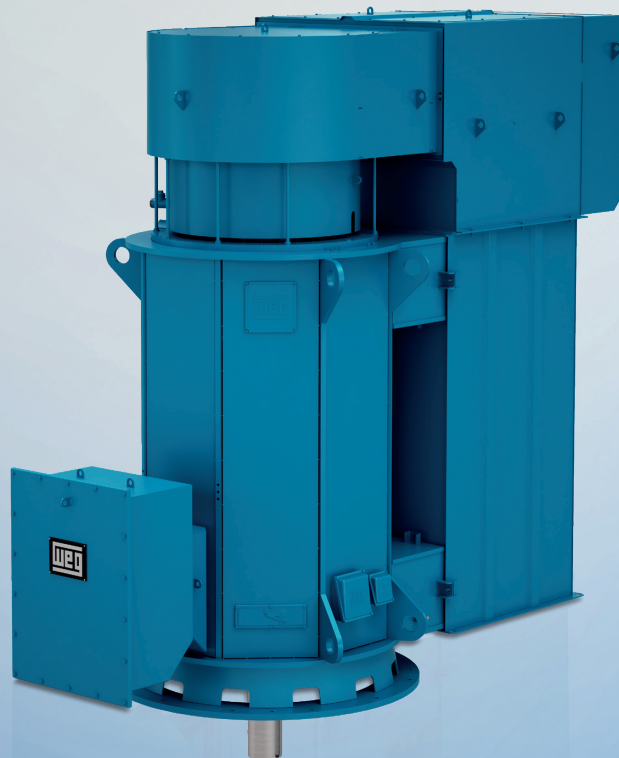


Industrial Motors
Commercial &
Appliance Motors
Automation
Digital &
Systems
Energy
Transmission &
Distribution
Coatings

W60 VERTICAL MOTOR

Reliability and
simplicity for
driving vertical
applications



Driving efficiency and sustainability





RELIABILITY AND SIMPLICITY

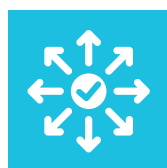
FOR DRIVING VERTICAL APPLICATIONS

W60 Vertical line motors present a robust design with excellent performance in various operating conditions. The concept of the line allows the flexibility of electromagnetic and mechanical design, complying with several applications and segment requirements, such as solutions which demands motor to withstand external axial loads.

Benefits



Suitable to operate in severe conditions and aggressive environments



Flexibility in electrical and mechanical design to comply with application requirements



High rigidity frame, made of carbon steel



Modern and efficient



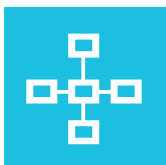
Modular concept, allowing different cooling configurations



Application

The W60 Vertical line motor were developed with a focus on driving vertical applications, mainly centrifugal pumps, but they also allow their use in other applications.

The optimized design, the use of excellent quality materials and the strict control at all stages of the WEG manufacturing process, qualify the motors for application in power generation, water and wastewater, oil and gas, mining and others segments.



Versatile motors that allow different configurations



Durability, resistance and robustness



Optimized bearings to comply with different levels of axial loads



Redesigned cooling system, optimizing the mechanical design



Technical characteristics

Scope

- Rated output: 1,000 up to 7,500 kW
- Number of poles: 4 up to 18
- Frame size: 450 and 900
- Duty: S1
- Degree of protection: IP24 up to IP55
- Voltage: 2,300 up to 13,800 V
- Frequency: 50 and 60 Hz
- Service factor: 1.00
- Cooling system: IC01, IC611 and IC81W

Standard features

- Starting method – DOL (Direct On Line)
- Class F insulation
- Rotation direction: unidirectional
- Preformed winding - vacuum impregnation (VPI)
- Grease-lubricated bearings
- Stator connection box with IP66 protection degree
- RTD Pt-100 temperature sensor, two per phase
- RTD Pt-100 temperature sensor, one per bearing
- Space heater
- Water leakage sensor (for IC81W cooling type)
- Air inlet filter - AISI 304 stainless steel (for IC01 cooling type)

Optional features

- Starting method: VFD or Soft-starter
- Class H insulation
- Vibration sensors (accelerometer or velomitor)
- Terminal boxes: rotatable at 90° steps
- Shaft end grounding brush
- Non-reverse ratchet
- Bearings suitable to withstand external axial loads
- Degree of protection: IP56 and IP65/IP66
- Reverse rotation detector (pulse output)
- Temperature transmitters with 4-20 mA signal (with or without HART protocol)
- Speed sensor
- Capacitor and surge arrester for surge protection
- Current transformers for self-balancing differential protection

Note: other features on request.

- Certifications for use in non-hazardous areas: CE, UL, CSA, EAC, GOST-R
- Certifications for use in hazardous areas¹⁾:
 - Ex ec IIB or IIC T3 or T4 Gc (increased safety, level of protection “ec”)
 - Ex eb IIB or IIC T3 or T4 Gb (increased safety, level of protection “eb”)
 - Ex tc IIIB or IIIC T125 °C or T160 °C Dc (dust ignition protection by enclosure “t”)
 - Ex tb IIIC T125 °C or T160 °C Db (dust ignition protection by enclosure “t”)
 - Class I, Division 2, Groups A, B, C and D, Temp. Cod. T3B or T3C or T3 (non-incendive)
 - Class II, Division 2, Groups F and G, Temp. Cod. T3B or T3C (dust ignition proof)

Nota: 1) Scope classified area upon request.



Project details

Frame

The frame of the W60 Vertical line is made of carbon steel, providing high rigidity to the product. Heat exchanger or ventilation box arranged on one side of frame.

Cooling system

The cooling systems were designed in order to optimize the motor and bearings thermal dissipation, with the following cooling type systems available:

- IC611 - Air-air heat exchanger
- IC01 - Self-ventilated
- IC81W - Air-water heat exchanger

The cooling circuits of W60 Vertical motors are unilateral, that is, cold air inlet at the bottom of motor and hot air outlet at the top the motor.

Bearings

The bearings of the W60 Vertical line are suitable to withstand axial loads, either from the rotor itself, or from external sources, such as hydraulic thrusts generated by the driven load. Based on these criteria assessment, there are three possible concepts for non-drive end bearing:

- Grease lubricated angular-contact bearing
- Oil lubricated spherical roller thrust bearings
- Hydrodynamic sleeve bearing

The non-drive end bearing cooling on motors with IC611 cooling system is optimized through a circuit that directs the inlet air over the bearing, can also be applied in motors with IC01 and IC81W cooling system, according to the load applied to the bearing.

The drive-end guide bearing is ball bearing grease lubricated.

Certifications



Testing laboratories

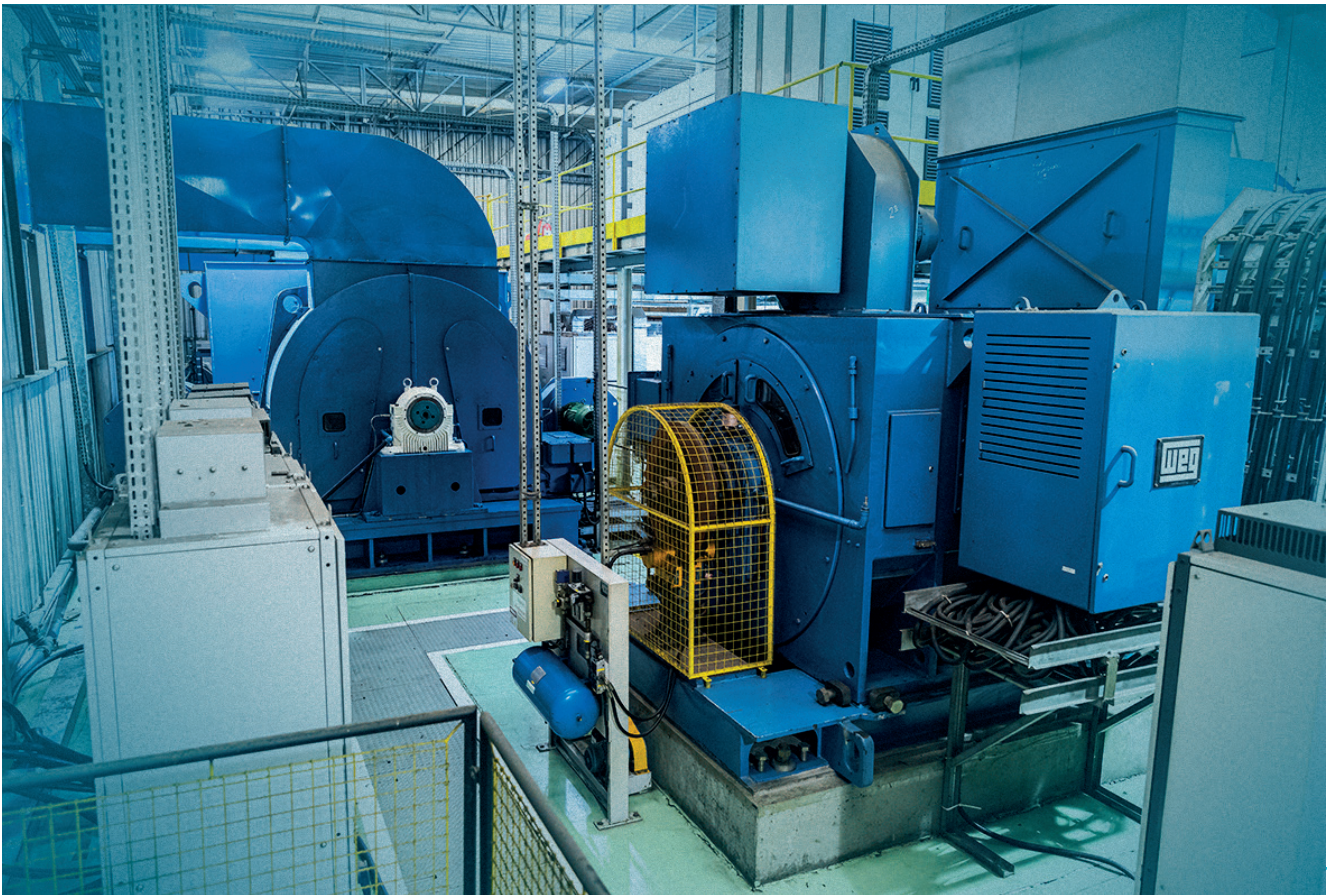
WEG motors and generators are tested according to NBR 5383, IEC 60034, NEMA MG 1 or API standards in modern laboratories. Capable of testing machines with rated output up to 20,000 kVA and voltages up to 15,000 V, WEG testing laboratories have high-precision controls and fully computerized test monitoring systems. The tests are divided into three categories: routine, type and special tests. Routine tests are performed on all motors. Type and special tests can be performed upon customer request.



Surge test



Control room



Test laboratory

Technical assistance

WEG provides its customers with technical assistance services, responsible for all after-sales support. These services include general queries attendance and field service, including diagnosis, machines commissioning and 24-hour duty. WEG also provides its authorized technical assistance network, present throughout Brazil and worldwide.

The technical assistance has a trained and experienced team, capable of the most several field situations and remote support, using the latest equipment, bringing reliability to the results.



Services

To recover medium and large electric machines, count on the WEG service team.

The products are overhauled and recovered using the same technology as in the new products manufacture.

The services are performed in field (at the customer's own) or at the factories in Jaraguá do Sul/SC, Sertãozinho/SP and São Bernardo do Campo/SP, which are also approved for services on equipment used in explosives atmospheres. In these factories all procedures and support of engineering, industrial processes and quality control departments are available, performing services with agility and quality.

- Service of WEG products and other brands:
- DC motors and generators
- Three-phase induction motors (squirrel-cage or slip-rings, medium and high voltage)
- Synchronous motors (with or without brushes, medium and high voltage)
- Synchronous condensers
- Turbogenerators
- Hydrogenerators
- Wind turbines
- Steam turbines
- Hydraulic turbines

WEG Services: flexibility, agility and experience to optimize your time and productivity.



The scope of WEG Group solutions is not limited to products and solutions presented in this catalogue.

To see our portfolio, contact us.

For WEG's worldwide operations visit our website



www.weg.net



 +55 47 3276.4000

 energia@weg.net

 Jaraguá do Sul - SC - Brazil

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The values shown are subject to change without prior notice.
The information contained is reference values.