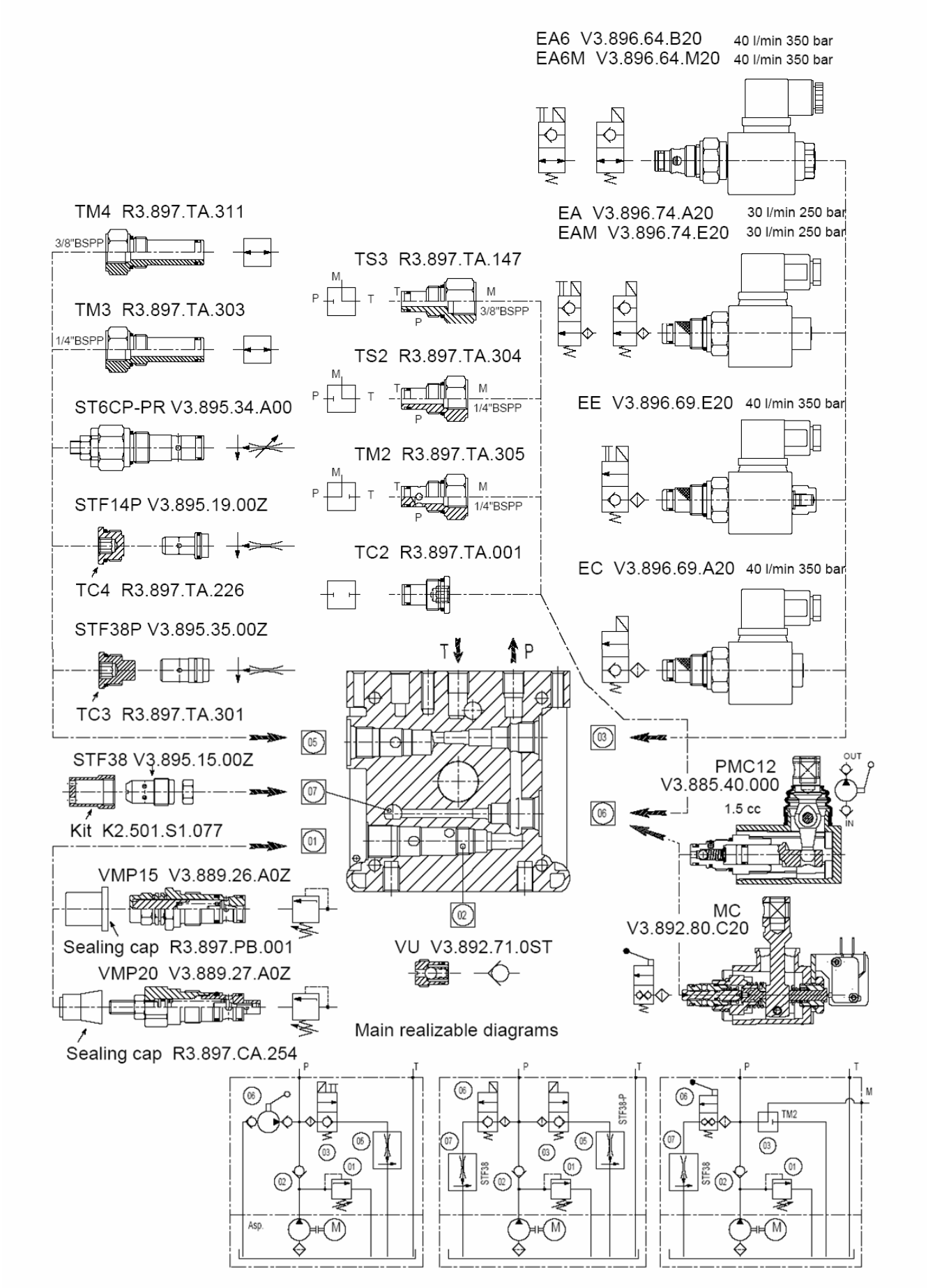






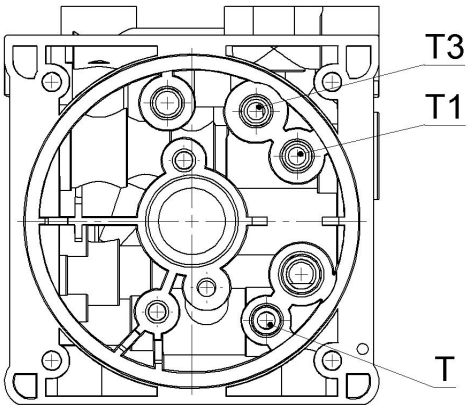
P-T = 1/4"BSPP

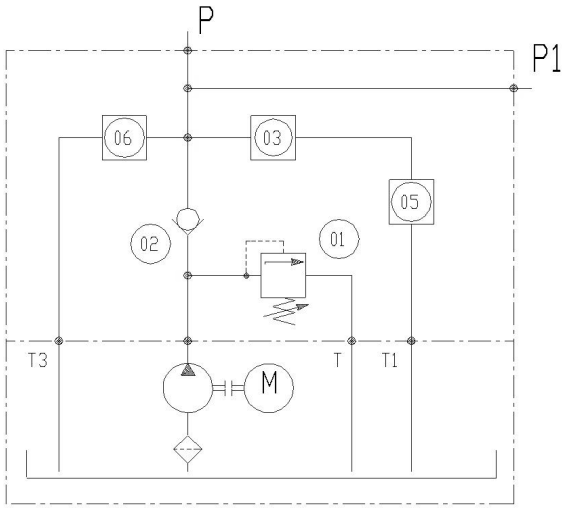
M04 with valves

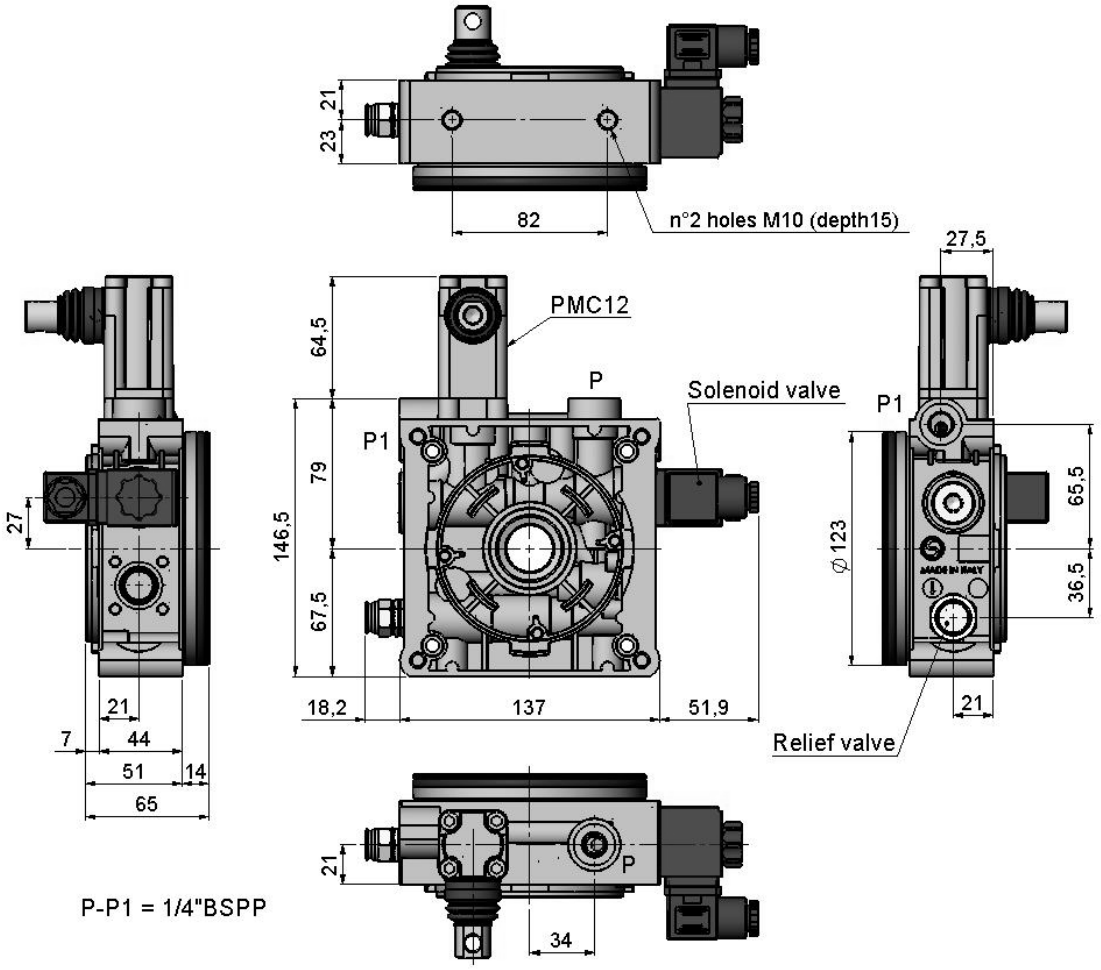


M05

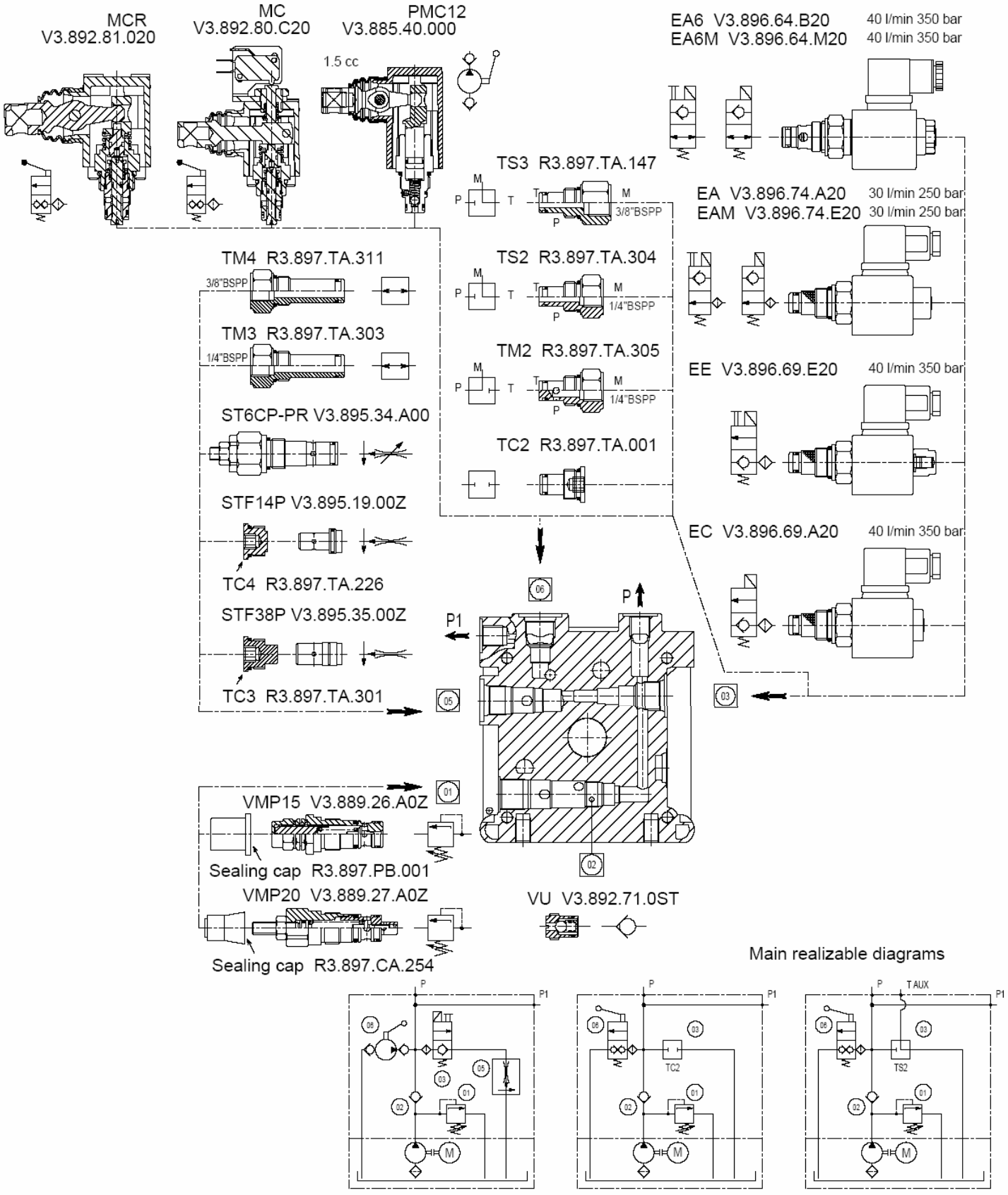
Relief valve		Pressure range (bar)
VMP15	W	5 ÷ 50
	Y	30 ÷ 120
	Z	80 ÷ 250
VMP20	Y	20 ÷ 80
	Z	60 ÷ 220
	X	100 ÷ 350





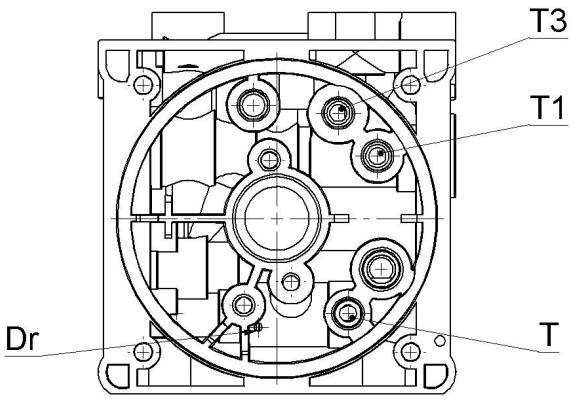


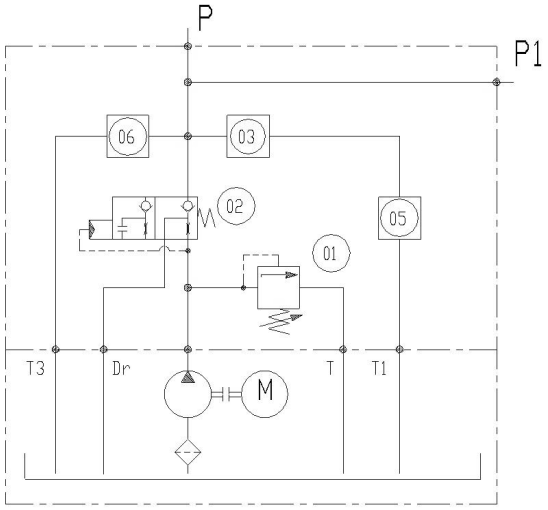
M05 with valves

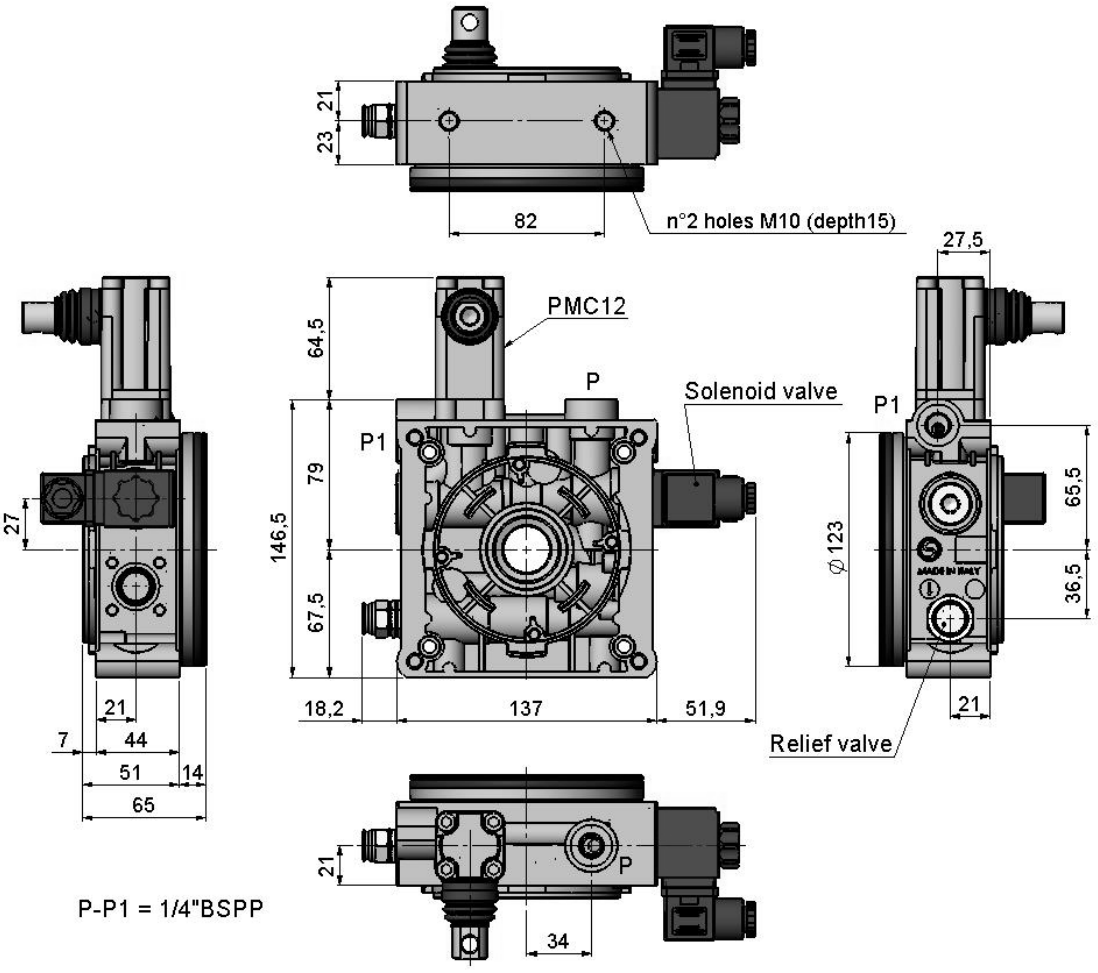


M19

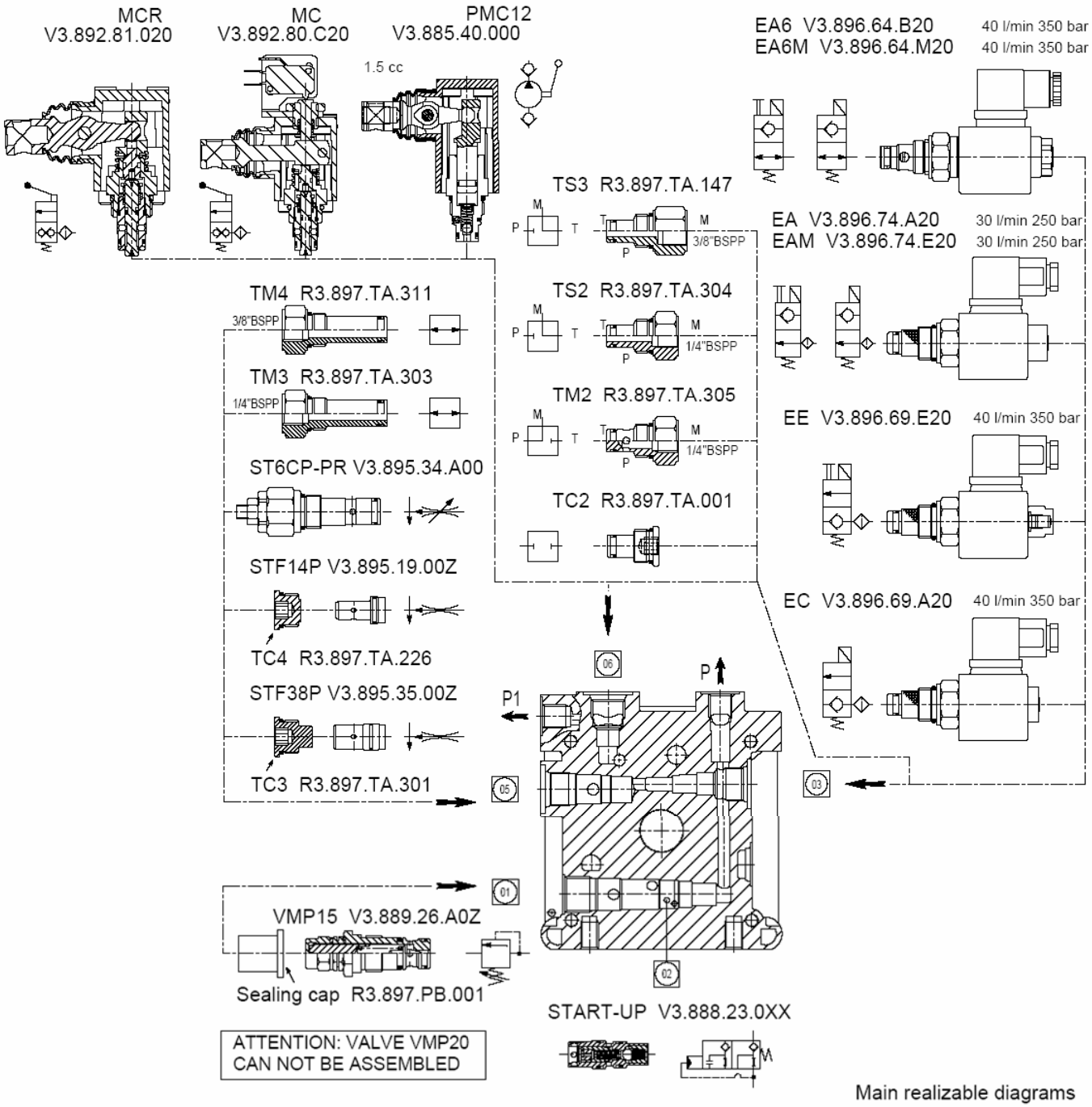
Relief valve		Pressure range (bar)
VMP15	W	5 ÷ 50
	Y	30 ÷ 120
	Z	80 ÷ 250
VMP20	*NOT AVAILABLE*	







M19 with valves



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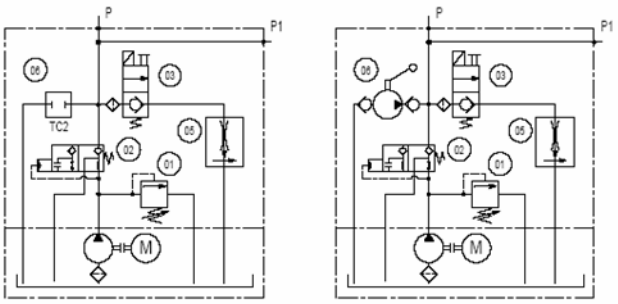
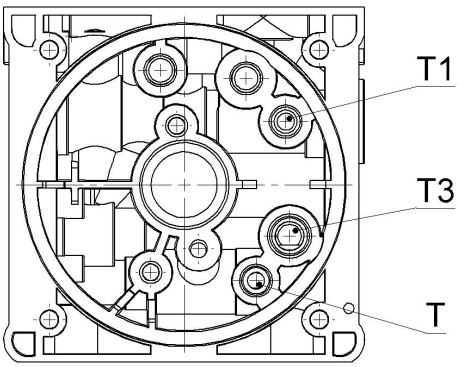
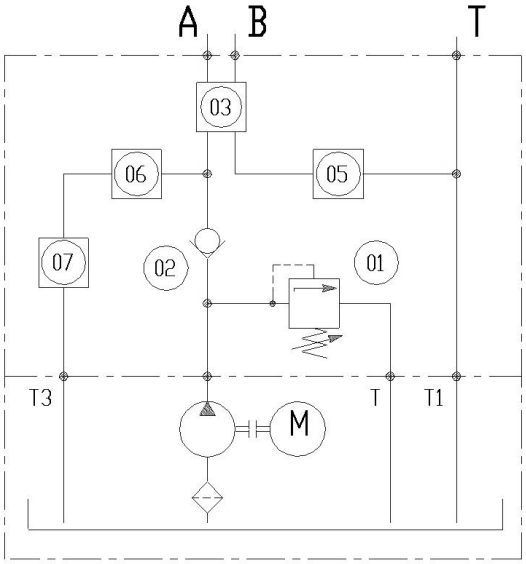
Main realizable diagrams

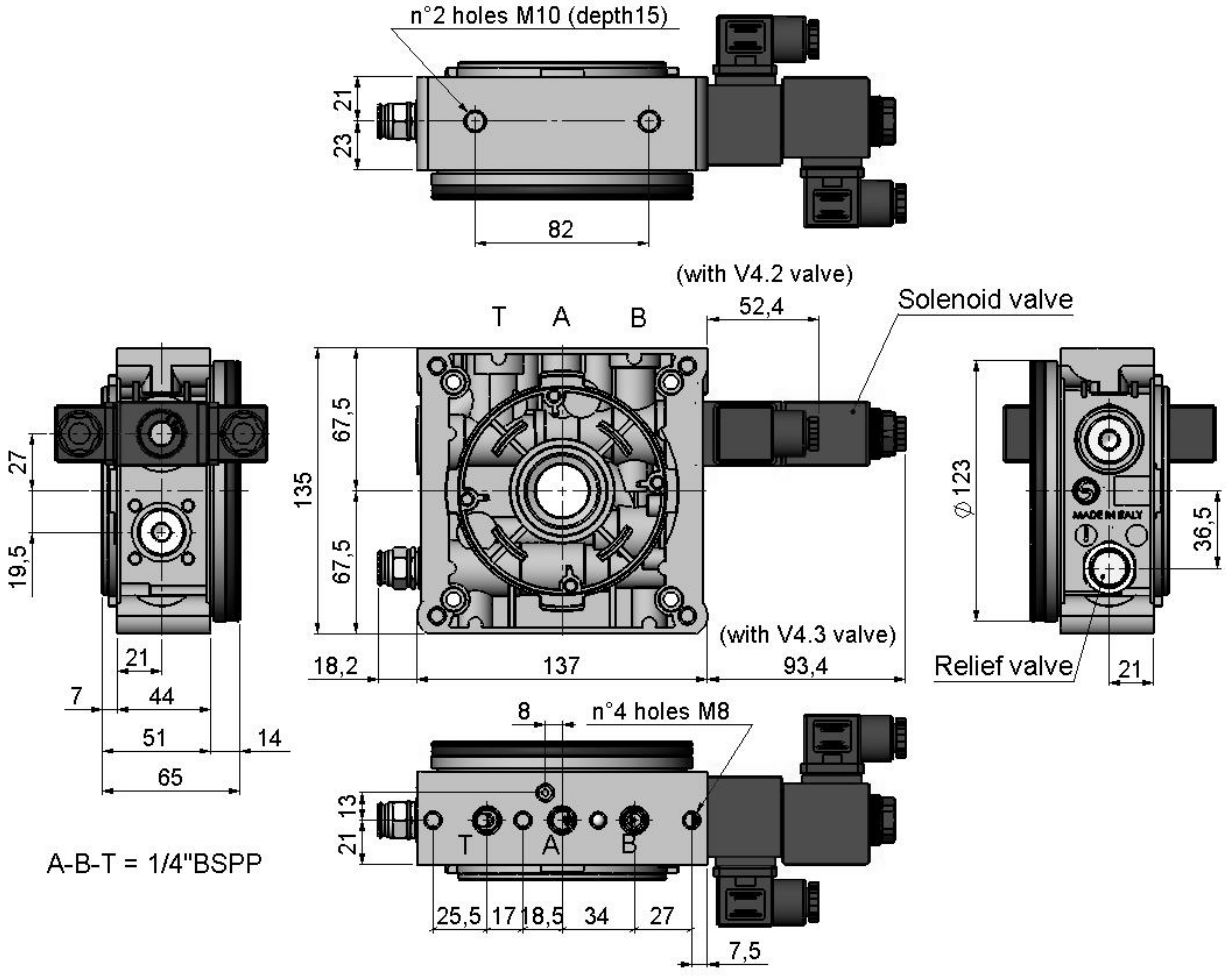


M21

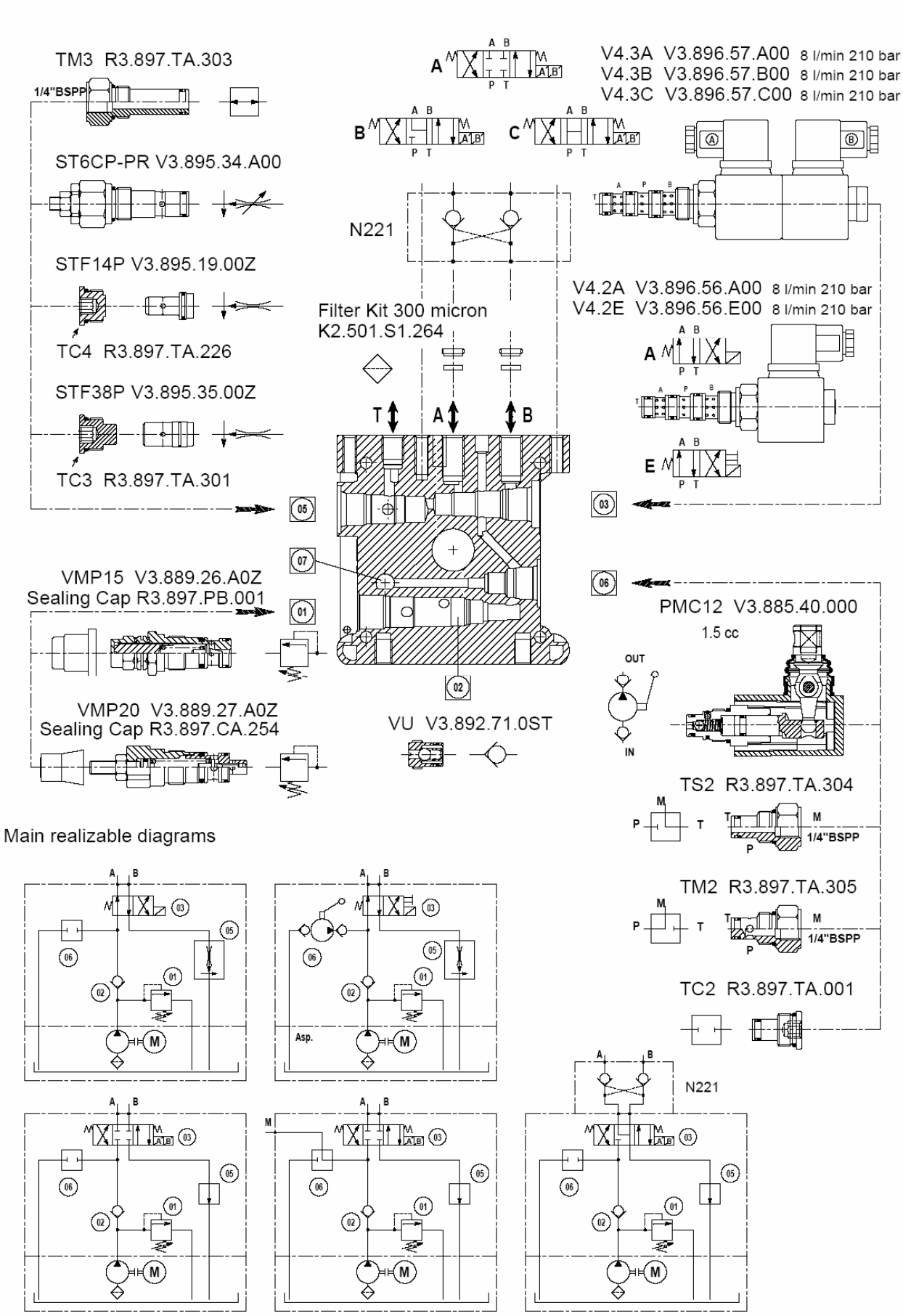
Relief valve		Pressure range (bar)
VMP15	W	5 ÷ 50
	Y	30 ÷ 120
	Z	80 ÷ 250
VMP20	Y	20 ÷ 80
	Z	60 ÷ 220
	X	100 ÷ 350





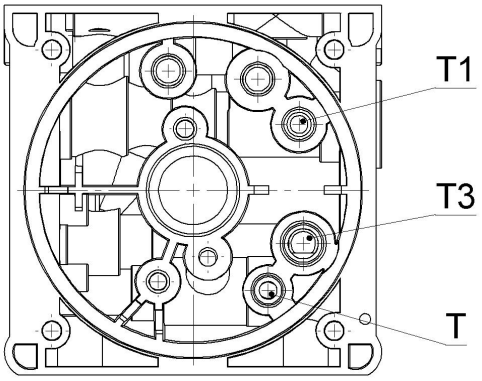


M21 with valves

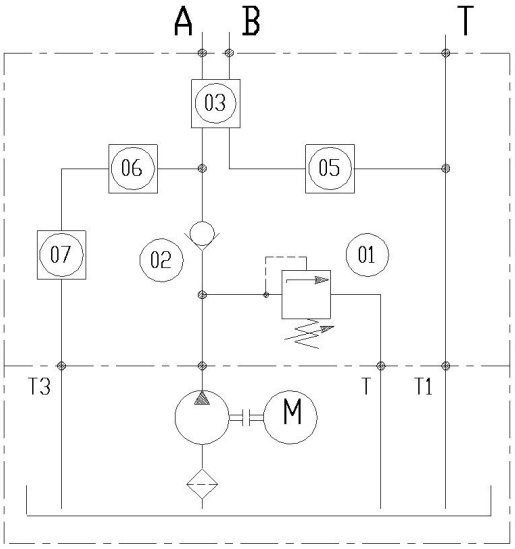


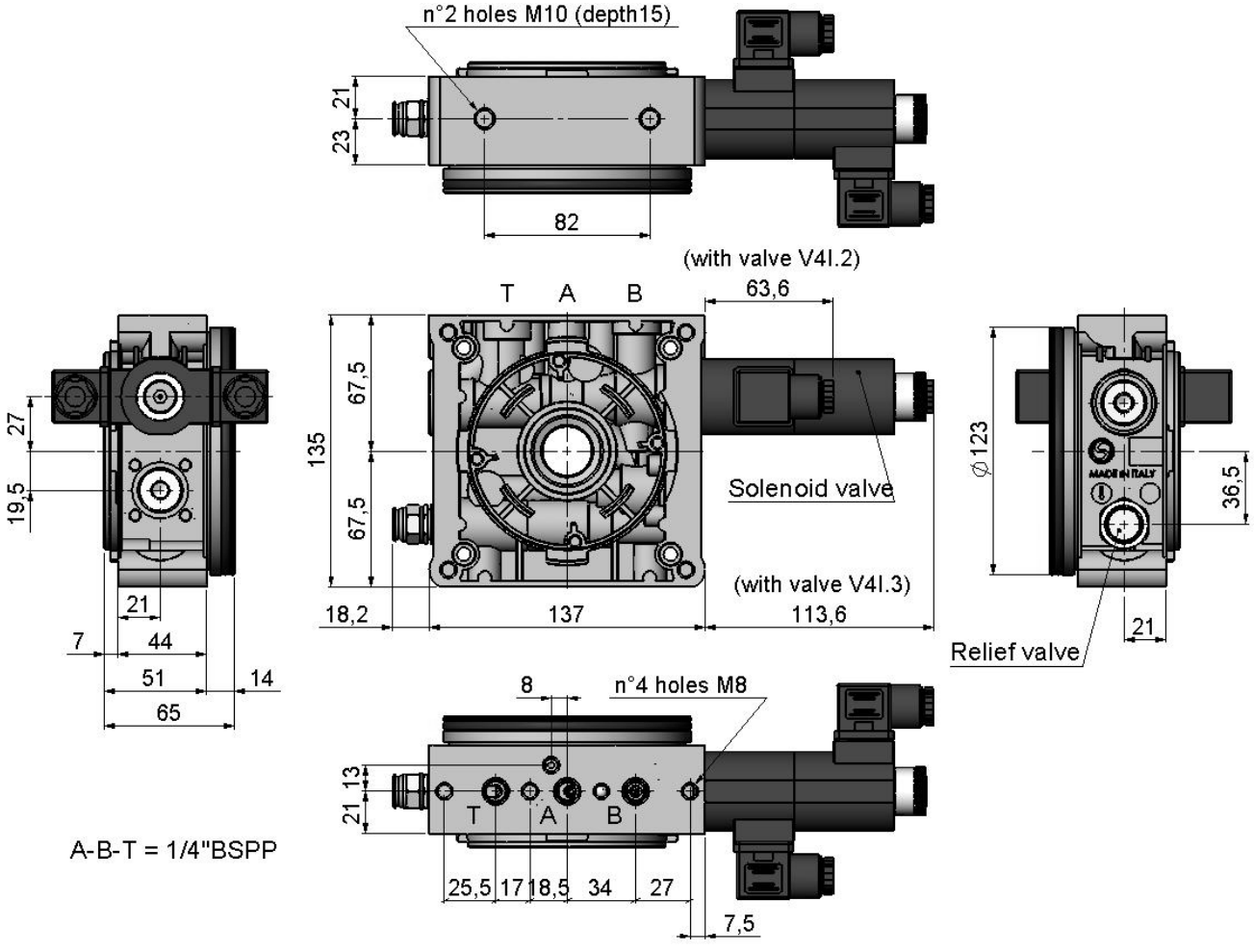
M25

Relief valve		Pressure range (bar)
VMP15	W	5 ÷ 50
	Y	30 ÷ 120
	Z	80 ÷ 250
VMP20	Y	20 ÷ 80
	Z	60 ÷ 220
	X	100 ÷ 350

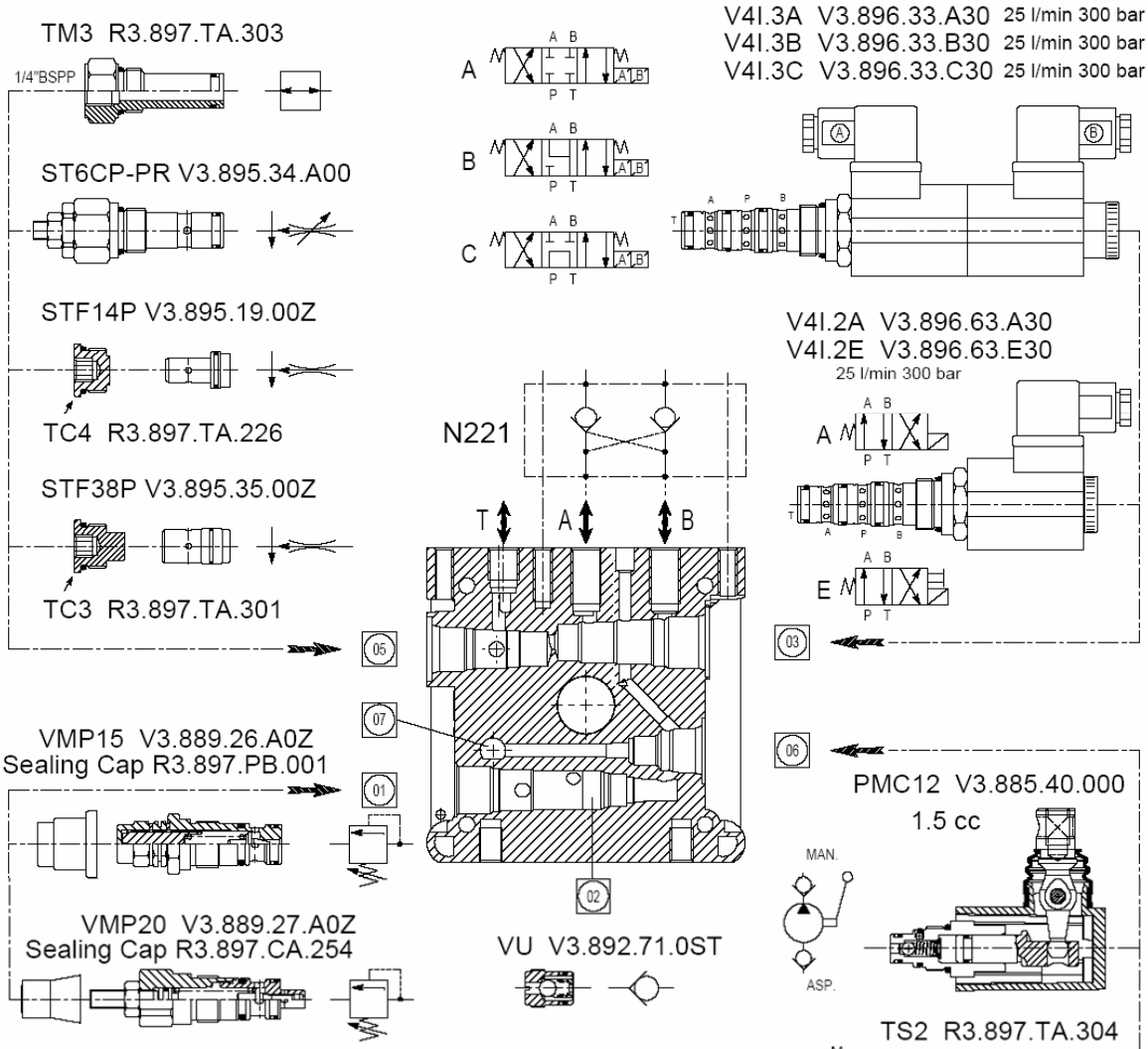


Manifold hydraulic diagram

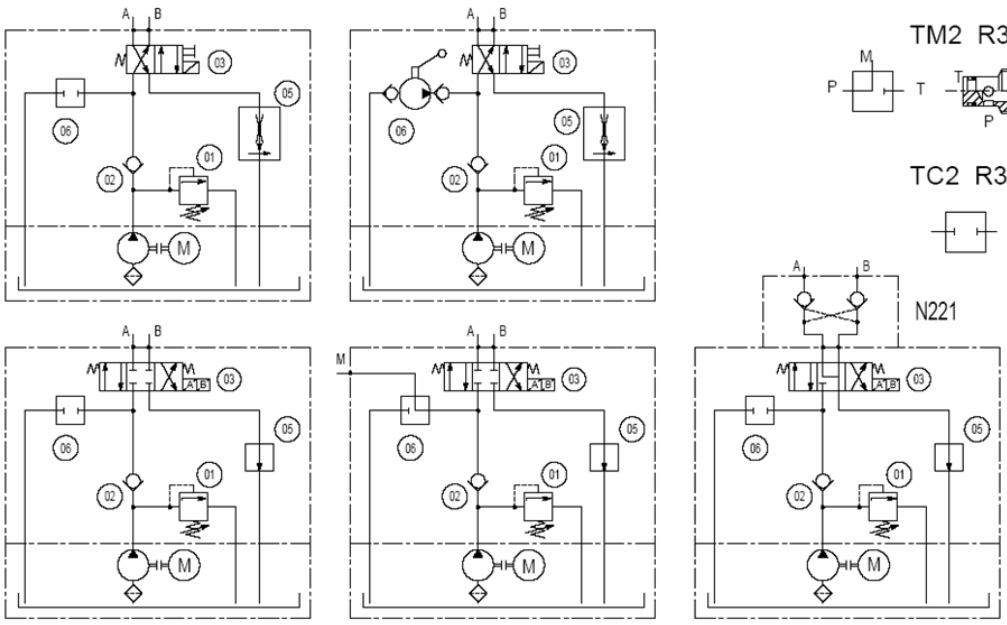




M25 with valves

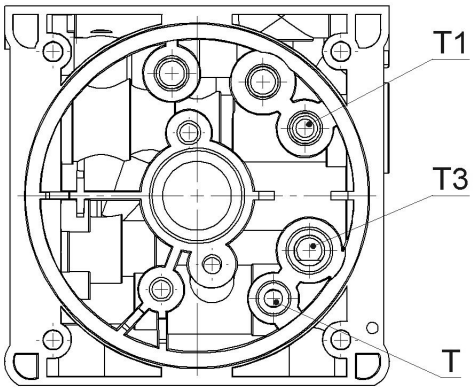


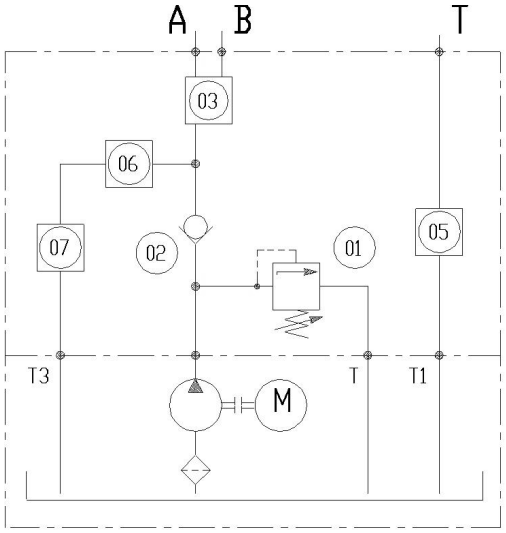
Main realizable diagrams

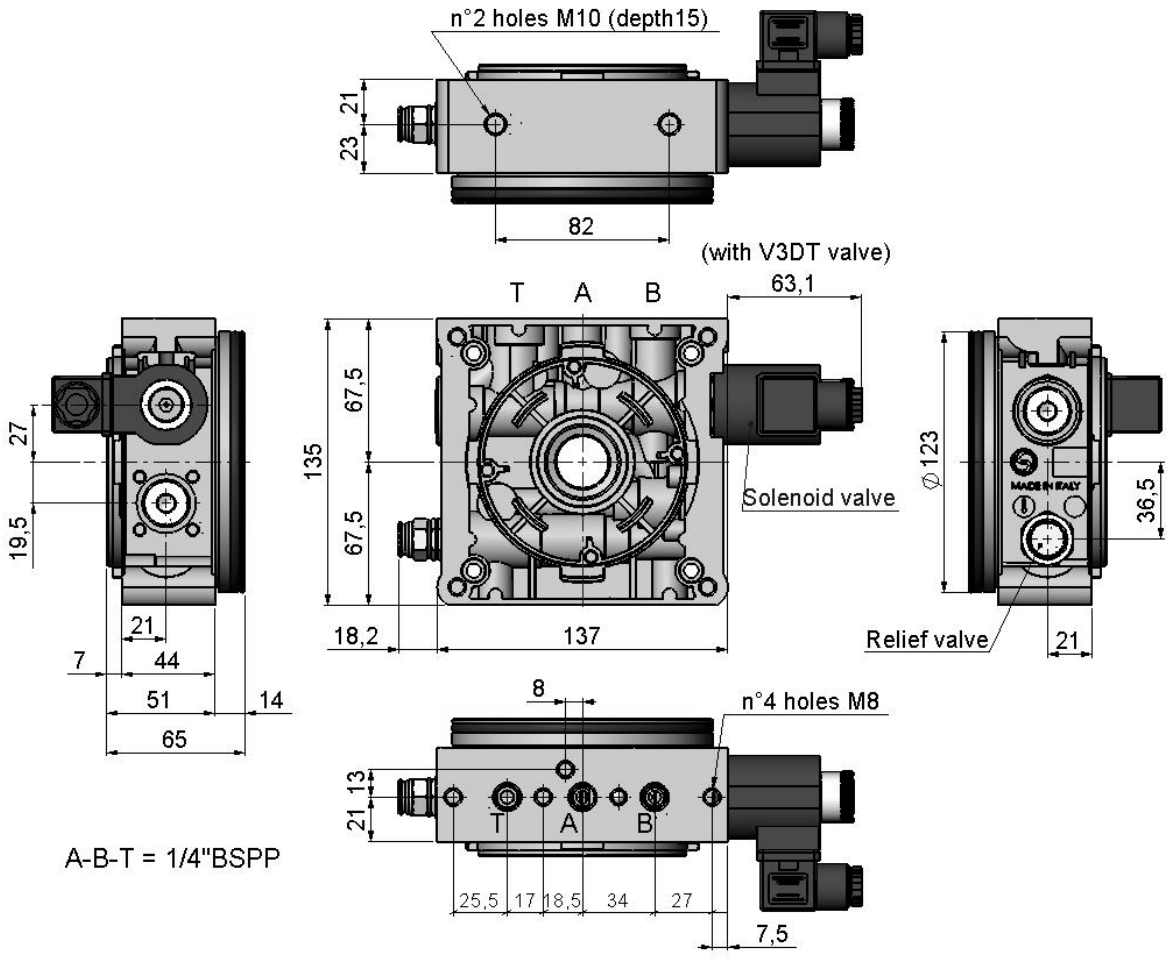


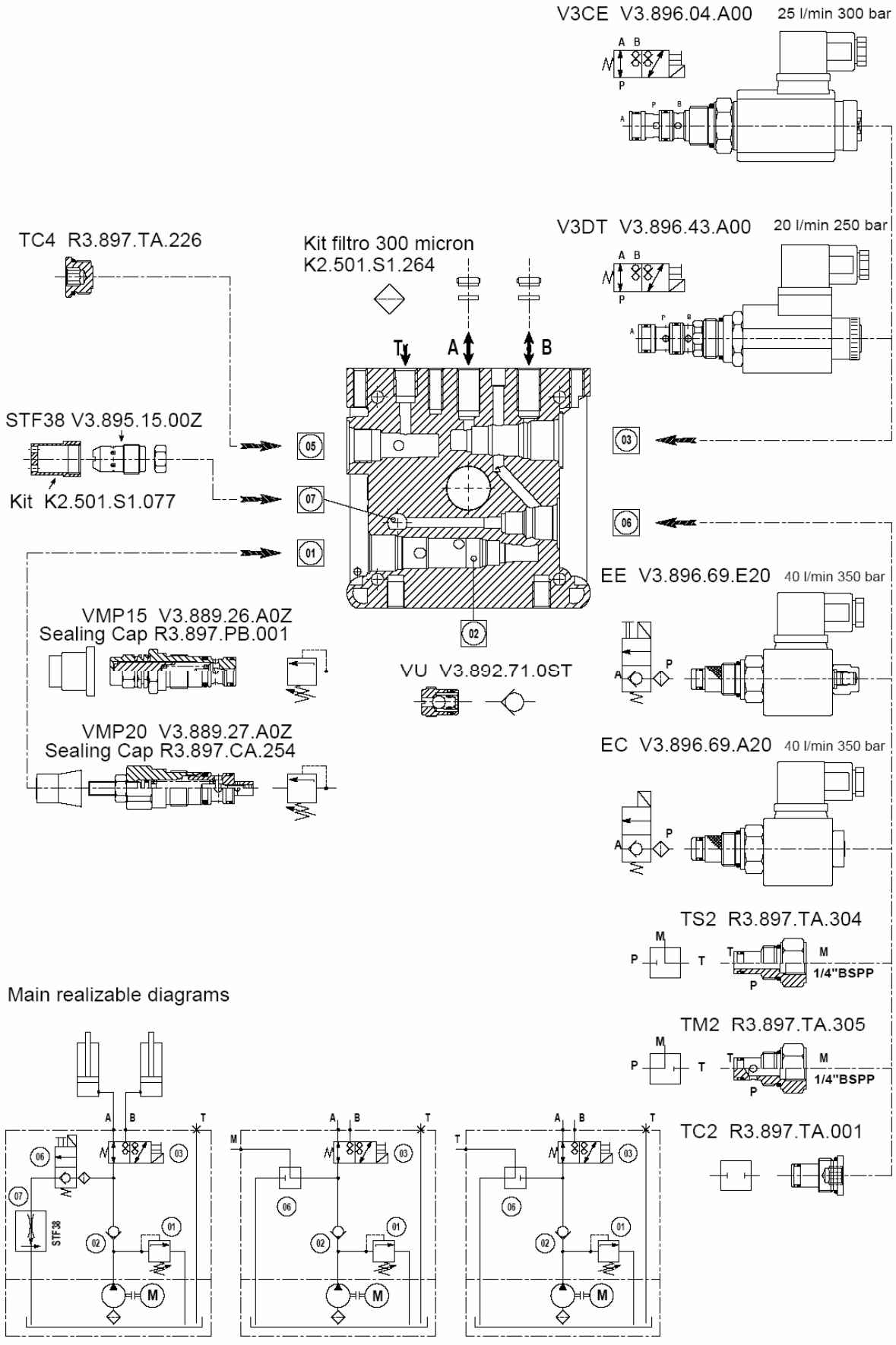
M15

Relief valve		Pressure range (bar)
VMP15	W	5 ÷ 50
	Y	30 ÷ 120
	Z	80 ÷ 250
VMP20	Y	20 ÷ 80
	Z	60 ÷ 220
	X	100 ÷ 350



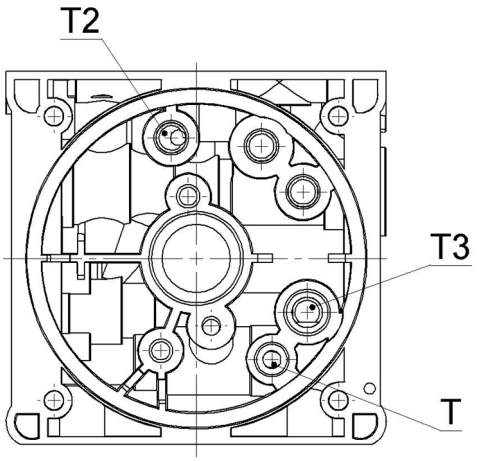


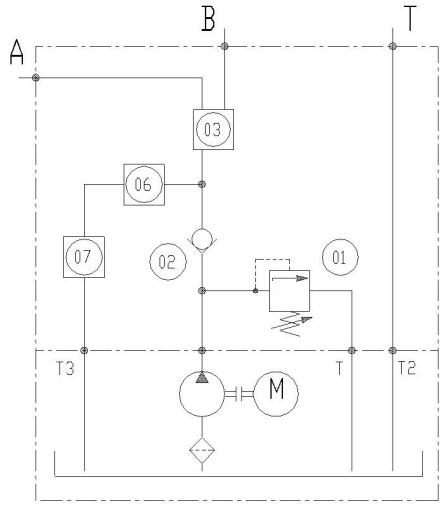


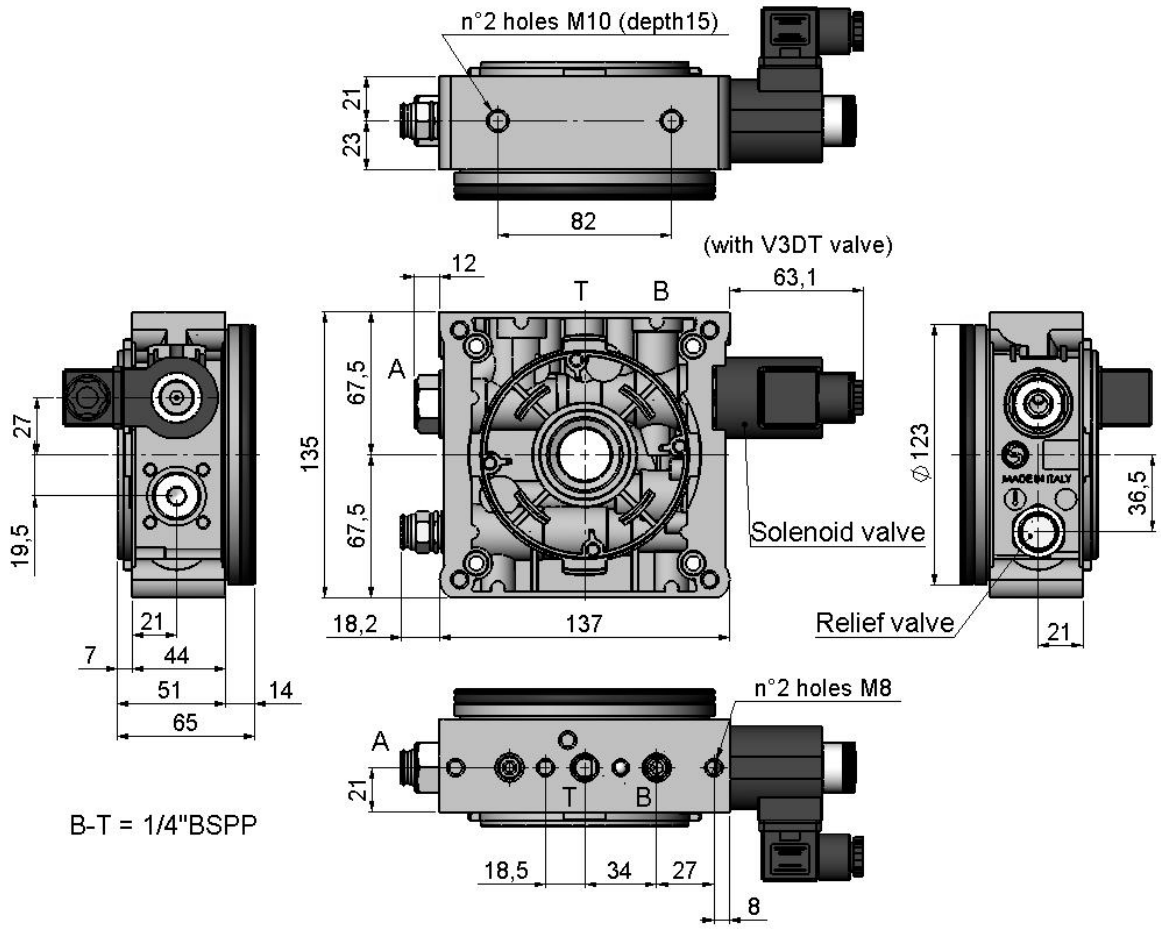

V3CE V3.896.04.A00 25 l/min 300 bar
V3DT V3.896.43.A00 20 l/min 250 bar
TC4 R3.897.TA.226
Kit filtro 300 micron
K2.501.S1.264
STF38 V3.895.15.00Z
Kit K2.501.S1.077
VMP15 V3.889.26.A0Z
Sealing Cap R3.897.PB.001
VMP20 V3.889.27.A0Z
Sealing Cap R3.897.CA.254
VU V3.892.71.0ST
EE V3.896.69.E20 40 l/min 350 bar
EC V3.896.69.A20 40 l/min 350 bar
TS2 R3.897.TA.304
TM2 R3.897.TA.305
TC2 R3.897.TA.001
1/4"BSPP
Main realizable diagrams

M16

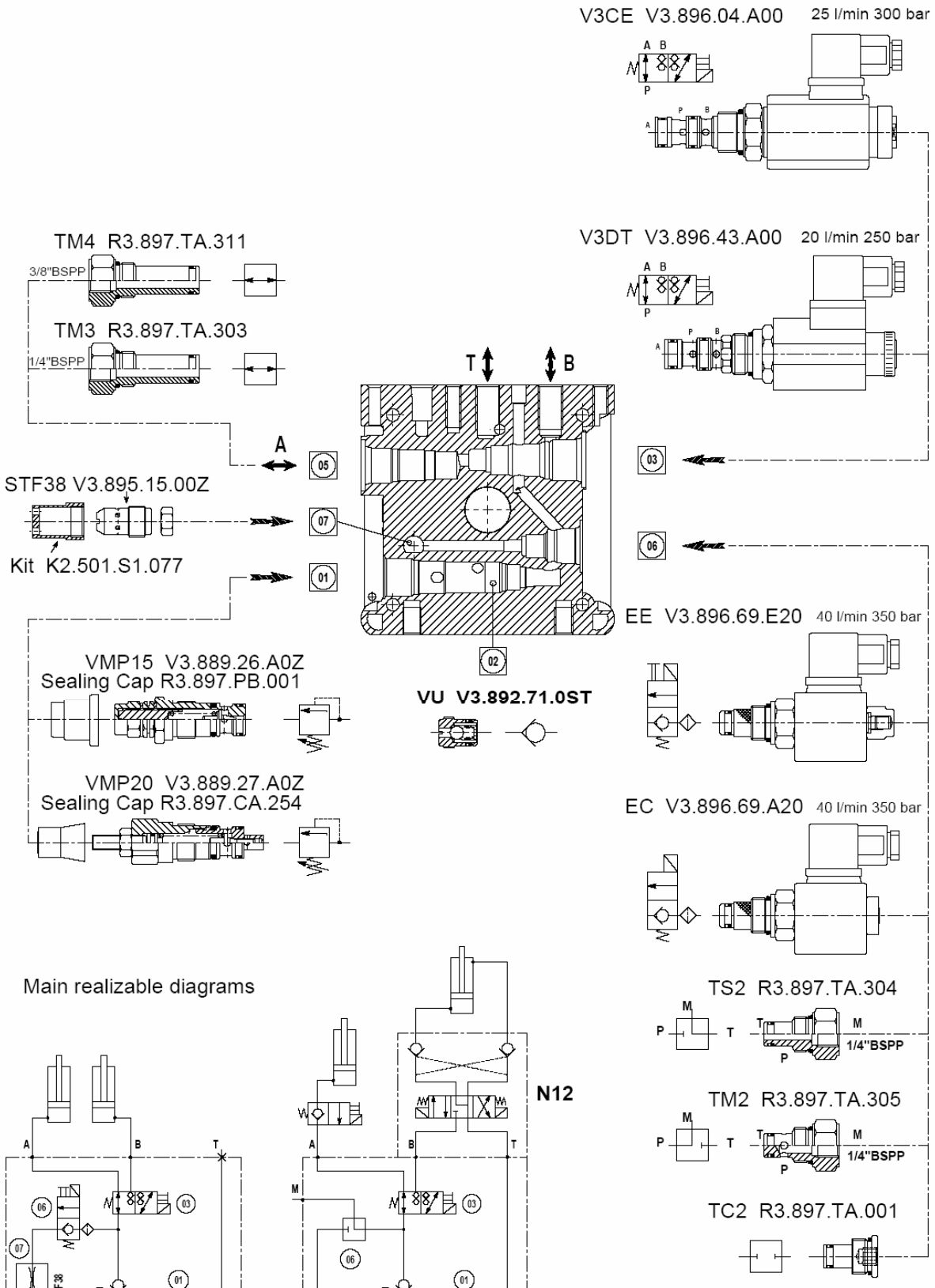
Relief valve		Pressure range (bar)
VMP15	W	5 ÷ 50
	Y	30 ÷ 120
	Z	80 ÷ 250
VMP20	Y	20 ÷ 80
	Z	60 ÷ 220
	X	100 ÷ 350







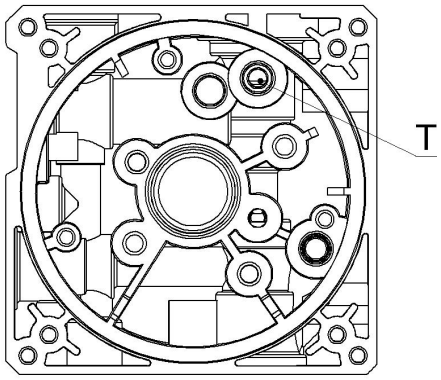
M16 with valves



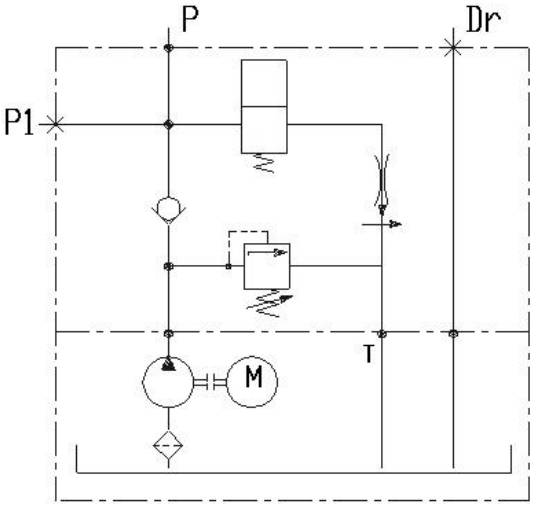
KS00

Relief valve		Pressure range (bar)
VM15	W	5 ÷ 50
	Y	30 ÷ 120
	Z	80 ÷ 250

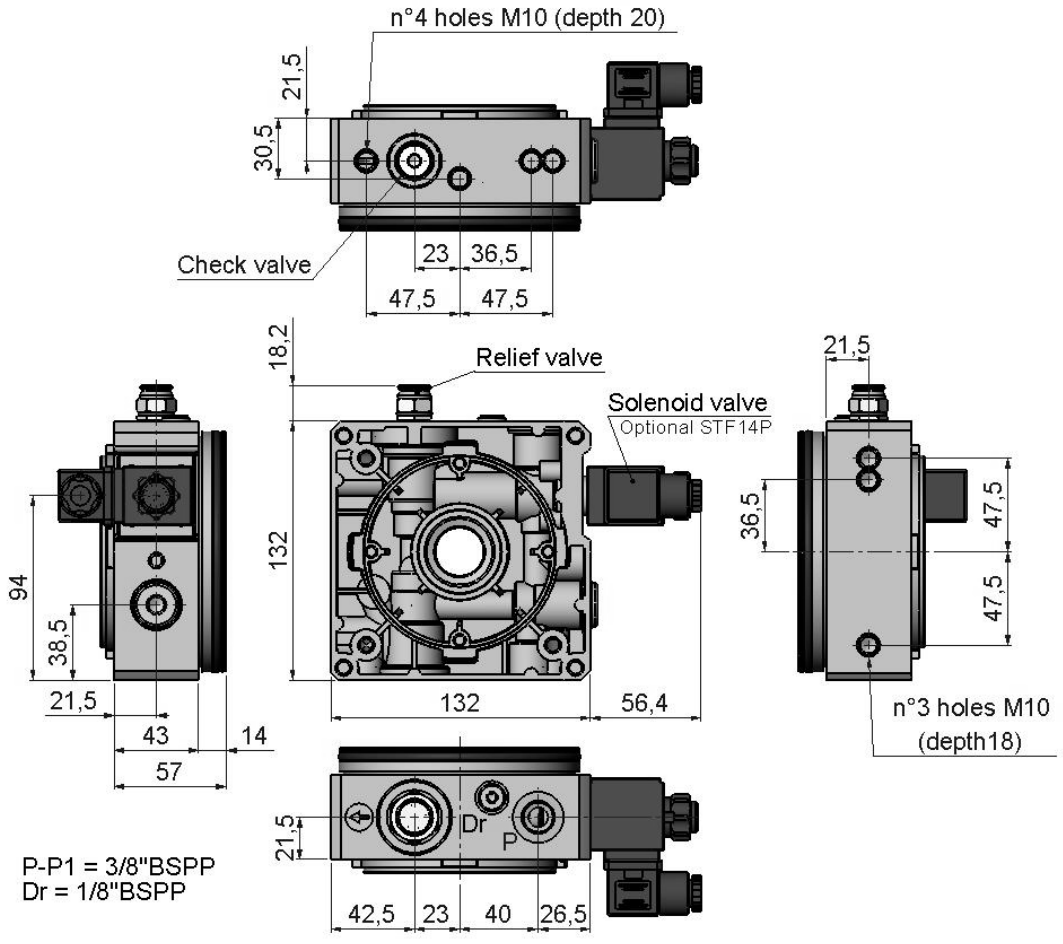
Steel tank is not available for central manifold KS type.
Please contact our sales department for further information.



Manifold hydraulic diagram



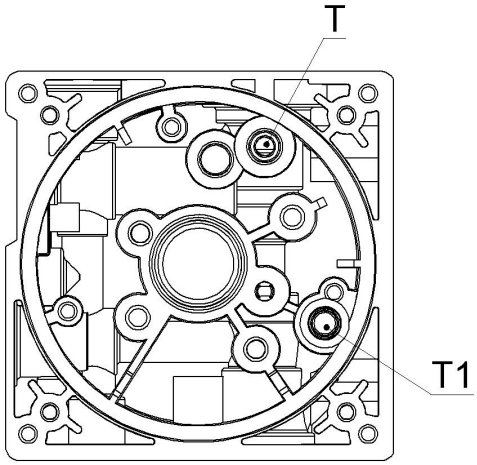
Optional: STF14P flow control valve.



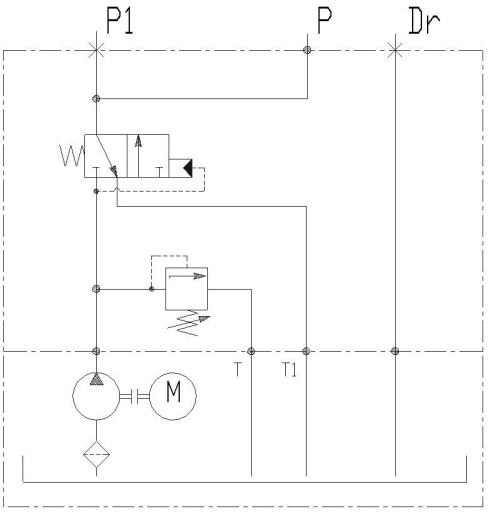
KS02

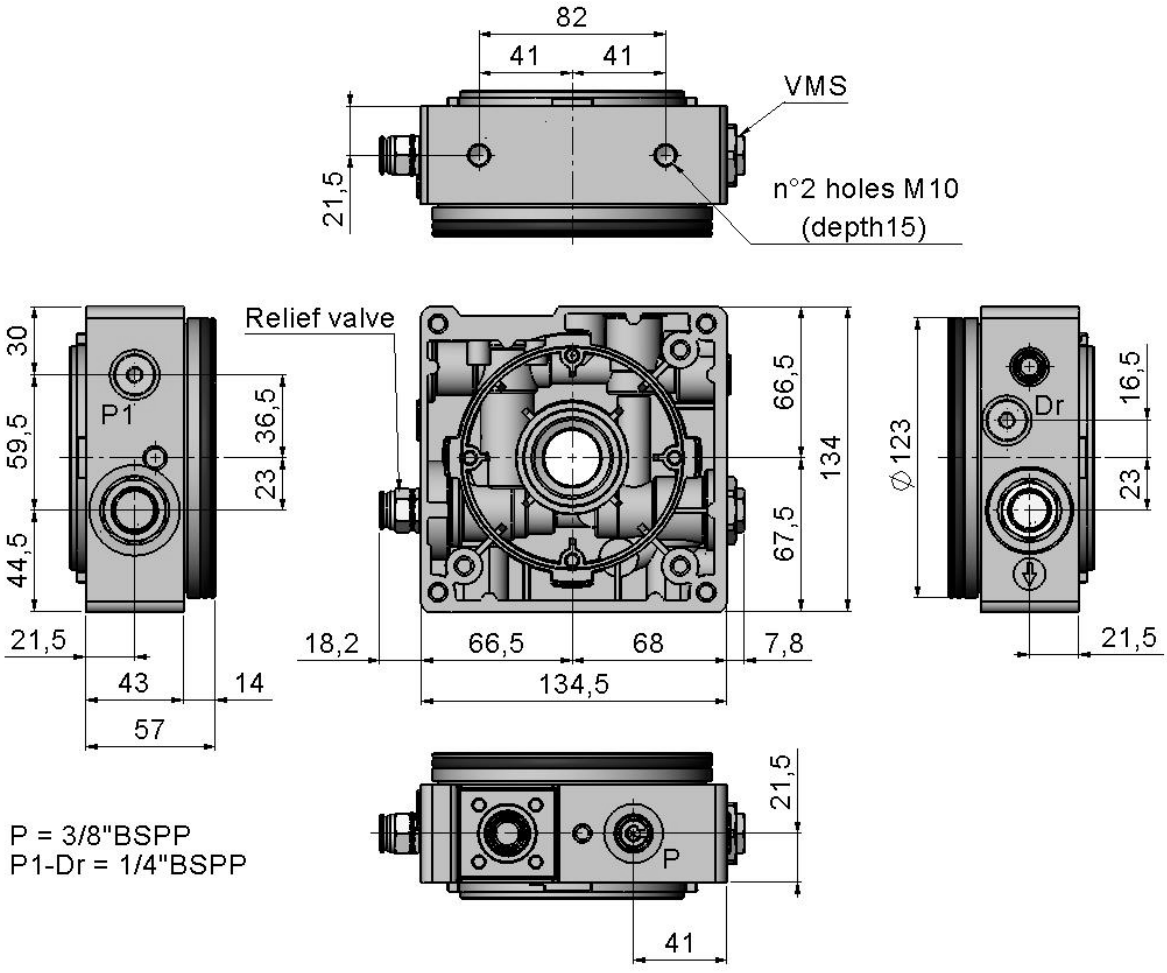
Relief valve		Pressure range (bar)
VM15	W	5 ÷ 50
	Y	30 ÷ 120
	Z	80 ÷ 250

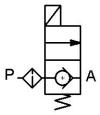
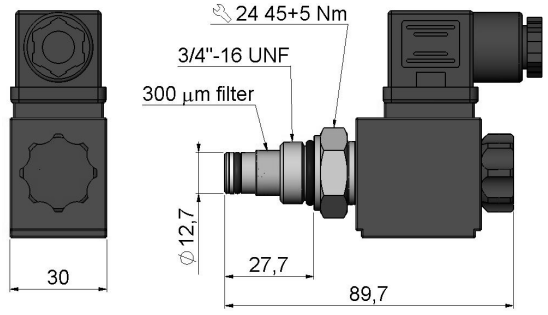
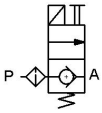
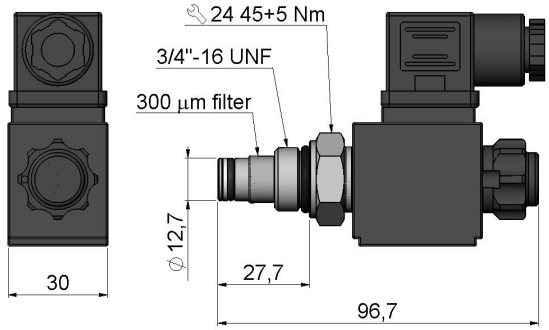
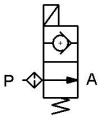
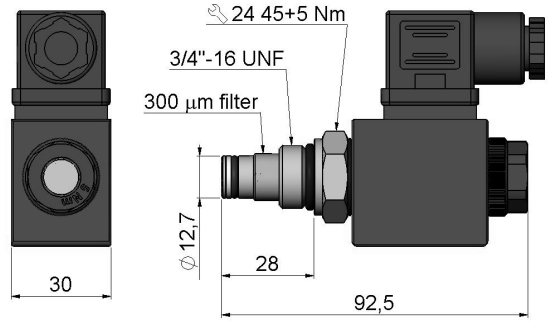
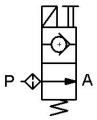
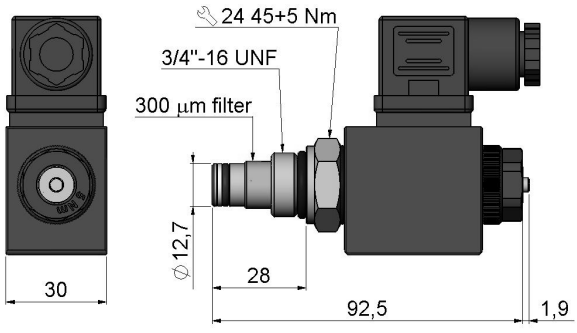
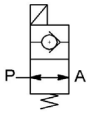
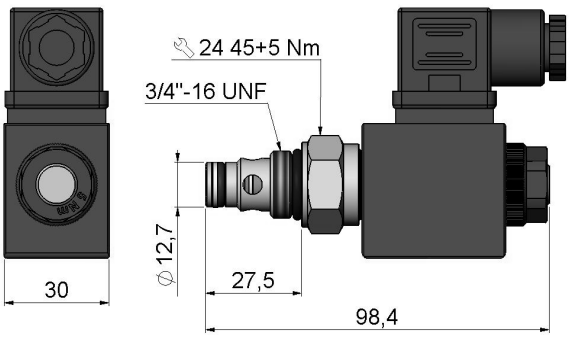
Steel tank is not available for central manifold KS type.
Please contact our sales department for further information.

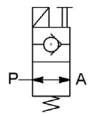
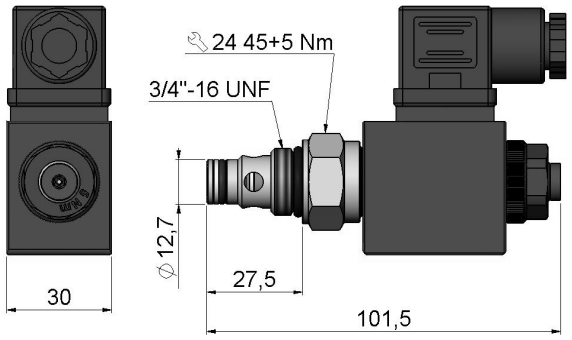
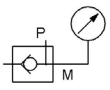
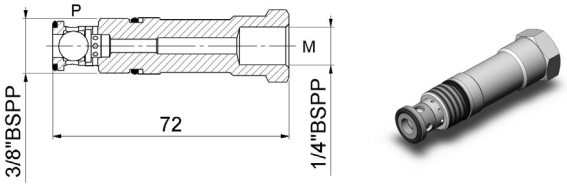
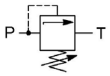
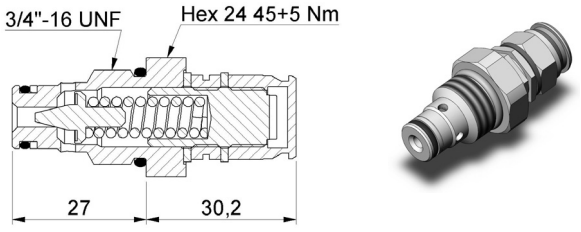
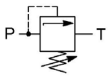
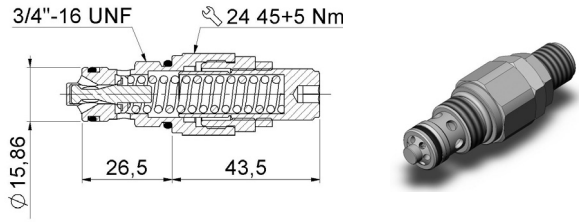
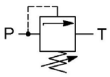
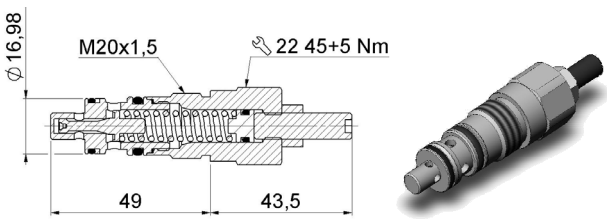


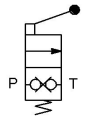
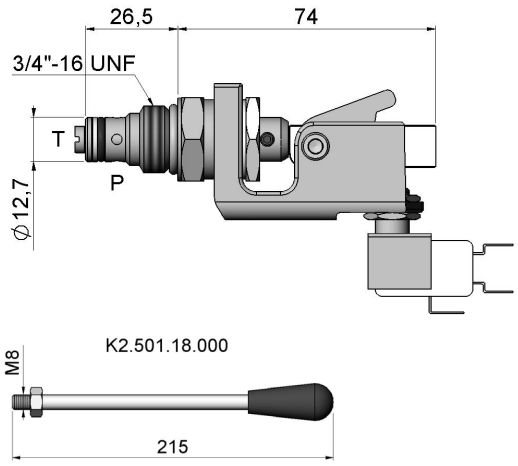
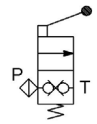
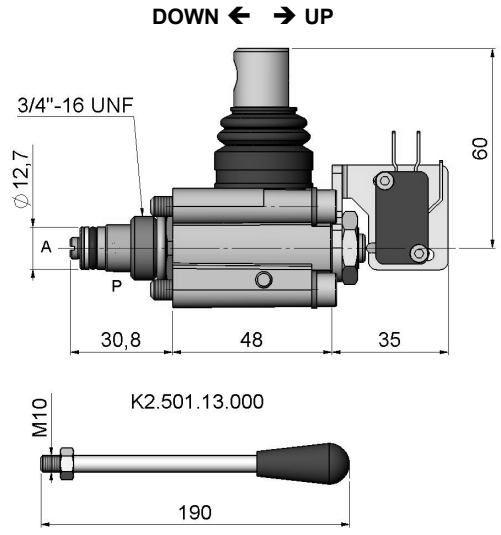
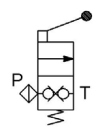
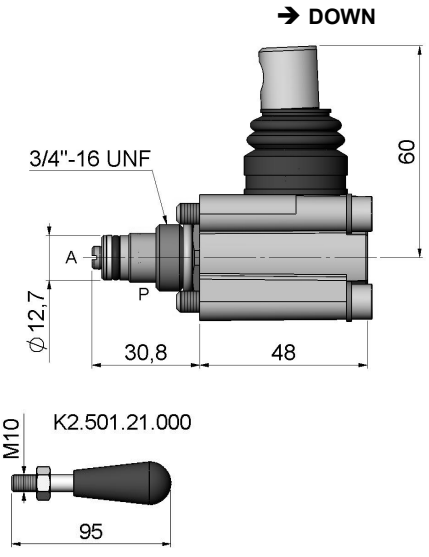
Manifold hydraulic diagram

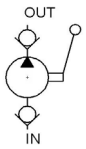
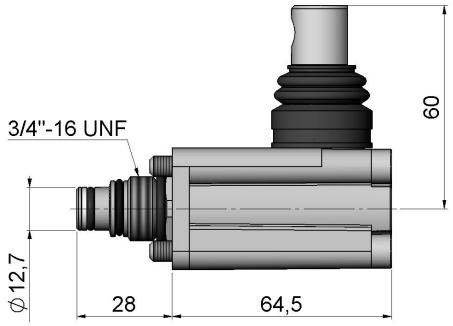
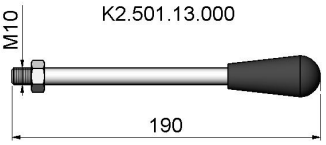
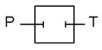
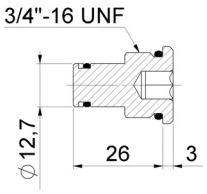
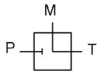
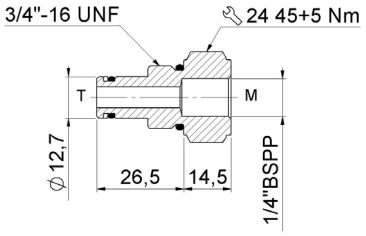
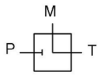
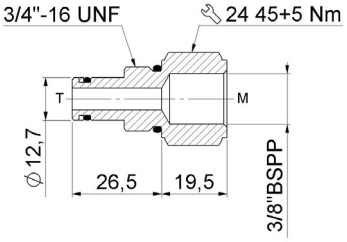
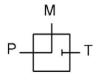
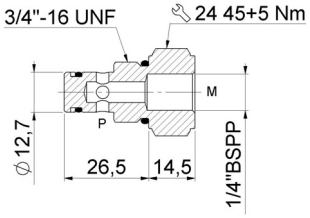


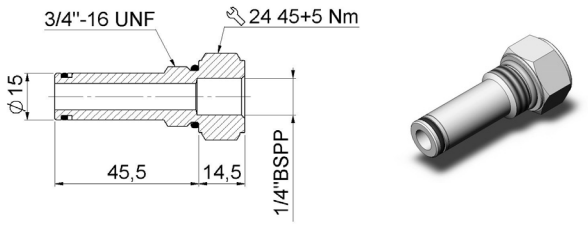
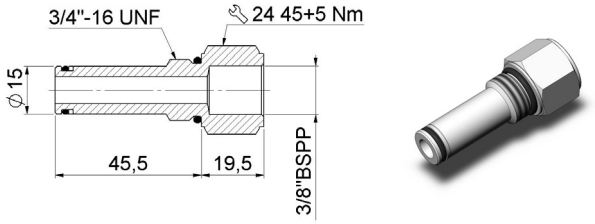
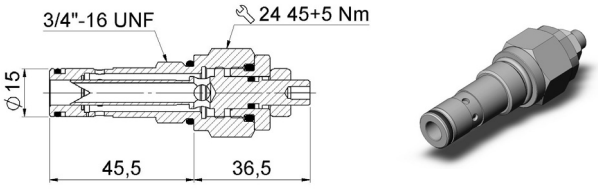


CODE	Description		Diagram	Drawing	Compatibility
EC	Solenoid valve VE1-NC				ME K - KE
	Max working pressure	350 bar			
	Max flow rate	40 l/min			
	Coil type	S2-CE			
EE	Solenoid valve VE1-NC-EM with emergency screw				ME K - KE
	Max working pressure	350 bar			
	Max flow rate	40 l/min			
	Coil type	S2-CE			
EA	Solenoid valve VE3-NA				ME K - KE
	Max working pressure	250 bar			
	Max flow rate	30 l/min			
	Coil type	S-CE			
EAM	Solenoid valve VE3-NA-EM with emergency push				ME K - KE
	Max working pressure	250 bar			
	Max flow rate	30 l/min			
	Coil type	S-CE			
EA6	Solenoid valve CEI6-NA				K - KE
	Max working pressure	350 bar			
	Max flow rate	40 l/min			
	Coil type	S-CE			

CODE	Description		Diagram	Drawing	Compatibility
EA6M	Solenoid valve CEI6-NA-EM with emergency push				K - KE
	Max working pressure	350 bar			
	Max flow rate	40 l/min			
	Coil type	S-CE			
TPR	Check valve with pressure port 1/4”BSPP				K
VM15	Direct acting poppet style relief valve				ME K - KS
	Max working pressure	250 bar			
	Max flow rate	15 l/min			
VM25	Direct acting guided poppet style relief valve				K - KS
	Max working pressure	350 bar			
	Max flow rate	25 l/min			
VMP20	Direct acting guided poppet style relief valve				KE
	Max working pressure	350 bar			
	Max flow rate	20 l/min			

CODE	Description	Diagram	Drawing	Compatibility
VCM99	Two-Way manual operated cartridge valve			ME K - KE
MC	Two-Way manual operated cartridge valve			K - KE
MCR	Two-Way manual operated cartridge valve			K - KE

CODE	Description		Diagram	Drawing	Compatibility
PMC12	Hand pump (1.5 cc)			 	K - KE
	Max working pressure	300 bar			
	Displacement	1,5 cc			
TC2	Plug for cavity			 	ME K - KE
TS2	1/4” auxiliary return port			 	ME K - KE
TS3	3/8” auxiliary return port			 	ME K - KE
TM2	1/4” auxiliary pressure port			 	ME K - KE

CODE	Description		Diagram	Drawing	Compatibility
TM3	1/4” auxiliary pressure port				KE
TM4	3/8” auxiliary pressure port				KE
ST6CP-PR	Pressure compensated flow regulator				K - KE
	Max working pressure	250 bar			
	Regulated flow rate	2 ÷ 16 l/min			

Electric controls for solenoid operated valves

CODE	Description	S-CE	S2-CE
OO	None		
OB	D.C. 12V	X	X
OC	D.C. 24V	X	X
OD	D.C. 48V	X	X
OH	A.C. 24V 50Hz		X
OM	A.C. 110V 50Hz		X
ON	A.C. 220V 50Hz		X
OP	A.C. 24V 60Hz		X
OR	A.C. 110V 60Hz		X
OS	A.C. 220V 60Hz		X
OV	24V RAC	X	X
OW	110V RAC	X	X
OZ	220V RAC	X	X

Nominal power: 18 W
Duty cycle: 100%
Insulation class: F (T = 155°C)
Index of protection: IP65

X	X	X	.	Y	Y

XXX : solenoid operated valve code.
YY : coil voltage code.

Example: | E | E | . | O | C |

Mechanical drives for manual operated valves

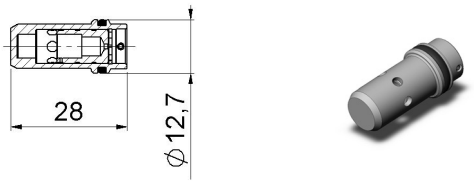
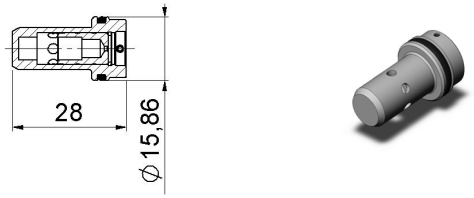
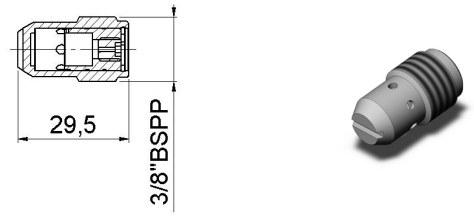
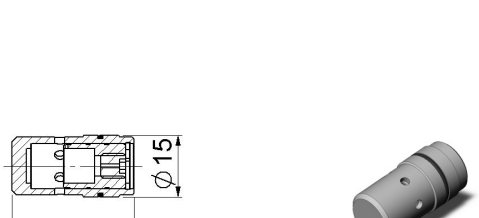
CODE	Description
00	Without microswitch
17	With microswitch

X	X	X	.	Y	Y

XXX : manual operated valve code.
YY : coil voltage code.

Example: | M | C | . | 1 | 7 |

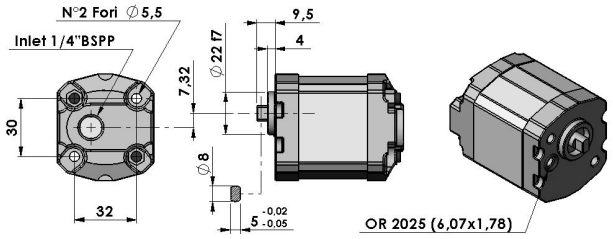
Flow control valves pressure compensated

CODE	Setting				Diagram	Drawing	Compatibility
STF12P	**CODE**	l/min	**CODE**	l/min			ME K - KE
	A	1	**F**	6			
	B	2	**G**	7			
	C	3	**H**	8			
	D	4	**I**	9			
	E	5	**L**	10			
STF14P	**CODE**	l/min	**CODE**	l/min			KE - KS
	A	1	**F**	6			
	B	2	**G**	7			
	C	3	**H**	8			
	D	4	**I**	9			
	E	5	**L**	10			
STF38	**CODE**	l/min	**CODE**	l/min			KE
	B	2	**M**	11			
	C	3	**N**	12			
	D	4	**O**	13			
	E	5	**P**	14			
	F	6	**Q**	15			
	G	7	**R**	16			
	H	8	**T**	18			
	I	9	**Z**	20			
	L	10					
STF38P	**CODE**	l/min	**CODE**	l/min			K - KE
	B	2	**M**	11			
	C	3	**N**	12			
	D	4	**O**	13			
	E	5	**P**	14			
	F	6	**Q**	15			
	G	7	**R**	16			
	H	8	**T**	18			
	I	9	**Z**	20			
	L	10					

Please note: all pumps have **anti-clockwise rotation**.

Gear pumps group 05 for ME – standard version

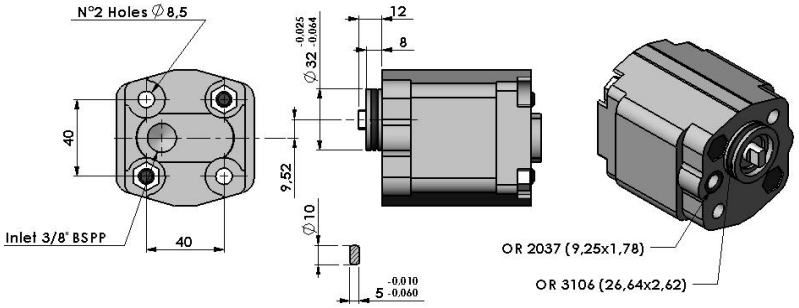
Code	Displacement (cc/rev)	Flow (l/min) @1500 rpm	P2 (bar)	P3 (bar)
L1	0,18	0,27	190	230
L2	0,25	0,37	190	230
L3	0,50	0,75	190	230
L4	0,62	0,93	190	230
L5	0,75	1,12	190	230
L6	1,00	1,50	190	230
L7	1,25	1,87	190	230
L8	1,50	2,25	190	230



P2= Intermittent max. pressure *P3= Peak max. pressure (max. 2 seconds)*

Gear pumps group 1 for K-KE-KS – standard version

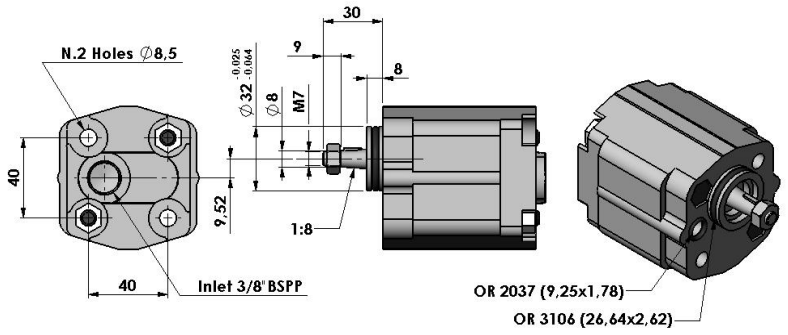
Code	Displacement (cc/rev)	Flow (l/min) @1500 rpm	P2 (bar)	P3 (bar)
10	0,82	1,3	230	270
11	1,1	1,6	230	270
12	1,6	2,4	230	270
13	2,1	3,1	230	270
14	2,7	3,9	230	270
15	3,2	4,8	210	250
16	3,7	5,5	210	250
17	4,2	6,3	210	250
18	4,8	7,2	190	230
19	5,8	8,7	190	230
20	8,0	11,8	160	200
21	9,9	14,8	150	190



P2= Intermittent max. pressure *P3= Peak max. pressure (max. 2 seconds)*

Gear pumps group 1 for K – elastic couplings version with tapered shaft

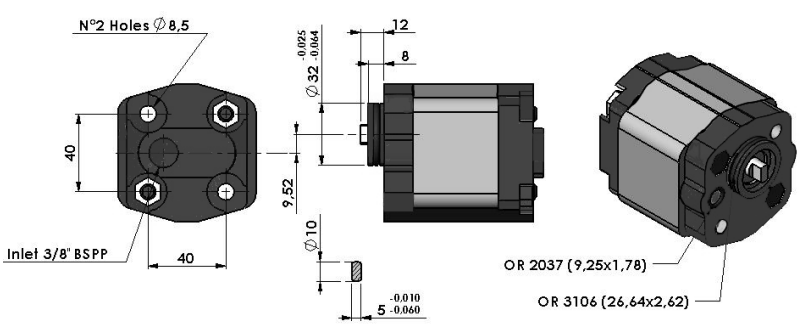
Code	Displacement (cc/rev)	Flow (l/min) @1500 rpm	P2 (bar)	P3 (bar)
10CON	0,82	1,3	230	270
11CON	1,1	1,6	230	270
12CON	1,6	2,4	230	270
13CON	2,1	3,1	230	270
14CON	2,7	3,9	230	270
15CON	3,2	4,8	210	250
16CON	3,7	5,5	210	250
17CON	4,2	6,3	210	250
18CON	4,8	7,2	190	230
19CON	5,8	8,7	190	230
20CON	8,0	11,8	160	200
21CON	9,9	14,8	150	190



P2= Intermittent max. pressure *P3= Peak max. pressure (max. 2 seconds)*

High pressure gear pumps group 1 for K-KE-KS – cast iron covers version for high pressure applications

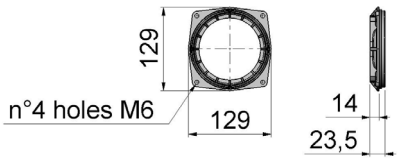
Code	Displacement (cc/rev)	Flow (l/min) @1500 rpm	P2 (bar)	P3 (bar)
11GH	1	1,5	300	350
12GH	1,6	2,4	300	350
13GH	2	3	300	350
14GH	2,5	3,7	300	350
15GH	3,15	4,7	280	330
16GH	3,65	5,5	250	300
17GH	4,2	6,3	230	280
18GH	5	7,5	210	250
19GH	6,1	9,1	210	250
20GH	7,4	11,1	180	230



P2= Intermittent max. pressure *P3= Peak max. pressure (max. 2 seconds)*

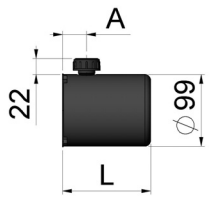
Adaptor for K-KE tanks

CODE				
S81	This adaptor allows you to use steel tanks designed for K-KE (Ø123 mm) with ME manifolds (Ø96 mm).			

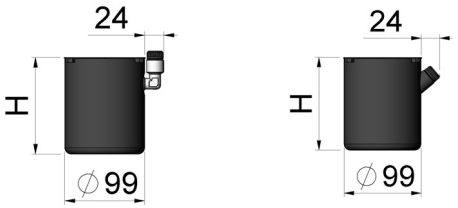


Steel tank

CODE	Tank capacity (l)	Useable capacity (l)	L (mm)	A (mm)
S266	0,5	0,4	120	32
S267	1	0,7	184	32
S183	1	0,7	184	154



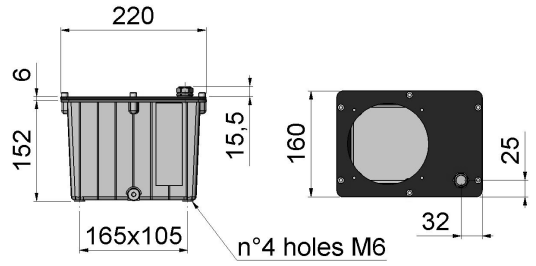
CODE	Tank capacity (l)	Useable capacity (l)	H (mm)	
S294	0,5	0,4	120	
S295	1	0,7	184	
S268	0,5	0,4	120	
S269	1	0,7	184	



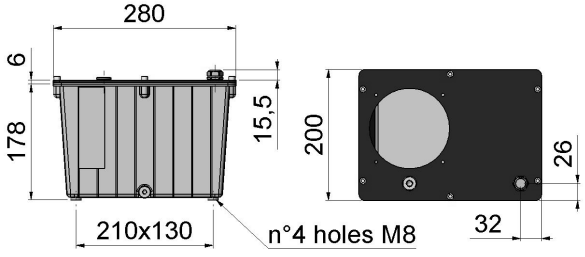
S294 - S295 **S268 - S269**

Alluminium tank

CODE	Tank capacity (l)	Useable capacity (l)	
S102	3	2,3	



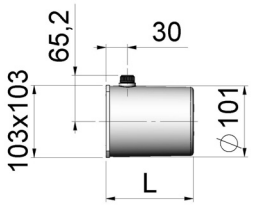
CODE	Tank capacity (l)	Useable capacity (l)	
S103	6	5	



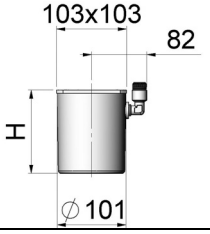
Plastic tank

Temperature range: -15 / +70 °C
Materials: PE = Polyethylene, PP = Polypropilene
Color: Neutral transparent

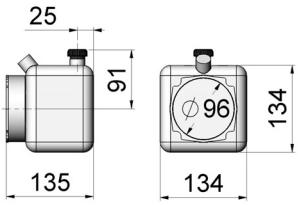
CODE	Tank capacity (l)	Useable capacity (l)	L (mm)	Material
S284	0,5	0,4	123	PP
S286	1	0,7	186	PP



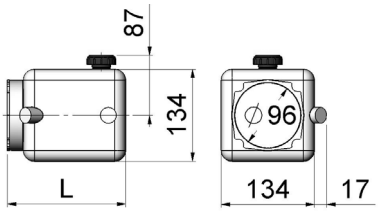
CODE	Tank capacity (l)	Useable capacity (l)	H (mm)	Material
S285	0,5	0,4	123	PP
S287	1	0,7	186	PP



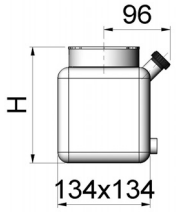
CODE	Tank capacity (l)	Useable capacity (l)		Material
S270	1	0,9		PE



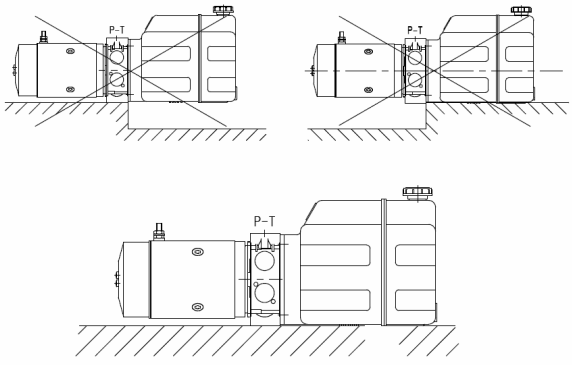
CODE	Tank capacity (l)	Useable capacity (l)	L (mm)	Material
S271	1,8	1,6	170	PE
S272	2,5	2,2	240	PE



CODE	Tank capacity (l)	Useable capacity (l)	H (mm)	Material
S273	1	0,9	135	PE
S274	1,8	1,6	170	PE
S275	2,5	2,2	240	PE



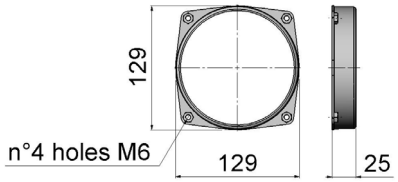
Please make sure that the tank and motor are mounted correctly



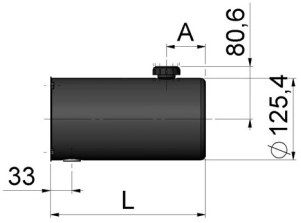
Assembly kit for plastic tank

Oil tank	Assembly kit
1 - 1,8 - 2,5 liters	K2.501.VT.005
0,5 - 1 liters Ø96 mm	K2.501.VT.009

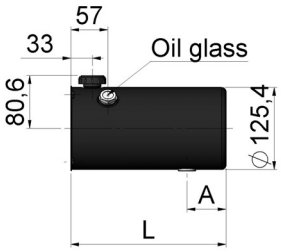
Steel collar for tank				
CODE				
S00				



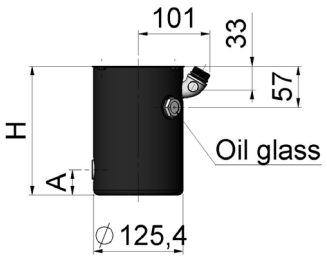
Steel tank				
CODE	**Tank capacity (l)**	**Useable capacity (l)**	**L (mm)**	**A (mm)**
S01	1	0,7	133	35
S20	1,8	1,2	178	35
S02	2,5	1,7	238	60
S161	3	2,3	280	60
S107	4	3,2	409	60



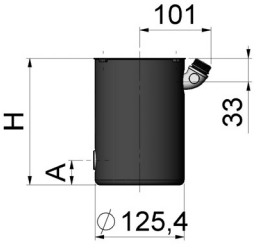
CODE	**Tank capacity (l)**	**Useable capacity (l)**	**L (mm)**	**A (mm)**
S145	1	0,7	133	35
S144	1,8	1,2	178	35
S142	2,5	1,7	238	60



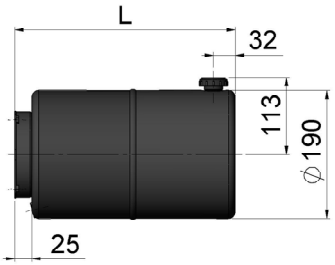
CODE	**Tank capacity (l)**	**Useable capacity (l)**	**H (mm)**	**A (mm)**
S01V	1	0,6	133	35
S20V	1,8	1,1	178	35
S02V	2,5	1,7	238	60



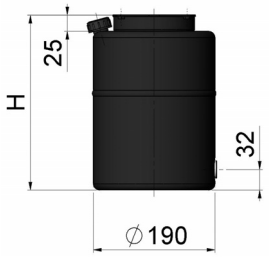
CODE	**Tank capacity (l)**	**Useable capacity (l)**	**H (mm)**	**A (mm)**
S216	1	0,6	133	35
S217	1,8	1,1	178	35
S218	2,5	1,7	238	60
S239	3	2,3	280	60
S107V	4	3,2	409	60



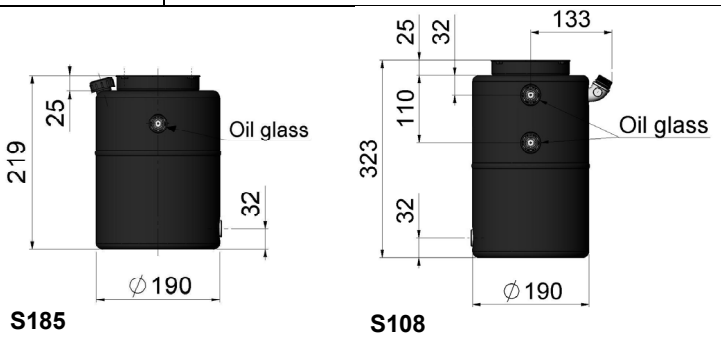
CODE	**Tank capacity (l)**	**Useable capacity (l)**	**L (mm)**	
S03	5	4	219	
S34	7	5,4	271	
S04	8	6,6	323	
S109	11	9,6	453	



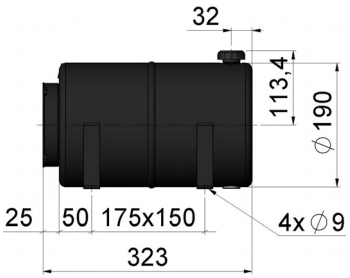
CODE	Tank capacity (l)	Useable capacity (l)	H (mm)	
S03V	5	3	219	
S34V	7	4,4	271	
S04V	8	5,8	323	
S109V	11	9,0	453	



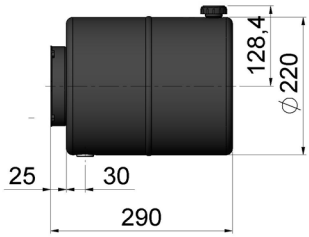
CODE	Tank capacity (l)	Useable capacity (l)	
S185	5	3	
S108	8	5,8	



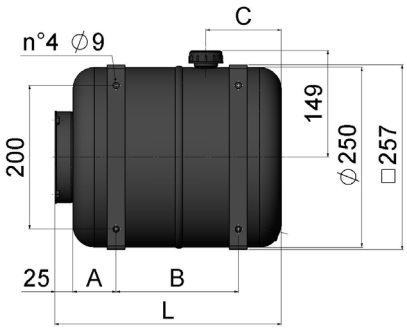
CODE	Tank capacity (l)	Useable capacity (l)		
S94	8	6,6		



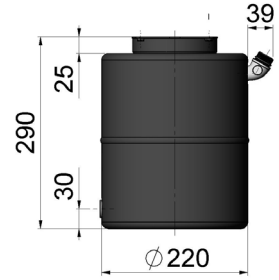
CODE	Tank capacity (l)	Useable capacity (l)		
S177	9	7,7		



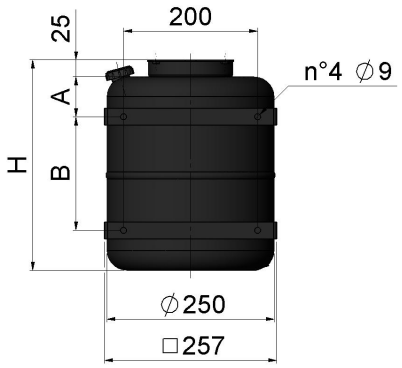
CODE	Tank capacity (l)	Useable capacity (l)	A (mm)	B (mm)	C (mm)	L (mm)
S90	12	10,5	60	170	105	315
S128	16	13	60	170	158	368
S105	19	15	52,5	290	158	420
S92	23	19	102,5	290	158	520



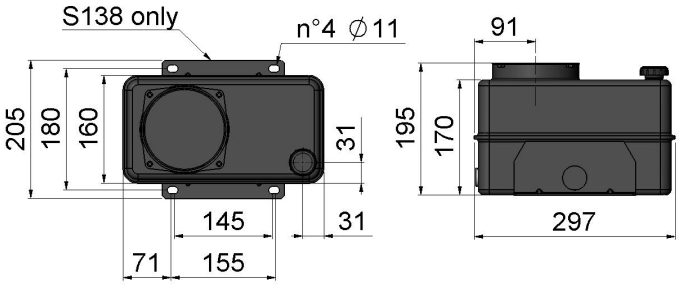
CODE	Tank capacity (l)	Useable capacity (l)		
S178	9	6,9		



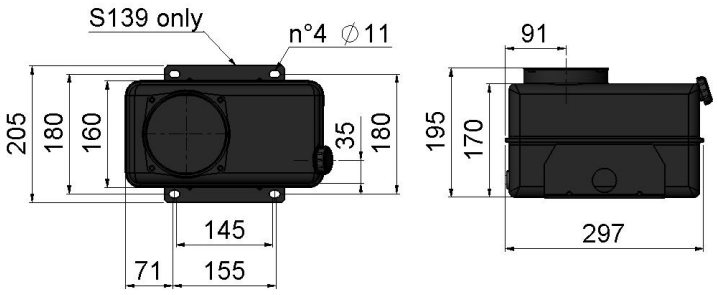
CODE	Tank capacity (l)	Useable capacity (l)	H (mm)	A (mm)	B (mm)
S90V	12	9	315	60	170
S92V	23	18	520	102,5	290



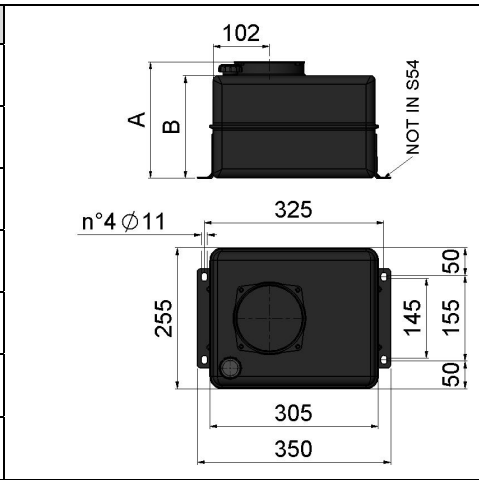
CODE	Tank capacity (l)	Useable capacity (l)	Brackets
S07	6	4	No
S138	6	4	Yes



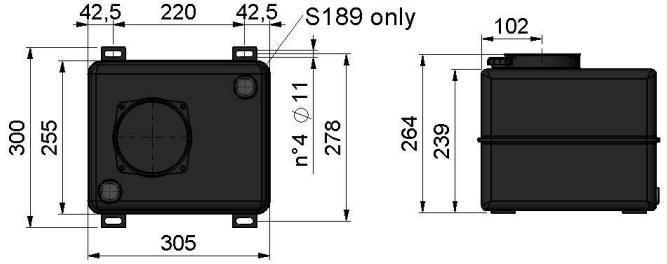
CODE	Tank capacity (l)	Useable capacity (l)	Brackets
S48	6	4	No
S139	6	4	Yes



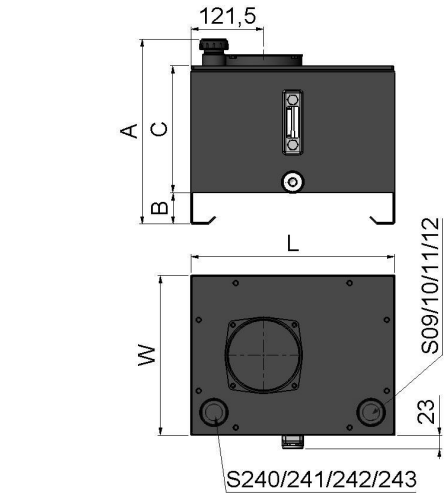
CODE	Tank capacity (l)	Useable capacity (l)	A (mm)	B (mm)
S223	8	6	156	131
S54	12	9,5	210	186
S140	12	9,5	210	186
S256	14	12	235	211
S141	15	13	261	236
S143	20	18	329	305



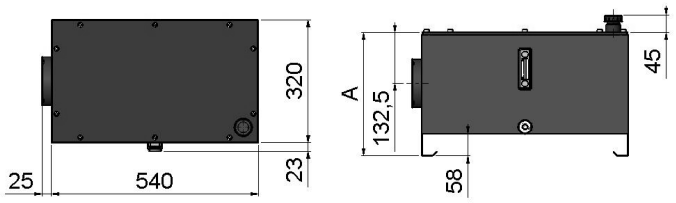
CODE	Tank capacity (l)	Useable capacity (l)	
S184	15	13	
S189	15	13	



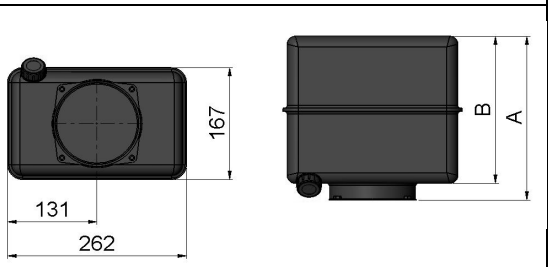
CODE	Tank capacity (l)	Useable capacity (l)	A (mm)	B (mm)	C (mm)	LxW (mm)
S09	20	12,5	285	53	207	340x270
S240	20	12,5	285	53	207	340x270
S10	30	22,5	405	58	322	340x270
S241	30	22,5	405	58	322	340x270
S11	45	30	344	58	261	540x320
S242	45	30	344	58	261	540x320
S12	60	44	435	58	352	540x320
S243	60	44	435	58	352	540x320



CODE	Tank capacity (l)	Useable capacity (l)	A (mm)
S13	45	30	321
S14	60	44	416

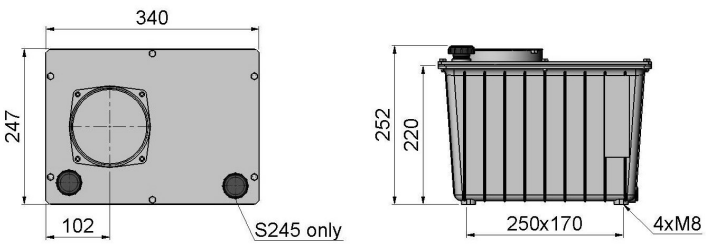


CODE	Tank capacity (l)	Useable capacity (l)	A (mm)	B (mm)
S211	3,5	3	125	100
S212	8	7	245	220



Alluminium tank

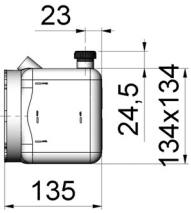
CODE	Tank capacity (l)	Useable capacity (l)	
S31	10	8,3	
S245	10	8,3	



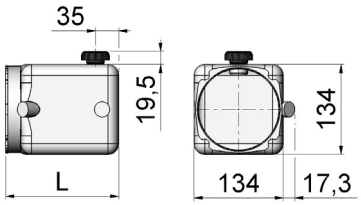
Plastic tank

Temperature range: -15 / +70 °C
Materials: PE = Polyethylene, PP = Polypropilene
Color: Neutral transparent

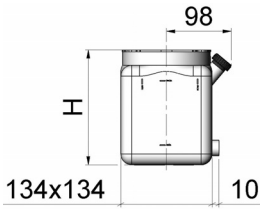
CODE	Tank capacity (l)	Useable capacity (l)		Material
S246	1	0,9		PE



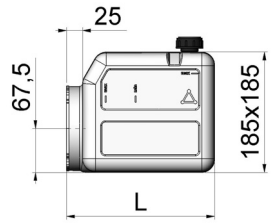
CODE	Tank capacity (l)	Useable capacity (l)	L (mm)	Material
S247	1,8	1,6	170	PE
S248	2,5	2,2	240	PE



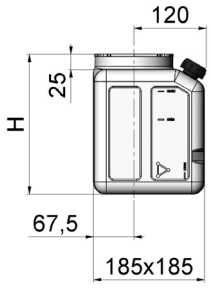
CODE	Tank capacity (l)	Useable capacity (l)	H (mm)	Material
S249	1	0,9	135	PE
S250	1,8	1,6	170	PE
S251	2,5	2,2	240	PE



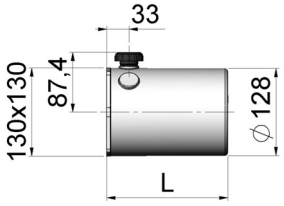
CODE	Tank capacity (l)	Useable capacity (l)	L (mm)	Material
S343	5	3,8	230	PP
S331	5	3,8	230	PP Black
S316	9	7,3	365	PP
S314	9	7,3	365	PP Black



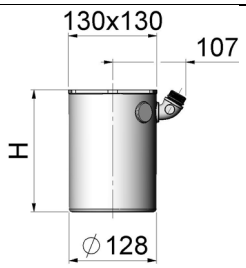
CODE	Tank capacity (l)	Useable capacity (l)	H (mm)	Material
S344	5	3,5	230	PP
S332	5	3,5	230	PP Black
S315	9	7,3	365	PP
S313	9	7,3	365	PP Black



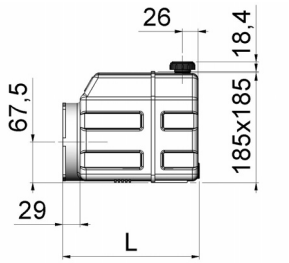
CODE	Tank capacity (l)	Useable capacity (l)	L (mm)	Material
S335	1	0,7	140	PP
S336	1,8	1,2	180	PP
S337	2,5	1,7	240	PP
S338	3	2,3	285	PP



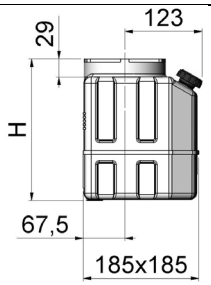
CODE	Tank capacity (l)	Useable capacity (l)	H (mm)	Material
S339	1	0,6	140	PP
S340	1,8	1,1	180	PP
S341	2,5	1,7	240	PP
S342	3	2,3	285	PP



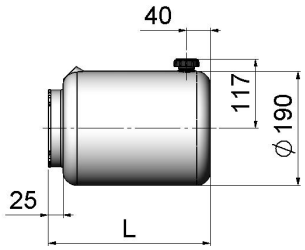
CODE	Tank capacity (l)	Useable capacity (l)	L (mm)	Material
S202	5	3,8	227	PP
S205	8	6	334	PP
S208	12	9	492	PP



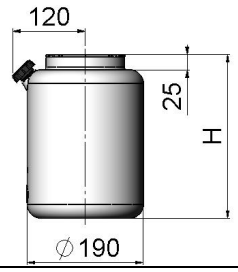
CODE	Tank capacity (l)	Useable capacity (l)	H (mm)	Material
S198	5	3,5	227	PP
S191	8	6,3	334	PP
S192	12	10,8	492	PP



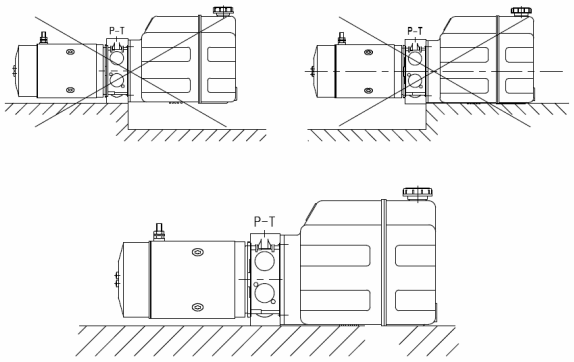
CODE	Tank capacity (l)	Useable capacity (l)	L (mm)	Material
S374	5	4	219	PP
S376	7	5,4	271	PP
S378	8	6,6	323	PP
S380	11	9,6	453	PP



CODE	Tank capacity (l)	Useable capacity (l)	H (mm)	Material
S375	5	4	219	PP
S377	7	5,4	271	PP
S379	8	6,6	323	PP
S381	11	9,6	453	PP



Please make sure that the tank and motor are mounted correctly



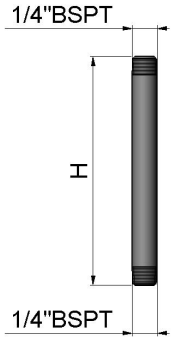
Assembly kit for plastic tank

Oil tank	K	KE
S246 - S247 - S248 S249 - S250 - S251	K2.501.VT.002	K2.501.VT.007
S335 - S336 - S337 - S338 S339 - S340 - S341 - S342 S202 - S205 - S208 S198 - S191 - S192	K2.501.VT.001	K2.501.VT.006
S332 - S344 - S313 - S315 S343 - S331 - S316 - S314 S374 - S375 - S376 - S377 S378 - S379 - S380 - S381	K2.501.VT.013	K2.501.VT.014

Suction pipe

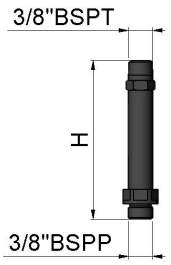
Vertical suction, steel pipe

Central manifold	CODE	H (mm)
ME	**M2.340.49.000**	42
	K2.340.S2.009	52
	K2.340.57.000	58
	M2.340.51.000	70
	M2.340.52.000	86
	M2.340.46.000	96
	M2.340.50.000	108
	M2.340.55.000	123
	M2.340.54.000	145
	M2.340.53.000	170
	M2.340.95.000	250
	M2.340.22.000	330

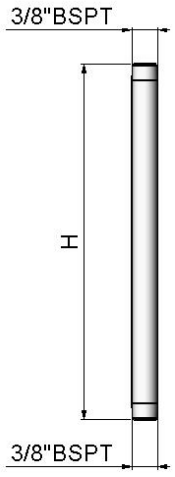


Vertical suction, plastic pipe

Central manifold	CODE	H (mm)
K - KE	**K2.340.69.000**	32
	K2.340.73.000	47
	K2.340.74.000	76
	K2.340.76.000	98
	K2.340.79.000	109
	K2.340.72.000	129
	K2.340.63.000	144
	K2.340.66.000	194
	K2.340.64.000	211
	K2.340.S2.012	240
	K2.340.S2.013	287
	K2.340.S2.014	320
	K2.340.S2.015	337
	K2.340.S2.016	358
	K2.340.S2.017	385



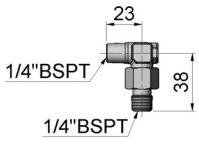
Code: **K2.340.XX.000**



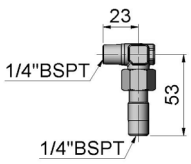
Code: **K2.340.S2.0XX**

Horizontal suction, steel pipe

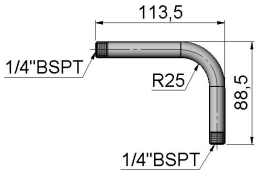
Central manifold	Oil tank diameter (mm)	CODE
ME	Ø96	**K2.501.S1.319**
	Ø123	**K2.501.S1.320**
	Ø190	**M2.340.48.000**



Code: **K2.501.S1.319**



Code: **K2.501.S1.320**

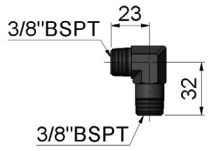


Code: **M2.340.48.000**

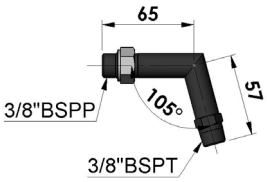
Suction pipe

Horizontal suction, plastic pipe

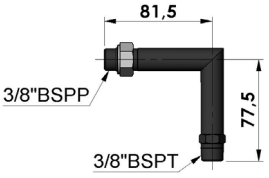
Central manifold	Oil tank diameter (mm)	CODE
K	Ø123	**K2.340.S2.004**
	Ø190	**K2.501.S1.060**
	Ø250	**K2.501.S1.061**



Code: **K2.340.S2.004**

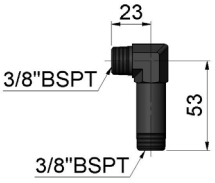


Code: **K2.501.S1.060**

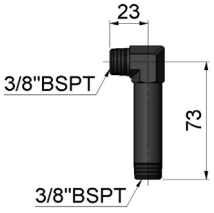


Code: **K2.501.S1.061**

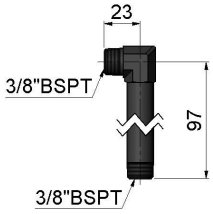
Central manifold	Oil tank diameter (mm)	CODE
KE	Ø123	**K2.340.S2.005**
	Ø190	**K2.340.S2.006**
	Ø250	**K2.340.S2.007**



Code: **K2.340.S2.005**

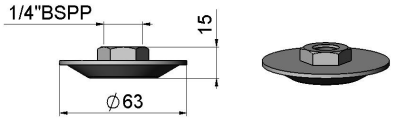


Code: **K2.340.S2.006**

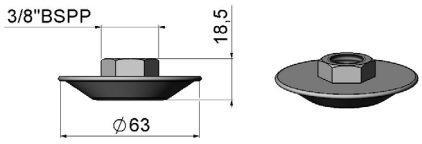


Code: **K2.340.S2.007**

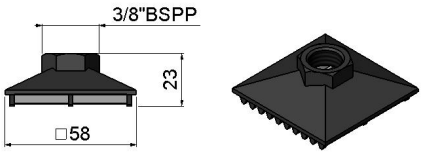
Suction filter



ME	**K2.255.15.000** 90 µm, 5 l/min



K - KE	**K2.255.37.000** 90 µm, 8 l/min

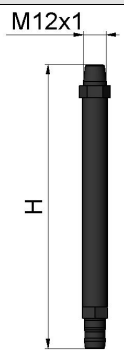


K - KE	**K2.255.66.000** 90 µm, 15 l/min

Return pipe

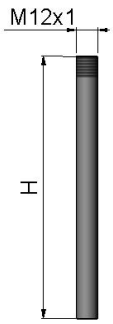
Vertical return, plastic pipe

CODE	H (mm)
K2.347.15.000	100
K2.347.14.000	150
K2.347.13.000	200



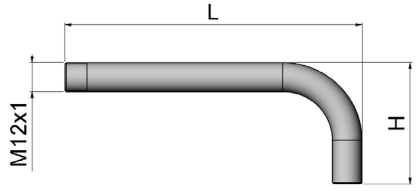
Vertical return, steel pipe

CODE	H (mm)
K2.347.18.000	250
K2.347.19.000	300
K2.347.22.000	400



Horizontal return, steel pipe

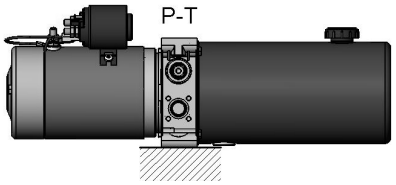
CODE	L (mm)	H (mm)
K2.347.16.000	120	45
K2.347.17.000	134	90
K2.347.27.000	170	90



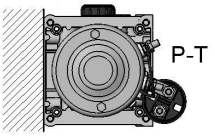
Mounting position

CODE	Image
O1	1
O2	2
O3	3
O4	4
V1	5
V2	6
-	7
O6	8
O7	9
O8	10

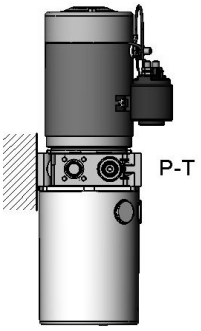
1



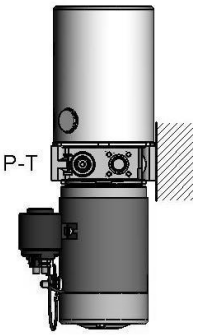
3



5



6



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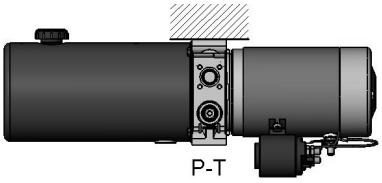
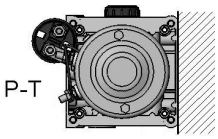
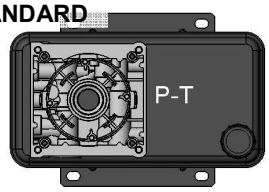


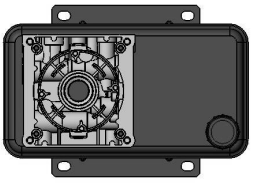
4



7 - STANDARD



8



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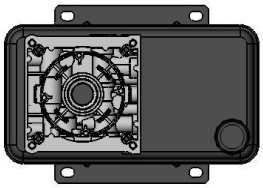
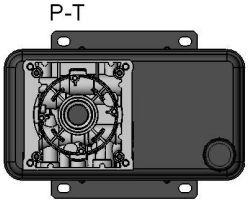


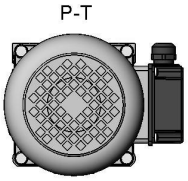
10



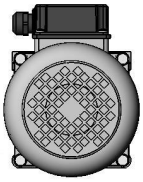
Terminal box positon for A.C. motors

CODE	Image
-	11
M2	12
M3	13
M4	14

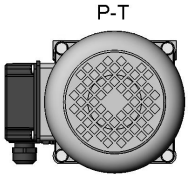
11 - STANDARD



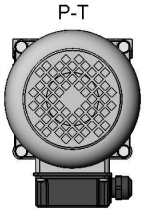
12



13



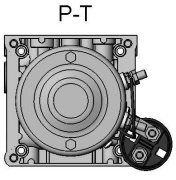
14



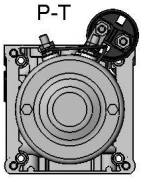
Relay position for D.C. motors

CODE	Image
-	15
R2	16
R3	17
R4	18

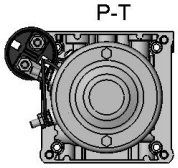
15 - STANDARD



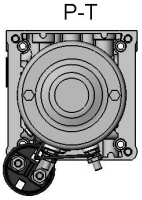
16

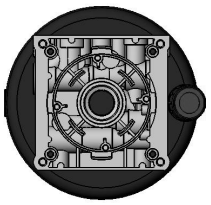
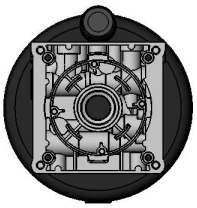
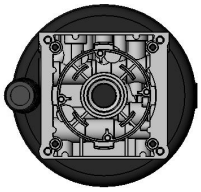
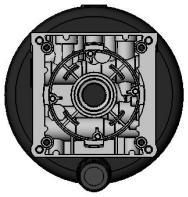


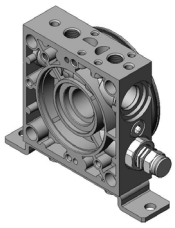
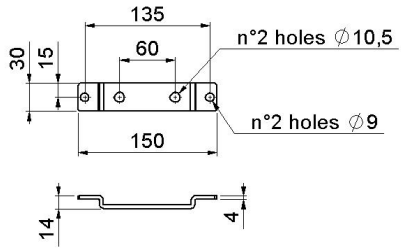
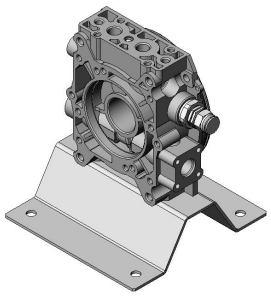
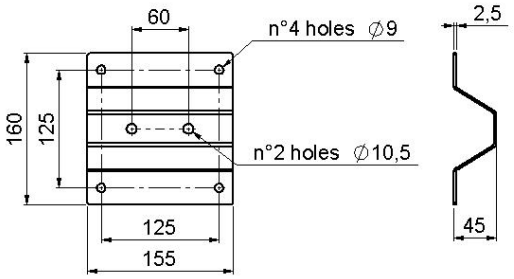
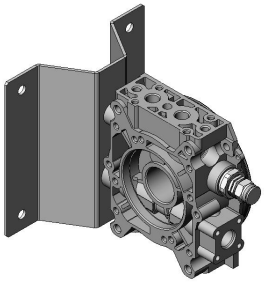
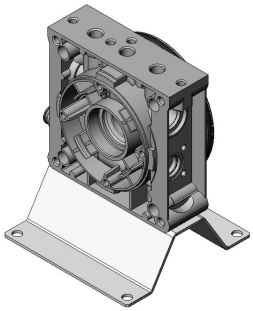
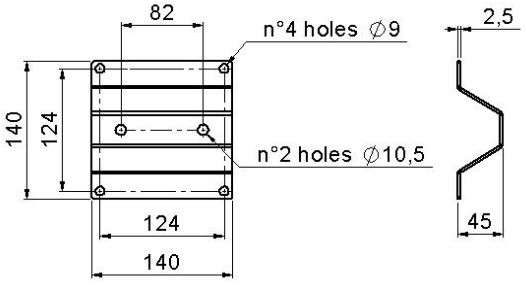
17



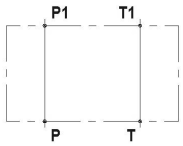
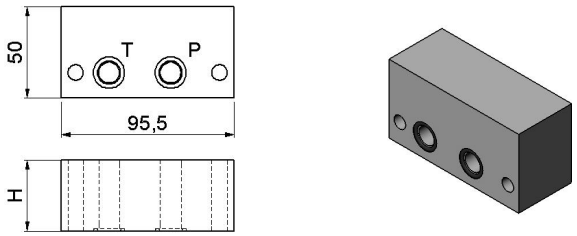
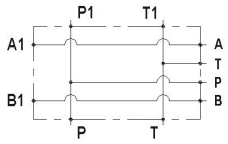
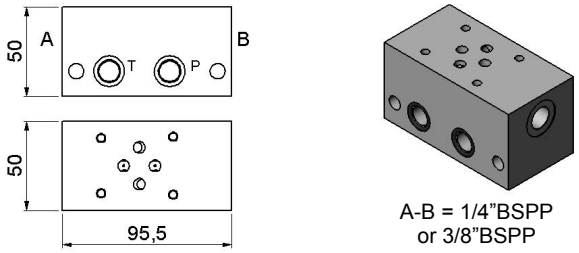
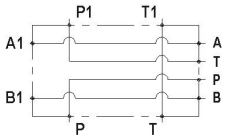
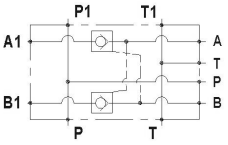
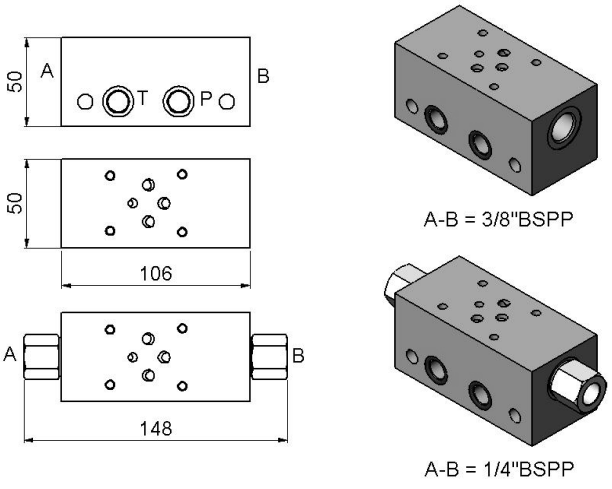
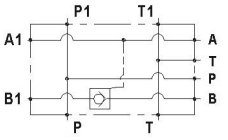
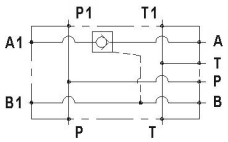
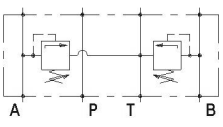
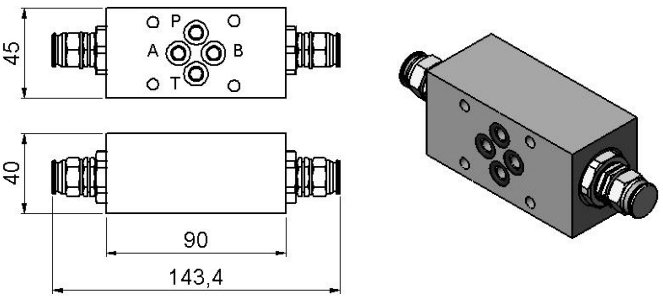
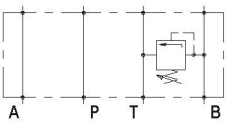
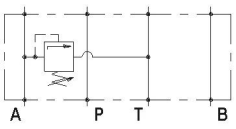
18

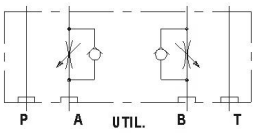
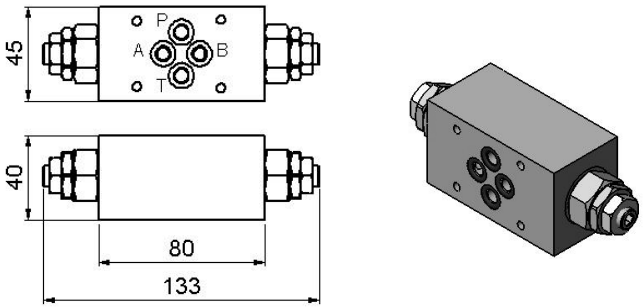
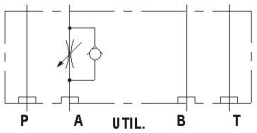
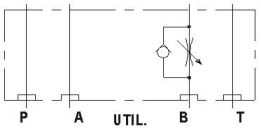
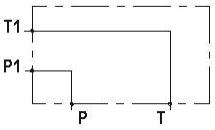
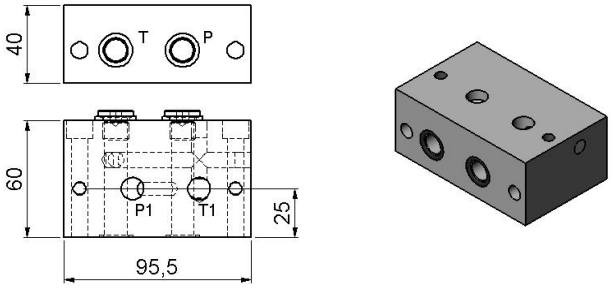
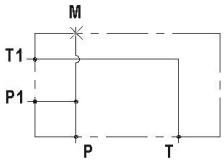
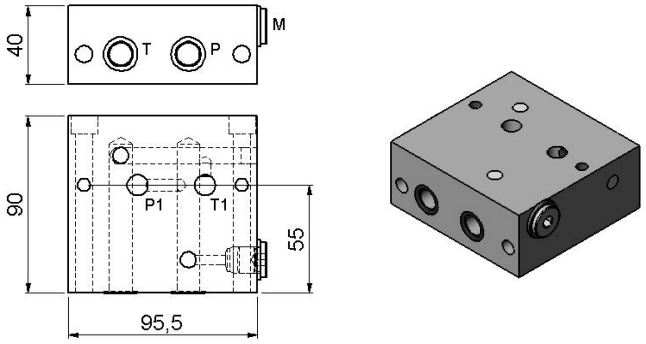
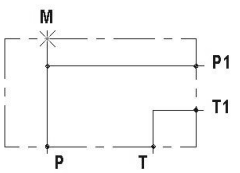
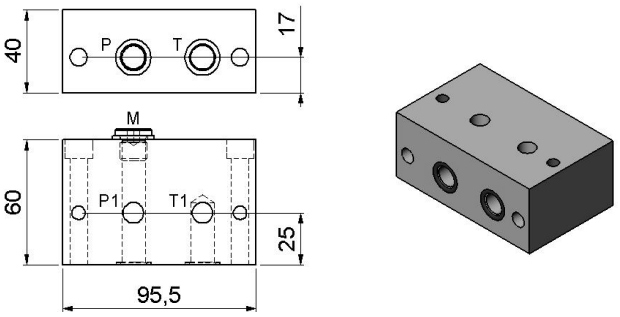


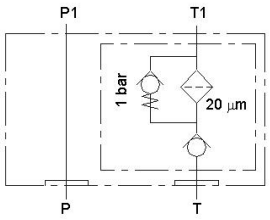
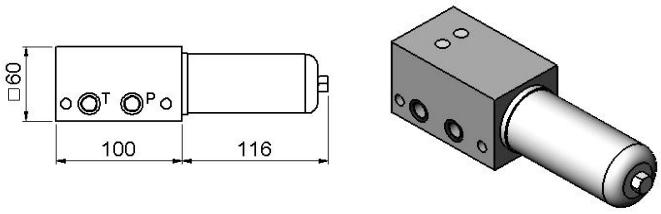
Oil cap position for V1 only			
CODE	**Image**	**19 - STANDARD** P-T 	**20** P-T 
-	19		
LU	20		
LO	21		
LP	22		
		21 P-T 	**22** P-T 

9	***Mounting brackets***	
Support		
Central manifold	**CODE**	**Drawing**
ME	**G06**	 
K	**G07**	 
	G07L	
KE	**G80**	 

Our modular system offers a wide range of elements. In this general catalogue only a selection will be reported to demostrate the main objectives reachable. For more details please refer to our **Modular manifold blocks catalogue**, or contact our sales department.

Elements without drives			
CODE	**Description**	**Diagram**	**Drawing**
N09	Spacing element H = 18 mm		
N01	Spacing element H = 39 mm		
N02	Spacing element H = 69 mm		
N03	Element for solenoid valves CETOP 2143 (Ø6 mm), parallel connection		
N11	Element for solenoid valves CETOP 2143 (Ø6 mm), series connection		
N12	Element for solenoid valves CETOP 2143 (Ø6 mm) with pilot operated check valve on A and B		
N13	Element for solenoid valves CETOP 2143 (Ø6 mm) with pilot operated check valve on B		
N14	Element for solenoid valves CETOP 2143 (Ø6 mm) with pilot operated check valve on A		
N07	Element CETOP 2143 with relief valve VM15 on A and B		
N06	Element CETOP 2143 with relief valve VM15 on B		
N05	Element CETOP 2143 with relief valve VM15 on A		

Elements without drives			
CODE	**Description**	**Diagram**	**Drawing**
N78	Element CETOP 2143 with SVU6 on A and B		
N105	Element CETOP 2143 with SVU6 on A		
N106	Element CETOP 2143 with SVU6 on B		
N51	Element for horizontal modular system motor side		
N15	Element for horizontal modular system motor side, with 1/4”BSPP pressure port		
N26	Element for horizontal modular system tank side, with 1/4”BSPP pressure port		

Elements without drives			
CODE	**Description**	**Diagram**	**Drawing**
N116	Element with return filter		

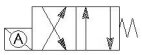
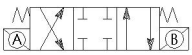
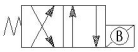
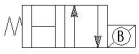
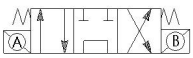
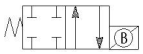
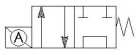
Ports	
CODE	**Description**
1	1/4” BSPP
2	3/8” BSPP

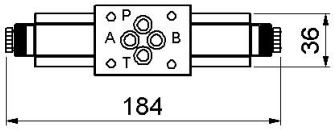
Example

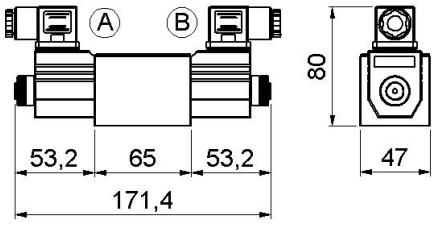
Element N03 is available with A - B = 1/4”BSPP or with A - B = 3/8”BSPP.

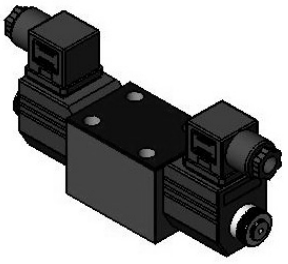
Fill in the code with N 0 3 . 1 for 1/4”BSPP port or N 0 3 . 2 for 3/8”BSPP port.

CETOP 2143 (Ø6 mm) solenoid valves

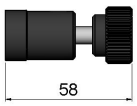
CODE	**Diagram**	**CODE**	**Diagram**
E02Z		**E06Z**	
E11Z		**E07Z**	
E03Z		**E08Z**	
E04Z		**E10Z**	
E05Z		**E20Z**	
E13Z			
E14Z			
E15Z			







Screw type emergency kit V2.501.S1.243

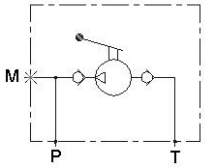
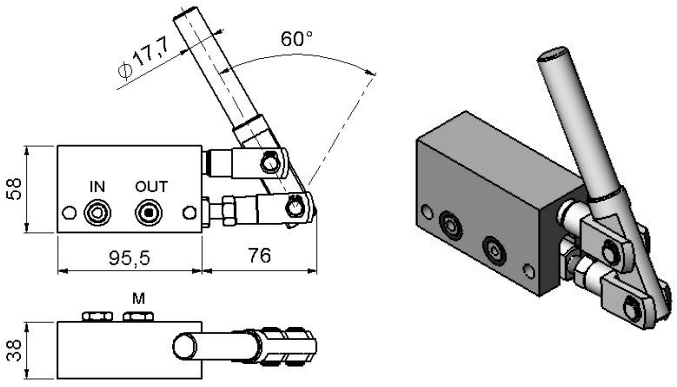
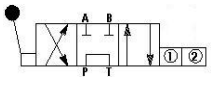
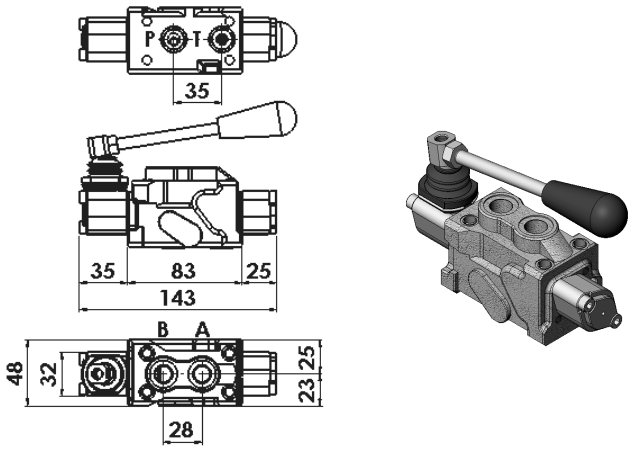
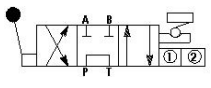
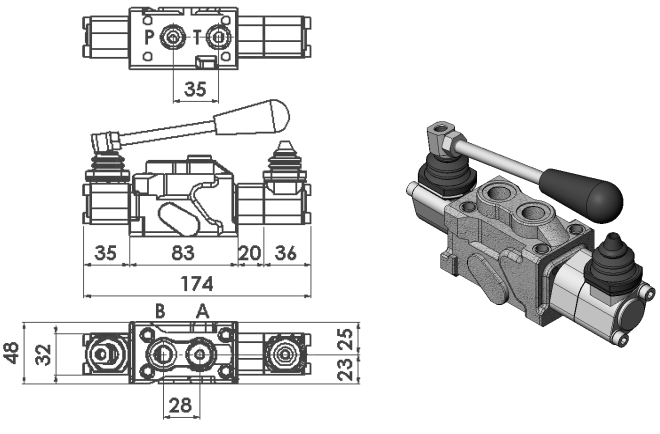


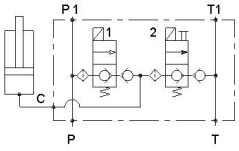
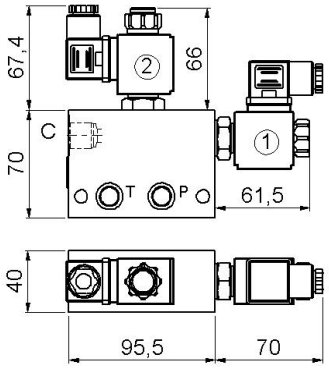
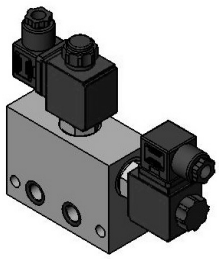
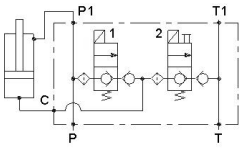
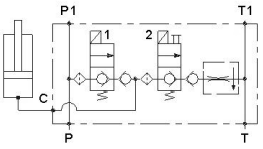
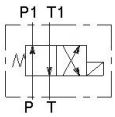
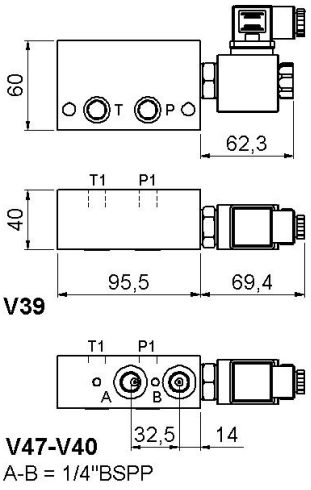
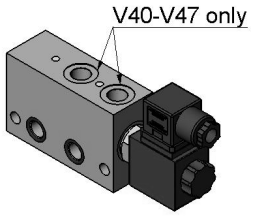
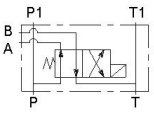
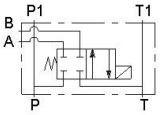
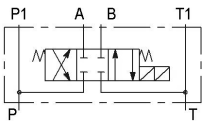
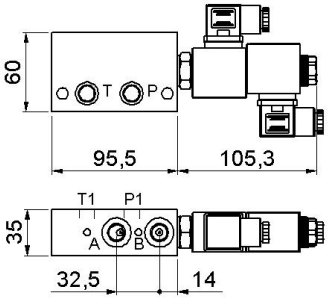
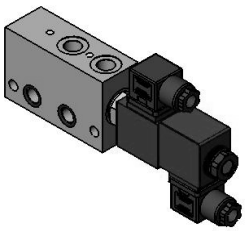
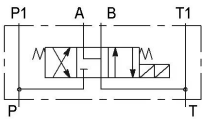
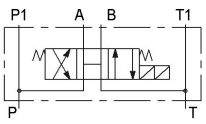
Max working pressure 250 bar

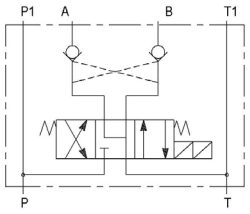
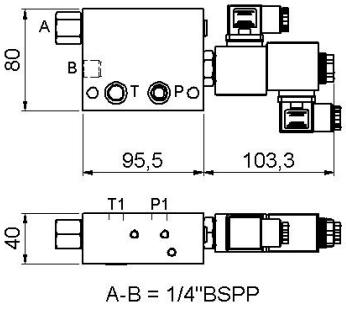
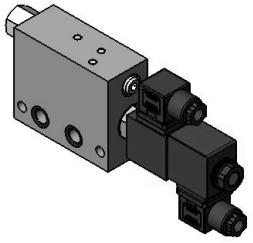
Max flow rate 30 l/min

Solenoid	
CODE	**Voltage**
OB	12V D.C.
OC	24V D.C.
OD	48V D.C.
OV	24V RAC
OW	110V RAC
OZ	220V RAC

Example: N 1 2 . 1 / E 0 8 Z . O V element N12 with 1/4”BSPP ports and CETOP valve E08Z.

Hand operated elements			
CODE	**Description**	**Diagram**	**Drawing**
N22	Single acting hand operated pump element Displacement: 6 cc		
D09	Hand operated directional valve		 A-B = 1/4”BSPP
	Hand operated directional valve with microswitch		 A-B = 1/4”BSPP

Elements with cartridge solenoid valves			
CODE	**Description**	**Diagram**	**Drawing**
V07	Element with two valves VE1-NC-VU for single acting circuit		  C = 1/4"BSPP or 3/8"BSPP
V08	Element with two valves VE1-NC-VU for double acting circuit (regenerating)		
V30	Element with two valves VE1-NC-VU and flow regulator for single acting circuit		
V39	Element with V4DS-2P valve for double acting circuit		  V40-V47 only
V47			
V40			**V47-V40** A-B = 1/4"BSPP
V61	Element with V4DS-3P valve for double acting circuit		  A-B = 1/4"BSPP
V62			
V89			

Elements with cartridge solenoid valves			
CODE	**Description**	**Diagram**	**Drawing**
V55	Element with V4DS-3P valve for double acting circuit		 A-B = 1/4"BSPP 

Ports	
CODE	**Description**
1	1/4” BSPP
2	3/8” BSPP

Example

Element V07 is available with C = 1/4”BSPP or with C = 3/8”BSPP.

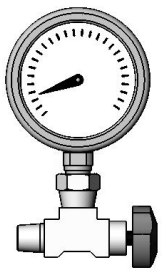
Fill in the code with | V | 0 | 7 | . | 1 | for 1/4”BSPP port or | V | 0 | 7 | . | 2 | for 3/8”BSPP port.

Electric controls			
CODE	**Solenoid**	**CODE**	**Solenoid**
OO	None	**OP**	24V 60Hz A.C.
OB	12V D.C.	**OR**	110V 60Hz A.C.
OC	24V D.C.	**OS**	220V 60Hz A.C.
OD	48V D.C.	**OV**	24V RAC
OH	24V 50Hz A.C.	**OW**	110V RAC
OM	110V 50Hz A.C.	**OZ**	220V RAC
ON	220V 50Hz A.C.		

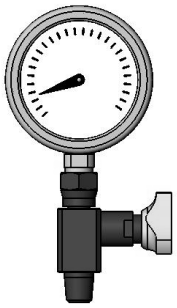
Example: | V | 5 | 5 | . | O | C |

Accessories

Manometer



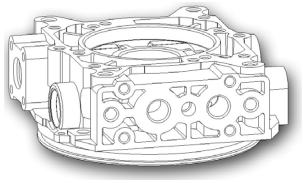
Manometer with 90° isolator



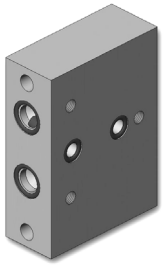
Manometer with straight isolator

CODE	Description	Pressure range (bar)
C1.630.16.000	Manometer	0 ÷ 60
C1.630.17.000	Manometer	0 ÷ 100
C1.630.18.000	Manometer	0 ÷ 160
C1.630.19.000	Manometer	0 ÷ 250
C1.630.20.000	Manometer	0 ÷ 315
C1.605.04.000	90° isolator	
C1.605.03.000	Straight isolator	

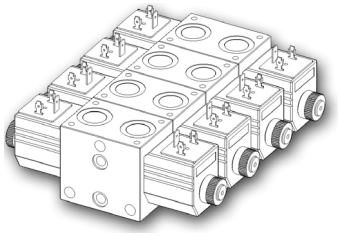
Design



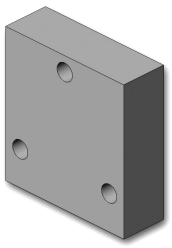
Modular interface (Oil Sistem)



Connection plate

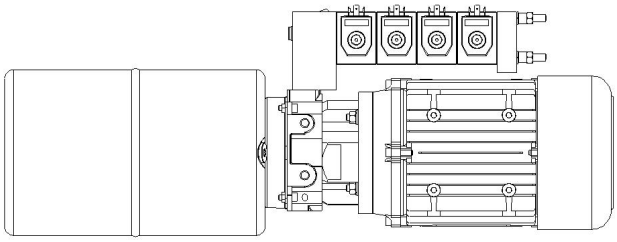


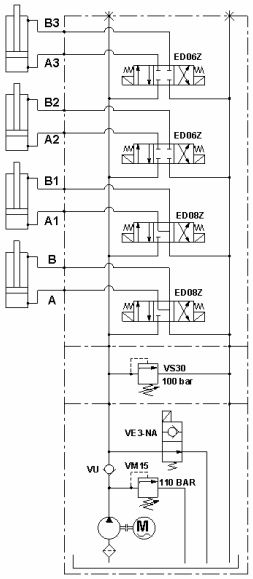
Modular directional valves (LC)

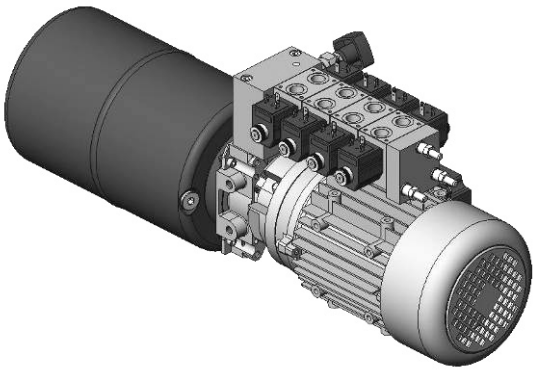


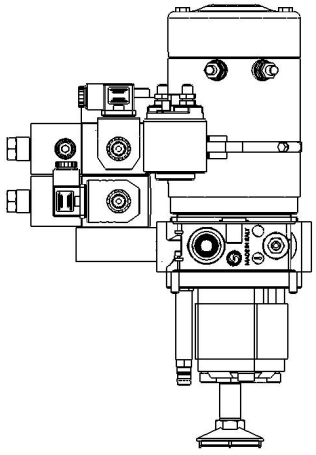
Ending plate

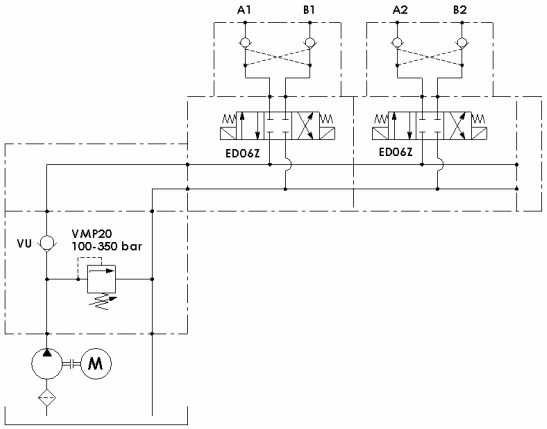
Examples

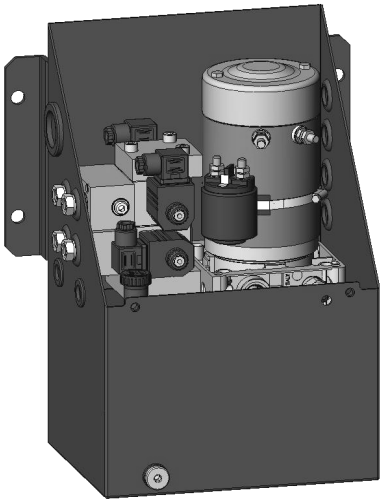








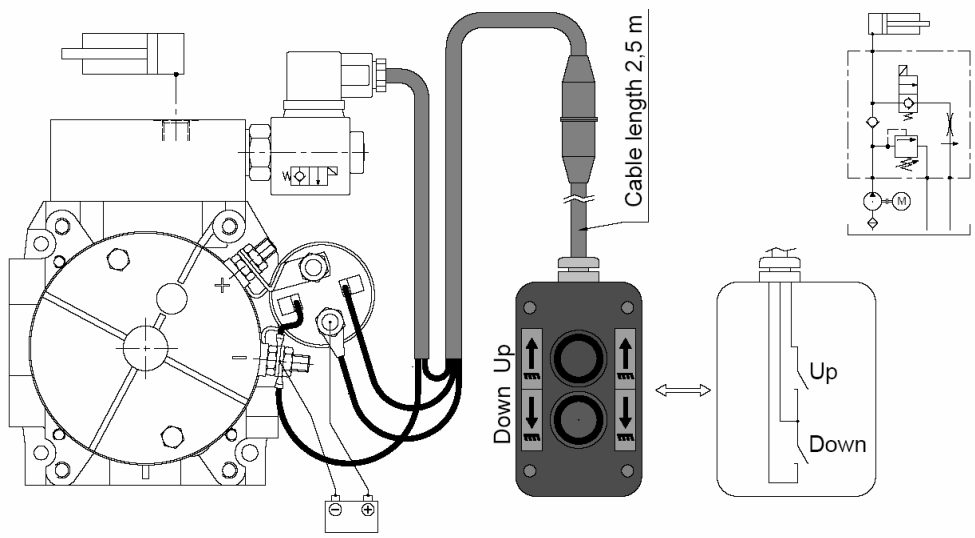




Please contact our sales department for further information.

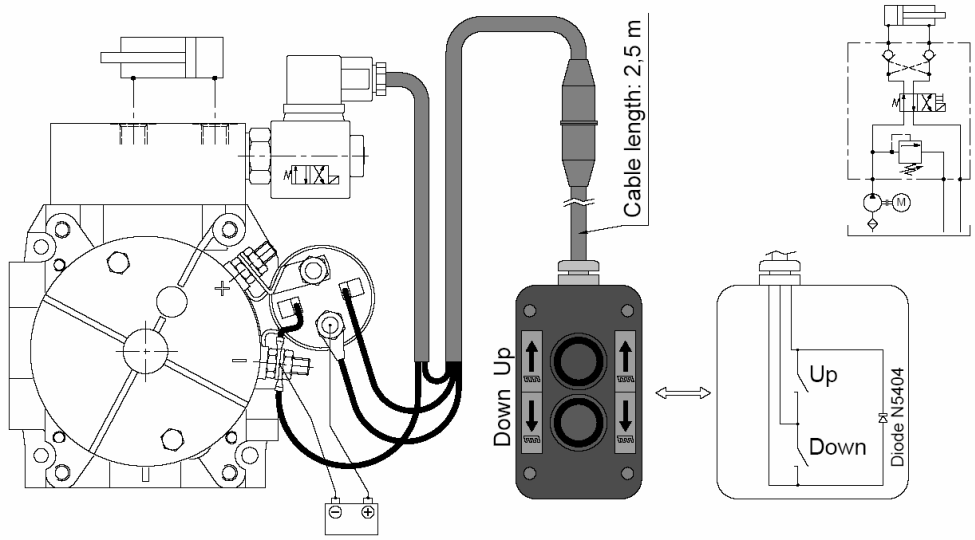
Cables for D.C. motor and single acting cilinder

CODE: K2.501.S1.218



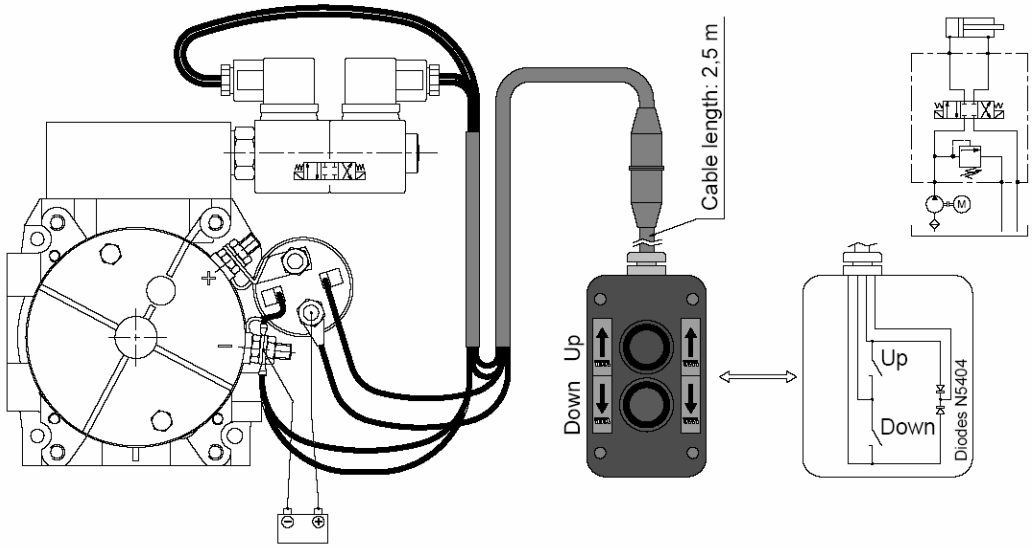
Cables for D.C. motor and double acting cilinder (V4DS-2P solenoid valve)

CODE: K2.501.S1.216



Cables for D.C. motor and double acting cilinder (V4DS-3P solenoid valve)

CODE: K2.501.S1.226



Duty cicles

All motors are limited by the amount of heat that can develop in the motor windings. Diagrams are based on standardized duty cicles. Differentiation is made between:

Continous running duty S1
The motor operates under constant load of sufficient duration for thermal equilibrium to be established.

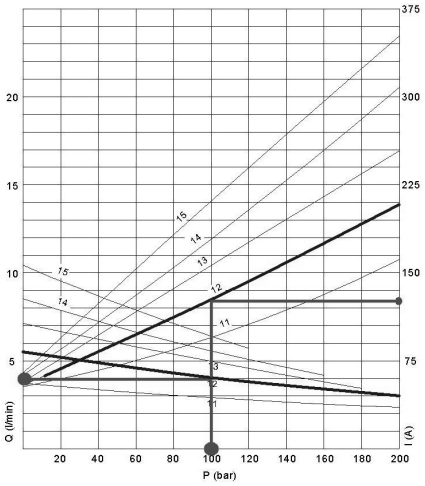
Short time duty S2
The motor operates at constant load for a given number of minutes. The duration would not be sufficient for thermal equilibrium being reached.

Intermittent periodic duty S3
S2 duty cicle is comprised of a sequence of identical duty cycles, each of which consists of a period of constant load followed by an interval of no load. If not given, operating time is assumed to be 10 minutes. Cycle duty is given in a percent value. For example: an S3 = 40% would indicate that motor load would be costant for 40% of the time (4 minutes). A no load condition would occur for 60% of the time (6 minutes).

Performance curves

Speed and torque of a D.C. motor and therefore volumetric flow and pressure of the driven pump are interrelated as shown by the characteristic curves.

Following charts represent both given volumetric flow rate (liters/minute) and required current (Amperes) versus pressure, for every D.C. motor with different pump's displacement.

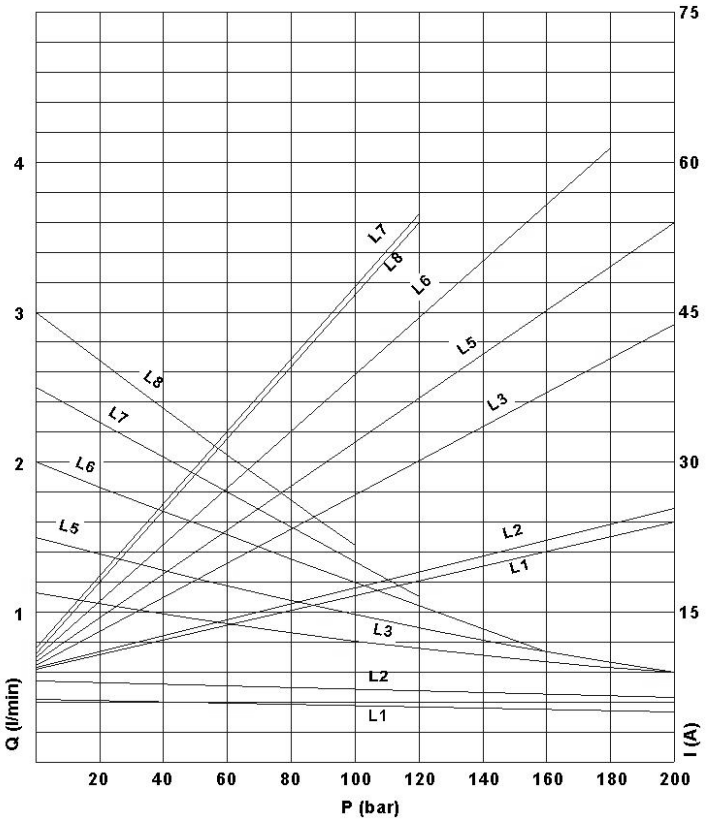


How to read the curves

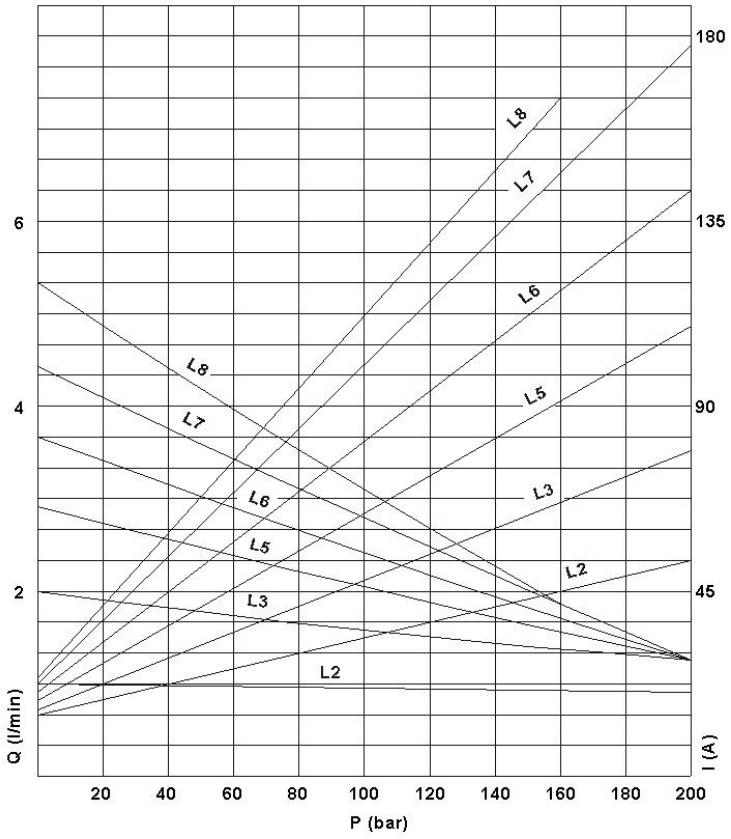
When pressure in bars and flow in l/min are determined according to your requirements, you can use the curves to find the correct pump/motor unit.

Example:
Pressure 100 bar
Flow 4 l/min

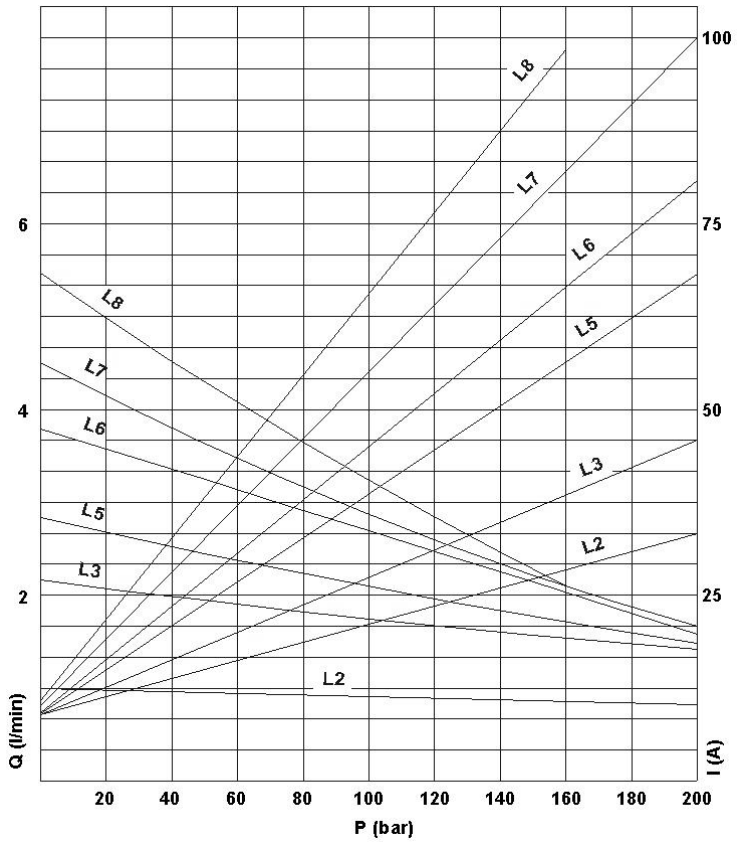
If you choose C98 electric motor (1,5 kW - S3 8%) with 12 pump (1,6 cc), you will have amperage 92 A.



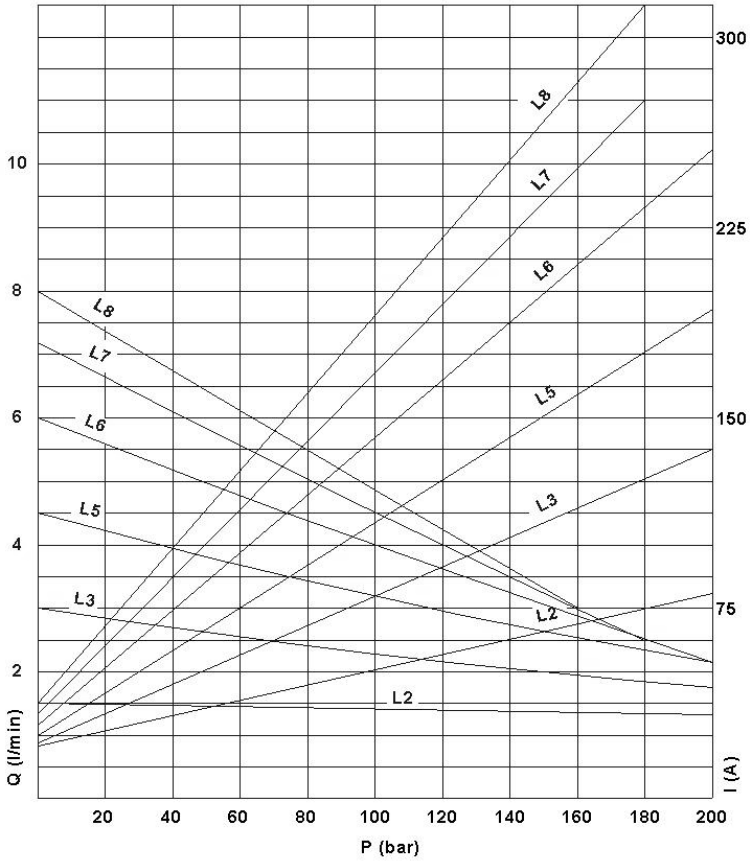
Motor CODE	**C105**
Voltage	12 V
Power	150 W
S3	50%
S2	25 min
Thermal switch	no
Protection Index	IP65



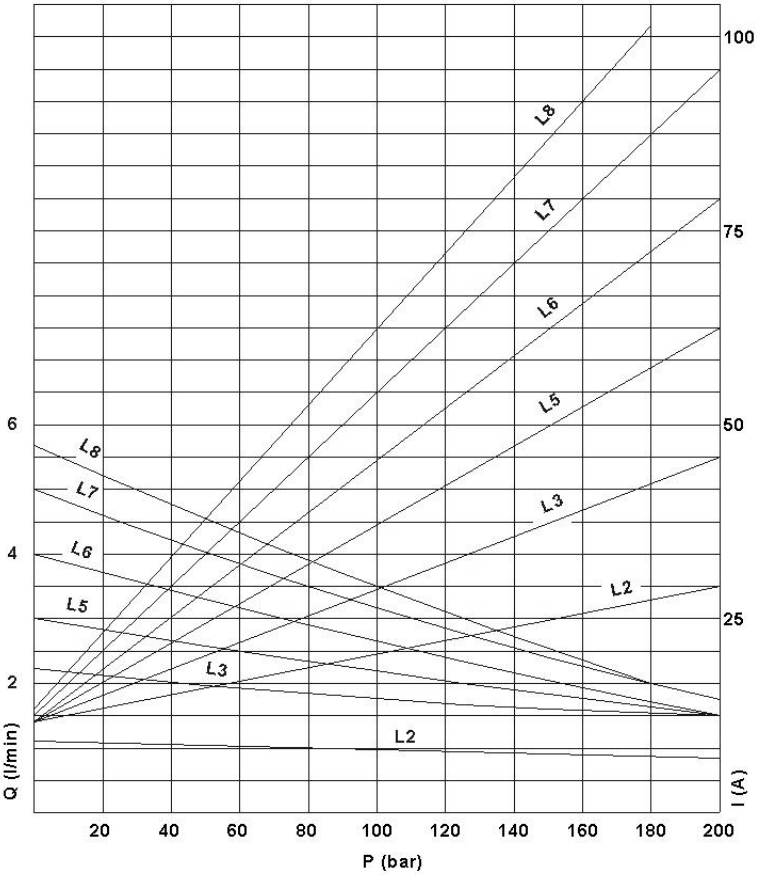
Motor CODE	**C40**
Voltage	12 V
Power	500 W
S3	17%
S2	5 min
Thermal switch	no
Protection Index	IP54



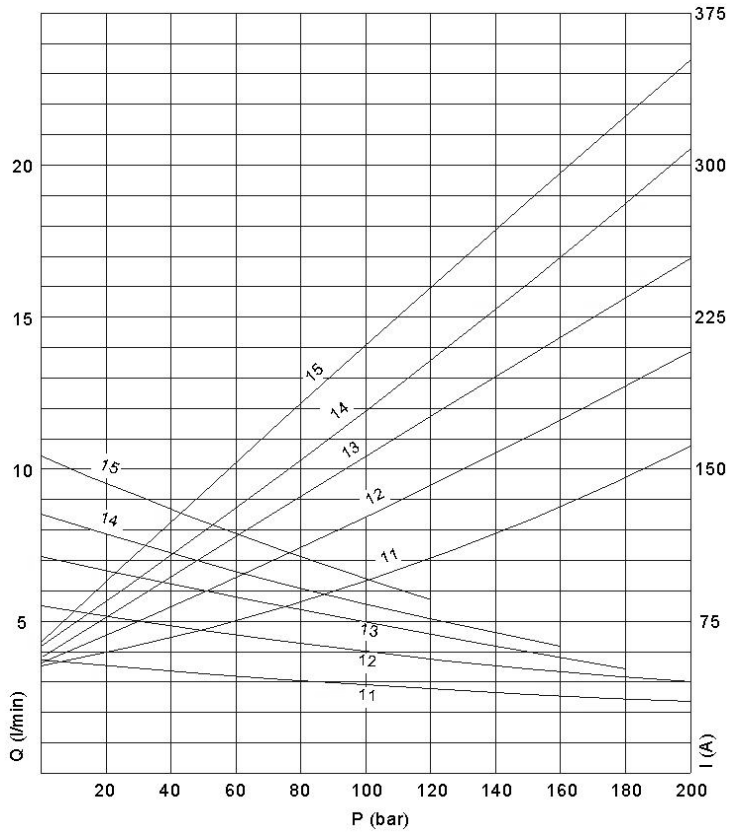
Motor CODE	**C41**
Voltage	24 V
Power	500 W
S3	17%
S2	5 min
Thermal switch	no
Protection Index	IP54



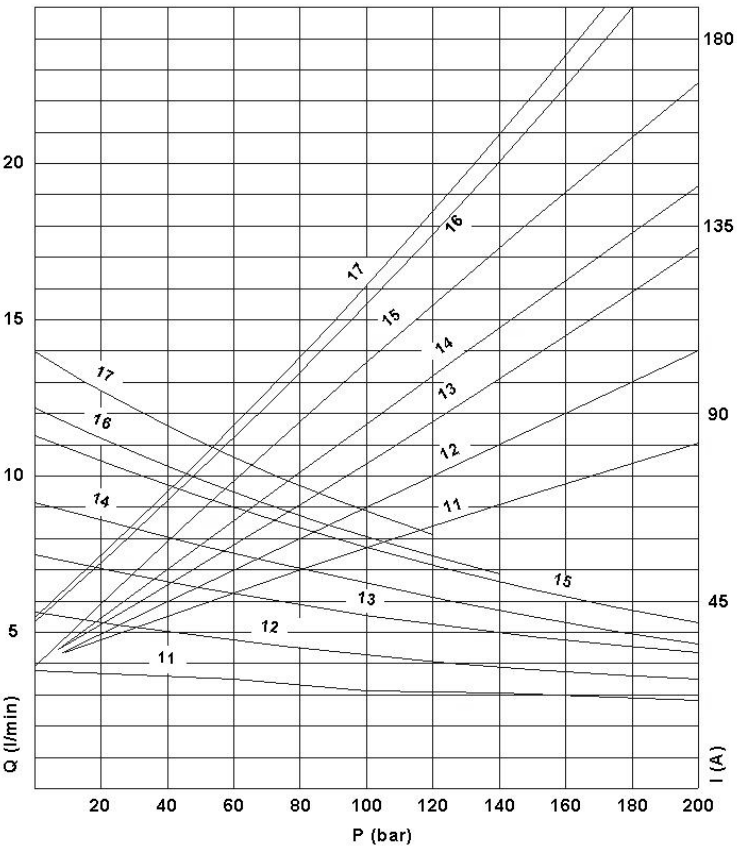
Motor CODE	**C67 – C123**
Voltage	12 V
Power	800 W
S3	9%
S2	4 min
Thermal switch	C123 only
Protection Index	IP54



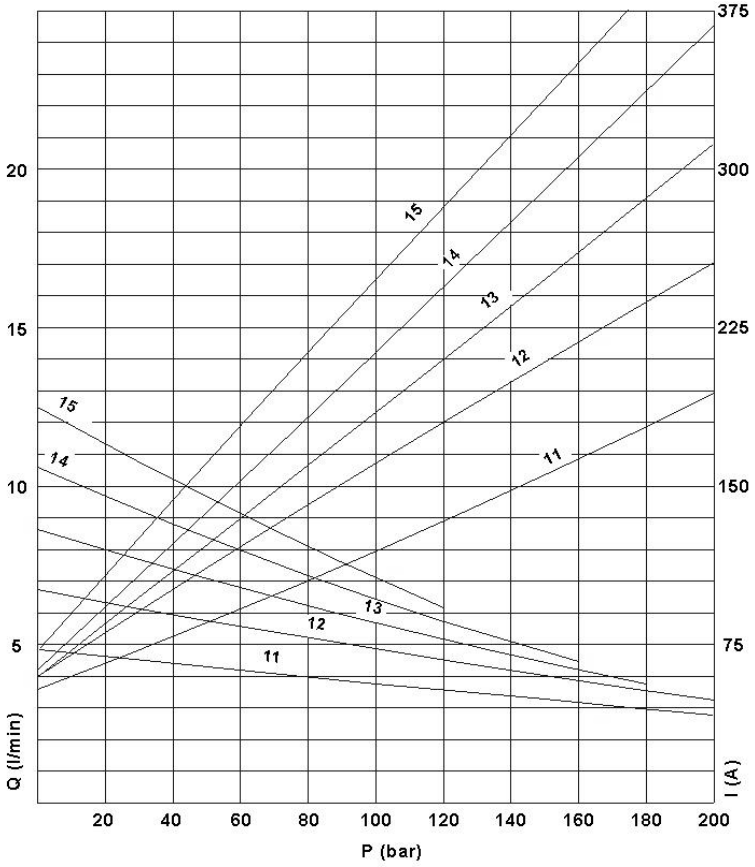
Motor CODE	**C94 – C122**
Voltage	24 V
Power	800 W
S3	C94: 8% C122: 10%
S2	C94: 2,5 min C122: 4 min
Thermal switch	C122 only
Protection Index	IP54



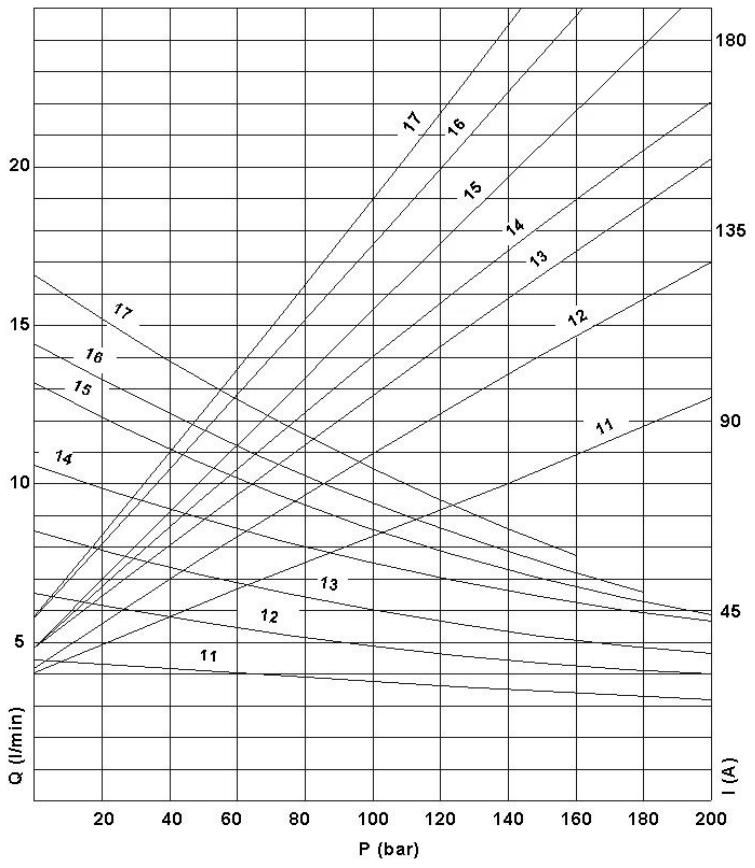
Motor CODE	**C98 – C144**
Voltage	12 V
Power	1500 W
S3	8%
S2	2 min
Thermal switch	C144 only
Protection Index	IP54



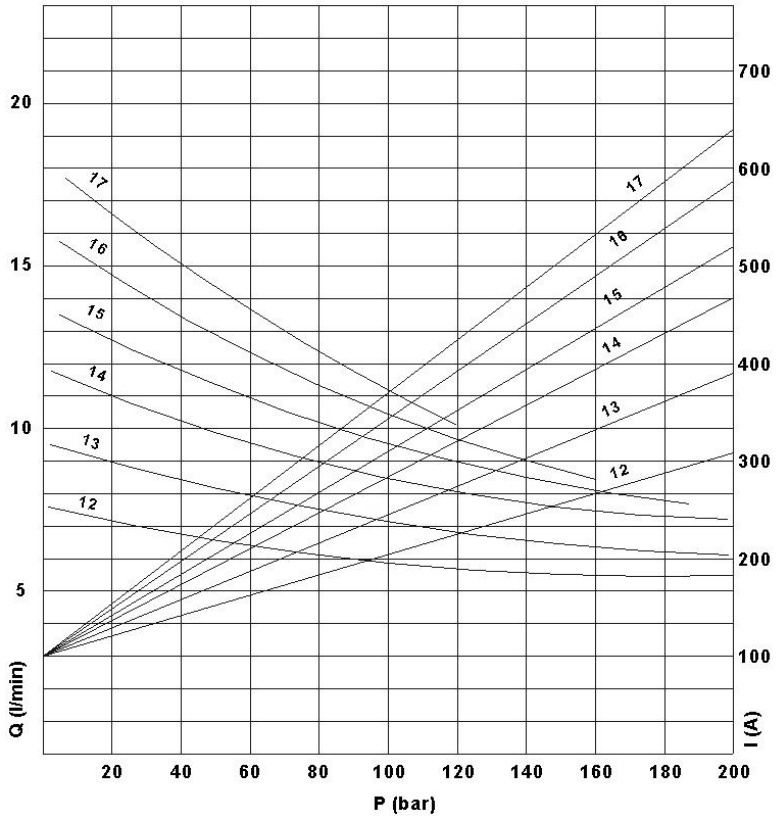
Motor CODE	**C97 – C145**
Voltage	24 V
Power	2000 W
S3	5%
S2	2 min
Thermal switch	C145 only
Protection Index	IP54



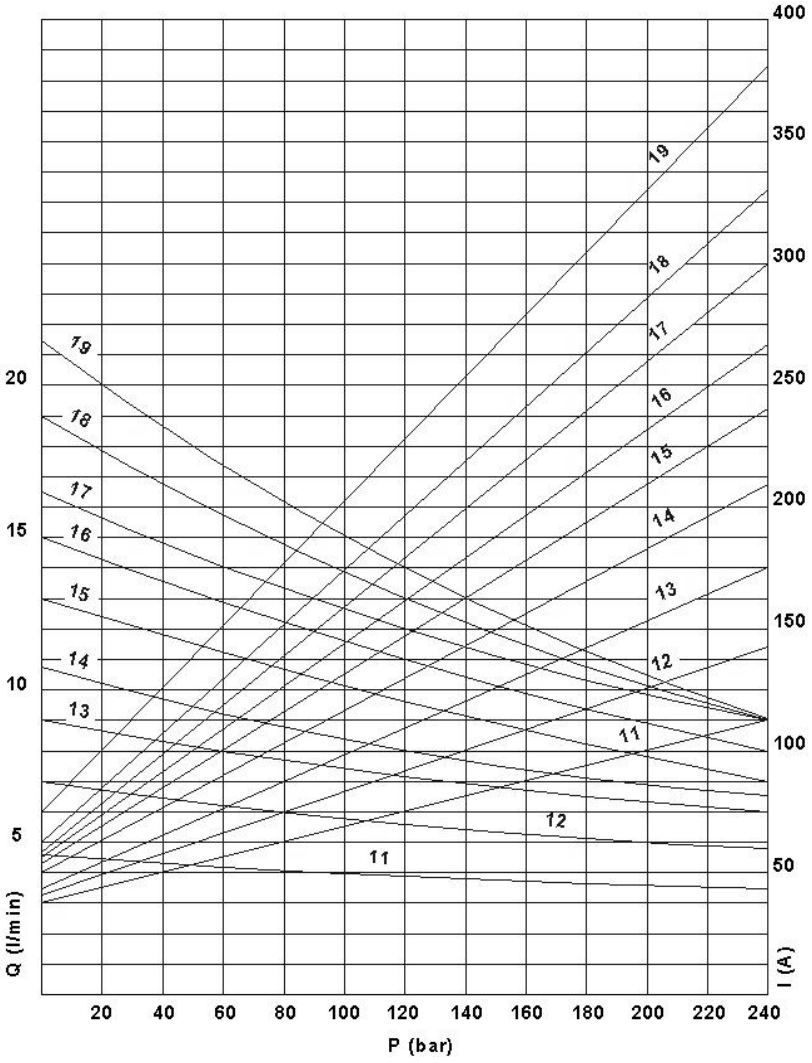
Motor CODE	**C91-C102**
Voltage	12 V
Power	1600 W
S3	10%
S2	2 min
Thermal switch	C102 only
Protection Index	IP54



Motor CODE	**C92-C103**
Voltage	24 V
Power	2200 W
S3	5%
S2	2 min
Thermal switch	C103 only
Protection Index	IP54



Motor CODE	**C96**
Voltage	12 V
Power	2400 W
S3	8%
S2	1 min
Thermal switch	yes
Protection Index	IP54



Motor CODE	**C151 – C140**
Voltage	24 V
Power	3000 W
S3	8%
S2	4 min
Thermal switch	C140 only
Protection Index	IP54

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