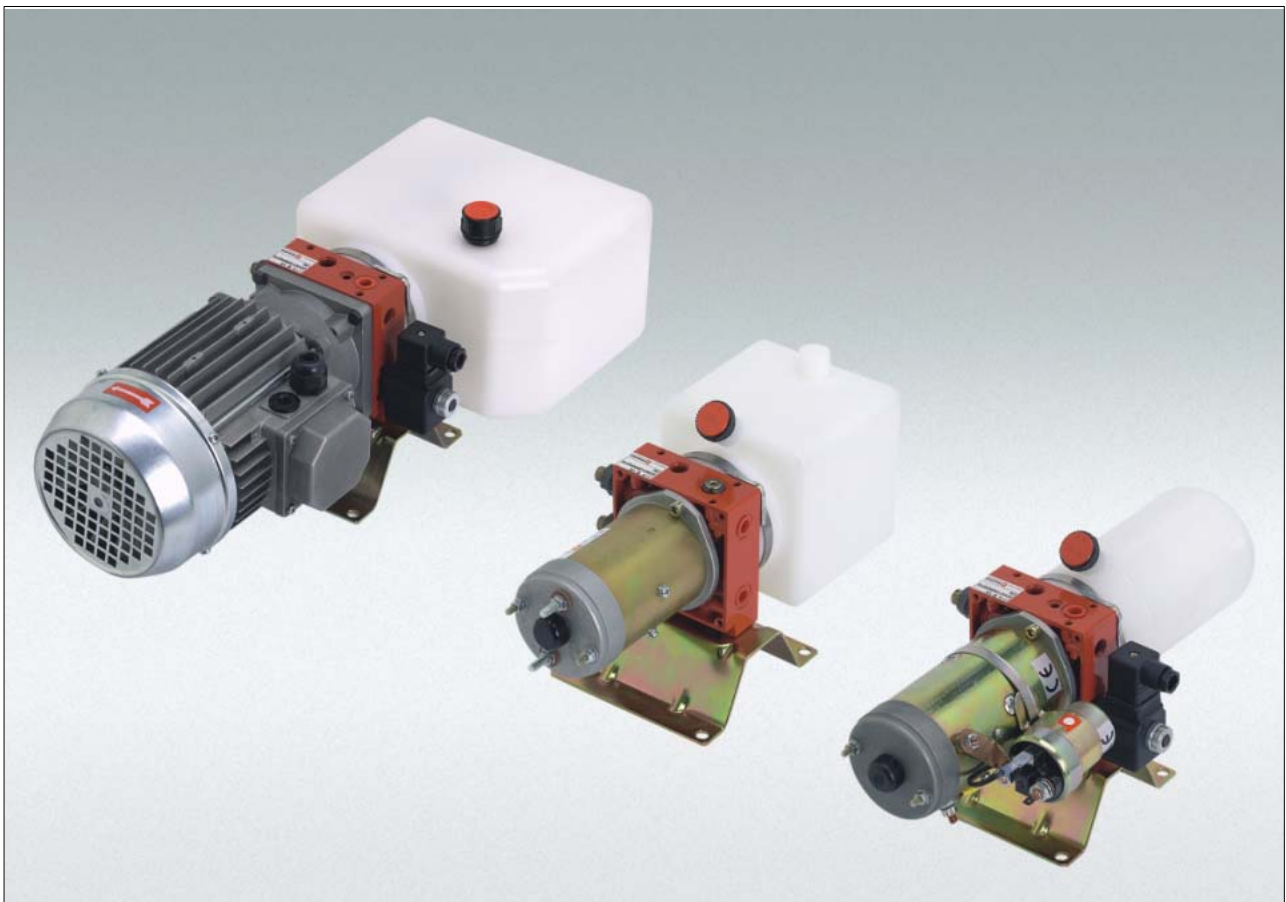


## Hydraulic Units UP50



motion and progress

# HYDRAULIC UNIT

## UP50

### GENERAL FEATURES

Modular assembly for single sub-groups.

Standard circuit: SINGLE ACTING - DOUBLE ACTING - REVERSIBLE

Valves: adjustable max relief valve, check valve, flow control valve, directional control valves electrically or manually operated, parallel or series circuit, reversible pump with double hydraulic piloted check valves and relief valves integrated.

### TECHNICAL FEATURES

#### MOTOR:

D.C. motor: (with or without starting switch)

12 V. \_\_\_\_\_ W: 350-2000

24 V. \_\_\_\_\_ W: 400-2500

48 V. \_\_\_\_\_ W: 2000

A.C. motor: (UNEL - IEC - CEI - VDE standard)

220-380 V. (1500RPM) \_\_\_\_\_ Kw: 0.12-0.75

PUMPS: \_\_\_\_\_ cc/g 0.25-2.30

\_\_\_\_\_ C.I.P.R. .015-.10

working pressure \_\_\_\_\_ bar 170-230

\_\_\_\_\_ PSI 2400-3300

TANKS: \_\_\_\_\_ L 0.5-4.0

\_\_\_\_\_ U.S. Gall. 0.13-1.05

OIL: utilize HYDRAULIC OIL ISO 6743/4 standard

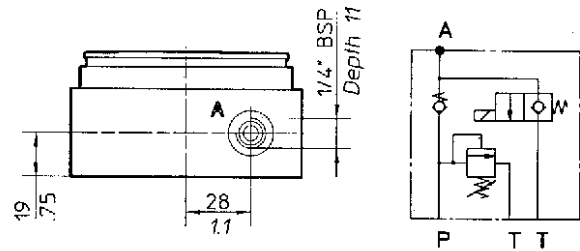
Important note: we inform you that starting from 01.04.99 all our part numbers are modified by adding the prefix '200' Ex.: present part code: 9402.3017.0 new code 200.9402.3017.0



**1** HOUSINGS

**K04** SINGLE ACTING CIRCUIT TYPE - ARRANGEMENT FOR INTEGRAL CONTROL VALVE

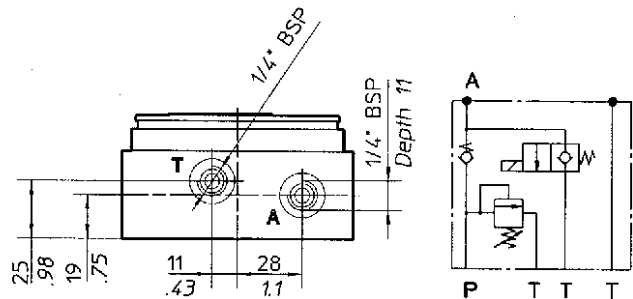
Code  
7402.3004.0\*



\* The lowering valve is not part of this code

**K41** SINGLE ACTING CIRCUIT TYPE - ARRANGEMENT FOR INTEGRAL CONTROL VALVE HOUSING WITH SUPPLEMENTARY T THREADED PORT

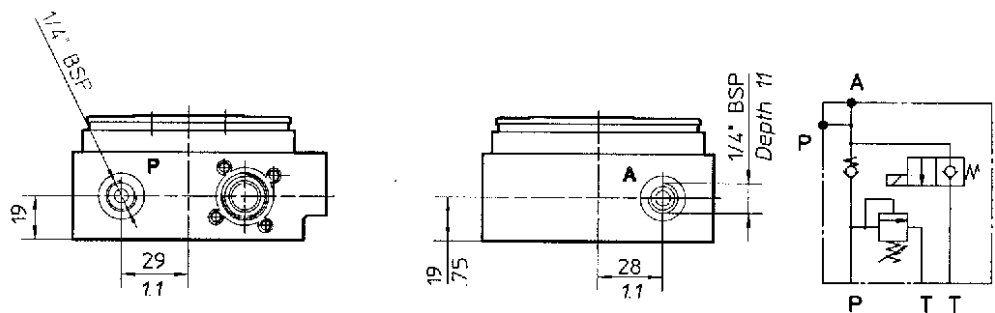
Code  
7402.3024.0\*



\* The lowering valve is not part of this code

**K42** SINGLE ACTING CIRCUIT TYPE - ARRANGEMENT FOR INTEGRAL CONTROL VALVE

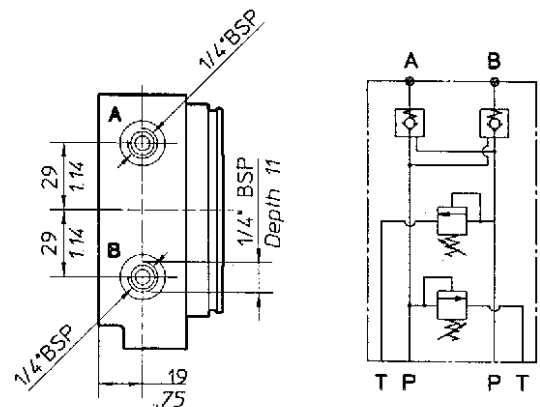
Code  
7402.3020.0\*



\* The lowering valve is not part of this code

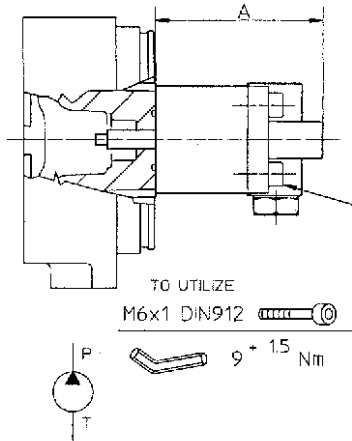
**K50** REVERSIBLE CIRCUIT TYPE - ARRANGEMENT WITH 'A'-'B' THREADED PORTS

Code  
7402.5004.0



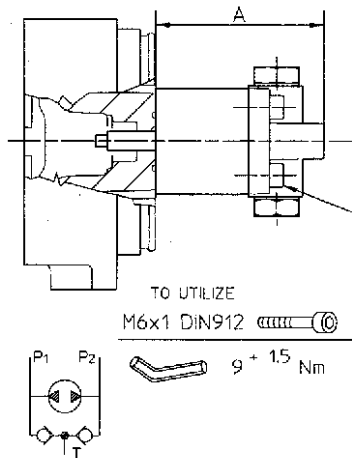
**GEAR PUMPS – ANTICLOCKWISE ROTATION**

Pump type	Displacement		Max pressure						A		Code
	cm <sup>3</sup> /g	cu. In. P.R.	P1		P2		P3		mm	inch.	
			bar	PSI	bar	PSI	bar	PSI			
AP05/0.25 S409	0.25	.015	190	2700	200	2900	220	3150	63	2.48	7481.2005.0
AP05/0.5 S409	0.5	.030	210	3000	230	3300	250	3600	65	2.56	7481.3005.0
AP05/0.75 S409	0.75	.045	210	3000	230	3300	250	3600	67	2.64	7481.4005.0
AP05/0.9 S409	0.9	.055	210	3000	230	3300	250	3600	68.5	2.69	7481.5005.0
AP05/1.2 S409	1.2	.075	190	2700	200	2700	220	3150	71	2.79	7481.6005.0
AP05/1.6 S409	1.6	.10	170	2400	180	2600	200	2900	74.7	2.94	7481.8006.0
AP05/2.3 S409	2.3	.140	170	2400	180	2600	200	2900	80.6	3.17	7481.9004.0



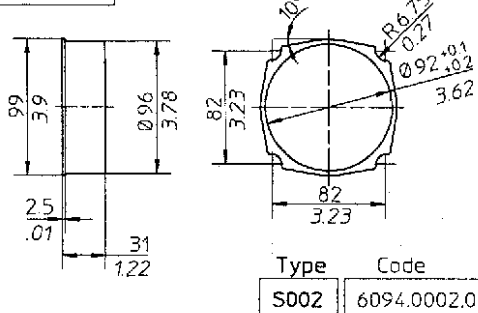
**REVERSIBLE GEAR PUMPS**

Pump type	Displacement		Max pressure						A		Code
	cm <sup>3</sup> /g	cu. In. P.R.	P1		P2		P3		mm	inch.	
			bar	PSI	bar	PSI	bar	PSI			
APR05/0.25-339	0.25	.015	170	2400	180	2600	200	2900	63	2.48	7481.2002.0
APR05/0.5-339	0.5	.030	190	2700	210	3000	230	3300	65	2.56	7481.3002.0
APR05/0.75-339	0.75	.045	190	2700	210	3000	230	3300	67	2.64	7481.4002.0
APR05/0.9-339	0.9	.055	190	2700	210	3000	230	3300	68.5	2.69	7481.5002.0
APR05/1.2-339	1.2	.075	170	2400	180	2600	200	2900	71	2.79	7481.6002.0
APR05/1.6-339	1.6	.10	170	2400	180	2600	200	2900	74.7	2.94	7481.8001.0
APR05/2.3-339	2.3	.140	150	2100	160	2200	180	2600	80.6	3.17	7481.9002.0

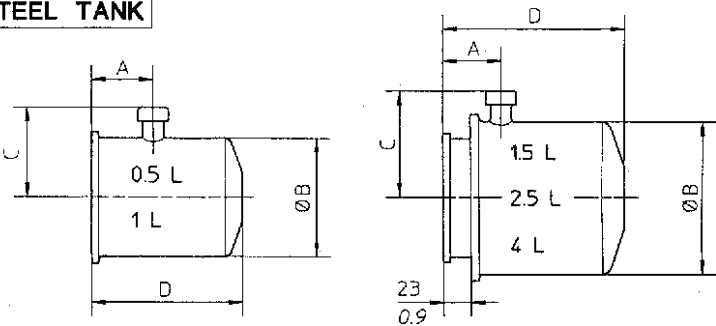


**3 OIL TANKS**

**FLANGE**

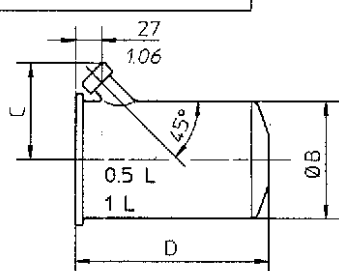


**STEEL TANK**

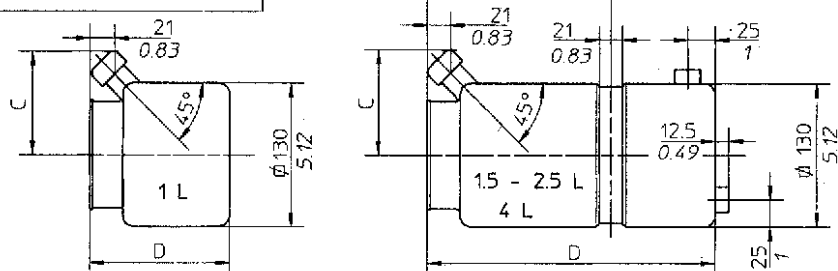


**PLASTIC TANK**

**CIRCULAR SECTION ●**

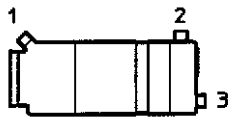


**SQUARE SECTION ■**

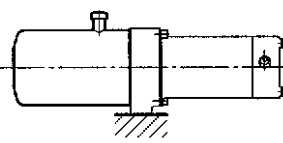


FIXING POSITIONS

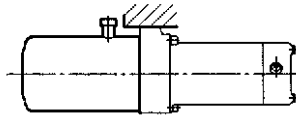
OPENED FILLING PORTS AND DRAIN PORTS



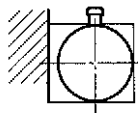
Type	OPENED Ports		
	1	2	3
A	●		
B		●	
D	●	●	
E	●		●
F		●	●



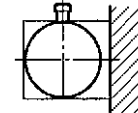
POSITION: HORIZONTAL  
Fixing side: down



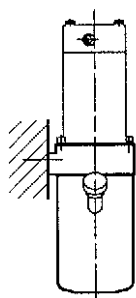
POSITION: HORIZONTAL  
Fixing side: up



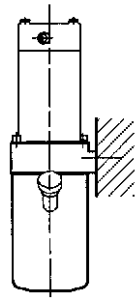
POSITION: HORIZONTAL  
Fixing side: lateral left hand



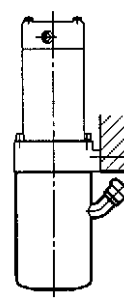
POSITION: HORIZONTAL  
Fixing side: lateral right hand



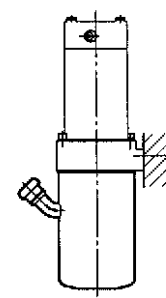
POSITION: VERTICAL  
Oil caps: on the right of fixing side



POSITION: VERTICAL  
Oil caps: on the left of fixing side



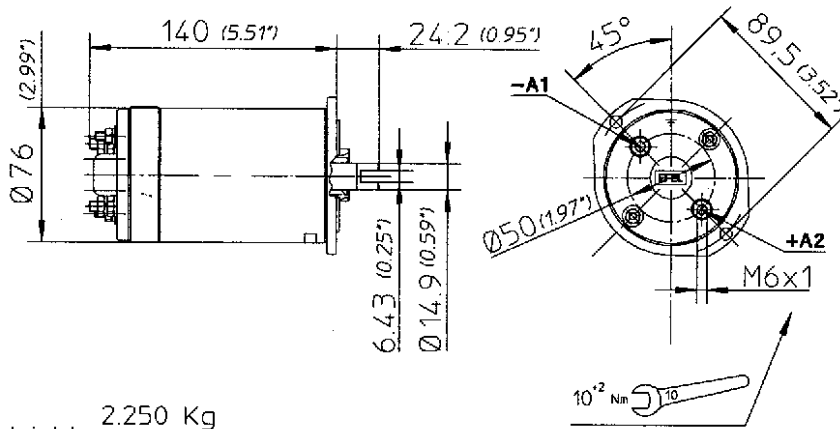
POSITION: VERTICAL  
Oil cap: fixing side



POSITION: VERTICAL  
Oil cap: against of fixing side (not available with manifolds)

Material	Capacity			Dimensions				Fixing position									
	L.	U.S.G.	IMP.G.	A	B	C	D	Horizontal position				Vertical position					
								P01	P02	P03	P04	P05	P15	P25	P35		
STEEL	0.5	.13	.11	8.5	96	72	126	L00.5R-01									
				.33	3.78	2.83	4.96	9722.1008.0				9722.1007.0					
STEEL	1	.26	.22	8.5	96	72	190	L01.0R-01									
				.33	3.78	2.83	7.5	9722.2007.0				9722.2008.0					
STEEL	1.5	.40	.33	47	127	88	152	L01.5R-01									
				1.85	5	3.46	6	9722.3010.0				9722.3011.0					
STEEL	2.5	.66	.55	47	127	88	257	L02.5R-01									
				1.85	5	3.46	10.1	9722.4012.0				9722.4013.0					
STEEL	3	.79	.66	52	154	102	220	L03.0R-01									
				2.05	6.07	4.02	8.65	9722.9004.0									
STEEL	4	1.05	.88	52	154	102	294	L04.0R-01									
				2.05	6.07	4.02	11.6	9722.6009.0				9722.6010.0					
PLASTIC ●	0.5	.13	.11	—	96	82.5	126	P-005R-A									
					3.78	3.25	4.96	9732.1009.0									
PLASTIC ●	1	.26	.22	—	96	82.5	190	P-010R-A									
					3.78	3.25	7.48	9732.2004.0									
PLASTIC ■	1	.26	.22	—	—	99	126	P-010Q-A									
						3.9	4.96	9732.2003.0									
								P01 P02 P03 P04				P01 P02 P03 P04					
PLASTIC ■	1.5	.40	.33	—	—	99	159	P-015Q-A		P-015Q-E		P-015Q-D		P-015Q-B		P-015Q-F	
						3.9	6.26	9732.3003.0		9732.3007.0		9732.3006.0		9732.3004.0		9732.3008.0	
PLASTIC ■	2.5	.66	.55	167	—	99	262	P-025Q-A		P-025Q-E		P-025Q-D		P-025Q-B		P-025Q-F	
				6.6		3.9	10.3	9732.4002.0		9732.4006.0		9732.4005.0		9732.4003.0		9732.4007.0	
PLASTIC ■	4	1.05	.88	232	—	99	327	P-040Q-A		P-040Q-E		P-040Q-D		P-040Q-B		P-040Q-F	
				9.13		3.9	12.9	9732.6002.0		9732.6006.0		9732.6005.0		9732.6003.0		9732.6007.0	

CATUP50.040



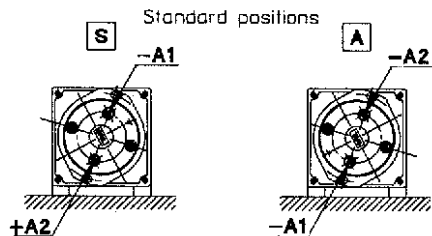
Weight 2.250 Kg  
4.96 lb

DIRECT CURRENT

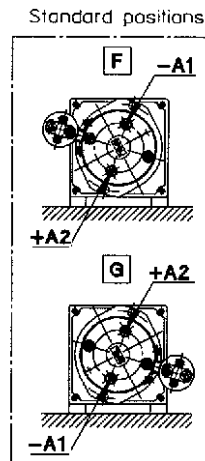
Voltage	12 V	24 V
Power	350 W	400 W
Protection index	IP42	
Insulation class	B	
Type of winding	Permanent magnets	
Brushes kit	5441.3802.1	
Minimum brush length	mm	inch

Rotation	MOTOR		MOTOR WITH RELAY			
	12V - 350W	24V - 400W	12V - 350W	24V - 400W	12V	24V
Reversible						
Type	<b>C117PE/V0</b>	<b>C220PE/Z0</b>	<b>C117PE/V1</b>	<b>C220PE/Z1</b>		
Code	5439.1170.1	5439.2200.1	5439.1170.2	5439.2200.2	Relè code only 5441.3410.5	Relè code only 5441.3420.5
Relay	<b>STANDARD</b> Single relè can be used only for clock-wise rotation				To be used with bi-directional rotation	
Relay type			<b>R104</b>	<b>R203</b>		

MOTOR MOUNTING POSITION



RELAY MOUNTING POSITION



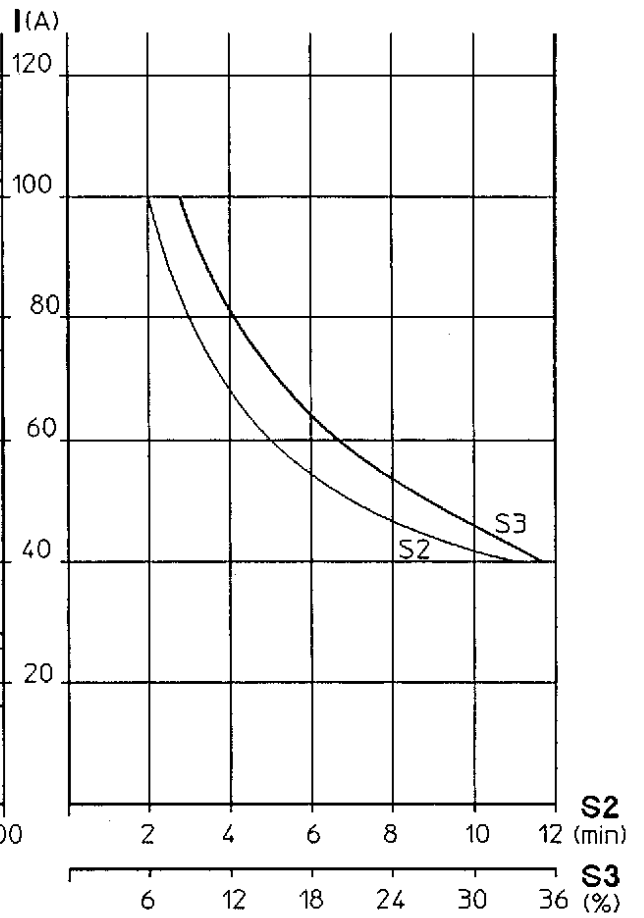
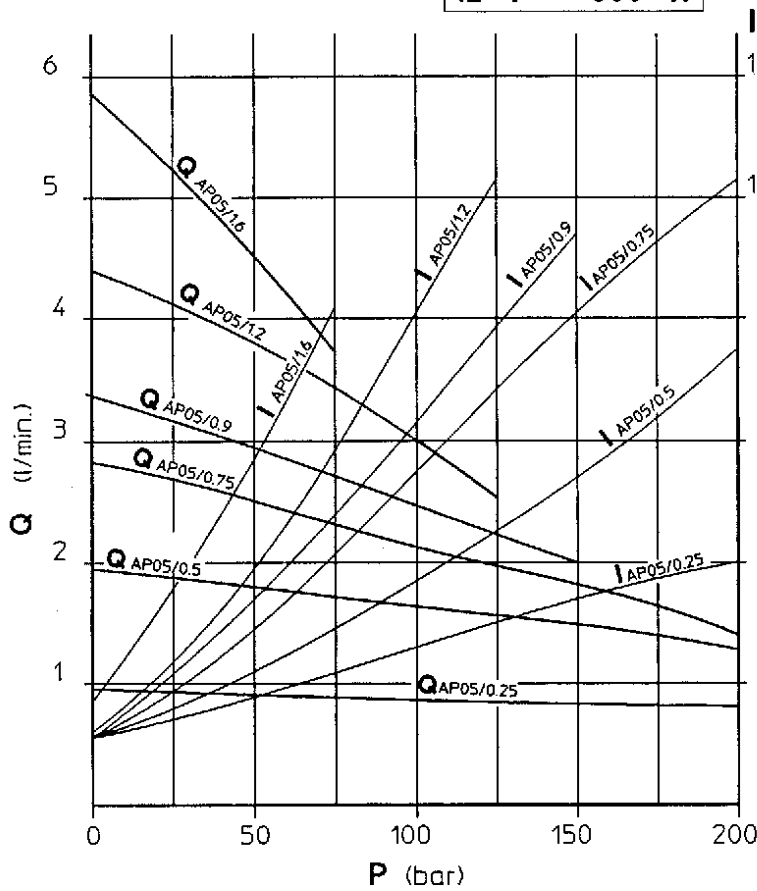
5 Electric motor Pos.  
C 1 1 7 P E / V 0 S

Example

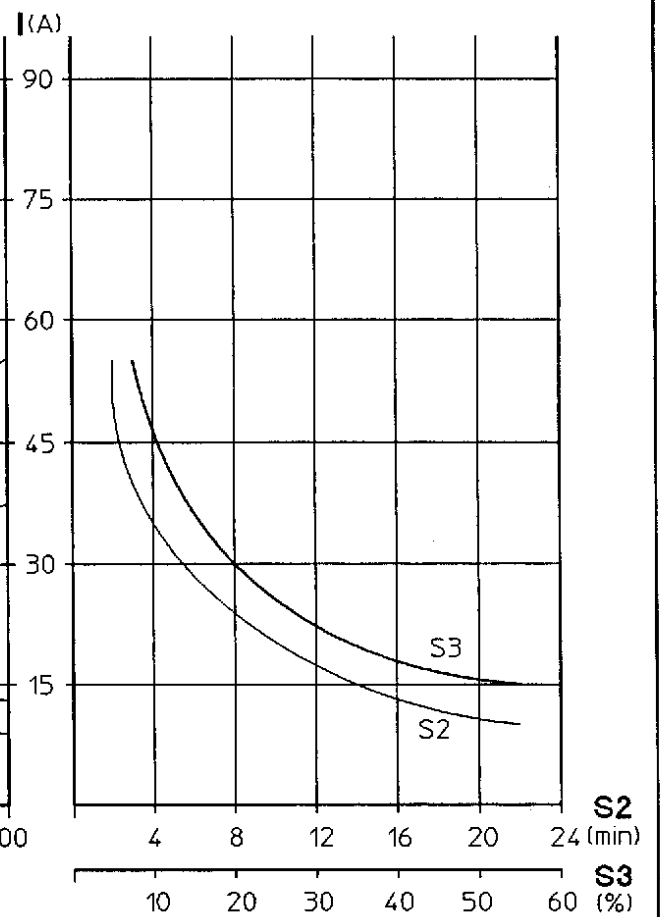
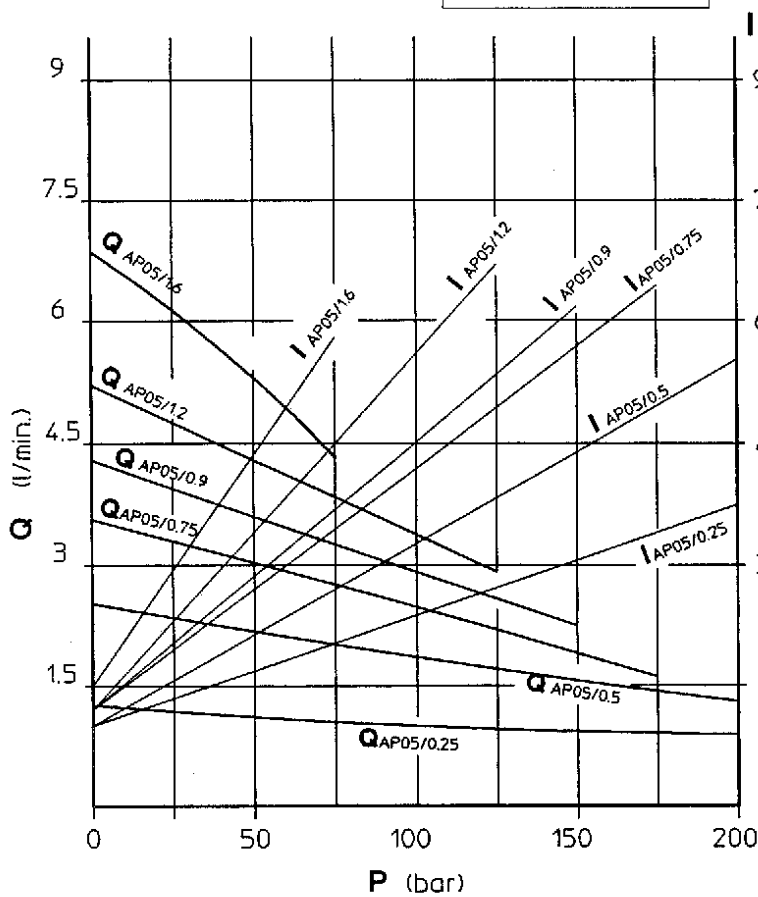
Relay Pos.  
[ ] [ ] [ ] [ ] [ ] [ ]

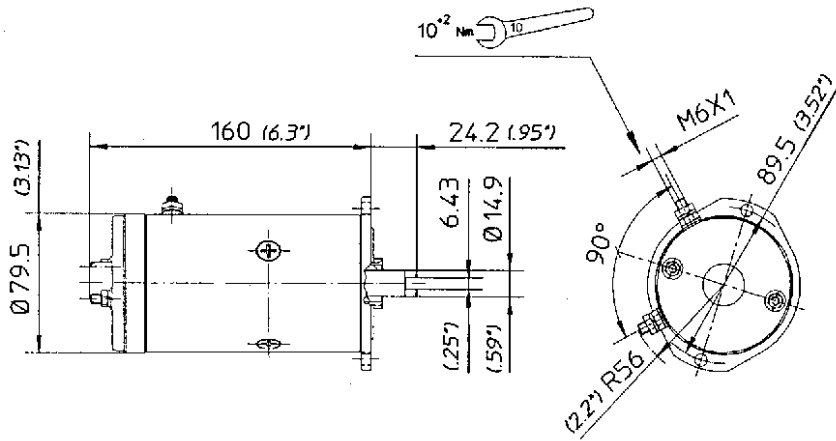
**4 ELECTRIC MOTORS**

**12 V - 350 W**



**24 V - 400 W**





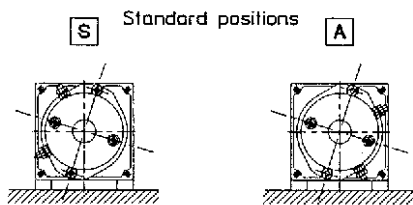
Weight 3.250 Kg  
7.15 lb

**DIRECT CURRENT**

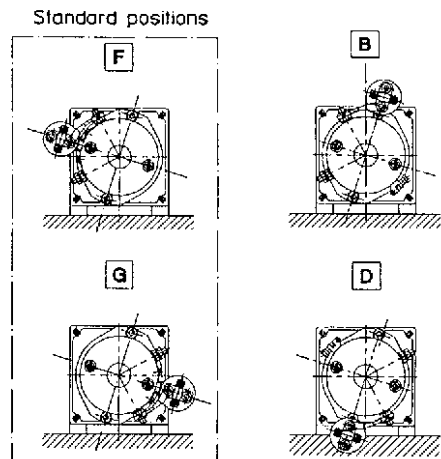
Voltage	12 V	24 V
Power	800 W	1200 W
Protection index	IP42	
Insulation class	B	
Type of winding	Compound	
Brushes kit	5441.3801.7	
Minimum brush length	5mm 0.2inch	

Rotation	MOTOR		MOTOR WITH RELAY	
	Right			
Type	C128AE/S0	C232AE/R0	T113E	C232AE/T1
Code	5439.1280.4	5439.2320.3	5439.1280.3	5439.2320.4
Relay	STANDARD			
Relay type			R104	R203

**MOTOR MOUNTING POSITION**



**RELAY MOUNTING POSITION**

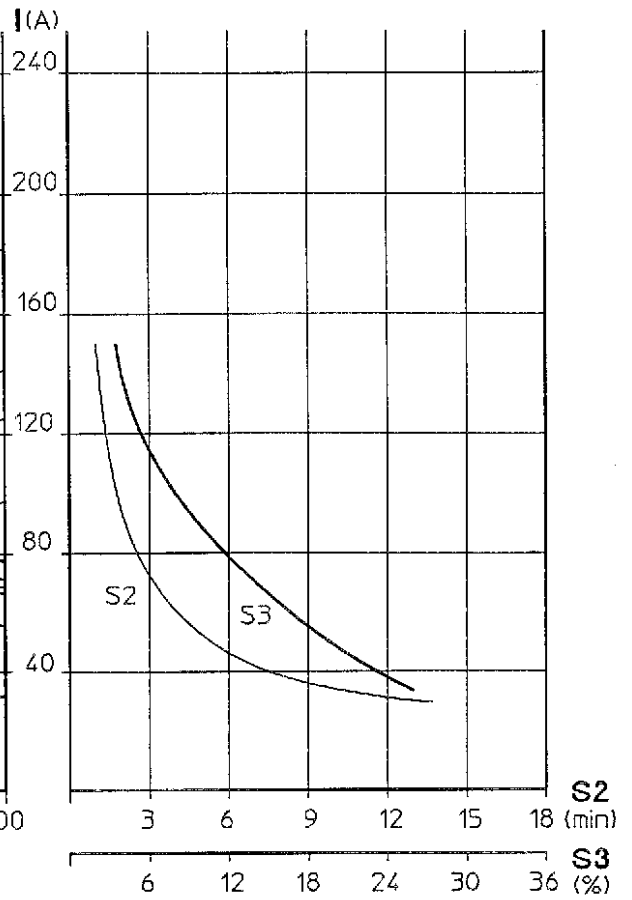
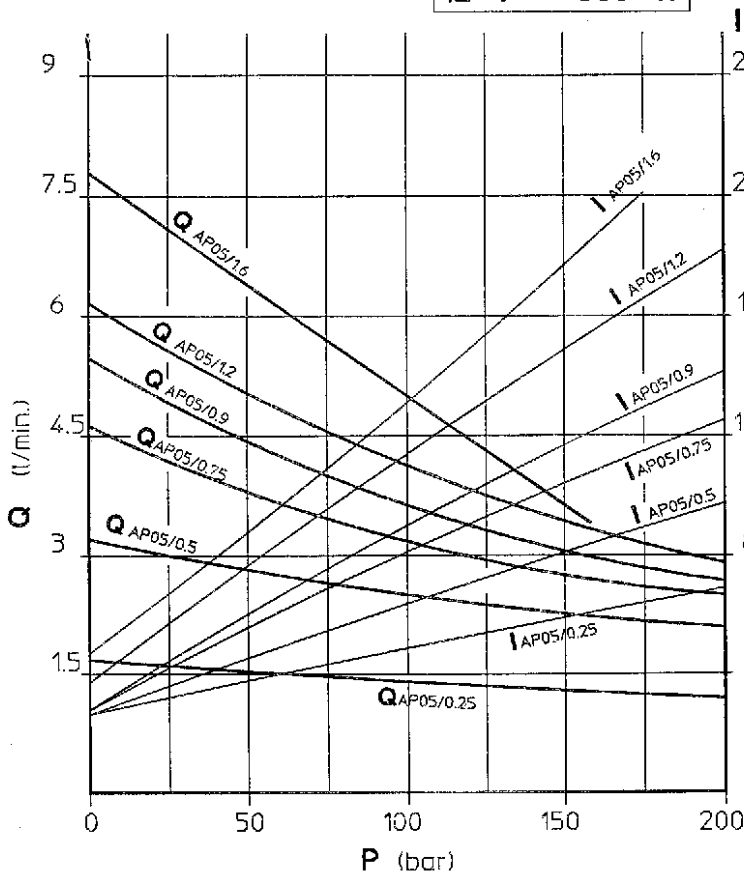


5	Electric motor					Pos.	
	C	2	3	2	A	E / T	1

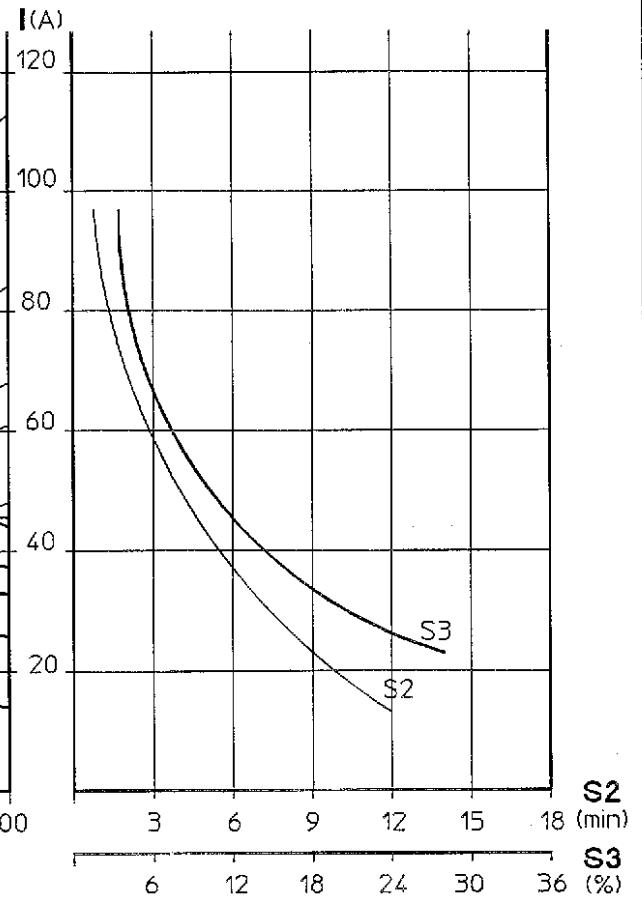
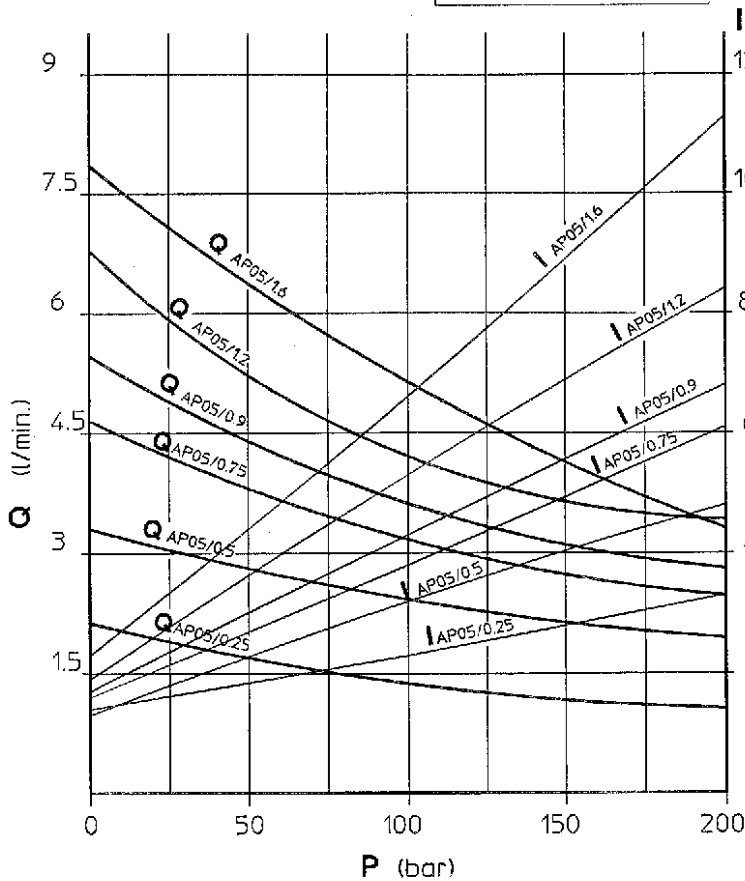
Example

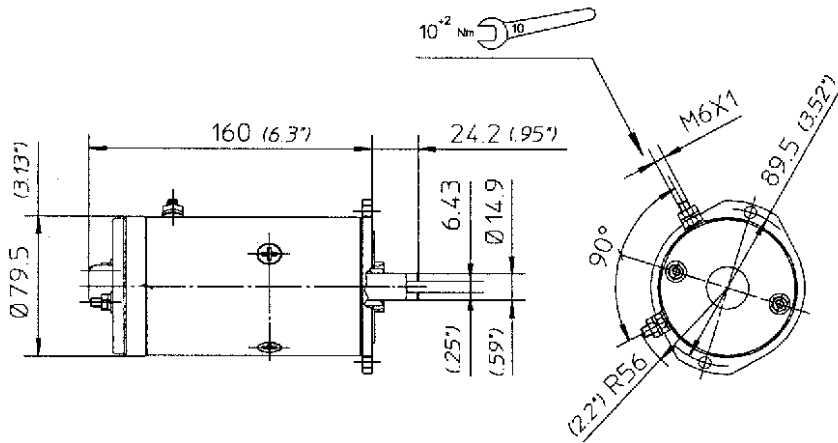
Relay				Pos.
R	2	0	3	F

12 V - 800 W



24 V - 1200 W





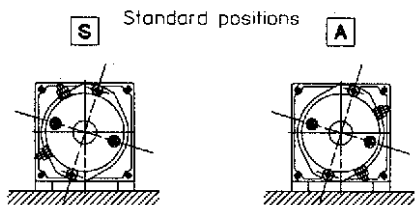
Weight 3.250 Kg  
7.15 lb

**DIRECT CURRENT**

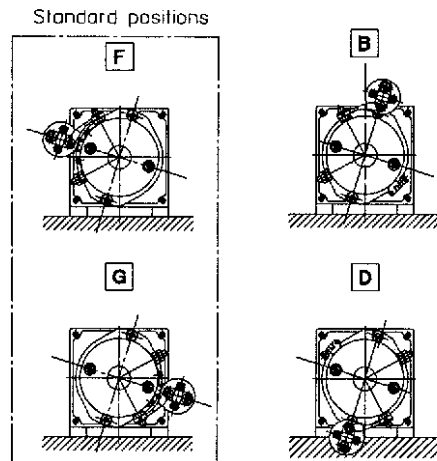
Voltage	12 V	24 V
Power	800 W	900 W
Protection index	IP42	
Insulation class	B	
Type of winding	Permanent magnet	
Brushes kit	5441.3801.7	
Minimum brush length	5mm 0.2inch	

Rotation Reversible	MOTOR		MOTOR WITH RELAY			
	12V - 800W	24V - 900W	12V - 800W	24V - 900W	12V	24V
Type	<b>C128PE/X0</b>	<b>C229PE/Y0</b>	<b>C128PE/X1</b>	<b>C229PE/Y1</b>		
Code	5439.1280.6	5439.2290.1	5439.1280.7	5439.2290.2	Relè code only 5441.3410.5	Relè code only 5441.3420.5
Relay	<b>STANDARD</b> Single relè can be used only for clock-wise rotation				To be used with bi-directional rotation	
Relay type			<b>R104</b>	<b>R203</b>		

**MOTOR MOUNTING POSITION**



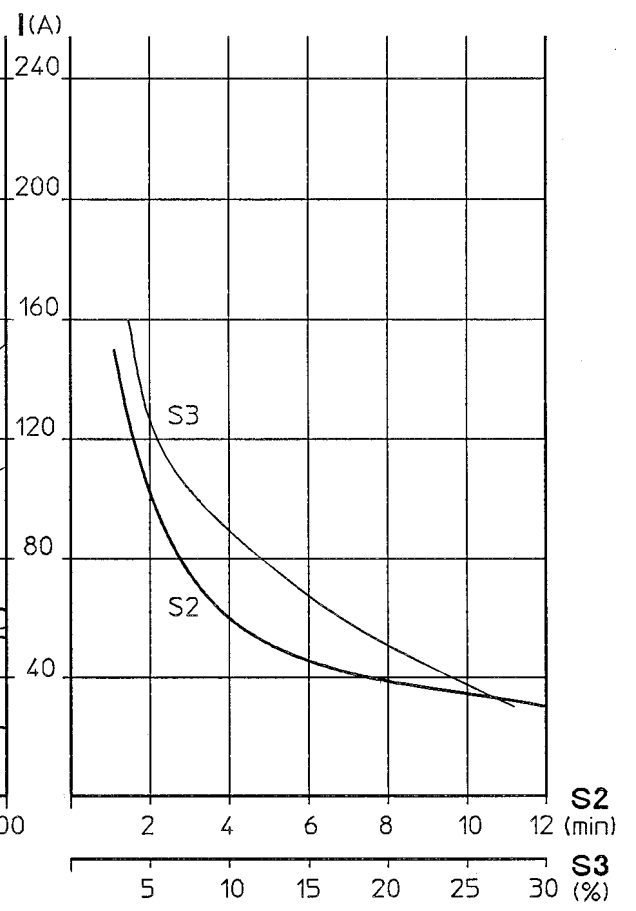
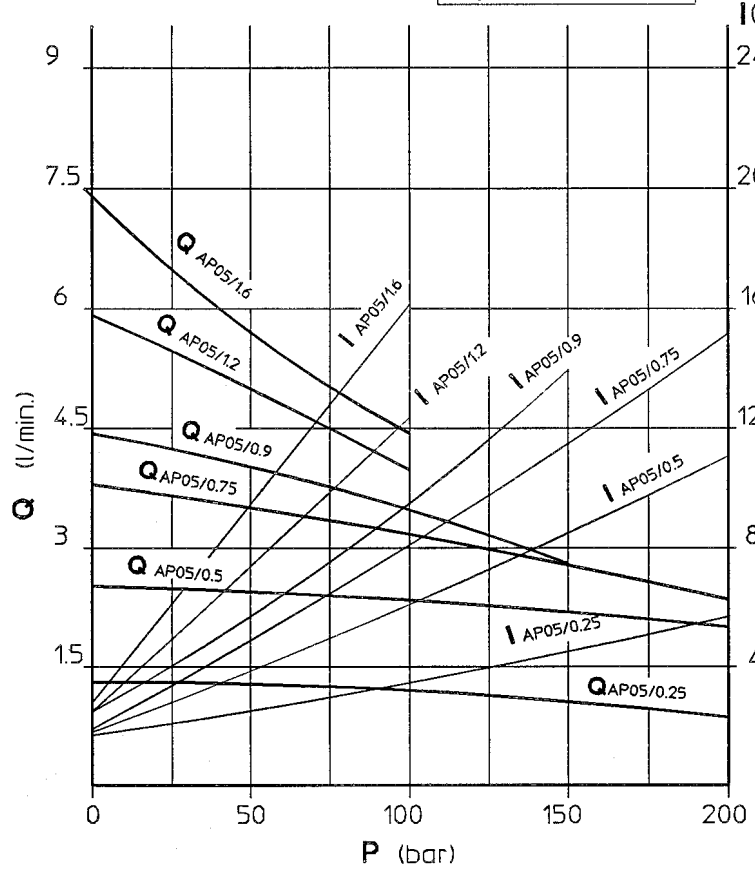
**RELAY MOUNTING POSITION**



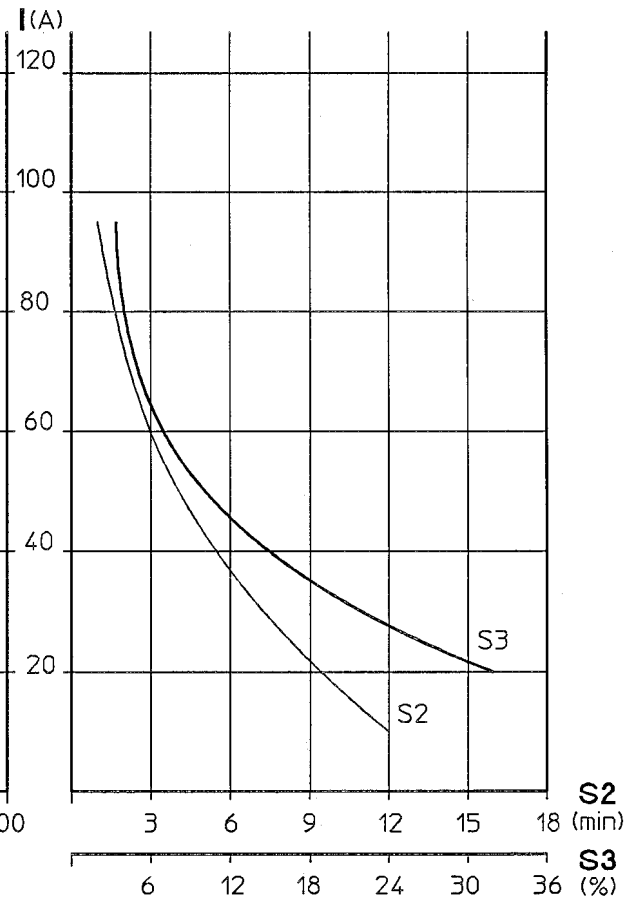
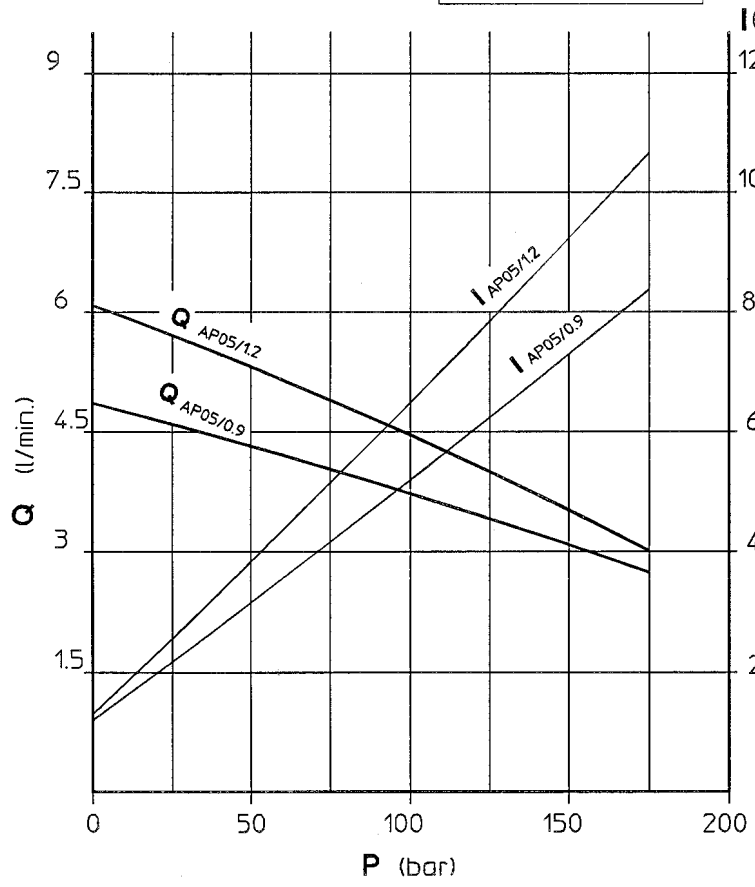
5 Electric motor Pos.  
C 2 3 2 A E / T 1 S

Relay Pos.  
R 2 0 3 F

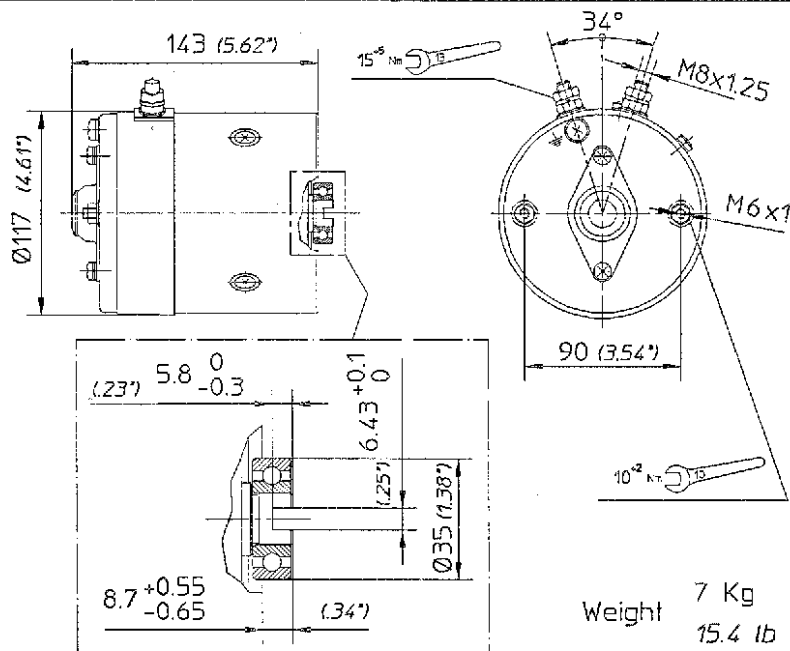
12 V - 800 W



24 V - 900 W



CATP50.084



DIRECT CURRENT

Voltage	12 V	24 V
Power	900 W	1600 W
Protection index	IP42	
Insulation class	B	
Type of winding	Compound	
Brushes kit	12/900 24/1600	5441.3801.2
Minimum brush length	5mm 0.2inch	

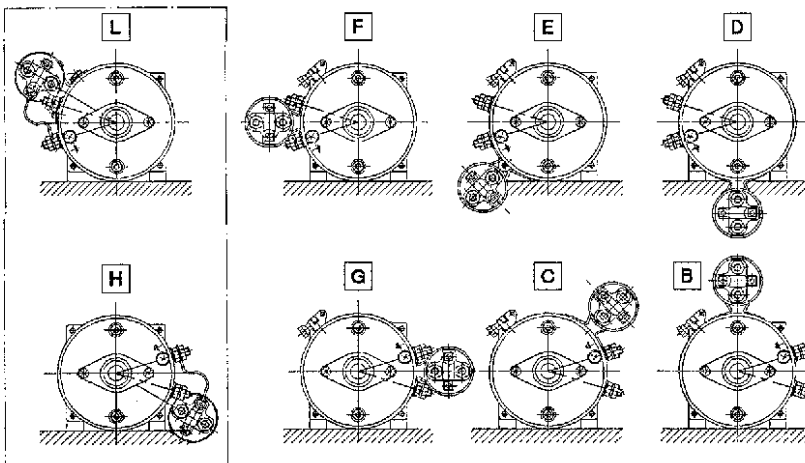
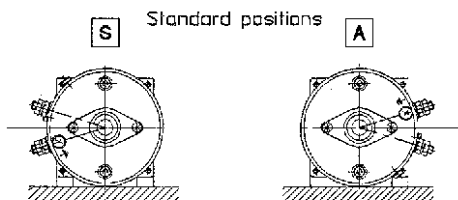
Weight 7 Kg  
15.4 lb

	MOTOR		MOTOR WITH RELAY	
Rotation				
Right				
Type	C129AE/B0	C235AE/A0	C129AE/B1	C235AE/A1
Code	5439.1290.1	5439.2350.1	5439.1290.2	5439.2350.2
Relay	STANDARD		HEAVY DUTY	
Relay type	R104		R203	

MOTOR MOUNTING POSITION

Standard positions

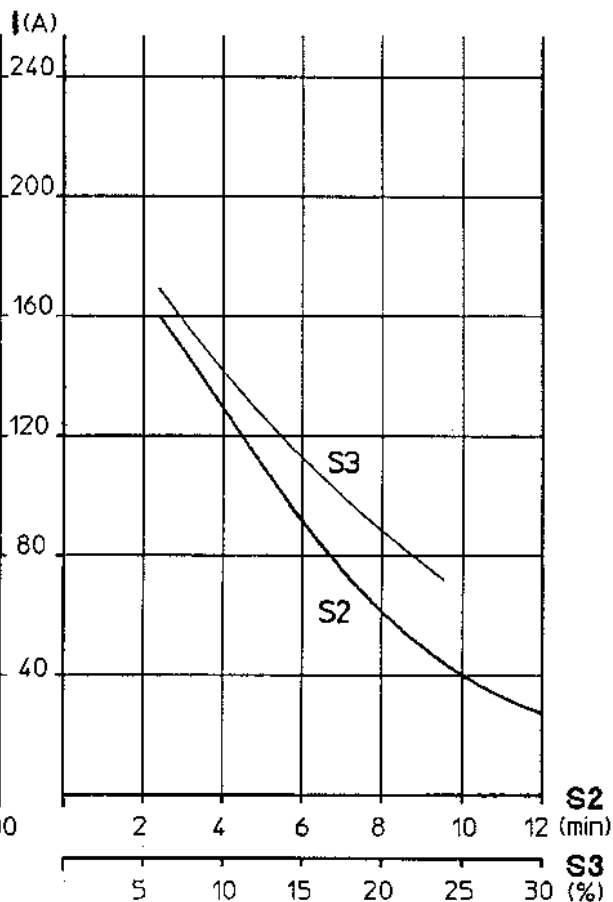
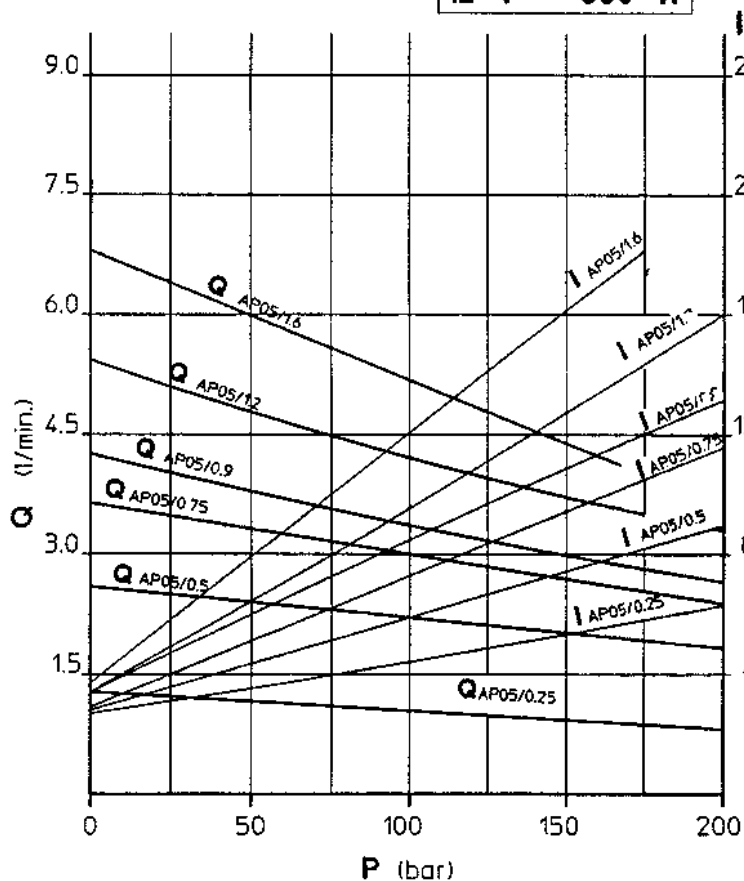
RELAY MOUNTING POSITION



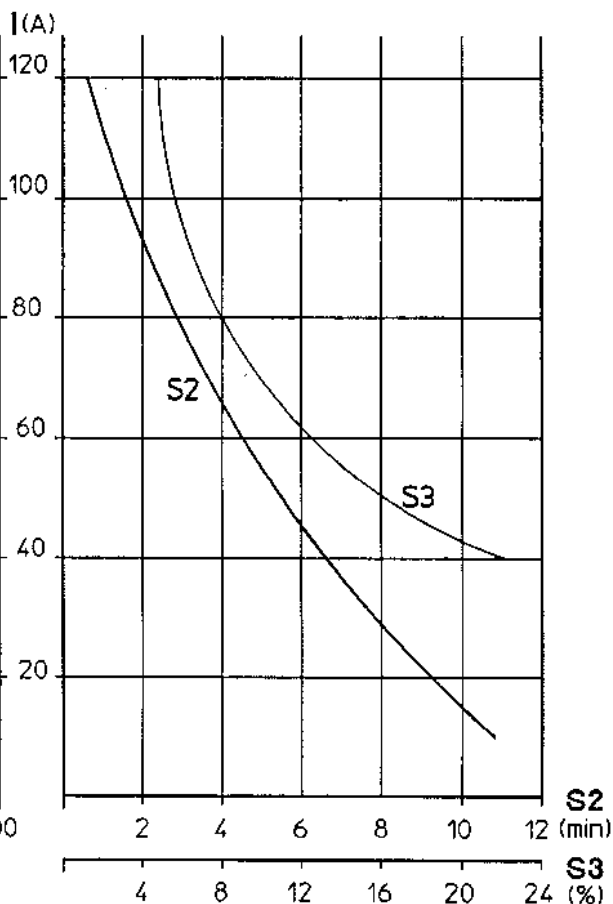
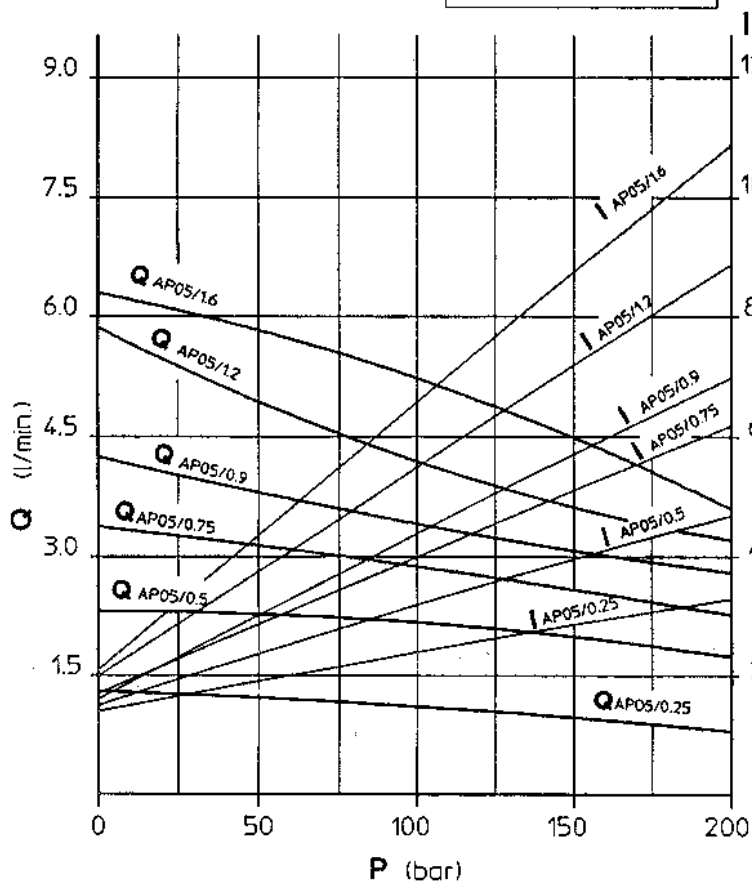
5 Example Electric motor Pos. C 1 2 9 A E / P 0 S

Relay Pos.

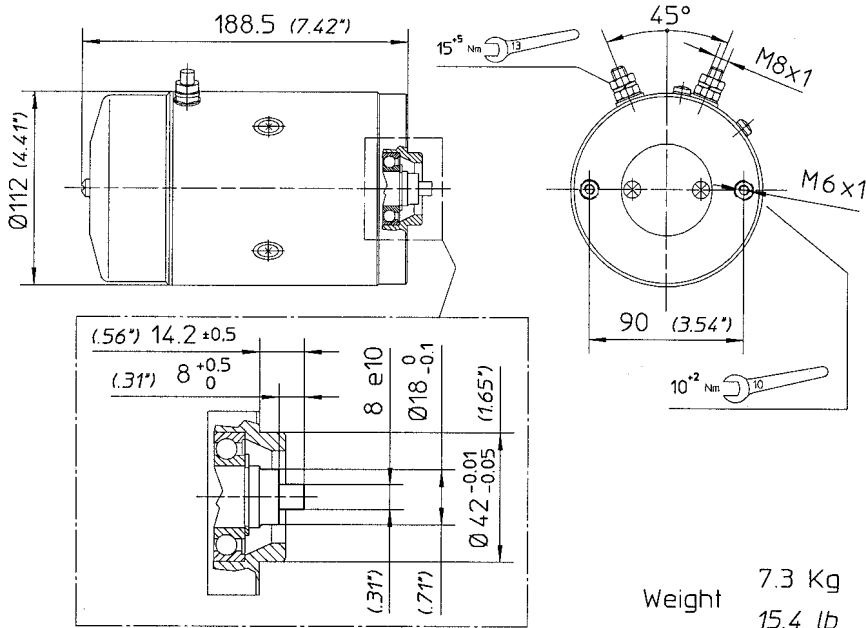
12 V - 900 W



24 V - 1600 W



CATUP50086



DIRECT CURRENT

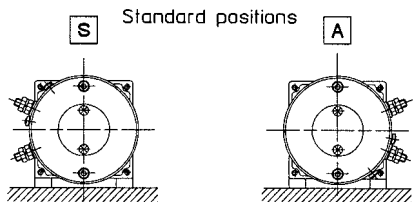
Voltage	12 V	24 V
Power	1500 W	2000 W
Protection index	IP54	
Insulation class	F	
Type of winding	Compound	
Brushes kit	12/1500 24/2000	5441.3801.6 5441.3801.5
Minimum brush length	12.5mm 0.5 inch	

Weight 7.3 Kg  
15.4 lb

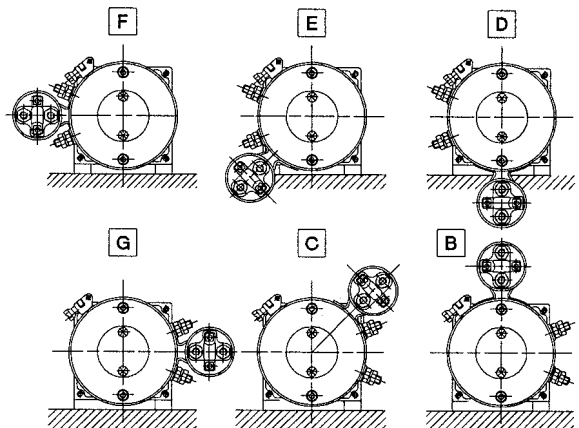
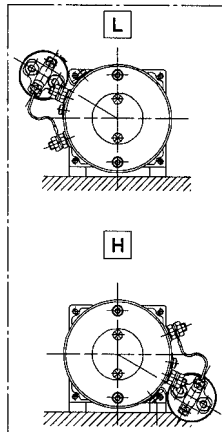
Rotation	MOTOR		MOTOR WITH RELAY			
	12V - 1500W	24V - 2000W	12V - 1500W	24V - 2000W	12V - 1500W	24V - 2000W
Right						
Type	<b>C134AK/O0</b>	<b>C238AK/P0</b>	<b>C134AK/O0 + R104</b>	<b>C238AK/P0 + R203</b>	<b>C134AK/O0 + R107</b>	<b>C238AK/P0 + R210</b>
Code	5439.1341.6	5439.2381.3	7633.1001.0	7633.2003.0	7633.1003.0	7633.2005.0
Relay			STANDARD		HEAVY DUTY	
Relay type			R104	R203	R107	R210
			Standard pos. only			

MOTOR MOUNTING POSITION

RELAY MOUNTING POSITION



Standard positions

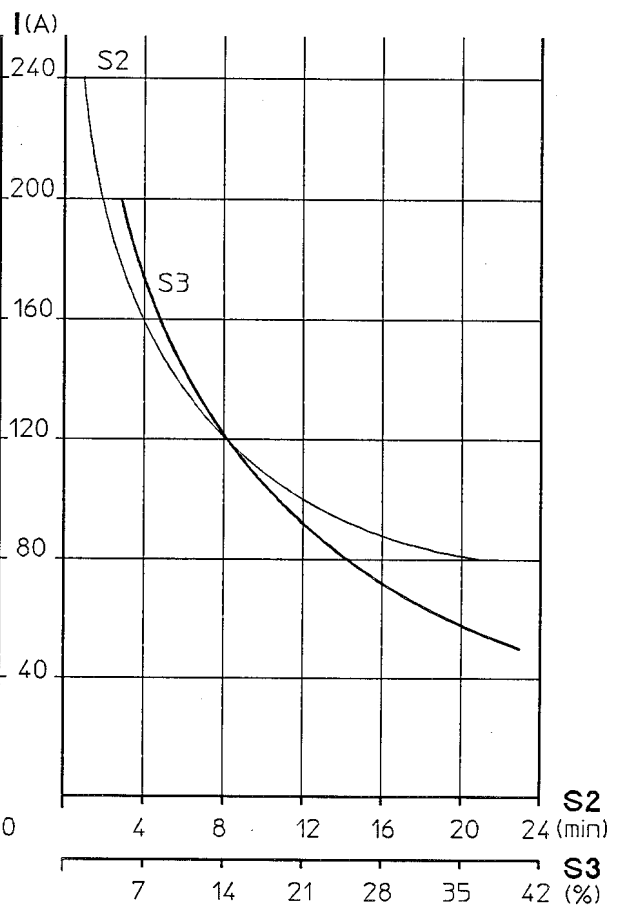
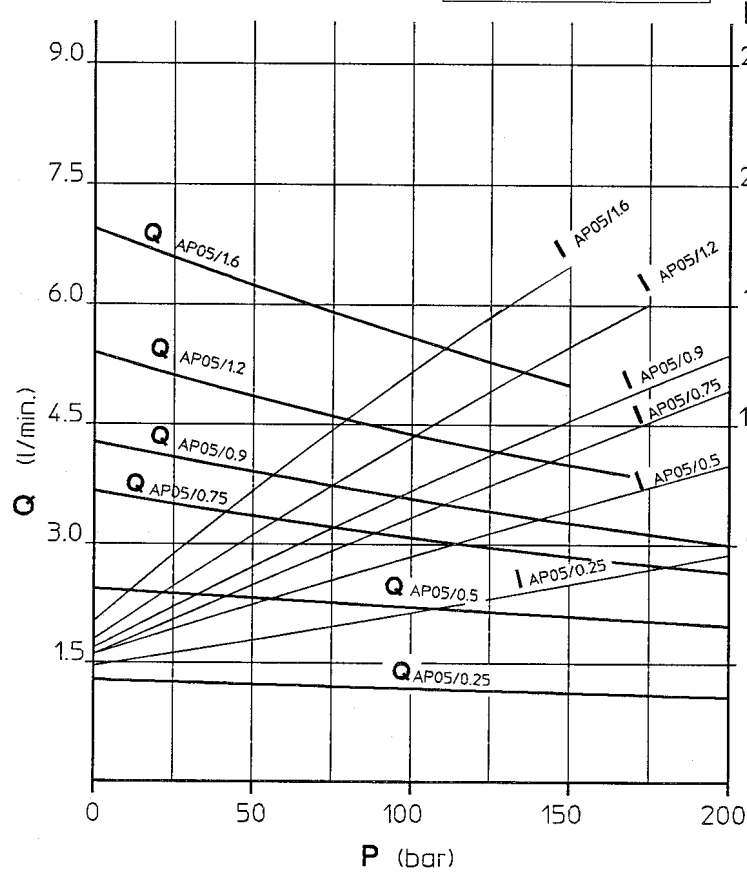


5 Example

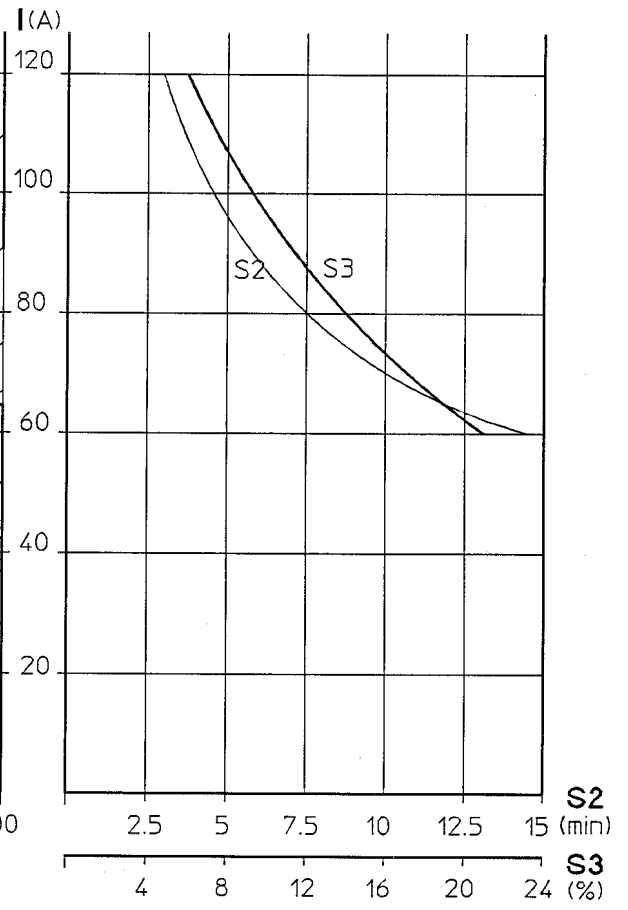
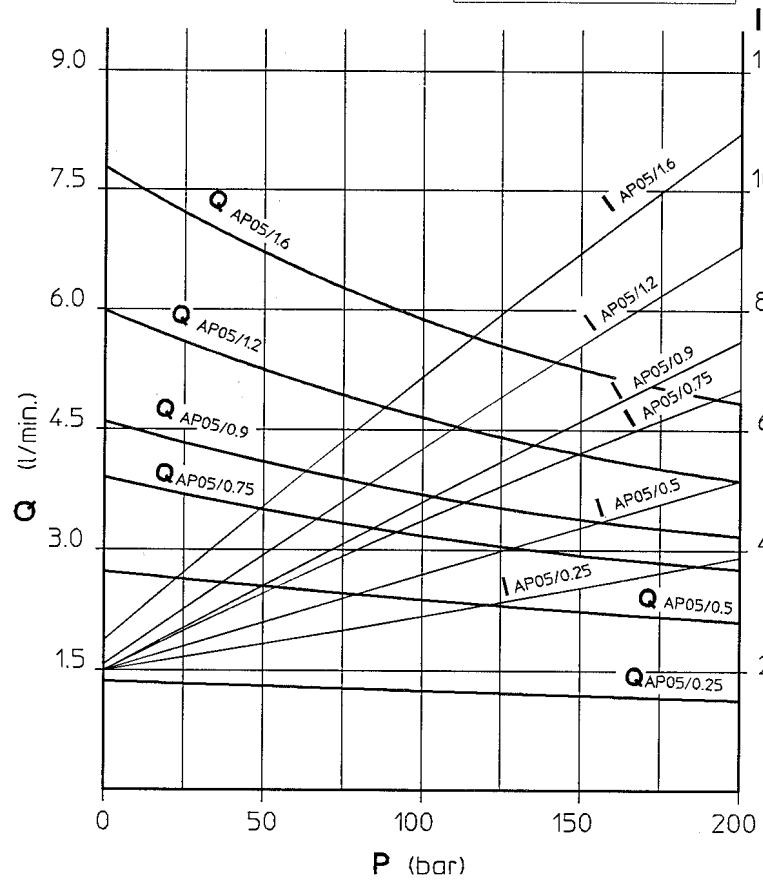
Electric motor	Pos.
C 1 3 4 A K / 0 0	S

Relay	Pos.

12 V - 1500 W



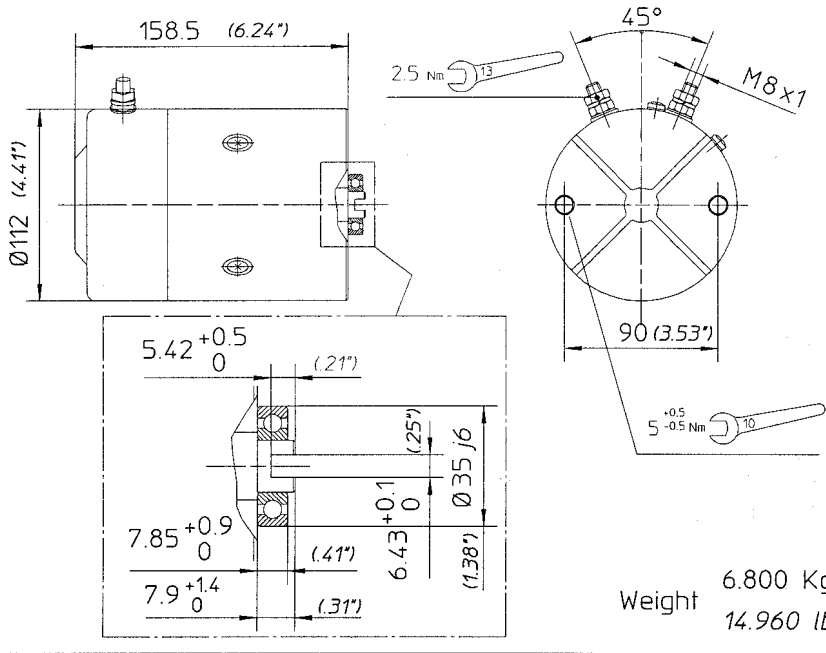
24 V - 2000 W



CATUP50.100

4

**ELECTRIC MOTORS**



**DIRECT CURRENT**

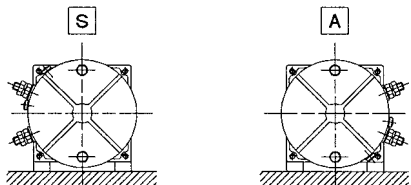
Voltage	12 V	24 V
Power	1600 W	2200 W
Protection index	IP44	
Insulation class	F	
Type of winding	Compound	
Brushes kit	12/1600 24/2200	5441.3802.2 5441.3802.3
Minimum brush length	12.5 mm	

Weight 6.800 Kg  
14.960 lb

Rotation Right	MOTOR		MOTOR WITH RELAY			
	12V - 1600W	24V - 2200W	12V - 1600W	24V - 2200W	12V - 1600W	24V - 2200W
Type	<b>C135AK/X0</b>	<b>C240AK/Y0</b>	<b>C135AK/X0 + R104</b>	<b>C240AK/Y0 + R203</b>	<b>C135AK/X0 + R107</b>	<b>C240AK/Y0 + R210</b>
Code	5439.1350.1	5439.2400.1	7633.1008.0	7633.2008.0	7633.1009.0	7633.2009.0
Relay	STANDARD			HEAVY DUTY		
Relay type			R104	R203	R107	R210
			Standard pos. only			

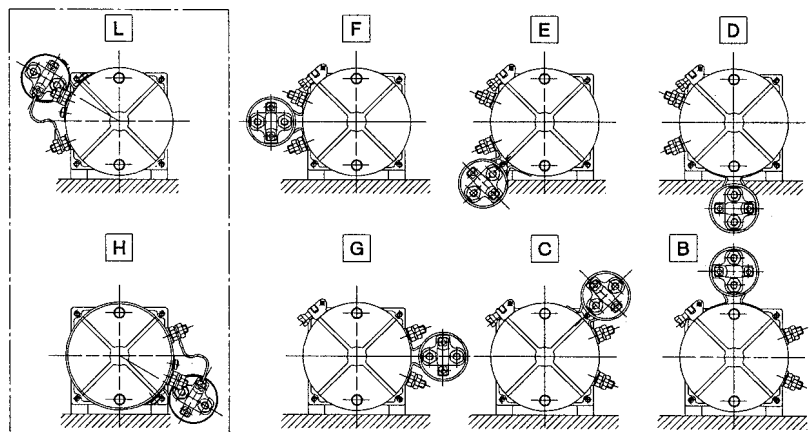
**MOTOR MOUNTING POSITION**

Standard positions

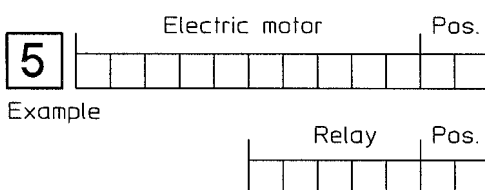


**RELAY MOUNTING POSITION**

Standard positions

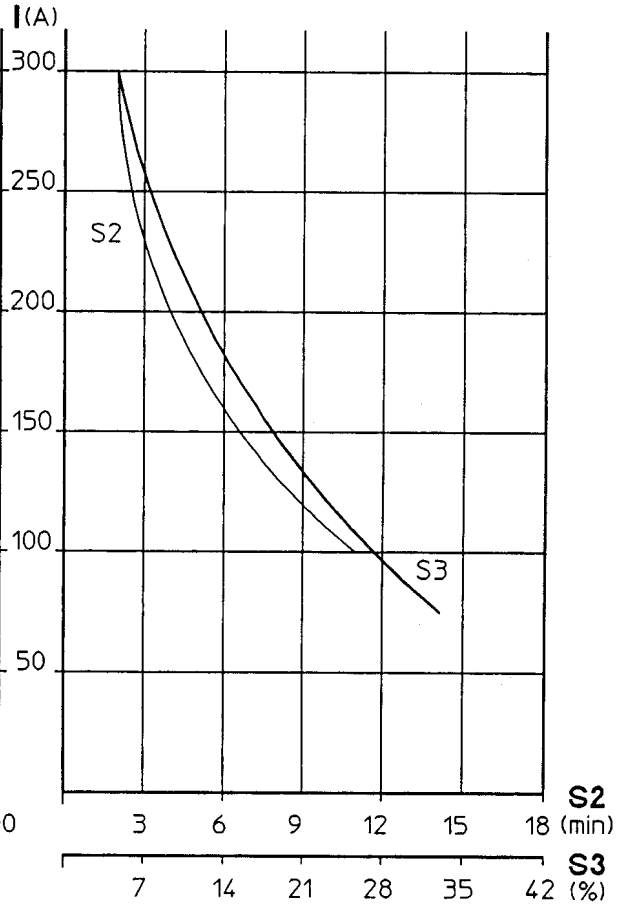
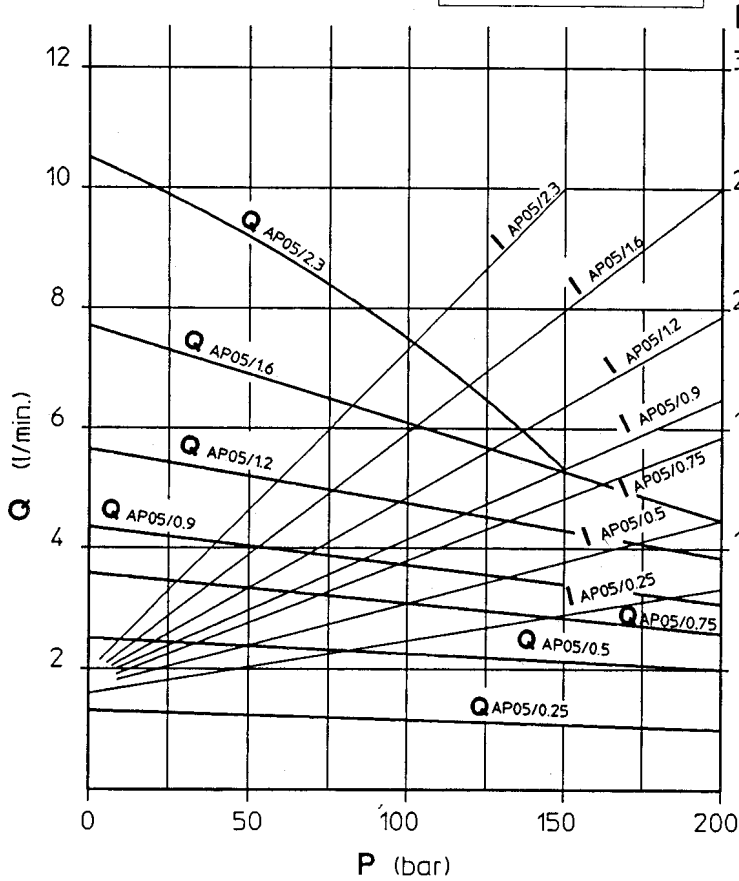


5

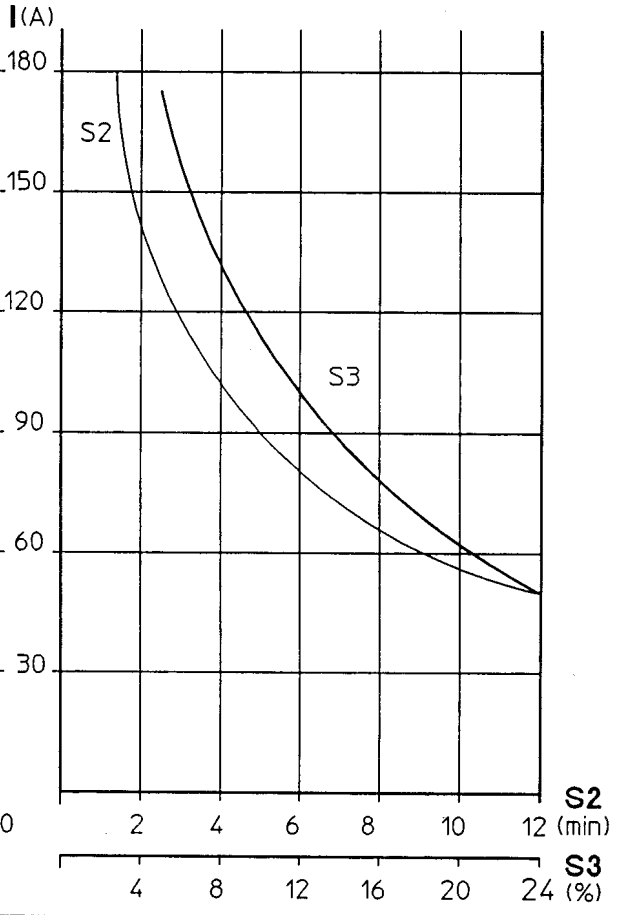
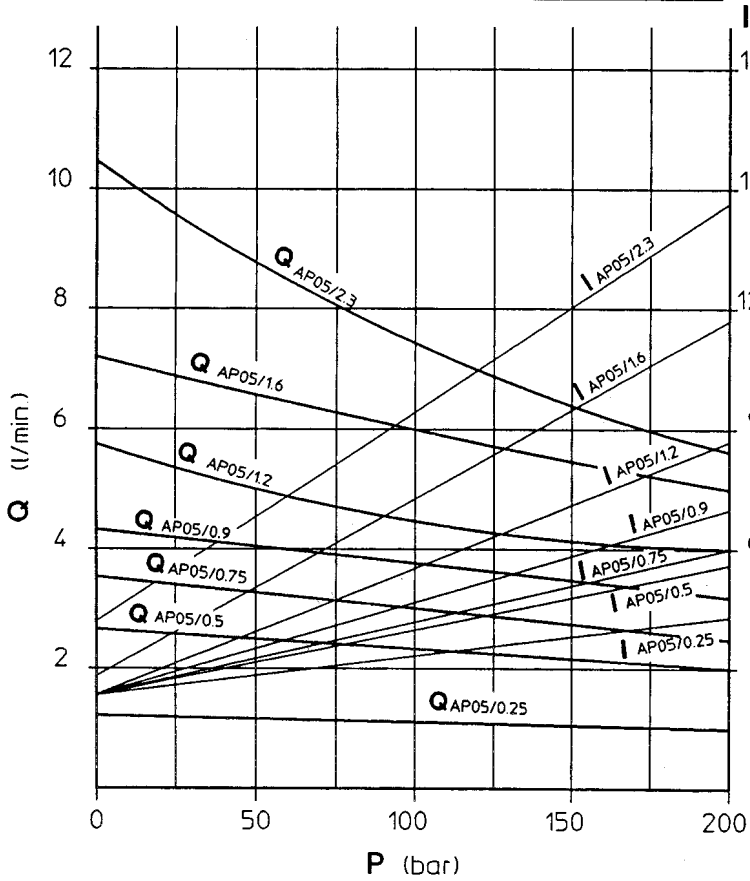


CATUP50.105

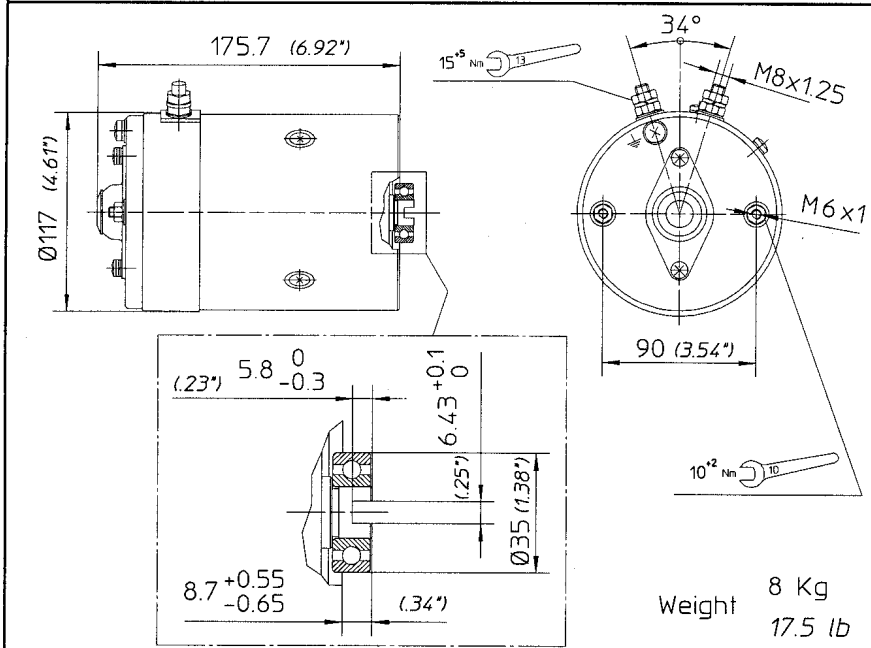
12 V - 1600 W



24 V - 2200 W



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DIRECT CURRENT

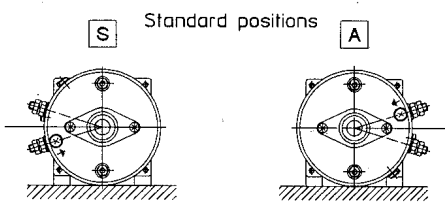
Voltage	12 V	24 V
Power	2000 W	2500 W
Protection index	IP42	
Insulation class	B	
Type of winding	Compound	
Brushes kit	12/1500 24/2000	5441.3801.2
Minimum brush length	5mm 0.2inch	

Weight 8 Kg  
17.5 lb

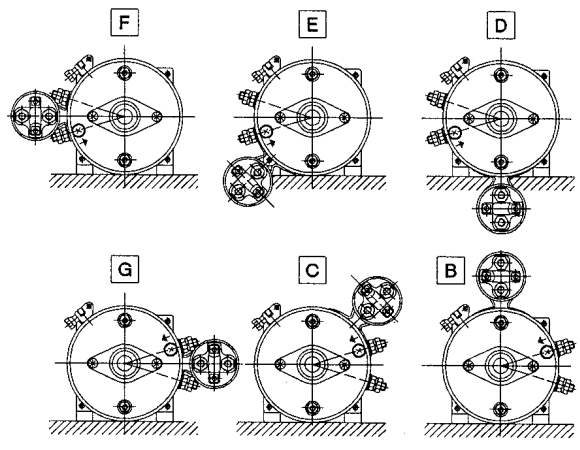
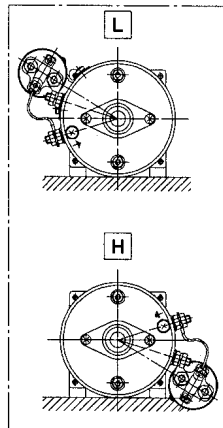
Rotation Right	MOTOR		MOTOR WITH RELAY			
Type	T107E	T109E	T108E	T110E	T111E	T112E
Code	5439.1380.6	5439.2420.5	5439.1380.7	5439.2420.6	5439.1380.8	5439.2420.7
Relay	STANDARD			HEAVY DUTY		
Relay type			R104	R203	R107	R210
	Standard pos. only					

MOTOR MOUNTING POSITION

RELAY MOUNTING POSITION



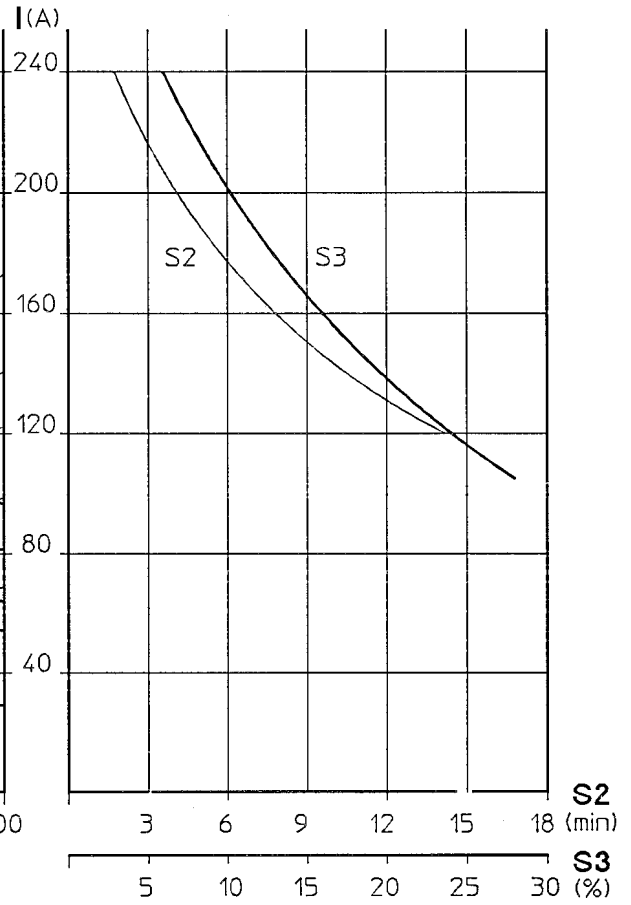
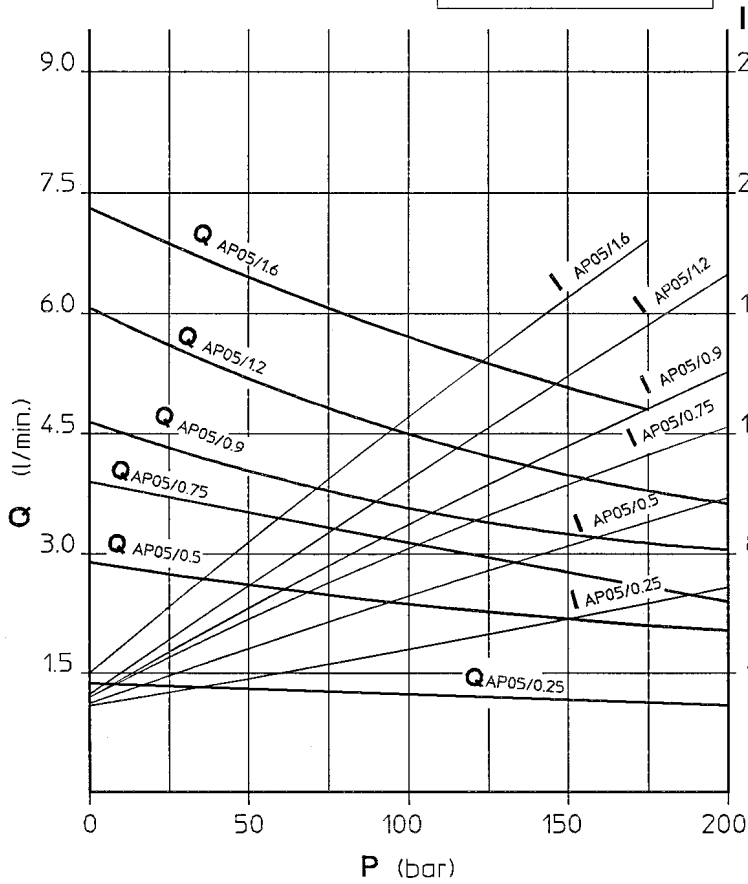
Standard positions



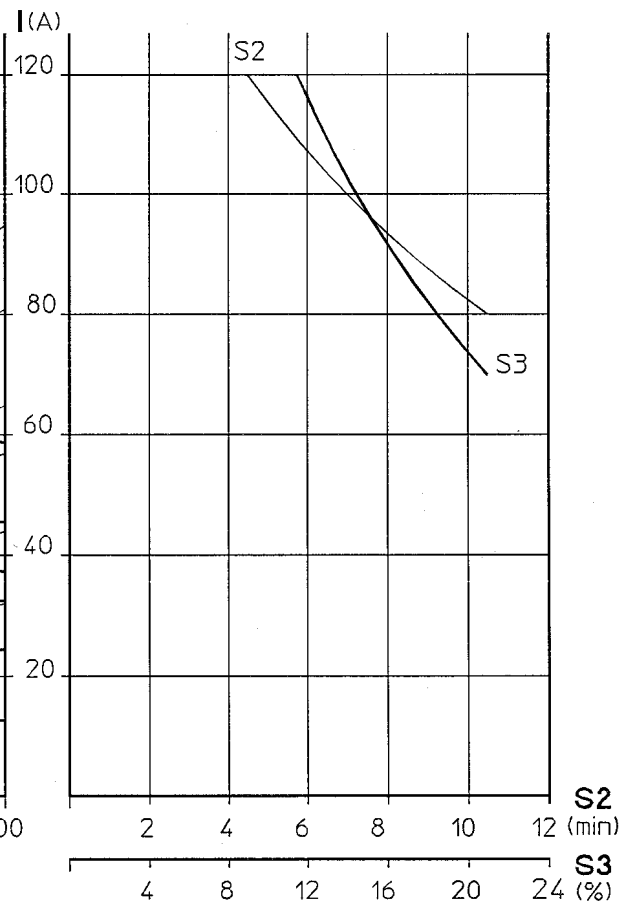
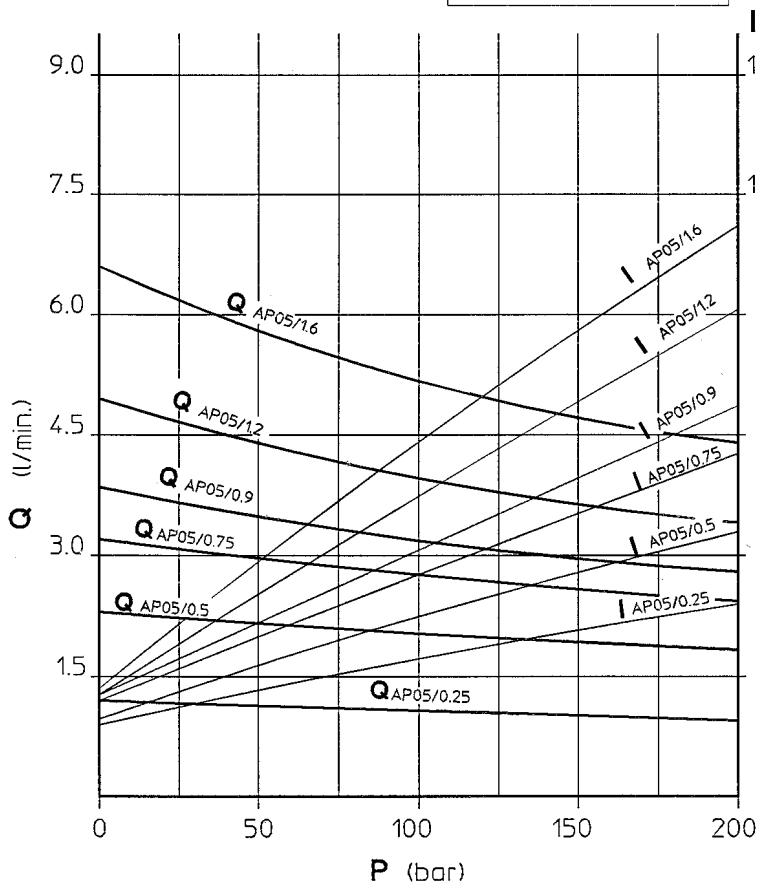
5

Electric motor	T	1	0	9	E				Pos.	S
Example									Relay	Pos.

12 V - 2000 W

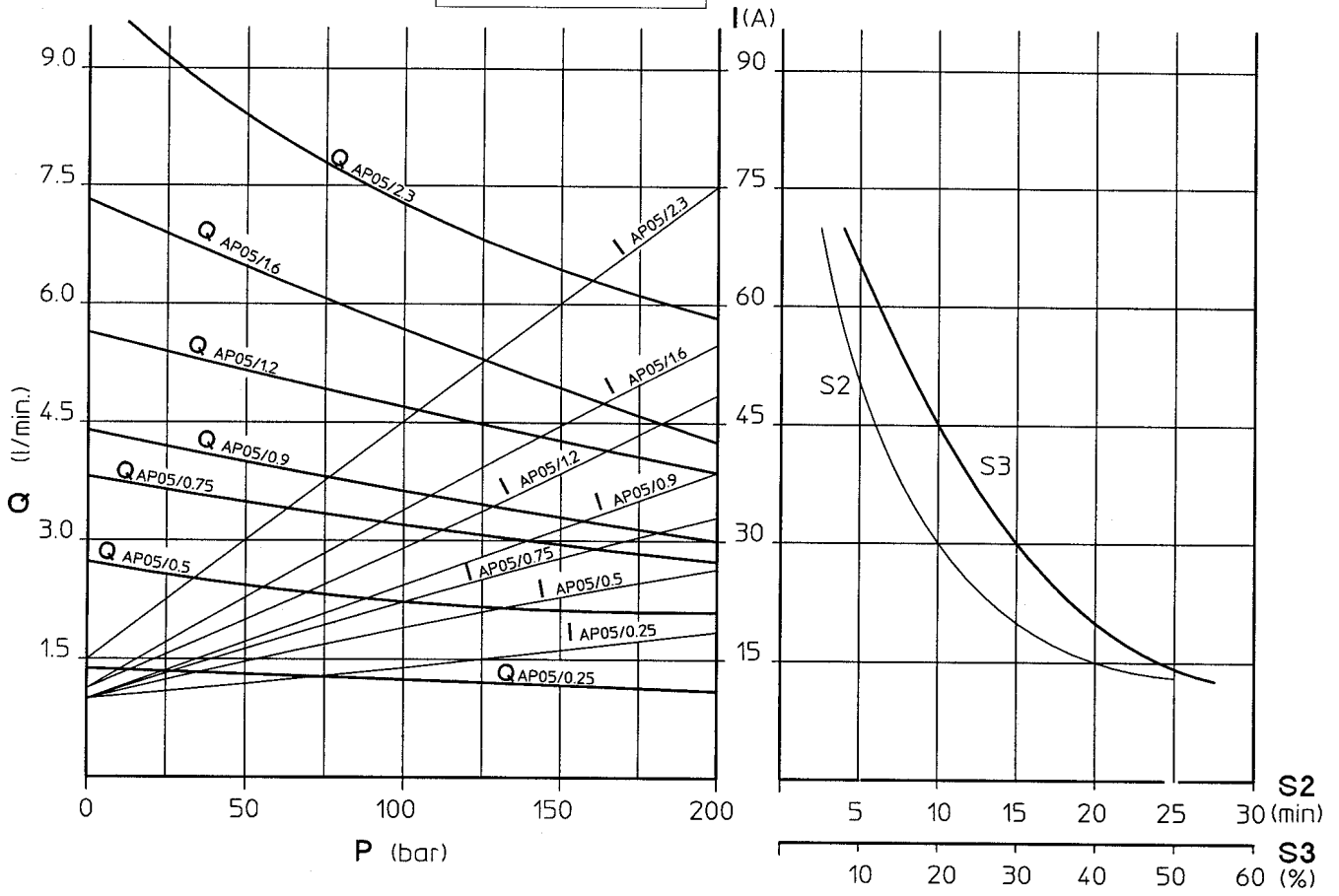


24 V - 2500 W

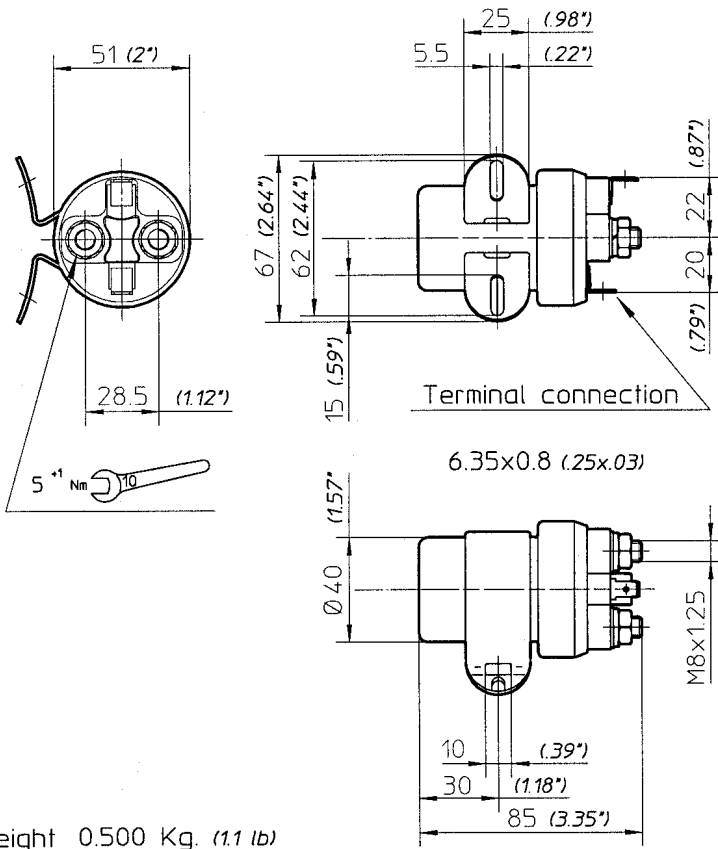




12 V - 2000 W



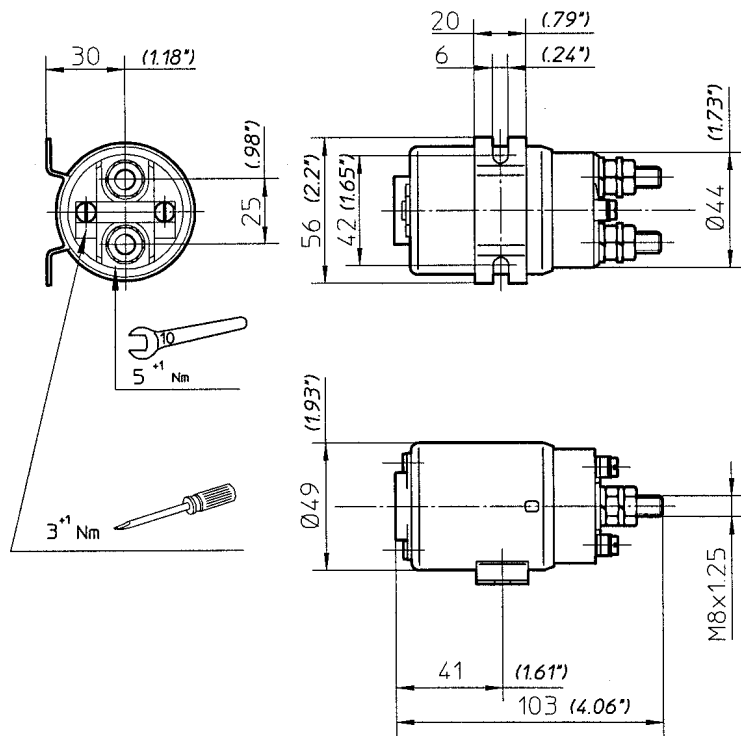
STARTER RELAYS



Weight 0.500 Kg. (1.1 lb)

STANDARD RELAY

Voltage	12 V	24 V
Type	R104	R203
Code	5441.34104	5441.34203
Current for continuous duty	60 A.	
Max. current (5 sec.)	500 A.	
Protection index	IP43	
Insulation class	B	
Electric symbol		



Weight 0.600 Kg. (1.3 lb)

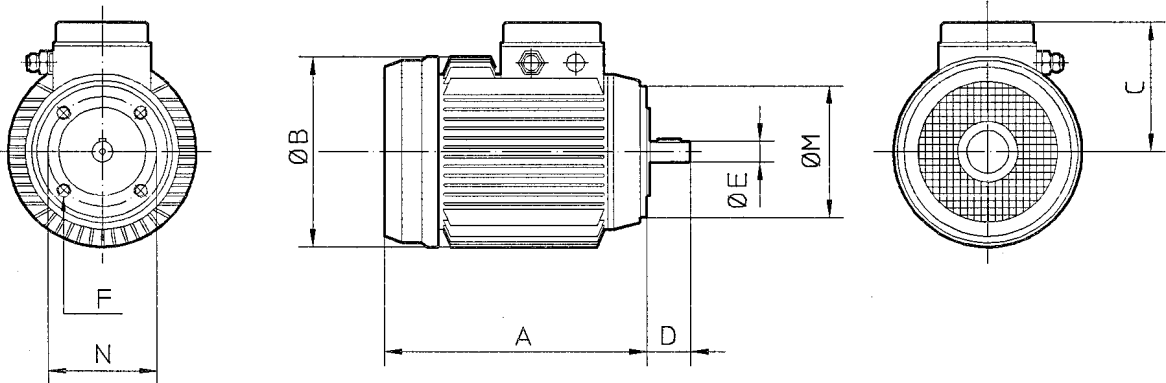
HEAVY DUTY

Voltage	12 V	24 V
Type	R107	R210
Code	5441.34107	5441.34210
Current for continuous duty	150 A.	
Max. current (5 sec.)	800 A.	
Protection index	IP42	
Insulation class	B	
Electric symbol		

A.C. CURRENT

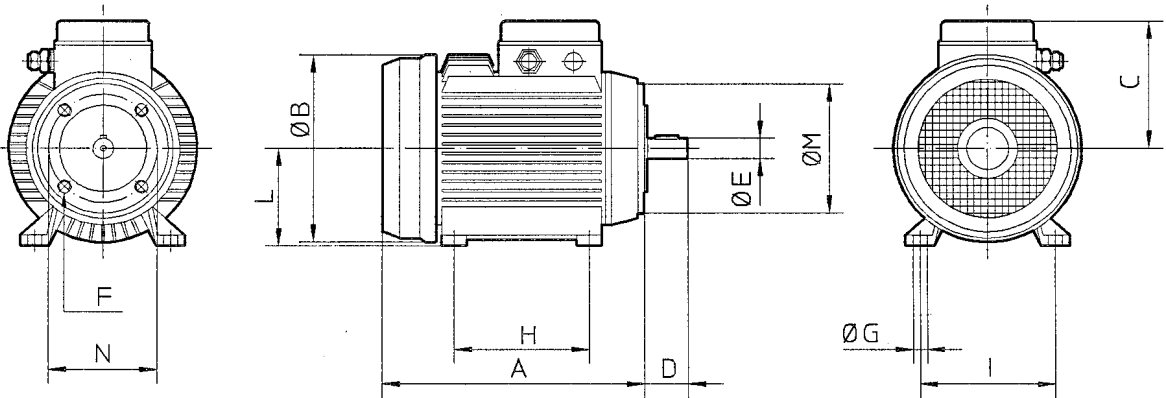
Frame size

**B14**



Frame size

**B34**



Size	DIMENSIONS												
		A	B	C	D	E	F	G	H	I	L	M	N
63	mm	187	126	89	23	11	M5	10	80	100	63	90	75
	inch	7.36	4.96	3.50	.90	.43		.39	3.14	3.93	2.48	3.54	2.95
71	mm	230	154	101	30	14	M6	7	90	112	71	105	85
	inch	9.05	6.06	3.97	1.18	.55		.27	3.54	4.41	2.79	4.13	3.35
80	mm	250	162	125	40	19	M6	9	100	125	80	120	100
	inch	9.84	6.38	4.92	1.57	.75		.35	3.94	4.92	3.15	4.72	3.94

Lengths and diameters indicated by the letter A and B are guideline only.

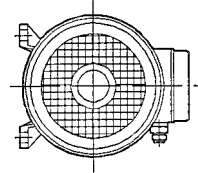
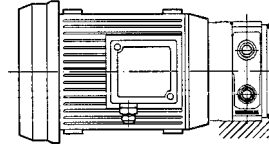
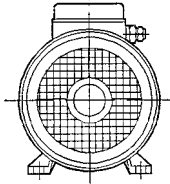
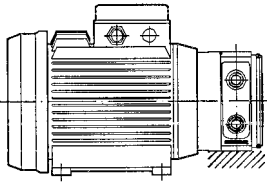
Frame size <b>B14</b> SINGLE PHASE motor					Frame size <b>B34</b> SINGLE PHASE motor				
Power		Size	Type	Code	Power		Size	Type	Code
kW	HP				kW	HP			
0.12	0.16	63	T211	5431.60411	0.12	0.16	63	T711	5431.60412
0.18	0.25	63	T212	5431.60811	0.18	0.25	63	T712	5431.60812
0.25	0.33	71	T209	5431.61221	0.25	0.33	71	T709	5431.61223
0.37	0.5	71	T201	5431.61831	0.37	0.5	71	T701	5431.61832
0.55	0.75	80	T202	5431.62231	0.55	0.75	80	T702	5431.62233
0.75	1	80	T203	5431.62631	0.75	1	80	T703	5431.62633
Frame size <b>B14</b> THREE PHASE motor					Frame size <b>B34</b> THREE PHASE motor				
Power		Size	Type	Code	Power		Size	Type	Code
kW	HP				kW	HP			
0.12	0.16	63	T011	5435.60441	0.12	0.16	63	T511	5435.60442
0.18	0.25	63	T012	5435.61041	0.18	0.25	63	T512	5435.61011
0.25	0.33	71	T009	5435.61221	0.25	0.33	71	T509	5435.61222
0.37	0.5	71	T001	5435.61821	0.37	0.5	71	T501	5435.61822
0.55	0.75	80	T002	5435.62231	0.55	0.75	80	T502	5435.62232
0.75	1	80	T003	5435.62631	0.75	1	80	T503	5435.62632

Mounting positions

Standard position

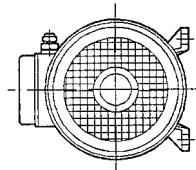
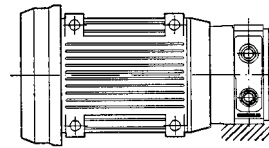
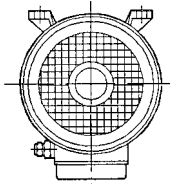
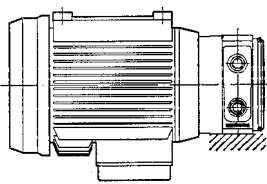
**S**

**B**



**A**

**C**



Example

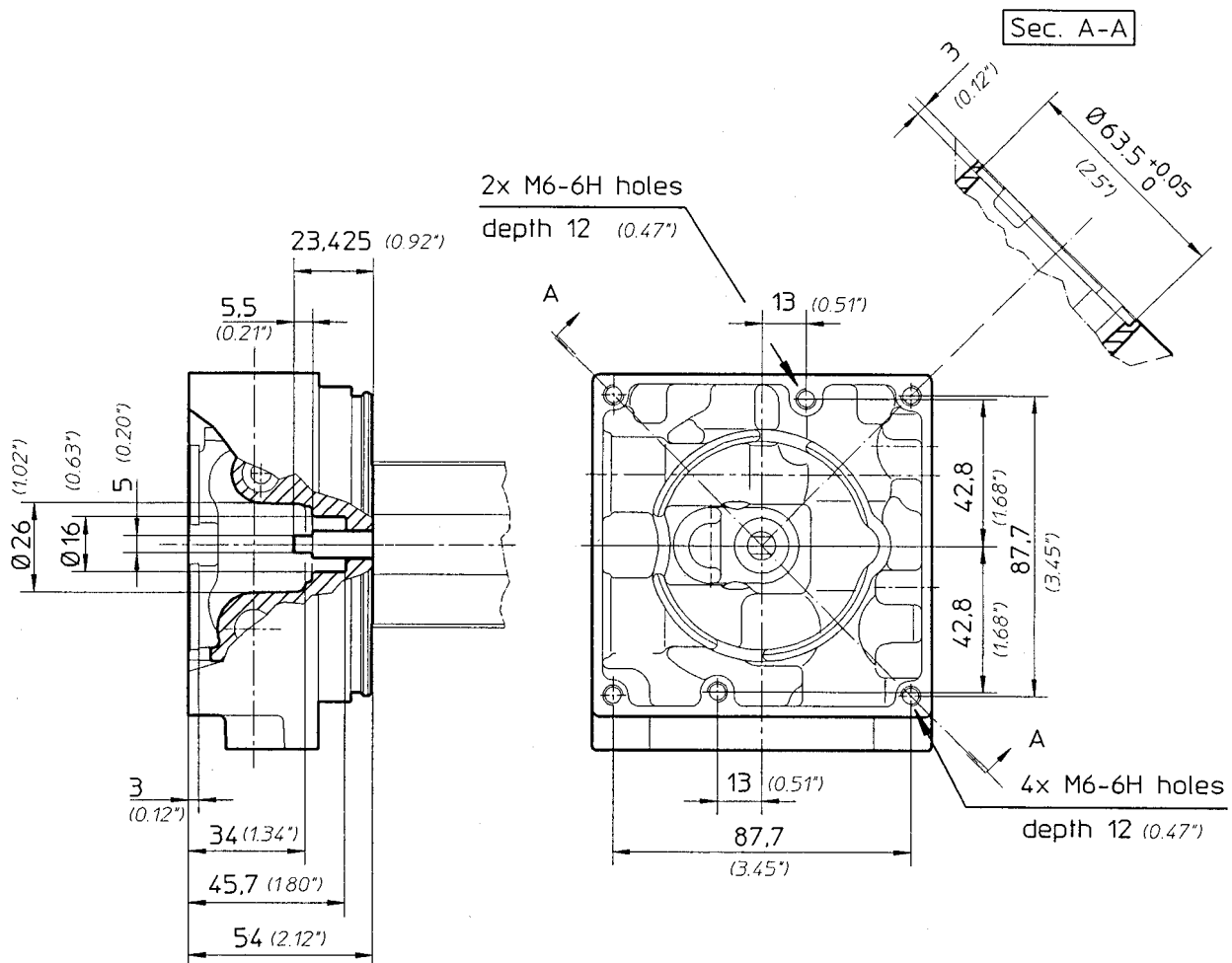
<b>5</b>	Electric motor							Pos.
	T	0	0	1				S

Relay				Pos.

## INTRODUCTION

The drives illustrated in this chapter are intended for use in conjunction with d.c. and a.c. motors as described in the previous chapter.

To allow the use of different motors, the interface on the motor side is shown with the dimensions of the spigot and of the end of the pump drive shaft.



## Materials

The flanges for connection of the power pack housing and the electric motor are in aluminium alloy GdAlSi12Cu to UNI 5076.

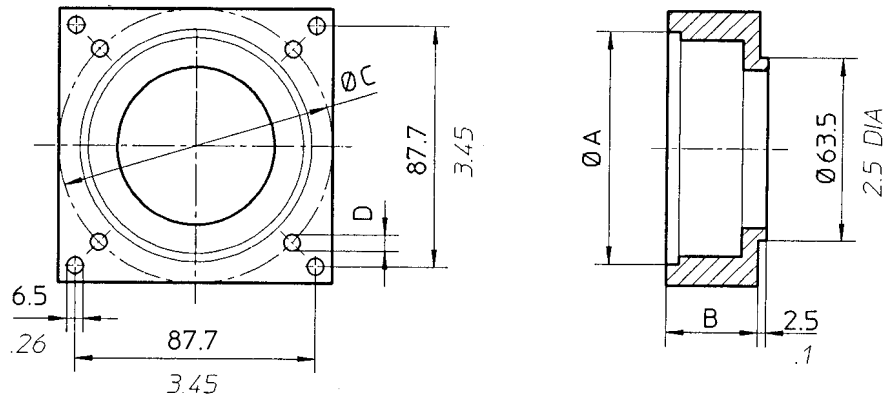
Couplings are high strength steel, with mating surfaces hardened by heat treatment for added resistance to wear.

The tables allow selection of the correct drive for the selected motor.

D.C. MOTORS					
Motor type			Voltage	Power	Drive
C117PE/V0	C117PE/V1		12 V	350 W	<b>E61</b>
C220PE/Z0	C220PE/Z1		24 V	400 W	
C128AE/S0	T113E		12 V	800 W	
C232AE/R0	C232AE/T1		24 V	1200 W	
C128PE/X0	C128PE/X1		12 V	800 W	
C229PE/Y0	C229PE/Y1		24 V	900 W	
C135AK/X0	C135AK/X0 + R104	C135AK/X0 + R107	12 V	1600 W	<b>E66</b>
C240AK/Y0	C240AK/Y0 + R203	C240AK/Y0 + R210	24 V	2200 W	
C129AE/B0	C129AE/B1		12 V	900 W	
C235AE/A0	C235AE/A1		24 V	1600 W	
T107E	T108E	T111E	12 V	2000 W	
T109E	T110E	T112E	24 V	2500 W	
C134AK/O0	C134AK/O0 + R104	C134AK/O0 + R107	12 V	1500 W	<b>E65</b>
C238AK/P0	C238AK/P0 + R203	C238AK/P0 + R210	24 V	2000 W	
T82K			48 V	200 W	

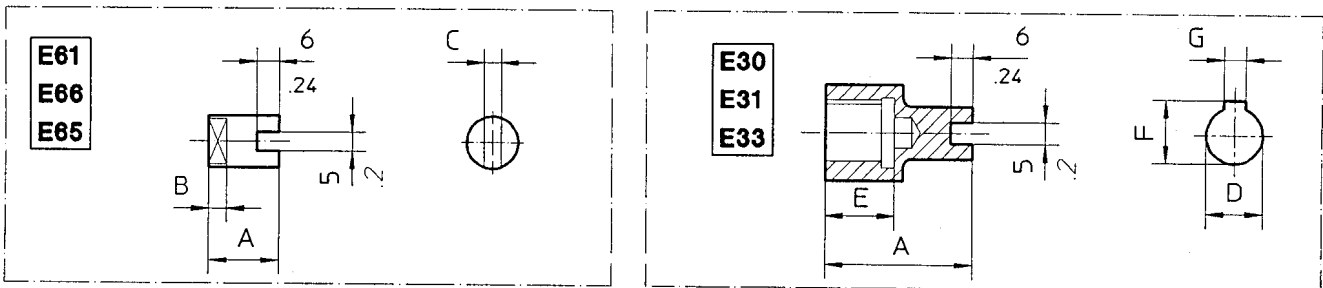
A.C. MOTORS							
SINGLE PHASE				THREE PHASE			
Motor type	Power		Drive	Motor type	Power		Drive
	kW	HP			kW	HP	
T211-T711	0.12	0.16	<b>E30</b>	T011-T511	0.12	0.16	<b>E30</b>
T212-T712	0.18	0.25		T012-T512	0.18	0.25	
T209-T709	0.25	0.33	<b>E33</b>	T009-T509	0.25	0.33	<b>E33</b>
T201-T701	0.37	0.5		T001-T501	0.37	0.5	
T202-T702	0.55	0.75	<b>E31</b>	T002-T502	0.55	0.75	<b>E31</b>
T203-T703	0.75	1		T003-T503	0.75	1	

MOTORS FLANGE



Drive system	Flange code	Dimensions			
		A	B	C	D
<b>E66</b>	6581.0018.0	98 (3.85")	3 (.12")	115 (4.53")	6.5 (.25")
<b>E65</b>	6581.0017.0	42 (1.65")	11.5 (.45")	90 (3.54")	M6
<b>E30</b>	6581.0008.0	60 (2.36")	30 (1.18")	75 (2.95")	5.5 (.22")
<b>E33</b>	6581.0009.0	70 (2.76")	30 (1.18")	85 (3.35")	6.5 (.25")
<b>E31</b>	6581.0007.0	80 (3.15")	30 (1.18")	100 (3.94")	6.5 (.25")

MOTORS COUPLING

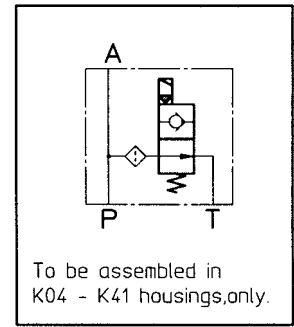
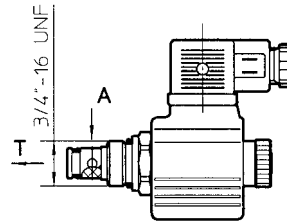
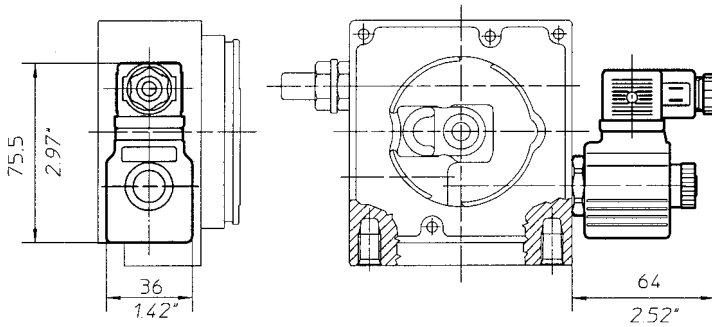


Drive system	Coupling code	Dimensions						
		A	B	C	D	E	F	G
<b>E66</b>	6596.0034.0	34.5 (1.36")	5.5 (.22")	6.4 (.26")				
<b>E61</b>	6596.0011.0	15 (.6")	5.5 (.22")	6.4 (.26")				
<b>E65</b>	6596.0015.0	39.5 (1.55")	7 (.27")	8 (.31")				
<b>E30</b>	6594.0029.0	60 (2.36")			11 (.43")	18 (.71")	12.7 (.5")	4 (.16")
<b>E33</b>	6594.0030.0	55 (2.17")			14 (.55")	20 (.79")	16.2 (.64")	5 (.2")
<b>E31</b>	6594.0031.0	50 (1.97")			19 (.75")	25 (.98")	21.7 (.86")	6 (.24")

**TWO POSITION-TWO WAY N.O.EL.VALVE**

Directional valve without coil and connector

**SPF817/22-T0 7572.0020.0**

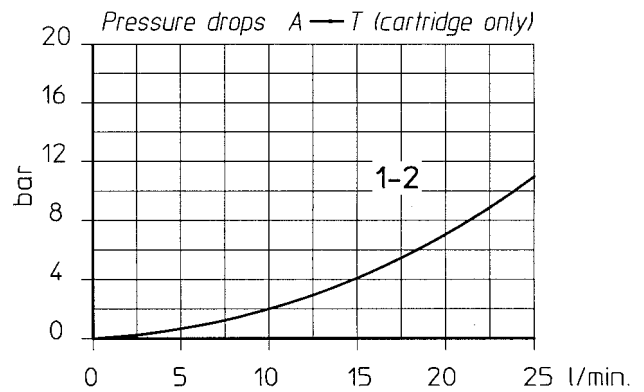


Coil voltage

	D.C.		A.C.		
<b>Volt</b>	12 V.	24 V.	24 V.	110 V.	220 V.
<b>Type</b>	13	23	21	41	51

Complete solenoid valve for d.c. and a.c. current

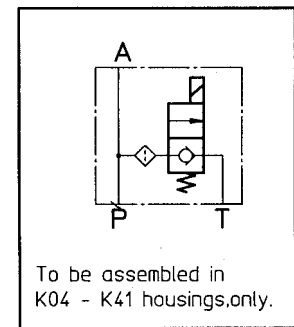
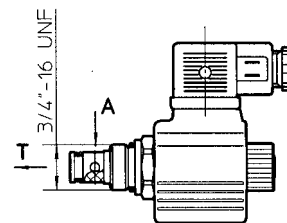
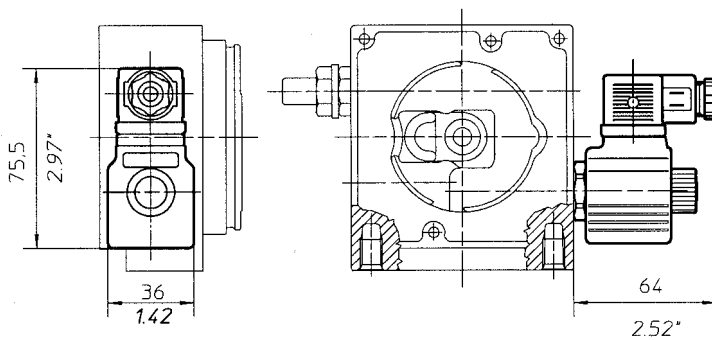
SPF817/22-T0-13-HC	9570.1002.1
SPF817/22-T0-23-HC	9570.2002.0
SPF817/22-T0-21-HC	9569.2002.0
SPF817/22-T0-41-HC	9569.4001.8
SPF817/22-T0-51-HC	9569.6001.8



**TWO POSITION-TWO WAY N.C.EL.VALVE**

Directional valve without coil and connector

**SDF817/22-TV 7572.0001.0**

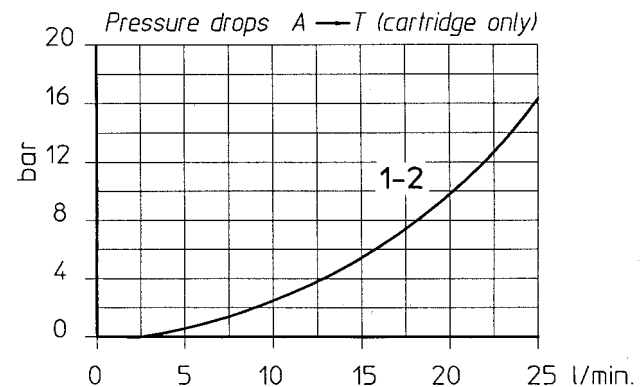


Coil voltage

	D.C.		A.C.		
<b>Volt</b>	12 V.	24 V.	24 V.	110 V.	220 V.
<b>Type</b>	13	23	21	41	51

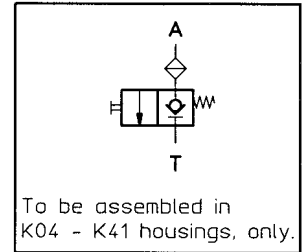
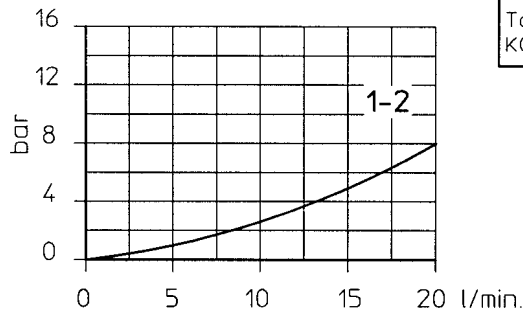
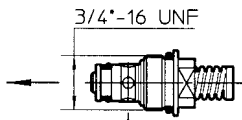
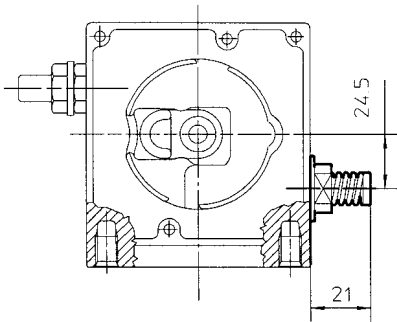
Complete solenoid valve for d.c. and a.c. current

SDF817/22-TV-13-HC	9570.1001.3
SDF817/22-TV-23-HC	9570.2001.3
SDF817/22-TV-21-HC	9569.2001.4
SDF817/22-TV-41-HC	9569.4001.2
SDF817/22-TV-51-HC	9569.6001.2



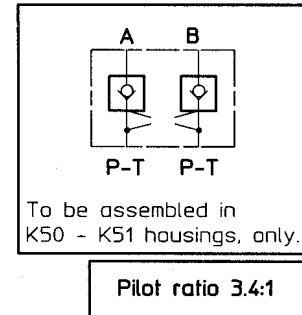
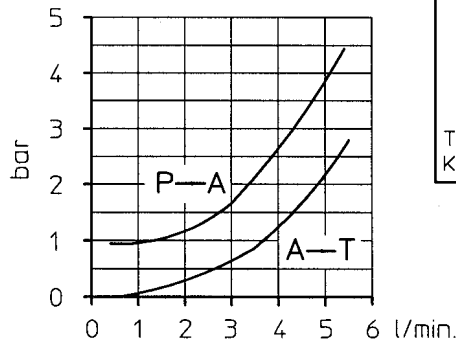
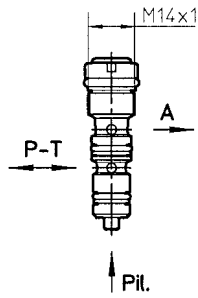
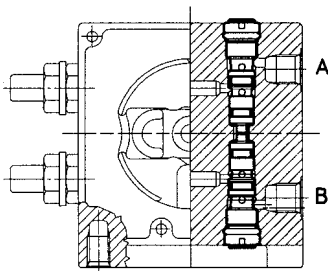
TWO POSITION-TWO WAY MANUAL OPERATED VALVE

ZR817/22-TV 7876.0194.0

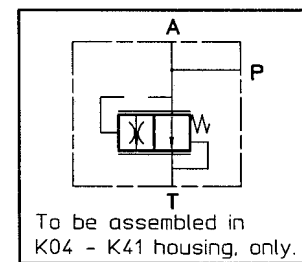
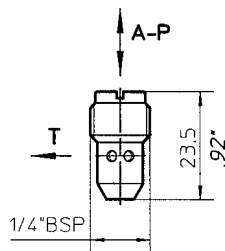
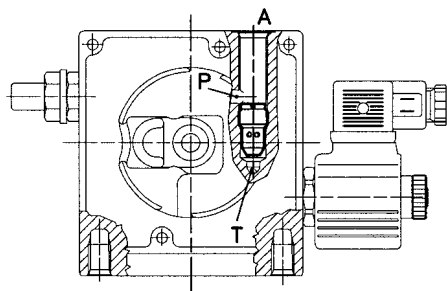


DOUBLE PILOTED CHECK VALVE

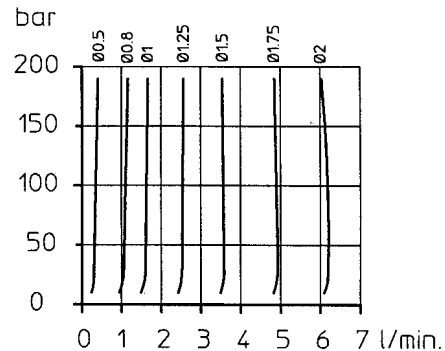
VRP05 7876.0092.0



THROTTLE COMPENSATED FLOW VALVE



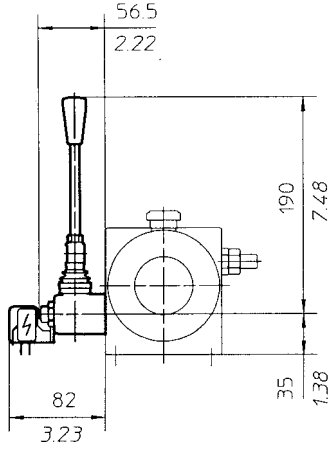
Type valve	Hole flow restrictor	Controlled flow Q			Code
		l/min	UK.G.P.M.	US.G.P.M.	
VRC05/0.35	Ø0.5	0.35	0.077	0.092	7872.0025.0
VRC05/1	Ø0.8	1	0.22	0.26	7872.0026.0
VRC05/1.6	Ø1	1.6	0.35	0.42	7872.0027.0
VRC05/2.5	Ø1.25	2.5	0.55	0.66	7872.0028.0
VRC05/3.5	Ø1.5	3.5	0.77	0.92	7872.0029.0
VRC05/4.9	Ø1.75	4.9	1.08	1.3	7872.0030.0
VRC05/6	Ø2	6	1.32	1.59	7872.0031.0



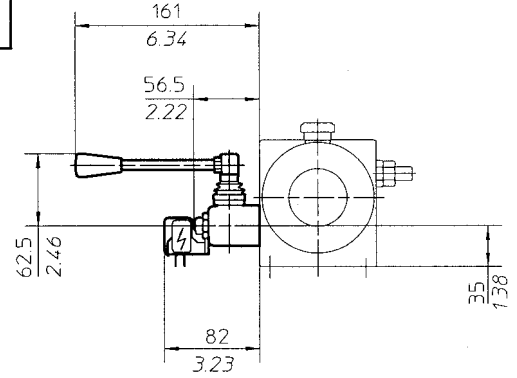
MANUAL CONTROL

Valves	Code	Description	Lever
ZR817/22-TV	7876.0196.0	Without micro-switch	L10...L15
ZR817/22-TVM	7876.0195.0	With micro-switch	L30...L35

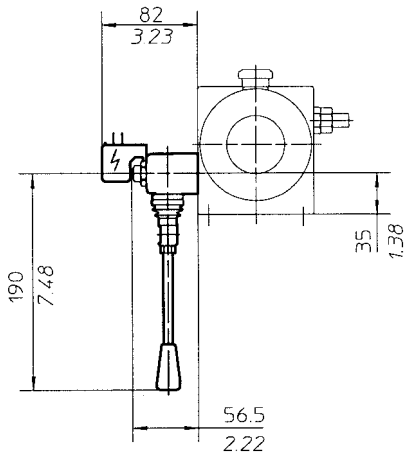
L 10  
L 30



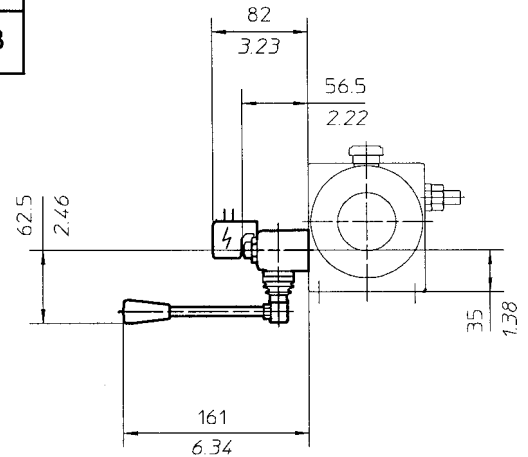
L 11  
L 31



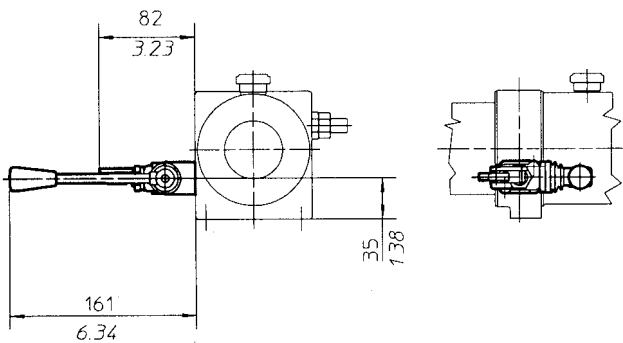
L 12  
L 32



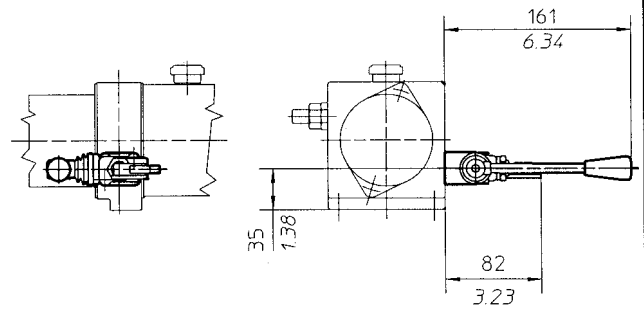
L 13  
L 33



L 14  
L 34

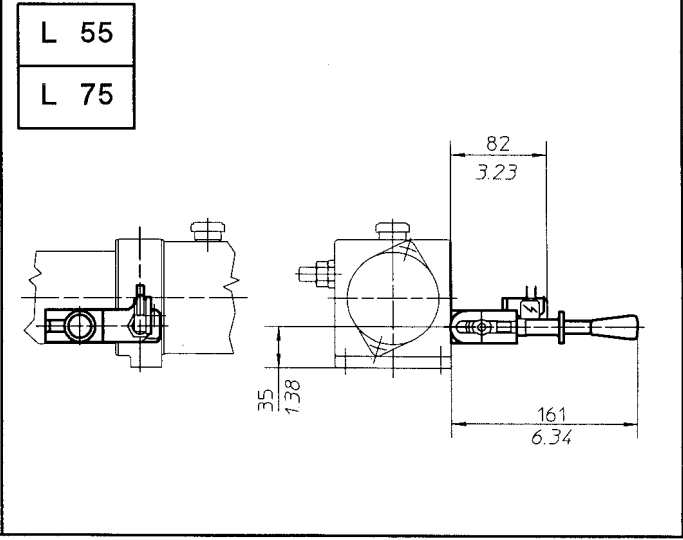
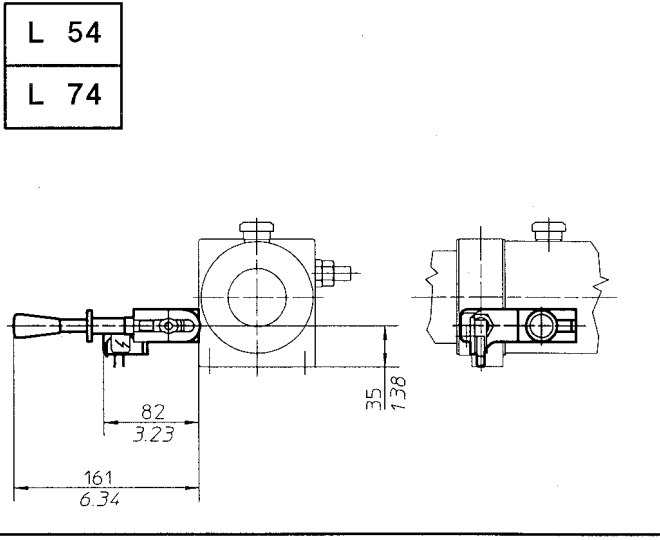
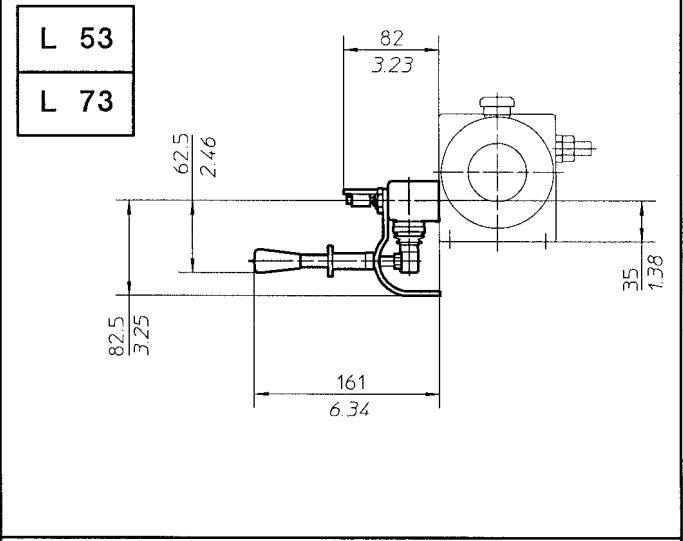
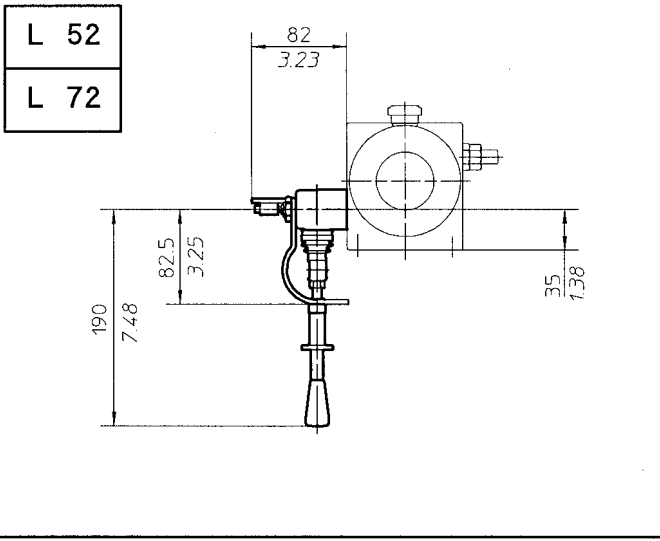
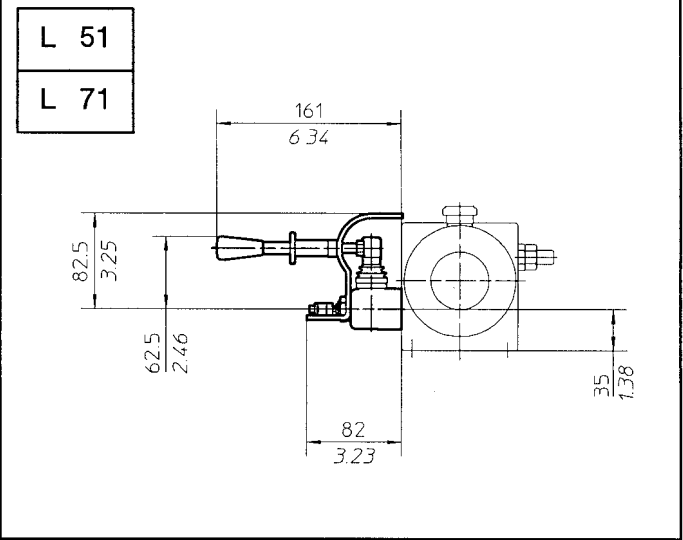
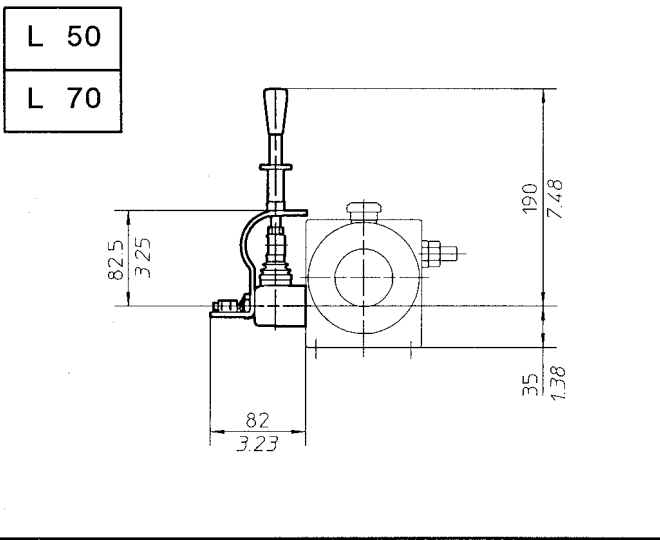


L 15  
L 35



MANUAL CONTROL

Valves	Code	Description	Lever
ZR817/22-TVS	7876.0197.0	With safety lever without micro-switch	L50...L55
ZR817/22-TVMS	7876.0198.0	With safety lever and micro-switch	L70...L75



CATUP50.240

MANIFOLD FOR PARALLEL CIRCUIT – VERTICAL ASSEMBLY

CARTRIDGE SOLENOID VALVES-SUB PLATE APPLICABLE ON HOUSING K03

MANIFOLD FOR SINGLE ELECTROVALVE

E	H1	Type	Code
31 (1.22)	57 (5.31)	6013	7646.0028.0

MANIFOLD FOR TWO ELECTROVALVE

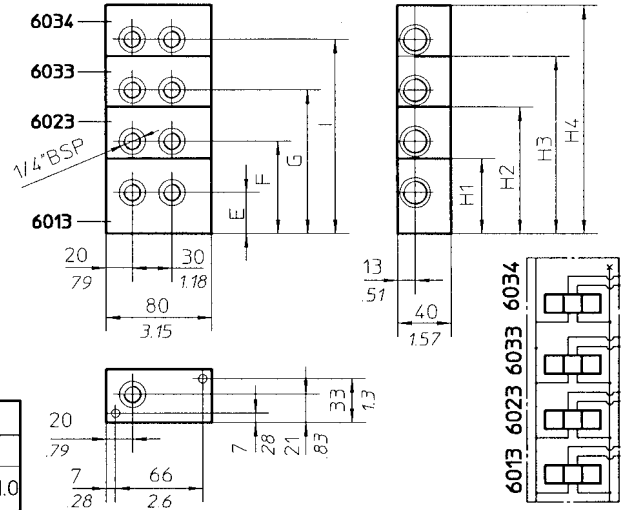
E	F	H2	Type	Code
31 (1.22)	70 (2.76)	96 (5.31)	6023	7646.0029.0

MANIFOLD FOR THREE ELECTROVALVE

E	F	G	H3	Type	Code
31 (1.22)	70 (2.76)	109 (4.29)	135 (5.31)	6033	7646.0030.0

MANIFOLD FOR FOUR ELECTROVALVE

E	F	G	I	H4	Type	Code
31 (1.22)	70 (2.76)	109 (4.29)	148 (5.31)	174 (5.31)	6034	7646.0031.0



MANIFOLD FOR PARALLEL CIRCUIT – HORIZONTAL ASSEMBLY

INTERMEDIATE MANIFOLD FOR HORIZONTAL ASSEMBLY

Type	Code
4010	7649.0003.0

MANIFOLD FOR SINGLE ELECTROVALVE

E	H1	Type	Code
31 (1.22)	57 (5.31)	6013	7646.0028.0

MANIFOLD FOR TWO ELECTROVALVE

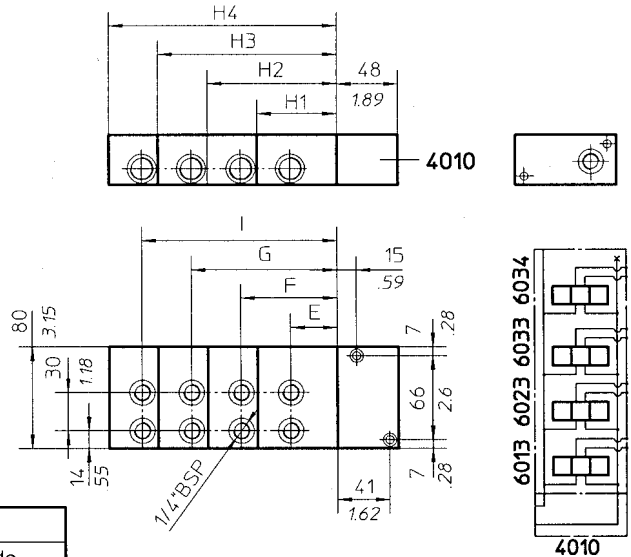
E	F	H2	Type	Code
31 (1.22)	70 (2.76)	96 (5.31)	6023	7646.0029.0

MANIFOLD FOR THREE ELECTROVALVE

E	F	G	H3	Type	Code
31 (1.22)	70 (2.76)	109 (4.29)	135 (5.31)	6033	7646.0030.0

MANIFOLD FOR FOUR ELECTROVALVE

E	F	G	I	H4	Type	Code
31 (1.22)	70 (2.76)	109 (4.29)	148 (5.31)	174 (5.31)	6034	7646.0031.0



MANIFOLD FOR SERIE CIRCUIT – VERTICAL ASSEMBLY

FIRST MANIFOLD

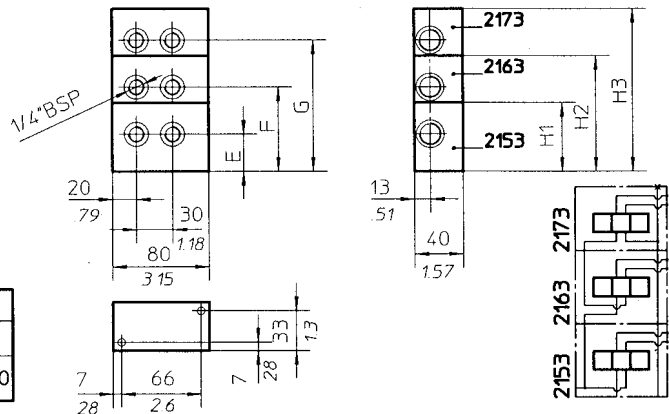
E	H1	Type	Code
31 (1.22)	57 (5.31)	2153	7644.0012.0

INTERMEDIATE MANIFOLD

E	F	H2	Type	Code
31 (1.22)	70 (2.76)	96 (5.31)	2163	7644.0006.0

END MANIFOLD

E	F	G	H3	Type	Code
31 (1.22)	70 (2.76)	109 (4.29)	135 (5.31)	2173	7644.0005.0



MANIFOLD FOR PARALLEL CIRCUIT – VERTICAL ASSEMBLY

CARTRIDGE SOLENOID VALVES-SUB PLATE  
APPLICABLE ON HOUSING K03

MANIFOLD FOR SINGLE ELECTROVALVE

E	H1	Type	Code
31 (1.22)	57 (5.31)	6013	7646.0028.0

MANIFOLD FOR TWO ELECTROVALVE

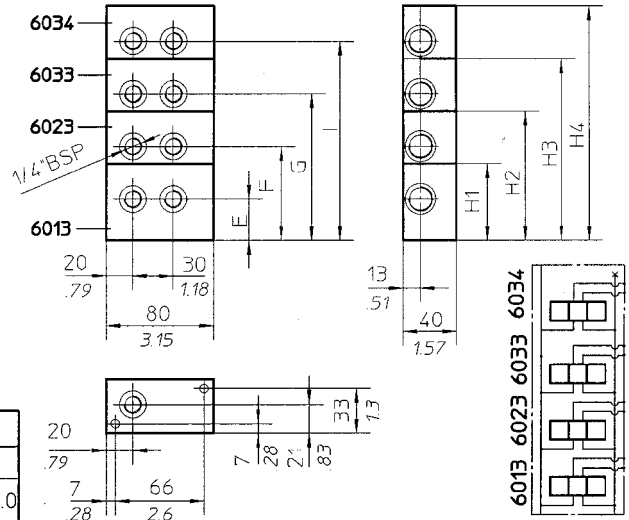
E	F	H2	Type	Code
31 (1.22)	70 (2.76)	96 (5.31)	6023	7646.0029.0

MANIFOLD FOR THREE ELECTROVALVE

E	F	G	H3	Type	Code
31 (1.22)	70 (2.76)	109 (4.29)	135 (5.31)	6033	7646.0030.0

MANIFOLD FOR FOUR ELECTROVALVE

E	F	G	I	H4	Type	Code
31 (1.22)	70 (2.76)	109 (4.29)	148 (5.31)	174 (5.31)	6034	7646.0031.0



MANIFOLD FOR PARALLEL CIRCUIT – HORIZONTAL ASSEMBLY

INTERMEDIATE MANIFOLD FOR HORIZONTAL ASSEMBLY

Type	Code
4011	7649.0040.0

MANIFOLD FOR SINGLE ELECTROVALVE

E	H1	Type	Code
31 (1.22)	57 (5.31)	6013	7646.0028.0

MANIFOLD FOR TWO ELECTROVALVE

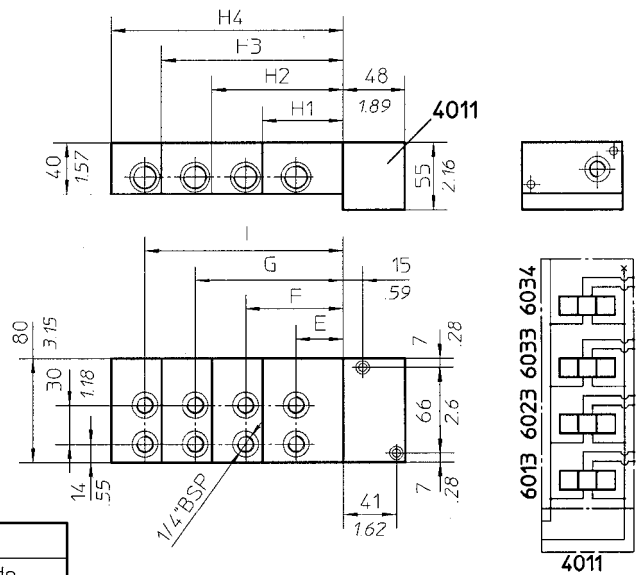
E	F	H2	Type	Code
31 (1.22)	70 (2.76)	96 (5.31)	6023	7646.0029.0

MANIFOLD FOR THREE ELECTROVALVE

E	F	G	H3	Type	Code
31 (1.22)	70 (2.76)	109 (4.29)	135 (5.31)	6033	7646.0030.0

MANIFOLD FOR FOUR ELECTROVALVE

E	F	G	I	H4	Type	Code
31 (1.22)	70 (2.76)	109 (4.29)	148 (5.31)	174 (5.31)	6034	7646.0031.0



MANIFOLD FOR SERIE CIRCUIT – VERTICAL ASSEMBLY

FIRST MANIFOLD

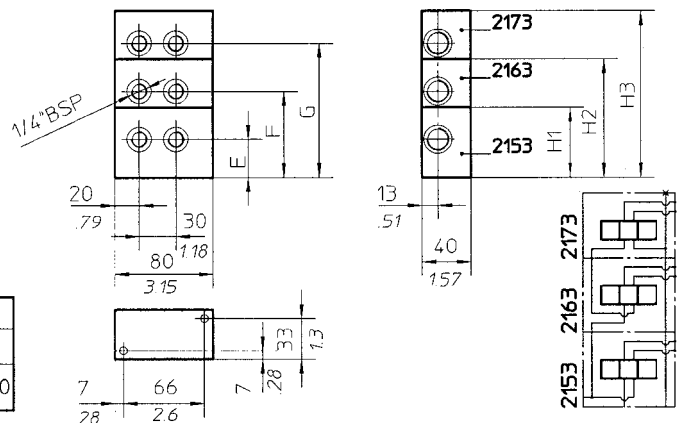
E	H1	Type	Code
31 (1.22)	57 (5.31)	2153	7644.0012.0

INTERMEDIATE MANIFOLD

E	F	H2	Type	Code
31 (1.22)	70 (2.76)	96 (5.31)	2163	7644.0006.0

END MANIFOLD

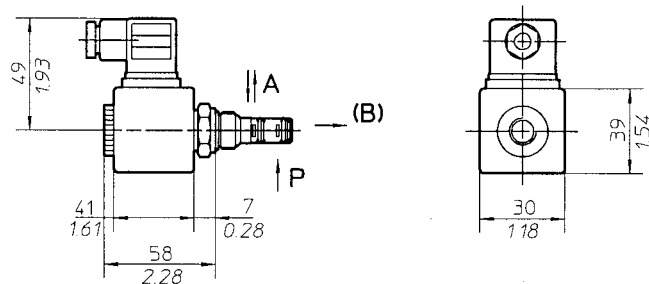
E	F	G	H3	Type	Code
31 (1.22)	70 (2.76)	109 (4.29)	135 (5.31)	2173	7644.0005.0



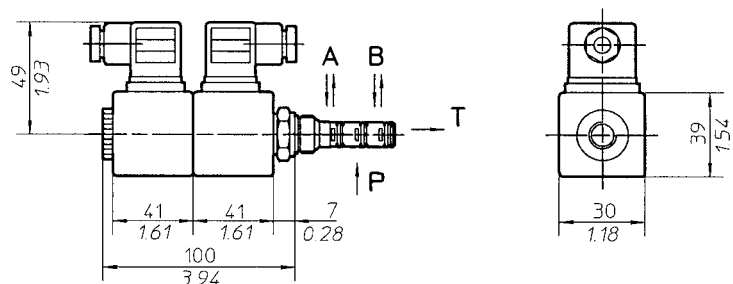
CARTRIDGE TYPE ELECTROVALVES

Circuit	Type
	CT-01
	CF-02
	CH-01
	CB-01
	CR-01
	CC-01
	CA-01
	CI-01
	CB-02
	CC-02
	CA-02
	CD-02
	CX-02

Two position electrovalves



Three position electrovalves



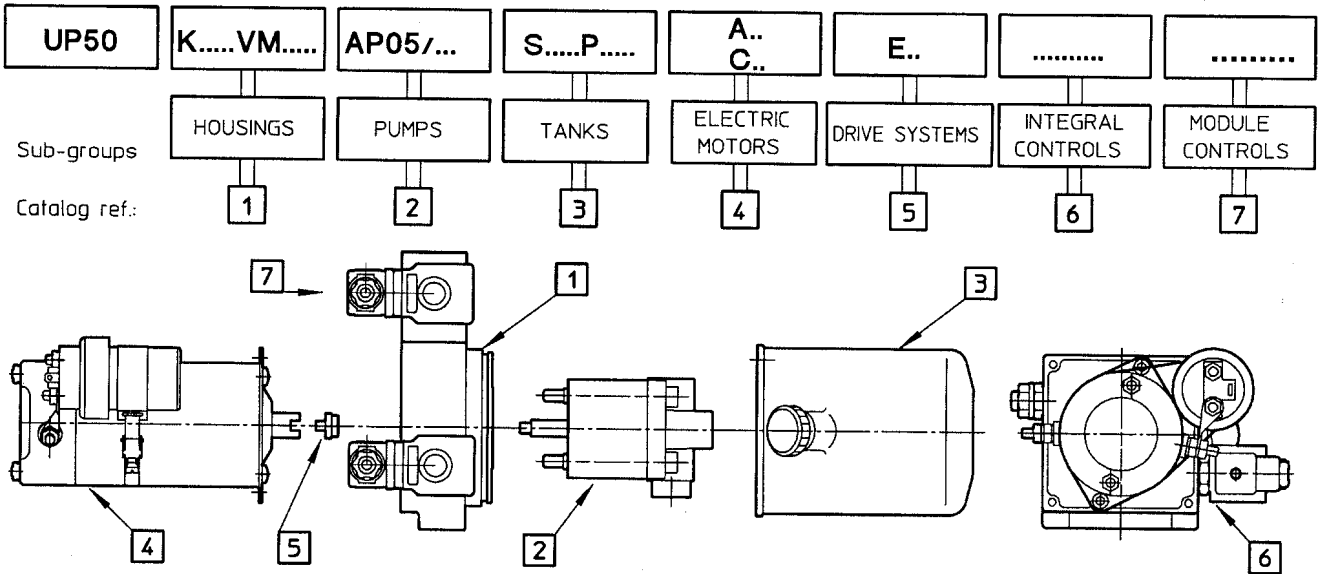
Std. voltage	Type	Std. voltage	Type
12 V D.C	13	24 V A.C 50Hz	21
24 V D.C	23	110 V A.C 50Hz	41
48 V D.C	33	220 V A.C 50Hz	51

**CONNECTOR:** insulation class C-VDE 0110  
HIRSCHMAN type plug  
connection DIN 43650

**SOLENOID:** insulation class E-VDE 0580/10.70-33;  
protection degree: IP65 - DIN 40050;  
intermittency: ED 100%; power: 24 W;

Type Circuit	Mechanical Part code	13	23	33	21	41	51
		Code	Code	Code	Code	Code	Code
CT-01	5423.10002	9570.1100.1	9570.2100.1		9569.2100.1	9569.4100.2	9569.6100.2
CF-02	5423.40003	9570.1400.2	9570.2400.2		9569.2400.2	9569.4400.2	9569.6400.4
CH-01	5423.20002	9570.1200.7	9570.2200.7		9569.2200.7	9569.4200.8	9569.6200.8
CB-01	5423.20003	9570.1200.4	9570.2200.4		9569.2200.3	9569.4200.4	9569.6200.4
CR-01	5423.20001	9570.1201.2	9570.2201.2		9569.2201.2	9569.4201.2	9569.6201.2
CC-01	5423.20004	9570.1200.5	9570.2200.5		9569.2200.5	9569.4200.6	9569.6200.6
CA-01	5423.20005	9570.1200.1	9570.2200.1		9569.2200.1	9569.4200.2	9569.6200.2
CI-01	5423.20006	9570.1200.9	9570.2200.9		9569.2200.9	9569.4201.0	9569.6201.0
CB-02	5423.50003	9570.1500.4	9570.2500.9		9569.2500.4	9569.4500.4	9569.6500.3
CC-02	5423.50001	9570.1500.6	9570.2500.5		9569.2500.7	9569.4500.6	9569.6500.5
CA-02	5423.50004	9570.1500.2	9570.2500.2		9569.2500.2	9569.4500.2	9569.6500.2
CD-02	5423.50005	9570.1500.8	9570.2500.8		9569.2500.9	9569.4500.8	9569.6500.7
CX-02	5423.50006	9570.1501.0	9570.2501.1		9569.2501.1	9569.4501.0	9569.6500.9

# COMPOSITION OF HYDRAULIC POWER PACK DESIGNATION



## EXAMPLE:

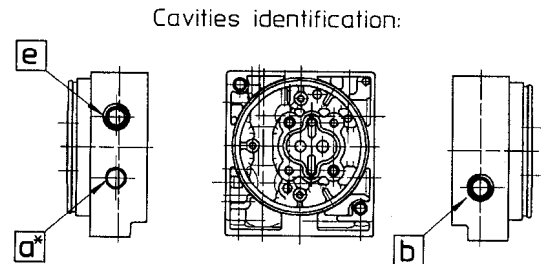
1 Type of housing Vers. **UP50 / K04**

2 Pump Hi-Lo Series **AP05 / 0.75 S409**

3 Tank Fitting Pos. **P-025Q-E P15**

4 Electric motor Pos. Relay Pos. **C232AE / T1 S**

5 Drive **E61**



(\* Only for reversible pumps)

6 Cavity a: **SDF817 / 22 - TV - 23**

Cavity b: **15 VM01**

Cavity c: **23**

Cavity d: **15 VM01**

Cavity e: **23**

Cavity f: **23**

Cavity g: **23**

Hand lever: **23**

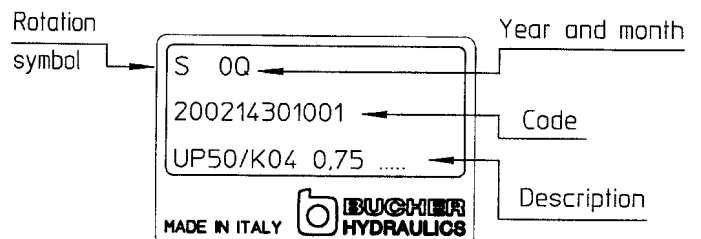
Lever stick: **23**

Volts: **23**

7 Sequence Manifolds Valves for manifolds Q.ty Volt

Manufacturing month	Manufacturing year									
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
JANUARY	6A	7A	8M	9M	0M	1M	2M	3M	4M	5M
FEBRUARY	6B	7B	8N	9N	0N	1N	2N	3N	4N	5N
MARCH	6C	7C	8P	9P	0P	1P	2P	3P	4P	5P
APRIL	6D	7D	8Q	9Q	0Q	1Q	2Q	3Q	4Q	5Q
MAY	6E	7E	8R	9R	0R	1R	2R	3R	4R	5R
JUNE	6F	7F	8S	9S	0S	1S	2S	3S	4S	5S
JULY	6G	7G	8T	9T	0T	1T	2T	3T	4T	5T
AUGUST	6H	7H	8U	9U	0U	1U	2U	3U	4U	5U
SEPTEMBER	6I	7I	8V	9V	0V	1V	2V	3V	4V	5V
OCTOBER	6J	7J	8Z	9Z	0Z	1Z	2Z	3Z	4Z	5Z
NOVEMBER	6K	7K	8X	9X	0X	1X	2X	3X	4X	5X
DECEMBER	6L	7L	8Y	9Y	0Y	1Y	2Y	3Y	4Y	5Y

## PRODUCT IDENTIFICATION PLATE



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We reserve the right of modification without prior notice.