



# For Reciprocating Compressors

500 - 25,000 HP



- ▲ Ratings range from 500 HP to 25,000 HP.
- ▲ Starting and pull-in torques are designed to accommodate electrical system requirements and load limitations.
- ▲ Designed to fit your existing machines, space limitations, shaft heights, and mounting foot locations.
- ▲ 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 which resists chemicals and moisture, and provides long motor life.
- ▲ Brushless excitation is non-sparking for hazardous atmospheres. Solid state components are rated conservatively to provide dependable service and long life.
- ▲ EM's patented SynchRite® system applies the field automatically at the proper rotor angle to ensure smooth synchronization.
- ▲ Explosion-proof accessory terminal boxes for use in hazardous atmospheres are standard on EM motors for reciprocating compressors.
- ▲ Synchronous motors are highly efficient and have power correction capabilities to provide reactive power and/or reduce demand charges.
- ▲ Enclosures available in traditional open and enclosed NEMA and IEC designations.
- ▲ Stator shift is available on motors with pedestal type bearings to provide easier accessibility.
- ▲ Phosphorous free brazing of cage bars prevents chemical corrosion which can cause machine failure.
- ▲ Robust rotor construction provides high inertia to minimize current pulsations. Additional inertia can be added as required.
- ▲ A continuous damper winding minimizes current pulsations.
- ▲ EM experience... a recognized leader in synchronous motors worldwide.

## ELECTRIC MACHINERY COMPANY

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SYNCHRONOUS MOTORS

## For Reciprocating Compressors

Heavy-duty EM synchronous motors for reciprocating compressors are built to meet design parameters from compressor manufacturers along with on site electrical requirements. Our motors are ideal for a wide variety of applications requiring continuous, trouble-free, dependable operation.

### ROTOR

- Rotor consists of a spider on which the field poles, amortisseur (cage) windings and exciter armature are mounted. Shafts can be provided by either compressor manufacturer or EM.
- Rotor spider is cast iron or fabricated steel depending on the application. Mounted to the spider rim by bolts, studs or dovetails, the field poles are comprised of steel laminations pressed and bolted together to withstand rotational and electrical stresses. The wire-wound poles are then epoxy bonded layer-by-layer to hold the windings firmly.
- Brushless excitation standard.

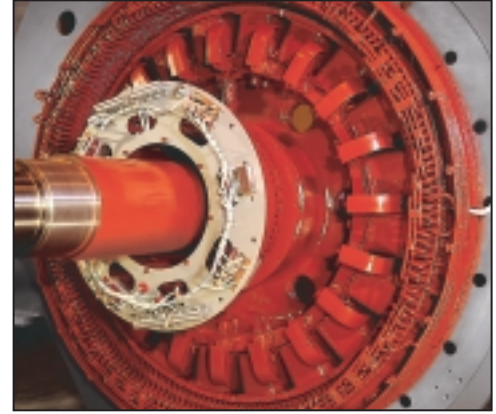
### STATOR

- Frame is welded and machined to withstand stresses exerted by electrical and mechanical forces in the core and provide low vibration levels.
- 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 coreplated 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.
- Stator shift is available on motors with pedestal type bearings to provide easier accessibility. Extra length soleplates provide stator shift to allow internal inspection of the motor.

### API 546

EM builds motors for reciprocating compressors to exacting API 546 Standards, meeting welding, structural and testing requirements. This helps customers avoid costly down time because the motors start and run reliably, with these other advantages from API 546 design:

- Stator core laminations are C-5 quality or better to withstand winding burnout if rewinding is required.
- Low impedance ground path is welded to the back of the machine's core to divert surges in the power system away from the motor, preventing damage.
- Factory dynamic balancing at rated speed provides low vibration for smooth field operation.



Rotor and stator in final assembly.



Motor with weather protected enclosure installed in Korea.



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