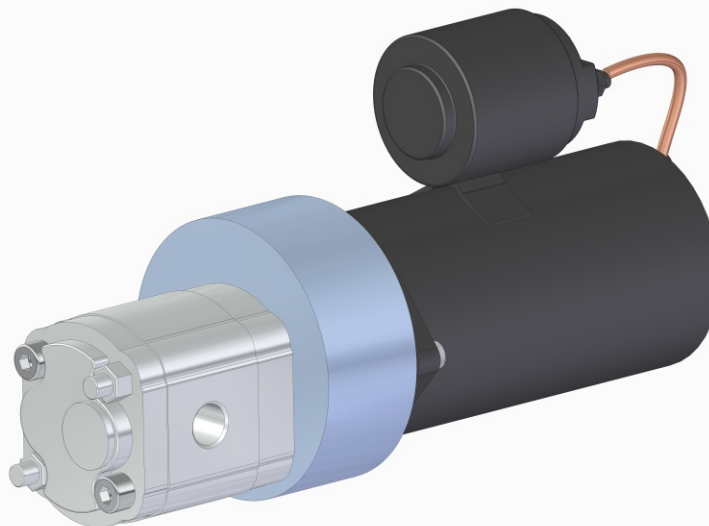


Hydronit



AC & DC Hydraulic ElectroPumps Bull Series

Electro pumps Bull 80 series



MODEL CODE

EPB80

-

0,5 24DC /S150

-

K1,1 V**

**Electro Pump
Bull 80 series**

Dc electric motor power (kW) and type

(see tables E010.20.01):

0,15 12DC (/T/S): 0,15kW 12VDC (/thermal switch/start switch)

0,15 24DC (/T/S): 0,15kW 24VDC (/thermal switch/start switch)

0,5 12DC (/T/S): 0,5kW 12VDC (/thermal switch/start switch)

0,5 24DC (/T/S): 0,5kW 24VDC (/thermal switch/start switch)

0,8 12DC (/T/S): 0,8kW 12VDC (/thermal switch/start switch)

0,8 12DC (/T/S): 0,8kW 24VDC (/thermal switch/start switch)

Optional Starting Switch:

(see tables E010.20.01):

/S150: 150 A starting switch (for Ø 80 motors)

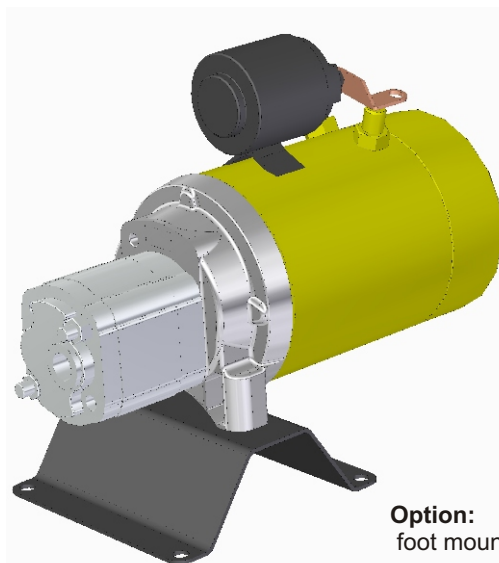
Gear pump displacement (cc/rev) (see tables E010.30.01):

K0,1	0,19
K0,2	0,26
K0,4	0,38
K0,6	0,63
K0,9	0,87
K1,2	1,2
K1,6	1,68
K2,1	2,19
K2,7	2,7
K3,2	3,26

Optional Relief Valve (see tables E010.30.02):

V40	10÷40 bar
V110	20÷110 bar
V250	30÷250 bar
V350	70÷350 bar

Electro pumps Bull 112 series



Option:
foot mounting

MODEL CODE

EPB114

-

2,2 24DC /S150

-

K1,1 V**

+

E60543006

Option:
foot mounting

Electro Pump
Bull 114 series

Dc electric motor power (kW) and type
(see tables E010.20.02):

1,6 12DC (/T/S): 1,6kW 12VDC (/thermal switch/start switch)
2,1 12DC (/T/S): 2,1kW 12VDC (/thermal switch/start switch)
2,2 24DC (/T/S): 2,2kW 24VDC (/thermal switch/start switch)

Optional Starting Switch:
(see tables E010.20.02):

/S150: 150 A starting switch (for Ø 114 motors)

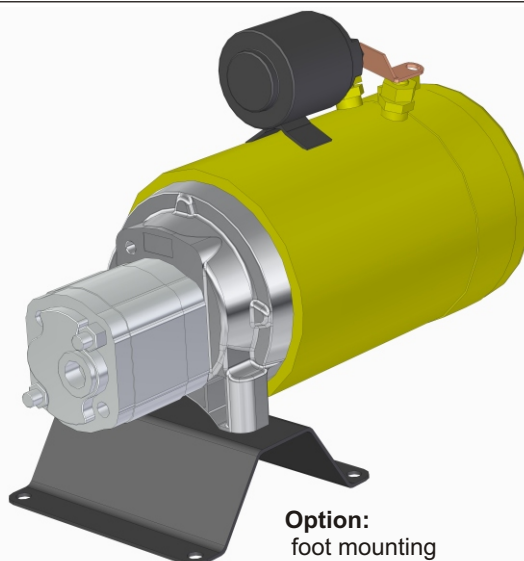
Gear pump displacement (cc/rev)
(see tables E010.30.01):

K0,9	0,87
K1,2	1,2
K1,6	1,68
K2,1	2,19
K2,7	2,7
K3,2	3,26
K3,7	3,8
K4,2	4,3
K5,0	4,9
K6,0	6,02
K7,9	6,02

Optional Relief Valve
(see tables E010.30.02):

V40	10÷40 bar
V110	20÷110 bar
V250	30÷250 bar
V350	70÷350 bar

Electro pumps Bull 125 series



Option:
foot mounting

MODEL CODE

EPB125

-

2,4 12DC /S200

-

K3,7 V**

+

E60543006

Option:
foot mounting

Electro Pump
Bull 125 series

Dc electric motor power (kW) and type

(see tables E010.20.03):

2,4 12DC (/T/S): 2,4kW 12VDC (/thermal switch/start switch)

3,0 24DC (/T/S): 3,0kW 24VDC (/thermal switch/start switch)

Optional Starting Switch:

(see tables E010.20.03):

/S200: 200 A starting switch (for Ø 125 motors)

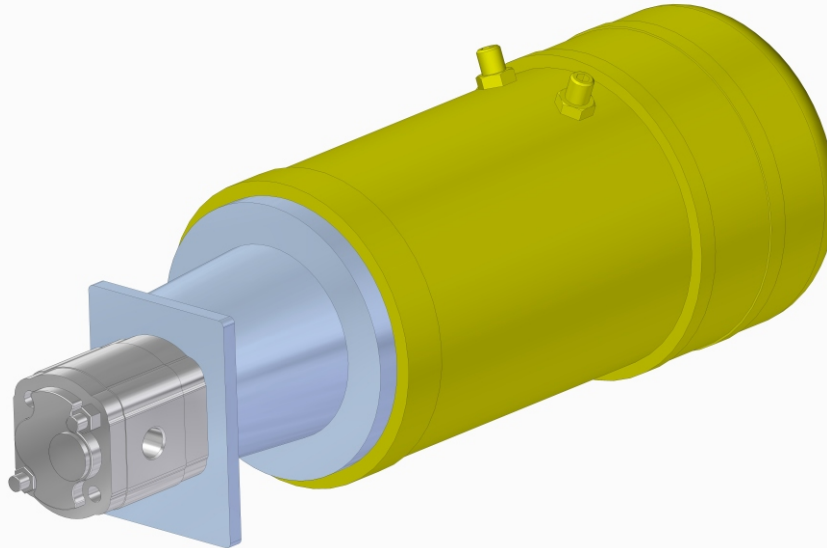
Gear pump displacement (cc/rev) (see tables E010.30.01):

K0,9	0,87
K1,2	1,2
K1,6	1,68
K2,1	2,19
K2,7	2,7
K3,2	3,26
K3,7	3,8
K4,2	4,3
K5,0	4,9
K6,0	6,02
K7,9	6,02

Optional Relief Valve (see tables E010.30.02):

V40	10÷40 bar
V110	20÷110 bar
V250	30÷250 bar
V350	70÷350 bar

Electro pumps Bull 151 series



MODEL CODE

EPB151

-

4,0HD 24DC /S200

-

K6,0 V**

+

E60543006

Option:
foot mounting

Electro Pump
Bull 151 series

Dc electric motor power (kW) and type
(see tables E010.20.04):

2,5HD 12DC (/T/S): 2,5kW 12VDC (/thermal switch/start switch)
3,0HD 24DC (/T/S): 3,0kW 24VDC (/thermal switch/start switch)
4,0HD 24DC (/T/S): 3,0kW 24VDC (/thermal switch/start switch)

Optional Starting Switch:
(see tables E010.20.03):

/S200: 200 A starting switch (for Ø 151 motors)

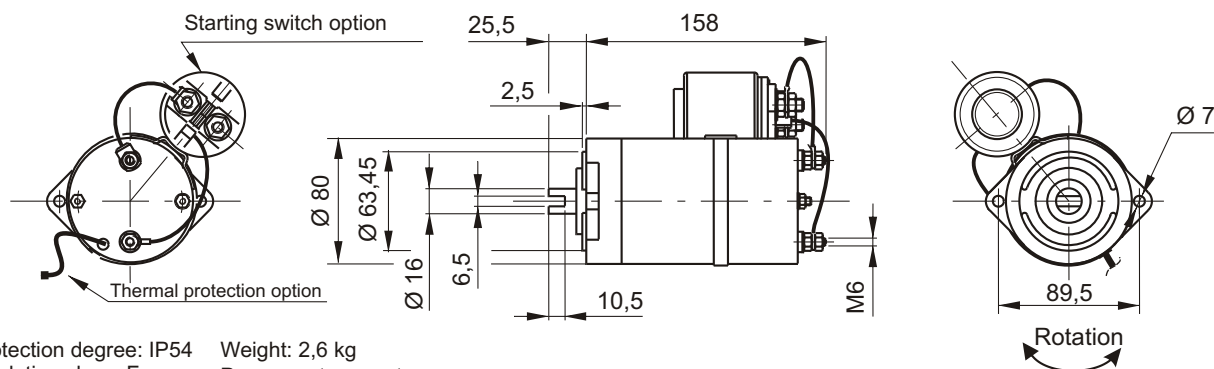
Gear pump displacement (cc/rev)
(see tables E010.30.01):

K0,9	0,87
K1,2	1,2
K1,6	1,68
K2,1	2,19
K2,7	2,7
K3,2	3,26
K3,7	3,8
K4,2	4,3
K5,0	4,9
K6,0	6,02
K7,9	6,02

Optional Relief Valve
(see tables E010.30.02):

V40	10÷40 bar
V110	20÷110 bar
V250	30÷250 bar
V350	70÷350 bar

EPB80 DC motors



Protection degree: IP54 Weight: 2,6 kg
Insulation class: F Permanent magnets

Code

Description	PPC assembly code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current
500W 12V DC motor	0,5 12DC	M46C1S005	S2: 6min S3: 10% ED	2800 rpm	90 A
500W 24V DC motor	0,5 24DC	M46C2S005	S2: 6min S3: 10% ED	2800 rpm	50 A
800W 12V DC motor	0,8 12DC	M46C1S008	S2: 3min S3: 10% ED	4000 rpm	130 A
800W 24V DC motor	0,8 24DC	M46C2S008	S2: 4min S3: 10% ED	4000 rpm	80 A
150W 12V DC motor with thermal protection	0,15 12DC/T	M46C1ST01	S2: 10min S3: 15% ED	1400 rpm	30 A
150W 24V DC motor with thermal protection	0,15 24DC/T	M46C2ST01	S2: 10min S3: 15% ED	1400 rpm	15 A
500W 12V DC motor with thermal protection	0,5 12DC/T	M46C1ST05	S2: 6min S3: 10% ED	2800 rpm	90 A
500W 24V DC motor with thermal protection	0,5 24DC/T	M46C2ST05	S2: 6min S3: 10% ED	2800 rpm	50 A
800W 12V DC motor with thermal protection	0,8 12DC/T	M46C1ST08	S2: 3min S3: 10% ED	4000 rpm	130 A
800W 24V DC motor with thermal protection	0,8 24DC/T	M46C2ST08	S2: 4min S3: 10% ED	4000 rpm	80 A

Options

Description	PPC assembly code	Spare part code
12 or 24V DC 150 Amp start switch + mounting kit	S150 12DC 80 S150 24DC 80	M47SC0001 + M47SK0801 (12V DC) M47SC0002 + M47SK0801 (24V DC)
Remote wired control with two buttons and 3m cable (see U040.40.03)	P0201 P0202	P0201 (single acting) P0202 (double acting)

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

Coupling

Description	PPC assembly code / Spare part code
Coupling for Ø 80 DC motors and gr.1 pump	E36200007

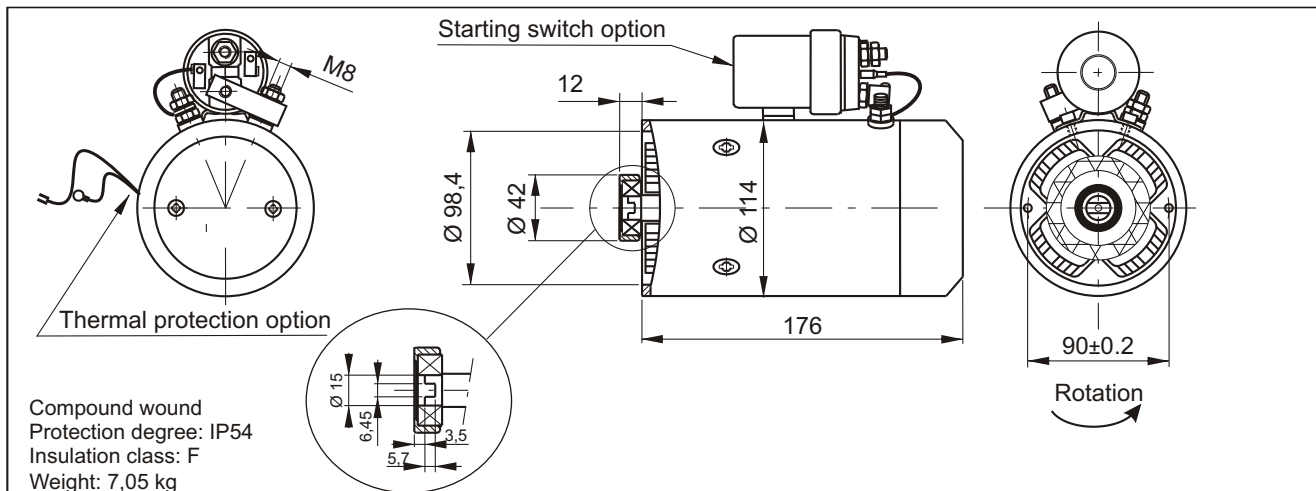
Note: the coupling is already included when specifying the motor in EPB assembly code.

Flange

Description	PPC assembly code / Spare part code
Flange for Ø 80 DC motors and gr.1 pump	E10101010

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

EPB114 DC motors



Code

Description	PPC assembly code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current
1600W 12V DC motor	1,6 12DC	M46C1S016	S2: 2min S3: 7,5% ED	2600 rpm	230 A
2200W 24V DC motor	2,2 24DC	M46C2S022	S2: 1,2min S3: 4,5% ED	2600 rpm	140 A
1600W 12V DC motor with thermal protection	1,6 12DC/T	M46C1ST16	S2: 2min S3: 7,5% ED	2600 rpm	230 A
2100W 12V DC motor with thermal protection	2,1 12DC/T	M46C1ST21	S2: 1,2min S3: 7,5% ED	2300 rpm	330 A
2200W 24V DC motor with thermal protection	2,2 24DC/T	M46C2ST22	S2: 1,2min S3: 4,5% ED	2600 rpm	140 A

Options

Description	PPC assembly code	Spare part code
Starting switch 150A 12 or 24V DC + mounting kit	S150 12DC 112 S150 24DC 112	M47SC0001 + M47SK1121 (12V DC) M47SC0002 + M47SK1121 (24V DC)
DC motors plastic cover	F16000001	F16000001

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

Coupling

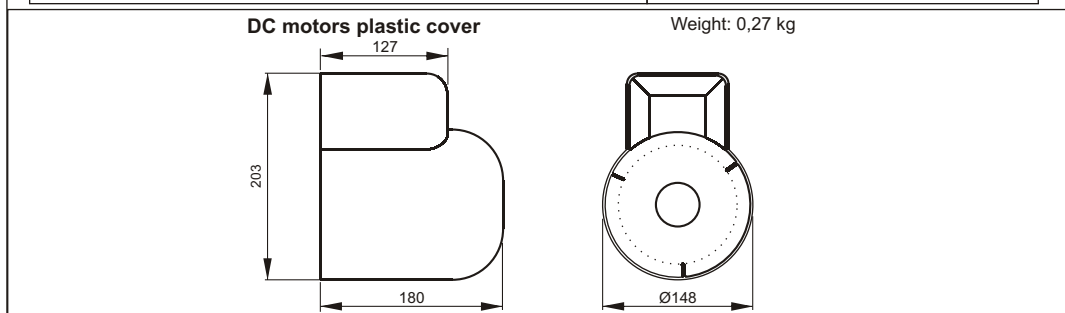
Description	PPC assembly code / Spare part code
Coupling for Ø114 - Ø125 DC motors and gr.1 pump	E36200003

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

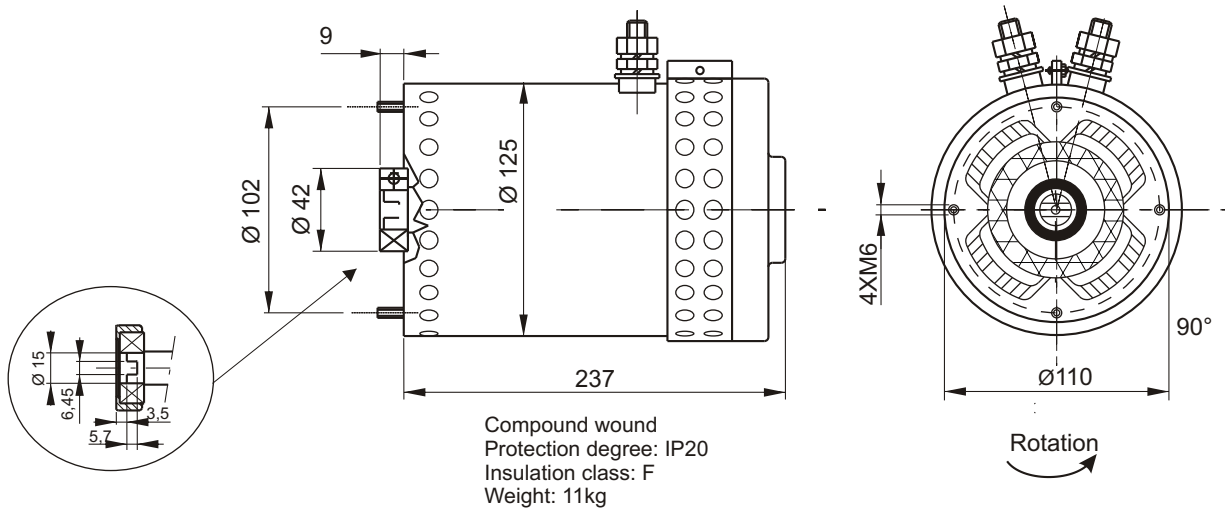
Flange

Description	PPC assembly code / Spare part code
Flange for Ø114 - Ø125 DC motors and gr.1 pump	E10103010

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



EPB125 DC motors



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

Description	PPC assembly code	Spare part code
Starting switch 200A 12 or 24V DC	S200 12DC S200 24DC	M47ZC0001 (12V DC) M47ZC0002 (24V DC)

Coupling

Description	PPC assembly code / Spare part code
Coupling for Ø 112 and Ø125 DC motors	E36200003

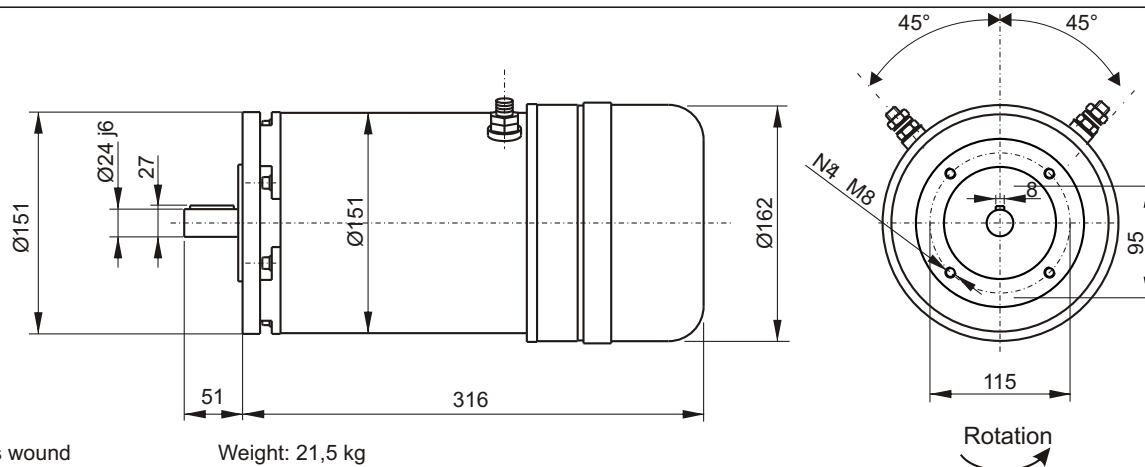
Note: the coupling is already included when specifying the motor in EPB assembly code.

Flange

Description	PPC assembly code / Spare part code
Flange for Ø 112 and Ø125 DC motors	E10103010

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

EPB151 DC motors with fan cooling



Series wound
Protection degree: IP20
Insulation class: F

Weight: 21,5 kg
Front attachment: B14-90

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)

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 B14 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. They are mounted on the central manifold with B14 standard mounting kits (see tables U040.40.11 and following).

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 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 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 bigger motor and repeat the calculation on the new motor curves.

Example:

For our application we have following data:

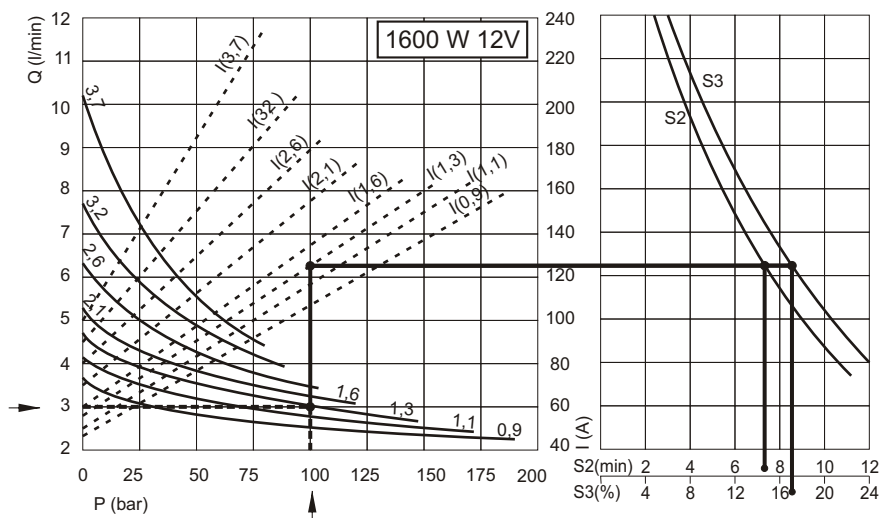
flow = 3 l/min, max pressure = 100 bar, not clearly defined duty cycle.

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

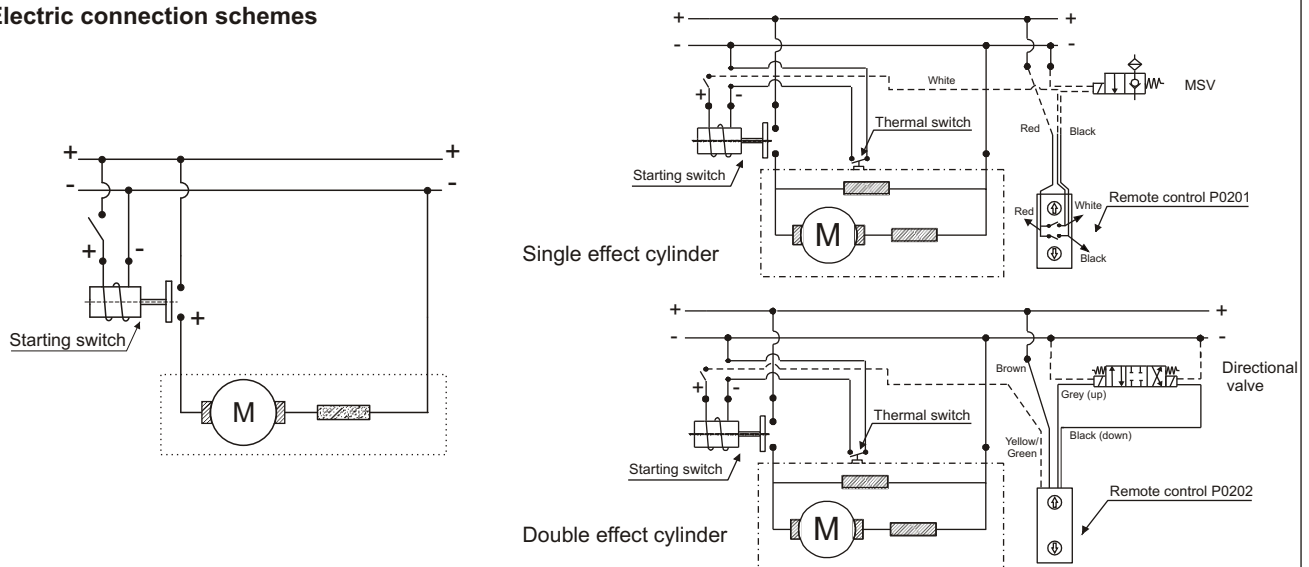
-We choose from curves 1,3 pump: a 1,3 cm³/rev pump. On the corresponding "I" curve we read 125 A absorbed current.

In these conditions on the S2 / S3 diagram we read that the DC motor can work for maximum 7 min (S2), that is 17% (S3) of the total cycle, i.e. after 7 min working, the motor should cool down for at least 34 min.

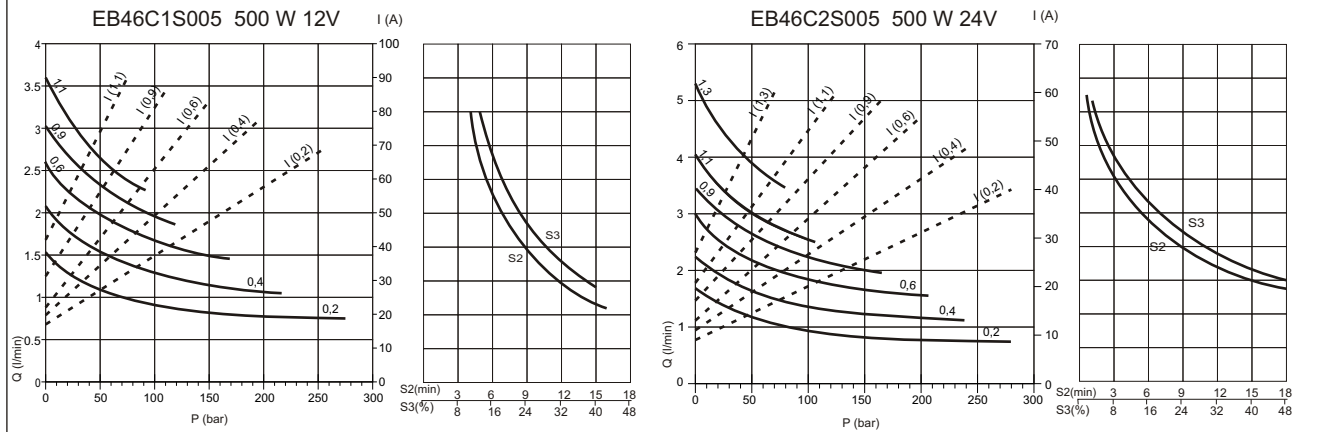
-The total cycle time is calculated adding the working time and the idle time (17% working time plus 83% idle time), in this case 41 min. If this duty cycle is not adequate for our application, we must choose a higher power DC motor and check the relevant diagram again.



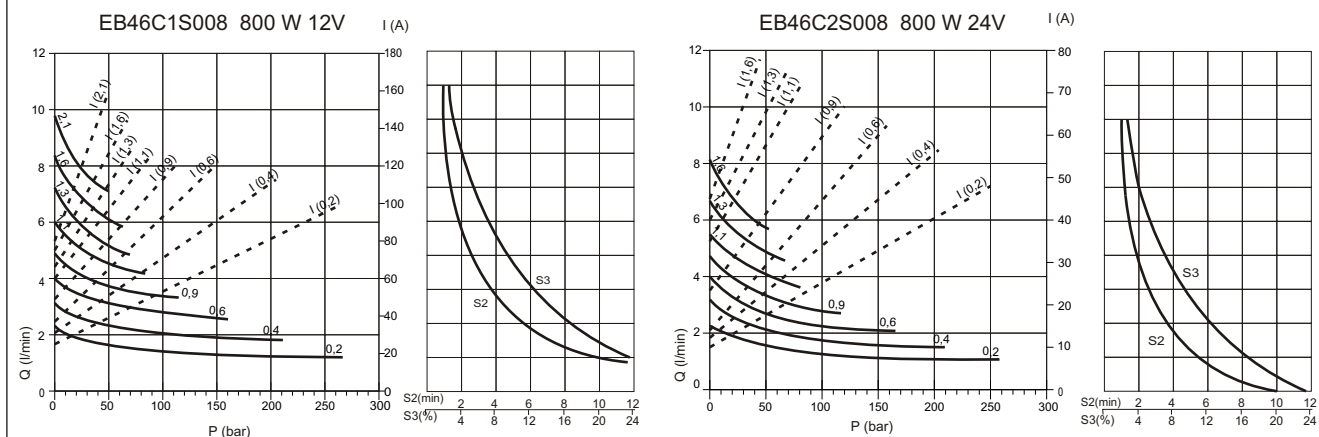
Electric connection schemes



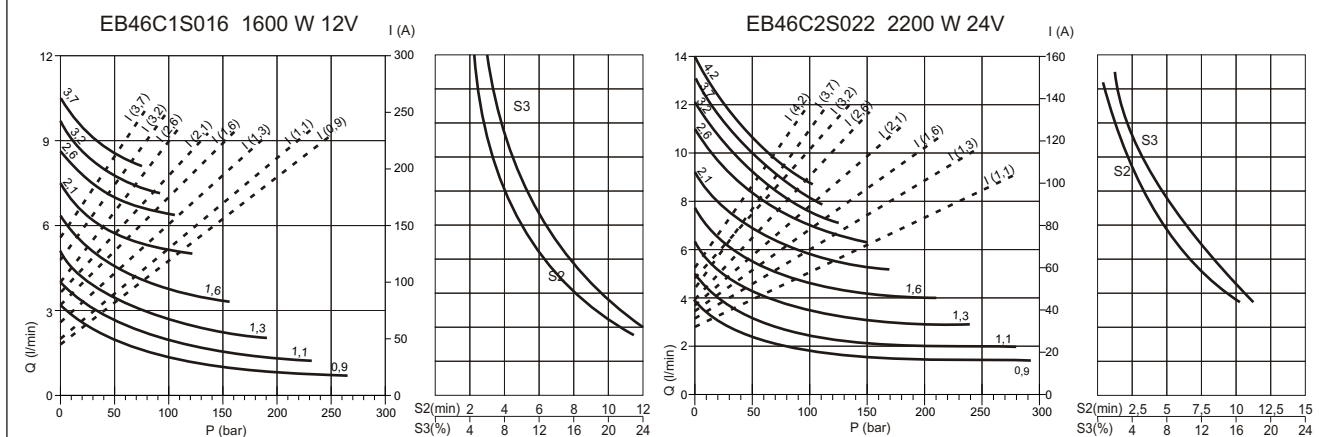
DC motors diagrams



Test made with battery 135Ah 50% charged at 15°C and mineral oil ISO VG46 at 40°C

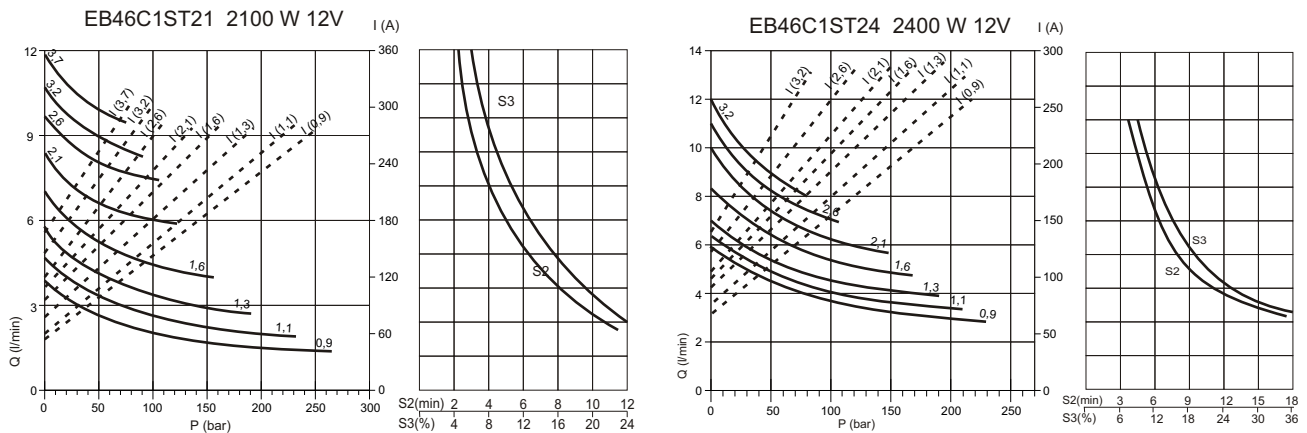


Test made with battery 135Ah 50% charged at 15°C and mineral oil ISO VG46 at 40°C

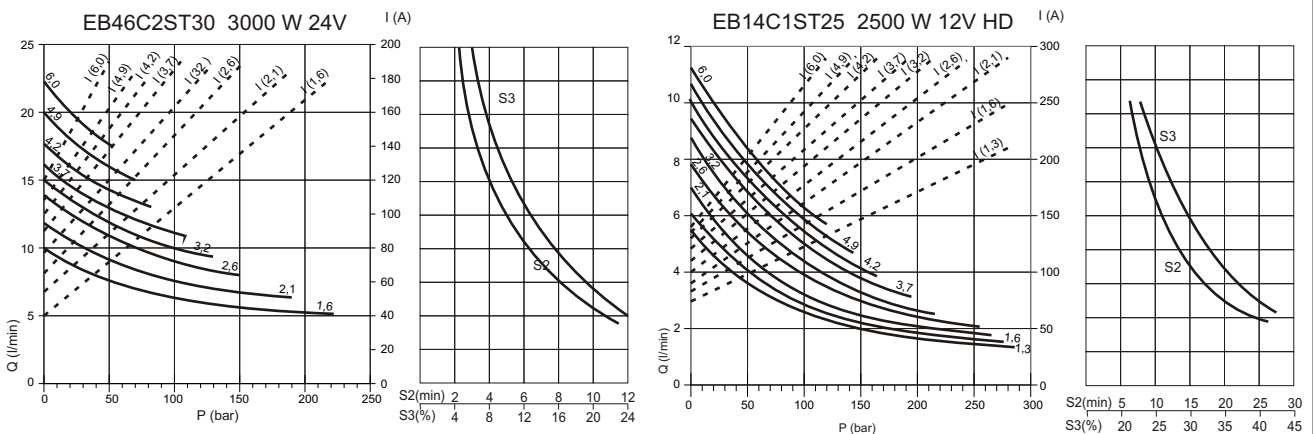


Test made with battery 135Ah 50% charged at 15°C and mineral oil ISO VG46 at 40°C

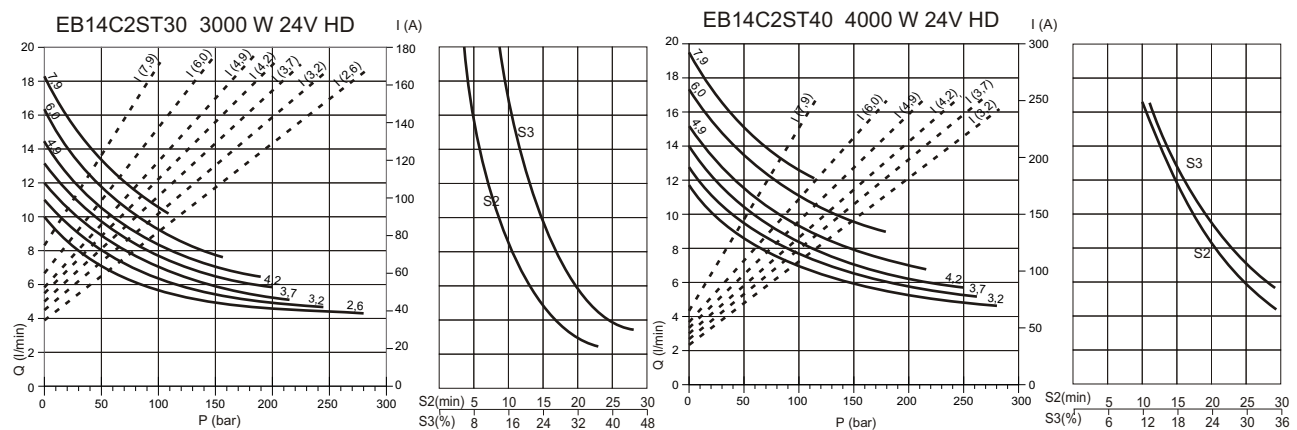
DC motors diagrams



Test made with battery 135Ah 50% charged at 15°C and mineral oil ISO VG46 at 40°C

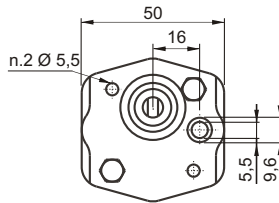
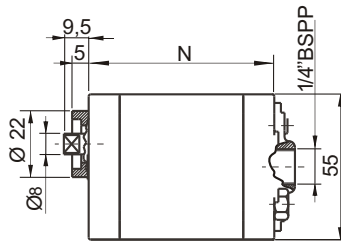


Test made with battery 135Ah 50% charged at 15°C and mineral oil ISO VG46 at 40°C



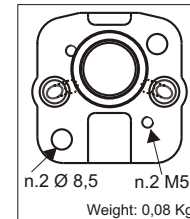
Test made with battery 135Ah 50% charged at 15°C and mineral oil ISO VG46 at 40°C

Gr.0 gear pumps



Alluminium adapter flange for group 0

Code: E60513025



Spare part code

E6050 ** **

Size:
see spare part code
on below table

Ports:
40 = front/rear ports
42 = lateral ports

PPC assembly code field

K

Pump type:
K = K type with front/rear ports
KL = KL type with lateral ports

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 part code	Weight
0,26	200	180	160	6000	45,5	M5x55	E60504202	0,33 Kg
0,4	200	180	160	6000	47,5	M5x55	E60504204	0,35 Kg
0,6	200	180	160	6000	51,5	M5x60	E60504206	0,40 Kg
0,9	200	180	160	5000	52,5	M5x65	E60604201	0,44 Kg
1,2	200	180	160	3900	55,5	M5x65	E60604202	0,49 Kg
1,5	200	180	160	3900	57,8	M5x70	E60604235	0,51 Kg

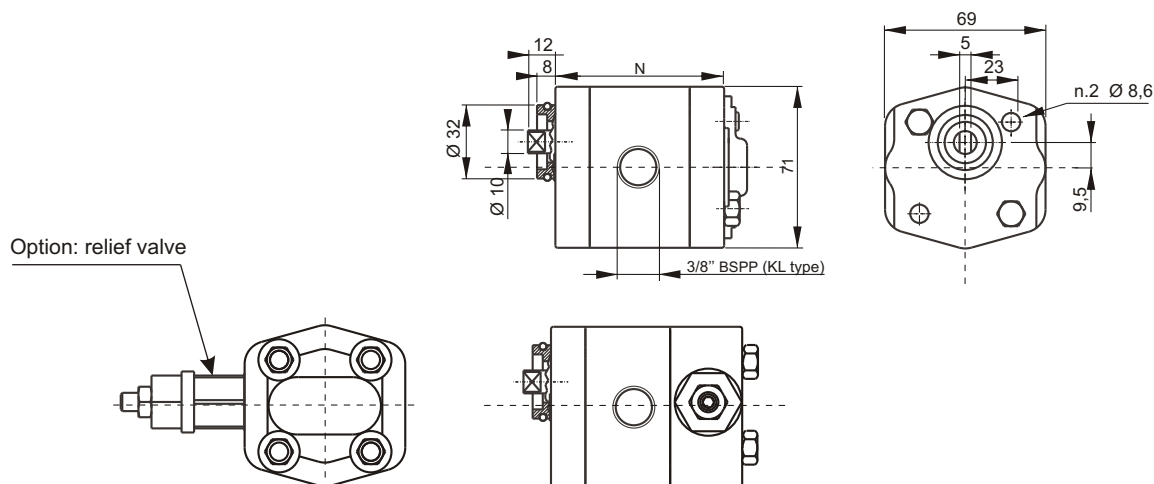
Other pumps executions with different pressure/speed ratings are available on request.

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

Main features

Oil temperature	-15 ÷ +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

Gr.1 gear pumps



Spare part code

E6060 ** **

Size:
see spare part code
on below table

Ports:
40 = front/rear ports
42 = lateral ports

PPC assembly code field

K

Pump type:

K = K type
KL = KL type with lateral ports

1,2

Nominal displacement:
(cc/rev) see below table

V**

Optional relief valve:
(bar) see table E010.30.03

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
0,8	250	220	200	5000	61	M8x75	E6060**01	0,77 Kg
1,2	250	220	200	5000	62	M8x75	E6060**02	0,77 Kg
1,6	250	220	200	5000	64	M8x75	E6060**35	0,80 Kg
2,1	250	220	200	5000	66	M8x80	E6060**04	0,82 Kg
2,6	250	220	200	5000	68	M8x80	E6060**05	0,85 Kg
3,2	250	220	200	4500	70	M8x85	E6060**06	0,87 Kg
3,7	230	200	180	4000	72	M8x85	E6060**07	0,90 Kg
4,2	230	200	180	3800	74	M8x90	E6060**08	0,92 Kg
4,9	220	190	170	3200	76	M8x90	E6060**09	0,95 Kg
6,0	220	190	160	3000	88	M8x100	E6060**10	1 Kg

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

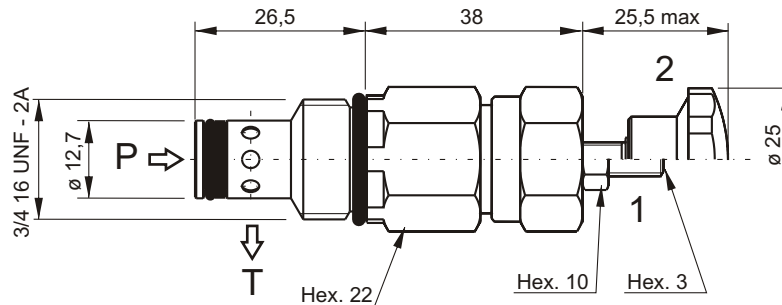
* Proper washers are to be forecast to adapt bolt length

Main features

Oil temperature	-15 ÷ +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

Accessories

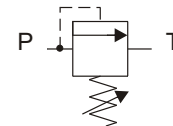
VMDC20



Spare part code

VMDC	Direct acting relief valve
20	Nominal size: 20 = 20 l/min
B	Working range: A = 10 ÷ 40 bar B = 20 ÷ 110 bar C = 30 ÷ 250 bar D = 70 ÷ 350 bar
1	Adjusting device: 1 = screw (std) 2 = handwheel
01	Series

Hydraulic symbol

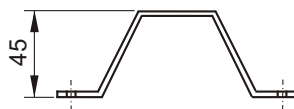


Main features

Max pressure	350 bar
Max flow	20 l/min
Weight	0,15 kg

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

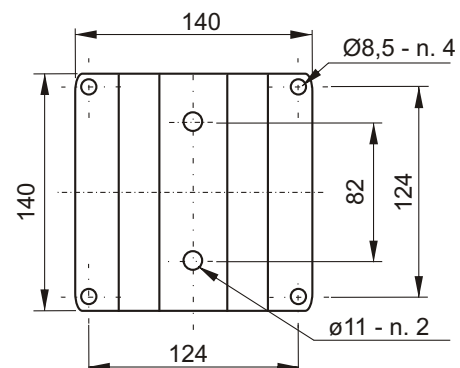
Foot mounting support



E60543006
Weight: 0,4 Kg

Spare part codes

E60543006



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