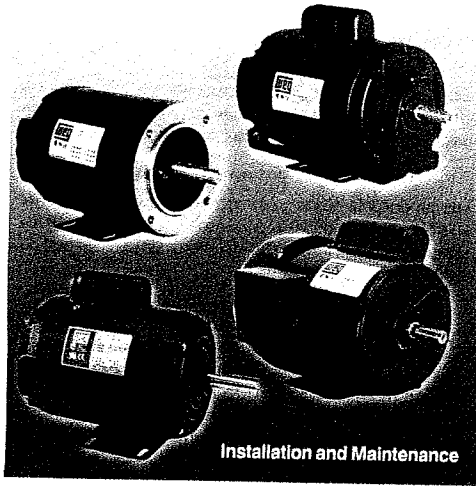




INSTRUCTION MANUAL FOR NEMA 42/48 AND 56 FRAME MOTORS



Installation and Maintenance

Make sure to use correct cable gauge based on the rated current stamped on the motor nameplate, in accordance with Standard.

BEFORE ENERGIZING MOTOR TERMINALS, CHECK IF THE GROUNDING IS MADE ACCORDING TO THE APPLICABLE STANDARDS. THIS IS ESSENTIAL TO AVOID ACCIDENTS.

Insulation for connections must be made with proper isolation tape that complies with motor thermal class.

THERMAL PROTECTION

Motors fitted with Automatic Thermal Protector will reset automatically as the thermal protector cools down. Never use these motors on applications where this automatic thermal protection may be dangerous to people or to the equipment.

Motors fitted with Manual Thermal Protector. If the thermal protector trips, switch-off the motor and, as it cools down (5 minutes or more), then reset this thermal protector and switch-on the motor. This procedure is actually required once this type of thermal protector may trip at any time after first tripping.

When the motor is supplied with protective or monitor temperature devices such as thermostats, thermistors, thermal protector, etc, connect their terminals to the corresponding devices on the control panel. If this procedure is not followed accordingly, warranty will be void. Do not change protection devices setting as they may not operate.

Note: Motors fitted with thermal protection will have the

READ CAREFULLY THIS MANUAL BEFORE INSTALLING THE MOTOR

RECEIVING CHECK UP

- Check if any damage has occurred during transportation.
- Check nameplate data.
- Remove shaft locking device (if any) before operating the motor.
- Turn the shaft with the hand to make sure it is turning freely.
- Make sure the motor was not exposed to excessive dirt and moisture during transportation and storage.

IN CASE OF ANY DAMAGE, LET THE TRUCKING COMPANY KNOW ABOUT IT IMMEDIATELY.

HANDLING AND TRANSPORTATION

1 - GENERAL

Lifting and lowering must be done gently without any shocks to avoid bearing damage. Use proper equipment to handle the motor.

STORAGE

If motors are not immediately installed, they must be stored in dry places, free of dust, vibrations, gases, corrosive smokes, under constant temperature and in normal position free from other materials.

Motor storage temperature must remain between 5°C to 60°C, with relative humidity not exceeding 50%.

Shaft and flange anti-corrosive protective product must be checked and re-applied, whenever required. WEG motors

are protected with "DASCO GUARD 400 TX AZ" supplied by Stuart, or "ANTICORIT TX 7RV" supplied by Fuchs.

Recommended protective layer must be 200µm for a period of 2 years.

In case the motors are stored for more than two years, bearings must be replaced.

Single phase motors when kept in stock for 2 years or more must have their capacitors replaced.

WEG recommends to turn the shaft (by hands) at least once a month.

For motors fitted with connection box, check the following topics:

- Inside area must be clean and moisture free.
- Connections and contacts must be corrosion free.
- Joints, endbells and connection box sealing rubbers must be in good operating condition, not even dry or broken.
- Lead passages (if any) must be duly sealed.

If motors are stored for over 6 months or subject to harmful conditions, the insulation resistance must be checked before installation.

If motor is fitted with space heaters, these should be switched-on.

Insulation Resistance Checking

Measure the insulation resistance before operating the motor and/or when there is any sign of winding moisture.

The resistance measured at 25°C must be:

$$R_i \geq (20 \times U) / (1000 + 2P) \text{ [M}\Omega\text{]}$$

(measured with a MEGGER at 500 V d.c.);
where U = voltage (V); P = power (kW)

If the insulation resistance is below 2 MΩ, the winding must be

following information on the nameplate: "Thermal Protection" or "Thermostat".

10- Start-Up

THE KEY MUST BE FASTENED OR REMOVED BEFORE STARTING THE MOTOR

- The motor must start and operate smoothly. In case this does not occur, switch it off and check the connections and mounting before starting it again.
- If there is excessive vibration, check if the fastening bolts are correctly fastened. Check also if the vibration comes from a neighbor machine. Periodical vibration checks must be carried out.
- Run the motor under rated load for a short period of time and compare if the running current is equal to that stamped on the nameplate.
- On VFD applications, make sure the maximum operating speed is not exceeded.

MAINTENANCE

WARNING: SAFETY CHECK LIST

1 - General Inspection

- Check the motor periodically.
- Keep the motor clean and ensure free air flow.
- Check the seals or V Ring and replace them, if required.
- Check electric connections as well as supporting screws.
- Check bearing condition and pay attention to: Any excessive noise, vibration, bearing temperature and grease condition.

- When a change, under normal conditions, is detected, check the motor and replace the required parts. Periodical inspection depends on the motor type and on application conditions.

LUBRICATION

Motors fitted with ZZ bearings do not require relubrication as they are factory-lubricated for life. grease used is Polyrex EM.

Vertical application motors ("V" mounting will have the grease lifetime reduced by half as well as the bearing lifetime.

Maximum operating temperature for these bearings is 70°C. For every 15°C in excess, lifetime will be reduced at 50%.

BEARING DISASSEMBLY AND ASSEMBLY

Bearing disassembly and assembly, whenever required, must be carried out by qualified personnel using only suitable tools and appropriate methods.

The extractor grips must be applied over the side face of the inner ring to be disassembled or over an adjacent part.

It is essential that bearing assembly be done under cleaning conditions to ensure proper operation and avoid damages. New bearings shall only be taken out from their cases when assembling them.

Before installing a new bearing it is required to check the shaft fitting for any sharp edge or strike signals.

dried according to the following method:

Warm it up inside an oven at a minimum temperature of 80°C increasing 5°C every hour up to 105°C, remaining under this temperature at least one hour.

Check if the stator insulation resistance remains constant within the acceptable values. If not, stator must be reimpregnated.

NOTE: All drains (if any) must be removed while drying.

INSTALLATION

1 - Safety

All personnel involved with electrical installations, either handling, lifting, operation or maintenance must be well informed and updated concerning safety standards and principles that govern the work and carefully follow them. Only qualified personnel should carry out these works.

MAKE SURE THAT ELECTRIC MOTORS ARE SWITCHED OFF BEFORE STARTING ANY MAINTENANCE SERVICE.

All rotating parts such as pulleys, couplings, outside fans, shaft, etc must be protected against accidental touches.

Motors must be protected against accidental starts.



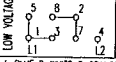
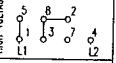
When performing any maintenance service, disconnect the motor from the power supply. Make sure all accessories have been switched off and disconnected.

In order to prevent from penetrating dust and/or water into the terminal box, cable glands or threaded pipe in the lead holes must be installed.

Do not change the regulation of the protecting devices to avoid any damage.

REPLACEMENT SPARE PARTS

When ordering replacement parts, please provide motor description as stated on the motor nameplate, including motor serial number.

 MADE IN BRAZIL  THERMALLY PROTECTED	PH1	B56	HP(KW)	3/4(0.55)
	RPM	1760	DUTY	CONT
	V	115/208-230	60 HZ	SF 1.25
	A	11.0/5.50	INS. B	AMB. AOC
	SFA	12.4/6.20	ENCL. TEAO	IP 44
	EFF	70.6%	PF	0.61
	CAP. 124.30-516 µF 110 V		TO REVERSE ROTATION INVERSE 5 AND 8	
				
	1-BLUE 2-WHITE 3-ORANGE 4-YELLOW 5-BLACK 6-RED 7-BROWN			
	WEG			

MOTORS FOR HAZARDOUS LOCATIONS

Besides the recommendations given above, these ones must be also followed:

THE SPECIFICATION OF THE MOTOR INSTALLATION AREA IS FOR CUSTOMER'S RESPONSIBILITY WHO WILL ALSO DETERMINE THE ENVIRONMENT CHARACTERISTICS AS PER APPLICABLE STANDARDS FOR CLASSIFIED AREAS.

Motors for hazardous locations are manufactured according to specific standards for such environments and they are certified by worldwide certifying entities.

2 - Operating Conditions

Electric motors, in general, are designed for operation at an altitude of 1000m above sea level for an ambient temperature ranging from -20°C to 40°C. Any variation is stated on the nameplate.

COMPARE THE CURRENT, VOLTAGE, FREQUENCY, SPEED, OUTPUT AND OTHER VALUES REQUIRED BY THE APPLICATION WITH MOTOR NAMEPLATE INFORMATION.

KEEP AIR INLET AND OUTLET FREE AND CLEAN. THE AIR BLOWN OUT BY THE MOTOR SHALL NOT RETURN. THE DISTANCE BETWEEN THE AIR INLET AND THE WALL MUST BE AROUND ¼ OF THE INLET OPENING DIAMETER.

ODP MOTORS - Open motors (IP00, IP21, IP23) are machines designed for operation in clean, dry areas, with enough air circulation for proper cooling. These motors should never be used in areas with flammable materials. Open motors may cause sparks and release cast particles under any eventual insulation failure (short-circuit).

TEFC MOTORS - Totally enclosed motors are machines suitable to operate in areas with moisture, dirt and/or corrosive materials either in enclosed or open environments. Motors supplied for hazardous locations (classified areas) must be installed in areas that comply with those specified on the motor nameplate.

3 - Motor Foundations

Motors provided with feet must be installed on solid foundations to avoid excessive vibrations.

1 - Installation of hazardous location motors

The complete installation must follow procedures given by the local legislation in effect for such purpose.

THE INSTALLATION OF HAZARDOUS LOCATION MOTORS MUST BE CARRIED OUT BY SKILLED PEOPLE, AND THE THERMAL PROTECTION MUST BE ALWAYS INSTALLED, EITHER INSIDE OR OUTSIDE THE MOTOR.

2 - Maintenance for hazardous location motors

Maintenance must be carried out by repair shops authorized and accredited by WEG. Repair shops and people without WEG's authorization who will perform any service on hazardous location motors will be fully responsible for such service as well as for any consequential damage.

ANY ELECTRICAL OR MECHANICAL MODIFICATION MADE ON HAZARDOUS LOCATION (CLASSIFIED AREAS) MOTORS WILL VOID THE CERTIFICATION.

Flanged motors must be duly fixed and aligned. Metal parts must be painted to avoid corrosion.

NOTE: If rotation direction is important for correct operation, then check it carefully before hooking up the load. The purchaser is fully responsible for the foundation.

4 - Drain Holes

Make sure the drains are placed at the lower motor position when the mounting configuration differs from that specified on the motor purchase order.

5 - Balance

WHEN SPECIAL BALANCING IS REQUIRED, CONTACT THE FACTORY.

Transmission elements such as pulleys, couplings, etc. must be dynamically balanced with half key before installation. Use always appropriate tools for installation and removal.

6 - Alignment

ALIGN THE SHAFT ENDS AND USE FLEXIBLE COUPLING, WHENEVER POSSIBLE.

Make sure that the motor mounting devices do not allow alignment modifications and further damage to the equipment.

When assembling a half-coupling, be sure to use suitable equipment and tools to protect the bearings.

Suitable assembly of half-coupling:

Check that clearance Y (eccentricity) is less than 0.05 mm and that the difference of X1 and X2 (perpendicularity) is less than 0.05 mm, as well.

When performing maintenance, installation or oiling services, follow these instructions:

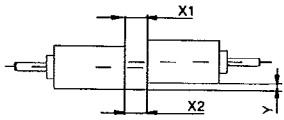
- Check if all components are free of edges, knocks or dirt.
- Make sure all parts are in perfect conditions.
- Lubricate the surfaces of the endshield fittings with protective oil to make the assembly easier.
- Use only rubber hammer to fit the parts.
- Check for correct bolts fastening.
- Use clearance calibrator for correct connection box fitting (below 0.05mm).

DO NOT REUSE DAMAGED OR WORN PARTS. REPLACE THEM BY NEW ONES SUPPLIED BY THE FACTORY.



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NOTE: For better assembly, we recommend to follow the coupling manufacturer instructions.



Note: Dimension X1 and X2 must be 3mm minimum.

7 - Belt - Pulley Drive

When using pulley - belt drive (coupling), follow the instructions given below:

- Belts must be tightened just enough to avoid slippage when running, according to the specifications stated on the belt supplier recommendation. Excessive belt tension will cause bearing lifetime reduction.
- Pulleys must be mounted as close as possible to the motor bearing, and always touching the flange shoulder.

WARNING

Excessive tension on the pulleys will damage the bearings and lead to a probable shaft rupture.

8 - Connection

WARNING

Voltage may be connected at standstill inside the terminal box for space heaters or direct winding heating.

WARNING

Capacitor on single-phase motors can retain a charge which appears across the motor terminals, even when the motor has reached standstill condition. So avoid touching them at such condition.

WARRANTY TERMS

WEG warrants its products against defects in workmanship and materials for twelve (12) months from the invoice date issued by the factory, authorized distributor or agent limited to eighteen (18) months from manufacturing date independent of installation date as long as the following items are fulfilled accordingly:

- Proper transportation, handling and storage;
- Correct installation based on the specified ambient conditions and free of corrosive gases;
- Operation under motor capacity limits;
- Observation of the periodical maintenance services;
- Repair and/or replacement effected only by personnel duly authorized in writing by WEG;
- The failed product be available to the supplier and/or repair shop for a required period to detect the cause of the failure and corresponding repair;
- Immediate notice by the purchaser about failures occurred and that these are accepted by WEG as manufacturing defects.

This warranty does not include disassembly services at the purchaser facilities, transportation costs with product, tickets, accommodation and meals for technical personnel when requested by the customer.

The warranty service will be only carried out at WEG Authorized Repair Shops or at WEG's facilities.

Components whose useful life, under normal use, is shorter than the warranty period are not covered by these warranty terms. The repair and/or replacement of parts or components, when effected by WEG and/or any WEG Authorized Repair Shop, will not give warranty extension. This constitutes WEG's only warranty in connection with this sale and the company will have no obligation or liability whatsoever to people, third parties, other equipment or installations, including without limitation, any claims for consequential damages or labor costs.



A WRONG CONNECTION CAN BURN THE MOTOR.

Voltage and connection are indicated on the motor nameplate. To perform performance variations, acceptable voltage and frequency variations must comply with NEMA MG 1.14.30. Check also the phase to phase voltage balance.

9 - Starting Methods

The motor is rather started through direct starting. In case this is not possible, use compatible methods to motor load and voltage. When applying reduced voltage starting method, remember that the starting torque will also reduce.

Rotation Direction:

For three phase motors:

The rotation direction is clockwise if the motor is viewed from DE side and if the phases are connected according to the sequence L1, L2, L3.

To change the rotation direction, reverse two of the connecting leads.

For single phase motors:

The rotation direction is clockwise if motor is viewed from DE side. To change rotation direction (whenever possible), reverse leads 5 and 8 (see note on motor nameplate).



THE POWER SUPPLY CONNECTION MUST BE MADE BY QUALIFIED PERSONNEL AND WITH FULL ATTENTION TO ENSURE SAFE AND PERMANENT CONTACT. AFTER CONNECTING THE MOTOR, CHECK FOR ANY STRANGE MATERIAL INSIDE THE TERMINAL BOX. ALL CABLE INLETS NOT IN USE MUST BE CLOSED.