

# IEC Motors Type Metric Efficient Line Cast-iron

User Manual for the Philippines



INSTALLATION

MAINTENANCE

**Nidec**

NIDEC MOTOR CORPORATION

## Safety First

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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

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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

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

## Maintenance

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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

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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

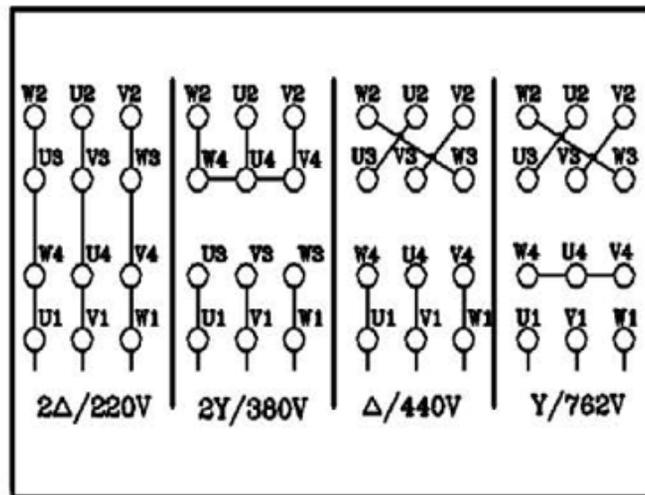


## Connecting Data and Starting Methods

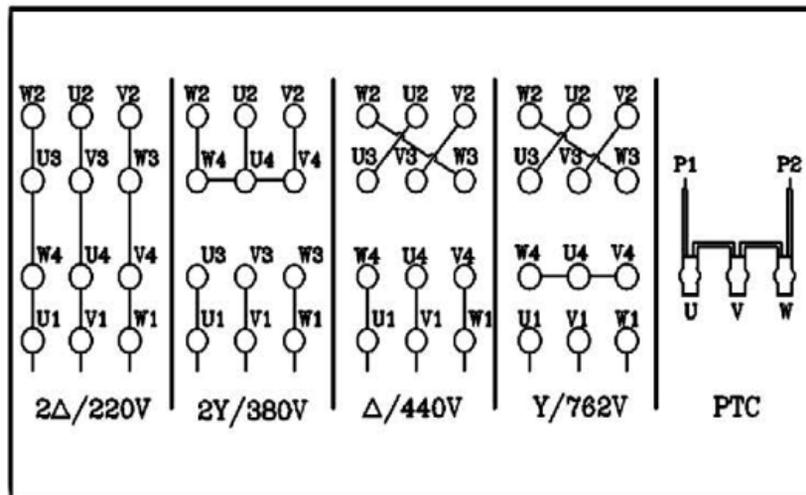
All the motors must be connected according to the following diagrams:

### Connection Stickers

90Kw and Below



110Kw and Above



† All marks shown within this document are properties of their respective owners.

## Location

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**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

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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

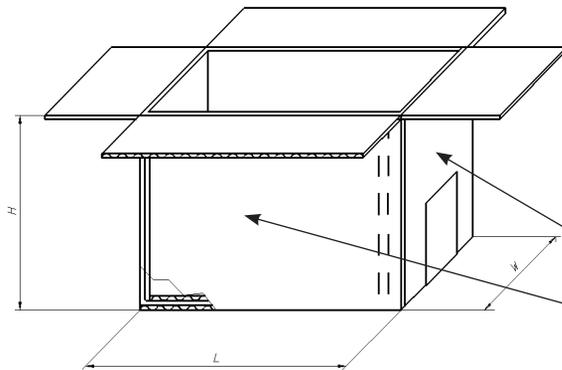
## Service

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For after sales service and warranty questions refer to

# Packaging Dimensions & Weights

## Small Motors

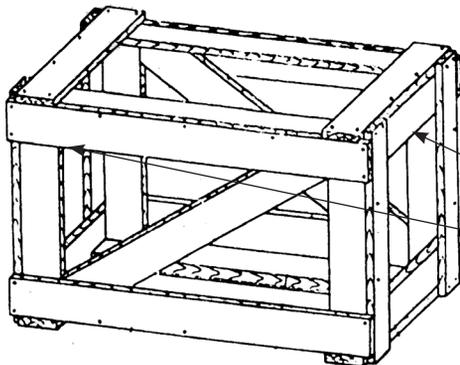


**Palette Ground Clearance 100mm**

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	780	850	890	940	1010	1180	1480	1620
	inches	24.4	30.7	33.5	35.0	37.0	39.8	46.5	58.3	63.8
W	mm	370	430	440	510	560	660	680	780	900
	inches	14.6	16.9	17.3	20.1	22.0	26.0	26.8	30.7	35.4
H	mm	415	490	530	680	720	790	880	1050	1200
	inches	16.3	19.3	20.9	26.8	28.3	31.1	34.6	41.3	47.2
Crate Clearance	mm	100	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	3.9
Weight	Kg	10	13	15.5	24.5	25	40.5	41	89.5	91
	Lbs	22	28.6	34.1	53.9	55	89.1	90.2	196.9	200.2

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