GENERAL CATALOGUE

motive®







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

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 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 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)

ACCREDIA
SGQ N° 049A

Per l'Organismo di Certificazione
For the Certification Body
TÜV 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 / *Issuing Date*
2022-02-28

PRIMA CERTIFICAZIONE / *FIRST CERTIFICATION:* 2001-07-20

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

TÜV Italia • Gruppo TÜV SÜD • Via Carducci 125, Pal. 23 • 20099 Sesto San Giovanni (MI) • Italia • www.tuvsud.com/it

AEO

Autorizzazione AEO — **IT AEOF 21 1809**

1. Titolare dell'Autorizzazione AEO
MOTIVE S.R.L.
Codice EORI: IT02980380174

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)

5. Data di rilascio dell'Autorizzazione 15/05/2021

Il Direttore dell'Ufficio

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

MADE IN ITALY

INDEX

motive®

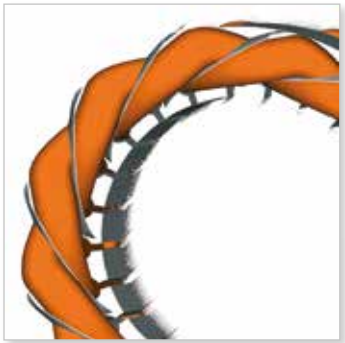
DELPHI

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.

SIZES 56 -132

Available also in “Ex” version, ATEX certified

II 2G Ex eb IIC T4 Gb
II 2D Ex tb IIIC T120°C IP65 Db
Tamb=-20 +40°C or +60°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.

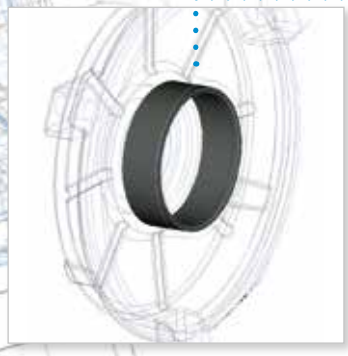
The frame, up to 132 included, is made in die casting aluminium alloy, from size 160 up to 355 the frame is made in cast iron.

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

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

All three-phase Delphi motors, from size 56 to size 355, standard, ATEX, or brake motors, are covered by the international type approval certification for marine use issued by RINA.



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

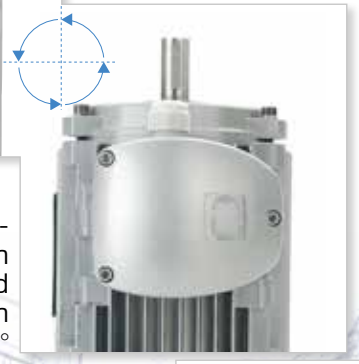
type	of	power
56	aluminum	0,09kW-11kW
63		
71		
80		
90		
100		
112		
132		
160	cast iron	4kW-315kW
180		
200		
225		
250		
280		
315		
355		

REGISTERED DESIGN

Know DELPHI 56-132 on
http://www.youtube.com/watch?v=G2EWOuOHIjU

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



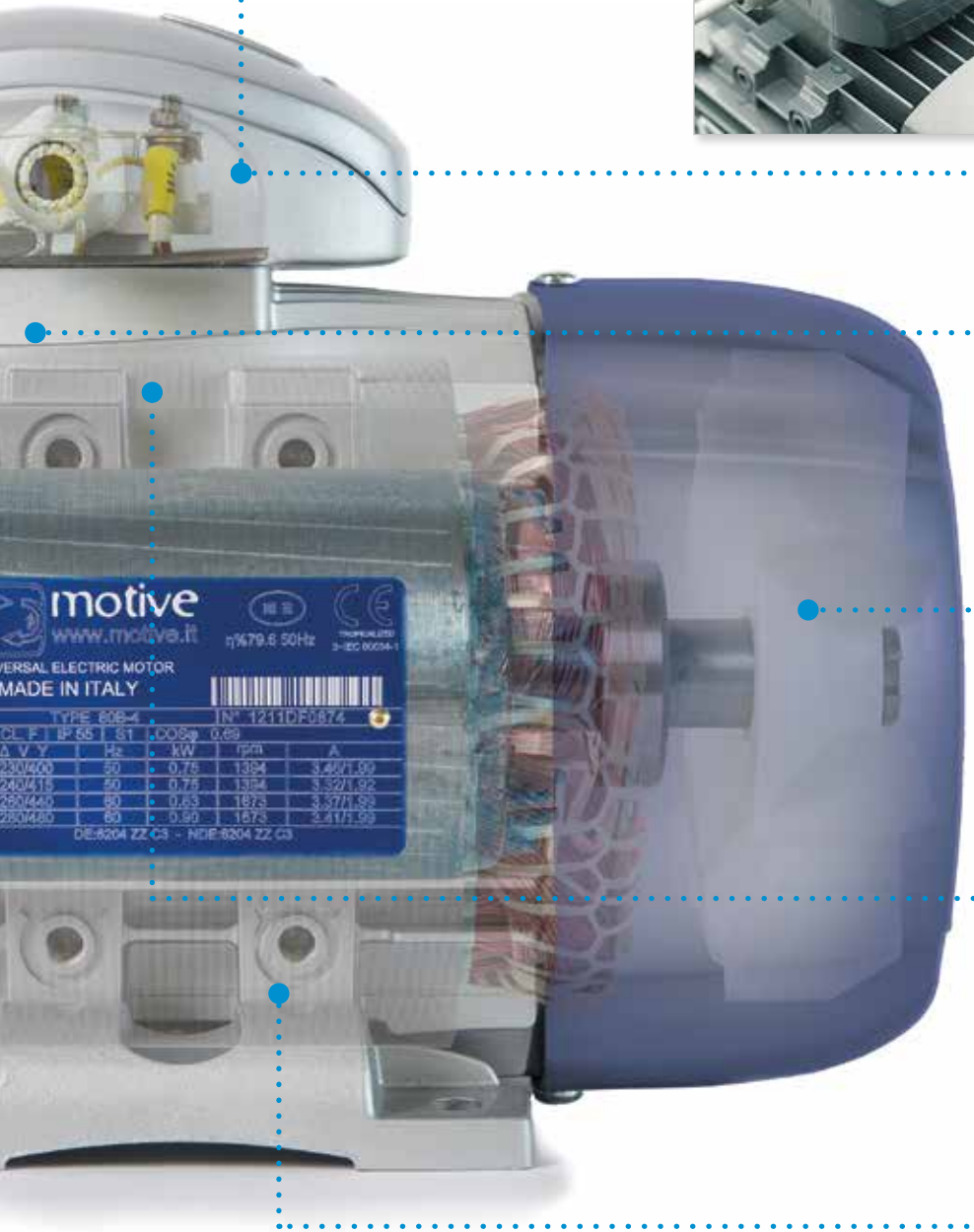
The connection box can be rotated of 360° with steps of 90°

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 "FeP01". 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 permittig the terminal box to be positioned up, right or left.

DELPHI

SIZES 160-355

Available also in “Ex” version, ATEX certified
II 2G Ex eb IIC T4 Gb
II 2D Ex tb IIIC T120°C IP65 Db
Tamb=-20 +40°C or +60°C

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

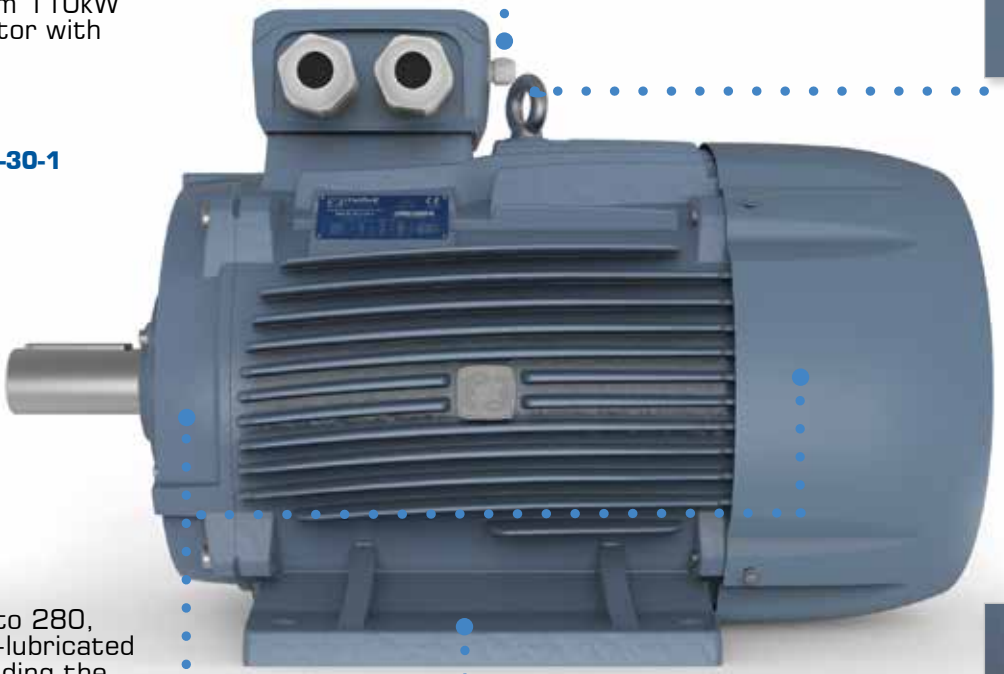
Motive three phase motors from size 160 up to size 355 are made in cast-iron and have all those main features of the Delphi series, among which:

- 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))

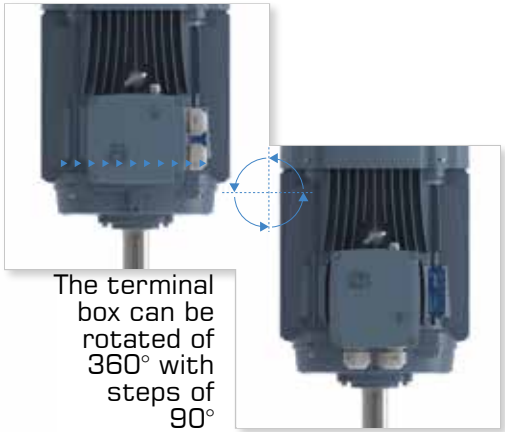
IE2, high efficiency class IEC 60034-30-1
IE3, premium efficiency class IEC 60034-30-1
IE4, super premium efficiency class IEC 60034-30-1

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))

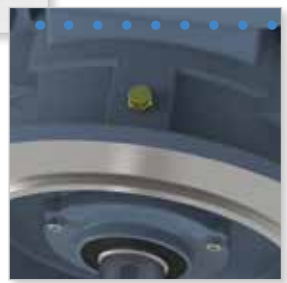


Keeping the same sealing system of the whole delphi series, the terminal box up to size 280 is made in aluminum, thus guaranteeing its IP65 protection index without being affected by the usual finishing imperfections of the cast iron



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

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")

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

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

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

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

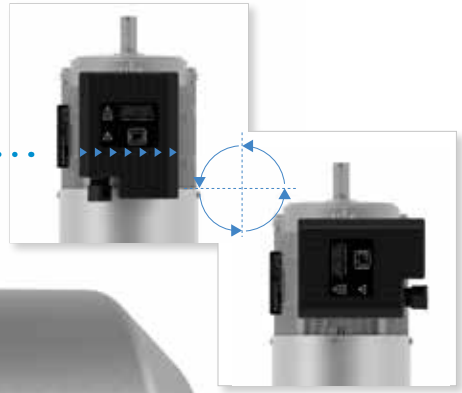
MONO

Motive motors 1PH 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



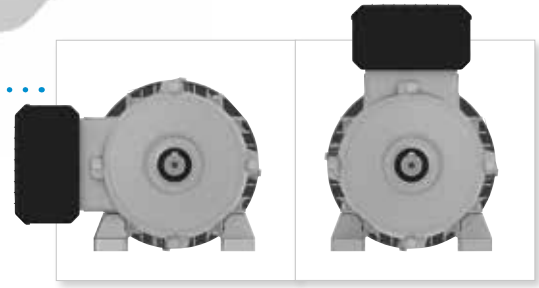
The connection box can be rotated

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

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

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 permittig the terminal box to be positioned up, right or left.



DELFIRE SERIES, 100°C RESISTANT MOTORS

"DELFIRE" 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 lifespam 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		cast iron	7,5 - 37
160			
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 he 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

The standard version has an IP55 protection index. Also available in IP56, IP65, and IP66 versions.

	ATDC						AT24				ATDC AT24	ATTD
IEC Type	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

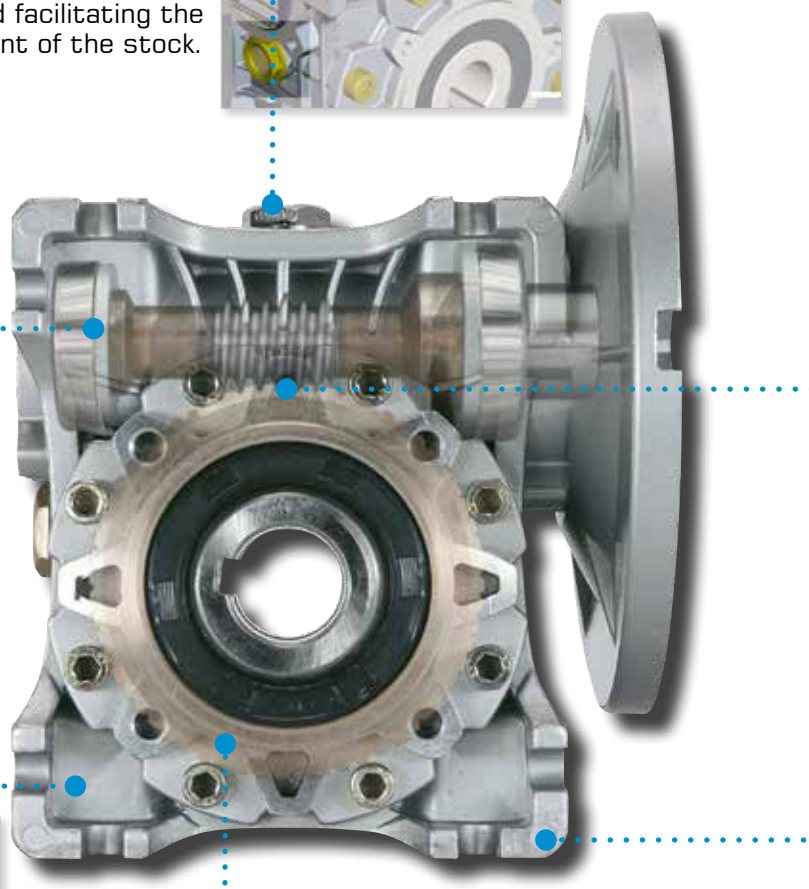
Available also in "Ex" version, ATEX certified
II 2G c IIB T4
II 2D c IIIB T135°C
Tamb= -20 +40 °C

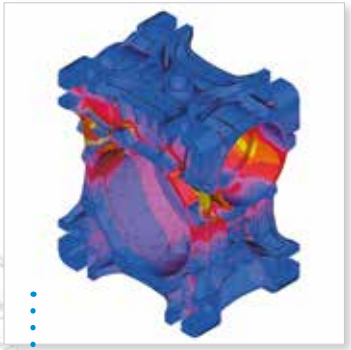
Lubrication is already provided by motive with long-life synthetic oil up to size BOX90, and with mineral oil from size BOX110.

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.

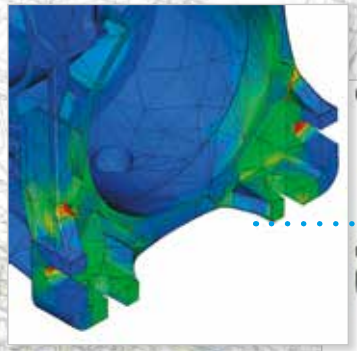
From type 75 and up, 2 taper roller bearings are mounted on the wormshaftmwheel.

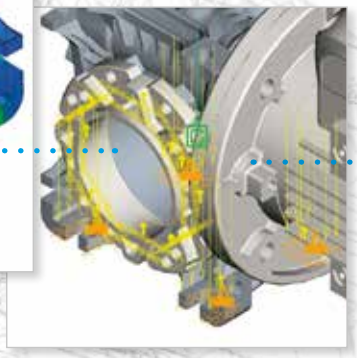
Moreover, the combination of this characteristic and 2 nilos (mounted on size 75 and up to keep lubrication grease inside the bearings even when they are not touched by the oil bath), permits the mounting of the whole BOX range, from the size 25 to the size 150, in the positions V5 and V6 without any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



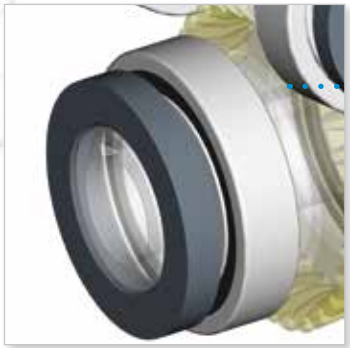


The new patented "BOX" series of worm gear units is made with die-casting aluminium housing from size 25 up to 90, and in cast iron from size 110.





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.

REGISTERED DESIGN

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.

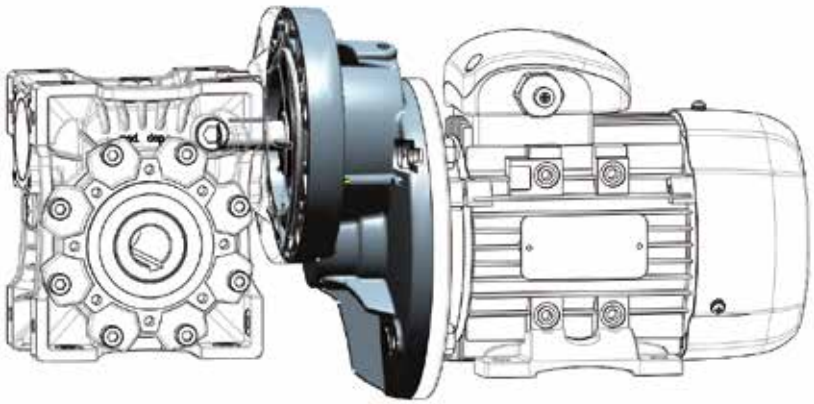
STADIO

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

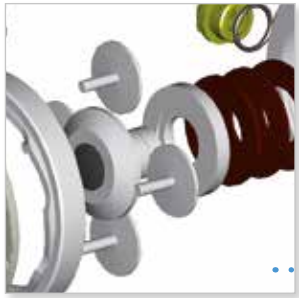


VARIO

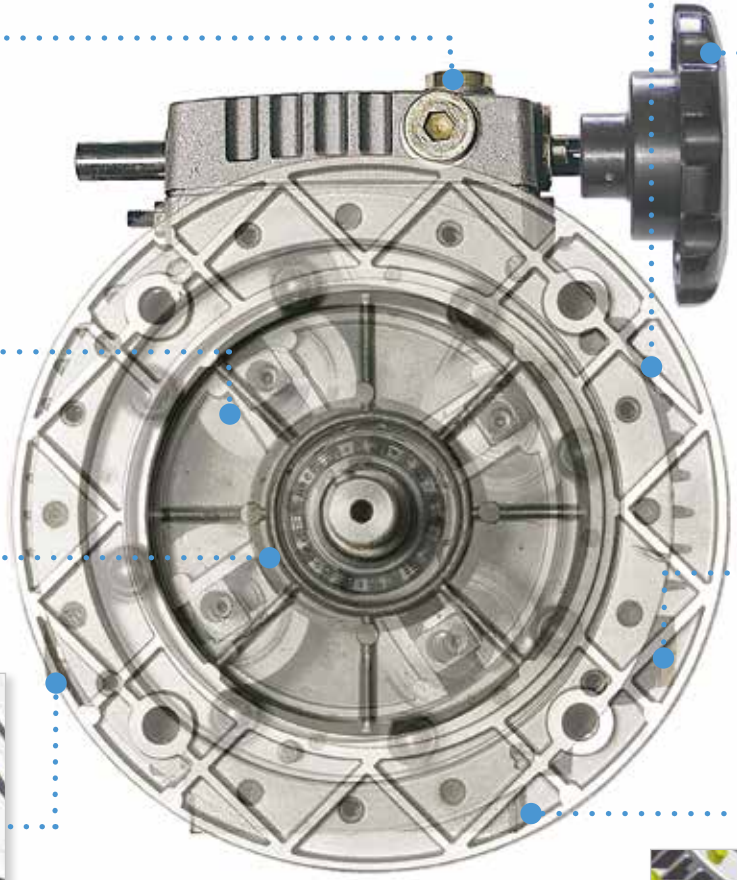
Each VARIO is equipped with filler, level and breather plugs to make it suitable for any mounting position.

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.



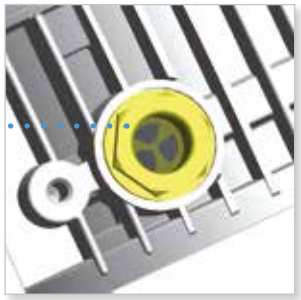
Each VARIO is equipped with filler, level and breather plugs to make it suitable for any mounting position.



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

TC double lip oil seals.

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



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

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

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.

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			■

ROBUST

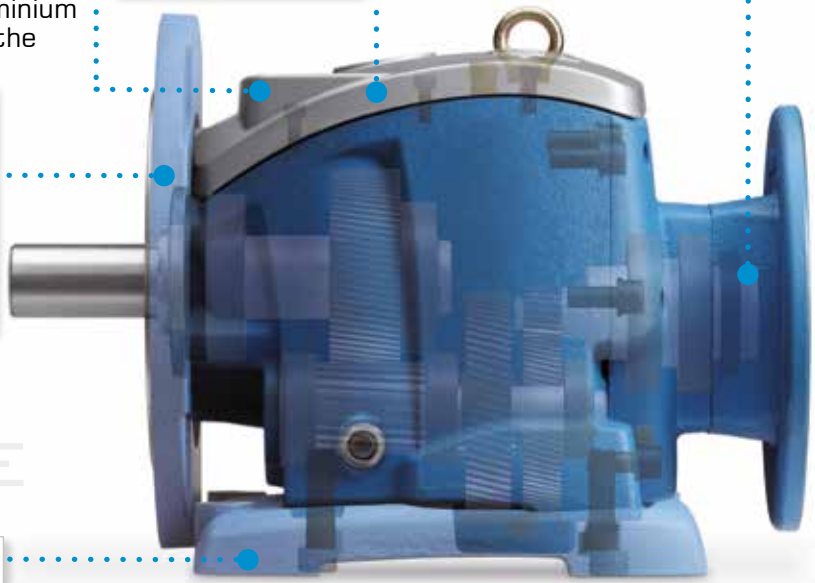
Uniquely contoured, rigid, precise, monobloc, cast iron Body, Base and Flange ensure extreme robustness.

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

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

Easy to examine and maintan.

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

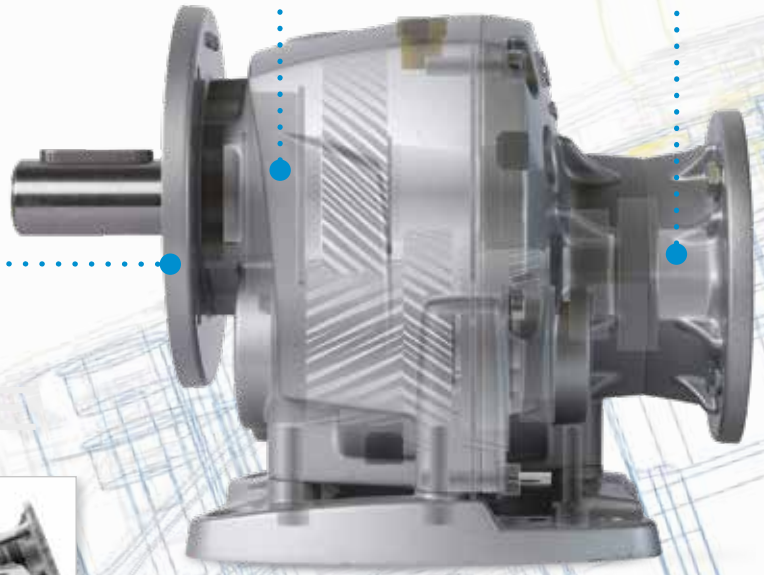
+ mechanical parts locked in their positions by snap rings and spacers.This also ensures better absorbtion of axial thrust and prolongs the life of bearings

ROBUS-A2

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

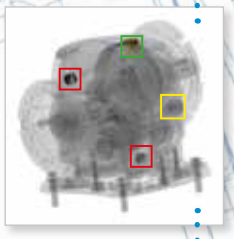


IEC flange and hollow shaft.
Choice of hollow input flanges permits direct mounting of any standard motor

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

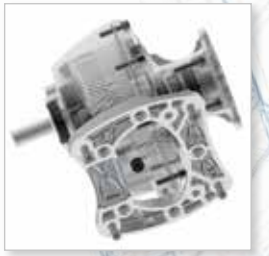
Unique construction of Robus-A2 makes it possible to mount any size in any position.
This flexibility is achieved by:

+ 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 absorbtion of axial thrust and prolongs the life of bearings



A removable base, with several fixing holes, makes ROBUS-A2 interchangeable with most of the gearboxes brands

REGISTERED DESIGN

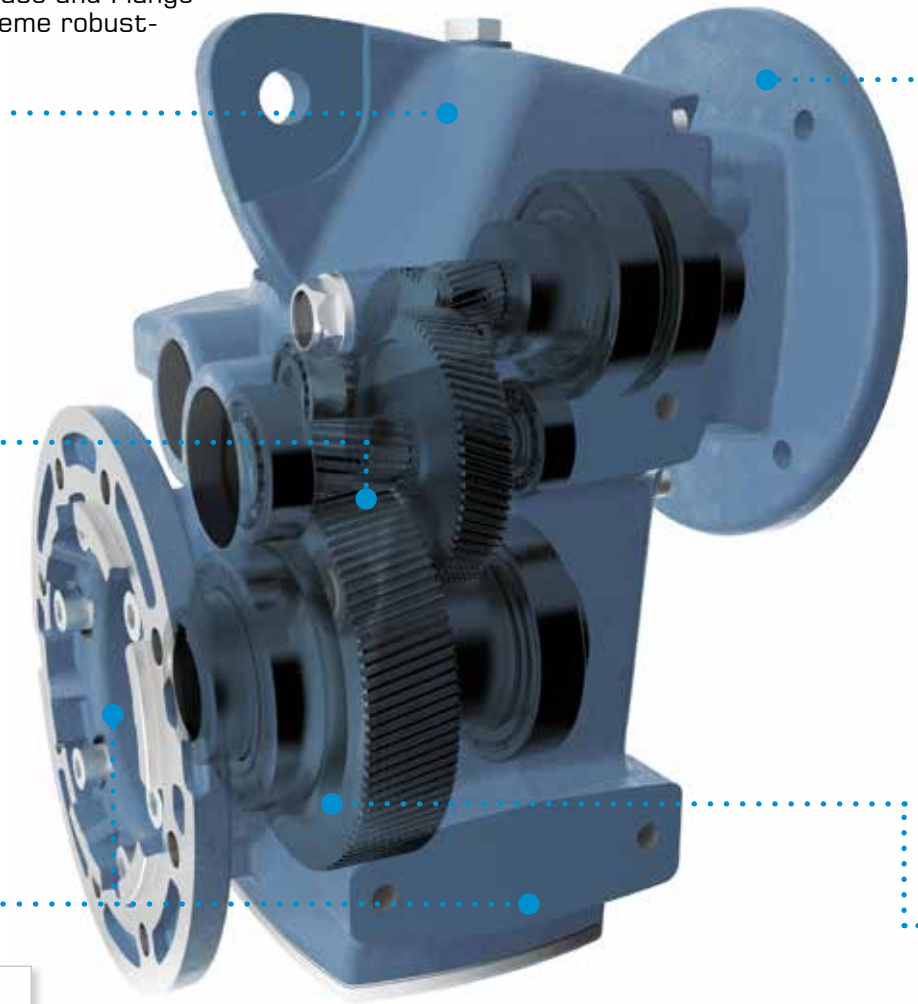
Uniquely contoured, rigid, precise, monobloc, cast iron Body, Base and Flange ensure extreme robustness.

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



FLEXIBLE MOUNTING

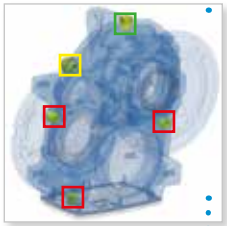
REGISTERED DESIGN

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 absorbtion of axial thrust and prolongs the life of bearings

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					■	■	■	■	■	■

ROBUST

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

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

Available also in "Ex" version, ATEX certified

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

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

FLEXIBLE MOUNTING

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

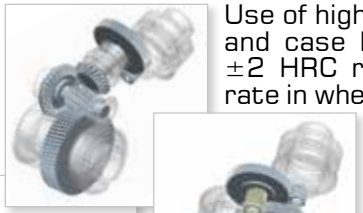
+ mechanical parts locked in their positions by snap rings and spacers. This also ensures better absorbtion of axial thrust and prolongs the life of bearings

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.

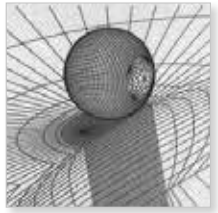


Use of high strength steels and case hardening to 58 ±2 HRC reduce the wear rate in wheels. All cylindrical gears are profile ground to Din 3962 class 6 accuracy for low noise and high efficiency.

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

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.

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



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 strengh and smoother meshing.

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

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.

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 efficenty 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"

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.

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 trasnsmitter for NANO and NEO, and to the free App NANO, you can make the setting or command NANO via tablets or smartphones.

NANO can be commanded by analog controls or MODBUS.

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			■	■	■	■	■	■

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.

The keypad can be fixed to a metal wall with its magnets or to a concrete wall using inserts.

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

Modbus

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 trasnsmitter for NANO and NEO, and to the free App NANO, you can make the setting or command NANO via tablets or smartphones.

iOS android

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

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

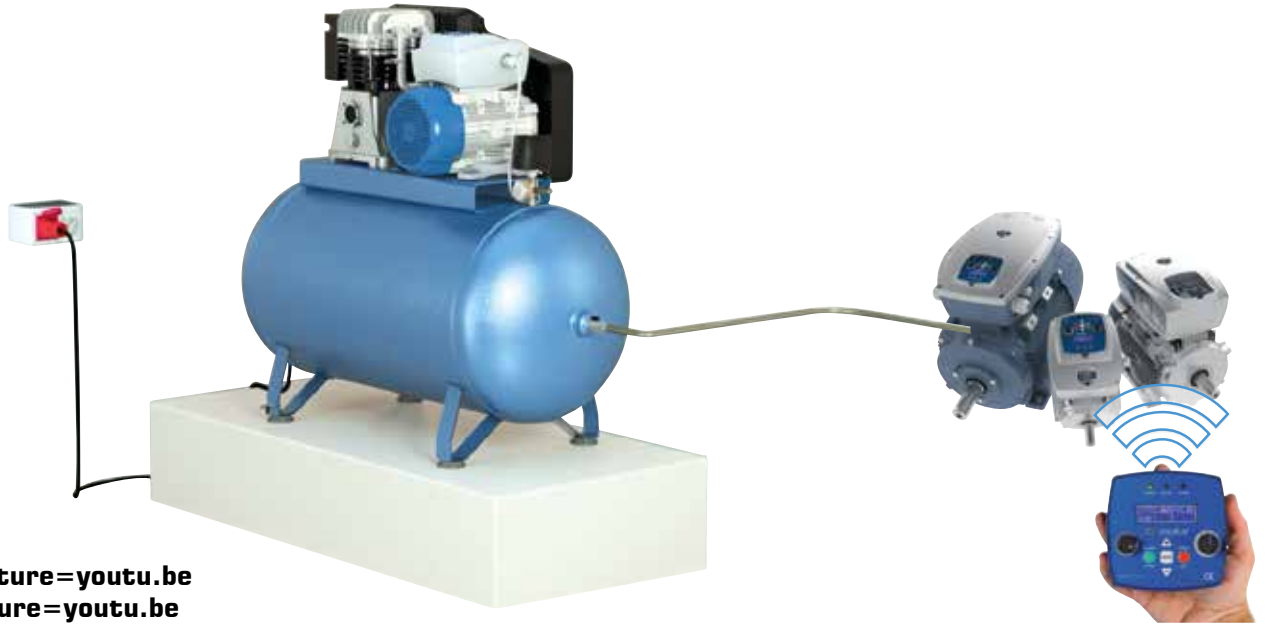
Know NEO-WIFI on https://www.youtube.com/watch?v=hUXJ47P_Qxo&feature=youtu.be

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

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

NEO-COMP & NANO-COMP

NEO/NANO-COMP controls the COMPressor pressure and adjusts automatically the motor speed according to the flow rate



Know NEO-COMP and NANO-COMP on

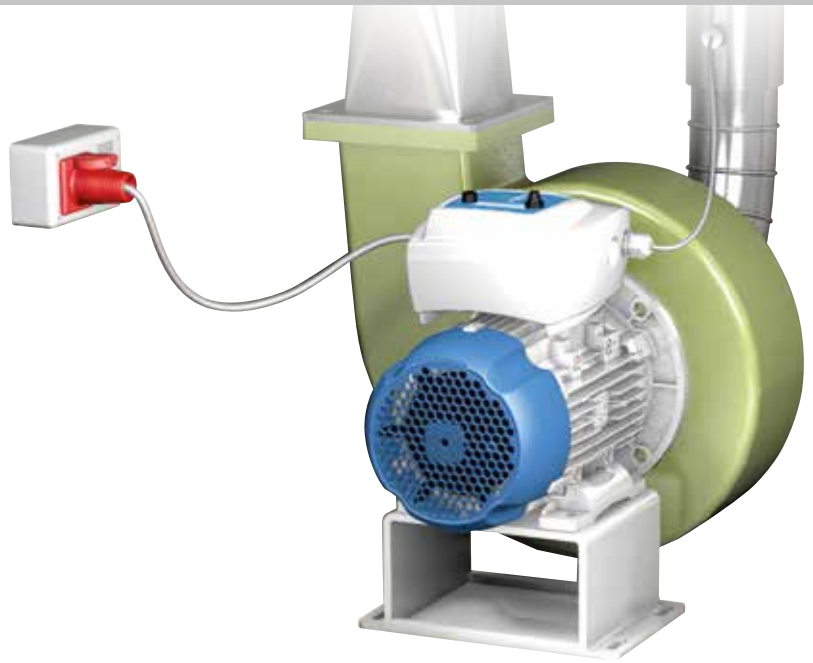
https://www.youtube.com/watch?v=moFYX6gWCfw&feature=youtu.be
https://www.youtube.com/watch?v=DKbZST69L9I&feature=youtu.be

Value	Symbol	UOM	NEO-COMP-3kW	NEO-COMP-4kW	NEO-COMP-5.5kW	NEO-COMP-11kW	NEO-COMP-22kW	NANO-COMP-1.1kW	NANO-COMP-2.2kW
NEO/NANO protection degree*			IP65					IP65	
NEO/NANO supply voltage	V_{1n}	V	3x 200÷460					1x110(-10%)÷240(+10%)	
NEO/NANO supply frequency	f_{1n}	Hz	50-60					50-60	
Compressor pressure		Bar	0.01 ÷ 160					0-160	
Inverter output frequency	f_2	Hz	Max f_{1n} x 200%					200% f_{1n} [$f_2$0-100Hz if f_{1n}50Hz]	
Rated output current from NEO/NANO (to the motor)	I_{2n}	A	7	10	14	22	45	4	9
Maximum WiFi keypad-NEO communication distance out in the open		mt	20						

Further characteristics	NEO-COMP-3kW	NEO-COMP-4kW	NEO-COMP-5.5kW	NEO-COMP-11kW	NEO-COMP-22kW	NANO-0.75kW	NANO-2.2kW
EMC for DOMESTIC, COMMERCIAL AND LIGHT INDUSTRIAL ENVIRONMENT (ref. EN 50081-1, para 5)	YES Class A - Cat C1			optional		YES Class B (with NANFILT)	
EMC for INDUSTRIAL ENVIRONMENT (ref. EN 50081-2, para 5)	YES			YES Class A - Cat C2			
Communication Protocol	MODBUS					MODBUS RS485	

NEO-VENT & NANO-VENT

NEO/NANO-VENT controls the air pressure in the system to keep it constant, thus adjusting automatically the motor speed and the consumed power of the ventilation and suction systems in residential and industrial applications, according to the air flow requested in each moment by the users.



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

Value	Symbol	UOM	NEO-VENT-3kW	NEO-VENT-4kW	NEO-VENT-5.5kW	NEO-VENT-11kW	NEO-VENT-22kW	NANO-VENT-1.1kW	NANO-VENT-2.2kW
NEO-VENT protection degree*			IP65					IP65	
NEO-VENT supply voltage	V_{1n}	V	3x 200÷460					1x110(-10%)÷240(+10%)	
NEO-VENT supply frequency	f_{1n}	Hz	50-60					50-60	
Air pressure		bar psi	Bar 0.010 ÷ 16 bar Psi 0.14 ÷ 232 psi					0-16 Psi	
NEO-VENT drive output frequency	f_2	Hz	Max f_{1n} x 200%					200% f_{1n} [$f_2$0-100Hz if f_{1n}50Hz]	
Rated output current from NEO-VENT (to the motor)	I_{2n}	A	7	10	14	22	45	4	9
Maximum WiFi keypad-NEO-VENT communication distance out in the open		mt	20						

Further characteristics	NEO-VENT-3kW	NEO-VENT-4kW	NEO-VENT-5.5kW	NEO-VENT-11kW	NEO-VENT-22kW	NANO-0.75kW	NANO-2.2kW
EMC for DOMESTIC, COMMERCIAL AND LIGHT INDUSTRIAL ENVIRONMENT (ref. EN 50081-1, para 5)	YES Class A - Cat C1			optional		YES Class B (with NANFILT)	
EMC for INDUSTRIAL ENVIRONMENT (ref. EN 50081-2, para 5)	YES			YES Class A - Cat C2			
Communication Protocol	MODBUS					MODBUS RS485	

NEO-PUMP

VFD for the automatic control of water pumping systems.

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

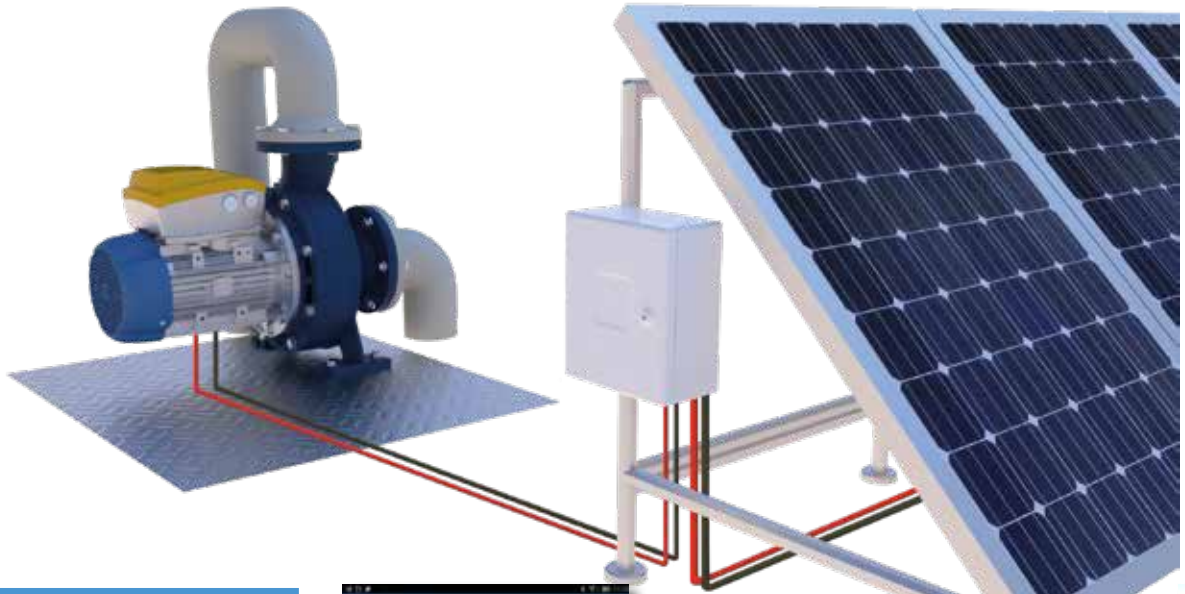
Know NEO-PUMP on https://www.youtube.com/watch?v=7y1J4rFUVy8

Physical quantity	Symbol	UOM	NEO-PUMP-3kW	NEO-PUMP-11kW
NEO protection degree			IP65	IP65
Inverter supply voltage	V_{1n}	V	3 x 200-460	3 x 200-460
Inverter supply frequency	f_1	Hz	50-60	50-60
Inverter output frequency	f_2	Hz	max f_1 x 110%	max f_1 x 110%
Rated output current from the inverter (to the motor)	I_{1n}	A	8.0	25
Maximum Starting torque / Rated torque ratio	Cs/Cn	%	150%	150%
Maximum WiFi keypad-inverter communication distance out in the open		mt	20	20

Further characteristics	NEO-PUMP-3kW	NEO-PUMP-11kW
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)	YES	YES Class A - Cat C2
EMC for DOMESTIC, AND LIGHT INDUSTRIAL ENVIRONMENT (ref. EN 50081-1, para 5)	YES Class A - Cat C1	optional
3PH power knife switch	optional	optional
Communication Protocol	MODBUS	MODBUS

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

Motive Solar Utility:
It calculates the correct photovoltaic generator sizing and choses the right NEO-SOLAR for you after that you input some info like the panels data, max temperature, motor power, etc.

Only for Android

1. Download the APP from play-store or Google play
2. Digit “Motive Solar”
3. Click on Motive Solar Utility icon motive

NEO-OLEO & NANO-OLEO

NANO-OLEO e NEO-OLEO controllano la pressione dell'olio e la portata delle centraline oleodinamiche monofase o trifase, fino a 22kW, e regolano così automaticamente la velocità e la potenza consumata in base al carico di lavoro richiesto in ciascun momento

Know NEO/NANO-OLEO on https://youtu.be/-m7uT6MnDq4

Value	Symbol	UOM	NEO-OLEO-3kW	NEO-OLEO-4kW	NEO-OLEO-5.5kW	NEO-OLEO-11kW	NEO-OLEO-22kW	NANO-OLEO-1.1kW	NANO-OLEO-2.2kW
NEO/NANO protection degree*			IP65					IP65	
NEO/NANO supply voltage	V_{1n}	V	3x 200-460					1x110(-10%)÷240(+10%)	
NEO/NANO supply frequency	f_{1n}	Hz	50-60					50-60	
NEO/NANO output frequency	f_2	Hz	200% f_{1n} [$f_2$0-100Hz if f_{1n}50Hz]					200% f_{1n} [$f_2$0-100Hz if f_{1n}50Hz]	
Rated output current from the inverter (to the motor)	I_{2n}	A	7	10	14	22	45	4	9
Maximum Starting torque / Rated torque ratio	Cs/Cn	Nm	150%			200% (7,5kW) 160% (11kW)	150%	150%	
Maximum WiFi keypad-inverter communication distance out in the open		mt	20						

Further characteristics	NEO-OLEO-3kW	NEO-OLEO-4kW	NEO-OLEO-5.5kW	NEO-OLEO-11kW	NEO-OLEO-22kW	NANO-0.75kW	NANO-2.2kW
Bluetooth communication with mobile devices	YES (opt. with BLUE device)					YES (opt. with BLUE device)	
EMC for INDUSTRIAL ENVIRONMENT (ref. EN 50081-2, para 5)	YES			YES Class A - Cat C2	YES Class A - Cat C2	YES Class B (with NANFILT)	
EMC for DOMESTIC, COMMERCIAL AND LIGHT INDUSTRIAL ENVIRONMENT (ref. EN 50081-1, para 5)	YES (since V2.01) Class A – Cat C1			optional	optional		
Built in potentiometer with Knob and Unit Scale IP65	YES (with NANPOT)					YES (with NANPOT)	
3PH Power Switch	optional cod.INTEM3X32A				optional cod.INTEM3X63A	optional cod. INTEM1X12A	
Communication Protocol	MODBUS RS485					MODBUS RS485	

A universal expandable information system comprising of sensors + gateway + platform + pushnotifier, open, autotuning, IIoT, machine learning and A.I., ALL IN ONE

We saw
-toy sensors that had to be thrown away when the battery was down,
-sensors giving one number data per day (how do you understand, for example, abnormal vibrations if someone was using a hammer nearby in that moment?),
-mouths filled of the word "artificial intelligence" when only 2 (vibration, heating) neurons were there, we heard
-talking about "machine learning" when it was us that had to state a tolerance for each taken value,
-people adding the "AI" term when the taken values correlations were not learned.

Well, it was just nice to see a number in an app and see it as a solution... but how useful was it really?

And what if now we had a UNIVERSAL EXPANDABLE SENSING permanent system comprising of gateway + platform + pushnotifier, open, autotuning, IoT, machine learner, all-in-one and not a complicate assembly of devices, that incorporates the most brilliant patented Artificial Intelligence for predictive maintenance (a REAL one, and not just a marketing word)? And what if that not only receives data, but can also send commands from an app (slow down, stop, etc.)?

We would be faced with something that can really do predictive maintenance but, more importantly, that can do a lot more than that.
A dream? No, it's already there. We invented and patented it. It is called DOCTOR 4.0

Industrial invention patent No. 102021000024412

Configure what you need by this automatic consultant, and get CAD files and data sheets

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.
It will give you a list of applicable product configurations; you can then download a PDF data sheet featuring performance data and dimensional drawings for each configuration, as well as 2D and 3D drawings.

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-authorised 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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