Three-Phase Induction Motors

WGM Line
Water Jacket Cooling
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The motors of the WGM line, water jacket cooled, were developed to meet the growing demand for compact, silent motors with high output/weight ratio.

Advantages
- Lower noise levels
- Suitable to operate with Variable Frequency Drives (VDF)
- Minimum heat dissipation to the environment
- Reduced dimensions
- Suitable to operate in extreme dirty environments
- Recommended for environments with space restrictions
- Manufactured in Brazil

Reduction of up to 57% in volume in comparison to motors with air-water heat exchangers (IC81W).

Local Content

The Marine and Oil & Gas industries are increasingly requiring the use of local content in equipment installed on platforms and support vessels. In order to meet this demand, WEG assists its customers to reach the local content levels in their projects, providing equipment with high level of nationalization. Using a 100% national workforce, and with the main parts of these motors manufactured at WEG, the WGM line reach high levels of local content.
Technical Data

Scope
- Output up to 3,150 kW
- Frames: 315 to 560 (IEC)
- Voltages: 440 to 6,600 V
- Number of poles: 2 to 8 poles
- Frequency: 50 or 60 Hz
- Insulation class: F
- Service factor: 1.0
- Mounting: horizontal or vertical
- Degree of protection: IP55 / IP56
- Cooling method: IC71W

Standard Accessories
- Non-Drive End bearing electrically insulated for frames 450 and above
- RTDs Pt-100 - 2 per phase and 1 per bearing
- Water leakage detector
- Grounding lugs in the frame and main terminal box
- Nameplate in stainless steel
- Terminal box with blind plate for cable input
- Drains

Optional Items
- RTDs Pt-100 - water inlet and outlet
- Flow switch - water inlet and outlet
- Non-Drive End bearing electrically insulated and shaft grounding brush
- Encoder
- Main terminal box suitable for 180° rotation
- Cable glands or Multi Cable Transit (MCT)

Special Features
- Motor suitable for marine certifications: ABS, Lloyd’s Register, DNV and BV
- Ex-n

Applications
- Marine - main and side propeller, firefighting pumps and winch
- Cement
- Mining
- Pulp & Paper
- Petrochemical
- Water & Waste Water
- Steel
- Sugar & Alcohol
- Oil & Gas

Note: other features on request.
Output per Frame

Output Values in kW, for \( f = 60 \) Hz. Water 38 °C - Temperature Rise Class F Poles

<table>
<thead>
<tr>
<th></th>
<th>440 V</th>
<th>690 V</th>
<th>4,160 V</th>
<th>6,600 V</th>
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<th>690 V</th>
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<tbody>
<tr>
<td>2 poles</td>
<td>450</td>
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<td>450</td>
<td>400</td>
<td>630</td>
<td>630</td>
<td>630</td>
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<tr>
<td>4 poles</td>
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<td>710</td>
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<td>1,120</td>
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<tr>
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<td>630</td>
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<td>560</td>
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<td>1,000</td>
<td>900</td>
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<tr>
<td>8 poles</td>
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<td>315</td>
<td>280</td>
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<td>500</td>
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<td>1,800</td>
<td>2,250</td>
<td>2,000</td>
<td>-</td>
<td>-</td>
<td>3,150</td>
<td>2,800</td>
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<tr>
<td>4 poles</td>
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<td>2,250</td>
<td>2,500</td>
<td>2,250</td>
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<td>-</td>
<td>3,150</td>
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<tr>
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<tr>
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<td>1,120</td>
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<td>2,000</td>
<td>2,250</td>
<td>1,800</td>
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Note: values subject to modifications without previous notice.

Mounting Features

Cooling
The cooling system by water jacket of the WGM motors consists of water circulation through the end shields and frame. Besides allowing a more effective heat exchange between the motor and the water, the system reduces the temperature of the conducting materials and increases the output/weight ratio. This system allows maintenance of the heat exchange efficiency even at low speeds, which allows the use of VFDs in a wide speed range, including severe applications with constant torque requirements. The water jacket also minimizes the heat exchanged with the environment, reduce the bearings temperature and eliminates the need of forced ventilation, reducing maintenance and noise.

Bearings
The WGM motors have an exclusive bearing cooling system. That allows, the bearings to operate under reduced temperature, increasing its lifetime and reducing maintenance of the motors. As standard, the lifetime of WGM motor’s bearings is rated at 80,000 hours. Different configurations, such as sleeve bearings, can be supplied under request.

Water Type
The motor cooling channels are anticorrosive protected, suitable to operate with treated industrial water and complying with most of water specifications available in the industry. The project flexibility and the robustness of this motor line allows operating with different temperatures of water inlet and different types of additives, such as antifreeze and anticorrosive. In case of emergency, the motor can also be operated with sea water for up to thirty consecutive days; however, that can only be done twice along motor’s lifetime. After sea water operation, it is mandatory to clean the cooling circuit with treated industrial water.
Mechanical Characteristics

Mounting: B3T

Notes: 1) Cast/welded main terminal box.
2) With/without encoder.

Mounting: B3D

Notes: 1) Cast/welded main terminal box.
2) With/without encoder.
## Mechanical Characteristics

### Mounting: V1

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<tr>
<th>Frame</th>
<th>AC</th>
<th>AD</th>
<th>C</th>
<th>E</th>
<th>HB</th>
<th>L</th>
<th>LA</th>
<th>M</th>
<th>N</th>
<th>P</th>
<th>S</th>
<th>T</th>
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<td>375</td>
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<td>91.1/0.32</td>
<td>190</td>
<td>154</td>
<td>603/479</td>
<td>1,658/1,755</td>
<td>36</td>
<td>740</td>
<td>680</td>
<td>800</td>
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<tr>
<td>355</td>
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<td>204</td>
<td>710/588</td>
<td>2,083/1,983</td>
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<td>740</td>
<td>680</td>
<td>800</td>
<td>24</td>
<td>6</td>
<td>580</td>
<td>535</td>
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<tr>
<td>400</td>
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<td>99.3/1.38</td>
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<td>204</td>
<td>915/891</td>
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<td>940</td>
<td>880</td>
<td>1,000</td>
<td>28</td>
<td>6</td>
<td>820</td>
<td>580</td>
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<tr>
<td>450</td>
<td>1.65/1.75</td>
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<td>244</td>
<td>1,040/806</td>
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<td>1,080</td>
<td>1,000</td>
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<tr>
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<td>1,400</td>
<td>28</td>
<td>8</td>
<td>1,190</td>
<td>740</td>
</tr>
</tbody>
</table>

Notes: 1) Cast/welded main terminal box.  2) With/without encoder.
Technical Support

WEG offers to its customers technical support services, responsible for the entire after sale support. Those services included general requests and services in the field, including checking, commissioning of machines and 24x7 support. WEG’s Authorized Service network is present worldwide. The technical support team is well qualified and experienced, capable of handle in field events and to provide remote support using state-of-the-art equipment, ensuring reliable operation to the equipment.

Genuine WEG Parts and Components

After years in operation, in addition to the periodic checkups described in the maintenance plan, the motors need restoration in order to keep working properly. For this restoration, we recommend that you use original spare parts supplied by the manufacturer. WEG team is available to promptly serve you and help in the correct identification of the component parts.

Services

In order to restore medium and large electrical machines, count on WEG service team. The same technology used to manufacture motors and generators is used for inspection and restoration.

The services are executed in the field (at the customer’s premises) or at the two factories: Jaraguá do Sul Unit (Brazil) and São Bernardo do Campo Unit (Brazil), which is also homologated to execute services on equipment for application in explosive atmospheres. Those plants count on the full structure and support of the engineering, industrial process and quality control departments, enabling fast, reliable and top quality service.

Service of WEG products and other brands:

- DC generators and motors
- Three-phase induction motors (squirrel cage or slip ring, medium and high voltage)
- Synchronous motors (with or without brushes, medium and high voltage)
- Synchronous condensers
- Hydrogenerators

WEG Services: Flexibility, agility and experience to optimize your time and productivity.
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For those countries where there is not a WEG own operation, find our local distributor at www.weg.net.