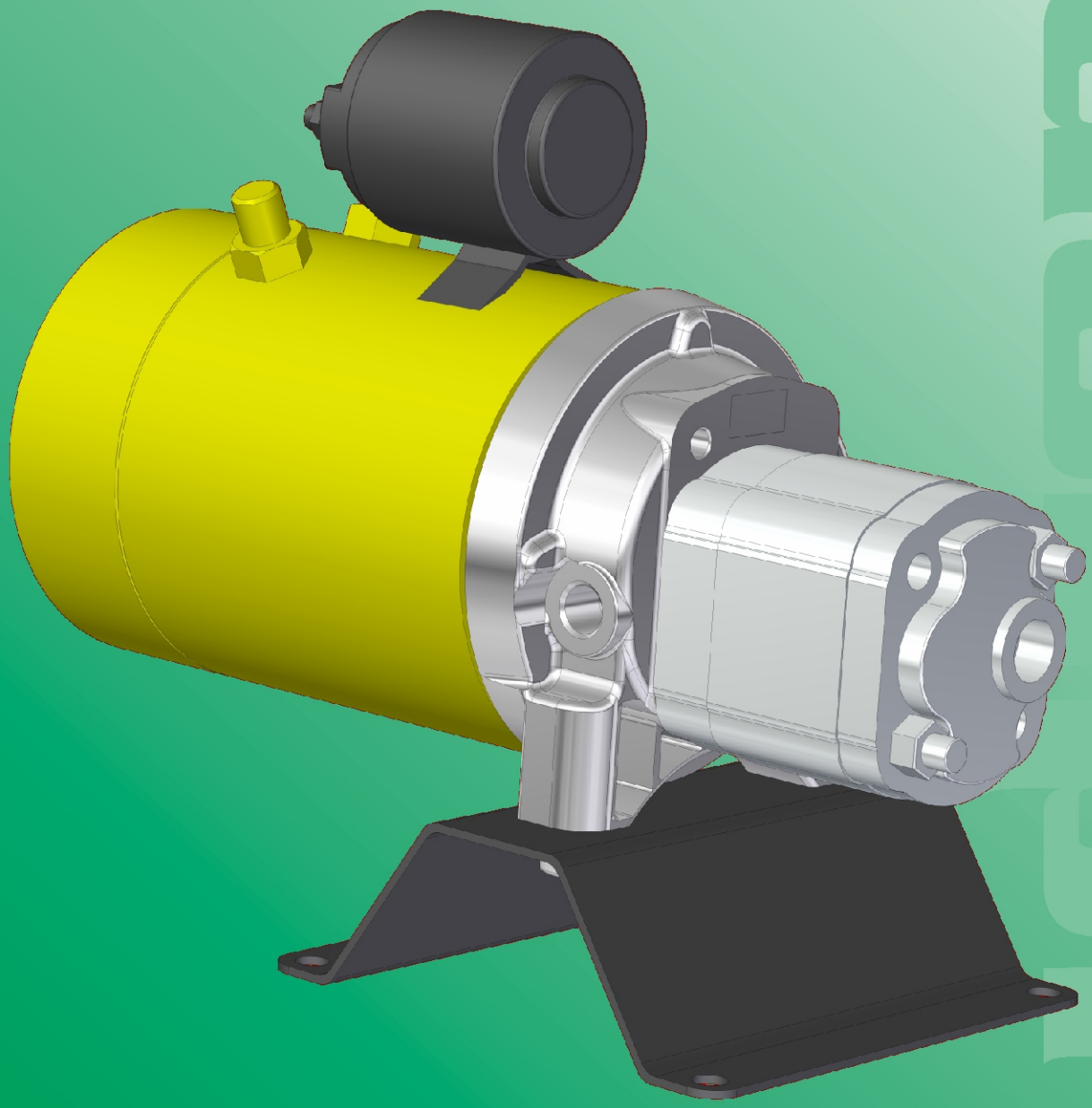
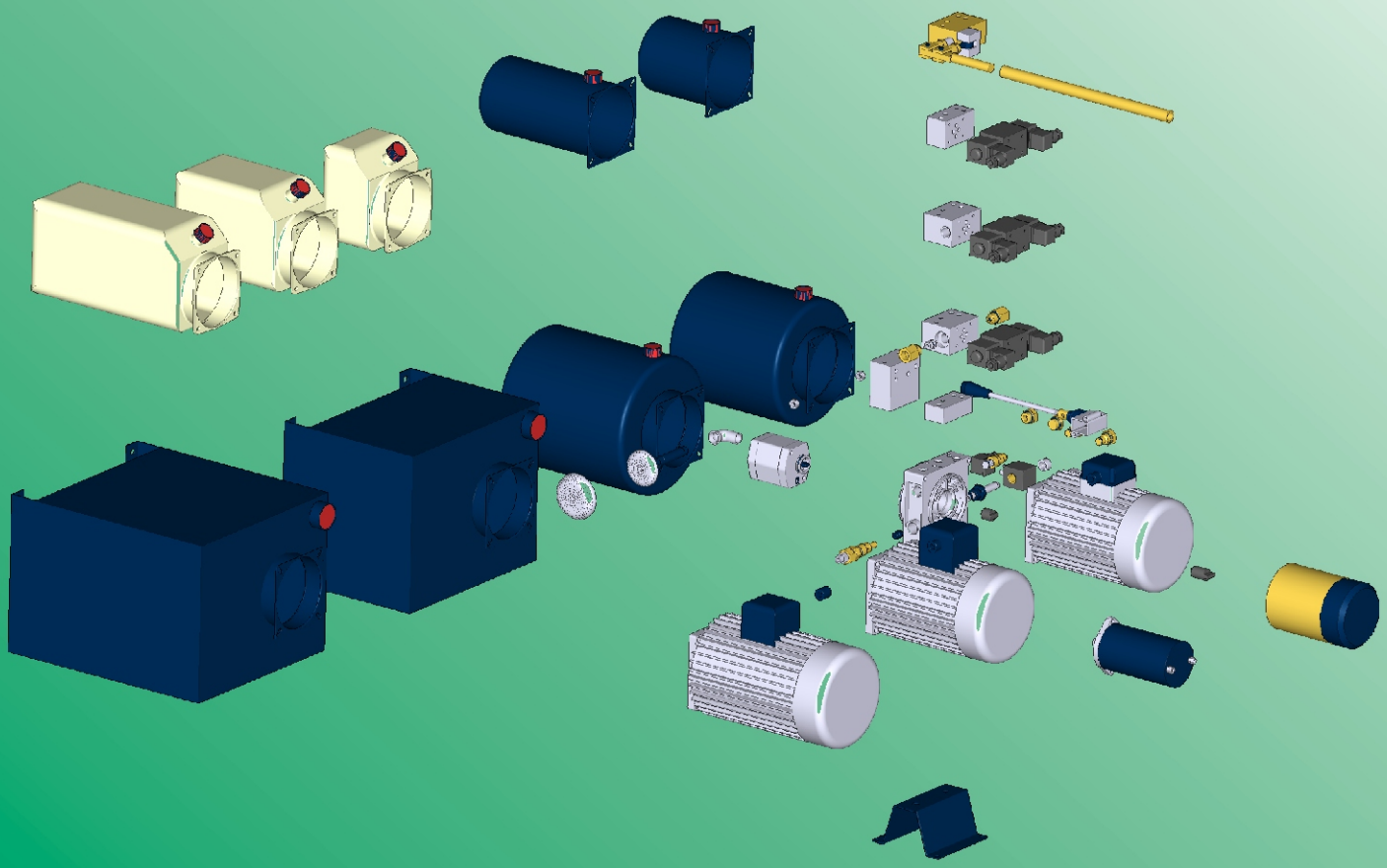
Hydronit

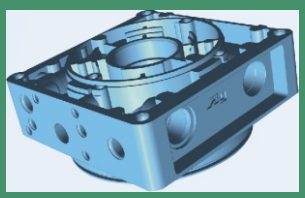


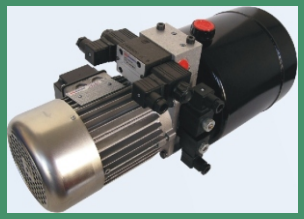
# AC & DC Hydraulic ElectroPump Bull Series

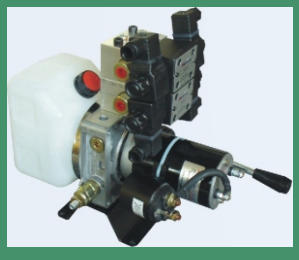
# A modular and flexible system

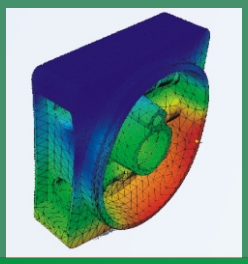


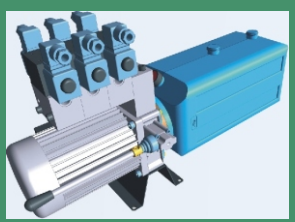
## for thousands different applications in mobile and industrial markets







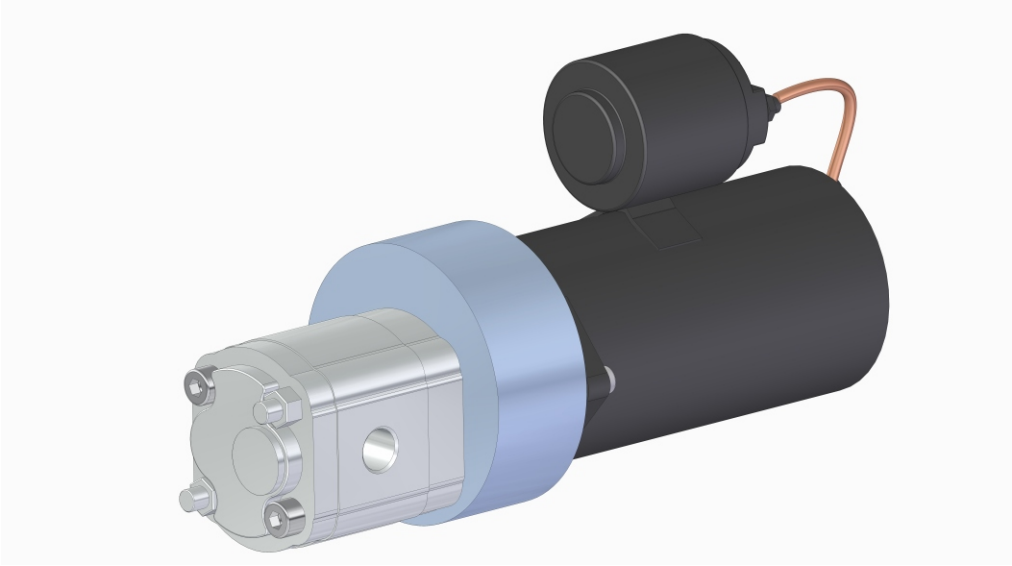




www.hydronit.com
E-mail: sales@hydronit.com
Fax +39 0362 1841214



# 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):

| | |
|---|---|
| **K0,2** | 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 |

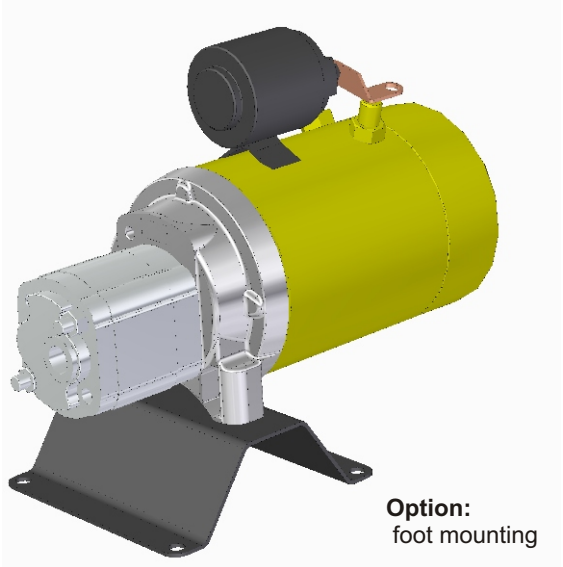
**Optional Relief Valve**
(see tables E010.30.02):

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

www.hydronit.com
E-mail: sales@hydronit.com
Fax +39 0362 1841214



# Electro pumps Bull 112 series



**Option:**
foot mounting

## MODEL CODE

| EPB112 | - | 2,2 24DC | /S150 | - | K1,1 | V** | + | E60543006 |
|---|---|---|---|---|---|---|---|---|

**Option:**
foot mounting

**Electro Pump Bull 112 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 24DC (/T/S):** 2,1kW 12VDC (/thermal switch/start switch)
**2,2 12DC (/T/S):** 2,2kW 24VDC (/thermal switch/start switch)

**Optional Starting Switch:**
(see tables E010.20.02):
**/S150:** 150 A starting switch (for Ø 112 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 |

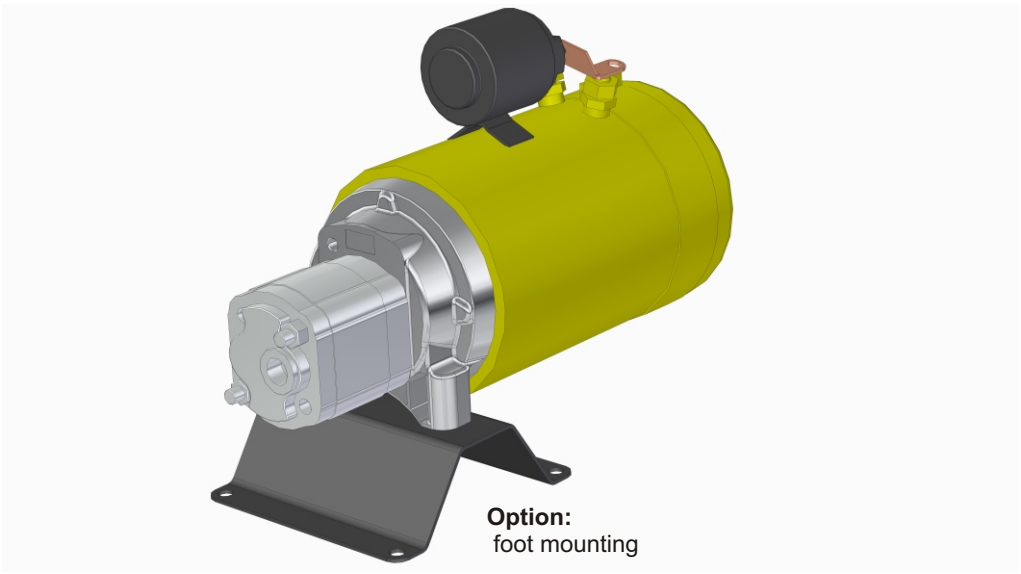
**Optional Relief Valve**
(see tables E010.30.02):

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

www.hydronit.com
E-mail: sales@hydronit.com
Fax +39 0362 1841214



# 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 |

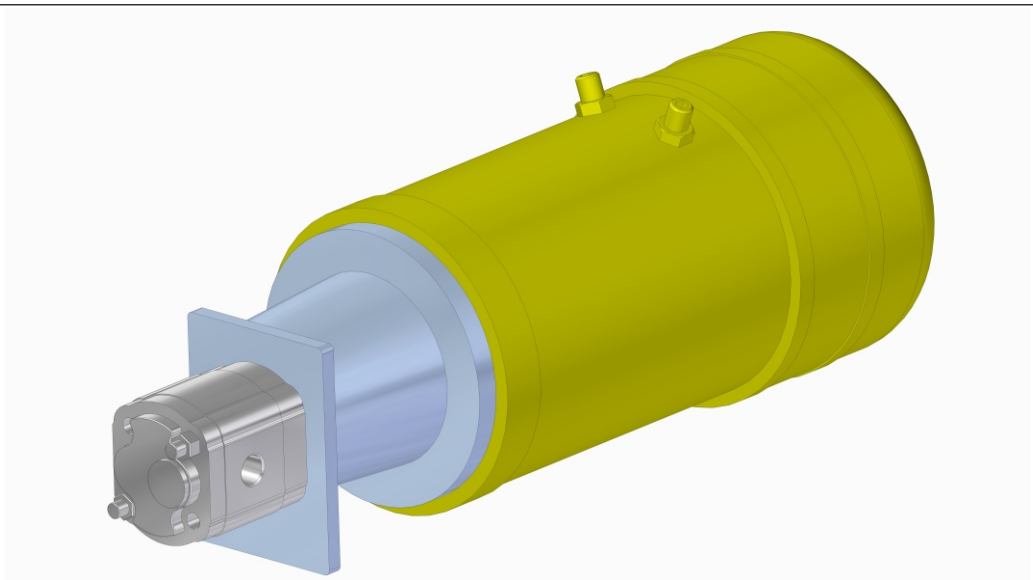
**Optional Relief Valve**
(see tables E010.30.02):

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

www.hydronit.com
E-mail: sales@hydronit.com
Fax +39 0362 1841214



# 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)

**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 |

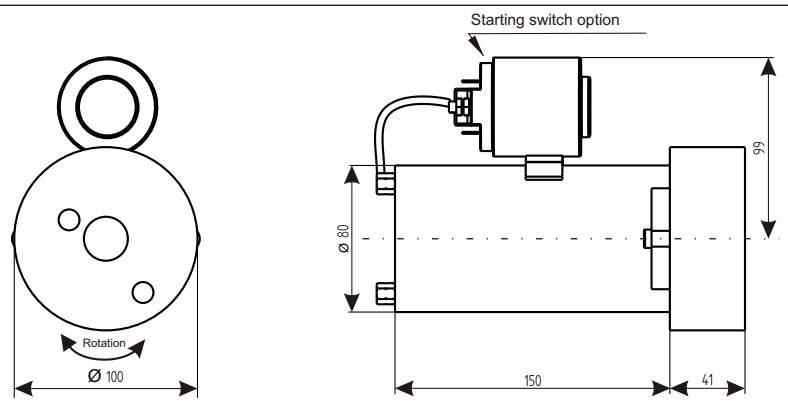
**Optional Relief Valve**
(see tables E010.30.02):

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

www.hydronit.com
E-mail: sales@hydronit.com
Fax +39 0362 1841214



# EPB80 DC motors




Permanent magnets
Protection degree: IP54
Insulation class: F
Weight: 3,1 kg

**Code**

| Description | EPB assembly code | Spare part code | Nominal duty cycle | Nominal speed | Nominal current |
|---|---|---|---|---|---|
| 150W 12V DC motor | **0,15 12DC** | **EB46C1S001** | S2: 10min<br>S3: 15% ED | 1400 rpm | 30 A |
| 150W 24V DC motor | **0,15 24DC** | **EB46C2S001** | S2: 10min<br>S3: 15% ED | 1400 rpm | 15 A |
| 500W 12V DC motor | **0,5 12DC** | **EB46C1S005** | S2: 6min<br>S3: 10% ED | 2800 rpm | 90 A |
| 500W 24V DC motor | **0,5 24DC** | **EB46C2S005** | S2: 6min<br>S3: 10% ED | 2800 rpm | 50 A |
| 800W 12V DC motor | **0,8 12DC** | **EB46C1S008** | S2: 3min<br>S3: 10% ED | 4000 rpm | 130 A |
| 800W 24V DC motor | **0,8 24DC** | **EB46C2S008** | S2: 4min<br>S3: 10% ED | 4000 rpm | 80 A |
| 500W 12V DC motor with thermal protection | **0,5 12DC/T** | **EB46C1ST05** | S2: 6min<br>S3: 10% ED | 2800 rpm | 90 A |
| 500W 24V DC motor with thermal protection | **0,5 24DC/T** | **EB46C2ST05** | S2: 6min<br>S3: 10% ED | 2800 rpm | 50 A |
| 800W 12V DC motor with thermal protection | **0,8 12DC/T** | **EB46C1ST08** | S2: 3min<br>S3: 10% ED | 4000 rpm | 130 A |
| 800W 24V DC motor with thermal protection | **0,8 24DC/T** | **EB46C2ST08** | S2: 4min<br>S3: 10% ED | 4000 rpm | 80 A |

**Options**

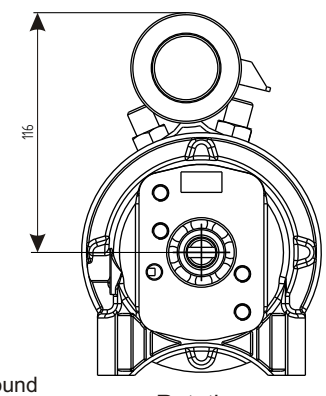
| Description | EPB assembly code | Spare part code |
|---|---|---|
| 12 or 24V DC 150 Amp start switch + mounting kit | **S150 12DC 80**<br>**S150 24DC 80** | **M47SC0001 + M47SK0801** (12V DC)<br>**M47SC0002 + M47SK0801**(24V DC) |

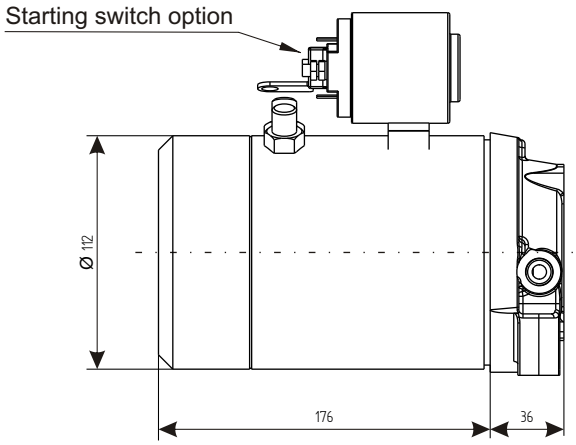
Notes: the starting switch mounting kit is provided when specifying the **/S150** in EPB assembly code.
The coupling is already include in the motor code.

www.hydronit.com
E-mail: sales@hydronit.com
Fax +39 0362 1841214



# EPB112 DC motors




Compound wound
Protection degree: IP54
Insulation class: F
Weight: 7,6 kg

**Code**

| Description | EPB assembly code | Spare part code | Nominal duty cycle | Nominal speed | Nominal current |
|---|---|---|---|---|---|
| 1600W 12V DC motor | **1,6 12DC** | **EB46C1S016** | S2: 2min<br>S3: 7,5% ED | 2600 rpm | 230 A |
| 2200W 24V DC motor | **2,2 24DC** | **EB46C2S022** | S2: 1,2min<br>S3: 4,5% ED | 2600 rpm | 140 A |
| 1600W 12V DC motor with thermal protection | **1,6 12DC/T** | **EB46C1ST16** | S2: 2min<br>S3: 7,5% ED | 2600 rpm | 230 A |
| 2100W 12V DC motor with thermal protection | **2,1 12DC/T** | **EB46C1ST21** | S2: 1,2min<br>S3: 7,5% ED | 2300 rpm | 330 A |
| 2200W 24V DC motor with thermal protection | **2,2 24DC/T** | **EB46C2ST22** | S2: 1,2min<br>S3: 4,5% ED | 2600 rpm | 140 A |

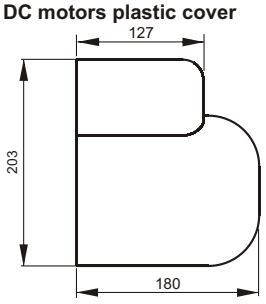
**Options**

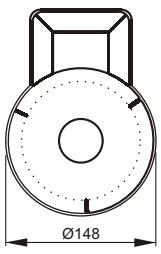
| Description | EPB assembly code | Spare part code |
|---|---|---|
| Starting switch 150A 12 or 24V DC + mounting kit | **S150 12DC 112**<br>**S150 24DC 112** | **M47SC0001 + M47SK1121** (12V DC)<br>**M47SC0002 + M47SK1121**(24V DC) |
| DC motors plastic cover | **F16000001** | **F16000001** |

Notes: the starting switch mounting kit is provided when specifying the **/S150** in EPB assembly code.
The coupling is already include in the motor code.

**DC motors plastic cover**

Weight: 0,27 kg

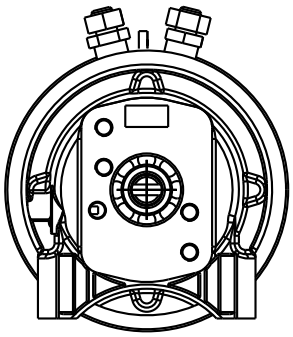


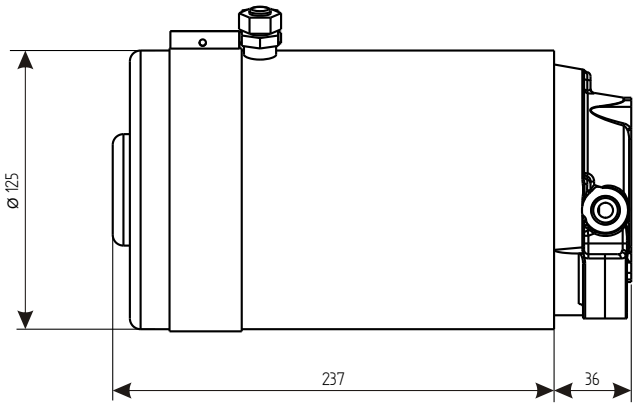



www.hydronit.com
E-mail: sales@hydronit.com
Fax +39 0362 1841214



# EPB125 DC motors






Compound wound
Protection degree: IP20
Insulation class: F
Weight: 11,5kg

Rotation

**Code**

| Description | EPB assembly code | Spare part code | Nominal duty cycle | Nominal speed | Nominal current |
|---|---|---|---|---|---|
| 2400W 12V DC motor with thermal protection & fan | **2,4 12DC/T** | **EB46C1ST24** | S2: 4min<br>S3: 7,5% ED | 3400 rpm | 290 A |
| 3000W 24 V DC motor with thermal protection & fan | **3 24DC/T** | **EB46C2ST30** | S2: 4min<br>S3: 7,5% ED | 3500 rpm | 170 A |

**Options**

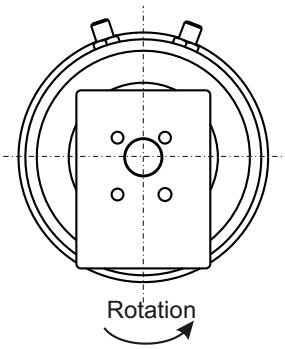
| Description | EPB assembly code | Spare part code |
|---|---|---|
| Starting switch 200A 12 or 24V DC | **S200 12DC**<br>**S200 24DC** | **M47ZC0001** (12V DC)<br>**M47ZC0002** (24V DC) |

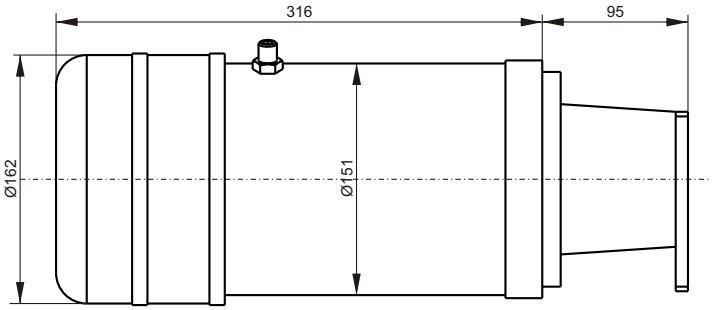
Notes: the starting switch mounting kit is provided when specifying the **/S150** in EPB assembly code.
Mounting kit for starting switch is not included.
The coupling is already include in the motor code.

www.hydronit.com
E-mail: sales@hydronit.com
Fax +39 0362 1841214



# EPB151 heavy duty DC motors




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** | **EB14C1ST25** | S2: 16min | 1700 rpm | 290 A | XB1490 |
| 3000W 24V DC motor + thermal protection & fan | **3HD 24DC/T** | **EB14C2ST30** | S2: 16min | 1700 rpm | 170 A | XB1490 |
| 4000W 24V DC motor + thermal protection & fan | **4HD 24DC/T** | **EB14C2ST40** | S2: 10min | 2000 rpm | 240 A | XB1490 |

**Options**

| Description | PPC assembly code | Spare part code |
|---|---|---|
| Starting switch 200A 12 or 24V DC | **S200 12DC**<br>**S200 24DC** | **M47ZC0001** (12 V DC)<br>**M47ZC0002** (24 V DC) |

Notes: the starting switch mounting kit is provided when specifying the **/S150** in EPB assembly code.
Mounting kit for starting switch is not included.
The coupling is already include in the motor 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.
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.

www.hydronit.com
E-mail: sales@hydronit.com
Fax +39 0362 1841214

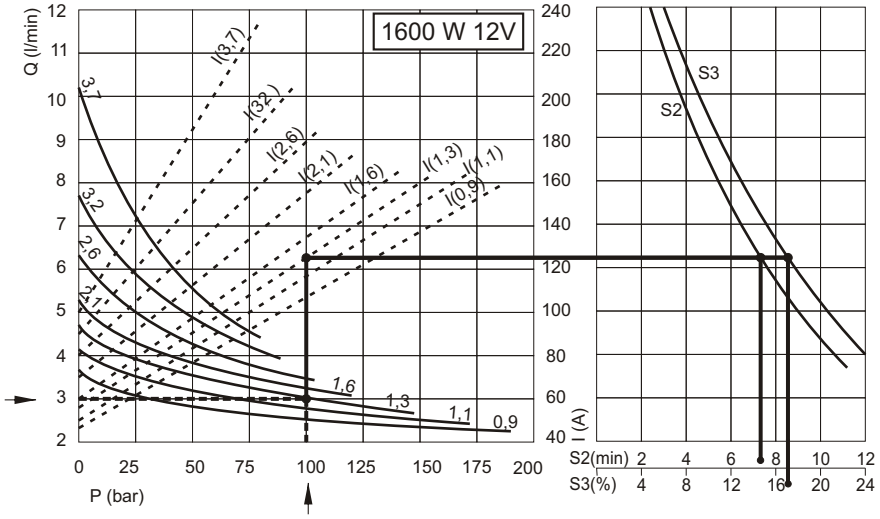


# DC motors choice and electric connection schemes

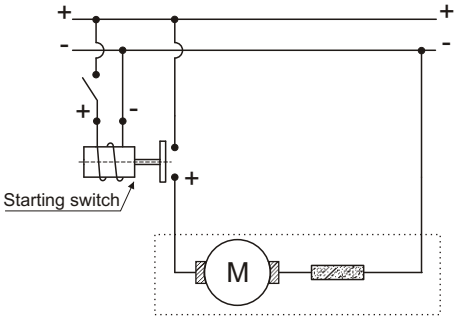
## DC motors choice

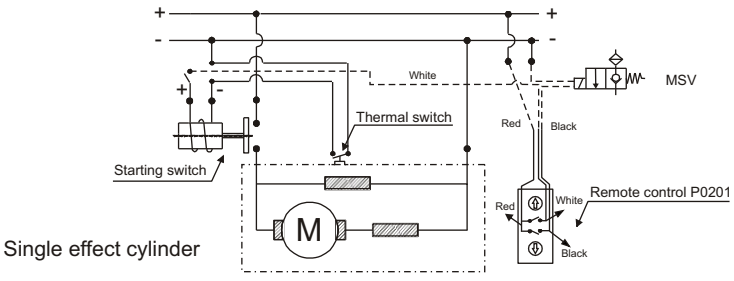
Once required pressure and flow and available voltage (12 or 24V DC) are known, you can select the motor checking on each provided diagram if a pump displacement is available at the intersection of pressure and flow values. On the relevant "I" curve you obtain the absorbed current. When the intersection 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.

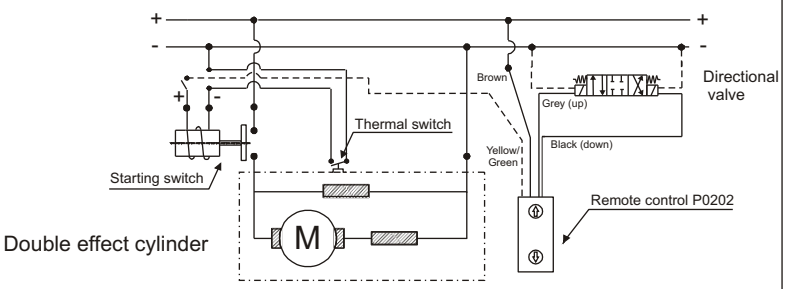
**Example:**
For our application we have following data:
flow = 3 l/min, max pressure = 100 bar, not clearly defined duty cycle.
-We check on 1,6 Kw 12V DC motor diagram and see there is a pump available.
-We choose from curves 1,3 pump: a 1,3 $cm^3$/rev pump. On the corresponding "I" curve we read 125 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



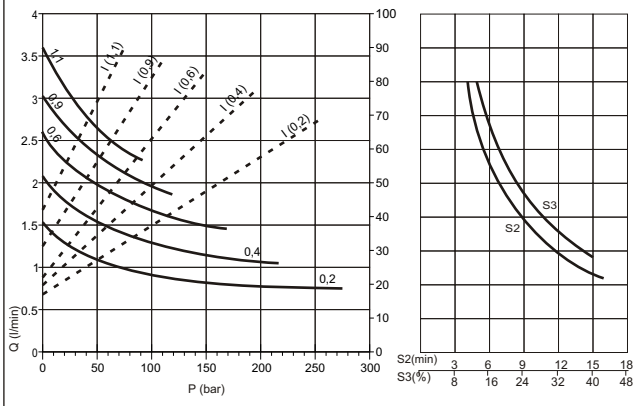



www.hydronit.com
E-mail: sales@hydronit.com
Fax +39 0362 1841214

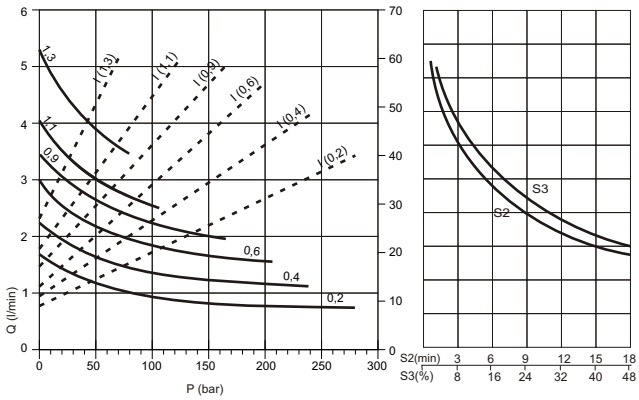


# DC motors diagrams

EB46C1S005 500 W 12V

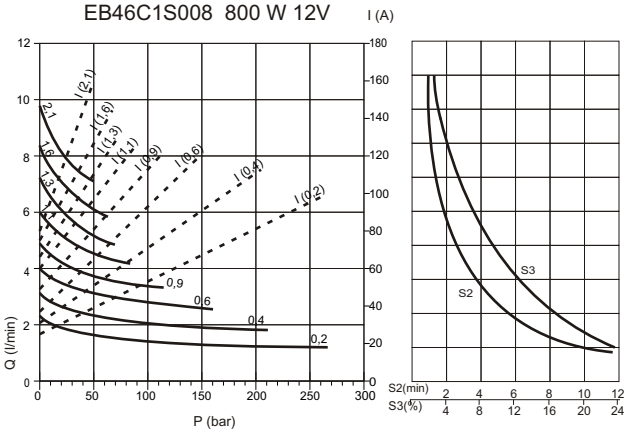



EB46C2S005 500 W 24V

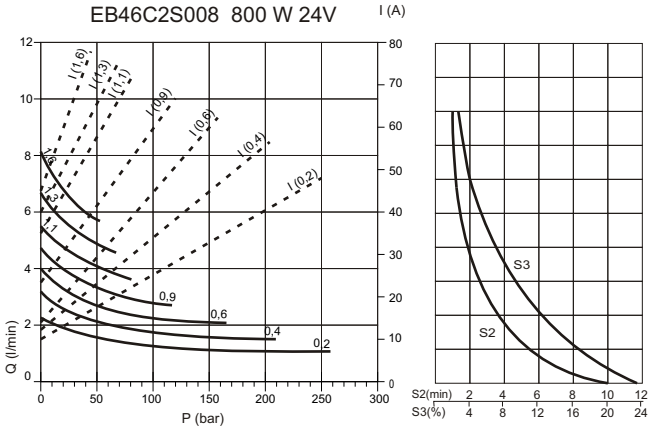



Test made with battery 135Ah 50% charged at 15°C and mineral oil ISO VG46 at 40°C

EB46C1S008 800 W 12V

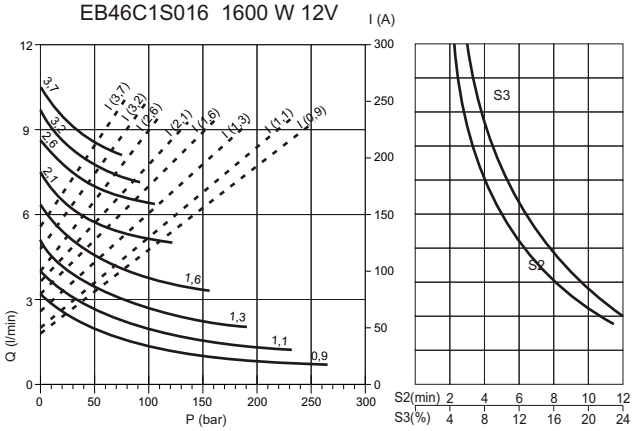



EB46C2S008 800 W 24V

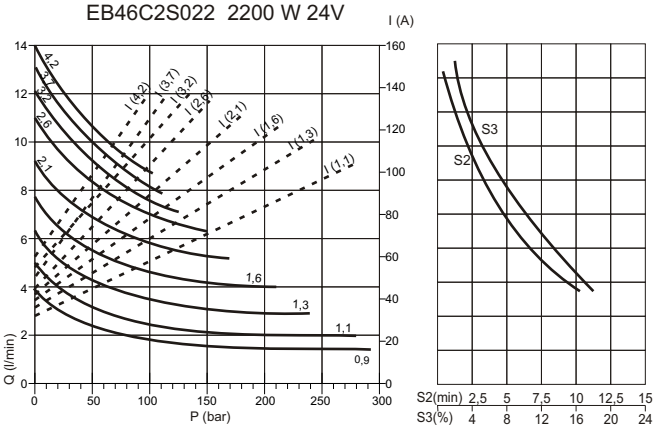



Test made with battery 135Ah 50% charged at 15°C and mineral oil ISO VG46 at 40°C

EB46C1S016 1600 W 12V




EB46C2S022 2200 W 24V



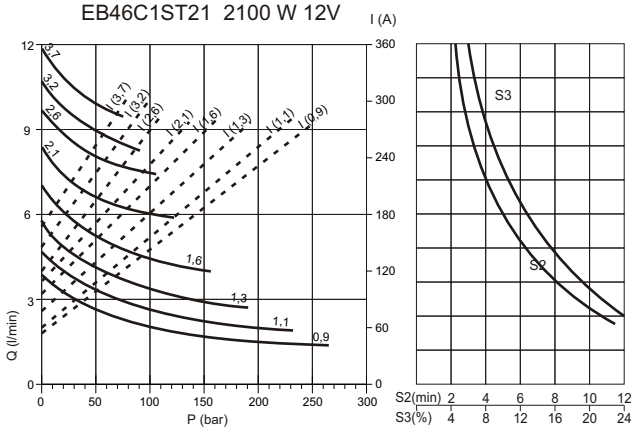

Test made with battery 135Ah 50% charged at 15°C and mineral oil ISO VG46 at 40°C

www.hydronit.com
E-mail: sales@hydronit.com
Fax +39 0362 1841214

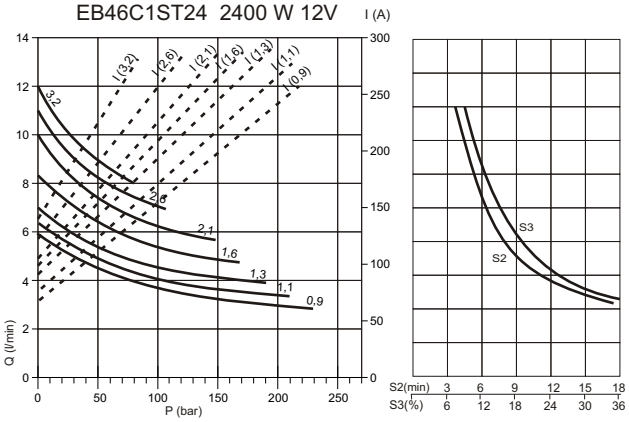


# DC motors diagrams

EB46C1ST21 2100 W 12V

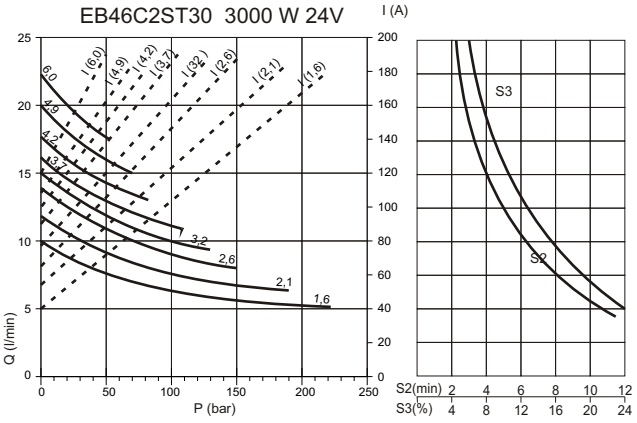



EB46C1ST24 2400 W 12V

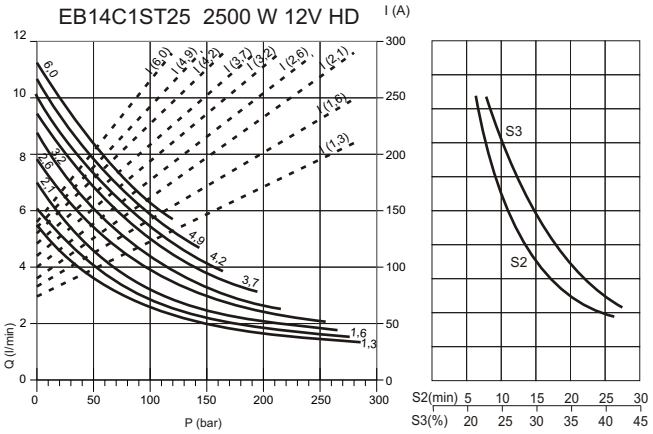



Test made with battery 135Ah 50% charged at 15°C and mineral oil ISO VG46 at 40°C

EB46C2ST30 3000 W 24V

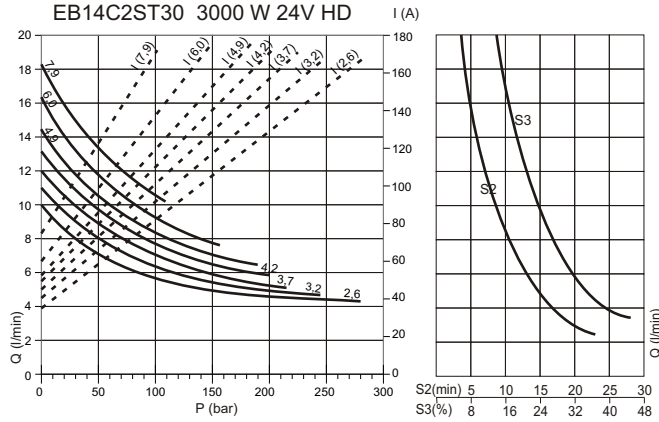



EB14C1ST25 2500 W 12V HD

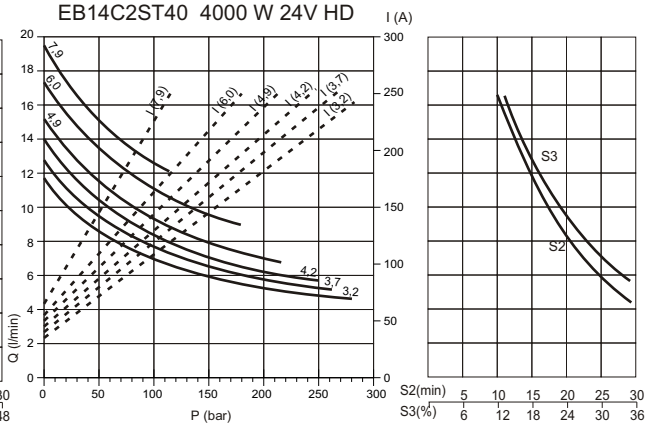



Test made with battery 135Ah 50% charged at 15°C and mineral oil ISO VG46 at 40°C

EB14C2ST30 3000 W 24V HD




EB14C2ST40 4000 W 24V HD

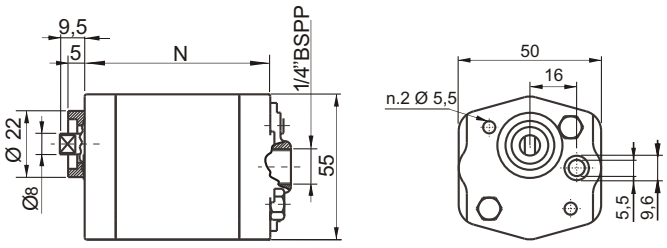



Test made with battery 135Ah 50% charged at 15°C and mineral oil ISO VG46 at 40°C

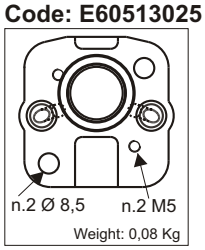
www.hydronit.com
E-mail: sales@hydronit.com
Fax +39 0362 1841214



# Gr.0 gear pumps




**Alluminium adapter flange for group 0**
**Code: E60513025**




## Spare part code

**E605042 ****

**Size:**
see spare part code on below table

## PPC assembly code field

**K** — **Pump type:** K = 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 part code | Weight |
|---|---|---|---|---|---|---|---|---|
| 0,2 | 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

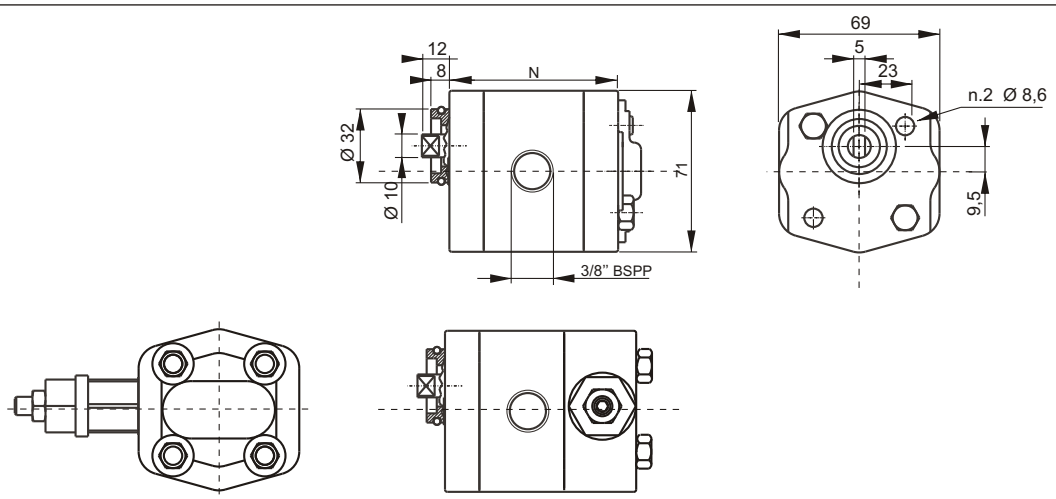
## Main features

| | |
|---|---|
| **Oil temperature** | -15 ÷ +80 °C |
| **Inlet pressure** | 0,7 < P < 3,0 bar (absolute pressure) |
| **Fixing bolts** | 2 x M8 8.8 class steel<br>tightening torque: 25 Nm |
| **Pressure definition** | Peak pressure: cycle 2 s ON<br>Intermittent pressure: cycle 20 s ON<br>Continuous pressure: cycle always ON |
| **Filtration setting** | 25 ÷ 50 µ |

www.hydronit.com
E-mail: sales@hydronit.com
Fax +39 0362 1841214



# Gr.1 gear pumps




## Spare part code

**E606042 ****

**Size:**
see spare part code
on below table

## PPC assembly code field

**K** — **Pump type:**
K = K type

**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 | E60604201 | 0,77 Kg |
| 1,2 | 250 | 220 | 200 | 5000 | 62 | M8x75 | E60604202 | 0,77 Kg |
| 1,6 | 250 | 220 | 200 | 5000 | 64 | M8x75 | E60604235 | 0,80 Kg |
| 2,1 | 250 | 220 | 200 | 5000 | 66 | M8x80 | E60604204 | 0,82 Kg |
| 2,6 | 250 | 220 | 200 | 5000 | 68 | M8x80 | E60604205 | 0,85 Kg |
| 3,2 | 250 | 220 | 200 | 4500 | 70 | M8x85 | E60604206 | 0,87 Kg |
| 3,7 | 230 | 200 | 180 | 4000 | 72 | M8x85 | E60604207 | 0,90 Kg |
| 4,2 | 230 | 200 | 180 | 3800 | 74 | M8x90 | E60604208 | 0,92 Kg |
| 4,9 | 220 | 190 | 170 | 3200 | 76 | M8x90 | E60604209 | 0,95 Kg |
| 6,0 | 220 | 190 | 160 | 3000 | 88 | M8x100 | E60604210 | 1 Kg |

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

* Proper washers are to be forecast to adapt bolt lenght

## Main features

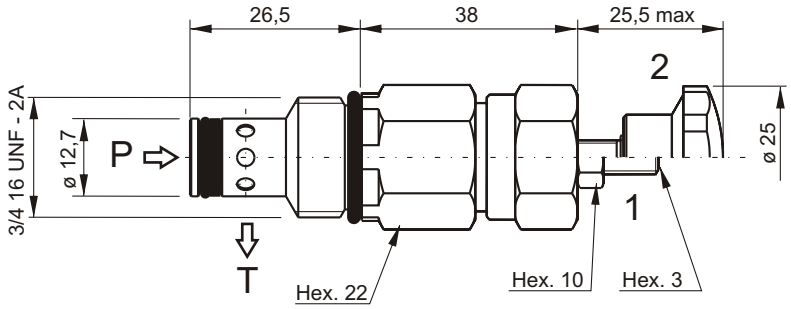
| | |
|---|---|
| **Oil temperature** | -15 ÷ +80 °C |
| **Inlet pressure** | 0,7 < P < 3,0 bar (absolute pressure) |
| **Fixing bolts** | 2 x M8 8.8 class steel<br>tightening torque: 25 Nm |
| **Pressure definition** | Peak pressure: cycle 2 s ON<br>Intermittent pressure: cycle 20 s ON<br>Continuous pressure: cycle always ON |
| **Filtration setting** | 25 ÷ 50 µ |

www.hydronit.com
E-mail: sales@hydronit.com
Fax +39 0362 1841214



# Accessories

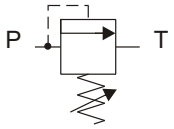
## VMDC20




### Spare part code

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

### Hydraulic symbol



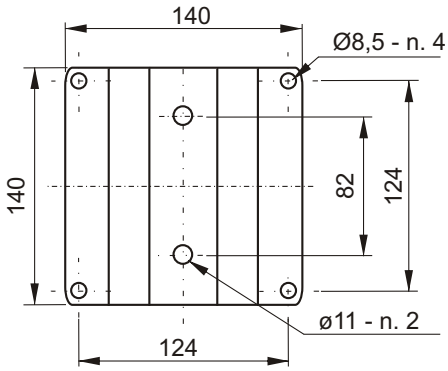

### Main features

| | |
|---|---|
| **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** |

Hydronit


**Hydronit Srl**
via Pastrengo 62
20039 Varedo - Italy
Phones: +39 0362 1841 210
+39 0232 0625 145
Fax: +39 0362 1841 214
E-mail: sales@hydronit.com
www.minipowerpacks.com
www.hydronit.com

PPC2009-03/EN