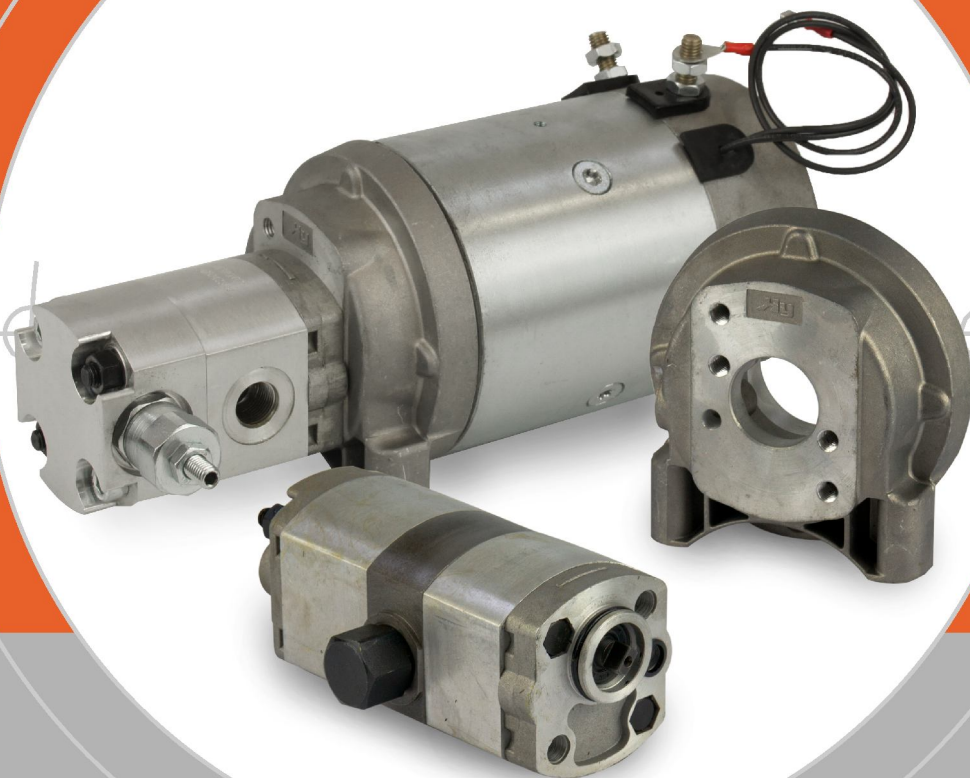
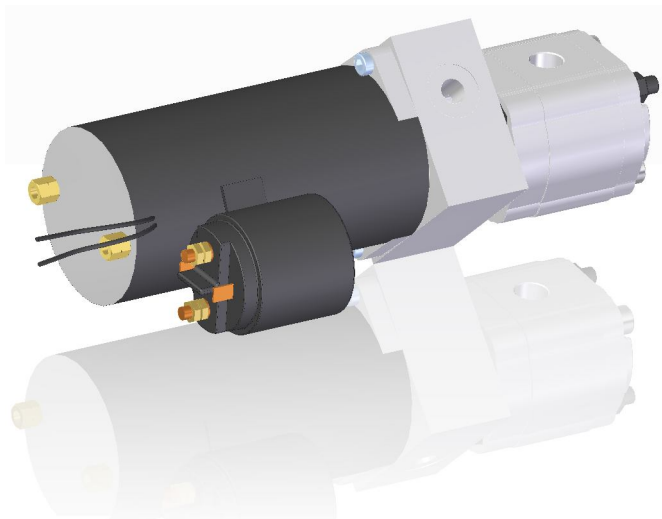




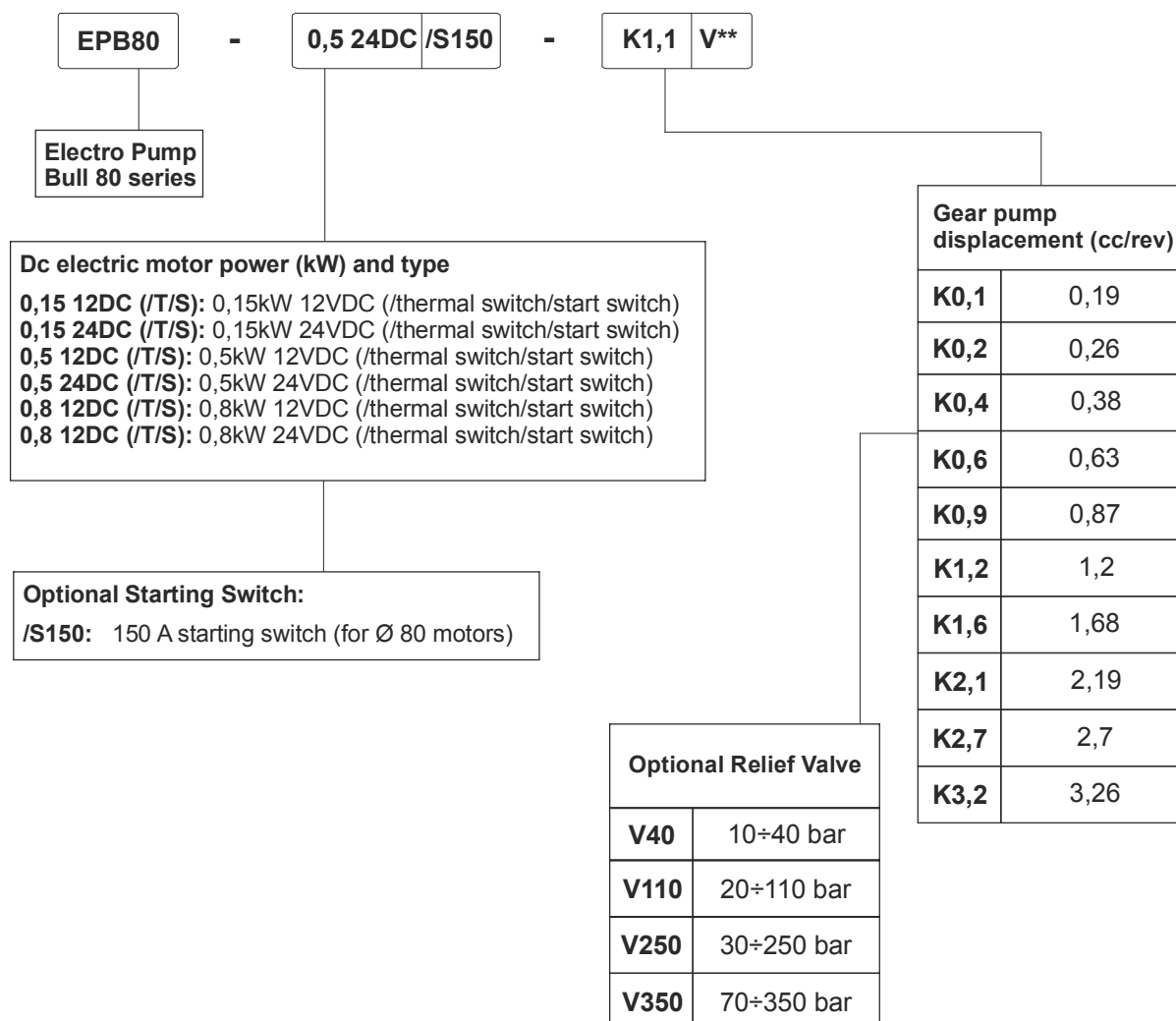
2012
DC Electropumps Bull

ELECTROPUMPS BULL series ordering codes

ELECTROPUMP BULL 80

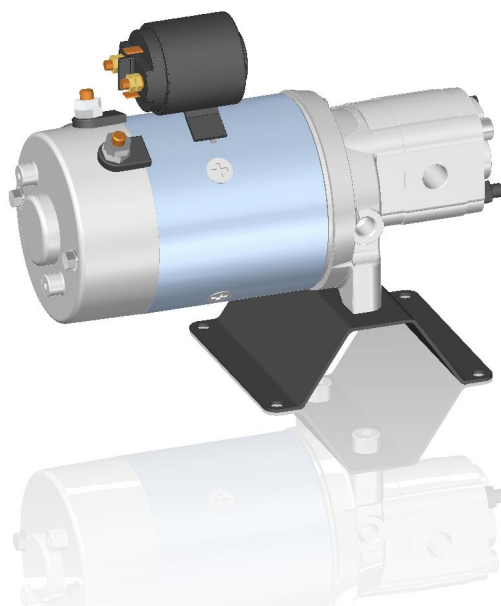


MODEL CODE



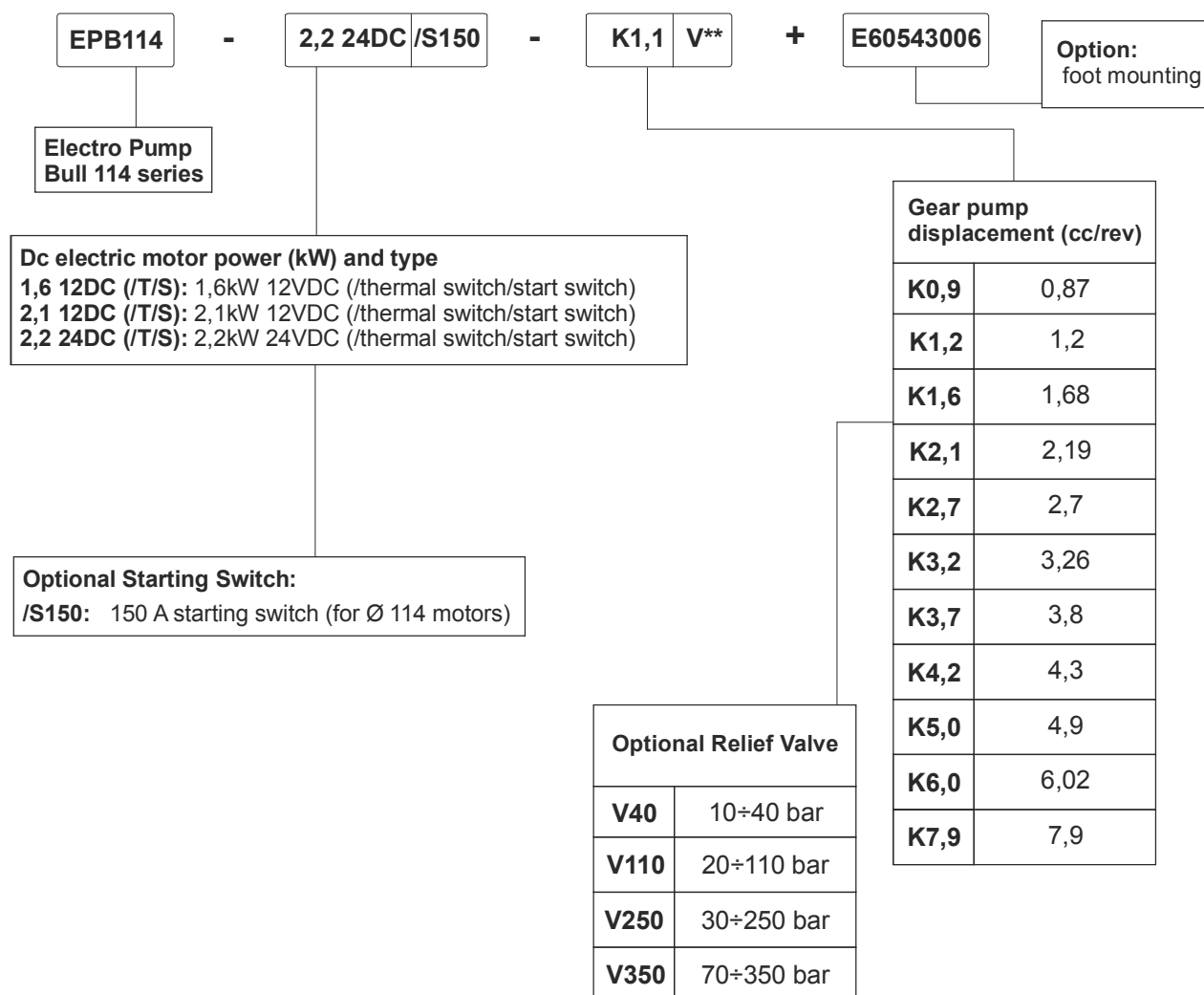
ELECTROPUMPS BULL series ordering codes

ELECTROPUMP BULL 114



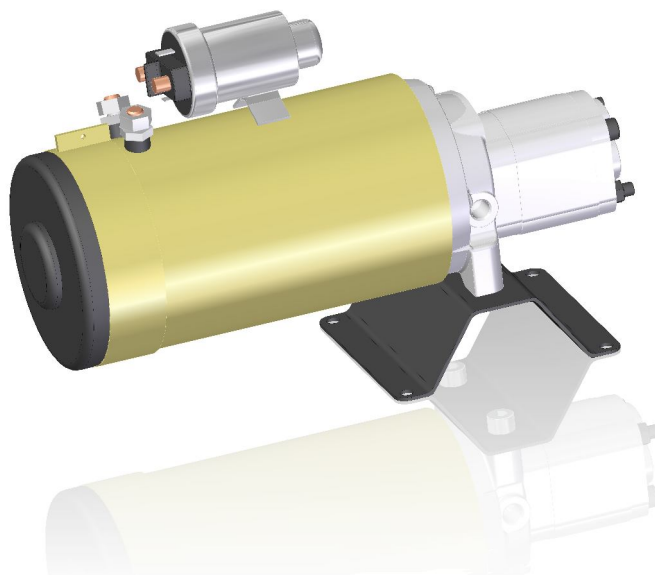
Option:
foot mounting

MODEL CODE



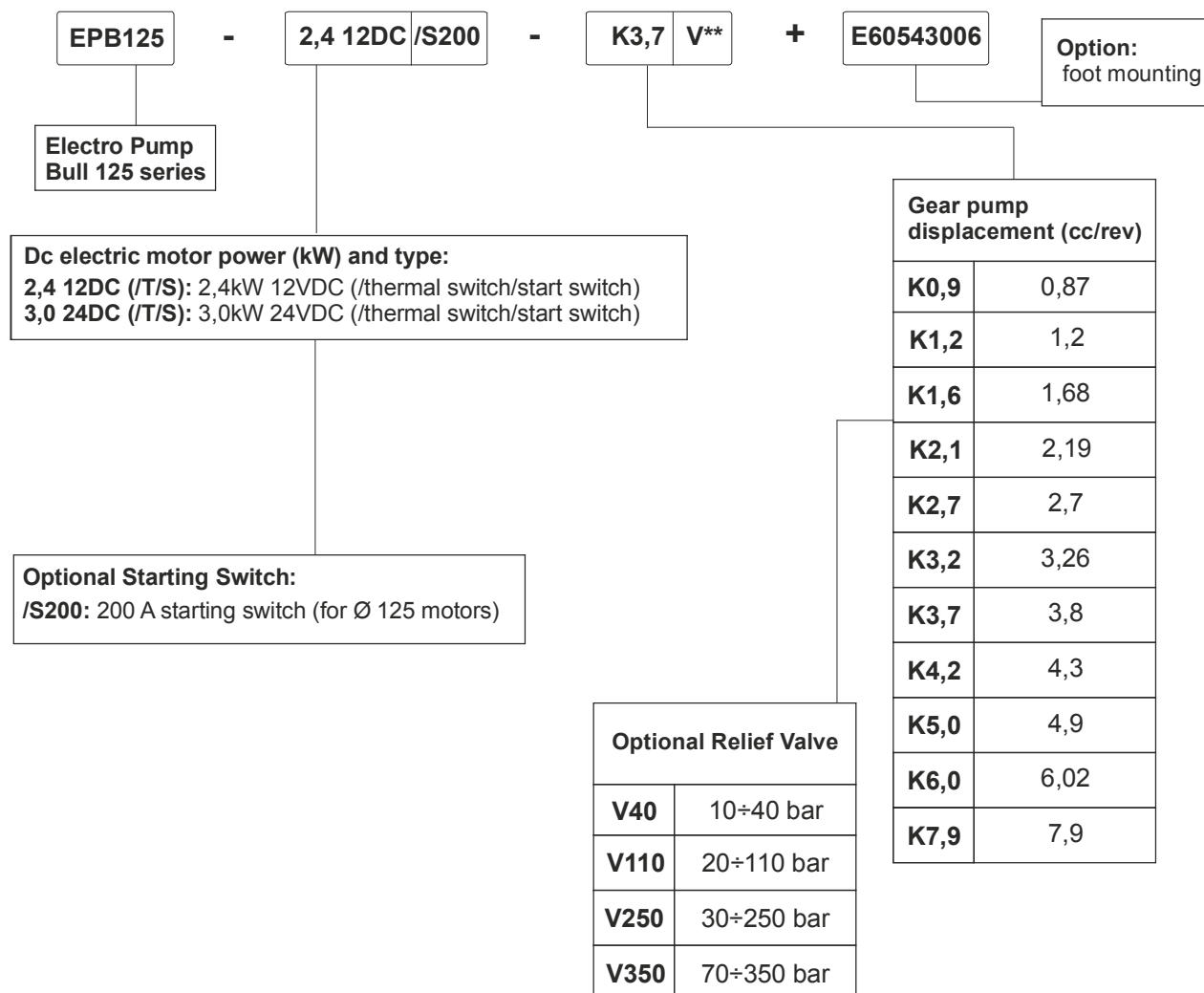
ELECTROPUMPS BULL series ordering codes

ELECTROPUMP BULL 125



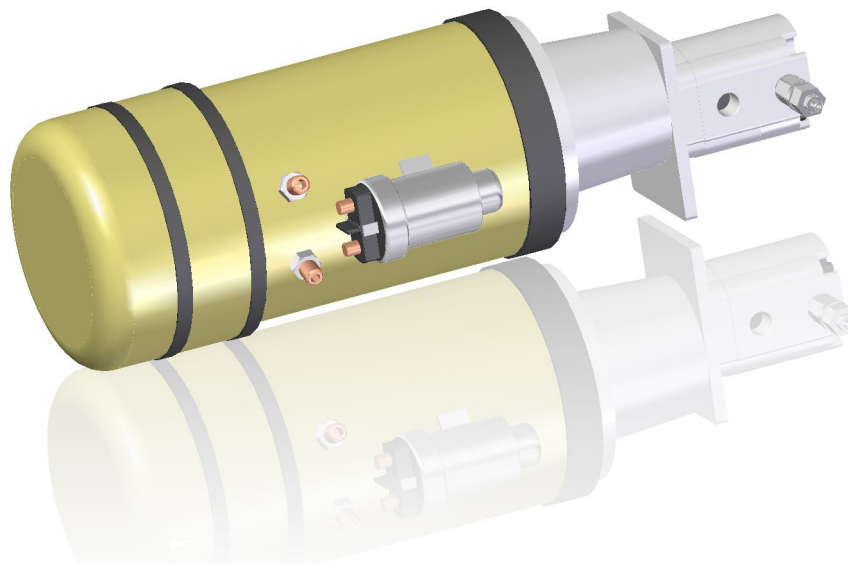
Option:
foot mounting

MODEL CODE

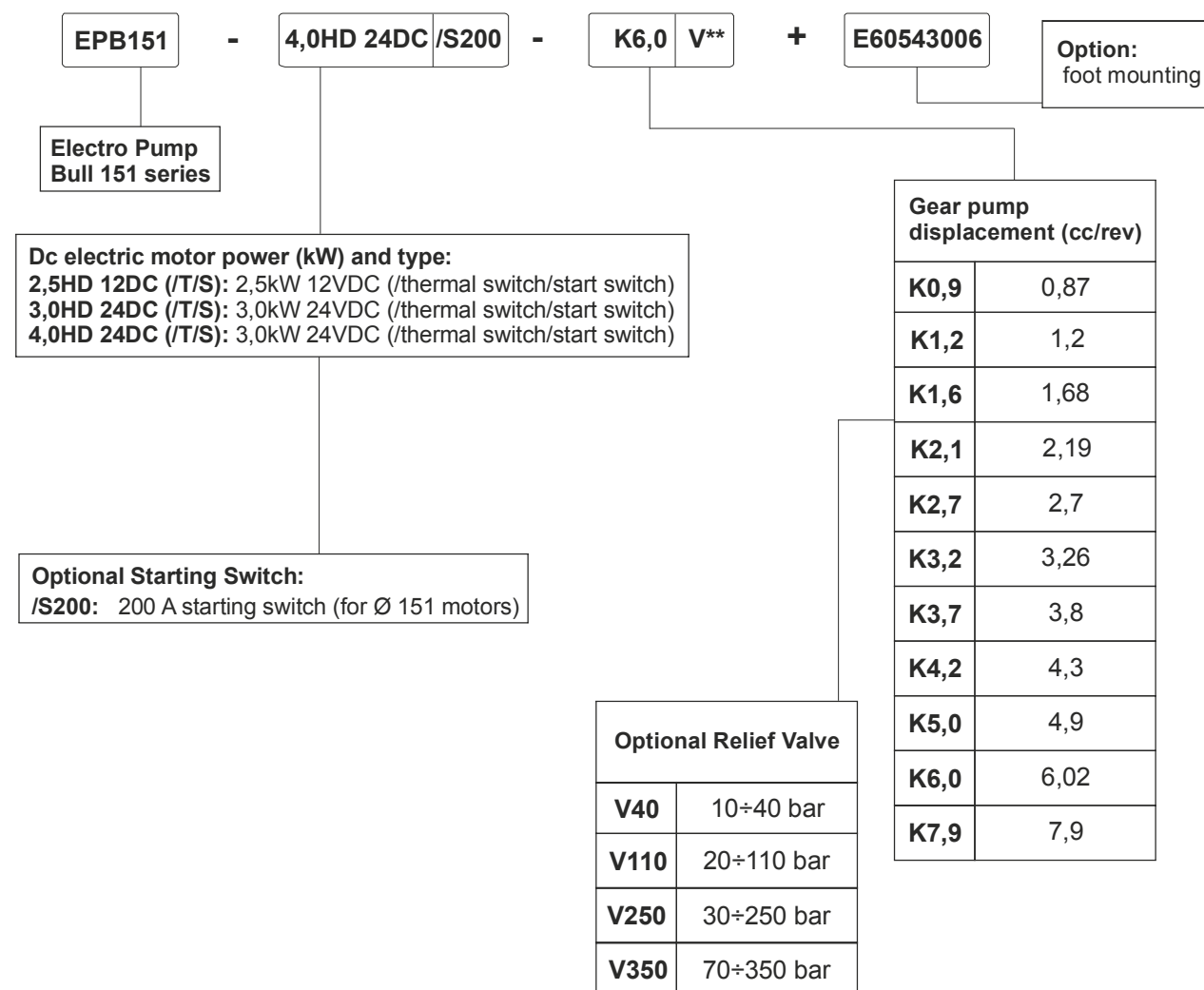


ELECTROPUMPS BULL series ordering codes

ELECTROPUMP BULL 151



MODEL CODE

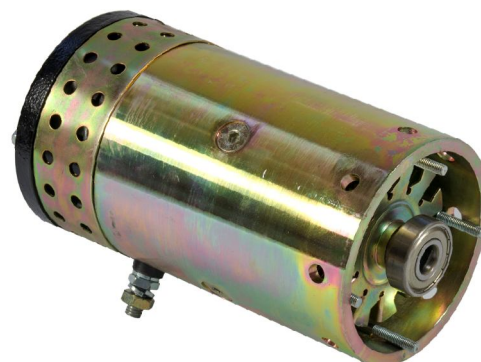
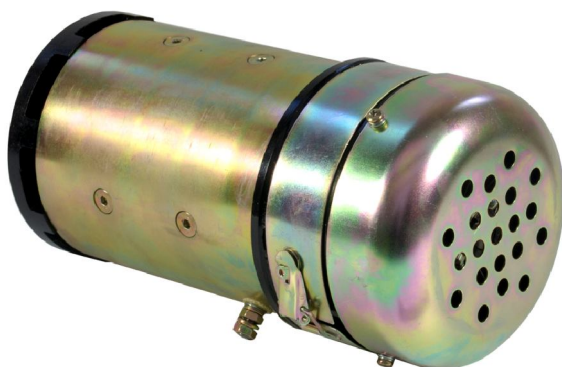


DC ELECTRIC MOTORS

Frame 114 DC motors: the most popular choice. Power up to 2,1kW 12VDC and 2,2kW 24VDC. All motors have thermal protector switch as standard. UL certified.



Frame 80 DC motors: permanent magnets and compact dimensions for high power density and low current absorption. Power from 150W up to 800W either 12VDC or 24VDC. Available with or without thermal protector switch. UL certified.



Frame 151 DC motors: real heavy duty bulk motors, with fan cooling, thermal protector and running time up to 16 min or over. Power from 2,5kW 12VDC up to 4kW 24VDC.

Frame 125 DC motors: the fan cooled motors for heavy duty applications with reasonable dimensions. Power up to 2,4kW 12VDC and 3kW 24VDC. All motors have thermal protector switch as standard.

Are these motors different from those mounted in the mini and micro power packs ranges?

No. Hydronit consistent engineering is reflected in the low number of parts used to compose all product ranges.

A big advantage for stockist distributors who can keep stock of spare motors, flanges as well as power packs central manifolds and assemble them quickly and effectively depending on customer requirements.

How do I dimension a DC motor?

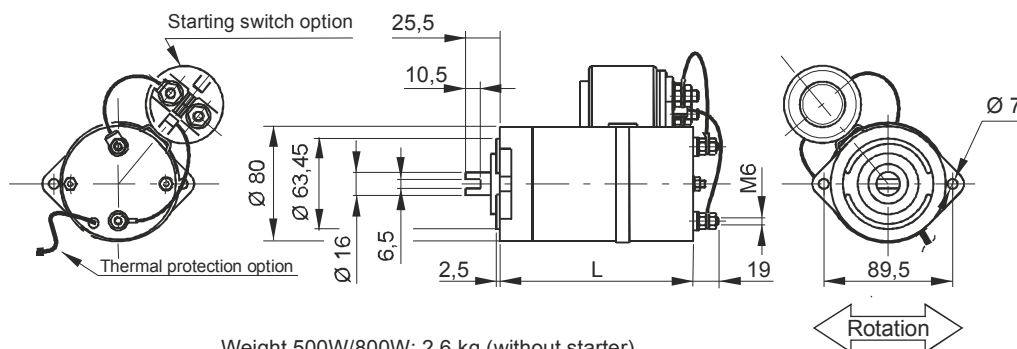
DC motors are normally for intermittent duty. It is important to know required flow in l/min and working pressure in bar. Then following A050 table instructions a proper motor/pump combination can be selected. From the diagrams you can obtain absorbed current [Amp], S2 (allowed running time in seconds) and S3 (percentage of allowed running cycle over total running + cooling cycle) characteristic values. Take note that the rotational speed of DC motor is not constant and is dependent on absorbed torque, which is linked to flow and pressure.

Special motors executions, with out of standard voltages, IP grade, rotational speed or duty charge (also S1) can be manufactured according to customer requirements and depending on quantities involved. Please ask our technical office.

INTEGRAL DC MOTORS Ø 80



Permanent magnets
Protection degree: IP54
Insulation class: F



Weight 500W/800W: 2,6 kg (without starter)
Weight 150W: 2 kg (without starter)

Code

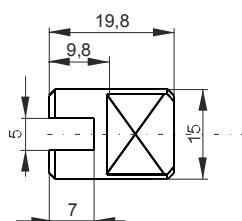
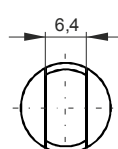
Description	PPC assembly code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current	L
150W 12V DC + thermal protector	0,15 12DC/T	M46C1ST01	S2: 25 min S3: 50% ED	1400 rpm	30 A	108 mm
150W 24V DC + thermal protector	0,15 24DC/T	M46C2ST01	S2: 25 min S3: 50% ED	1400 rpm	15 A	108 mm
500W 12V DC motor	0,5 12DC	M46C1S005	S2: 5 min S3: 17% ED	1700 rpm	90 A	139 mm
500W 24V DC motor	0,5 24DC	M46C2S005	S2: 5 min S3: 17% ED	2300 rpm	45 A	139 mm
500W 12V DC + thermal protector	0,5 12DC/T	M46C1ST05	S2: 5 min S3: 17% ED	1700 rpm	90 A	139 mm
500W 24V DC + thermal protector	0,5 24DC/T	M46C2ST05	S2: 5 min S3: 17% ED	2300 rpm	45 A	139 mm
800W 12V DC motor	0,8 12DC	M46C1S008	S2: 4 min S3: 10% ED	2100 rpm	150 A	139 mm
800W 24V DC motor	0,8 24DC	M46C2S008	S2: 4 min S3: 10% ED	2400 rpm	75 A	139 mm
800W 12V DC + thermal protector	0,8 12DC/T	M46C1ST08	S2: 4 min S3: 10% ED	2100 rpm	150 A	139 mm
800W 24V DC + thermal protector	0,8 24DC/T	M46C2ST08	S2: 4 min S3: 10% ED	2400 rpm	75 A	139 mm

Options & couplings

Description	PPC assembly code	Spare part code
12V DC 150 Amp start switch + mounting kit	S150 12DC 80	M47SC0001 + M47SK0801
24V DC 150 Amp start switch + mounting kit	S150 24DC 80	M47SC0002 + M47SK0801
Remote wired control with 2 buttons and 3m cable	P0201 (single acting)	
Remote wired control with 4 buttons and 3m cable	P0202 (double acting)	
Shaft coupling for Ø 80 DC motors and gr.1 pump	E36200007	
Flange for Ø 80 DC motors and gr.1 pump	E10101010	

Notes: the starting switch mounting kit is provided when specifying the **/S150** as motor option in EPB assembly code. When ordering spare starting switches, it must be ordered separately (code: M47SK0801).

E36200007



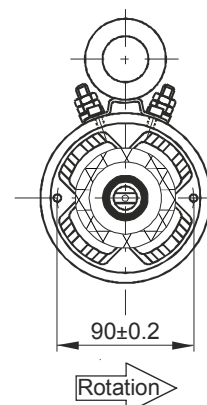
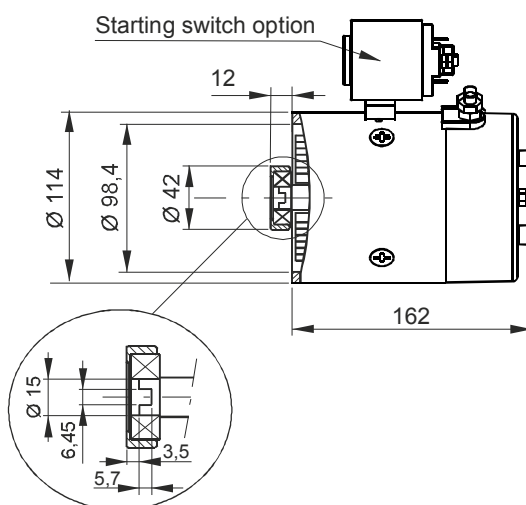
Weight: 0,063 kg

The coupling is already included when specifying the motor in EPB assembly code. It is to be indicated only when ordering EPB with no motor but with coupling.

INTEGRAL DC MOTORS Ø 114



Compound wound
Protection degree: IP54
Insulation class: F
Weight: 7,05 kg (without starter)



Code

Description	PPC assembly code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current
1600W 12V DC + thermal protector	1,6 12DC/T	M46C1ST16	S2: 5 min S3: 10% ED	2800 rpm	210 A
2100W 12V DC + thermal protector	2,1 12DC/T	M46C1ST21	S2: 4 min S3: 12% ED	2400 rpm	300 A
2200W 24V DC + thermal protector	2,2 24DC/T	M46C2ST22	S2: 2.5 min S3: 10% ED	2400 rpm	130 A

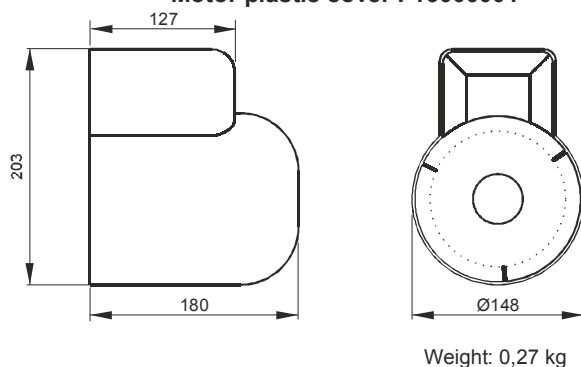
Options & couplings

Description	PPC assembly code	Spare part code
12V DC 150 Amp start switch + mounting kit	S150 12DC 112	M47SC0001 + M47SK1121
24V DC 150 Amp start switch + mounting kit	S150 24DC 112	M47SC0002 + M47SK1121
Remote wired control with 2 buttons and 3m cable	P0201 (single acting)	
Remote wired control with 4 buttons and 3m cable	P0202 (double acting)	
DC motor plastic cover	F16000001	
Coupling for Ø114 motors - Ø125 DC motors and gr.1 pump	E36200003	
Flange for Ø114 and Ø125 motors and gr.1 pump	E10103010	

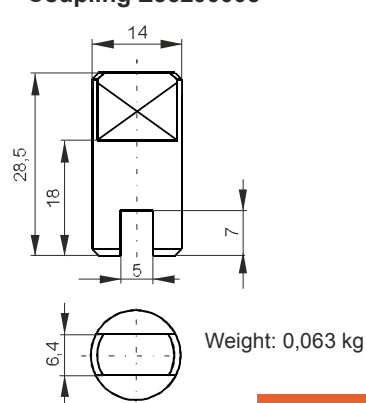
Notes: the starting switch mounting kit is provided when specifying the /S150 as motor option in EPB assembly code.
When ordering spare starting switches, it must be ordered separately (code: M47SK1121).

The coupling is already included when specifying the motor in EPB assembly code.
It is to be indicated only when ordering PPC with no motor but with coupling.

Motor plastic cover F16000001



Coupling E36200003



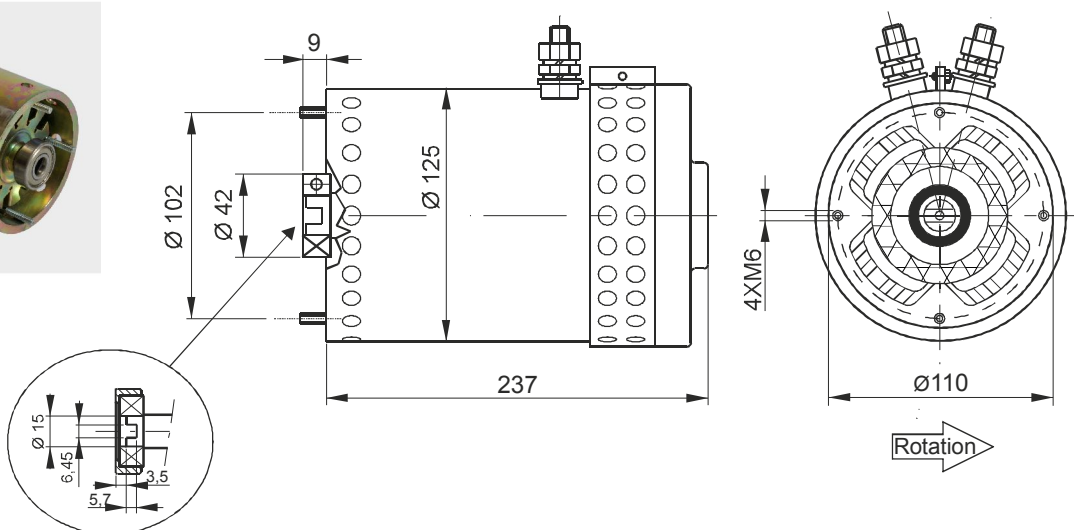
Flange E10103010



INTEGRAL DC MOTORS Ø 125 WITH FAN COOLING



Compound wound
Protection degree: IP20
Insulation class: F
Weight: 11kg (without starter)



Code

Description	PPC assembly code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current
2400W 12V DC motor with thermal protection & fan	2,4 12DC/T	M46C1ST24	S2: 4min S3: 7,5% ED	3400 rpm	290 A
3000W 24 V DC motor with thermal protection & fan	3 24DC/T	M46C2ST30	S2: 4min S3: 7,5% ED	3500 rpm	170 A

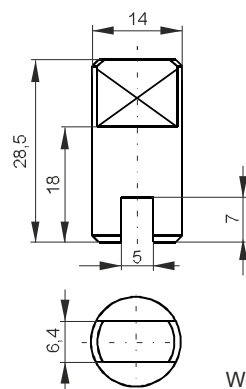
Options & couplings

Description	PPC assembly code	Spare part code
12V DC 150 Amp start switch + mounting kit	S150 12DC 112	M47SC0001 + M47SK1121
24V DC 150 Amp start switch + mounting kit	S150 24DC 112	M47SC0002 + M47SK1121
Remote wired control with 2 buttons and 3m cable	P0201 (single acting)	
Remote wired control with 4 buttons and 3m cable	P0202 (double acting)	
DC motor plastic cover	F16000001	
Coupling for Ø114 motors - Ø125 DC motors and gr.1 pump	E36200003	
Flange for Ø114 and Ø125 motors and gr.1 pump	E10103010	

Notes: the starting switch mounting kit is provided when specifying the **/S150** as motor option in EPB assembly code. When ordering spare starting switches, it must be ordered separately (code: M47SK1121).

The coupling is already included when specifying the motor in EPB assembly code. It is to be indicated only when ordering PPC with no motor but with coupling.

Coupling E36200003



Weight: 0,063 kg

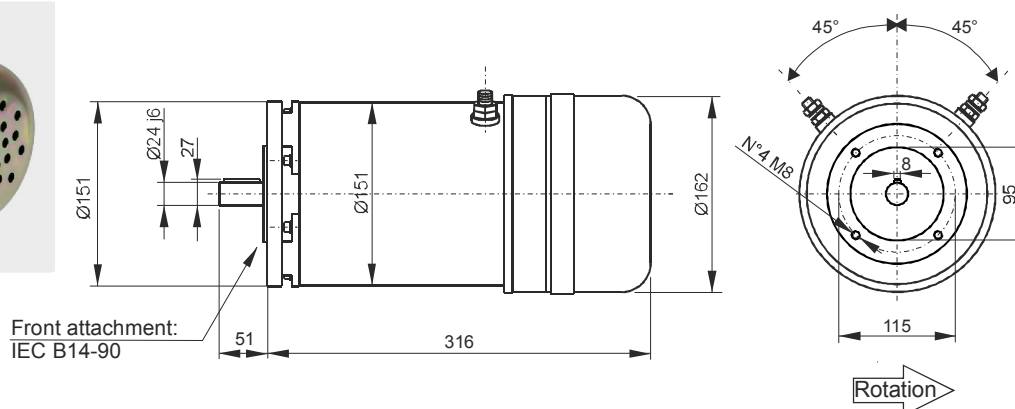
Flange E10103010



HEAVY DUTY DC MOTORS Ø 151 WITH FAN COOLING



Series wound
Protection degree: IP20
Insulation class: F
Weight: 21,5 kg



Code

Description	PPC code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current	Mounting kit
2500W 12V DC motor + thermal protection & fan	2,5HD 12DC/T	MB14C1ST25	S2: 16min	1700 rpm	290 A	XB1490
3000W 24V DC motor + thermal protection & fan	3HD 24DC/T	MB14C2ST30	S2: 16min	1700 rpm	170 A	XB1490
4000W 24V DC motor + thermal protection & fan	4HD 24DC/T	MB14C2ST40	S2: 10min	2000 rpm	240 A	XB1490

Options

Description	PPC assembly code	Spare part code
Starting switch 200A 12 or 24V DC	S200 12DC S200 24DC	M47ZC0001 (12 V DC) M47ZC0002 (24 V DC)
Remote wired control with two/four buttons and 3m cable	P0201 P0202	P0201 (single acting) P0202 (double acting)

The mounting kit is already included when specifying the motor in EPB assembly code.
When ordering spare part motors, the mounting kit must be ordered separately.

Coupling

Description	PPC assembly code / Spare part code
Two pieces coupling for Ø 151 DC motors	E36100000 + E36100003

Note: the coupling is already included when specifying the motor in EPB assembly code.

Flange

Description	PPC assembly code / Spare part code
Flange for Ø 151 DC motors	E10105010

Note: the flange is already included when specifying the motor in EPB assembly code.

Other DC motors for heavy duty or special applications

They are available with Ø125, Ø151 or Ø191 in multiple executions, engineered to perform heavy duty cycles and tailor made to suit each specific application, with or without fan cooling or thermal protection.

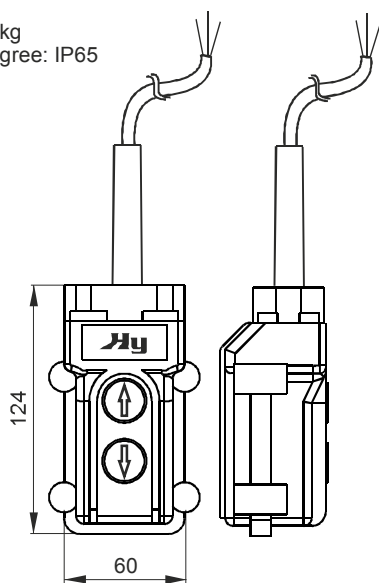
To properly choose these motors, following minimum information must be provided to our technical office: 1) motor power and voltage, 2) application type, 3) duty factors: S2 [min] continuous running time and S3 [%] percentage of running time on total cycle time, 4) required motor speed, 5) quantity to be supplied.

DC MOTORS OPTIONS



Remote control P0201
for one single or double acting cylinder

Weight: 0,58 kg
Protection degree: IP65



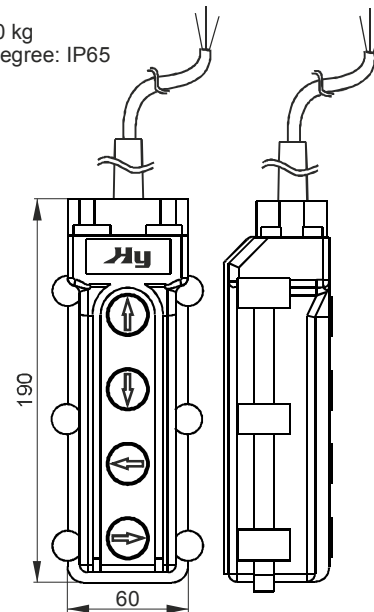
Spare part code

P0201



Remote control P0202
for two double acting cylinders

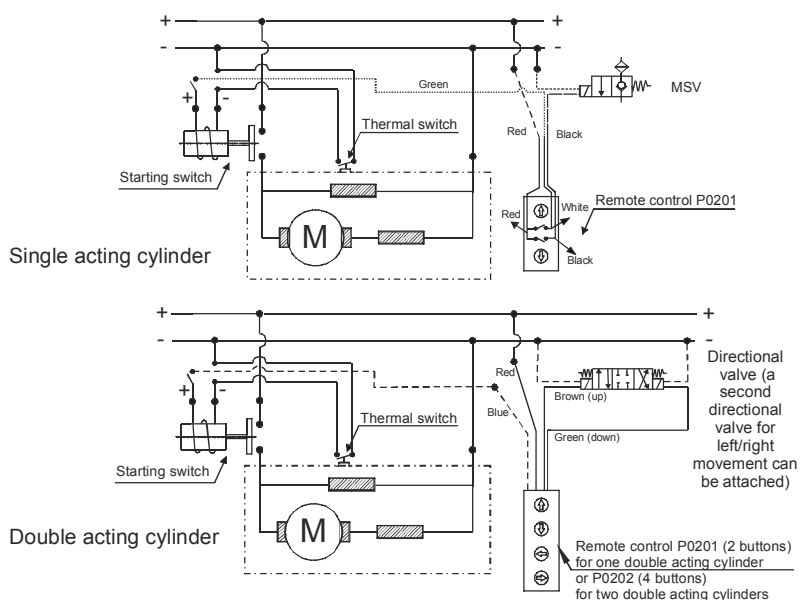
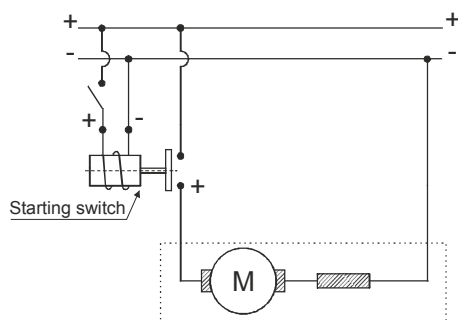
Weight: 0,60 kg
Protection degree: IP65



Spare part code

P0202

Electric connection schemes



DC MOTORS CHOICE AND ELECTRIC CONNECTION SCHEMES

DC motors choice

Once required pressure and flow and available voltage (12 or 24V DC) are known, you can select the motor checking on each provided diagram if a pump displacement is available at the intersection of pressure and flow values. On the relevant "I" curve you obtain the absorbed current. When the intersection point is not exactly on a pump curve, choose the closer smaller pump.

On the right hand diagram, from the current value, you can easily obtain the maximum allowed S2 (min) and S3 (%) values. S2 gives the allowable motor continuous running time in minutes, S3 gives the allowable running time in % of the total cycle.

If obtained S2 and S3 values are not enough for required duty cycle, choose a higher power or heavier duty motor and repeat the calculation on the new motor curves.

Example:

For our application we have following data:

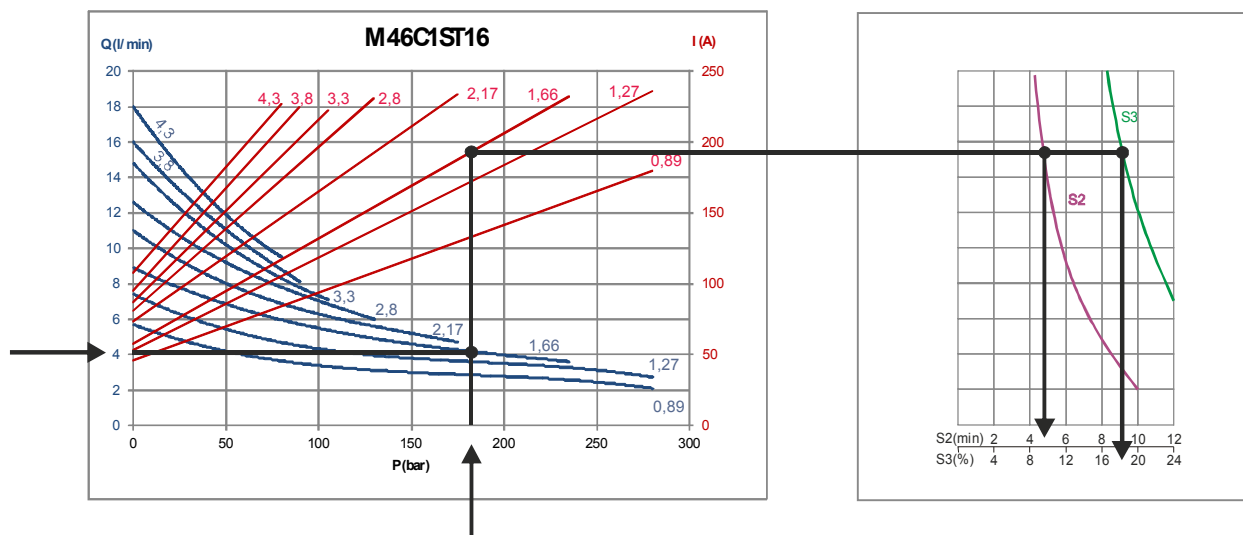
flow = 4 l/min, max pressure = 180 bar, not clearly defined duty cycle.

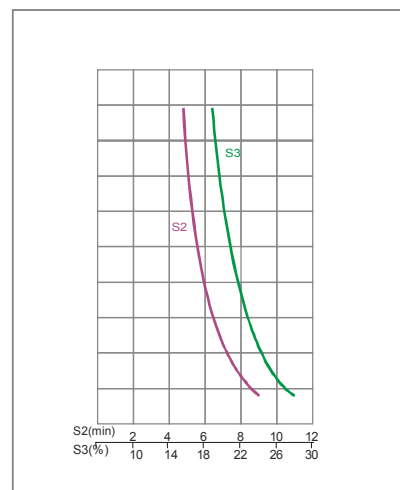
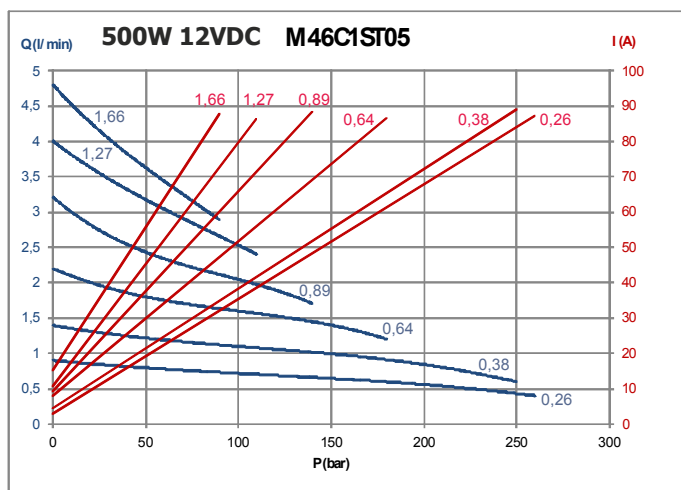
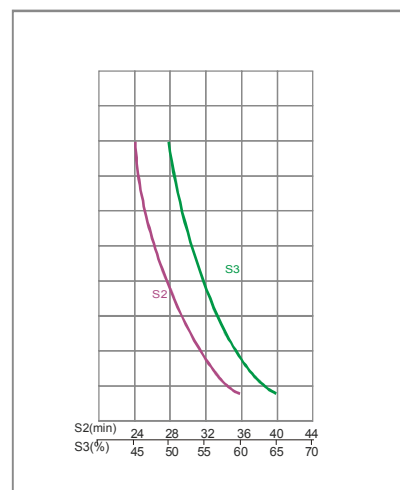
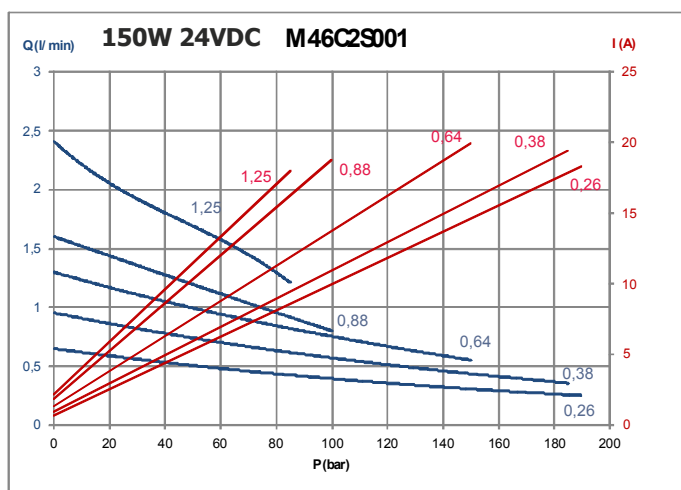
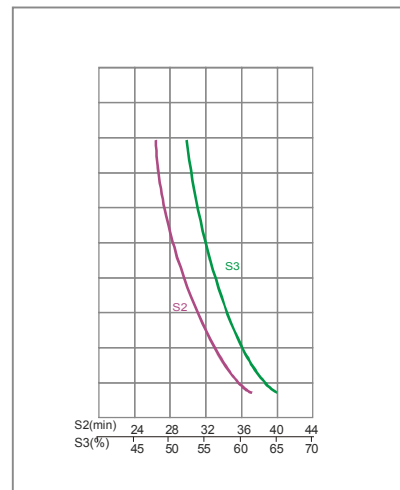
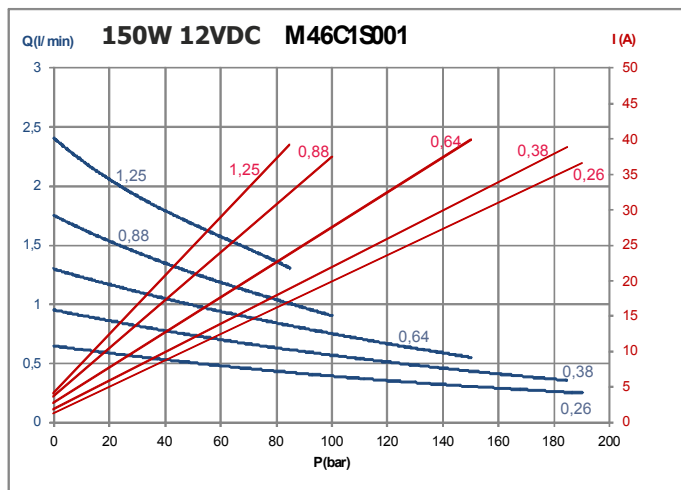
-We check on 1,6 Kw 12V DC motor diagram and see there is a pump available.

-We choose from curves 1,66 pump: a 1,66 cm³/rev pump. On the corresponding "I" curve we read 195 A absorbed current.

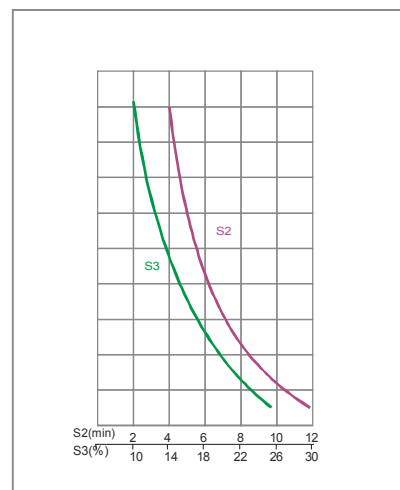
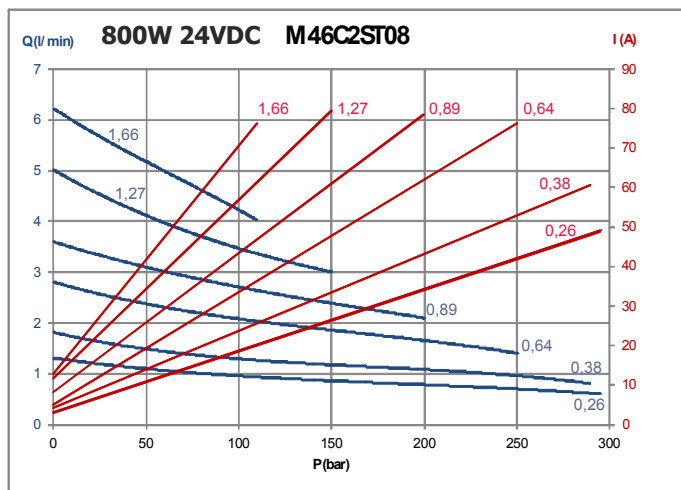
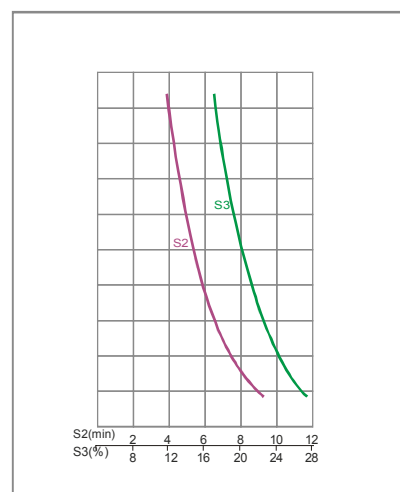
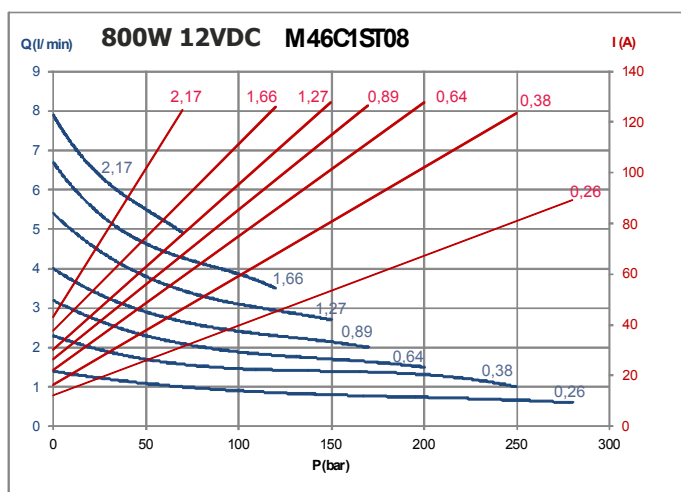
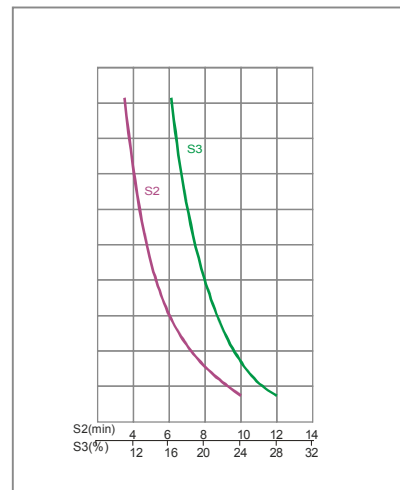
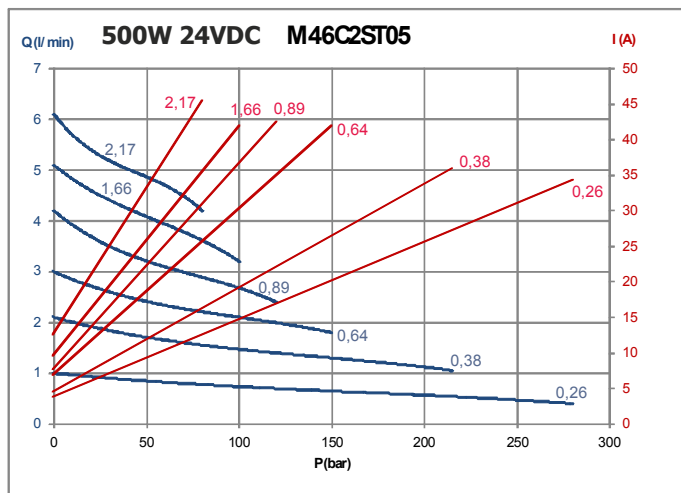
In these conditions on the S2 / S3 diagram we read that the DC motor can work for maximum 5 min (S2), that is 18% (S3) of the total cycle, i.e. after 5 min working, the motor should cool down for at least 23 min.

-The total cycle time is calculated adding the working time and the idle time (17% working time plus 83% idle time), in this case 28 min. If this duty cycle is not adequate for our application, we must choose a higher power or higher duty DC motor and check the relevant diagram again.

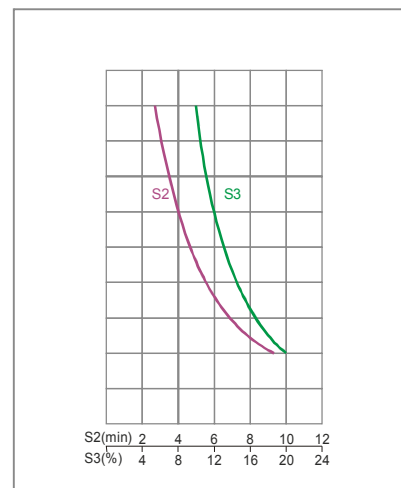
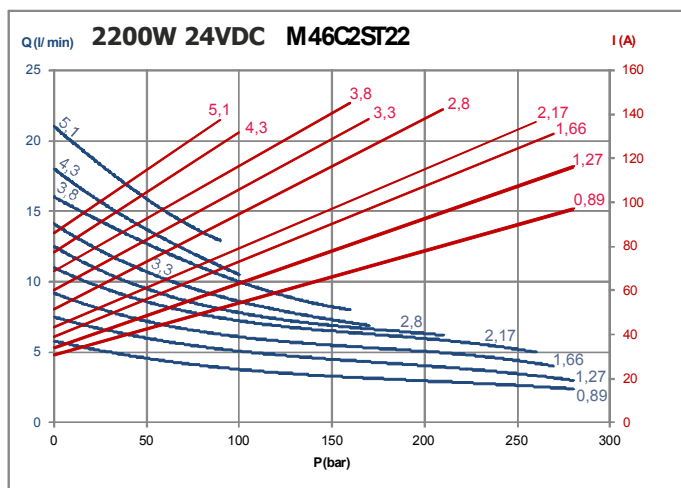
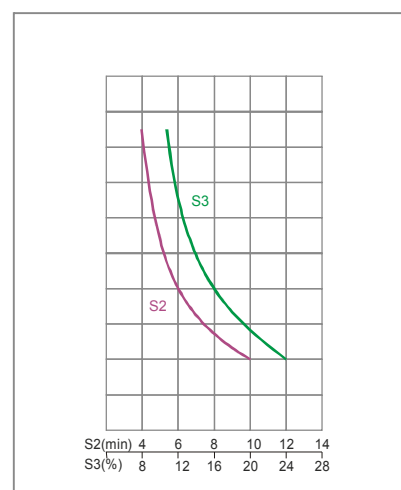
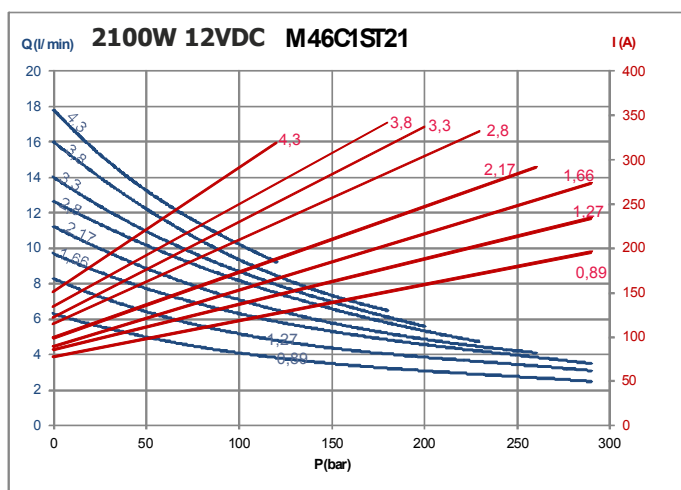
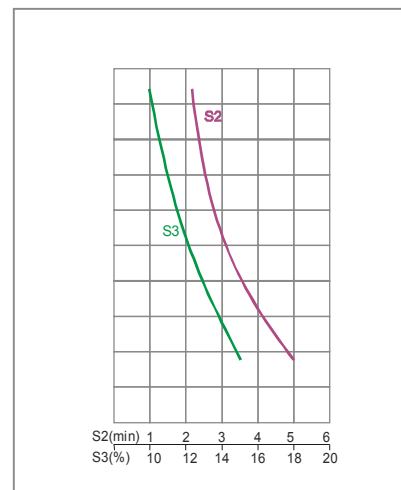
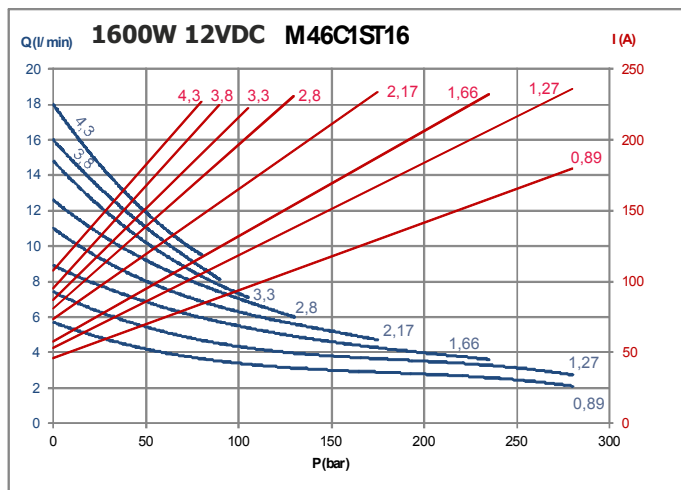


DC MOTORS Ø80 DIAGRAMS

Tests made with rectified current supplied at nominal motor voltage (measured at the motor connection terminals) and oil ISO VG46 at 36°C

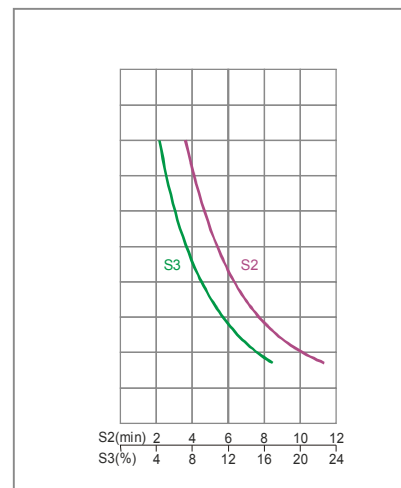
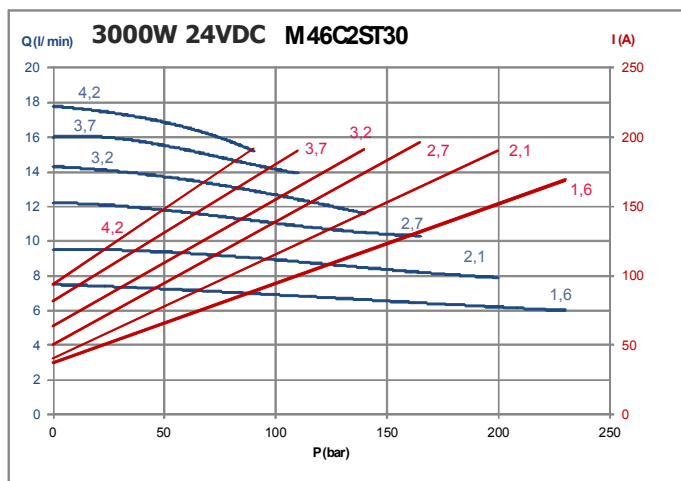
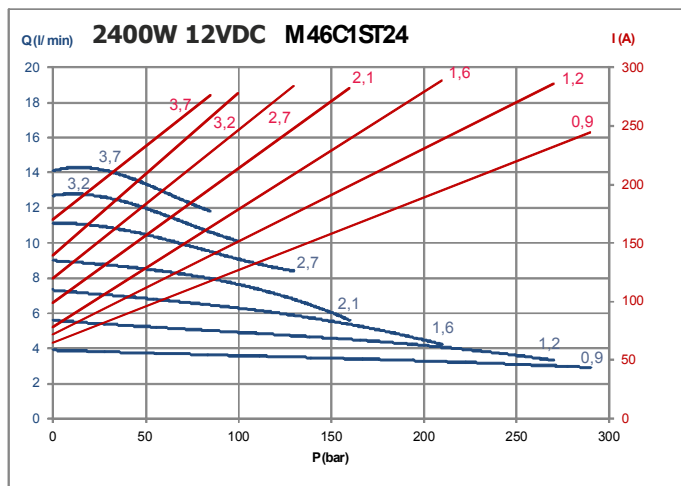
DC MOTORS Ø80 DIAGRAMS

Tests made with rectified current supplied at nominal motor voltage (measured at the motor connection terminals) and oil ISO VG46 at 35°C

DC MOTORS Ø114 DIAGRAMS

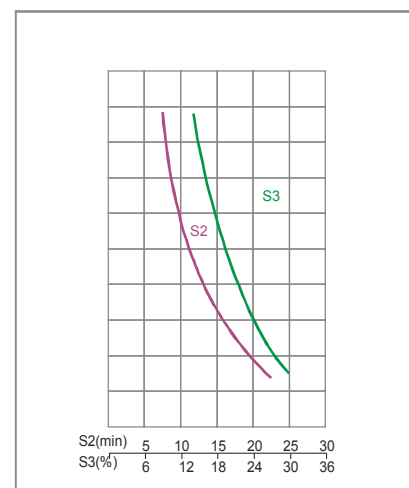
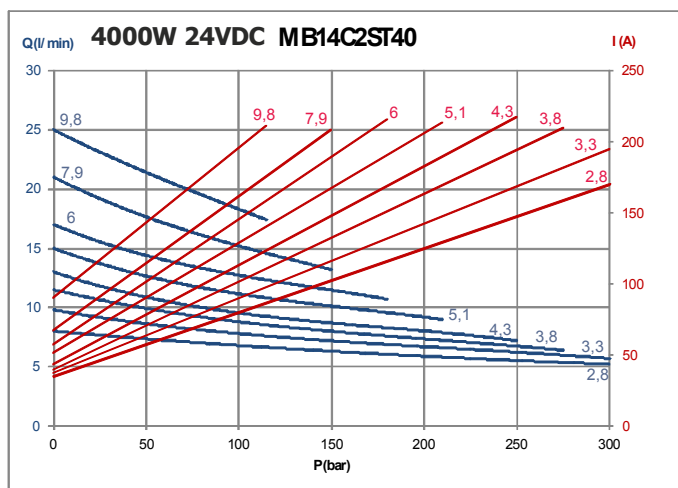
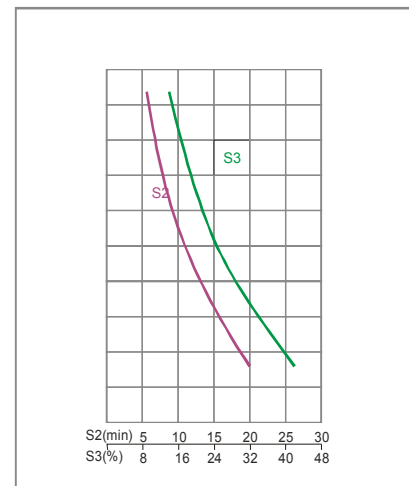
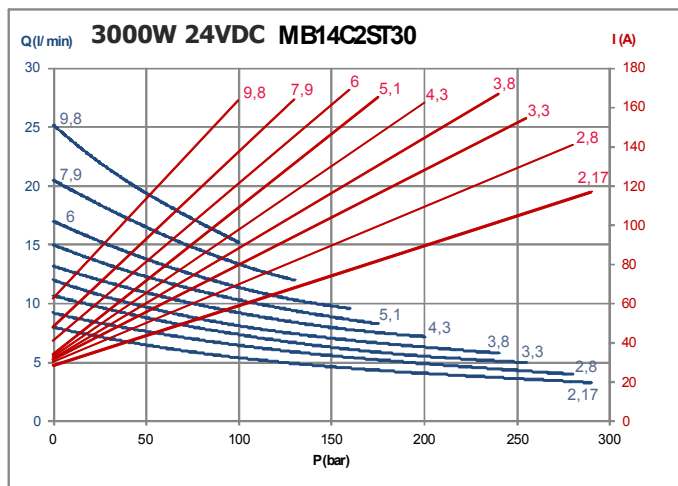
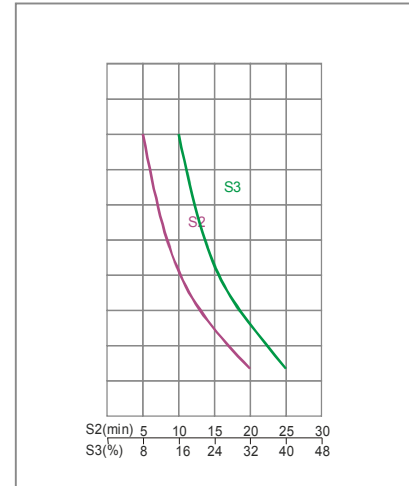
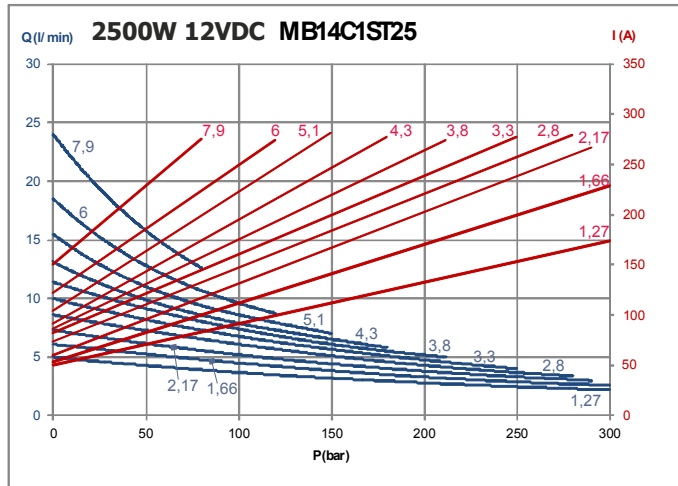
Tests made with rectified current supplied at nominal motor voltage (measured at the motor connection terminals) and oil ISO VG46 at 35°C

DC MOTORS Ø125 DIAGRAMS



Tests made with rectified current supplied at nominal motor voltage (measured at the motor connection terminals) and oil ISO VG46 at 35°C

DC MOTORS Ø151 DIAGRAMS



Tests made with rectified current supplied at nominal motor voltage (measured at the motor connection terminals) and oil ISO VG46 at 35°C

PUMPS

K series. The standard pressure balanced design for high volumetric efficiency also at high pressures. The front pressure line is output on the side of frame 114 and 125 flange. Suction port is on the back cover.



K series double pump, also available with HI-LO circuit integrated in the pump itself. Both pumps work at low pressure and only the front pump at high pressure, while the rear pump flow is bypassed at zero pressure for high efficiency and low amperage draw.



KL series with lateral ports. This is the conventional solution for frame 80 and frame 151 electropumps. Can be applied on frame 114 and 125 too. Optional integral relief valve.

Why are pressure balanced gear pumps better than fixed clearings gear pumps?

Pressure balanced gear pumps are built with lateral pressure plates which reduce the mechanical clearings on the gears with the increase of the pressure on the outlet, thus greatly improving the fluidodynamic efficiency, reducing heat generation and energy consumption. The mechanical efficiency is kept at optimal levels too.

How can we mount both group 0 and group 1 pumps on the same mounting flange?

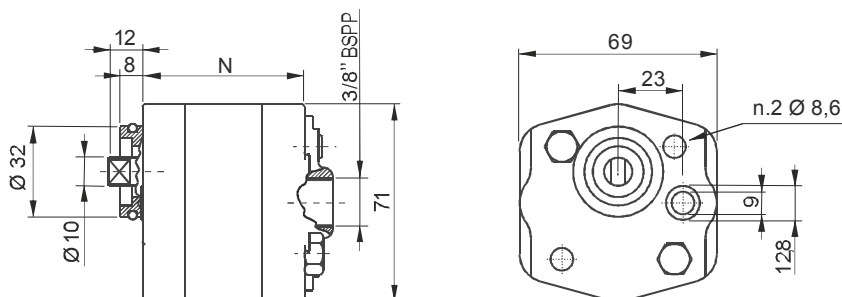
This can be done only with K type pumps and frame 114 or 125 flange. K group 1 pumps fit directly on the electropump flange and are fixed to it by two bolts, provided together with the pump.

K group 0 pumps are fitted by the adaptor plate E60513025, which adapts the pump front flange to the electropump flange.

Why are the pump technical specifications showing three maximum pressure levels?

Our pumps have three ratings for the maximum allowable pressure: 1-Peak: is the maximum one and can be allowed for a maximum cycle of 2 seconds. 2-Intermittent: it can be applied on the pump for a maximum cycle of 20 seconds; 3-Continuous: it can be applied on the pump continuously.

K TYPE GEAR PUMPS. GROUP 1



Main features

Oil temperature	-35 ÷ +80 °C
Inlet pressure	0,7 < P < 3,0 bar (absolute pressure)
Fixing bolts	2 x M8 8.8 class steel tightening torque: 25 Nm
Pressure definition	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON
Filtration setting	25 ÷ 50 μ

Standard rotation direction: clockwise rotation (from shaft side).
Counterclockwise rotation pumps can be mounted on request.
Ask our sales department.

Spare part code

E606040 **

Size:
see spare part code
on below table

EPB assembly code field

K

Pump type:
K = K type

1,2

Nominal displacement:
(cc/rev) see below table

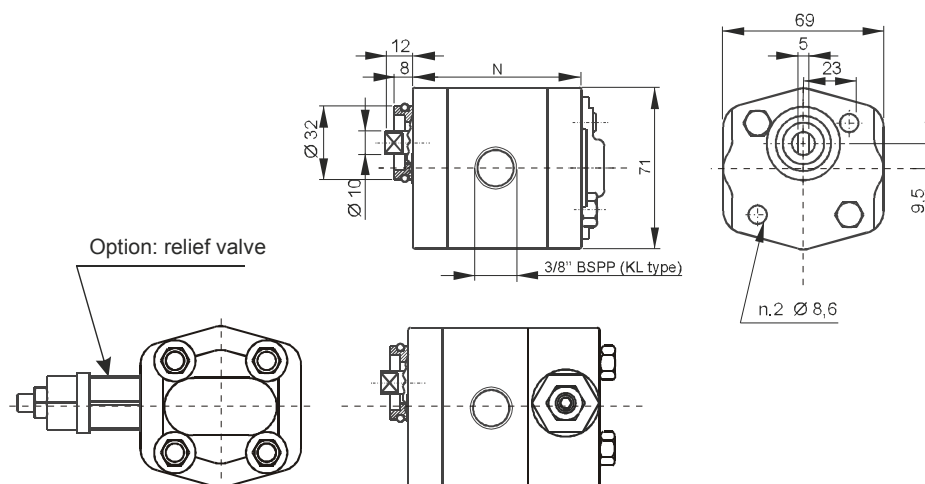
Available range

Nominal Displacement (cc/rev)	Peak pressure (bar)	Intermittent pressure (bar)	Continuous pressure (bar)	Max speed (rpm)	N (mm)	Bolts* (mm)	Spare part code	Weight
0,9	250	230	200	4500	60	M8x75	E60604001	0,73 Kg
1,2	250	230	200	4500	61	M8x75	E60604002	0,75 Kg
1,6	250	230	200	4500	63	M8x80	E60604035	0,77 Kg
2,1	250	230	200	4500	65	M8x80	E60604004	0,79 Kg
2,7	250	230	200	4500	66	M8x80	E60604005	0,82 Kg
3,2	250	230	200	4500	70	M8x85	E60604006	0,86 Kg
3,7	230	210	180	3600	72	M8x85	E60604007	0,88 Kg
4,2	230	210	180	3600	74	M8x90	E60604008	0,90 Kg
5,0	210	180	140	3000	76	M8x90	E60604009	0,94 Kg
6,0	210	180	140	3000	80	M8x100	E60604010	0,98 Kg
7,9	180	140	100	3000	90	M8x110	E60604012	1,10 Kg

Other pumps executions with different pressure/speed ratings are available on request.

* A proper washer is to be forecast to adapt bolt lenght

KL TYPE GEAR PUMPS. GROUP 1



Main features

Oil temperature	-35 ÷ +80 °C
Inlet pressure	0,7 < P < 3,0 bar (absolute pressure)
Fixing bolts	2 x M8 8.8 class steel tightening torque: 25 Nm
Pressure definition	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON
Filtration setting	25 ÷ 50 µ

Standard rotation direction: clockwise rotation (from shaft side).
Counterclockwise rotation pumps can be mounted on request.
Ask our sales department.

Spare part code

E606042 **

Size:
see spare part code
on below table

EPB assembly code field

KL

Pump type:
KL = KL type

1,2

Nominal displacement:
(cc/rev) see below table

V**

Optional relief valve:
where ** = (bar max)

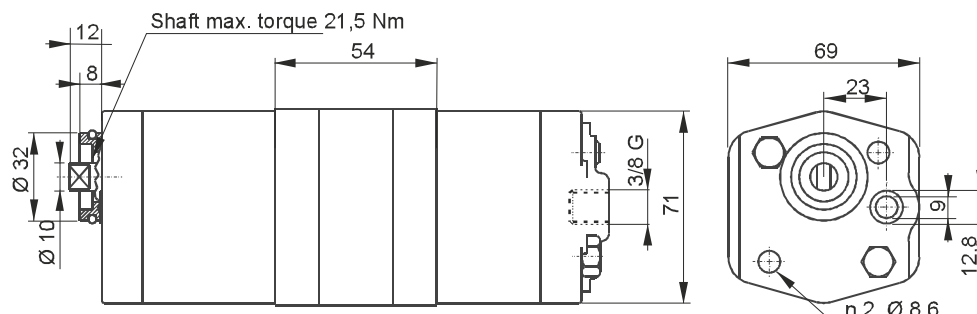
Available range

Nominal Displacement (cc/rev)	Peak pressure (bar)	Intermittent pressure (bar)	Continuous pressure (bar)	Max speed (rpm)	N (mm)	Bolts* (mm)	Spare part code	Weight
0,9	250	230	200	4500	60	M8x75	E60604201	0,73 Kg
1,2	250	230	200	4500	61	M8x75	E60604202	0,75 Kg
1,6	250	230	200	4500	63	M8x80	E60604235	0,77 Kg
2,1	250	230	200	4500	65	M8x80	E60604204	0,79 Kg
2,7	250	230	200	4500	66	M8x80	E60604205	0,82 Kg
3,2	250	230	200	4500	70	M8x85	E60604206	0,86 Kg
3,7	230	210	180	3600	72	M8x85	E60604207	0,88 Kg
4,2	230	210	180	3600	74	M8x90	E60604208	0,90 Kg
5,0	210	180	140	3000	76	M8x90	E60604209	0,94 Kg
6,0	210	180	140	3000	80	M8x100	E60604210	0,98 Kg
7,9	180	140	100	3000	90	M8x110	E60604212	1,10 Kg

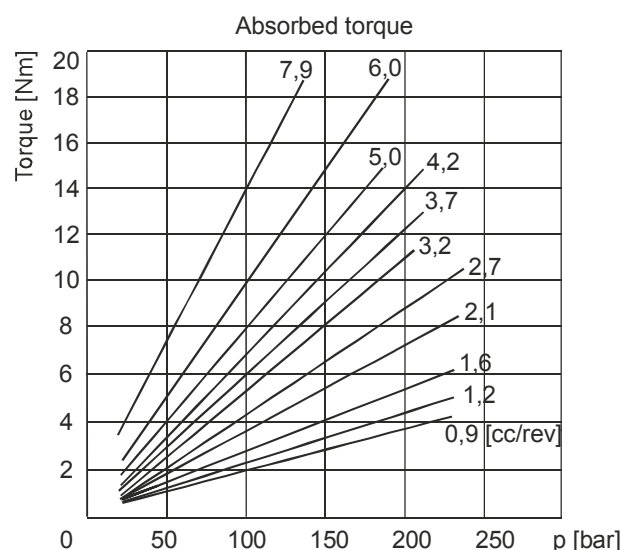
Other pumps executions with different pressure/speed ratings are available on request.

* A proper washer is to be forecast to adapt bolt length. With relief valve option, bolts length is to be increased of 15-20 mm.

DOUBLE GEAR PUMPS



Commune 3/8" BSPP inlet port (on the rear cover) alternatively individual inlet side ports are available



PPC assembly code field

G	Pump type: G = G type K = K type
1,1	Displacement 1st section: see B010-B020 tables
+	
2,1	Displacement 2nd section: see B010-B020 tables
HL	Option: Hi - Lo execution

Standard combinations available

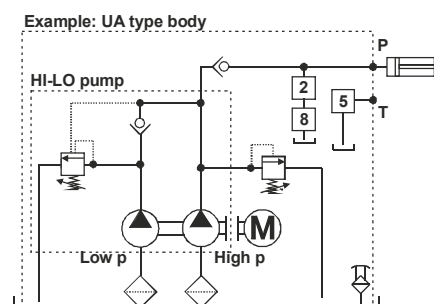
Type	Nominal Displacement (cc/rev)	Peak pressure (bar)	Intermittent pressure (bar)	Continuous pressure (bar)	Unloading pressure (bar)	Max speed (rpm)	Spare part code	Weight
K0,9+3,2HL	0,9 + 3,2	250	230	210	42±5	1750	E60600932HL	2,12 Kg
K2,1+6,0HL	2,1 + 6,0	250	230	210	42±5	1750	E60602160HL	2,29 Kg

PUMPS CHOICE DIMENSIONING:

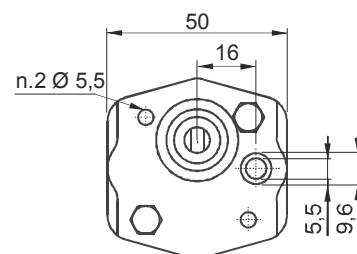
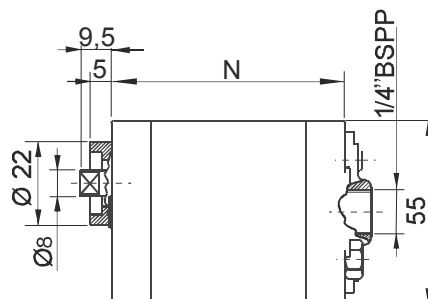
- Check that the power absorption of the front element is equal or higher than the rear one
- Element performance and features are the same as the elements of corresponding single pumps
- Double pump maximum rotation speed is determined by the lowest speed among maximum rotation speeds of each single element
- Torque applied on the shaft of the first element is the addition of the torques absorbed by the two pumps (see above diagram); this value must never go over the limit value allowed for the shaft (21,5 Nm).

HI-LO

It's an efficient and energy saving solution for applications where you need a fast approach and an high pressure working phase (industrial presses, garbage compactors,...). During the high speed phase both pumps are supplying flow to the system while during the high pressure phase, the high flow pump is bypassed with no load.



GROUP 0 GEAR PUMPS

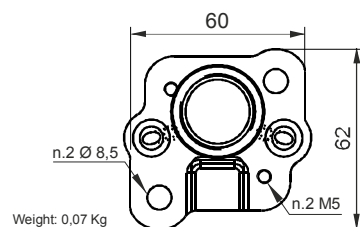


Main features

Oil temperature	-35 ÷ +80 °C
Inlet pressure	0,7 < P < 3,0 bar (absolute pressure)
Fixing bolts	2 x M5 8.8 class steel tightening torque: 5 Nm
Pressure definition	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON
Filtration setting	25 ÷ 50 µ

Standard rotation direction: clockwise rotation (from shaft side).
Counterclockwise rotation pumps can be mounted on request.
Ask our sales department.

Alluminium adapter flange for group 0
Code: E60513025



Spare part code

E6050 ** **

Nominal size:
see below table

Type:
30 = GM type
40 = KM type

EPB assembly code field

KM

Pump type:
GM = G type
KM = K type

0,6

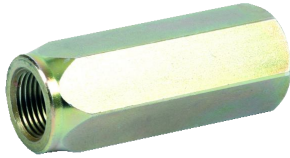
Nominal displacement:
cc/rev
(see below table)

Available range

Nominal displacement (cc/rev)	Peak pressure (bar)	Intermittent pressure (bar)	Continuous pressure (bar)	Max speed (rpm)	N (mm)	Bolts* (mm)	Spare parts code	Weight (kg)
0,1	230	210	190	7000	45,5	M5x55	E60503001	0,31
0,2	200	180	160	6000	45,5	M5x55	E60504002	0,33
0,4	200	180	160	6000	47,5	M5x55	E60504004	0,35
0,6	200	180	160	6000	51,5	M5x60	E60504006	0,40

* A proper washer is to be forecast to adapt bolt lenght

ACCESSORIES



The VMDC20 relief valves can be mounted in KL gear pumps rear cover as option



Pressure switches, pressure gauges, flow control and check valves can be mounted in-line on the electropumps pressure port with proper nipples and adapters

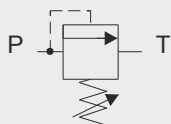
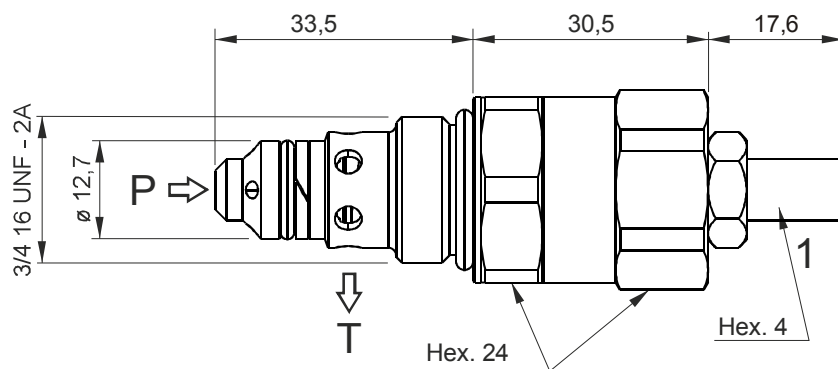
The foot mounting support is the same used in PPC range and is available with two different heights



Are these accessories shared with the mini and micro power packs ranges?

Yes. Hydronit consistent engineering is translated in a reduced number of modular parts and accessories to fit all ranges: Power Pack Compact series, Power Pack Micro series and Electropumps. Stockist distributors keep spare parts in stock and are able to assemble very quickly the required unit according to the actual market demand

VMDC20 - DIRECT ACTING RELIEF VALVE

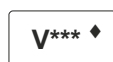


Main features

Max pressure	350 bar
Max flow	20 l/min
Weight	0,14 kg

Recommended tightening torque: 40 Nm
 Recommended filtration settings: 25 ÷ 50 µ
 Oil temperature: -30 ÷ + 80 °C

EPB assembly code field



where *** stands for max setting pressure [bar]. Ex. V250

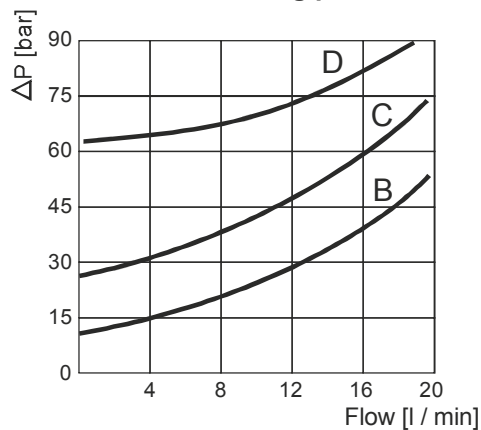
where ♦ stands for adjustment other than the standard one

This valve is to be fit in KL pump series rear cover

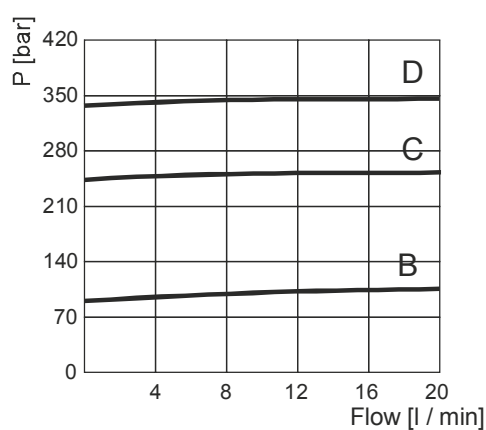
Spare part code

VMDC	Direct acting relief valve
20	Nominal size: 20 = 20 l/min
B	Working range: B = 20 ÷ 110 bar C = 30 ÷ 250 bar D = 70 ÷ 350 bar
1	Adjustment: 1 = screw (std) V = handwheel

Minimum setting pressure



Pressure vs flow

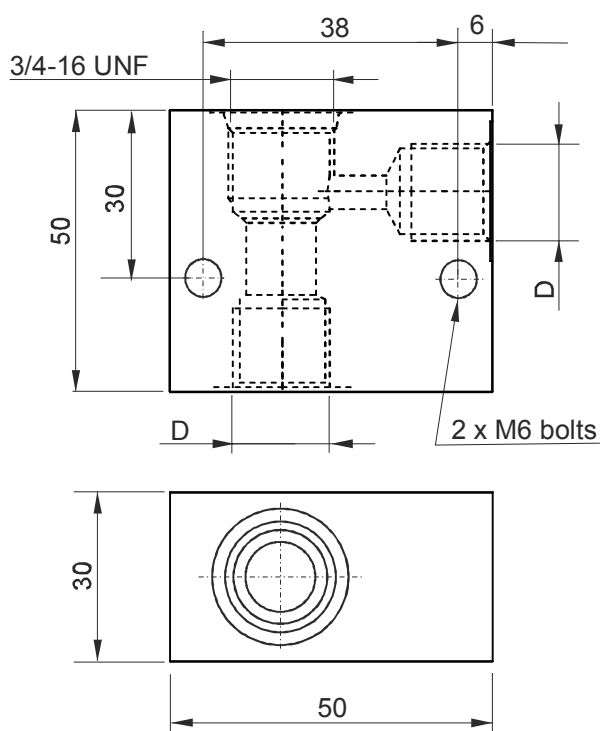


Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature

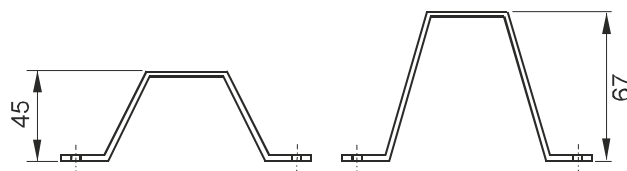
ACCESSORIES



In line mounting SAE 8 manifolds

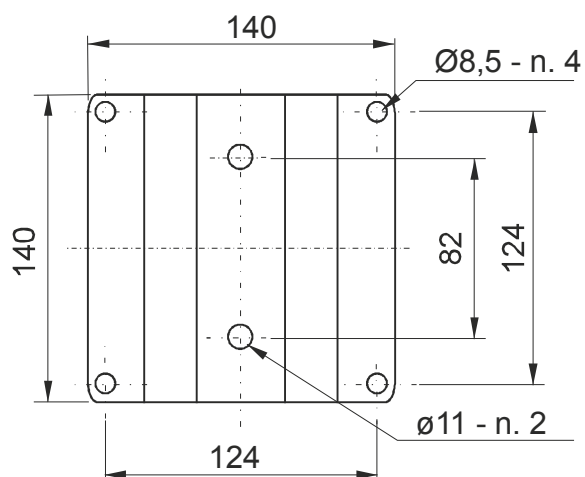


Foot mounting supports



E60543006
Weight: 0,4 Kg

E60543007
Weight: 0,6 Kg



E60543006: suitable for all tanks except E60303012

E60543007: recommended for E60303011, E60303012 tanks and with frame 90 AC integral motors.

Spare part code	D	Weight
BFCSAE0801	1/4" BSPP	0,16 Kg
BFCSAE0802	3/8" BSPP	0,16 Kg

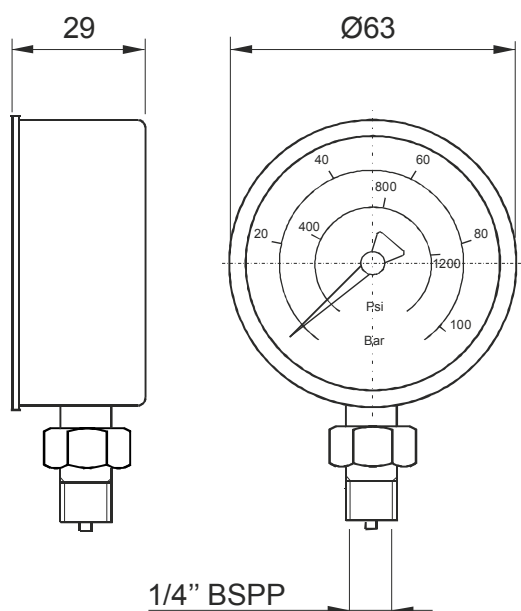
Spare part codes	
E60543006	E60543007

ACCESSORIES



Pressure gauge

Protection degree	IP 65
Thermal drift	$\pm 0,04\%/1K$ from 20°C
Weight	0,206 Kg
Static working pressure	75% end of scale
Peak working pressure	end of scale
Working temperature	-10 ÷ +60°C
Precision class	cl. 1.6 EN837-1

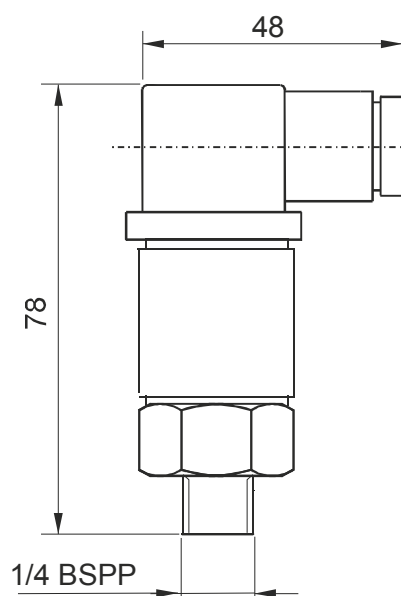


Spare part code

MIR63******:pressure max in bar
(60, 100, 160, 250, 315 bar)

Pressure switch

Protection degree	IP 65
Hysteresis	15 ÷ 25%
Weight	0,05 Kg
Max load	0,5A @ 250VAC
Working temperature	-25 ÷ +85°C
Switching accuracy	$\pm 4\%$ end of scale @ 20°C
Electric switch	NO / NC



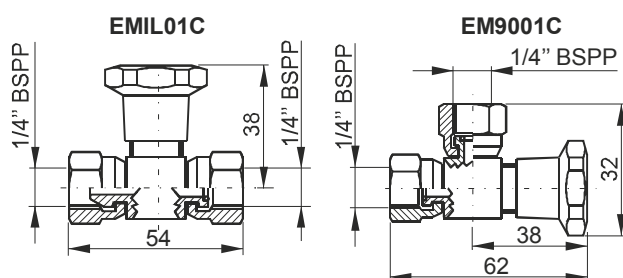
Spare part code

F401******:pressure max in bar
(050, 100, 200, 400 bar)

ACCESSORIES



Gauge isolator F-F

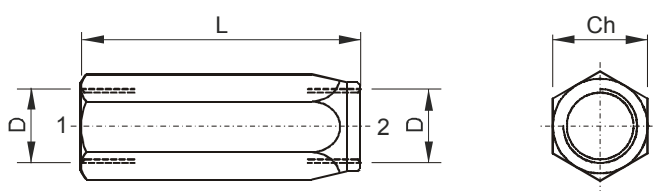


Weight: 0,14 Kg. Max working pressure: bar

Spare part code
EM9001C / EMIL01C



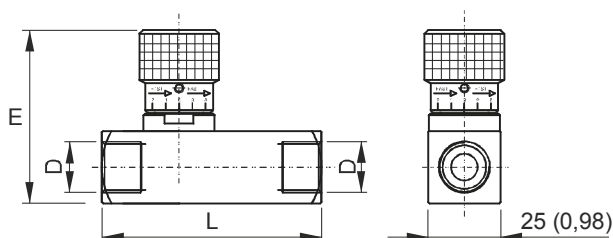
In-line check valve



Spare part code	D	Ch	L	Weight
VUR01	1/4" BSPP	19	55	0,10 kg
VURSAE06	9/16-18UNF	19 (0,75)	58 (2,28)	0,10 kg (0,22 lb)



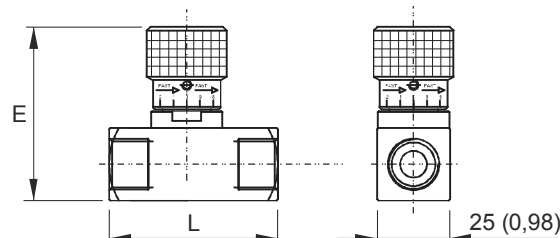
In-line unidirectional flow control valve



Spare part code	D	E	L	Weight
STU01	1/4" BSPP	68	66	0,34 kg
STUSAE06	9/16-18UNF	68 (2,68)	70,5 (2,78)	0,38 kg (0,84 lb)



In-line bidirectional flow control valve



Spare part code	D	E	L	Weight
STB01	1/4" BSPP	68	54	0,29 kg
STBSAE06	9/16-18UNF	68 (2,68)	54 (2,13)	0,30 kg (0,66 lb)

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