

# GENERAL CATALOGUE





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# CERTIFICATO

Nr. 50 100 1185 Rev.011

SI ATTESTA CHE / THIS IS TO CERTIFY THAT  
IL SISTEMA DI GESTIONE PER LA QUALITÀ DI  
THE QUALITY MANAGEMENT SYSTEM OF



**MOTIVE S.r.l.**

SEDE LEGALE E OPERATIVA:  
REGISTERED OFFICE AND OPERATIONAL SITE:  
**VIA LE GHISSELLE 20  
IT - 25014 CASTENEDOLO (BS)**

E 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 OF APPLICATION

**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)**



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

Validità / Validity  
Dal / From: 2022-03-03  
Al / To: 2025-03-02

*Francesco Scarlata*  
Direttore Divisione Business Assurance  
Business Assurance Division Manager

Data emissione /  
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2022-02-28

PRIMA CERTIFICAZIONE / FIRST CERTIFICATION: 2001-07-20

"LA VALIDITÀ DEL PRESENTE CERTIFICATO È SUBORDINATA A SOVRIGILIANZA PERIODICA A 12 MESI E AL RESAME COMPLETO DEL SISTEMA DI  
"THE VALIDITY OF THE PRESENT CERTIFICATE IS DEPENDENT ON THE ANNUAL SUPERVISANCE EVERY 12 MONTHS AND ON THE COMPLETE REVIEW OF  
"COMPLY WITH THE REQUIREMENTS OF THE QUALITY MANAGEMENT SYSTEM AFTER THREE YEARS"

TUV Italia • Gruppo TÜV SÜD • Via Carcano, 125, Pal. 23 • 20099 Sesto San Giovanni (MI) • Italia • www.tuv.it

IT AEOF 21 1809

Autorizzazione AEO

1. Titolare dell'Autorizzazione AEO MOTIVE S.R.L. Codice EDRI: 0723680081174	2. Autorità che rilascia l'Autorizzazione Agenzia delle Dogane e dei Monopoli Direzione Centrale Dogane Ufficio AEO, compliance e grandi imprese
3. Stabile organizzazione	

Il Titolare indicato nel riquadro 1 è un  
Operatore economico autorizzato  
Semplificazioni doganali / Sicurezza (AEOF)

3. Data di validità dell'Autorizzazione: 15/05/2021

Il Direttore dell'Ufficio  
*[Signature]*



VISIT AND KNOW MOTIVE THANKS TO  
THE MOVIE ON WWW.MOTIVE.IT



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# DELPHI

## SIZES 56 -132

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

The frame, up to 132 included, is made in die casting aluminium alloy, from size 160 up to 355 the frame is made in cast iron.

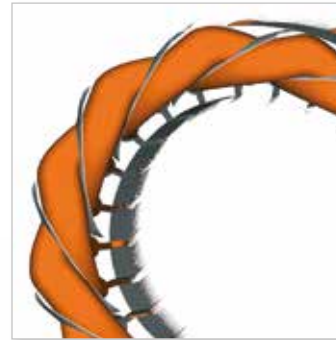
All DELPHI motors are three-phase, multiple voltage multi-frequency 50/60Hz, F class insulation, (H on request) S1 continuous duty service, IP55 protection (IP56, 66 and 67 on request) IE2 or IE3 efficiency class tropicalized winding suitable for inverter power supply

**IE2, high efficiency class IEC 60034-30-1**  
**IE3, premium efficiency class IEC 60034-30-1**  
**IE4, super premium efficiency class IEC 60034-30-1**

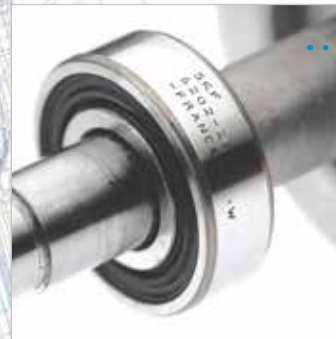
type	of	power
56	aluminum	0,09kW-11kW
63		
71		
80		
90		
100		
112	cast iron	4kW-315kW
132		
160		
180		
200		
225		
250		
280		
315		
355		

REGISTERED DESIGN

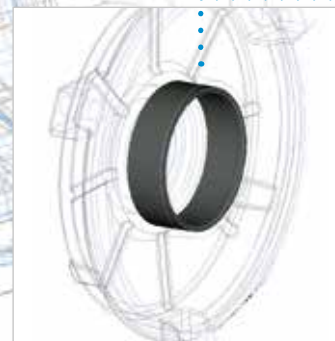
Available also in "Ex" version, ATEX certified  
 II 2G Ex eb IIC T4 Gb  
 II 2D Ex tb IIC T135°C IP65 Db  
 Tamb=-20 +40 °C



The copper is impregnated with a double layer of insulating enamel to ensure high resistance to electrical, thermal and mechanical stress. The phases are further isolated by another layer of Nomex film to protect the motors from the voltage peaks that usually occur when the motor is controlled by an inverter.



Bearings selected for their silence and reliability and, for the same objectives, the cage rotor is dynamically balanced.

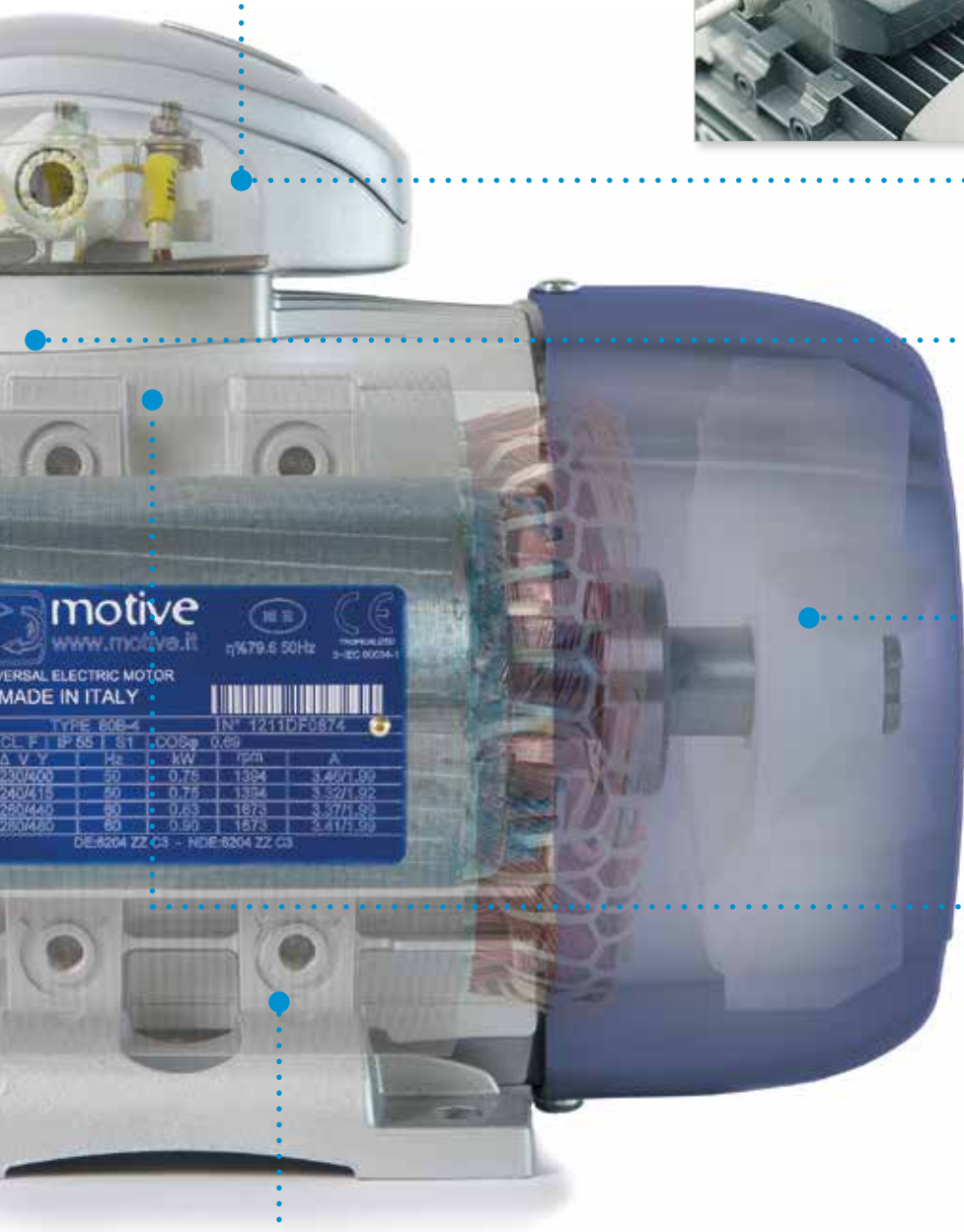


From type 90, a steel insert is provided in the bearing slot of the aluminum flanges, to resist to radial mechanical forces with a fair degree of security

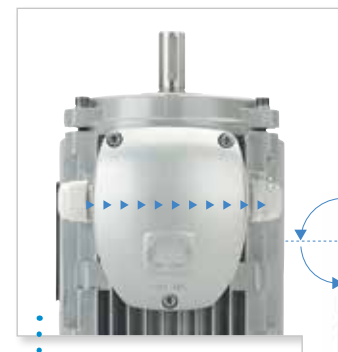


Know DELPHI 56-132 on <http://www.youtube.com/watch?v=G2EWOuOHjU>





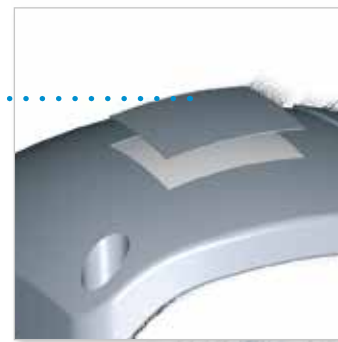
Aiming the maximum protection, the motors are equipped with important details like the pull-resistant cable gland and the combination of bearings with two shields each with rubber seal rings



Cable gland can be easily moved on both the sides of the connection box, thanks to the screw cap



The connection box can be rotated of 360° with steps of 90°



To protect them by the rust, motive motors are painted



Very thick and made of a special plastic material, the fan cover is:

- impact resistant
- soundproofing
- scratchproof
- rustproof



Performance excellence is granted by the low loss CRNO "FeV" magnetic laminations adoption, instead then the usual Semi Processed/Decarb "FePO1". FeV laminations provide higher efficiency, lower heating, energy saving and longer life to insulation materials



From size 56 to size 132, feet are detachable, and can be fixed on 3 sides of the housing, thus permitting the terminal box to be positioned up, right or left.

**motive**  
www.motive.it  
UNIVERSAL ELECTRIC MOTOR  
MADE IN ITALY

TYPE 60B-4 IN° 1211DF/874

Δ V	V	f	Hz	cos φ	η	W	rpm	A
230	400	50	0.75	1394	3.460	1.90		
240	415	50	0.75	1394	3.520	1.92		
250	440	50	0.63	1673	3.570	1.92		
250	440	60	0.50	1673	3.410	1.99		

DE:6204 ZZ C3 - NDE:6204 ZZ C3

Available also in "Ex" version, ATEX certified



II 2G Ex eb IIC T4 Gb  
II 2D Ex tb IIC T135°C IP65 Db  
Tamb=-20 +40 °C

Know DELPHI 160-355 on <https://youtu.be/pXvcKximmNA>



Motive three phase motors from size 160 up to size 355 are made in cast-iron and have all those main features of the Delphi series, among which:

- standardized dimensions according to International standards (IEC 72-1)
- multiple voltage and multi-frequency 50/60Hz,
- F class insulation, [oupon request H or H+ (delfire)]
- S1 continuous duty service,
- IP55 protection (IP56, 66 and 67 on request)
- tropicalized winding and reinforced insulation
- suitable for inverter power supply\* [from 110kW and up we recommend to order the motor with insulated barings (option)]

**IE2, high efficiency class IEC 60034-30-1**

**IE3, premium efficiency class IEC 60034-30-1**

**IE4, super premium efficiency class IEC 60034-30-1**



provided with 3 PTC thermistors that protect the motor and the system by operation anomalies



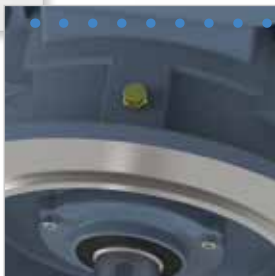
equipped by lifting eyebolts (one for B3 version (feet fixing), two for B5 version (flange fixing))



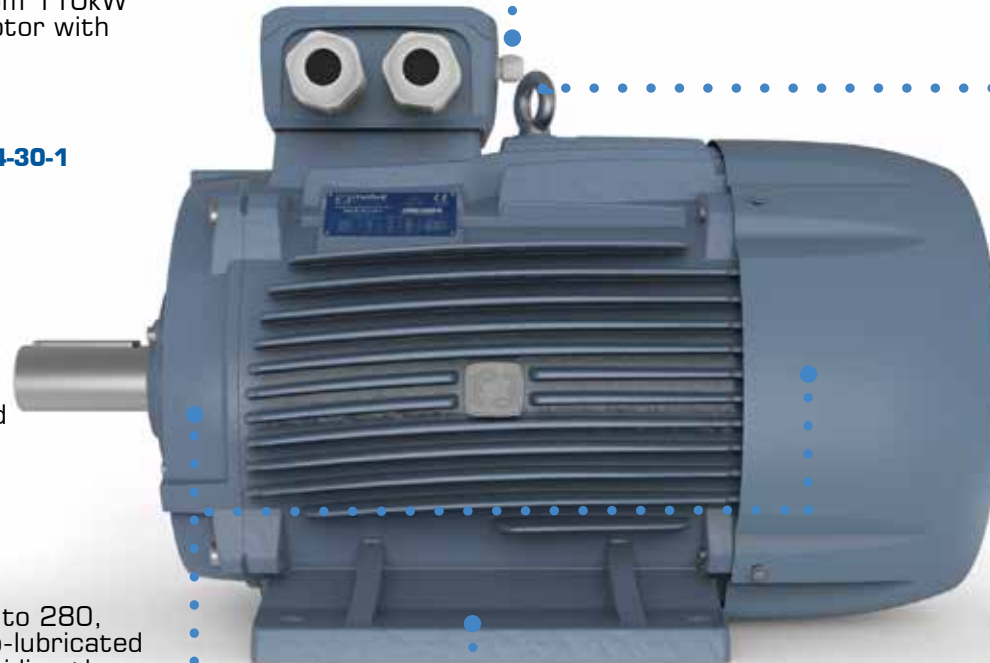
Keeping the same sealing system of the whole delphi series, the terminal box up to size 280 is made in aluminum, thus guaranteeing its IP65 protection index without being affected by the usual finishing imperfections of the cast iron



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



Instead, from size 315 and up, they are provided with lubricators. 4, 6 and 8 poles motors drive end bearings are in fact of open roller type, in order to withstand eventual extraordinary radial loads (see paragraph "components list")



The terminal box can be rotated of 360° with steps of 90°



Given the high torque, the fixing from size 180 up is ensured by feet integrally casted with the housing



Upon request, motive can anyway mount the terminal box laterally, on the right or the left

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

NOTE: during the years 2016 and 2017, the motors size 160 might still be equipped with detachable feet, because of the time needed to update them



# MONO

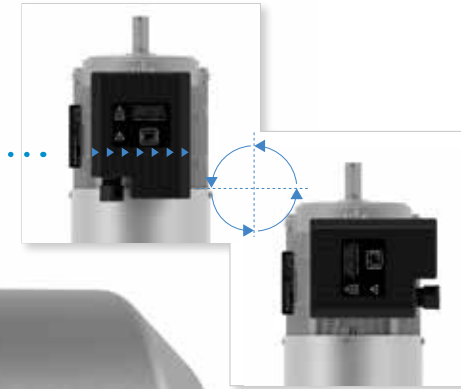
Motive motors are built according to international standard regulations; each size throughout the construction forms is calculated with reference to the tables of standard IEC 72-1.

The frame is made in die casting aluminium alloy.

All MONO motors are single phase 230V 50Hz. On request 60Hz and special voltages  
 F class insulation, (H on request)  
 S1 continuous duty service,  
 IP55 protection (IP56, 66 and 67 on request)  
 on request extra capacitor for high starting torque



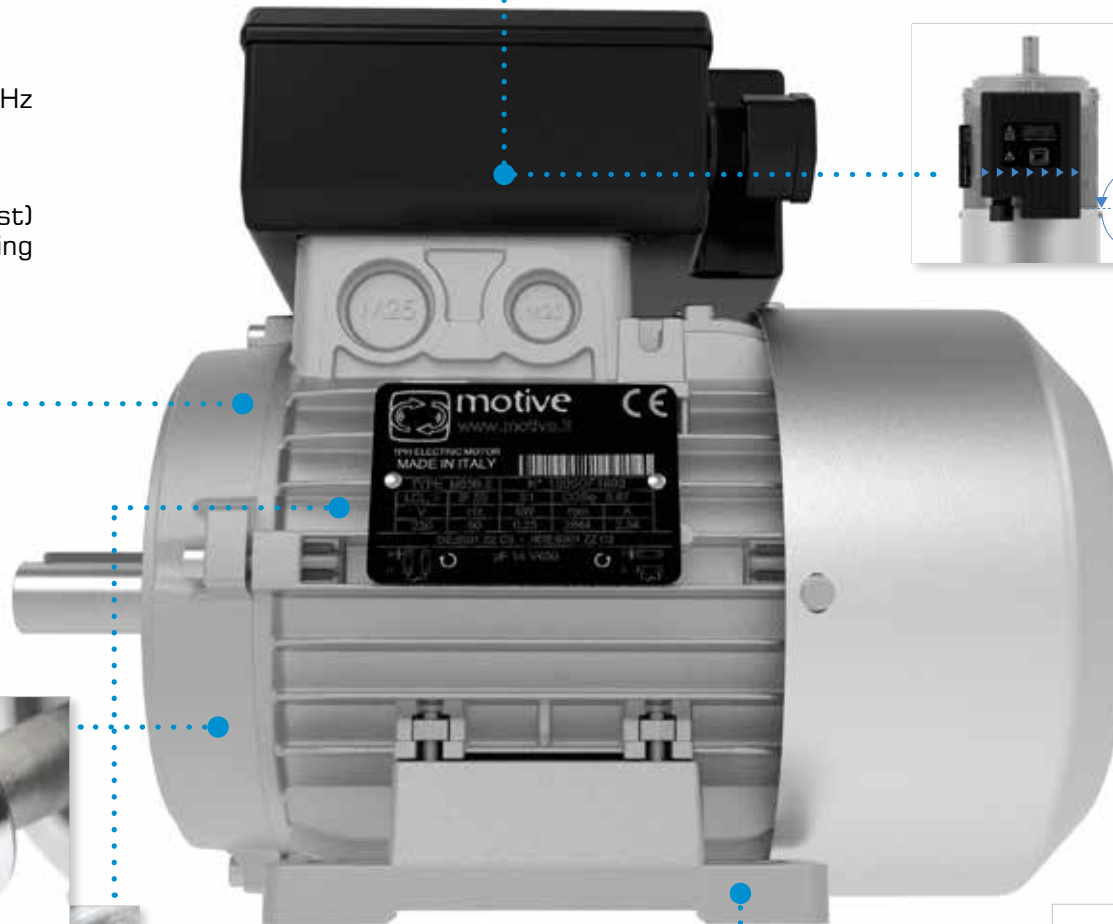
Aiming the maximum protection, the motors are equipped with important details like the pull-resistant cable gland and the combination of bearings with two shields each with rubber seal rings



The connection box can be rotated



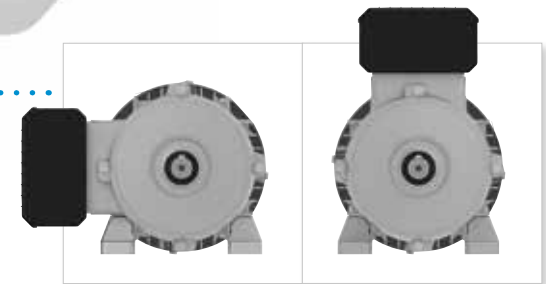
The special winding permits a good starting torque even without a double capacitor start/run



Bearings selected for their silence and reliability and, for the same objectives, the rotor is dynamically balanced.



Feet are detachable, and can be fixed on 3 sides of the housing, thus permitting the terminal box to be positioned up, right or left.



kW	type	
	2 poles	4 poles
0,18	63A-2	63B-4
0,25	63B-2	71A-4
0,37	71A-2	71B-4
0,55	71B-2	80A-4
0,75	80A-2	80B-4
1,1	80B-2	90S-4
1,5	90S-2	90L-4
2,2	90L-2	100LA-4
3		100LB-4
4		112M-4

## DELFIRESERIES, 100°C RESISTANT MOTORS

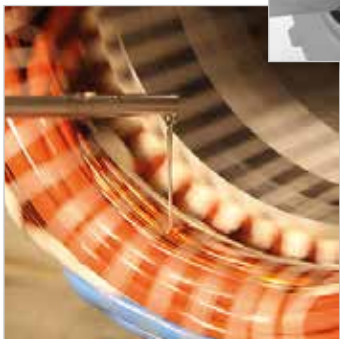


“DELFIRESERIES” is an innovative range of three phase motors specifically designed to work in an ambient temperature of 100°C, like for instance the one of the ventilation of furnaces and dryers, in S1 continuous duty



The used technology finds its origin in EN 12101-3 fire emergency motors for smoke evacuation, but instead of being intended for working for few hours only, it is designed to offer an S1 continuous duty service and the same lifespan of a normal motor in a normal ambient. The main features are:

- metal cable glands and ventilation, viton gaskets and seals, high temp bearings, steel bearing seats



- defluxed winding for a low temp rise, dual coated magnet wires, increased H class:
  - Double impregnation: varnished twice and re-baked. The process assures the coverage of pin holes. The increased solid content layer increases the high voltage capacity of the motor and better protects it against surge voltages. The increased parasitic capacitance gives a higher impulse withstand capacity;
  - Gel Coat: the stator is then further protected by an epoxy compound which cures fast under hot conditions. Epoxy has very good fungus resistance properties, thus avoiding tracking failure, drastically reducing the service life of the motor. Epoxy also exhibits very good resistance to alkali as well as acids. Epoxy coating also allows for condensing humidity. The smoothly finished surface does not allow liquid water to stay on the windings

type	pole	of	kW
71	2, 4, 6	aluminum	0,18 - 7,5
80			
90			
100			
112			
132			
160	cast iron	7,5 - 37	
180			
200			



## SELF-BRAKING MOTORS - SERIES DELPHI AT

Delphi ATDC, AT24 and ATTD series self-braking motors use one or 2 spring-pressure brakes, firmly spliced onto a cast iron shield at the back of the motor.

These motors include a series of characteristics normally considered options by other brands, like:

- The standard hand lever permits to release the brake, making it possible to move manually the shaft,
- The PTO thermal protectors in the winding are a standard up to size 132. PTC are a standard from size 160 and up
- Easy separate connection of the brake in case that the motor is connected to an inverter.

On ATDC and ATTD, the separate brake power supply is achieved, whenever needed, by connecting directly to the brake terminal board located inside the motor terminal box.

On AT24, the 24Vdc single or double brakes are designed to be directly connected to an inverter (usually having a 24Vdc plug)

On request, the brakes can be modified to be extremely silent for usage in special environments like theatres.

Also MONO 1PH motors are offered in ATDC version.



### IE2, high efficiency class IEC 60034-30-1

### IE3, premium efficiency class IEC 60034-30-1

### IE4, super premium efficiency class IEC 60034-30-1

IEC Type	ATDC						AT24				ATDC AT24	ATTD
	Static max braking torque [Nm]	standard vers. braking time no-load [Sec]	"TA version" braking time no-load [Sec]	input voltage on rectifier [Vac]	output voltage to brake [Vdc]	brake power [W]	Static max braking torque [Nm]	Static min braking torque [Nm]	Braking time no-load [Sec]	brake power [W]	extra Kg on std	extra Kg on std
AT..63	4,5	0,15	<0,05	220-280 (opt. 380-480)	99-126 (opt. 171-216)	20	4,5	4,0	0,06	20	+4	+7,5
AT..71	8,0	0,15	<0,05	220-280 (opt. 380-480)	99-126 (opt. 171-216)	28	4,5	4,0	0,06	20	+5	+9
AT..80	12,5	0,20	<0,05	220-280 (opt. 380-480)	99-126 (opt. 171-216)	30	10,0	9,0	0,09	25	+5,5	+10
AT..90	20,0	0,25	<0,05	220-280 (opt. 380-480)	99-126 (opt. 171-216)	45	16,0	12,0	0,11	45	+6	+11
AT..100	38,0	0,30	<0,05	220-280 (opt. 380-480)	99-126 (opt. 171-216)	60	32,0	28,0	0,14	60	+7	+12,5
AT..112	55,0	0,35	<0,05	380-480	171-216	65	60,0	55,0	0,15	65	+10	+19
AT..132	90,0	0,40	<0,05	380-480	171-216	90	90,0	80,0	0,16	85	+12	+23
AT..160	160,0	0,50	<0,05	380-480	171-216	110	160,0	130,0	0,21	105	+22	+42
AT..180	250,0	0,50	<0,05	380-480	171-216	130					+32	+62
AT..200	420,0	0,50	<0,05	380-480	171-216	140					+40	+77
AT..225	450,0	0,50	<0,05	380-480	171-216	160					+52	+100
AT..250	550,0	0,50	<0,05	380-480	171-216	170					+80	+155
AT..280	900,0	0,50	<0,05	380-480	171-216	360					+106	+209
ATTD	ATTD= ATDCx2					ATTD= ATDCx2						

# BOX

BOX	max Nm (4 poles)	motor type									
		56	63	71	80	90	100	112	132	160	
25	13										
30	19										
40	39										
50	74										
63	135										
75	205										
90	360										
110	675										
130	850										
150	1200										



Know BOX on  
<http://www.youtube.com/watch?v=QqGmfraDq7A&feature=youtu.be>

Available also in "Ex" version,  
 ATEX certified



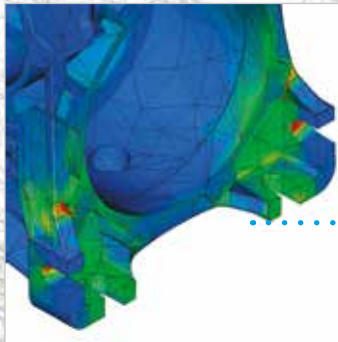
II 2G c IIB T4  
 II 2D c IIIB T135°C  
 Tamb = -20 +40 °C



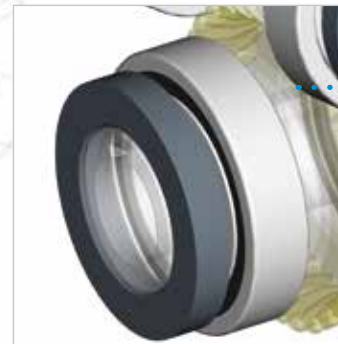
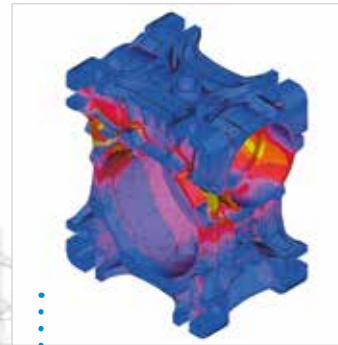
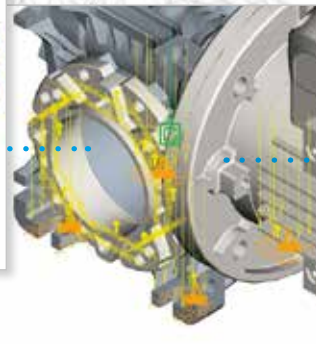
From type 75 and up, 2 taper roller bearings are mounted on the wormshaft/wheel.

Moreover, the combination of this characteristic and 2 nilos (mounted on size 75 and up to keep lubrication grease inside the bearings even when they are not touched by the oil bath), permits the mounting of the whole BOX range, from the size 25 to the size 150, in the positions V5 and V6 without any need of additional interventions.

The new patented "BOX" series of worm gear units is made with die-casting aluminium housing from size 25 up to 90, and in cast iron from size 110.



The housing has been designed with parametric three-dimensional CAD SW supported by programs of analysis of the thermal dissipation capacity and the structural resistance/deformation.

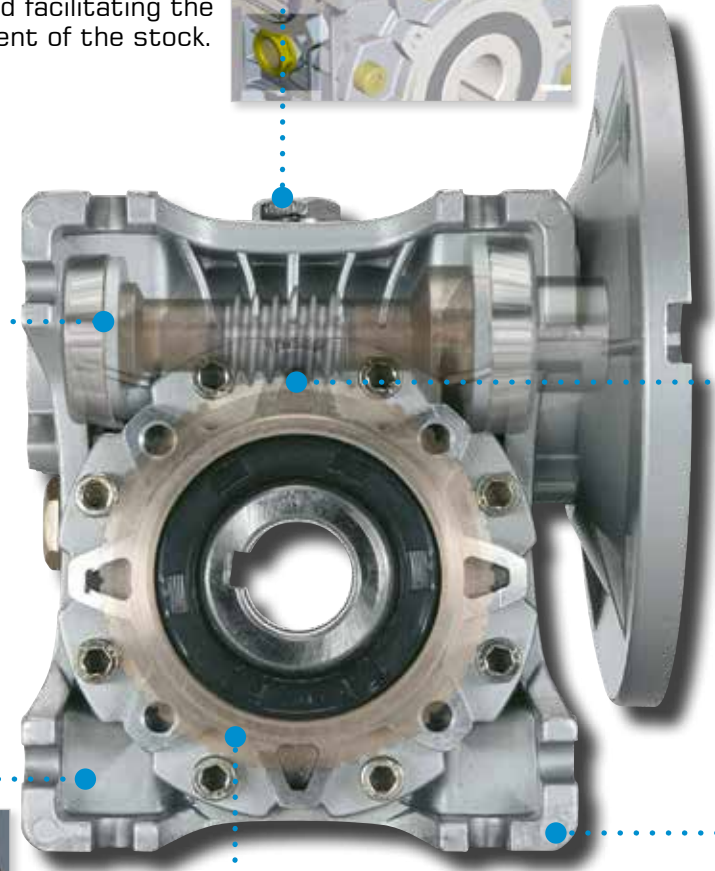


Mounting positions B6 or B7 are also permitted on all the BOX series, thanks to the adoption of 2RS auto-lubricated bearings on the output gear.

In conclusion, the whole BOX series can be mounted in any position with no need of specifications in the order.

Lubrication is already provided by motive with long-life synthetic oil up to size BOX90, and with mineral oil from size BOX110.

The gear unit is equipped with a full set of filler, level and breather plugs, permitting all mounting positions and facilitating the management of the stock.





An epoxy paint coat cancels the negative effects of the aluminium porosity and protects the housing from oxidation.



In order to increase silence, efficiency and duration, the wormshaft is made in case hardened steel and ground machined, while the worm wheel is in shell cast ZCuSn12 bronze.

2 safety plastic covers on the output are always provided to protect BOX during transportation and storage, and then the user from accidental contacts with moving parts



Mating surfaces are machined for a perfect planarity.

## STADIO

### Design features

STADIO construction is modular and therefore it can be supplied as a separate unit to be mounted on any type of fitted geared motor (PAM).

It is not requested any part pre-mounting on the motor shaft.

Like all connectable motive motors and gearboxes, STADIO is supplied by Motive with synthetic oil suitable for the whole lifetime. No maintenance requested.


Like all connectable gearboxes and motors manufactured by Motive, the whole STADIO range can be mounted in any position with no need of specifications in the order.

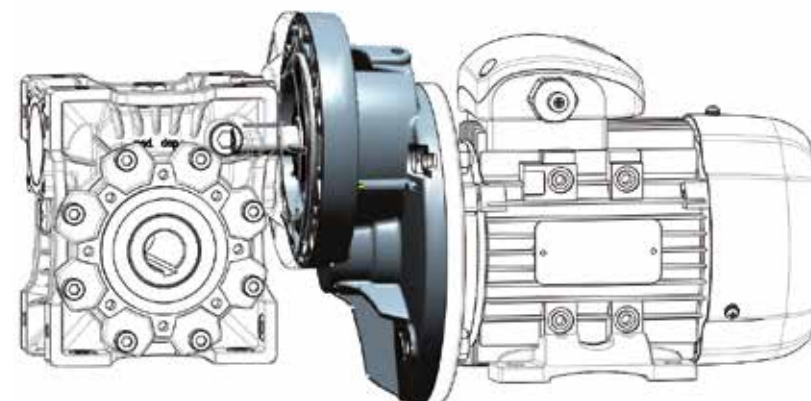
The pre-stage unit cannot be used by itself, but only coupled with another reduction unit.

A powder paint coat cancels the negative effects of the aluminium porosity and protects the housing from oxidation.

In order to increase silence, efficiency and duration, gears are made in case hardened (HRC59-63) tempered steel 20CrMnTi (UNI7846) accurately ground on the involute.

Available also in "Ex" version, ATEX certified

 II 2G c IIB T4  
II 2D c IIIB T135°C  
Tamb = -20 +40 °C



	motor flange
STADIO-63	63B5
STADIO-71	71B5
STADIO-80	80B5
STADIO-90	90B5

## VARIO



Each VARIO is equipped with filler, level and breather plugs to make it suitable for any mounting position.

The new planetary cone disc variators of the patented series VARIO are built in an aluminium die-casted housing in 3 sizes: small, medium and large, respectively for motors of IEC size 63, 71 and 80.



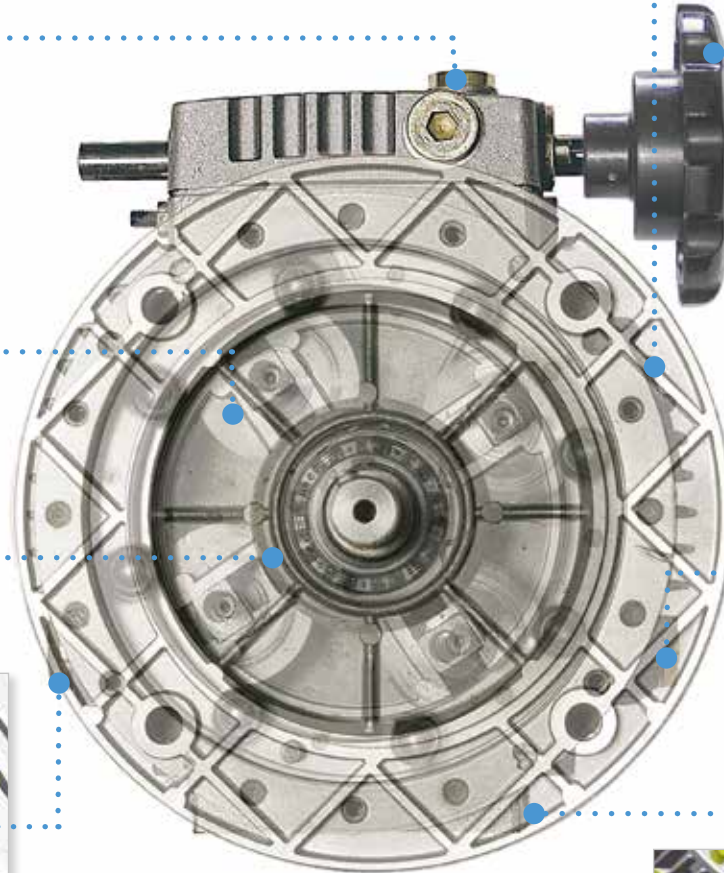
VARIO can operate in both directions, input and output shafts rotate in the same direction. Hand wheel can be fitted to both sides of control box for convenient installation.

Each VARIO is equipped with filler, level and breather plugs to make it suitable for any mounting position.

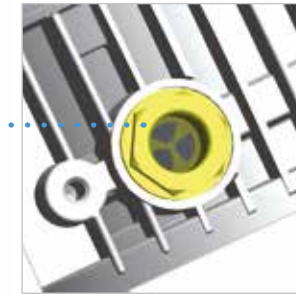


TC double lip oil seals.

A filler plug is magnetic too, in order to maintain clean the lubricant and extend the maintenance intervals.



The oil bath operation provides high efficiency, low noise, vibration free running.



The closed input flange is an integral part of VARIO casing, preventing oil leaks possibilities.



The housing and flanges are blasted and then painted, to cancel the negative effects of the aluminium porosity and protect VARIO from oxidation.

VARIO	max kW (4 poles)	motor type		
		63	71	80
VARIO-S	0,13-0,18			
VARIO-M	0,25-0,37			
VARIO-L	0,55-0,75			

The standard unit is including the motor B5 flange connection, but it allows to fix the detachable foot too, reducing stock levels and allowing quick delivery.






# ROBUS 25-60

Uniquely contoured, rigid, precise, monobloc, cast iron Body, Base and Flange ensure extreme robustness.



## ROBUST

Available also in "Ex" version, ATEX certified

 II 2G c IIB T4  
II 2D c IIB T135°C  
Tamb= -20 +40 °C

Easy to examine and maintain.

Minimum maintenance requirement. All sizes are supplied with long-life synthetic oil.



IEC flange and hollow shaft.

Choice of hollow input flanges permits direct mounting of any standard motor

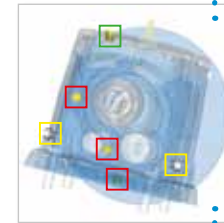


Unique construction of Robus makes it possible to mount any size in any position. This flexibility is achieved by:

+ ZZ autolubricating bearings on input and output shaft



6 interchangeable plugs, including one breather plug and a level plug. Please note that the vent plug also allows you to reduce the internal pressure on seals, and thus increases the efficiency of the gearbox.



+ mechanical parts locked in their positions by snap rings and spacers. This also ensures better absorption of axial thrust and prolongs the life of bearings



A large top cover in light weight aluminium alloy facilitates the inspection



Modular design with detachable output flange and foot base allows easy and quick conversion between foot and flange mounting



## VERSATILE



Various detachable foot bases in solid cast iron make Robus interchangeable with any other gearbox brand



ROBUS	max Nm (4 poles)	motor type													
		63	71	80	90	100	112	132	160	180	200				
A2	165														
25	350														
30	450														
35	700														
40	1100														
50	2500														
60	4300														



Know ROBUS on <http://www.youtube.com/watch?v=-5Givjw5NCg&feature=youtu.be>

REGISTERED DESIGN

FLEXIBLE MOUNTING

# ROBUS-A



Main body of a single piece of aluminum, for an optimal compromise between weight, rigidity and precision

Available also in "Ex" version, ATEX certified



II 2G c IIB T4  
II 2D c IIIB T135°C  
Tamb = -20 +40 °C



Modular design with detachable output flange and foot base allows easy and quick



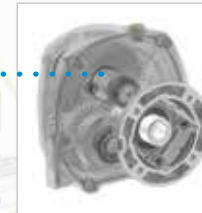
conversion between foot and flange mounting



A removable base, with several fixing holes, makes ROBUS-A interchangeable with most of the gearboxes brands

## ROBUST

## VERSATILE



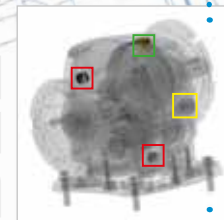
IEC flange and hollow shaft. Choice of hollow input flanges permits direct mounting of any standard motor

Minimum maintenance requirement. All sizes are supplied with long-life synthetic oil.



Unique construction of Robus-A makes it possible to mount any size in any position. This flexibility is achieved by:

+ ZZ autolubricating bearings on input and output shaft



+ 4 interchangeable plugs, including one breather plug and a level plug. Please note that the vent plug also allows you to reduce the internal pressure on seals, and thus increases the efficiency of the gearbox



+ mechanical parts locked in their positions by snap rings and spacers. This also ensures better absorption of axial thrust and prolongs the life of bearings





Uniquely contoured, rigid, precise, monobloc, cast iron Body, Base and Flange ensure extreme robustness.

ROBUST

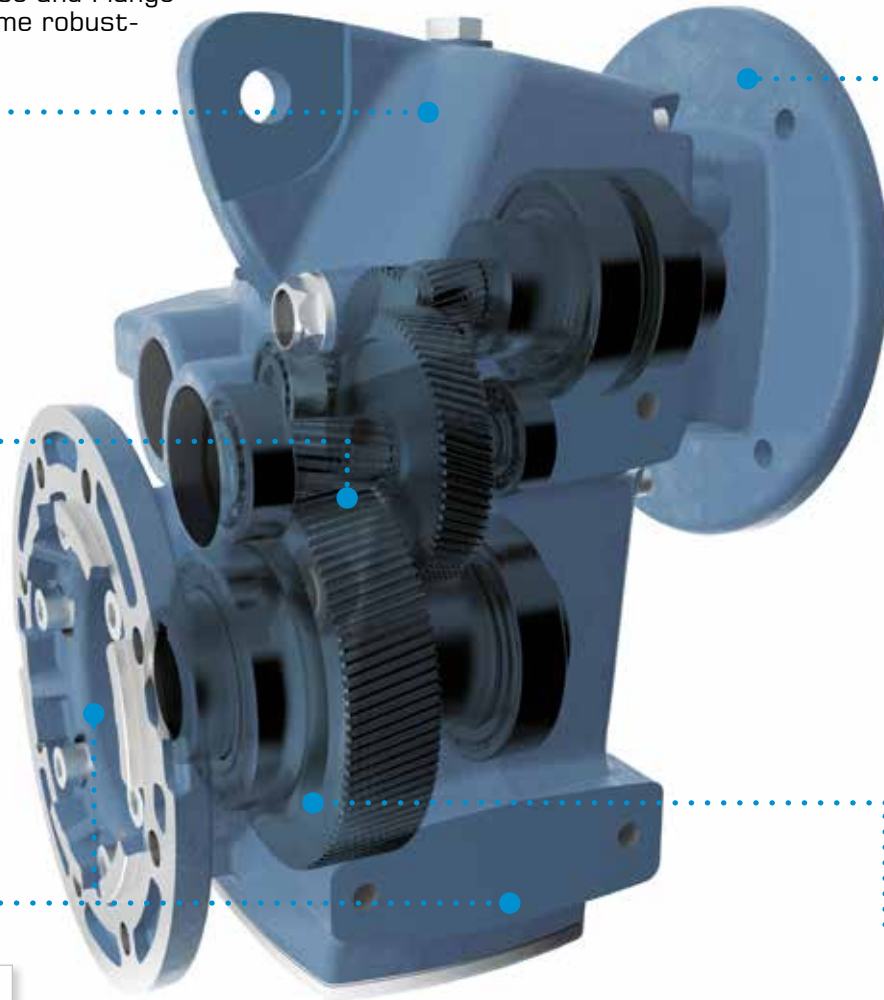


2 or 3 reduction stages inside the same body, in order to have a wider and more reliable range of ratios



A modular design with detachable output flange and integral feet permits the easy and fast conversion between flange or foot mounting

VERSATILE



**REGISTERED DESIGN**  
IEC flange and hollow shaft.

Choice of hollow input flanges permits direct mounting of any standard motor

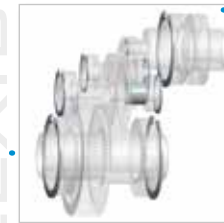


Unique construction of Ston makes it possible to mount any size in any position. This flexibility is achieved by:

+ ZZ autolubricating bearings on input and output shaft




5 interchangeable plugs, including one breather plug and a level plug  
Please note that the vent plug also allows you to reduce the internal pressure on seals, and thus increases the efficiency of the gearbox



+ mechanical parts locked in their positions by snap rings and spacers. This also ensures better absorption of axial thrust and prolongs the life of bearings

FLEXIBLE MOUNTING

Available also in "Ex" version, ATEX certified  
 II 2G c IIB T4  
 II 2D c IIIB T135°C  
 Tamb= -20 +40 °C

Know STON on  
<https://youtu.be/uYYLC3biN9I>



STON	max Nm (4 poles)	motor type									
		63	71	80	90	100	112	132	160	180	200
3	400										
4	600										
5	800										
7	1700										
8	3500										
9	5900										

# ENDURO

## ROBUST



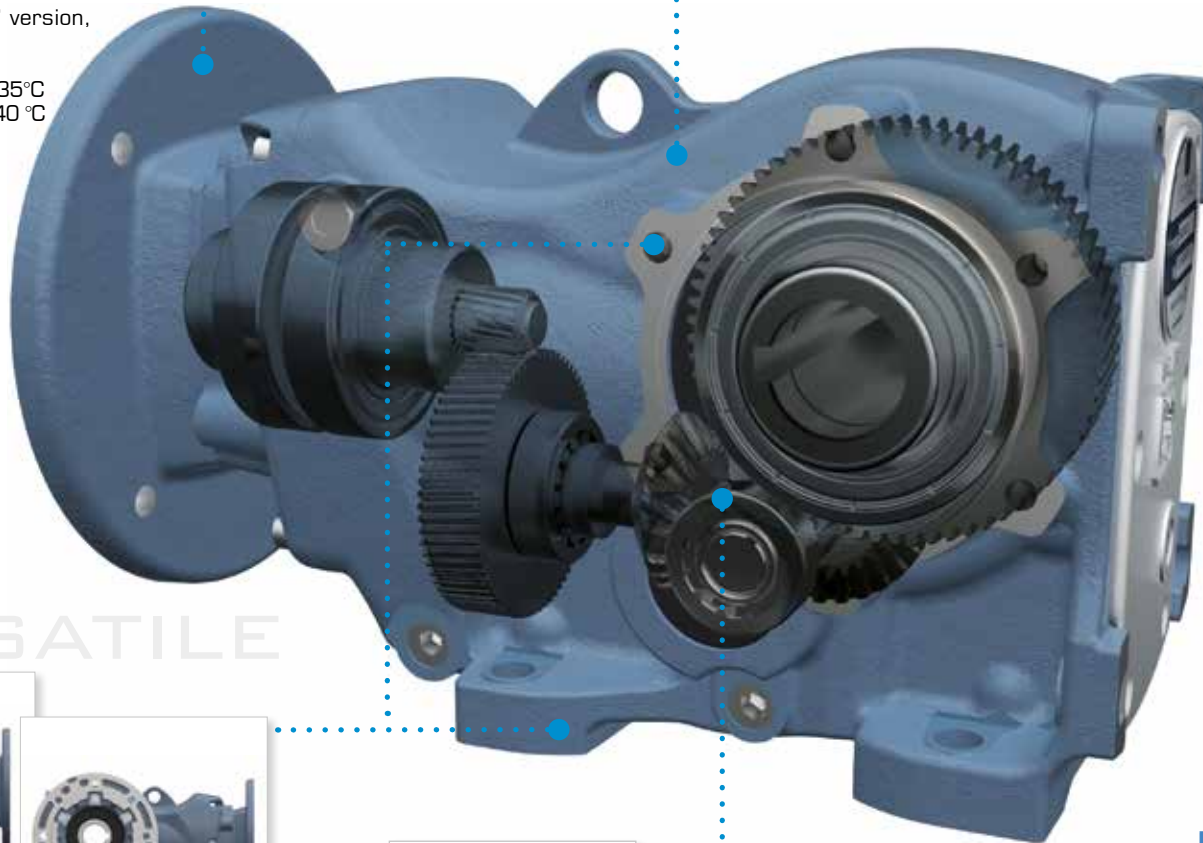
Uniquely contoured, rigid, precise, monobloc, cast iron Body, Base and Flange ensure extreme robustness.

Available also in "Ex" version, ATEX certified



II 2G c IIB T4  
II 2D c IIIB T135°C  
Tamb= -20 +40 °C

Know ENDURO on <https://youtu.be/uYYLC3biN9I>



## VERSATILE



A modular design with detachable output flange and integral feet permits the easy and fast conversion between flange or foot mounting



Bevel gears in the middle stage, to be more silent and, at the same time, reach a higher service factor

## REGISTERED DESIGN



IEC flange and hollow shaft.

Choice of hollow input flanges permits direct mounting of any standard motor



Unique construction of Enduro makes it possible to mount any size in any position. This flexibility is achieved by:  
+ ZZ autolubricating bearings on input and output shaft



5 interchangeable plugs, including one breather plug and a level plug  
Please note that the vent plug also allows you to reduce the internal pressure on seals, and thus increases the efficiency of the gearbox



+ mechanical parts locked in their positions by snap rings and spacers. This also ensures better absorption of axial thrust and prolongs the life of bearings

ENDURO	max Nm (4 poles)	motor type										
		63	71	80	90	100	112	132	160	180	200	
3	210											
4	400											
5	600											
7	1550											
8	2800											
9	4300											



## Offered service factor

The service factor of a gearbox is its capacity to withstand operating load and overloads, a certain number of starts, the duration of operating time, and mechanical shocks and vibrations. Thus, higher the service factor, greater is the possibility of trouble-free operation and increased life. Without aiming to be completely exhaustive, we list here the main features that influence the service factor:

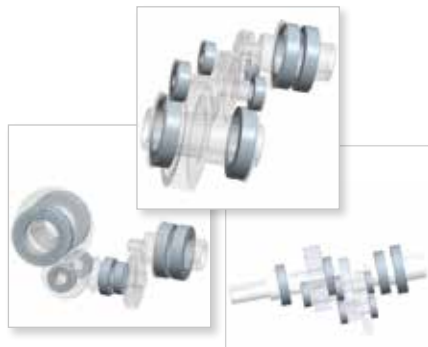
The monobloc body provides higher rigidity and mechanical robustness.



Optimal ratios (between 2 and 6) in the several stages, together with appropriate centre distances, result in higher number of teeth and size (module) of each wheel and better torque transmission fractioning through various stages.



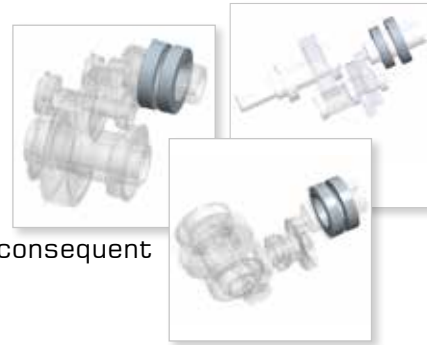
Oversized bearings, allow the gearbox to withstand higher operating loads.



Use of high strength steels and case hardening to  $58 \pm 2$  HRC reduce the wear rate in wheels. All cylindrical gears are profile ground to Din 3962 class 6 accuracy for low noise and high efficiency.



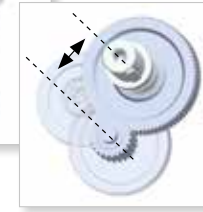
Dual bearing support on the input shaft ensures precise alignment of the first stage gears and reduces vibrations and consequent gear wear.



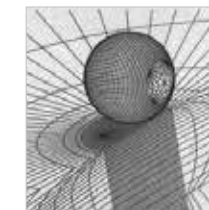
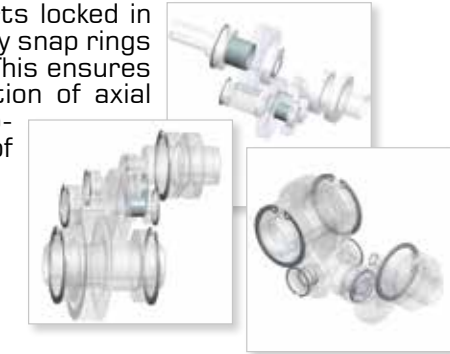
Shafts are made from 42CrMo4 steel and tempered to reach a hardness of 23-35 HRC, thus increasing their capacity to withstand shearing stresses and torsion effect.



Amongst all parts, the last stage gears are subjected to highest mechanical stresses. Higher centre distance which in turn results in higher module considerably increases the service factor.



Mechanical parts locked in their position by snap rings and spacers. This ensures better absorption of axial thrust and prolongs the life of bearings.



The surface is exposed to a bombardment of micro-spheres that induces compression and increases further the fatigue resistance.



If the intermediate shaft is rigidly supported on both ends, with no overhang wheel, imparts greater flexural strength and smoother meshing.



Smaller overhang of output shaft from supporting bearing in order to withstand higher radial loads.

# NANO



NANO is for single phase supply, three phase motors. This permits NANO to add to the well known power saving of variable speed drives, the possibility to replace the single phase motors (technically losing lot of

power) with the higher efficiency IE2 and IE3 three phase motors.



Setting and command can also be made by a PC, thanks to the free PC interface program "Motive Motor Manager"

Any NANO can be fixed to a wide range of motors of different power and size.

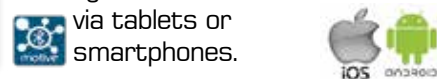


A voltage booster guarantees a stable torque Nm at very slow speed too.



Thanks to BLUE, motive bluetooth transmitter for NANO and NEO, and to the free App NANO, you can make the setting or command NANO

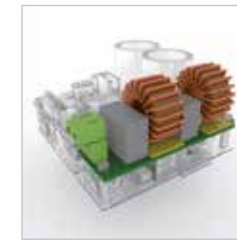
via tablets or smartphones.



Available also in "Ex" version, ATEX certified  
**Ex** II 2D Ex tb IIIC T135°C Db  
 Tamb: -20 +40 °C



NANO is also offered in the versions "NANO-COMP", "NANO-VENT" and "NANO-OLEO", with a SW specifically modified for the automatic speed+power adaptation to the required pressure and variable flow rate of air compressors, fans, pumps, hydraulic power packs.



The EMC filter makes NANO compatible not just with industrial environment, but also with light industrial, commercial end residential environments.

Features	Symbol	U.O.M	NANO-0.75	NANO-2.2
Inverter protection degree*	IP		IP65*	
Inverter input voltage	$V_{1n}$	V	1x110(-10%)÷240(+10%)	
Inverter input frequency	$f_{1n}$	Hz	50/60 (±5%)	
Inverter output frequency	$f_2$	Hz	200% $f_{1n}$ ( $f_2$ 0÷100Hz with $f_{1n}$ 50Hz)	
Rated output inverter current (to the motor)	$I_{2n}$	A	4	9

Table RP: Power range of motors that can be connected (at 230Vac)

KW motor	0.13	0.18	0.25	0.37	0.55	0.55	0.75	1.1	1.5	1.9	2.2
NANO-0.75											
NANO-2.2											

Table RD: Size range of IEC motors that can be connected

IEC Motor	63	71	80	90S	90L	100L	112M	132S
NANO-0.75								
NANO-2.2								

NANO can be commanded by analog controls or MODBUS.





# NEO WIFI

NEO-WiFi is a three-phase inverter designed as a competitive and user-friendly turnkey integrated system, with all parts, motor, inverter and control designed for outdoor use, and with standard remote control. The manufacturers of pumps, fans, and other machines can thus offer a finished "plug-in" product. Their customers need only to insert the plug, wherever it is installed, and decide if they want to bring the keypad with them.

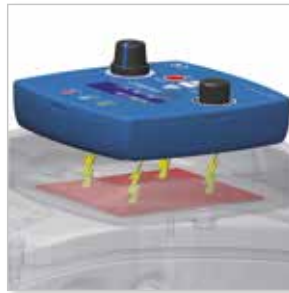


The keypad is available in two versions: with or without analogue controls.



Programming and control, that is also remote and wireless. A drastic reduction of installation costs.

To maintain the degree of protection and eliminate fragile and complicated connectors, the keypad is automatically powered by induction when the panel is



Modbus



housed in the lid of the NEO, or, when remote controlled, it is automatically powered by rechargeable batteries that are provided standard, or by BLOCK.

Any NEO can be fixed to a wide range of motors of different power and size.



Available also in "Ex" version, ATEX certified



II 2D Ex tb IIIC T135°C Db  
Tamb: -20 +40 °C



With PC and, thanks to BLUE, motive bluetooth transmitter for NANO and NEO, and to the free App NANO, you can make the setting or command NANO via tablets or smartphones.



The keypad can be positioned or removed from its seat without any tools, because it adheres to it with 4 magnets.



High degree of protection, against dust and water, for outdoor use.



A keypad can control simultaneously, or separately, up to 8 motors.



Know NEO-WIFI on

[https://www.youtube.com/watch?v=hUXJ47P\\_Qxo&feature=youtu.be](https://www.youtube.com/watch?v=hUXJ47P_Qxo&feature=youtu.be)

## NEO-COMP

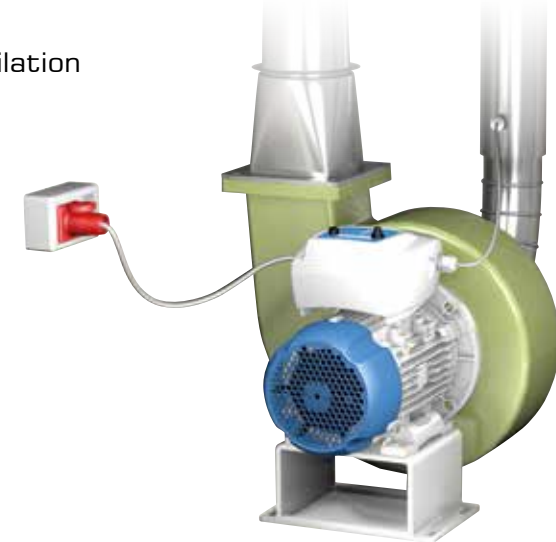
Compressors control unit



Know **NEO-COMP** and **NANO-COMP** on  
<https://www.youtube.com/watch?v=moFYX6gWCfw&feature=youtu.be>  
<https://www.youtube.com/watch?v=DKbZST69L9I&feature=youtu.be>

## NEO-VENT

VFD control unit for air suction and ventilation



Know **NEO-VENT** on  
<https://www.youtube.com/watch?v=dBcVtzZGyAM&feature=youtu.be>



Value	Symbol	UOM	WiFi / VENT / COMP / PUMP / OLEO				
			NEO-3	NEO-4	NEO-5.5	NEO-11	NEO-22
Max motor power if with 400V power supply		kW	3	4	5.5	11	22
Connectable IEC motor type			90 ÷ 132	90 ÷ 160			160 ÷ 200
Inverter protection degree	IP		IP65				
Inverter supply voltage	$V_{1n}$	V	3x 200-460				
Inverter supply frequency	$f_{1n}$	Hz	50-60				
Inverter output frequency	$f_2$	Hz	200% $f_{1n}$ [ $f_2$ 0-100Hz with $f_{1n}$ 50Hz]				
Rated output current from the inverter (to the motor)	$I_{2n}$	A	7	10	14	22	45
Maximum Starting torque / Rated torque ratio	Cs/Cn	Nm	150% (at $I_{2n}$ ) 300% (at $I_{2n}/2$ )			200% (7,5kW) 160% (11kW)	150%
Maximum WiFi keypad communication distance out in the open		mt	20				

Further features	WiFi / VENT / COMP / PUMP				
	NEO-3	NEO-4	NEO-5.5	NEO-11	NEO-22
Programmer with built-in clock and battery (to make it possible to plan starts and stops)	NO			YES	
EMC for INDUSTRIAL ENVIRONMENT (ref. EN 50081-2, para 5)	YES			YES Class A - Cat C2	
EMC for DOMESTIC, COMMERCIAL AND LIGHT INDUSTRIAL ENVIRONMENT	YES Class A - Cat C1			optional	
3PH power knife switch	optional				
Communication Protocol (from November 2014)	MODBUS				
Internal braking resistances	YES				



## NEO-PUMP

VFD for the automatic control of water pumping systems.



Know **NEO-PUMP** on <https://www.youtube.com/watch?v=7y1J4rFUVy8>

To fit well with the pump traditional drives for pumps require a sophisticated data setting.

**NEO-PUMP** is much easier to be installed since it makes an 90 seconds auto-tuning of the pump curve to suit its work to the system features without any calculation and manual setting



Alternate work to maximize each pump lifespan

## NEO-SOLAR

Island or hybrid drive for solar pumps and motors



Know **NEO-SOLAR** on <https://www.youtube.com/watch?v=zjJV6oSiLDA>

Technical feature	UOM	NEO-SOLAR-3	NEO-SOLAR-11	NEO-SOLAR-22
NEO protection degree				IP65
Min starting voltage (from solar panels)	V		250Vdc	
Stop voltage (from solar panels)	V		170Vdc	
Max voltage (from solar panels)	V		650Vdc	
Motor rated voltage and frequency	V Hz	3PH 190-460Vac +/- 5%		50/60Hz
Supply frequency to motor	Hz	20-110%		
Max output current from NEO-SOLAR to motor	A	7	22	45

Further features	NEO-SOLAR-3	NEO-SOLAR-11	NEO-SOLAR-22
Programmer with built-in clock and battery (to make it possible to plan starts and stops)	NO	YES	YES
Communication Protocol	MODBUS	MODBUS	MODBUS
MSPT working, to reach the max water quantity permitted by the sun	YES	YES	YES
Constant pressure working	YES	YES	YES
Programmable by motive wifi keypad	YES	YES	YES
Programmable by PC	YES	YES	YES
Programmable by smartphone/tablet	YES	YES	YES

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Motive configurator allows you to shape Motive products, combine them as you want, and finally to download 2D/3D CAD drawings, and a PDF datasheet.

**Search by performance**

If you're not sure about the best products combination that you should select for your purpose, you can input your wishes, like final torque, final speed, use, etc, and the configurator will act like a consultant.

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**Search by product**

To be used if you already know the product configuration that you want, and you just want to get quicker a PDF data sheet featuring performance data and dimensional drawings for 2D and 3D drawings.



free access without login  
<http://www.motive.it/configuratore.php>





## TERMS OF SALE AND GUARANTEE

### ARTICLE 1 GUARANTEE

1.1 Barring written agreements, entered into between the parties hereto each time, Motive hereby guarantees compliance with specific agreements.

The guarantee for defects shall be restricted to product defects following design, materials or manufacturing defects leading back to Motive.

The guarantee shall not include:

- \* Faults or damages ensuing from transport. Faults or damages ensuing from installation defects; incompetent use of the product, or any other unsuitable use.
- \* Tampering or damages ensuing from use by non-authorized staff and/or use of non-original parts and/or spare parts;
- \* Defects and/or damages ensuing from chemical agents and/or atmospheric phenomena (e.g. burnt out material, etc.); routine maintenance and required action or checks;
- \* Products lacking a plate or having a tempered plate.

1.2 Returns to credit or replace will be accepted only in exceptional cases; however returns of goods already used to credit or replace won't be accepted in any case.

The guarantee shall be effective for all Motive products, with a term of validity of 12 months, starting from the date of shipment.

The guarantee shall be subject to specific written request for Motive to take action, according to statements, as described at

the paragraphs herein below. By virtue of aforesaid approval, and as regards the claim, Motive shall be bound at its discretion, and within a reasonable time-limit, to alternatively take the following actions:

a) To supply the Buyer with products of the same type and quality as those having proven defective and not complying with agreements, free ex-works; in aforesaid case, Motive shall have the right to request, at Buyer's charge, early return of defective goods, which shall become Motive's property;

b) To repair, at its charge, the defective product or to modify the product which does not comply with agreements, by performing aforesaid action at its facilities; in aforesaid cases, all costs regarding product transport shall be sustained by the Buyer.

c) To send spare parts free of charge: all costs regarding product transport shall be sustained by the Buyer.

1.3. The guarantee herein shall assimilate and replace legal guarantees for defects and discrepancies, and shall exclude any other eventual Motive liability, however caused by supplied products; in particular, the Buyer shall have no right to submit any further claims. Motive shall not be liable for the enforcement of any further claims, as of the date the guarantee's term of validity expires.

### ARTICLE 2 CLAIMS

2.1. Claims, regarding quantity, weight, gross weight and colour, or claims regarding faults and defects in quality or compliance, and which the Buyer may discover on goods delivery, shall be submitted by a max. 7 days of aforesaid discovery, under penalty of nullity.

### ARTICLE 3 DELIVERY

3.1. Any liability for damages ensuing from total or partial delayed or failed delivery, shall be excluded.

3.2. Unless differently communicated by written to the Client, the transport terms have to be intended ex-works.

### ARTICLE 4 PAYMENT

4.1. Any delayed or irregular payments shall entitle Motive to cancel ongoing agreement, including agreements which do not regard the payments at issue, as well as entitling Motive to claim damages, if any. Motive shall, however, have the right, as of payment's due date and without placing in arrears, to claim interest for arrears, to the extent of the discount rate in force in Italy, increased by 12 points. Motive shall also have the right to withhold material under repair for replacement. In the case of failed payment, Motive shall have the right to cancel all guarantees of materials, as regards the insolvent Client.

4.2. The Buyer shall be bound to complete payment, including cases whereby claims or disputes are underway.



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