

# MONO

MOTOR SATU FASA  
SINGLE PHASE MOTORS



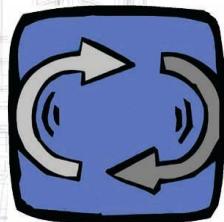
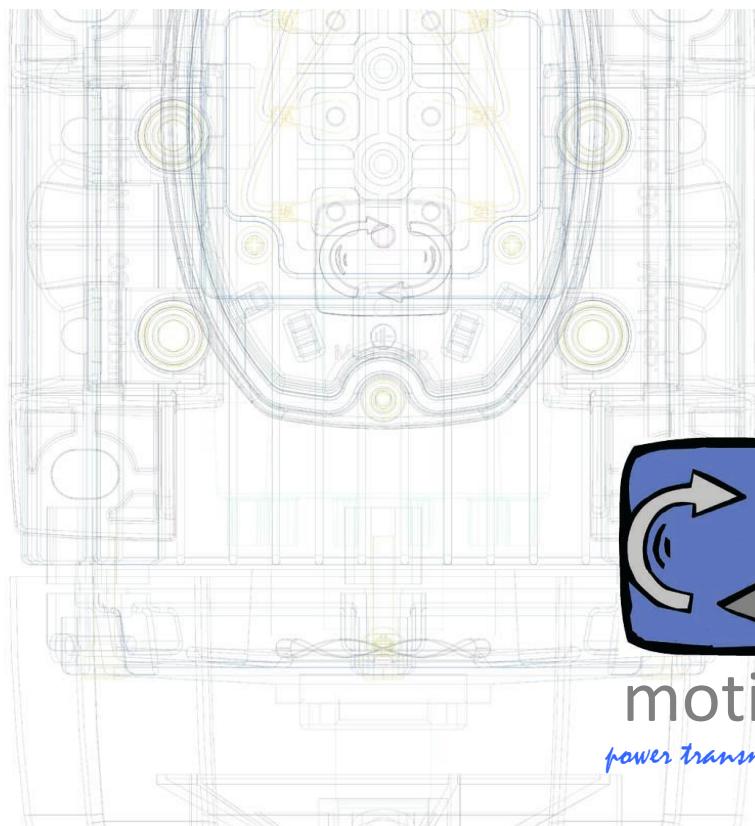
CE

# DELPHI

MOTOR TIGA FASA  
THREE PHASE MOTORS



teknik kılavuz  
technical manual



**motive**  
*power transmission*





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## Karakteristik teknis

Motor Motive dibuat sesuai dengan peraturan standar internasional untuk penggunaan universal; setiap ukuran seluruh bentuk konstruksi dihitung dengan mengacu pada tabel standar IEC 72-1;

Bentuk yang dibuat sesuai IEC 34-7 adalah B3, B5, B14, B3/B5, B3/B14, B14B

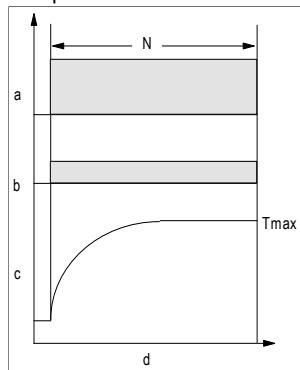
Motive tiga fase asinkron tertutup dan berventilasi eksternal.

Dudukan, termasuk hingga ukuran 132, dibuat dari paduan aluminium die casting, dari ukuran 160 dudukan dibuat dalam besi cor

Semua detail teknis, seperti data kinerja dan dimensi, dijelaskan secara menyeluruh dalam produk katalog dan di [www.motive.it](http://www.motive.it)

**Semua motor tiga fase adalah multi tegangan, dan multi frekuensi 50/60Hz, sesuai dengan data di sebelah kanan Insulasi Kelas F, Tugas berkelanjutan layanan S1\*, perlindungan IP55. Efisiensi diklasifikasikan di piring IE2/IE3 sesuai dengan norma IE 60034-30**

\*S1 - Layanan tugas berkelanjutan: beroperasi di beban konstan.



a= beban

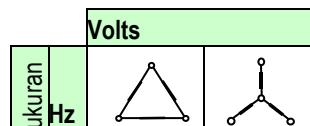
b= rugi-rugi listrik

c= suhu

d= waktu

N= waktu pengoperasian beban stabil

T<sub>max</sub>= suhu maksimal yang dicapai



56-132	230	400	(Pn=100%)
	220	380	(Pn=100%)
	240	415	(Pn=100%)
	260	440	(Pn=110%)
	220	380	(Pn=100%)
	265	460	(Pn=115%)
	280	480	(Pn=120%)

50	400	690	(Pn=100%)
	380	660	(Pn=100%)
	415	720	(Pn=100%)
	440	760	(Pn=110%)
60	380	660	(Pn=100%)
	460	795	(Pn=115%)
	480	830	(Pn=120%)
	400	690	(Pn=100%)



## 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.

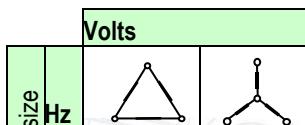
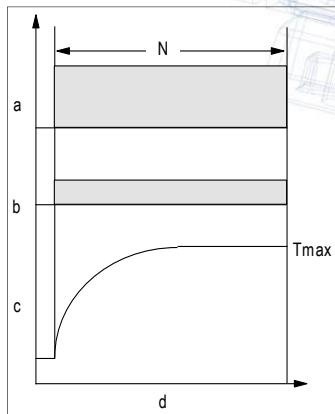
The frame, up to 132 included, is made in die casting aluminium alloy, from 160 the frame is made in cast iron

All technical details, as performance data and dimensions, are thoroughly described in the product catalogue and in [www.motive.it](http://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 IEC 60034-30**

\*S1 - Continuous duty service: operating at constant load



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= load

b= electric losses

c= temperature

d= time

N= steady load operating time

Tmax= max temperature achieved



## Kondisi kerja



**Kelembaban:** Peralatan listrik harus dapat bekerja dengan relatif kelembaban antara 30 dan 95% (tanpa kondensasi). Efek yang merusak kondensasi sese kali harus dihindari dengan peralatan yang memadai desain atau, jika perlu, dengan tindakan tambahan (misalnya, alat pemanas internal, lubang drainase).

Berliku adalah tekanan vakum diresapi (proses VPI, bebas penguapan, sedang kategori), dan karena itu cocok untuk iklim tropis

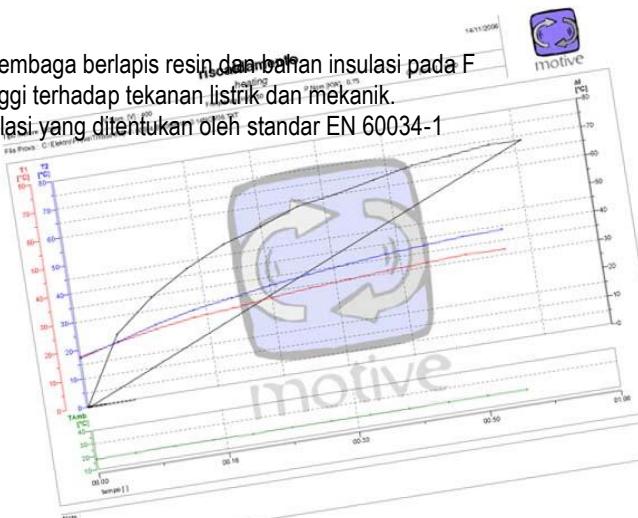
**Ketinggian dan suhu:** kekuatan yang ditunjukkan dimaksudkan untuk penggunaan reguler pada ketinggian di bawah 1000 mt di atas permukaan laut dan suhu antara -15°C dan 40°C (IEC 34-1): Untuk suhu lebih tinggi ketinggian dan/atau suhu, daya berkurang 10% setiap 10°C pada suhu yang lebih tinggi, dan sebesar 8% untuk setiap 1000 mt ketinggian yang lebih tinggi. Tidak diperbolehkan menggunakan motor yang dirancang untuk bahan peledak atmosfer pada suhu lingkungan di luar kisaran -20°C dan +40°C.

**Tegangan - Frekuensi:** Variasi maksimum tegangan suplai adalah +/-10%. Dalam toleransi ini Motor motif menyuplai daya pengenal. Dalam kisaran tersebut, kenaikan suhu motor bisa berfluktuasi hingga +/-20°C

**Isolasi:** belitan stator terbuat dari kawat tembaga berlapis resin dan bahan insulasi pada F kelas, yang memberikan perlindungan tinggi terhadap tekanan listrik dan mekanik.

Suhu maksimum (Tmax) untuk kelas isolasi yang ditentukan oleh standar EN 60034-1

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



Kenaikan suhu deret Delphi adalah kelas B atau lebih rendah, jauh di bawah batas kelas F motor, sehingga memungkinkan umur motor lebih lama.



## 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

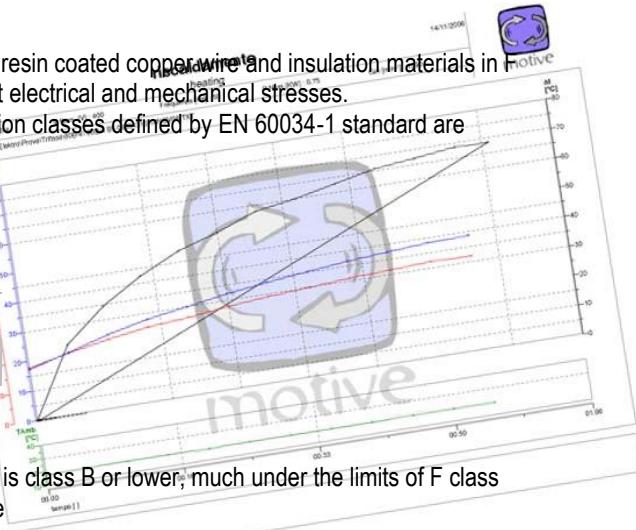
**Altitude and temperature:** the powers indicated are intended for regular use at altitudes below 1000 mt above sea level and a temperature between -15°C and 40°C (IEC 34-1): For higher altitude and/or temperature the power decreases of 10% each 10°C of higher temperature, and of 8% for each 1000 mt 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 wires and insulation materials in 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	$\Delta T$ (°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



## Perlindungan listrik dan termal

Perlindungan harus dipilih berdasarkan kondisi pengoperasian tertentu, sesuai standar EN 60204-1 (untuk motor ATEX, lihat juga EN60079-14 dan EN61241-14).

### Perlindungan eksternal

Dimungkinkan untuk memiliki:



1. Perlindungan terhadap arus lebih dan arus pendek.  
Perlindungan ini bisa diperoleh melalui pemutus arus magnetotermik atau dengan sekering; ini pastinya dikalibrasi pada arus motor.



2. Perlindungan terhadap kelebihan beban dengan relai termal yang mengontrol daya kontaktor saluran di bagian hulu motor.
3. Jika penerapannya memerlukan, perlindungan terhadap kecepatan motor listrik yang berlebihan, misalnya jika beban mekanis dapat menggerakkan motor listrik itu sendiri dan dengan demikian menimbulkan situasi berbahaya.
4. Jika kondisi khusus atau pengoperasian tersinkronisasi dengan mesin atau bagian mesin lain memerlukannya, perlindungan terhadap kegagalan atau penurunan daya melalui relai tegangan minimum yang mengontrol saklar pisau daya otomatis.



## Sakelar pemutus beban berlebih termal bagian dalam

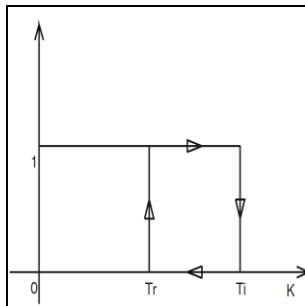
(per CEI 2-3 / IEC 34-1)

Perlindungan kelistrikan pada saluran listrik motor mungkin tidak cukup untuk melindunginya kelebihan beban. Jika kondisi pendinginan memburuk, motor mengalami overheating tetapi kondisi kelistrikan jangan berubah, yang menghambat perlindungan saluran. Memasang pelindung bawaan pada belitan memecahkan masalah ini:



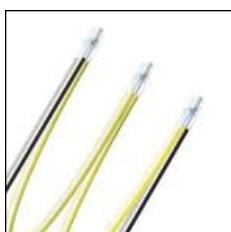
### Perangkat bimetallik "PTO"

Ini adalah perangkat elektromekanis yang biasanya tertutup yang terbuka ketika suhu ambang batas tercapai; secara otomatis diatur ulang kapan suhu turun di bawah tingkat ambang batas. Perangkat bimetallik tersedia dengan berbagai suhu intervensi dan tanpa reset otomatis, sesuai EN 60204-1.



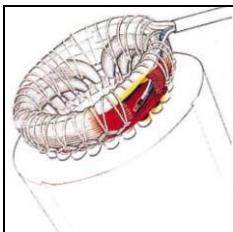
Tr= Suhu pembukaan (motor berhenti)

Ti= Suhu penutupan kembali (motor bekerja kembali)

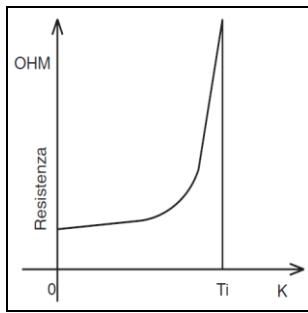


### Perangkat termistor PTC

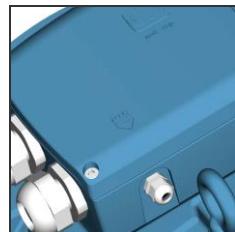
perangkat ini dengan cepat, secara positif menyesuaikan resistensinya setelah suhu ambang batas tercapai. Motor dari ukuran 160 hingga ukuran 355L dilengkapi sebagai standar dengan 3 termistor PTC yang dibenamkan di dalamnya belitan, dengan suhu pengaktifan 130°C pada motor kelas F (seri DELPHI standar) atau 160°C pada motor kelas H+ (DELFIRE).



posisi PTC



Ti= suhu pengaktifan



Size 160-400

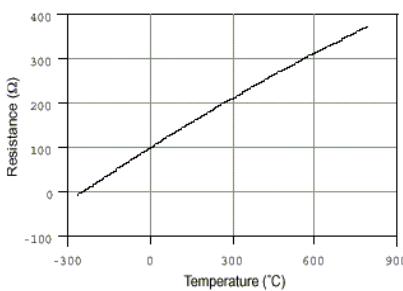
kabel gland PTC



### Perangkat PT100

ini adalah perangkat yang terus menerus menyesuaikan ketahanannya sesuai dengan suhu. Hal ini berguna untuk pengukuran konstan suhu belitan menggunakan elektronik

Sesuai dengan IEC34-1, semua motor dapat terkena beban berlebih kondisi 1,5 kali arus pengenal selama 2 menit dan 1,6 kali arus pengenal torsi terukur selama 15 detik (pada nilai V dan Hz).



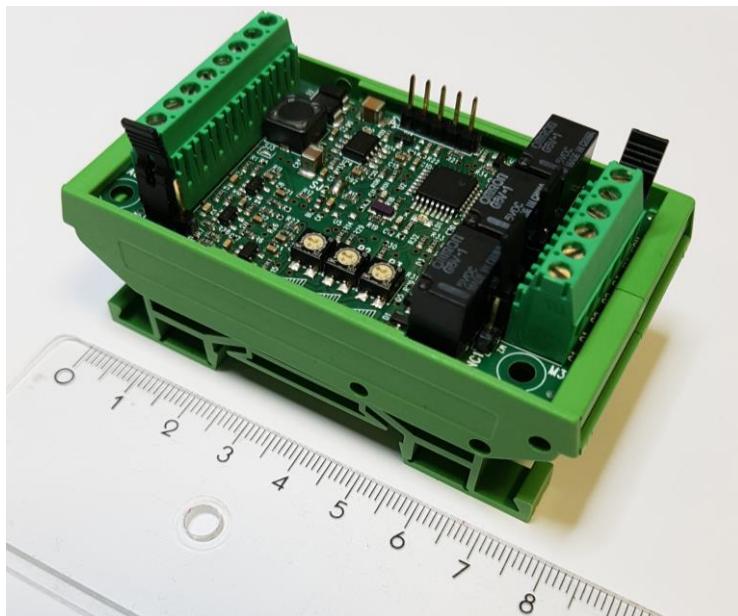
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Menurut norma IEC34-1, semua motor tahan terhadap beban berlebih sementara sebesar 1,5 kali lipat dari nilai yang ditentukan arus selama 2 menit, dan 1,6 kali torsi terukur selama 15 detik (pada nilai V dan Hz).

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## SCHEDAPT - Kartu kendali probe termal motor



[https://www.motive.it/upload/documenti/manuali/SCHEDAPT\\_ita.pdf](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 synchronised 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

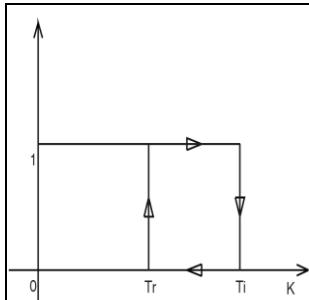
(per CEI 2-3/IEC 34-1)

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:



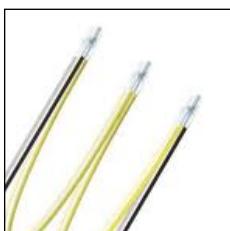
### bimetallic device “PTO”

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.



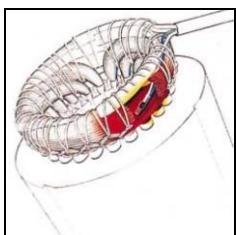
Tr= Opening temperature (motor stops)

Ti= Re-closing temperature (motor works again)

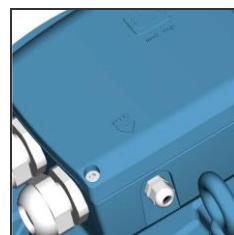
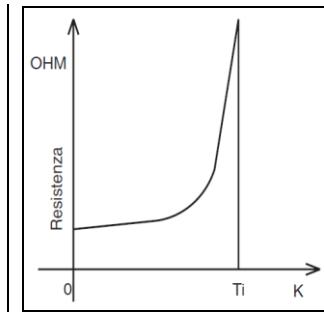


### PTC thermistor device

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



Size 160-400

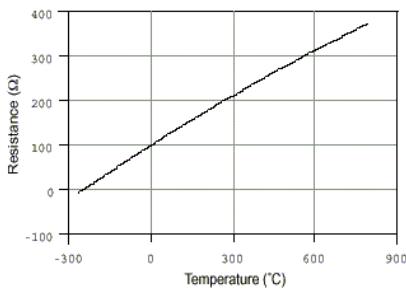
PTC cable gland



### 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

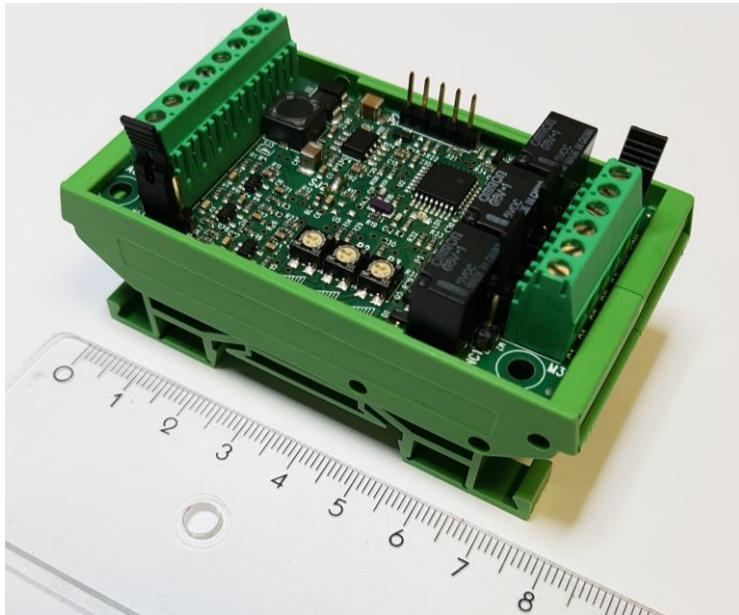
In compliance with IEC34-1, all motors can be exposed to overload conditions of 1,5 times the rated current for 2 min and 1,6 times the rated torque for 15 sec (at rated V and Hz)



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



[https://www.motive.it/upload/documenti/manuali/SCHEDAPT\\_eng.pdf](https://www.motive.it/upload/documenti/manuali/SCHEDAPT_eng.pdf)





## koneksi kelistrikan

Operasi penyambungan ke listrik jaringan (berlaku untuk sirkuit tambahan juga) harus dilakukan sesuai dengan hal indikasi:

- setiap operasi di pabrik harus dijalankan oleh personel terlatih;
- motor harus dinonaktifkan dan diisolasi;
- memastikan bahwa permulaan yang biasa-biasa saja tidak terjadi;
- pastikan tidak ada tegangan;
- Jika jaringan tidak mendukung input langsung tegangan, motor dapat dihidupkan dengan cara komutator bintang/delta, yang dimungkinkan hanya di motor tempat koneksi belitan untuk tegangan pengenal adalah delta.
- penyambungan listrik harus dilakukan secara berurutan tahan lama dan aman;
- memastikan dimensi pasokan listrik yang benar kabel;
- pastikan di dalam kotak sambungannya tidak ada benda asing, tidak kotor/lembab bagian. Periksa kembali penutupan yang tepat dari semua bekas dan gland serta penutup kabel yang tidak terpakai dan tutup kotak terminal untuk mencegah masuknya debu dan air;
- saat pengujian tanpa komponen keluaran mengamankan alur pasak;
- di motor dengan rem (seri AT..), tolong verifikasi peralihan rem sebelum mulai proses;
- Anda dapat mengubah ke counter-rotation dengan menukar kedua fase tersebut.

## 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 by interchanging the two phases.



## Diagram Pengkabelan (DELPHI 3PH)

Tipe motor	56	63-100	112	132	160-180	200-225	250-355	400
Kabel gland	M16	M20	M25	M32	2xM40	2xM50	2xM63	3xM63
Diameter kabel mm	3-7	10-14	9-16	13-20	20-26	25-31	29-35	29-35

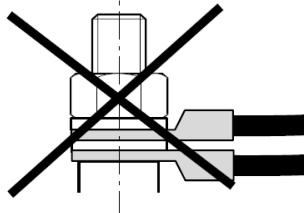
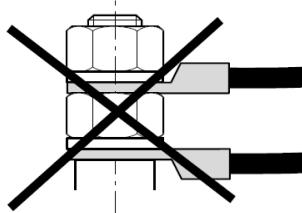
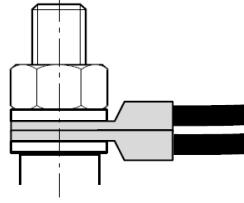
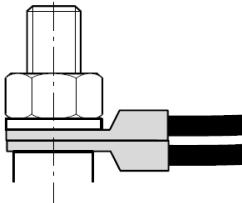


Kode Motive	Deskripsi kabel	Arus masuk motor In [A]
CAVOFG16OR4G1.5MT	FG16OR 4G1,5 mm <sup>2</sup>	0 ÷ 10
CAVOFG16OR4G2.5MT	FG16OR 4G2,5 mm <sup>2</sup>	11 ÷ 16
CAVOFG16OR4G4MT	FG16OR 4G4 mm <sup>2</sup>	17 ÷ 22
CAVOFG16OR4G6MT	FG16OR 4G6 mm <sup>2</sup>	23 ÷ 32
CAVOFG16OR4G10MT	FG16OR 4G10 mm <sup>2</sup>	33 ÷ 50
CAVOFG16OR4G16MT	FG16OR 4G16 mm <sup>2</sup>	51 ÷ 64
CAVOFG16OR4G25MT	FG16OR 4G25 mm <sup>2</sup>	65 ÷ 90
CAVOFG16OR4G35MT	FG16OR 4G35 mm <sup>2</sup>	91 ÷ 110
CAVOFG16OR4G50MT	FG16OR 4G50 mm <sup>2</sup>	111 ÷ 130
CAVOFG16OR4G70MT	FG16OR 4G70 mm <sup>2</sup>	131 ÷ 170
CAVOFG16OR4G95MT	FG16OR 4G95 mm <sup>2</sup>	171 ÷ 200
CAVOFG16OR4G120MT	FG16OR 4G120 mm <sup>2</sup>	201 ÷ 240



CAVOFG16OR4G150MT	FG16OR 4G150 mm <sup>2</sup>	241 ÷ 270
CAVOFG16OR4G185MT	FG16OR 4G185 mm <sup>2</sup>	271 ÷ 305

Sambungan yang benar dan salah dari terminal kabel daya ke blok terminal:

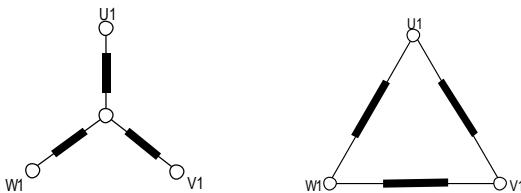


Torsi (Nm) pada mur blok terminal:

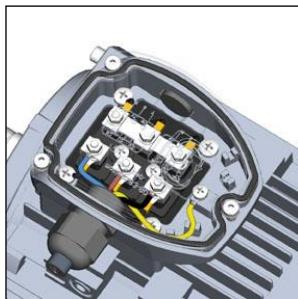
Nm	M4	M5	M6	M8	M10	M12	M16
baja	2	3,2	5	10	20	35	65
kuningan	1	2	3	6	12	20	50



Motor tiga fase seri Delphi dapat dihubungkan “Star” atau “Delta”.

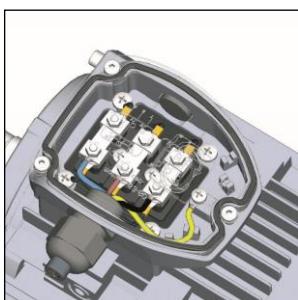


### Koneksi bintang



Koneksi bintang diperoleh dengan menghubungkan bersama-sama terminal W2, U2, V2 dan mensuplai terminal U1, V1, W1.

### Koneksi Delta



Sambungan delta diperoleh dengan menyambungkan ujung a fase dengan awal fase berikutnya.

Untuk diagram pengkabelan motor rem, lihat bab “Seri AT.. Delphi”.



## 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

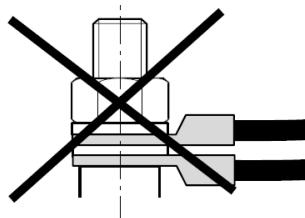
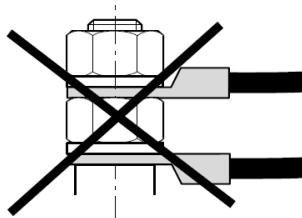
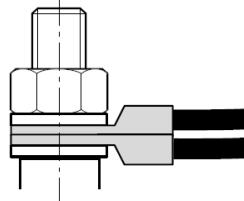
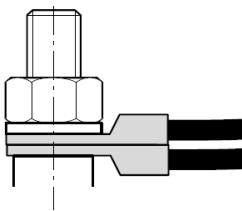


Motive code	Cable description	Motor current In [A]
CAVOFG16OR4G1.5MT	FG16OR 4G1,5 mm <sup>2</sup>	0 ÷ 10
CAVOFG16OR4G2.5MT	FG16OR 4G2,5 mm <sup>2</sup>	11 ÷ 16
CAVOFG16OR4G4MT	FG16OR 4G4 mm <sup>2</sup>	17 ÷ 22
CAVOFG16OR4G6MT	FG16OR 4G6 mm <sup>2</sup>	23 ÷ 32
CAVOFG16OR4G10MT	FG16OR 4G10 mm <sup>2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



CAVOFG16OR4G150MT	FG16OR 4G150 mm <sup>2</sup>	241 ÷ 270
CAVOFG16OR4G185MT	FG16OR 4G185 mm <sup>2</sup>	271 ÷ 305

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

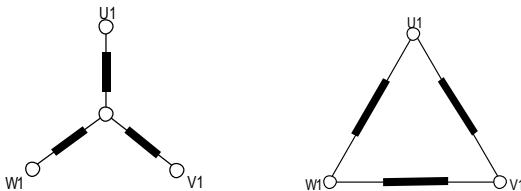


Torque (Nm) on the terminal block nuts

 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

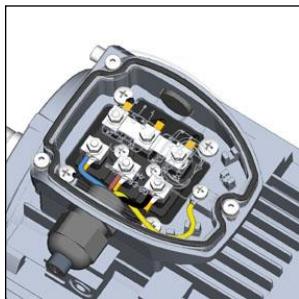


Delphi series three phase motors can be connected "Star" or "Delta".

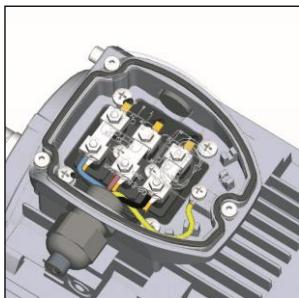


### Star connection

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



### Delta connection



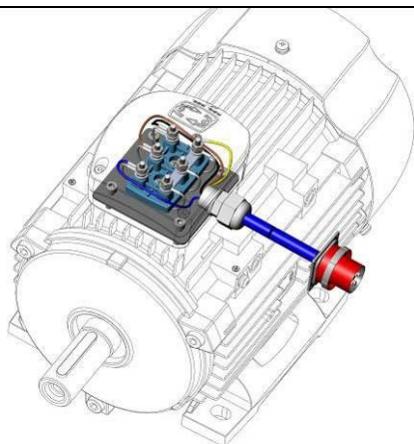
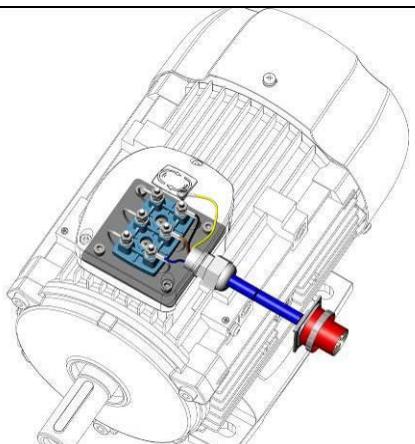
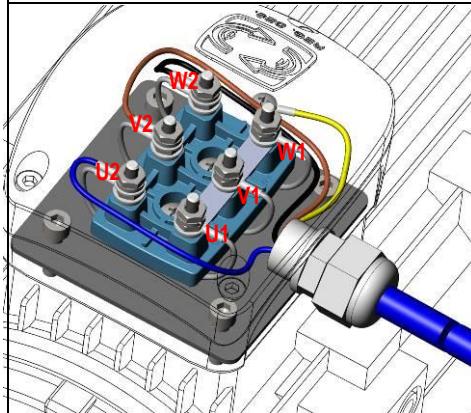
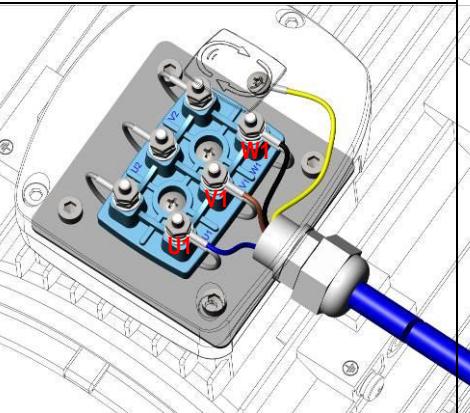
Delta connection is obtained by connecting the end of a phase with the beginning of the following one.

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



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

Motor polaritas ganda  
belitan tunggal (Dahlander)  
2/4 – 4/8 Kutub

High-speed connection 400 YY Koneksi berkecepatan tinggi 400 YY	Low-speed connection 400 Δ Koneksi berkecepatan rendah 400 Δ
	
	

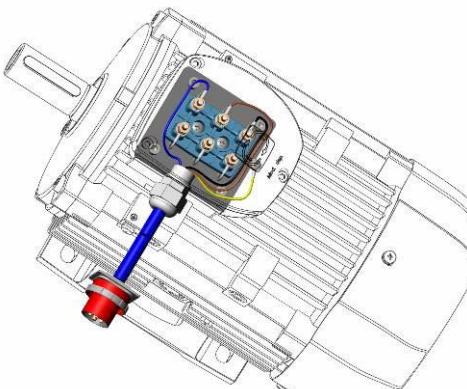
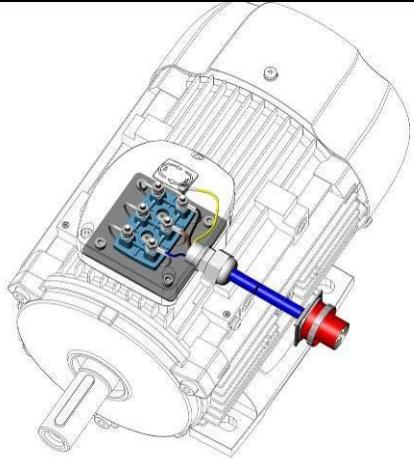
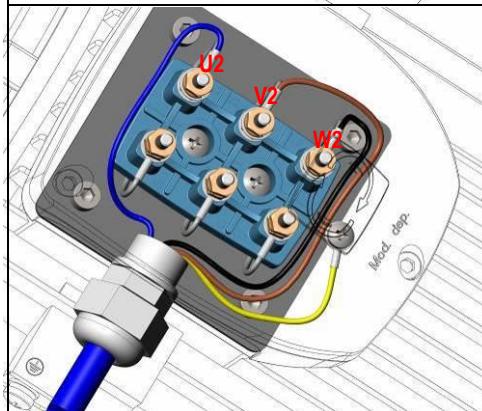
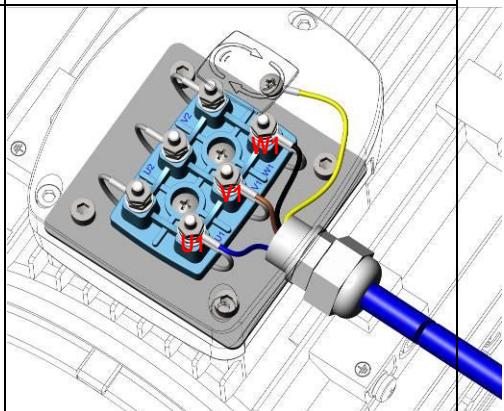
To use the 2 speeds, you must adopt a 6+1 wires cable and connect an external switch

Untuk menggunakan 2 kecepatan, Anda harus menggunakan kabel 6+1 dan menyambungkan sakelar eksternal.



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

**Motor polaritas ganda  
dengan lilitan ganda  
2/6 – 2/8 – 4/6 – 6/8 Kutub**

High-speed connection 400 Y Koneksi berkecepatan tinggi 400 Y	Low-speed connection 400 Y Koneksi berkecepatan rendah 400 Y
	
	

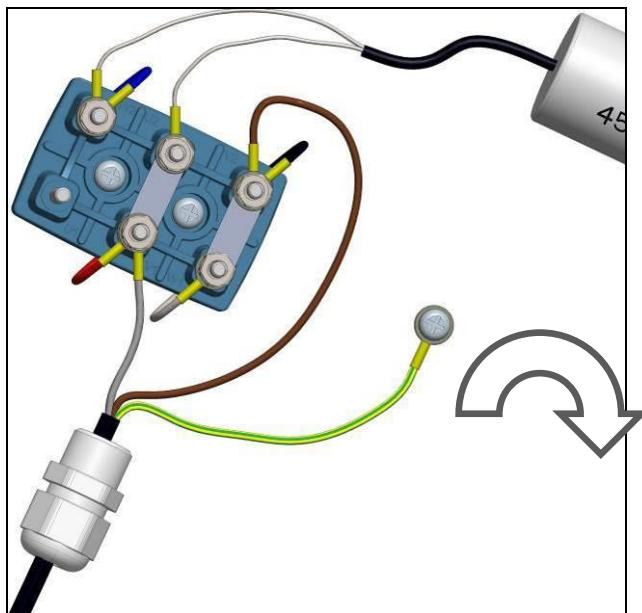
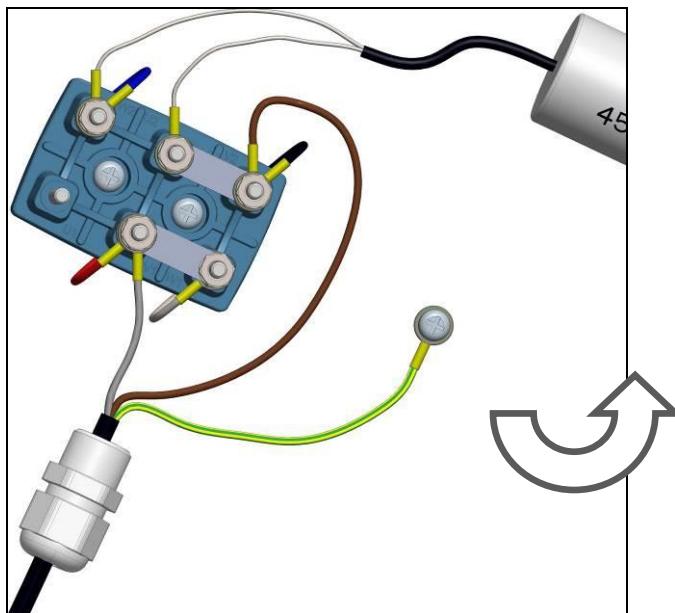
To use the 2 speeds, you must adopt a 6+1 wires cable and connect an external switch

Untuk menggunakan 2 kecepatan, Anda harus menggunakan kabel 6+1 dan menyambungkan sakelar eksternal



Single phase motors MONO

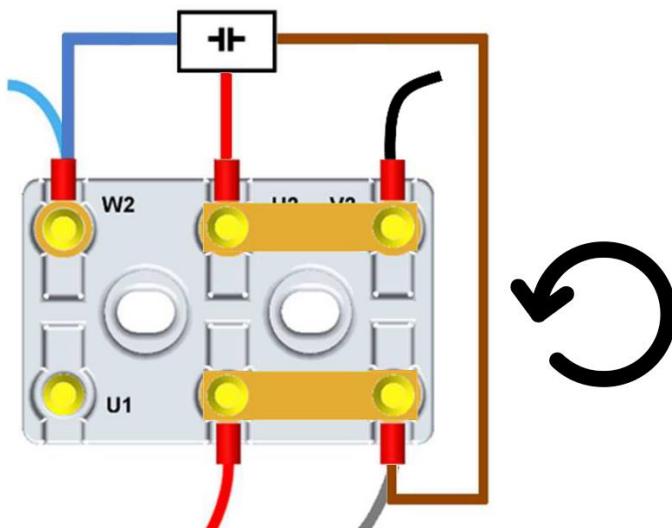
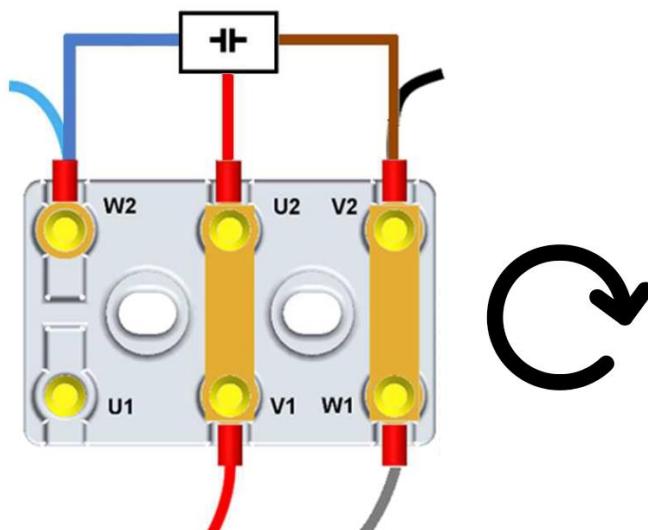
Motor fase tunggal MONO





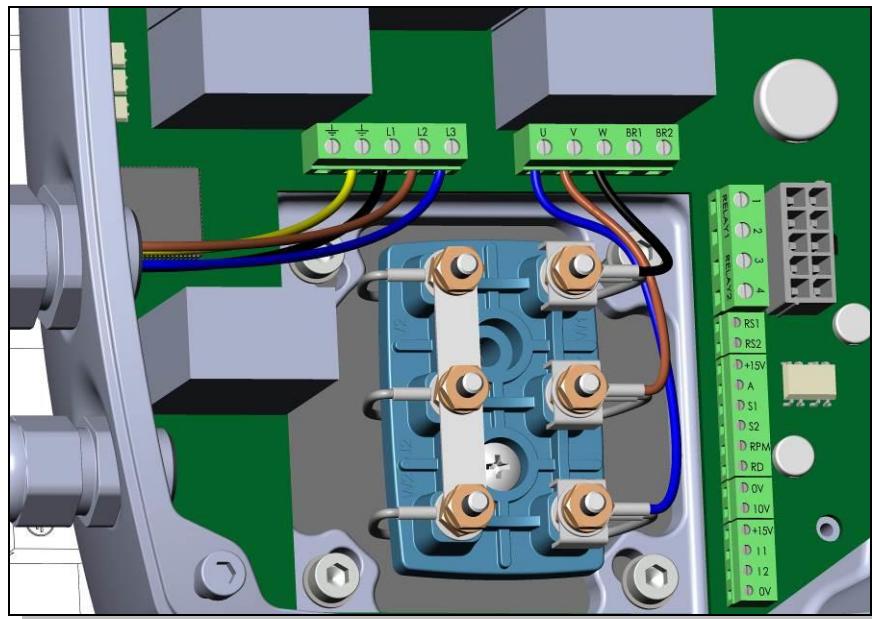
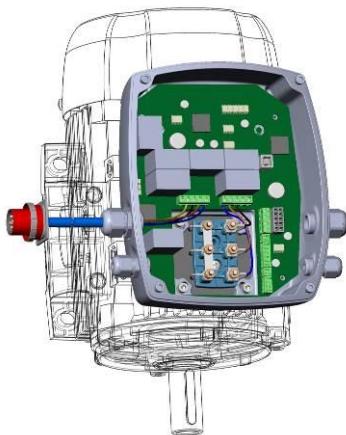
Starting Capacitor 3 wires MONO

Kapasitor Awalan 3 kabel MONO



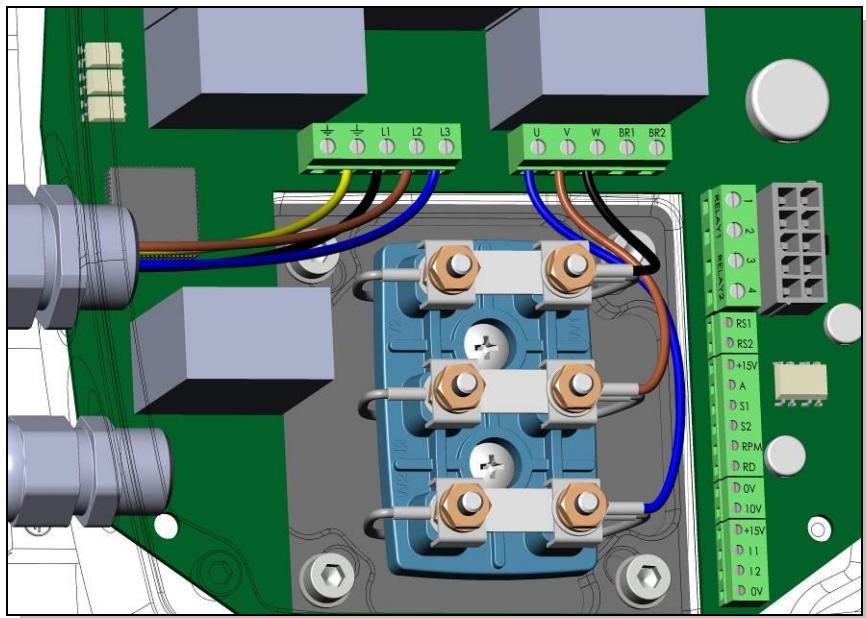
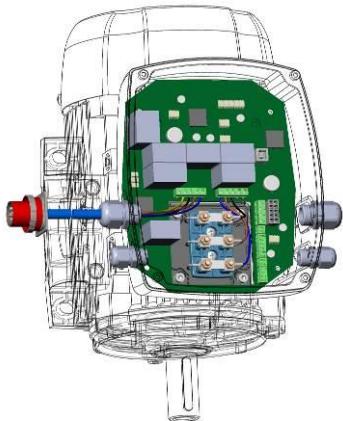


NEO-WiFi (motor 230V $\Delta$ /400VY)





NEO-WiFi (motor 400V $\Delta$ /690VY)





## Awalan

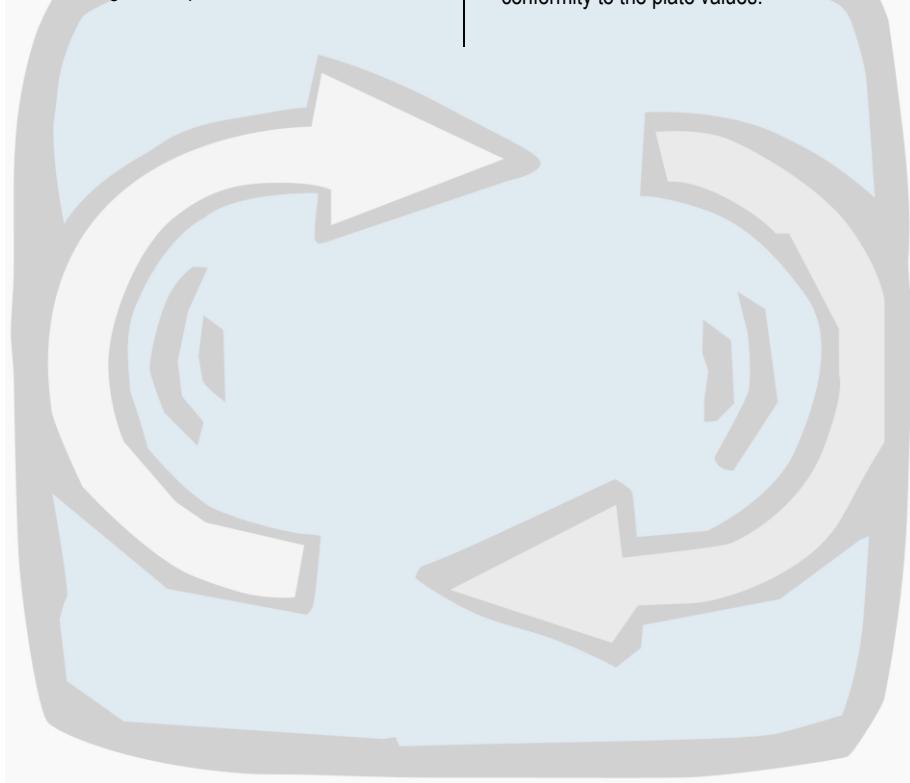
Sebelum memulai lakukan pengecekan keseluruhan pada motor pastikan semua indikasi tentang instalasi telah diterapkan. Secara khusus:

- pastikan tegangan motor setara sesuai yang diharapkan (lihat plat motor) dan;
- periksa penyatuhan link penghubung, tutup semua dan kencangkan penutup papan terminal tanpa merusak pakingnya;
- verifikasi putaran bebas poros motor secara manual;
- Periksa apakah ada tegangan di semua fasa dan akhirnya mengukur nilainya untuk memeriksanya kesesuaian dengan nilai pelat.

## 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.





## Pelindung hujan

Untuk aplikasi luar ruangan dengan Pemasangan V5 – V18 – V1 – V15 (poros bawah), kami sarankan untuk memasang perisai hujan. Konfigurasi ini mungkin juga digunakan dalam pemrosesan tekstil industri.

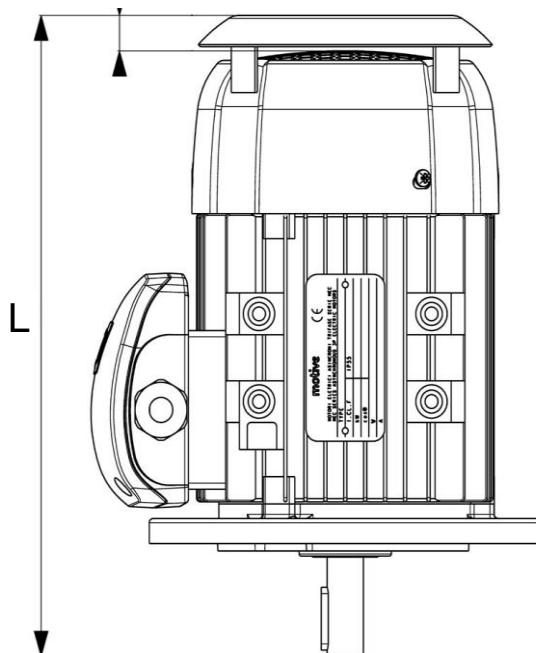
The rain shield is compulsory in ATEX motors with mounting V5 – V18 – V1 – V15

## Tettuccio parapioggia

Per applicazioni all'aperto con montaggio in posizione V5 – V18 – V1 – V15 (albero in basso) è consigliabile montare un tettuccio parapioggia. Questa esecuzione si può utilizzare anche in ambienti per lavorazioni tessili

Il tettuccio para-pioggia è obbligatorio nei motori atex, quando gli stessi vengono montati in posizione V5 – V18 – V1 – V15

Tipe	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





## Seri Delphi AT..

Delphi ATDC, AT24, ATTD dan ATTD24 motor penggereman otomatis seri menggunakan satu atau 2 rem tekanan pegas, disambung dengan kuat ke perisai besi cor di bagian belakang motor.

Pada AT24 dan ATTD24, single 24Vdc atau rem ganda dirancang sedemikian rupa terhubung langsung ke inverter (biasanya memiliki colokan 24Vdc).

Dua jenis penyesuaian yang berbeda adalah mungkin untuk motor ATDC dan AT24.

### Penyesuaian celah udara S

Untuk pengoperasian yang benar, celah udara S antara elektromagnet ⑦ dan jangkar ① harus berada di antara batas yang ditunjukkan berikut ini:

Tipe motor	Celah udara S (mm)
63~71	0.20~0.30
80~100	0.40~0.50
112~280	0.50~0.60

Penyesuaian dilakukan dengan menggunakan semak berulir ⑩ menggunakan ketebalan mengukur untuk memastikan bahwa udara yang diinginkan kesenjangan tercapai. Untuk rem ukuran 63, 71, 80 dan 90, pengaturan celah udara S tidak bisa diubah.

### Penyesuaian torsi penggereman

Torsi penggereman dapat ditingkatkan sebesar mengencangkan sekrup penyetel ⑨ dari Motor ATDC/ATTD berukuran 112 -280, atau sebesar memutar kenop (11) AT24/ATTD24 rem. Settingnya sudah ada dibuat dengan motif dengan nilai aksimal, dan oleh karena itu kami menyarankan untuk tidak melakukan intervensi di atasnya.

## 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

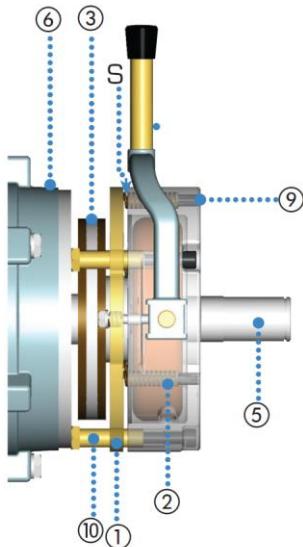
For proper operation, the air gap S between electromagnet ⑦ and the mobile armature ① must be between the following indicated limits:

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.

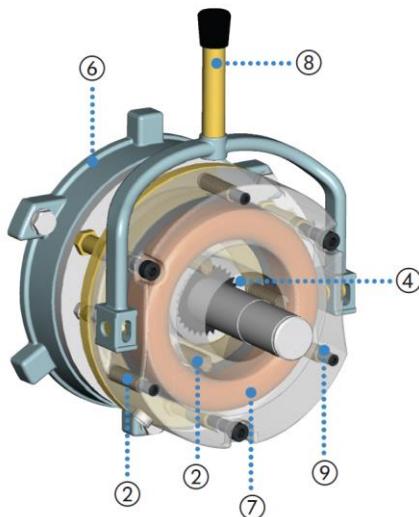
### Braking torque adjustment

The braking torque can be increased by tightening the adjuster screws ⑨ of ATDC/ATTD motors size 112-280, or by turning the knob (11) of AT24/ATTD24 brakes. 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
- ② Molle
- ③ Disco freno (ferodo)
- ④ Trascinatore
- ⑤ Albero motore
- ⑥ Flangia motore
- ⑦ Bobina
- ⑧ Leva di sblocco
- ⑨ Grani di regolazione
- ⑩ Bussola filettata
- ⑪ manopola di regolazione coppia
- ⑫ piastra di connessione

S Traferro



- ① Mobile armature
- ② springs
- ③ Brake disc
- ④ Driver
- ⑤ Motor shaft
- ⑥ Motor flange
- ⑦ Electromagnet
- ⑧ Release lever
- ⑨ Adjuster screws
- ⑩ Threaded bush
- ⑪ braking torque setting knob
- ⑫ ATTD connection plate

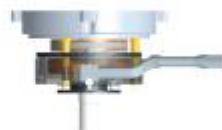
S Air gap

Catatan: Motor rem umumnya tidak diperbolehkan di motor ATEX. Untuk lebih jelasnya lihat filenya "Tambah ATEX".

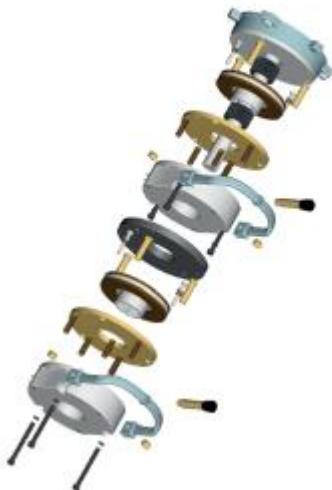
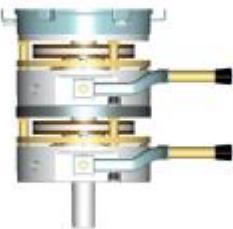
Note: Brake motors are generally not admitted in ATEX motors. For further details, see the file "ATEX addendum"

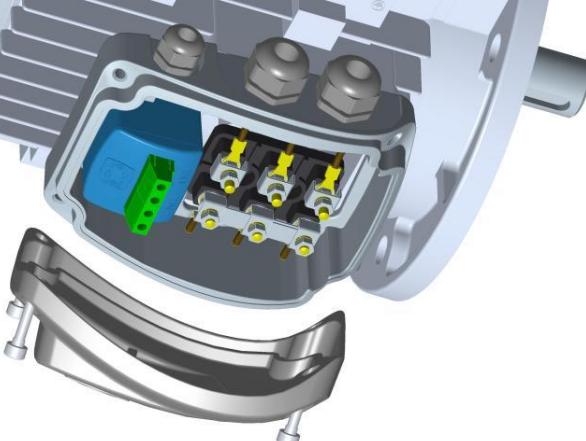


AT24



AT20



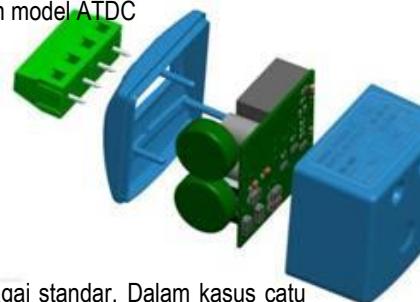


Rem ATDC adalah rem DC daya yang disuplai oleh penyearah dipasang di dalam motor utama kotak terminal.

Kinerja semua rem, in dari segi Watt, Nm dan kecepatan masuk mSec ditampilkan di situs web Motive [www.motive.it](http://www.motive.it).

Tabel berikut menunjukkan tegangan pada penyearah dan rem model ATDC

Tipe	Tegangan input rectifier [Vac]	Tegangan output ke rem [Vdc]
ATDC 63-100	220-280	99-126
ATDC 112-280	380-480	171-216



Motor ATDC dilengkapi dengan catu daya rem terpisah sebagai standar. Dalam kasus catu daya dari blok terminal motor, satu set kabel lengkap dan rakitan terkait instruksi disediakan.

Penyearah tidak dapat disuplai daya oleh inverter frekuensi atau perangkat soft-start.

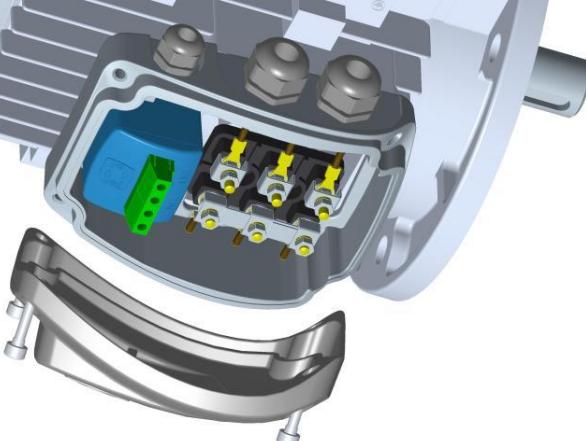
Jika motor disuplai daya oleh inverter frekuensi (gbr. 5a dan 5b), atau pada tegangan khusus\*, atau pada tegangan rendah saat start, atau jika motor digunakan untuk bergerak beban yang dapat mempunyai inersia, seperti beban yang diangkat (gerakan inersia

seperti itu bisa menggerakkan motor ketika listrik dimatikan, dan motor dapat bertindak seperti generator pada penyearah menghindari penguncian rem), lepaskan papan terminal utama dari penyearah, dan sambungkan penyearah secara terpisah (ATDC) (gbr. 5a, 5b, 6 dan 7).



Penyearah khusus TA memungkinkan untuk menyelesaikan masalah gerakan inersia tanpa perlu

gerakan terpisah catu daya ke penyearah (gambar 3 dan 4).

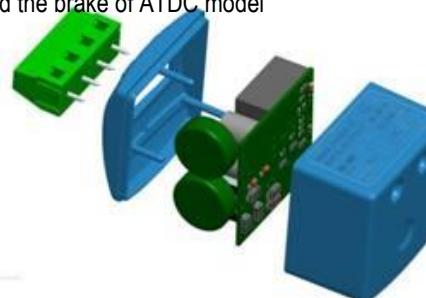


ATDC brakes are DC brakes power supplied by a rectifier installed inside the motor main terminal box.

The performance of all brakes, in terms of Watt, Nm and speed in mSec are shown in motive website [www.motive.it](http://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



ATDC motors are supplied with separate brake power supply as standard. In the case of power supply from the motor terminal block, a complete kit of cables and associated assembly instructions is provided.

#### 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

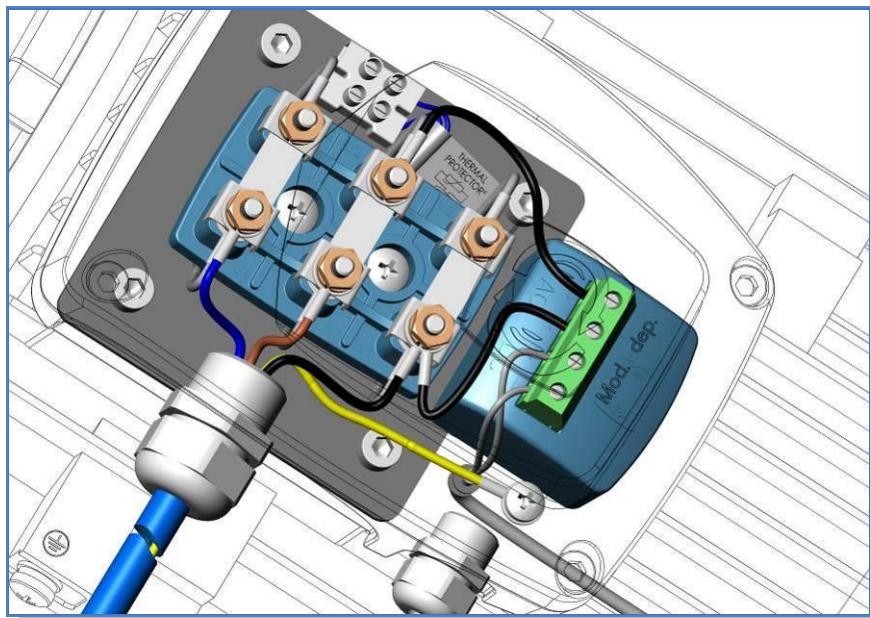
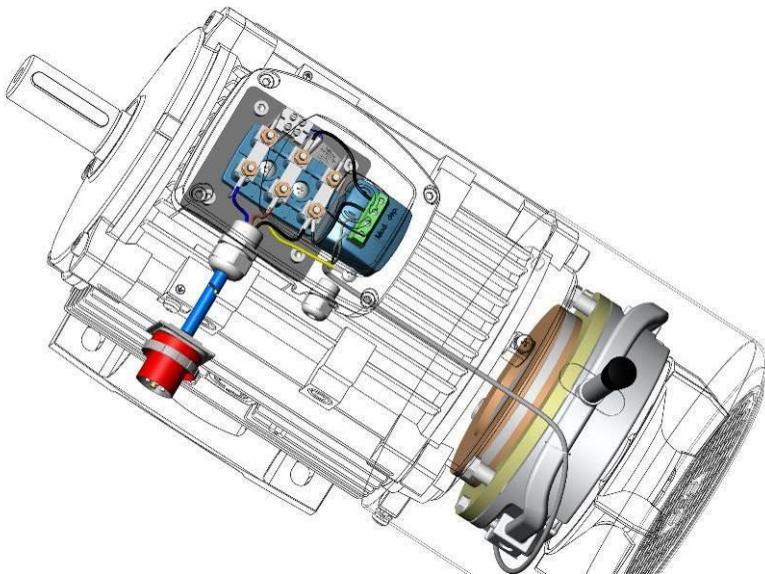
move the motor when the power is switched off, and the motor can act like a generator on the rectifier avoiding the brake locking), disconnect the motor main terminal board from the rectifier, and connect separately the rectifier (ATDC) (fig. 5a, 5b, 6 and 7).



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)

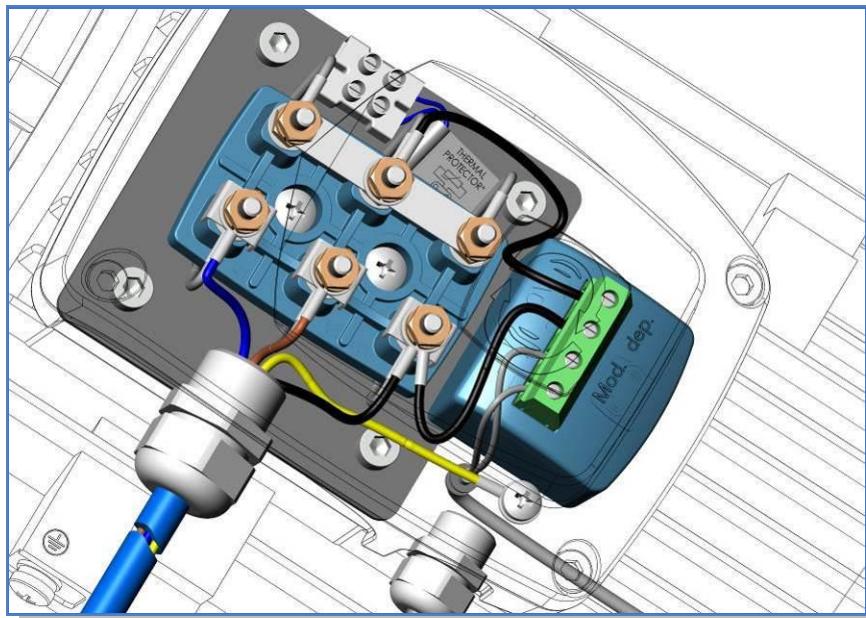
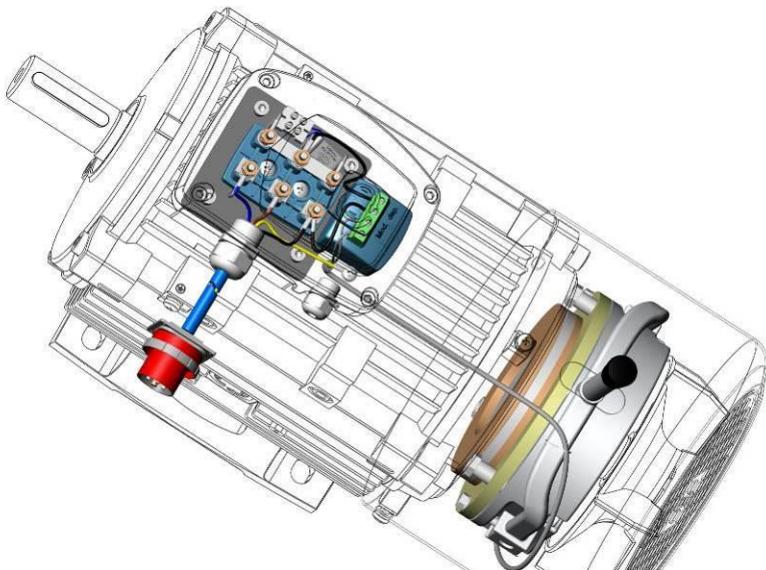


ATDC 112-280 - 400Vac/180Vdc rectifier (gambar 1)



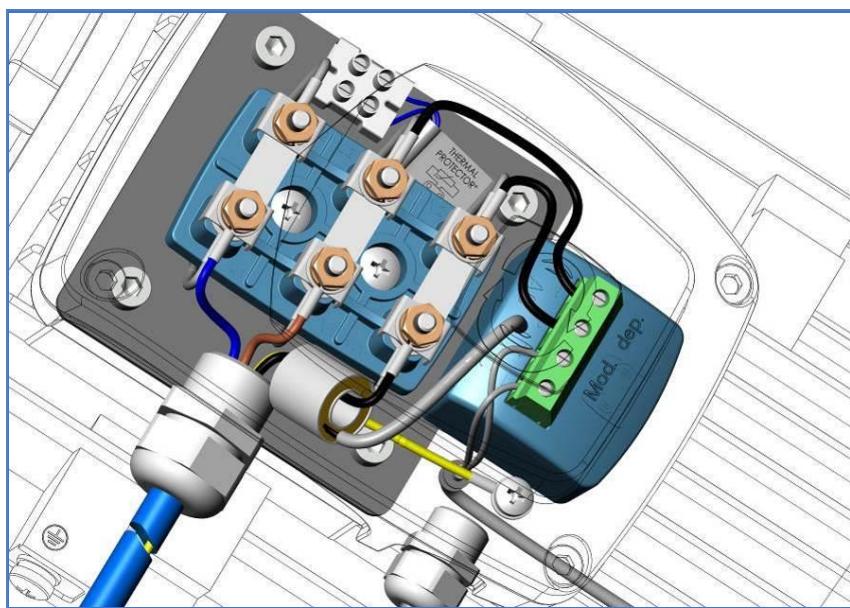
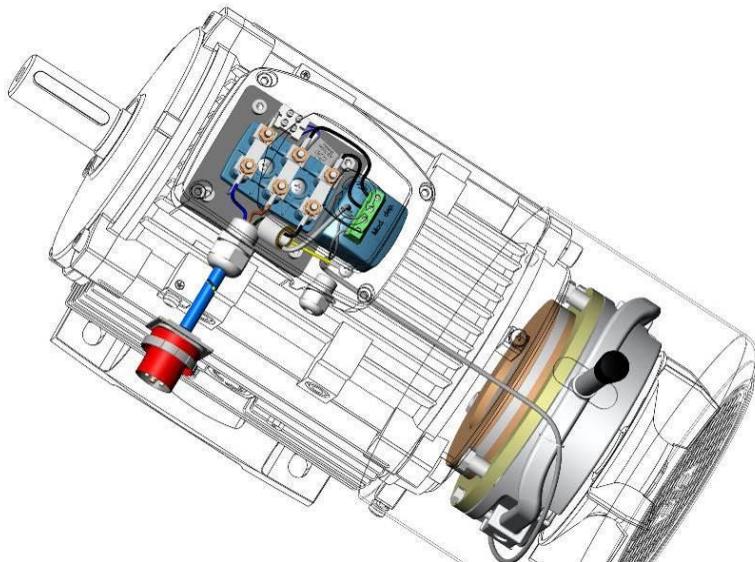


ATDC 63-100  - 230Vac/104Vdc rectifier (gambar 2)



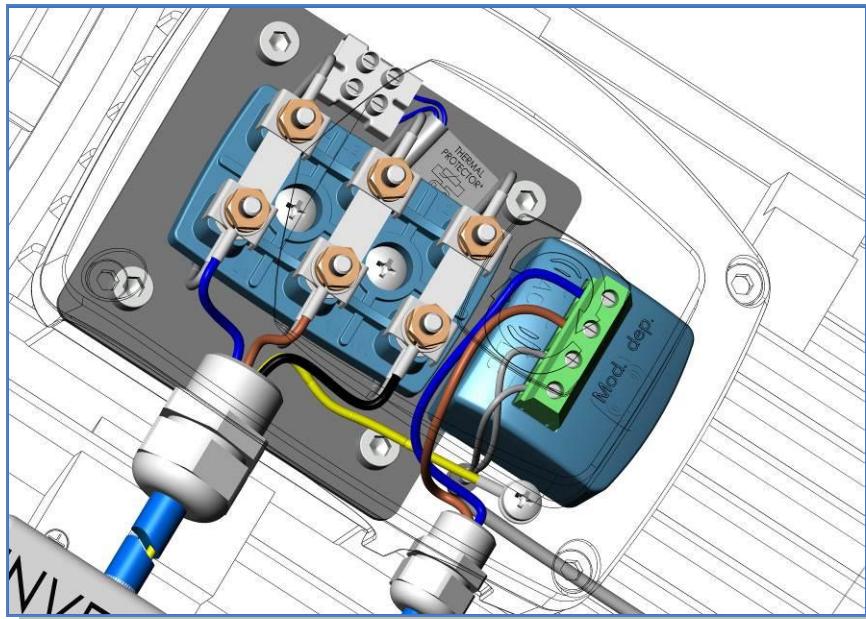
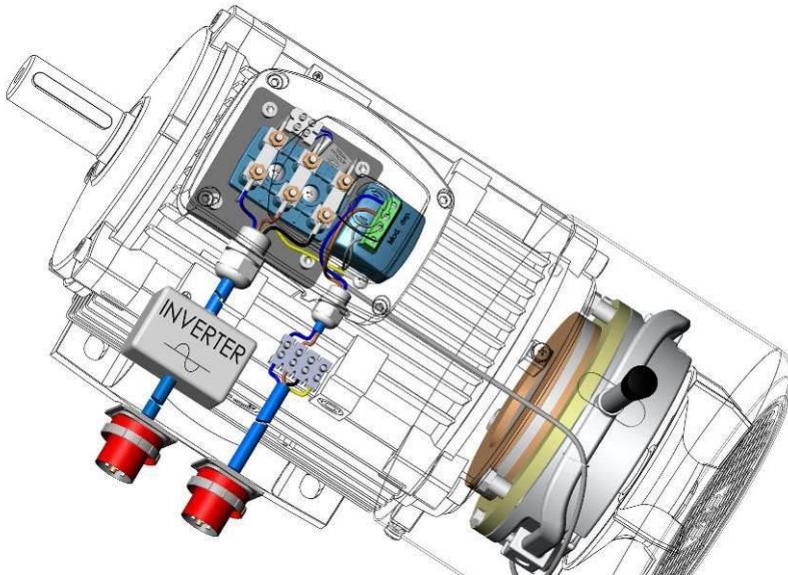


ATDC 400Vac/180Vdc **TA** rectifier (gambar 3) \* Tidak cocok jika motor dikendalikan oleh inverter



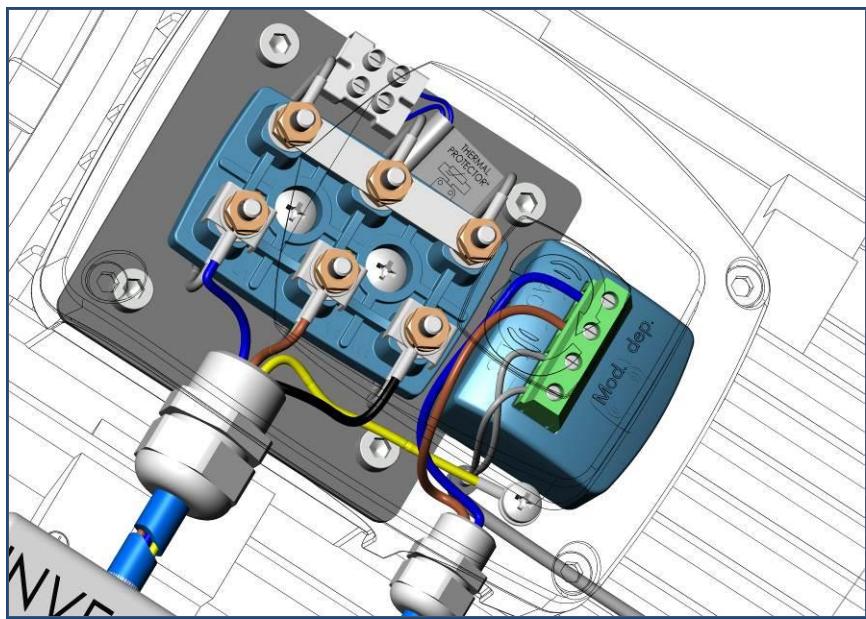
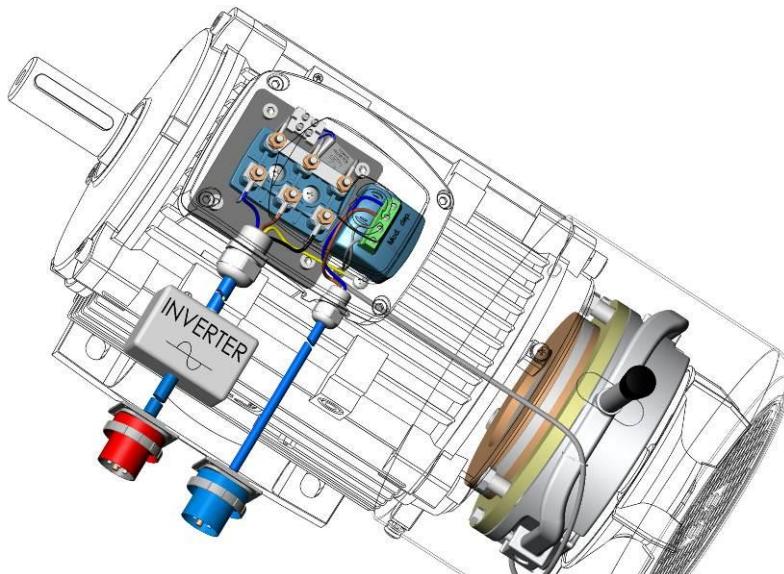


ATDC 112-280 (separate 400Vac/180Vdc rectifier) + inverter (gambar 5°)



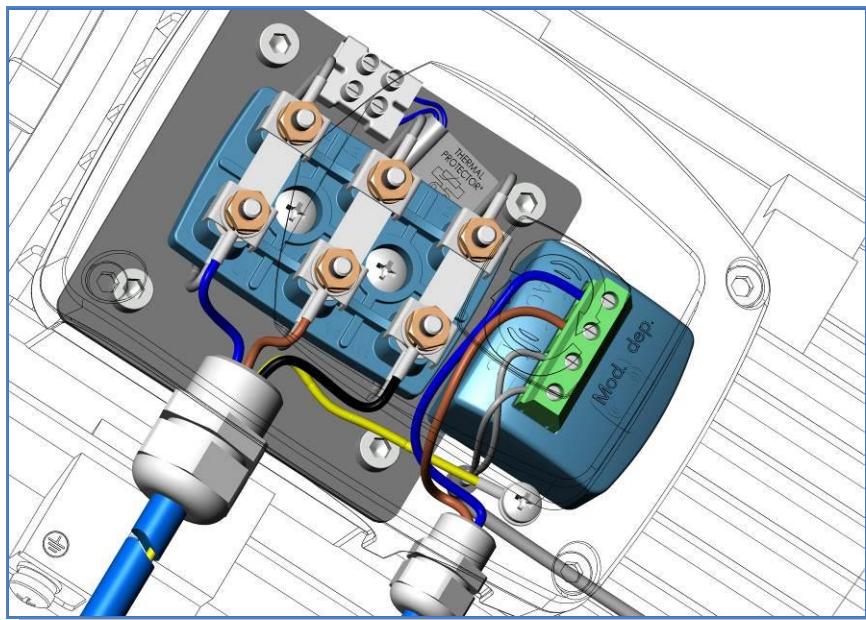
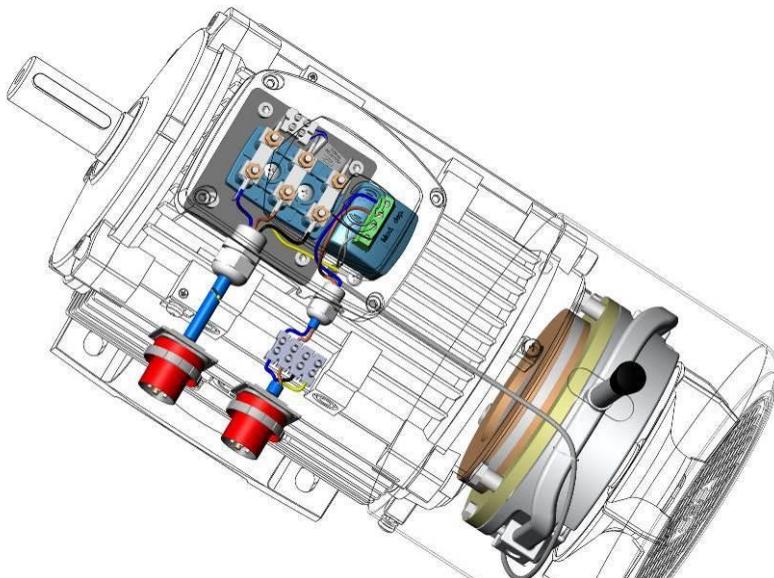


ATDC 63-100 (terpisah rectifier 230Vac/104Vdc) + inverter (gambar 5b)



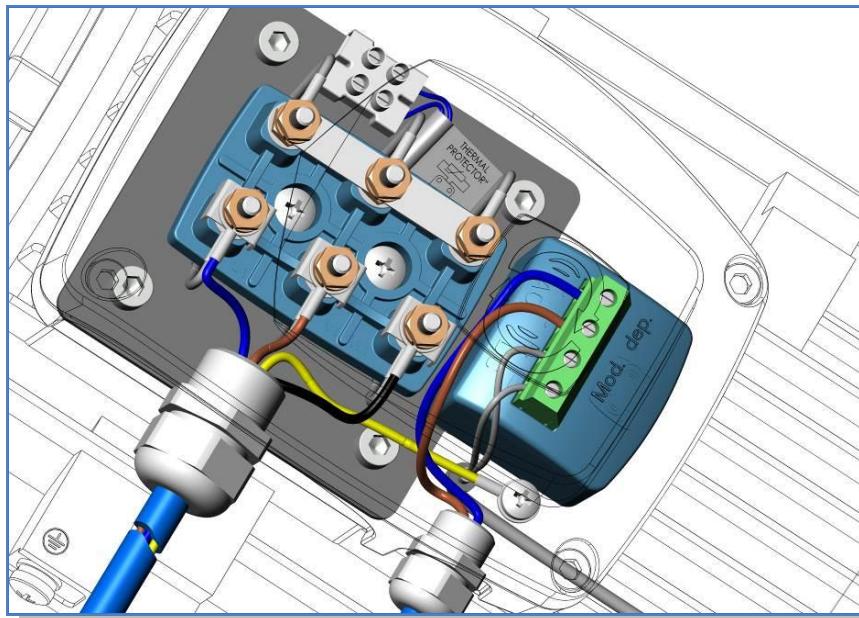
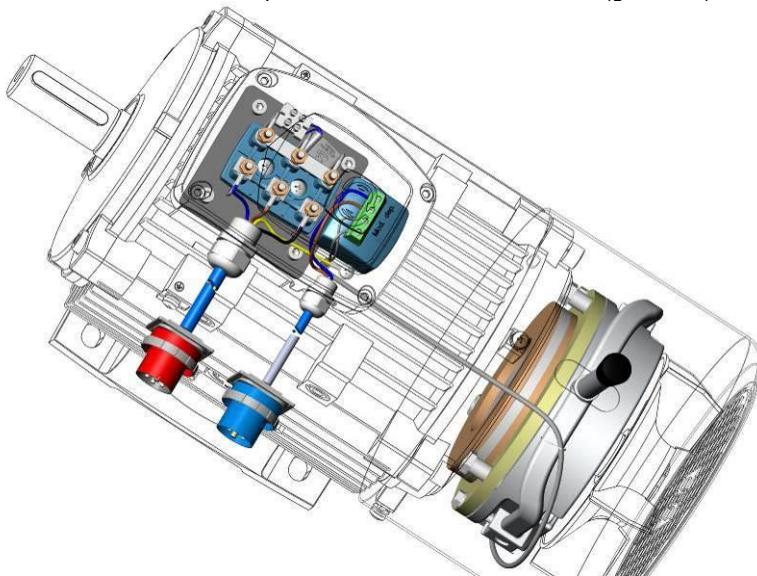


ATDC 112-280 + terpisah 400Vac/180Vdc rectifier koneksi (gambar 6)





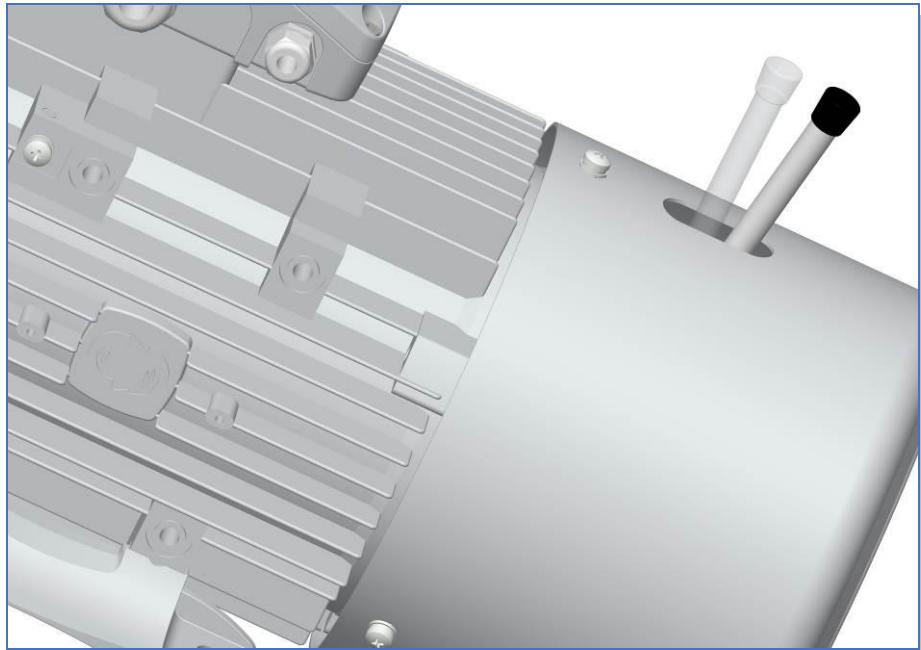
ATDC 63-100 + terpisah 230/104Vdc rectifier koneksi (gambar 7)





## Sblocco

## Pelepasan Manual



La leva di sblocco è di serie ma, se non desiderata, è come una vite e può essere smontata semplicemente girandola.

I motori con freno tandem ATTD e ATTD24 dalla taglia 180 alla taglia 280 non sono provvisti di leva di sblocco.

Motor rem motif disertakan Bersama tuas pelepas manual dalam standarnya Versi: kapan. Jika tidak dikehendaki, tuasnya seperti sekrup, yang dapat dilepas hanya dengan memutarnya.

Motor rem tandem ATTD dan ATTD24, dari ukuran 180 sampai dengan ukuran 280, tidak bisa rilis manual.



## IP

DI.. rem adalah IP55 di bawah listrik sudut pandang, tetapi secara mekanis, jika terjadi penggunaan di luar ruangan (atau untuk mencapai IP65), mereka harus dilindungi oleh karat dan cakram efek adhesi yang diberikan oleh kelembaban. Di dalam kasus seperti itu, kami sarankan untuk menggunakan segel cincin karet pelindung.

Perangkat ini mencegah keluar atau masuknya debu, kelembapan, kotoran, dll., keluar dari atau masuk ke dalam daerah penggeraman.

Itu dimasukkan ke dalam alur pada stator. Jika rem Anda tidak memiliki alur seperti itu, Anda harus memesan mesin khusus rem untuk itu.

Untuk menjaga torsi penggeraman, itu perlu dibersihkan secara berkala bagian di dalam segel cincin karet oleh debu yang dihasilkan oleh lapisan cakram.

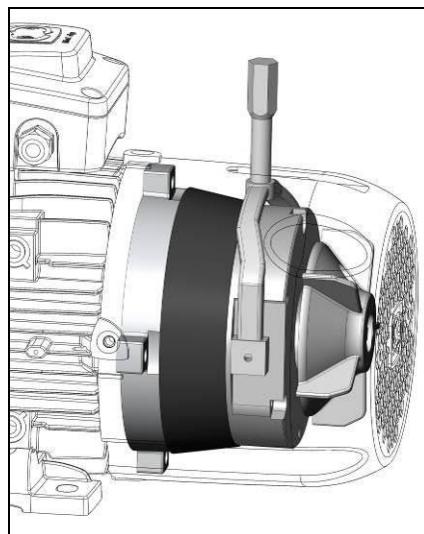
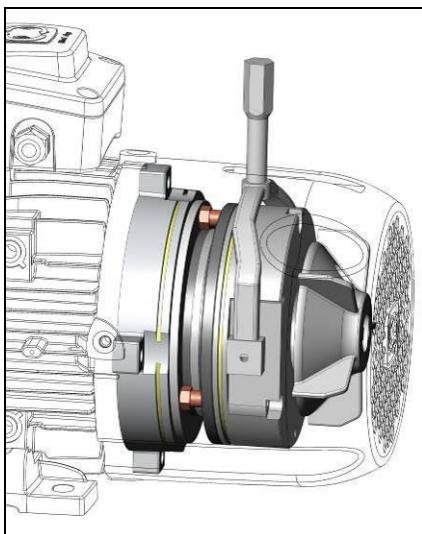
## IP

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.



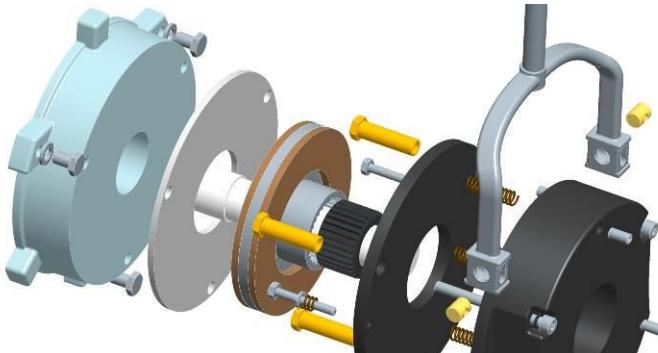


## permukaan penggereman besi tahan karat

Bila kelembaban udara tinggi dapat cepat berkarat permukaan kontak antara cakram rem dan pelindung motor NDE dari besi, anda bisa request motif untuk ditambahkan perisai baja tahan karat

## 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

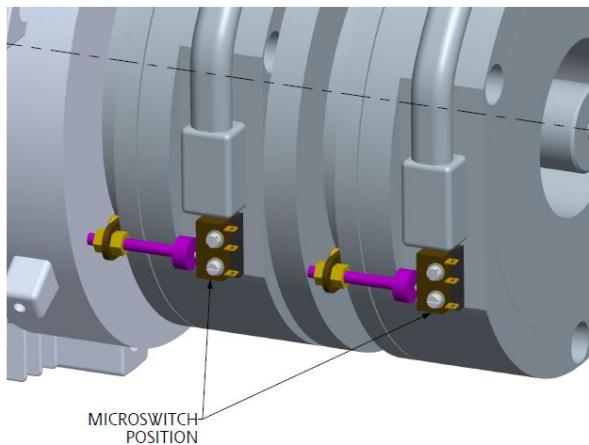


## saklar mikro untuk dideteksi posisi rem

Pilihan

## micro-switches to detect brake position

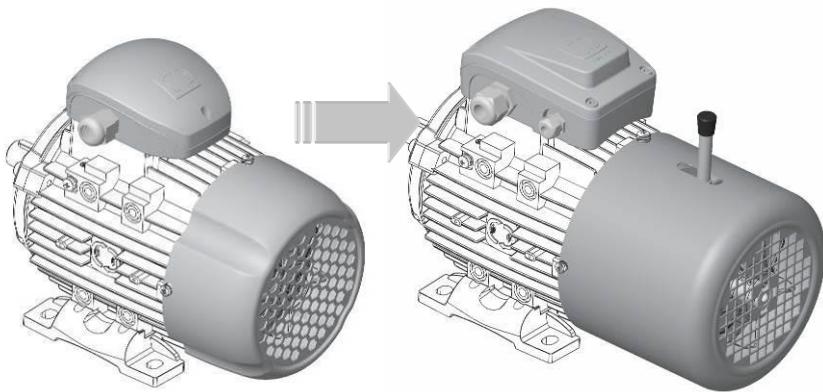
Optional





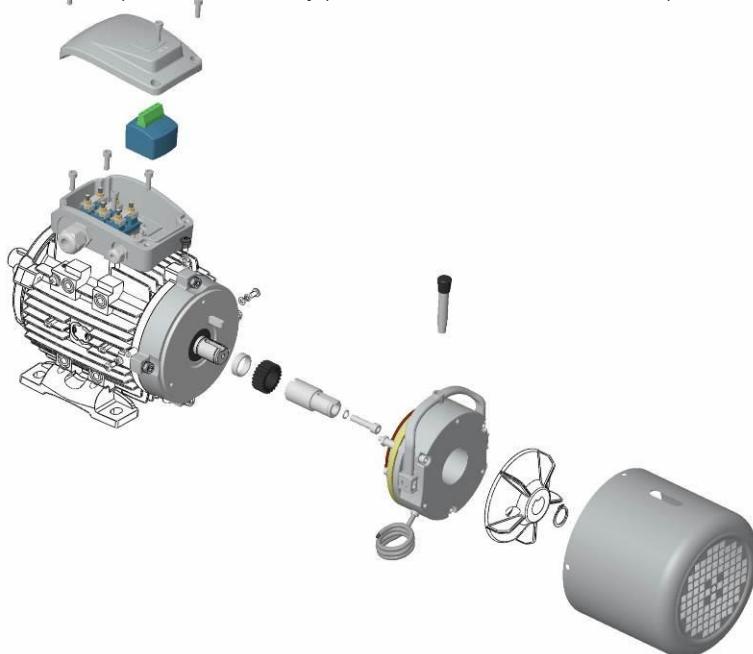
**Dari motor standar hingga  
motor rem ATDC terima  
kasih kepada  
"kit ATDC/AT24"**

**From a standard motor to  
an ATDC brake motor  
thanks to "kit-ATDC/AT24"**



**KIT-ATDC/AT24 (IEC90-112; 160 saja)**

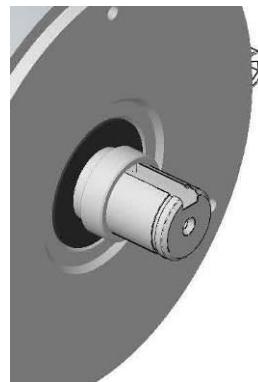
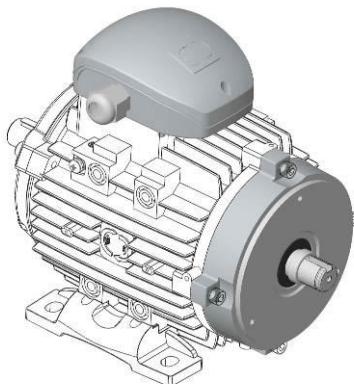
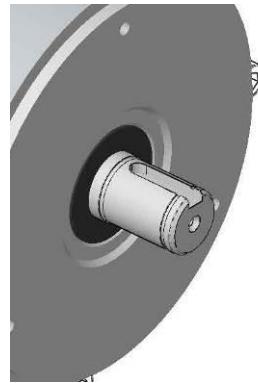
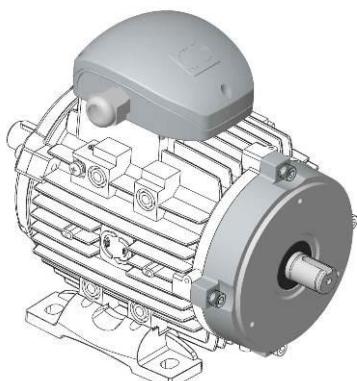
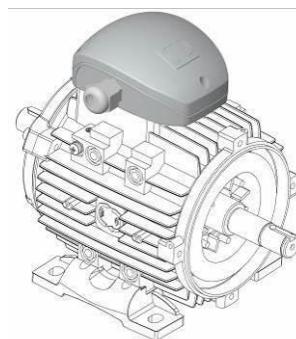
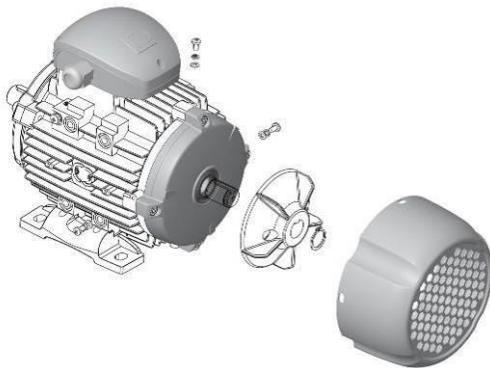
**KIT-ATDC/AT24 PARTS (IEC 90-112; 160 only)**

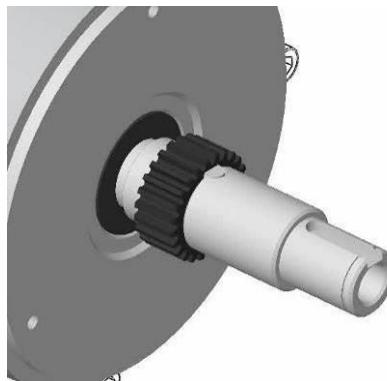
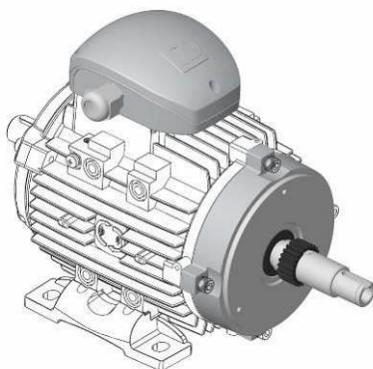
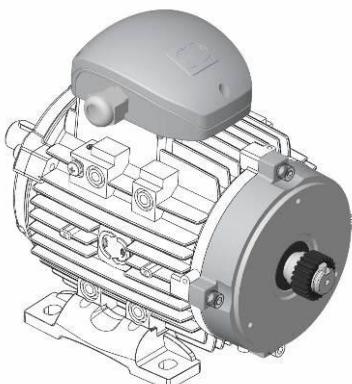
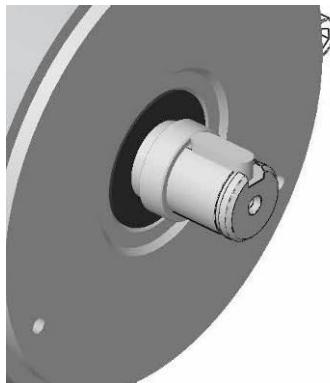
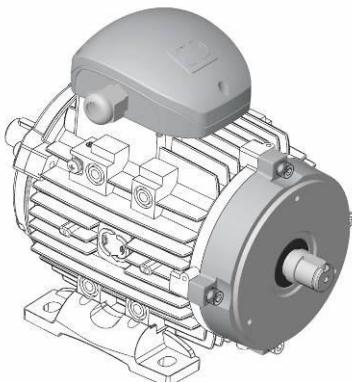


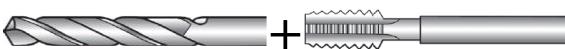
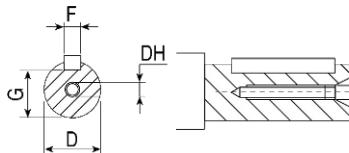


LANGKAH

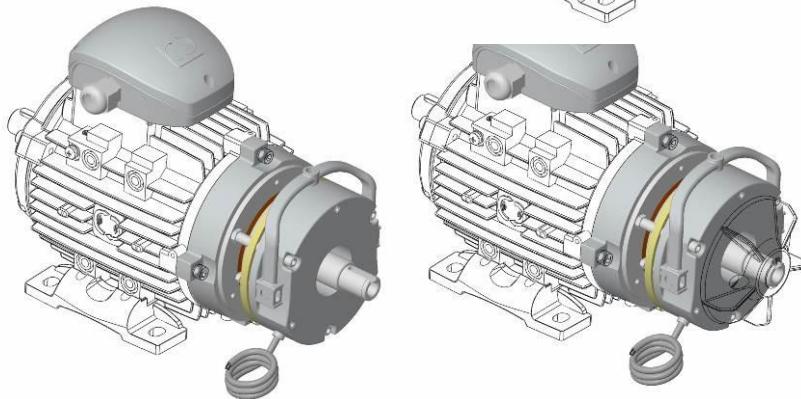
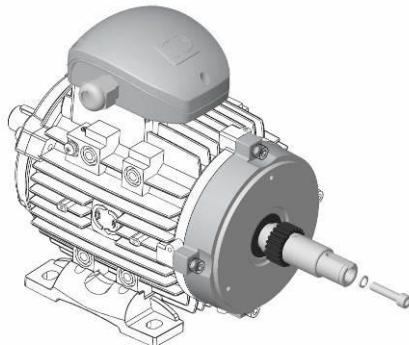
STEPS





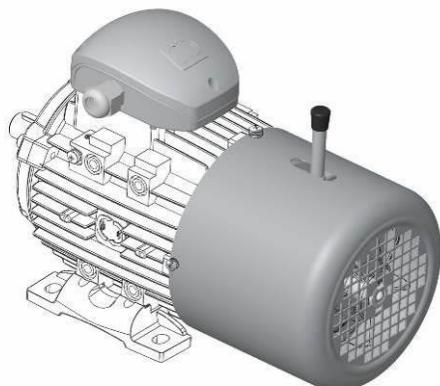
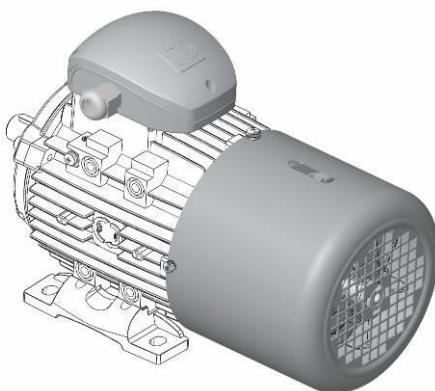
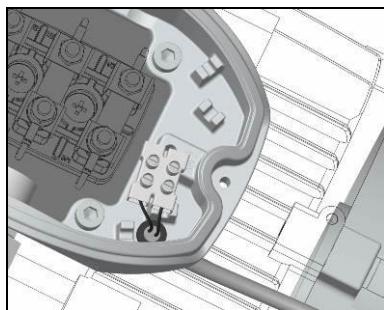
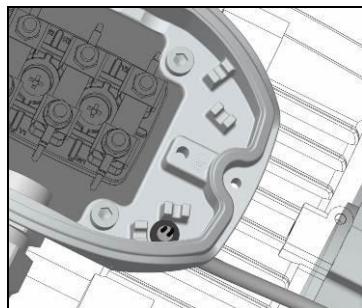
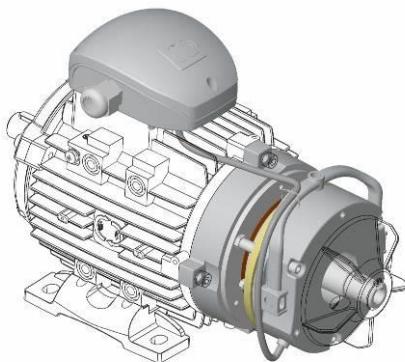


tipe motor	DH
90	M8X19
100	M10X22
112	M10X22
132	M12X28
160	M16X36



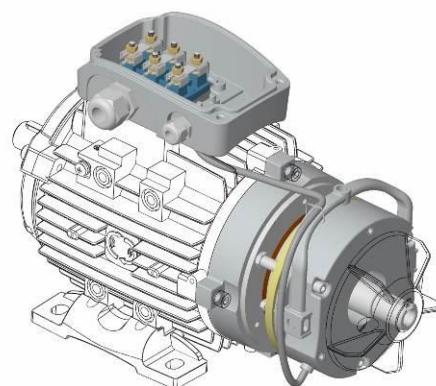
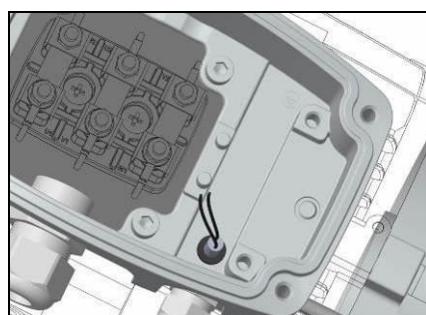
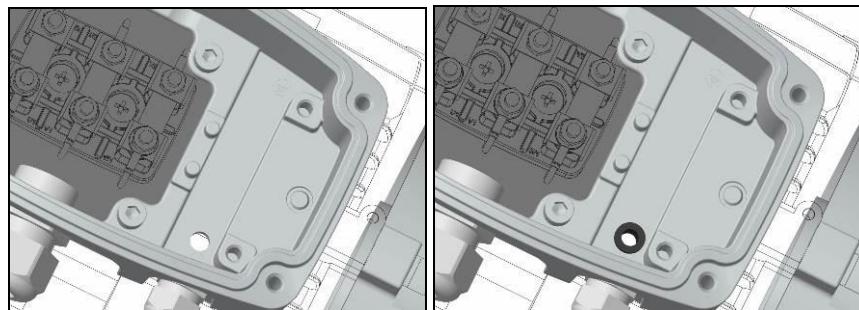
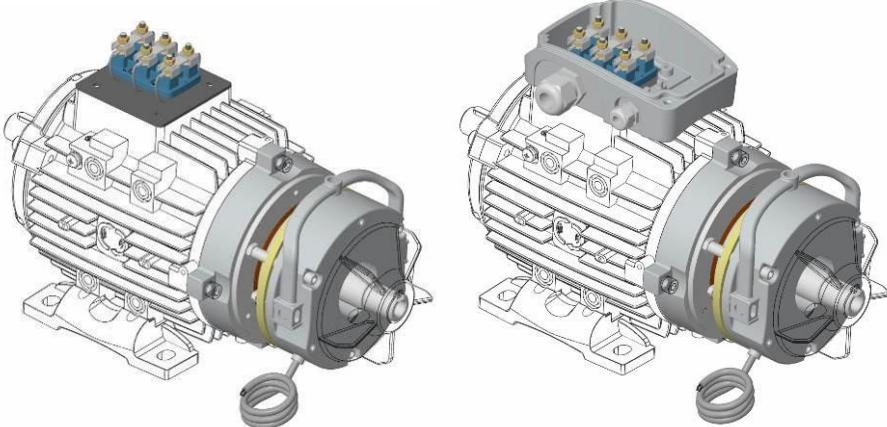


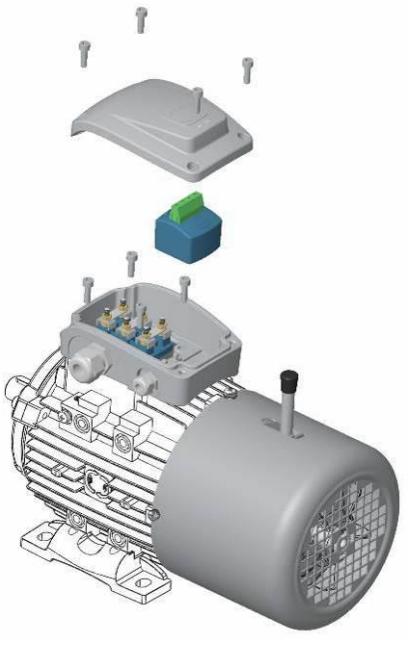
AT24:



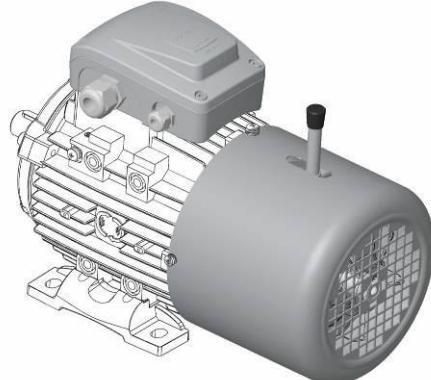
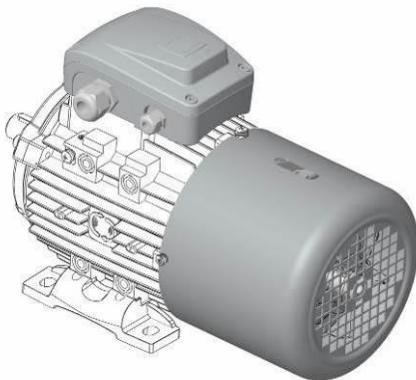
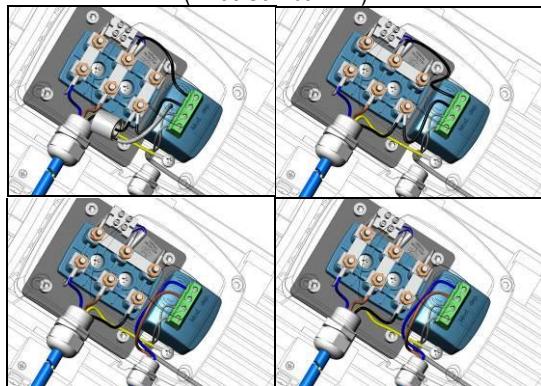


ATDC:





(Lihat Gambar 1-7)





## Assisted power cooling SV series

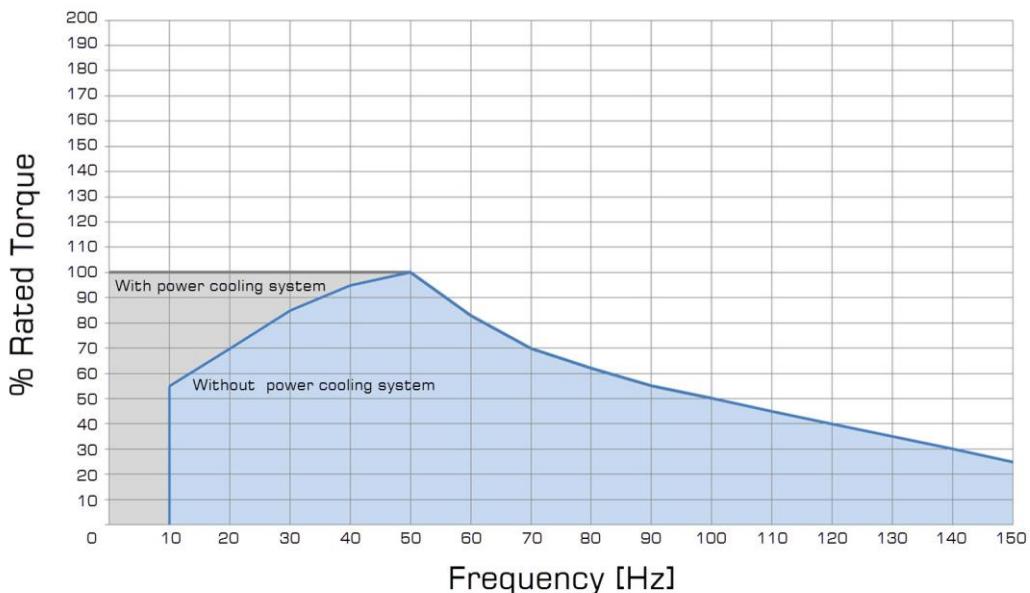
For applications with a power supply below a frequency of 50Hz, the appropriate assisted power cooling must be mounted as there are too many variables involved to determine the various possible thermal duties, and thus the temperatures reached by the motors

### Seri SV bantuan pendinginan daya

Untuk aplikasi dengan catu daya di bawah frekuensi 50Hz, diperlukan bantuan yang sesuai pendinginan daya harus dipasang karena ada terlalu banyak variabel yang terlibat untuk menentukan berbagai kemungkinan tugas termal, dan dengan demikian suhu yang dicapai oleh motor.

Tabel ini mengacu pada motor yang digunakan pada suhu lingkungan maksimum 40°C. Untuk aplikasi pada suhu ruangan yang berbeda, silakan berkonsultasi dengan departemen teknis kami.

The table refers to motors for use at a maximum ambient temperature of 40°C.  
For applications at different ambient temperatures, please consult our technical department.





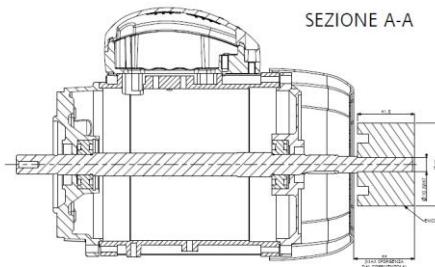
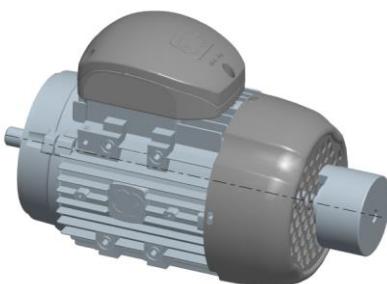
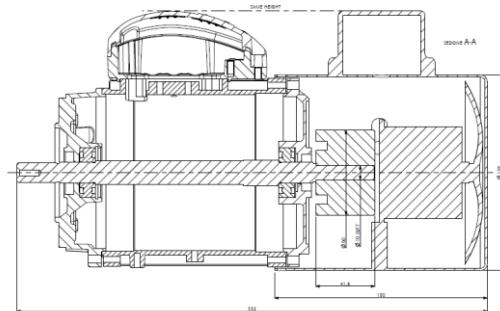
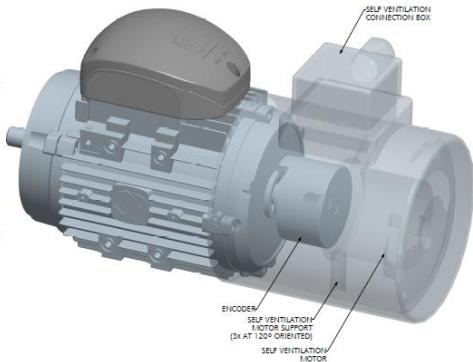
## Enkoder

A seconda del tipo di ventilazione, l'encoder può essere montato dalla Motive nei due modi rappresentati di seguito.

Motive raccomanda encoder di propria selezione, le cui caratteristiche vengono segnalate in fase d'ordine.

Menurut ventilasi yang diminta, enkoder dapat dipasang berdasarkan Motive di 2 cara berikut.

Motive merekomendasikan jenis enkode itu dipilih. Fitur-fiturnya bisa jadi dikomunikasikan berdasarkan permintaan.





## Transportasi, konservasi, penggunaan dan pemeliharaan

Motif mengirimkan motor dalam kemasan yang cocok untuk segala jenis transportasi.

Sebelum intervensi pemeliharaan apa pun, pastikan catu daya motor dimatikan / menonaktifkannya; gunakan hanya suku cadang asli sesuai petunjuk yang diberikan dalam katalog motor;

Motor harus disimpan di lingkungan yang tertutup dan kering, tanpa adanya getaran atau debu, suhunya lebih tinggi dari -15°C.

Bagian yang terbuka, seperti flensa dan ujung penggerak poros, harus dilindungi dengan pelumas. Adalah tepat untuk memutar poros secara berkala untuk memastikan penyelesaian jangka panjang pelumasan bearing.

II Motor harus dipasang dan digunakan oleh orang berkualifikasi yang mengetahui persyaratan keselamatan. Pemasangannya juga harus dilakukan di iklim kering dan dilindungi oleh agen atmosfer. Suhu dan kelembaban kerja harus berada dalam batas yang dijelaskan sebelumnya paragraf "kondisi kerja". Pembongkaran dan perakitan motor harus dilakukan oleh orang yang berkualifikasi. Intervensi apa pun pada kotak sambungan harus dilakukan hanya setelah sambungan terputus catu daya.

Inspeksi akhir harus dilakukan dengan peralatan yang tepat, menghindari cara-cara yang dapat merusak motor. Adalah tepat untuk melakukan inspeksi berkala, untuk menjamin kondisi kerja terbaik dan pembuatan: pembersihan motor, verifikasi pendinginan kipas, kebisingan dan getaran yang tidak normal identifikasi. Dalam kasus terakhir ini, periksa bantalannya (lihat tab.1) dan, jika perlu, gantikan mereka, serta cincin segel karet.

Terakhir, verifikasi pemasangan motor yang benar pada flensa atau kaki.



### Tindakan pencegahan yang disarankan untuk motor ATEX

Semua operasi pemeliharaan dan kontrol pada motor ATEX harus dilakukan dengan mematuhi standar EN 60079-17. Perhatikan bahwa semua sekrup tertutup rapat.

Penggantian suku cadang yang mengalami keausan, (seperti bantalan dan segel oli, harus dilakukan hanya dengan menggunakan suku cadang asli untuk menjaga persyaratan keselamatan dan tingkat perlindungan.

Permukaan sambungan (misalnya antara rumahan dan pelindung, poros) tidak boleh dikerjakan atau dicat. Permukaan seperti itu harus tetap bersih dan, dari korosi dan masuknya air, Anda harus menggunakan lapisan minyak silikon yang sama.

Perbaikan motor ATEX harus dilakukan dengan mematuhi norma IEC 79-19, dan hanya dapat dilakukan oleh pabrikan atau oleh bengkel eksternal yang terlatih dan resmi.



## Tindakan pencegahan instalas

Untuk pemasangan motor harap perhatikan hal berikut:

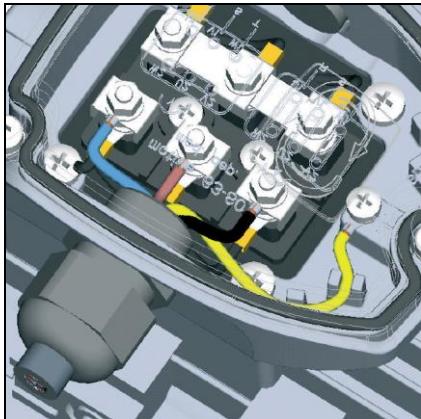
- memastikan tidak ada kerusakan yang terjadi selama pengangkutan;
- secara hati-hati lepaskan komponen tanaman dari bahan pembungkus dan alat pelindung lainnya;
- pastikan nilai tegangan pada pelat rating sama dengan tegangan sumber listrik;
- permukaan yang bersentuhan dengan ikatan listrik dan pelat peringkat tidak boleh dipernis;
- letakkan motor pada permukaan yang rata;
- pastikan bantalan atau flensa terpasang dengan baik dan jika terjadi sambungan langsung, motor berada dalam posisi sejajar sempurna;
- memutar rotor secara manual untuk memastikan tidak adanya tarikan;
- verifikasi rasa rotasi dengan melepas sambungan;
- kunci (ekstraksi) komponen keluaran (yaitu sambungan, katrol sabuk, dll.) hanya menggunakan perangkat yang tepat (menyusut). Hindari ketegangan pada katrol (lihat katalog pada lembar teknis);
- pada model yang porosnya menghadap ke bawah, gunakan penutup pelindung. Jika ujung poros menghadap ke atas, gunakan penutup yang mencegah penetrasi bagian luar ke dalam kipas;
- tidak menghalangi ventilasi. Udara yang dikeluarkan bersama dengan udara yang berasal dari kelompok lain tidak boleh segera disedot kembali;
- pastikan grounding motor sudah benar



## Koneksi Bumi / grounding (DELPHI 3PH)

Koneksi bumi dapat dilakukan di dalam kotak terminal (Gbr.1) atau dengan menggunakan sekrup pada rumahan (Gbr.2).

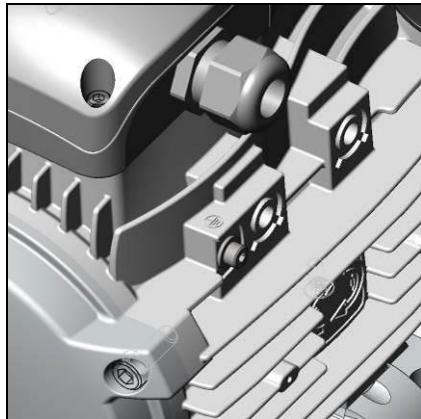
Koneksi terakhir ini bisa di request saat kabel masuk kotak terminal adalah kabel 3 kabel, tanpa yang bumi, atau ketika ditentukan oleh beberapa orang norma (seperti ATEX), atau untuk menghubungkan secara seri beberapa grounding dengan menghubungkannya membingkai satu sama lain, atau di motor yang disesuaikan tanpa blok terminal dan kotak terminal.



Gambar 1

## 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.



Gambar 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 than -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 entry, 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.



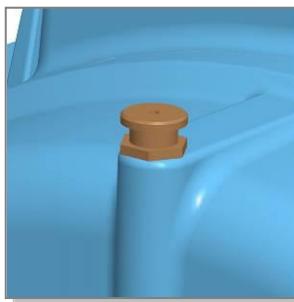
## Installation precautions

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



## Pelumasan bearing (DELPHI 3PH)



Motor dengan bantalan yang kokoh, yang dapat melumasi dirinya sendiri seumur hidup, tidak dapat melakukan hal tersebut memerlukan pelumasan apa pun. Umur bantalan bervariasi dari 3 hingga 5 tahun sesuai dengan beban aksial dan radial yang dibebankan pada poros dan kondisi lingkungan tempat motor digunakan. Motor dari ukuran 180 dilengkapi dengan unit pelumasan bearing dilumasi saat berjalan sesuai dengan interval pelumasan dan jumlah gemuk sesuai tabel 2.



Pada bantalan rol "NU"

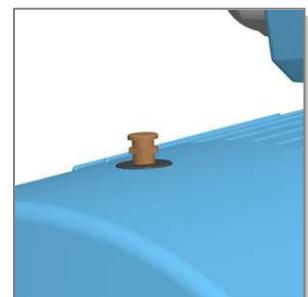
on-standar dan bantalan bola kontak sudut "7..",



waktu interval pelumasan adalah setengah.

Waktu interval pelumasan juga setengahnya untuk motor yang disuplai oleh inverter, karena perubahan gemuk yang disebabkan oleh arus busur antara stator dan rotor. Untuk alasan ini, isolasi. Bearing (eksekusi khusus) direkomendasikan pada motor tersebut, terutama bila dayanya 110kW atau lebih tinggi.

Si può usare grasso al litio o polyurea con olio di base minerale adatto ad una temperatura max di esercizio di ameno 190°C. Comunque, motive raccomanda Mobil Polyrex EM o Mobil Mobilith SHC per la massima durata



## Bearings lubrication (DELPHI 3PH)

Motors with staungh 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

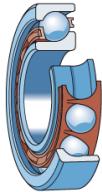


and the grease quantity as per table 2.



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 vaporization 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 or 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

Tabel 2

motore motor	Kuantitas gemuk (g) Grease quantity (g)		Interval pelumasan dalam jam operasional Lubrication intervals in operation hours			
	ukuran size	2 kutub 2 poles	2 kutub 2 Poles	4 kutub 4 Poles	6 kutub 6 Poles	8 kutub 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



### \*lubrikasi bearing motor 180-280

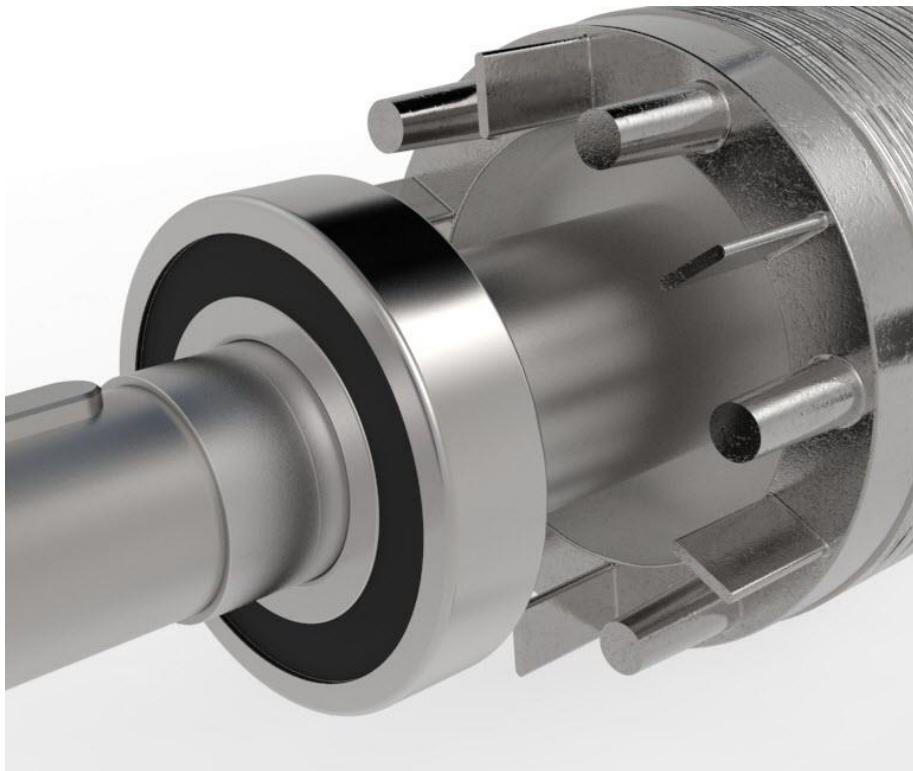
Dari ukuran 160 hingga 280, sejak tahun 2017, kami pasang bearing berpelumas otomatis ZZ, dengan demikian menghindari perlunya pelumasan berkala pada pemeliharaan.

Catatan: selama tahun 2016 dan 2017, motor ukuran 180-280 mungkin masih dilengkapi oleh pelumas dan bearing terbuka, karena waktu yang dibutuhkan untuk memperbaruiinya.

### \*180-280 motors bearings lubrication

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

Note: during the years 2016 and 2017, the motors size 180-280 might still be equipped by lubricators and open bearings, because of the time needed to update them.

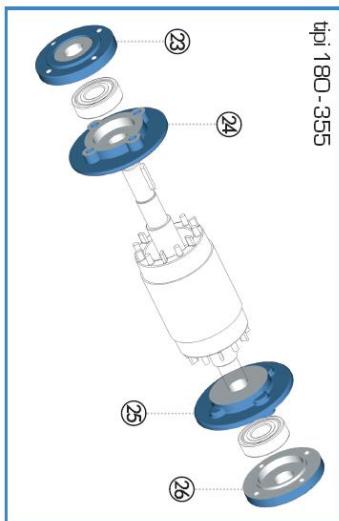
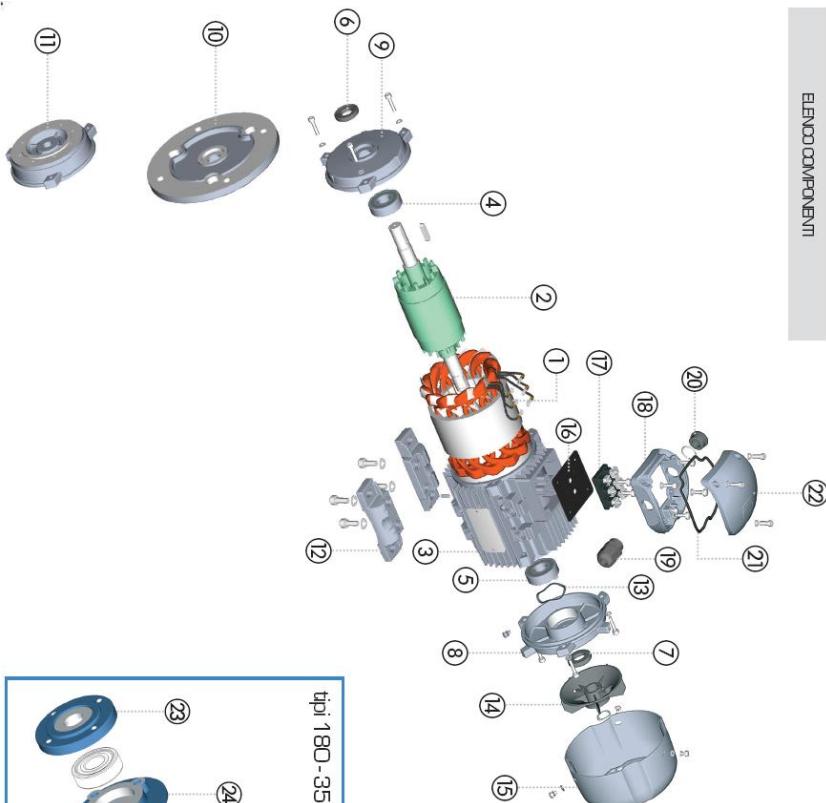




## Daftar suku cadang - Spare parts list

DELPHI (3PH)

ELENO COMPONENT

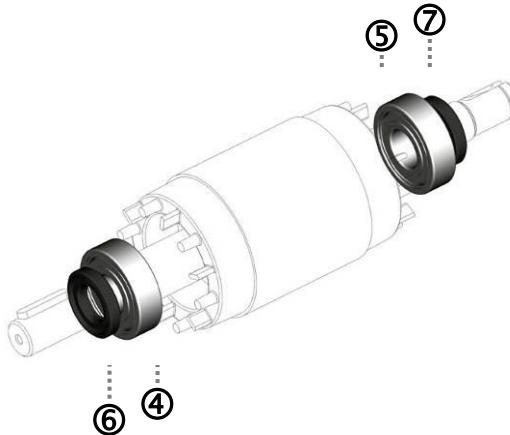


N°	CODICE
1	3PNISTA
2	3PNFOT
3	3PNFRA
4	3PNFBE
5	3PNBB
6	3PNFOS
7	3PNBOS
8	3PNBSH
9	3PNBC3
10	3PNB05
11	3PNB14
12	3PNFEE
13	3PNWAV

N°	CODICE
14	3PNFAN
15	3PNFCV
16	3PNJUB
17	3PNTER
18	3PNBOB
19	3PNMP
20	3PNQAP
21	3PNSOB
22	3PNDOB
23	3PNFOB
24	3PNHB
25	3PNBB
26	3PNBOB



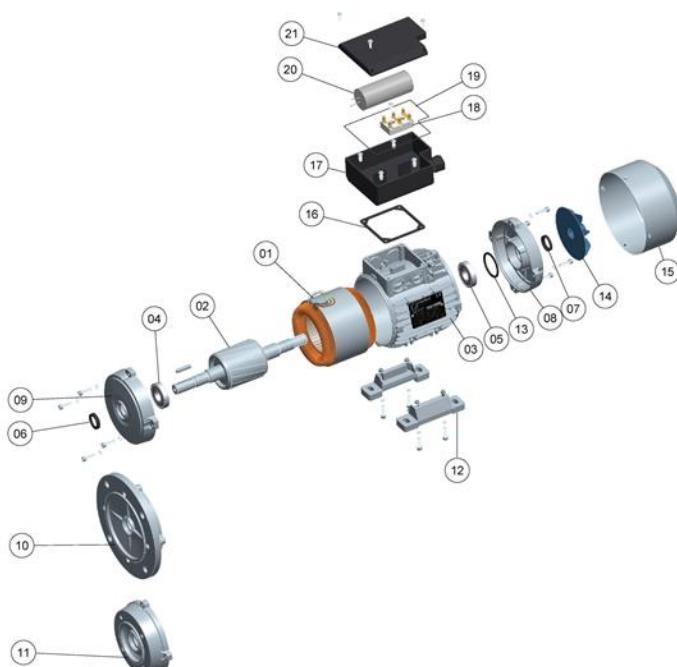
DELPHI (3PH)



Tipe Type	Kutub Poles	Seal cincin karet Rubber seal ring	Laher - Bearings		
		⑥	⑦	④	⑤
				standar	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	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



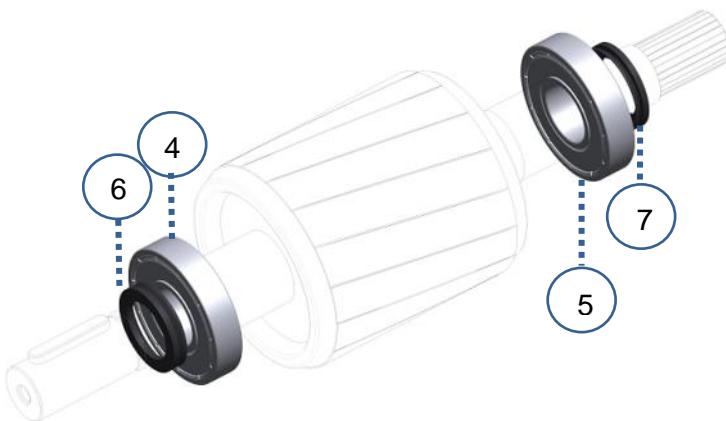
MONO (1PH)



Nº	KODEKS
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)

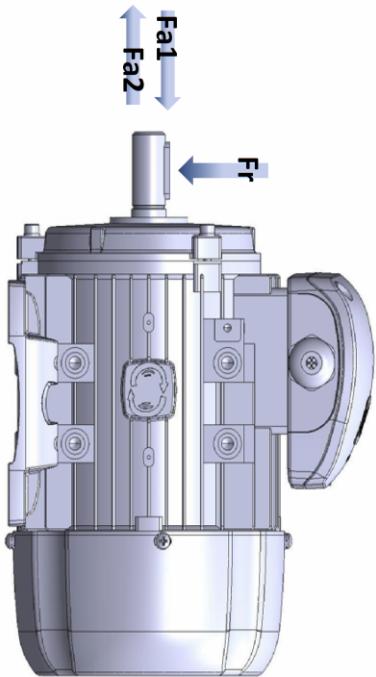


Type	Kutub	Cincin V		Laher - Bearings			
		Type	Poles	⑥	⑦	④	⑤
63		VR14		VR14		6202ZZ	6202ZZ
71		VR14		VR14		6202ZZ	6202ZZ
80		VR19		VR19		6204ZZ	6204ZZ
90		VR24		VR24		6205ZZ	6205ZZ
100		VR28		VR28		6206ZZ	6206ZZ
112		VR28		VR28		6306ZZ	6306ZZ



## beban maksimum yang diterima – max admitted loads

DELPHI (3PH)

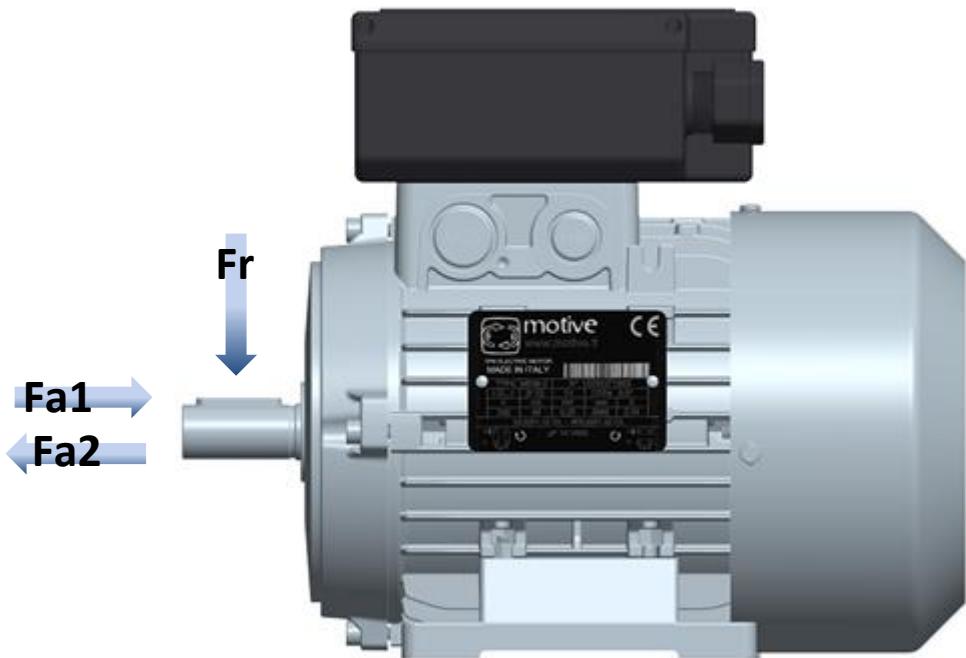


Fr [N] standard	F_a1 / F_a2 [N] standard						F_a1 / F_a2 [N] special option					
	3000rpm	1500rpm	1000rpm	750rpm	3000rpm	1500rpm	1000rpm	750rpm	3000rpm	1500rpm	1000rpm	750rpm
56	275	360			120	160			300	500		
63	300	375			200	250	300	320	640	800	960	1000
71	330	410	480	500	260	340	400	460	880	1160	1370	1440
80	550	690	800	900	340	460	570	650	1480	2000	2480	2880
90	600	770	880	980	480	590	750	850	1960	2410	3070	3900
100	880	1100	1250	1400	590	750	850	950	2410	3070	3700	4600
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	2280	2800	8980
180	3000	4000	4600	5300	2400	2700	3000	3300	4000	4450	6970	7320
200	3800	4800	5500	5500	3000	3900	4800	4800	3700	4810	5920	7320
225	4200	5200	6000	6000	3800	4900	5700	5700	5400	7350	8550	8450
250	4800	6000	6000	6000	4100	5500	6500	6500	5930	7950	9390	8010
280	4800	7600	6900	6900	4200	6800	6800	6800	6070	9830	9830	10220
315	5800	15000	17500	4600	7000	7000	7000	7000	6580	10000	10000	10120
355	7700	19000	19000	5800	7200	7200	7200	7200	7740	9600	9600	10400
400	9000	20500	25500	7300	12500	14800	14800	14800	9960	17050	19910	



MONO (1PH)

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



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## 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**

The Legal Representative: Giorgio Bosio



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- BS EN 60034-6** Rotating Electrical Machines - Part 6: Methods of cooling (IIC 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

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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

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**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)

Il Rappresentante Legale: Giorgio Bosio

N. REA 422301  
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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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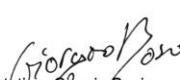
is conform to the following international norms (last issue):

- BS EN 60034-1** Rotating Electrical Machines - Part 1: Rating and performance
- 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



**СИСТЕМА ДОБРОВОЛЬНОЙ СЕРТИФИКАЦИИ**  
**«Старт»**

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



ИСПЫТАТЕЛЬНАЯ ЛАБОРАТОРИЯ ОБЩЕСТВО С ОГРАНИЧЕННОЙ  
ОТВЕТСТВЕННОСТЬЮ ИННОВАЦИОННЫЙ ЦЕНТР «КОЛИБРИ» (ООО ИЦ «КОЛИБРИ»)  
109025, г. Москва, 8-й проезд Марыиной Роши, дом 30, стр. 1,  
тел. +7(499) 391-23-57, inbox@l-sert.ru

АТТЕСТАТ АККРЕДИТАЦИИ № РОСС RU.31857.04ИЛС.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: Российской Федерации, 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 56В-2
Изготовитель:	"Motive srl". Место нахождения и адрес места осуществления деятельности по изготовлению продукции: Via Le Ghiselle, 20 25014 Castenedolo (BS), Италия.
Технический регламент:	TP TC 004/2011 "О безопасности низковольтного оборудования",
Испытано согласно требованиям:	TP TC 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 изготавливает "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 Директивой 2014/35/EU "Низковольтное оборудование".

Код ТН ВЭД ЕАЭС 8501. Серийный выпуск

соответствует требованиям

TR TC 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 «Колибрь», 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. Н.

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*  
Pia Östgaard  
Manager

This Statement for Registration is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any part, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Statement for Registration. Only the Client is authorized to permit copying or distribution of this Statement for Registration and then only in its entirety. Any use of the Intertek name for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.



**TYPE APPROVAL CERTIFICATE**  
No. ELE012624CS

This is to certify that the product below is found to be in compliance with the applicable requirement  
of the RINA type approval system.

<i>Description</i>	<b>Electric motor asynchronous three-phases</b>
<i>Type</i>	<b>DELPHI Series</b>
<i>Applicant</i>	<b>MOTIVE SRL</b> <b>VIA GHISELLE, 20</b> <b>25014 Castenedolo (BS)</b> <b>ITALY</b>
<i>Manufacturer</i>	<b>MOTIVE SRL</b>
<i>Place of manufacture</i>	<b>VIA GHISELLE, 20</b> <b>25014 Castenedolo (BS)</b> <b>ITALY</b>
<i>Reference standards</i>	<b>RINA Rules, Part C, Chap. 2, Sect. 4</b>

*Issued in Genoa on April 23, 2024. This Certificate is valid until April 22, 2029*

**RINA Services S.p.A.**  
*Luigi Benedetti*

This certificate consists of this page and 1 enclosure

RINA Services S.p.A.  
Via Corsica, 12 - 16128 Genova  
Tel +39 010 53851  
Fax +39 010 5351000



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

**CERTIFICATO**  
Nr. 50 100 1185 - Rev.010  
Si attesta che / This is to certify that  
IL SISTEMA QUALITÀ DI  
THE QUALITY SYSTEM OF  
®  
**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

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

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

  
Andrea Coscia  
Direttore Divisione Business Assurance

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 SURVEILLANCE PERIODICA A 12 MESI E AL RIESAME COMPLETO DEL SISTEMA DI GESTIONE AZIENDALE CON PERIODICITÀ TRIENNALE\*  
\*THE VALIDITY OF THE PRESENT CERTIFICATE DEPENDS ON 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](http://www.tuv.it) 



## Tanggung jawab produsen

Motif tidak bertanggung jawab jika terjadi:

- Penggunaan motor bertentangan dengan keselamatan nasional hukum
- Ketaatan yang hilang atau salah terhadap instruksi yang disediakan dalam manual ini
- Masalah dengan pasokan listrik
- Modifikasi atau gangguan motor
- Operasi dijalankan oleh personel yang tidak terlatih

Keamanan pada motor juga disebabkan oleh pengamatan indikasi yang diberikan dalam hal panduan ini.

Bacalah instruksinya dengan cermat dan patuhil semua tindakan pencegahan yang disarankan juga. Di dalam khususnya perlu untuk:

- Bekerja selalu dalam batas operasional
- Lakukan perawatan oleh orang yang berkualifikasi
- Gunakan hanya suku cadang asli

Peringatan! Petunjuk yang terkandung di dalam buku pegangan bukan mengantikan tetapi merangkum tugas yang berasal dari peraturan tentang keselamatan.

## 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

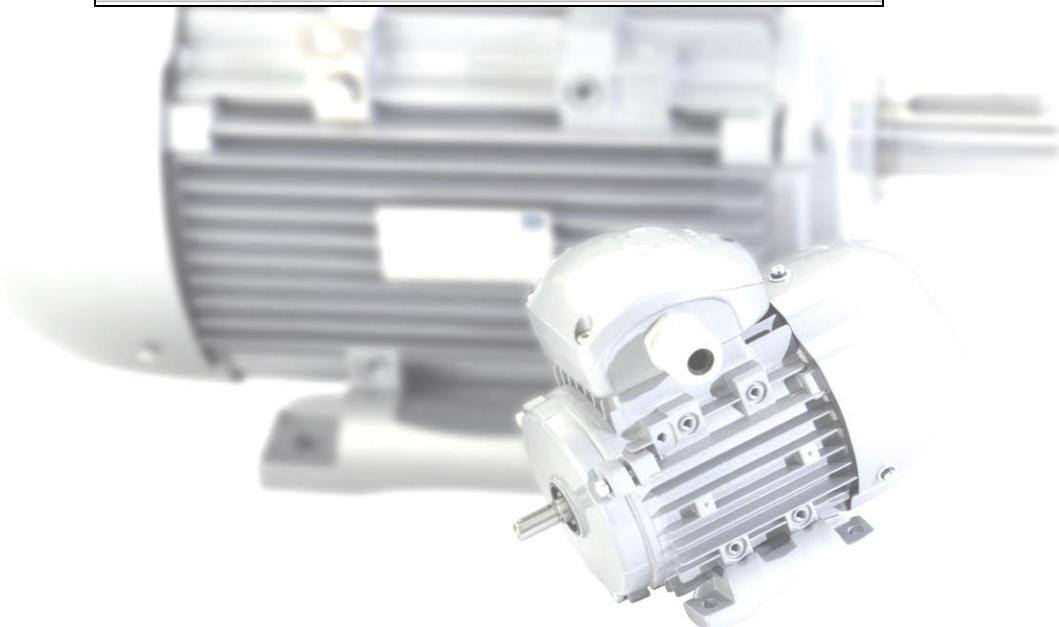
Warning! The instructions contained in this handbook do not substitute but summarize the duties derived from the regulations in force about safety.



Di [www.motive.it](http://www.motive.it), menggunakan serial nomor pada papan nama gearbox, dimungkinkan untuk mengunduh Laporan Uji Akhir masing-masing unit.

On [www.motive.it](http://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.

The screenshot shows a web browser displaying the Motive website. The URL is [www.motivemotors.it/final-test-report/index.php?lang=spa](http://www.motivemotors.it/final-test-report/index.php?lang=spa). The page title is "Final test report". It features a search bar with placeholder text "(Búsqueda con Número de serie)" and a "Buscar" button. Below the search bar, there is contact information for Motive S.r.l.: Viale La Stadera, 30 - 20144 Castellanzio (MI), Italy; phone +39 030 267707 / fax +39 030 267705; email [motors@motive.it](mailto:motors@motive.it); and website [www.motivemotors.it](http://www.motivemotors.it). To the right, there is a link "daily updated" and a thumbnail image of a gearbox with the text "Gearboxes". At the bottom, there are two examples of the "final test report" document, one for a motor and one for a gearbox, both showing various test results and graphs.





SEMUA INFORMASI TELAH DIAMBIL DAN DIKONTROL DENGAN KEHATI-HATIAN MAKSIMUM. NAMUN, KAMI TIDAK BERTANGGUNG JAWAB ATAS KESALAHAN ATAU KEJADIAN INFORMASI YANG HILANG MOTIF srl DAPAT MERUBAH KARAKTERISTIK PRODUK SETIAP SAAT.

ALL INFORMATION 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



**UNTUK ATEX MOTORS, FILE “TAMBAHAN”  
MENYELESAIKAN PANDUANINI**



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

**MADE IN ITALY**



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