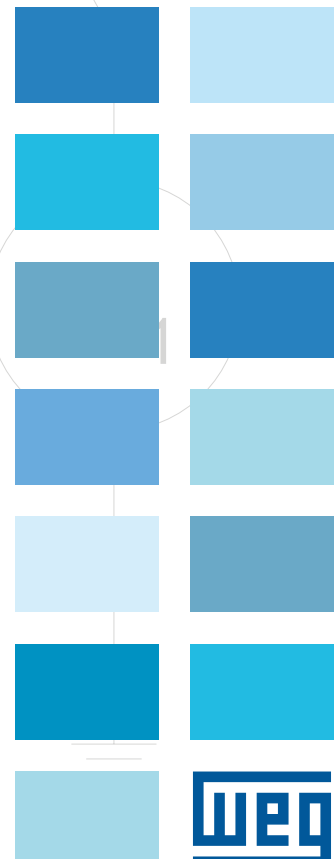


## WGM20 Line

Three-Phase Induction  
Motors Water Jacket  
Cooling System





# THREE-PHASE INDUCTION MOTORS

## WGM20 Line - Water Jacket Cooling System

WGM20 motor is a compact product that was designed to meet several industrial applications. This motor is suitable to operate in reduced-space and aggressive environments that demand low noise level and minimum thermal dissipation to the environment. The product was designed with a cooling system consisting of longitudinal cooling water channels, allowing inspection and cleaning much easier, then reducing maintenance costs.

### Features and Benefits



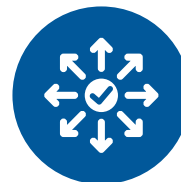
Reduced noise  
levels



Suitable for VFD  
application



Minimum thermal  
dissipation to the  
environment



Reduced  
dimensions



## Design

Designed with state-of-the-art technology by R&D and engineering specialists with the application of superior raw materials and modern software, the WGM20 motors are suitable for industrial and marine applications. Its modern concept resulted a high performance and reliable product even under the most severe operational conditions. This motor line can be supplied with Marine Certification such as Lloyds, Bureau Veritas, ABS and DNV.



Suitable to operate under severe conditions and aggressive environments



Easy cleaning of water cooling channels



Accessories installed inside the motor



Terminal box easy to be rotated



New bearing regreasing system

## Technical Features

### Horizontal Motor

- Output power: 200 up to 2,800 kW
- Frame sizes: 355 up to 560 (IEC)
- Voltage: 400 up to 4,160 V
- Number of poles: 4 to 8
- Frequency: 50 or 60 Hz
- Insulation class: F
- Service factor: 1.0
- Degree of protection: IP55 and IP56
- Cooling method: IC71W
- 180° rotational terminal box

### Vertical Motor

- Output power: 200 up to 2,000 kW
- Frame sizes: 355 up to 500 (IEC)
- Voltage: 400 up to 4,160 V
- Number of poles: 4 to 8
- Frequency: 50 or 60 Hz
- Insulation class: F
- Service factor: 1.0
- Degree of protection: IP55 and IP56
- Cooling method: IC71W
- 90° rotational terminal box

### Standard Accessories

- Pt-100 - 2 per phase and 1 per bearing
- Pt-100 - water inlet and outlet
- Water leakage detector
- Space heaters
- NDE insulated bearing
- Grounding terminal on the frame and T-box
- Stainless steel nameplate
- Terminal box with blind plate for cable inlet
- Drain plugs

### Optional Features

- Encoder
- Vibration sensors
- Flange connection for water inlet/outlet
- Water pressure switch
- Water flow switch
- Cable glands or Multi Cable Transit (MCT)
- Degree of protection: IP56

### Special Features

- Brake system
- Bearing thermometer
- Water flow regulator valve
- Marine Certification: ABS, Lloyd's Register, DNV and BV
- Ex-n protection (explosive atmospheres)

*Note: other features on request.*





## Applications

WGM20 motors are suitable for a wide variety of applications including: fans, pumps, compressors, rolling mills, main and lateral thrusters, hoists and others in the main market segments:



**Marine**



**Cement**



**Mining**



**Pulp & Paper**



**Petrochemical**



**Water & Waste Water**



**Steel Industry**



**Sugar & Ethanol**

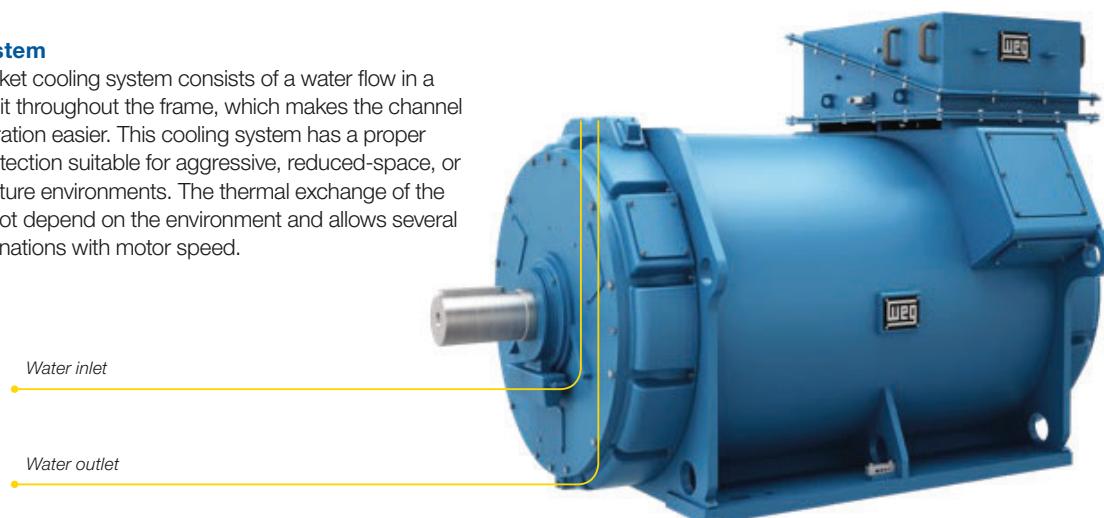


**Oil & Gas**

## Mounting Features

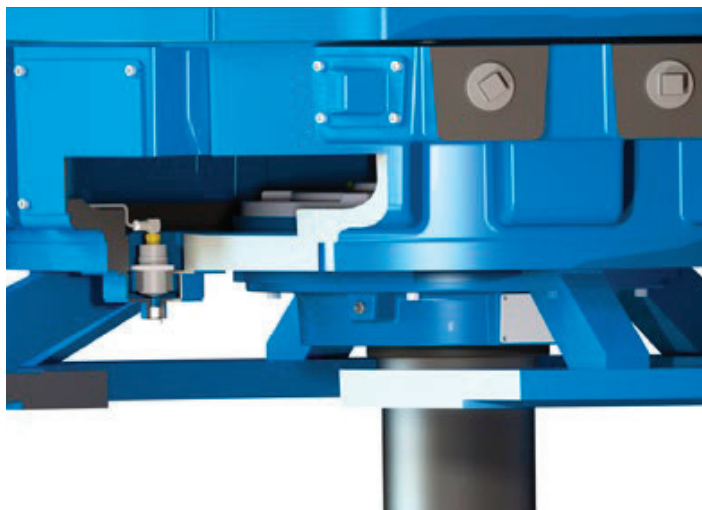
### Cooling System

The water jacket cooling system consists of a water flow in a “zigzag” circuit throughout the frame, which makes the channel cleaning operation easier. This cooling system has a proper degree of protection suitable for aggressive, reduced-space, or high-temperature environments. The thermal exchange of the motor does not depend on the environment and allows several torque combinations with motor speed.



### Protected Accessories

The WGM20 motor was designed in such a way to keep all accessories protected inside the motor, which makes the line more solid. Although accessories are assembled inside the motor, they are easily accessed for maintenance.

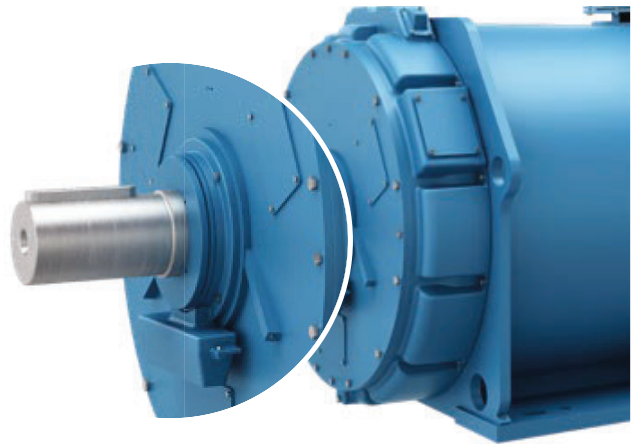


### Water Type

The water cooling channels are suitable to operate with treated industrial water and meet the majority of the water specifications available in the industry. The design flexibility and robustness of WGM20 motor allow operation with several water inlet temperatures and multiple types of additives, such as antifreeze, anticorrosive, among others.

### Bearings

Grease lubricated bearings have a grease storage system that does not require to remove the old grease at each lubrication interval. Another feature is that the DE and NDE bearings are the same, reducing the amount of replacement parts in stock. As standard, the life (L10 nm) of the bearing is 80,000 hours. Other optional features, such as sleeve bearings, on request.



### Terminal Box

The T-box design allows the motors to be assembled in places with reduced height, with the terminal box near the ceiling. Another benefit of this T-box design is the way it is attached to the frame, where it is possible to rotate it for horizontal motors by 180° and for vertical motors by 90°.



Horizontal motor T-box



Vertical motor T-box

### Winding and Insulation System

The winding process is specially designed and specified according to the rated voltage and the motor application. Motor coils are produced with rectangular copper wire, preformed and completely insulated with mica-based porous tape. Conducting and semiconducting tapes are also used for the winding process, wrapping the coils and ensuring proper characteristics to the required insulation level. The insulation system is based on the Vacuum Pressure Impregnation (VPI) process. Using epoxy resins, this system ensures proper winding insulation in a process totally free of gas emission, which are harmful to the environment. The insulation system is applied to LV and HV machines from 380 to 15,000V.

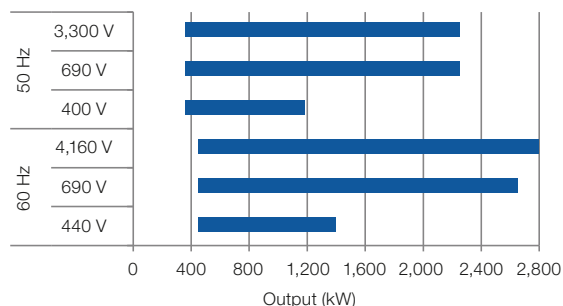
### Suitable for VFDs

The WGM20 motor is suitable for VFD applications.

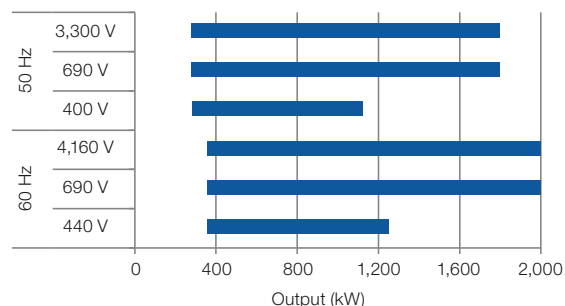


## Rated Output

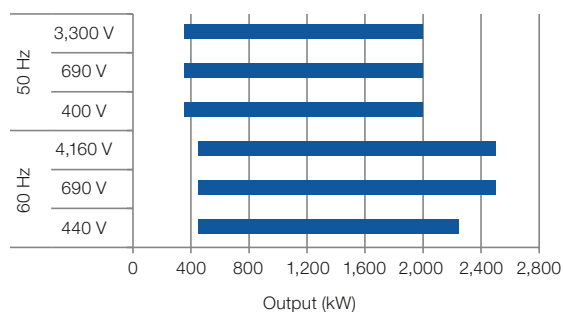
### 4 Poles / Horizontal



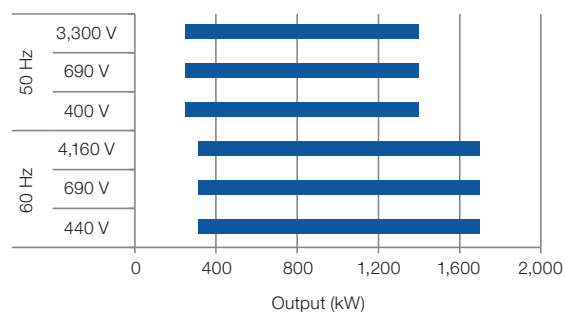
### 4 Poles / Vertical



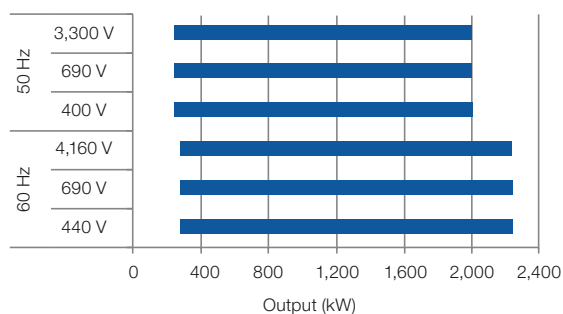
### 6 Poles / Horizontal



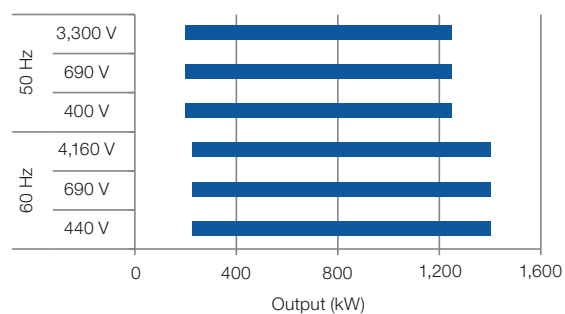
### 6 Poles / Vertical



### 8 Poles / Horizontal



### 8 Poles / Vertical

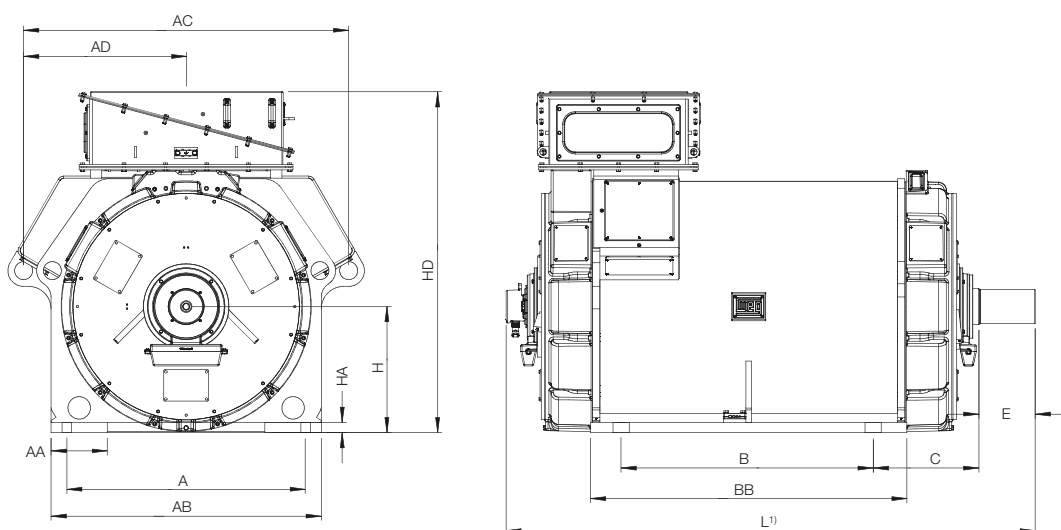


Note: values subject to change without prior notice. Other values, on request.



## Mechanical Features

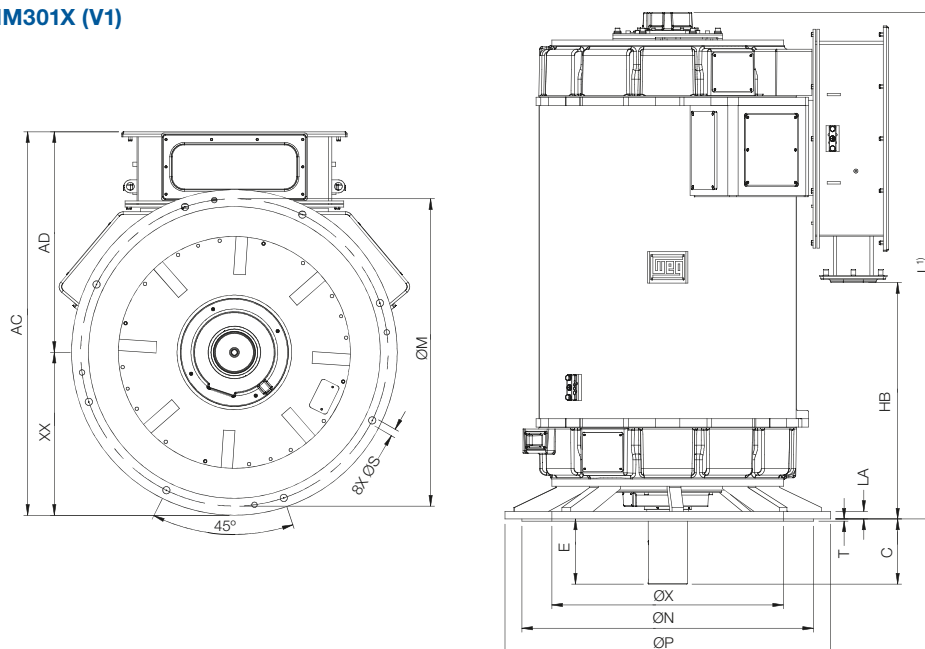
### Mounting: IM100X (B3T)



Frame	Dimensions (mm)														
	A	B	AB	BB	AA	HA	K	H	HD <sup>1)</sup>	AC	AD	C	E	L <sup>1)</sup>	
355	710	630	790	896	150	32.5	28	355	1,145	1,222.4	504.3	396	210	1,673/1,610	
400	800	710	900	1,016	200	32.5	35	400	1,220	1,393.9	516.6	425	210	1,844/1,781	
450	900	900	1,000	1,166	200	39.5	35	450	1,300	1,458.3	516.6	420	250	2,049/1,986	
500	950	1,000	1,100	1,326	250	45	42	500	1,410	1,540.8	516.6	450	250	2,248/2,185	
560	1,060	1,120	1,200	1,406	250	45	42	560	1,520	1,583.7	516.6	477	250	2,356/2,293	

Note: 1) With/without encoder.

### Mounting: IM301X (V1)



Frame	Dimensions (mm)													
	ØP	ØN	ØX	E	T	LA	C	HB	AC	XX	AD	ØS	ØM	L <sup>1)</sup>
355	800	680	580	210	6	30	210	365	1,236.6	400	785	28	740	1,645/1,562
400	1,000	800	715	210	6	30	210	505	1,367.6	500	765	28	940	1,792/1,709
450	1,150	1,000	740	210	6	30	210	695	1,470.1	575	790	28	1,080	1,992/1,909
500	1,150	1,000	740	250	6	30	250	920	1,532.6	575	850	28	1,080	2,266/2,183

Note: 1) With/without encoder.

# WEG SERVICES

## FLEXIBILITY, SPEED AND EXPERIENCE ALLOWING YOU TO OPTIMIZE YOUR TIME AND PRODUCTIVITY

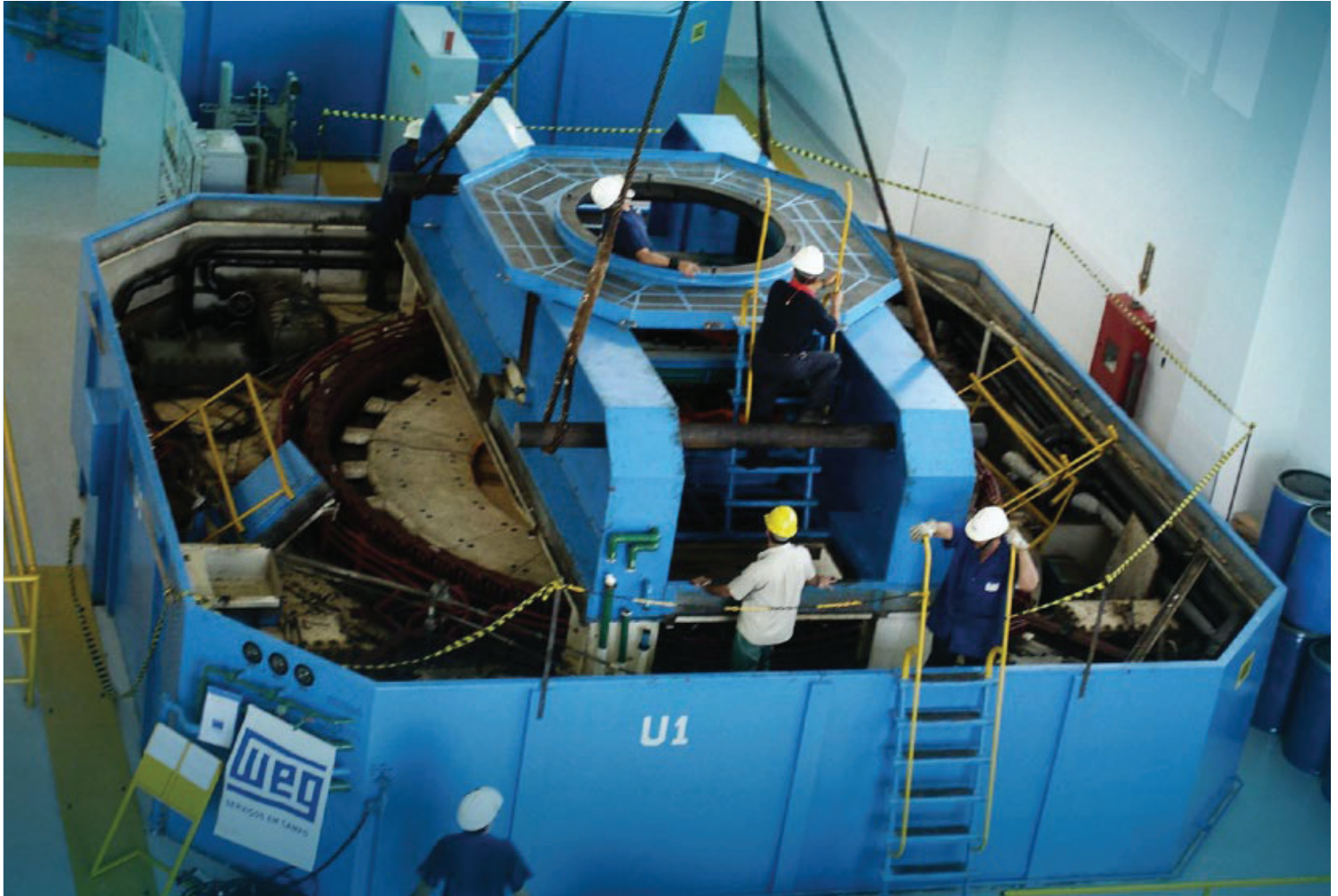


### Technical Support

WEG provides its customers with technical support services whenever and wherever required. These services include the day-to-day support and field service, diagnosis and machine commissioning. The company also provides its authorized service network, which is available all over the world. The service area has a qualified and skilled team duly trained to solve any field problem as well as provide remote support, with the application of the latest generation equipment, ensuring reliability to the results.

### Service

When you need to repair MV and HV electrical rotating machines, you can count on WEG service team. These services can be done at WEG own facilities (Minneapolis – USA and Hosur – India) or in the field (customer's site), including machines from different brands.



## Providing Full Service On WEG Products and On Other Brands

- DC motors and generators
- Three-phase induction motors (squirrel cage or slip ring, MV or HV)
- Synchronous motors (with or without brushes, MV or HV)
- Synchronous condensers
- Turbogenerators
- Hydrogenerators
- Hydraulic turbines and hydro mechanical equipment
- Wind turbines

## Replacement Parts

A proper and non-stop motor operation is guaranteed with the application of periodical maintenance plans. However, if an unexpected problem occurs and the motors needs to be repaired, we recommend to use only original replacement parts supplied by the manufacturer. The WEG team is always available to support you with original replacement parts.



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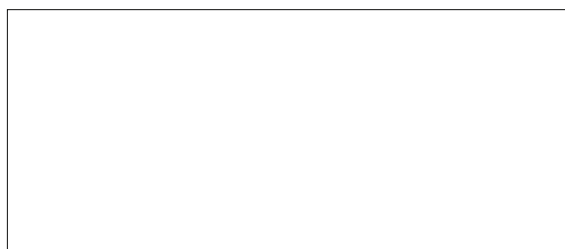
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Cod: 50078221 | Rev: 00 | Date (m/y): 06/2018  
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