M Mining

Three-Phase Induction Motors
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To provide an effective solution for the mining and cement segments, WEG developed the M Mining line. These motors have a superior degree of protection, ideal for dust environments, and a new brush system for the wound-rotor motors.

The design was specially developed with electromechanical characteristics which provide durability long life operation, strength and robustness. They can operate in dust environments as found in cement and mining industries, susceptible to sun exposure installations that are able to withstand water projected in powerful jets and permanent contact with suspended ore/cement particles accumulated on the equipment. For this reason, the motors have a degree of protection up to IP66 and are mainly used in mills (rollers, balls, bars, SAG), crushers, fans, exhaust fans, conveyor belts, wheel loaders and winches, centrifugal pumps, rotary kilns, electric excavators among others.

Characteristics

- Rated output: 250 up to 10,000 kW
- Frame: 355 up to 1,000 (IEC)
- Voltage: 220 up to 13,800 V
- Number of poles: 2 to 14 (squirrel cage motors) 4 to 14 (wound-rotor motors)
- Frequency: 50 and 60 Hz
- Degree of protection: IP55 up to IP66
- Standards: IEC/NEMA
- Integrated control system for motors with liftable brush holders
Features and Benefits

**Brush Lifting Mechanism**
The mechanism is now simplified, with significant reduction of parts and components, making the maintenance even easier. Constant pressure springs are used to reduce brush wear.

**Liftable Brush Holder Drive System**
The drive system was optimized using reducers and inductive sensors.

**Liftable Brush Holder Control System**
A control system was incorporated into the motor, containing the operation logic of the brush lifting system. The goal was to combine a robust and easy implementation project in the application (only 2 input signals and 3 output signals). The control system has the capability to investigate faults and monitor system operation via integrated HMI, facilitating system maintenance, preventing undue maneuvering in the brush holder system and the main motor drive, and increasing safety in the motor operation.

**Access to the Liftable Brush Holder Compartment**
The slip rings compartment has large inspection windows on both sides for easy maintenance.

**Stainless Steel Hardware**
Motor Line with stainless steel hardware. This way, avoids the corrosion process in screws, nuts, washers and others.

**Inspection Window**
All brushes are positioned facing the side of the inspection window, allowing full access for brushes exchange.

**Constructive Form of Fixed Brush Holder**
The mechanism is now simplified, with significant reduction number of parts and components. It makes possible reversing the construction of the brush holder. It also has a filter in the ventilation circuit to prevent brush powder accumulation.

**Position of the Fixed Brush Holder Insulators**
The new assembly reduces dust accumulation in the brush holder and allows the axial adjustment of the insulators and brush holders.

**Fixed Brush Holder Cooling System**
The cooling system of the brush holder is independent of the motor cooling system, increasing its efficiency.

**Painting Plan**
M Mining motors are protected by the high performance WEG paint system, capable to withstand 240h test in the ASTM 117B saline mist chamber. It allows operation in abrasive and humid environments with SO₂ presence.

**IP66 Protection**
To ensure the IP66 protection level, special seals are used in all connecting and sealing joints of the bearings. The sealing system protects the motor from pollutants, which may cause serious damages to the motor.
ARGENTINA
San Francisco - Cordoba
Phone: +54 3564 421484
info-ar@weg.net

Cordoba - Cordoba
Phone: +54 3514 641366
weg-morbe@weg.com.ar

Buenos Aires
Phone: +54 1142 998000
ventas@pulverlux.com.ar

AUSTRALIA
Scoresby - Victoria
Phone: +61 3 97654600
info-au@weg.net

AUSTRIA
Markt Piesting - Wiener Neustadt-Land
Phone: +43 2 833 4040
watt@wattdrive.com

Vienna
Phone: +43 1 796 2048
wtr@weg.net

BELGIUM
Nivelles - Belgium
Phone: +32 67 888420
info-be@weg.net

BRAZIL
Jaraguá do Sul - Santa Catarina
Phone: +55 47 32764000
info-br@weg.net

CHILE
La Reina - Santiago
Phone: +56 2 27848900
info-cl@weg.net

COLOMBIA
San Cayetano - Bogota
Phone: +57 1 4160166
info-co@weg.net

Sabaneta - Antioquia
Phone: +57 4 4449277
info-co@weg.net

ECUADOR
El Batan - Quito
Phone: +593 2 5144339
wegecuador@weg.net

FRANCE
Saint-Quentin-Fallavier - Isère
Phone: +33 4 74991135
info-fr@weg.net

GERMANY
Türnich - Kerpen
Phone: +49 2237 92910
info-de@weg.net

Balingen - Baden-Württemberg
Phone: +49 7433 90410
info@weg-antriebe.de

Hornberg (Efze) - Hesse
Phone: +49 5681 99520
info@akh-antriebstechnik.de

GHANA
Accra
Phone: +233 30 2766490
ghana@zestweg.com

INDIA
Bangalore - Karnataka
Phone: +91 080 46437450
info-in@weg.net

Hosur - Tamil Nadu
Phone: +91 4344 301577
info-in@weg.net

ITALY
Cinisello Balsamo - Milano
Phone: +39 2 61293535
info-it@weg.net

JAPAN
Yokohama - Kanagawa
Phone: +81 45 5503030
info-jp@weg.net

MEXICO
Huehueteoca - Mexico
Phone: +52 55 53241275
info-mx@weg.net

Tizayuca - Hidalgo
Phone: +52 77 97963790
info-mx@weg.net

NETHERLANDS
Oldenzaal - Overijssel
Phone: +31 54 571080
info-nl@weg.net

PERU
La Victoria - Lima
Phone: +51 1 2097600
info-pe@weg.net

PORTUGAL
Maia - Porto
Phone: +351 22 9477700
info-pt@weg.net

RUSSIA and CIS
Saint Petersburg
Phone: +7 812 363 2172
sales-wes@weg.net

SOUTH AFRICA
Johannesburg
Phone: +27 (0) 11 7236000
info@zestweg.com

CAPE TOWN
Phone: +27 (0) 21 507 7200
gentsets@zestweg.com

Heidelberg
Phone: +27 (0) 16 349 2683/4/5
wta@zestweg.com

SPAIN
Coslada - Madrid
Phone: +34 91 6553008
info-es@weg.net

VALENCIA
Phone: +34 96 1379296
info@autrial.es

SINGAPORE
Singapore
Phone: +65 68589081
info-sg@weg.net

SINGAPORE
Singapore
Phone: +65 68622220
info-sg@weg.net

SCANDINAVIA
Mölbycke - Sweden
Phone: +46 31 798527
info-se@weg.net

UK
Redditch - Worcestershire
Phone: +44 1527 513800
info-uk@weg.net

UNITED ARAB EMIRATES
Jebel Ali - Dubai
Phone: +971 4 8130800
info-ae@weg.net

USA
Duluth - Georgia
Phone: +1 678 2492000
info-us@weg.net

Bluffton - Indiana
Phone: +1 800 5798527
info-us@weg.net

MINNEAPOLIS - Minnesota
Phone: +1 612 3788000
info-us@weg.net

WASHINGTON - Missouri
Phone: +1 636-239-9300
wegwill@weg.net

VENEZUELA
Valencia - Carabobo
Phone: +58 241 8210582
info-ve@weg.net

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