

# Induction Motors

Ideal Electric specializes in large horizontal and vertical motors and generators.

Squirrel cage induction motors are the simplest motors available. They can be built with high starting torques, low inrush or high performance.

Unlike other manufacturers, Ideal Electric does not ignore the potential variety of induction motors and sell only from a standard set of designs. Ideal designs its induction motors to meet the needs of the application.

Ideal has built induction motors for over seventy years. Our expertise, combined with the best materials, results in high performance and dependability.

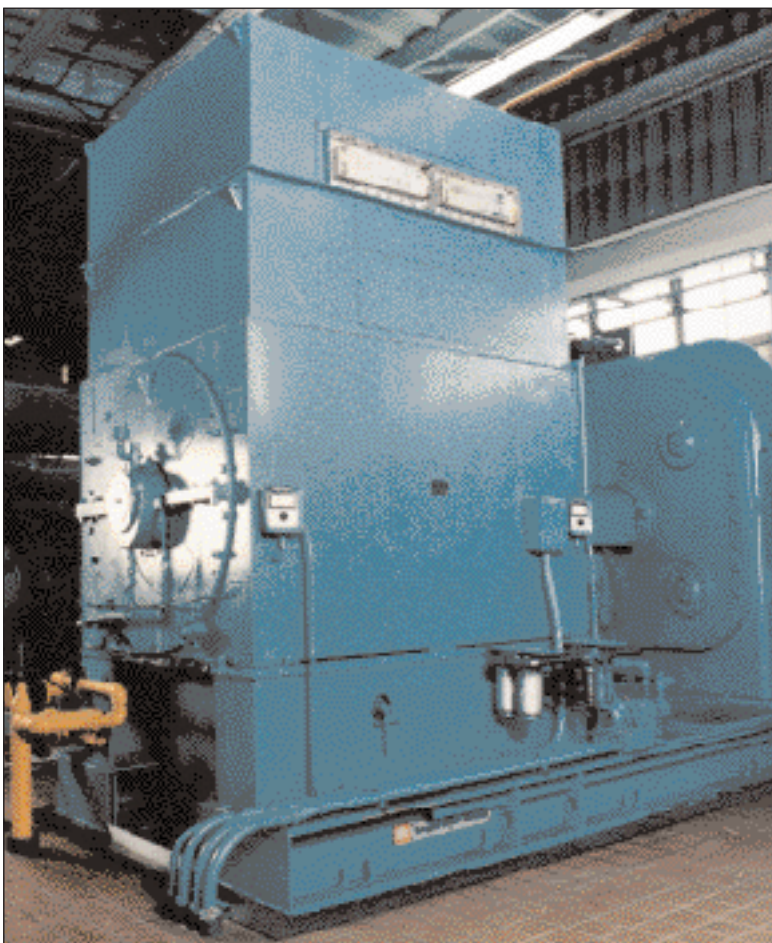
## Benefits

### ► Application Specific Design

Ideal Electric motors are designed to the application, ensuring you get the required performance. Our engineering and sales staff can help you develop specifications for your project, working with you to determine inrush, current, torque, efficiency and vibration requirements.

### ► Full Load Testing

Ideal Electric's test floor allows for full load testing of vertical and horizontal units up to 8000 HP from 480 volts to 13.8 kV and at 50 and 60 Hz. Having the capability to test up to 8000 HP at 50 or 60 Hz ensures higher quality and customer satisfaction.



*High-speed induction motor with dual water-to-air heat exchangers in a centrifugal compressor application.*

### ► Made in the U.S.A.

Ideal Electric motors are manufactured in our Mansfield, Ohio plant with a high U.S. content (often better than 90%). That's why Ideal Electric is often the vendor of choice for U.S. Export-Import Bank financed projects.

### ► Cost-Effective

Each parameter— torque, inrush and efficiency— is optimized for the given application, ensuring a cost-effective motor that is right for the job.

## Mechanical Features

Ideal Electric induction motor designs have been rigorously tested

in our test facility, and in the field, to ensure each motor is mechanically sound.

### ► Rotor Construction

Rotor stability is critical to motor reliability. Material selection and construction methods optimize stability and allow Ideal Electric motors to perform dependably under all operating conditions. Vibration problems are minimized through dynamic balancing.

Rotor shafts use forged AISI 1040 or 4140 series steel. On two-pole motors, integral rotor laminations are welded together under pressure before being shrunk onto the shaft. Four-pole motors have a ribbed spider welded onto the shaft. Then the rotor laminations are



***Ideal Electric...in sync with your needs***

welded under pressure to the spider. Both designs use plate-steel rotor heads for added stability.

For starting, the rotor bars use a floating cage construction to allow for thermal expansion, reducing mechanical stresses.

#### ► Bearings

Ideal Electric can offer our own conservatively rated split sleeve bearing design, RENK bearings, or other commercially available bearings. Our bearings can accommodate thrust, if required, and can be flood oil lubricated or self-lubricated, both with dual oil rings. The liner is centrifugally cast high tin, low lead content babbitt, and manufactured per federal specifications QQ-T-390.

The bearing is designed with a 1:1 length-to-diameter ratio with a low typical running temperature of 140°F.

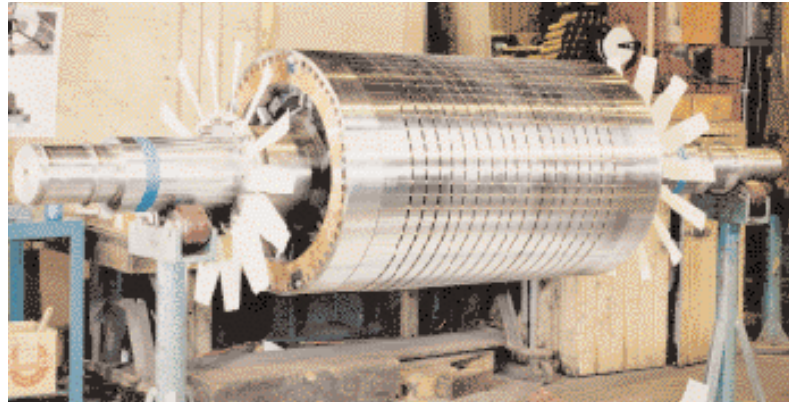
Conservative loads below 200 psi, and surface speeds at the babbitt less than 4000 FPM, ensure long bearing life and minimum vibration.

#### ► Enclosures

A variety of enclosures are available for nearly every type of installation

### OUR MISSION

OUR MISSION IS TO PRODUCE THE HIGHEST QUALITY PRODUCT, SATISFY CUSTOMER REQUIREMENTS, AND PROVIDE REWARDING EMPLOYMENT IN A PROFITABLE GROWTH ENVIRONMENT, WHILE SUPPORTING THE COMMUNITY.



*Induction rotor with stainless steel retaining rings.*

including those that meet NEMA/IEC standards.

Available enclosures include ODP, WPI, WPII, TEWAC, TEAAC, TEFV, IP54 and IP24 open ventilated enclosures. Special sound attenuation, filters, screens and redundant coolers are all available.

Totally enclosed units meet IEC IP54 ingress protection standards.

### Industry Standards

Ideal Electric manufactures motors to meet all current industry standards, including NEMA, IEC, and API. CSA Labeling and CENELEC approved designs are also available.

Ideal routinely designs motors for hazardous operation in Division 2/Zone 2 environments. Special designs for Division 1/Zone 1 environments, with TEFV enclosures, are available.

### Electrical Features

#### ► Sealed Insulation System

Ideal offers various Class F insulation systems, including an epoxy VPI or a polyester VPI system and a resin-rich "B" staged system. Each has its advantages and can be provided to pass an immersion test per NEMA 1-20.49. Corona protection is standard for stators above 6 kV.

#### ► Squirrel Cage Winding

Ideal uses only copper bars in the squirrel cage winding. Tapered copper bars are used to enhance starting performance while maintaining high efficiency and power factor.

Alloy bars are used when the application requires.

The bars are brazed to a forged copper shorting ring to complete the floating squirrel cage. A stainless steel ring is shrunk onto the copper bars for added mechanical strength.

### Testing

Ideal induction motors are rigorously tested to ensure each motor is mechanically and electrically sound. Ideal Electric's motor manufacturing facility includes a test floor which allows for the full-load testing of vertical and horizontal induction motors, up to 8,000 HP at voltages from 480 volts to 13.8 kV and at 60 Hz and 50 Hz.

### For More Information

For more information on induction motors, or any other Ideal product, contact Ideal Electric headquarters or your local Ideal Electric representative.



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