

IEC Motors Type Metric Efficient Line Cast-iron

User Manual for the Philippines



INSTALLATION

MAINTENANCE

Nidec

NIDEC MOTOR CORPORATION

Safety First

High voltage and rotating parts can cause serious or fatal injury. Qualified personnel must perform safe operation, and maintenance. Familiarization with and adherence to IEC 61508, NEMA MG2, the National Electrical Code (NEC) and local codes is required. It is important to observe safety precautions to protect personnel from possible injury. Personnel should be instructed to:

1. Be familiar with the equipment and read all instructions thoroughly before installing or working on equipment.
2. Avoid contact with energized circuits or rotating parts.
3. Disconnect all power sources before initiating any maintenance or repair.
4. Act with care in accordance with prescribed procedures in handling and lifting this equipment.

Inspection and Handling

Inspect unit to make sure no damage has occurred during shipment. Check nameplate for correct speed, horsepower, voltage, Hertz, and phase for conformance with power supply and equipment. **WARNING:** Units should be lifted using all eyebolts or lugs if provided. These eyebolts or lugs are provided for lifting this unit only and must not be used to lift any additional weight. Lifting angle, from shank of eyebolt, must not exceed 30° for machines with single and 45° for machines

Storage

Units should be stored indoors, in a clean, dry location and winding should be protected from excessive moisture

Maintenance

Inspect units at regular intervals. Keep units clean and ventilation openings clear of dust, dirt or other.

WARNING: Disconnect all power sources to the unit and discharge all parts, which may retain an electrical charge before attempting any maintenance or repair. Screen, and covers, must be maintained in place when unit is in operation. Failure to

Grease Lubrication Instructions

Units are prelubricated at the factory and do not require any additional lubrication up to and including frame 160.

Above regreasable bearing are used. And motor bearing should be well-lubricated.

Polyrex-EM grease is suitable for ELC and ELA series motor bearing.

| Motor Bearings Re-lubrication Guide | | | | |
|-------------------------------------|-----------------|----------------------|----------------|-------------|
| Motor Frame Size | Number of Poles | Weight of Grease (g) | Interval Hours | Grease Type |
| 160-200 | 2 | 30 | 2000 | Polyrex-EM |
| 225-315 | 2 | 45 | | |
| 355 | 2 | 75 | | |
| 160-200 | 4 & 6 | 30 | 4000 | |
| 225-280 | 4 & 6 | 45 | | |
| 315-355 | 4 & 6 | 75 | | |

NOTE: Motors operating under rated load and allowable ambient conditions may feel hot when touched; this is normal and should not be cause for concern. When in doubt, measure frame surface temperature and confer with nearest office. Enclosed motors normally have condensation drain openings. Insure that drain openings are properly located and open (plugs removed) for the motor mounting position. Drain openings should be at the lowest point of end brackets, frame housing and terminal housing when the motor is installed. This may require modification of motor to accomplish. If unit appears wet, and/or has been stored in a damp location, dry out thoroughly and check for adequate insulation resistance to ground before operating

20 MOhms - for 80 through 112 motor frames

2 MOhms - for 132 through 355 motors frame

as measured with a 500V magneto.

Resistance control device between each phase and frame indicates excess moisture requiring that the windings be dried

Power Supply and Connections

The power supply must agree with values on nameplate. Terminal voltage should not vary more than $\pm 10\%$ of nameplate voltage at rated frequency. Unbalanced line voltage, greater than one percent, can cause overheating. Do not exceed the continuous rated load amperes on the nameplate.

Starting controls and overload protection should be properly sized in accordance with the IEC, NEC and the control

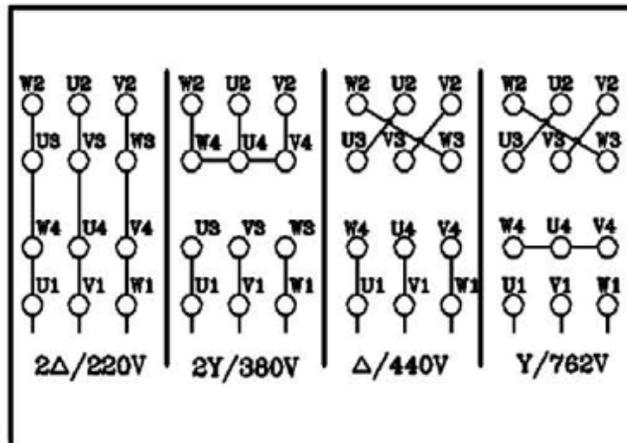


Connecting Data and Starting Methods

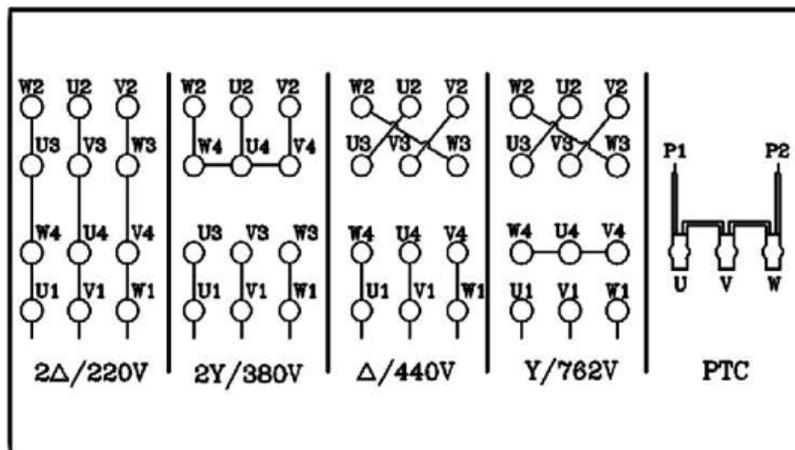
All the motors must be connected according to the following diagrams:

Connection Stickers

90Kw and Below



110Kw and Above



Location

WARNING: Use only listed Hazardous Location Motors and /or Atex directive for service in Hazardous Locations as defined in Article 500 of the NEC or IEC60079-10-1, IEC61241-10, IEC60079-10-2.

Installation Mounting

Motors may be mounted horizontally or vertically, provided that there is free movement for cooling air. The motors are designed for mounting position, IM B3, B6, B7, B8, V5, V6 and F-1 assembly positions. The F-1 assembly is standard. (Conduit box on the side of the motor).

When mounting the motor, make sure drain holes are positioned to allow condensed moisture to drain off. Mount units on a firm, flat surface sufficiently rigid to prevent vibration. Drive belts and chains should be tensioned in accordance with supplier recommendations.

Couplings should be properly aligned and balanced. For belt, chain and gear drive selection refer to the drive or equipment manufacturer. For application of drive equipment refer to applicable information in IEC standards and/or NEMA MG1.

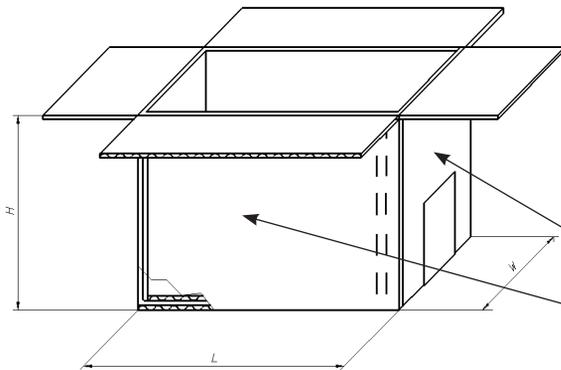
Motors have been dynamically balanced using a half key the same length as the full key shipped with the motor. If pulley

Service

For after sales service and warranty questions refer to www.USMotors.com

Packaging Dimensions & Weights

Small Motors

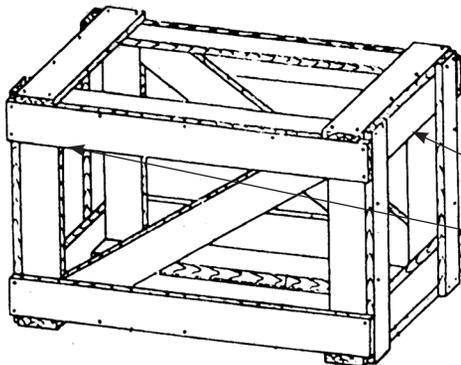


Palette Ground Clearance 100mm

Label (Opposite side of motor nameplate) and adjacent right

| Frame | | 80 | 90 | 100 | 112 |
|-------------------|--------|------|------|------|------|
| L | mm | 300 | 360 | 405 | 420 |
| | inches | 11.8 | 14.2 | 15.9 | 16.5 |
| W | mm | 210 | 210 | 260 | 330 |
| | inches | 8.3 | 8.3 | 10.2 | 13.0 |
| H | mm | 240 | 230 | 270 | 315 |
| | inches | 9.4 | 9.1 | 10.6 | 12.4 |
| Palette Clearance | mm | 100 | 100 | 100 | 100 |
| | inches | 3.9 | 3.9 | 3.9 | 3.9 |
| Carton Weight | Kg | 0.2 | 0.23 | 0.38 | 0.58 |
| | Lbs | 0.4 | 0.5 | 0.8 | 1.3 |

Large Motors



Crate Ground Clearance 100mm

Label (Opposite side of motor nameplate) and adjacent right

| Frame | | 132 | 160 | 180 | 200 | 225 | 250 | 280 | 315 | 355 |
|-----------------|--------|------|------|------|------|------|------|------|-------|-----|
| L | mm | 620 | 760 | 830 | 880 | 935 | 1015 | 1135 | 1430 | |
| | inches | 24.4 | 29.9 | 32.7 | 34.6 | 36.8 | 40.0 | 44.7 | 56.3 | |
| W | mm | 440 | 520 | 545 | 595 | 650 | 735 | 765 | 960 | |
| | inches | 17.3 | 20.5 | 21.5 | 23.4 | 25.6 | 28.9 | 30.1 | 37.8 | |
| H | mm | 430 | 480 | 510 | 560 | 630 | 650 | 735 | 845 | |
| | inches | 16.9 | 18.9 | 20.1 | 22.0 | 24.8 | 25.6 | 28.9 | 33.3 | |
| Crate Clearance | mm | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | |
| | inches | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | |
| Crate Weight | Kg | 10 | 13 | 15.5 | 24.5 | 25 | 40.5 | 41 | 89.5 | |
| | Lbs | 22 | 28.6 | 34.1 | 53.9 | 55 | 89.1 | 90.2 | 196.9 | |

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