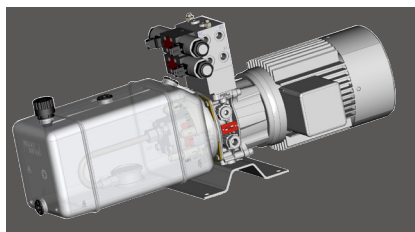


## Hydraulic Mini Power Pack

### SMA 05

 $Q_{max}$  17 l/min •  $p_{max}$  250 bar •  $P_{max}$  3 kW

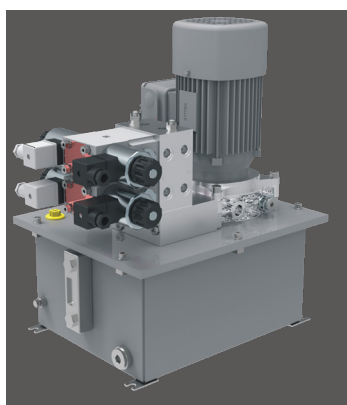
#### Example: plastic tank version



#### Technical Features

- › AC and DC electro-hydraulic unit, easy-to-assemble, compact
- › Modularity offers many combinations of hydraulic circuits to suit various requirements
- › Main applications are fork lifts, lifting platforms, automotive lifts, cranes for small trucks, snow plows, machine tools, food and textile industry
- › 7 central block basic circuits options
- › Possibility of building up an additional circuit in the form of vertical or horizontal stacking assembly
- › Rated power up to 3 kW with DC and AC
- › Single and triple-phase motors with power ratings of up to 3 kW
- › Tank capacities from 1.5 to 40 l with optional plastic tanks for cost saving
- › In the standard version, the aluminium basic block is without surface protection and steel plate are zinc coated for 240 h protection acc. to ISO 9227

#### Example: steel tank version



#### Functional Description

Compact mini hydraulic power packs are designed to fit small design envelopes and can be used in lifting platforms, elevating tables, manipulators, small presses, machine tools and mobile applications. Each power pack consists of an electric motor, a pump, a manifold and a tank. The aluminum body forms the base of the power pack, on which all the main components, including the hydraulic elements, are mounted. The function of the power packs is apparent from the respective hydraulic circuit diagrams. The desired combination of particular components and hydraulic elements can be defined by reference to the ordering code and the respective tables. The additional hydraulic circuits can be built up in valve sizes 03 (RPEK), 04 (CETOP 02) and 06 (CETOP 03). The size 03 (RPEK) is in a form of sectional directional valves. The mounting position of the power pack is horizontal or vertical - see Power Pack Dimensions on pages 12 to 19. All ports have G1/4 internal threads (thread G3/8 to be agreed with the manufacturer). With the standard model, the connecting ports A, B of the components of the vertical stacking assembly are oriented to one side. Orientation of ports A, B to different sides is to be discussed with the manufacturer. The basic combinations of electric motors and pumps as well as their code designations are shown in tables 1 - 5.

#### Technical Data

Flow rate	l/min	see table 1, 2, 3, 4 and 5		
Working pressure	bar	see table 1, 2, 3, 4 and 5		
Max. operating pressure	bar	see table 1, 2, 3 and 4		
Tank capacity	l	1.5 - 40		
Type of hydraulic pump		gear pump, COUNTER-CLOCKWISE		
Electrical Motor power ratings	kW	0.12 - 3		
Type of electric motor		one- , three-phase and DC		
Voltage of electric motor	V	230 AC	230 / 400 AC	12 / 24 DC
Duty cycle S3 of electric motor	%	AC 100, DC see table		
Frequency	Hz	AC 50		
Protection degree of electric motor - insulation class		AC IP 55-F, DC - see table (page 7)		
Viscosity range	mm²/s	20 ... 100		
Fluid temperature range	°C	0 ... +70		
Fluid temperature range, short-time	°C	-20 ... +80		
Ambient temperature max.	°C	+50		
Thread of functional ports P, T, M, A, B		G1/4 (G3/8 A, B on request)		

	Data Sheet	Type
General information	GI_0060	Products and operating conditions

#### Standard Surface Treatment

Model	Material used	Surface treatment
Cylindrical steel tank	sheet steel	Komaxit RAL 7030
Square steel tank / cover	sheet steel	Komaxit RAL 7030
Cylindrical plastic tank	BOREALIS ME 8131 (transparent)	without surface treatment
Square plastic tank	MOSTEN (transparent)	without surface treatment
DC electric motor		zinc-coated
AC electric motor		RAL 7030
Other components acc. to manufacturer standard		

For other surface treatment consult factory.

**SMA 05-**  /  .  -  -   .  -    /

**Compact power pack**

**Pump displacement in cm<sup>3</sup>**

**Series GP0L**

0.32	<b>03</b>
0.40	<b>04</b>
0.50	<b>05</b>
0.63	<b>06</b>

**Series GP1**

0.8	<b>08</b>
1.2	<b>12</b>
1.6	<b>16</b>
2.1	<b>21</b>
2.5	<b>25</b>
3.3	<b>33</b>
3.6	<b>36</b>
4.4	<b>44</b>
4.8	<b>48</b>
5.8	<b>58</b>
6.2	<b>62</b>
7.9	<b>79</b>

**Code of the electric motor**  
(see tables 1-5)

**DC electric motor**

with switch

**R**

**one-phase electric motor**

without starting module

**0**

with starting module

**M**

**three-phase electric motor**

**0**

**Type of hydraulic circuit**  
(see table on pages 8)

**Code of the tank**  
see pages 12, 14-18

**Solenoid voltage**

<b>01200</b>	12 V DC
<b>02400</b>	24 V DC
<b>20500</b>	205 V DC
<b>23050</b>	230 V AC 50 (60) Hz

**Nominal size of stacking assembly elements**

<b>0</b>	without
<b>3</b>	size 03
<b>4</b>	size 04
<b>6</b>	size 06

(see page 12)

**Parallel plate**

<b>0</b>	without
<b>1</b>	1 section
<b>2</b>	2 sections
<b>3</b>	3 sections
<b>4</b>	4 sections
<b>5</b>	5 sections

(see page 12)

**Base platte**

<b>0</b>	without
<b>A</b>	configuration A
<b>B</b>	configuration B
<b>C</b>	configuration C
<b>D</b>	configuration D
<b>E</b>	configuration E
<b>F</b>	configuration F

(see page 12)

**Foot bracket**

<b>0</b>	without foot bracket
<b>F</b>	low foot bracket
<b>K</b>	high foot bracket (only for tank codes 40-45)

**Type of filter used**

<b>0</b>	without filter
<b>S</b>	suction filter
<b>R*</b>	return line filter without indication
<b>E*</b>	return line filter with el. indication
<b>M*</b>	return line filter with manometer

\*only for tank codes 56-60 and 30-32

**SMA05-**   /   . **0** - **G** -     .   -     /  

**Compact power pack**

**Pump displacement in cm<sup>3</sup>**

**Series GP1**

4.8 + 1.2 cm <sup>3</sup>	<b>4812</b>
4.8 + 1.6 cm <sup>3</sup>	<b>4816</b>
4.8 + 2.1 cm <sup>3</sup>	<b>4821</b>

5.8 + 1.2 cm <sup>3</sup>	<b>5812</b>
5.8 + 1.6 cm <sup>3</sup>	<b>5816</b>
5.8 + 2.1 cm <sup>3</sup>	<b>5821</b>

6.2 + 1.2 cm <sup>3</sup>	<b>6212</b>
6.2 + 1.6 cm <sup>3</sup>	<b>6216</b>
6.2 + 2.1 cm <sup>3</sup>	<b>6221</b>

7.9 + 1.2 cm <sup>3</sup>	<b>7912</b>
7.9 + 1.6 cm <sup>3</sup>	<b>7916</b>
7.9 + 2.1 cm <sup>3</sup>	<b>7921</b>

**Code of the e-motor**

1, 2, 3, 4, 5, 6, 7, 8  
9, 10, 11, 12, 13, 14, 15, 16, 17, 18

(see tables 3, 4)

**Code of the tank**

24, 31, 32, 44, 45, 55, 58, 59, 60, 69, 70

**Type of filter used**

without filter  
suction filter  
return line filter without indication  
return line filter with el. indication  
return line filter with manometer

**0**  
**S**  
**R\***  
**E\***  
**M\***

**Solenoid voltage**

<b>01200</b>	12 V DC
<b>02400</b>	24 V DC
<b>20500</b>	205 V DC
<b>23050</b>	230 V AC 50 (60) Hz

**Nominal size of stacking assembly elements**

<b>0</b>	without stacking assembly
<b>3</b>	size 03
<b>4</b>	size 04
<b>6</b>	size 06

(see page 12)

**Parallel plate**

<b>0</b>	without stacking assembly
<b>1</b>	1 section
<b>2</b>	2 sections
<b>3</b>	3 sections
<b>4</b>	4 sections
<b>5</b>	5 sections

(see page 12)

**Base platte**

<b>0</b>	without stacking assembly
<b>A</b>	configuration A
<b>B</b>	configuration B
<b>C</b>	configuration C
<b>D</b>	configuration D
<b>E</b>	configuration E
<b>F</b>	configuration F

(see page 12)

**Foot bracket**

<b>0</b>	without foot bracket
<b>F</b>	low foot bracket
<b>K</b>	high foot bracket (only for tank codes 40-45)

\*only for tank codes 58-60 and 31-32

**Tab. 1a Single Pumps AC Electric Motors - three-phase**

Code of the three-phase motor			Code of the pump															
			03 GP0L-...		04 GP0L-...		05 GP0L-...		06 GP0L-...		08 GP1-...		12 GP1-...		16 GP1-...		21 GP1-...	
p <sub>max</sub> ** [bar]			240								250							
400V	n[1/min]	P[kW]	Q/p <sub>n</sub> * [l/min] / [bar]															
9	1320	0.12	0.3	160	0.4	130	0.6	100	0.7	80	0.9	65	1.4	40	1.8	30		
10	1320	0.18	0.3	220	0.4	190	0.6	150	0.7	120	0.9	95	1.4	60	1.8	45	2.5	35
11	1395	0.25			0.5	220	0.6	200	0.8	160	0.9	125	1.4	80	1.9	60	2.6	45
12	1400	0.37							0.8	200	0.9	180	1.4	120	1.9	90	2.6	70
13	1390	0.55									0.9	200	1.4	180	1.9	135	2.6	105
14	1400	0.75											1.4	200	1.9	180	2.6	140
15	1410	1.10													2.0	200	2.6	200
16	1410	1.50																
17	1425	2.20																
18	1425	3.00																
27	2745	0.18	0.7	115	0.9	90	1.2	75	1.5	60	1.9	45	2.8	30				
28	2740	0.25	0.7	160	0.9	130	1.2	100	1.5	80	1.9	65	2.8	40	3.8	30		
29	2790	0.37	0.7	200	0.9	185	1.2	150	1.5	115	1.9	90	2.9	60	3.9	45	5.2	35
30	2820	0.55					1.2	200	1.5	175	1.9	135	2.9	90	3.9	65	5.3	50
31	2850	0.75							1.5	200	1.9	180	2.9	120	4.0	90	5.3	70
32	2850	1.10									1.9	200	2.9	175	4.0	130	5.3	100
33	2855	1.50											2.9	200	4.0	175	5.3	135
34	2855	2.20													4.0	200	5.3	200
35	2860	3.00																

**Tab. 1a Single Pumps AC Electric Motors - three-phase**

Code of the three-phase motor			Code of the pump															
			25 GP1-...		33 GP1-...		36 GP1-...		44 GP1-...		48 GP1-...		58 GP1-...		62 GP1-...		79 GP1-...	
p <sub>max</sub> ** [bar]			250										200				160	
400V	n[1/min]	P[kW]	Q/p <sub>n</sub> * [l/min] / [bar]															
9	1320	0.12																
10	1320	0.18	3.0	30														
11	1395	0.25	3.2	40	4.2	30	4.6	25										
12	1400	0.37	3.2	55	4.2	45	4.6	40	5.6	35	6.1	30	7.4	25				
13	1390	0.55	3.2	85	4.2	65	4.6	60	5.6	50	6.1	45	7.4	35	7.9	35	10.1	25
14	1400	0.75	3.2	115	4.3	90	4.6	80	5.7	65	6.2	60	7.5	50	8.0	45	10.2	35
15	1410	1.10	3.2	165	4.3	130	4.7	115	5.7	95	6.2	90	7.5	75	8.0	70	10.2	55
16	1410	1.50	3.2	200	4.3	175	4.7	160	5.7	130	6.2	120	7.5	100	8.0	95	10.2	75
17	1425	2.20			4.3	200	4.7	200	5.8	190	6.3	175	7.6	145	8.1	135	10.4	105
18	1425	3.00									6.3	200	7.6	195	8.1	180	10.4	145
27	2745	0.18																
28	2740	0.25																
29	2790	0.37	6.3	30														
30	2820	0.55	6.4	40	8.6	30	9.3	30	11.4	25								
31	2850	0.75	6.5	55	8.7	45	9.4	40	11.5	30	12.6	30	15.2	25				
32	2850	1.10	6.5	80	8.7	65	9.4	60	11.5	45	12.6	45	15.2	35	16.3	35		
33	2855	1.50	6.5	110	8.7	85	9.5	80	11.6	65	12.6	60	15.2	50	16.3	45		
34	2855	2.20	6.5	165	8.7	125	9.5	115	11.6	95	12.6	85	15.2	70	16.3	65		
35	2860	3.00	6.5	200	8.7	170	9.5	160	11.6	130	12.6	120	15.3	100	16.3	90		

\*p<sub>n</sub>- nominal pressure = the highest working pressure allowed without time restriction

\*\* p<sub>max</sub> - maximum allowable pressure of the pump for max. 20 sec. Motor overload max. 30 % for max. 20 sec.

In the case of rotation speed control keep the speed limits of the gear pump - see Gear Pumps catalog.

**Tab. 2a Single Pumps AC Electric Motors - single-phase**

Code of the single-phase motor			Code of the pump															
			03 GP0L-...		04 GP0L-...		05 GP0L-...		06 GP0L-...		08 GP1-...		12 GP1-...		16 GP1-...		21 GP1-...	
p <sub>max</sub> ** [bar]			240										250					
230V	n[1/min]	P[kW]	Q/p <sub>n</sub> * [l/min] / [bar]															
1	1300	0.12	0.3	160	0.4	125	0.6	100	0.7	80	0.9	65	1.3	40	1.8	30		
2	1350	0.18	0.4	220	0.4	185	0.6	150	0.7	115	0.9	90	1.4	60	1.9	45	2.5	35
3	1390	0.25			0.5	220	0.6	200	0.8	160	0.9	125	1.4	80	1.9	60	2.6	45
4	1410	0.37							0.8	200	0.9	180	1.4	120	1.9	90	2.6	70
5	1370	0.55									0.9	200	1.4	180	1.9	135	2.6	105
6	1410	0.75											1.5	200	2.0	180	2.6	140
7	1410	1.10															2.6	200
8	1410	1.50																
19	2840	0.18	0.7	110	0.9	90	1.2	70	1.5	55	1.9	45	2.9	30				
20	2840	0.25	0.7	155	0.9	125	1.2	100	1.5	80	1.9	60	2.9	40	3.9	30		
21	2780	0.37	0.7	200	0.9	185	1.2	150	1.5	120	1.9	90	2.9	60	3.9	45	5.2	35
22	2820	0.55					1.2	200	1.5	175	1.9	135	2.9	90	3.9	65	5.3	50
23	2820	0.75							1.5	200	1.9	185	2.9	120	3.9	90	5.3	70
24	2845	1.10									1.9	200	2.9	175	4.0	130	5.3	100
25	2855	1.50											2.9	200	4.0	175	5.3	135
26	2810	2.20															5.3	200

**Tab. 2b Single Pumps AC Electric Motors - single-phase**

Code of the single-phase motor			Code of the pump															
			25 GP1-...		33 GP1-...		36 GP1-...		44 GP1-...		48 GP1-...		58 GP1-...		62 GP1-...		79 GP1-...	
p <sub>max</sub> ** [bar]			250										200				160	
230V	n[1/min]	P[kW]	Q/p <sub>n</sub> * [l/min] / [bar]															
1	1300	0.12																
2	1350	0.18	3.1	30														
3	1390	0.25	3.1	40	4.2	30	4.6	30										
4	1410	0.37	3.1	55	4.2	45	4.6	40	5.6	30	6.1	30	7.4	25				
5	1370	0.55	3.1	85	4.2	65	4.6	60	5.6	50	6.1	45	7.4	35	7.8	35	10.0	30
6	1410	0.75	3.2	115	4.3	85	4.7	80	5.7	65	6.2	60	7.5	50	8.0	45	10.2	35
7	1410	1.10	3.2	165	4.3	130	4.7	115	5.7	95	6.2	90	7.5	75	8.0	70	10.2	55
8	1410	1.50	3.2	200	4.3	175	4.7	160	5.7	130	6.2	120	7.5	100	8.0	95	10.2	75
19	2840	0.18																
20	2840	0.25																
21	2780	0.37	6.3	30														
22	2820	0.55	6.4	40	8.6	30	9.3	30										
23	2820	0.75	6.4	55	8.6	45	9.3	40	11.4	35	12.5	30	15.0	25				
24	2845	1.10	6.5	85	8.6	65	9.4	60	11.5	50	12.5	45	15.1	35	16.2	35		
25	2855	1.50	6.5	110	8.6	85	9.4	80	11.5	65	12.5	60	15.1	50	16.2	45		
26	2810	2.20	6.5	165	8.6	130	9.4	120	11.5	95	12.5	90	15.1	75	16.1	70		

Attention! Pay special attention to the start-up torque of single-phase motors. Use the start-up module during start-up under pressure.

\* $p_n$  - nominal pressure = the highest working pressure allowed without time restriction

\*\*  $p_{max}$  - maximum allowable pressure of the pump for max. 20 sec. Motor overload max. 30 % for max. 20 sec.

In the case of rotation speed control keep the speed limits of the gear pump - see Gear Pumps catalog.

**Tab. 3a Double Pumps AC Electric Motors 400 V - three-phase**

Pump code P1+P2		4812		4816		4821		5812		5816		5821		
P2 p <sub>max</sub> [bar]		250 for a short period only - max. 20 s												
P1 p <sub>max</sub> [bar]		184		173		160		166		157		147		
3 phase E-motor		Q1	p1 <sub>n</sub>		Q1, Q2 [l/min] p1 <sub>n</sub> , p2 <sub>n</sub> [bar] P1 p <sub>max</sub> is limited due to torque of the pump shaft									
code	P[kW]	Q2	p2 <sub>n</sub>											
12	0.37	6.1	25	6.1	20									
		1.4	120	1.9	90									
13	0.55	6.1	35	6.1	35	6.1	30	7.4	30					
		1.4	180	1.9	135	2.6	105	1.4	180					
14	0.75	6.1	50	6.1	45	6.1	45	7.4	45	7.4	40	7.4	35	
		1.4	200	1.9	180	2.6	140	1.4	200	1.9	180	2.6	140	
15	1.1	6.1	75	6.1	70	6.1	65	7.4	65	7.4	60	7.4	55	
		1.4	200	1.9	200	2.6	200	1.4	200	1.9	200	2.6	200	
16	1.5	6.1	100	6.1	95	6.1	85	7.4	85	7.4	80	7.4	75	
		1.4	200	1.9	200	2.6	200	1.4	200	1.9	200	2.6	200	
17	2.2	6.1	150	6.1	140	6.1	130	7.4	130	7.4	120	7.4	110	
		1.4	200	1.9	200	2.6	200	1.4	200	1.9	200	2.6	200	
18	3	6.1	184	6.1	173	6.1	160	7.4	166	7.4	157	7.4	147	
		1.4	200	1.9	200	2.6	200	1.4	200	1.9	200	2.6	200	

**Tab. 3b Double Pumps AC Electric Motors 400 V - three-phase**

Pump code P1+P2		6212		6216		6221		7912		7916		7921	
P2 p <sub>max</sub> [bar]		250 for a short period only - max. 20 s											
P1 p <sub>max</sub> [bar]		151		143		134		139		133		127	
3 phase E-motor		Q1	p1 <sub>n</sub>		Q1, Q2 [l/min]	p1 <sub>n</sub> , p2 <sub>n</sub> [bar]	P1 p <sub>max</sub> is limited due to torque of the pump shaft						
code	P[kW]	Q2	p2 <sub>n</sub>										
13	0.55	8	30	8	25								
		1.4	180	1.9	135								
14	0.75	8	40	8	40	8	35	10.2	30				
		1.4	200	1.9	180	2.6	140	1.4	200				
15	1.1	8	60	8	55	8	50	10.2	50	10.2	45	10.2	45
		1.4	200	1.9	200	2.6	200	1.4	200	1.9	200	2.6	200
16	1.5	8	80	8	75	8	70	10.2	65	10.2	60	10.2	60
		1.4	200	1.9	200	2.6	200	1.4	200	1.9	200	2.6	200
17	2.2	8	120	8	115	8	105	10.2	95	10.2	90	10.2	90
		1.4	200	1.9	200	2.6	200	1.4	200	1.9	200	2.6	200
18	3	8	151	8	143	8	134	10.2	130	10.2	125	10.2	120
		1.4	200	1.9	200	2.6	200	1.4	200	1.9	200	2.6	200

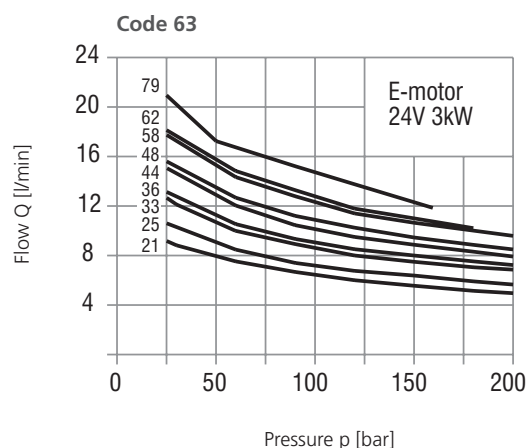
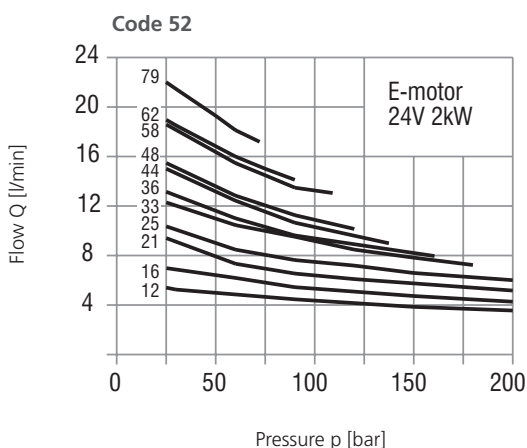
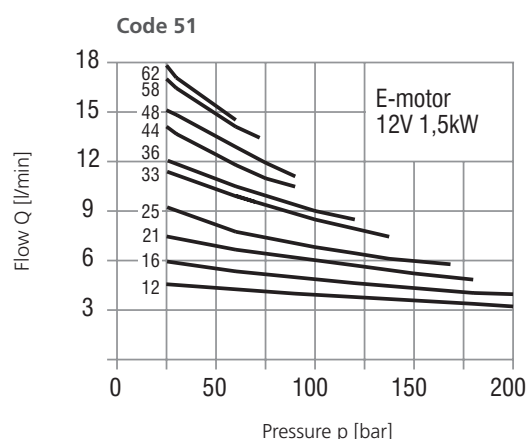
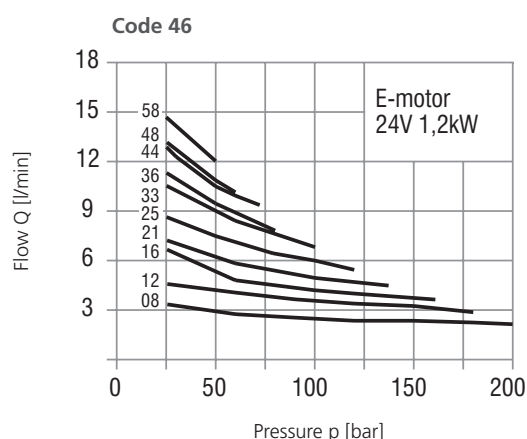
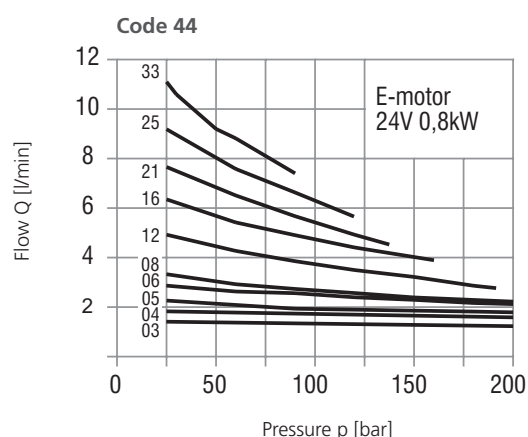
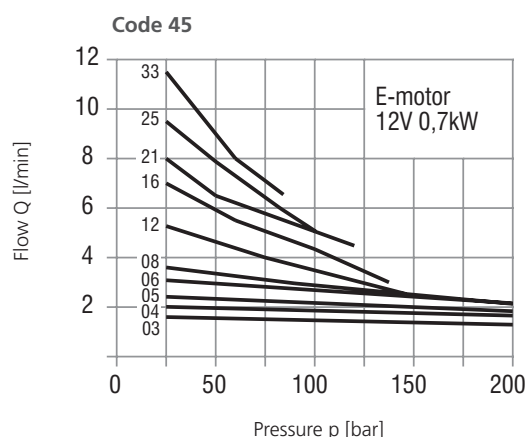
**Tab. 4a Double Pumps AC Electric Motors 230 V - one-phase**

Pump code P1+P2		4812		4816		4821		5812		5816		5821		
P2 p <sub>max</sub> [bar]		250 for a short period only - max. 20 s												
P1 p <sub>max</sub> [bar]		184		173		160		166		157		147		
1 phase E-motor		Q1	p <sub>1n</sub>		Q1, Q2 [l/min] p <sub>1n</sub> , p <sub>2n</sub> [bar] P1 p <sub>max</sub> is limited due to torque of the pump shaft									
code	P[kW]	Q2	p <sub>2n</sub>											
4	0.37	6.1	25	6.1	20									
		1.4	120	1.9	90									
5	0.55	6.1	35	6.1	35	6.1	30	7.4	30					
		1.4	180	1.9	135	2.6	105	1.4	180					
6	0.75	6.1	50	6.1	45	6.1	45	7.4	45	7.4	40	7.4	35	
		1.4	200	1.9	180	2.6	140	1.4	200	1.9	180	2.6	140	
7	1.1	6.1	75	6.1	70	6.1	65	7.4	65	7.4	60	7.4	55	
		1.4	200	1.9	200	2.6	200	1.4	200	1.9	200	2.6	200	
8	1.5	6.1	100	6.1	95	6.1	85	7.4	85	7.4	80	7.4	75	
		1.4	200	1.9	200	2.6	200	1.4	200	1.9	200	2.6	200	

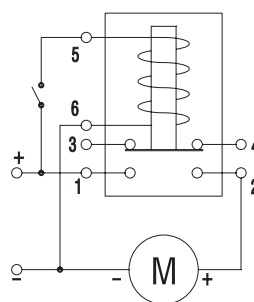
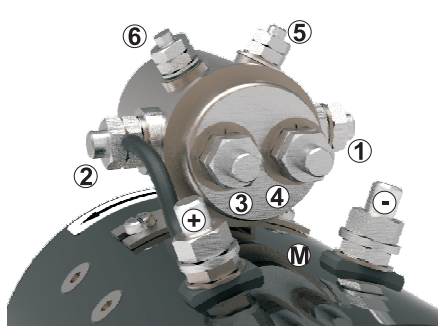
**Tab. 4b Double Pumps AC Electric Motors 230 V - one-phase**

Pump code P1+P2		6212		6216		6221		7912		7916		7921	
P2 p <sub>max</sub> [bar]		250 for a short period only - max. 20 s											
P1 p <sub>max</sub> [bar]		151		143		134		139		133		127	
1 phase E-motor		Q1	p1 <sub>n</sub>		Q1, Q2 [l/min]	p1 <sub>n</sub> , p2 <sub>n</sub> [bar]	P1 p <sub>max</sub> is limited due to torque of the pump shaft						
code	P[kW]	Q2	p2 <sub>n</sub>										
5	0.55	8	30	8	25								
		1,4	180	1,9	135								
6	0.75	8	40	8	40	8	35	10,2	30				
		1,4	200	1,9	180	2,6	140	1,4	200				
7	1.1	8	60	8	55	8	50	10,2	50	10,2	45	10,2	45
		1,4	200	1,9	200	2,6	200	1,4	200	1,9	200	2,6	200
8	1.5	8	80	8	75	8	70	10,2	65	10,2	60	10,2	60
		1.4	200	1.9	200	2.6	200	1.4	200	1.9	200	2.6	200

# Characteristics pQ DC Electric Motors + Pumps



Tab. 5 DC Electric Motors

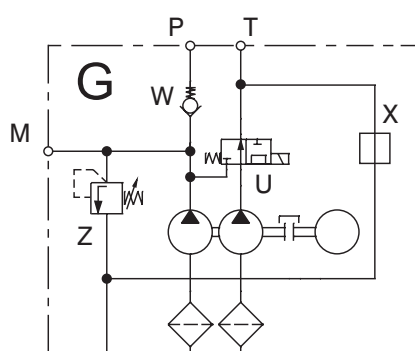
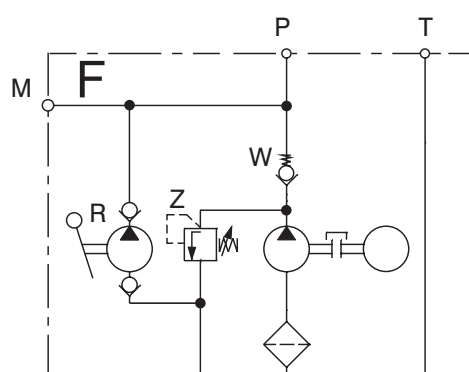
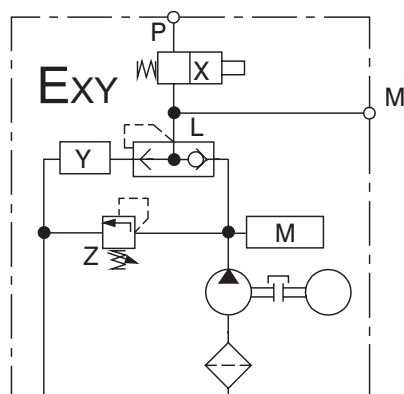
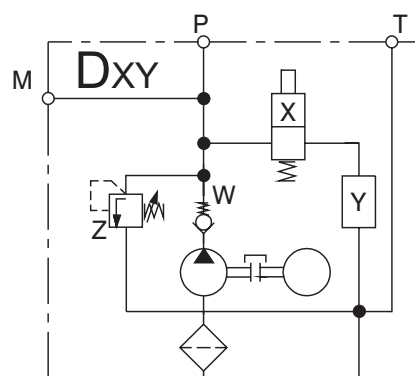
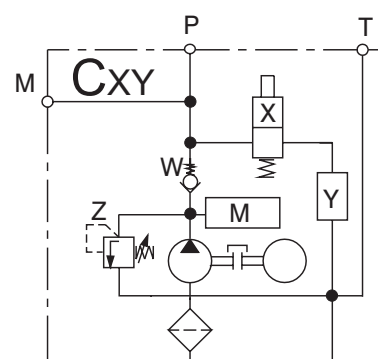
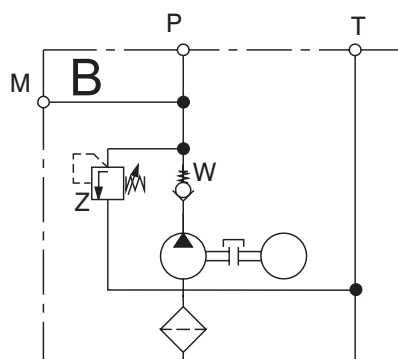
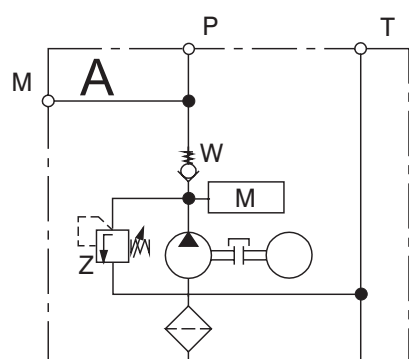


12 V	24 V	HP	(kW)	Protection degree - insulation class
Code of the electric motor				
45	/	1	(0.7)	IP 44
/	44	1	(0.8)	IP 44
/	46	1-1/2	(1.2)	IP 44
51	/	2	(1.5)	IP 54
/	52	2-1/2	(2.0)	IP 54
/	63	4	(3.0)	IP 20

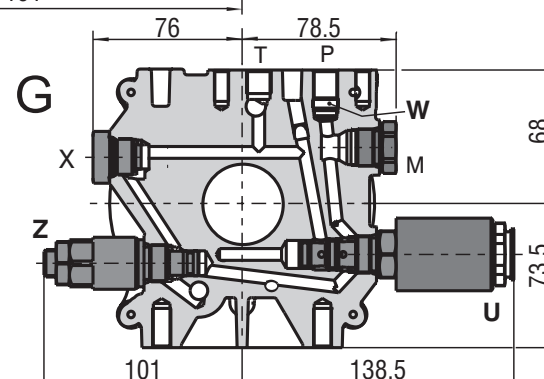
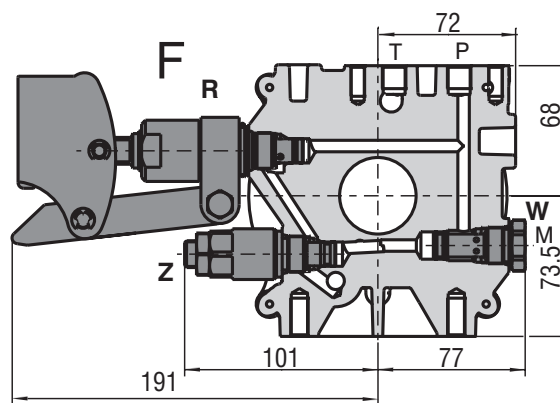
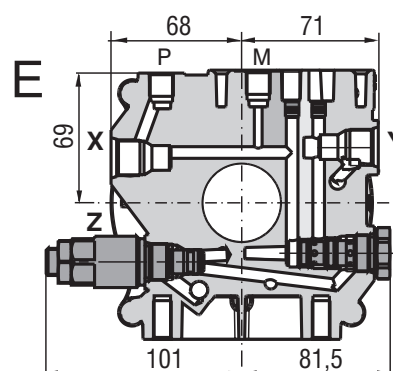
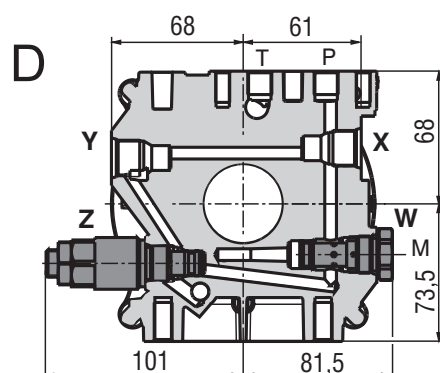
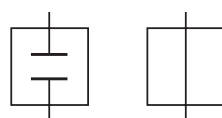
**Attention!** The DC motors must be loaded, so as to reduce the revolutions! Do not run the motors without pressure loading!

Voltage limits for the switch (between terminals 5 and 6) - min. 18 V for 24 V nominal  
 - min. 9 V for 12 V nominal

In the case of rotation speed control keep the speed limits of the gear pump - see Gear Pumps catalog.

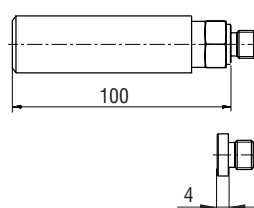
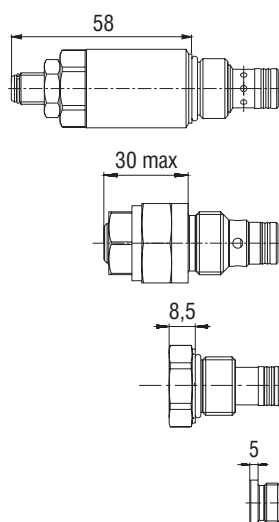
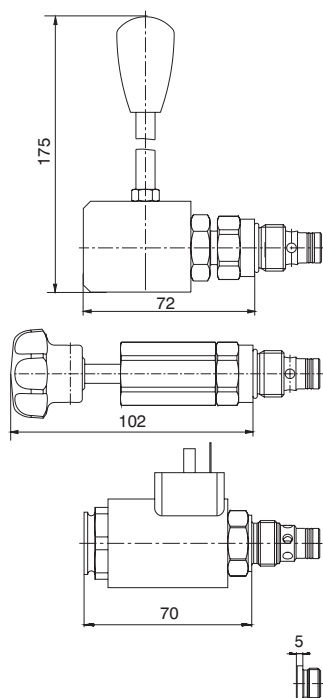


PLUG in the Cavity X:  
 15960800    17250900





# Valves for Central Manifolds

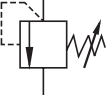


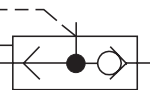
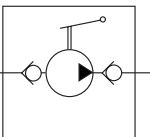



X	X	Functional symbol
4	SD1M-A2/L2S5-2*	
3	SD1M-A2/L2S5-1*	
2	SD3E-A2/*2O2*	
1	SD3E-A2/*2L2*	
0*	17250900	

Y	Type of the throttle valve	Functional symbol
2	SF22A-A2/H**	
**The size of the throttle valve corresponds regularly with the flow rate Q of the pump used. Other throttle valve size on request of the customer.		
1	ST21A-A2/L2O5	
0	15960800 for X=0	
0	17250900 for X≠0	

M	Type	Symbols
M*	Starting module	
0*	Plug VSTI G1/4	

\*Exact position of the starting module or plug ... ref. page 18

Z	W		L	R	U
Pressure relief valve directly operated	Check valve		Load shuttle	Hand pump	Unloading valve
SR1A-A2/S (HA 5063)	SC1F-A3 (HA 5016)	VJ01-06/SG-01	SH1F-A3 (HA 5029)	RC 3/4-16UNF	SD2E-A3/H (HA 4041)
	A, B, C, D, F	G (HA 5004)	E	F (HA 2020)	G
					

**Table of Dimensions** Dimensions of Electric Motors in millimeters

AC Electric Motor    one-phase and three-phase								
Code of EM	Power [kW]	Voltage [V]	Current [A]*	Speed [1/min]*	B max. [mm]	C max. [mm]	Ø D [mm]	
1	0.12	230	1.30	1300	248	139	120	
2	0.18	230	1.70	1350	248	139	120	
3	0.25	230	2.13	1390	261	151	141	
4	0.37	230	2.82	1410	261	151	141	
5	0.55	230	5.00	1370	305	157	159	
6	0.75	230	6.00	1410	305	157	159	
7	1.10	230	8.20	1410	314	165	174	
8	1.50	230	10.00	1410	339	165	174	
9	0.12	400	0.65	1320	248	101	120	
10	0.18	400	0.78	1320	248	101	120	
11	0.25	400	0.83	1395	261	105	140	
12	0.37	400	1.14	1400	261	105	140	
13	0.55	400	1.51	1390	305	127	159	
14	0.75	400	1.98	1400	305	127	159	
15	1.10	400	2.78	1410	314	139	174	
16	1.50	400	3.61	1410	339	139	174	
17	2.20	400	5.07	1425	390	148	196	
18	3.00	400	6.66	1425	390	148	196	
19	0.18	230	1.52	2840	248	139	120	
20	0.25	230	1.90	2840	248	139	120	
21	0.37	230	2.90	2780	261	151	141	
22	0.55	230	4.10	2820	261	151	141	
23	0.75	230	5.45	2820	305	157	159	
24	1.10	230	8.00	2845	305	157	159	
25	1.50	230	11.50	2855	314	165	174	
26	2.20	230	14.80	2810	339	165	174	
27	0.18	400	0.56	2745	248	101	120	
28	0.25	400	0.73	2740	248	105	120	
29	0.37	400	1.00	2790	261	105	140	
30	0.55	400	1.40	2820	261	105	140	
31	0.75	400	1.80	2850	305	127	159	
32	1.10	400	2.54	2850	305	127	159	
33	1.50	400	3.50	2855	314	139	174	
34	2.20	400	4.95	2855	339	139	174	
35	3.00	400	6.35	2860	390	148	196	
DC Electric Motor								
Code of EM	Power [kW]	Voltage [V]	Current [A]*	Speed [1/min]*	Load factor *	B [mm]	C [mm]	D [mm]
44	0.8	24	40	3300	S2 - 2.5 min   S3 - 7 % ED	143	97	80
45	0.7	12	135	3300	S2 - 2.5 min   S3 - 4 % ED	165	97	80
46	1.2	24	90	3000	S2 - 1.2 min   S3 - 4 % ED	172	100	80
51	1.5	12	220	2600	S2 - 2 min   S3 - 7.5 % ED	179	114	117
52	2.0	24	140	2600	S2 - 1.2 min   S3 - 4.5 % ED	179	114	117
63	3.0	24	200	1700	S2 - 16 min   S3 - 10 % ED	336	134	162

\*Valid for rated power values

#### Load factor

**Duty S1 (min)** – Intended for use under continuous duty cycle conditions (load factor S1) for various press-related applications and those which involve dynamic strokes, with recommendation to consult the conditions of use with manufacturer.

#### **Duty S2 (min) - short-time operation**

The motor operates with constant load for a definite time until the motor reaches the maximum permissible temperature T max. It is followed by an idle period long enough to reach equality between motor temperature and ambient temperature.

#### **Duty S3 (% ED) - periodic operation**

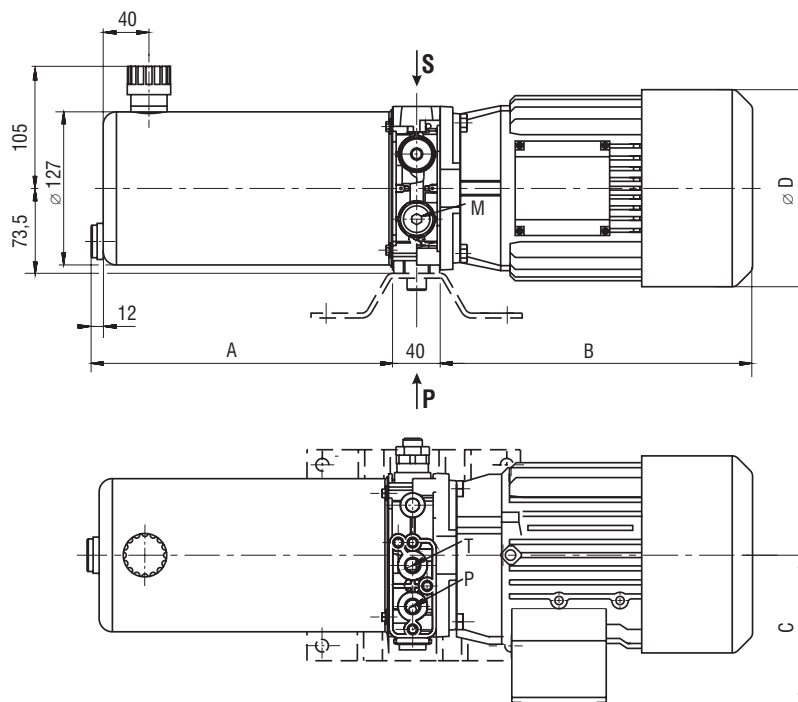
The operation of the motor is a continuous sequence of identical cycles, each compound from a load period and an idle period. During the load period the motor can reach the maximum permissible temperature. S3 value shows, in percentage, the length of the load period with respect to the total cycle-load period more idle period. The S3 curve quoted in the performance specifications is referred to a lengths cycle of 10 minutes.

# Tank Dimensions

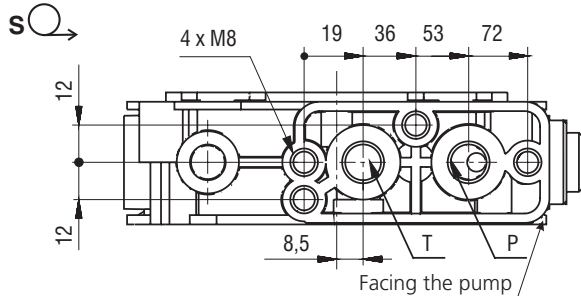
Dimensions in millimeters

## Power pack with cylindrical steel tank, one-phase and three-phase motors

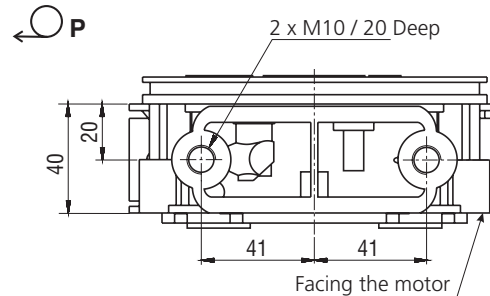
- mounting position horizontal



Connecting Block



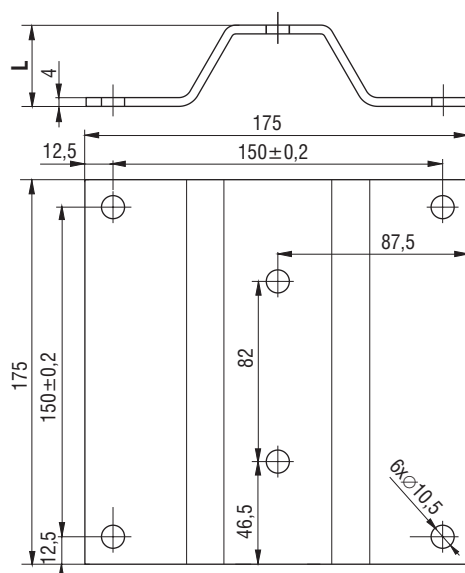
Connecting Holder



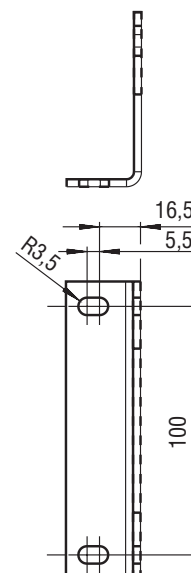
Code of the tank	Tank capacity [l]	Working volume [l]	A [mm]
10 (steel)	1.5	0.8	152
11 (steel)	2	1.1	252
12 (steel)	3	1.6	332
13 (steel)	4	2	412

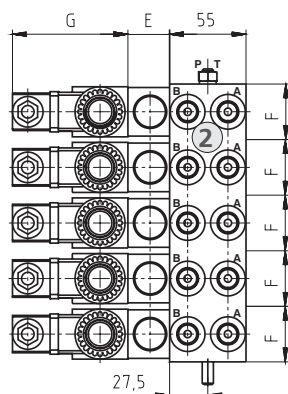
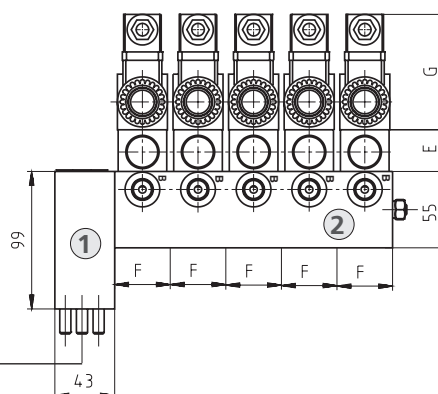
Dimensions B, C, Ø D see Table of Dimensions - page 10

Power pack foot bracket	
Typ	Dimensions L [mm]
F	37
K	62

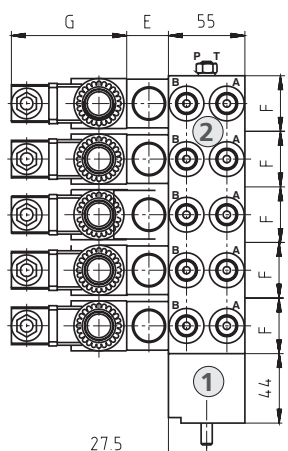
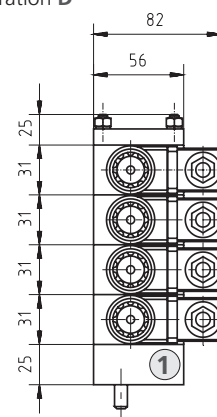


**Tank Support**  
code 64-70 with holder  
of power pack  
configuration F

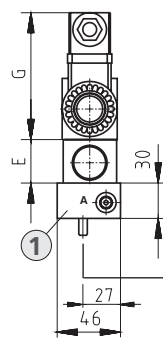
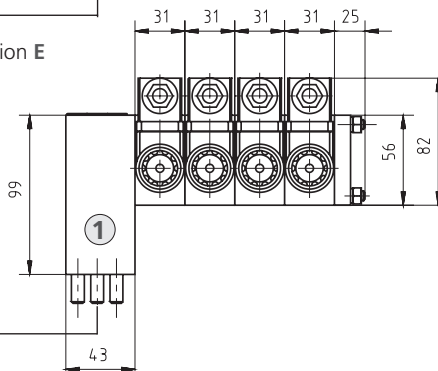


**Base Plates and Parallel Plates**
**Configuration A**  
**Size 04, 06**

**Configuration B**  
**Size 04, 06**


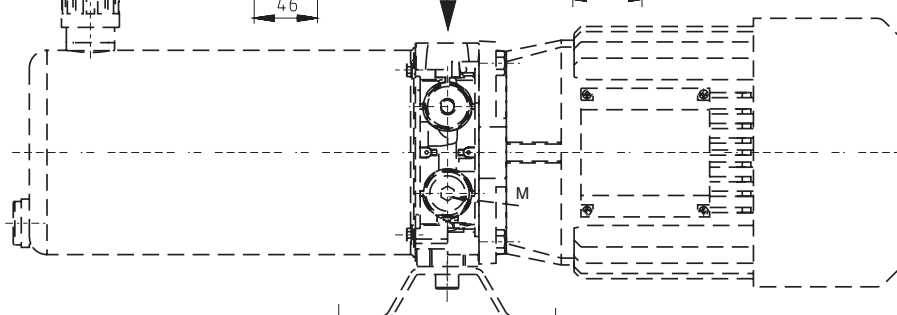
- 1 Base Plate
- 2 Parallel Plate

**Configuration C**  
**Size 04, 06**

**Configuration D**  
**Size 03**


- 1 Base Plate
- 2 Parallel Plate

**Configuration F**  
**Size 04, 06**

**Configuration E**  
**Size 03**


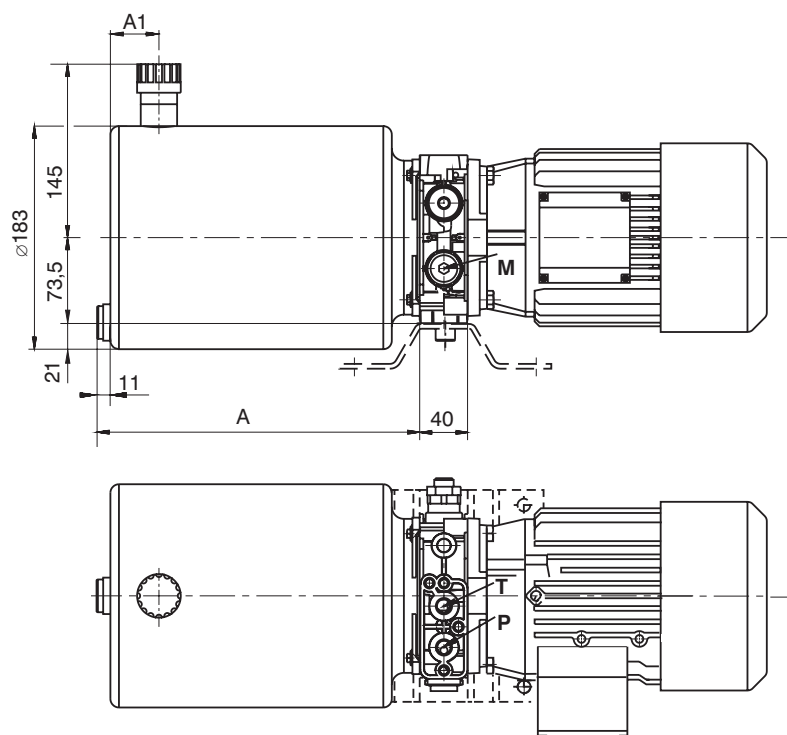
- 1 Base Plate



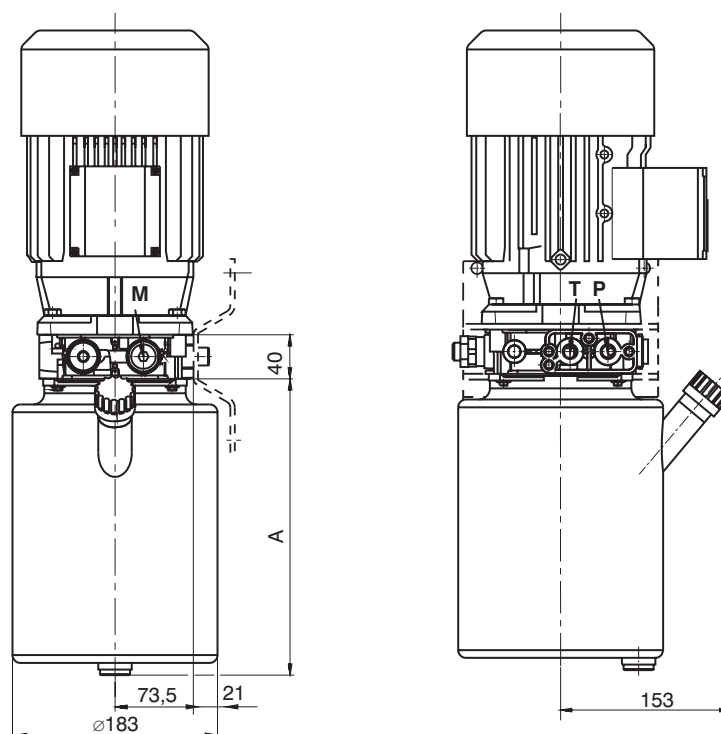
Thread of the connecting ports A, B, P, T, M - G1/4 standard (A, B - G3/8 option)

Dimension	E [mm]						F [mm]	G [mm]
	Pressure switch	Reducing valves	Pressure relief valves	Pilot operated check valves cartridge	Check valves	Flow valves		
Size 04	35	30	35	30	30	30	40	79
Size 06	43	45	40	40	31.4	40	50	92

**Tank Dimensions** Dimensions in millimeters

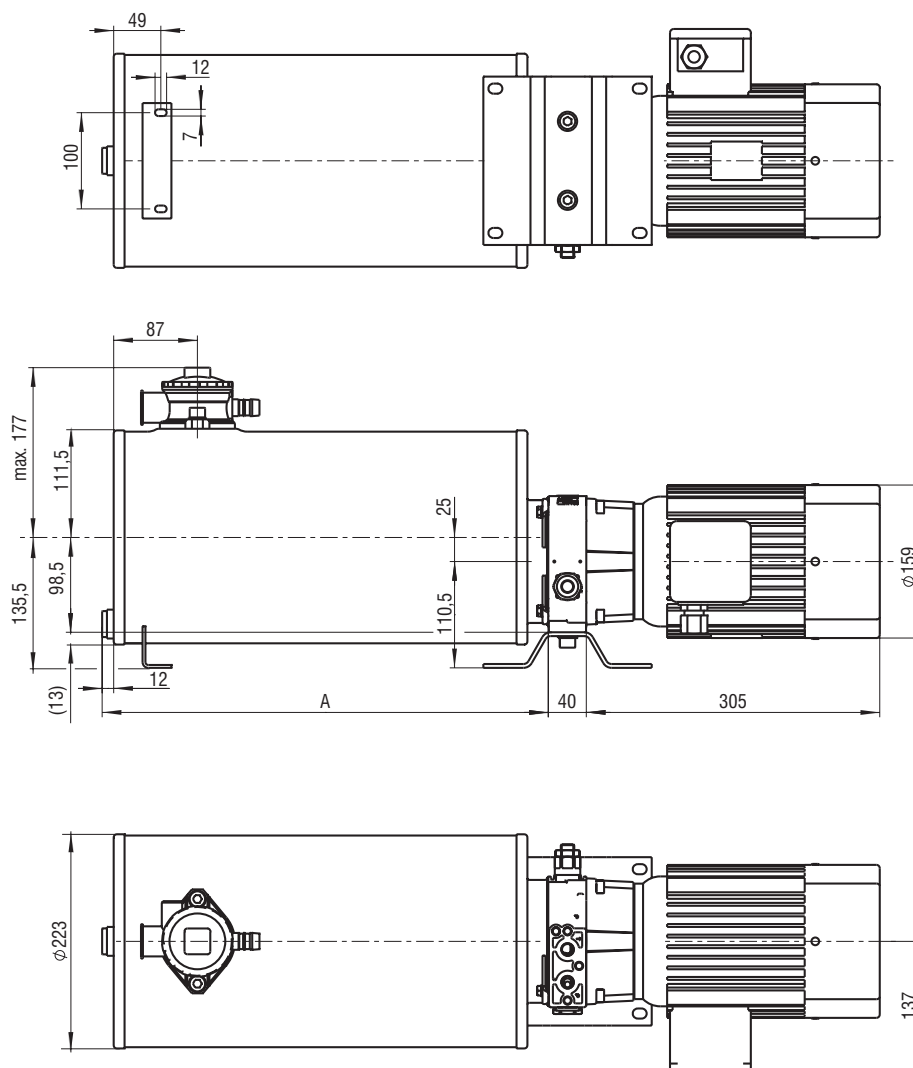
**Power pack with cylindrical steel tank - mounting position horizontal**


Code of the tank	Tank capacity [l]	Working volume [l]	A [mm]	A1 [mm]
20 (steel)	6	3.7	269	40
22 (steel)	8	4.9	349	155
24 (steel)	10	6.1	429	195

**Power pack with cylindrical steel tank - mounting position vertical**


Code of the tank	Tank capacity [l]	Working volume [l]	A [mm]
51 (steel)	6	3.4	269
53 (steel)	8	5.4	349
55 (steel)	10	7.4	429

**Tank Dimensions** Dimensions in millimeters

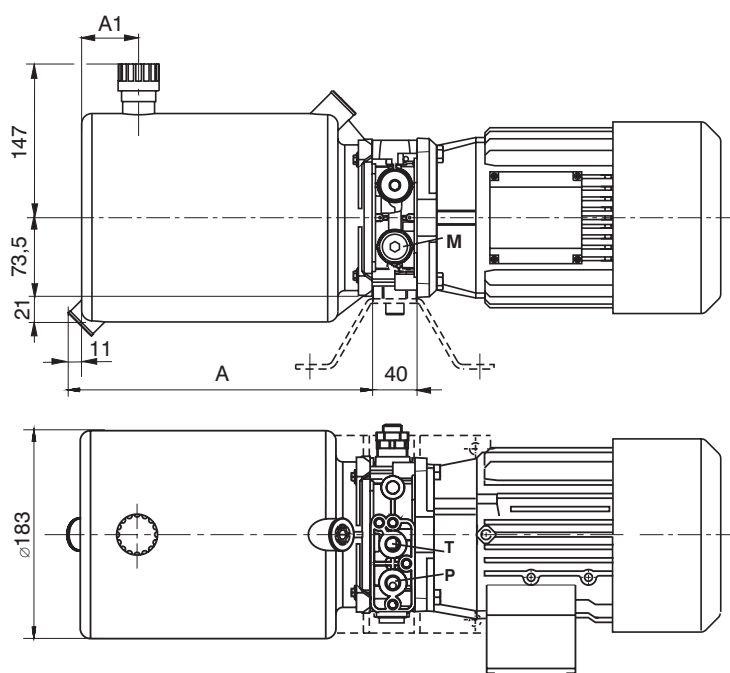
**Power pack with cylindrical steel tank - mounting position horizontal**


Code of the tank	Tank capacity [l]	Working volume [l]	A [mm]	B [mm]
30 (steel)	9	7.5	304	188
31 (steel)	15	12	464	348
32 (steel)	25	20	724	608

# Tank Dimensions Dimensions in millimeters

## Power pack with cylindrical plastic tank - mounting position horizontal

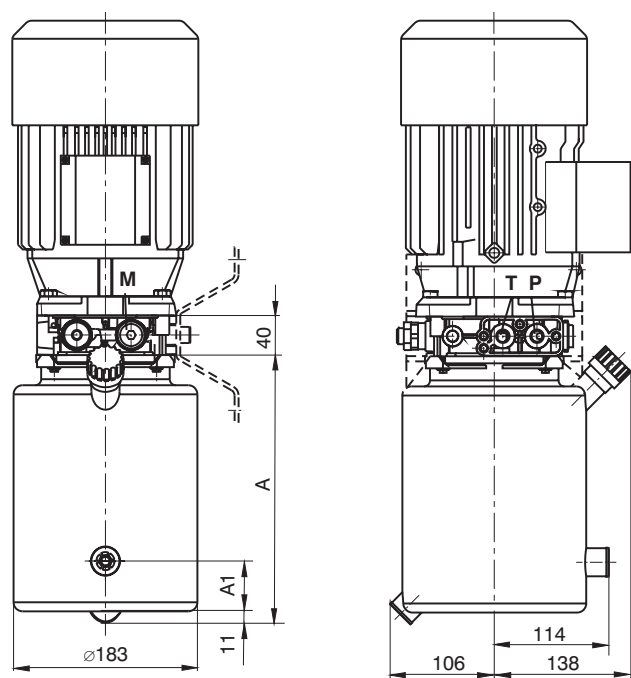
Plastic tanks are not UV stable. Place the unit in the shade for outdoor application.



Code of the tank	Tank capacity [l]	Working volume [l]	A [mm]	A1 [mm]
40 (plastic)	6	3.7	280	61
42 (plastic)	8	4.9	360	121
44 (plastic)	10	6.1	440	201

## Power pack with cylindrical plastic tank - mounting position vertical

Plastic tanks are not UV stable. Place the unit in the shade for outdoor application.

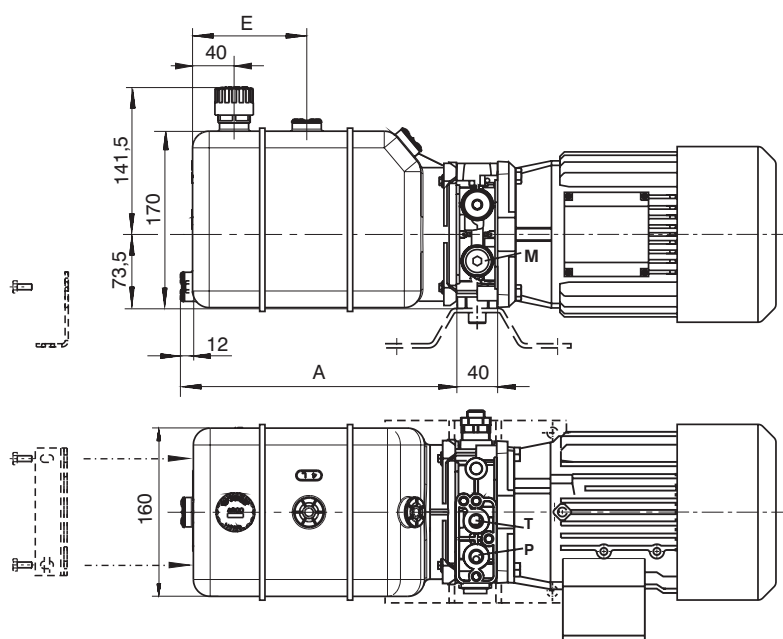


Code of the tank	Tank capacity [l]	Working volume [l]	A [mm]	A1 [mm]
41 (plastic)	6	3.7	280	61
43 (plastic)	8	4.9	360	121
45 (plastic)	10	6.1	440	201

# Tank Dimensions Dimensions in millimeters

## Power pack with square plastic tank - mounting position horizontal

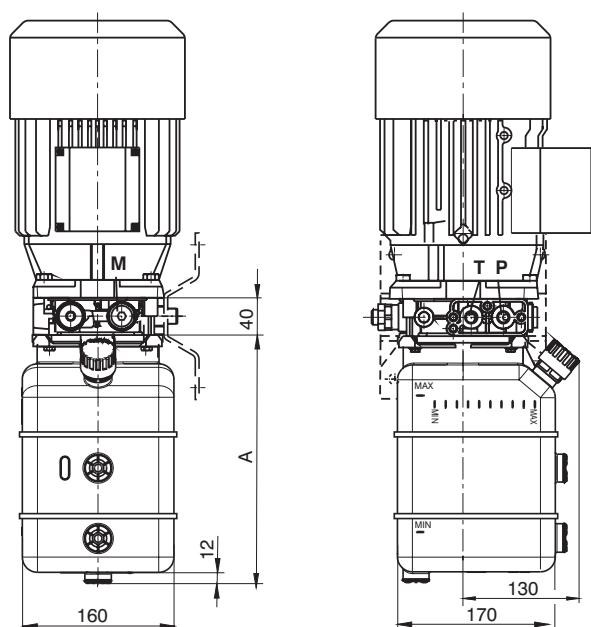
Plastic tanks are not UV stable. Place the unit in the shade for outdoor application.



Code of the tank	Tank capacity [l]	Working volume [l]	A [mm]	E [mm]
62 (plastic)	2	1.7	178	-
64 (plastic)	4	3.0	270	120
66 (plastic)	6	4.5	359	165
68 (plastic)	8	6.0	449	208
70 (plastic)	10	7.5	543	208

## Power pack with square plastic tank - mounting position vertical

Plastic tanks are not UV stable. Place the unit in the shade for outdoor application.



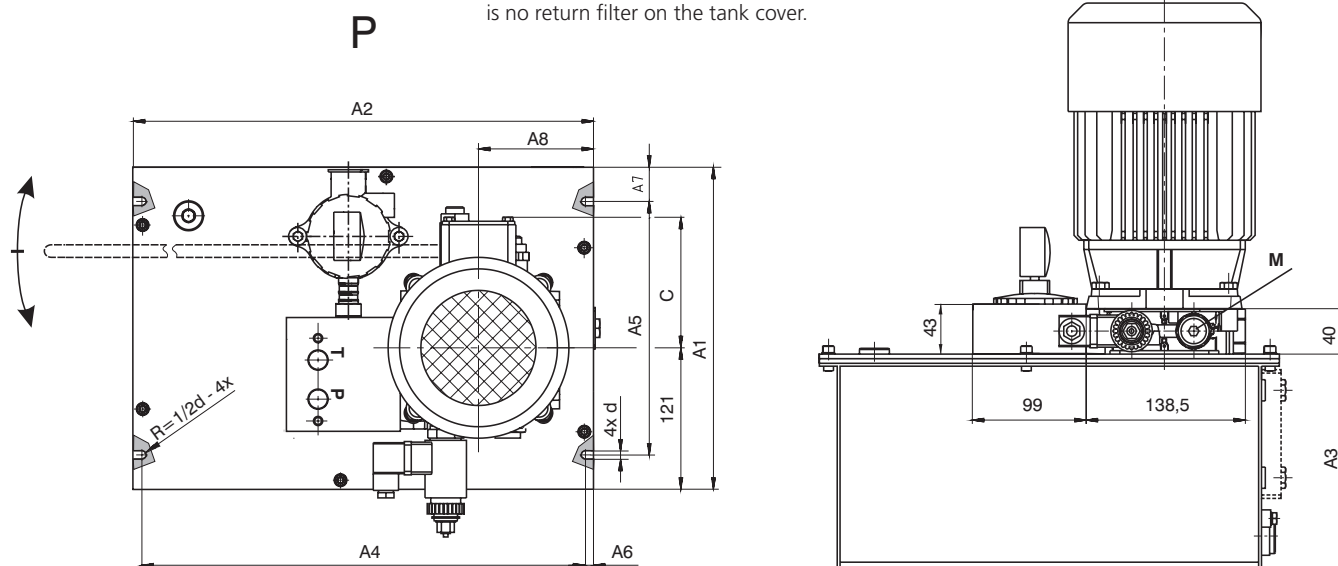
Code of the tank	Tank capacity [l]	Working volume [l]	A [mm]
61 (plastic)	2	1.3	178
63 (plastic)	4	3.5	270
65 (plastic)	6	5.5	359
67 (plastic)	8	7.5	449
69 (plastic)	10	9.5	543



**Tank Dimensions** Dimensions in millimeters

**Power pack with square steel tank - one-phase and three-phase motors with return line filter**
**Configuration B, E**

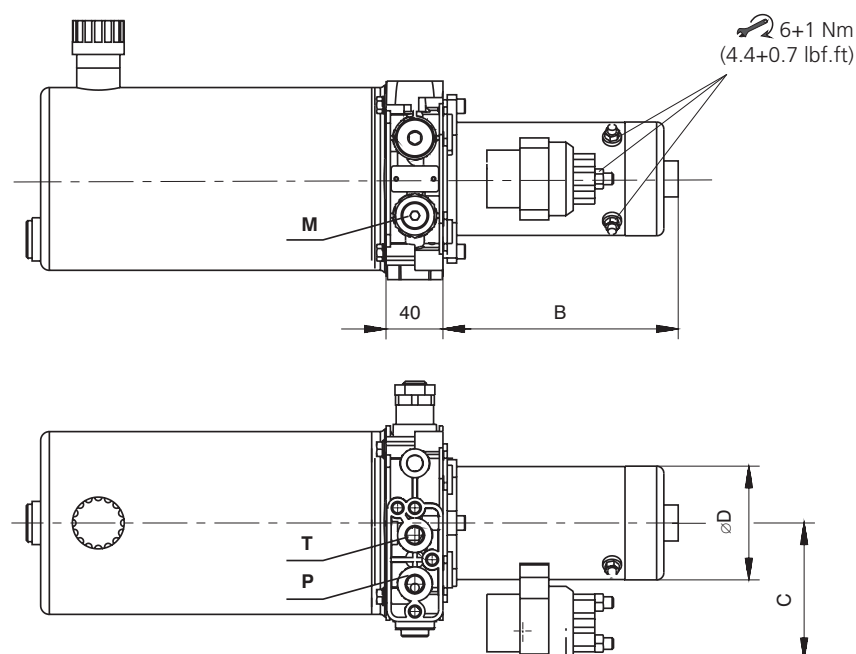
There is limited possibility to use hand pump together with the tanks 56-60.  
 It is possible to use it only in this position if here is no return filter on the tank cover.



Code of the tank	Tank capacity [l]	Working volume [l]	A1	A2	A3	A4	A5	A6	A7	A8	d
56 (steel)	8	4.5	280	340	165	319	220	10.5	30	100	9
57 (steel)	10	8	280	400	188	388	220	6	30	100	9
58 (steel)	20	16	280	400	276	388	220	6	30	100	9
59 (steel)	30	24	320	500	287	479	260	9.5	30	132	11
60 (steel)	40	34	320	500	366	479	260	9.5	30	132	11

Dimensions C see Table of Dimensions - page 10

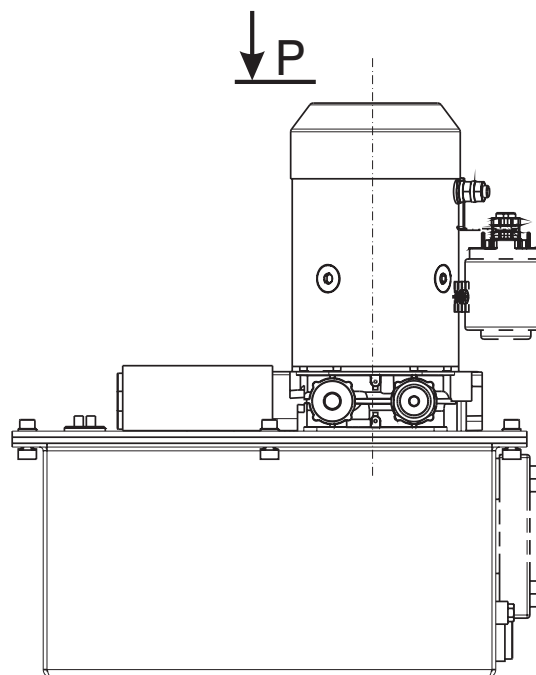
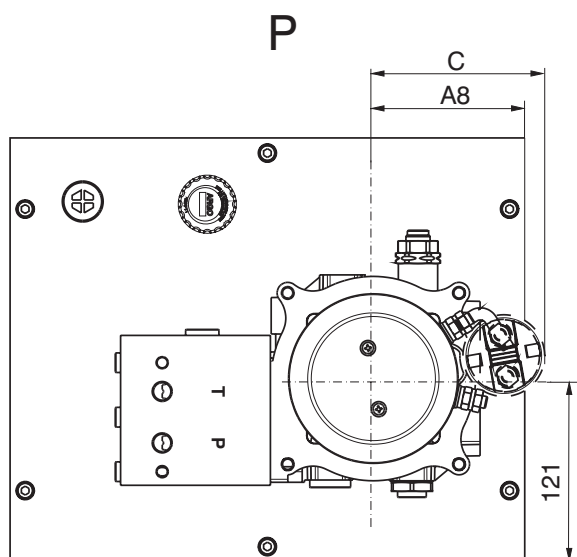
**Power Pack** Dimensions in millimeters

**Power pack with cylindrical steel tank - with DC electric motor without return line filter**


**Power Pack** Dimensions in millimeters

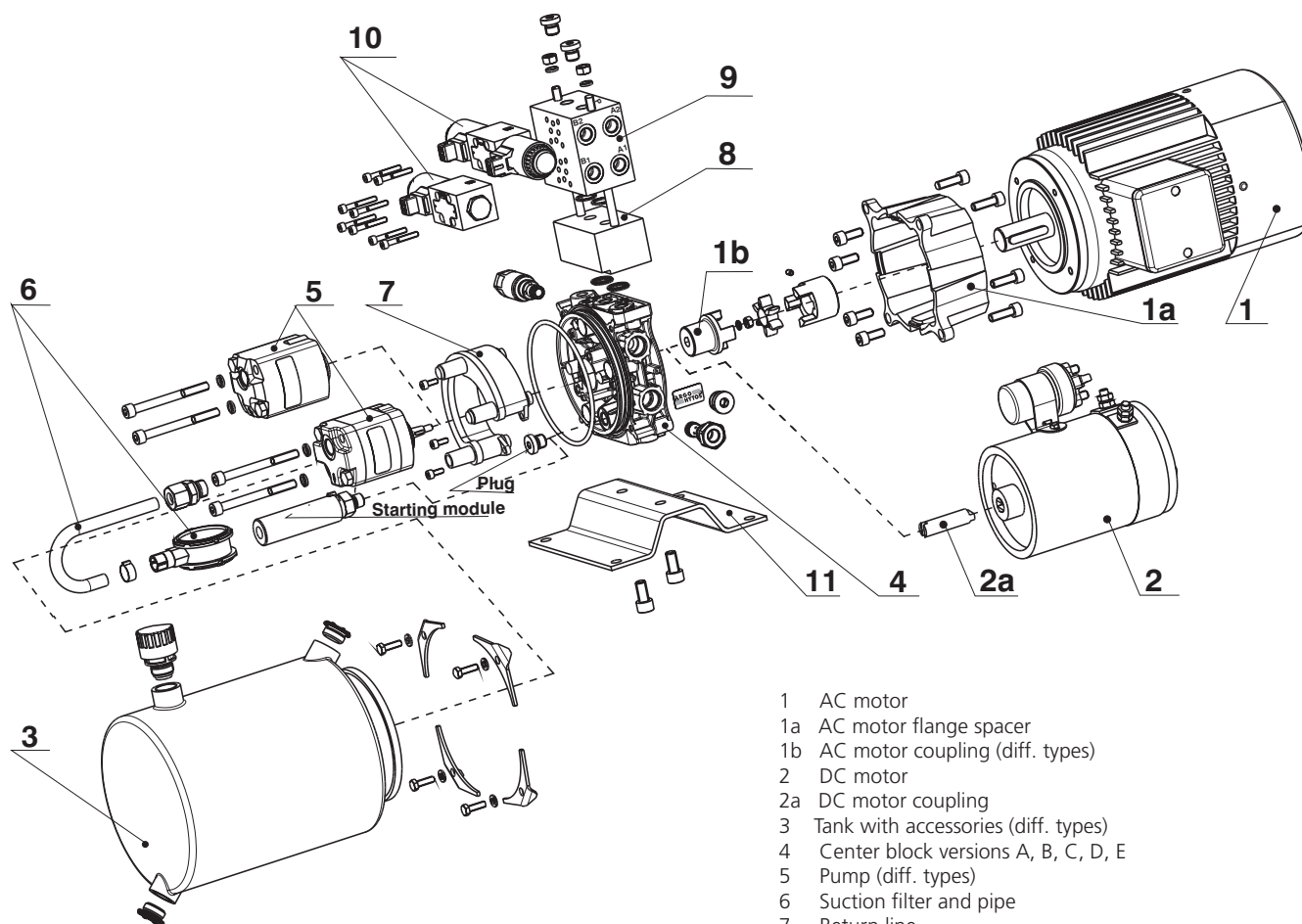
**Power pack with square steel tank - with DC electric motor without return line filter**

Optional stacking assembly, versions B, E ref. page 13.



Dimensions B, C, Ø D see Table of Dimensions - page 10

Dimensions A8 see Table of Dimensions - page 17

**SMA05 - Illustration Figure**


- 1 AC motor
- 1a AC motor flange spacer
- 1b AC motor coupling (diff. types)
- 2 DC motor
- 2a DC motor coupling
- 3 Tank with accessories (diff. types)
- 4 Center block versions A, B, C, D, E
- 5 Pump (diff. types)
- 6 Suction filter and pipe
- 7 Return line
- 8 Base-plate for different types of stacking assembly
- 9 Cover plate for horizontal stacking
- 10 Stacking assembly valves
- 11 Foot bracket