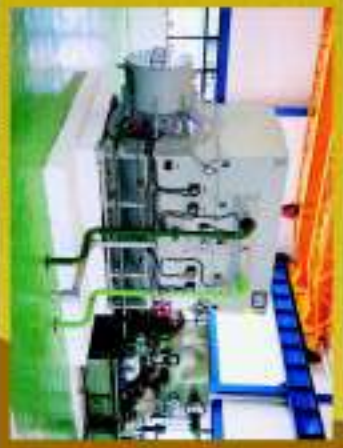
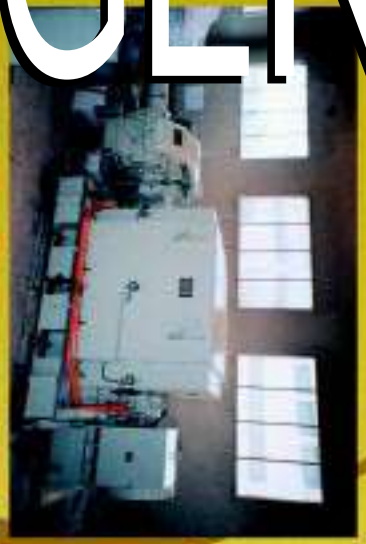
TURBOGENERATORS





MOTORS AND DRIVES

Turbogenerators

In conjunction with world renown consultant companies, Weg developed **complete industrial solutions for generation and energy distribution,** and offers internationally recognized quality and state-of-the-art products.
Modern concept, outstanding performance and long lasting lifetime are some of the features included in the WEG TURBOGENERATORS, which are widely used by Power and Utility Companies.

Technical Features:

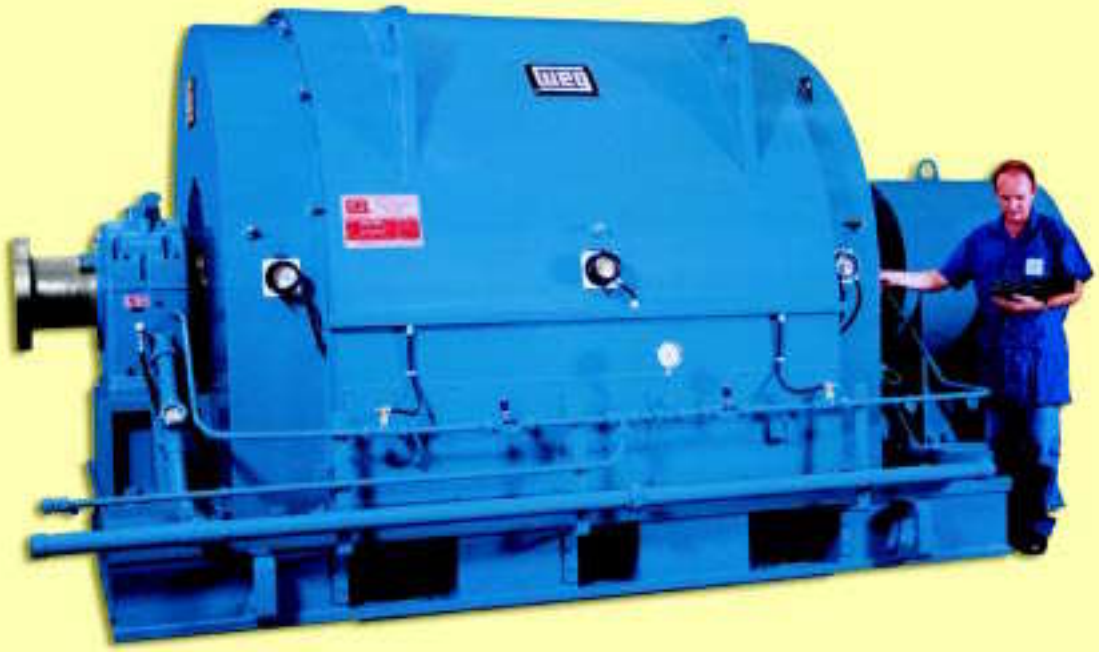
OUTPUTS: Up to 50,000 kVA (Thermal and Steam Generation, 4 poles)

VOLTAGES: 220 to 13,800 V, 50 or 60 Hz

DEGREE OF PROTECTION: IP23 to IPW55

SPEED: 1800 rpm

MOUNTINGS: Horizontal (B3, D5, D6)



Turbogenerators
Outputs up to 50,000 kVA
Voltages up to 13.8 kV

Design

WEG Turbogenerators are designed with advanced software, which were developed in conjunction with Universities of Europe, USA and Brazil, ensuring high accuracy along with cost reduction and superior efficiency.

Technological Capability

WEG have a complete control of the analysis, understanding and optimization process of electric machines under normal and transient service duty. Additionally, the company has made heavy investments to build a modern testing laboratory with full load capacity up to 10,000 kVA. Testing voltages are available for the full range from 220 V up to 15,000 V. The testing lab is fully computer monitored and controlled for extreme accuracy.

Certifications

WEG have accreditation for a Quality System in accordance with ISO 9001 and 14001 requirements. The quality system is audited and certified by the Bureau Veritas Quality Institute. To meet the world's most demanding markets, WEG generators bear most certifications by internationally recognized certifying entities.

Manufacturing Processes

Winding

The coils manufactured by WEG Maquinas are specially designed and specified for the voltage and application the generator is intended for. In voltages ranging from 2.3 kV to 15 kV, the coils are built with rectangular copper wire, form-coil and totally mica tape insulated. Conductive and semi-conductive tapes are also used to insulate the coils allowing a grounding system with the stator for an improved resistance to corona effect.

V.P.I System

Developed with most recent insulating technologies, the VPI (Vacuum Pressure Impregnation) system used by WEG as its standard impregnation system, guarantees a high quality insulation and stator coil protection for all generators. Applying a special epoxy based resin this system provides a perfect insulation to the generator protection process, which has no emission of harmful gases to the environment. Known worldwide by its thermal dissipation capacity along with state-of-the-art technology, the rectangular form-coils are manufactured with WEG VPI system and ensure outstanding quality and high efficiency to the insulation process used by generator manufacturers.

Balancing

All rotors are dynamically balanced at the generator operating speed. The standard balance is in 2 planes but WEG have the capability of 3 plane balancing: normal, reduced and special. The balance is computer controlled and capable of meeting very low vibration levels. A well-performed balance results in a long bearing and generator life together with a significant noise reduction.

Winding

VPI System

Balance Equipment

Plain Pole Rotor

Applications

Thermal Generation (Diesel, Gas, Co-generation, Biomass)

Customer: SANTA ADELIA
Country: Brazil
Supply : 42,500 kVA, 13,800 V, 4 poles
Application: Steam turbine (Sugar and alcohol plant)
Fuel source: sugar cane waste
Manufacturing date: 2002

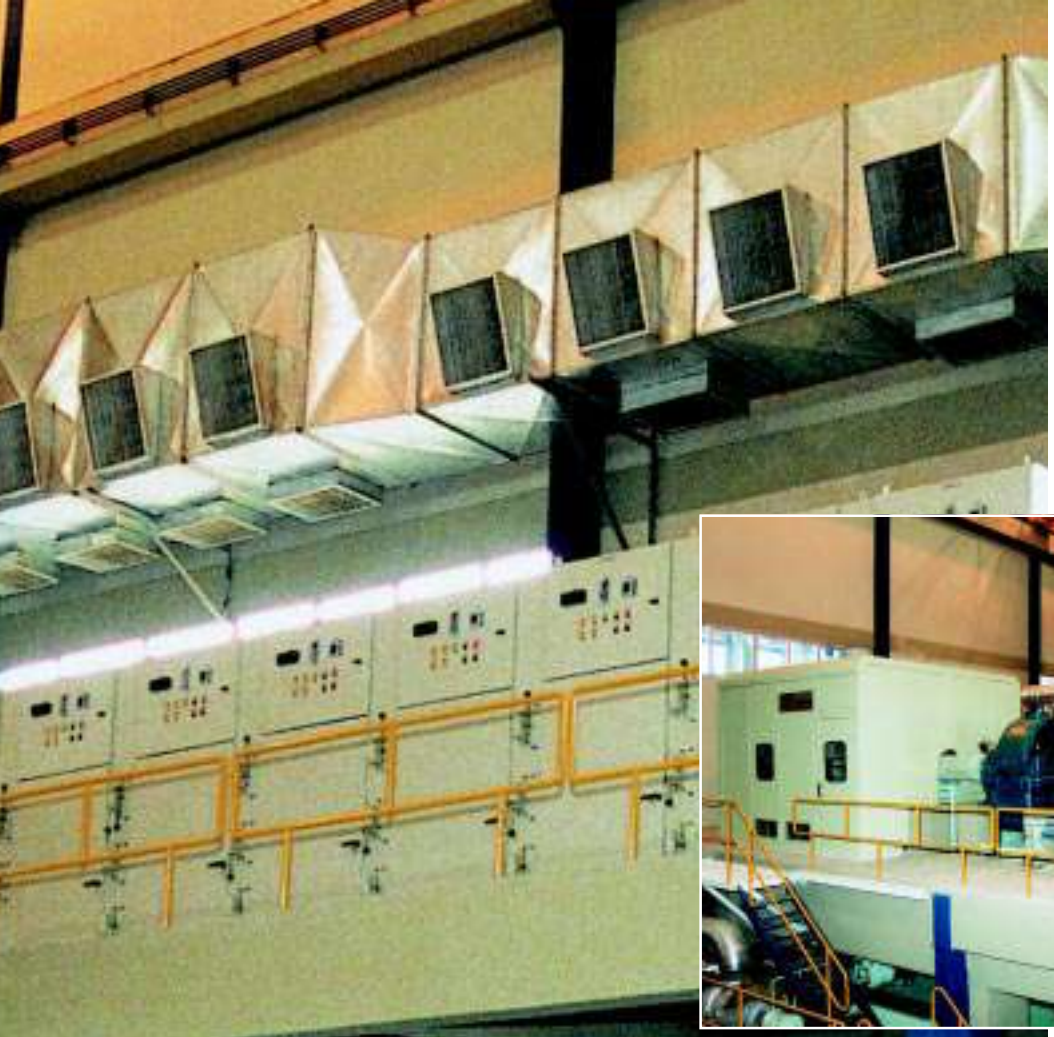
Customer: TERRANOVA
Country: Brasil
Supply: 3750 kVA, 13,800 V, 4 poles
Application: Steam turbine (Lumber processing plant)
Fuel source: wood waste
Manufacturing date: 2002

Customer: Bioenergia Cogeradora/Usina Santo Antônio
Country: Brazil
Supply: 28,750 kVA, 13,800 V, 4 poles
Application: Steam turbine (Sugar and alcohol plant)
Fuel source: sugar cane waste
Manufacturing date: 2002

Customer: URBANO AGROINDUSTRIAL S.A.
Country: Brazil
Supply: 3750 kVA, 13,800 V, 4 poles
Application: Steam turbine (Rice processing plant)
Fuel source: rice shell
Manufacturing date: 2000

Customer: UNI-SYSTEMS
End User: Engenho Monte Rosa
Country: Nicaragua
Supply: 18,750 kVA, 13,800 V, 4 poles
Application: Steam turbine (Sugar and alcohol plant)
Fuel source: sugar cane waste
Manufacturing date: 2001

Customer: USINA COLOMBO
Country: Brazil
Supply: 18,750 kVA, 13,800 V, 4 poles
Application: Steam turbine (Sugar and alcohol plant)
Fuel source: sugar cane waste
Manufacturing date: 2000



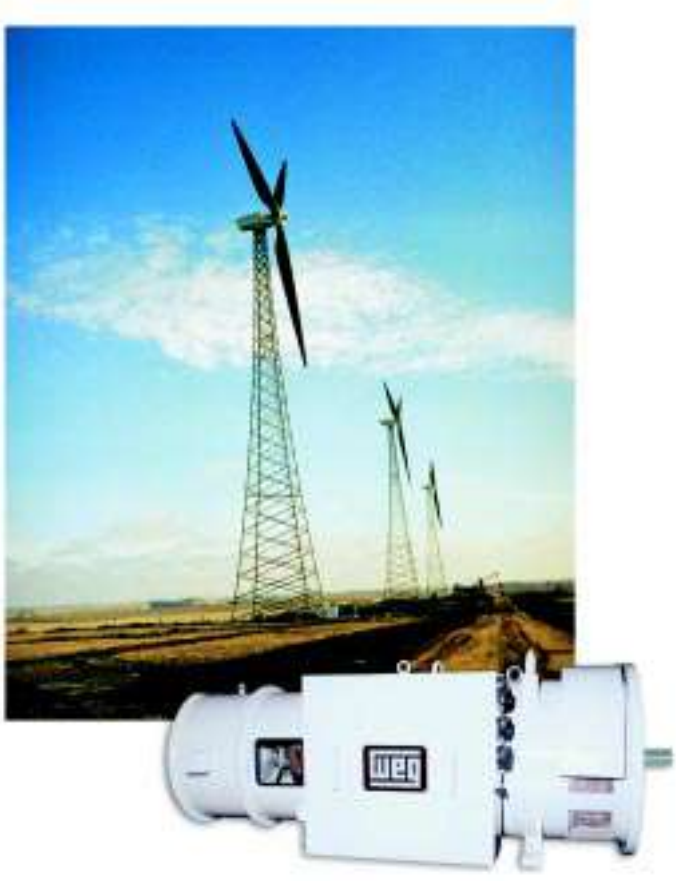
Customer: USINA CERRADINHO
Country: Brazil
Supply:
- Generator: 31,250 kVA, 13,800 V, 4 poles
- Transformer
- Cabinets
- Panels
- Monitoring Systems

Application: Steam turbine (Sugar and alcohol plant)
Fuel source: sugar cane waste
Manufacturing date: 2002

Wind Generation

Considered as a solution for generation of energy with the application of machines that convert wind power (kinetic energy) into an output torque on the rotor blades.
The amount of energy transferred by the wind to the rotor depends on the following factors:

- Air density;
- Rotor blade dimensions;
- Wind velocity.



Supply:

- 120 x 680 kW generators
- Customer: ZOND
- Country: USA
- Manufacturing date: 1998

In addition to Turbogenerators, WEG also manufactures:

Medium and high voltage motors
Output ratings up to 22,000 kW
Voltages up to 13.8 kV

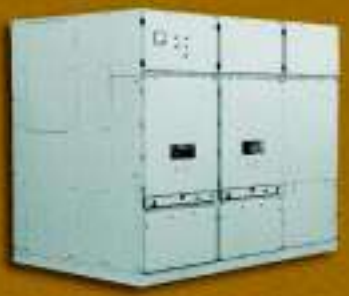
DC motors
Output ratings from 0.5 to 3000 kW

Synchronous motors
Output ratings up to 22,000 kW
Voltages up to 13.8 kV

Hydrogenerators
Output ratings up to 25,000 kVA
Voltages up to 13.8 kV

Generators for generator sets
Output ratings up to 4200 kVA

WEG can also offer cabinets, panels, monitoring systems and transformers designed to meet the most demanding technical requirements on applications of Generation and Distribution of Energy systems.



Cabinets

Panels

Monitoring Systems

Transformers

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