ARGO HYTOS

Hydraulic Power Units

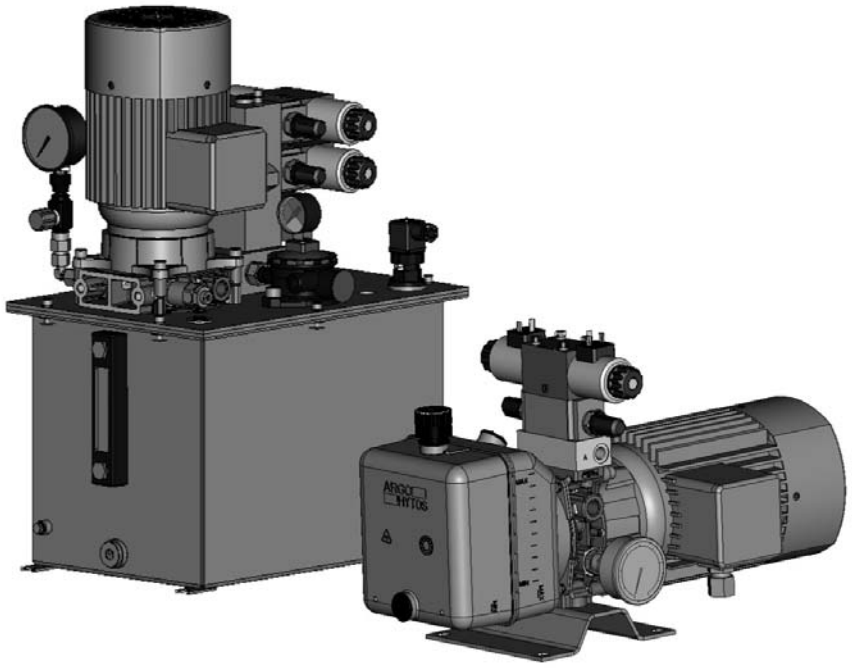
SMA 05

$p_{max.}$ up to 250 bar • $Q_{max.}$ up to 17 l/min

HA 7212
11/2013

Replaces
HA 7212 12/2012

- ❑ Compact power packs for the use in lifting platforms, elevating tables, ramps, presses, machine tools, mobile applications and others
- ❑ 7 basic hydraulic circuits in the manifold
- ❑ Possibility of building up an additional circuit in the form of vertical or horizontal stacking assembly
- ❑ Tank capacities from 1.5 to 40 l
- ❑ Low noise level



Functional Description

Compact hydraulic power packs are designed to fit into small envelope dimensions 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 hydraulic circuits can be accomplished in sizes 03, 04 and 06. The size 03 is in a form of sectional directional valves.

The mounting position of the power pack is horizontal or vertical - see the Power Pack Dimensions on pages 12 to 19. All ports have G 1/4 internal threads (the thread G3/8 is to agreed with manufacturer).
With the standard model the connecting ports A, B of the components of the vertical stacking assembly are oriented onto one side. Orientation of ports A, B each onto another side is to be agreed with the manufacturer.
The basic combinations of electric motors and pumps, as well as their code designations, are shown in tables 1-5.

Information regarding the basic power pack surface treatment is on page 4.

Ordering Code — Single Pump

SMA 05- □ / □ . □ - □ - □ □ . □ - □ □ □ / □

Compact Power Pack

Pump displacement in cm³

Series X	Series P
0,32 **03**	0,8 **08**
0,40 **04**	1,2 **12**
0,50 **05**	1,6 **16**
0,63 **06**	2,1 **21**
	2,5 **25**
	3,3 **33**
	3,6 **36**
	4,4 **44**
	4,8 **48**
	5,8 **58**
	6,2 **62**
	7,9 **79**

Code of the electric motor

(see tables 1-5)

DC electric motor
with switch **R**

Single-phase electric motor
without starting module **0**
with starting module **M**

Three-phase electric motor **0**

Type of hydraulic circuit

(see table on pages 9)

Code of the Tank

(see pages 12, 14-18)

Type of filter used

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

* only for tank codes 56-60, 30-32

Foot bracket

0	without foot bracket
F	low foot bracket
K	high holder (only for tank codes 40-45)

Type of stacking assembly

0	without stacking assembly
A	Configuration A
B	Configuration B
C	Configuration C
D	Configuration D
E	Configuration E
F	Configuration F

(see page 13)

Number of add-on units

0	without stacking assembly
1	Section 1
2	Sections 2
3	Sections 3
4	Sections 4
5	Sections 5

(see page 13)

Nominal size of stacking assembly elements

0	without stacking assembly
3	Size 03
4	Size 04
6	Size 06

(see page 13)

Solenoid voltage

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

Ordering Code — Double Pump

SMA 05- □ / □ . **0** - **G** - □ □ . □ - □ □ □ / □

Compact Power Pack

Pump displacement in cm³

Series P

4812	4,8 + 1,2 cm³
4816	4,8 + 1,6 cm³
4821	4,8 + 2,1 cm³
5812	5,8 + 1,2 cm³
5816	5,8 + 1,6 cm³
5821	5,8 + 2,1 cm³
6212	6,2 + 1,2 cm³
6216	6,2 + 1,6 cm³
6221	6,2 + 2,1 cm³
7912	7,9 + 1,2 cm³
7916	7,9 + 1,6 cm³
7921	7,9 + 2,1 cm³

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

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

Solenoid voltage

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

Nominal size of stacking assembly elements

0	without stacking assembly
3	Size 03
4	Size 04
6	Size 06

(see page 13)

Number of add-on units

0	without stacking assembly
1	Section 1
2	Sections 2
3	Sections 3
4	Sections 4
5	Sections 5

(see page 13)

Type of stacking assembly

0	without stacking assembly
A	Configuration A
B	Configuration B
C	Configuration C
D	Configuration D
E	Configuration E
F	Configuration F

(see page 13)

Foot bracket

0	without foot bracket
F	low foot bracket
K	high holder (only for tank codes 40-45)

Technical Data

Flow rate	l/min	see tables 1, 2, 3, 4 and 5		
Working pressure	bar	see tables 1, 2, 3, 4 and 5		
Tank capacity	l	1,5-40		
Typ of pump		external gear pump, left-hand rotation		
Nominal pressure / max. pressure	bar	see tables 1, 2, 3 and 4		
Power of electric motor		see tables 1, 2, 3, 4 and 5		
Type of electric motor		single phase	three phase	DC
Voltage of the electric motor	V	230	230/400	12/24
Frequency	Hz	50	50	-
Protection class		IP 55/F	IP 55/F	IP 43/F
Voltage of directional valves	V	12DC, 24DC, 205DC, 230AC		
Hydraulic fluid		Hydraulic oils (HL, HLP) to DIN 51524		
Oil conductivity	pS/m	≥ 500 on 20°C		
Viscosity range	mm^2/s	20 ... 100		
Max. degree of fluid contamination		Class 21/18/15 according to ISO 4406 (1999)		
Filtration (suction/return)	μm	60/10		
Fluid temperature range	°C	0 ...+70		
Fluid temperature range for a short term (10 minute max.)	°C	-20 minimum		+80 maximum
Ambient temperature range	°C	-25 ...+50		
Thread of the connectiong ports P, T, A, B, M		G1/4 (A, B G3/8 - per request)		
Working position		horizontal, vertical		

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 to manufacturer standard		

For other surface treatment consult factory.

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

Code of the three-phase motors			Code of the pump															
			03 X-...		**04** X-...		**05** X-...		**06** X-...		**08** P2-...		**12** P2-...		**16** P2-...		**21** P2-...	
$p_{max.}$ ** [bar]			**240**								**250**							
400V	n[1/min]	P[kW]	Q/p_n* [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. 1b Single Pumps AC Electric Motors - three-phase

Code of the three-phase motors			Code of the pump															
			25 P2-...		**33** P2-...		**36** P2-...		**44** P2-...		**48** P2-...		**58** P2-...		**62** P2-...		**79** P2-...	
$p_{max.}$ ** [bar]			**250**										**200**				**160**	
400V	n[1/min]	P[kW]	Q/p_n* [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	114	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_n- nominal pressure = the highest working pressure allowed without time restriction

** $p_{max.}$ - maximum pressure = maximum pressure allowed for a short time - max. 20s

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

Code of the single-phase motors			Code of the pump															
			03 X-...		**04** X-...		**05** X-...		**06** X-...		**08** P2-...		**12** P2-...		**16** P2-...		**21** P2-...	
$p_{max.}$ ** [bar]			**240**								**250**							
230V	n[1/min]	P[kW]	Q/p_n* [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 motors			Code of the pump															
			25 P2-...		**33** P2-...		**36** P2-...		**44** P2-...		**48** P2-...		**58** P2-...		**62** P2-...		**79** P2-...	
$p_{max.}$ ** [bar]			**250**										**200**				**160**	
230V	n[1/min]	P[kW]	Q/p_n* [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 pressure = maximum pressure allowed for a short time - max. 20s

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

Pump code P1+P2		4812		4816		4821		5812		5816		5821	
P2 $p_{max.}$ [bar]		250 for short period only - max. 20 sec											
P1 $p_{max.}$ [bar]		184		173		160		166		157		147	
3 phase E-motor		Q1	$p1_n$	Q1, Q2 [l/min] $p1_n$, $p2_n$ [bar] P1 $p_{max.}$ is limited due to torque of the pump shaft									
code	P[kW]	Q2	$p2_n$										
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
		6,1	150	6,1	140	6,1	130	7,4	130	7,4	120	7,4	110
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 400V - three-phase

Pump code P1+P2		6212		6216		6221		7912		7916		7921	
P2 $p_{max.}$ [bar]		250 for short period only - max. 20 sec											
P1 $p_{max.}$ [bar]		151		143		134		139		133		127	
3 phase E-motor		Q1	$p1_n$	Q1, Q2 [l/min] $p1_n$, $p2_n$ [bar] P1 $p_{max.}$ is limited due to torque of the pump shaft									
code	P[kW]	Q2	$p2_n$										
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 230V - single-phase

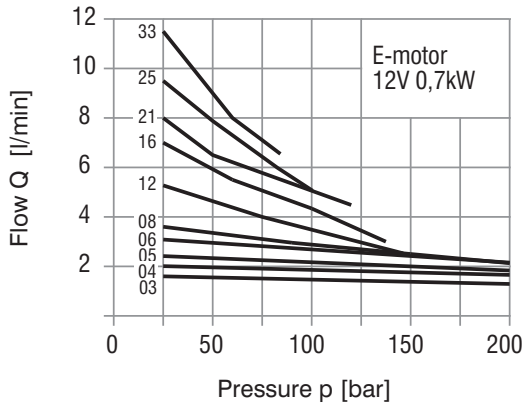
Pump code P1+P2		4812		4816		4821		5812		5816		5821	
P2 $p_{max.}$ [bar]		250 for short period only - max. 20 sec											
P1 $p_{max.}$ [bar]		184		173		160		166		157		147	
1 phase E-motor		Q1	$p1_n$	Q1, Q2 [l/min] $p1_n$, $p2_n$ [bar] P1 $p_{max.}$ is limited due to torque of the pump shaft									
code	P[kW]	Q2	$p2_n$										
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 230V - single-phase

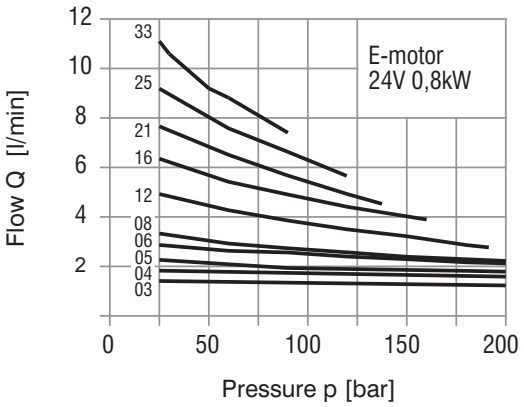
Pump code P1+P2		4812		4816		4821		5812		5816		5821	
P2 $p_{max.}$ [bar]		250 for short period only - max. 20 sec											
P1 $p_{max.}$ [bar]		184		173		160		166		157		147	
1 phase E-motor		Q1	$p1_n$	Q1, Q2 [l/min] $p1_n$, $p2_n$ [bar] P1 $p_{max.}$ is limited due to torque of the pump shaft									
code	P[kW]	Q2	$p2_n$										
5	0,55	6,1	25	6,1	20								
		1,4	120	1,9	90								
6	0,75	6,1	35	6,1	35	6,1	30	7,4	30				
		1,4	180	1,9	135	2,6	105	1,4	180				
7	1,1	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
8	1,5	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

Characteristics pQ DC Electric Motors + Pumps

Code 45



Code 44



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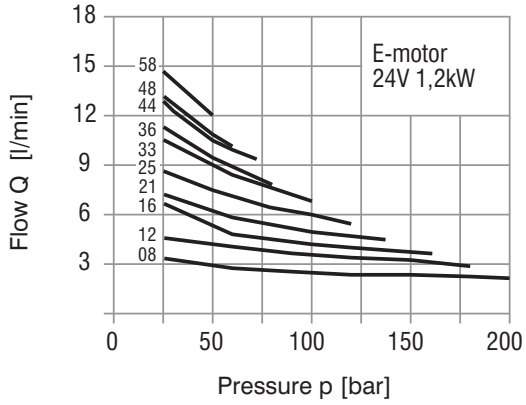
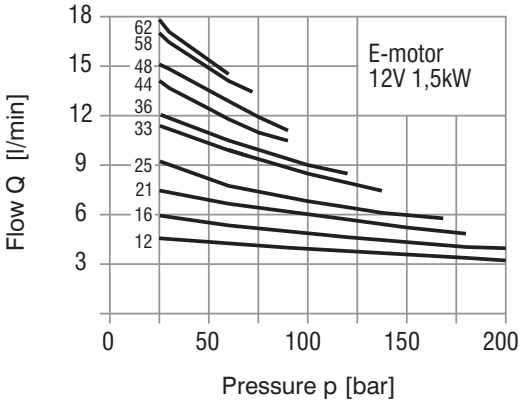


Code 51



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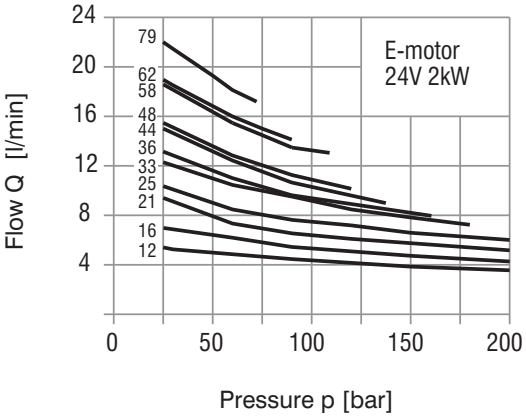

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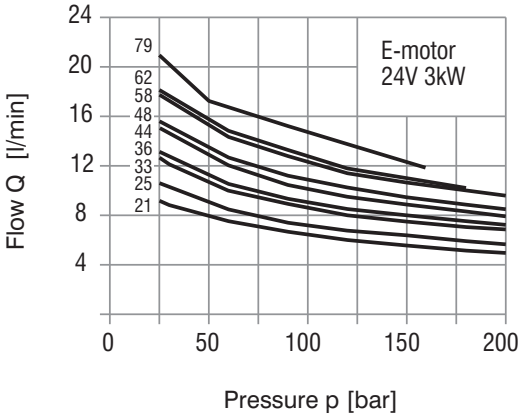
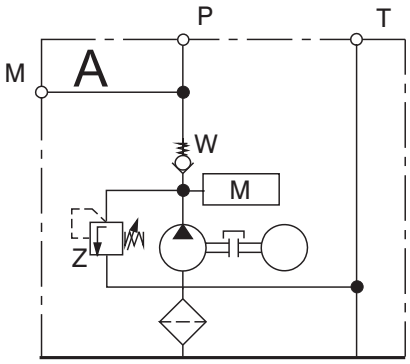


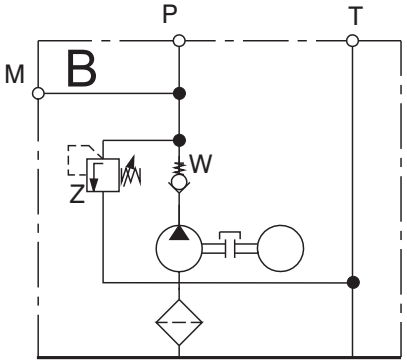
Tab. 5 DC Electric Motors

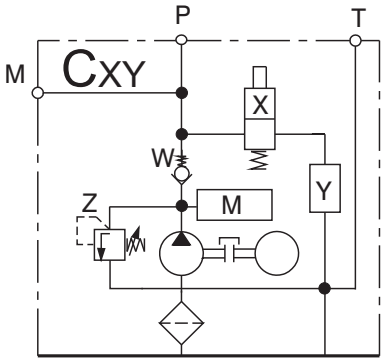
12V	24V	kW
Code of the electric motor		
45	/	0,7
/	**44**	0,8
/	**46**	1,2
51	/	1,5
/	**52**	2,0
/	**63**	3,0

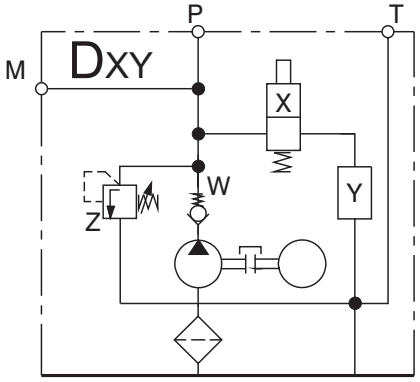
Attention! The DC motors must be loaded, so as to reduce the revolutions! Do not run the motors without pressure loading!

Basic Hydraulic Circuit Diagrams - Central Manifolds

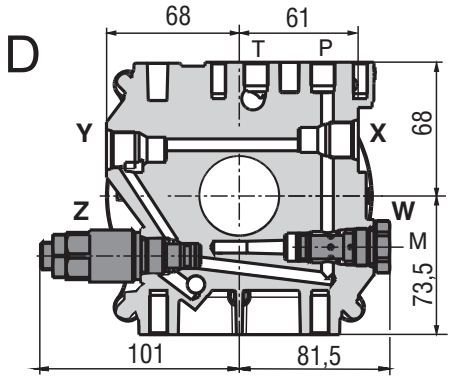


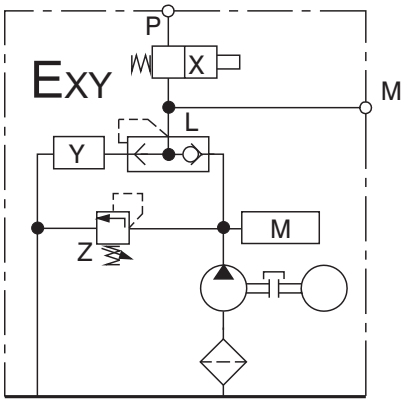


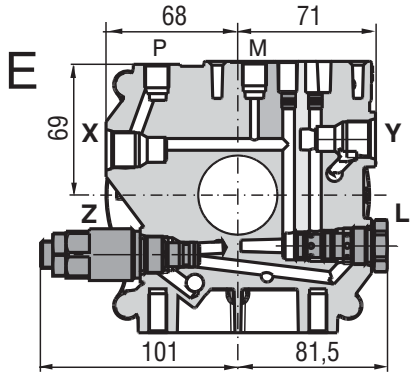


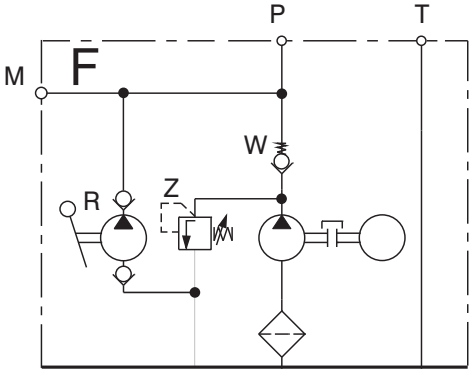


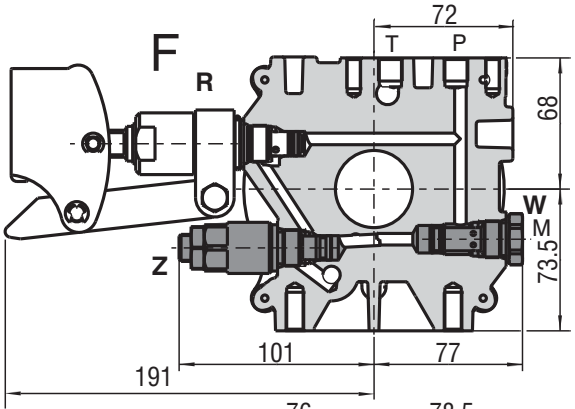
Same dimensions for blocks of type **A, B, C, D**

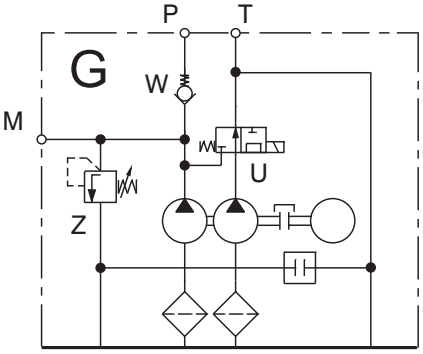


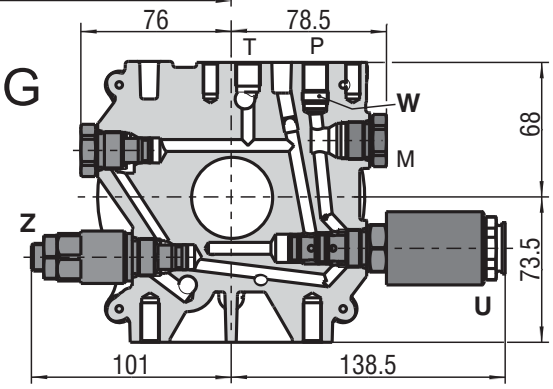




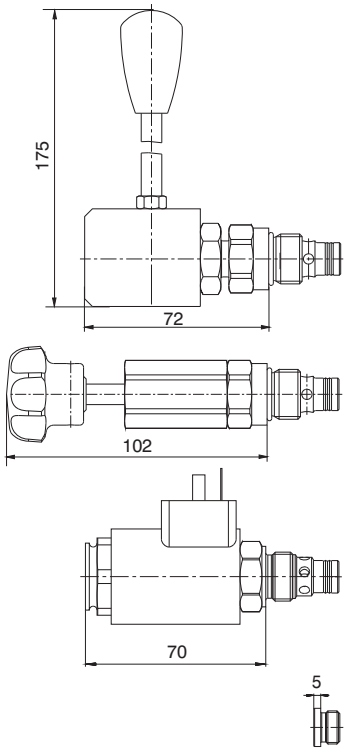




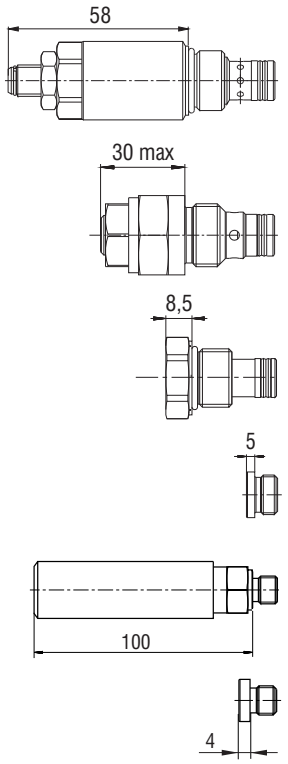




Valves for Central Manifolds



X	Type of the seat valve	Functional symbol
5	SD1M-A2/SL3 + lever with micro switch	
4	SD1M-A2/SL2 + lever without micro switch	
3	SD1M-A2/SL1	
2	SD3E-A2/H2O2	
1	SD3E-A2/H2L2	
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/L20S	
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 20.

Z	W		L	R	U
Pressure Relief Valve Directly Operated	**Check Valve**		**Logical Valve**	**Hand Pump**	**Unloading Valve**
SR1A-A2/S	SC1F-A3	VJ01-06/SG-01	SC3S1H-A3/L005	RC 3/4-16UNF	SD2E-A3/H
Pressure see HA 5063	A, B, C, D, F	G	E	F	G

Table of Dimensions

Dimensions of Electric Motors in millimeters

AC Electric Motor Single-phase and Three-phase

Code of EM	Power [kW]	Voltage [V]	Current [A]**	Speed [1/min]**	B max. [mm]	C max. [mm]	∅ 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]*	A [mm]
44	0,8	24	62	3300	S2 - 2,5 min S3 - 7% ED	143	96	76	62
45	0,7	12	105	3300	S2 - 2,5 min S3 - 4% ED	165	95	80	105
46	1,2	24	120	3000	S2 - 1,2 min S3 - 4% ED	165	95	80	120
51	1,5	12	250	2600	S2 - 2 min S3 -7,5% ED	179	100	117	250
52	2,0	24	150	2600	S2 - 1,2 min S3 -4,5% ED	179	100	117	150
63	3,0	24	180	1700	S2 - 16 min S3 - 10% ED	336	121	162	180

*Dimension B, C, D can be little different according to supplier´s changes. ** 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, in order to reach the maximum permissible temperature Tmax., later on an idle period long enough to reach the equality between motor temperature and ambient temperature.

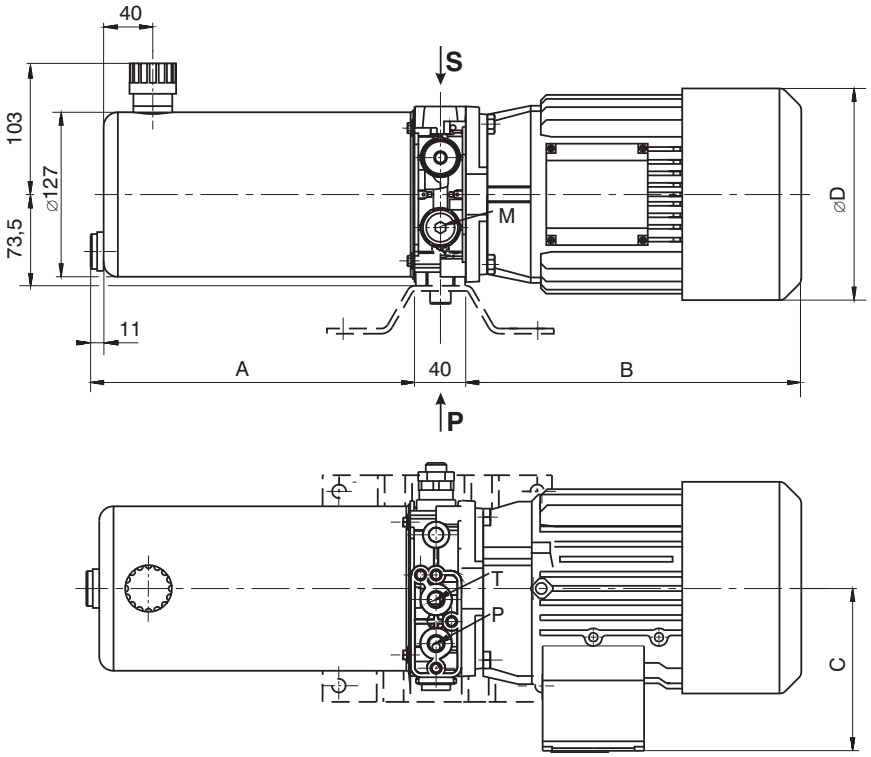
Duty S3 (%ED) - periodic operation

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

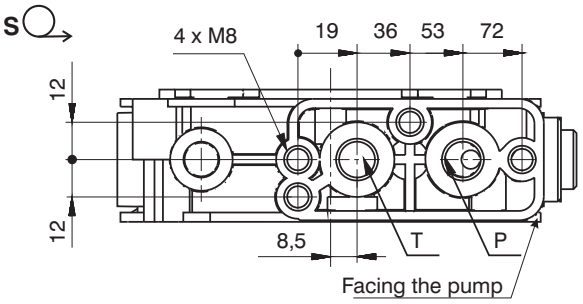
Tank Dimensions

Dimensions in millimeters

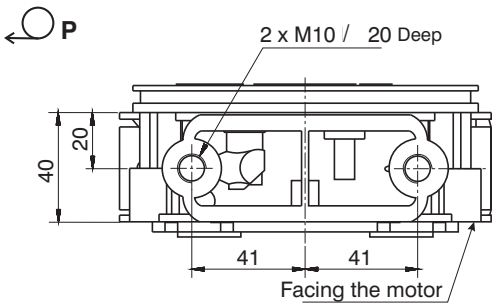
Power pack with cylindrical steel tank, single-phase and three-phase motors
- mounting position horizontal



Connecting Block

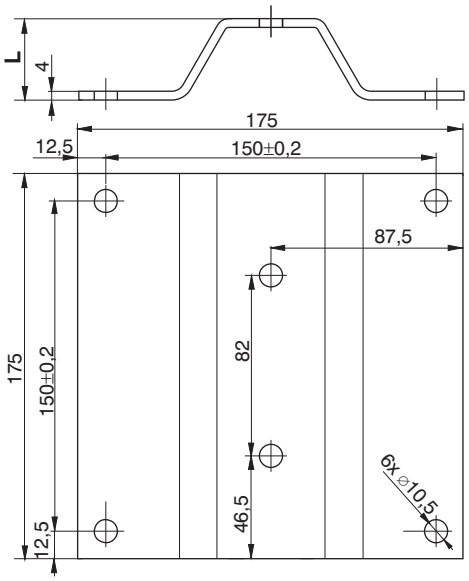


Connecting Holder



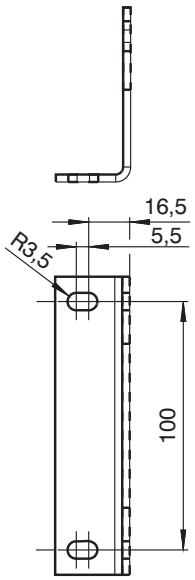
Dimensions B, C, ∅D see Table of Dimensions page 11

Code of the tank	Capacity in [l]	Working volume [l]	A [mm]
10 (steel)	1,5	0,8	151
11 (steel)	2	1,1	251
12 (steel)	3	1,6	331
13 (steel)	4	2	411



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

Tank Support
code 64-70 with holder of Power Pack Configuration F

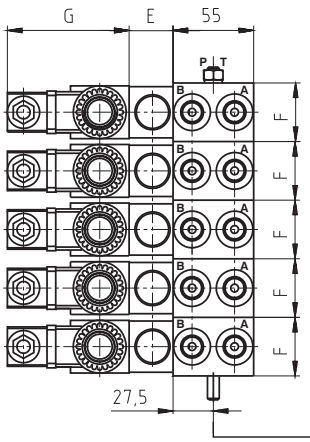


Valve Dimensions

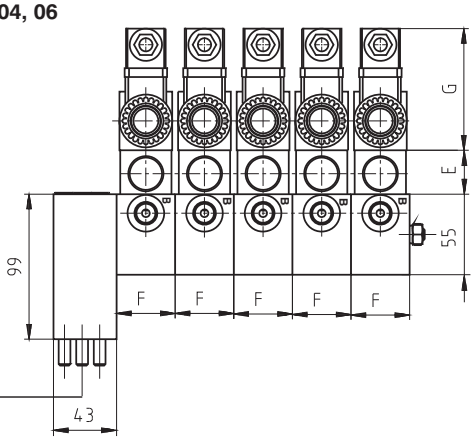
Dimensions in millimeters

Lay - out of the Block power pack with cylindrical steel tank

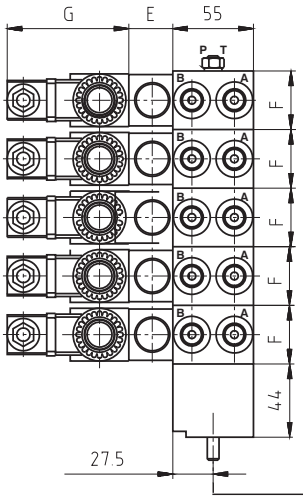
Configuration **A**
Size 04, 06



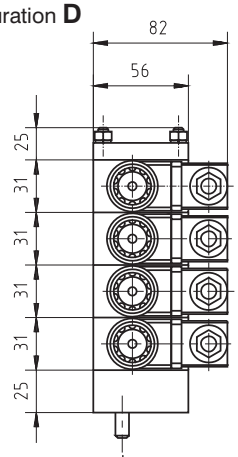
Configuration **B**
Size 04, 06



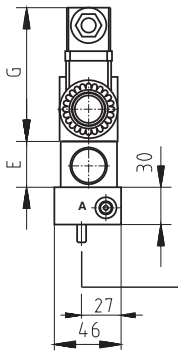
Configuration **C**
Size 04, 06



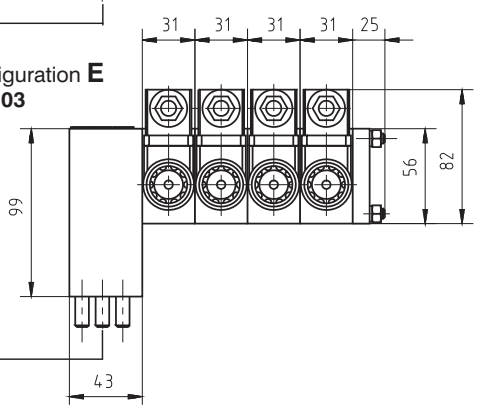
Configuration **D**
Size 03

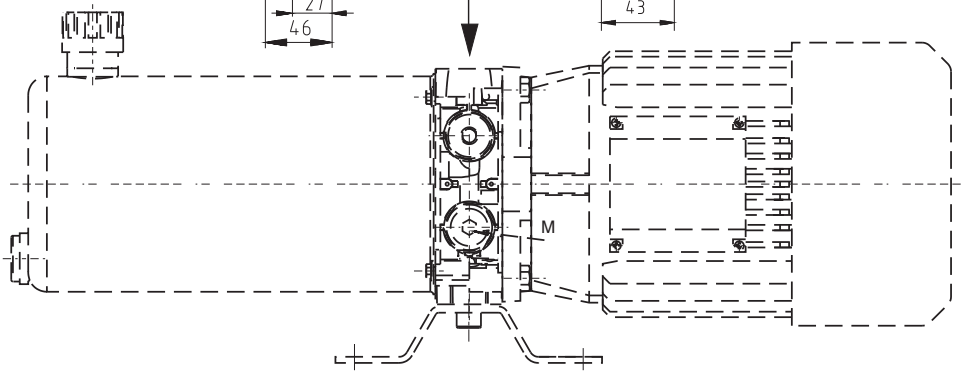


Configuration **F**
Size 04, 06



Configuration **E**
Size 03





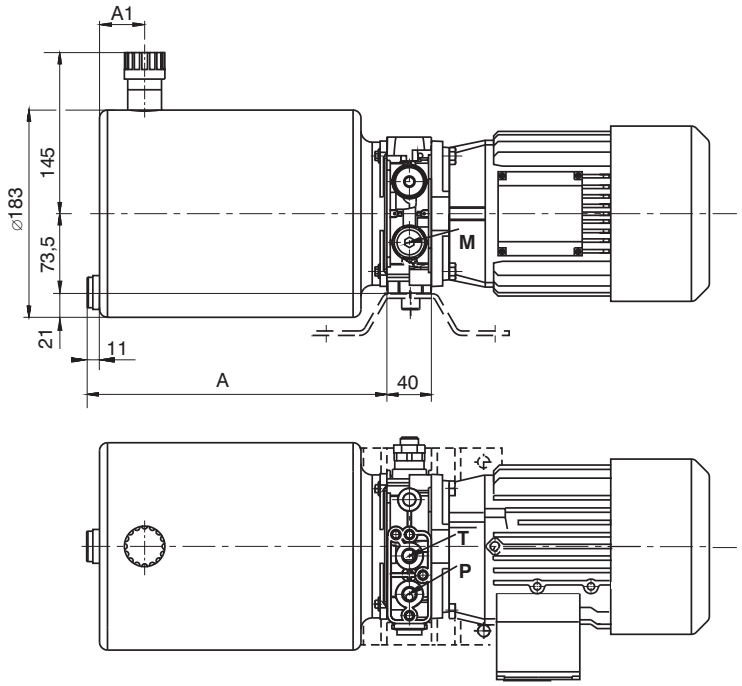
Thread of the connecting ports A, B, P, T, M - G1/4 (A, B - G3/8)

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

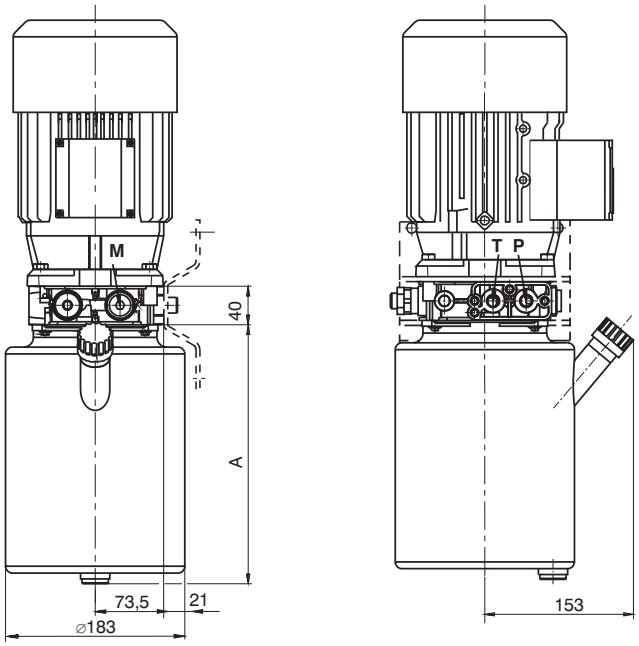
Dimensions in millimeters

Power pack with cylindrical steel tank - mounting position horizontal



Code of the tank	Capacity in [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

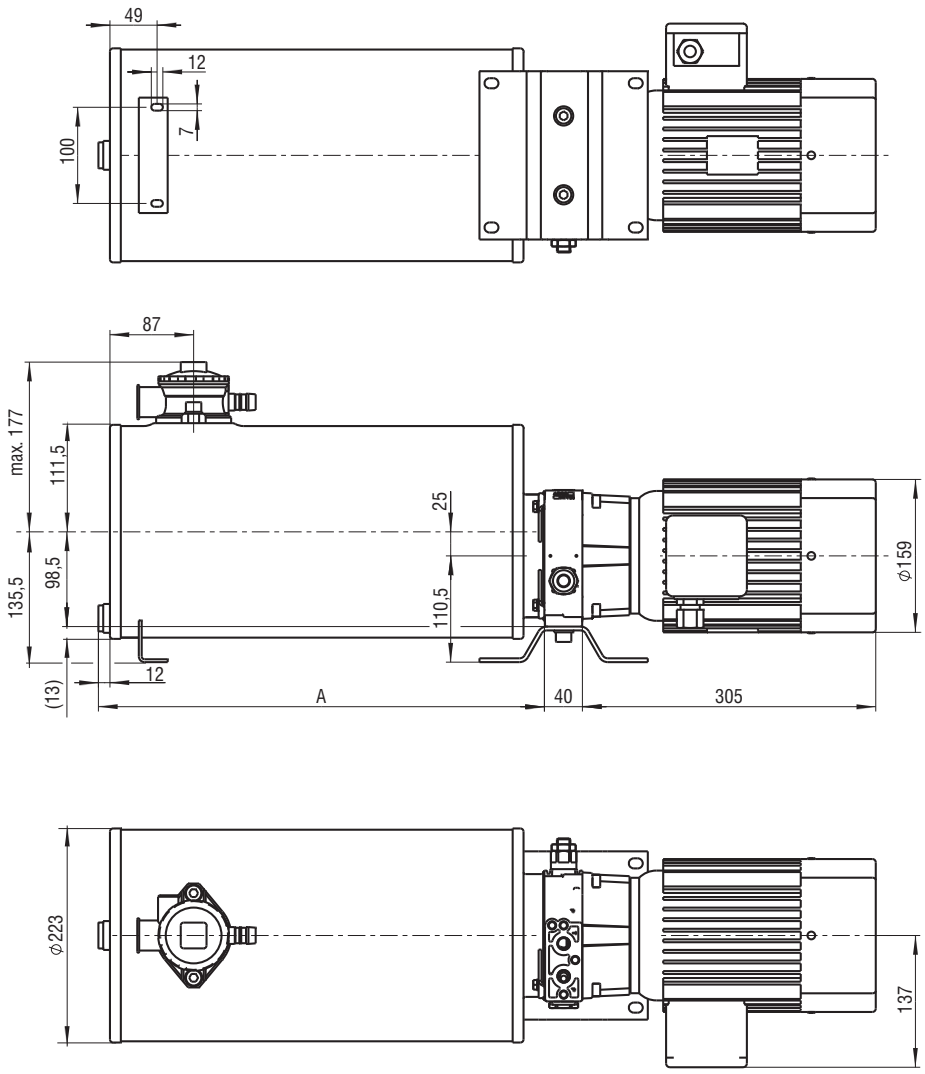


Code of the tank	Capacity in [l]	Working volume [l]	A [mm]
51 (steel)	6	3,4	269
53 (steel)	8	5,4	349
55 (steel)	10	7,4	429

Tank Dimensions

Dimensions in millimeters

Power pack with cylindrical steel tank - mounting position horizontal

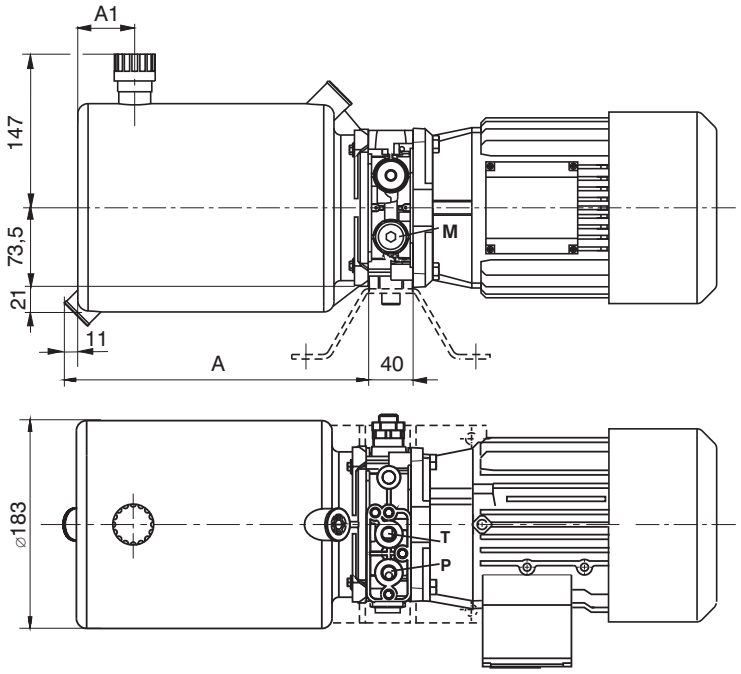


Code of the tank	Capacity in [l]	Working volume [l]	A [mm]
30 (steel)	9	7,5	304
31 (steel)	15	12	464
32 (steel)	25	20	724

Tank Dimensions

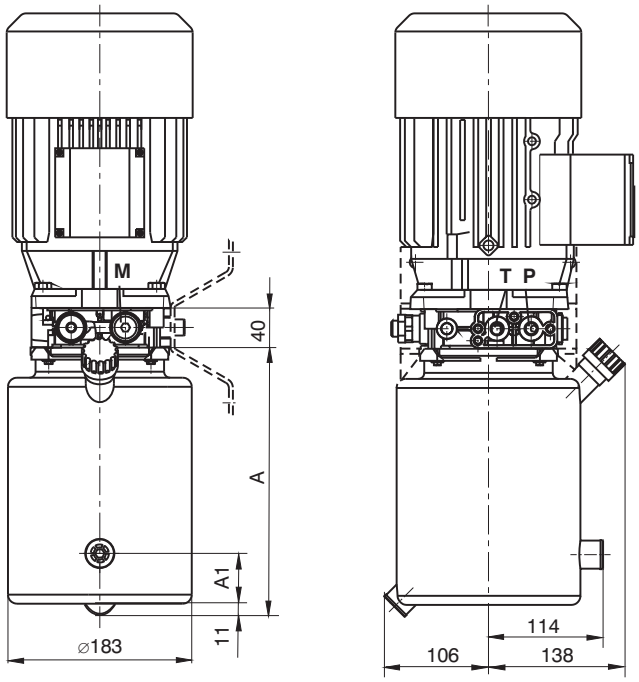
Dimensions in millimeters

Power pack with cylindrical plastic tank - mounting position horizontal



Code of the tank	Capacity in [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

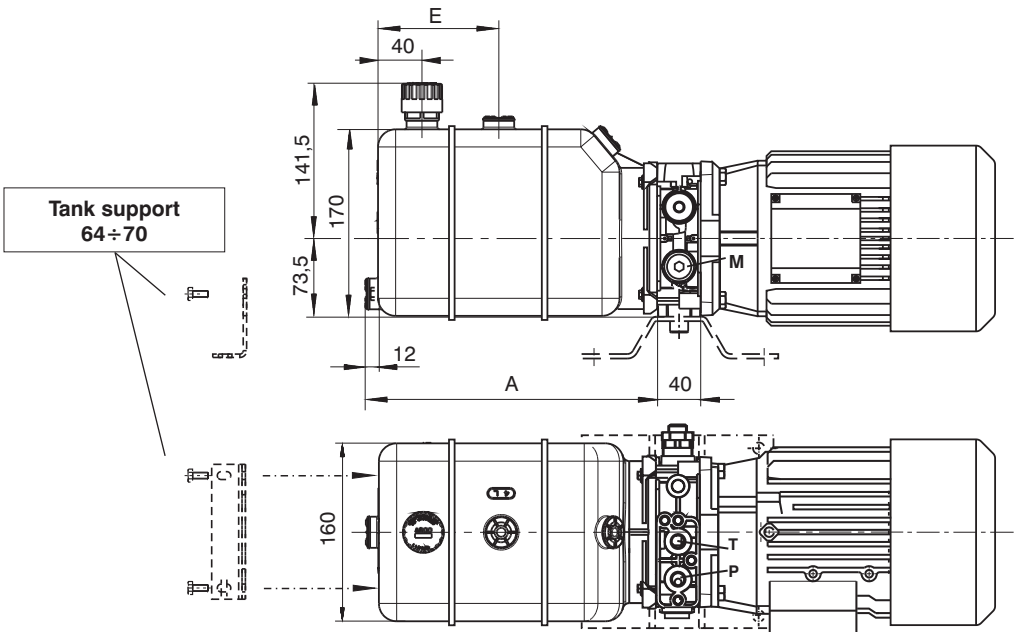


Code of the tank	Capacity in [l]	Working volume [l]	A [mm]	A1 [mm]
41 (plastic)	6	3,7	280	61
43 (plastic)	8	4,9	360	121
45 (plastic)	10	6,1	440	201

Tank Dimensions

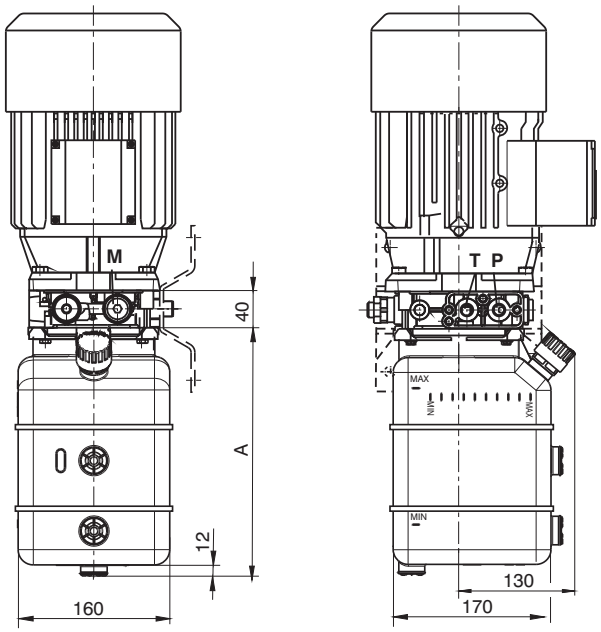
Dimensions in millimeters

Power pack with square plastic tank - mounting position horizontal



Code of the tank	Capacity in [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



Code of the tank	Capacity in [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

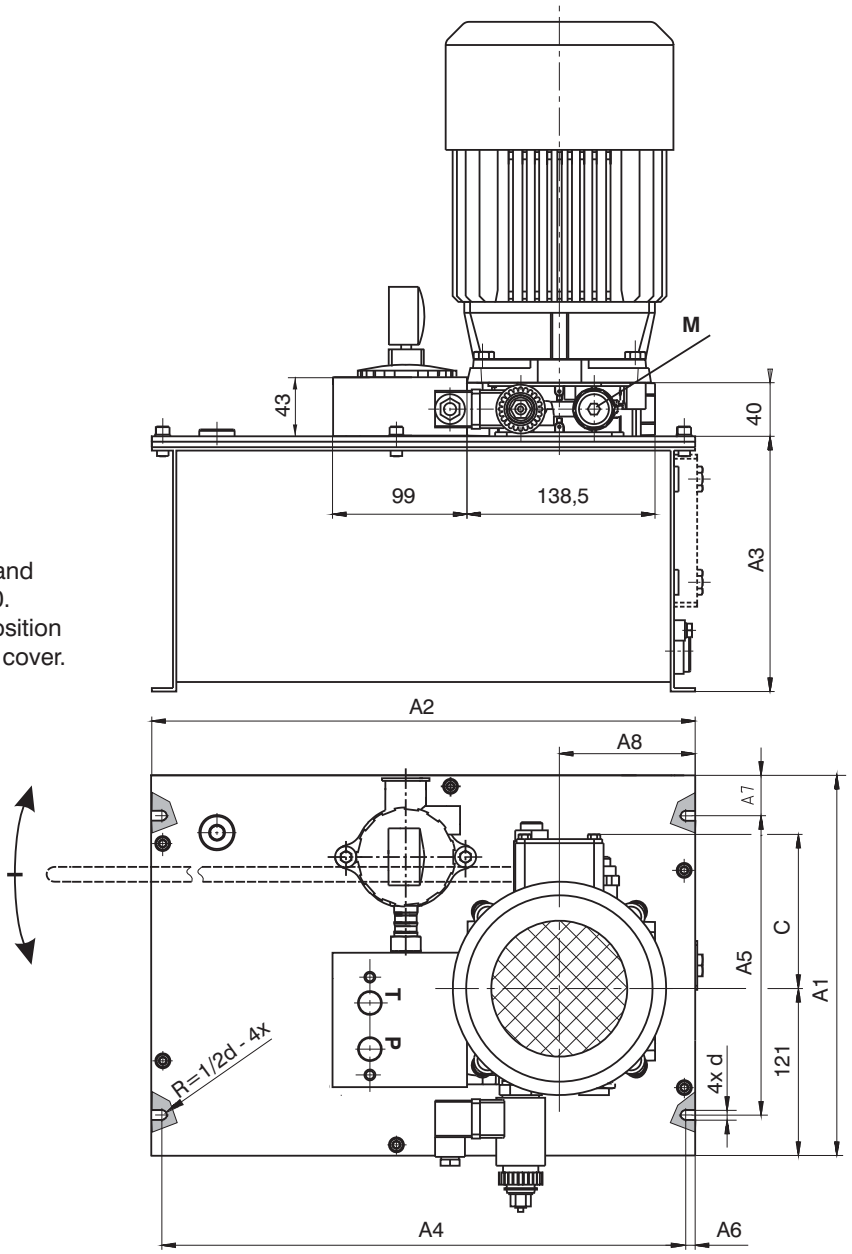
Tank Dimensions

Dimensions in millimeters

Power pack with square steel tank - single-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.



Dimensions C see page 11 - Table of Dimensions

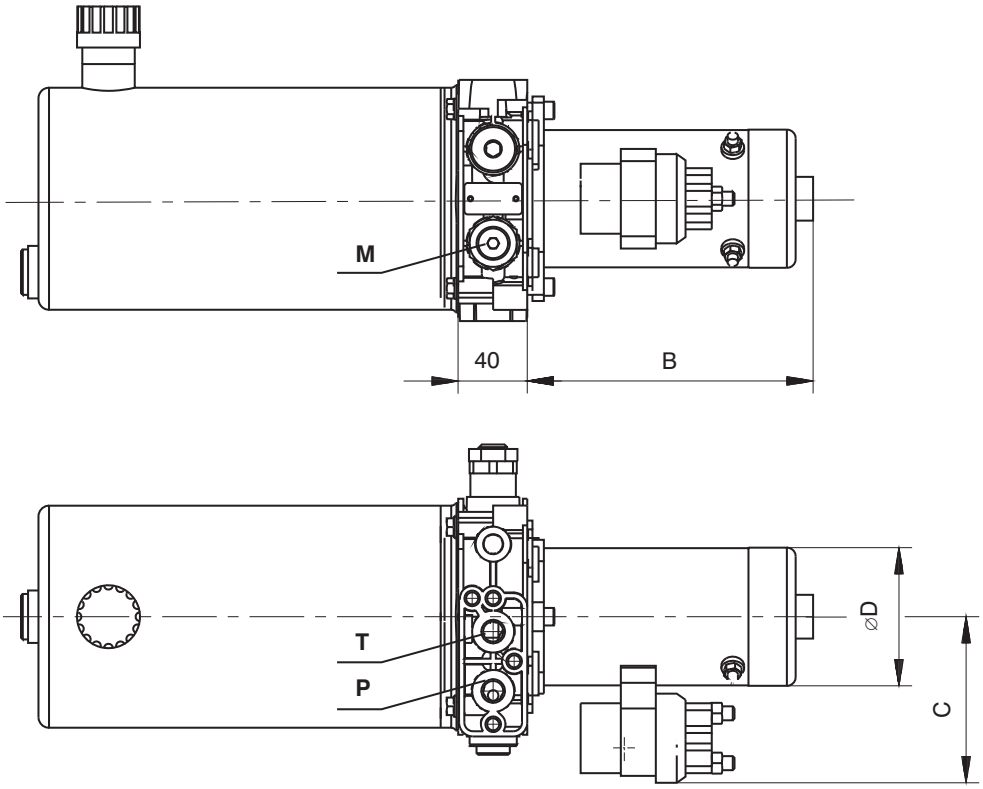
Code of the tank	Capacity in [l]	Working volume [l]	A1*	A2*	A3*	A4*	A5*	A6*	A7*	A8*	d*
56 (steel)	8	4,5	280	340	165	319	220	10,5	30	100	9
57 (steel)	10	8	280	400	188	388	220	6	30	100	9
58 (steel)	20	16	280	400	276	388	220	6	30	100	9
59 (steel)	30	24	320	500	287	479	260	9,5	30	132	11
60 (steel)	40	34	320	500	366	479	260	9,5	30	132	11

*Dimensions in millimeters

Power Pack

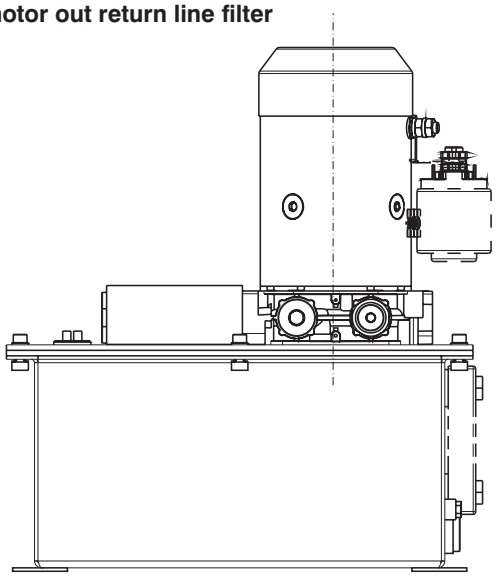
Dimensions in millimeters

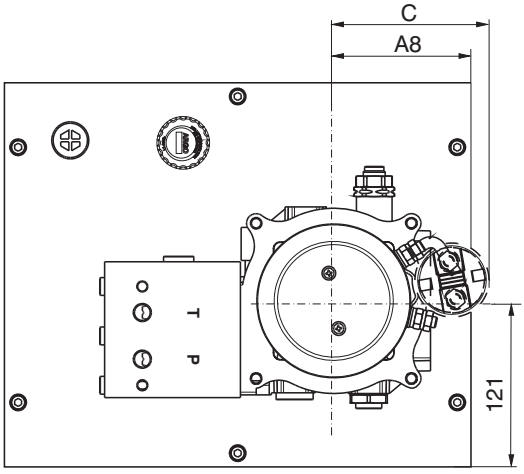
Power pack with cylindrical steel tank - with DC electric motor out return line filter



Power pack with square steel tank - with DC electric motor out return line filter

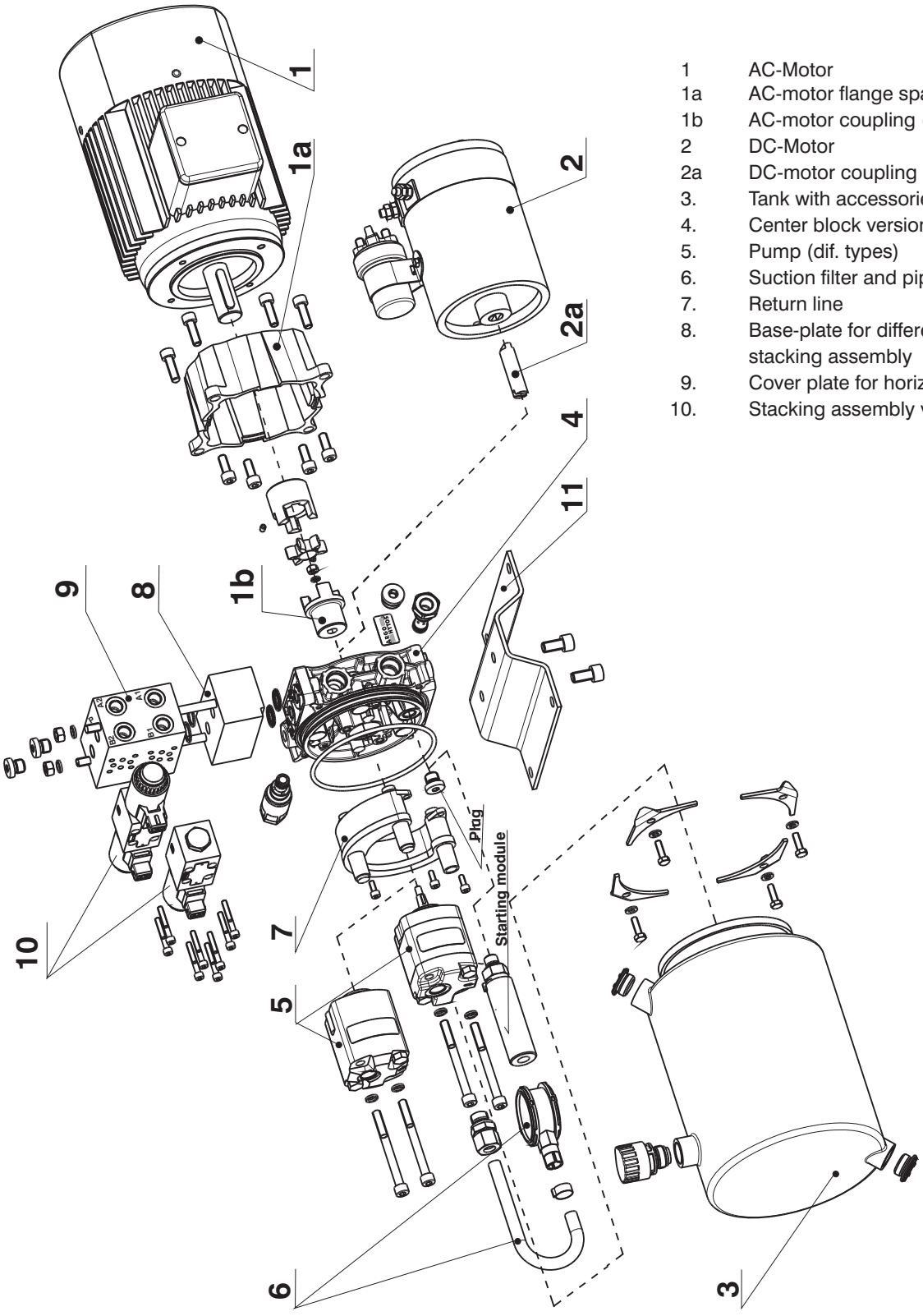
Optional stacking assembly, versions B, E ref. page 13.





Dimensions B, C, ∅D see page 11 - Table of Dimensions
Dimensions A8 see page 18

SMA 05 - Ilustration Figure



1	AC-Motor
1a	AC-motor flange spacer
1b	AC-motor coupling (dif. types)
2	DC-Motor
2a	DC-motor coupling
3.	Tank with accessories (dif. types)
4.	Center block versions A, B, C, D, E
5.	Pump (dif. 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

Caution!

- The packing foil is recyclable.
- The technical information regarding the product presented in this catalogue is for descriptive purposes only. It should not be construed in any case as a guaranteed representation of the product properties in the sense of the law.

ARGO-HYTOS s.r.o. CZ - 543 15 Vrchlabí
tel.: +420-499-403 111
e-mail: info.cz@argo-hytos.com
www.argo-hytos.com