

## 1. TERMINOLOGY

**Balancing:** the procedure by which the mass distribution of a rotor is checked and, if necessary, adjusted to ensure that the residual unbalance or the vibration of the journals and/or forces on the bearings at a frequency corresponding to service speed are within specified limits in International Standards.

[ISO 1925:2001, definition 4.1]

**Balance quality grade:** indicates the peak velocity amplitude of vibration, given in mm/s, of a rotor running free-in-space and it is the product of a specific unbalance and the angular velocity of the rotor at maximum operating speed.

**Grounded Part:** metallic part connected to the grounding system.

**Live Part:** conductor or conductive part intended to be energized in normal operation, including a neutral conductor.

**Authorized personnel:** employee who has formal approval of the company.

**Qualified personnel:** employee who meets the following conditions simultaneously:

- Receives training under the guidance and responsibility of a qualified and authorized professional;
- Works under the responsibility of a qualified and approved professional.

**Qualified personnel:** employee previously qualified and registered with the competent class council.

**Qualified personnel:** employee who proves completion of a specific course in the electrical area by the official education system.

**Note:** The qualification is only valid for the company that trained the employee in the conditions set out by the authorized and qualified professional responsible for training.

## 2. INITIAL RECOMMENDATIONS



Electric motors have energized circuits, exposed rotating parts and hot surfaces that may cause serious injury to people during normal operation. Therefore, it is recommended that transportation, storage, installation, operation and maintenance services are always performed by qualified personnel.

Also the applicable procedures and relevant standards of the country where the machine will be installed must be considered.

Noncompliance with the recommended procedures in this manual and other references on the WEG website may cause severe personal injuries and/or substantial property damage and may void the product warranty.

For practical reasons, it is not possible to include in this Manual detailed information that covers all construction variables nor covering all possible assembly, operation or maintenance alternatives.

This Manual contains only the required information that allows qualified and trained personnel to carry out their services. The product images are shown for illustrative purpose only.

For special applications and operating conditions (50026367 manual for Smoke Extraction Motors, 50021973 manual for Brake Motors, 50078700 manual for Electronically Commutated Motors, 14629920 manual for Roller Table motors, 50106963 manual for WEG Lift Gearless motors) refer to the applicable manual on the website [www.weg.net](http://www.weg.net) or contact WEG.

For motors supplied with WEG Motor Scan sensor, see installation guidelines Overview of Receipt to Operation Manual (10008475131) available on [www.weg.net](http://www.weg.net).

For information about permissible radial and axial shaft loads, please check the product technical catalogue.



The user is responsible for the correct definition of the installation environment and application characteristics.



During the warranty period, all repair, overhaul and reclamation services must be carried out by WEG authorized Service Centers to maintain validity of the warranty.

### 2.1 WARNING SYMBOL



Warning about safety and warranty.

## 2.2 RECEIVING INSPECTION

All motors are tested during the manufacturing process.

The motor must be checked when received for any damage that may have occurred during the transportation. All damages must be reported in writing to the transportation company, to the insurance company and to WEG. Failure to comply with such procedures will void the product warranty.

You must inspect the product:

- Check if nameplate data complies with the purchase order;
- Remove the shaft locking device (if any) and rotate the shaft by hand to ensure that it rotates freely. The shaft might not rotate freely in WMagnet and WQuattro motors, due to alignment torque from the magnets. It might be necessary to use a lever;



When rotating the shaft, it is necessary to certify that the terminals are insulated to eliminate the risk of electric shock from induced voltage.

- Check that the motor has not been exposed to excessive dust and moisture during the transportation. Do not remove the protective grease from the shaft, or the plugs from the cable entries. These protections must remain in place until the installation has been completed.

## 2.3 NAMEPLATES

The nameplate contains information that describes the construction characteristics and the performance of the motor. Figure 1, Figure 2 and Figure 3 show nameplate layout examples.

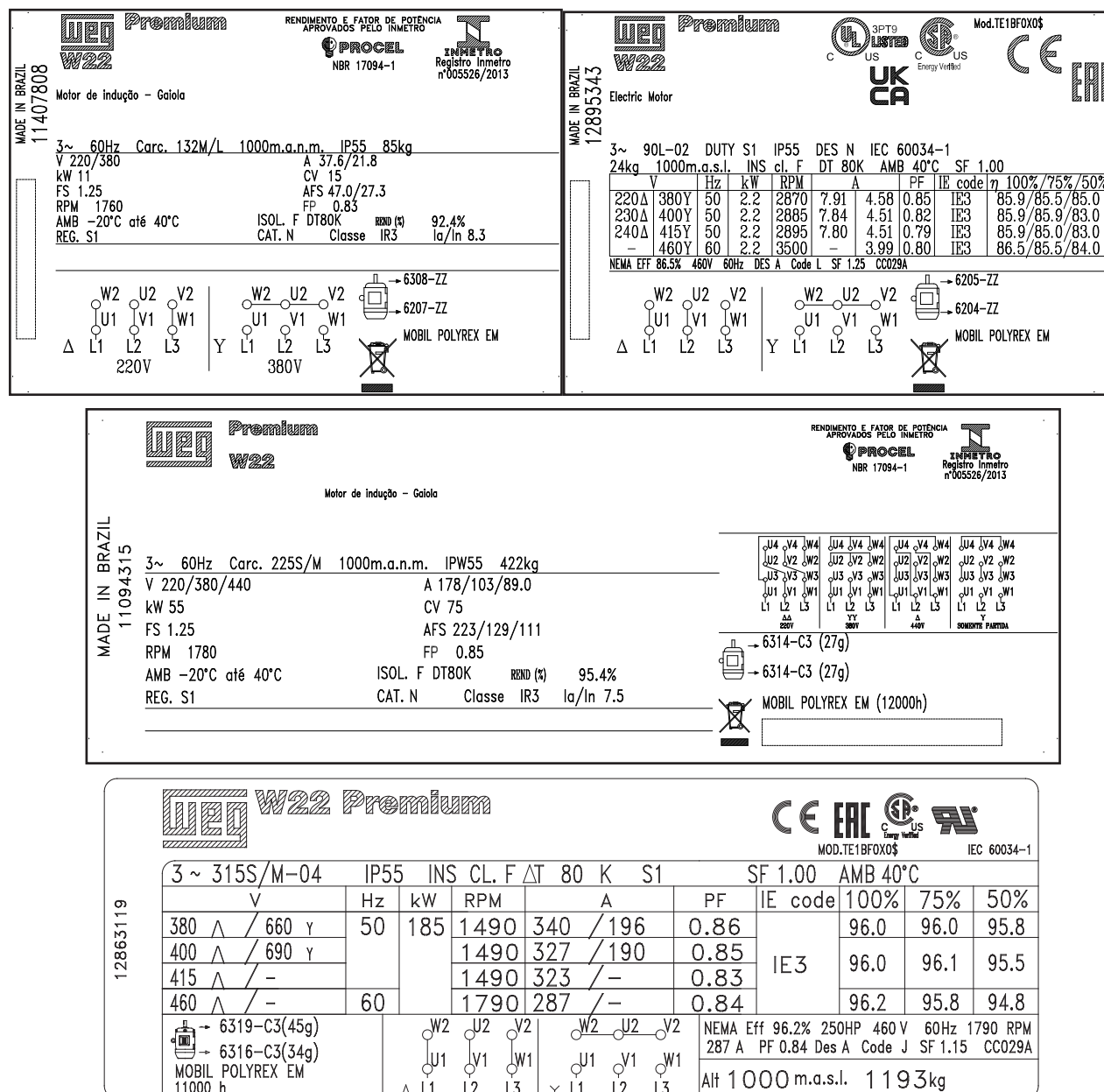


Figure 1 - IEC motor nameplate

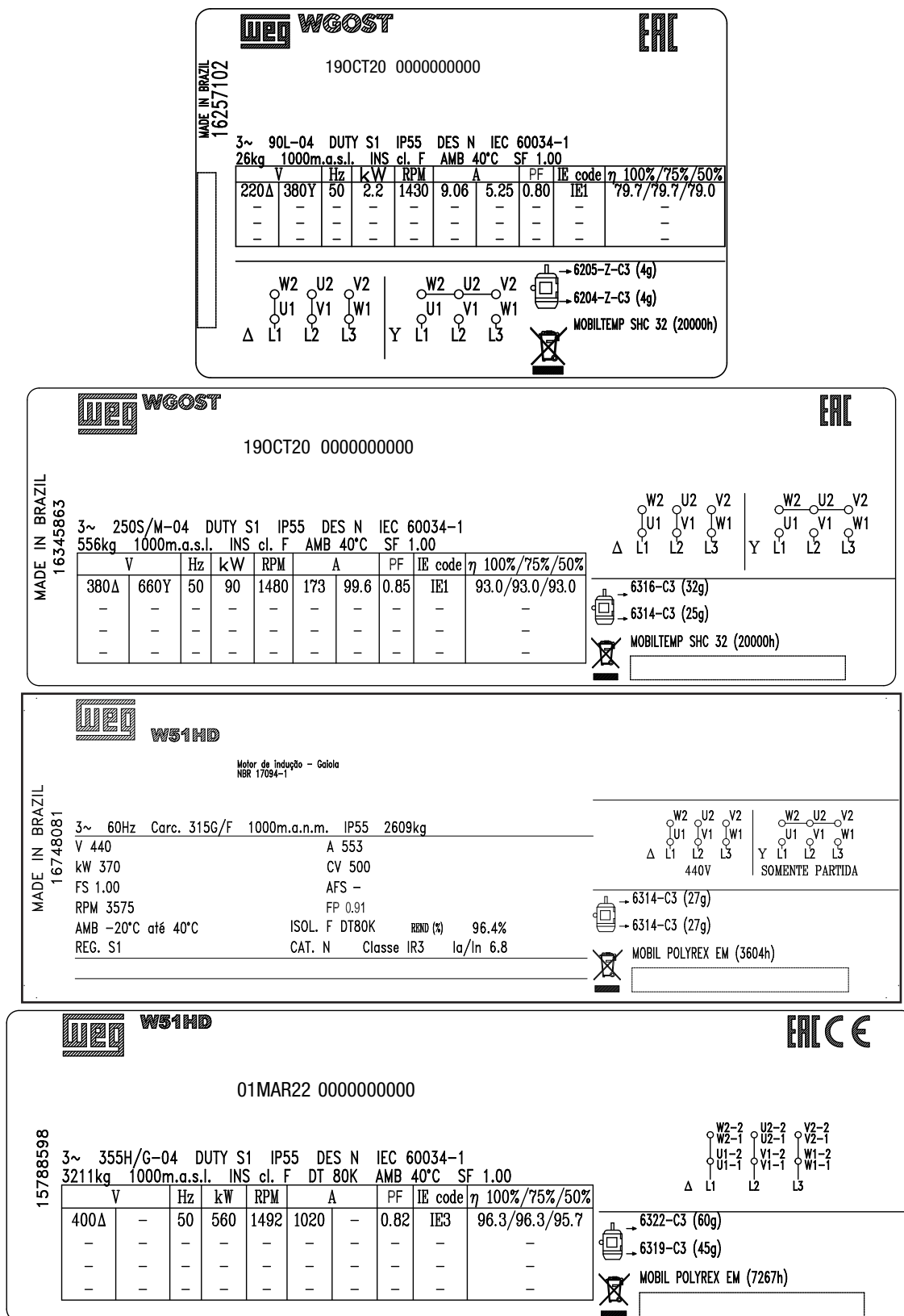


Figure 2 - IEC motor nameplate

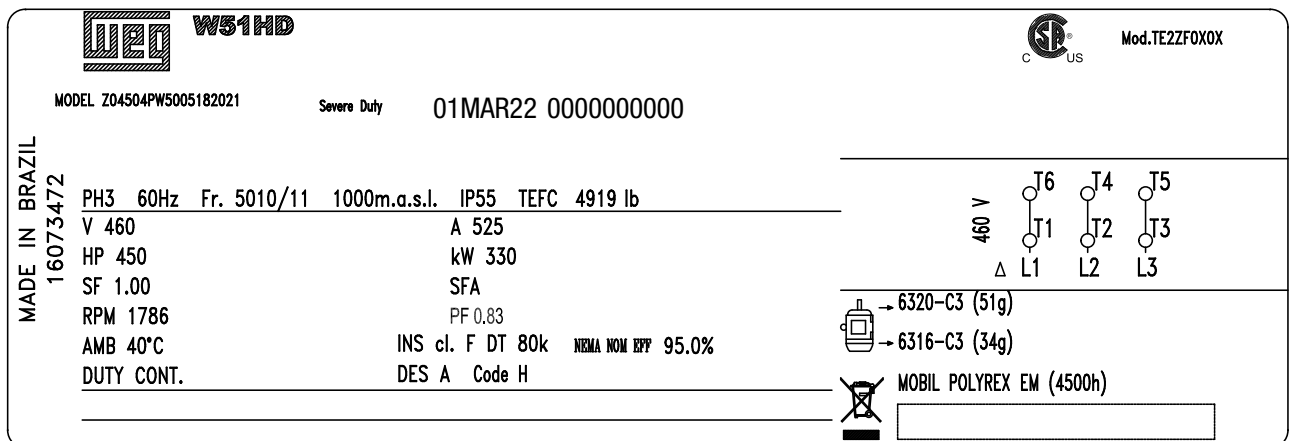
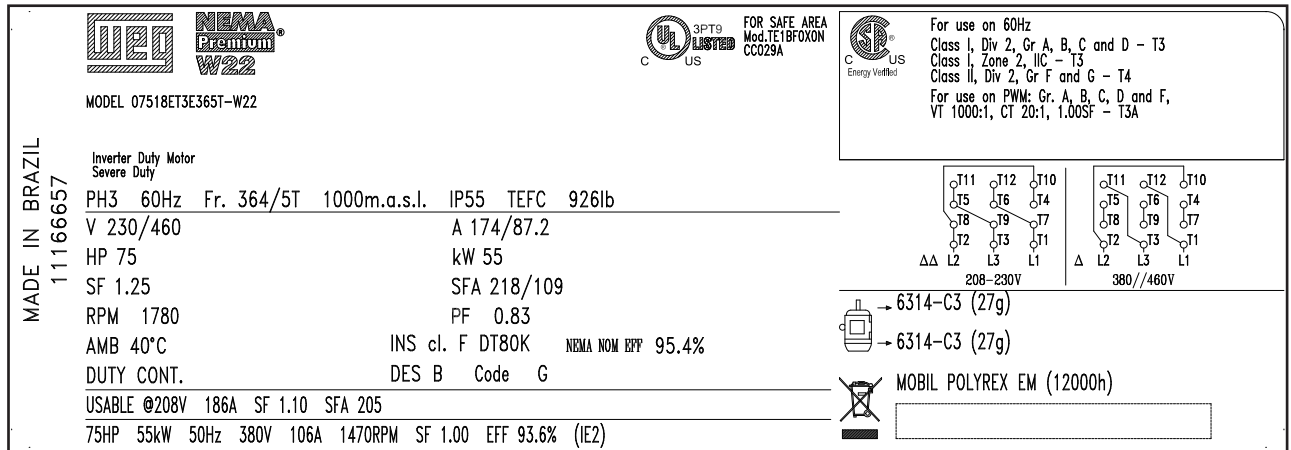
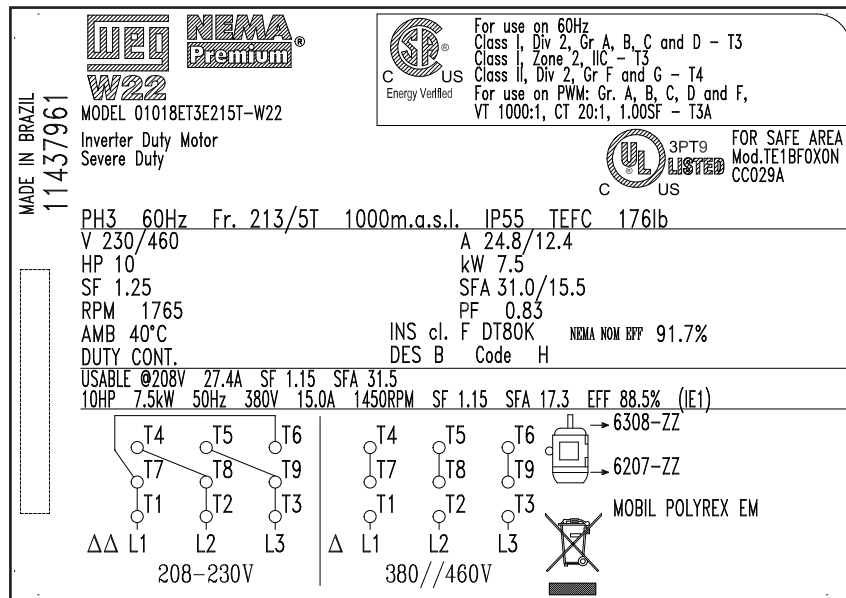


Figure 3 - NEMA motor nameplate

### 3. SAFETY INSTRUCTIONS



The motor must be disconnected from the power supply and be completely stopped before conducting any installation or maintenance procedures. Additional measures should be taken to avoid accidental motor starting.



Professionals working with electrical installations, either in the assembly, operation or maintenance, should use proper tools and be instructed on the application of standards and safety requirements, including the use of Personal Protective Equipment (PPE) that must be carefully observed in order to reduce risk of personal injury during these services.



Electric motors have energized circuits, exposed rotating parts and hot surfaces that may cause serious injury to people during normal operation. It is recommended that transportation, storage, installation, operation and maintenance services are always performed by qualified personnel.



Pacemaker users and unqualified personnel shall not open WMagnet and WQuattro motors, because high energy magnets are used.

Always follow the safety, installation, maintenance and inspection instructions in accordance with the applicable standards in each country.

### 4. HANDLING AND TRANSPORT

Individually packaged motors should never be lifted by the shaft or by the packaging. They must be lifted only by means of the eyebolts, when supplied. Use always suitable lifting devices to lift the motor. Eyebolts on the frame are designed for lifting the machine weight only as indicated on the motor nameplate. Motors supplied on pallets must be lifted by the pallet base with lifting devices fully supporting the motor weight. The package should never be dropped. Handle it carefully to avoid bearing damage.



Eybolls provided on the frame are designed for lifting the machine only. Do not use these eyebolls for lifting the motor with coupled equipment such as bases, pulleys, pumps, reducers, etc..

Never use damaged, bent or cracked eyebolls. Always check the eyebolt condition before lifting the motor.

Eybolls mounted on components, such as on end shields, forced ventilation kits, etc. must be used for lifting these components only. Do not use them for lifting the complete machine set.

Handle the motor carefully without sudden impacts to avoid bearing damage and prevent excessive mechanical stresses on the eyebolls resulting in its rupture.



Do not handle the motors by the polymeric components: fan cover, drip cover, terminal box and / or terminal box cover.



To move or transport motors with cylindrical roller bearings or angular contact ball bearings, use always the shaft locking device provided with the motor.

All HGF, W50, W51 HD and W60 motors, regardless of bearing type, must be transported with shaft locking device fitted.

Vertical mounted motors with oil-lubricated bearings must be transported in the vertical position. If necessary to move or transport the motor in the horizontal position, install the shaft locking device on both sides (drive end and non-drive end) of the motor.