

**Hydronit**<sup>®</sup>

[www.hydronit.com](http://www.hydronit.com)



**2016**  
**Hydraulic Electropumps**  
**DC Bull**

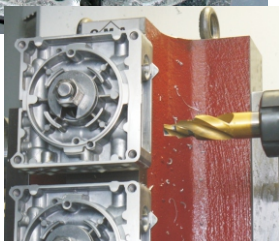
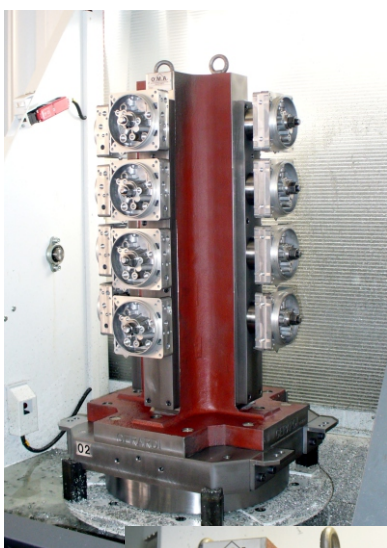
# Why choose Hydronit?

- ⊕ Complete focus on hydraulic components & modular power packs and electropumps design, **continuous** research, development and **innovation**
- ⊕ **Expertise** on hydraulic applications; design and development of **customised solutions**, including special manifolds, ex-proof units, proportional systems,...
- ⊕ Organization fully based on processes and **Total Quality Management** principles, certified **ISO 9001:2008** and **ISO 50001:2011**
- ⊕ Lean and **energy efficient** product design and manufacturing
- ⊕ Mass production and **cost optimization**: hundreds of thousands of Hydronit modular power packs and electropumps are now reliably running worldwide
- ⊕ Flexible marketing policy: supply of loose hydraulic components and power packs either in kit or fully assembled and tested in accordance with **Machine Directive 2006/42/CE**
- ⊕ Distributors, associate companies and partners in over **50 countries** worldwide



# Hydronit - The sustainable factory

- ⊕ Production is carried out in a building of 13000 m<sup>3</sup> **requiring almost no use of fossil fuels** to operate
- ⊕ The **hyper insulation of the structure** through the use of materials, mainly natural, such as wood and cork, ensures a consumption of only 7,4 kWh/m<sup>3</sup>/year for winter heating and for summer cooling only 3,2 kWh/m<sup>3</sup>/year
- ⊕ A **heat pump** provides **high efficiency** thermal regulation
- ⊕ A system of 60 solar panels on the roof of the offices provides 13,8 kW of electrical power that contributes about 60% of the electricity consumed by the plant for its own operation
- ⊕ **Solar thermal panels** provide hot water
- ⊕ The **automatic warehouses** and the line of **semi-automatic assembly** increase efficiency, reduce process paperwork and human errors, thus ensuring compliance with **stringent quality standards** and **repeatable test results**



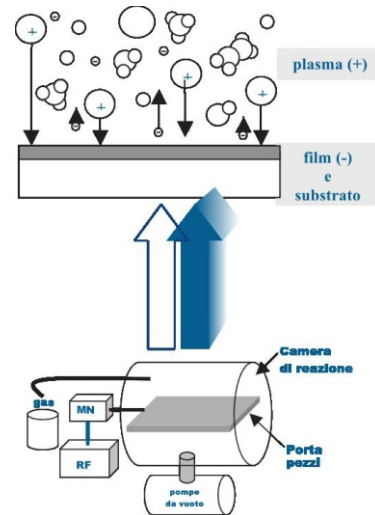


# Continuous innovation

Hydronit Srl, in the pursuit of excellence, have dedicated a large part of their profits to **research and continuous development of the product**, in order to increase the performance, efficiency, durability and reliability over time, and for the **continuous improvement of the organization**, constantly monitoring parameters over thirty indicators of the efficiency and effectiveness of the organization as a whole.

## Nanotechnology surface treatment

Hydronit Srl, in partnership with research institutions and external bodies, co-financed by the Lombardy Region, has initiated some years ago a project for the **development of advanced applications of plasma surface treatment of metallic materials**. In short it is the application of **nanotechnology** to hydraulic equipment to improve the performance of our units. We have obtained excellent results in the following fields: **improvement of the pressure tightness** of the aluminum die-casting; **improvement of the characteristics of surface hardness** of the treated components and a **remarkable increase in the corrosion resistance of the surface**. More information is available by contacting our sales department.



Treated manifold Nanotech

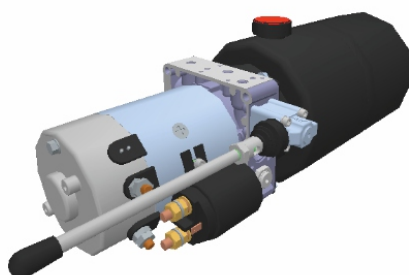
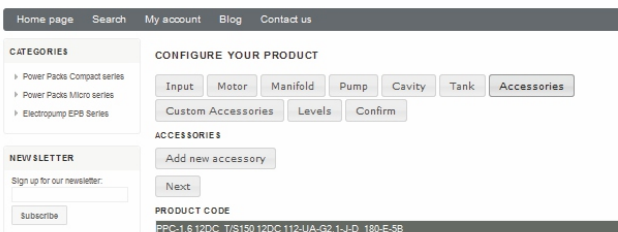
Standard manifold

Exposure to salt spray > 300 hours

## Product Configurator



tech@hydronit.com Log out



Hydronit Srl has developed over the years a smart **Product Configurator** which allows the user, from a PC or mobile device web browser:

- to simply and quickly create the **speaking code** of the unit starting from the customer's specific requirements
- to **limit the possible errors** in the product configuration
- to obtain quickly the **unit description and parts list**, the **hydraulic diagram**, **instant 3D preview**, **weight**, **dimensions**, **price** and **terms of sale**. This facilitates a **reduced time-to-market** and provides full information on the power unit to be realized.

The access to the web configurator is offered free of charge to official partners of Hydronit Srl.



## Hydronit hydraulic range

Three main families: **Power Pack Micro**, **Power Pack Compact**, **Electropumps Bull** sharing the most core components allowing mass production and stock optimization.  
Design, research & development according to **flexibility**, **modularity** and **efficiency** principles.

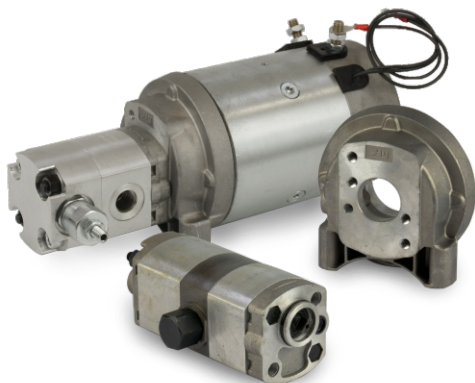


### AC & DC MICRO hydraulic power packs

- ⊕ Extremely **compact and lightweight**
- ⊕ Flow: **0,2 ~ 6 l/min**
- ⊕ Pressure up to **250 bar**
- ⊕ DC motors up to **2,2 kW**
- ⊕ AC motors up to **1,8 kW**
- ⊕ High modularity: single & double acting & reversible circuits from the same micro central manifold
- ⊕ Main valves **on one side** in most configurations for enhanced positioning in small machines

### AC & DC COMPACT hydraulic power packs

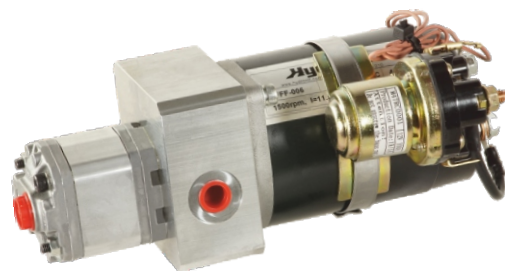
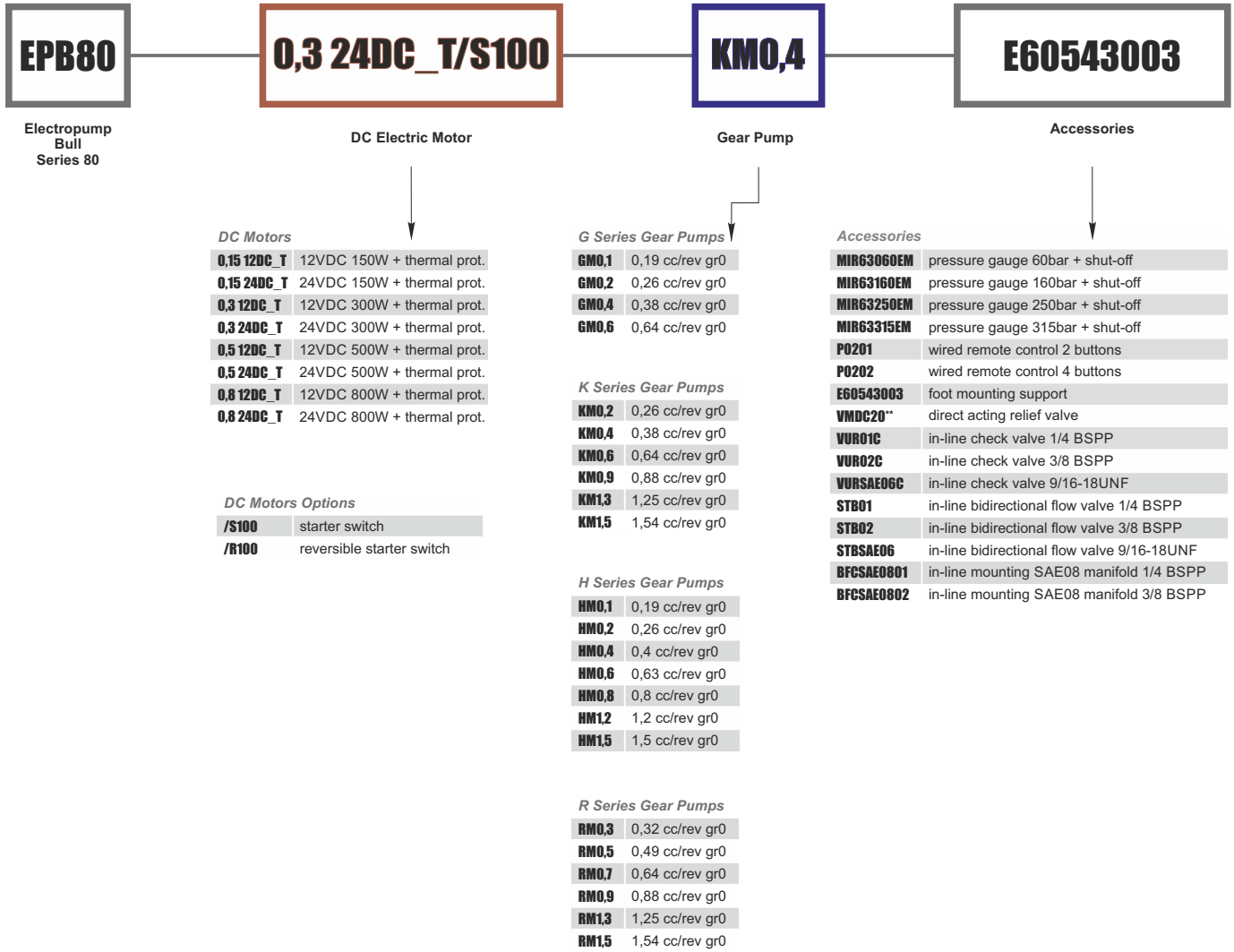
- ⊕ **Over 10 years** of serial production
- ⊕ Hundred of thousands of power packs running worldwide
- ⊕ Flow: **0,2 ~ 25 l/min**
- ⊕ **Low pressure drop**
- ⊕ Pressure up to **300 bar** (or more in special application)
- ⊕ DC motors up to **4 kW**
- ⊕ AC motors up to **7,5 kW**
- ⊕ **High modularity**: single & double acting & reversible circuits from the same micro central manifold
- ⊕ Ideal choice for hydraulic distributors & assemblers



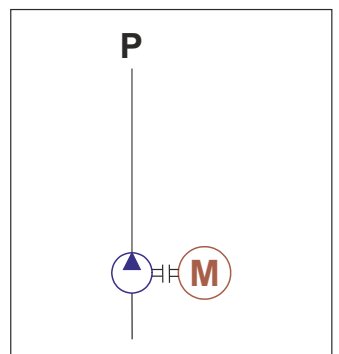
### DC electropumps

- ⊕ **0,15 ~ 4 kW, 12V e 24V DC** motors (same used in Compact and Micro power packs)
- ⊕ Forced ventilation **for high cycle times**
- ⊕ **0,19 ~ 7,9 cc/rev** gear pumps (same used in Compact and Micro power packs. Available also lateral ports pumps)
- ⊕ **Option**: relief valve, starter which, thermal protection, foot mounting support

# ELECTROPUMPS BULL 80 speaking code



Reference hydraulic scheme



# ELECTROPUMPS BULL 114-125 speaking code



**EPB114**  
Electropump  
Bull  
Series 114-125

**2,2 24DC\_T/S150**  
DC Electric Motor

**K1,2**  
Gear Pump

**E60543006**  
Accessories

*DC Motors*

<b>1,6 12DC_T</b>	12VDC 1600W + thermal prot.
<b>1,6 12DC_FE</b>	12VDC 1600W with cooling fan + thermal prot.
<b>2,1 12DC_T</b>	12VDC 2100W + thermal prot.
<b>2,1 12DC_FE</b>	12VDC 2100W with cooling fan + thermal prot.
<b>2,2 24DC_T</b>	24VDC 2200W + thermal prot.
<b>2,2 24DC_FE</b>	24VDC 2200W with cooling fan + thermal prot.
<b>3 24DC_T</b>	24VDC 3000W + thermal prot.
<b>3 24DC_FE</b>	24VDC 3000W with cooling fan + thermal prot.
<b>4 12DC_T</b>	24VDC 4000W + thermal prot.
<b>4 12DC_FE</b>	24VDC 4000W with cooling fan + thermal prot.

*DC Motors Options*

<b>/S150</b>	starter switch
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*Gear Pumps*

<b>K0,9</b>	0,89 cc/rev gr1
<b>K1,2</b>	1,27 cc/rev gr1
<b>K1,6</b>	1,66 cc/rev gr1
<b>K2,1</b>	2,17 cc/rev gr1
<b>K2,7</b>	2,8 cc/rev gr1
<b>K3,2</b>	3,3 cc/rev gr1
<b>K3,7</b>	3,8 cc/rev gr1
<b>K4,2</b>	4,3 cc/rev gr1
<b>K5,0</b>	5,1 cc/rev gr1
<b>K6,0</b>	6,0 cc/rev gr1
<b>K7,9</b>	7,9 cc/rev gr1
<b>69,8</b>	9,8 cc/rev gr1

*Gear Pumps Options*

<b>HL</b>	double pump with hi-lo circuit
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*Gear Pumps Lateral Ports*

<b>KL0,9</b>	0,89 cc/rev gr1
<b>KL1,2</b>	1,27 cc/rev gr1
<b>KL1,6</b>	1,66 cc/rev gr1
<b>KL2,1</b>	2,17 cc/rev gr1
<b>KL2,7</b>	2,8 cc/rev gr1
<b>KL3,2</b>	3,3 cc/rev gr1
<b>KL3,7</b>	3,8 cc/rev gr1
<b>KL4,2</b>	4,3 cc/rev gr1
<b>KL5,0</b>	5,1 cc/rev gr1
<b>KL6,0</b>	6,0 cc/rev gr1
<b>KL7,9</b>	7,9 cc/rev gr1

*High Pressure Gear Pumps*

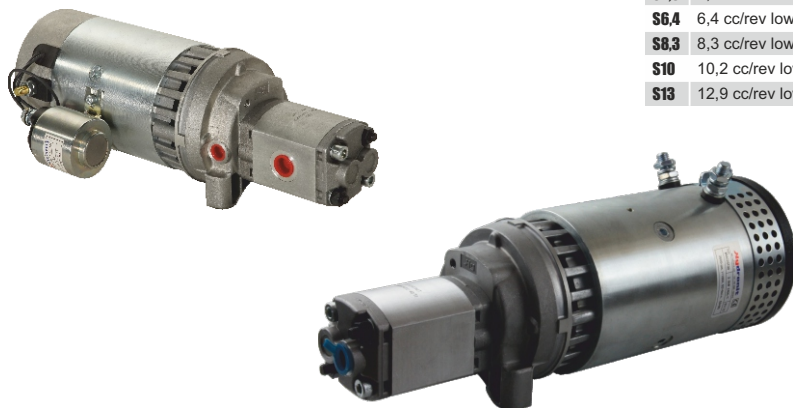
<b>H1,2</b>	1,2 cc/rev gr1
<b>H1,7</b>	1,7 cc/rev gr1
<b>H2,2</b>	2,2 cc/rev gr1
<b>H2,6</b>	2,6 cc/rev gr1
<b>H3,2</b>	3,2 cc/rev gr1
<b>H3,8</b>	3,8 cc/rev gr1
<b>H4,2</b>	4,3 cc/rev gr1
<b>H4,7</b>	4,7 cc/rev gr1
<b>H6,0</b>	6,0 cc/rev gr1
<b>H7,4</b>	7,4 cc/rev gr1

*Low Noise Gear Pumps*

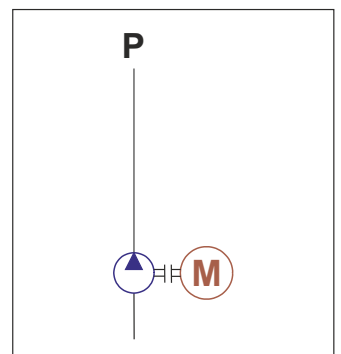
<b>S2,2</b>	2,2 cc/rev low noise gr1
<b>S3,2</b>	3,2 cc/rev low noise gr1
<b>S4,3</b>	4,3 cc/rev low noise gr1
<b>S6,4</b>	6,4 cc/rev low noise gr1
<b>S8,3</b>	8,3 cc/rev low noise gr1
<b>S10</b>	10,2 cc/rev low noise gr1
<b>S13</b>	12,9 cc/rev low noise gr1

*Accessories*

<b>MIR63060EM</b>	pressure gauge 60bar + shut-off
<b>MIR63160EM</b>	pressure gauge 160bar + shut-off
<b>MIR63250EM</b>	pressure gauge 250bar + shut-off
<b>MIR63315EM</b>	pressure gauge 315bar + shut-off
<b>PO201</b>	wired remote control 2 buttons
<b>PO202</b>	wired remote control 4 buttons
<b>E60543006</b>	foot mounting support
<b>VMDC20**</b>	direct acting relief valve
<b>VURO1C</b>	in-line check valve 1/4 BSPP
<b>VURO2C</b>	in-line check valve 3/8 BSPP
<b>VURSAE06C</b>	in-line check valve 9/16-18UNF
<b>STB01</b>	in-line bidirectional flow valve 1/4 BSPP
<b>STB02</b>	in-line bidirectional flow valve 3/8 BSPP
<b>STBSAE06</b>	in-line bidirectional flow valve 9/16-18UNF
<b>BFCSAE0801</b>	in-line mounting SAE08 manifold 1/4 BSPP
<b>BFCSAE0802</b>	in-line mounting SAE08 manifold 3/8 BSPP

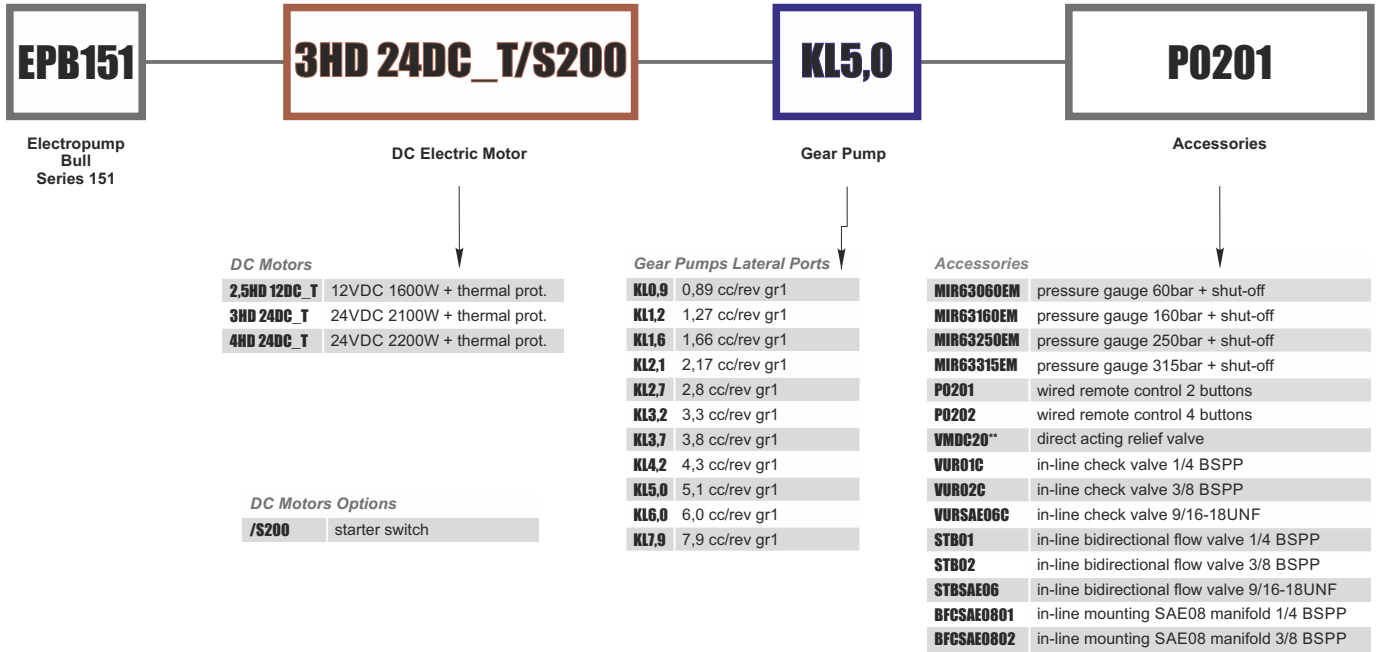


Reference hydraulic scheme

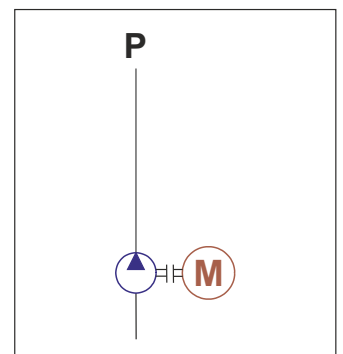




# ELECTROPUMPS BULL 151 speaking code



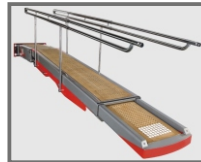
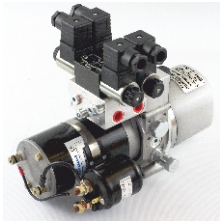
Reference hydraulic scheme



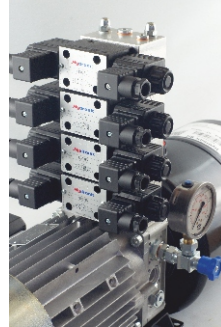
# Some typical applications

The **high level of modularity** and **circuit flexibility** of Hydronit hydraulic power packs and electropumps allows you to use them in the most varied applications: in addition to typical applications of **lifting equipment** and **mobile vehicles** (dump trucks, tail lifts, ...) and in the **industrial** (presses, machine tools, hoists, hydraulic brakes, ...), even in the **automotive industry** (drive doors and hood, suspension, campervan ...), **marine** (bridges, cranes, doors, ...), in the **alternative energy** sector, in **agricultural equipment**, in the field of **construction machinery**, in **explosions proof** environments. Hydronit has also developed **solutions for improvement** to equipment previously available on the market, including the use of **proportional components** and **electronics** for **forklift trucks**, **snow plows**, **brake** and **transmission equipment**, **loading ramps**.

## DC applications



## AC applications



## General Application

<b>Installation position</b>	Any. Take care of the correct positioning of the suction filter and pipe to avoid negative pressure at the pump inlet
<b>Environment temperature</b>	-15 ÷ +50°C
<b>Hydraulic fluid</b>	Fluid for hydraulic use mineral based or synthetic ISO 6743/4 / DIN 51519, viscosity 15 ÷ 100 mm <sup>2</sup> /s ISO 3448 (recommended viscosity 22 ÷ 46 mm <sup>2</sup> /s)
<b>Fluid temperature</b>	-10° ÷ +70°C
<b>Contamination class</b>	Higher than 18/14 ISO 4406 or higher
<b>Commissioning</b>	<ul style="list-style-type: none"> <li>• After connecting the electric motor and the suction pipe, check the direction of rotation of the pump with pulses of 1÷2 sec. For standard pumps the direction of motor rotation must be clockwise as viewed from the side of the motor fan.</li> <li>• Flush the oil at atmospheric pressure in order to remove any impurity and air bubbles from the circuit.</li> <li>• Connect all devices to the system and gradually increase oil pressure.</li> <li>• Check the oil level and, if necessary, fill up to the maximum level.</li> <li>• To ensure a correct and longlasting operation, check oil after 100h from commissioning and replace oil every year or 300h of use.</li> </ul>
<b>Recomanded tightening torques</b>	<ul style="list-style-type: none"> <li>• M5: 4÷5,5 Nm</li> <li>• M5 for pumps gr.0,5: 8÷9,5 Nm</li> <li>• M6: 8÷10 Nm</li> <li>• M8: 16÷20 Nm</li> <li>• M8 for pumps gr.1: 21÷25 Nm</li> <li>• M10: 30÷40 Nm</li> <li>• Valves and plugs 1/4 BSPP: 6÷20 Nm</li> <li>• Valves and plugs 3/4-16 UNF: 15÷40 Nm</li> <li>• Relief valves M20x1,5: 50 Nm</li> <li>• Tank's plugs 1/2 BSPP: max 10 Nm</li> </ul>

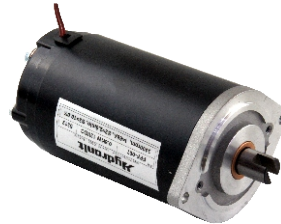


## DC ELECTRIC MOTORS

**Frame 114 DC motors:** the most popular choice. Power up to 2,1kW 12VDC and 2,2kW 24VDC also available with integrated cooling fan. All motors have thermal protection switch as standard.



**Frame 80 DC motors:** permanent magnets and compact dimensions for high power density and low current consumption. Power from 150W up to 800W either 12VDC or 24VDC.



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



**Frame 125 DC motors:** Power up to 4kW also available with integrated cooling fan. All motors have thermal protection switch as standard.

### Q & A

**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. It is a big advantage for stockist distributors who can keep stock of the same DC motors used in the power packs and assemble them quickly and effectively for electropumps too, depending on the actual requirement from the market.

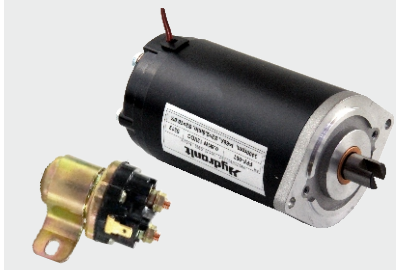
**How do I dimension a DC motor?**

DC motors are normally for intermittent duty. It is important to know required flow in l/min and working pressure in bar. Then following A090 table instructions a proper motor/pump combination can be selected. From the diagrams you can obtain current drawing [Amp], duty as 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 required torque, which is linked to flow and pressure.

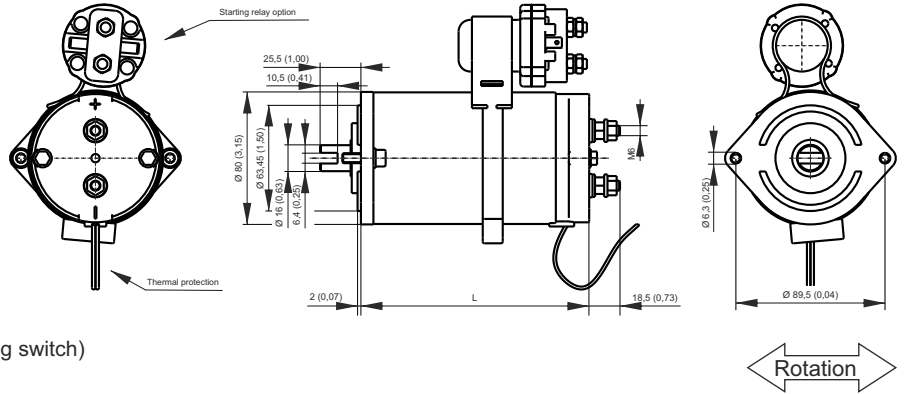
Special motors executions as special voltage supply, ingress protection, rotation speed and service factor are available on request.

# SECTION A

## INTEGRAL DC MOTORS Ø80



Permanent magnets  
 Protection degree: IP54  
 Insulation class: F  
 Weight 300W/500W/800W: 2,6 kg (without starting switch)  
 Weight 150W: 2 kg (without starting switch)



### Code

Description	Assembly code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current	L
150W 12V DC + thermal protection	<b>0,15 12DC_T</b>	<b>M46C1ST01</b>	S2: 20 min S3: 30% ED	1200 rpm	28 A	108 mm
150W 24V DC + thermal protection	<b>0,15 24DC_T</b>	<b>M46C2ST01</b>	S2: 20 min S3: 30% ED	1650 rpm	12 A	108 mm
300W 12V DC + thermal protection	<b>0,3 12DC_T</b>	<b>M46C1ST03</b>	S2: 9 min S3: 18% ED	1800 rpm	39 A	137 mm
300W 24V DC + thermal protection	<b>0,3 24DC_T</b>	<b>M46C2ST03</b>	S2: 9 min S3: 18% ED	1800 rpm	20 A	137 mm
500W 12V DC + thermal protection	<b>0,5 12DC_T</b>	<b>M46C1ST05</b>	S2: 5 min S3: 15% ED	2400 rpm	68 A	137 mm
500W 24V DC + thermal protection	<b>0,5 24DC_T</b>	<b>M46C2ST05</b>	S2: 5 min S3: 15% ED	2500 rpm	31 A	137 mm
800W 12V DC + thermal protection	<b>0,8 12DC_T</b>	<b>M46C1ST08</b>	S2: 3 min S3: 10% ED	2800 rpm	119 A	137 mm
800W 24V DC + thermal protection	<b>0,8 24DC_T</b>	<b>M46C2ST08</b>	S2: 3 min S3: 10% ED	3100 rpm	52 A	137 mm

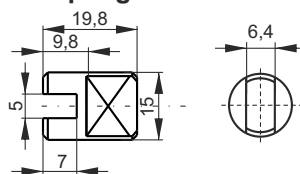
### Options & couplings

Description	Assembly code	Spare part code
12V DC 100 Amp start relay + mounting kit	<b>S100 12DC 80</b>	<b>M47RC0001+M47SK0801</b>
24V DC 100 Amp start relay + mounting kit	<b>S100 24DC 80</b>	<b>M47RC0002+M47SK0801</b>
12VDC 100 Amp start relay (reversible)	<b>R100 12DC*</b>	<b>M47NB0001</b>
24VDC 100 Amp start relay (reversible)	<b>R100 24DC*</b>	<b>M47NB0002</b>
Mounting kit for Ø80 DC motors and gr.0 pumps	<b>EPB80-0</b>	<b>E36200007 + E10101020</b>
Wired remote control with 2 buttons and 3m cable	<b>P0201</b> (single acting)	
Wired remote control with 4 buttons and 3m cable	<b>P0202</b> (double acting)	

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

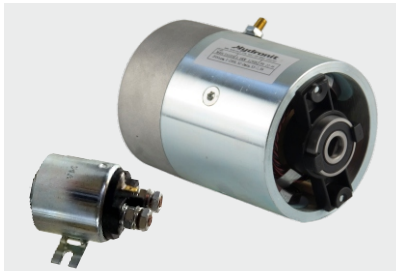
The reversible starting relay cannot be mounted on the motor. It must be fixed on the machine.

### Coupling E36200007

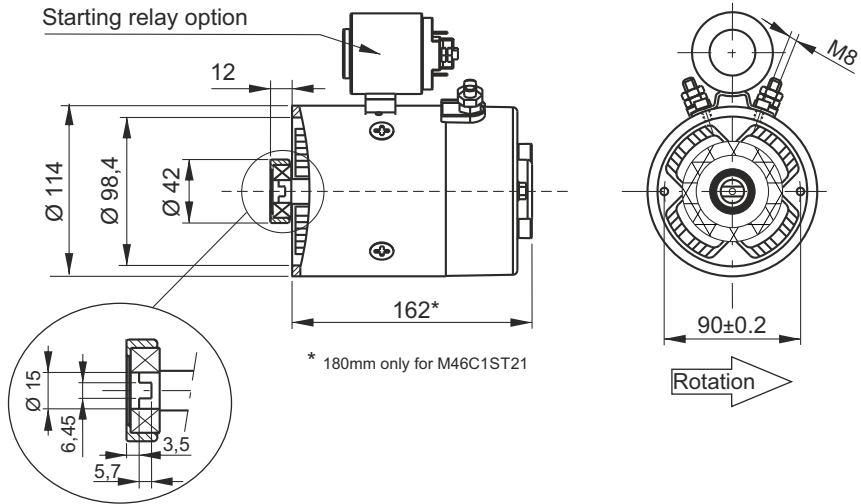


Weight: 0,063 kg

**INTEGRAL DC MOTORS Ø114**



Series wound  
 Protection degree: IP54  
 Insulation class: F  
 Weight: 7,05 kg (without starting switch)



**Code**

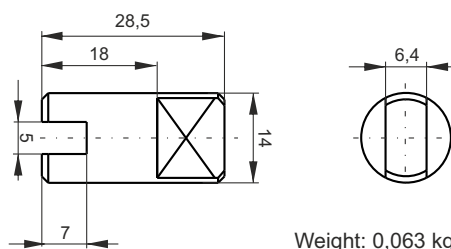
Description	Assembly code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current
1600W 12V DC + thermal protection	<b>1,6 12DC_T</b>	<b>M46C1ST16</b>	S2: 3 min S3: 10% ED	2800 rpm	210 A
2100W 12V DC + thermal protection	<b>2,1 12DC_T</b>	<b>M46C1ST21</b>	S2: 2,5 min S3: 10% ED	2400 rpm	300 A
2200W 24V DC + thermal protection	<b>2,2 24DC_T</b>	<b>M46C2ST22</b>	S2: 3,5 min S3: 15% ED	2400 rpm	130 A

**Options & couplings**

Description	Assembly code	Spare part
12V DC 150 Amp start relay + mounting kit	<b>S150 12DC 112</b>	<b>M47SC0001 + M47SK1121</b>
24V DC 150 Amp start relay + mounting kit	<b>S150 24DC 112</b>	<b>M47SC0002 + M47SK1121</b>
Mounting kit for Ø114-Ø125 DC motors and gr.1 pumps	<b>EPB114-1</b>	<b>E36200003 + E10103010</b>
Plastic protection cover for Ø114 motors	<b>MC</b>	<b>F16000001</b>
Wired remote control with 2 buttons and 3m cable	<b>P0201</b> (single acting)	
Wired remote control with 4 buttons and 3m cable	<b>P0202</b> (double acting)	

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

**Coupling E36200003**



Weight: 0,063 kg

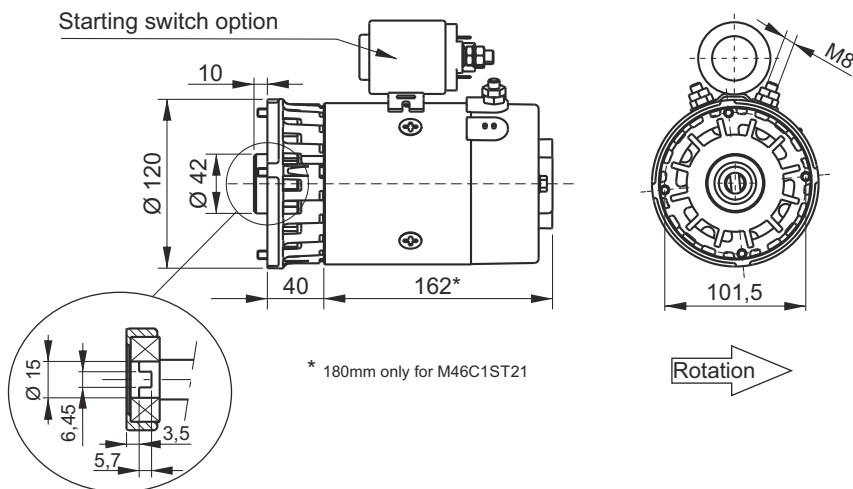


# SECTION A

## INTEGRAL DC MOTORS Ø114 WITH COOLING FAN



Series wound  
 Protection degree: IP20  
 Insulation class: F  
 Weight: 7,5 kg (without starting switch)



### Code

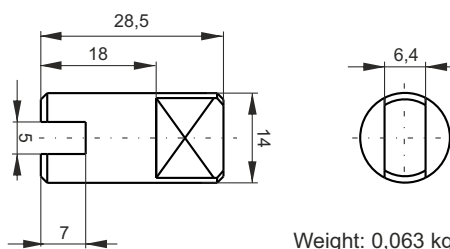
Description	Assembly code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current
1600W 12V DC with cooling fan + thermal protection	<b>1,6 12DC_FE</b>	<b>M46C1SF16FE</b>	S2: 4 min S3: 10% ED	2800 rpm	210 A
2100W 12V DC with cooling fan + thermal protection	<b>2,1 12DC_FE</b>	<b>M46C1SF21FE</b>	S2: 3,5 min S3: 10% ED	2400 rpm	300 A
2200W 24V DC with cooling fan + thermal protection	<b>2,2 24DC_FE</b>	<b>M46C2SF22FE</b>	S2: 4,5 min S3: 15% ED	2400 rpm	130 A

### Options & couplings

Description	Assembly code	Spare part
12V DC 150 Amp start switch + mounting kit	<b>S150 12DC 112</b>	<b>M47SC0001 + M47SK1121</b>
24V DC 150 Amp start switch + mounting kit	<b>S150 24DC 112</b>	<b>M47SC0002 + M47SK1121</b>
Mounting kit for Ø114-Ø125 DC motors and gr.1 pumps	<b>EPB114-1</b>	<b>E36200003 + E10103010</b>
Wired remote control with 2 buttons and 3m cable	<b>P0201</b> (single acting)	
Wired remote control with 4 buttons and 3m cable	<b>P0202</b> (double acting)	

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

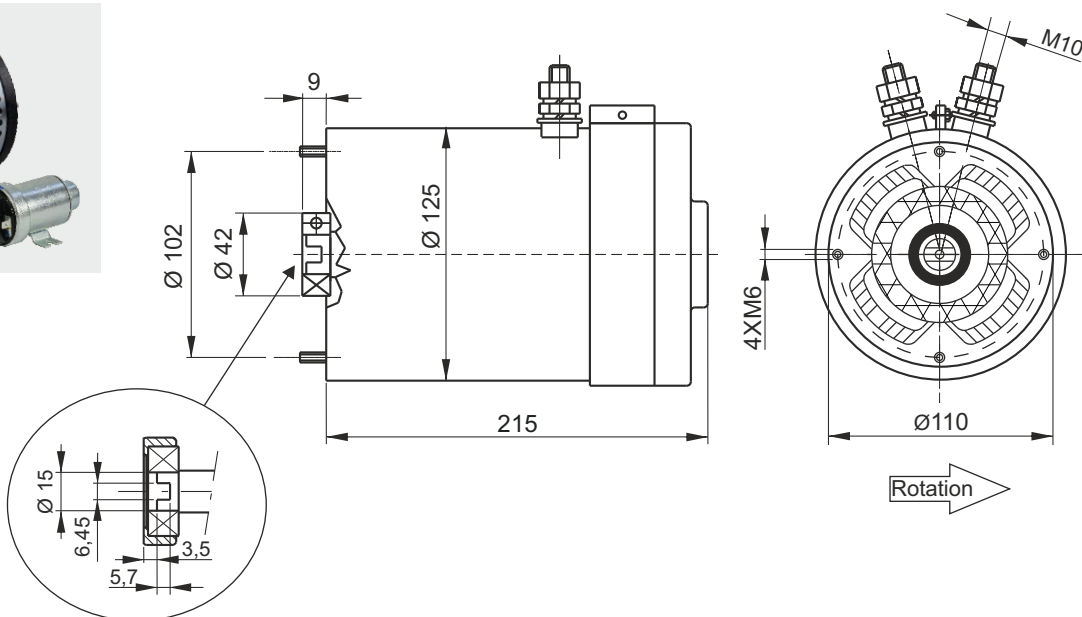
### Coupling E36200003



## INTEGRAL DC MOTORS Ø125



Compound wound (3kW)  
 Series wound (4kW)  
 Protection degree: IP42  
 Insulation class: F  
 Weight: 11kg (without starter)



### Code

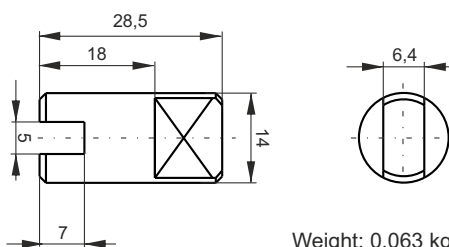
Description	Assembly code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current
3000W 24 V DC + thermal protection	3 24DC_T	M46C2ST30	S2: 4min S3: 10% ED	2600 rpm	180 A
4000W 24 V DC + thermal protection	4 24DC_T	M46C2ST40	S2: 3min S3: 8% ED	3500 rpm	230 A

### Options & couplings

Description	Assembly code	Spare part code
24V DC 200 Amp start switch + mounting kit	S200 24DC 125_151	M47ZC0002 + M47SK1251
Mounting kit for Ø114-Ø125 DC motors and gr.1 pumps	EPB114-1	E36200003 + E10103010
Wired remote control with 2 buttons and 3m cable	P0201 (single acting)	
Wired remote control with 4 buttons and 3m cable	P0202 (double acting)	

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

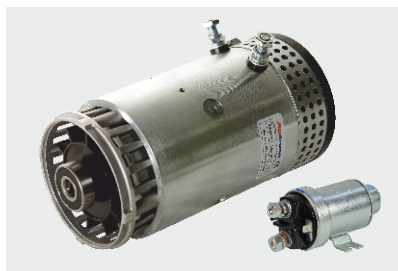
### Coupling E36200003



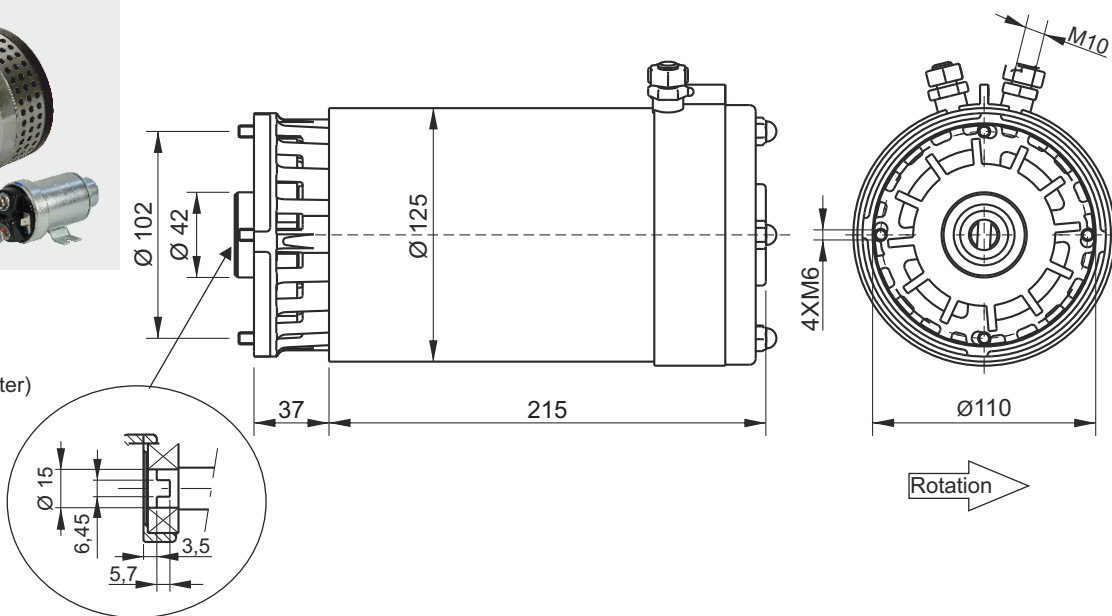
Weight: 0,063 kg

# SECTION A

## INTEGRAL DC MOTORS Ø125 WITH COOLING FAN



Compound wound (3kW)  
 Series wound (4kW)  
 Protection degree: IP20  
 Insulation class: F  
 Weight: 11,45kg (without starter)



### Code

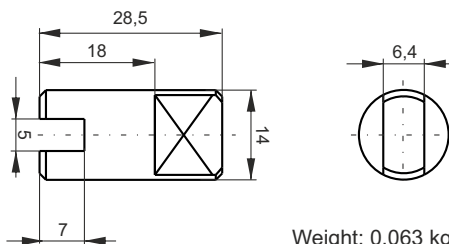
Description	Assembly code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current
3000W 24 V DC with fan cooling + thermal protection	<b>3 24DC_FE</b>	<b>M46C2SF30FE</b>	S2: 5min S3: 10% ED	2600 rpm	180 A
4000W 24 V DC with fan cooling + thermal protection	<b>4 24DC_FE</b>	<b>M46C2SF40FE</b>	S2: 4min S3: 8% ED	3500 rpm	230 A

### Options & couplings

Description	Assembly code	Spare part code
24V DC 200 Amp start switch + mounting kit	<b>S200 24DC 125_151</b>	<b>M47ZC0002 + M47SK1251</b>
Mounting kit for Ø114-Ø125 DC motors and gr.1 pumps	<b>EPB114-1</b>	<b>E36200003 + E10103010</b>
Remote wired control with 2 buttons and 3m cable	<b>P0201</b> (single acting)	
Remote wired control with 4 buttons and 3m cable	<b>P0202</b> (double acting)	

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

### Coupling E36200003

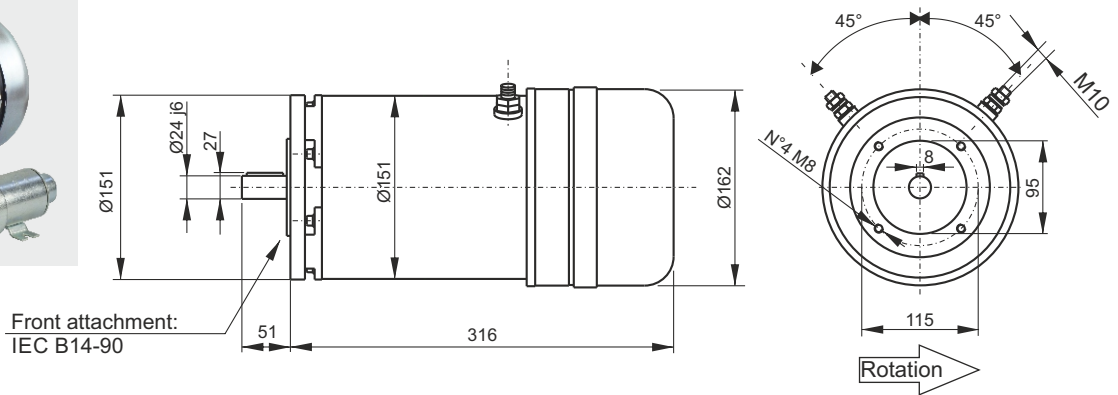


Weight: 0,063 kg

## HEAVY DUTY DC MOTORS Ø 151 WITH COOLING FAN



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



### Code

Description	Assembly code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current	Mounting kit
2500W 12V DC motor + thermal protection & fan	<b>2,5HD 12DC_T</b>	<b>MB14C1ST25</b>	S2:16 min S3: 20%	1700 rpm	290 A	XB14 90-1
3000W 24V DC motor + thermal protection & fan	<b>3HD 24DC_T</b>	<b>MB14C2ST30</b>	S2: 16 min S3: 20%	1700 rpm	170 A	XB14 90-1
4000W 24V DC motor + thermal protection & fan	<b>4HD 24DC_T</b>	<b>MB14C2ST40</b>	S2: 10 min S3: 15%	2000 rpm	240A	XB14 90-1

### Mounting kit & options

Description	Assembly code	Spare part code
12V DC 200 Amp start switch + mounting kit	<b>S200 12DC 125_151</b>	<b>M47ZC0001 + M47SK1251</b>
24V DC 200 Amp start switch + mounting kit	<b>S200 24DC 125_151</b>	<b>M47ZC0002 + M47SK1251</b>
Mounting kit for B14 IEC frame 90 motors and gr.1 pumps	<b>EPB151</b>	<b>E36100003 + E36100000 + E10105010</b>
Remote wired control with 2 buttons and 3m cable	<b>P0201</b> (single acting)	
Remote wired control with 4 buttons and 3m cable	<b>P0202</b> (double acting)	

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

For B14 motors the relay is not normally mounted on the motor.

### Other B14 DC motors for heavy duty or special applications

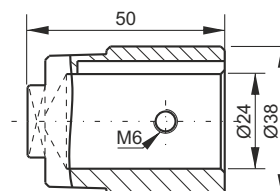
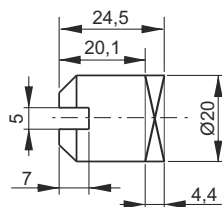
They are available in sizes Ø125, Ø151 or Ø191 in multiple executions, engineered to perform heavy duty cycles and tailor made to suit each specific application, with or without fan cooling or thermal protection. They are normally mounted on the central flange with B14 standard mounting kits.

To properly select these motors, the following minimum information must be provided: 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.

### Couplings

Pump side **E36100000** Weight: 0,05 Kg

Motor side **E36100003** Weight: 0,22 Kg



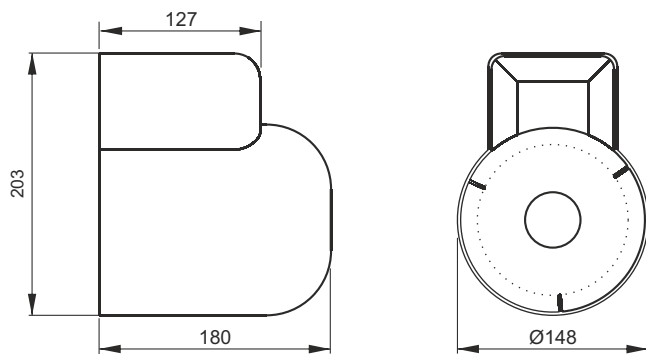


# SECTION A

## DC MOTOR OPTIONS



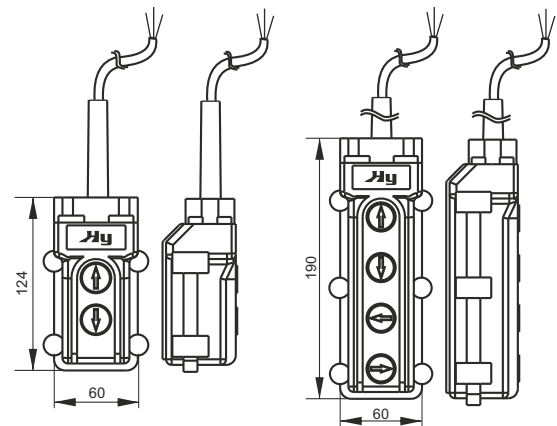
**Plastic cover for DC motors Ø 114**  
Weight: 0,27 kg



Assembly code	Spare part code
MC	F1600001



**Wired remote control**  
Weight: 0,60 kg  
Protection degree: IP65

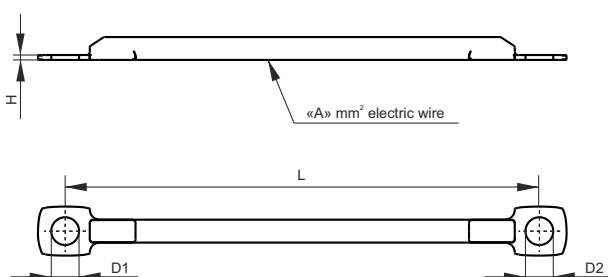


Description	Spare part code
Wired remote control with 2 buttons single/double acting	P0201
Wired remote control with 4 buttons double acting	P0202



**Mounting kit for DC motors**

Motor Type	Mounting Kit code	Mounting kit sub-parts	
		Power cable	Fixing system
Ø 80	M47SK0801	M47SK000A	Worm drive hose clip E60513080
Ø 114	M47SK1121	M47SK000C	Screws TCEIM5X10 + washer WASHL05
Ø 125 - 151	M47SK1251	M47SK000E	Screws TCEIM5X10 + washer WASHL05



### Power Cables

Spare part	L (mm)	A (mm <sup>2</sup> )	D1 (mm)	D2 (mm)	H (mm)
M47SK000A	130	10	6	8	1,5
M47SK000B	130	2	6	Faston 6,3 mm	1,5
M47SK000C	130	16	8	8	2
M47SK000D	130	2	8	Faston 6,3 mm	1,5
M47SK000E	130	25	10	8	2
M47SK000F	130	2	10	Faston 6,3 mm	1,5

**DC MOTOR OPTIONS**



**Starting relay 100A**  
for motors Ø80

Weight: 0,3kg  
Protection degree: IP54  
Max current draw: 3,6A 12V - 2,0A 24V

Nominal current	Peak Current (5s)	Spare part code
100A	200A	<b>M47RC0001 (12V DC)</b> <b>M47RC0002 (24V DC)</b>



**Starting relay 150A**  
for motors Ø114

Weight: 0,6 kg  
Protection degree: IP54  
Max current draw: 3,6A 12V - 2,0A 24V

Nominal current	Peak Current (5s)	Spare part code
150A	300A	<b>M47SC0001 (12V DC)</b> <b>M47SC0002 (24V DC)</b>



**Starting relay 200A**  
for motors Ø125 and 151

Weight: 0,5 kg 12V - 0,7 kg 24V  
Protection degree: IP54  
Max current draw: 1,6A 12V - 0,7A 24V

Nominal current	Peak Current (5s)	Spare part code
200A	800A	<b>M47ZC0001 (12V DC)</b> <b>M47ZC0002 (24V DC)</b>



**Starting relay (reversible) 100A**  
for reversible motors and pumps

Weight: 0,5 kg  
Protection degree: IP65  
Max current draw: 1A 12V - 0,5A 24V

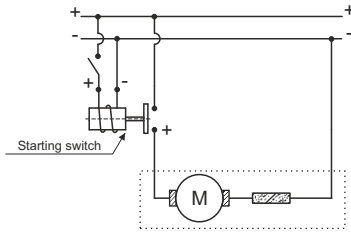
Nominal current	Peak Current (40ms)	Spare part code
100A	400A	<b>M47NB0001 (12V DC)</b> <b>M47NB0002 (24V DC)</b>

# SECTION A

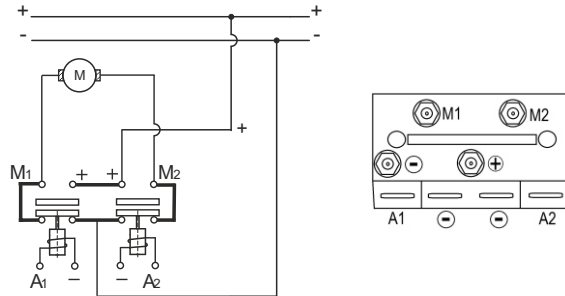
## DC MOTOR CHOICE AND ELECTRIC CONNECTION SCHEME

### Electrical connection scheme

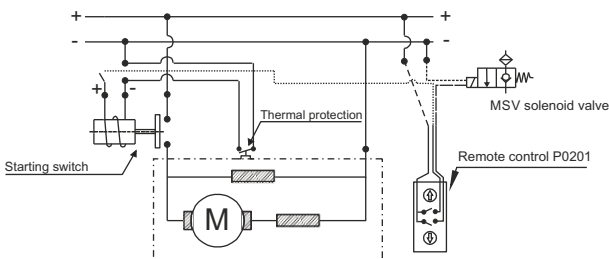
M47\*C000\*



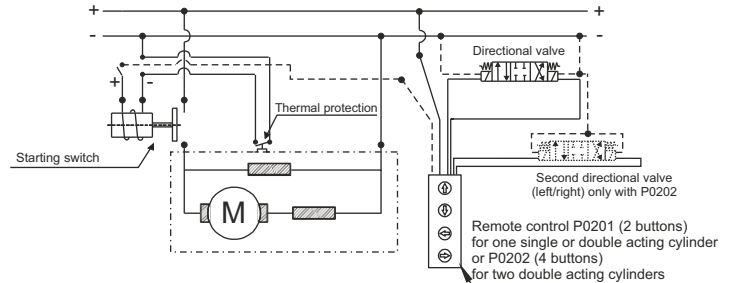
M47NB000\*



Single acting cylinder



Double acting cylinder



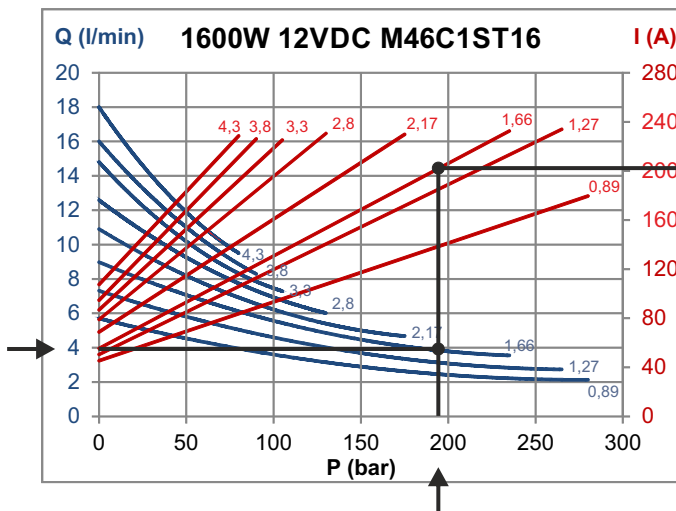
### DC motors selection

DC motor selection is a critical step for the proper power pack definition. Required Pressure, Required Flow, Service Factor (or Duty Cycle) should be known before starting the motor selection. Please note that DC motors speed is **not** constant and depends on torque. Once you choose a motor, look at Motor-Pump Performance diagram if a pump displacement (blue curve) is available at the **intersection** of required pressure and flow values. On the relevant "I" axis (red curve) you obtain the current drawn. When the intersection point is not exactly on a pump curve, select a smaller pump. On Motor Ratings diagram you can easily obtain the maximum allowed Service Factor: S2, Short Time Duty (min); S3, Intermittent Periodic Duty (% of total cycle). If the obtained Service values are not sufficient to meet required performances, choose a higher power or heavier duty motor and repeat the calculation on the new motor curves.

### Example:

an application requires the following data: flow = 4 l/min, max pressure = 195 bar, duty cycle is unknown.  
 - check on 1,6 Kw 12V DC motor diagram: the 1,66 cc pump curve meet the intersection of 4 liters/minutes and 195 bar  
 - choose from curves a 1,66 cm<sup>3</sup>/rev pump. the corresponding "I" curve declares 200 A drawn current at 195 bar.  
 - project horizontally the current drawn to the Motor Rating diagram: the DC motor can work for maximum 3 min (S2) and S3 is about 9% of the total cycle, i.e. after 3 min working, the motor should cool down for at least 30 min.  
 - The total cycle time is calculated by adding the working time and the idle time (9% working time plus 91% idle time), in this case 33 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.

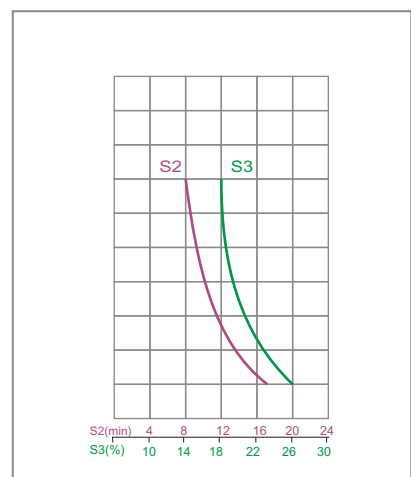
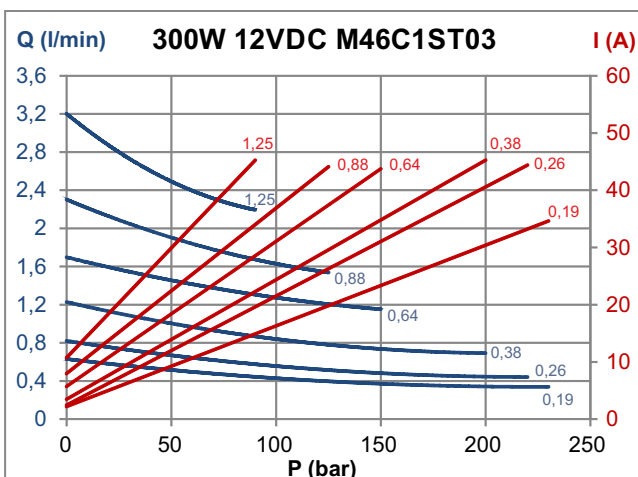
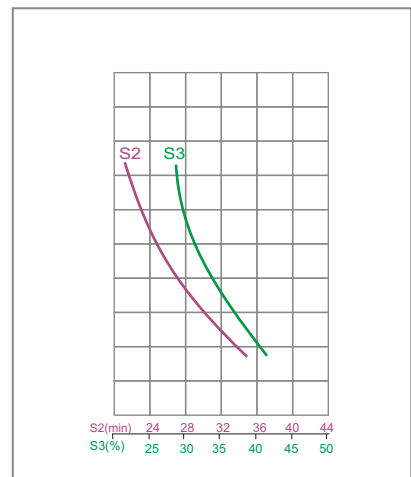
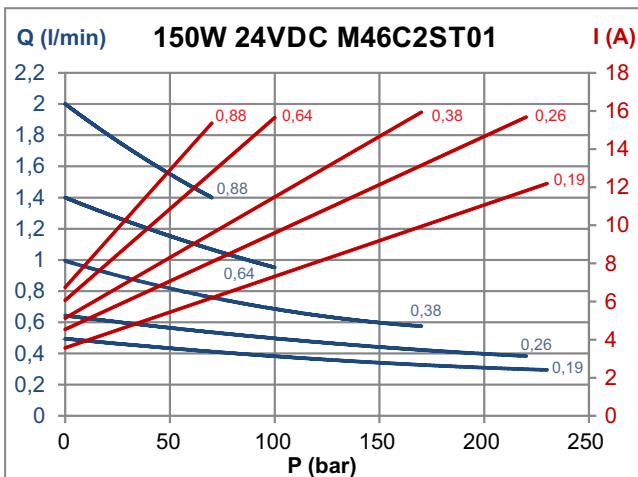
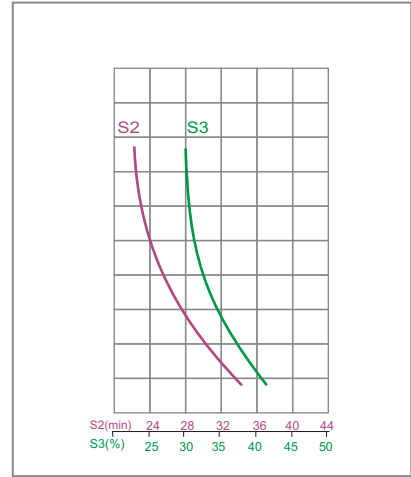
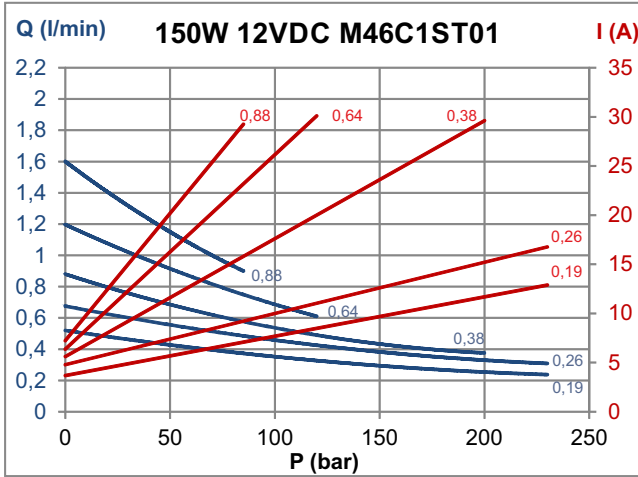
Motor-Pump Performances



Motor Ratings



**DC MOTORS Ø80 DIAGRAMS**

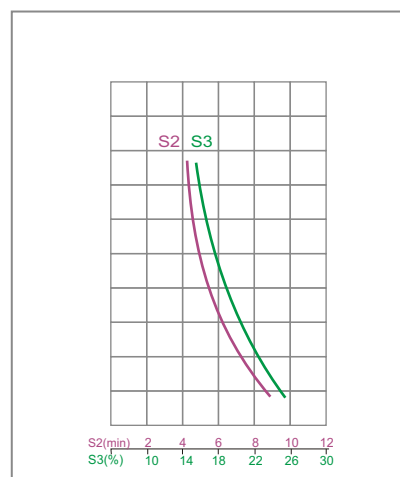
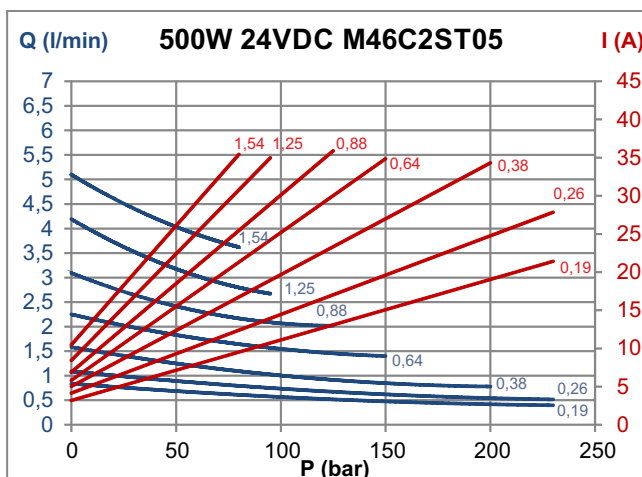
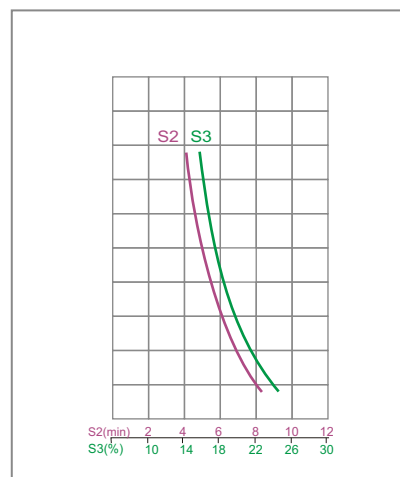
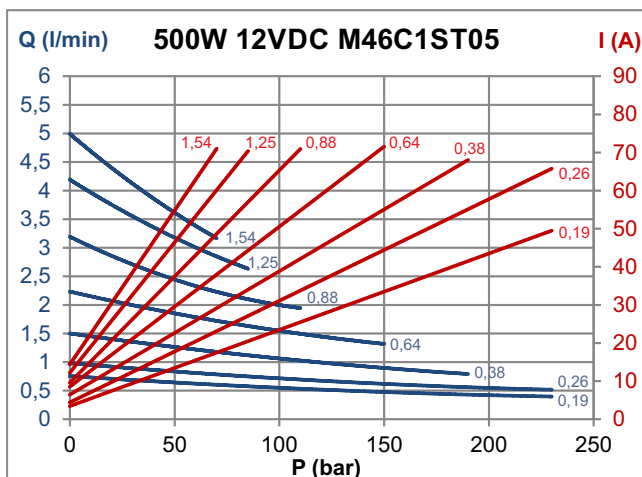
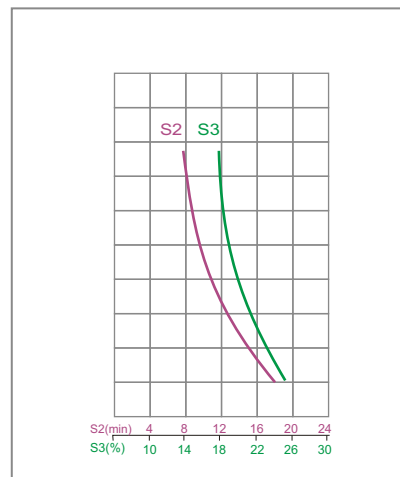
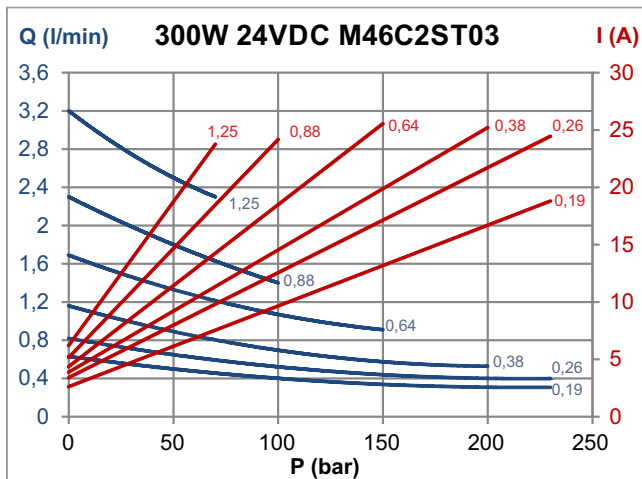


Tests made with rectified current supplied at nominal motor voltage (measured at the motor connection terminals) and oil ISO VG46 at 40°C



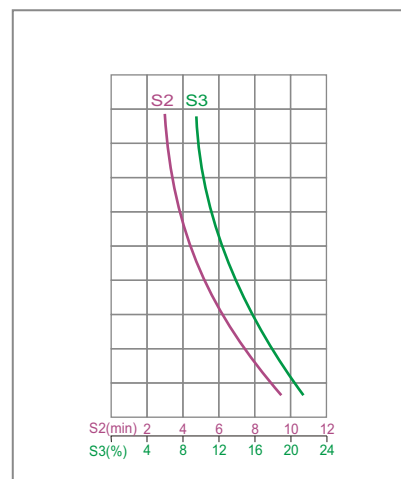
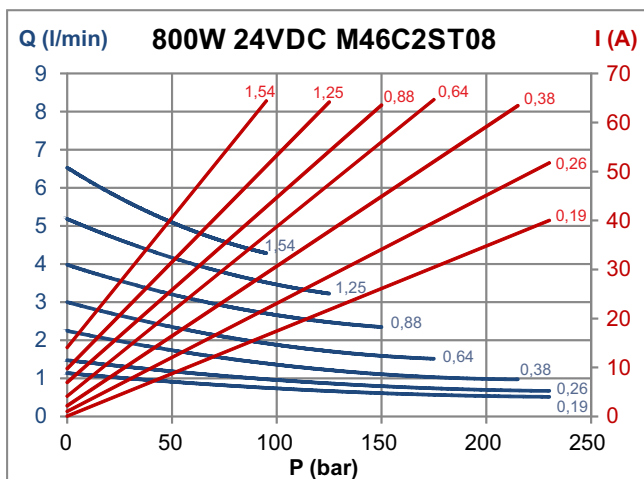
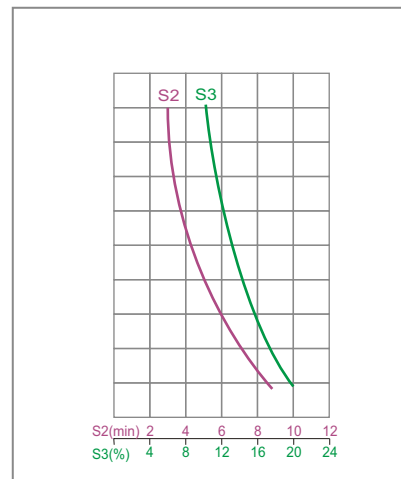
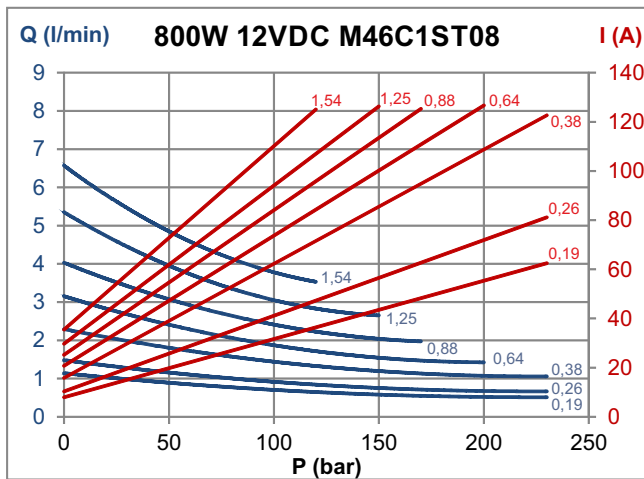
# SECTION A

## 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 40°C

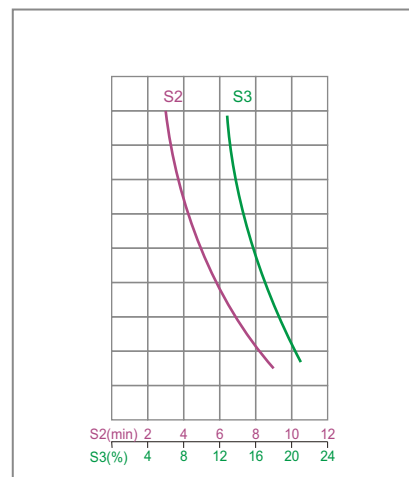
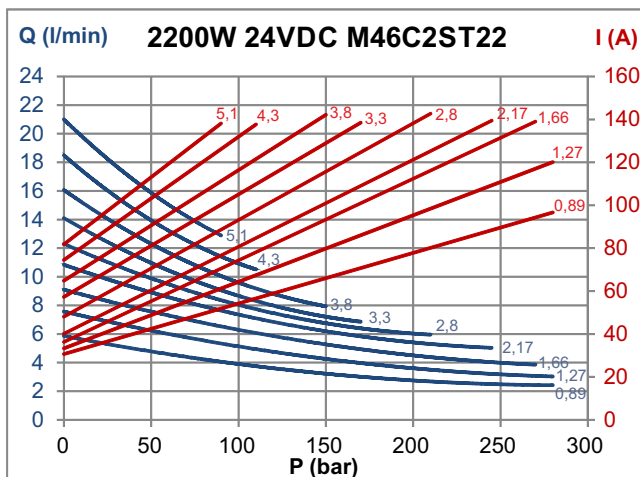
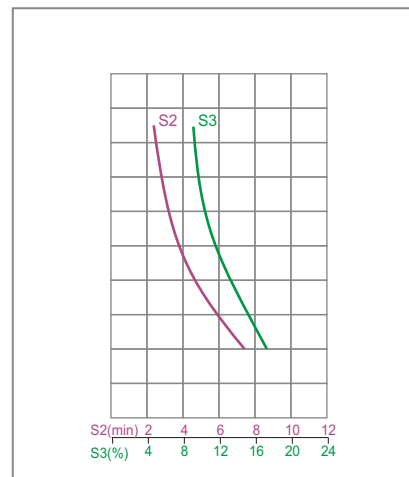
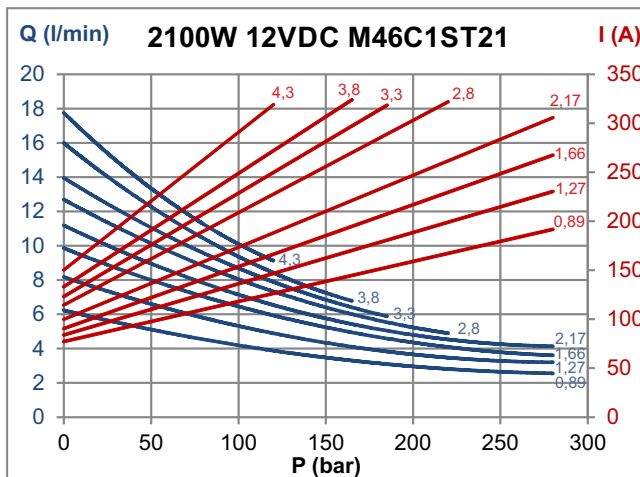
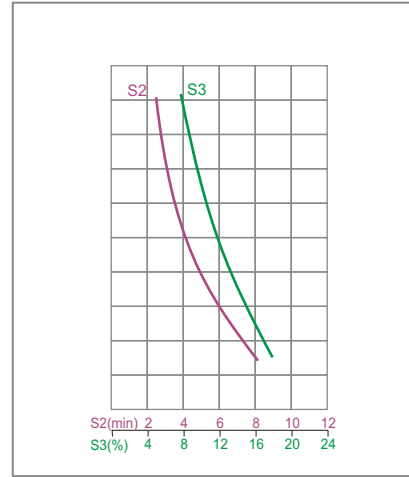
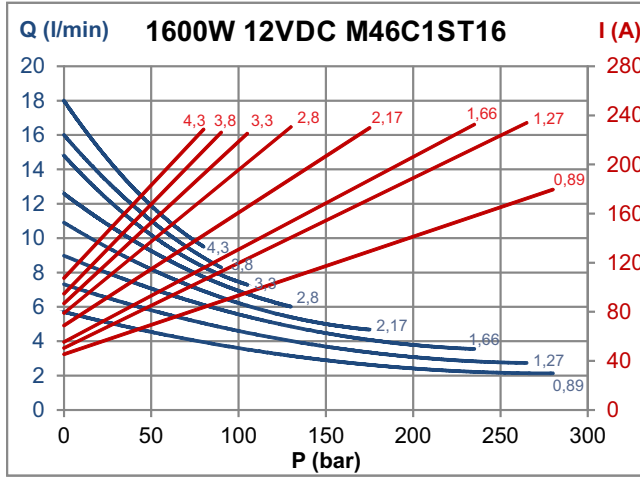
**DC MOTORS Ø80 DIAGRAMS**



Tests made with rectified current supplied at nominal motor voltage (measured at the motor connection terminals) and oil ISO VG46 at 40°C

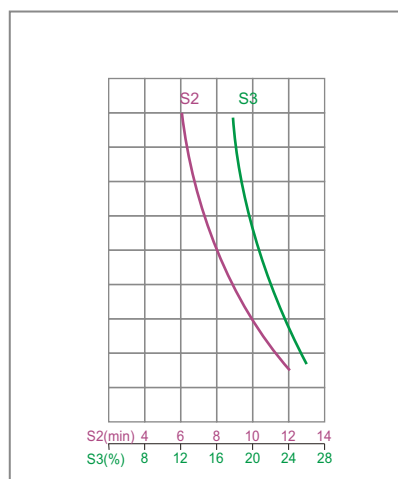
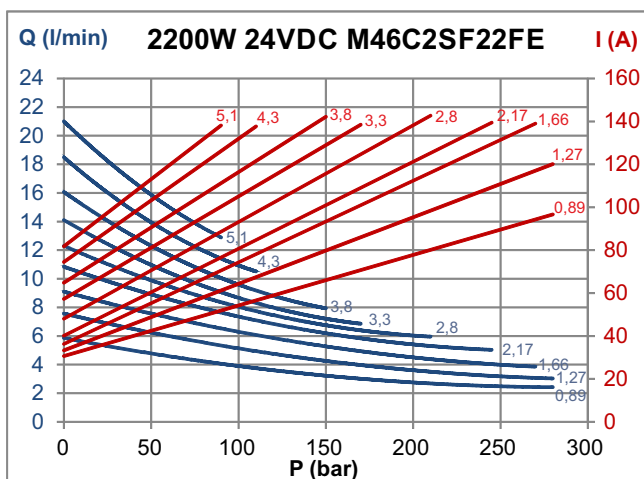
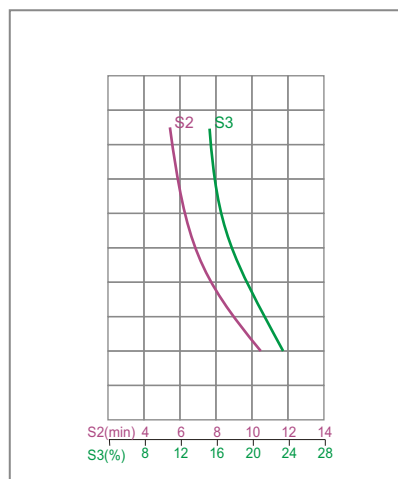
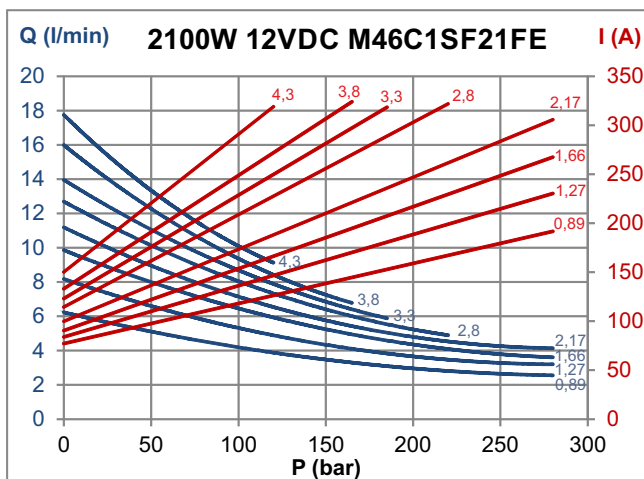
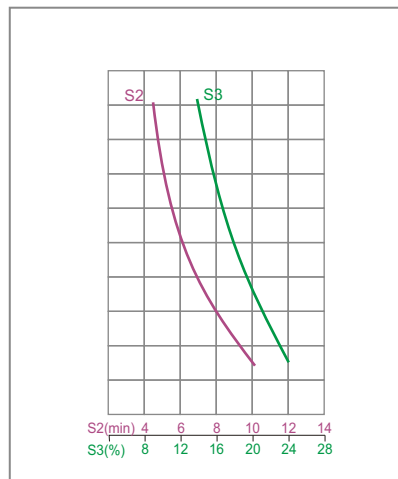
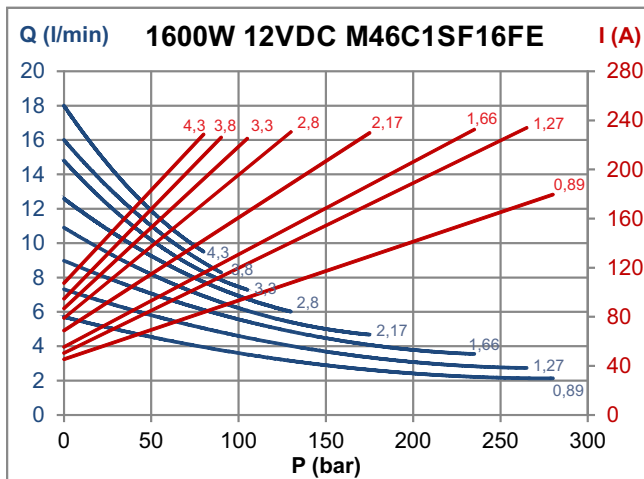
# SECTION A

## 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 40°C

**DC MOTORS Ø114 DIAGRAMS**

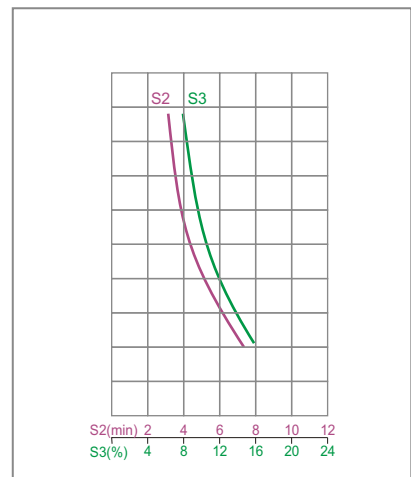
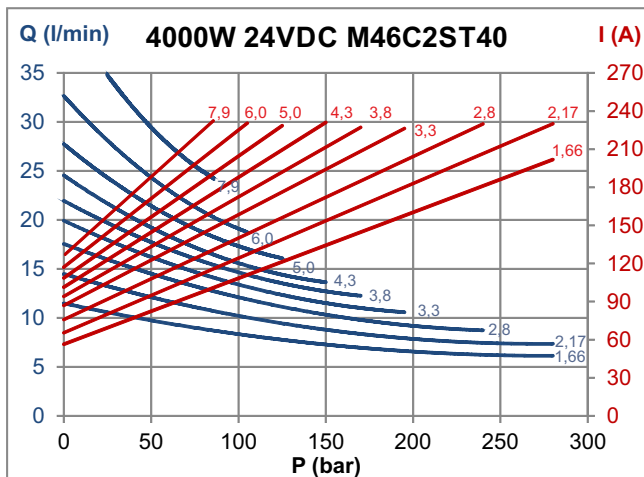
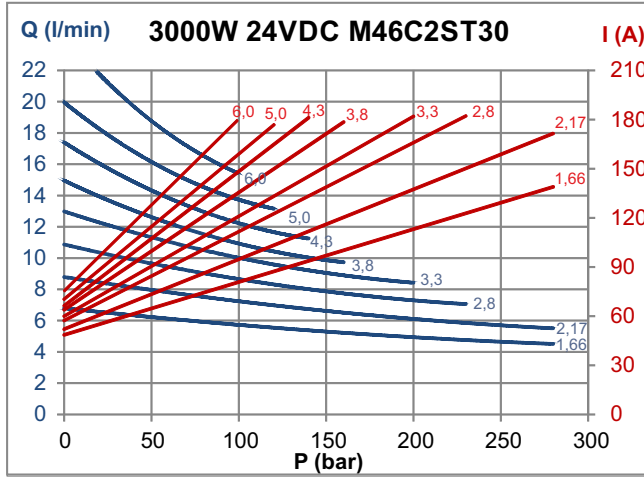


Tests made with rectified current supplied at nominal motor voltage (measured at the motor connection terminals) and oil ISO VG46 at 40°C



# SECTION A

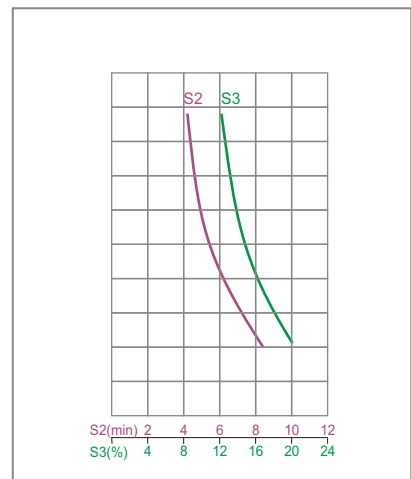
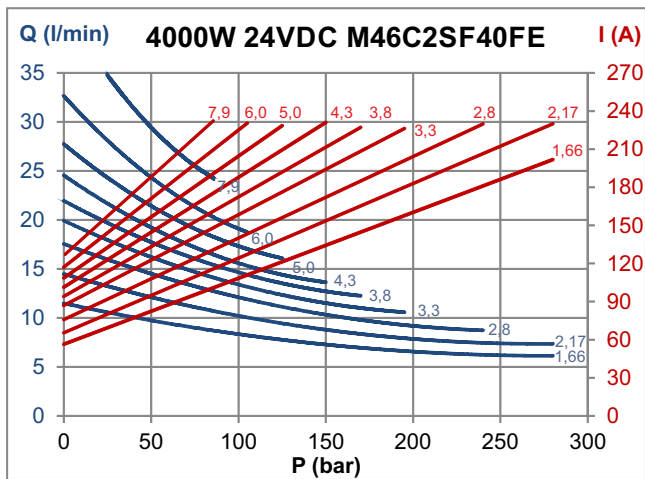
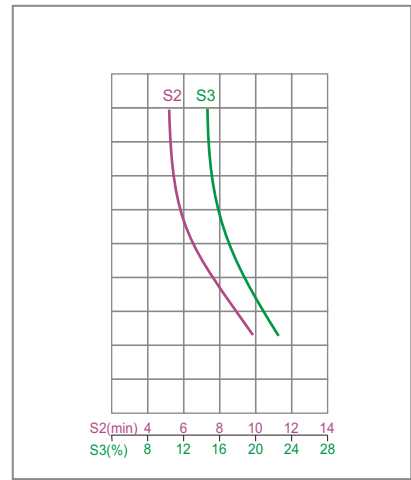
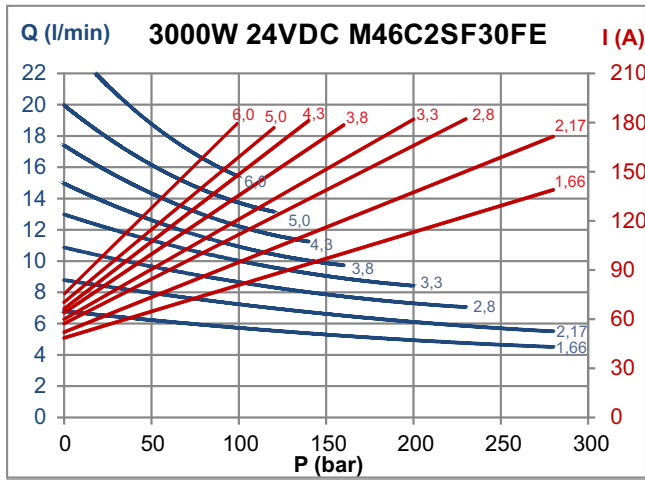
## DC MOTORS Ø125 DIAGRAMS



Tests made with rectified current supplied at nominal motor voltage (measured at the motor connection terminals) and oil ISO VG46 at 40°C

# SECTION A

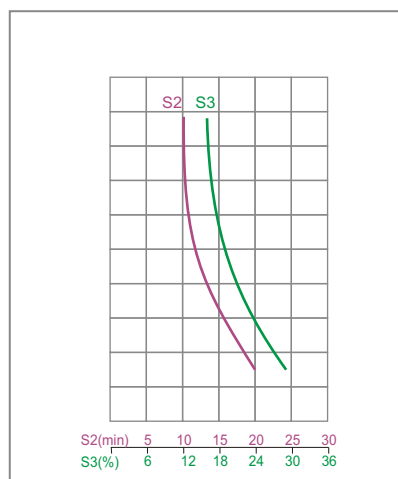
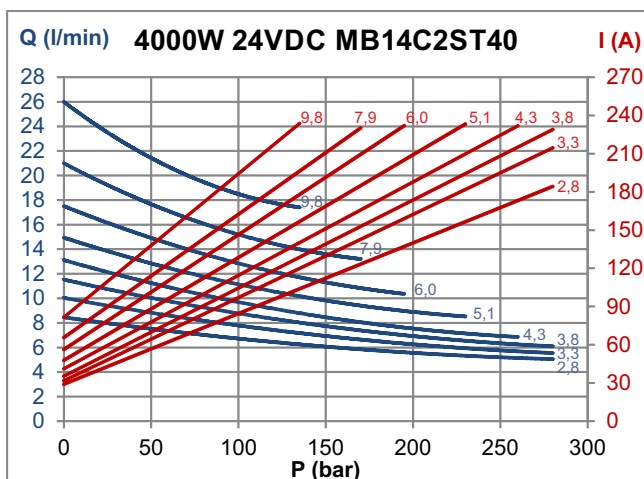
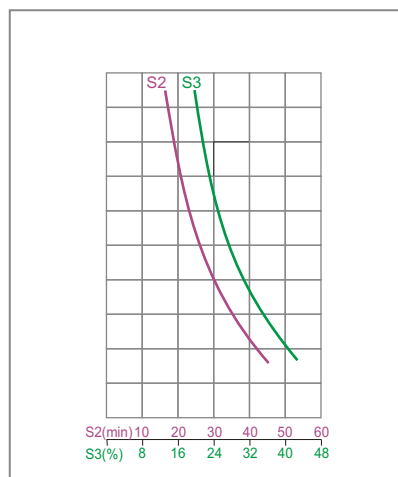
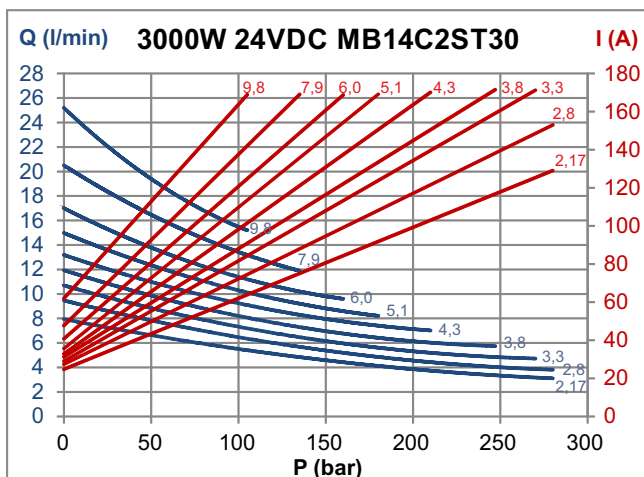
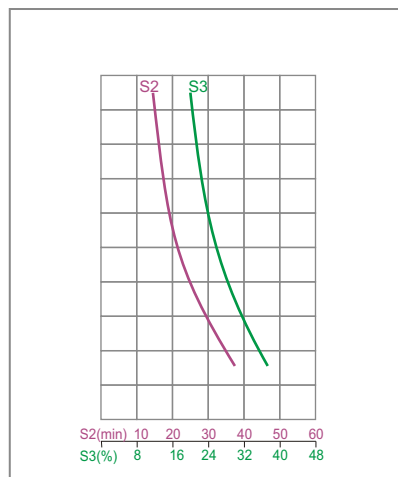
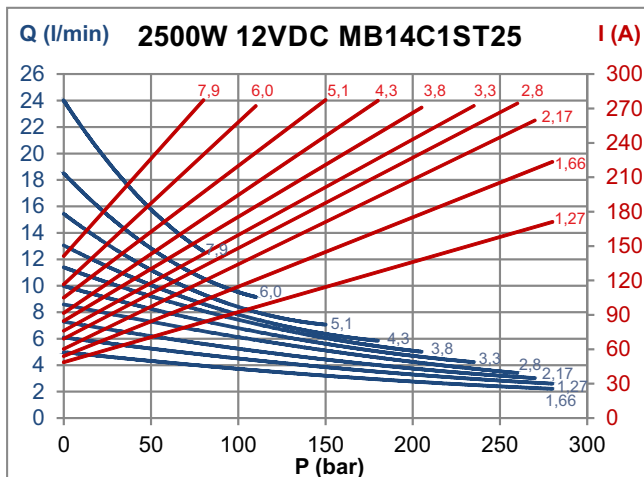
## DC MOTORS Ø125 DIAGRAMS



Tests made with rectified current supplied at nominal motor voltage (measured at the motor connection terminals) and oil ISO VG46 at 40°C

# SECTION A

## 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 40°C

## SUMMARY TABLE - PUMP/MOTOR COUPLING KITS

Motor \ Pump	Group 0 pump Series G - K - H - R	Group 1 pump Series G - K - KL- H - S
DC Ø 80	EPB80-0 (E36200007+E10101020)	n/a
DC Ø 114	n/a	EPB114-1 (E36200003+E10103010)
DC Ø 125	n/a	EPB114-1 (E36200003+E10103010)
DC Ø 151	n/a	EPB151 (E36100000+E36100003+E10105010)



## NOTE

A series of horizontal dotted lines spanning the width of the page, intended for handwritten notes.

## CENTRAL FLANGES

Three flanges to cover all DC motors Hydronit range, from frame 80 up to frame 151mm.

The **interfaces** to pumps and motors are **standardised**. Motors and pumps already on stock for the Hydronit power packs range can be used to build electropumps too.

The mid flange E10103010 allows the mounting of both frame 114 and frame 125 DC motors. Less parts in stock allow savings and flexibility.

**Lateral ports pumps (KL series)**, allow the positioning of P and T ports where needed (right or left side, thanks to the double attachment) to simplify the power packs positioning within the machine.

**Standard gear pumps**, as mounted in the power packs PPC and PPM ranges, can be mounted here too, thanks to the lateral P port on the flange. **Double pumps**, including those with an integral **HI-LO circuit**, are also available.

### Q & A

#### Which gear pump / central flange combination should I choose?

Depending on the motor frame you have multiple options:

- for frame 80 DC motors (power up to 800W) you have only the choice of group 05 pumps. these are the same used in PPM and PPC power packs (front flange P port and rear flange suction port).
- for frame 114 and 125 DC motors (1600W up to 4000W), the same central flange can accommodate standard power pack pumps, either group 05 (with an adapter) or group 1, with the front flange P port, connected to the lateral 1/4 BSPP exit port. As alternative, the classical group 1 KL series pumps with lateral ports are available. These can be fitted with P and T ports which can be rotated 180°, when configuring the power pack, in order to allow ports positioning flexibility.
- for frame 125 (DC motors 2500W, 3000W and 4000W), a standard B14 bell housing and coupling is used. Only KL pumps are usable.

#### Is the central flange available as a loose component?

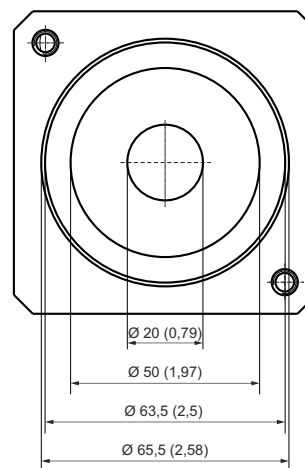
Yes. We can supply either fully assembled and tested electropumps or kits of loose components which can be kept in stock by our worldwide distributors and easily assembled to satisfy local market demand quickly and effectively.

# SECTION B

## DC MOTORS Ø80 CENTRAL FLANGES - OVERALL DIMENSIONS

Spare part code	
E10101020	
Cavity	Threads
P	1/4 BSPP
DC motors attachment	2 bolts M6x14
Pumps attachment	2 bolts M5x** (see pump lenghts on the relevant tables)
Mounting Foot attachment	2 bolts M8x16

Motor side

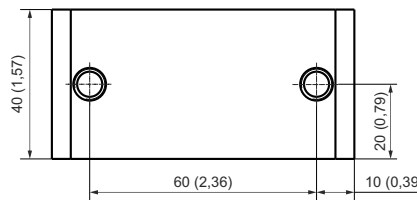


**Notes:**

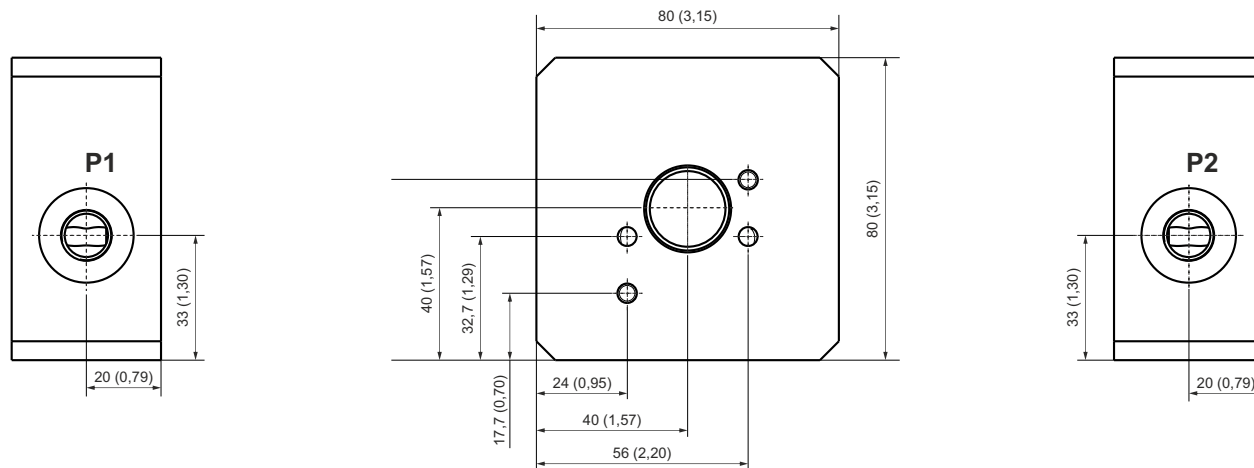
- all dimensions in mm + (inches)

**Weight:**

0,759 kg (1,67 lb)



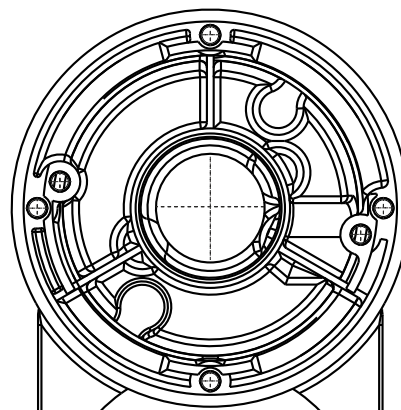
Pump side



DC MOTORS Ø114 - Ø125 CENTRAL FLANGES - OVERALL DIMENSIONS

Spare part code	
E10103010	
Cavity	Threads
P	1/4 BSPP
DC motors attachment	tie rods M6
Pumps attachment	2 bolts M8x** (see pump lenghts on the relevant tables)
Mounting Foot attachment	2 bolts M10x18

Motor side

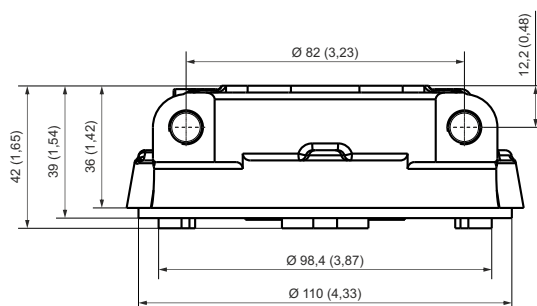


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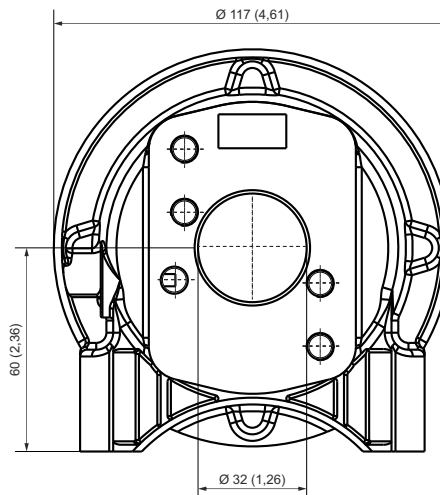
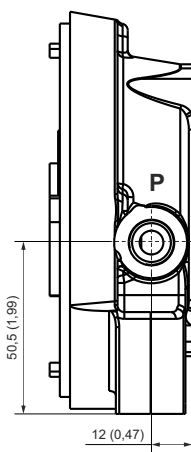
- all dimensions in mm + (inches)

Weight:

0,357 kg (0,79 lb)



Pump side

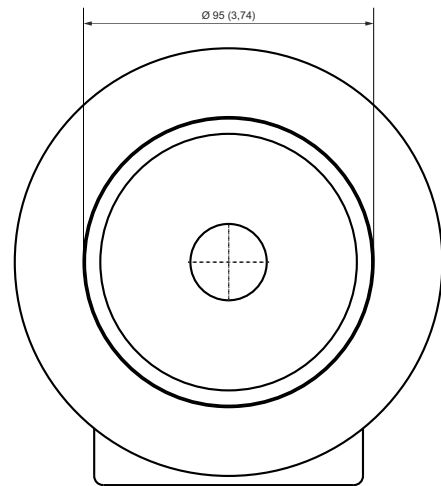


# SECTION B

## DC MOTORS Ø151 CENTRAL FLANGES - OVERALL DIMENSIONS

Spare part code	
E10105010	
Cavity	Threads
DC motors attachment	tie rods M6
Pumps attachment	2 bolts M8x** (see pump lenghts on the relevant tables)

Motor side



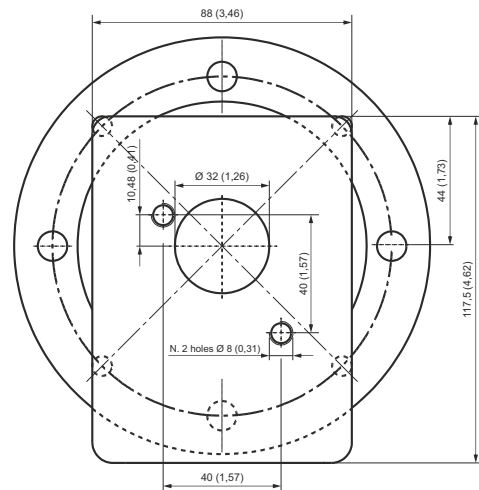
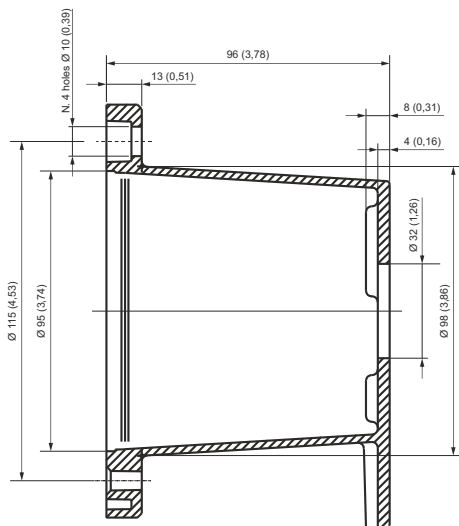
**Notes:**

- all dimensions in mm + (inches)

**Weight:**

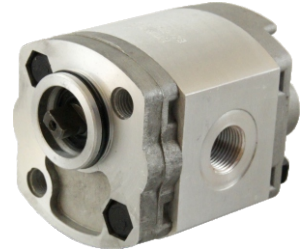
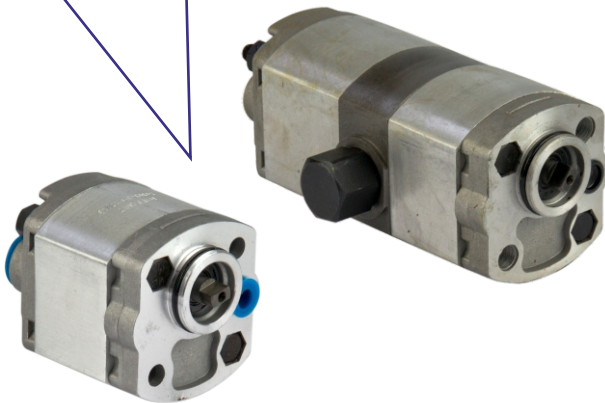
0,448 kg (0,99 lb)

Pump side



## PUMPS

**K series.** The standard pressure balanced design for cost effective solutions. Also available as a double pump with or without HI-LO circuit integrated within the pump itself



**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.

**H series.** It features an oversized shaft and a higher number of teeth for high pressure applications, up to 280 bar peak.



**R series.** Bidirectional pumps with integrated suction check valves and two front outlet ports.

### Q & A

**Why are pressure balanced gear pumps better than fixed clearance gear pumps used by some competitors?**

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

**How can we mount both group 0 and group 1 pumps on the same Universal central manifold?**

The group 1 pumps fit directly on the central manifold and are fixed by two bolts provided with the pump.  
The group 0 pumps are fitted by adaptor plate E60513025, which adapts the pump front flange to to the central manifold.

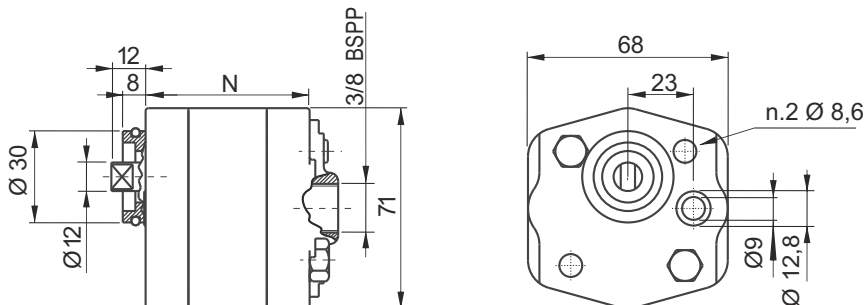
**Why do the pump technical specifications show three maximum pressure levels?**

Our pumps have three ratings for the maximum allowed pressure: 1-Peak: is the max pressure allowed for less than 2 seconds. 2-Intermittent: is the max pressure for a period of 20 seconds; 3-Continuous: is the normal pressure allowed continuously.



# SECTION C

## G SERIES GEAR PUMPS, GROUP 1



### 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: 21 ÷ 25 Nm
Pressure definition	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON

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

### Spare part code

E60 60 30 \*\*

Pump type:  
60 = Group 1

Size:  
see below table

### Assembly code

G

Pump type:  
G = G series

1,1

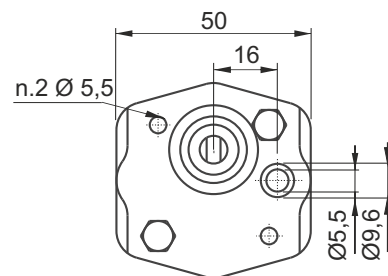
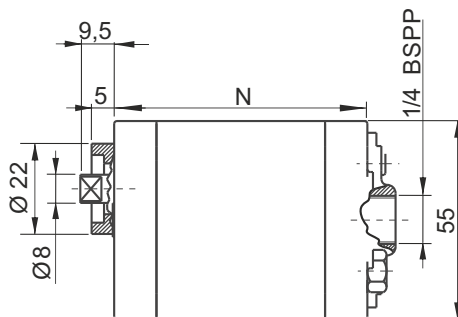
Nominal displacement:  
(cc/rev) see below table

### Available range

Nominal displacement [cc/rev]	Peak pressure [bar]	Intermittent pressure [bar]	Continuous pressure [bar]	Max speed [rpm]	N [mm]	Bolts* [mm]	Code marked on pump	Spare part code	Weight [Kg]
0,8	250	230	210	6000	35,8	M8x50	EK1PD1.3G	E60603001	0,49
1,1	250	230	210	6000	36,8	M8x50	EK1PD1.6G	E60603002	0,50
1,3	250	230	210	6000	37,8	M8x50	EK1PD2G	E60603003	0,51
1,6	250	230	210	6000	38,8	M8x55	EK1PD2.5G	E60603035	0,52
2,1	250	230	210	6000	40,8	M8x55	EK1PD3.3G	E60603004	0,54
2,6	250	230	210	6000	42,3	M8x60	EK1PD4.2G	E60603005	0,56
3,2	230	210	190	5000	43,8	M8x60	EK1PD5G	E60603006	0,58
3,7	230	210	190	4500	45,8	M8x60	EK1PD5.8G	E60603007	0,61
4,2	230	210	190	4000	47,3	M8x60	EK1PD6.7G	E60603008	0,63
4,9	210	190	170	3500	49,3	M8x65	EK1PD7.5G	E60603009	0,65
6,0	210	190	170	3000	51,3	M8x65	EK1PD9.2G	E60603010	1,01
7,9	200	180	160	2100	88,0	M8x100	K1PD11.5G	E60603012	1,12
9,8	170	150	130	1700	95,0	M8x110	K1PD15G	E60603014	1,27

\* A washer is always fitted to ensure correct bolt engagement

## G SERIES GEAR PUMPS, GROUP 0

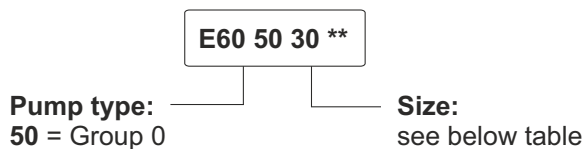


### Main features

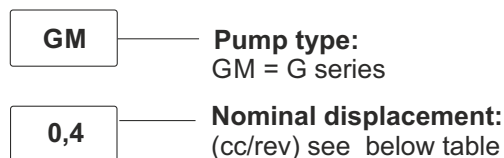
<b>Oil temperature</b>	-15 ÷ +80 °C
<b>Inlet pressure</b>	0,7 < P < 3,0 bar (absolute pressure)
<b>Fixing bolts</b>	2 x M5 8.8 class steel tightening torque: 8 ÷ 9,5 Nm
<b>Pressure definition</b>	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON

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

### Spare part code



### Assembly code



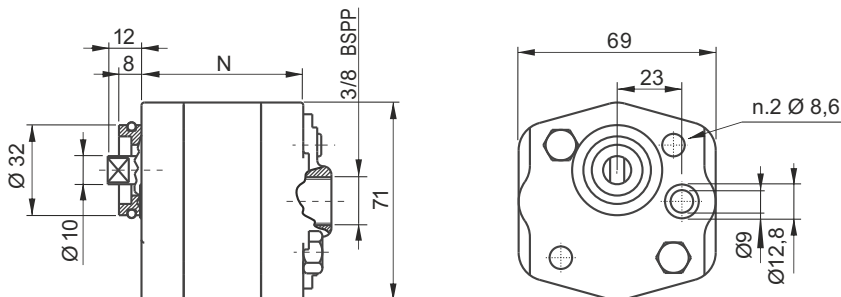
### Available range

Nominal displacement [cc/rev]	Peak pressure [bar]	Intermittent pressure [bar]	Continuous pressure [bar]	Max speed [rpm]	N [mm]	Bolts* [mm]	Code marked on pump	Spare part code	Weight [Kg]
0,1	230	210	190	7000	44,5	M5x55	UK0,25D18G	E60503001	0,49
0,2	230	210	190	7000	44,5	M5x55	UK0,25D24G	E60503002	0,50
0,4	230	210	190	7000	47,5	M5x55	UK0,25D36G	E60503004	0,51
0,6	230	210	190	7000	51,5	M5x65	UK0,5D0,75G	E60503006	0,52

\* A washer is always fitted to ensure correct bolt engagement

# SECTION C

## K SERIES GEAR PUMPS, GROUP 1

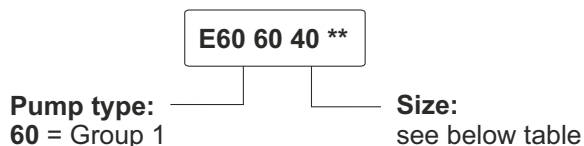


### Main features

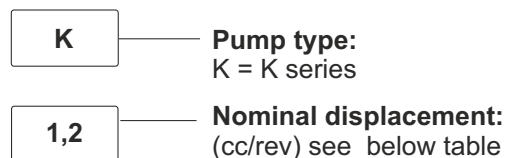
Oil temperature	-15 ÷ +80 °C
Inlet pressure	0,7 < P < 3,0 bar (absolute pressure)
Fixing bolts	2 x M8 8.8 class steel tightening torque: 21 ÷ 25 Nm
Pressure definition	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON

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

### Spare part code



### Assembly code

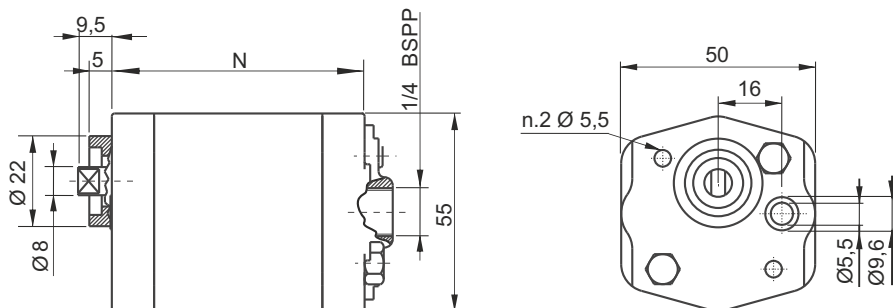
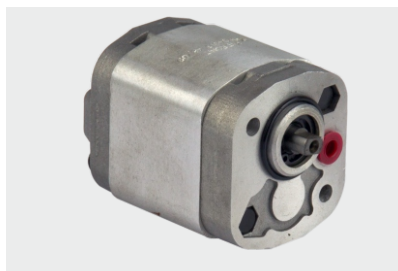


### Available range

Nominal displacement [cc/rev]	Peak pressure [bar]	Intermittent pressure [bar]	Continuous pressure [bar]	Max speed [rpm]	N [mm]	Bolts* [mm]	Spare part code	Weight [Kg]
0,9	250	230	210	4500	61,3	M8x75	E60604001	0,73
1,2	250	230	210	4500	62,8	M8x75	E60604002	0,75
1,6	250	230	210	4500	64,3	M8x80	E60604035	0,77
2,1	250	230	210	4500	66,0	M8x80	E60604004	0,79
2,7	250	230	210	4500	68,5	M8x80	E60604005	0,82
3,2	250	230	210	4500	70,0	M8x85	E60604006	0,86
3,7	230	210	180	3600	72,0	M8x85	E60604007	0,88
4,2	230	210	180	3600	74,0	M8x85	E60604008	0,90
5,0	210	180	140	3000	77,0	M8x90	E60604009	0,94
6,0	210	180	140	3000	81,0	M8x100	E60604010	0,98
7,9	180	140	100	2800	88,5	M8x100	E60604012	1,10

\* A washer is always fitted to ensure correct bolt engagement

## K SERIES GEAR PUMPS, GROUP 0

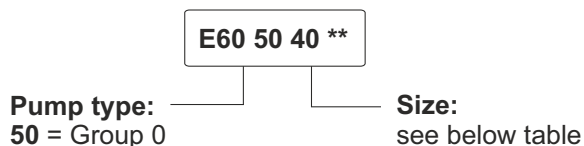


### Main features

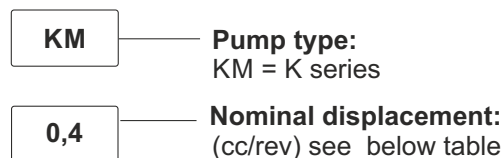
<b>Oil temperature</b>	-15 ÷ +80 °C
<b>Inlet pressure</b>	0,7 < P < 3,0 bar (absolute pressure)
<b>Fixing bolts</b>	2 x M5 8.8 class steel tightening torque: 8 ÷ 9,5 Nm
<b>Pressure definition</b>	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON

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

### Spare part code



### Assembly code



### Available range

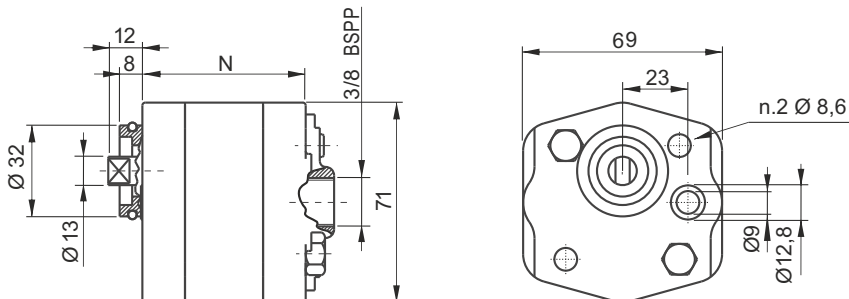
Nominal displacement [cc/rev]	Peak pressure [bar]	Intermittent pressure [bar]	Continuous pressure [bar]	Max speed [rpm]	N [mm]	Bolts* [mm]	Spare part code	Weight [Kg]
0,2	200	180	160	6000	45,5	M5x60	E60504002	0,33
0,4	200	180	160	6000	47,5	M5x65	E60504004	0,35
0,6	200	180	160	6000	51,5	M5x65	E60504006	0,40
0,9	200	180	160	5000	52,5	M5x70	E60504009	0,44
1,3	200	180	160	3900	55,5	M5x70	E60504013	0,49
1,5	200	180	160	3900	57,8	M5x70	E60504015	0,51

Other gear pumps with different pressure and speed available upon request.

\* Washers may be fitted to adapt bolt length

# SECTION C

## H SERIES HIGH PRESSURE GEAR PUMPS, GROUP 1

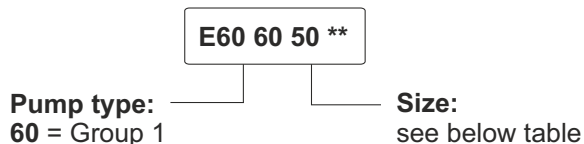


### Main features

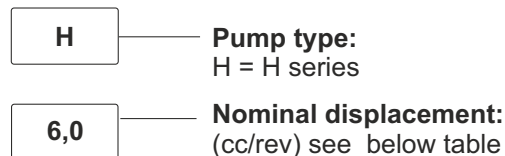
Oil temperature	-15 ÷ +80 °C
Inlet pressure	0,7 < P < 3,0 bar (absolute pressure)
Fixing bolts	2 x M8 8.8 class steel tightening torque: 21 ÷ 25 Nm
Pressure definition	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON

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

### Spare part code



### Assembly code

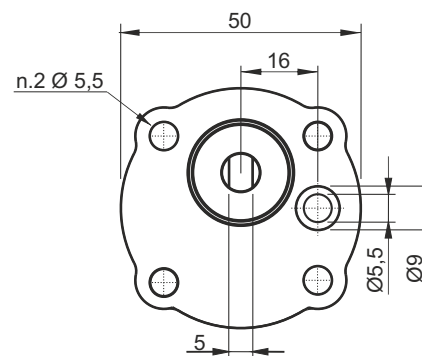
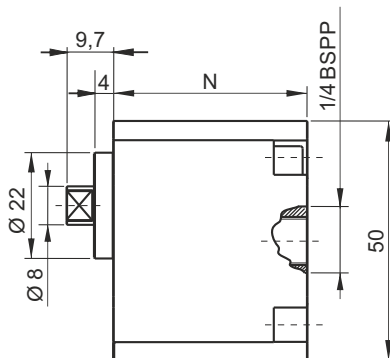


### Available range

Nominal displacement [cc/rev]	Peak pressure [bar]	Intermittent pressure [bar]	Continuous pressure [bar]	Max speed [rpm]	N [mm]	Bolts* [mm]	Spare part code	Weight [Kg]
1,2	280	270	250	5000	39,5	M8x55	E60605002	0,50
1,7	280	270	250	4500	41,3	M8x55	E60605035	0,52
2,2	280	270	250	4500	44,2	M8x60	E60605004	0,54
2,6	280	270	250	4500	45,7	M8x60	E60605005	0,56
3,2	280	270	250	4000	51,9	M8x65	E60605006	0,58
3,8	280	270	250	3800	54,1	M8x70	E60605007	0,61
4,2	280	270	250	3500	82,0	M8x100	E60605008	1,05
4,7	260	250	240	3200	83,5	M8x100	E60605009	1,12
6,0	230	220	210	3000	94,3	M8x110	E60605010	1,22
7,4	230	210	190	2000	97,5	M8x110	E60605012	1,80

\* A washer is always fitted to ensure correct bolt engagement

**H SERIES HIGH PRESSURE GEAR PUMPS, GROUP 0**

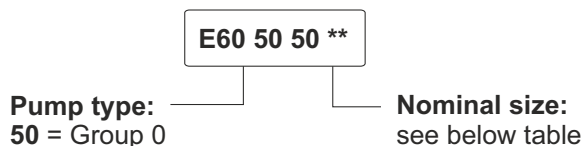


**Main features**

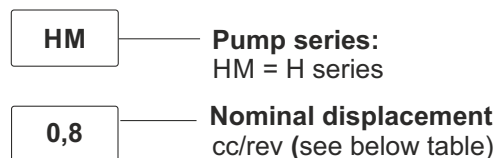
<b>Oil temperature</b>	-15 ÷ +80 °C
<b>Inlet pressure</b>	0,7 < P < 3,0 bar
<b>Fixing bolts</b>	2 x M5 8.8 steel class tightening torque: 25 Nm
<b>Pressure definition</b>	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON

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

**Spare part code**



**Assembly code**



**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 [Kg]
0,1	210	180	160	7000	31,9	5x45	E60505001	0,26
0,2	220	200	180	7000	32,3	5x45	E60505002	0,27
0,4	240	220	210	7000	32,8	5x45	E60505004	0,27
0,6	240	220	210	7000	34,4	5x45	E60505006	0,28
0,8	240	220	210	7000	36,1	5x45	E60505008	0,29
1,2	240	220	210	5000	38,9	5x50	E60505012	0,31
1,5	240	220	210	5000	41	5x50	E60505015	0,32

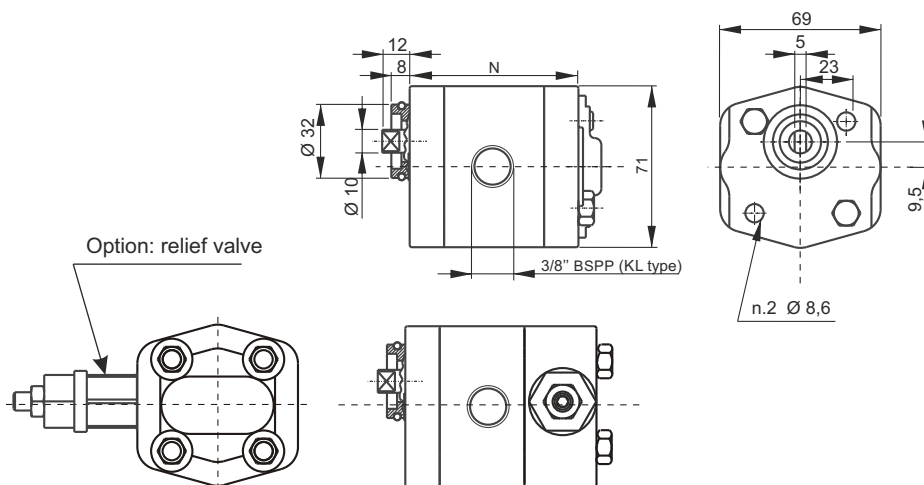
Other gear pumps with different pressure and speed available upon request.

\* Washers may be fitted to adapt bolt length



# SECTION C

## KL SERIES GEAR PUMPS, GROUP 1



### Main features

<b>Oil temperature</b>	-15 ÷ +80 °C
<b>Inlet pressure</b>	0,7 < P < 3,0 bar (absolute pressure)
<b>Fixing bolts</b>	2 x M8 8.8 class steel tightening torque: 21 ÷ 25 Nm
<b>Pressure definition</b>	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON

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

### Spare part code

**E60 60 42 \*\***

**Pump type:**  
60 = Group 1

**Size:**  
see below table

### Assembly code

<b>KL</b>	<b>Pump type:</b> KL = KL series
<b>1,2</b>	<b>Nominal displacement:</b> (cc/rev) see below table
<b>V**</b>	<b>Optional relief valve:</b> where ** = (bar max)

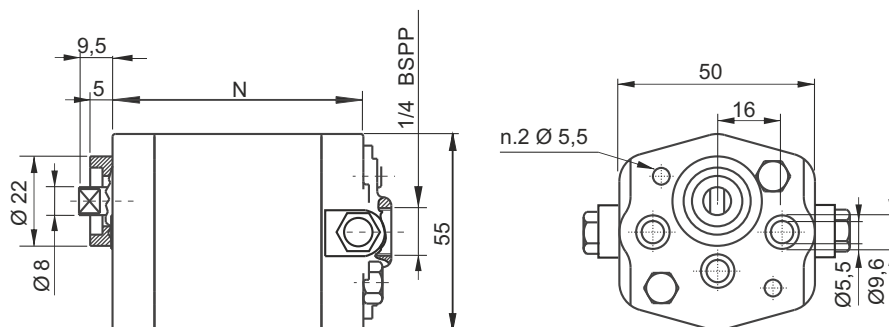
### Available range

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

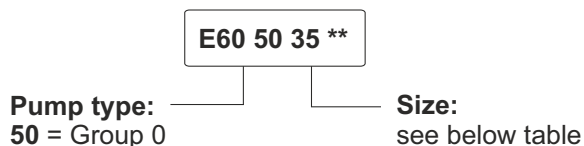
## R SERIES BIDIRECTIONAL GEAR PUMPS, GROUP 0



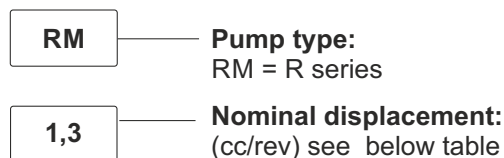
### Main features

<b>Oil temperature</b>	-15 ÷ +80 °C
<b>Inlet pressure</b>	0,7 < P < 3,0 bar (absolute pressure)
<b>Fixing bolts</b>	2 x M5 8.8 class steel tightening torque: 8 ÷ 9,5 Nm
<b>Pressure definition</b>	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON

### Spare part code



### Assembly code



### Available range

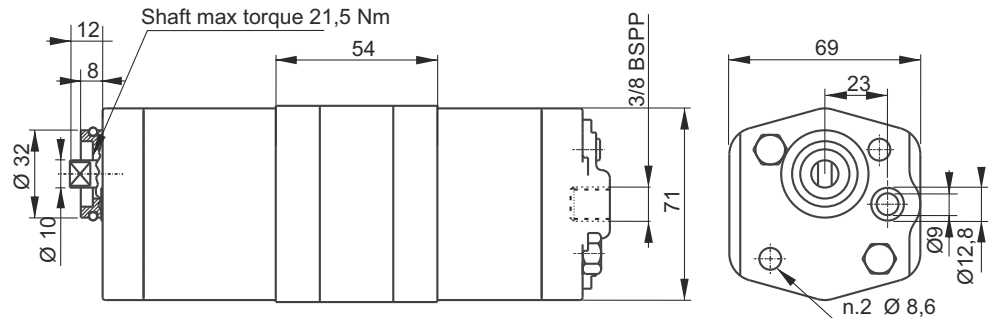
Nominal displacement [cc/rev]	Peak pressure [bar]	Intermittent pressure [bar]	Continuous pressure [bar]	Max speed [rpm]	N [mm]	Bolts* [mm]	Spare part code	Weight [Kg]
0,3	190	170	150	7000	46,5	M5x55	E60503503	0,42
0,5	190	170	150	7000	49,5	M5x60	E60503505	0,44
0,7	190	170	150	7000	51,5	M5x60	E60503506	0,46
0,9	190	170	150	7000	56,5	M5x65	E60503509	0,48
1,3	190	170	150	5000	59,5	M5x70	E60503513	0,50
1,5	190	170	150	4000	61,5	M5x70	E60503515	0,52

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

\* A washer is always fitted to ensure correct bolt engagement

# SECTION C

## K SERIES DOUBLE GEAR PUMPS, GROUP 1



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

### 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: 21 ÷ 25 Nm
Pressure definition	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON

### Choosing the right pump combination:

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

### Spare part code

**E60 60 \*\* \*\* HL**

Pump type:  
60 = Group 1

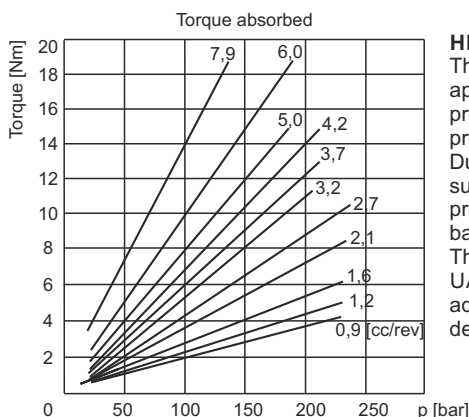
Size:  
see below table

### Assembly code

- K** — Pump type:  
K = K series
- 1,2** — Displacement 1st section
- +**
- 5** — Displacement 2nd section
- HL** — Option:  
Hi - Lo execution

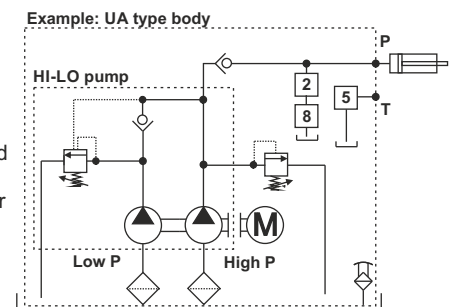
### Available range

Nominal displacement [cc/rev]	Peak pressure [bar]	Intermittent pressure [bar]	Continuous pressure [bar]	Preset unloading pressure* [bar]	Max speed [rpm]	N [mm]	Bolts** [mm]	Spare part code	Weight [Kg]
0,9 + 3,2	250	230	210	42±5	1750	128,3	M8x160	E60600932HL	2,12
1,2 + 5,0	250	230	210	42±5	1750	141,3	M8x160	E60601250HL	2,29



### HI-LO

This is an efficient and energy saving solution for applications where a fast approach and a high pressure working phase are needed (industrial presses, garbage compactors, balers,...). During the high speed phase both pumps are supplying flow to the system while during the high pressure phase, the low pressure pump is discharged back to tank with no load. This solution can be conveniently assembled with our UA or UB or U4 central manifold without any additional kit. Ask to our technical office for more details.

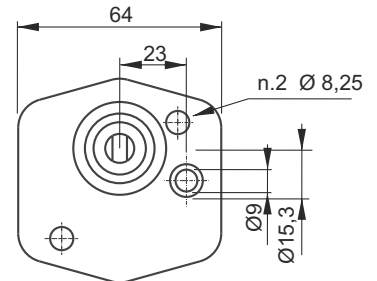
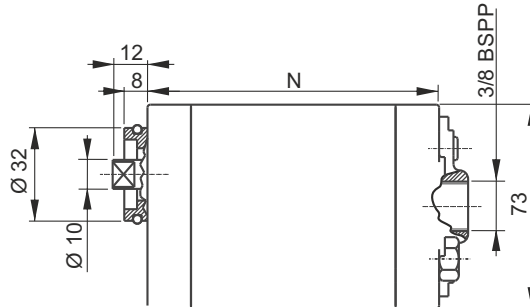


Other pumps with different pressure/speed are available on request.

\* Preset value unloading valve can be adjusted between 15 - 60 bar.

\*\* A washer is always fitted to ensure correct bolt engagement

## S SERIES HELICAL ROTOR PUMPS FOR HIGH PRESSURE, HIGH FLOW AND LOW NOISE APPLICATIONS, GROUP 1



### Main features

<b>Oil temperature</b>	-15 ÷ +80 °C
<b>Inlet pressure</b>	0,7 < P < 3,0 bar (absolute pressure)
<b>Fixing bolts</b>	2 x M8 8.8 class steel tightening torque: 21 ÷ 25 Nm
<b>Pressure definition</b>	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON

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

### Spare part code

**S60 60 30 \*\***

**Pump type:**  
60 = Group 1

**Size:**  
see below table

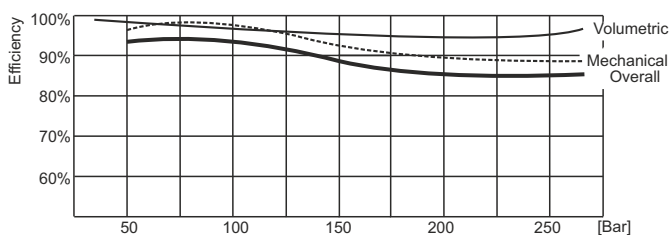
### Assembly code

**S** — **Pump type:**  
S = S series

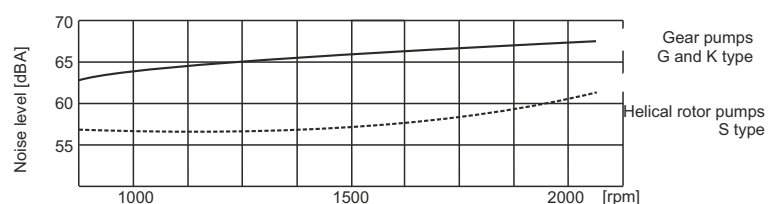
**6,4** — **Nominal displacement:**  
(cc/rev) see below table

### Available range

Nominal displacement [cc/rev]	Peak pressure [bar]	Intermittent pressure [bar]	Continuous pressure [bar]	Max speed [rpm]	N [mm]	Bolts* [mm]	Noise level [dB]**	Spare part code	Weight [Kg]
2,2	270	250	210	3000	66,2	M8x80	50	S60603004	0,85
3,2	270	250	210	3000	69,9	M8x85	51	S60603006	0,9
4,3	270	250	210	3000	81,6	M8x100	52	S60603008	0,95
5,0	270	250	210	3000	83,8	M8x100	52	S60603009	1,1
6,4	250	200	200	3600	93,6	M8x110	57	S60603010	2,03
8,3	215	195	153	3600	98,6	M8x120	57	S60603012	2,08
10	190	170	126	3600	103,6	M8x120	57	S60603014	2,12
13	160	140	99	3600	110,5	M8x140	57	S60603016	2,15



Note: reference values measured at 1500rpm with oil ISO VG 46 cSt at 40 °C.



\*\* The noise level is for guidance only since it depends on the values of the resonance of the mounting structure and other components of the system.

\* A washer is always fitted to ensure correct bolt engagement

## NOTES

A series of horizontal dotted lines spanning the width of the page, intended for taking notes.

## ACCESSORIES



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



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



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

### Q & A

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

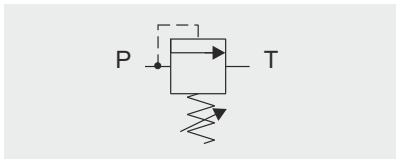
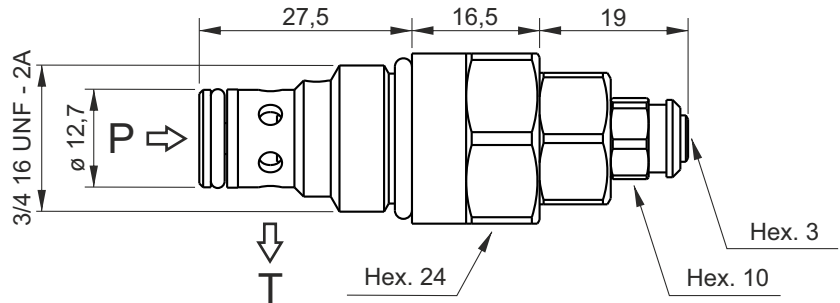
Yes. Hydronit consistent engineering is translated in a reduced number of modular parts and accessories to fit all ranges: Power Pack Compact series, Power Pack Micro series and Electropumps.

Stockist distributors keep spare parts in stock and are able to assemble very quickly the required unit according to the actual market demand



# SECTION D

## VMDC20 - DIRECT ACTING RELIEF VALVES



### Main features

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

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

### Spare part code

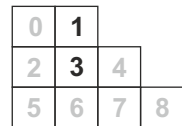
- VMDC** — Relief valve
- 20** — Nominal size:  
20 = 20 l/min
- B** — Working range:  
A = 0 ÷ 30 bar  
B = 20 ÷ 100 bar  
C = 50 ÷ 200 bar  
D = 150 ÷ 350 bar
- 1** — Option:  
1 = screw (std)  
2 = handwheel  
3 = with cap  
4 = plastic seal

### Assembly code



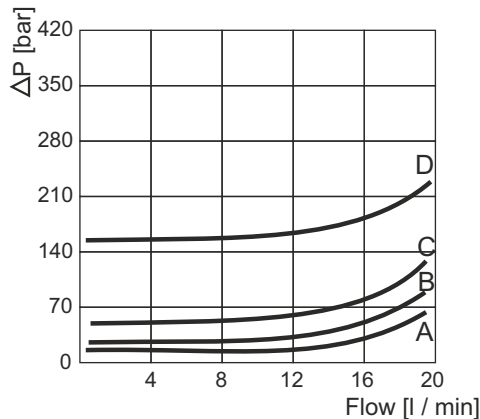
where \*\*\* stands for max setting pressure [bar]. Ex. V200  
 where \* is the option

### Mounting cavities

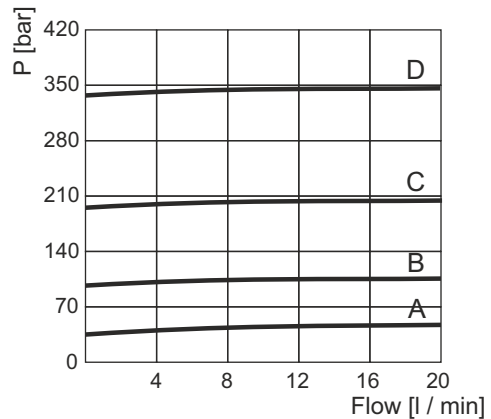


Note: cavities 3, 4 and 6 are present on central manifold type UB only.

### Minimum setting pressure



### Pressure vs Flow



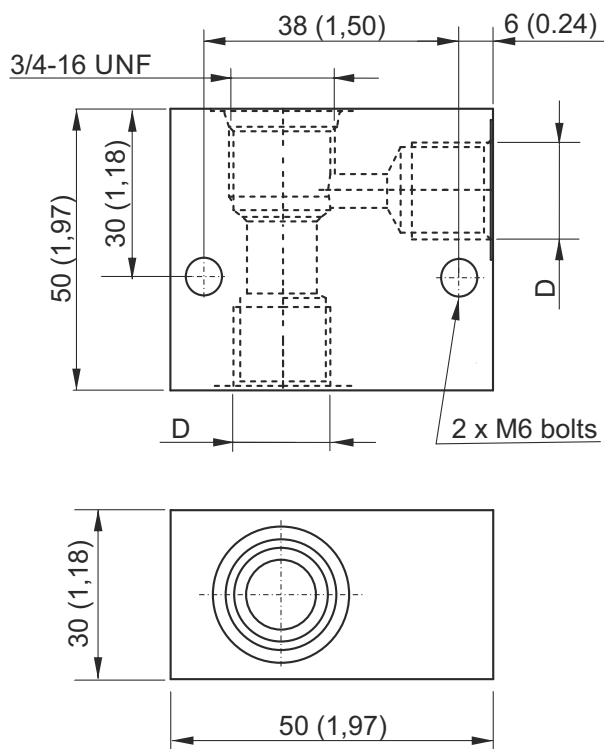
Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature

**ACCESSORIES**

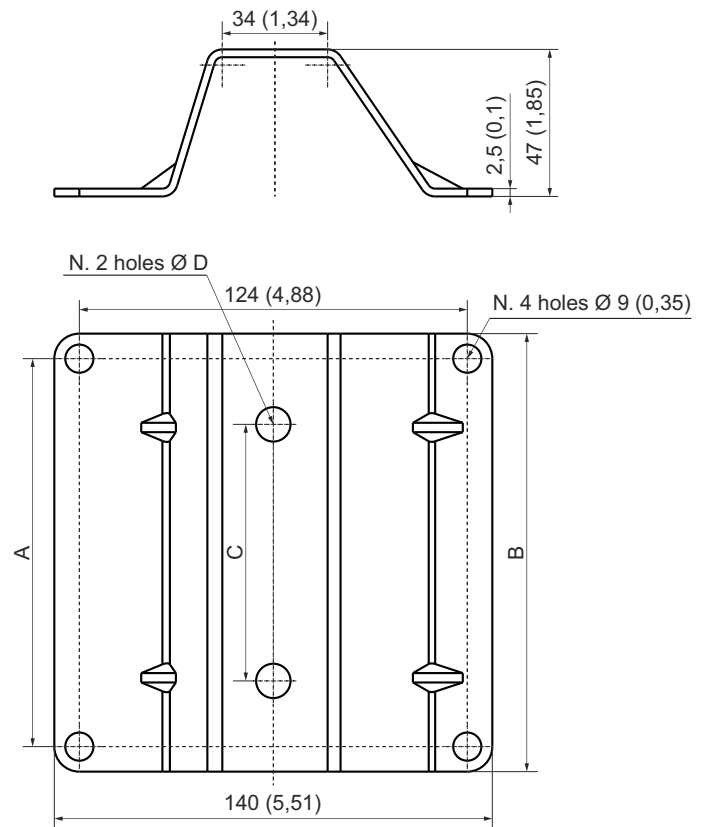


Dimensions in mm (inches)

**In line mounting SAE 8 manifold**



**Foot mounting support**



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

Spare part code	A	B	C	D	Weight
<b>E60543003</b>	79 (3,11)	95 (3,74)	60 (2,36)	9 (0,35)	0,35 Kg
<b>E60543006</b>	124 (4,88)	140 (5,51)	82 (3,23)	11 (0,43)	0,50 Kg

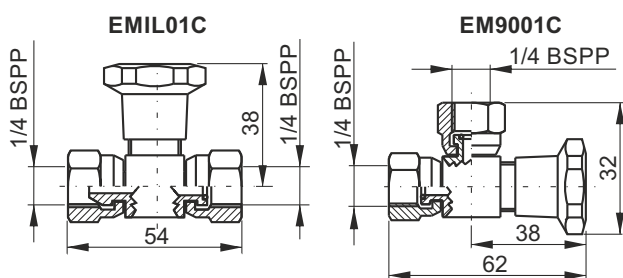
Note:  
 - E60543003 must be used only for EPB80  
 - E60543006 must be used only for EPB114 and EPB125

# SECTION D

## ACCESSORIES

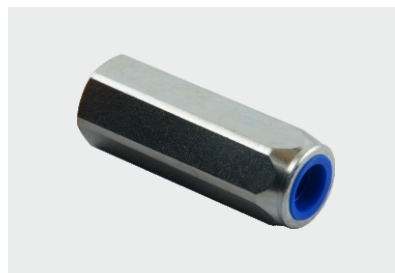


Gauge isolator F-F

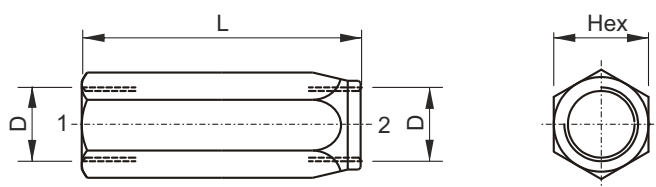


Weight: 0,14 Kg. Max working pressure: 400 bar

Spare part code
<b>EM9001C / EMIL01C</b>



In-line check valve



Spare part code	D	Ch	L	Weight
VUR01C	1/4 BSPP	19	55	0,10 kg
VUR02C	3/8 BSPP	24	65	0,18 kg
VURSAE06C	9/16-18UNF	19 (0,75)	58 (2,28)	0,10 kg (0,22 lb)



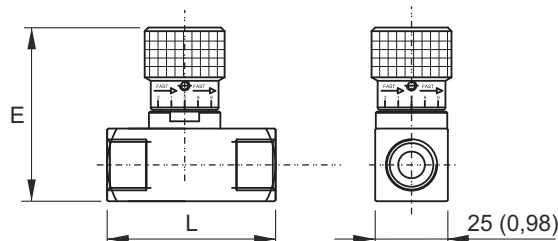
Pressure gauge

Spare part code
<b>MIR63***</b>
***=max pressure in bar (60, 160, 250, 315 bar)

Diameter	63mm
Attachment	1/4BSPP
Protection degree	IP 65
Thermal drift	±0,04%/1K a 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



In-line bidirectional flow control valve



Spare part code	D	E	L	Weight
STB01	1/4 BSPP	68	54	0,29 kg
STB02	3/8 BSPP	68	54	0,27 kg
STBSAE06	9/16-18UNF	68 (2,68)	54 (2,13)	0,30 kg (0,66 lb)

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