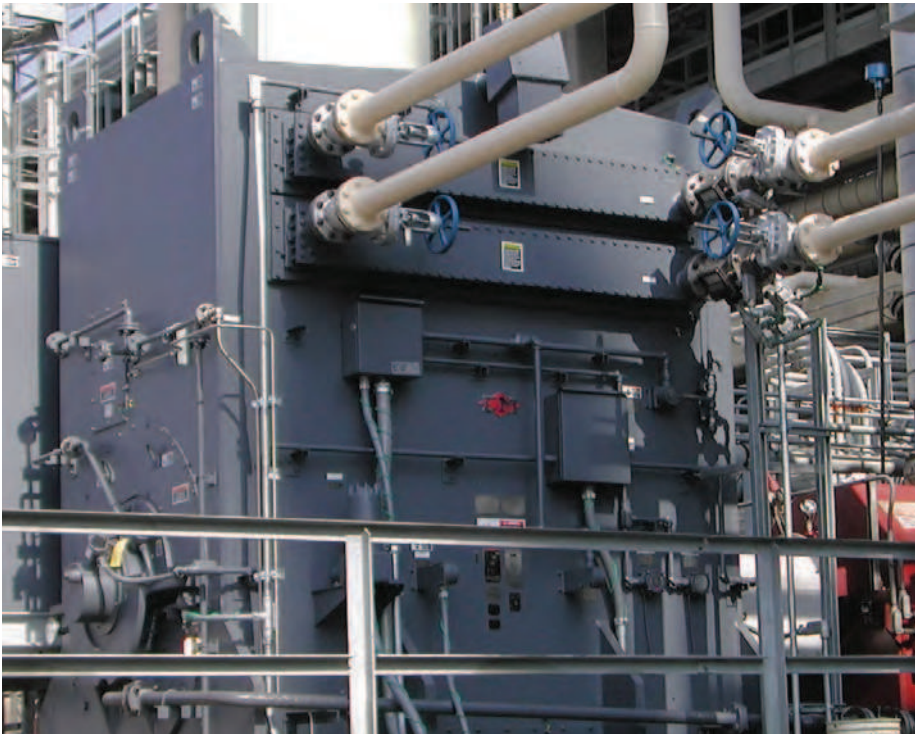




# Induction Motors

## Horizontal and Vertical

**Electric Machinery (EM) induction motors have been specifically designed and manufactured for the most severe industrial applications, such as heavy duty fans, pumps, refiners, compressors, crushers and grinding mill drives.**



Induction motor driving a centrifugal compressor.

### Ranges

Ranges

Output: 2,000 to 25,000 HP

Speed: 200 to 3,600 RPM

Voltage: 2,300 to 13,800 VAC

### Advantages

- Simple and Rugged Design
- Low Cost
- Higher Starting Torque Capability
- Minimal Maintenance

### Rotor

#### • Rotor construction

Heavy-duty rotor construction is designed for adequate torque, high thermal capacity, mechanical rigidity, low noise level, and smooth operation. The assembled rotor is accurately machined and balanced for smooth operation.

#### • Rotor cage bars

The oxygen-free copper alloy cage bars are silver brazed into special milled pocket joints in the circular end rings. The end ring joints provide greater contact and locking than other methods of attaching end rings. Each joint is ultrasonically inspected to obtain the highest quality. The ultrasonic test for his application was developed by EM engineers. This permits higher heat absorption capacity for starting high inertia loads.

#### • Rotor laminations

Low loss, non-segmental rotor laminations are tightly anchored to the shaft. Each lamination is individually insulated to minimize stray losses.

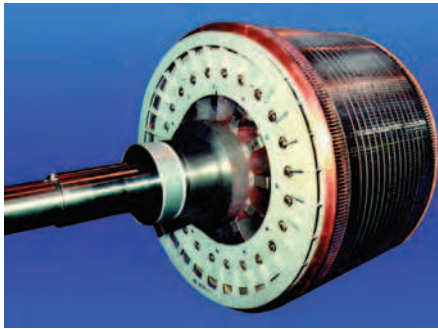
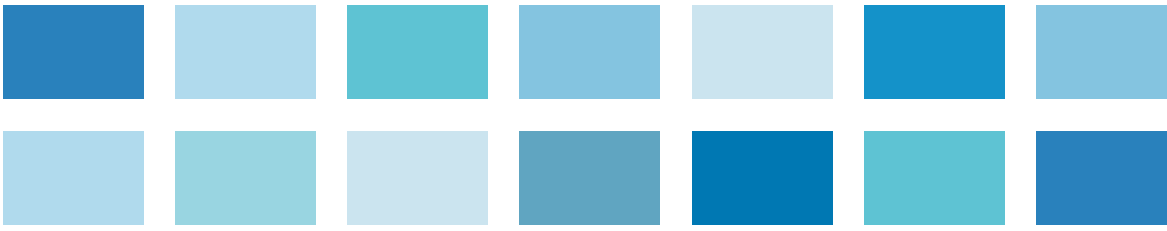
#### • Rotor shaft

The shaft will be forged steel or rolled steel, accurately machined and smoothly finished where required

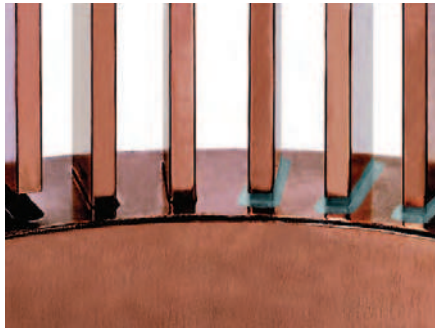
### Bearings

- Roller, sleeve or tilt pad bearings are designed to match the application.
- Lubrication of sleeve bearings is achieved through either ring lubrication or a combination of ring and forced lubrication.
- Extra large bearing oil reservoirs ensure a clean oil supply to the bearings. Special bearing designs available for vertical applications.





Slow speed rotor construction.



Simulated placement of rotor bars in milled end



Vertical motor with TEAAC enclosure.

## Stator

### • Stator construction

The stator is composed of a supporting structure, a core of electrical laminations and insulated windings. High grade silicon steel laminations that build up the core are precision punched from core-plated sheets. Pressed and held between end plates, these laminations are stacked in the support structure and spaced for radial ventilation to ensure even cooling throughout the core. The frame is welded and machined to withstand stresses exerted by electrical and mechanical forces in the core and provide low vibration levels.

### • Stator winding insulation

The Duraguard™ insulation system is a vacuum pressure impregnated epoxy-mica insulation system that provides Class F thermal capability, outstanding dielectric properties, superior moisture and chemical resistance and the superb mechanical integrity of an epoxy resin system. It is a sealed insulation system capable of passing the water immersion test as specified by NEMA MG 1 and IEEE 115. Abrasion-resistant coating is available for protection in demanding environments.

## Industry standards

Electric Machinery manufactures synchronous motors to meet all current industry standards including NEMA MG 1, IEEE 112, IEC 60034, API 541 and ISO 9001 standards. Motors can be designed to match your existing machines space limitations, shaft heights, and mounting foot locations to minimize installation costs.

## Enclosure

Typical motor enclosures include DPG (IC01/IP22), WP I (IC01/IPW23), WP II (IC01/IPW24), TEFV (IC31/37/IP44), TEWAC (IC817/IP54), and TEAAC (IC611/616/IP54).

## Application

Typical motor applications include extruders, fans, pumps, mixers and compressors.

## Experience

EM has over a century of experience in designing, manufacturing and servicing large induction motors.

## Service, Support & Upgrades

Electric Machinery EM provides 24/7 support from initial design studies, manufacturing and commissioning to after-sales service and service through a network of regional business centers.

Thanks to our experience with equipment of all types and generations our highly qualified teams provide a complete lifecycle support to your equipment. At Electric Machinery EM we are committed to a pro-active management of your systems.

### Our scope of services includes:

- Installation, commissioning and start-up
- Maintenance and field support
- Spares/replacement parts
- Rebuilds and rewinds
- Refurbishment/replacement
- Technical support.



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