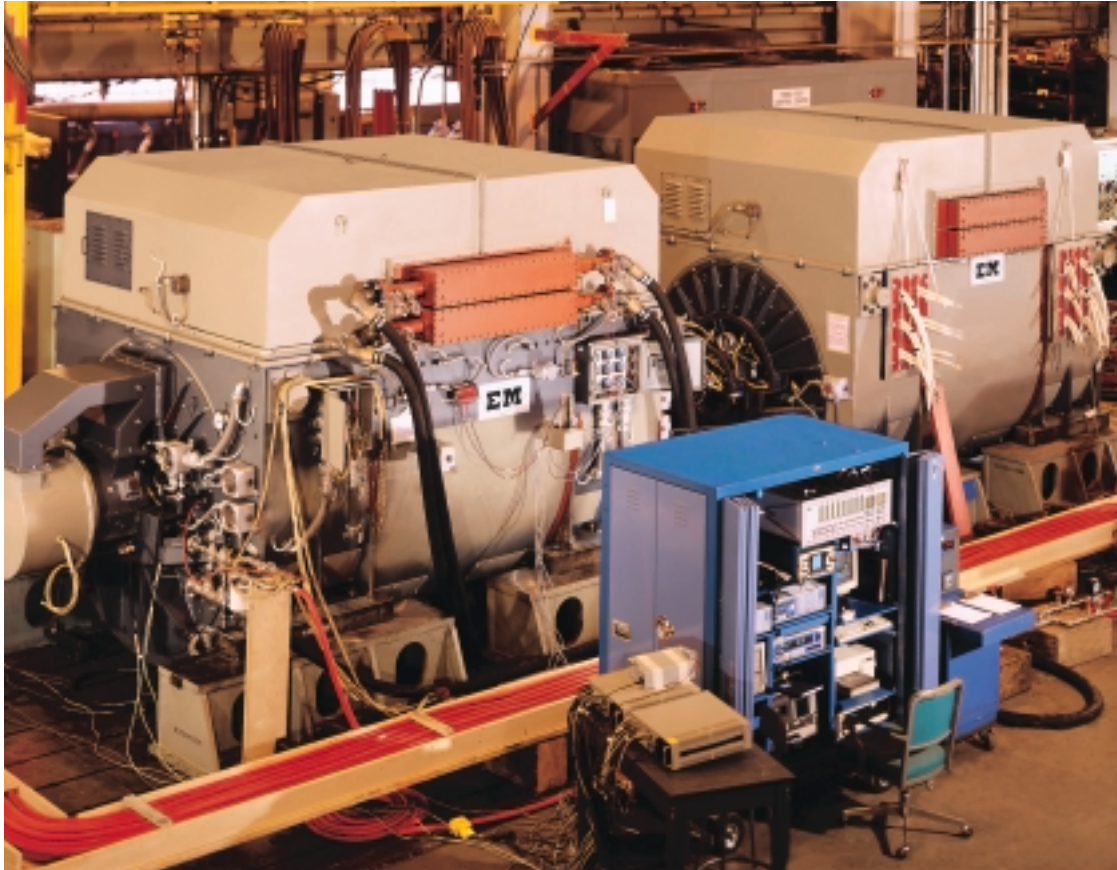




# Industrial Applications

Up to 150,000 HP



- ▲ Ratings range to meet synchronous motor applications up to 150,000 HP.
- ▲ Custom designed to meet customer starting and pull-in torque based on electrical system limitation and load requirements.
- ▲ Designed to match your existing machines, space limitations, shaft heights, and mounting foot locations to reduce installation costs.
- ▲ Extra large oil reservoir provides ample clean oil supply to bearings for protection and long life.
- ▲ Field windings are manufactured to protect them from moisture and chemicals.
- ▲ Innovative designs offer access covers to a large internal cross section and provide easier accessibility for inspection and maintenance.
- ▲ Duraguard VPI insulation is fully Class F rated and uses a two-part epoxy-mica system to provide industry-proven long life.
- ▲ Abrasion-resistant coating is available for protection in demanding environments.
- ▲ Brushless excitation system eliminates the need to change brushes and maintain collector rings, reducing operating costs.
- ▲ EM's patented SynchRite<sup>®</sup> system applies field automatically and at the proper rotor angle to ensure smooth synchronization.
- ▲ Brushless solid state components are rated conservatively to provide dependable service and long life.
- ▲ Synchronous motors are highly efficient and have power factor correction capabilities to provide reactive power and/or reduce operating costs and demand charges.
- ▲ EM experience... a supplier of synchronous motors to industry for over 100 years.

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SYNCHRONOUS MOTORS

### SYNCHRONOUS MOTOR CONSTRUCTION FEATURES

Electric Machinery's synchronous motors incorporate special features which make them the right choice for use in many industrial applications. Over 100 years of experience has enabled us to design dependable motors that satisfy the special needs of many industrial markets. Some of these specialized areas include municipal and water treatment plant, metals and mining, petrochemical, the paper industry and more. For every unique application, EM works closely with customers through every stage: engineering, software development, manufacturing, and training. EM provides the services needed to ensure complete satisfaction.

### STATOR

- Frame is engineered, welded and machined to withstand forces exerted by electrical and mechanical stresses in the core.
- Core laminations are punched from insulation-coated electrical steel. Spacer laminations are stacked into the core at regular intervals to provide openings for radial ventilation to ensure even cooling throughout the core.
- Stator coils are form-wound and vacuum-pressure impregnated to meet Class F insulation requirements. This system provides outstanding dielectric properties, superior moisture and chemical resistance, superb mechanical integrity and proven long life.

### ROTOR

- Rotor consists of a spider on which the field poles, amortisseur (damper) windings and exciter armature are mounted. Shafts can be provided by either compressor manufacturer or EM.
- Rotors above 600 RPM are dynamically balanced at full operating speed to meet the lowest levels of vibration in the industry.
- Rotor insulation is a full Class F system for long, trouble-free performance.

### BRUSHLESS EXCITATION SYSTEM

- Field excitation is provided by a standard brushless excitation system which consists of a rotating armature, diode bridge and stationary field. The brushless excitation system eliminates periodic brush and collector ring maintenance and replacement.
- Conservatively rated diodes are provided to ensure long service.
- Ability to fit various shaft and mounting arrangements.
- Eliminates the need for collector rings, brushes, or commutators which require maintenance, adjustments and inspections.



Variable speed municipal pump drive.



Compressor drive in a petrochemical plant.

