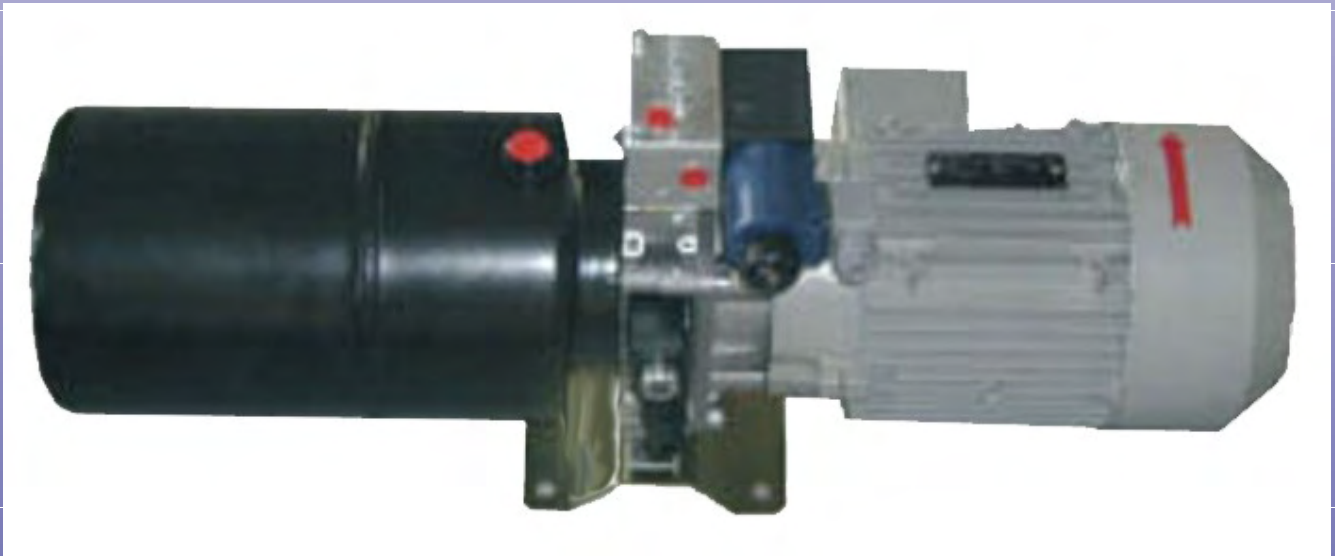




HYDRAULIC COMPONENTS
HYDROSTATIC TRANSMISSIONS
GEARBOXES - ACCESSORIES

HT 25 0308 E

HYDRAULIC MINI-POWERPACKS

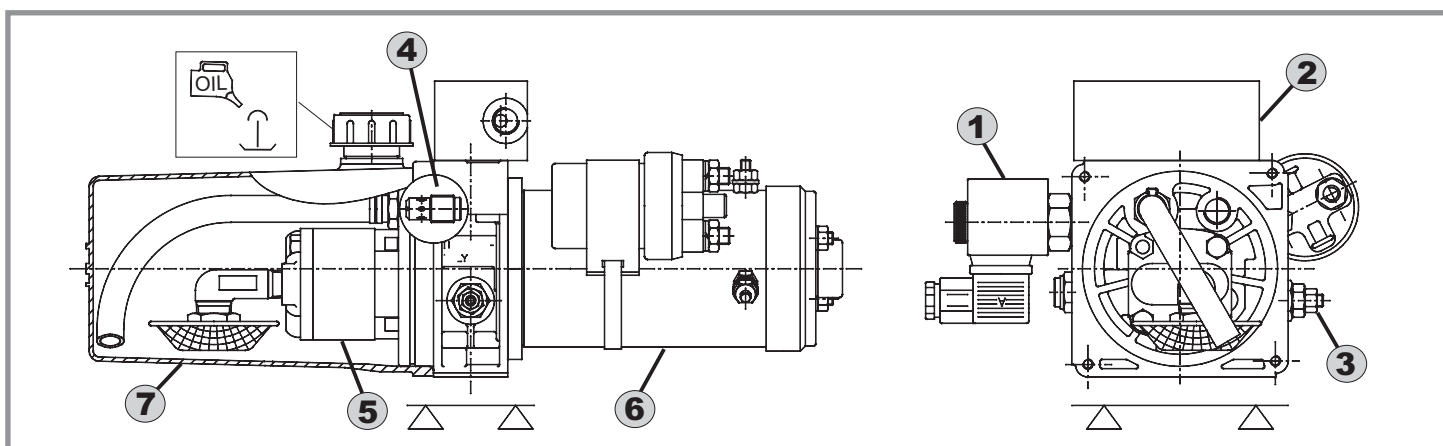


Le centraline serie **MR** sono state concepite per offrire una soluzione razionale ed economica ai più svariati problemi di automazione oleodinamica. La modularità è realizzata attraverso componenti standardizzati di larga produzione che uniscono un elevato livello qualitativo ad un'estrema semplicità di assemblaggio e di funzionamento. Questi componenti sono facilmente intercambiabili e danno alle centraline una eccezionale flessibilità di impiego per le più svariate esigenze. La modularità consente inoltre di avere a disposizione l'intera gamma di centraline con uno stoccaggio versatile ed estremamente economico di componenti. Ne deriva un gruppo compatto con elevate prestazioni e silenziosità, la cui economicità di esercizio ne consente l'impiego in tutti i settori industriali.

The **MR** power packs have been studied to offer a rational and economic solution to the many applications of the hydraulic automation. The modularity is realized with large production standard components joining a high quality level to a very simple way of mounting and working of the unit. The components are easily interchangeable and make power packs exceptionally flexible.

More on, the modularity allows the availability of the whole range of power packs with a versatile and economic stocking of the components. The result is a compact, economic and noiseless unit with high performances to be employed in all the industrial fields.

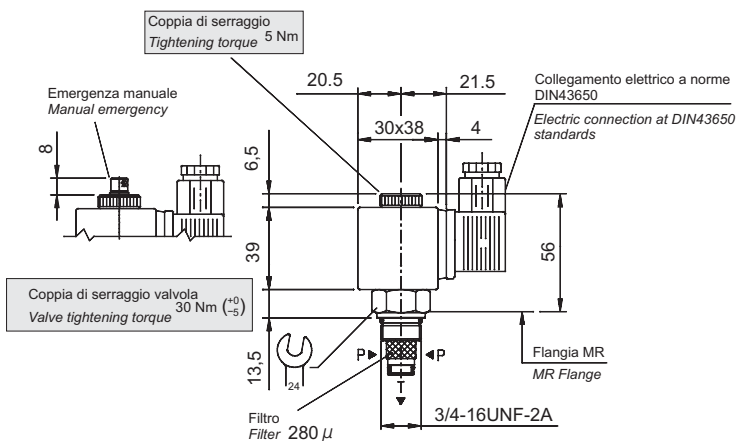
CODICE DI ORDINAZIONE → **Tip** **Type** **1** **2** **3** **4** **5** **6** **7** ← **HOW TO ORDER**



1 Comando a solenoide Solenoid valve

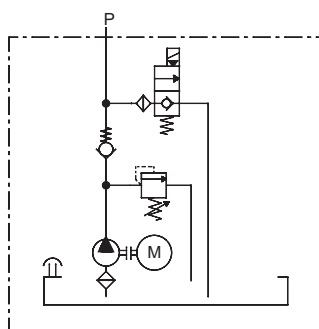
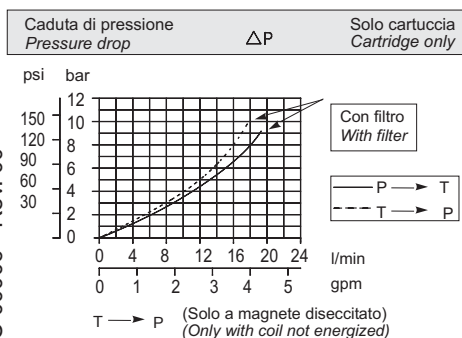
MR2-

	Voltaggio solenoide Solenoid voltage	Schema Symbol
A	12 Volt DC	
B	24 Volt DC	
C	24 Volt AC 50 Hz	
D	110 Volt AC 50 Hz	
E	220 Volt AC 50 Hz	
F	12 Volt DC	
G	24 Volt DC	
L	24 Volt AC 50/60 Hz	
M	110 Volt AC 50/60 Hz	
N	220 Volt AC 50/60 Hz	
P	12 Volt DC	
Q	24 Volt DC	
R	24 Volt AC 50 Hz	
S	110 Volt AC 50 Hz	
T	220 Volt AC 50 Hz	



Connettori Connectors	
Numero poli Poles	2 + $\frac{1}{2}$
Serracavo Cable gland	PG 9
Grado di protezione Protection class	IP 65 (DIN 40050)
Classe di isolamento Group C - (VDE0110)	Insulation Class Group C - (VDE 0110)

Caratteristiche tecniche Specifications	
Pressione max di lavoro Max operating pressure	210 bar
Portata max Max flow	22 l/min.
Drenaggio (a 210 bar) Leakage (at 210 bar)	12 cc/h
Tempi di risposta Response time	Apertura Energized 40 msec. Chiusura Deenergized 130 msec.
Fluidi : Riferimento ISO 6743/4 e DIN 51524 Fluids: Reference ISO 6743/4 and DIN 51524	

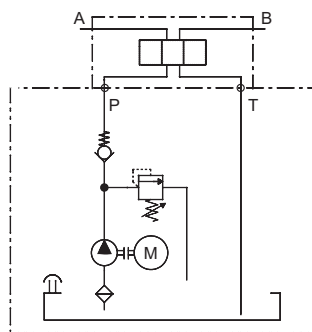


Bobine Coils	
Tolleranza sulla tensione nominale Voltage tolerance	±10%
Isolamento classe "F" a norme Insulation class "F" ref.	VDE 0580
Temperatura limite in ambiente Ambient temperature range	-15°C +40°C
Potenza assorbita Power consumption	In C.C. D.C. 18 WATT In C.A. A.C. 28 V.A. In servizio/Holding 40 V.A. Allo spunto/In rush
Servizio Duty	ED 100%

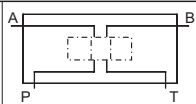
Blocchetti Modulari

Modular manifolds

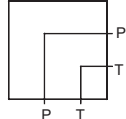
MR 4-

Blocchetti Cetop3
Cetop3 manifolds

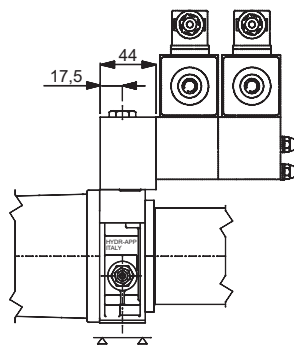
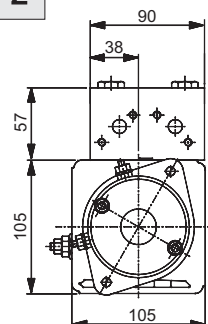
C 1/4" Chiuso
1/4" Closed



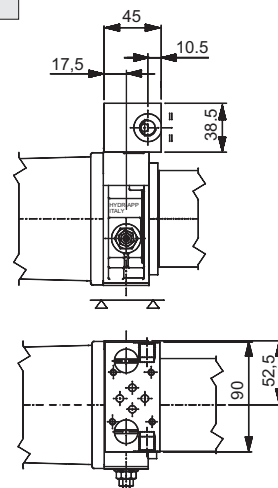
Z | Pannello adattatore
bloccetti Cetop3 per centralina
*Cetop3 manifolds adapting panel
for power pack*



Z



C

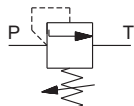


Valvola di massima pressione

Relief valve

V

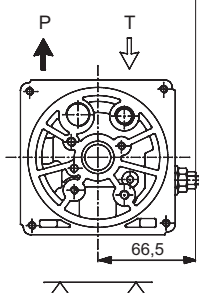
1	
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Taratura valvola di max. pressione
Relief valve setting range

A	25 - 80 bar	Standard	40 bar
B	75 - 220 bar	Standard	140 bar
C	5 - 30 bar	Standard	20 bar

Valvola di massima pressione
Relief valve

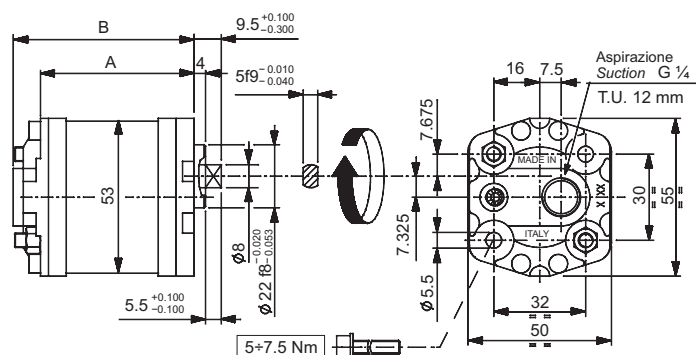


Pompe Pumps



P

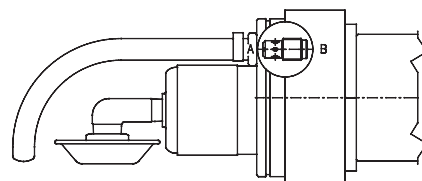
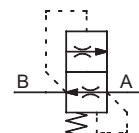
Rotazione albero : DESTRA
Direction of rotation: RIGHT



Valvola di strozzamento compensata fissa **Flow compensated fixed valve**

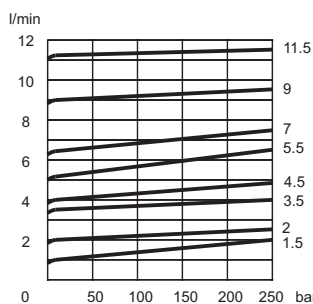
F ☐Portata nominale
Nominal flow

1,5	1,5	Lt/min
2	2	Lt/min
3,5	3,5	Lt/min
4,5	4,5	Lt/min
5,5	5,5	Lt/min
7	7	Lt/min
9	9	Lt/min
11.5	11.5	Lt/min



Portata controllata:
Flow controlled: B → A l/min

Fluid used: mineral based oil with viscosity :
15 mm²/s a 40°C



Caratteristiche tecniche

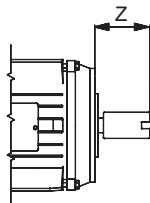
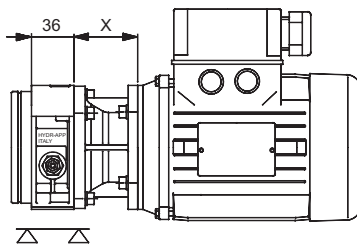
Pressione max.di esercizio <i>Max working pressure</i>	250 bar
Portata max. <i>Max flow</i>	12 l/min
Portata minima <i>Minimum flow</i>	0.8 l/min
Errore sulla portata nominale a 120 bar <i>Possible deviation on nominal flow at 120 bar</i>	±10%
Temperatura di esercizio <i>Working temperature</i>	-15°C/+70°C
Olio idraulico a base minerale <i>Mineral based hydraulic oil</i>	ISO/DIN 6743/4
Viscosità fluido <i>Fluid viscosity</i>	22+100mm ² /sec ISO3448
Grado di contaminazione massimo classe <i>Max contamination degree class</i>	18/14 ISO 4406
Peso <i>Weight</i>	Kg 0.014

	Tipo di pompa <i>Type of pump</i>	B	A	Pressione massima di esercizio <i>Max working pressure</i>	Velocità massima ammessa <i>Max. allowed speed</i>	Velocità minima ammessa <i>Min. allowed speed</i>
A	Gr. 05-0,25 cm³/giro (cm³/rev.)	56	46,5	210 bar	4500 giri/min - rev/min	900 giri/min - rev/min
B	Gr. 05-0,45 cm³/giro (cm³/rev.)	63	53,5		4500 giri/min - rev/min	
C	Gr. 05-0,56 cm³/giro (cm³/rev.)	64	54,5		4500 giri/min - rev/min	
D	Gr. 05-0,75 cm³/giro (cm³/rev.)	66	56,5		4000 giri/min - rev/min	
J	Gr. 05-0,92 cm³/giro (cm³/rev.)	67	57,5		3500 giri/min - rev/min	
Z	Gr. 05-1,26 cm³/giro (cm³/rev.)	69	59,5		3000 giri/min - rev/min	

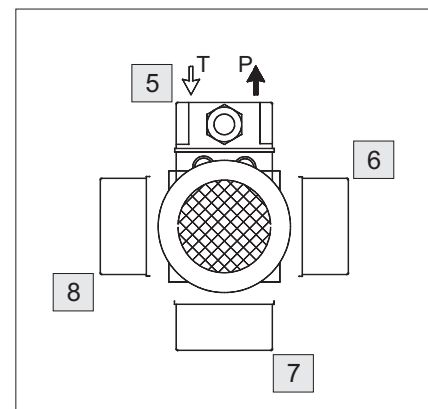
Motori elettrici Electric motors

Motori elettrici C.A. Forma B14 secondo le Norme UNEL IEC
A.C. electric motors B14 according to UNEL IEC standards

	5 6 7 8				0	
	Posizione di montaggio Mounting position				Senza motore Without motor	
	Grandezza Size	Potenza Power	HP	X		
	B14	KW	HP	X		
R	63	0,18-0,25	0,25-0,33	54,7	2 Poli 2 Poles	
L	71	0,35-0,55	0,5-0,75	53,9		
M	80	0,75-1,1	1-1,5	54,7	4 Poli 4 Poles	
R	63	0,12-0,18	0,17-0,25	54,7		
L	71	0,25-0,37	0,33-0,5	53,9		
M	80	0,55-0,75	0,75-1	54,7	6 Poli 6 Poles	
R	63	0,09-0,12	0,12-0,17	54,7		
L	71	0,18-0,25	0,25-0,34	53,9		
M	80	0,37-0,55	0,5-0,75	54,7		



Z
R 42,8 mm
L 42 mm
M 53 mm



ATTENZIONE

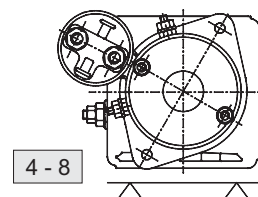
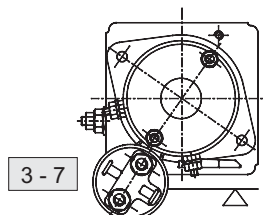
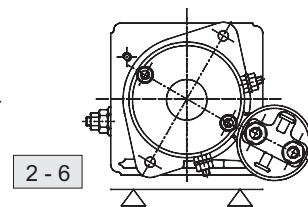
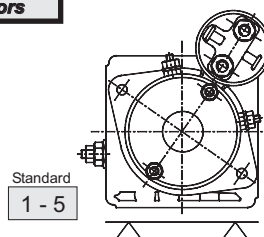
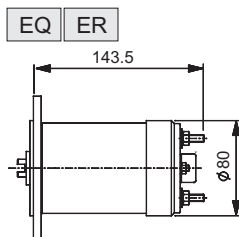
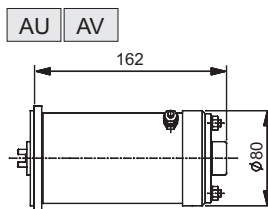
- Determinare accuratamente la quota Z e bloccare la vite di fermo
- Dopo il collegamento elettrico, verificare il senso di rotazione per la durata di 1 secondo max. con la pompa a scarico; si eviteranno così danni irreparabili alla pompa.

WARNING

- Carefully determine the Z dimension and lock the grub-screw
- After the electric connection, please check the sense of rotation of the pump in exhaust flow for no more than 1 second: Serious damages will be so avoided.

Motori elettrici C.C. D.C. Electric motors

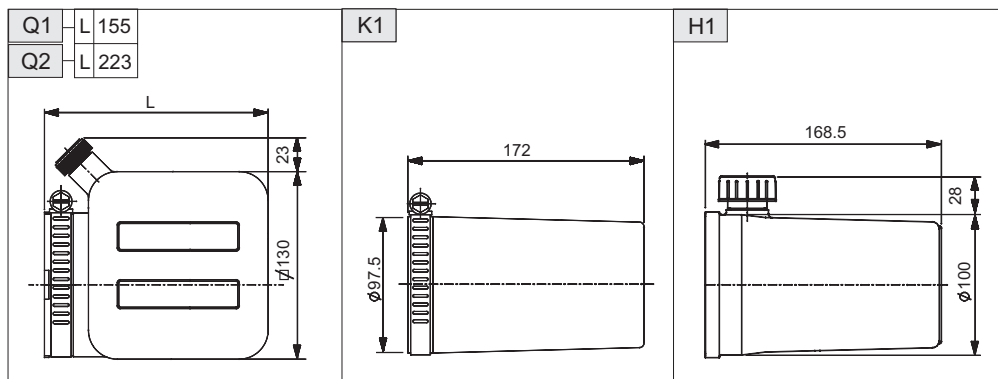
M								
	Posizione teleruttore <i>Start switch position</i>				Posizione dei poli senza teleruttore <i>Poles position without start switch</i>			
	Caratteristiche tecniche <i>Specifications</i>							
	EQ	Motore in c.c.a magneti permanenti <i>Permanent magnet d.c. Motor</i>						
	ER	Senso di rotazione reversibile (nominale sx) <i>Reversible rotation (nominal left)</i>						
	AU	Grado di protezione <i>Protection class</i>						
AV	Classe di isolamento <i>Insulation class</i>							
	12 Volts d.c. 350 W	24 Volts d.c. 400 W	12 Volts d.c. 700 W	24 Volts d.c. 800 W				



Serbatol Reservoirs

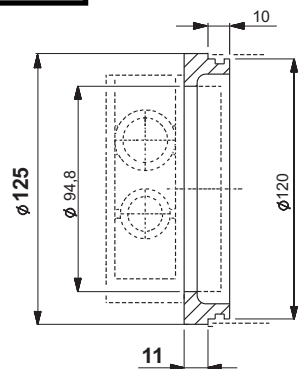
Serbatol in plastica Plastic reservoirs

H1	Seratoio di capacità nominale litri 1 con tappo di carico 1 liter nominal capacity reservoir with fill port
K1	Seratoio di capacità nominale litri 1 senza tappo di carico 1 lt nominal capacity reservoir without fill port
Q1	Seratoio di capacità nominale litri 1 con tappo di carico a 45° 1 lt nominal capacity reservoir with 45° fill port
Q2	Seratoio di capacità nominale litri 2 con tappo di carico a 45° 2 lt nominal capacity reservoir with 45° fill port

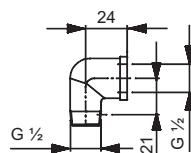


Serbatol in acciaio Steel reservoirs

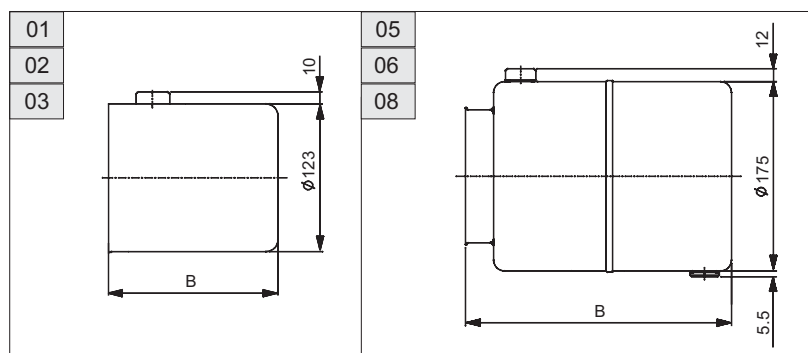
		B
01	Litri Liters	1 141
02	Litri Liters	2 200
03	Litri Liters	3 330
05	Litri Liters	5 246
06	Litri Liters	6 308
08	Litri Liters	8 370

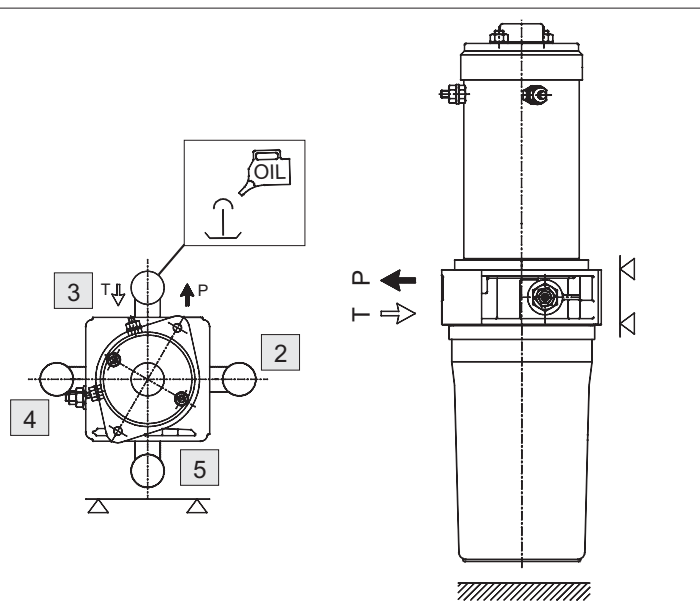
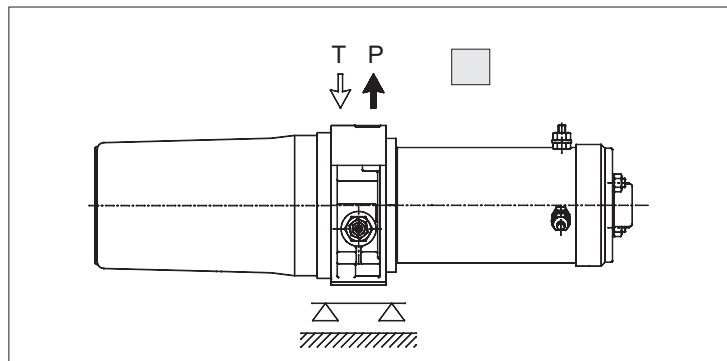


Flangia adattatrice per serbatol in acciaio
Adapting flange for steel reservoirs



Raccordo per tappo di carico
montaggio verticale
Filling plug adapter for vertical
mounting




Norme di impiego ed installazione

- Dimensionare accuratamente l'impianto idraulico nel suo complesso e scegliere una centralina appropriata nella cilindrata della pompa e nella capacità del serbatoio. Dotare l'impianto di sicurezze adeguate e strumentazioni affidabili.
- La centralina può essere montata in tutte le posizioni raffigurate, sia in orizzontale che in verticale con serbatoio rivolto verso il basso: nel caso di montaggi su strutture o macchinari soggetti a vibrazioni o oscillazioni, prevedere dei tasselli antivibranti.
- Scegliere un serbatoio ben dimensionato, in modo da avere sempre una corretta aspirazione della pompa ed una temperatura di esercizio di 60°C (Max. 80°C).
- Scegliere un fluido idraulico adeguato: si consiglia di filtrare il fluido a $25 \div 30 \mu$, prima del riempimento del serbatoio.
- Evitare le partenze a freddo sotto carico: temperatura ambiente -15°C+60°C (5°F+140°F).
- Evitare strozzature e curve a piccolo raggio nelle tubazioni dell'impianto.

Norme di manutenzione

- Ripristinare l'olio nel serbatoio dopo il primo avviamento dell'impianto.
- Eseguire una accurata pulizia dei tubi e di tutti i componenti dell'impianto.
- Eseguire una frequente pulizia del circuito sostituendo il fluido idraulico.

Limiti funzionali dei motori elettrici in c.c.

I limiti funzionali del motore elettrico in C.C. si possono leggere sulle linee S2 + S3 dei diagrammi di prestazione raffigurati sul catalogo motori elettrici.
 La linea S2 determina il tempo limite di inserzione del motore elettrico in C.C. espresso in minuti.
 La linea S3 esprime il rapporto di intermittenza in%, che ha il valore S2 in un ciclo totale di lavoro (100%).
 N.B.: Per ciclo totale di lavoro si intende la somma dei minuti di lavoro S2 e i minuti di riposo che servono al motore per non superare mai i limiti di riscaldamento.

Calcolo del limite funzionale	Calcolo del tempo di lavoro
$S2 : S3 = Tt : 100$ $Tt = \frac{100 \times S2}{S3}$ dove Tt = Tempo totale ciclo di lavoro $Tp = Tt - S2$ Tp = Tempo di pausa	$TL : S3 = Tt : 100$ $Tt = \frac{100 \times TL}{S3}$ dove TL = Tempo di lavoro qualsiasi purché non superi i limiti posti S2 $Tp = Tt - TL$

Scelta del motore

- Per calcolare la potenza teorica (in Kw) richiesta della pompa, utilizzare la seguente formula:

$$Kw \text{ (teorica)} = \frac{Q \times P}{612} \quad \text{dove } Q = \text{Portata} \quad \frac{dm^3}{min} \\ P = \text{Pressione} \quad bar$$

Caratteristiche dei fluidi idraulici

Tipo di fluido da impiegare: olio idraulico a base minerale con caratteristiche lubrificanti, antischiuma, anticorrosione, antiossidanti HL-HLP (ISO e UNI HM) - HV - HLPD secondo le norme DIN51524 parte 1-2.

Viscosità minima	15 cts (23°C / 77,39 SSU a 100°F)
Viscosità max. avviamento	800 cts (105,6°C / 3708 SSU a 100°F)
Viscosità max. di funzionamento	100 cts (13,2°C / 463,5 SSU a 100°F)
Campo di viscosità consigliato	25÷40 cts = (3,47÷5,35°C / 119,3÷186,3 SSU a 100°F)
Temperatura ammessa	max 80°C (176°F)
Temperatura raccomandata	30÷60°C (86÷140°F)

Installation and use

- Carefully spot the hydraulic system and choose a proper power pack both for the pump displacement and the reservoir capacity. Equip the system with the adequate securities and trustable tools.
- The power pack can be mounted in all the stated positions, both in horizontal and in vertical position with the reservoir downwards: in case the power pack is mounted on structures or machines bearing vibrations or oscillations, vibration dampings must be used.
- Choose a proper reservoir for a correct suction of the pump and a working temperature of 60°C (80°C max).
- Choose a proper hydraulic fluid: it is suggested to filter the fluid at $25 \div 30 \mu$ before filling the reservoir.
- Avoid to pressurize the power pack before its warming up: ambient temperature: -15°C+60°C (5°F+140°F).
- Avoid to throttle pipings and small bend radius.

Maintenance

- Refill the reservoir with oil after the first starting-up.
- Carefully clean pipings and all the components of the system.
- Frequently clean the circuit replacing the hydraulic fluid.

Service limits of the D.C. electric motors

The service limits of the D.C. electric motors can be read on the S2+ S3 lines of the relevant diagrams on the electric motors catalogue.

The S2 line is stating the limit connection time in minutes of the D.C. electric motor.

The S3 line is stating in % the intermittence ratio, having the S2 value in a total cycle of work (100%).

Note: Total cycle of work means the sum of S2 working minutes and the rest minutes motor needs not to overheats.

Calculation of service limits	Calculation of working time
$S2 : S3 = Tt : 100$ $Tt = \frac{100 \times S2}{S3}$ Tt = Total time of working cycle $Tp = Tt - S2$ Tp = Time of rest	$TL : S3 = Tt : 100$ $Tt = \frac{100 \times TL}{S3}$ TL = Any working time, but do not exceed the S2 limits $Tp = Tt - TL$

Choice of the motor

- To calculate the the theoretic power (Kw) the pump needs, please use the following formula:

$$Kw \text{ (theoretic)} = \frac{Q \times P}{612} \quad Q = \text{Flow} \quad \frac{dm^3}{min} \\ P = \text{Pressure} \quad bar$$

Specifications of the hydraulic fluids

Type of the fluid to use: mineral basis hydraulic oil with lubricating, antifoaming, anticorrosive, antioxidant HL-HLP (ISO and UNI HM)-HV-HLPD performances according to DIN51524 part 1-2 standards.

Minumum viscosity	15 cts (23°C / 77,39 SSU at 100°F)
Max. Viscosity at starting-up	800 cts (105,6°C / 3708 SSU at 100°F)
Max. Working viscosity	100 cts (13,2°C / 463,5 SSU at 100°F)
Suggested viscosity range	25÷40 cts = (3,47÷5,35°C / 119,3÷186,3 SSU a 100°F)
Allowed temperature	max 80°C (176°F)
Recommended temperature	30÷60°C (86÷140°F)

MC2



MC2 modular powerpacks are compact electro-hydraulic power units.

The high quality of the components and their flexibility and ease of mount makes these powerpacks compact in size and competitively priced. For specialist manufacturers and hydraulic distributors units can be supplied in kit form. The standard design ensures a large choice of pumps ranging from 0,25 to 9,8 CC/revolutions of tanks from 1-25 L. and motors ranging for 0,35 - 3 kw DC and 0,12 - 4 kw AC. MC2 powerpacks are mainly used to control the movement of single acting cylinders in various applications e.g. fork lift trucks, air platforms, scissors tables and car lifts. MC2 powerpacks can also be used as a bypass circuit when additional blocks are mounted or even for double acting cylinders. HANSA-TMP stocks various modular standard blocks for mounting cetop valves. In addition we can supply specialised circuits at request.

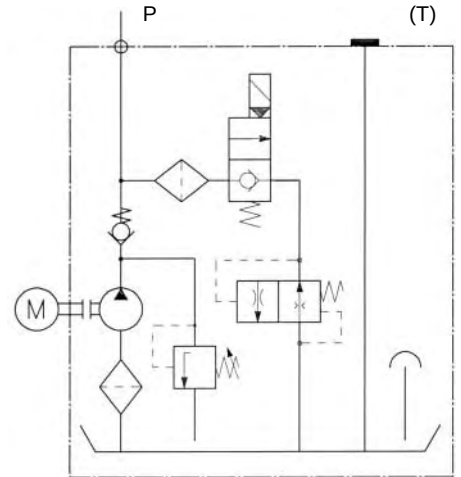
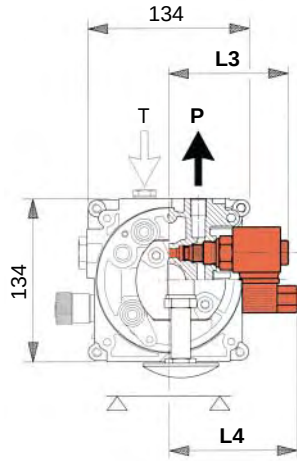
Das Kleinaggregat der Baureihe "MC2" stellt eine kompakte, hydraulische Einheit dar. Die hohe Qualität der einzelnen Komponenten und ihre einfache Montage ermöglichen platz- und kostensparende Anwendungen. Der modulare Aufbau ermöglicht die Kombination aus Pumpen von 0,25 bis 9,8 cm³/U, Behältern von 1 bis 25 Liter, Gleichstrommotoren von 0,35 bis 3 kW oder Wechselstrommotoren von 0,12 bis 4 kW. Das MC2 wird hauptsächlich für die Funktion einfachwirkender Zylinder in Hubwagen, Hebebühnen, Hubtischen, Autohebebühnen, usw. verwendet. Außerdem kann das Aggregat MC2 in Verbindung mit verschiedenen Steuerblöcken auch mit einer Bypass-Funktion in komplexen Steuerungen für die Funktion doppeltwirkender Zylinder eingesetzt werden. Hierzu stehen neben zahlreichen Standard-Anschlußblöcken für CETOP-Ventile auch Sonderlösungen auf Anfrage zur Verfügung.

SOLENOID VALVES ELEKTROMAGNETVENTILE

MC2

	VOLTAGE NENNSPANNUNG	L4	L3	SCHEMATIC SCHALTSYMBOL
A	12 Volt DC	~102	~97,5	
B	24 Volt DC			
C	24 Volt AC 50 Hz			
D	110 Volt AC 50 Hz			
E	220 Volt AC 50 Hz	~101,5	~101,7	
F	12 Volt DC			
G	24 Volt DC			
L	24 Volt AC 50/60 Hz			
M	110 Volt AC 50/60 Hz	~102	~105,5	
N	220 Volt AC 50/60 Hz			
P	12 Volt DC			
Q	24 Volt DC			
R	24 Volt AC 50 Hz			
S	110 Volt AC 50 Hz			
T	220 Volt AC 50 Hz			

P (T) standard
BSP G 1/4"

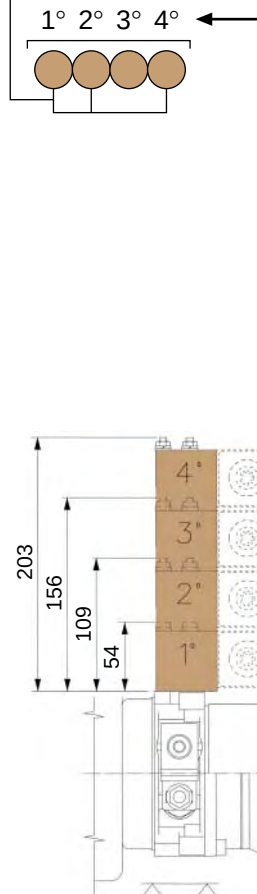


MOUNTING BLOCKS STEUERBLÖCKE

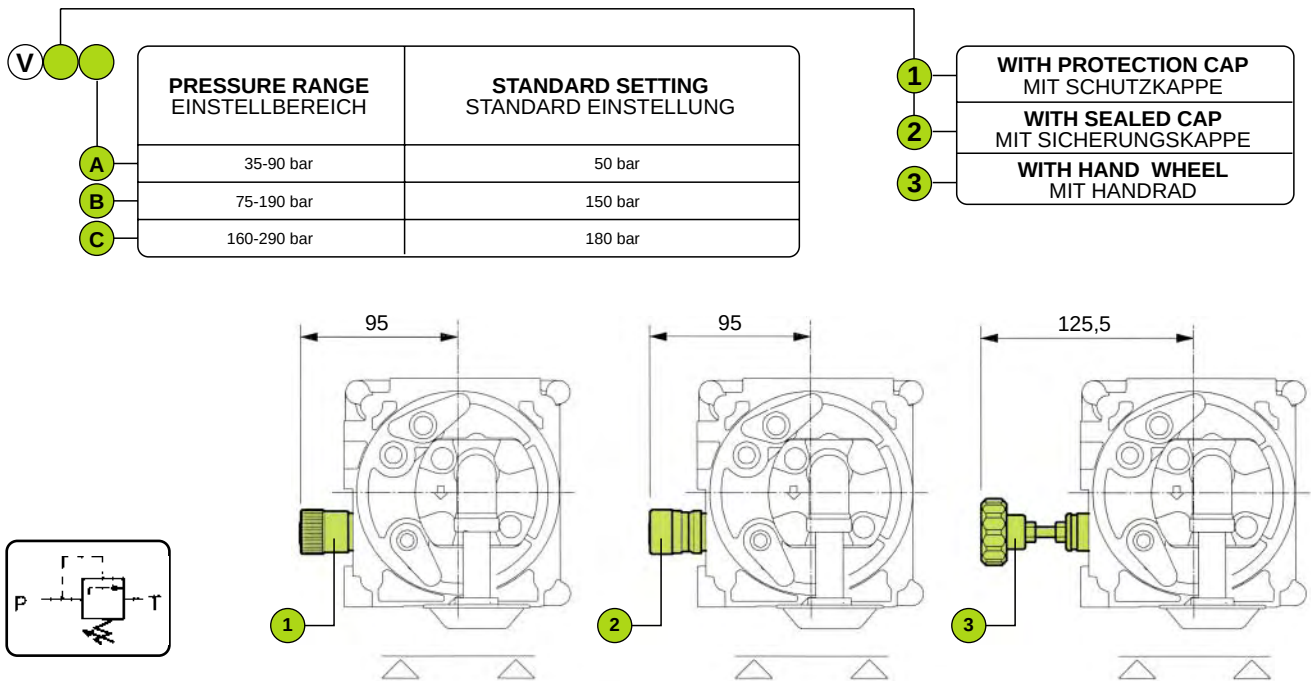
MANIFOLD BLOCKS FOR CETOP3 SOLENOID VALVES (UNI ISO 4401-AB-03-4) ANSCHLUßBLÖCKE FÜR CETOP3 VENTILE (UNI ISO 4401 - AB - 03 - 4)	SCHEMATIC SCHALTSYMBOL	DESCRIPTION BESCHREIBUNG	
		1/4" PARALLEL OPENED 1/4" ZWISCHENPLATTE	A
		1/4" CLOSED 1/4" ENDPLATTE	C
		1/4" GAUGE PORT 1/4" ENDPLATTE MIT MANOMETERANSCHLUß	D
		3/8" PARALLEL OPENED 3/8" ZWISCHENPLATTE	E
		3/8" CLOSED 3/8" ENDPLATTE	G
		3/8" GAUGE PORT 3/8" ENDPLATTE MIT MANOMETERANSCHLUß	H
		PILOT CHECK VALVE ON "A" PORT MIT ENTSPERRBAREM RV IN "A"	L

SCHEMATIC SCHALTSYMBOL	DESCRIPTION BESCHREIBUNG	
	PILOT CHECK VALVE ON "B" PORT MIT ENTSPERRBAREM RV IN "B"	M
	PILOT CHECK VALVE ON "A" AND "B" PORTS MIT ENTSPERRBAREM RV IN "A" UND "B"	N
	ADJUSTABLE PRESSURE ON "A" PORT MIT DBV IN "A"	P
	ADJUSTABLE PRESSURE ON "B" PORT MIT DBV IN "B"	R
	ADJUSTABLE PRESSURE ON "A" AND "B" PORTS MIT DBV IN "A" UND "B"	S
	HAND PUMP MIT HANDPUMPE 6 cm ³ /Hub	K
	TIGHTENING PLATE h=29 NECESSARY FOR AC MOTOR M-N-P HEBEPLATTE h=29 NOTWENDIG FUER EL-MOTOREN -M-N-P-	U

MANIFOLD BLOCKS FOR CETOP3 SOLENOID VALVES (UNI ISO 4401-AB-03-4)
ANSCHLUßBLÖCKE FÜR CETOP3 VENTILE (UNI ISO 4401 - AB - 03 - 4)

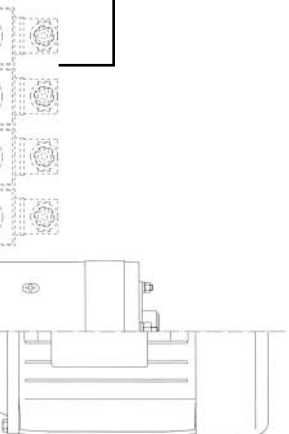


RELIEF VALVES DRUCK BEGRENZUSVENTIL



PRESSURE-COMPENSATED FLOW CONTROL VALVES STROMREGELVENTILE MIT DRUCKKOMPENSATION

MOUNTING SEQUENCE ANORDNUNG



S

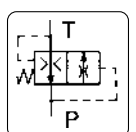
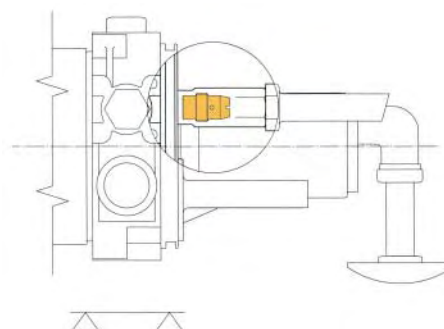
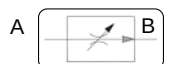
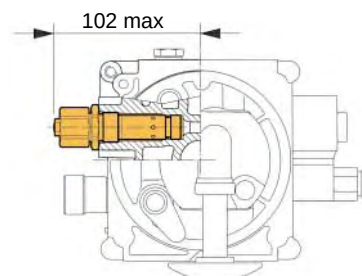
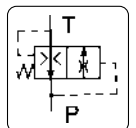
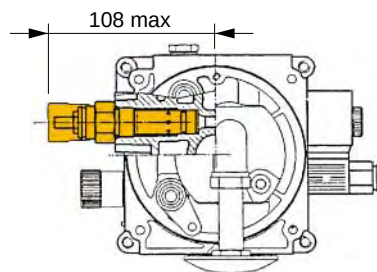
ADJUSTABLE FLOW (L/MIN) EINSTELLBEREICH (L/MIN)
8 2 - 3,5
9 5 - 7,5
0 8,5 - 13,5

S

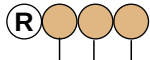
ADJUSTABLE FLOW (L/MIN) EINSTELLBEREICH (L/MIN)
11 0,5 - 22

F

FIXED FLOW (L/MIN) EINSTELLWERT (L/MIN)
2 2
3 3
4,5 4,5
6 6
7,5 7,5
9,5 9,5
12 12
15 15



OPTIONS OPTIONEN



P (T) BSP G 3/8" without holes for blocks mounting
P (T) BSP G 3/8" ohne Bohrungen fuer die Blockemontage

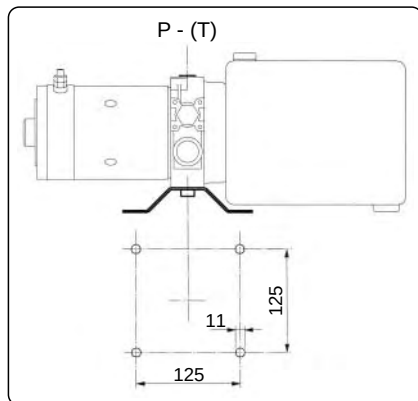
1

Mounting foot
Befestigungsfuß

7

With M6 holes for blocks mounting
Mit Bohrungen M6 fuer die Blockemontage

0



PUMPS DISPLACEMENT PUMPENGRÖßEN



	NOMINAL DISPLACEMENT CC/REV FÖRDERVOLUMEN NOMINAL cm.3/U	PUMP GROUP BAUGRÖßE
A	0,25	0,5
B	0,45	
C	0,56	
D	0,75	
J	0,92	
E	1,2	1
F	1,7	
G	2,2	
L	2,6	
M	3,2	
N	3,8	
P	4,3	
T	6,0	
R	7,8	
S	9,8	

DC - AC MOTORS ELEKTROMOTORE DC/AC

DC MOTORS - GLEICHSTROMMOTORE

EQ
ER
AU
AV
EN
ES
AH

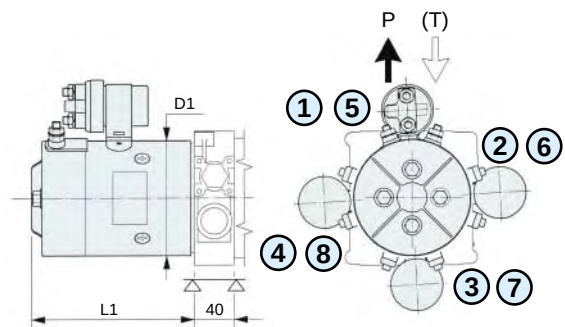
TYPE TYP	D1	L1
12Volt CC 0,35 kW	76	143,5
24Volt CC 0,4 kW		
12Volt CC 0,7 kW	76	162
24Volt CC 0,8 kW		
12Volt CC 1,6 kW	114	158
24Volt CC 2,2 kW		
24Volt CC 3,0 kW	125	207,2

1
2
3
4
5
6
7
8

**START SWITCH
POSITION**

POSITION DES
STARTRELAIS

**TERMINAL POSITION
WITHOUT START SWITCH**
POSITION DER POLE
OHNE STARTRELAIS



THermal switch protection and fan cooled motors are available
MOTORE AUCH MIT THERMOSCHALTER UND LUFTER VERFÜGBAR

AC MOTORS DREH - WECHSELSTROMMOTORE

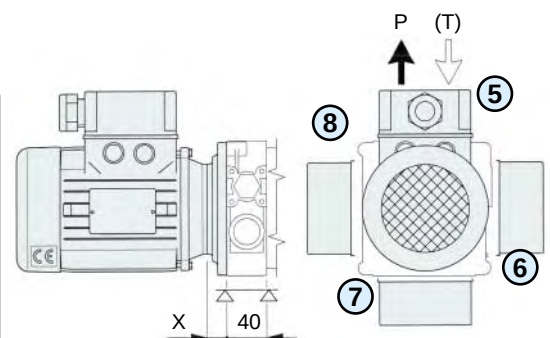


0 5 6 7 8

WITHOUT MOTOR - OHNE MOTOR

R
L
M
N
P

SIZE BAUGRÖßE	2 POLES	4 POLES	6 POLES	X	FRAME BAUFORM
	kW	kW	kW		
63	0,18-0,25	0,12-0,18	0,09-0,12	19,5	B14 UNEL 13118-71
71	0,35-0,55	0,25-0,37	0,18-0,25	19,5	
80	0,75-1,1	0,55-0,75	0,37-0,55	30,5	
90	1,5-2,2	1,1-1,5	0,75-0,55	40,5	
100/112	3-5,5	2,2-4	1,5-2,2	75	



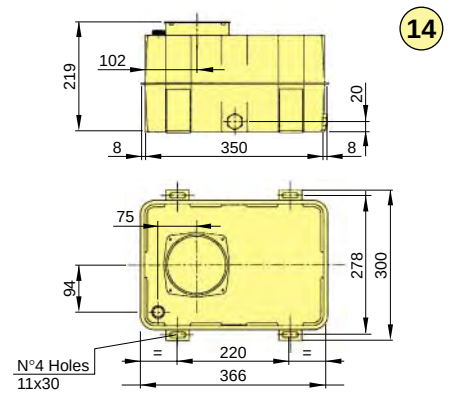
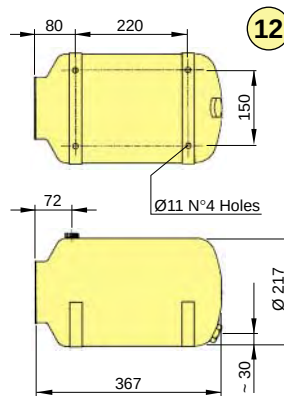
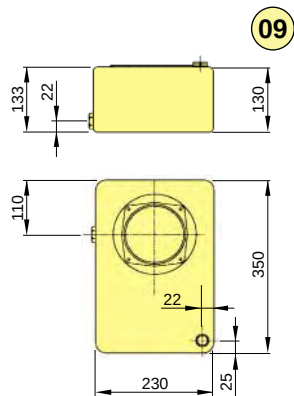
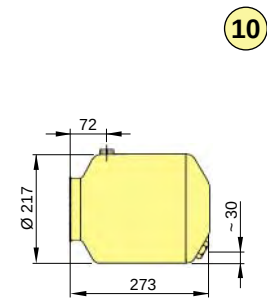
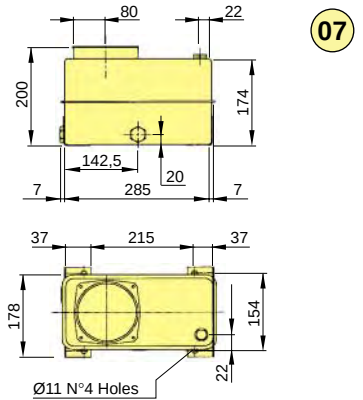
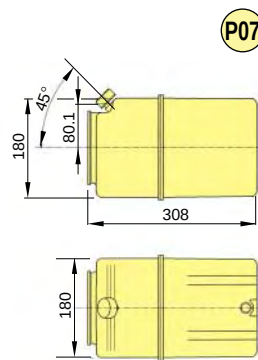
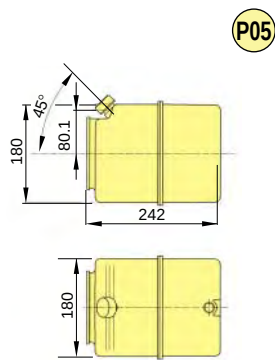
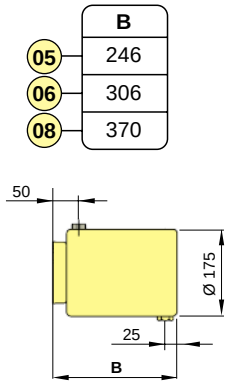
TANKS BEHÄLTER

T 01 02 03 05 P05 06 07 P07 08 09 10 12 14 25

NOMINAL CAPACITY NENNVOLUMEN	1	2	3	5	6	7	8	9	10	12	14	25

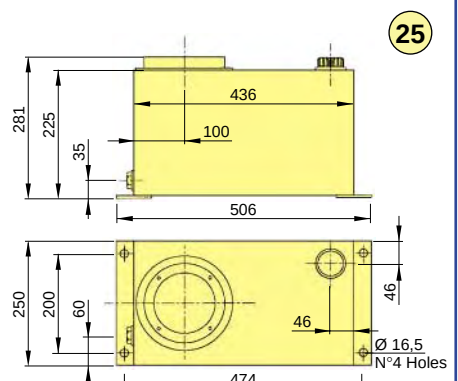
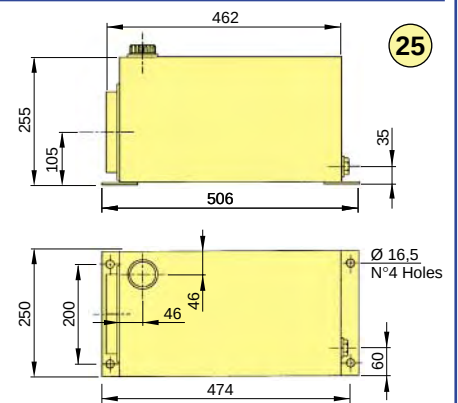
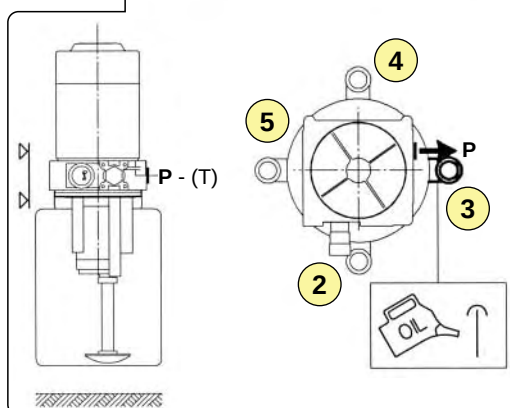
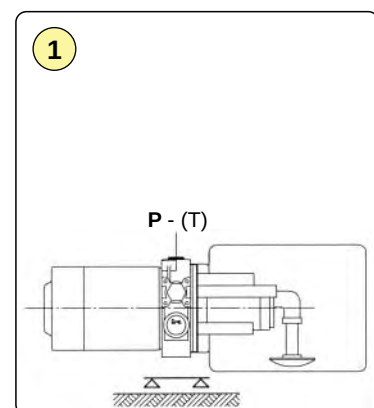
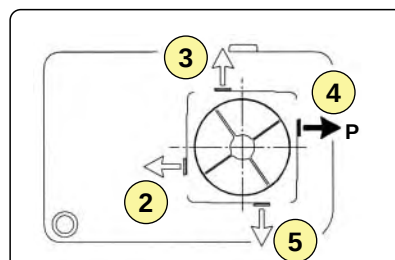
**SPECIAL SIZES ON
REQUEST**
SONDERGRÖßEN AUF
ANFRAGE

	A
01	141
02	200
03	330

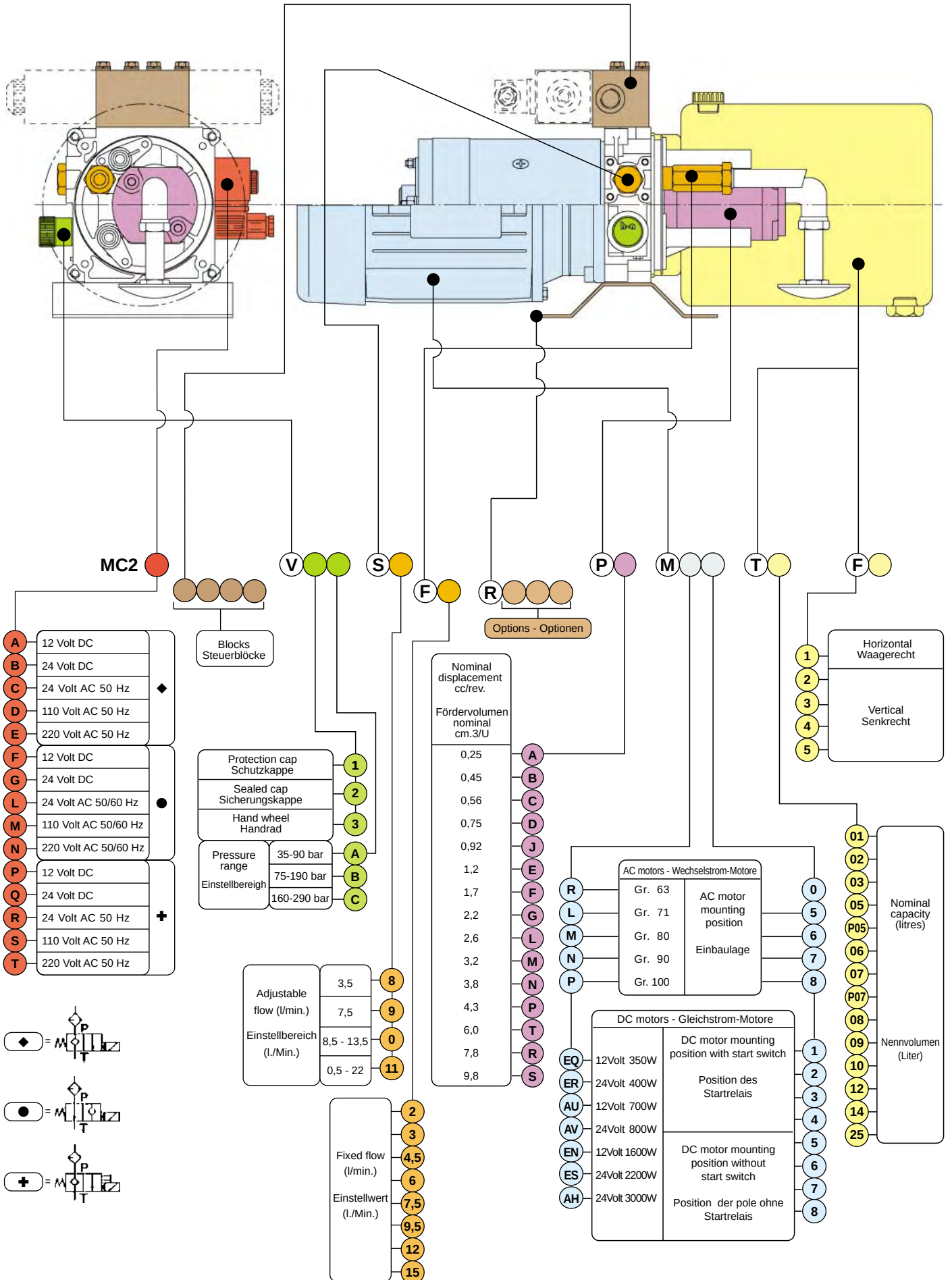


MOUNTING POSITION MONTAGESCHLÜSSEL

F	ORIZZONTALE	HORIZONTAL
1		
2		
3	VERTICALE	VERTICAL
4		
5		



BESTELLSCHLÜSSEL



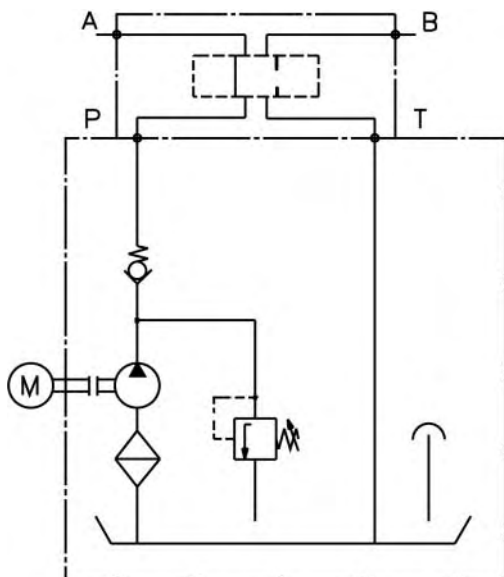
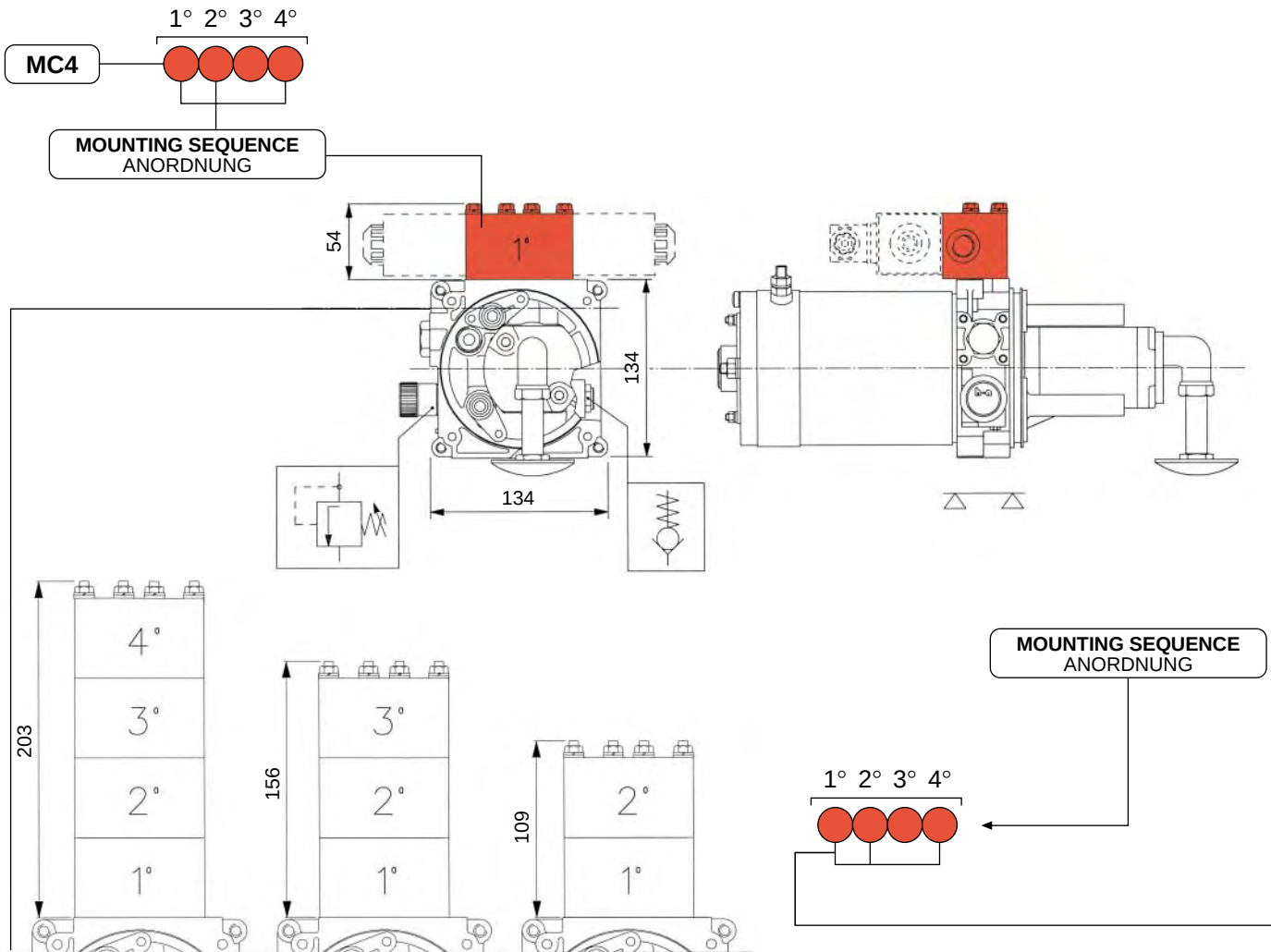
MC4



MC 4 modular power-packs were engineered to provide a practical and economical solution to various hydraulic applications. Modularity concept allows us to use standard components manufactured in large quantities. The high quality of components and their great mounting ease makes power pack extremely flexible and ready to cover a wide range of power requirements. Every component is completely interchangeable and it can be stocked separately and used in all required systems, obtaining in this way a time and stock costs save. The result is a silent compact assembly with high performance which has large application possibilities in all industrial fields.

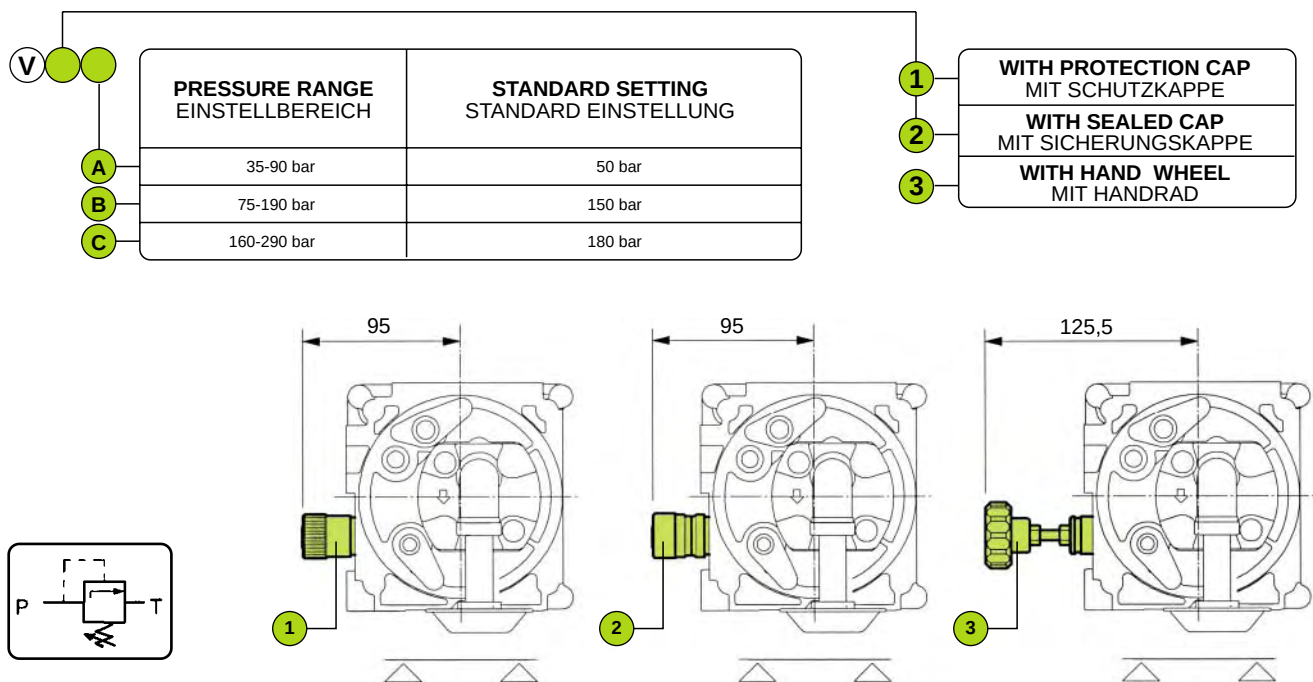
Die Kleinaggregate der Baureihe "**MC4**" sind das Ergebnis unserer langjährigen Erfahrung. Sie wurden entwickelt, um praktische und wirtschaftliche Lösungen für die verschiedenen Problemstellungen der Hydraulik-Automation anzubieten. Das Baukastensystem besteht aus Standard-Komponenten, die in unserem Werk in großen Stückzahlen hergestellt werden. Diese Komponenten stellen aufgrund Ihrer hohen Qualität eine einfache Montage und zuverlässige Funktion sicher. Durch den modularen Aufbau und die Austauschbarkeit der Elemente untereinander können die Kleinaggregate für verschiedene Hydraulik-Systeme und auch auf vorhandenen Ölbehältern verwendet werden. Das geringe Laufgeräusch der Pumpen erlaubt einen störungsarmen Einsatz in allen Industriebereichen. Das Baukastensystems ermöglicht außerdem eine zeitplatz-und kostensparende Lagerhaltung der Komponenten.

MOUNTING BLOCKS STEUERBLÖCKE



MANIFOLD BLOCKS FOR CETOP3 SOLENOID VALVES (UNI ISO 4401-AB-03-4) ANSCHLUßBLÖCKE FÜR CETOP3 VENTILE (UNI ISO 4401 - AB - 03 - 4)	SCHEMATIC HYDRAULIKSYMBOL	DESCRIPTION BESCHREIBUNG
		A 1/4" PARALLEL INTERMEDIATE SUBPLATE 1/4" ZWISCHENPLATTE
		B 1/4" SERIE INTERMEDIATE SUBPLATE 1/4" MITTELPLATTE - SERIE
		C 1/4" PARALLEL TOP BLOCK 1/4" ENDPLATTE
		D 1/4" PARALLEL TOP BLOCK WITH GAUGE PORT 1/4" ENDPLATTE MIT MANOMETERANSCHLUß
		E 3/8" PARALLEL INTERMEDIATE SUBPLATE 3/8" ZWISCHENPLATTE

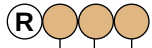
RELIEF VALVES DRUCK BEGRENZUSVENTIL



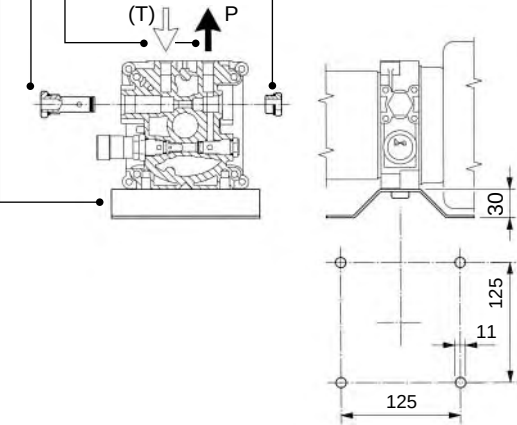
MOUNTING BLOCKS STEUERBLÖCKE

MANIFOLD BLOCKS FOR CETOP3 SOLENOID VALVES (UNI ISO 4401-AB-03-4) ANSCHLUßBLÖCKE FÜR CETOP3 VENTILE (UNI ISO 4401 - AB - 03 - 4)		SCHEMATIC HYDRAULIKSYMBOL	DESCRIPTION BESCHREIBUNG	
			3/8" SERIE INTERMEDIATE SUBPLATE 3/8" MITTELPLATTE	F
			3/8" PARALLEL TOP BLOCK 3/8" ENDPLATTE	G
			3/8" PARALLEL TOP BLOCK WITH GAUGE PORT 3/8" ENDPLATTE MIT MANOMETERANSCHLUß	H
			PILOT CHECK ON "A" PORT MIT ENTSPERRBAREM RV IN "A"	L
			PILOT CHECK ON "B" PORT MIT ENTSPERRBAREM RV IN "B"	M
			PILOT CHECKS ON "A" AND "B" PORTS MIT ENTSPERRBAREM RV IN "A" UND "B"	N
MANIFOLD BLOCKS FOR CETOP3 SOLENOID VALVES (UNI ISO 4401-AB-03-4) ANSCHLUßBLÖCKE FÜR CETOP3 VENTILE (UNI ISO 4401 - AB - 03 - 4)		SCHEMATIC HYDRAULIKSYMBOL	DESCRIPTION BESCHREIBUNG	
			ADJUSTABLE PRESSURE RELIEF ON "A" PORT MIT DBV IN "A"	P
			ADJUSTABLE PRESSURE RELIEF ON "B" PORT MIT DBV IN "B"	R
			ADJUSTABLE PRESSURE RELIEF ON "A" AND "B" PORTS MIT DBV IN "A" UND "B"	S
			BLOCK N 13 STEUERBLOCK N 13	V
			HAND PUMP MIT HANDPUMPE 6 cm³/Hub	K
			HIGHTENING PLATE h=29 NECESSARY FOR AC MOTOR M-N-P HEBEPLATTE h=29 NOTWENDIG FÜR EL-MOTOREN -M-N-P-	U

OPTIONS OPTIONEN



- 1** P - (T) G 3/8" without holes for blocks mounting
P - (T) G 3/8" ohne Bohrungen fuer die Bloeckemontage
- 2** Auxiliary pressure port-Zusätzlicher Anschluß
- 5** 1/4" Auxiliary return port - 1/4" Zusatz-Ablaßstopfen
- 7** Mounting footth - Montage fuß
- 0** With M6 holes for blocks mounting
Mit Bohrungen M6 fuer die Bloeckemontage



PUMPS DISPLACEMENT PUMPENGRÖßEN

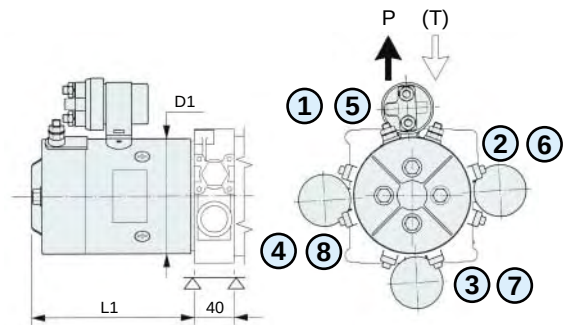
P	NOMINAL DISPLACEMENT CC/REV FÖRDERVOLUMEN NOMINAL cm.3/U	PUMP GROUP BAUGRÖßE
A	0,25	0,5
B	0,45	
C	0,56	
D	0,75	
J	0,92	
E	1,2	1
F	1,7	
G	2,2	
L	2,6	
M	3,2	
N	3,8	
P	4,3	
T	6,0	
R	7,8	
S	9,8	

DC - AC MOTORS ELEKTROMOTORE DC/AC

DC MOTORS - GLEICHSTROMMOTORE

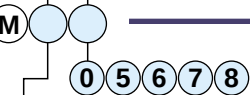
	TYPE TYP	D1	L1
EQ	12Volt CC 0,35 kW	76	143,5
ER	24Volt CC 0,4 kW		
AU	12Volt CC 0,7 kW	76	162
AV	24Volt CC 0,8 kW		
EN	12Volt CC 1,6 kW	114	158
ES	24Volt CC 2,2 kW		
AH	24Volt CC 3,0 kW	125	207,2

- 1** START SWITCH
POSITION
- 2** POSITION DES
STARTRELAIS
- 3** POSITION DES
STARTRELAIS
- 4** POSITION DES
STARTRELAIS
- 5** TERMINAL POSITION
WITHOUT START SWITCH
- 6** TERMINAL POSITION
WITHOUT START SWITCH
- 7** POSITION DER POLE
OHNE STARTRELAIS
- 8** POSITION DER POLE
OHNE STARTRELAIS



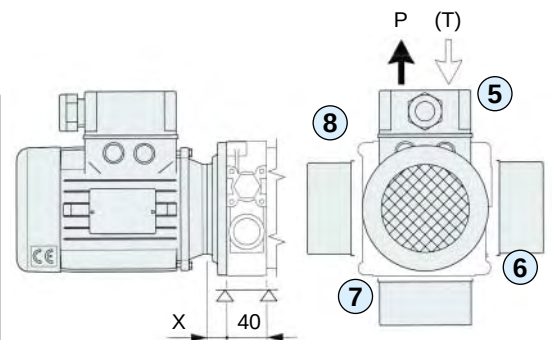
THERMAL SWITCH PROTECTION AND FAN COOLED MOTORS ARE AVAILABLE
MOTORE AUCH MIT THERMOSCHALTER UND LUFTER VERFÜGBAR

AC MOTORS DREH - WECHSELSTROMMOTORE



WITHOUT MOTOR - OHNE MOTOR

	SIZE BAUGRÖßE	2 POLES kW	4 POLES kW	6 POLES kW	X	FRAME BAUFORM
R	63	0,18-0,25	0,12-0,18	0,09-0,12	19,5	B14 UNEL 13118-71
L	71	0,35-0,55	0,25-0,37	0,18-0,25	19,5	
M	80	0,75-1,1	0,55-0,75	0,37-0,55	30,5	
N	90	1,5-2,2	1,1-1,5	0,75-0,55	40,5	
P	100/112	3-5,5	2,2-4	1,5-2,2	75	



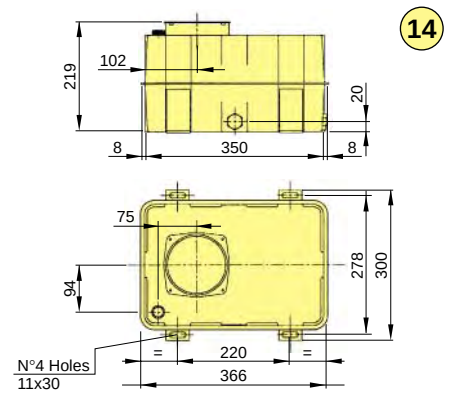
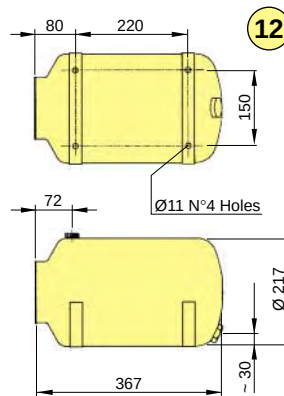
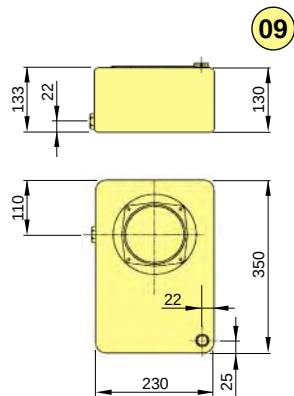
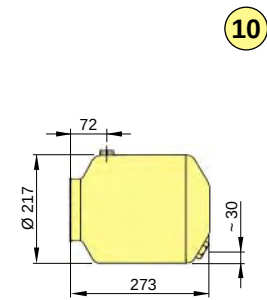
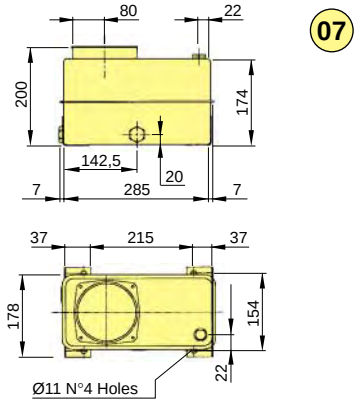
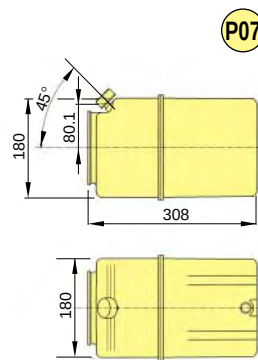
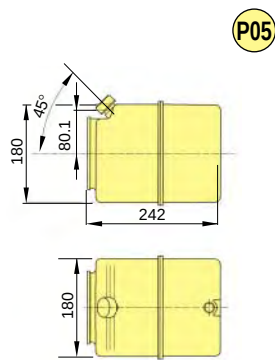
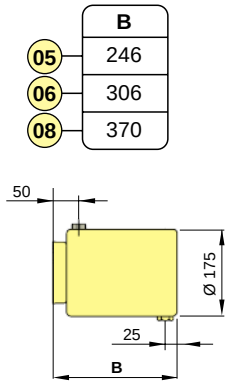
TANKS BEHÄLTER

T 01 02 03 05 P05 06 07 P07 08 09 10 12 14 25

NOMINAL CAPACITY NENNVOLUMEN	1	2	3	5	6	7	8	9	10	12	14	25
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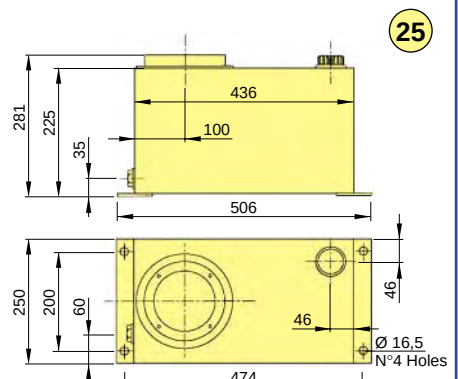
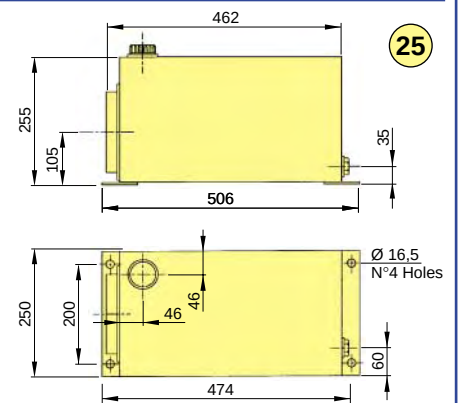
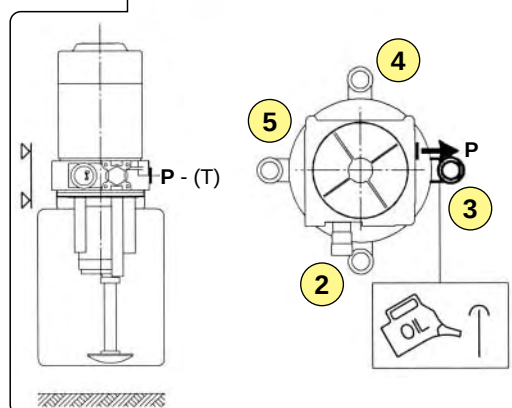
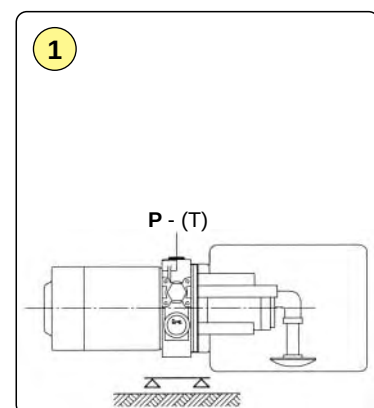
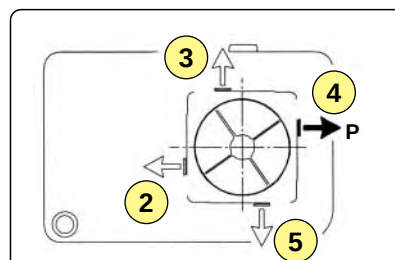
**SPECIAL SIZES ON
REQUEST**
SONDERGRÖßEN AUF
ANFRAGE

	A
01	141
02	200
03	330

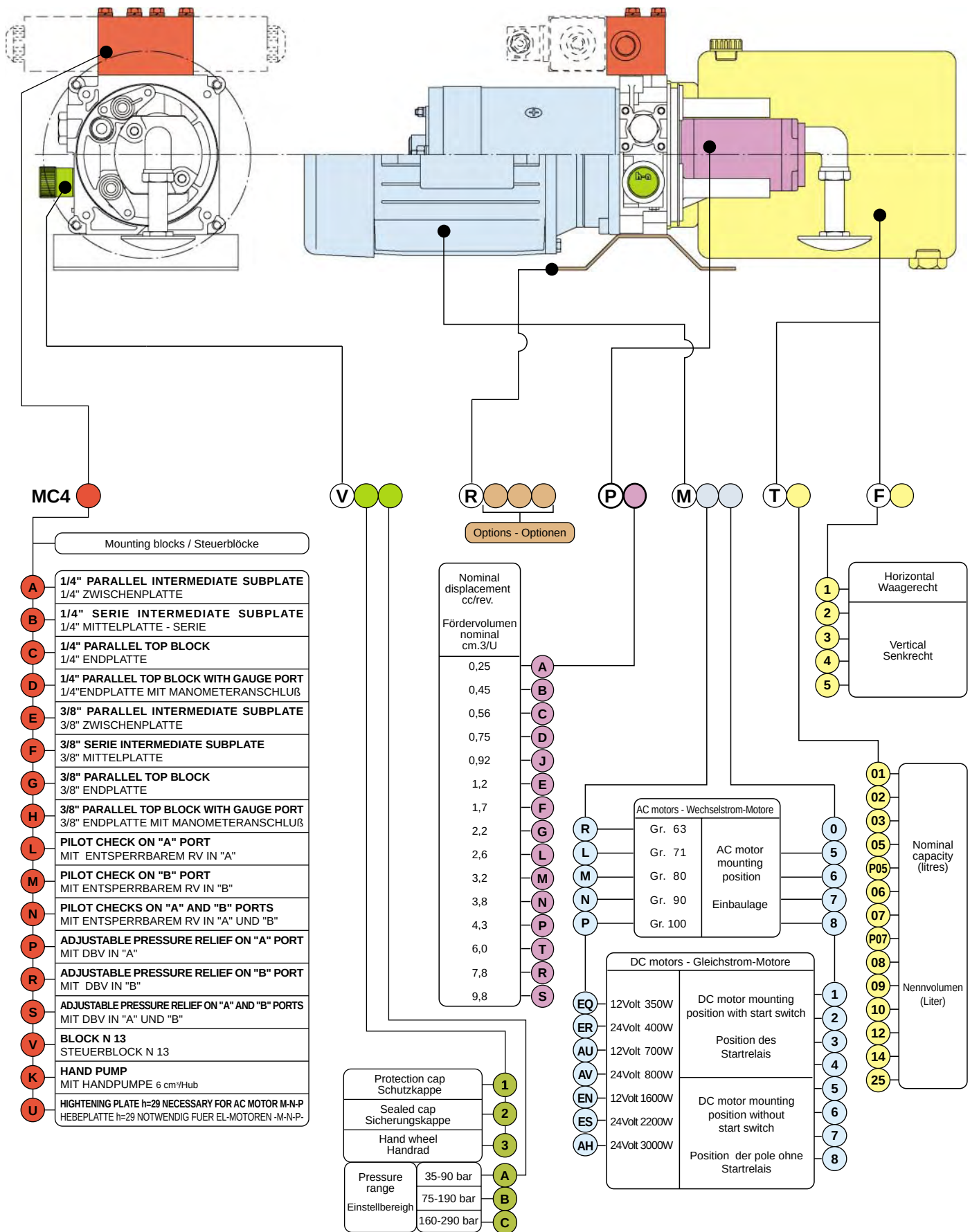


MOUNTING POSITION MONTAGESCHLÜSSEL

F	ORIZZONTALE	HORIZONTAL
1		
2		
3	VERTICALE	VERTICAL
4		
5		



ORDERING CODE BESTELLSCHLÜSSEL



Elettropompa

EP

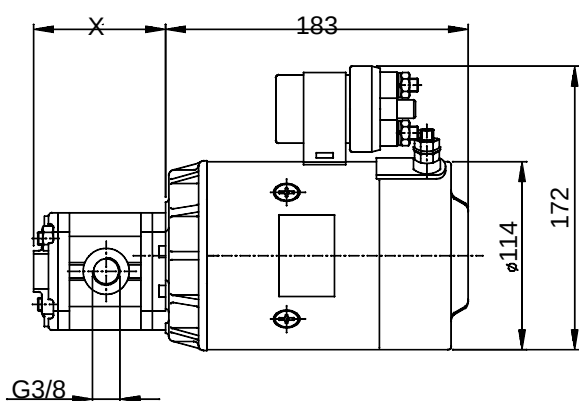
Electric pump

MOTORE

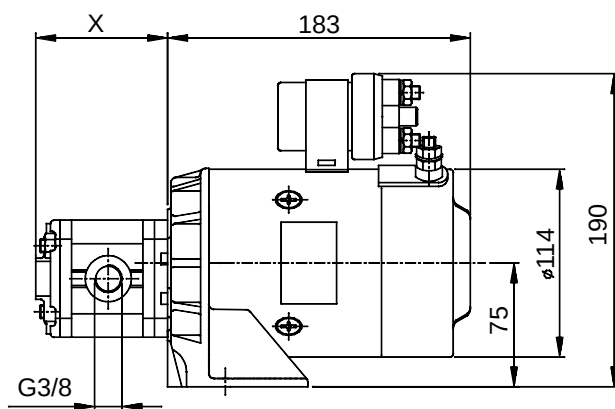
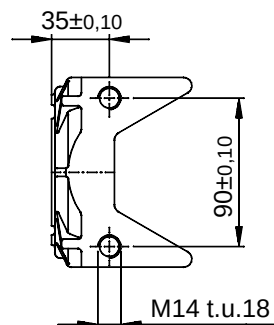
- 12 Volts C.C. 1600 W - 2 poli
- 24 Volts C.C. 2200 W - 2 poli
- Classe di isolamento F
- Grado di protezione IP54
- Rotore su cuscinetti autolubrificanti

MOTOR

- 12 Volts D.C. 1600 W - 2 poles
- 24 Volts D.C. 2200 W - 2 poles
- Insulation class F
- Protection level IP54
- Rotor on self lubricating bearings



Aspirazione - Suction
Mandata - Delivery



Aspirazione - Suction
Mandata - Delivery

Codice di ordinazione
How to order

EP

EN 12 Volts D.C. 1600 W
ES 24 Volts D.C. 2200 W

P Con piedini
With fixing holes

N Senza piedini
Without fixing holes

Tipo di pompa
Type of pump

X

1,2	Gr. 1 - 1,3 cm ³ /giro (cm ³ /rev)	75
1,7	Gr. 1 - 1,6 cm ³ /giro (cm ³ /rev)	76
2,2	Gr. 1 - 2,1 cm ³ /giro (cm ³ /rev)	78
2,6	Gr. 1 - 2,7 cm ³ /giro (cm ³ /rev)	80
3,2	Gr. 1 - 3,2 cm ³ /giro (cm ³ /rev)	82
3,8	Gr. 1 - 3,7 cm ³ /giro (cm ³ /rev)	84
4,3	Gr. 1 - 4,2 cm ³ /giro (cm ³ /rev)	86
6,0	Gr. 1 - 5,8 cm ³ /giro (cm ³ /rev)	92

Pressione max 210 bar Max pressure

C Con teleruttore
With start switch

S Senza teleruttore
Without start switch

MOTORI IN C.C. D.C. MOTORS

INDICE - INDEX

Riferimento Reference	Motore tipo Motor type	Pagina Page	Riferimento Reference	Motore tipo Motor type	Pagina Page
EQ	0.35 kw (NOMINALI) 12V c.c. 0.35 kw (NOMINAL) 12V d.c.	5	EN	1.6 kw (NOMINALI) 12V c.c. Con doppio cuscinetto 1.6 kw (NOMINAL) 12V d.c. With double bearing	13
ER	0.40 kw (NOMINALI) 24V c.c. 0.40 kw (NOMINAL) 24V d.c.	5	EP	1.6 kw (NOMINALI) 12V c.c. Con doppio cuscinetto e salvamotore 1.6 kw (NOMINAL) 12V d.c. With double bearing and thermal switch	17
AU	0.7 kw (NOMINALI) 12V c.c. 0.7 kw (NOMINAL) 12V d.c.	6	ES	2.2 kw (NOMINALI) 24V c.c. Con doppio cuscinetto 2.2 kw (NOMINAL) 24V d.c. With double bearing	15
AV	0.8 kw (NOMINALI) 24V c.c. 0.8 kw (NOMINAL) 24V d.c.	6	EU	2.2 kw (NOMINALI) 24V c.c. Con doppio cuscinetto e salvamotore 2.2 kw (NOMINAL) 24V d.c. With double bearing and thermal switch	19
AA	1.5 kw (NOMINALI) 12V c.c. 1.5 kw (NOMINAL) 12V d.c.	7	AH	3.0 kw (NOMINALI) 24V c.c. 3.0 kw (NOMINAL) 24V d.c.	21
EA	1.5 kw (NOMINALI) 12V c.c. Ventilato 1.5 kw (NOMINAL) 12V d.c. Fan cooled	9	AO	3.0 kw (NOMINALI) 24V c.c. Ventilato 3.0 kw (NOMINAL) 24V d.c. Fan cooled	22
EJ	1.5 kw (NOMINALI) 12V c.c. Ventilato con salvamotore 1.5 kw (NOMINAL) 12V d.c. Fan cooled with thermal switch	11	AP	3.0 kw (NOMINALI) 24V c.c. Con salvamotore 3.0 kw (NOMINAL) 24V d.c. With thermal switch	23
AB	2.0 kw (NOMINALI) 24V c.c. 2.0 kw (NOMINAL) 24V d.c.	8			
ED	2.0 kw (NOMINALI) 24V c.c. Ventilato 2.0 kw (NOMINAL) 24V d.c. Fan cooled	10			
EI	2.0 kw (NOMINALI) 24V c.c. Ventilato con salvamotore 2.0 kw (NOMINAL) 24V d.c. Fan cooled with thermal switch	12			

INTRODUZIONE INTRODUCTION

In questa raccolta di “Tabelle Tecniche” sono elencati tutti i motori in C.C. scelti dalla HANSA-TMP e utilizzati nelle centraline di propria produzione. I diagrammi rappresentati sono stati determinati nelle condizioni di prova specificate dalle stesse “Tabelle Tecniche”, utilizzando centraline di normale produzione HANSA-TMP.

Le differenti curve riportano le prestazioni della centralina, in funzione del tipo di pompa montata. Una tabellina descrive le caratteristiche principali della pompa, specificandone la grandezza (gruppo), la cilindrata nominale e le lettere di riferimento riportate sui “Cataloghi Centraline”.

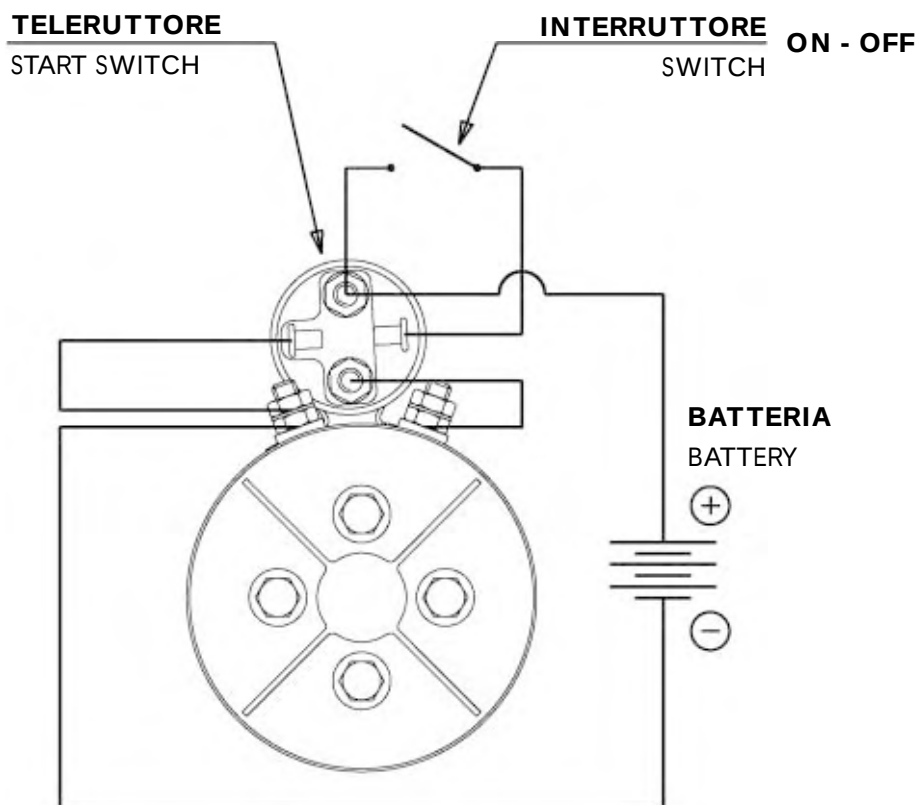
I gradi di protezione specificati sono classificati secondo le norme CEI 2-16 (conforme alla Norma Europea CENELEC 60034-5) e sono validi, in molti casi, solo a motore montato su centraline, o altri prodotti, di produzione HANSA-TMP.

This collection of “Technical Tables” lists all the D.C. motors approved by HANSA-TMP and used in power packs fabricated by HANSA-TMP.

The diagrams shown are determined from tests performed with the characteristics specified in the same “Technical Tables” and using the standard power packs fabricated by HANSA-TMP. The curves thus show the performances of the power pack in relation to the pumps installed. One table describes the main characteristics of the pump specifying their size (group), the rated displacement and the reference letters which correspond to the same references described in the “Power Packs Catalogues”.

The specific protection classes which are classified according to the Standards CEI 2-16 which Standards CEI 2-16 (which conforms to the European Standard CENELEC 60034-5) and are valid in many cases only for a motor mounted on power packs (or other products) fabricated by HANSA-TMP.

SCHEMA ELETTRICO COLLEGAMENTO TELERUTTORE START SWITCH WIRING DIAGRAM



LIMITI FUNZIONALI DEI MOTORI ELETTRICI FUNCTIONAL LIMIT OF D.C. ELECTRIC MOTORS

I limiti funzionali del motore elettrico in C.C., si possono leggere sulle curve S2 e S3 dei diagrammi di prestazione raffigurati nelle "Tabelle Tecniche":

- La curva S2 determina il tempo limite di inserzione del motore elettrico in C.C. espresso in minuti.
- La curva S3 esprime il rapporto di intermittenza in %, che ha il valore S2 in un ciclo totale di lavoro (100%).

N.B.: per il ciclo totale di lavoro si intende la somma dei minuti di lavoro S2 e i minuti di riposo che servono al motore per non superare mai i limiti di riscaldamento.

CALCOLO DEL LIMITE FUNZIONALE

$$S2 : S3 = T_t : 100$$

$$T_t = \frac{100 \times S2}{S3} \quad T_t = \text{tempo totale ciclo di lavoro}$$

$$T_p = T_t - S2 \quad T_p = \text{tempo di pausa}$$

CALCOLO DEL TEMPO DI LAVORO

$$T_L : S3 = T_t : 100$$

$$T_t = \frac{100 \times T_L}{S3} \quad T_L = \text{tempo di lavoro qualsiasi, purché non superi i limiti posti S2.}$$

$$T_p = T_t - T_L$$

SCELTA DEL MOTORE

Per calcolare la potenza teorica (in kW) richiesta dalla pompa, utilizzare la seguente formula:

$$\text{kW (teorica)} = \frac{Q \times P}{612}$$

Q = portata (l/min.)
P = pressione (bar)

The functional limits of the D.C. electric motor can be found on the S2 and S3 curves of the performance diagrams represented in the "Technical Tables".

- Curve S2 defines the maximum running time of the D.C. electric motor expressed in minutes.
- Curve S3 expresses the on-off ratio in % which has the value S2 in a total work cycle (100%).

NOTE: total work cycle is defined as the sum of the work minutes S2 and resting minutes which the motor uses to avoid exceeding the heating limits.

FUNCTIONAL LIMIT CALCULATION

$$S2 : S3 = T_t : 100$$

$$T_t = \frac{100 \times S2}{S3} \quad T_t = \text{total work cycle time}$$

$$T_p = T_t - S2 \quad T_p = \text{pause time}$$

WORK TIME CALCULATION

$$T_L : S3 = T_t : 100$$

$$T_t = \frac{100 \times T_L}{S3} \quad T_L = \text{any work time, provided that it does not exceed the S2 limits.}$$

$$T_p = T_t - T_L$$

MOTOR SELECTION

To calculate the theoretical power (in kW) required by the pump, use the following formula:

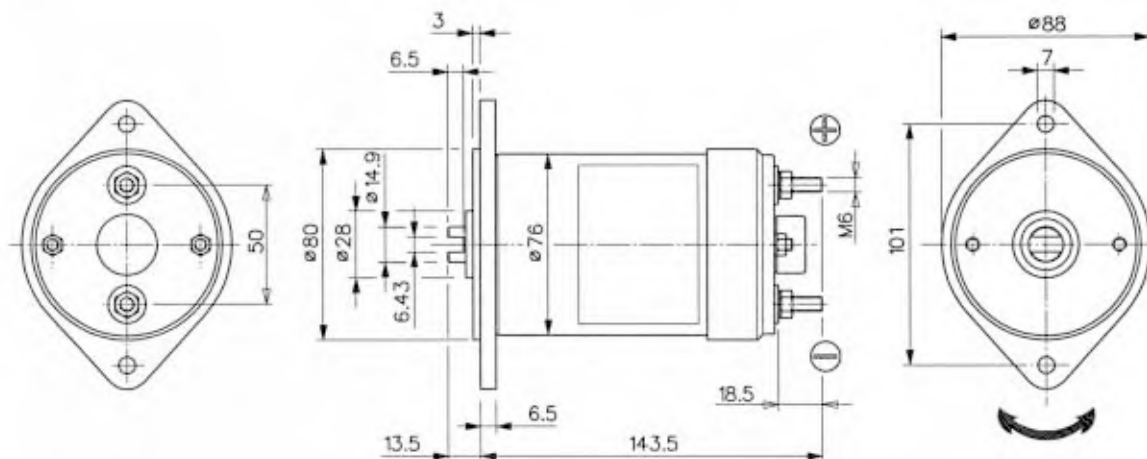
$$\text{kW (theoretical)} = \frac{Q \times P}{612}$$

Q = flow rate (l/min.)
P = pressure (bar)

INFORMAZIONI GENERALI GENERAL INFORMATION

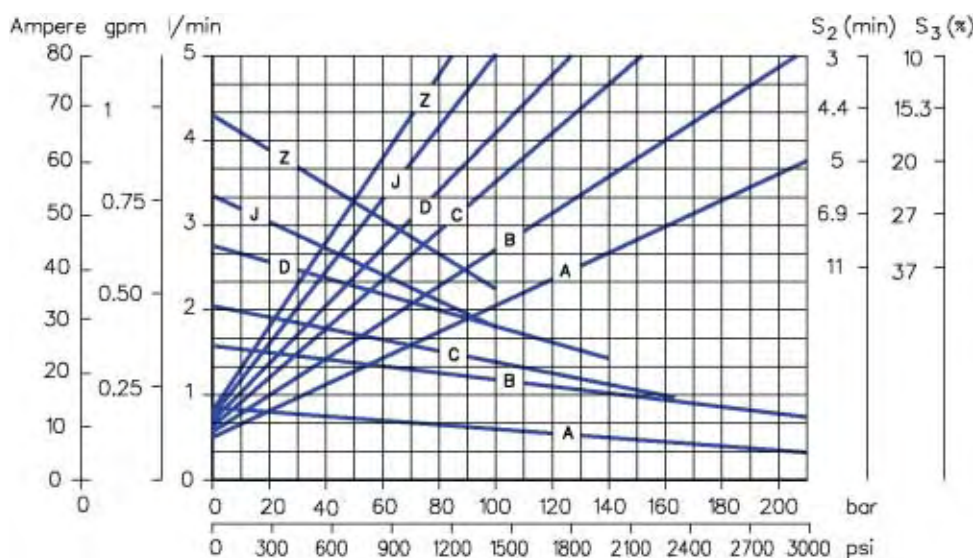
DATI TECNICI SALVA MOTORE TERMAL SWITCH TECHNICAL DATA	TIPO MOTORE MOTOR TYPE	CONDIZIONI DI PROVA TEST CONDITIONS
TENSIONE NOMINALE MAX. AMMESSA: MAXIMUM NOMINAL VOLTAGE ALLOWED: 24V	M ER	OLIO: ISO VG 32 (RIF/REF. ISO 3448) OIL:
CARICO RESISTIVO O INDUTTIVO MAX AMMESSO: MAXIMUM RESISTIVE OR INDUCTIVE LOAD ALLOWED: 2,5 A	M AV	TEMPERATURA OLIO: 50°C OIL TEMPERATURE:
CARICO MAX AMMESSO ALLA PARTENZA CON TEMPERATURA IN AMBIENTE E SUL MOTORE DI 20°C: MAXIMUM CURRENT ALLOWED STARTING WITH MOTOR AND AMBIENT TEMPERATURE AT 20°C: 130 A (max)	M AB	TEMPERATURA AMBIENTE: 20°C AMBIENT TEMPERATURE:
	M ED	RETTA DI CADUTA TENSIONE: $t = f(I)$ VOLTAGE DROPPING:
	M EI	I (Ampere) = 0 $\longrightarrow$ t (Volt) = 22,5 I (Ampere) = 350 $\longrightarrow$ t (Volt) = 19
	M EU	
	M ES	
TENSIONE NOMINALE MAX. AMMESSA: MAXIMUM NOMINAL VOLTAGE ALLOWED: 24V	M AH	OLIO: ISO VG 32 (RIF/REF. ISO 3448) OIL:
CARICO RESISTIVO O INDUTTIVO MAX AMMESSO: MAXIMUM RESISTIVE OR INDUCTIVE LOAD ALLOWED: 2,5 A	M AO	TEMPERATURA OLIO: 50°C OIL TEMPERATURE:
CARICO MAX AMMESSO ALLA PARTENZA CON TEMPERATURA IN AMBIENTE E SUL MOTORE DI 20°C: MAXIMUM CURRENT ALLOWED STARTING WITH MOTOR AND AMBIENT TEMPERATURE AT 20°C: 160 A (max)	M AP	TEMPERATURA AMBIENTE: 20°C AMBIENT TEMPERATURE:
	M EQ	RETTA DI CADUTA TENSIONE: $t = f(I)$ VOLTAGE DROPPING:
	M AU	I (Ampere) = 0 $\longrightarrow$ t (Volt) = 11 I (Ampere) = 200 $\longrightarrow$ t (Volt) = 9.5
TENSIONE NOMINALE MAX. AMMESSA: MAXIMUM NOMINAL VOLTAGE ALLOWED: 12V	M AA	OLIO: ISO VG 32 (RIF/REF. ISO 3448) OIL:
CARICO RESISTIVO O INDUTTIVO MAX AMMESSO: MAXIMUM RESISTIVE OR INDUCTIVE LOAD ALLOWED: 2.5A	M EP	TEMPERATURA OLIO: 50°C OIL TEMPERATURE:
CARICO MAX AMMESSO ALLA PARTENZA CON TEMPERATURA IN AMBIENTE E SUL MOTORE DI 20°C: MAXIMUM CURRENT ALLOWED STARTING WITH MOTOR AND AMBIENT TEMPERATURE AT 20°C: 180A (max)	M EJ	TEMPERATURA AMBIENTE: 20°C AMBIENT TEMPERATURE:
	M EA	RETTA DI CADUTA TENSIONE: $t = f(I)$ VOLTAGE DROPPING:
	M EN	I (Ampere) = 0 $\longrightarrow$ t (Volt) = 11.6 I (Ampere) = 400 $\longrightarrow$ t (Volt) = 9

MOTORE ELETTRICO IN C.C. TIPO EQ - ER (Pompe da 0,25 a 1,26) D.C. MOTOR TYPE EQ - ER (Pumps from 0,25 to 1,26)



M EQ

TIPO 0,35 Kw (NOMINALI) 12V c.c.
TYPE 0,35 Kw (NOMINAL) 12V d.c.

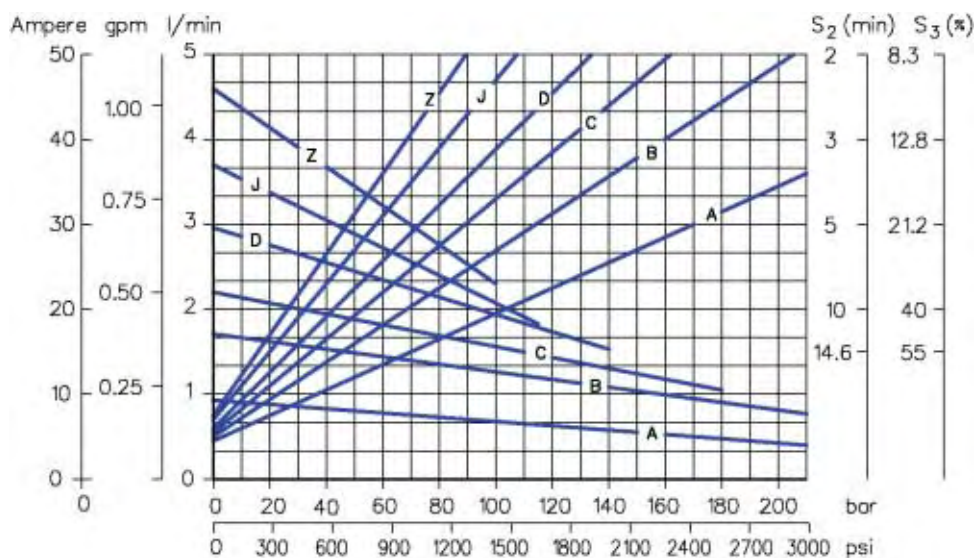


TIPO DI POMPA TYPE OF PUMP

A	GR. 0.5 - 0.25	CC/giro rev.
B	GR. 0.5 - 0.45	CC/giro rev.
C	GR. 0.5 - 0.56	CC/giro rev.
D	GR. 0.5 - 0.75	CC/giro rev.
J	GR. 0.5 - 0.92	CC/giro rev.
Z	GR. 0.5 - 1.26	CC/giro rev.

M ER

TIPO 0,40 Kw (NOMINALI) 24V c.c.
TYPE 0,40 Kw (NOMINAL) 24V d.c.



CARATTERISTICHE GENERALI SPECIFICATIONS

MOTORE IN C.C.
A MAGNETI PERMANENTI
PERMANENT MAGNET
D.C. MOTOR

SENSO DI ROTAZIONE
REVERSIBILE (NOMINALE SX)
REVERSIBLE
ROTATION (NOMINAL LEFT)

GRADO DI PROTEZIONE
PROTECTION CLASS

IP 43

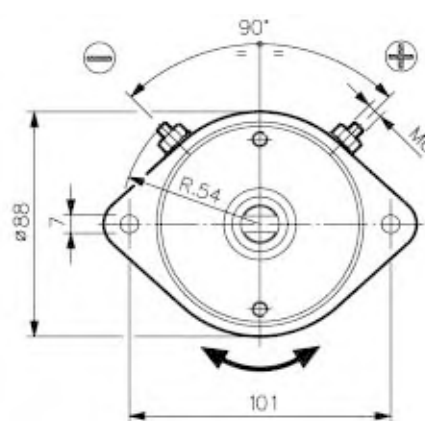
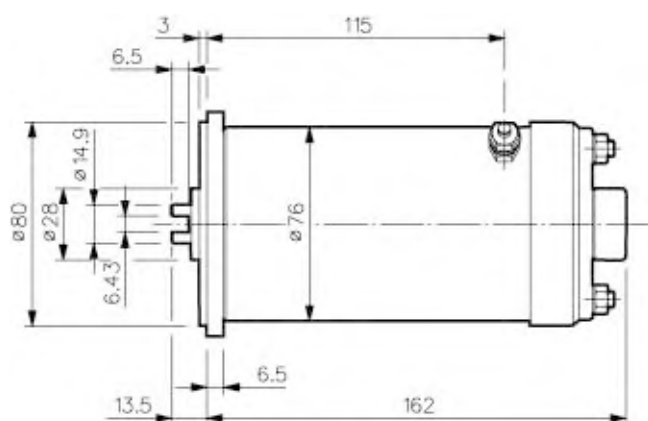
CLASSE DI ISOLAMENTO
INSULATION CLASS

F

PESO
WEIGHT

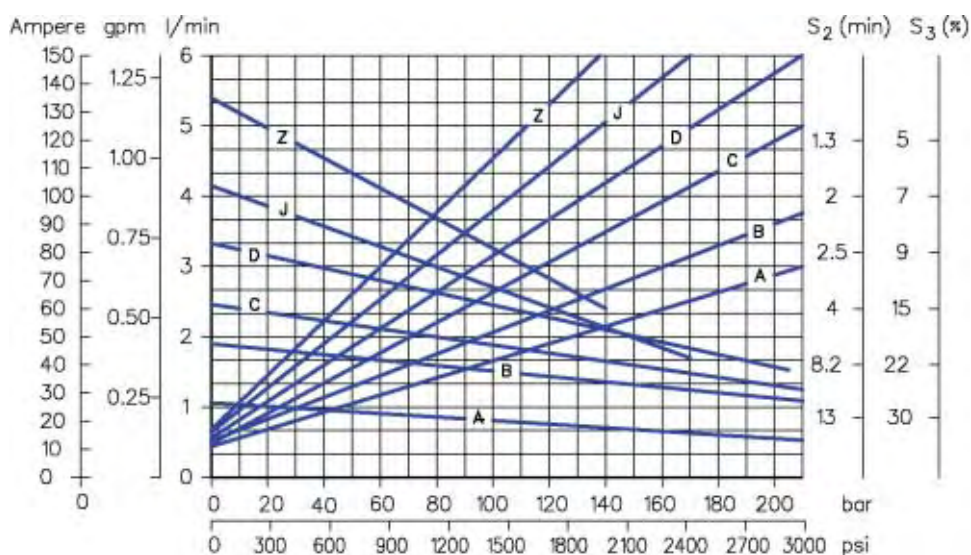
Kg 2,2

MOTORE ELETTRICO IN C.C. TIPO AU - AV (Pompe da 0,25 a 1,26) D.C. MOTOR TYPE AU - AV (Pumps from 0,25 to 1,26)



M AU

TIPO 0,7 Kw (NOMINALI) 12V c.c.
TYPE 0,7 Kw (NOMINAL) 12V d.c.

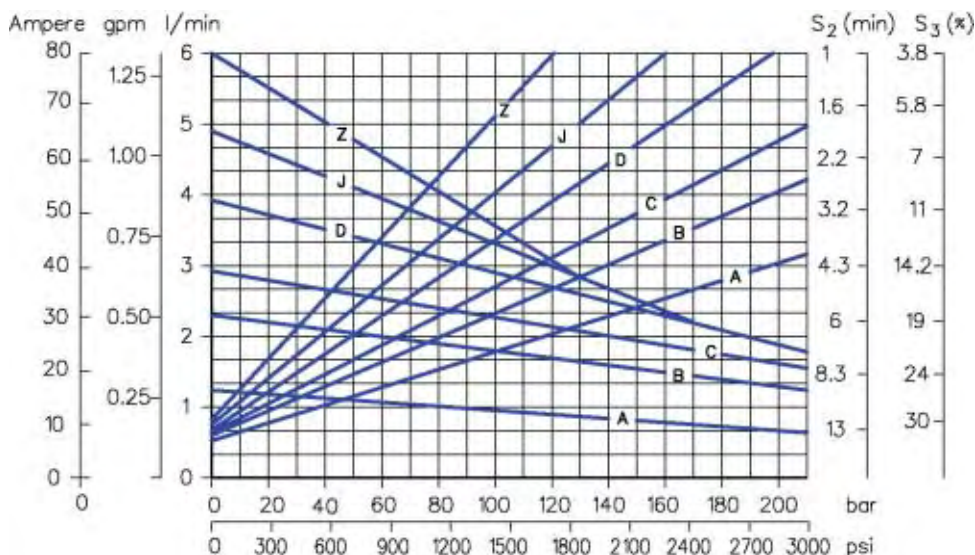


TIPO DI POMPA
TYPE OF PUMP

A	GR.	0.5 - 0.25	CC/giro rev.
B	GR.	0.5 - 0.45	CC/giro rev.
C	GR.	0.5 - 0.56	CC/giro rev.
D	GR.	0.5 - 0.75	CC/giro rev.
J	GR.	0.5 - 0.92	CC/giro rev.
Z	GR.	0.5 - 1.26	CC/giro rev.

M AV

TIPO 0,8 Kw (NOMINALI) 24V c.c.
TYPE 0,8 Kw (NOMINAL) 24V d.c.



CARATTERISTICHE GENERALI
SPECIFICATIONS

MOTORE IN C.C.
A MAGNETI PERMANENTI
PERMANENT MAGNET
D.C. MOTOR

SENSO DI ROTAZIONE
REVERSIBILE (NOMINALE SX)
REVERSIBLE
ROTATION (NOMINAL LEFT)

GRADO DI PROTEZIONE
PROTECTION CLASS

IP 43

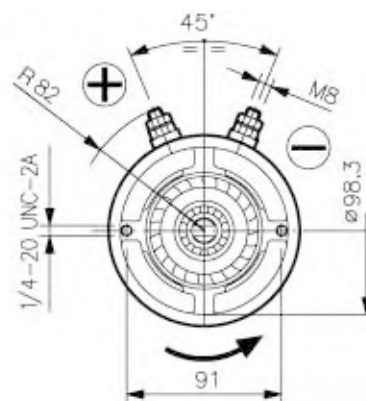
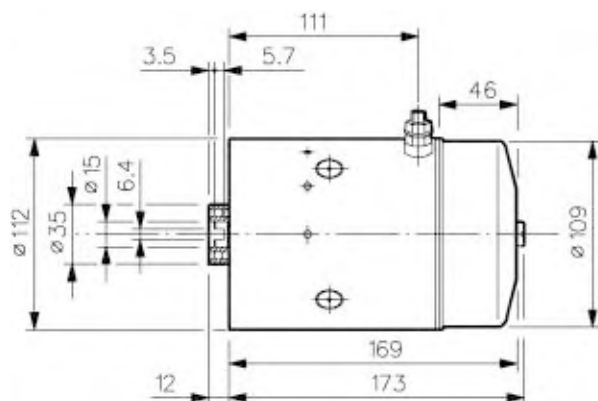
CLASSE DI ISOLAMENTO
INSULATION CLASS

F

PESO
WEIGHT

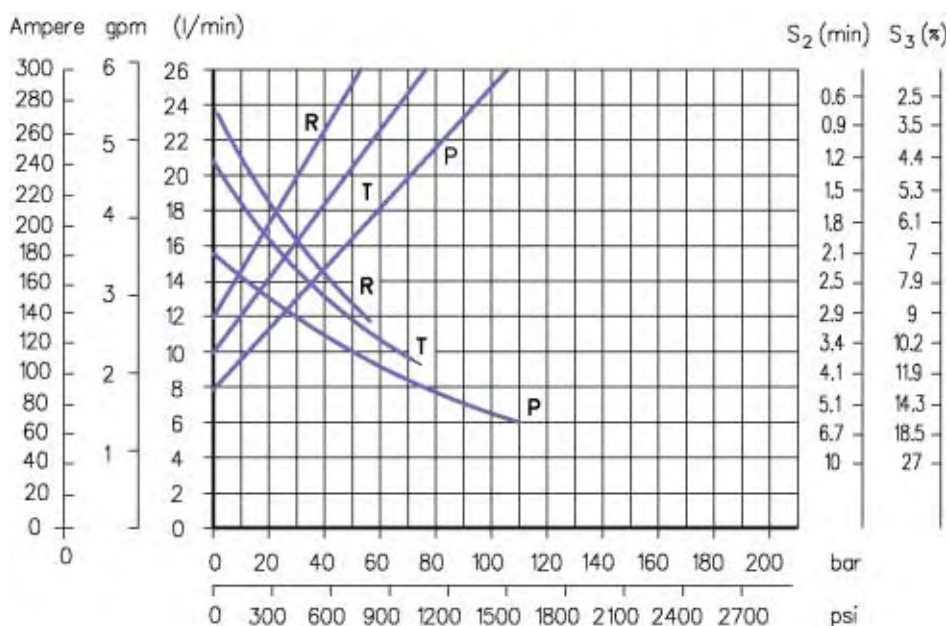
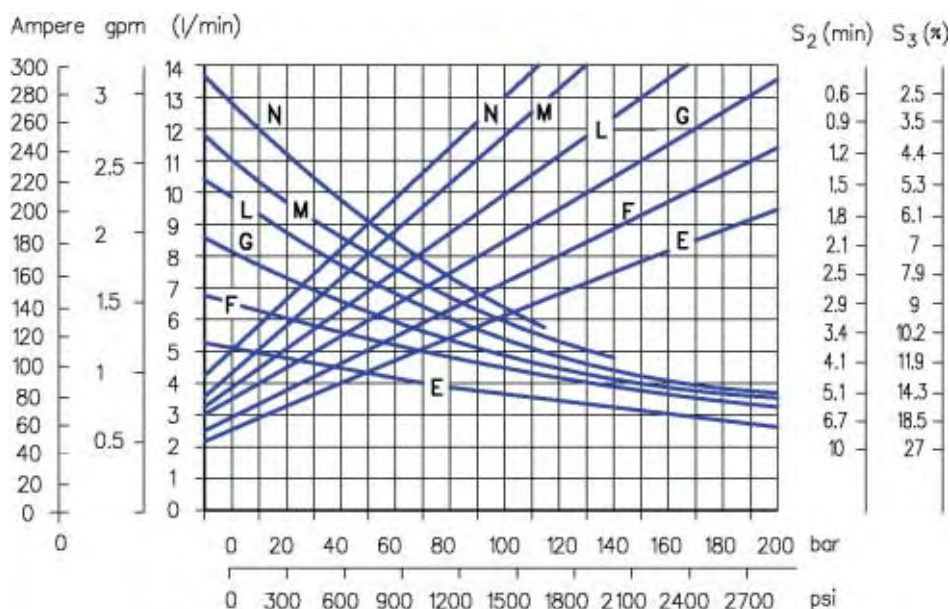
Kg 2,7

MOTORE ELETTRICO IN C.C. TIPO AA (Pompe da 1,2 a 7,8) D.C. MOTOR TYPE AA (Pumps from 1,2 to 7,8)



M AA

TIPO 1,5 Kw (NOMINALI) 12V c.c.
TYPE 1,5 Kw (NOMINAL) 12V d.c.



TIPO DI POMPA TYPE OF PUMP

E	GR.	1 - 1.2	cc/giro rev.
F	GR.	1 - 1.7	cc/giro rev.
G	GR.	1 - 2.2	cc/giro rev.
L	GR.	1 - 2.6	cc/giro rev.
M	GR.	1 - 3.2	cc/giro rev.
N	GR.	1 - 3.8	cc/giro rev.
P	GR.	1 - 4.3	cc/giro rev.
T	GR.	1 - 6.0	cc/giro rev.
R	GR.	1 - 7.8	cc/giro rev.

CARATTERISTICHE GENERALI SPECIFICATIONS

MOTORE IN C.C.
CAMPI AVVOLTI
FIELD WOUND
D.C. MOTOR

SENSO DI ROTAZIONE
SINISTRO
LEFT
ROTATION

GRADO DI PROTEZIONE
PROTECTION CLASS

IP 54

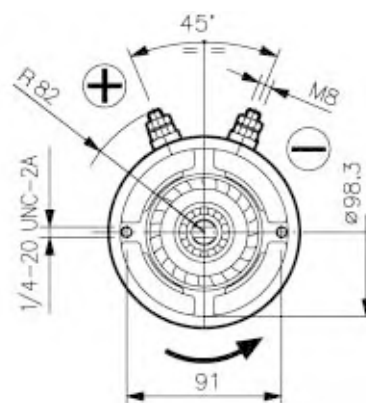
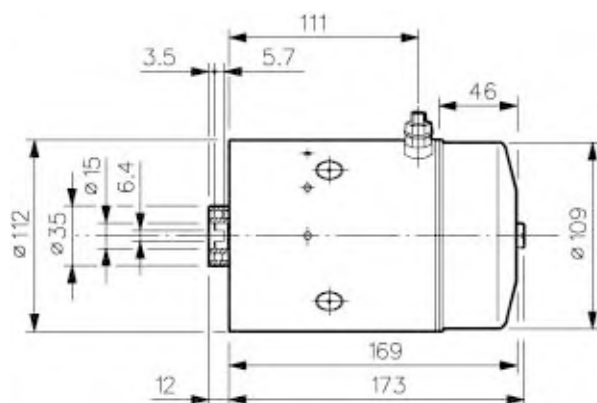
CLASSE DI ISOLAMENTO
INSULATION CLASS

F

PESO
WEIGHT

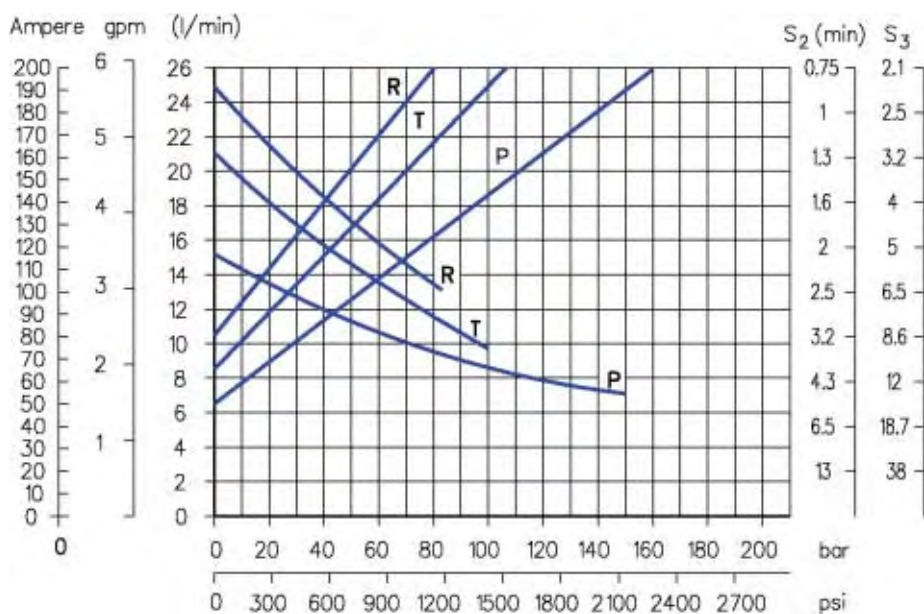
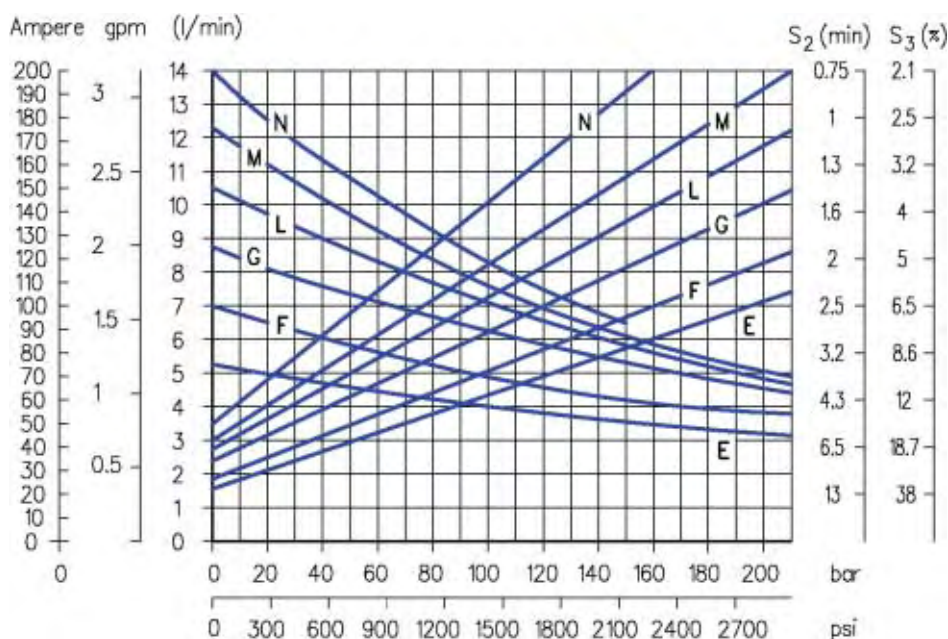
Kg 6,8

MOTORE ELETTRICO IN C.C. TIPO AB (Pompe da 1,2 a 7,8) D.C. MOTOR TYPE AB (Pumps from 1,2 to 7,8)



M AB

TIPO 2,0 Kw (NOMINALI) 24V c.c.
TYPE 2,0 Kw (NOMINAL) 24V d.c.



TIPO DI POMPA TYPE OF PUMP

E	GR.	1 - 1.2	CC/giro rev.
F	GR.	1 - 1.7	CC/giro rev.
G	GR.	1 - 2.2	CC/giro rev.
L	GR.	1 - 2.6	CC/giro rev.
M	GR.	1 - 3.2	CC/giro rev.
N	GR.	1 - 3.8	CC/giro rev.
P	GR.	1 - 4.3	CC/giro rev.
T	GR.	1 - 6.0	CC/giro rev.
R	GR.	1 - 7.8	CC/giro rev.

CARATTERISTICHE GENERALI SPECIFICATIONS

MOTORE IN C.C.
CAMPI AVVOLTI
FIELD WOUND
D.C. MOTOR

SENSO DI ROTAZIONE
SINISTRO
LEFT
ROTATION

GRADO DI PROTEZIONE
PROTECTION CLASS

IP 54

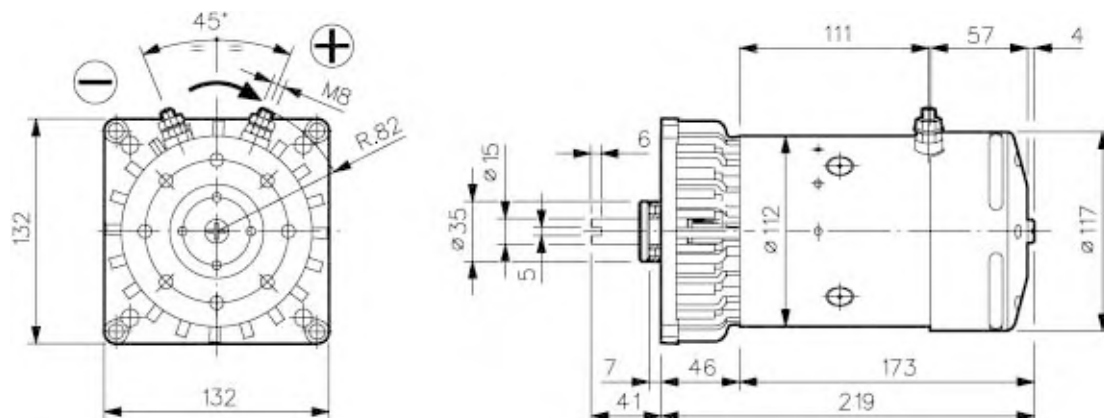
CLASSE DI ISOLAMENTO
INSULATION CLASS

F

PESO
WEIGHT

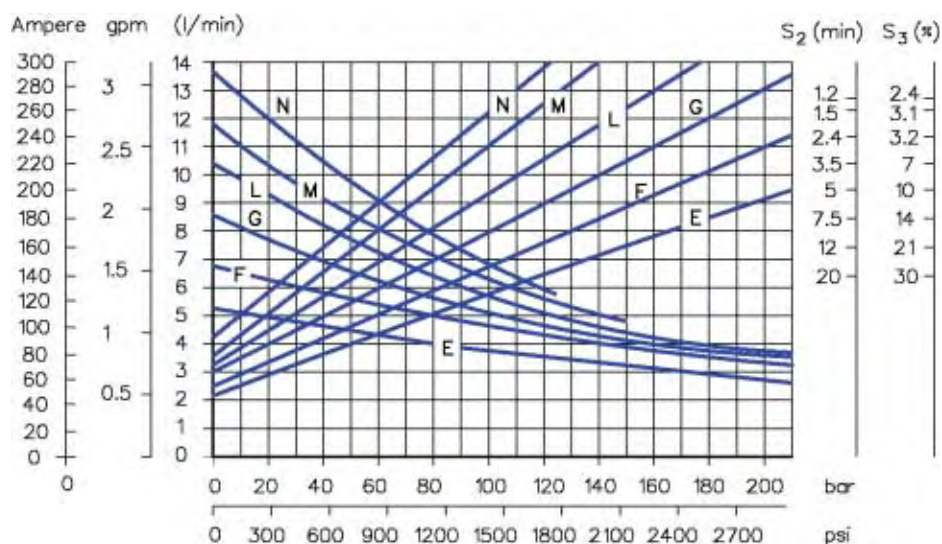
Kg 6,8

MOTORE ELETTRICO IN C.C. TIPO EA (Pompe da 1,2 a 7,8) D.C. MOTOR TYPE EA (Pumps from 1,2 to 7,8)

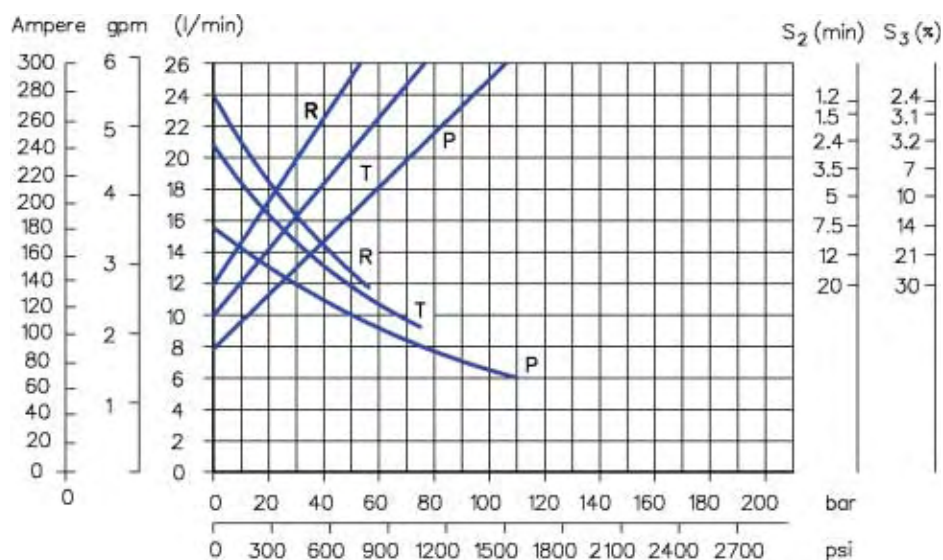


M EA

TIPO 1,5 Kw (NOMINALI) 12V c.c. VENTILATO
TYPE 1,5 Kw (NOMINAL) 12V d.c. FAN COOLED



TIPO DI POMPA TYPE OF PUMP			
E	GR.	1 - 1.2	cc/giro rev.
F	GR.	1 - 1.7	cc/giro rev.
G	GR.	1 - 2.2	cc/giro rev.
L	GR.	1 - 2.6	cc/giro rev.
M	GR.	1 - 3.2	cc/giro rev.
N	GR.	1 - 3.8	cc/giro rev.
P	GR.	1 - 4.3	cc/giro rev.
T	GR.	1 - 6.0	cc/giro rev.
R	GR.	1 - 7.8	cc/giro rev.



CARATTERISTICHE GENERALI SPECIFICATIONS

MOTORE IN C.C.
CAMPI AVVOLTI
FIELD WOUND
D.C. MOTOR

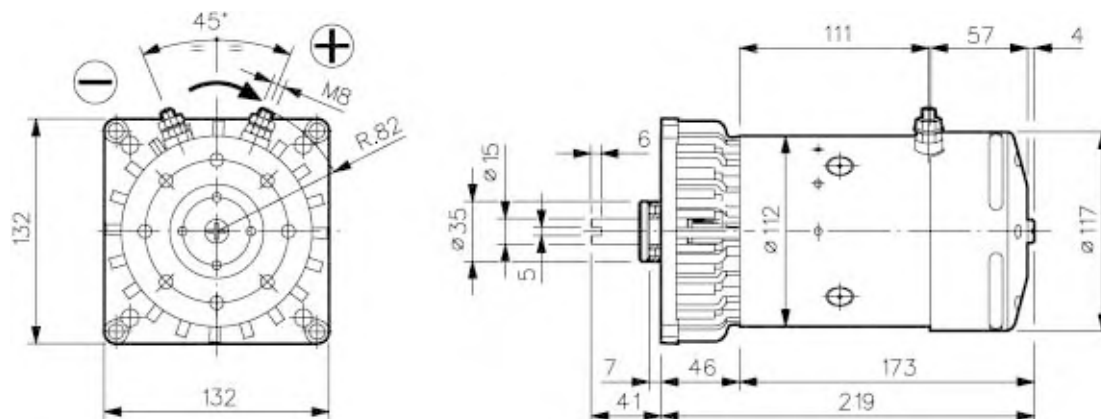
SENSO DI ROTAZIONE
SINISTRO
LEFT
ROTATION

GRADO DI PROTEZIONE PROTECTION CLASS	IP 10
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CLASSE DI ISOLAMENTO INSULATION CLASS	F
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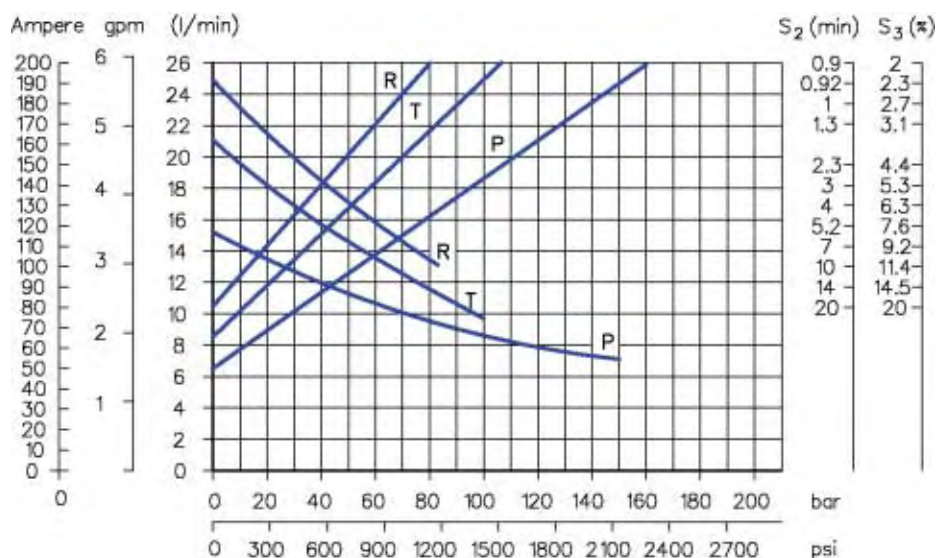
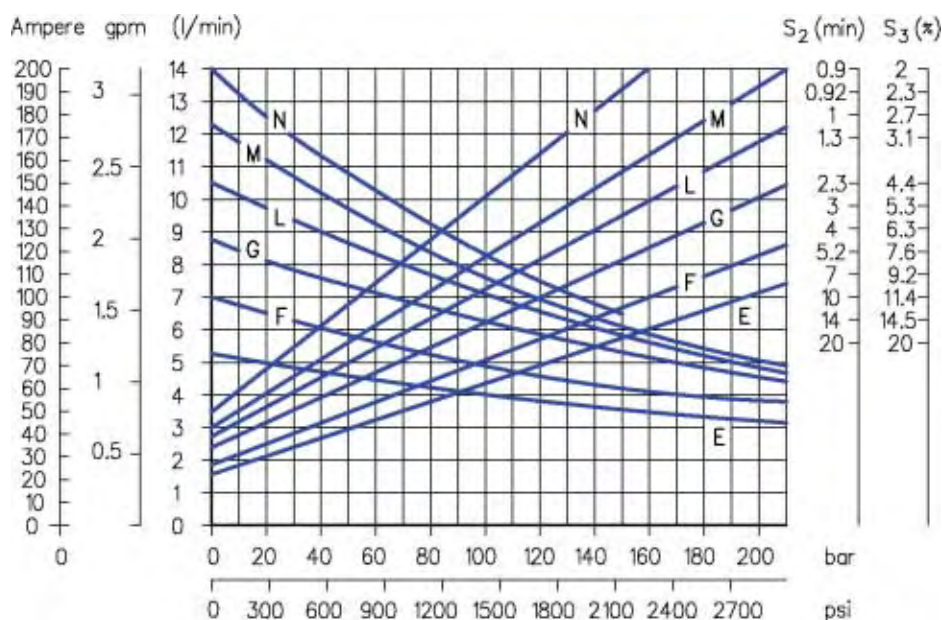
PESO WEIGHT	Kg 7,5
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MOTORE ELETTRICO IN C.C. TIPO ED (Pompe da 1,2 a 7,8) D.C. MOTOR TYPE ED (Pumps from 1,2 to 7,8)



M ED

TIPO 2,0 Kw (NOMINALI) 24V c.c. VENTILATO
TYPE 2,0 Kw (NOMINAL) 24V d.c. FAN COOLED



TIPO DI POMPA TYPE OF PUMP

E	GR.	1 - 1.2	cc/giro rev.
F	GR.	1 - 1.7	cc/giro rev.
G	GR.	1 - 2.2	cc/giro rev.
L	GR.	1 - 2.6	cc/giro rev.
M	GR.	1 - 3.2	cc/giro rev.
N	GR.	1 - 3.8	cc/giro rev.
P	GR.	1 - 4.3	cc/giro rev.
T	GR.	1 - 6.0	cc/giro rev.
R	GR.	1 - 7.8	cc/giro rev.

CARATTERISTICHE GENERALI SPECIFICATIONS

MOTORE IN C.C.
CAMPI AVVOLTI
FIELD WOUND
D.C. MOTOR

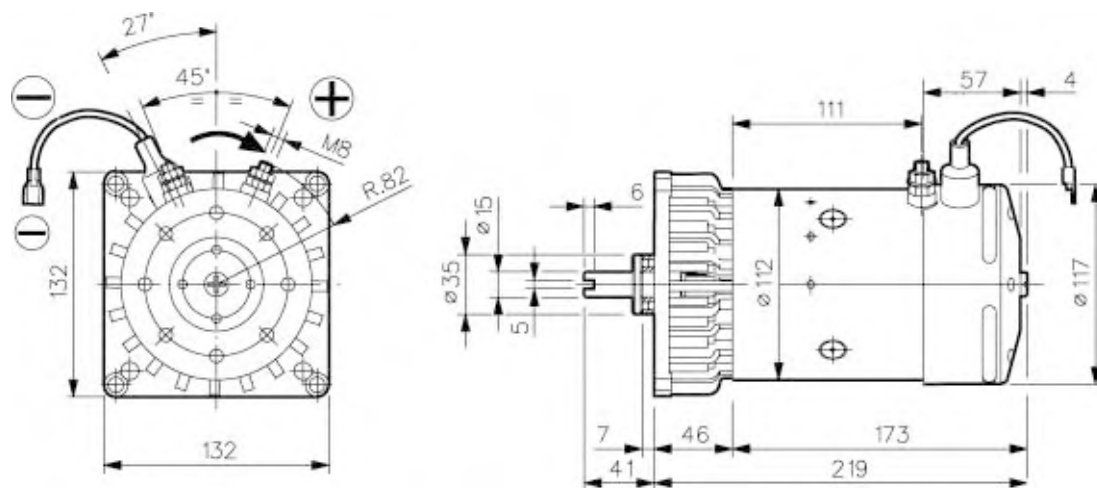
SENSO DI ROTAZIONE SINISTRO
LEFT
ROTATION

GRADO DI PROTEZIONE
PROTECTION CLASS **IP 10**

CLASSE DI ISOLAMENTO
INSULATION CLASS **F**

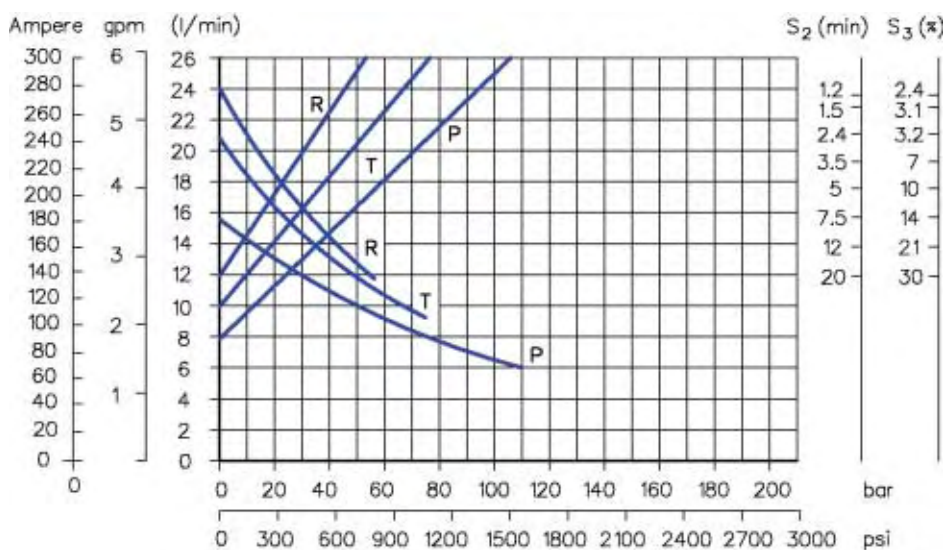
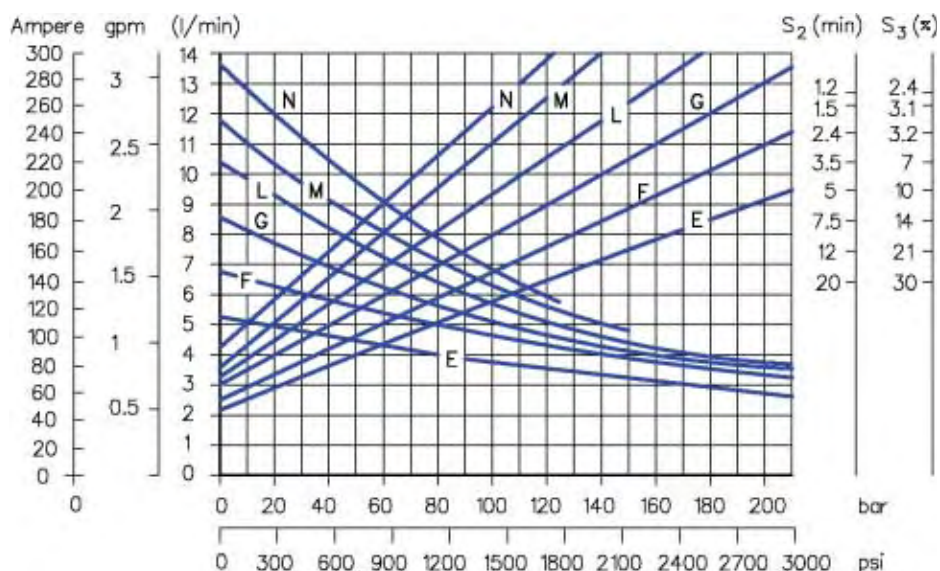
PESO
WEIGHT **Kg 7,5**

MOTORE ELETTRICO IN C.C. TIPO EJ (Pompe da 1,2 a 7,8) D.C. MOTOR TYPE EJ (Pumps from 1,2 to 7,8)



M EJ

TIPO 1,5 Kw (NOMINALI) 12V c.c. VENTILATO CON SALVAMOTORE
TYPE 1,5 Kw (NOMINAL) 12V d.c. FAN COOLED WITH THERMAL SWITCH



TIPO DI POMPA TYPE OF PUMP

E	GR.	1 - 1.2	CC/giro rev.
F	GR.	1 - 1.7	CC/giro rev.
G	GR.	1 - 2.2	CC/giro rev.
L	GR.	1 - 2.6	CC/giro rev.
M	GR.	1 - 3.2	CC/giro rev.
N	GR.	1 - 3.8	CC/giro rev.
P	GR.	1 - 4.3	CC/giro rev.
T	GR.	1 - 6.0	CC/giro rev.
R	GR.	1 - 7.8	CC/giro rev.

CARATTERISTICHE GENERALI SPECIFICATIONS

MOTORE IN C.C.
CAMPI AVVOLTI
FIELD WOUND
D.C. MOTOR

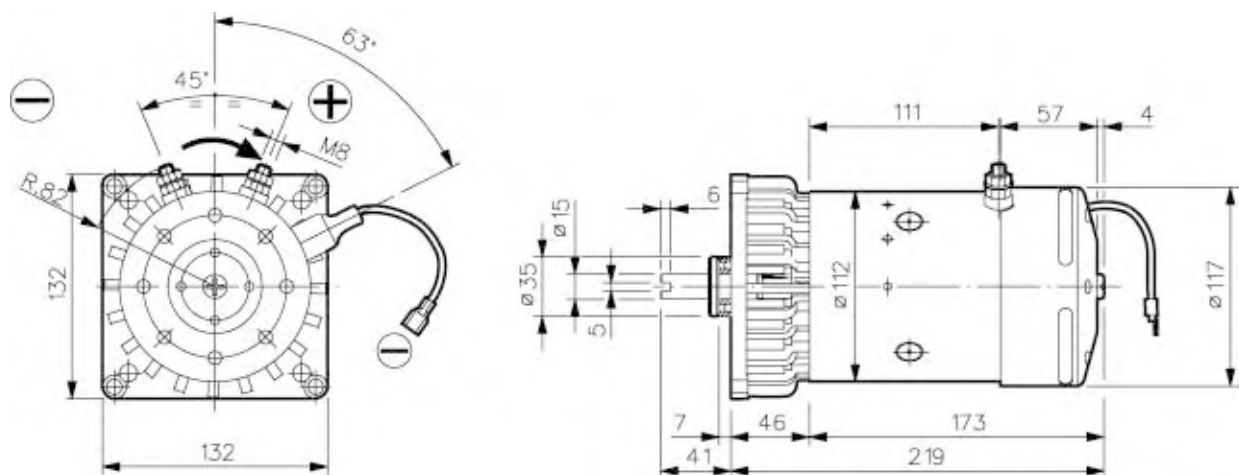
SENSO DI ROTAZIONE SINISTRO
LEFT
ROTATION

GRADO DI PROTEZIONE PROTECTION CLASS	IP 10
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CLASSE DI ISOLAMENTO INSULATION CLASS	F
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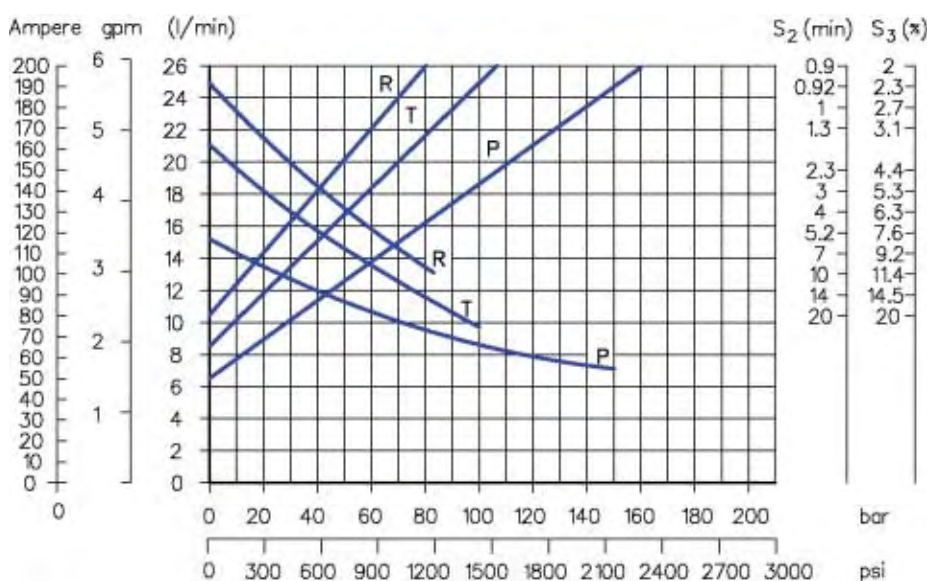
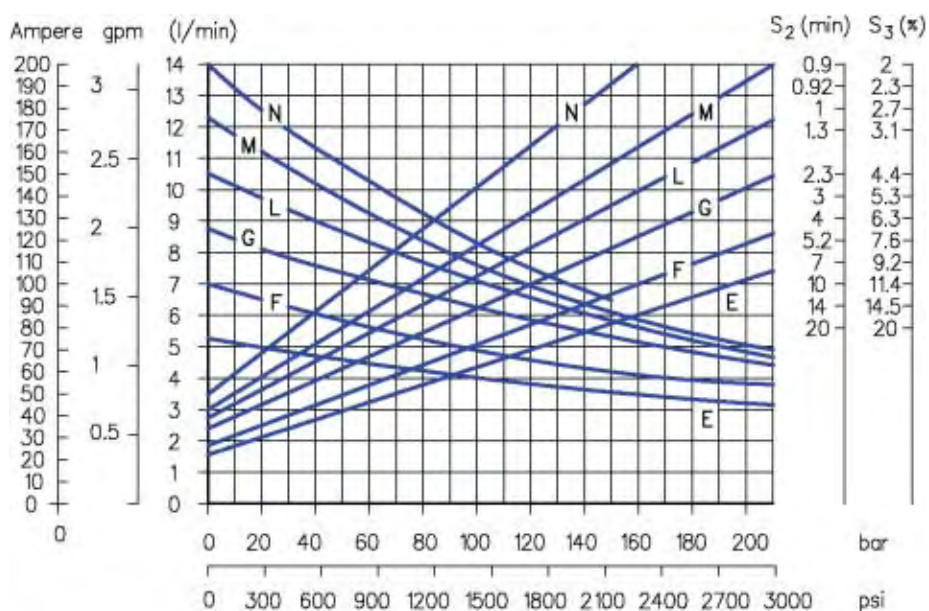
PESO WEIGHT	Kg 7,5
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MOTORE ELETTRICO IN C.C. TIPO EI (Pompe da 1,2 a 7,8) D.C. MOTOR TYPE EI (Pumps from 1,2 to 7,8)



M EI

TIPO 2,0 Kw (NOMINALI) 24V c.c. VENTILATO CON SALVAMOTORE
TYPE 2,0 Kw (NOMINAL) 24V d.c. FAN COOLED WITH THERMAL SWITCH



TIPO DI POMPA TYPE OF PUMP

E	GR.	1 - 1.2	CC/giro rev.
F	GR.	1 - 1.7	CC/giro rev.
G	GR.	1 - 2.2	CC/giro rev.
L	GR.	1 - 2.6	CC/giro rev.
M	GR.	1 - 3.2	CC/giro rev.
N	GR.	1 - 3.8	CC/giro rev.
P	GR.	1 - 4.3	CC/giro rev.
T	GR.	1 - 6.0	CC/giro rev.
R	GR.	1 - 7.8	CC/giro rev.

CARATTERISTICHE GENERALI SPECIFICATIONS

MOTORE IN C.C.
CAMPI AVVOLTI
FIELD WOUND
D.C. MOTOR

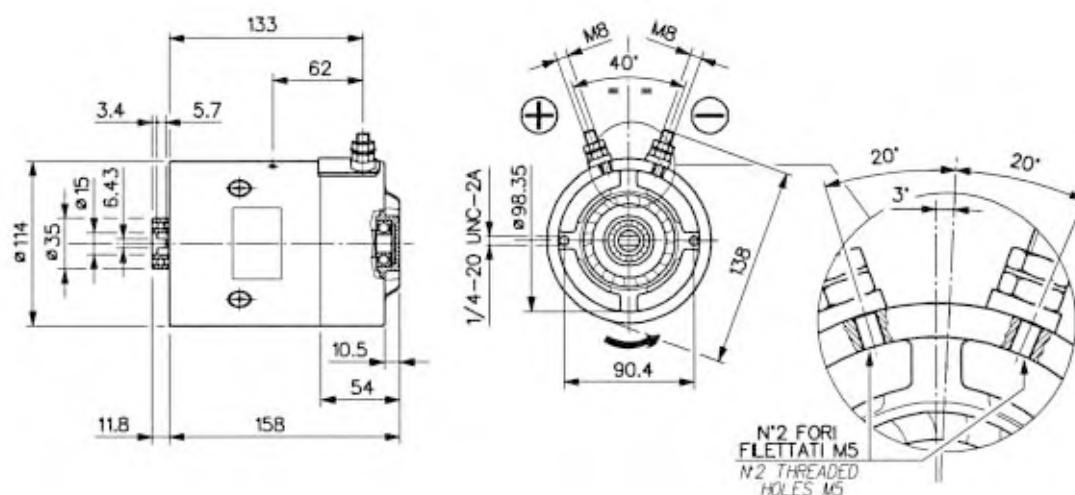
SENSO DI ROTAZIONE
SINISTRO
LEFT
ROTATION

GRADO DI PROTEZIONE PROTECTION CLASS	IP 10
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CLASSE DI ISOLAMENTO INSULATION CLASS	F
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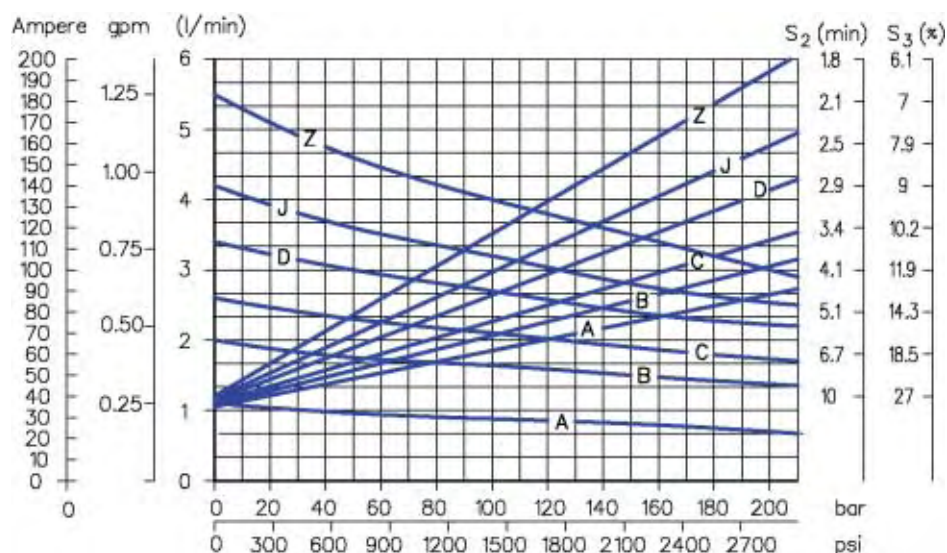
PESO WEIGHT	Kg 7,5
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MOTORE ELETTRICO IN C.C. TIPO EN (Pompe da 0,25 a 3,8) D.C. MOTOR TYPE EN (Pumps from 0,25 to 3,8)

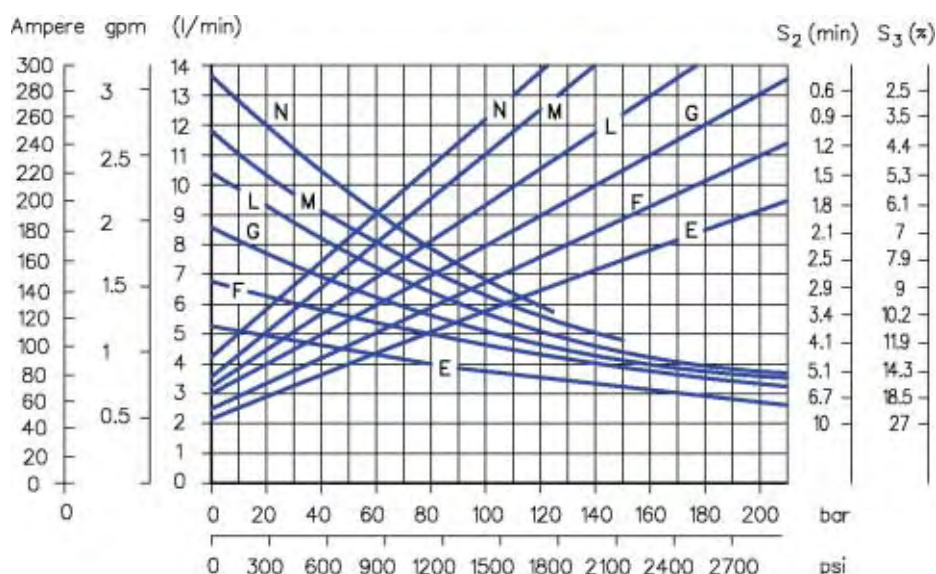


M EN

TIPO 1,6 Kw (NOMINALI) 12V c.c. CON DOPPIO CUSCINETTO
TYPE 1,6 Kw (NOMINAL) 12V d.c. WITH DOUBLE BEARING.



TIPO DI POMPA TYPE OF PUMP				
A	GR.	0.5 - 0.25	CC/giro rev.	
B	GR.	0.5 - 0.45	CC/giro rev.	
C	GR.	0.5 - 0.56	CC/giro rev.	
D	GR.	0.5 - 0.75	CC/giro rev.	
J	GR.	0.5 - 0.92	CC/giro rev.	
Z	GR.	0.5 - 1.26	CC/giro rev.	
E	GR.	1 - 1.2	CC/giro rev.	
F	GR.	1 - 1.7	CC/giro rev.	
G	GR.	1 - 2.2	CC/giro rev.	
L	GR.	1 - 2.6	CC/giro rev.	
M	GR.	1 - 3.2	CC/giro rev.	
N	GR.	1 - 3.8	CC/giro rev.	



CARATTERISTICHE GENERALI SPECIFICATIONS

MOTORE IN C.C.
CAMPI AVVOLTI
FIELD WOUND
D.C. MOTOR

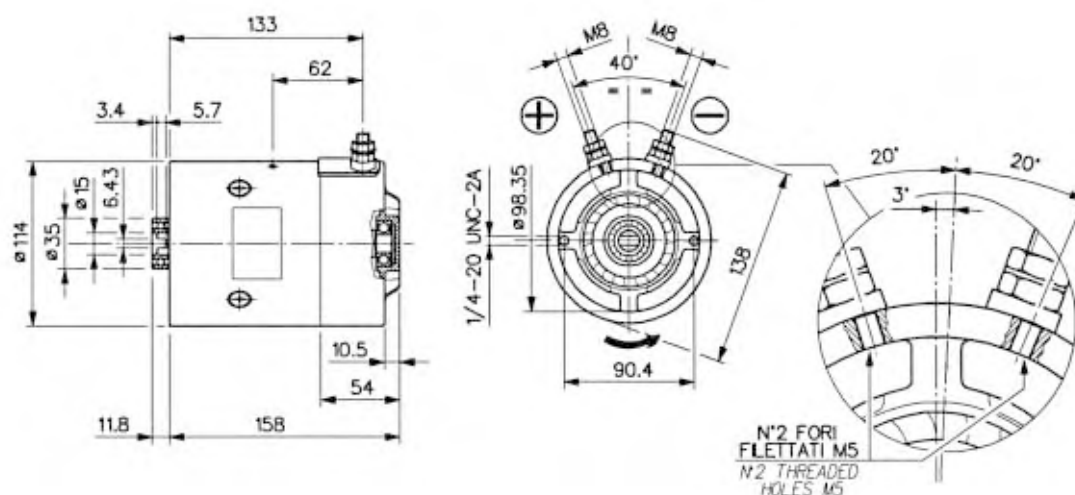
SENSO DI ROTAZIONE
SINISTRO
LEFT
ROTATION

GRADO DI PROTEZIONE PROTECTION CLASS	IP 54
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CLASSE DI ISOLAMENTO INSULATION CLASS	F
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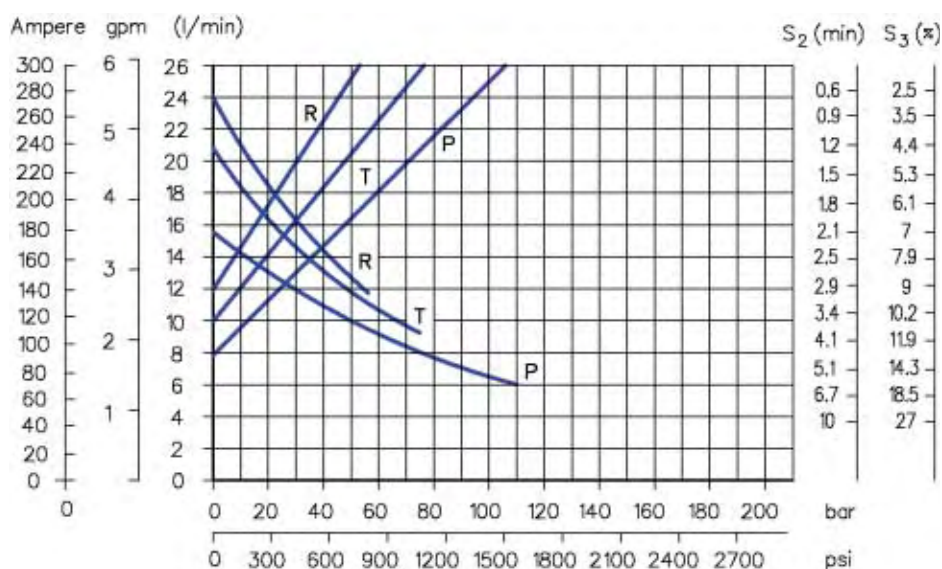
PESO WEIGHT	Kg 6,6
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MOTORE ELETTRICO IN C.C. TIPO EN (Pompe da 4,3 a 7,8) D.C. MOTOR TYPE EN (Pumps from 4,3 to 7,8)



M EN

TIPO 1,6 Kw (NOMINALI) 12V c.c. CON DOPPIO CUSCINETTO
TYPE 1,6 Kw (NOMINAL) 12V d.c. WITH DOUBLE BEARING.



TIPO DI POMPA TYPE OF PUMP

P	GR.	1 - 4.3	CC/giro rev.
T	GR.	1 - 6.0	CC/giro rev.
R	GR.	1 - 7.8	CC/giro rev.

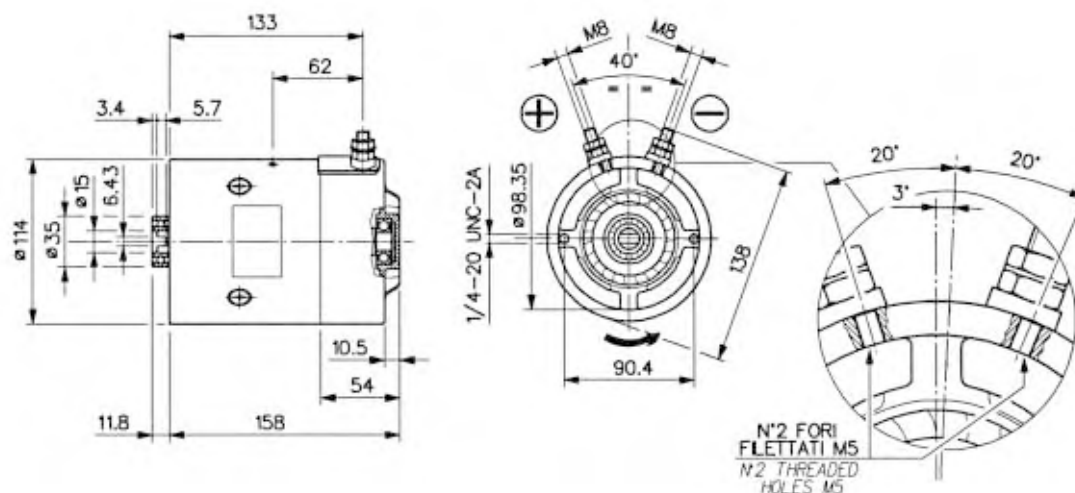
CARATTERISTICHE GENERALI SPECIFICATIONS

MOTORE IN C.C.
CAMPI AVVOLTI
FIELD WOUND
D.C. MOTOR

SENSO DI ROTAZIONE
SINISTRO
LEFT
ROTATION

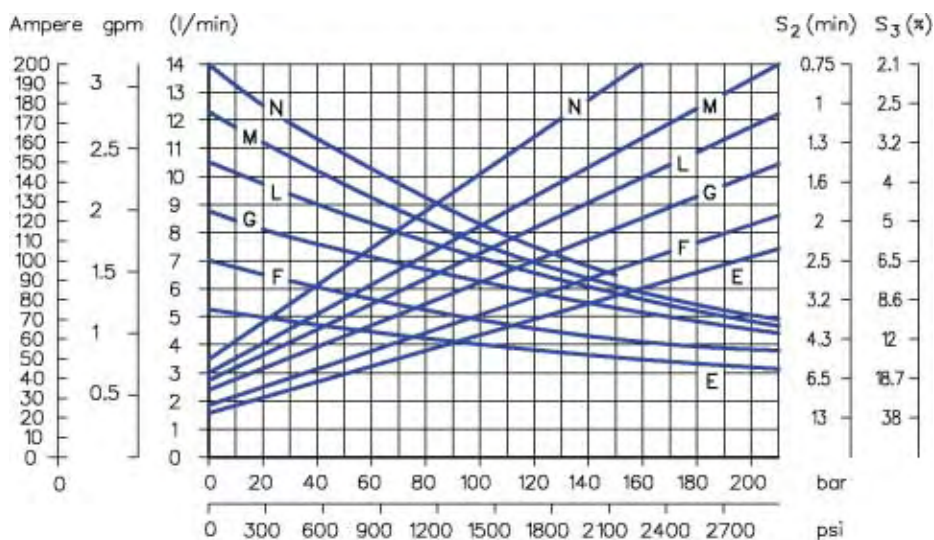
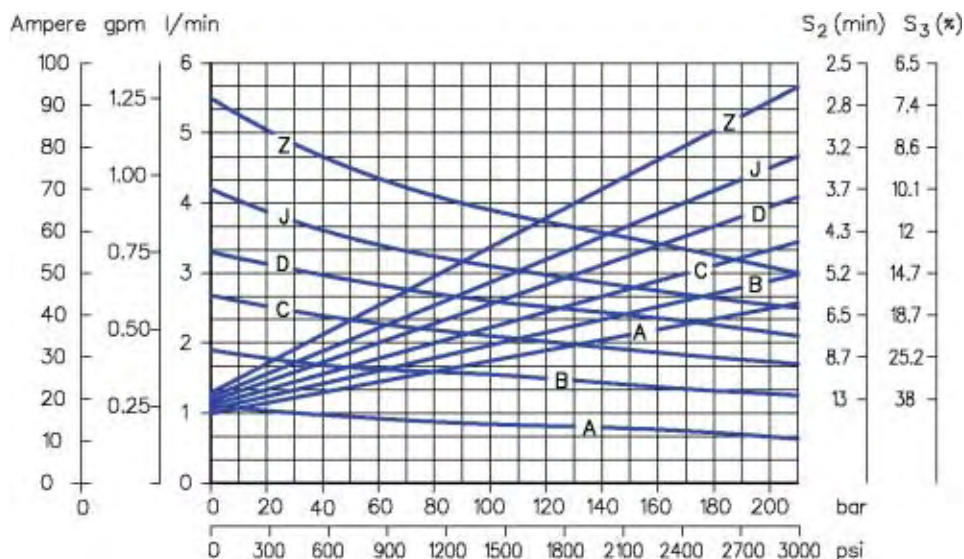
GRADO DI PROTEZIONE PROTECTION CLASS	IP 54
CLASSE DI ISOLAMENTO INSULATION CLASS	F
PESO WEIGHT	Kg 6,6

MOTORE ELETTRICO IN C.C. TIPO ES (Pompe da 0,25 a 3,8) D.C. MOTOR TYPE ES (Pumps from 0,25 to 3,8)



M ES

TIPO 2,2 Kw (NOMINALI) 24V c.c. CON DOPPIO CUSCINETTO
TYPE 2,2 Kw (NOMINAL) 24V d.c. WITH DOUBLE BEARING.



TIPO DI POMPA TYPE OF PUMP

A	GR.	0.5 - 0.25	CC/giro rev.
B	GR.	0.5 - 0.45	CC/giro rev.
C	GR.	0.5 - 0.56	CC/giro rev.
D	GR.	0.5 - 0.75	CC/giro rev.
J	GR.	0.5 - 0.92	CC/giro rev.
Z	GR.	0.5 - 1.26	CC/giro rev.
E	GR.	1 - 1.2	CC/giro rev.
F	GR.	1 - 1.7	CC/giro rev.
G	GR.	1 - 2.2	CC/giro rev.
L	GR.	1 - 2.6	CC/giro rev.
M	GR.	1 - 3.2	CC/giro rev.
N	GR.	1 - 3.8	CC/giro rev.

CARATTERISTICHE GENERALI SPECIFICATIONS

MOTORE IN C.C.
CAMPI AVVOLTI
FIELD WOUND
D.C. MOTOR

SENSO DI ROTAZIONE
SINISTRO
LEFT
ROTATION

GRADO DI PROTEZIONE
PROTECTION CLASS

IP 54

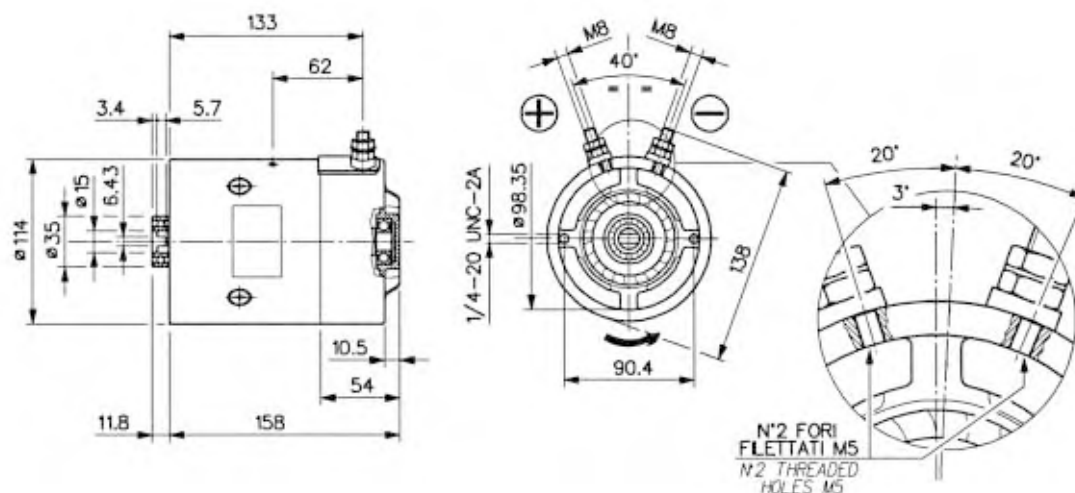
CLASSE DI ISOLAMENTO
INSULATION CLASS

F

PESO
WEIGHT

Kg 6,6

MOTORE ELETTRICO IN C.C. TIPO ES (Pompe da 4,3 a 7,8) D.C. MOTOR TYPE ES (Pumps from 4,3 to 7,8)

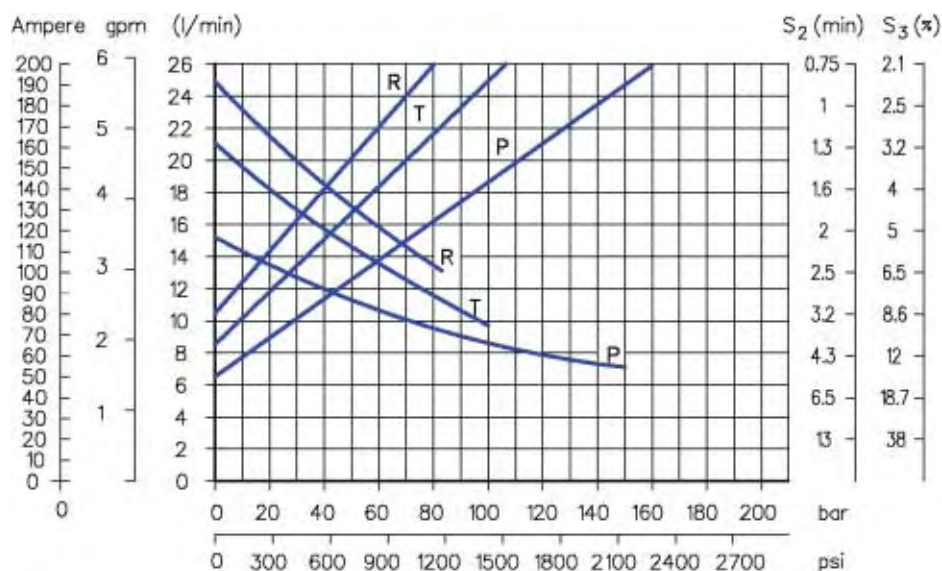


M ES

TIPO 2,2 Kw (NOMINALI) 24V c.c. CON DOPPIO CUSCINETTO
TYPE 2,2 Kw (NOMINAL) 24V d.c. WITH DOUBLE BEARING.

TIPO DI POMPA TYPE OF PUMP

P	GR.	1 - 4.3	cc/giro rev.
T	GR.	1 - 6.0	cc/giro rev.
R	GR.	1 - 7.8	cc/giro rev.



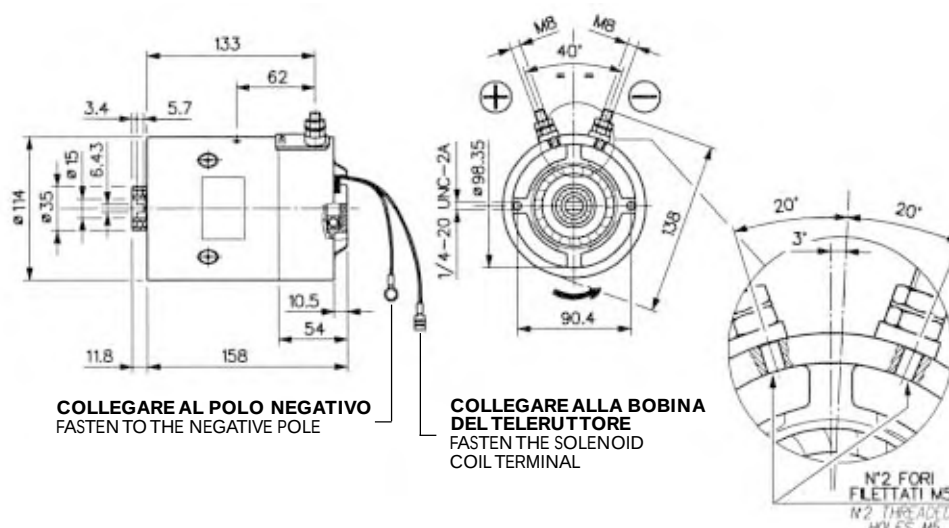
CARATTERISTICHE GENERALI SPECIFICATIONS

MOTORE IN C.C.
CAMPI AVVOLTI
FIELD WOUND
D.C. MOTOR

SENSO DI ROTAZIONE
SINISTRO
LEFT
ROTATION

GRADO DI PROTEZIONE PROTECTION CLASS	IP 54
CLASSE DI ISOLAMENTO INSULATION CLASS	F
PESO WEIGHT	Kg 6,6

MOTORE ELETTRICO IN C.C. TIPO EP (Pompe da 0,25 a 3,8) D.C. MOTOR TYPE EP (Pumps from 0,25 to 3,8)

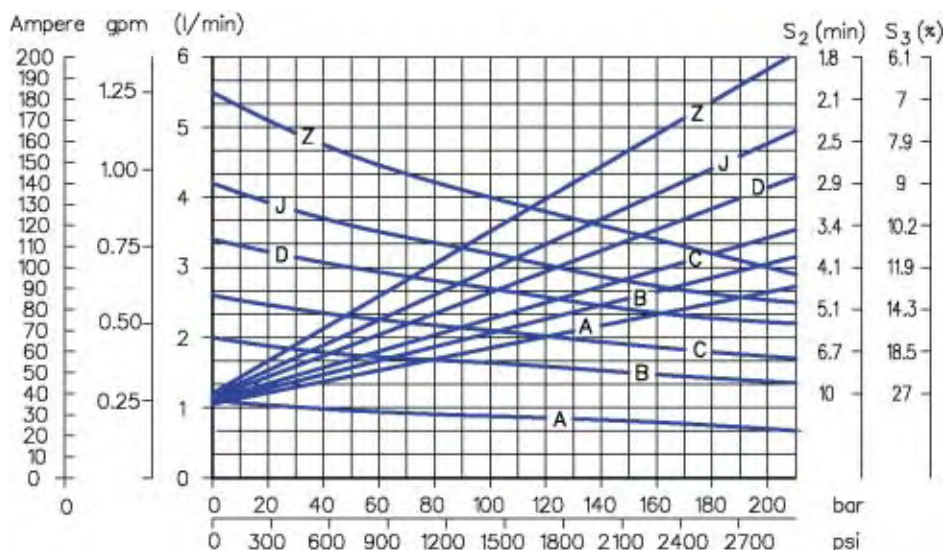


COLLEGARE AL POLO NEGATIVO
FASTEN TO THE NEGATIVE POLE

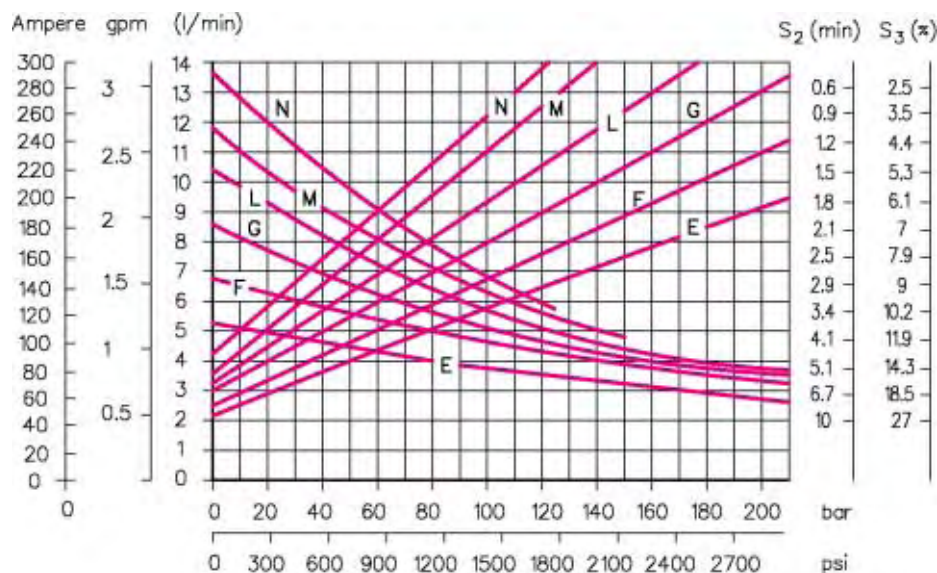
COLLEGARE ALLA BOBINA
DEL TELERUTTORE
FASTEN THE SOLENOID
COIL TERMINAL

M EP

**TIPO 1,6 Kw (NOMINALI) 12V c.c. CON DOPPIO CUSCINETTO
E SALVAMOTORE**
TYPE 1,6 Kw (NOMINAL) 12V d.c. WITH DOUBLE BEARING AND
THERMAL SWITCH



TIPO DI POMPA TYPE OF PUMP				
A	GR.	0.5 - 0.25	CC/giro rev.	
B	GR.	0.5 - 0.45	CC/giro rev.	
C	GR.	0.5 - 0.56	CC/giro rev.	
D	GR.	0.5 - 0.75	CC/giro rev.	
J	GR.	0.5 - 0.92	CC/giro rev.	
Z	GR.	0.5 - 1.26	CC/giro rev.	
E	GR.	1 - 1.2	CC/giro rev.	
F	GR.	1 - 1.7	CC/giro rev.	
G	GR.	1 - 2.2	CC/giro rev.	
L	GR.	1 - 2.6	CC/giro rev.	
M	GR.	1 - 3.2	CC/giro rev.	
N	GR.	1 - 3.8	CC/giro rev.	



CARATTERISTICHE GENERALI SPECIFICATIONS

MOTORE IN C.C.
CAMPI AVVOLTI
FIELD WOUND
D.C. MOTOR

**SENSO DI ROTAZIONE
SINISTRO**
LEFT
ROTATION

GRADO DI PROTEZIONE
PROTECTION CLASS

IP 54

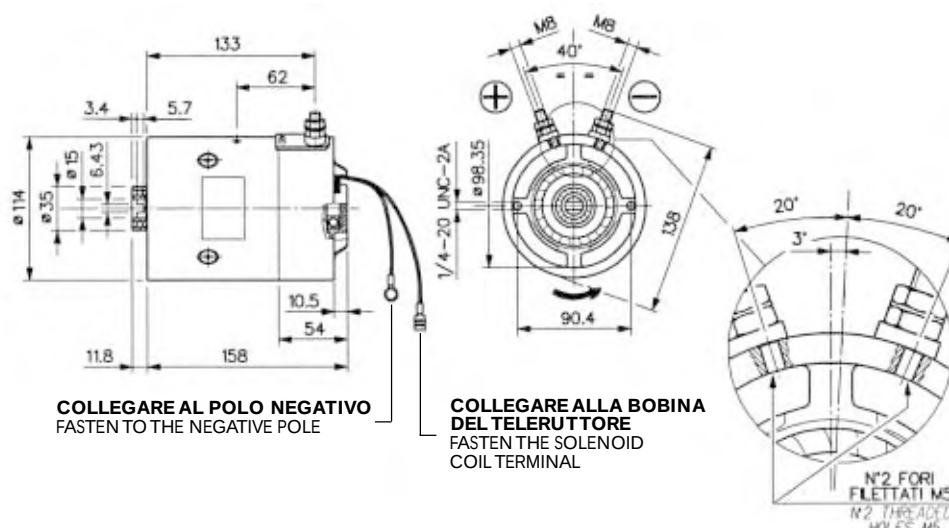
CLASSE DI ISOLAMENTO
INSULATION CLASS

F

PESO
WEIGHT

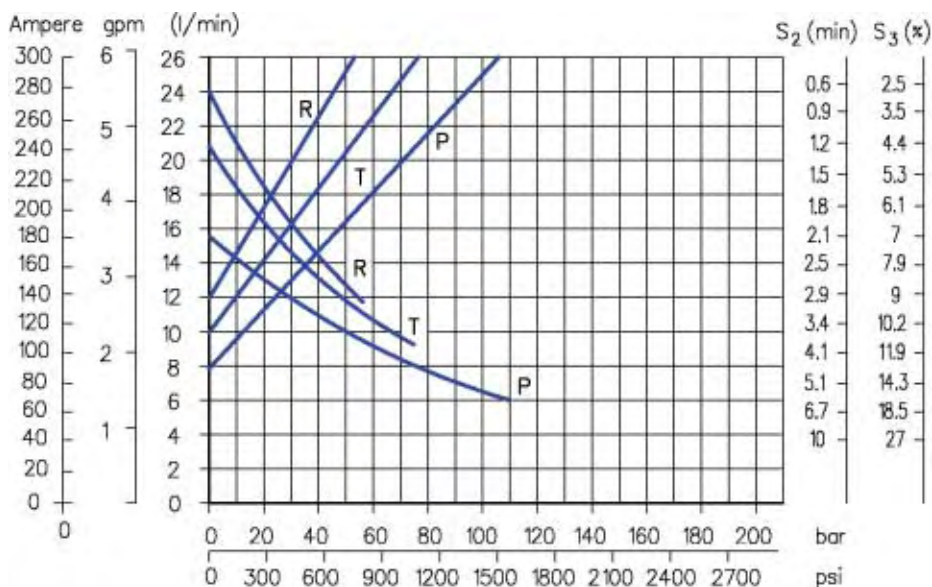
Kg 6,6

MOTORE ELETTRICO IN C.C. TIPO EP (Pompe da 4,3 a 7,8) D.C. MOTOR TYPE EP (Pumps from 4,3 to 7,8)



TIPO 1,6 Kw (NOMINALI) 12V c.c. CON DOPPIO CUSCINETTO E SALVAMOTORE
TYPE 1,6 Kw (NOMINAL) 12V d.c. WITH DOUBLE BEARING AND THERMAL SWITCH

M EP



TIPO DI POMPA TYPE OF PUMP

P	GR.	1 - 4.3	cc/giro rev.
T	GR.	1 - 6.0	cc/giro rev.
R	GR.	1 - 7.8	cc/giro rev.

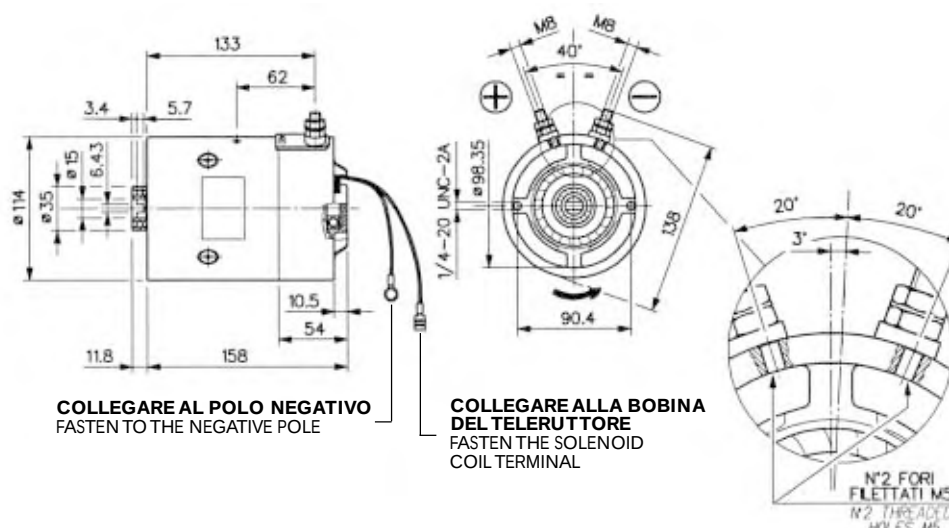
CARATTERISTICHE GENERALI SPECIFICATIONS

MOTORE IN C.C.
CAMPI AVVOLTI
FIELD WOUND
D.C. MOTOR

SENSO DI ROTAZIONE
SINISTRO
LEFT
ROTATION

GRADO DI PROTEZIONE PROTECTION CLASS	IP 54
CLASSE DI ISOLAMENTO INSULATION CLASS	F
PESO WEIGHT	Kg 6,6

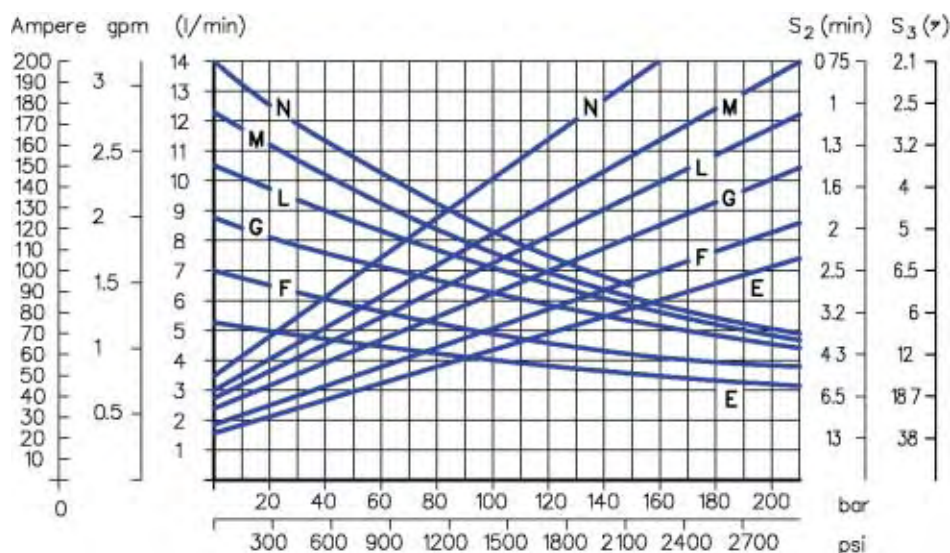
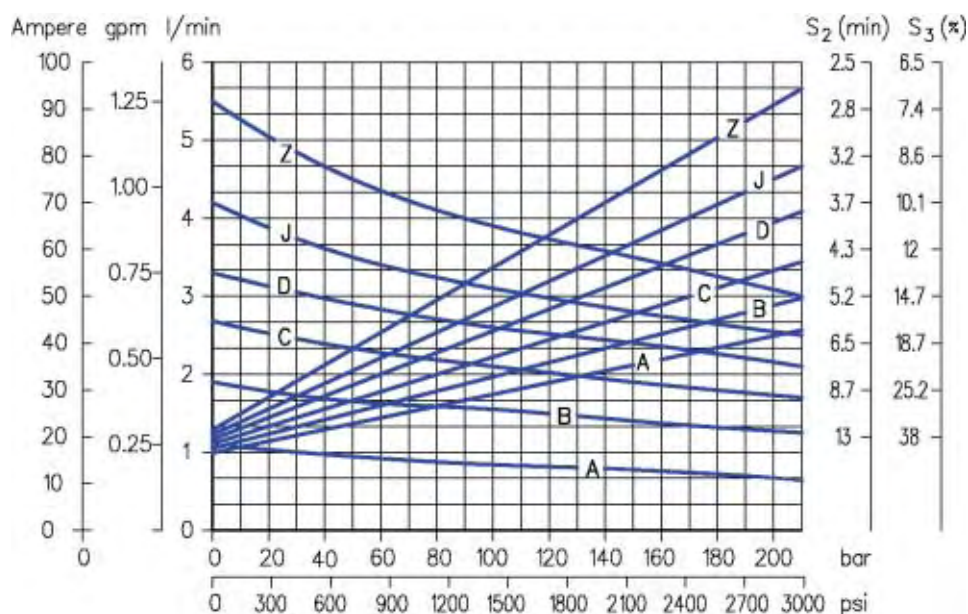
MOTORE ELETTRICO IN C.C. TIPO EU (Pompe da 0,25 a 3,8)
D.C. MOTOR TYPE EU (Pumps from 0,25 to 3,8)



**TIPO 2,2 Kw (NOMINALI) 24V c.c. CON DOPPIO CUSCINETTO
E SALVAMOTORE**
TYPE 2,2 Kw (NOMINAL) 24V d.c. WITH DOUBLE BEARING AND
THERMAL SWITCH

TIPO DI POMPA
TYPE OF PUMP

A	GR.	0.5 - 0.25	CC/giro rev.
B	GR.	0.5 - 0.45	CC/giro rev.
C	GR.	0.5 - 0.56	CC/giro rev.
D	GR.	0.5 - 0.75	CC/giro rev.
J	GR.	0.5 - 0.92	CC/giro rev.
Z	GR.	0.5 - 1.26	CC/giro rev.
E	GR.	1 - 1.2	CC/giro rev.
F	GR.	1 - 1.7	CC/giro rev.
G	GR.	1 - 2.2	CC/giro rev.
L	GR.	1 - 2.6	CC/giro rev.
M	GR.	1 - 3.2	CC/giro rev.
N	GR.	1 - 3.8	CC/giro rev.



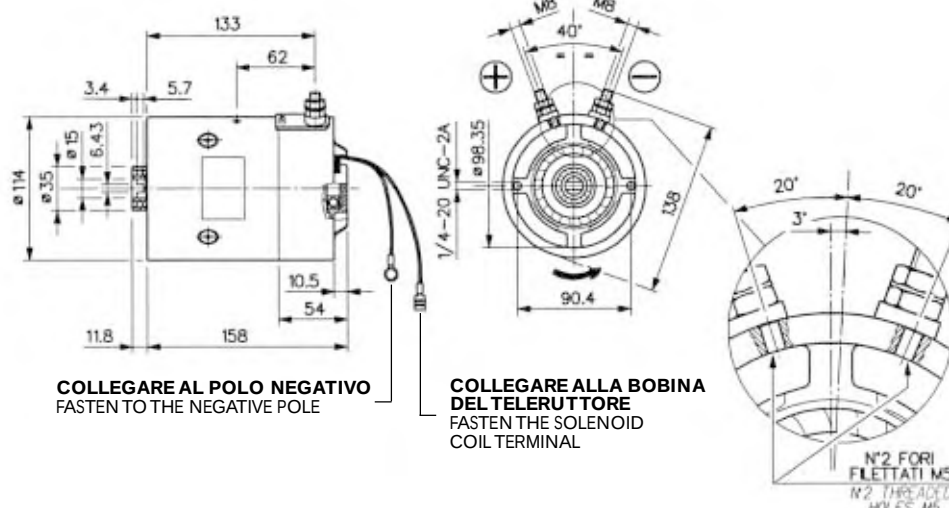
CARATTERISTICHE GENERALI SPECIFICATIONS

**MOTORE IN C.C.
CAMPI AVVOLTI**
FIELD WOUND
D.C. MOTOR

**SENSO DI ROTAZIONE
SINISTRO**
LEFT
ROTATION

GRADO DI PROTEZIONE PROTECTION CLASS	IP 54
CLASSE DI ISOLAMENTO INSULATION CLASS	F
PESO WEIGHT	Kg 6,6

MOTORE ELETTRICO IN C.C. TIPO EU (Pompe da 4,3 a 7,8) D.C. MOTOR TYPE EU (Pumps from 4,3 to 7,8)

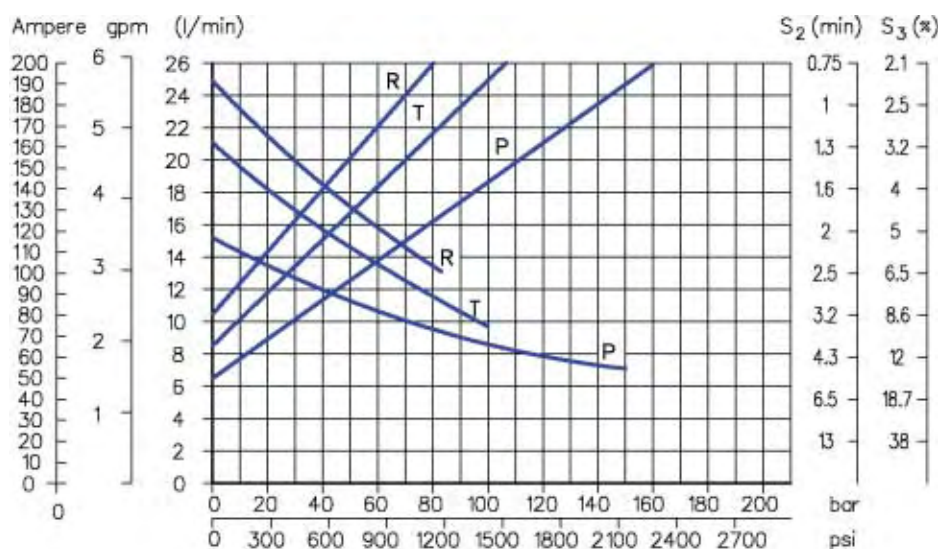


COLLEGARE AL POLO NEGATIVO
FASTEN TO THE NEGATIVE POLE

COLLEGARE ALLA BOBINA
DEL TELERUTTORE
FASTEN THE SOLENOID
COIL TERMINAL

**TIPO 2,2 Kw (NOMINALI) 24V c.c. CON DOPPIO CUSCINETTO
E SALVAMOTORE**
TYPE 2,2 Kw (NOMINAL) 24V d.c. WITH DOUBLE BEARING AND
THERMAL SWITCH

M EU



TIPO DI POMPA TYPE OF PUMP

P	GR.	1 - 4.3	cc/giro rev.
T	GR.	1 - 6.0	cc/giro rev.
R	GR.	1 - 7.8	cc/giro rev.

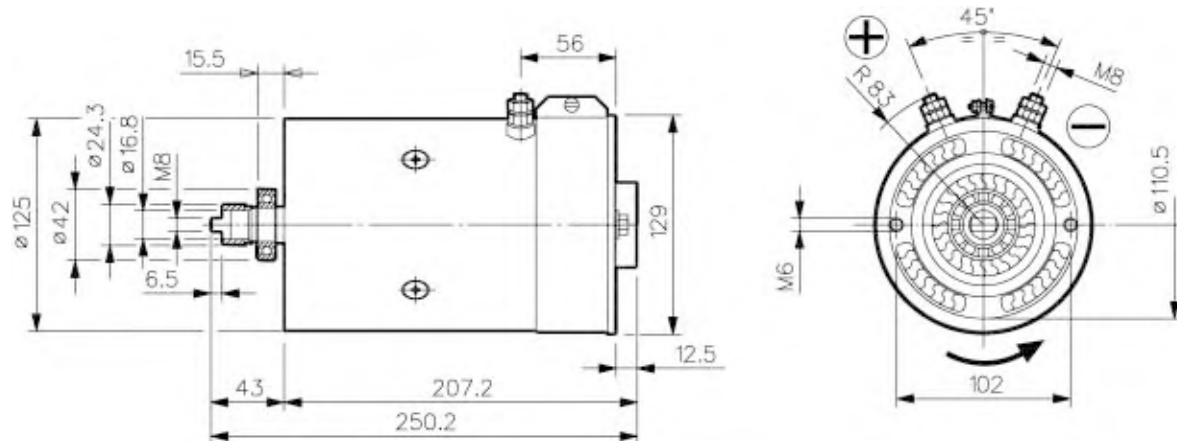
CARATTERISTICHE GENERALI SPECIFICATIONS

MOTORE IN C.C.
CAMPI AVVOLTI
FIELD WOUND
D.C. MOTOR

SENSO DI ROTAZIONE
SINISTRO
LEFT
ROTATION

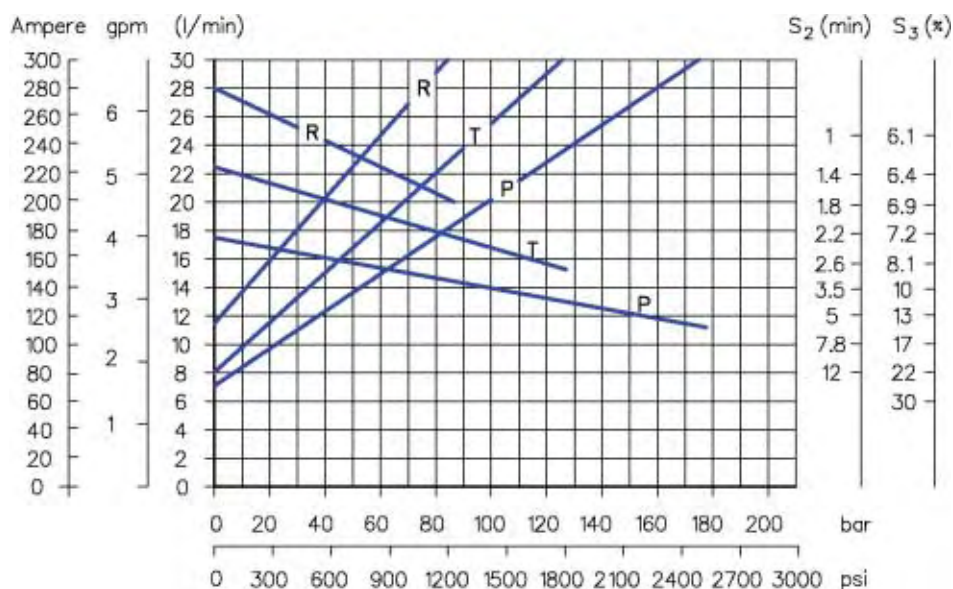
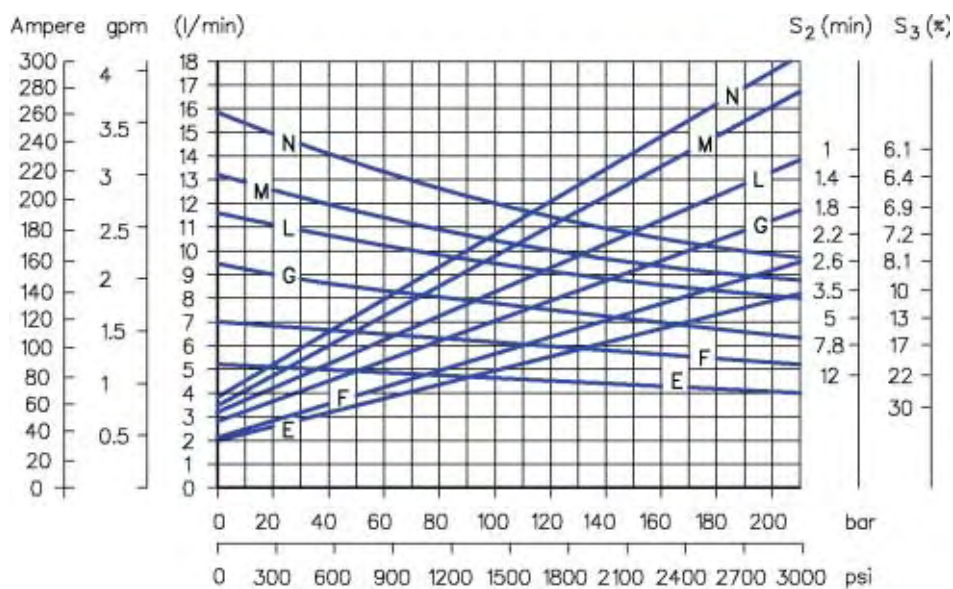
GRADO DI PROTEZIONE PROTECTION CLASS	IP 54
CLASSE DI ISOLAMENTO INSULATION CLASS	F
PESO WEIGHT	Kg 6,6

MOTORE ELETTRICO IN C.C. TIPO AH (Pompe da 1,2 a 7,8) D.C. MOTOR TYPE AH (Pumps from 1,2 to 7,8)



M AH

TIPO 3,0 Kw (NOMINALI) 24V c.c.
TYPE 3,0 Kw (NOMINAL) 24V d.c.



TIPO DI POMPA TYPE OF PUMP

E	GR.	1 - 1.2	cc/giro rev.
F	GR.	1 - 1.7	cc/giro rev.
G	GR.	1 - 2.2	cc/giro rev.
L	GR.	1 - 2.6	cc/giro rev.
M	GR.	1 - 3.2	cc/giro rev.
N	GR.	1 - 3.8	cc/giro rev.
P	GR.	1 - 4.3	cc/giro rev.
T	GR.	1 - 6.0	cc/giro rev.
R	GR.	1 - 7.8	cc/giro rev.

CARATTERISTICHE GENERALI SPECIFICATIONS

MOTORE IN C.C.
CAMPI AVVOLTI
FIELD WOUND
D.C. MOTOR

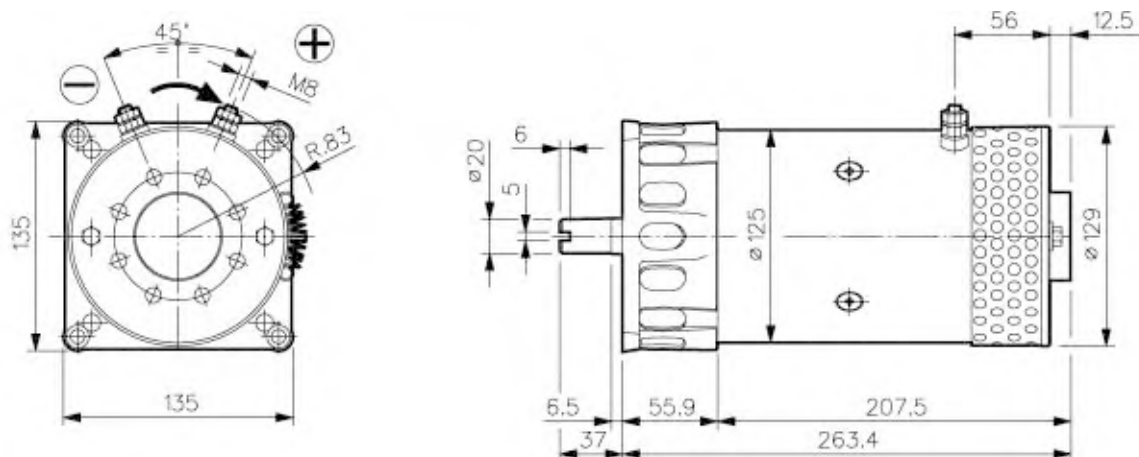
SENDO DI ROTAZIONE
SINISTRO
LEFT
ROTATION

GRADO DI PROTEZIONE PROTECTION CLASS	IP 43
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CLASSE DI ISOLAMENTO INSULATION CLASS	F
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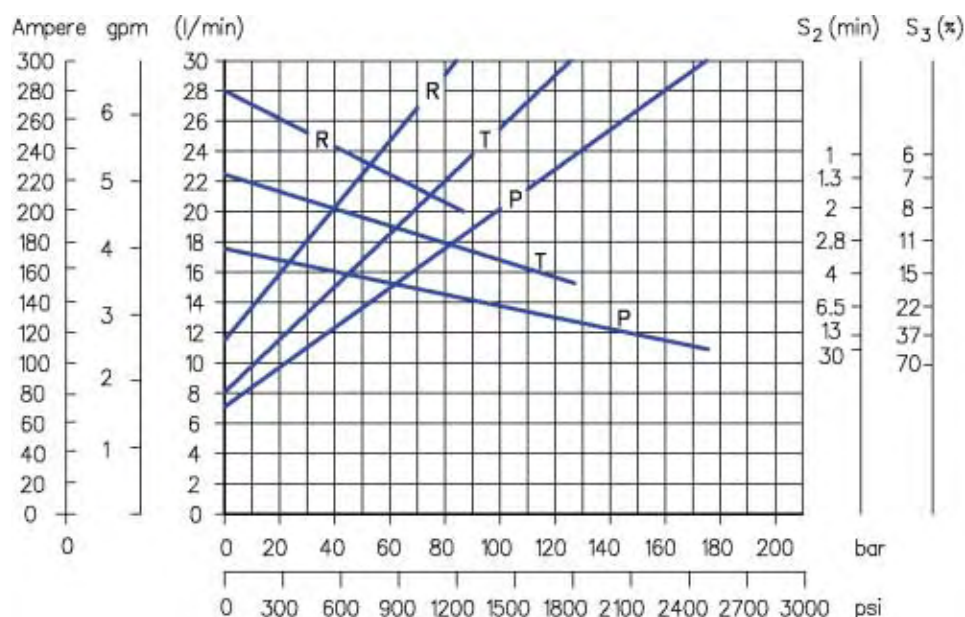
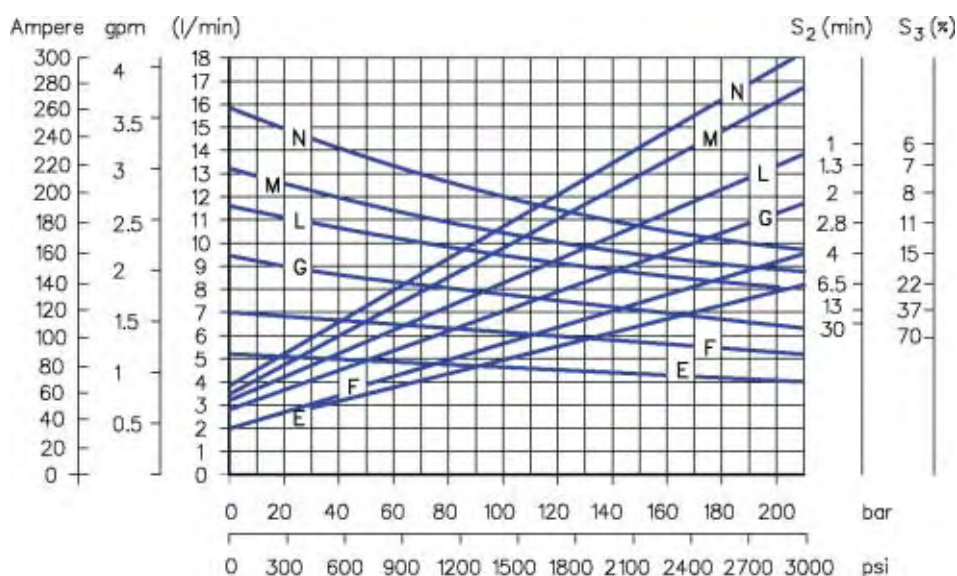
PESO WEIGHT	Kg 11
-----------------------	--------------

MOTORE ELETTRICO IN C.C. TIPO AO (Pompe da 1,2 a 7,8) D.C. MOTOR TYPE AO (Pumps from 1,2 to 7,8)



M AO

TIPO 3,0 Kw (NOMINALI) 24V c.c. VENTILATO
TYPE 3,0 Kw (NOMINAL) 24V d.c. FAN COOLED



TIPO DI POMPA TYPE OF PUMP

E	GR.	1 - 1.2	CC/giro rev.
F	GR.	1 - 1.7	CC/giro rev.
G	GR.	1 - 2.2	CC/giro rev.
L	GR.	1 - 2.6	CC/giro rev.
M	GR.	1 - 3.2	CC/giro rev.
N	GR.	1 - 3.8	CC/giro rev.
P	GR.	1 - 4.3	CC/giro rev.
T	GR.	1 - 6.0	CC/giro rev.
R	GR.	1 - 7.8	CC/giro rev.

CARATTERISTICHE GENERALI SPECIFICATIONS

MOTORE IN C.C.
CAMPI AVVOLTI
FIELD WOUND
D.C. MOTOR

SENSO DI ROTAZIONE
SINISTRO
LEFT
ROTATION

GRADO DI PROTEZIONE
PROTECTION CLASS

IP 10

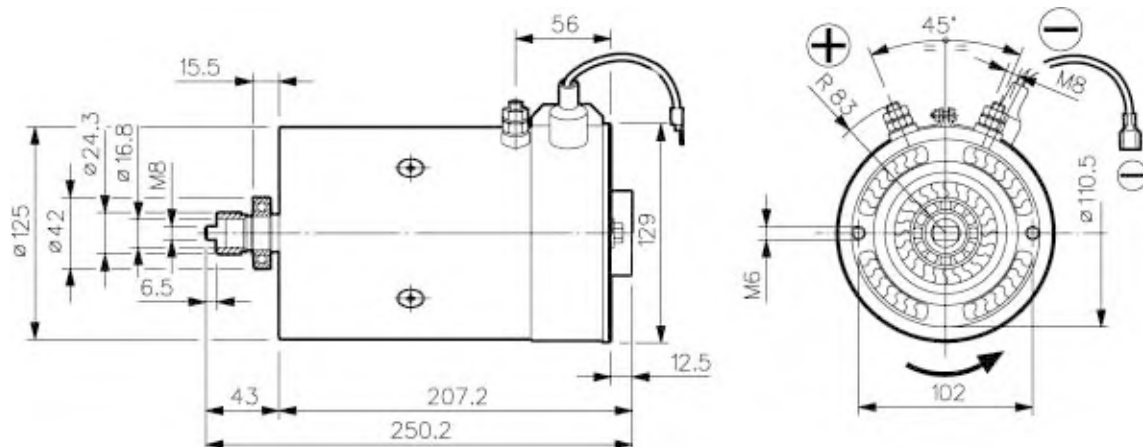
CLASSE DI ISOLAMENTO
INSULATION CLASS

F

PESO
WEIGHT

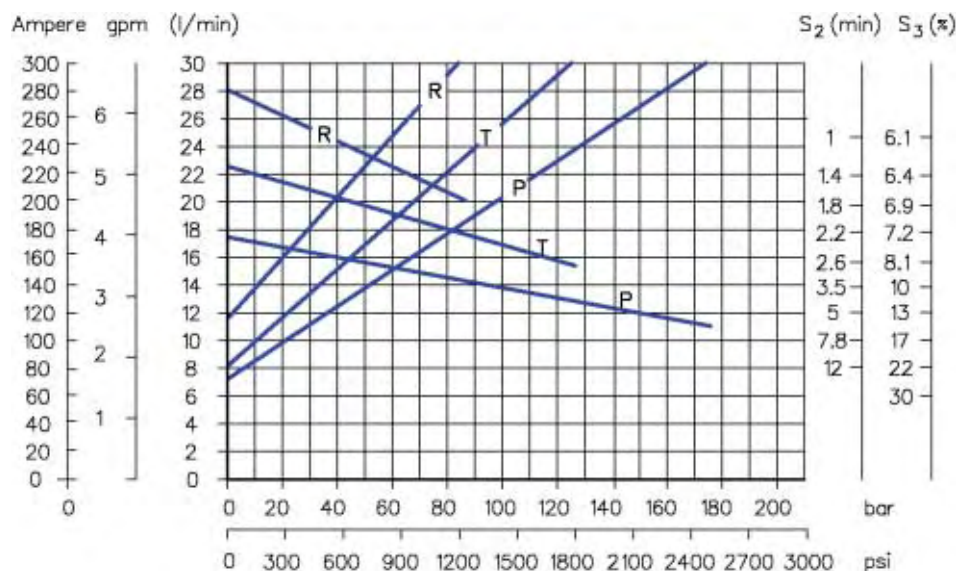
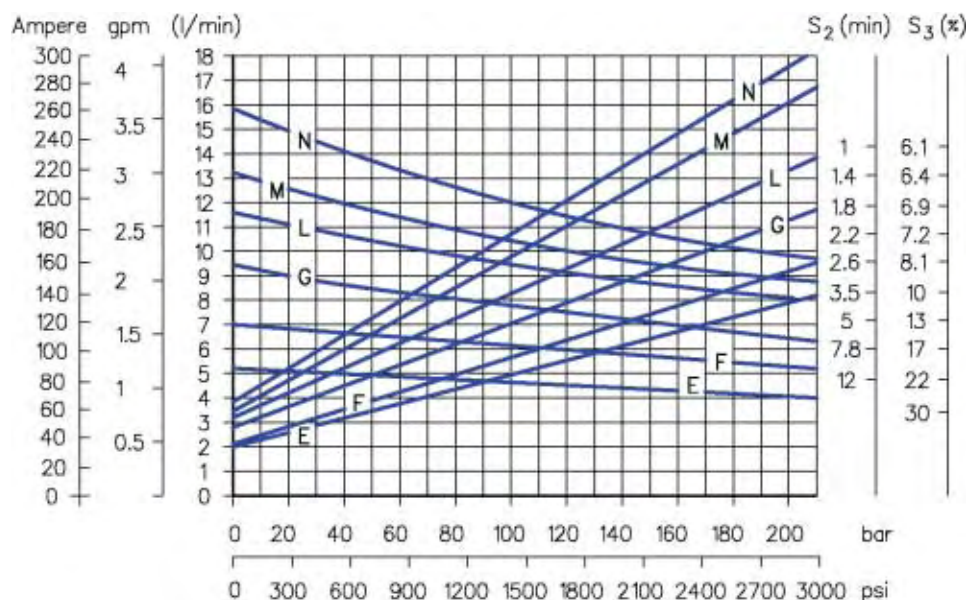
Kg 12,6

MOTORE ELETTRICO IN C.C. TIPO AP (Pompe da 1,2 a 7,8) D.C. MOTOR TYPE AP (Pumps from 1,2 to 7,8)



M AP

TIPO 3,0 Kw (NOMINALI) 24V c.c. CON SALVA MOTORE
TYPE 3,0 Kw (NOMINAL) 24V d.c. WITH THERMAL SWITCH



TIPO DI POMPA TYPE OF PUMP

E	GR.	1 - 1.2	cc/giro rev.
F	GR.	1 - 1.7	cc/giro rev.
G	GR.	1 - 2.2	cc/giro rev.
L	GR.	1 - 2.6	cc/giro rev.
M	GR.	1 - 3.2	cc/giro rev.
N	GR.	1 - 3.8	cc/giro rev.
P	GR.	1 - 4.3	cc/giro rev.
T	GR.	1 - 6.0	cc/giro rev.
R	GR.	1 - 7.8	cc/giro rev.

CARATTERISTICHE GENERALI SPECIFICATIONS

MOTORE IN C.C.
CAMPI AVVOLTI
FIELD WOUND
D.C. MOTOR

SENSO DI ROTAZIONE
SINISTRO
LEFT
ROTATION

GRADO DI PROTEZIONE
PROTECTION CLASS

IP 43

CLASSE DI ISOLAMENTO
INSULATION CLASS

F

PESO
WEIGHT

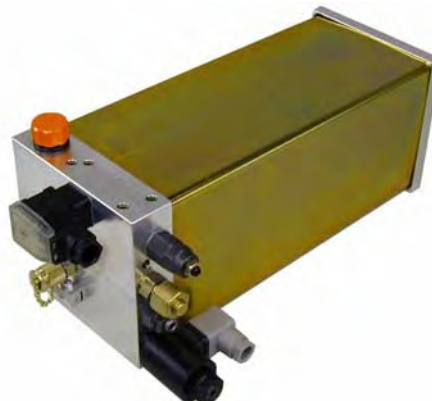
Kg 11

Document title: Datasheet ZPU 30
Created by: R. Otto
Date: 8.5.2003

Description

Hydraulic-powerunit with increased power density. Electric drive and pump are inserted in the oil reservoir; the multi-functional base plate integrates the control elements and components for filling, level control and electricity supply.

NEW: E-Motor-Connection by plug !



Application

Thanks to its compact design, it suits perfectly for the use with lifting tables, car lifts, stroke roofs, hydraulic support equipment or similar applications. It can be used as clamping pressure supply in machine tools as well.

Because of the special design, these units suit for intermittent operation, i.e. continuous operation is only possible with reduced power. Unless nothing else is indicated, the power rating for the operating mode S3-10% is valid

Installation position: horizontal or vertical

Advantages

- + Small dimensions (p.t.o.)
- + High power density
- + Easy installation
- + Favourable price due to serial production
- + Various types are available at short notice
- + Quick interchange thanks to the electric plug connection
- + Increased quality

Technical data

Operating voltage: 400 V, 50 Hz, 3 ~

Rated current: 6,8A

Line pressure: up to 500 bar

Further data according to the type code

Type code:

ZPU30 XX XX XXXX XX X X

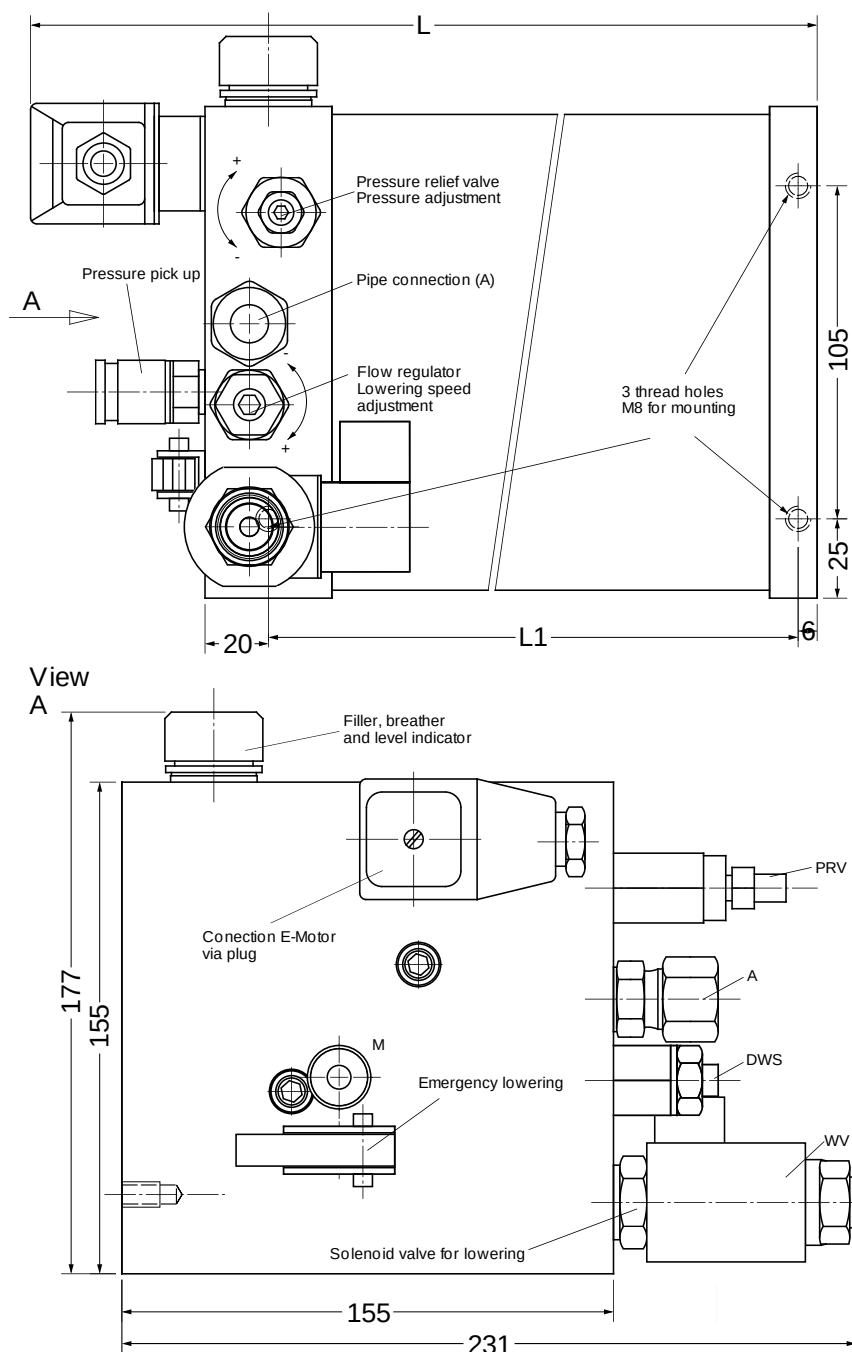
Reservoir useful volume		Pump capacity / max. operating Pressure		Control voltage		Hydraulic circuit	Installation position		Issue
25	2,5 L	02	2,2 L/min 230 bar	230A	230V AC	see page 3 - 6	V	Vertical	
45	4,5 L	03	3,4 L/min 230 bar	024A	24V AC		H	Horizontal	
65	6,5 L	04	4,5 L/min 230 bar	024D	24V DC				
85	8,5 L	06	5,6 L/min 230 bar						
		07	7,0 L/min 230 bar						
		09	9,0 L/min 200 bar						
		10	10,6 L/min 170 bar						

Type of Example: ZPU30 45 04 230A AJ H 1

Document title: Datasheet ZPU 30

Created by R. Otto

Date: 8.5.2003



The dimensions shown refer to type: ZPU30 3 04 230A AJ H 1

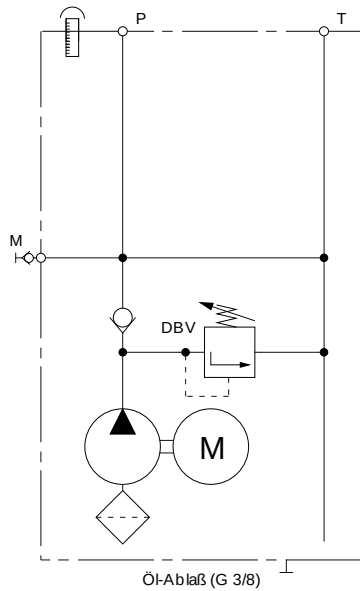
Dimensions			
Type	ZPU 30 3 ...	ZPU 30 5 ...	ZPU 30 7 ...
Reservoir capacity	3,5 Ltr	5,4 Ltr	7,6 Ltr
Useful volume	2,5 Ltr	4,5 Ltr	6,5 Ltr
Length overall L	441 mm	533 mm	638 mm
Length L1	360 mm	452 mm	557 mm

Document title: Datasheet ZPU 30

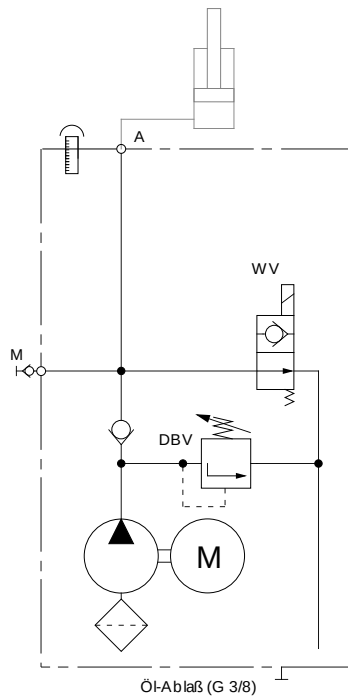
Created by R. Otto

Date: 8.5.2003

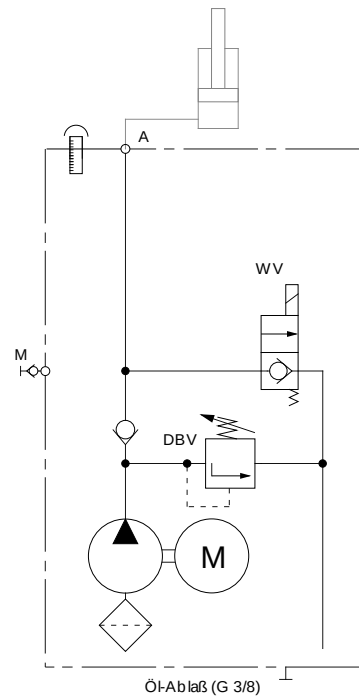
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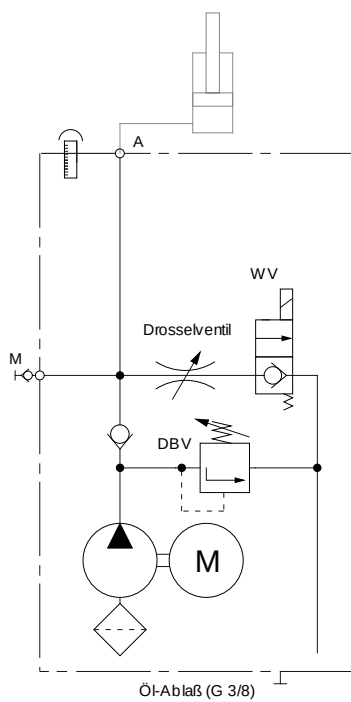
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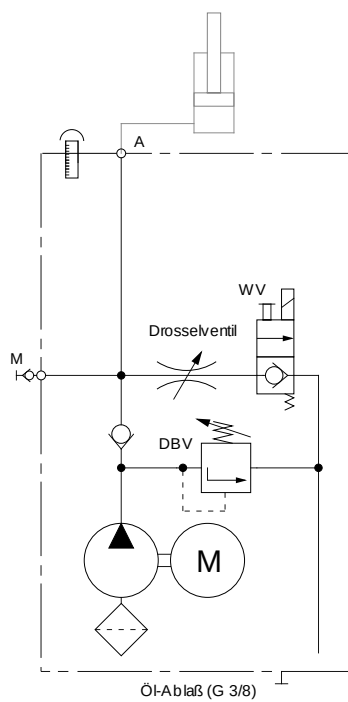
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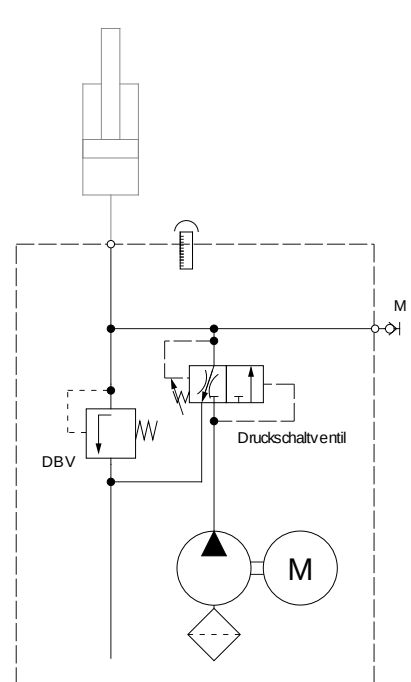
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Circuit Code: AE



Circuit Code: AF

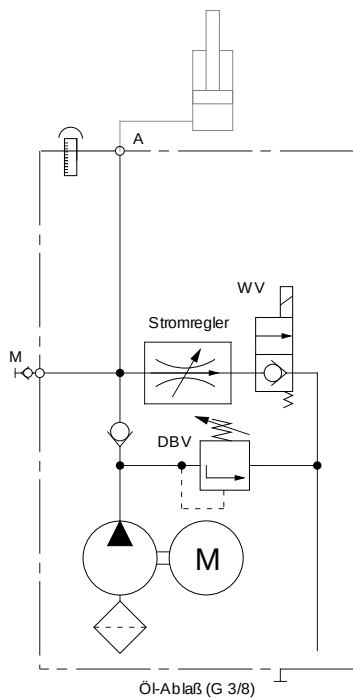


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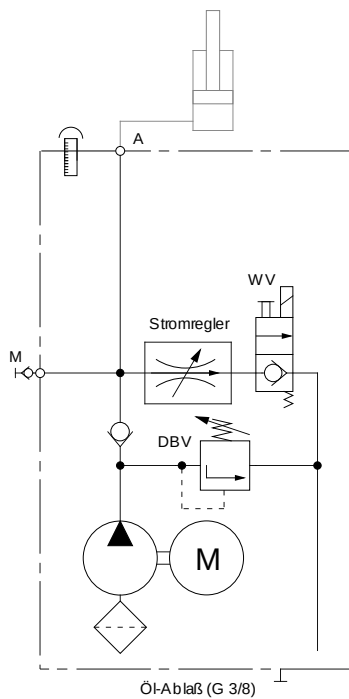
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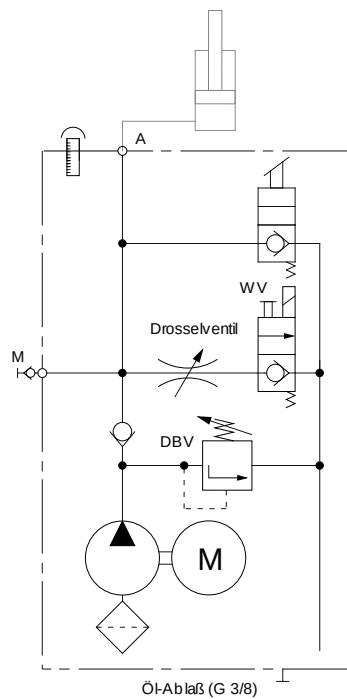
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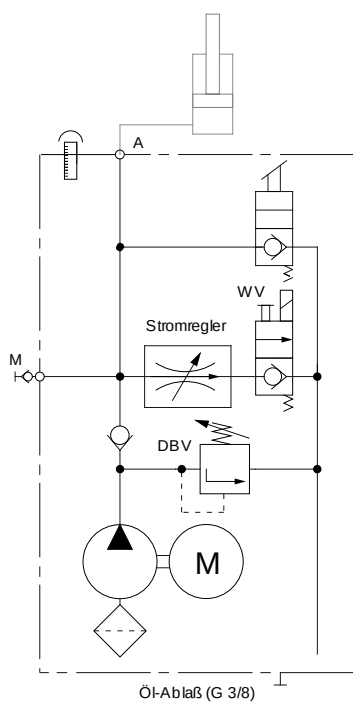
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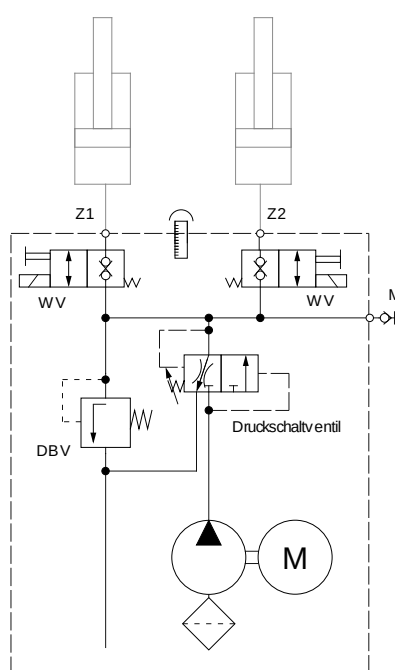
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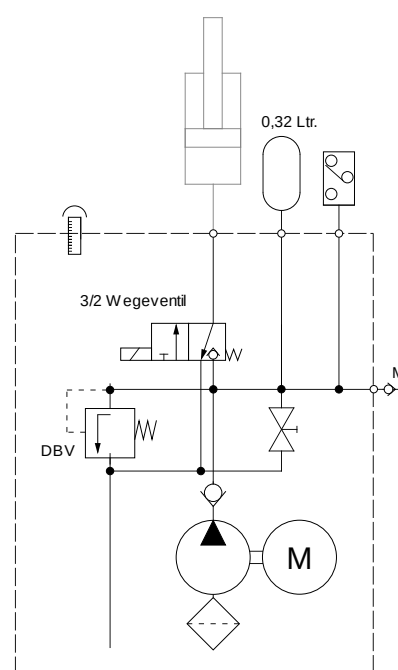
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Circuit Code: AK



Circuit Code: AL

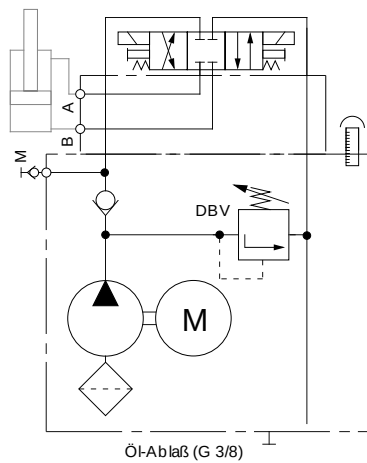


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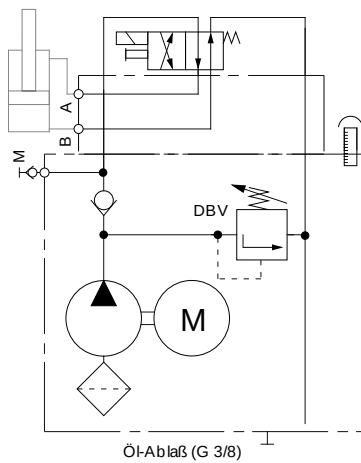
Created by R. Otto

Date: 8.5.2003

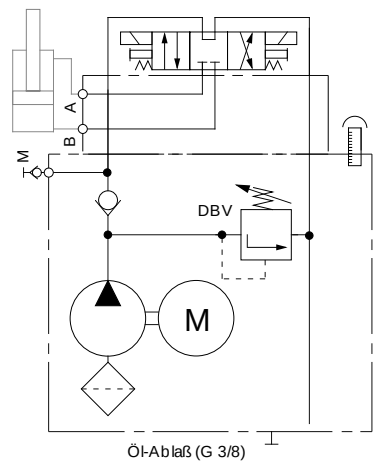
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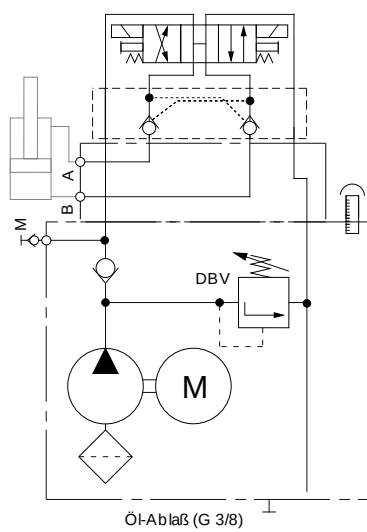
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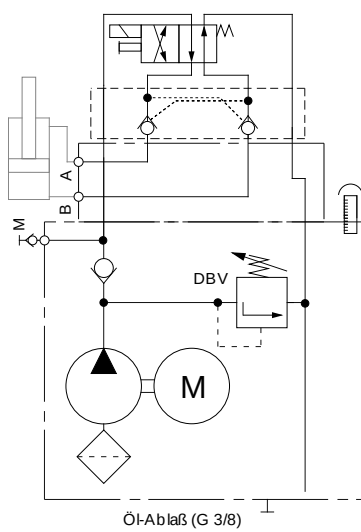
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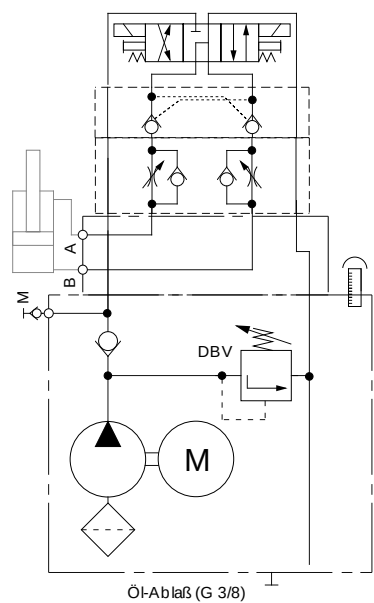
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Circuit Code: AQ



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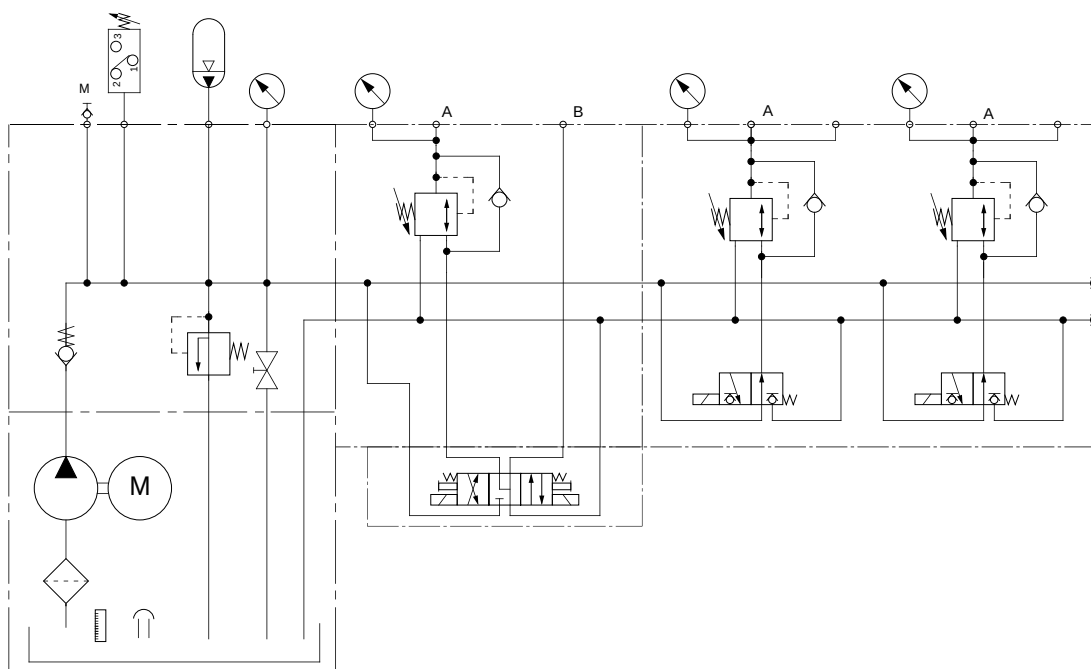


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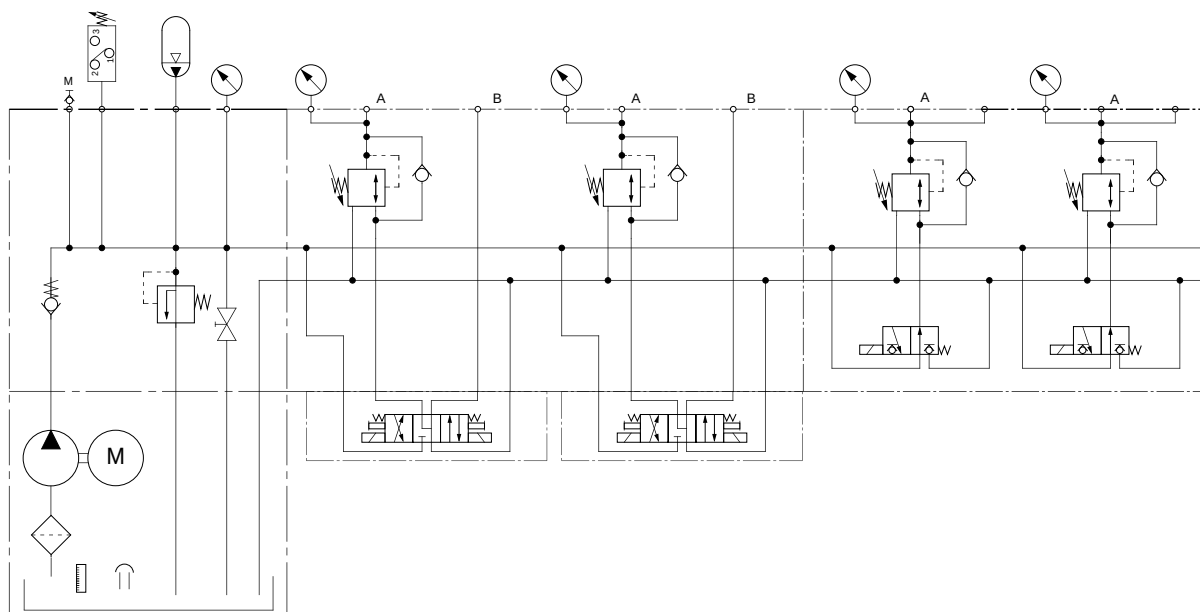
Created by R. Otto

Date: 8.5.2003

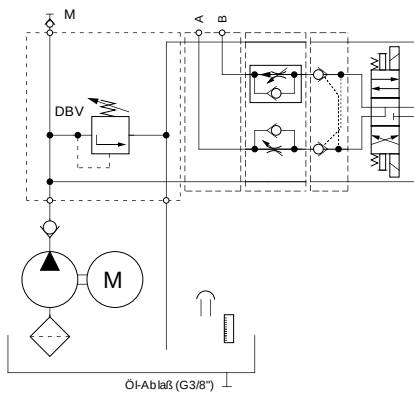
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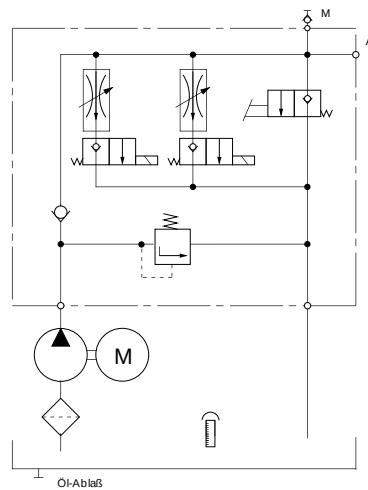
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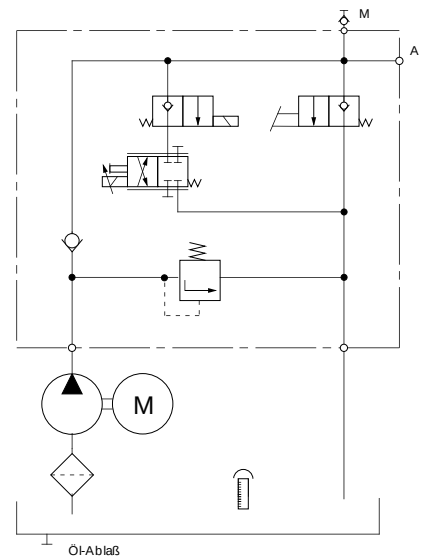
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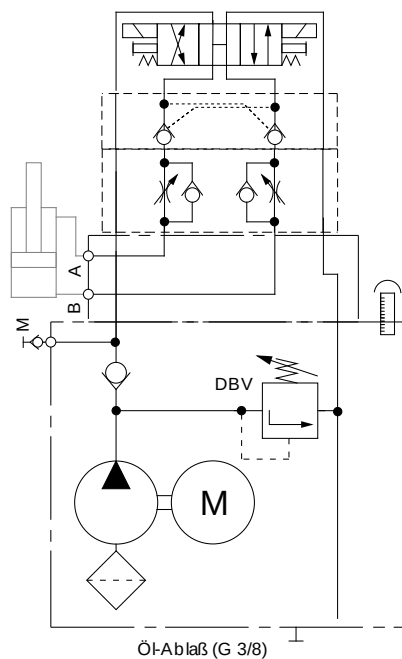
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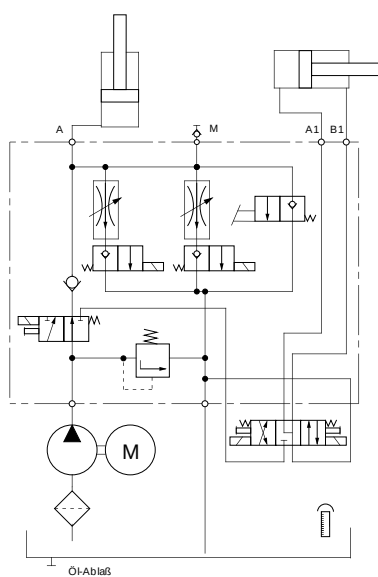
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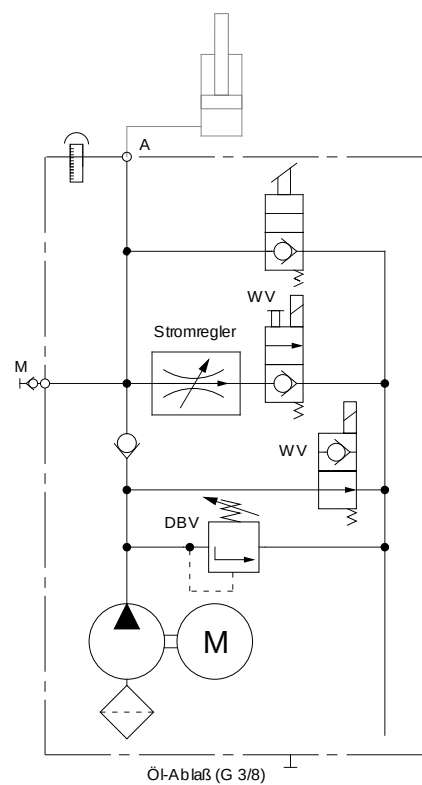
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Circuit Code: BE



Circuit Code: BF

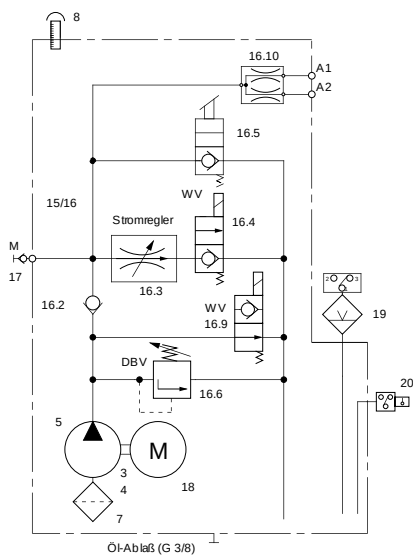


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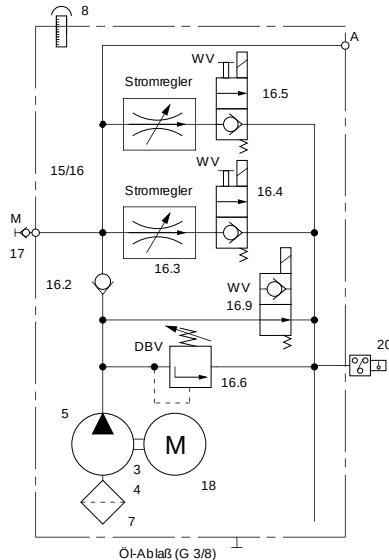
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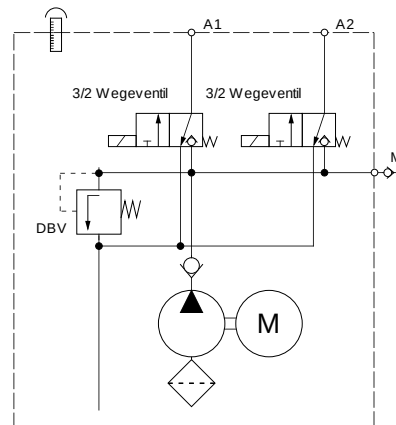
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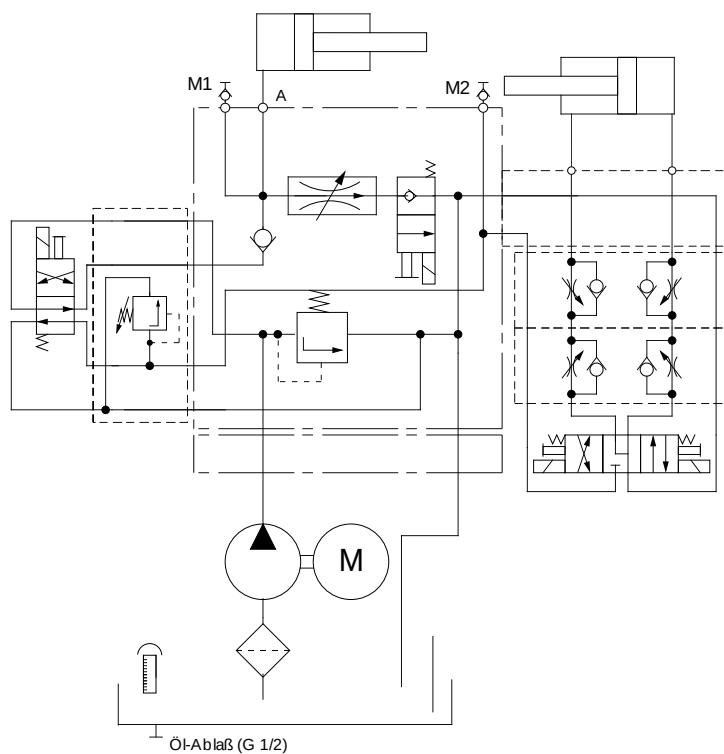
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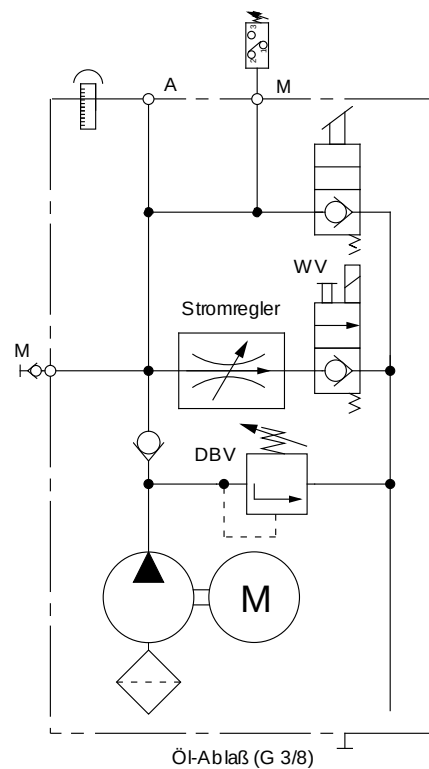
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Circuit Code: BJ



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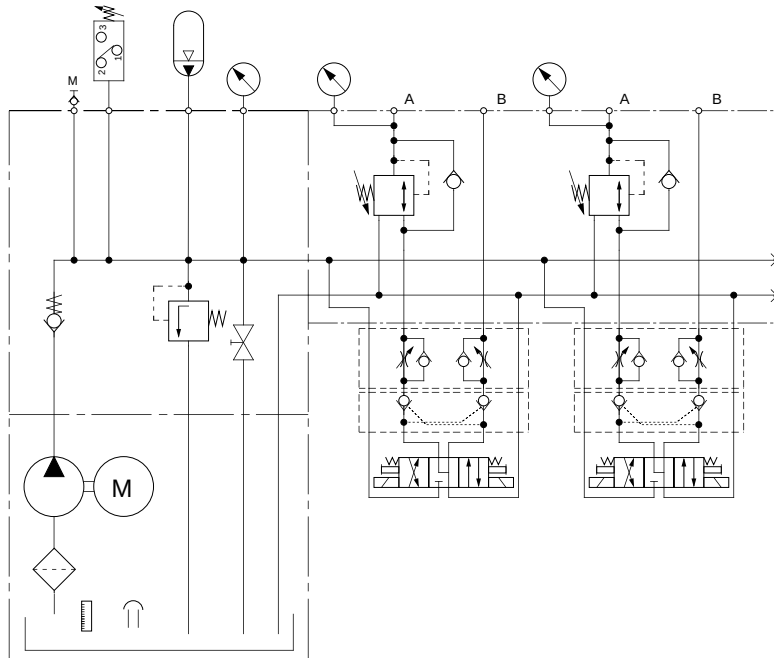


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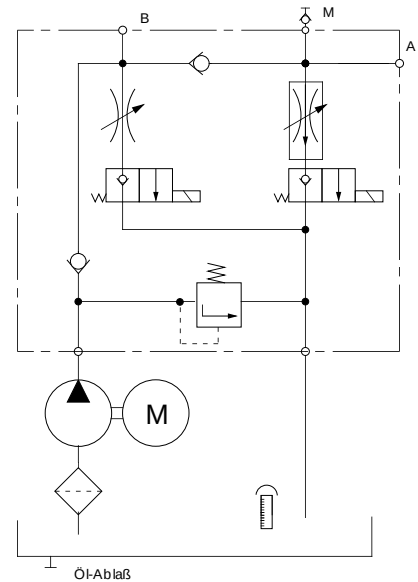
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Date: 8.5.2003

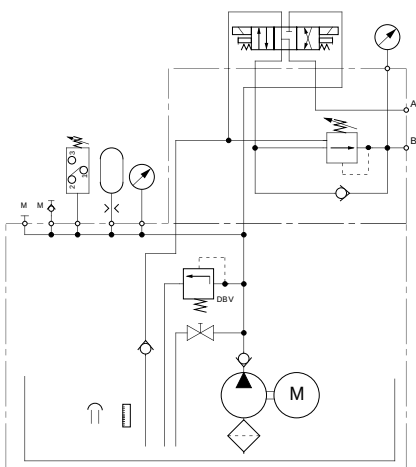
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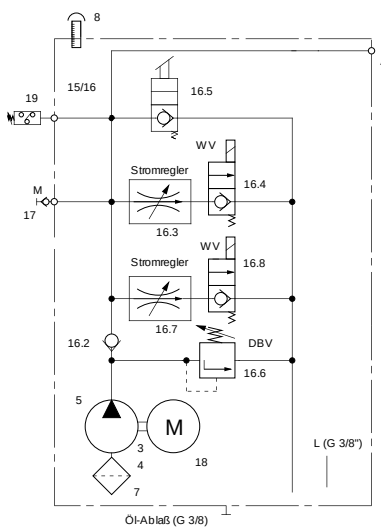
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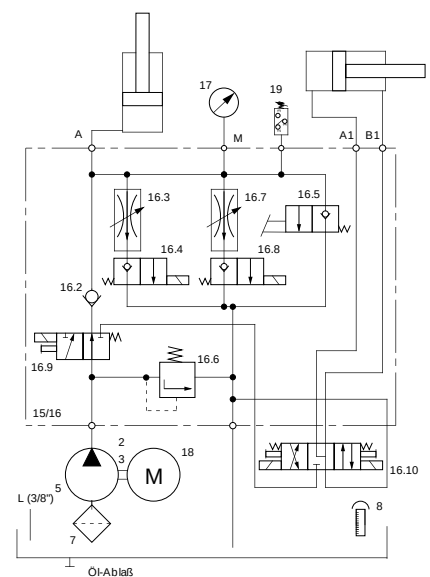
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Circuit Code: BO



Circuit Code: BP

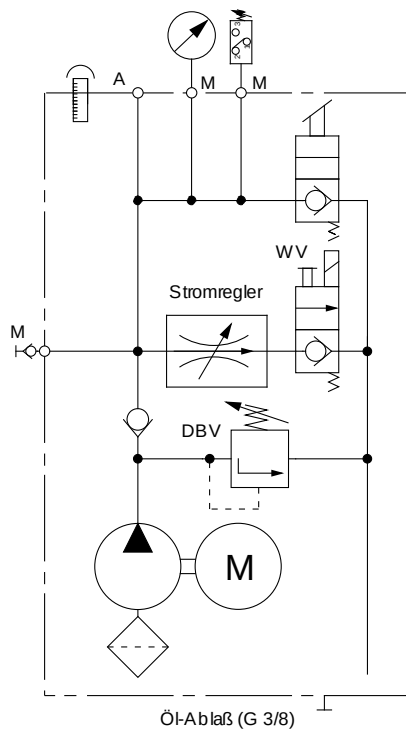


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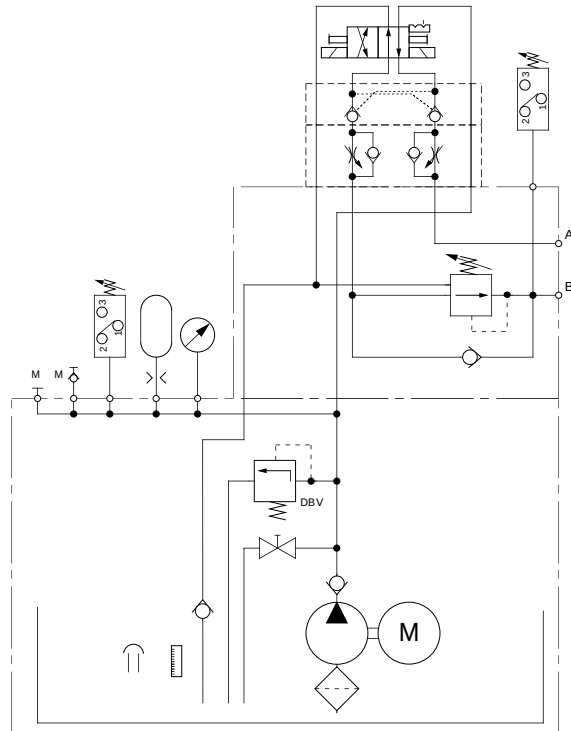
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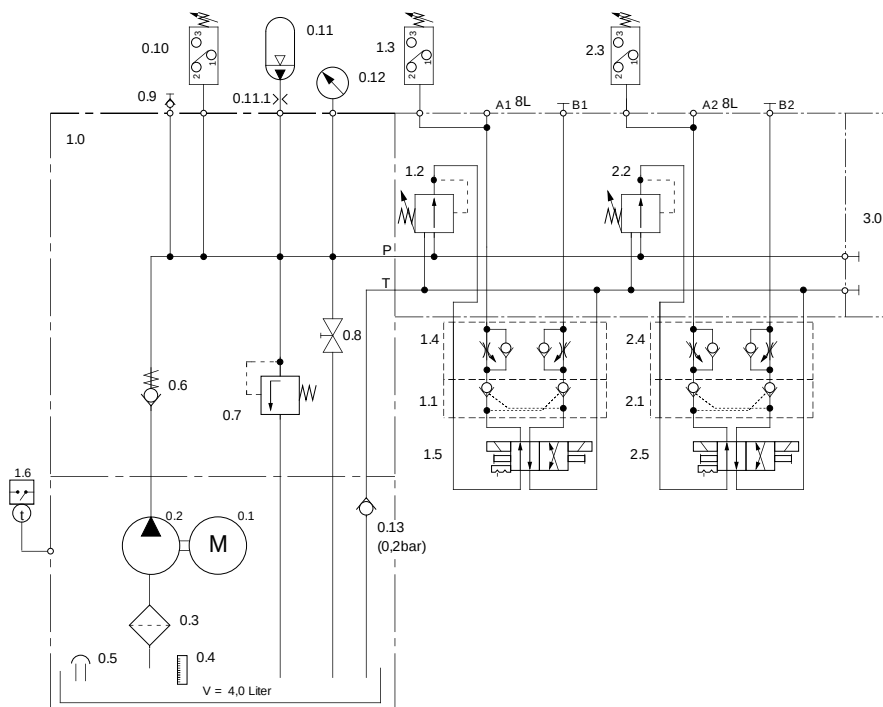
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Circuit Code: BR



Circuit Code: BS

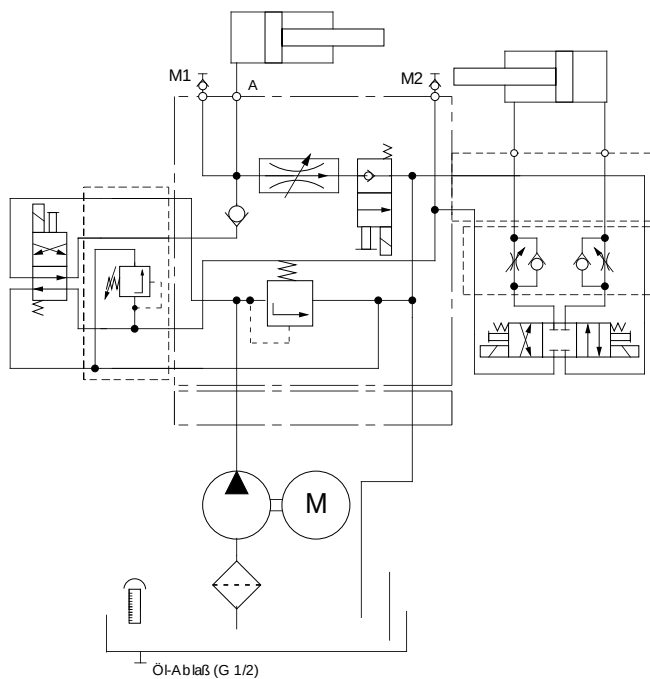


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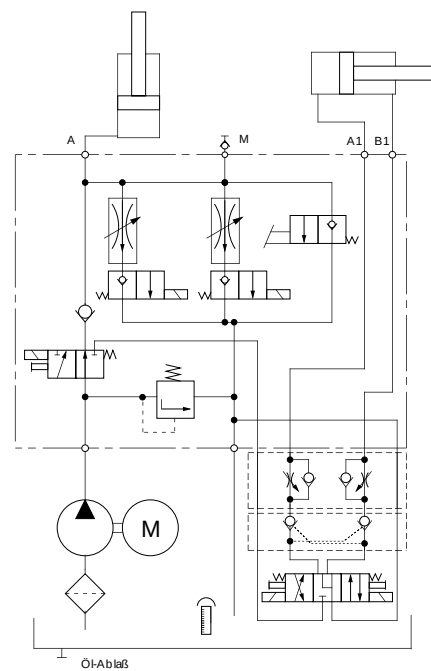
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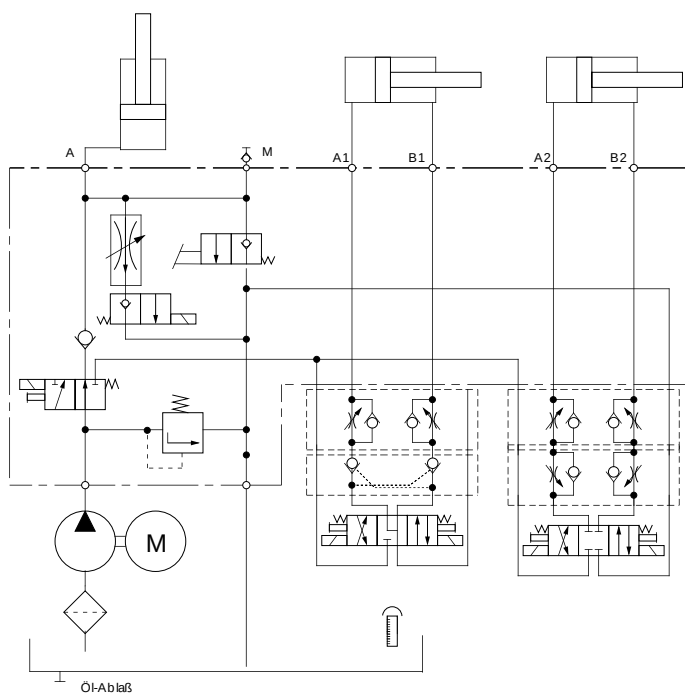
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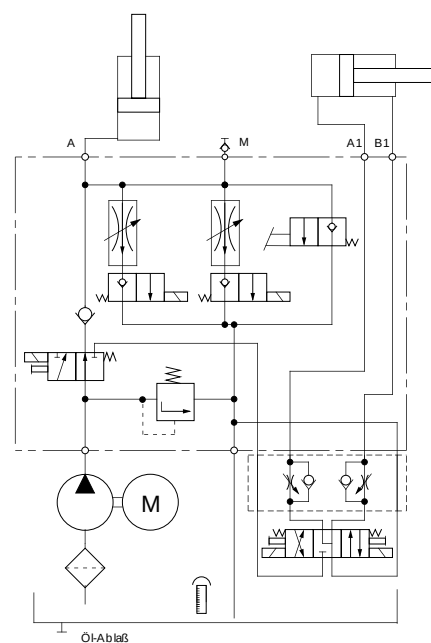
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Circuit Code: BU



Circuit Code: BZ

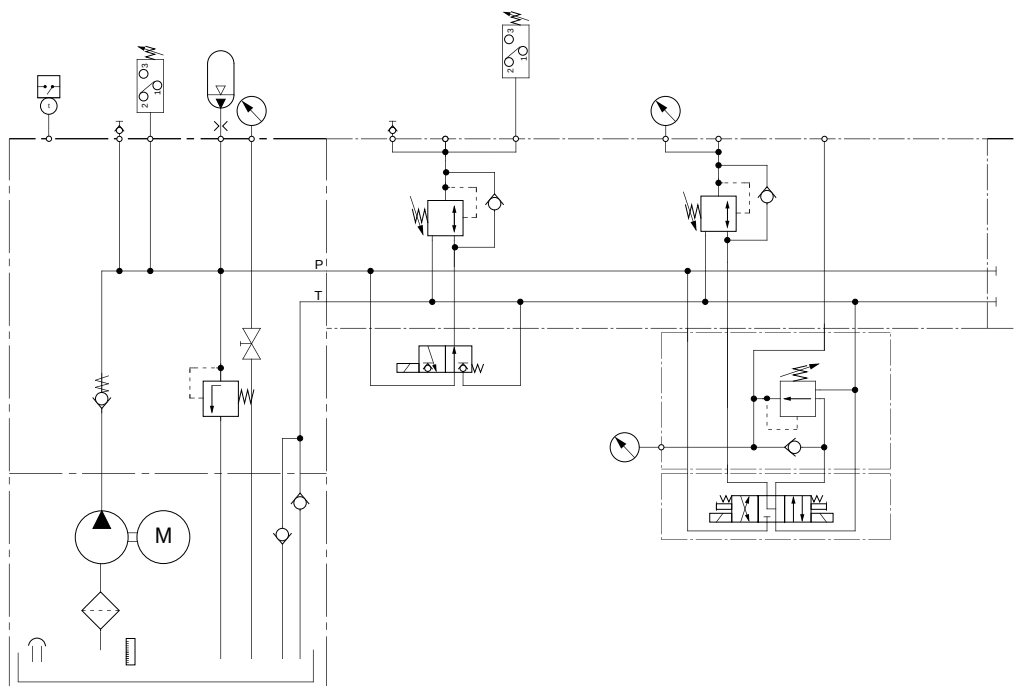


Document title: Datasheet ZPU 30

Created by R. Otto

Date: 8.5.2003

Circuit Code: BV

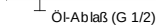


Document title: Datasheet ZPU 30

Created by R. Otto

Date: 8.5.2003

Circuit Code: CA

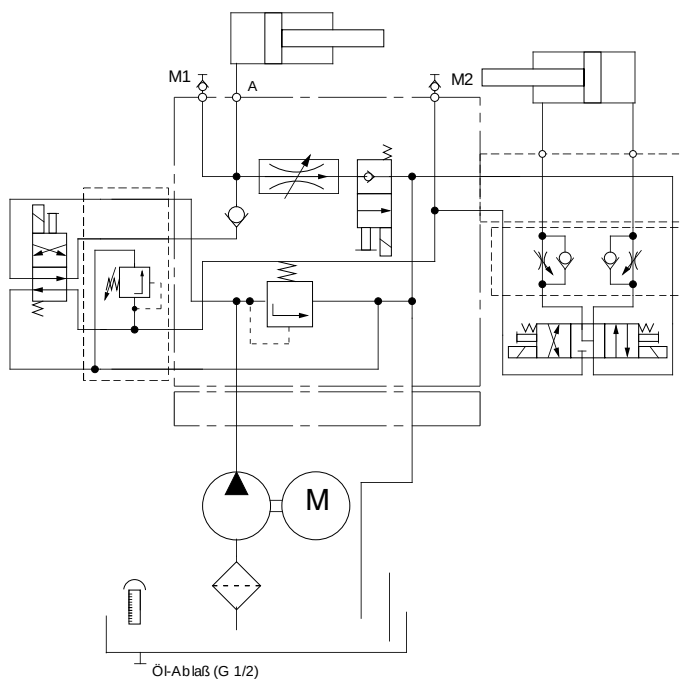


Circuit Code: CB



Document title: Datasheet ZPU 30
Created by R. Otto
Date: 8.5.2003

Circuit Code: CC



Circuit Code:



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