

Brake Motor

Instruction manual for installation, operation and maintenance of brake motors

Motofreno

Manual de instalación, Operación y Mantenimiento de Motores Eléctricos con Freno



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- Worldwide contact information for WEG in Mexico, Argentina, Brazil, India, China, and other countries.

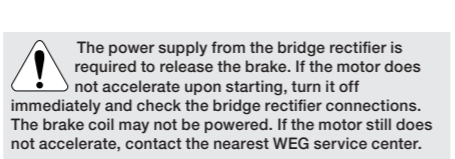


ENGLISH
1. INTRODUCTION
This manual provides important information about WEG three-phase and single-phase spring applied brake motors...

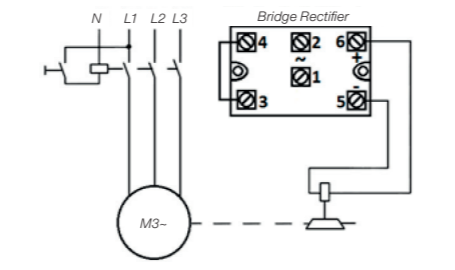
Noncompliance with these instructions informed in this manual and others indicated on the website www.weg.net voids the product warranty...

2. INSTALLATION
Brake motors must be only installed in places compatible with their mounting features and in applications and environments for which they are intended.

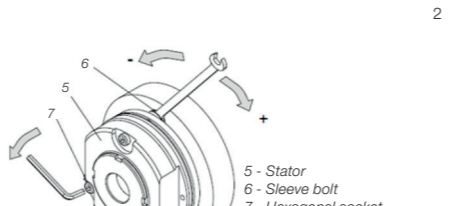
2.1. Brake coil power supply
The electromagnet coil is powered by direct current (DC) which can be supplied by a DC voltage source or bridge rectifier...



2.2. Connection diagram
2.2.1. AC power supply
The brake motor allows two braking system: normal braking and fast braking.



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5.3. Procedures for adjusting the brake air gap - brake size 6 to 25 (4 to 600 Nm)
To adjust the air gap to its minimum values, proceed as follows:

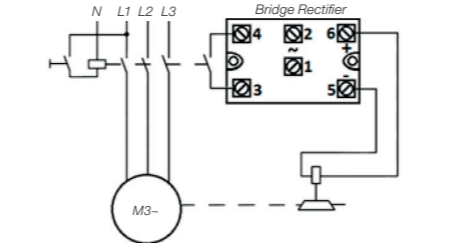
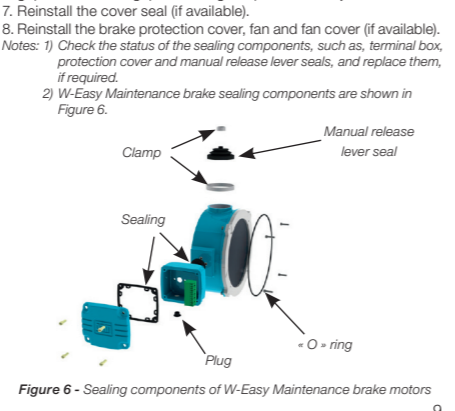


Figure 2 - Connection diagram of the bridge rectifier for fast braking. Note: The bridge rectifier has 6 (six) terminals...

Table 1 - Bridge rectifier supplied by the motor terminals. Table with columns for Motor power supply voltage, Power supply voltage, Braking connection diagram, and Bridge rectifier power supply by the electric motor connections.

Table 1 - Bridge rectifier supplied by the motor terminals

9. For motors supplied with manual release, reinstall the manual release lever and its sealing (which must be fastened by clamps - see Figure 6).

5.4. Procedures for adjusting the brake air gap - brake sizes 25 and 31 (800 Nm to 2,400 Nm)
To adjust the air gap to its minimum value, proceed as specified in steps 1 to 5 indicated in item 5.3.

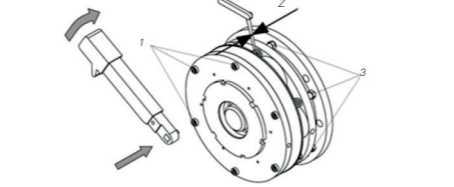


Figure 7 - Checking the air gap of the brake sizes 25 and 31
1. If the air gap adjustment does not meet the specification, unbolt the fixing bolts (pos. 1) to release the sleeve bolts (pos. 3).

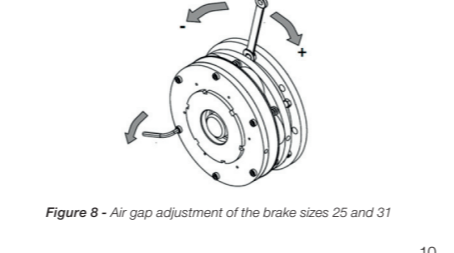


Figure 8 - Air gap adjustment of the brake sizes 25 and 31

When bridge rectifier is not supplied by the motor terminals, the power supply voltage must comply with brake supply nameplate.

2.2.2 DC power supply
The connection must be made directly to the brake terminals and must meet the voltage specified on brake supply nameplate.

The cable entries used for power supply and control must be fitted with components (such as, cable glands and conduits) that meet the applicable standards and regulations in each country and the degree of protection indicated on the motor nameplate.

3. BRAKE OPERATION
When the motor is disconnected from the power supply, the current flowing through the electromagnetic coil is interrupted and it stops operating.

3. When the air gap adjustment is correct, tighten the fixing bolts 1 (Fig. 7) according to the tightening torque specified in Table 4.

4. Carry out the steps 6 to 8 as specified in item 5.3.

6. USE OF THE MANUAL RELEASE LEVER (OPTIONAL FOR BRAKE SIZES 6 TO 25)



1. Pull the lever (Figure 9) to release the shaft.

The use of additional tools to facilitate the brake release is not allowed (for example wrenches or lever extenders).

2. Release the brake lever.

4. MAXIMUM ALLOWED LOAD INERTIA
The maximum load inertia and the maximum load torque indicated on Table 2 must be considered for the operation of flameproof motors with brake.

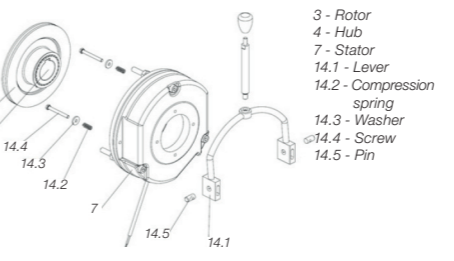
Table 2 - Maximum allowed load inertia for flameproof motors with brake. Table with columns for Frame Size, IEC, NEMA, Number of Poles, Normal Application, Load Lift Application, Maximum load inertia, and Maximum load torque.

Table 2 - Maximum allowed load inertia for flameproof motors with brake

Note: The values shown in Table 2 are valid for braking time of 1 second and motor operation at the rated speed.

5. MAINTENANCE
Before any service is performed, ensure that motor is at standstill, disconnected from the power supply and protected against accidental energization.

Due to their simple construction, the brakes are basically maintenance-free, except for the periodical adjustment of the air gap, which is required for optimal brake operation.



7. DISASSEMBLY/ASSEMBLY OF THE MANUAL RELEASE LEVER

- 1. With decoupled motor, insert the compression springs into the bore holes of the armature plate; Mount the washer (14.3) on the pins (14.4); 2. Push the pins with the washers (14.4 and 14.3) through the compression springs (14.2) in the armature plate (1) and the bore hole in the stator (7)...

Table 5 - Adjustment setting for manual release. Table with columns for Size, Z⁺¹ (mm), and S⁻¹ (mm).

Table 5 - Adjustment setting for manual release

Note: The "S" and "Z" values must be adjusted only with assembled brake and disenergized coil.

We recommend doing the internal cleaning whenever there is eventual penetration of contaminants, or during periodic maintenance schedule of the motor.

5.1. Brake component description

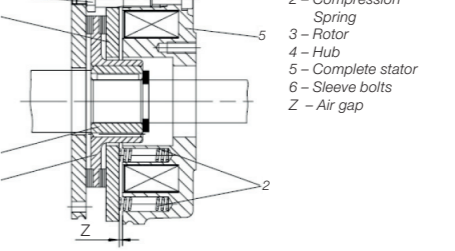


Figure 3 - Cross section of the electromagnetic brake - sizes 6 to 25 (4 to 600 Nm)

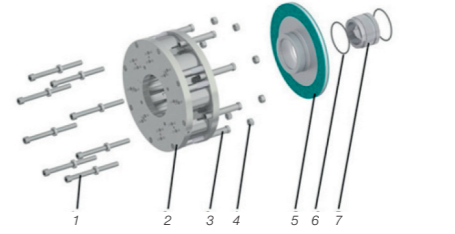


Figure 4 - Components of the electromagnetic brake - size 25 and 31 (800 to 2400 Nm)

- 1 - Fixing bolts, 2 - Complete Stator, 3 - Sleeve bolts, 4 - Adjuster nut, 5 - Braking disc, 6 - O'ring, 7 - Hub

8. TROUBLESHOOTING CHART X SOLUTIONS

Troubleshooting chart with columns for Fault, Possible Causes, and Solution. Includes entries for Brake activates with delay, Motor does not start, Bridge rectifier failure, and Brake does not release.

5.2. Maintenance intervals and air gap adjustment
The interval between periodic air gap adjustments, i. e., the number of braking operations until the air gap reaches its maximum value due to rotor wear, depends on the load, service conditions, weatherproof, etc.

Table 3 - Data for air gap adjustment. Table with columns for Frame, IEC, NEMA, Brake Size, Rated Air Gap, Maximum Air Gap for Service Brake, Minimum Rotor Thickness, and Tightening Torque.

The friction lining and the mechanical brake components are subject to function-related wear. For safe and trouble-free operation, the brake must be checked and readjusted at regular intervals, and, if necessary, be replaced.

Table 3 - Data for air gap adjustment

9. ADDITIONAL INFORMATION

For further information about installation, operation and maintenance of brake motors and to contact WEG authorized service centers, access website www.weg.net

