MONO

单相电机

SINGLE PHASE MOTORS

DELPHI

三相电机

THREE PHASE MOTORS

manuale tecnico
technical manual

motive
power transmission

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技术特点

Motive DELPHI（三相）和 MONO（单相）电机根据国际统一标准制造，适合普遍工况使用; 其结构形式， 各部尺寸都是通过参考 IEC 72-1 标准相关规定来设计的;

根据 IEC 34-7，实现的结构形式有 B3，B5，B14，B3 / B5，B3 / B14，B14B 等，

Motive 三相异步电动机是全密闭型(TEFC)，带有自力外部通风。

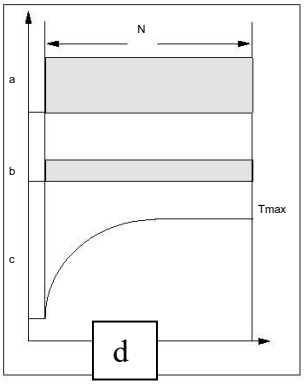
外壳（电机132 机 座 及以下）由铝合金压铸而成，从160机 座 起为铸铁机壳。

所有电机特性数据，如性能和尺寸，都在 Motive 产品型录和 www.motive.it 或 www.motivecn.com网站上进行了详细说明。

所有三相电机均为多电压，和双频率 50/60Hz，根据右表所示
绝缘等级 F， S1*连续运转，IP55 防护等级。
铭牌上标示效率等级 IE2/IE3，符合 IE 60034-30 标准

*S1 - 连续负载运转：运行于恒定负载。

size	Hz	Volts		
56-132	50	230	400	(Pn=100%)
		220	380	(Pn=100%)
		240	415	(Pn=100%)
	60	260	440	(Pn=110%)
		220	380	(Pn=100%)
		265	460	(Pn=115%)
		280	480	(Pn=120%)
132-400	50	400	690	(Pn=100%)
		380	660	(Pn=100%)
		415	720	(Pn=100%)
	60	440	760	(Pn=110%)
		380	660	(Pn=100%)
		460	795	(Pn=115%)
		480	830	(Pn=120%)



a= 负载
b= 电气损耗
c= 温度
d= 时间
N= 恒定负载下的工作时间
Tmax= 最高温度

Technical characteristics

Motive motors are built according to international standard regulations for universal use; each size throughout the construction forms is calculated with reference to the tables of standard IEC 72-1;

The shapes built per IEC 34-7, are B3, B5, B14, B3/B5, B3/B14, B14B

Motive asynchronous three-phase are closed and externally ventilated.

The frame, up to 132 included, is made in die casting aluminium alloy, from 160the frame is made in cast iron

All technical details, as performance data and dimensions, are thoroughly described in the product catalogue and in www.motive.it

All three-phase motors are multiple voltage, and multiple frequency 50/60Hz, according to the data on the right

F Class insulation, Continuous duty service S1*, IP55 protection

Efficiency is classified on the plate IE2/IE3 according to the norm IE 60034-30

*S1 - Continuous duty service: operating at constant load

size	Hz	Volts		
				
56-132	50	230	400	(Pn=100%)
		220	380	(Pn=100%)
		240	415	(Pn=100%)
	60	260	440	(Pn=110%)
		220	380	(Pn=100%)
		265	460	(Pn=115%)
		280	480	(Pn=120%)
132-400	50	400	690	(Pn=100%)
		380	660	(Pn=100%)
		415	720	(Pn=100%)
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		380	660	(Pn=100%)
		460	795	(Pn=115%)
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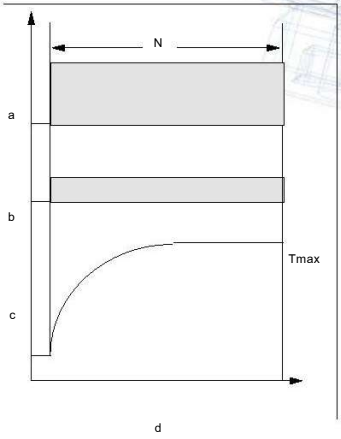


a= load

b= electric losses

c= temperature

d= time

N= steady load operating time

Tmax= max temperature achieved

操作条件

湿度：电气设备必须能够在相对湿度在 30%至 95%（非冷凝）之间运行。必须透过适当的设备设计或在必要时采取其他措施（例如：内置加热器用于加热，排水孔等）。 绕组采用真空浸渍(VPI 工艺 – 无蒸发) 因此适用于热带气候。

海拔高度和温度：电机功率适用于在海拔高度小于 1000m 正常运行，并且环境温度介于 -25°C 和 +40°C 之间 （IEC 34-1）：对于指定条件以外的工作条件（更高的海拔和/或温度），功率每10°超温降低10%， 高度升高每1000公尺功率降低 8% 。在具爆炸性环境中使用的电机，不允许在温度超出-20°C + 40°C 范围的环境中使用。

电压 - 频率：允许最大电压变化为标称值的+-10%。在这个范围内，Motive 电机可以正常输出额定功率。在连续工作中，在上述电压限值下，电机温升的波动最高可达为+/- 20°C。正常绕组的计算电压为 400V ，频率为 50Hz。

绝缘：定子绕组采用漆包铜线和 F 级绝缘材料，保证了对电气和机械应力的高度保护。 根据 EN 60034-1 定义的绝缘等级的最高极限温度 （Tmax）如下表:

为了确保长期 S1 连续负载运转，Motive Delphi 系列电机具有 B 级或更低的温升水平，远低于 F 级绝缘系统保护限值。

Classe	ΔT (°C)	Tmax (°C)
A	60+5°	105
E	75+5°	120
B	80+5°	130
F	105+5°	155
H	125	180

Working conditions

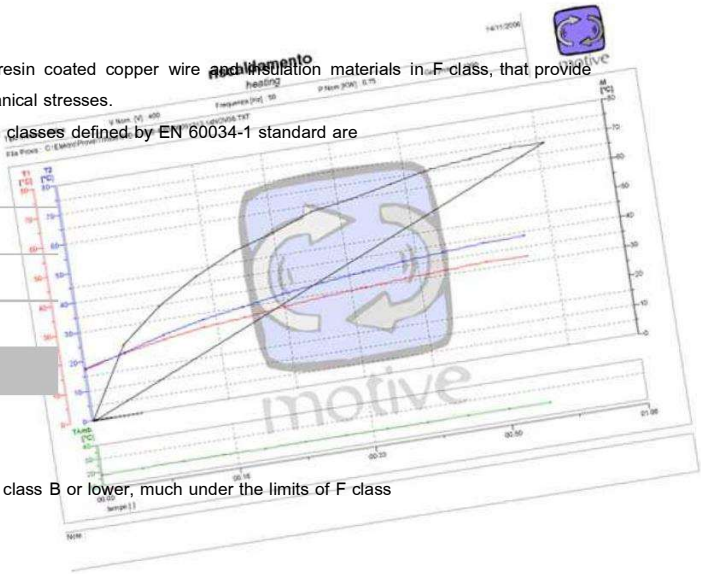
Humidity: The electrical equipment must be able to work with a relative humidity between 30 and 95% (without condensation). Damaging effects of occasional condensation must be avoided by adequate equipment design or, if necessary, by additional measures
(for example, built-in heating device, drainage holes). The winding are vacuum pressure impregnated (VPI process, evaporation free, medium category), and are therefore suitable for tropical climates

Altitude and temperature: the powers indicated are intended for regular use at altitudes below 1000 mt above sea level and a temperature between -15°C and 40°C (IEC 34-1): For higher altitude and/or temperature the power decreases of 10% each 10°C of higher temperature, and of 8% for each 1000 mt of higher altitude. It is not allowed to use motors designed for explosive atmospheres in environment temperatures out of -20°C and +40°C range.

Voltage - Frequency: The maximum variation of the supply voltage is +-10%. Within this tolerance Motive motors supply the rated power. Within such range, the temperature rise of the motor can fluctuate up to +/-20°C

Insulation: the stator winding is made of resin coated copper wire and insulation materials in F class, that provide high protection against electrical and mechanical stresses.
The max temperatures (Tmax) for insulation classes defined by EN 60034-1 standard are

Class	ΔT (°C)	Tmax (°C)
A	60+5°	105
E	75+5°	120
B	80+5°	130
F	105+5°	155
H	125	180



The temperature rise of the Delphi series is class B or lower, much under the limits of F class motors, thus permitting a longer motor life

电气和热保护

必须根据 EN 60204-1 的特定操作条件选择保护措施（对于要安装在爆炸性环境中的电动机，请参见 EN60079-14 和 EN61241-14）.

外部保护

您可能拥有：

1. 过流和短路保护，这种保护可以通过磁热开关或保险丝获得; 这些必须根据电机的使用电流进行校准 。

2. 过载保护，通过控制电机上游电源开关的热继电器。

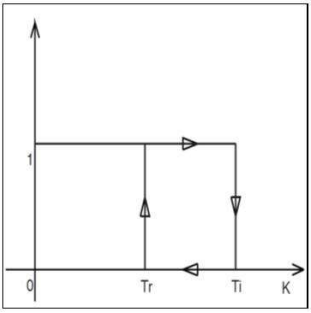
3. 如果设备需要，要防止电机超速，例如在机械负载可能拖累电机的情况下，造成危险情况 。

4. 如果有特殊情况、或与其他机器或机器部件同步操作的需求，通过最小电压继电器控制自动动力闸刀开关，来防止电源故障或骤降。

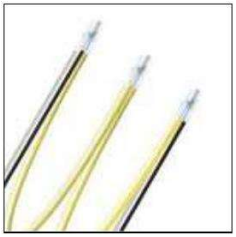
内部热保护：（依 CEI 2-3 / IEC 34-1）

电机电源在线的电气保护可能不足以防止过载。如果冷却条件恶化，电机过热，但电气条件不改变，这会抑制线路保护。在绕组上安装内置保护装置可以解决此问题：

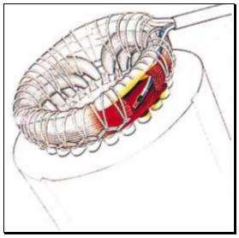
双金属温控开关「PTO」这是一种常闭机电器件，当达到设定上限温度时打开; 当温度低于设定复位温度时，它会自动复位。根据 EN 60204-1 标准，PTO 可以有各种不同的干预温度(作动温度)，也不一定需要自动复位。



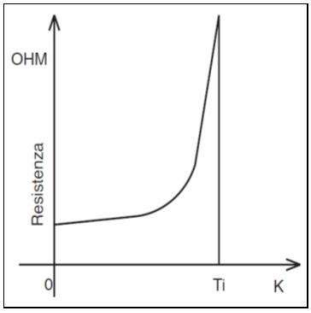
Tr= 开启温度（电机停止）
Ti= 重新关闭温度（电机再次工作）



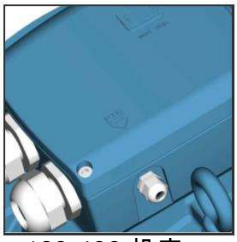
PTC 热敏电阻
该组件一旦达到设定的温度，会立即调整其电阻。Motive 160~355L 的电机，标配在绕组中装有 3 个 PTC 热敏电阻，F 级电机（标准 DELPHI 系列）的作动温度为 130°C。或 H+ 级电机（DELFIRE 系列）为 160°C。



PTC 安装位置

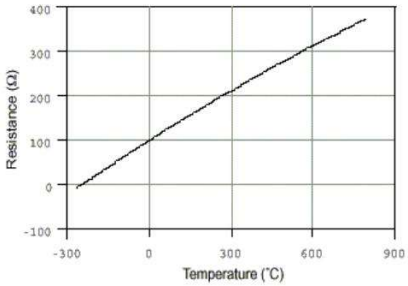


Ti= 干预(作动)温度



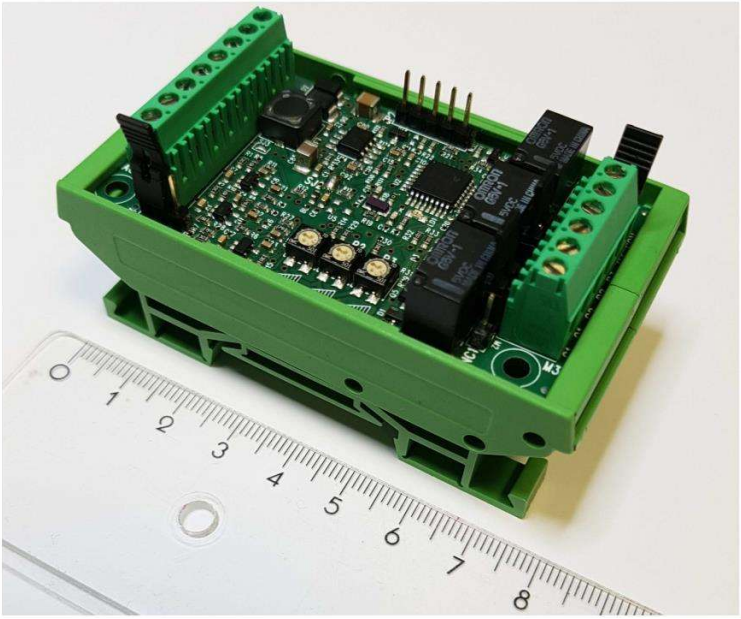
160-400 机座
用于 PTC 的电缆接头

PT100 组件
它是一种依温度连续变化其电阻的组件，其电阻作为温度的函数而不断变化。可以通过此组件对绕组进行连续性的温度测量。

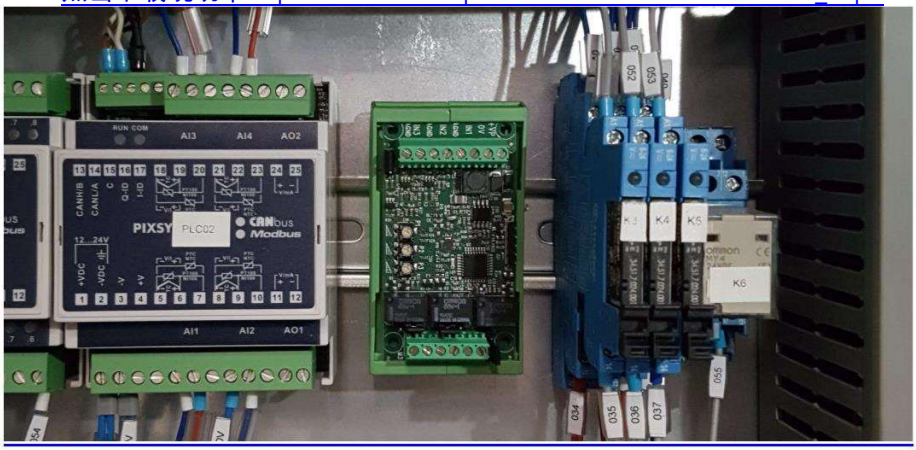


根据 IEC34-1 标准，Motive 所有电机均可承受 1.5 倍额定电流 2 分钟，以及 1.6 倍额定转矩 15 秒（在额定 V 和 Hz 下）的临时过载。

SCHEDAPT - 电机热探头控制模块



点击下载说明书 https://www.motive.it/upload/documenti/manuali/SCHEDAPT_ita.pdf



Electrical and thermal protections

protections must be chosen based on the specific running conditions, according to standards EN 60204-1 (for ATEX motors, see also EN60079-14 and EN61241-14).

External protections

It is possible to have:

1. 
Protection against overcurrent and short-circuits. this protection can be obtained through the magnetothermic circuit breaker or with fuses; these must be calibrated on the motor current.

2. 
Protection against overload by thermal relay that controls a power line contactor upstream the motor.

3. If the application requires, protection against excessive speed of the electric motor, for example if the mechanical load may drive the electric motor itself and thereby create a hazardous situation.

4. If special conditions or synchronized operation with other machines or parts of machines require it, protection against power failures or dips by means of a minimum voltage relay that controls an automatic power knife switch.

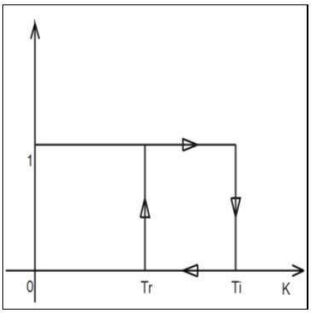
Inner thermal overload cut-out switches

(per CEI 2-3/IEC 34-1)

The electrical protections on the motor power line may not be sufficient to protect against overloads. If the cooling conditions worsen, the motor overheats but the electrical conditions do not change, which inhibits line protections. Installing built-in protections on the windings solves this problem:

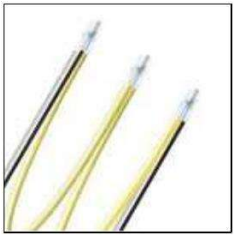
bimetallic device “PTO”

this is a normally-closed electromechanical device that opens when the threshold temperature is reached; it automatically resets when the temperature falls below the threshold level. Bimetallic devices are available with various intervention temperatures and without automatic reset, per EN 60204-1.



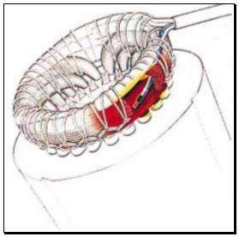
Tr= Opening temperature (motor stops)

Ti= Re-closing temperature (motor works again)

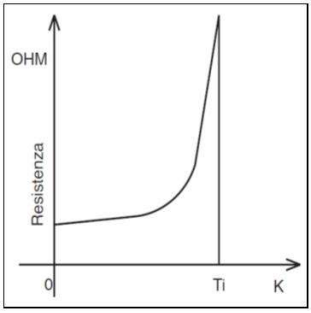


PTC thermistor device

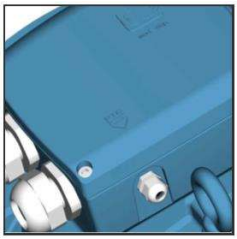
this device promptly, positively adjusts its resistance once the threshold temperature is reached. Motors from size 160 to size 355L are equipped as standard with 3 PTC thermistors immersed in the winding, with activating temperature of 130°C in class F motors (standard DELPHI series) or 160°C in class H+ motors (DELFIRE series).



PTC position



Ti= activating temperature



Size 160-400

PTC cable gland

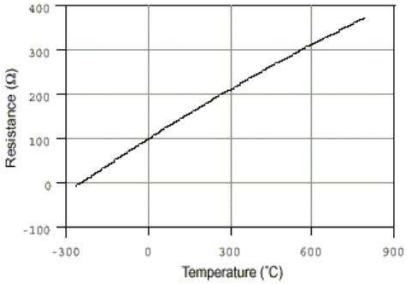
PT100 device

this is a device that continuously, increasingly adjusts its resistance according to the temperature. It is useful for constant measuring of

the

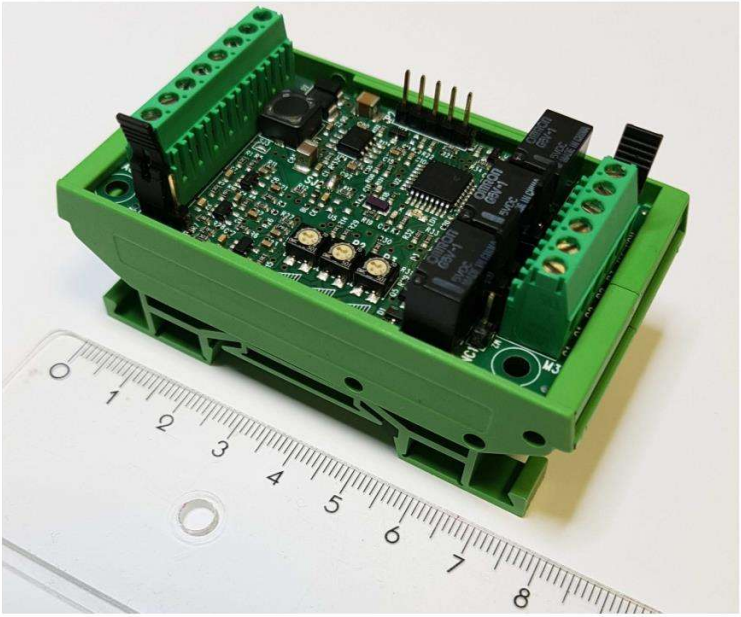
winding temperatures using electronic

In compliance with IEC34-1, all motors can be exposed to overload conditions of 1,5 times the rated current for 2 min and 1,6 times the rated torque for 15 sec (at rated V and Hz)



According to IEC34-1 norm, all motors withstand a temporary overload of 1.5 times the rated current for 2 minutes, and 1.6 times the rated torque for 15 seconds (at rated V and Hz)

SCHEDAPT - Motor thermal probes control card



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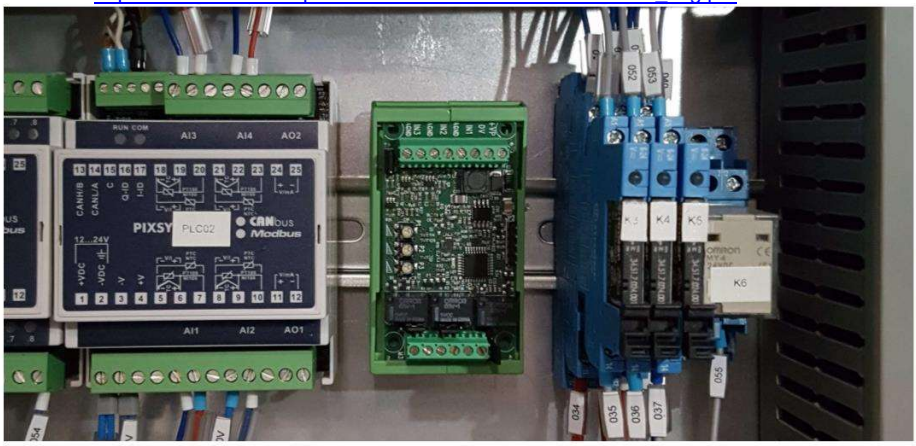


电气连接

电网连接时（也适用于辅助电路）必须按照以下要求进行：

- 在工厂内的任何操作都必须是由专业人员进行;
- 电机必须断电;
- 确保不会意外被重新启动。
- 确保没有通电;
- 如果电力网络无法提供稳定的直接启动输入电压，电机可以通过使用<星形接线/三角接线换向器>来启动，但仅适用在额定电压是三角接线的电机。
- 必须做好电气连接，以保证使用寿命和安全;
- 确保电源线的正确规格
- 确保接线盒内无异物，无脏污/潮湿部位。重新检查所有使用过的和未使用过的电缆接头和电缆帽的正确闭合，并锁紧接线盒的盖子，以防止灰尘和水的进入;
- 当在没有输出的组件做测试时，要保护键槽
- 在电机与刹车(AT..系列)，启动前请验证刹车开关;
- 您可以将任意两相电源对调，电机的转向将随之改变。

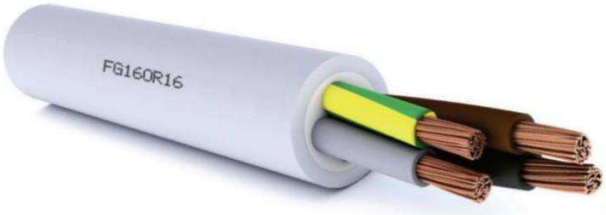
electrical connection

The operations for the connection to the electric network (valid for auxiliary circuits, too) must be performed in compliance with the following indications:

- any operation on the plant must be run by trained personnel;
- the motor must be disabled and isolated;
- make sure that a casual start can not occur;
- make sure that there is no voltage;
- If the network does not sustain the direct input voltage, the motor can be started by means of a star/delta commutator, which is possible only in motors where the connection of the winding for rated voltage is delta.
- the electric connection must be made in order be long-lasting and safe;
- assure correct dimensioning of power supply cables
- make sure that in the box for the connection there is neither foreign bodies, nor dirty/humid parts. Recheck the proper closure of all used and unused cable glands and caps and tight terminal box lid in order to prevent the entrance of dust and water;
- when testing without output components secure the keyway;
- in motors with brake (AT.. series), please verify the brake switching before the starting process;
- you can change to counter-rotation an be obtained by interchanging the two phases.

接线图 (DELPHI 3PH)

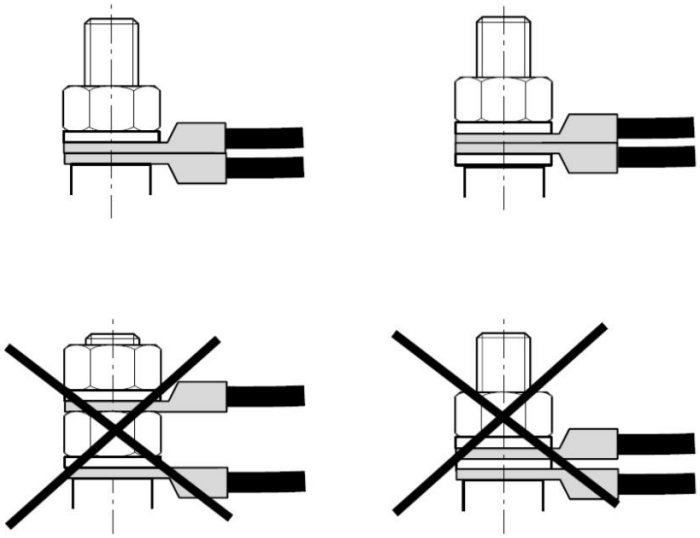
机座	56	63-100	112	132	160-180	200-225	250-355	400
电缆套头	M16	M20	M25	M32	2xM40	2xM50	2xM63	3xM63
电缆直径 mm	3-7	10-14	9-16	13-20	20-26	25-31	29-35	29-35



Motive 电缆代码	说明	电机电流 In [A]
CAVOFG16OR4G1.5MT	FG16OR 4G1,5 mm^2	0 ÷ 10
CAVOFG16OR4G2.5MT	FG16OR 4G2,5 mm^2	11 ÷ 16
CAVOFG16OR4G4MT	FG16OR 4G4 mm^2	17 ÷ 22
CAVOFG16OR4G6MT	FG16OR 4G6 mm^2	23 ÷ 32
CAVOFG16OR4G10MT	FG16OR 4G10 mm^2	33 ÷ 50
CAVOFG16OR4G16MT	FG16OR 4G16 mm^2	51 ÷ 64
CAVOFG16OR4G25MT	FG16OR 4G25 mm^2	65 ÷ 90
CAVOFG16OR4G35MT	FG16OR 4G35 mm^2	91 ÷ 110
CAVOFG16OR4G50MT	FG16OR 4G50 mm^2	111 ÷ 130
CAVOFG16OR4G70MT	FG16OR 4G70 mm^2	131 ÷ 170
CAVOFG16OR4G95MT	FG16OR 4G95 mm^2	171 ÷ 200
CAVOFG16OR4G120MT	FG16OR 4G120 mm^2	201 ÷ 240

CAVOFG16OR4G150MT	FG16OR 4G150 mm^2	241 ÷ 270
CAVOFG16OR4G185MT	FG16OR 4G185 mm^2	271 ÷ 305

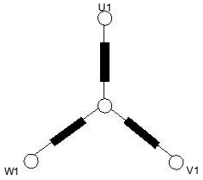
端子台上电源接线的正确与错误方法如下图示:

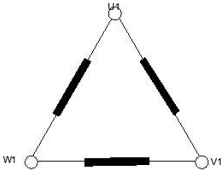


端子台上固定螺母的锁定扭矩如下表 (N-m):

Nm	M4	M5	M6	M8	M10	M12	M16
Steel 钢	2	3,2	5	10	20	35	65
Brass 铜	1	2	3	6	12	20	50

Delphi 系列三相电动机的绕组可以连接成星形或三角形.

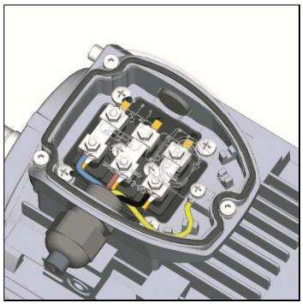




星形连接

星形连接是通过将 W2、U2、V2 端子连接在一起, 并为 U1、V1、W1 端子供电而获得的。

三角形连接

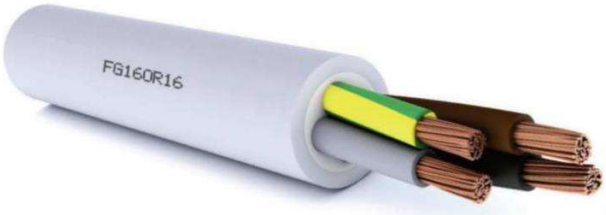


三角形连接, 是通过将一个绕组的尾端连接到下一个绕组的起点来实现的。

有关制动电机的接线法，请参阅“Delphi AT 系列...”一章。

Wiring Diagrams (DELPHI 3PH)

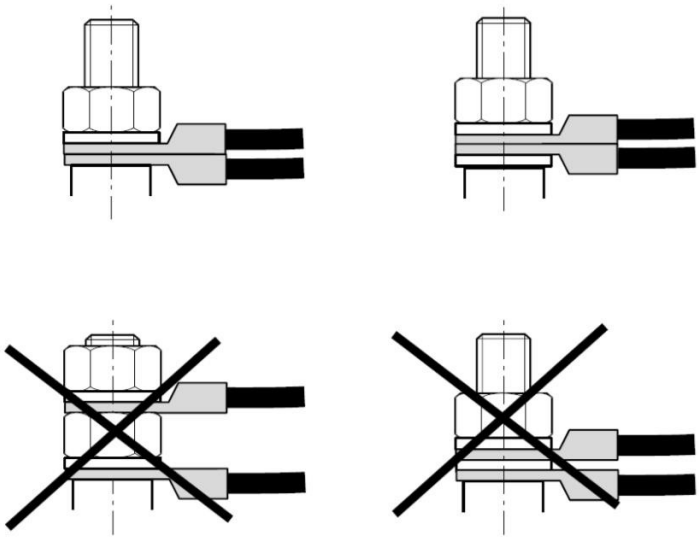
Motor type	56	63-100	112	132	160-180	200-225	250-355	400
Cable gland	M16	M20	M25	M32	2xM40	2xM50	2xM63	3xM63
Cables diam mm	3-7	10-14	9-16	13-20	20-26	25-31	29-35	29-35



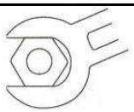
Motive code	Cable description	Motor current In [A]
CAVOFG16OR4G1.5MT	FG16OR 4G1,5 mm^2	0 ÷ 10
CAVOFG16OR4G2.5MT	FG16OR 4G2,5 mm^2	11 ÷ 16
CAVOFG16OR4G4MT	FG16OR 4G4 mm^2	17 ÷ 22
CAVOFG16OR4G6MT	FG16OR 4G6 mm^2	23 ÷ 32
CAVOFG16OR4G10MT	FG16OR 4G10 mm^2	33 ÷ 50
CAVOFG16OR4G16MT	FG16OR 4G16 mm^2	51 ÷ 64
CAVOFG16OR4G25MT	FG16OR 4G25 mm^2	65 ÷ 90
CAVOFG16OR4G35MT	FG16OR 4G35 mm^2	91 ÷ 110
CAVOFG16OR4G50MT	FG16OR 4G50 mm^2	111 ÷ 130
CAVOFG16OR4G70MT	FG16OR 4G70 mm^2	131 ÷ 170
CAVOFG16OR4G95MT	FG16OR 4G95 mm^2	171 ÷ 200
CAVOFG16OR4G120MT	FG16OR 4G120 mm^2	201 ÷ 240

CAVOFG16OR4G150MT	FG16OR 4G150 mm^2	241 ÷ 270
CAVOFG16OR4G185MT	FG16OR 4G185 mm^2	271 ÷ 305

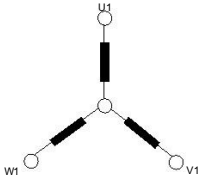
Correct and wrong connection of the power cables terminal lugs to the terminal block:

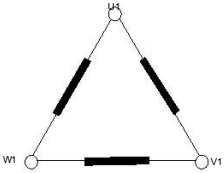


Torque (Nm) on the terminal block nuts

 Nm	M4	M5	M6	M8	M10	M12	M16
steel	2	3,2	5	10	20	35	65
brass	1	2	3	6	12	20	50

Delphi series three phase motors can be connected “Star” or “Delta” .

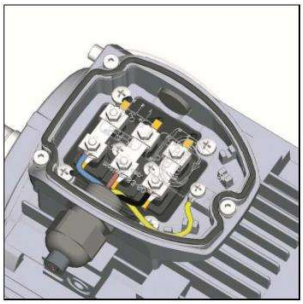




Star connection

Star connection is obtained by connecting together the terminals W2, U2, V2 and supplying the terminals U1, V1, W1.

Delta connection

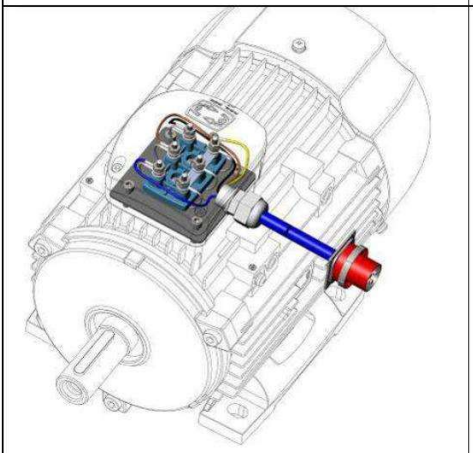
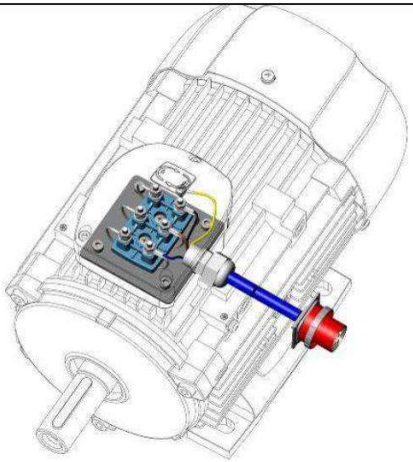
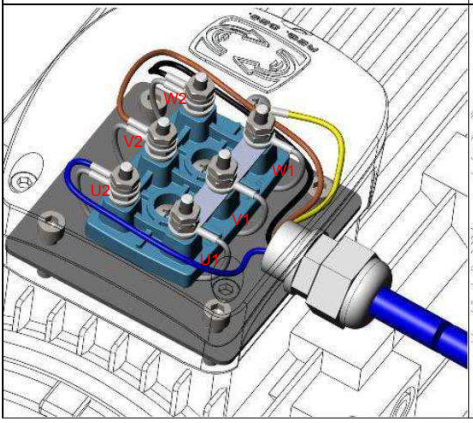
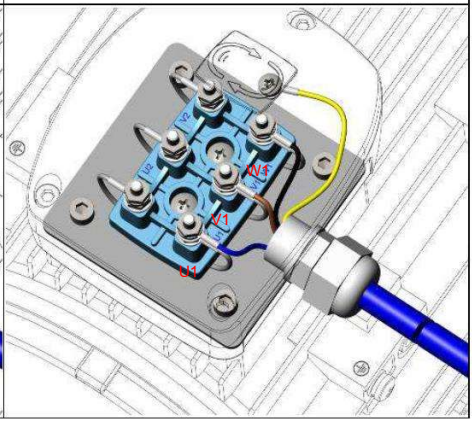


Delta connection is obtained by connecting the end of a phase with the beginning of the following one.

For brake motors wiring diagrams, see “AT.. Delphi series” chapter

Double polarity motor
single winding (Dahlander)
2/4 – 4/8 Poles

双极电机
单绕组（达兰德 Dahlander）
2/4 – 4/8 極

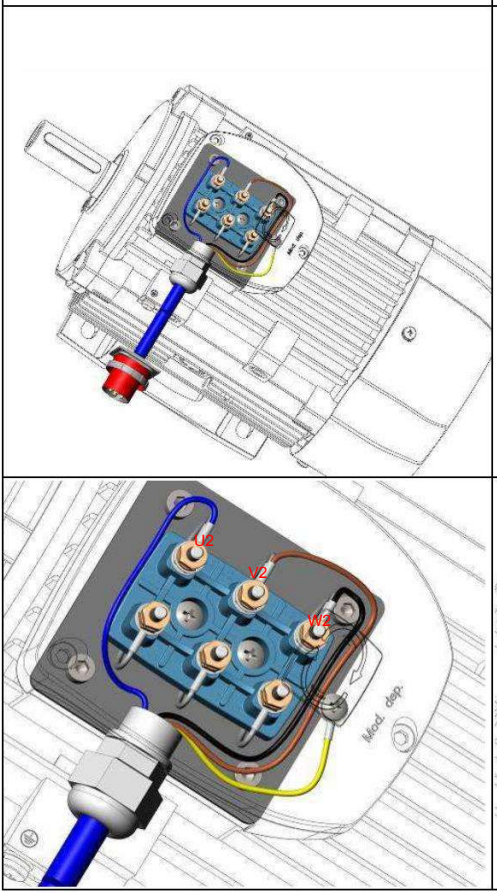
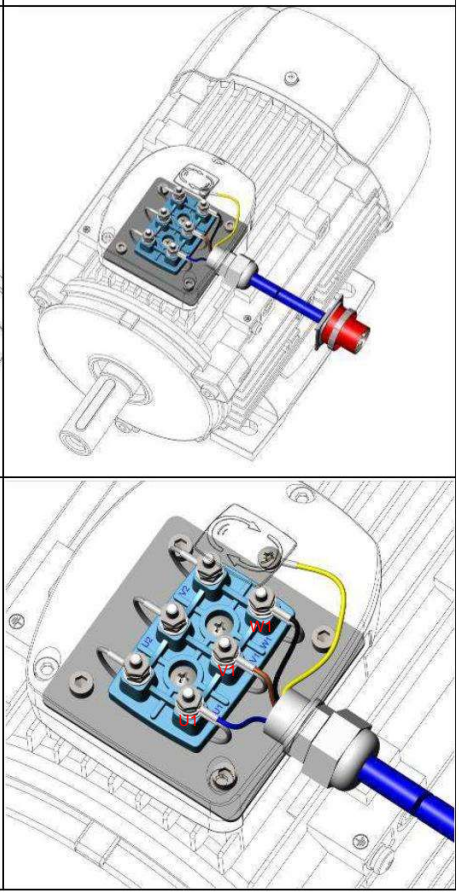
High-speed connection 400 YY 高速接法 400 YY	Low-speed connection 400 Δ 低速接法 400 Δ
	
	

To use the 2 speeds, you must adopt a 6+1 wires cable and connect an external switch

要利用这两种速度，请采用 6+1 线电缆并连接外部开关

Double polarity motor
with double winding
2/6 – 2/8 – 4/6 – 6/8 Poles

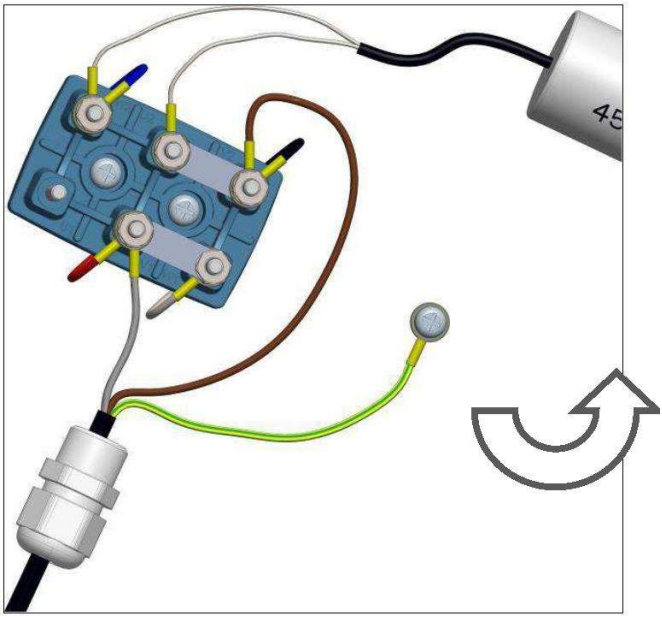
双极电机
双绕组
2/6 – 2/8 – 4/6 – 6/8 极

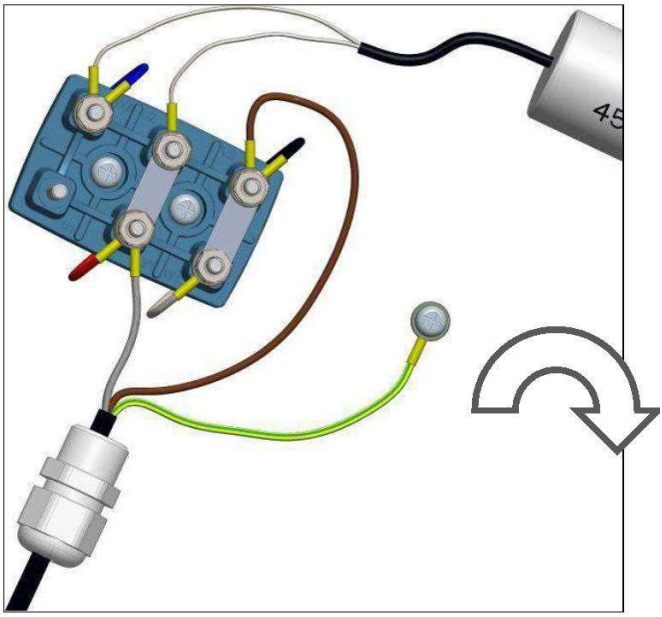
High-speed connection 400 Y 高速接法 400 Y	Low-speed connection 400 Y 低速接法 400 Y
	

To use the 2 speeds, you must adopt a 6+1 wires cable and connect an external switch

要利用这两种速度，请采用 6+1 线电缆并连接外部开关

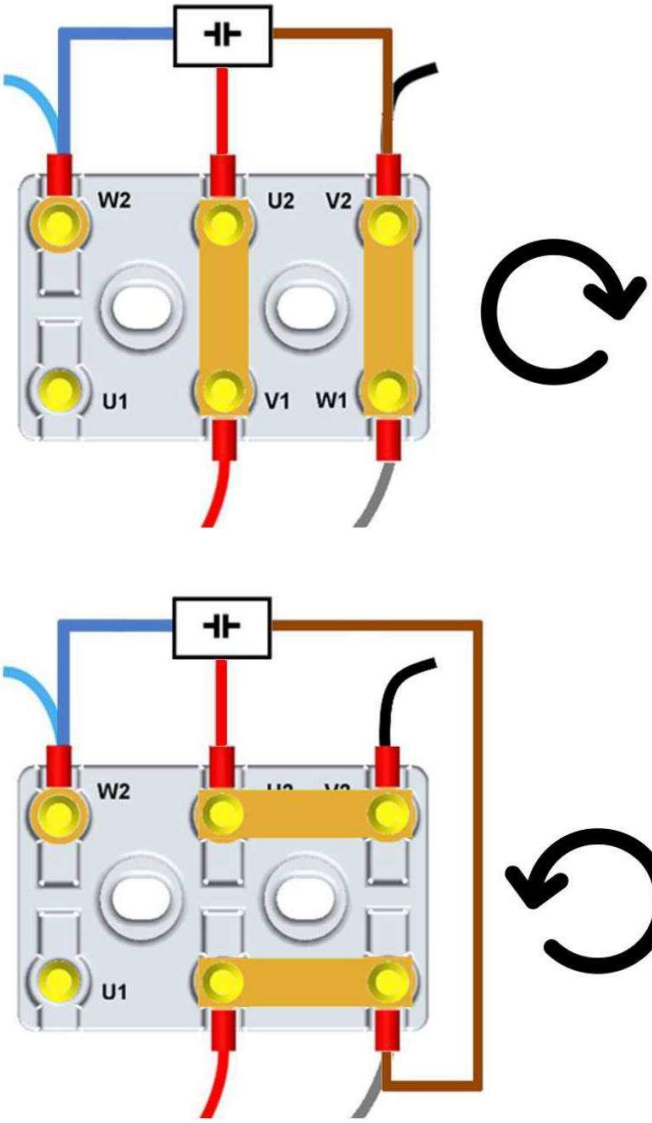
Single phase motors MONO 单相电机 MONO

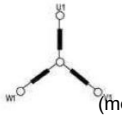


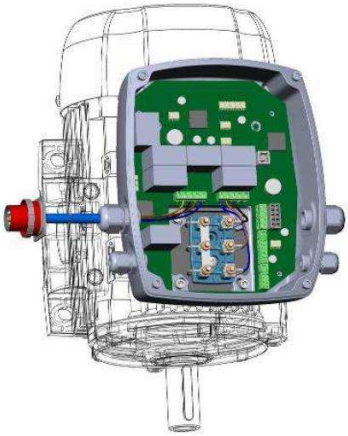


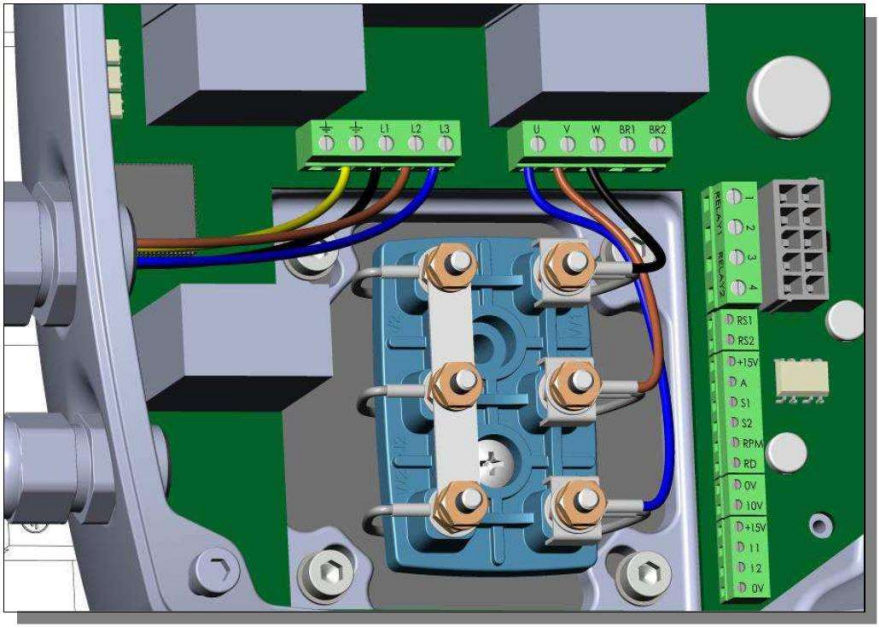
Starting Capacitor 3 wires MONO

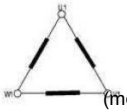
起动电容 3 线 MONO

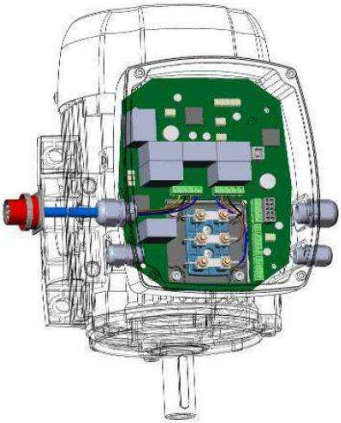


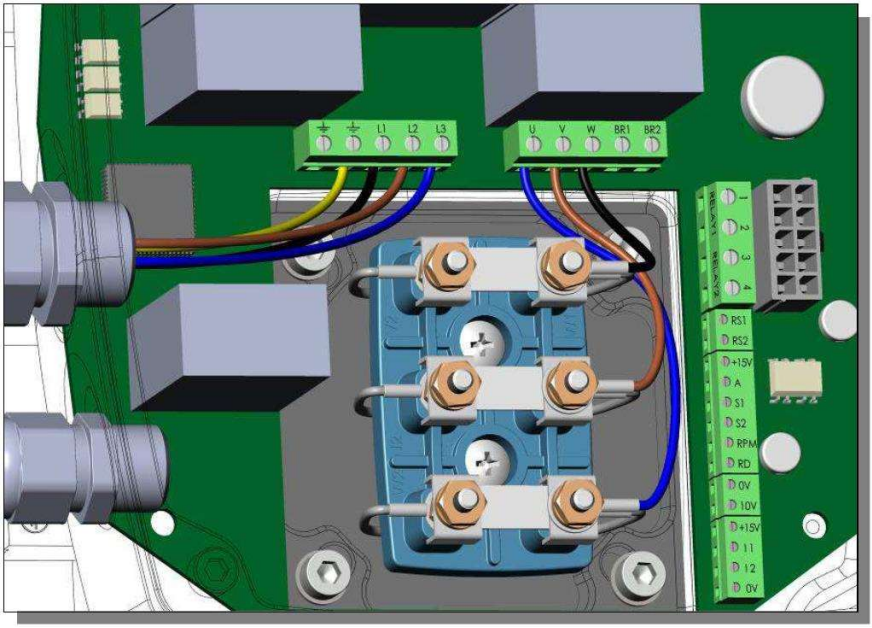
NEO-WiFi  (motor 230VΔ/400VY)





NEO-WiFi  (motor 400VΔ/690VY)





启动

启动前对电机进行全面检查
确保所有关于安装的要求准确。尤其是

- 确保电机电压是预期的（见电机铭牌）和
- 检查连接件的接头，盖好接线盒盖,不损坏橡胶垫片
- 手动验证电机轴的自由旋转；
- 检查所有相位电压是否符合铭牌值.

Start

Before starting make an overall check of the motor to make sure that all the indications about installation have been applied. In particular

- make sure that the voltage of the motor is equivalent to the one expected (see motor plate) and
- check the union of the connecting link, close all its dies and secure the cover of the terminal board without damaging the gasket;
- verify the free rotation of the motor shaft manually;
- check if there is voltage in all the phases and eventually measure their value to check their conformity to the plate values.

Rain shield

For outdoor applications with V5 – V18 – V1 – V15 installation(shaft down), we recommend to mount a rain shield. This configuration may also be used in textiles processing industry.

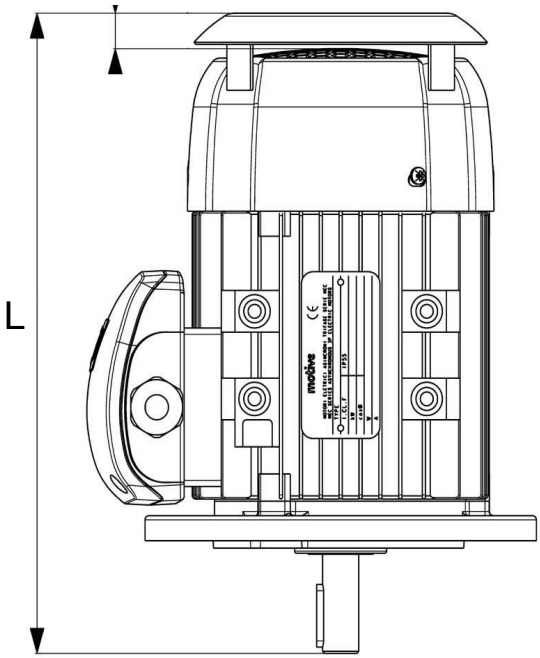
The rain shield is compulsory in ATEX motors with mounting V5 – V18 – V1 – V15

防雨罩

对于户外应用
适用于具有 V5 – V18 – V1 – V15 安装的户外应用（轴下），我们建议安装防雨罩。这种配置也可用于纺织加工业。

防雨罩安装在 V5 -V18 - V1 - V15 的ATEX 电机上是强制性安装的，

Tipo	L
63	215
71	323
80	369
90S	403
90L	428
100	469
112	453
132S	573
132M	613
160M	770
160L	825
180M	915
180L	955
200L	1025
225S	1155
225M	1160
250M	1220
280S	1265
280M	1315
315S	1540
315M	1570
315L	1680
355M	1840
355L	1870



Delphi AT系列..

Delphi的ATDC、AT24、ATTD和ATTD24系列自制动电机使用1个或2个弹簧压力制动器，牢固安装在电机反负载端的铸铁端盖上。
在 AT24 和 ATTD24 上，24Vdc 单个或双制动器设计为直接连接到变频器（通常具有 24Vdc 插头）。ATDC 和 AT24两种不同类型的电可以通过改变输入电源的方式进行调整

气隙 S 调整
为了正常运行，气隙 S 在电磁铁 ⑦和移动电枢 ①间距必须在以下指示的限制之间：

Motore tipo	traferro S (mm)
63~71	0.20~0.30
80~100	0.40~0.50
112~280	0.50~0.60

通过使用螺纹衬套⑩进行调整，使用厚度规确保达到所需的气隙。 对于尺寸为 63、71、80 和 90 的制动器，气隙 S 的设置不能更改。

制动力矩调节

可通过拧紧调节螺钉 ⑨来增加制动扭矩。Motive已将其设置为最大值,因此建议不要改变

AT.. Delphi series

Delphi ATDC, AT24, ATTD and ATTD24 series self-braking motors use one or 2 spring-pressure brakes, firmly spliced onto a cast iron shield at the back of the motor.
On AT24 and ATTD24, the 24Vdc single or double brakes are designed to be directly connected to an inverter (usually having a 24Vdc plug).
Two different types of adjustment are possible for motors ATDC and AT24

Air gap S adjustment

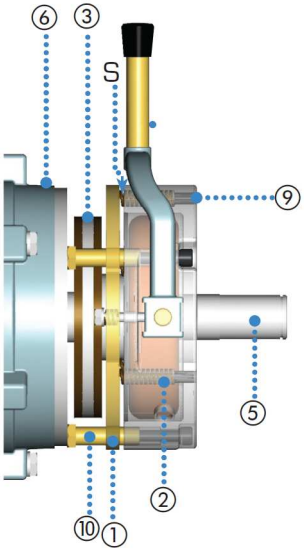
For proper operation, the air gap S between electromagnet ⑦ and the mobile armature ① must be between the following indicated limits:

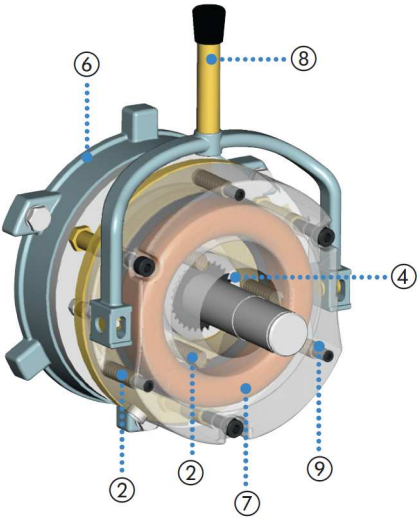
Motor type	S air gap (mm)
63~71	0.20~0.30
80~100	0.40~0.50
112~280	0.50~0.60

The adjustment is made by using the threaded bushes ⑩, using a thickness gauge to make sure that the wished air gap is reached. For brakes size 63, 71, 80 and 90, the setting of the air gap S cannot be changed.

Braking torque adjustment

The braking torque can be increased by tightening the adjuster screws ⑨. The setting has already been made by motive at the max value, and therefore we suggest to not to intervene on it .





① Ancora mobile	① Mobile armature
② Molle	② springs
③ Disco freno (ferodo)	③ Brake disc
④ Trascinatore	④ Driver
⑤ Albero motore	⑤ Motor shaft
⑥ Flangia motore	⑥ Motor flange
⑦ Bobina	⑦ Electromagnet
⑧ Leva di sblocco	⑧ Release lever
⑨ Grani di regolazione	⑨ Adjuster screws
⑩ Bussola filettata	⑩ Threaded bush
⑪ manopola di regolazione coppia	⑪ braking torque setting knob
⑫ piastra di connessione	⑫ ATTD connection plate
S Traferro	**S** Air gap

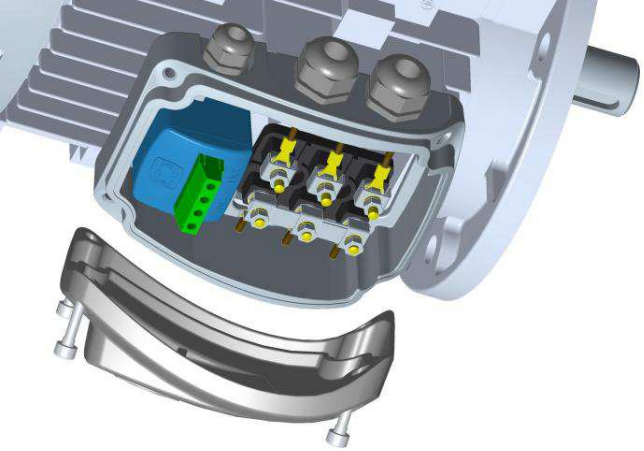
注意：安装在以下环境中的电机不允许使用制动器

爆炸性环境（2 区 - 气体）。有关详细信息，请参阅 “ ATEX 附录 ”。

Note: Brake motors are generally not admitted in ATEX motors. For further details, see the file “ATEX addendum”

A1TD

A1T24

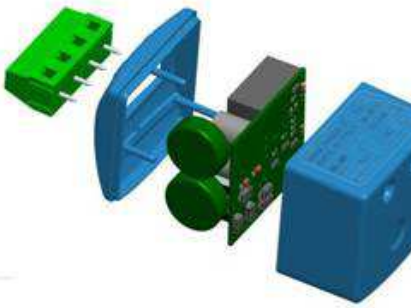


Motive ATDC 制动器是由安装在接线盒中的电压整流器供电的直流制动器。

所有的制动器性能包括: 功率W和转矩NM和以毫秒为单位的反应速度，可以在www.motive.it 。

下表显示了 ATDC 系列中的整流器和制动电源

Type	Volt in entrata al raddrizzatore [Vac]	Volt da raddrizzatore a freno [Vdc]
ATDC 63-100	220-280	99-126
ATDC 112-280	380-480	171-216

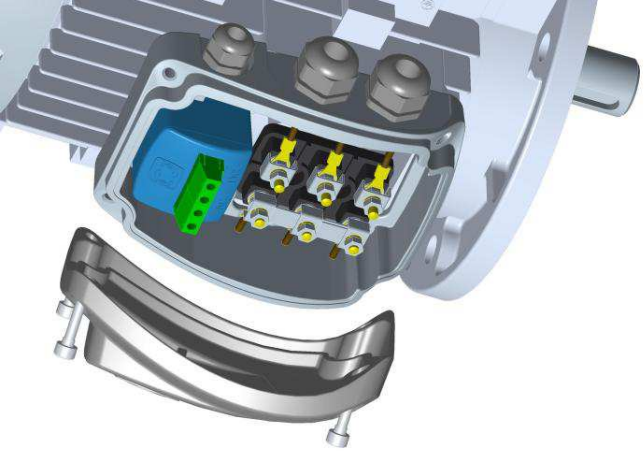


除非订购时另有书面要求，否则 Motive提供的ATDC 制动电机,附带的整流器已经连接到电机的主接线端坐上（图 1、2、3 和 4），以保证电机的切换是同时进行.

在任何情况下，整流器都不能由变频器/逆变器/软启动器供电。

电机由变频器供电时（图 5a 和 5b），或带特殊电压，或降压启动，或电机使用带载启动的情况，像是吊重的情况（这种惯性运动可以在电源关闭时转动电机，并且电机可以像整流器上的发电机一样运行让刹车不能锁定）断开电机主端子板和整流器的链接，并分别连接整流器(ATDC)(图2)。5a、5b、6和7)。

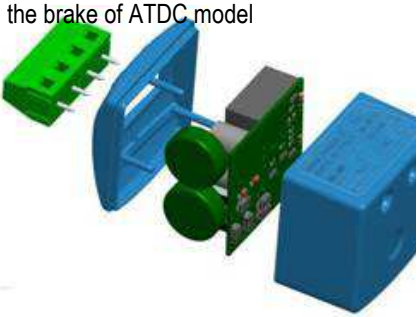
TA版专用整流器可以解决这个惯性负载问题，无需单独为整流器供电(图3和图4)



ATDC brakes are DC brakes power supplied by a rectifier installed inside the motor main terminal box.

The performance of all brakes, in terms of Watt, Nm and speed in mSec are shown in motive web-site www.motive.it .

The following tablechart shows the voltages on the rectifier and the brake of ATDC model



Type	input voltage on rectifier [Vac]	output voltage to brake [Vdc]
ATDC 63-100	220-280	99-126
ATDC 112-280	380-480	171-216

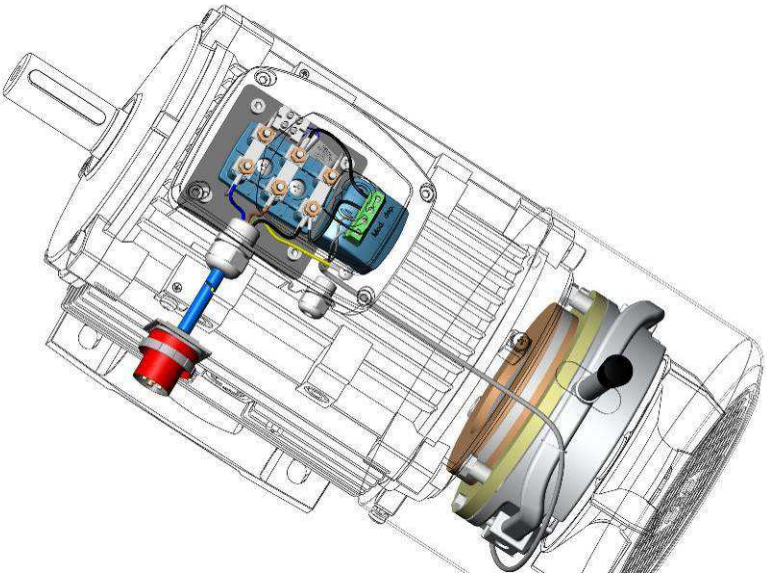
Unless there's a different request of the client, motive supplies ATDC brake motors with the rectifier already connected directly to the main terminal block of the motor (fig. 1, 2, 3 and 4), in order to permit to the motor switching to act at the same time on the brake.

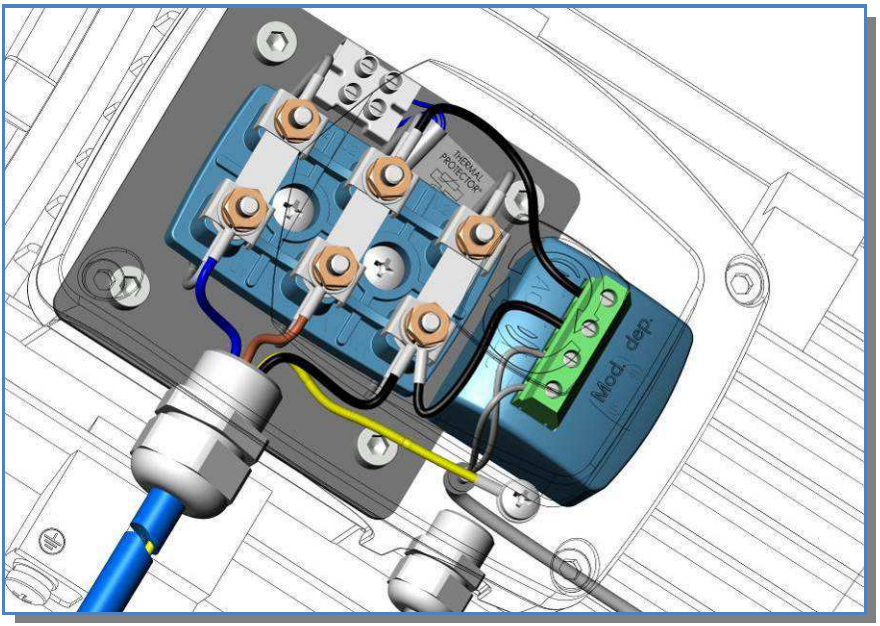
The rectifier cannot be power-supplied by frequency inverters or soft-start devices

In case that the motor is power supplied by a frequency inverter (fig. 5a and 5b), or at a special voltage*, or at a low tension during the start, or in case that the motor is used to move loads which can have an inertial movement, like lifted weights (such inertial movement can move the motor when the power is switched off, and the motor can act like a generator on the rectifier avoiding the brake locking), disconnect the motor main terminal board from the rectifier, and connect separately the rectifier (ATDC) (fig. 5a, 5b, 6 and 7).

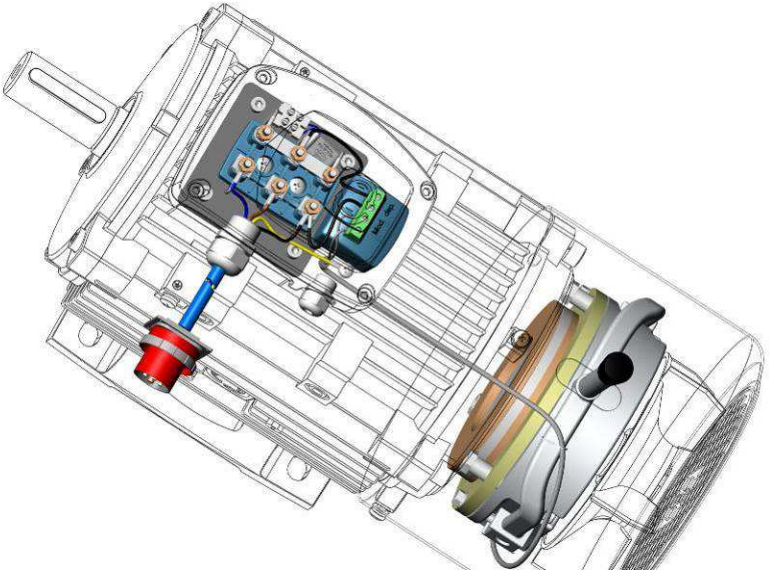
TA special rectifier permits to solve the problem of inertial movements with no need for a separate power supply to the rectifier (fig 3 and 4)

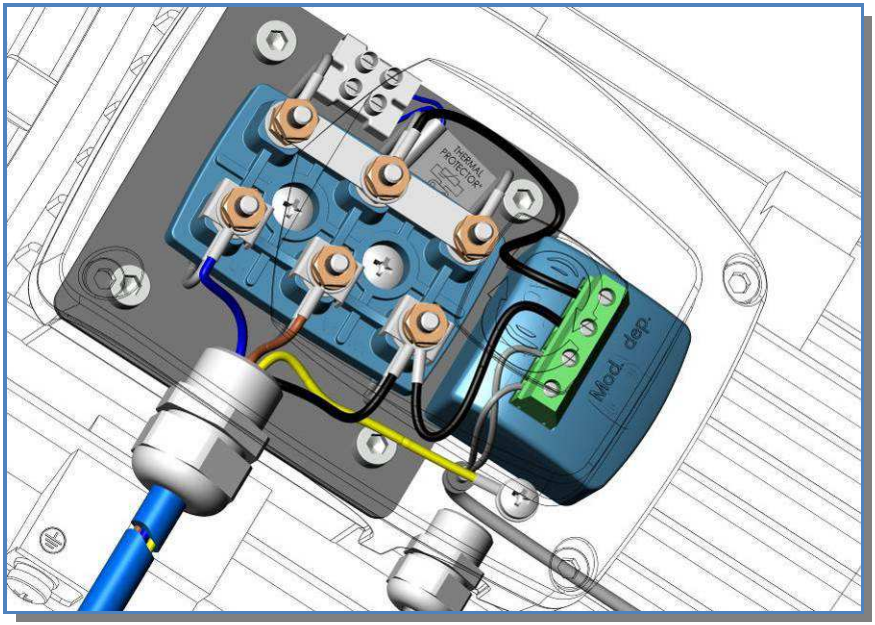
ATDC 112-280 - 400Vac/180Vdc 整流器接线法 (图.1)



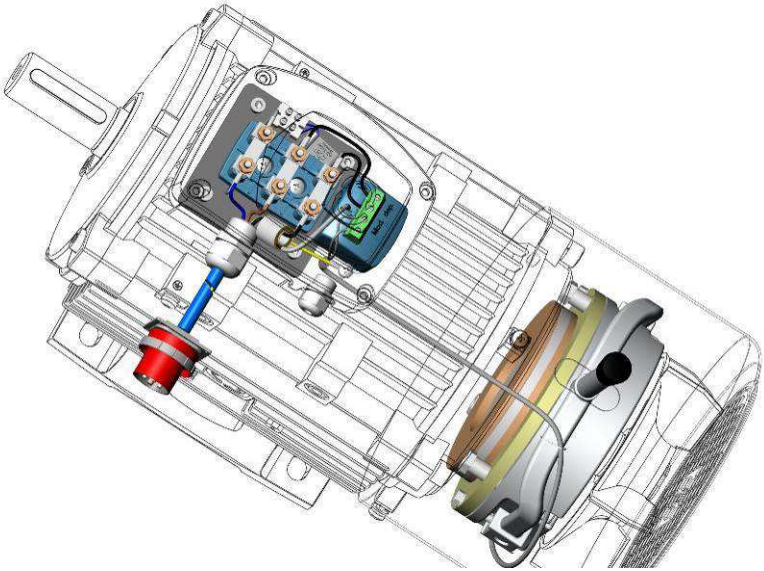


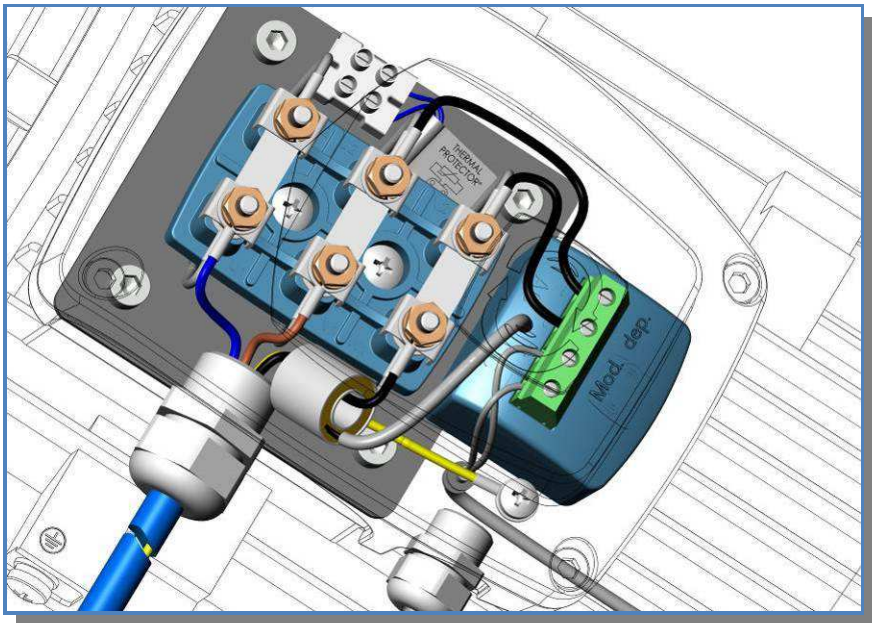
ATDC 63-100  - 230Vac/104Vdc 整流器接线法 (图.2)



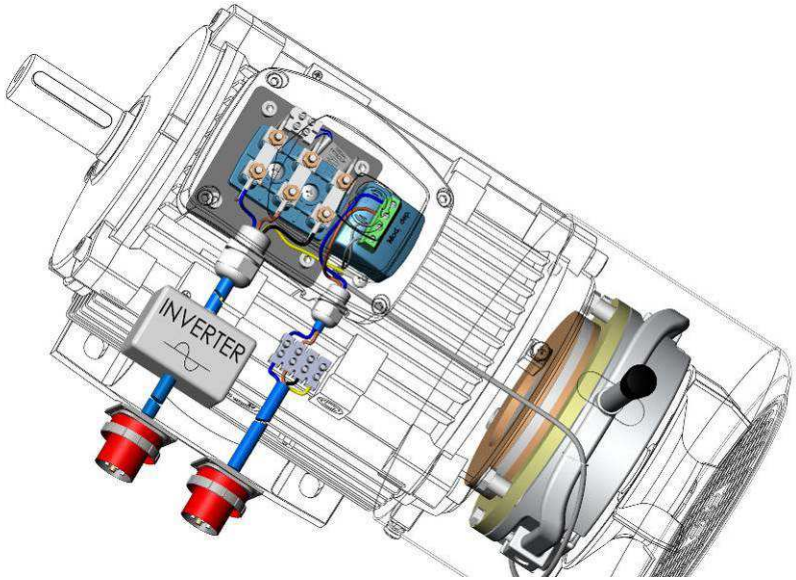


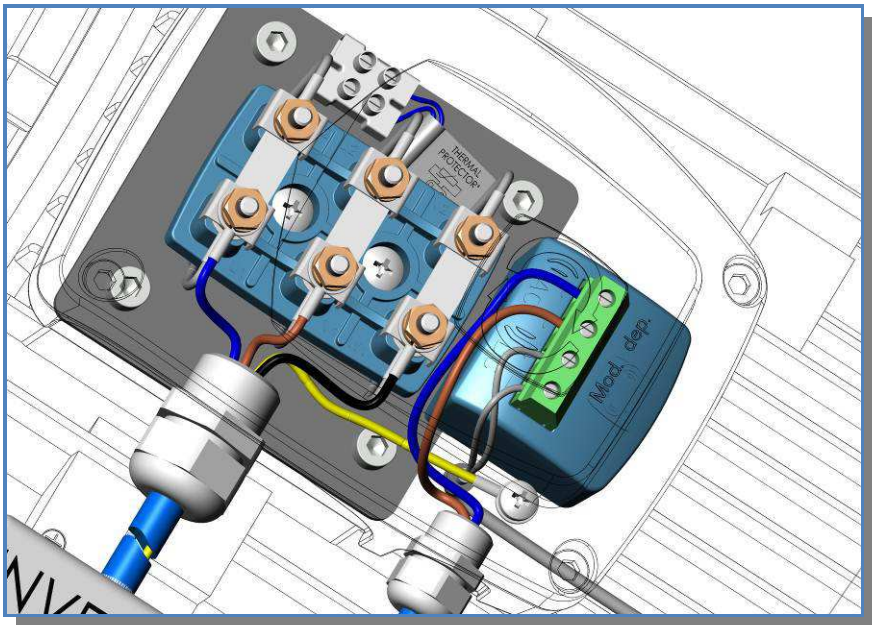
ATDC 400Vac/180Vdc **TA** 版的整流器接线法 (图.3) *如电机由变频器控制的话不适用



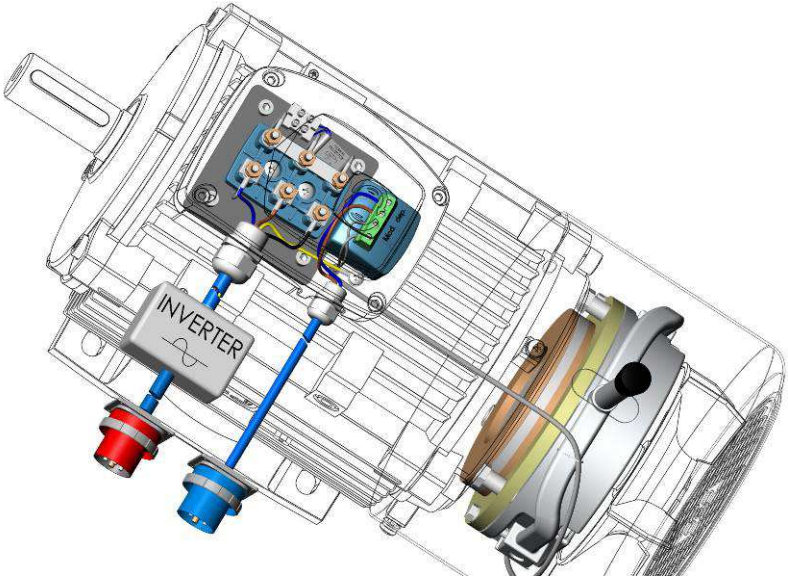


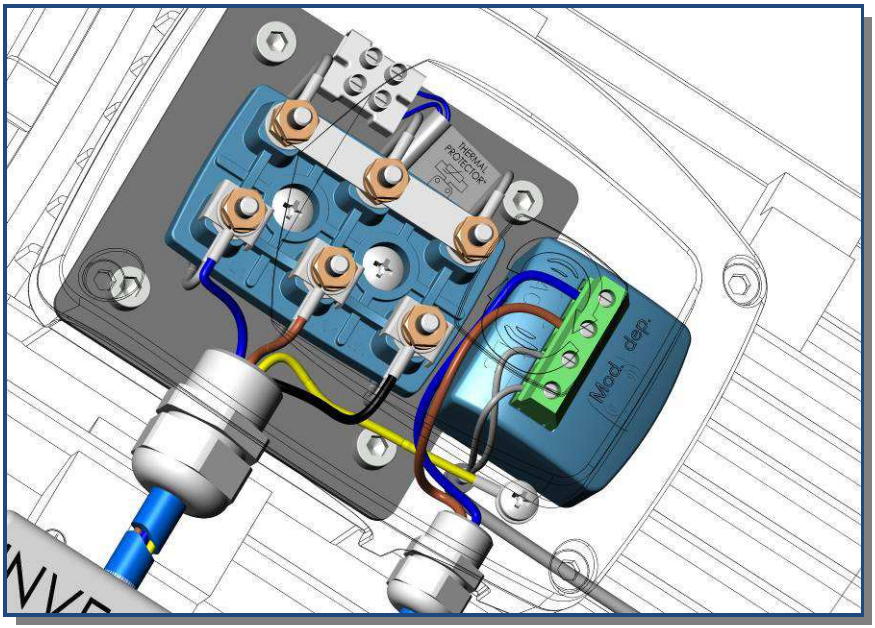
ATDC 112-280 (分离 400Vac/180Vdc 整流器单独供电) + 变频器接线法 (图. 5°)



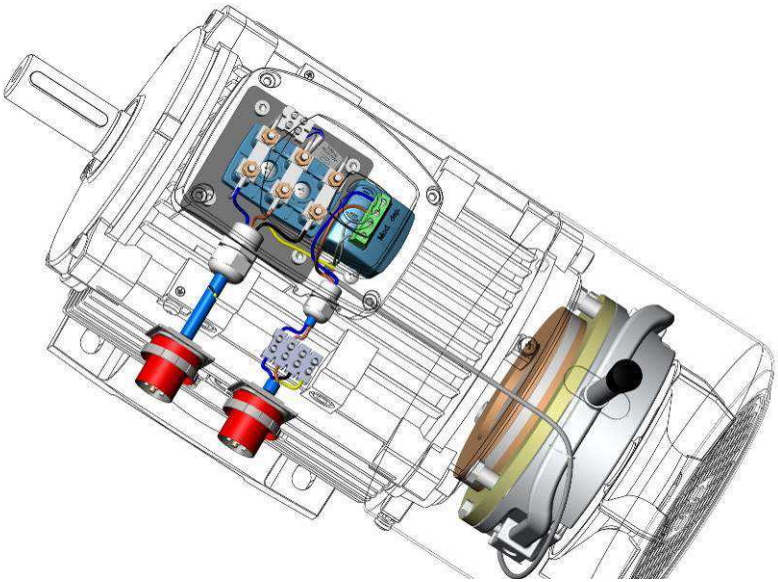


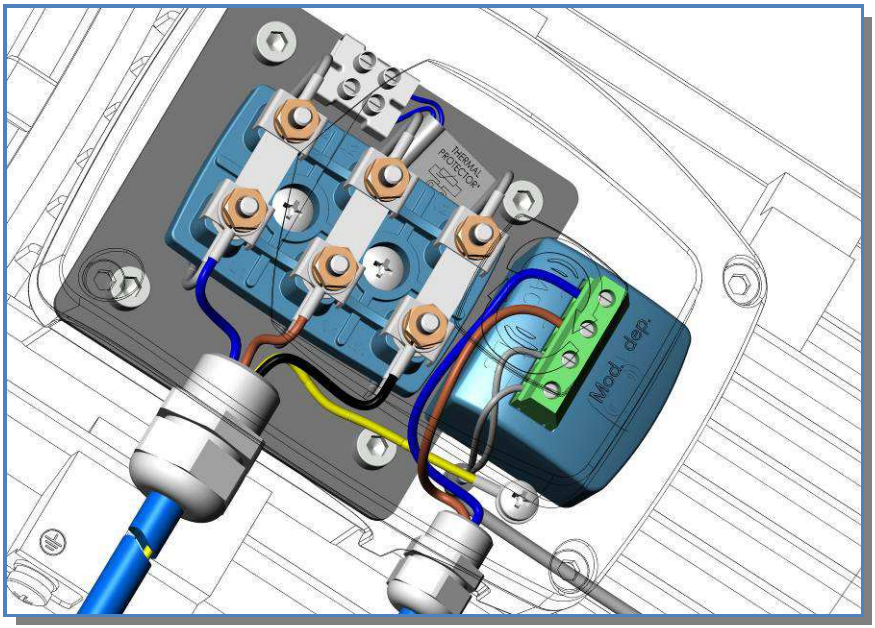
ATDC 63-100  (230Vac/104Vdc整流器单独供电) + 变频器接线法 (图. 5b)



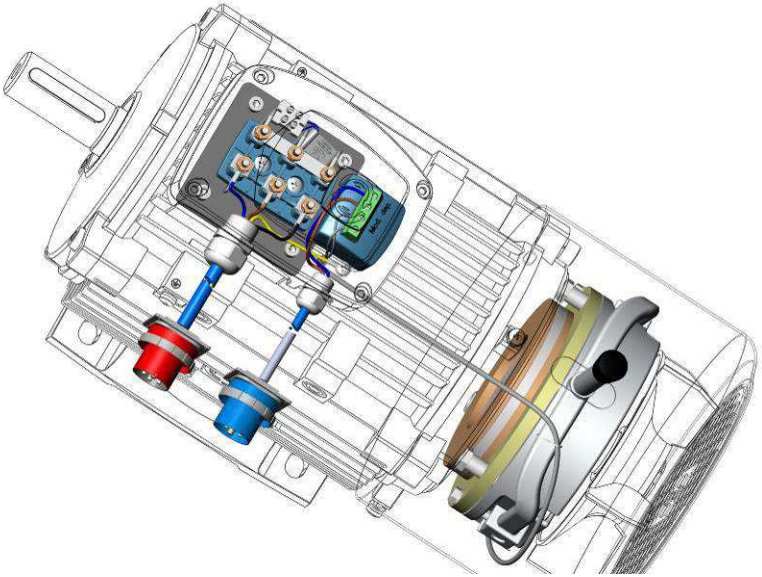


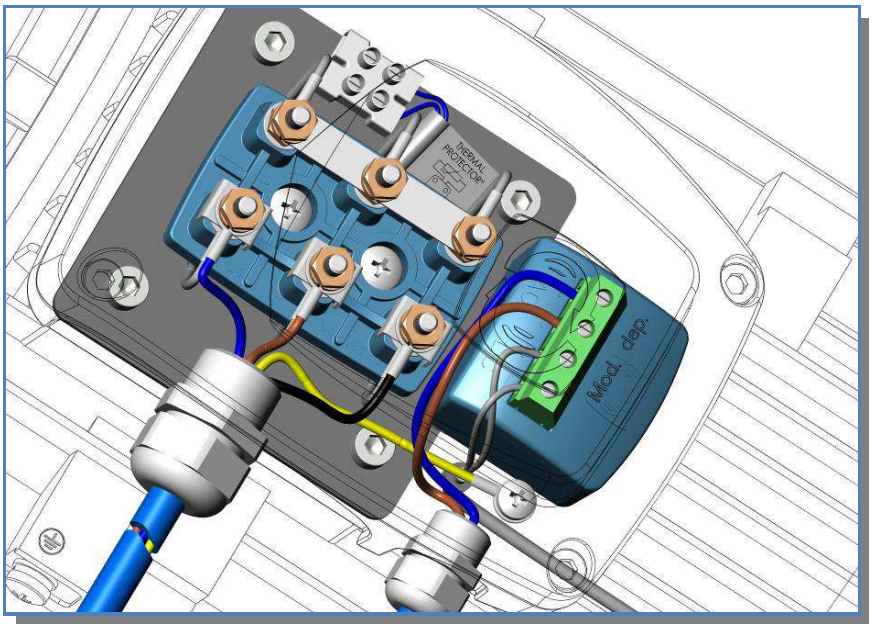
ATDC 112-280  + 400Vac/180Vdc 整流器单独供电接线法 (图. 6)



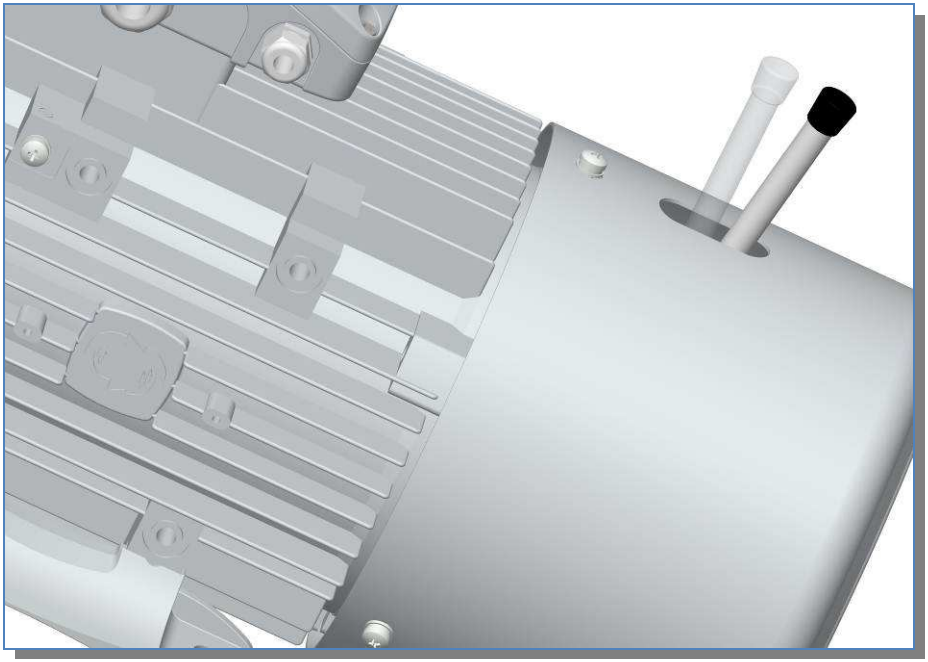


ATDC 63-100  + 230/104Vdc 整流器单独供电接线法 (图. 7)





手动释放 Manual release



Motive制动电机配备有标准的手动释放杆。如果不希望有释放杆,它就像一个螺丝，只需转动即可取下

Motive brake motors are supplied with the manual release lever in their standard version. If not wished, the lever is like a screw, that can be taken away simply turning it

ATTD 和 ATTD24 串联制动电机，从180机座到280机座，不能用手动释放

ATTD and ATTD24 tandem brake motors, from size 180 up to sized 280, cannot have the manual release

IP

AT.. 制动器在电气下观点下是IP55 但机械观点,设备如在户外使用的情况下（或可达到 IP65），它们应该要被保护,以防止由湿气造成的生锈和刹盘粘附效应。 在这种情况下，建议使用我们的保护性橡胶密封圈,该装置可防止灰尘、湿气、污垢等离开或进入制动区域。

橡胶密封圈应插置后端盖的凹槽中。

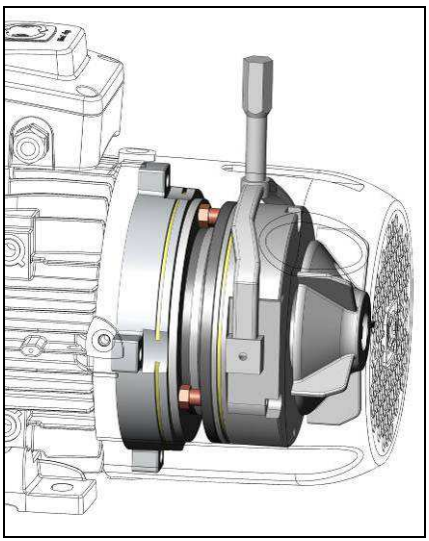
如果您的制动器没有这样的凹槽
您必须为此刹车专门订购加工.

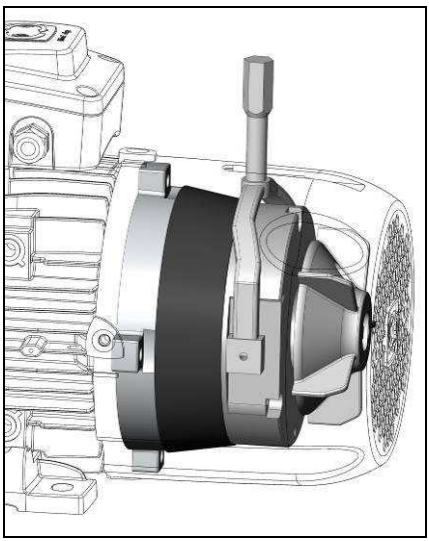
为了保证制动力矩，需要定期清理橡胶圈内由刹车盘摩擦产生的灰尘。

IP

AT.. brakes are IP55 under an electrical point of view, but mechanically, in case of an outdoor use (or to reach IP65), they should be protected by rust and by disc adhesion effects given by humidity. In such a case, we suggest to use our protective rubber ring seals
This device prevents the exit or ingress of dust, humidity, dirt, etc., out of or into the braking area.
It is inserted into the groove on the stator.

If your brake doesn't have such a groove, you must order a specifically machined brake for that.
In order to safeguard the braking torque, it is necessary to clean periodically the parts inside the rubber ring seal by the dust created by the disc lining.



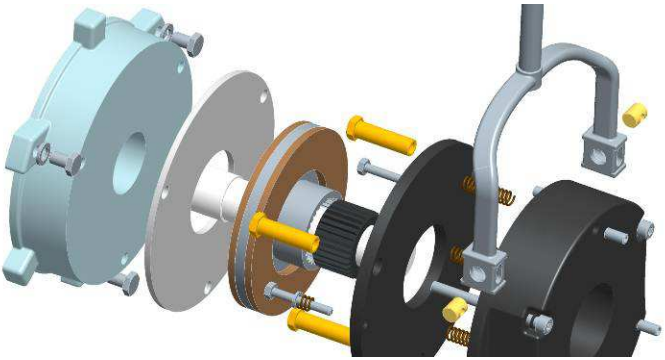


不锈钢制动器

当空气中的高湿度会使制动盘与电机铸铁后端盖之间的接触面生锈时，您可以要求添加不锈钢防护罩

stainless steel braking surface

When high humidity in the air can rust fastly the contact surface between the brake disc and the cast-iron NDE shield of the motor, you can request to motive to add a stainless steel shield

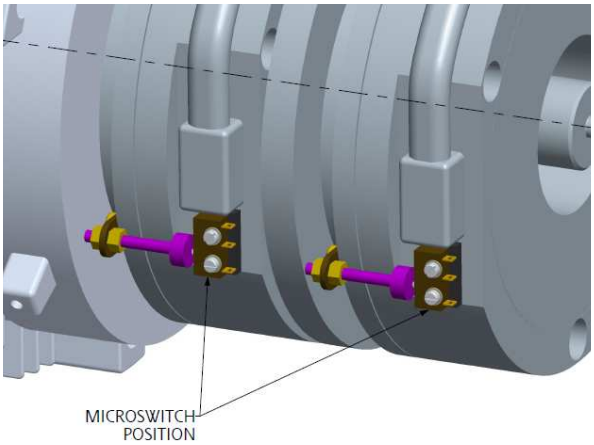


微动开关检测刹车位置

micro-switches to detect brake position

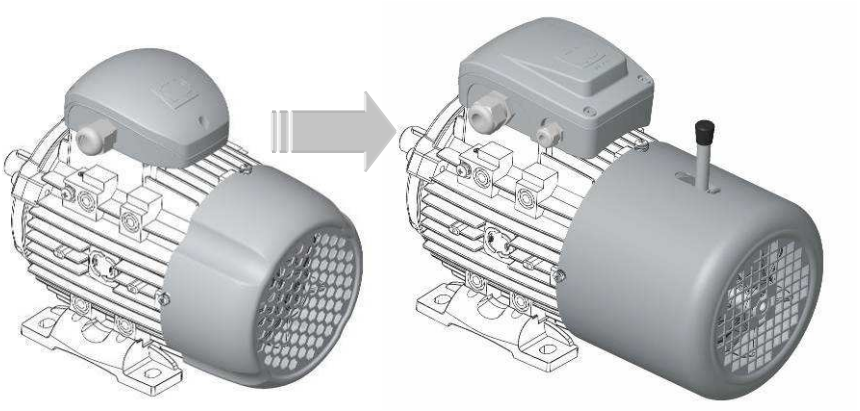
可选择的

Optional



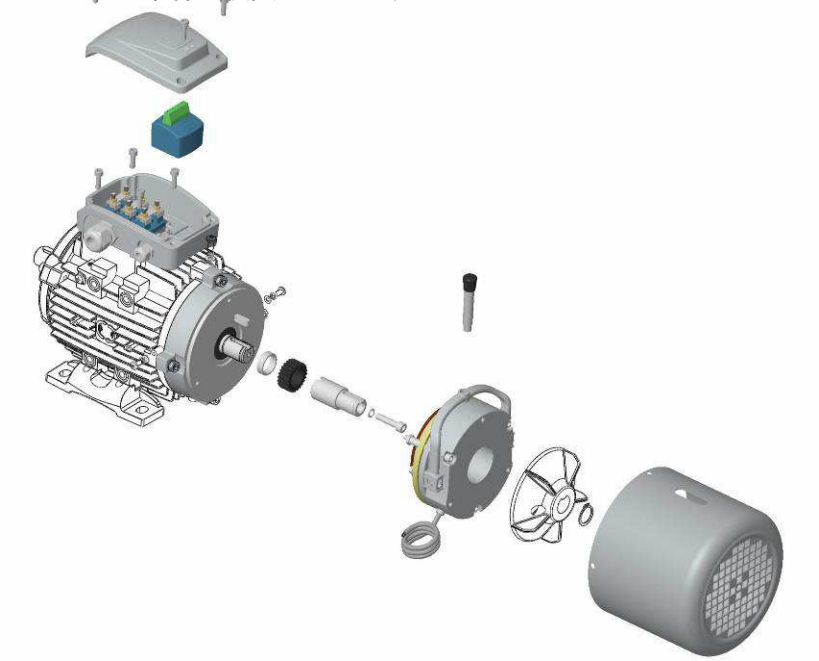
从标准电机到
ATDC 制动电机
"套件-ATDC/AT24"

From a standard motor to an ATDC brake motor thanks to “kit-ATDC/AT24”



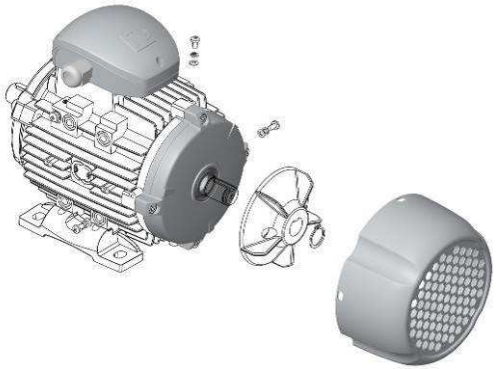
KIT-ATDC/AT24 零件（仅限 IEC 90-160）

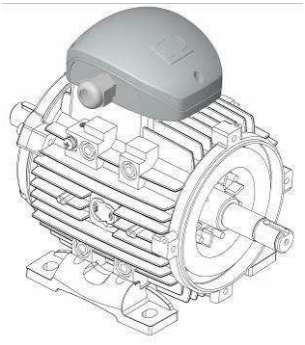
KIT-ATDC/AT24 PARTS (IEC 90-160 only)

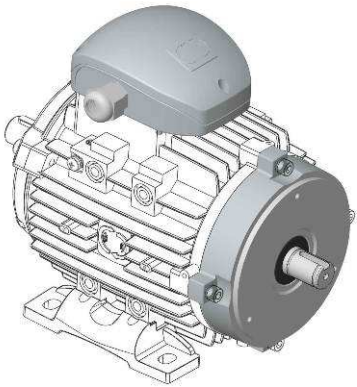


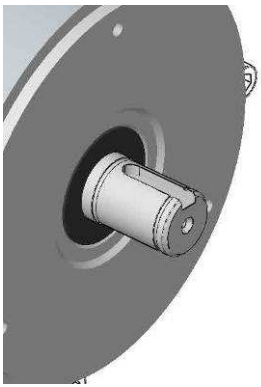
步骤

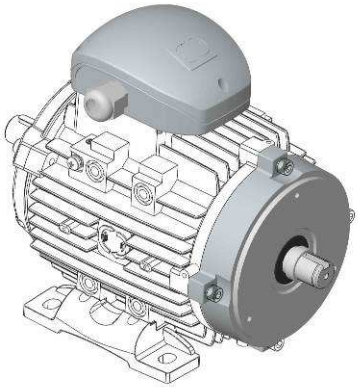
STEPS

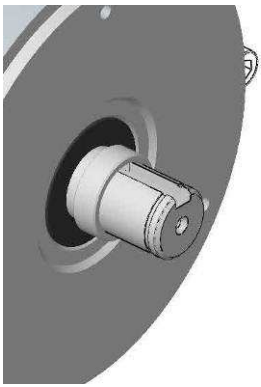


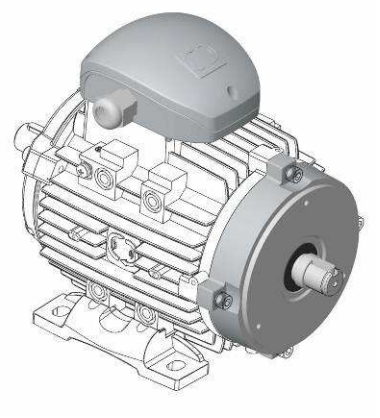


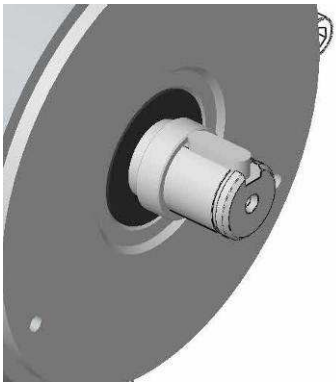


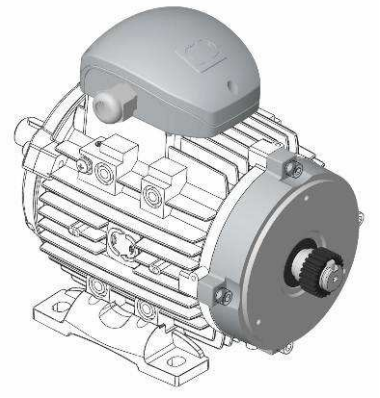


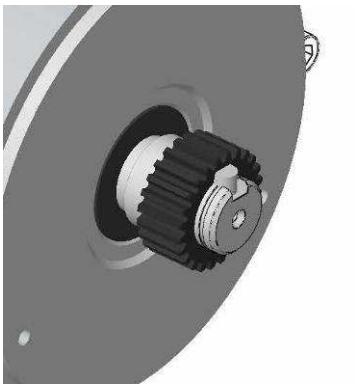


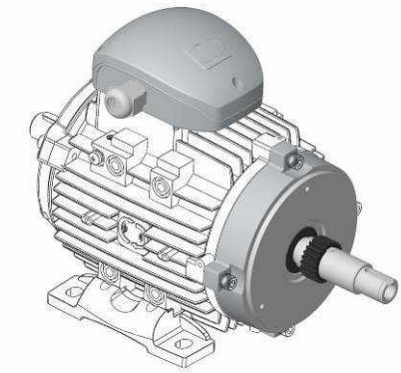


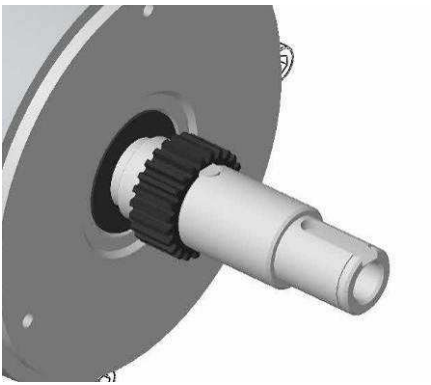


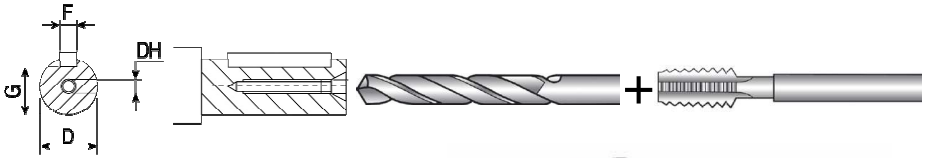




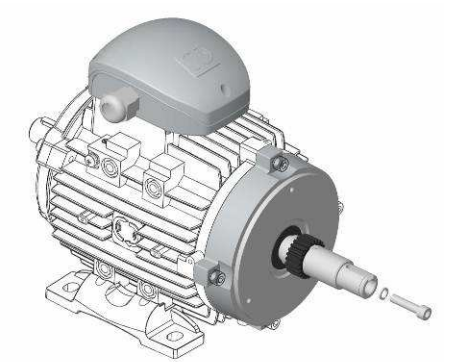


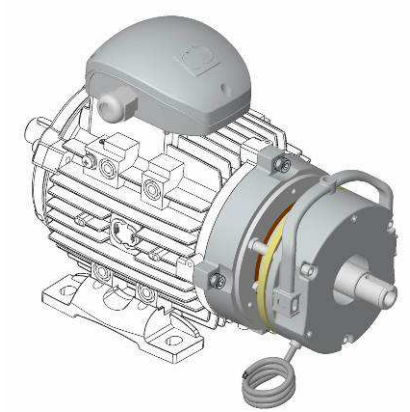


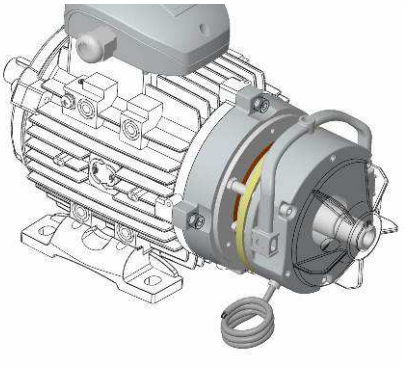




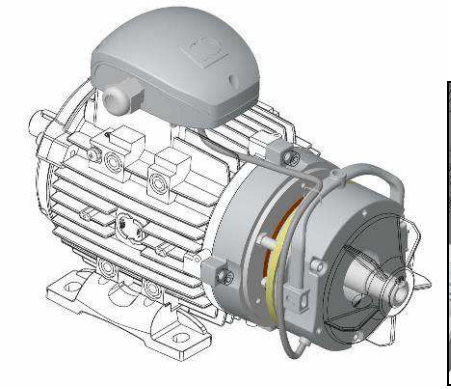
电机框号	DH
90	M8X19
100	M10X22
112	M10X22
132	M12X28
160	M16X36

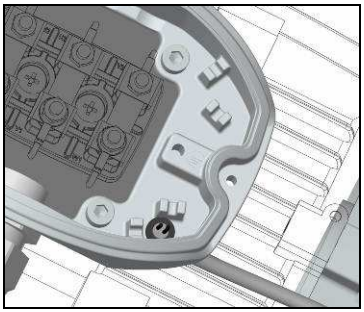


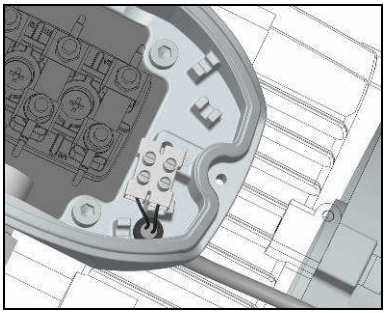


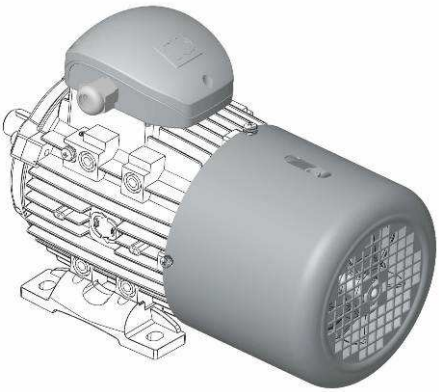


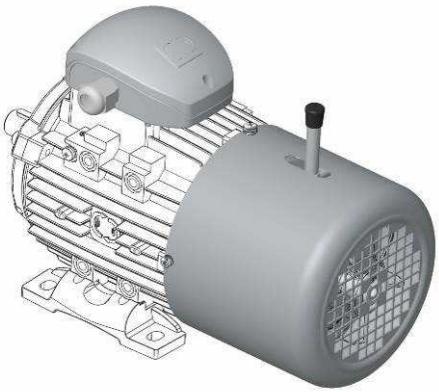
AT24:



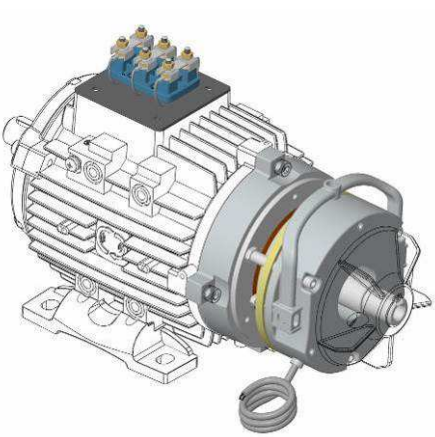


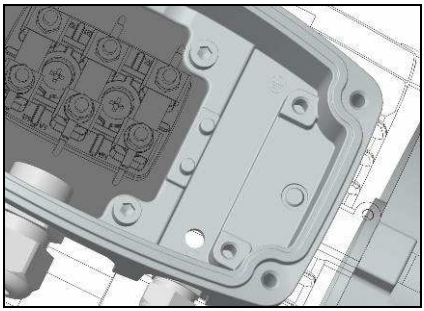


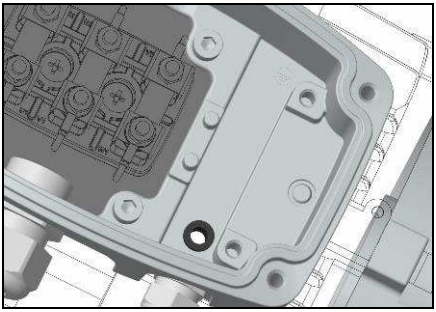


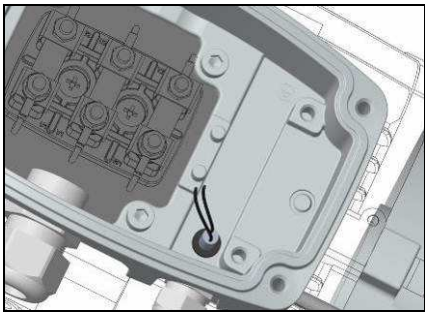


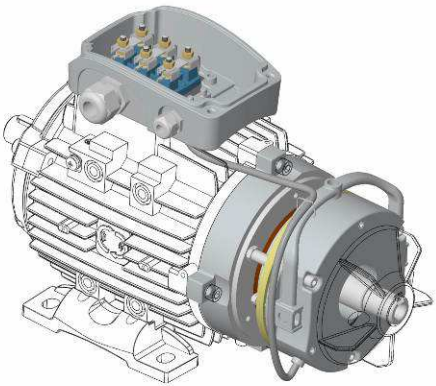
ATDC:

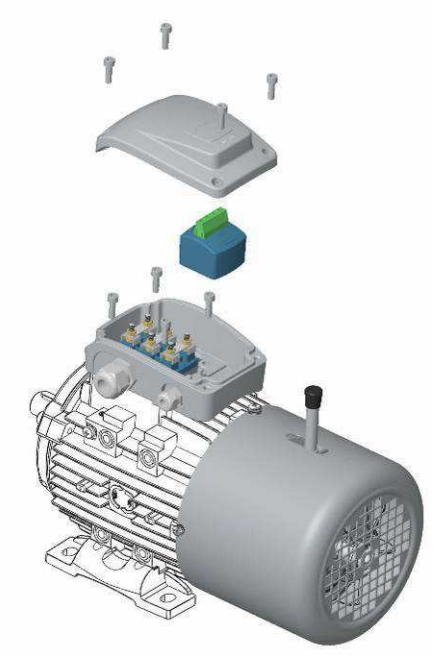




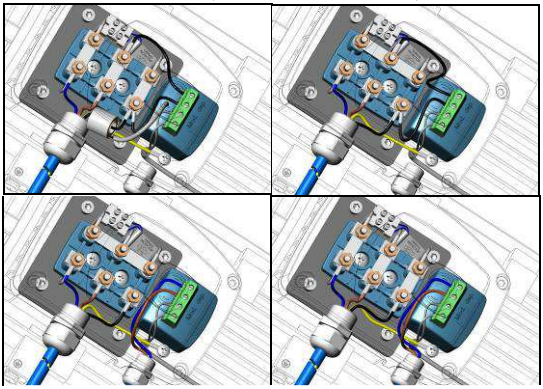


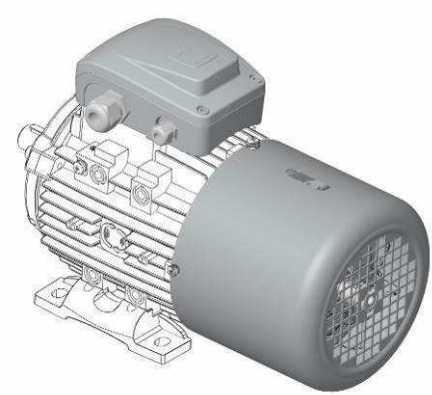


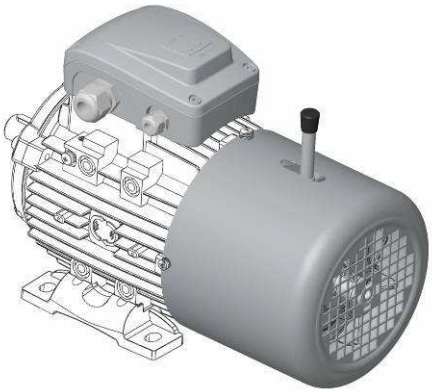




(接线方式见图1-7)







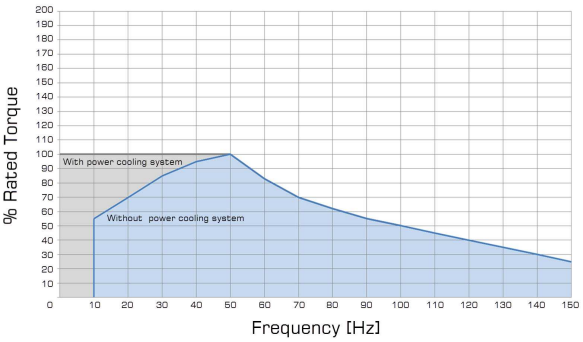
Assisted power cooling – SV series

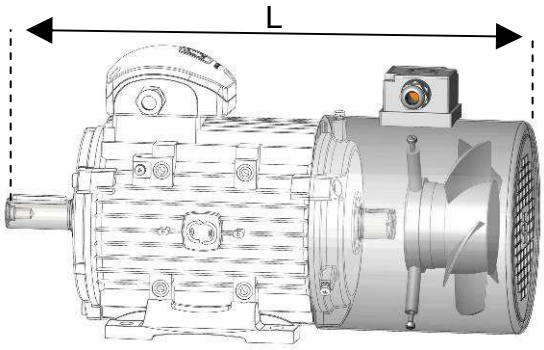
For applications with a power supply below a frequency of 50Hz, the appropriate assisted power cooling must be mounted as there are too many variables involved to determine the various possible thermal duties, and thus the temperatures reached by the motors

辅助动力冷却 - SV 系列

对于电源频率低于 50Hz 的应用，必须安装适当的辅助动力冷却，因为涉及的变量太多，无法确定各种可能的热负荷，从而确定电机达到的温度

Tipo type	power W	capacity m3/h	L mm
63	21	140	245
71	30	300	320
80	35	350	366
90S	50	500	400
90L	50	500	425
100	65	650	466
112	65	1000	450
132S	90	880	570
132M	90	880	610
160M	90	1100	710
160L	90	1100	765
180M	100	1200	805
180L	100	1200	845
200L	180	2500	910
225S	200	3800	1035
225M	200	3800	1040
250M	320	4200	1110
280S	370	5000	1160
280M	370	5000	1210
315S	500	6000	1410
315M	500	6000	1440
315L	500	6000	1550
355M	600	6500	1735
355L	600	6500	1765





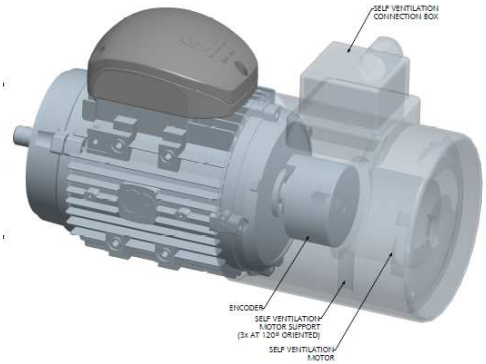
编码器

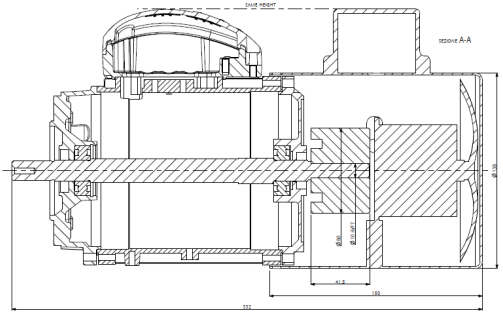
根据通风的要求，
编码器可以通过以下两种方式安装。

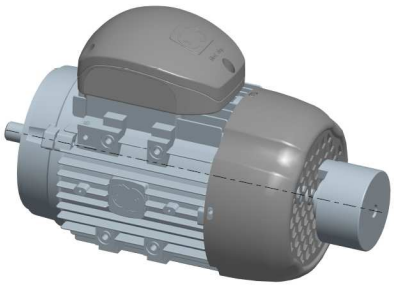
编码器的特点及性能可以通过双方沟通确认。
Motive 会推荐选择编码器的类型。

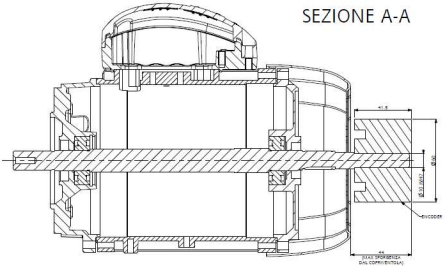
According to the requested ventilation, encoders can be mounted by motive in the 2 following ways.

Motive recommends the encoder types that it selected. Their features can be communicated upon request.









运输、储存、使用和维护

Motive 将电机装在适合任何运输方式的包装中。
在进行任何维护保养之前，请确保电机的电源已关闭；
按照电机目录中的说明，仅使用原厂备件；
电机必须保存在有遮盖和干燥的环境中，没有振动或灰尘，温度高于 -15 ° C。外露部件，如法兰和轴驱动端，必须用润滑剂保护。定期旋转轴，以确保电机长期放置时轴承完全润滑。
电机必须由了解安全要求的合格人员安装和使用。此外，安装必须在干燥的环境下进行。工作温度和湿度必须在之前“ 操作条件 ”中描述的范围内。
电机的拆装必须由有资质的人员进行。只有在断开电源后才能对接线盒进行任何操作。
必须使用适当的工具进行最终检查，避免使用可能损坏电机的方法。
进行定期保养以确保最佳工作条件
必须进行：电机清洁、风扇冷却验证、检查噪音和振动。
然后要检查轴承（见表 1），必要时更换它们以及橡胶密封圈。
最后，验证电机的法兰或底角是否正确固定。

ATEX 电机的特别建议
对于ATEX电机的所有维护和操作，必须要符合 EN 60079-17 标准。必须注意所有螺桩完全拧紧。
某些易磨损部件（例如油封、轴承）的更换必须使用与制造商提供的部件相同，以确保保持安全要求和防护等级。

零部件连接面（例如外壳与端盖之间；外壳与主轴之间）不得二次加工或涂漆。这些表面必须保持清洁，并且为了防止腐蚀或进水，必须在其表面保持一层硅脂油

ATEX 电机的维修必须按照 IEC 79-19 标准的要求进行，并且只能由制造商或由制造商授权的指定加工厂进行。

安装警告

对于电机的安装，请考虑以下几点：

· 确保在运输过程中没有发生损坏；
· 小心地从包装材料或任何其他保护装置中取出；
· 确保电源的电压与铭牌上的额定电压是一致的;
· 与电气连接处以及铭牌表面不得涂漆；
· 将电机放在平面上；
· 确保轴承或法兰固定良好，在直接连接的情况下，电机完全对齐；
· 用手转动转子，以验证没有任何拖动；
· 检查旋转方向；
· 外部传动部件(例如:皮带轮、联轴器等)只能使用合适的方法进行拆除(热浸)。避免外部传动部件上的残留应力（参考目录中的技术表）；
· 在安装形式为轴端朝下时，需使用保护罩,如果轴的末端向上，请使用盖子防止任何外部部件进入风扇；
· 不要妨碍通风。排出的空气，连同来自其他地方的空气组，不得立即重新吸入；
· 检查电机是否正确接地

接地 (DELPHI 3PH)

接地线可以接在接线箱里如（图 1）或者可以用接地螺栓接在外壳上（图 2）。后者当接线方式是在当进入接线盒的电源只有三条线不带接地线,或者当某些要求时（例如 ATEX）或者要把几台电机串联在一起,或者在客制化电机没有接线端坐和接线盒中。

Earth connection (DELPHI 3PH)

Earth connection can be done either inside the terminal box (Fig.1) or by using the screw on the housing (Fig.2). This last connection can be requested when the cable going into the terminal box is a 3 wires cable, without the earth one, or when prescribed by some norms (like ATEX), or to connect in series several motors earth by connecting their frames each-other, or in customized motors without terminal block and terminal box.

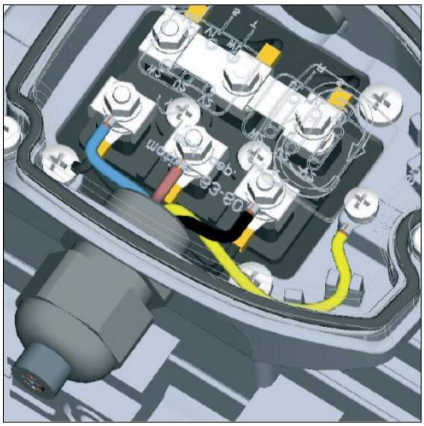


Fig.1

Fig.2

Transportation, conservation, use and maintenance

Motive dispatches the motors in packagings suitable for any kind of transportation.

Before any maintenance intervention make sure that the power supply of the motor is off disabling it;
Use only original spare parts following the indications provided in the catalogue for the motors;

The motor must be conserved in covered and dry ambient, without the presence of vibrations or dust, a temperature higher then -15°C.

The exposed parts, like flanges and the shaft drive extremity, must be protected by lubricant. It is opportune to rotate periodically the shaft in order to ensure a long-standing complete lubrication of the bearings.

The motor must be installed and used by qualified people that know the safety requirements. Also the installation must happen in dry climate and protected by atmospheric agents. The working temperature and humidity must be within the limits described in the previous paragraph “working conditions”. Motor dismantling and assembling must be done by qualified people. Any intervention on the connection box must be done only after having disconnected the power supply.

Eventual inspections must be done with proper tools, avoiding means that could damage the motor. It is opportune to make periodical inspections, to guarantee the best working conditions and making: motor cleaning, fan cooling verification, eventual abnormal noise and vibration identification. In this last case, check the bearings (see tab.1) and, if necessary, substitute them, as well as the rubber seal rings.

Finally, verify the correct fixture of the motor on the flange or on the feet.

Recommended precautions for ATEX motors

All maintenance and control operations on ATEX motors must be done respecting the standard EN 60079-17. Pay attention that all screws are closed tightly.

The replacement of parts subject to wear, (like bearings and oil seals, must be done using only original spare parts in order to preserve the safety requirements and protection degree.

The joints surfaces (for instance between housing and shields, shaft) must not be neither machined nor painted. Such surfaces must be kept clean and, against corrosion and water entryu, you must keep on the same a layer of silicon grease.

Repair of ATEX motors must be done respecting the norm IEC 79-19, and they can be done only by the manufacturer or by trained and authorized external workshops.

Installation precautions

For the installation of the motor please consider the following:

- make sure that no damages have occurred during transportation;
- carefully remove the components of the plant from the wrapping material and any other protective devices;
- make sure that the value of the voltage on the rating plate is the same as the voltage of mains;
- the surfaces in contact with the electric bonding and the rating plate must not be varnished;
- set the motor on a flat surface;
- make sure that the bearings or the flange are well fixed and that in case of direct joint the motor is perfectly aligned;
- make the rotor rotate manually in order to verify the absence of any dragging;
- verify the rotation sense removing the joint;
- key (extract) the output components (i.e. joint, belt pulley, etc.) only using apt devices (shrinking-on). Avoid not allowed tension on the pulley (ref. catalogue par. technical sheet);
- in the models in which the shaft is with the end downwards, use the protective cover. If the end of the shaft is upwards, use a cover preventing any penetration of external parts into the fan;
- do not hinder ventilation. The discharged air, together with the air coming from other groups, must not be immediately re-aspirated;
- verify the correct grounding of the motor

轴承润滑（DELPHI 3PH）

电机带密封轴承的终身润滑不需要维护
轴承的寿命从 3 到 5 年不等,依据轴上面的轴向和径向的负载不同以及电机使用环境情况的不同而有差异

机座号 180 带有可润滑轴承，依据表 2 规定的运转时间进行加入润滑油脂。

当使用 NU 非标滚柱轴承，和 7 系列角接触球轴承，表 2 中的润滑间隔减半。

当电机是由变频器供电时，润滑间隔也会减半因为定和转子之间的电弧导致润滑脂固化。
为了这个原因，建议在这类电机上选用绝缘轴承（特殊性能选项），特别是功率在 110kW 以上的电机

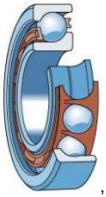
使用锂基或聚脲基润滑脂可与矿物基础油一起使用，已的到最高工作温度，至少为 190°C。此外 Motive 建议使用 Mobil EM 或 Mobilith SHC 以获得最大的耐用性

Bearings lubrication (DELPHI 3PH)

Motors with staunch bearings, that are self-lubricating for life, do not require any lubrication. Bearings life vary from 3 up to 5 years according to the axial and radial loads that are charged on the shaft and to environmental conditions the motor is used in.

Motors from size 180 provided with the bearings lubrication unit are to be lubricated while running according to the lubricating intervals and the grease quantity as per table 2.

On non-standard roller "NU" bearings  and Angular contact ball bearings "7.."



, the lubrication intervals timing is half.

Lubrication intervals timing is half also for motors supplied by inverter, because of the grease vetrification caused by the currents arc between stator and rotor. For this reason, insulated bearings  (special execution) are recommended on such motors, especially when their power is 110kW or higher

Use lithium o polyurea grease with mineral oil basis suitable for a max working temp. of at least 190°C. By the way, we recommend Mobil Polyrex EM or Mobil Mobilith SHC for the max durability

Tab. 2

Tab. 2

电机 motor	油脂量 (g) Grease quantity (g)		润滑间隔时间 Lubrication intervals in operation hours			
grandezza size	2 极 2 poles	4-6-8 极 4-6-8 poles	2 极 2 Poles	4 极 4 Poles	6 极 6 Poles	8 极 8 Poles
180-200*	25		3800	9300	12400	15200
225*	25		3800	8900	12200	14800
250*	30		3100	4100	5900	6900
280*	28	36	800	3900	5600	6700
315	36	45	800	2300	4100	5100
355	45	60	700	2000	4000	4500

*机座号180-280 电机轴承润滑

*180-280 motors bearings lubrication

电机机座 160 到 280
自 2017 年开始，我们配置了 ZZ 自动润滑轴承已避免了定期润滑维护的工作的需求

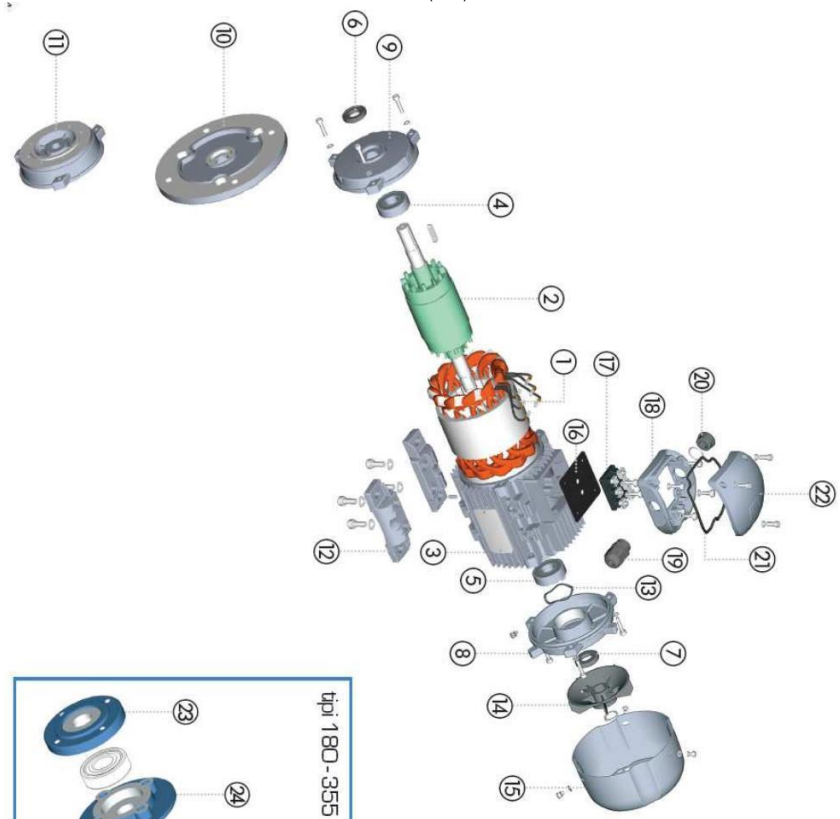
From size 160 up to 280, since 2017, we mount ZZ auto-lubricated bearings, thus avoiding the need of a periodical re-greasing maintenance

注： 在 2016-2017 年期间，电机机座号 180-280 可能还使用可润滑开式轴承。

Note: during the years 2016and 2017, the motors size180-280 might still be equipped by lubricators and open bearings, because of the time needed to update them.

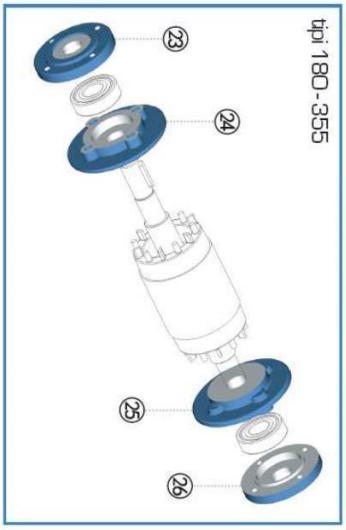
电机配件列表 - Spare parts list

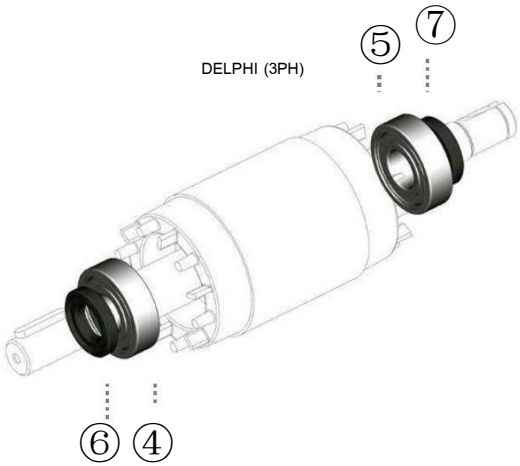
DELPHI (3PH)



N°	编码
1	3PNSTA
2	3PNROT
3	3PNFRA
4	3PNFBE
5	3PNBBE
6	3PNFOS
7	3PNBOS
8	3PNBSH
9	3PNBO3
10	3PNBO5
11	3PNB14
12	3PNFEE
13	3PNWAV

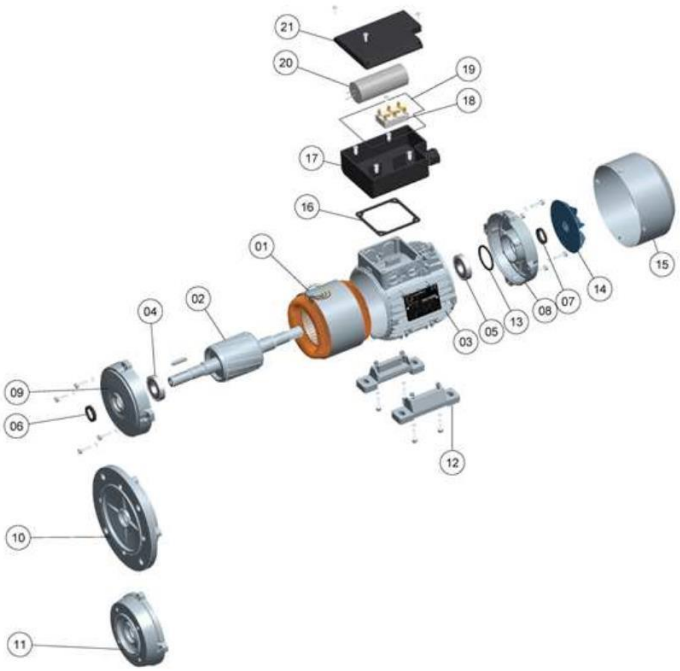
N°	编码
14	3PNFAN
15	3PNFCV
16	3PNJOB
17	3PNTER
18	3PNBOB
19	3PNOVP
20	3PNCAP
21	3PNSOB
22	3PNCOB
23	3PNFOB
24	3PNFRB
25	3PNBIB
26	3PNBOB





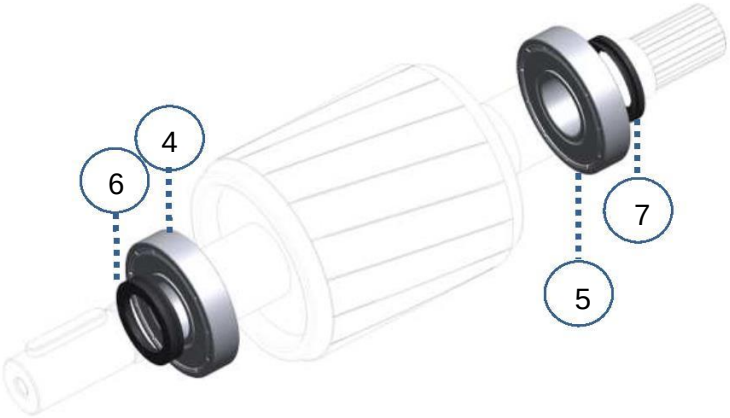
机座号	极数	橡胶密封圈		Cuscinetti - 轴承		
Type	poles	⑥	⑦	④	⑤ standard	AT...
56	2 - 8	12x25x7	12x25x7	6201 ZZ-C3	6201 ZZ-C3	=
63	2 - 8	12x25x7	12x25x7	6201 ZZ-C3	6201 ZZ-C3	=
71	2 - 8	15x30x7	15x30x7	6202 ZZ-C3	6202 ZZ-C3	=
80	2 - 8	20x35x7	20x35x7	6204 ZZ-C3	6204 ZZ-C3	=
90	2 - 8	25x40x7	25x40x7	6205 ZZ-C3	6205 ZZ-C3	=
100	2 - 8	30x47x7	30x47x7	6206 ZZ-C3	6206 ZZ-C3	=
112	2 - 8	30x47x7	30x47x7	6206 ZZ-C3	6206 ZZ-C3	6306 ZZ-C3
132	2 - 8	40x62x8	40x62x8	6208 ZZ-C3	6208 ZZ-C3	=
160	2 - 8	45x62x8	45x62x8	6309 ZZ-C3	6309 ZZ-C3	=
180	2 - 8	55x72x8	55x72x8	6311 ZZ-C3	6311 ZZ -C3	=
200	2 - 8	60x80x8	60x80x8	6312 ZZ -C3	6312 ZZ -C3	=
225	2 - 8	65x80x10	65x80x10	6313 ZZ -C3	6313 ZZ -C3	=
250	2 - 8	70x90x10	70x90x10	6314 ZZ -C3	6314 ZZ -C3	=
280	2	70x90x10	70x90x10	6314 ZZ -C3	6314 ZZ -C3	=
280	4 - 8	85x100x12	80x100x12	6317 ZZ -C3	6317 ZZ -C3	=
315	2	85x110x12	85x110x12	6317-C3	6317-C3	
315	4 - 8	95x120x12	95x120x12	NU 319-C3	6319-C3	
355	2	95x120x12	95x120x12	6319-C3	6319-C3	
355	4 - 8	110x130x12	110x130x12	NU 322-C3	6322-C3	
400	4 - 8	130x160x12	130x160x12	NU 326-C3	6326-C3	

MONO (1PH)



N°	编码
1	1PNSTA
2	1PNTOR
3	1PNFRA
4	1PNFBE
5	1PNBBE
6	1PNFOS
7	1PNBOS
8	1PNBSH
9	1PNB03
10	1PNB05
11	1PNB14
12	1PNFEE
13	1PNWAV
14	1PNFAN
15	1PNFCV
16	1PNUCB
17	1PNBCB
18	1PNTER
19	1PNSCB
20	1PNCON
21	1PNCCB

MONO (1PH)

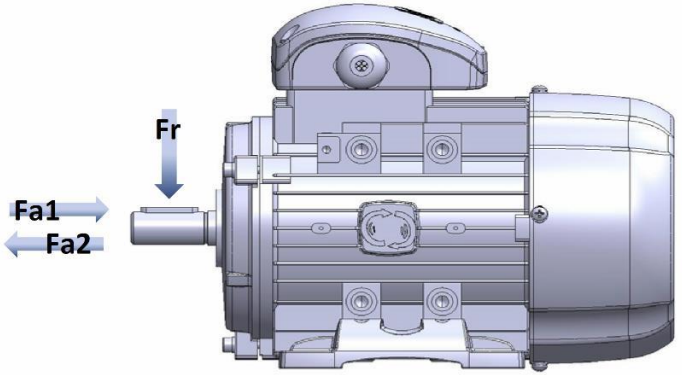


机座号	级数	V 型挡圈		Cuscinetti - 轴承	
Type	poles	⑥	⑦	④	⑤
63	2-4	VR14	VR14	6202ZZ	6202ZZ
71	2-4	VR14	VR14	6202ZZ	6202ZZ
80	2-4	VR19	VR19	6204ZZ	6204ZZ
90	2-4	VR24	VR24	6205ZZ	6205ZZ
100	2-4	VR28	VR28	6206ZZ	6206ZZ
112	2-4	VR28	VR28	6306ZZ	6306ZZ

最大负载 – max admitted loads

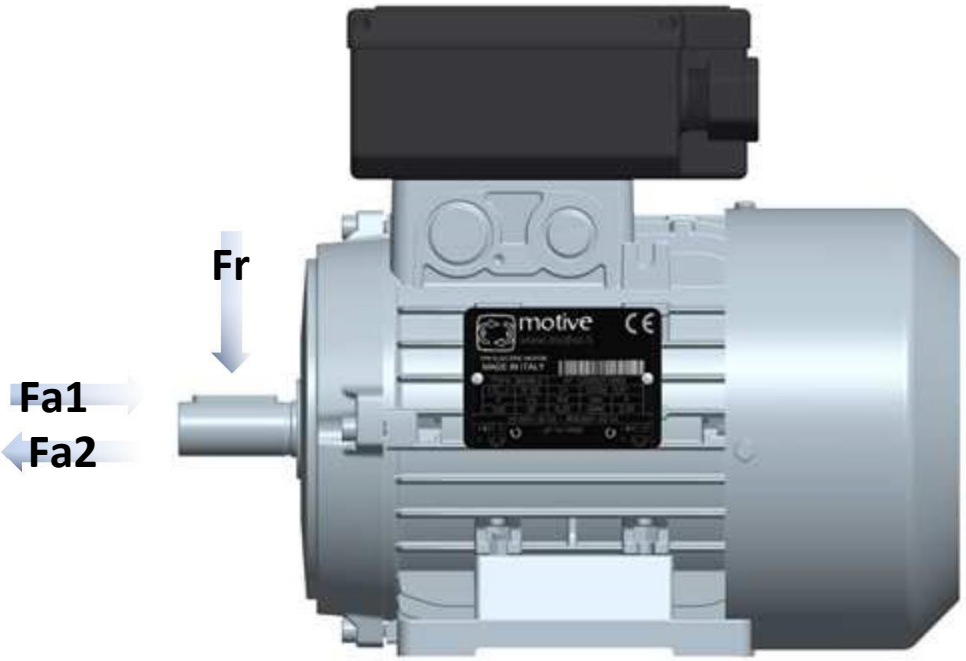
DELPHI (3PH)

	Fr[N]标准的				Fa1 / Fa2 [N]标准的				Fa1 / Fa2 [N] 特殊选项			
	3000rpm	1500rpm	1000rpm	750rpm	3000rpm	1500rpm	1000rpm	750rpm	3000rpm	1500rpm	1000rpm	750rpm
56	275	360			120	160			380	500		
63	300	375			120	160			380	500		
71	330	410	480	500	200	250	300	320	640	800	960	1000
80	550	690	800	900	260	340	400	460	890	1160	1370	1440
90	600	770	880	980	340	460	570	650	1480	2000	2480	2080
100	880	1100	1250	1400	480	590	750	850	1960	2410	3070	2900
112	1000	1200	1400	1500	480	590	750	850	1960	2410	3070	3700
132	1350	1700	1950	2200	600	1000	1300	1500	1110	1840	2390	6130
160	2300	2700	3000	3200	1300	1500	1900	2200	1990	2290	2900	8980
180	3000	4000	4600	5300	2400	2700	3000	3300	3560	4000	4450	6070
200	3800	4800	5500	5500	3000	3900	4800	4800	3700	4810	5920	7320
225	4200	5200	6000	6000	3600	4900	5700	5700	5400	7350	8550	8450
250	4800	6000	6000	6000	4100	5500	6500	6500	5930	7950	9390	8010
280	4800	7800	6900	6900	4200	6800	6800	6800	6070	9830	9830	10200
315	5800	15000	15000	17500	4600	7000	7000	7000	6580	10000	10000	10120
355	7700	19000	19000	19000	5800	7200	7200	7200	7740	9600	9600	10400
400	9000	20500	20500		7300	12500	14600		9960	17050	19910	



MONO (1PH)

	Fr [N]		Fa1 [N]		Fa2 [N]	
	3000rpm	1500rpm	3000rpm	1500rpm	3000rpm	1500rpm
56	275	360	120	160	120	160
63	300	375	120	160	120	160
71	330	410	200	250	200	250
80	550	690	260	340	260	340
90	600	770	340	460	340	460
100	880	1100	480	590	480	590
112	1000	1200	480	700	480	700



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motive@motive.it

Dichiarazione di conformità

La ditta Motive s.r.l. con sede in Castenedolo (BS) - Italia

dichiara, sotto la sua esclusiva responsabilità,

che la sua intera gamma di **motori elettrici asincroni trifase IEC 56-400 serie DELPHI e DELFIRE**

è costruita e collaudata in conformità con la seguente normativa internazionale (ult. ediz.)

EN60034-1 Macchine elettriche rotanti - Parte 1: Caratteristiche nominali e di funzionamento

EN60034-6 Macchine elettriche rotanti - Parte 6: Sistemi di raffreddamento

EN60034-7 Macchine elettriche rotanti - Parte 7: Classificazione delle forme costruttive e dei tipi di installazione nonché posizione delle morsettiere (Codice IM)

EN60034-8 Macchine elettriche rotanti – parte 8: Marcatura dei terminali e senso di rotazione

EN60034-25 Macchine elettriche rotanti-Parte 25: Guida per la progettazione e le prestazioni dei motori in corrente alternata specificamente progettati per l'alimentazione da convertitori

EN60034-2-1 Macchine elettriche rotanti: Metodi di prova per determinare le perdite e l'efficienza

EN60034-30-1 Macchine elettriche rotanti-Parte 30: Classi di rendimento dei motori a corrente alternata alimentati dalla rete (Codice IE)

EN50347 Motori asincroni trifase di uso generale con dimensioni e potenze normalizzate - Grandezze da 56 a 315 e numeri di flangia da 65 a 740

EN61000-6-4 Compatibilità elettromagnetica (EMC): Parte 6-4: Norme generiche - Emissione per gli ambienti industriali

IEC 72-1 Dimensions and output series for rotating electrical machines Part 1: Frame numbers 56 to 400 and flange numbers 55 to 1080

come richiesto dalle Direttive

Bassa Tensione (LVD) 2014/35/EU,
EMC Compatibilità Elettromagnetica (EMC) 2014/30/EU
ErP progettazione ecocompatibile dei prodotti (ErP) 2019/1781/EU

Il motore non deve funzionare finché la macchina ove viene assemblato viene dichiarata conforme alla **Direttiva Macchine 2006/42/EU**

Il Rappresentante Legale: Giorgio Bosio

N. REA 422301
Cod. Fisc. e P. IVA 03580280174

Motive s.r.l.
Via Le Ghiselle, 20
25014 Castenedolo (BS)
Tel.: +39 030 2677087
Fax: +39 030 2677125
motive@e-motive.it

Conformity Declaration

Motive s.r.l. whose Head Office is situated in Castenedolo (BS) - Italy

declares, under its own exclusive responsibility,

that its whole range of

asynchronous electric motors of the series "Delphi" and "DELFIRE"

is designed, produced and tested according to the following international norms (last issue):

EN60034-1 Rotating Electrical Machines - Part 1: Rating and performance

EN60034-6 Rotating Electrical Machines - Part 6: Methods of cooling (IC code)

EN60034-7 Rotating Electrical Machines - Part 7: Classification of Types of Construction, Mounting Arrangements and Terminal Box Position (IM Code)

EN60034-8 Rotating electrical machines – Part 8: Terminal markings and direction of rotation

EN60034-25 Rotating electrical machines - Part 25: Guidance for the design and performance of a.c. motors specifically designed for converter supply

EN60034-2-1 Rotating electrical machines. Standard methods for determining losses and efficiency from tests

EN60034-30-1 Rotating electrical machines - Part 30: Efficiency classes of single-speed, three-phase, cage-induction motors

EN50347 General purpose three-phase induction motors having standard dimensions and outputs. Frame numbers 56 to 315 and flange numbers 65 to 740

EN61000-6-4 Electromagnetic compatibility (EMC) - Part 6: Generic standards - Section 4: Emission standard for industrial environments

IEC 72-1 Dimensions and output series for rotating electrical machines Part 1: Frame numbers 56 to 400 and flange numbers 55 to 1080

following the provisions of the Directives

Low Voltage (LVD) 14/35/EEC,
EMC Electromagnetic Compatibility (EMC) 14/30/EEC
Eco-design Directive for Energy-related Products (ErP) 19/1781/EEC

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BS EN 60034-6	Rotating Electrical Machines - Part 6: Methods of cooling (IC code)
BS EN 60034-7	Rotating Electrical Machines - Part 7: Classification of Types of Construction, Mounting Arrangements and Terminal Box Position (IM Code)
BS EN 60034-8	Rotating electrical machines – Part 8: Terminal markings and direction of rotation
CLC/TS EN 60034-25	Rotating electrical machines - Part 25: Guidance for the design and performance of a.c. motors specifically designed for converter supply
BS EN 60034-2-1	Rotating electrical machines. Standard methods for determining losses and efficiency from tests
BS EN 60034-30-1	Rotating electrical machines - Part 30: Efficiency classes of single-speed, three-phase, cage-induction motors
BS EN 50347	General purpose three-phase induction motors having standard dimensions and outputs. Frame numbers 56 to 315 and flange numbers 65 to 740
BS EN 61000-6-4	Electromagnetic compatibility (EMC) - Part 6: Generic standards - Section 4: Emission standard for industrial environments
IEC 72-1	Dimensions and output series for rotating electrical machines Part 1: Frame numbers 56 to 400 and flange numbers 55 to 1080

following the provisions of the Directives

Low Voltage (LVD) **14/35/EEC,**
UK Electrical Equipment (Safety) **Regulations 2016**

EMC Electromagnetic Compatibility (EMC) **14/30/EEC**
UK EMC Electromagnetic Compatibility **Regulations 2016**

Eco-design Directive for Energy-related Products (ErP) **09/125/EEC**
UK The Ecodesign for Energy-Related Products and Energy Information (Amendment) (EU Exit) **Regulations 2019**

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Dichiarazione di conformità

La ditta Motive s.r.l. con sede in Castenedolo (BS) - Italia

dichiara, sotto la sua esclusiva responsabilità,

che la sua intera gamma di **motori elettrici asincroni monofase serie MONO**

è costruita in conformità con la seguente normativa internazionale (ult. edizione)

EN60034-1 Macchine elettriche rotanti - Parte 1: Caratteristiche nominali e di funzionamento

EN60034-6 Macchine elettriche rotanti - Parte 6: Sistemi di raffreddamento

EN60034-7 Macchine elettriche rotanti - Parte 7: Classificazione delle forme costruttive e dei tipi di installazione nonché posizione delle morsettiere (Codice IM)

EN60034-8 Macchine elettriche rotanti – parte 8: Marcatura dei terminali e senso di rotazione

EN50347 Motori asincroni trifase di uso generale con dimensioni e potenze normalizzate - Grandezze da 56 a 315 e numeri di flangia da 65 a 740

EN61000-6-4 Compatibilità elettromagnetica (EMC): Parte 6-4: Norme generiche - Emissione per gli ambienti industriali

IEC 72-1 Dimensions and output series for rotating electrical machines Part 1: Frame numbers 56 to 400 and flange numbers 55 to 1080

come richiesto dalle Direttive

BT Bassa Tensione CEE 14/35,
EMC Compatibilità Elettromagnetica CEE 14/30

Il motore non deve funzionare finché la macchina ove viene assemblato viene dichiarata conforme alla **Direttiva Macchine CEE 06/42**
NB: la Direttiva Macchine espressamente esclude dal suo campo di applicazione i motori elettrici (Art.1, comma 2)

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Motive s.r.l. whose Head Office is situated in Castenedolo (BS) - Italy

declares, under its own exclusive responsibility,

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single phase asynchronous electric motors of the series "MONO"

is conform to the following international norms (last issue):

EN60034-1 Rotating Electrical Machines - Part 1: Rating and performance

EN60034-6 Rotating Electrical Machines - Part 6: Methods of cooling (IC code)

EN60034-7 Rotating Electrical Machines - Part 7: Classification of Types of Construction, Mounting Arrangements and Terminal Box Position (IM Code)

EN60034-8 Rotating electrical machines – Part 8: Terminal markings and direction of rotation

EN60034-25 Rotating electrical machines - Part 25: Guidance for the design and performance of a.c. motors specifically designed for converter supply

EN50347 General purpose three-phase induction motors having standard dimensions and outputs. Frame numbers 56 to 315 and flange numbers 65 to 740

EN61000-6-4 Electromagnetic compatibility (EMC) - Part 6: Generic standards - Section 4: Emission standard for industrial environments

IEC 72-1 Dimensions and output series for rotating electrical machines Part 1: Frame numbers 56 to 400 and flange numbers 55 to 1080

following the provisions of the Directives

Low Voltage 14/35 EEC,
EMC Electromagnetic Compatibility 14/30 EEC

It is also possible to incorporate them into machines conform to the **Machinery Directive 06/42/EEC .** Note: The Machinery Directive excludes from its scope the electric motors (Art.1, comma 2)

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BS EN 60034-6	Rotating Electrical Machines - Part 6: Methods of cooling (IC code)
BS EN 60034-7	Rotating Electrical Machines - Part 7: Classification of Types of Construction, Mounting Arrangements and Terminal Box Position (IM Code)
BS EN 60034-8	Rotating electrical machines – Part 8: Terminal markings and direction of rotation
BS EN 60335-1	Household and similar electrical appliances – Safety
BS EN 50347	General purpose three-phase induction motors having standard dimensions and outputs. Frame numbers 56 to 315 and flange numbers 65 to 740
BS EN 61000-6-4	Electromagnetic compatibility (EMC) - Part 6: Generic standards - Section 4: Emission standard for industrial environments
IEC 72-1	Dimensions and output series for rotating electrical machines Part 1: Frame numbers 56 to 400 and flange numbers 55 to 1080

following the provisions of the Directives

Low Voltage (LVD) **14/35/EEC,**
UK Electrical Equipment (Safety) **Regulations 2016**

EMC Electromagnetic Compatibility (EMC) **14/30/EEC**
UK EMC Electromagnetic Compatibility **Regulations 2016**

The Legal Representative: Giorgio Bosio

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СИСТЕМА ДОБРОВОЛЬНОЙ СЕРТИФИКАЦИИ

«Старт»

Зарегистрирована в Едином реестре систем добровольной сертификации Федерального агентства по техническому регулированию и метрологии Российской Федерации (Росстандарт РФ)

ПРОФИСЕРТ

ИСПЫТАТЕЛЬНАЯ ЛАБОРАТОРИЯ ОБЩЕСТВО С ОГРАНІЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ ІННОВАЦИОННЫЙ ЦЕНТР «КОЛИБРИ» (ООО ИЛ ИЦ «КОЛИБРИ»)
109025, г. Москва, 8-й проезд Марьиной Рощи, дом 30, стр. 1,
тел. +7(499) 391-23-57, inbox@1-sert.ru

АТТЕСТАТ АККРЕДИТАЦИИ № РОСС RU.31857.04ИЛС0.00063 действителен до 17.06.2022г.

ПРОТОКОЛ ИСПЫТАНИЙ № 199-04/2020 от 14.04.2020 года

Место проведения испытаний:	Испытательная лаборатория ООО ИЦ «КОЛИБРИ»
Заявитель:	Общество с ограниченной ответственностью "ПРИВОД ГРАНД РЕДУКТОР". Место нахождения и адрес места осуществления деятельности: Российская Федерация, Смоленская область, 214004, город Смоленск, улица Багратиона, дом 4, офис 46
Наименование продукции:	Электродвигатели (мотор-редукторы) асинхронные трехфазные общепромышленного назначения, рабочее напряжение 220/380В. Модели 56B-2
Изготовитель:	"Motive srl". Место нахождения и адрес места осуществления деятельности по изготовлению продукции: Via Le Ghiselle, 20 25014 Castenedolo (BS), Италия.
Технический регламент:	ТР ТС 004/2011 "О безопасности низковольтного оборудования",
Испытано согласно требованиям:	ТР ТС 004/2011 "О безопасности низковольтного оборудования",
Дата получения образца	31.03.2020г.

Настоящий протокол испытаний распространяется только на образцы, подвергнутые испытаниям

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ
ДЕКЛАРАЦИЯ О СООТВЕТСТВИИ

Заявитель Общество с ограниченной ответственностью "ПРИВОД ГРАНД РЕДУКТОР"

Место нахождения и адрес места осуществления деятельности: Российская Федерация, Смоленская область, 214004, город Смоленск, улица Багратиона, дом 4, офис 46, основной государственный регистрационный номер: 1166733076608, номер телефона: +79203158381, адрес электронной почты: privodgrand@gmail.com

в лице Директора Шелеста Александра Иосифовича

заявляет, что Электродвигатели (мотор-редукторы) асинхронные трехфазные общепромышленного назначения, рабочее напряжение 220/380В. Модели по приложению № 1, количество листов: 2

изготовитель "Motive srl". Место нахождения и адрес места осуществления деятельности по изготовлению продукции: Via Le Ghiselle, 20 25014 Castenedolo (BS), Италия.
Продукция изготовлена в соответствии с Дерективой 2014/35/EU "Низковольтное оборудование".
Код ТН ВЭД ЕАЭС 8501. Серийный выпуск

соответствует требованиям

ТР ТС 004/2011 "О безопасности низковольтного оборудования", утвержден Решением Комиссии Таможенного союза от 16 августа 2011 года № 768

Декларация о соответствии принята на основании

Протокола испытаний № 199-04/2020 от 14.04.2020 года, выданного Испытательной лабораторией Общество с ограниченной ответственностью Инновационный центр «Колибри», аттестат аккредитации РОСС RU.31857.04ИЛС0.00063, сроком действия до 17.06.2022 года.
Схема декларирования 1д

Дополнительная информация

ГОСТ 16264.1-2016 Двигатели асинхронные. Часть 1. Общие технические условия. Срок хранения (службы, годности) указан в прилагаемой к продукции товаросопроводительной и/или эксплуатационной документации.

Декларация о соответствии действительна с даты регистрации по 13.04.2025 включительно

(подпись) М. П. Шелест Александр Иосифович
(Ф.И.О. заявителя)

Регистрационный номер декларации о соответствии: ЕАЭС N RU Д-IT.HX37.B.02083/20

Дата регистрации декларации о соответствии: 14.04.2020

KINGDOM OF SAUDI ARABIA

Product Conformity Programme

Statement for Registration

PCP Ref.no: **KSA R-205239**

Issued to:

Motive Srl
Via Artigianale 110/112
25010 Montirone (BS)
Italy

Product: II-06 MOTORS Incl. GEARED MOTORS/DRIVES

Model/Type: See appendix (1 page/s)

Applicable standards/references: IEC 60034, IEC 72

Issued by:

Regional Licensing Centre
Europe, Middle East and Africa
Intertek Semko AB
06 November 2009

Pia Östgaard
Manager

TYPE APPROVAL CERTIFICATE

N. ELE391318CS001

This is to certify that the product below is found to be in compliance with the applicable requirements of the RINA Type Approval system.

Description	**Asyncronous three-phases electric motors**
Type	**DELPHI Series**
Applicant	**Motive S.r.l.** **Via Le Ghiselle, 20** **25014 Castenedolo (BS)** **Italy**
Manufacturing Place	**Motive S.r.l.** **Via Le Ghiselle, 20** **25014 Castenedolo (BS)** **Italy**
Testing Standards	**RINA Rules for the Classification of Ships – Part C, Ch.2, Sec. 4**

Issued in **Genova** on **January 21, 2019** This certificate is valid until **January 21, 2024**

RINA Services S.p.A.

Valerio Bonanni

RINA Services S.p.A.
Via Corsica, 12 – 16128 Genova

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

TÜV SÜD Italia

CERTIFICATO

Nr. 50 100 1185 - Rev.010

Si attesta che / *This is to certify that*

IL SISTEMA QUALITÀ DI
THE QUALITY SYSTEM OF

motive®

MOTIVE S.r.l.

SEDE LEGALE E OPERATIVA:
REGISTERED OFFICE AND OPERATIONAL SITE:

VIA LE GHISELLE 20
IT - 25014 CASTENEDOLO (BS)

È CONFORME AI REQUISITI DELLA NORMA
HAS BEEN FOUND TO COMPLY WITH THE REQUIREMENTS OF

UNI EN ISO 9001:2015

QUESTO CERTIFICATO È VALIDO PER IL SEGUENTE CAMPO DI APPLICAZIONE
THIS CERTIFICATE IS VALID FOR THE FOLLOWING SCOPE

Progettazione e fabbricazione di motori elettrici, riduttori meccanici e inverter (IAF 18, 19)

Design and manufacture of electrical motors, mechanical gearboxes and variable speed drives (IAF 18, 19)

ACCREDIA L'ENTE ITALIANO DI ACCREDITAMENTO
SGQ N° 049A
Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreements

Per l'Organismo di Certificazione
For the Certification Body
TÜV Italia S.r.l.

Andrea Coscia
Direttore Divisione Business Assurance

Validità / *Validity*
Dal / From: **2019-03-19**
Al / To: **2022-03-02**

Data emissione / *Issuing Date*
2019-03-19

PRIMA CERTIFICAZIONE / *FIRST CERTIFICATION:* 2001-07-20
DATA DI SCADENZA DELL'ULTIMO CICLO DI CERTIFICAZIONE: 2019-03-02
EXPIRATION DATE OF THE LAST CERTIFICATION CYCLE 2019-03-02

"LA VALIDITÀ DEL PRESENTE CERTIFICATO È SUBORDINATA A SORVEGLIANZA PERIODICA A 12 MESI E AL RIESAME COMPLETO DEL SISTEMA DI GESTIONE AZIENDALE CON PERIODICITÀ TRIENNALE"
"THE VALIDITY OF THE PRESENT CERTIFICATE DEPENDS ON THE ANNUAL SURVEILLANCE EVERY 12 MONTHS AND ON THE COMPLETE REVIEW OF COMPANY'S MANAGEMENT SYSTEM AFTER THREE-YEARS"

TÜV Italia S.r.l. • Gruppo TÜV SÜD • Via Carducci 125, Pal. 23 • 20099 Sesto San Giovanni (MI) • Italia • www.tuv.it TÜV®

T01-1401

制造商责任

在下列情况下,Motive不承担任何责任：

- 在不遵循国家安全法规的情况下使用电动机
- 不依照本手册中提供的说明进行使用
- 输入电源缺陷
- 私自改装电动机
- 由未经过训练的人员操作使用电动机

电动机的使用安全也要依照本手册里的相关规定.
完整地阅读本手册中的使用说明和遵守所有提示的预防措施.

尤其是必须遵守:

- 仅在操作限制范围内使用
- 必须由专业人员进行保养
- 仅使用Motive原厂备件

警告! 本手册中的相关使用维护保养等说明,是不能取代有关的安全法律中的规定

Manufacturer liability

Motive disclaims all responsibility in case of:

- Use of the motors against national safety law
- Missing or wrong observance of the instructions provided in this manual
- Problems with the power supply
- Motor modifications or tampering
- Operations run by non-trained personnel

The safety in the motors is also due to the observance of the indications provided in this manual.

Read carefully the instructions and keep to all the recommended precautions, too. In particular it is necessary to:

- Work always within the operational limits
- Have maintenance done by qualified personnel
- Use only original spare parts

Warning! The instructions contained in this handbook do not substitute but summarize the duties derived from the regulations in force about safety.

在 www.motivecn.com，使用铭牌上的制造号码可以下载该产品的出场测试报告.

On www.motive.it, using the serial number on the nameplate of the gearbox, it is possible to download the Final Test Report of each unit.

本手册中所有的数据和信息都经过精心制定。
但是，我们不对任何错误 或遗漏承担任何责任。
MOTIVE可以随时自行决定更改所售产品的特性。

ALL INFORMATIONS HAVE BEEN DRAWN AND CONTROLLED WITH THE MAXIMUM
CARE. HOWEVER, WE ARE NOT RESPONSIBLE FOR EVENTUAL ERRORS OR MISSING
INFORMATION
MOTIVE srl CAN CHANGE IN ANY MOMENT THE CHARACTERISTICS OF ITS
PRODUCTS

关于ATEX电动机,请参阅本手册的附录部分.

FOR ATEX MOTORS, THE “ADDENDUM” FILE COMPLETES THIS MANUAL

DESIGNED IN ITALY

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Fax: +39 030 2677125

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