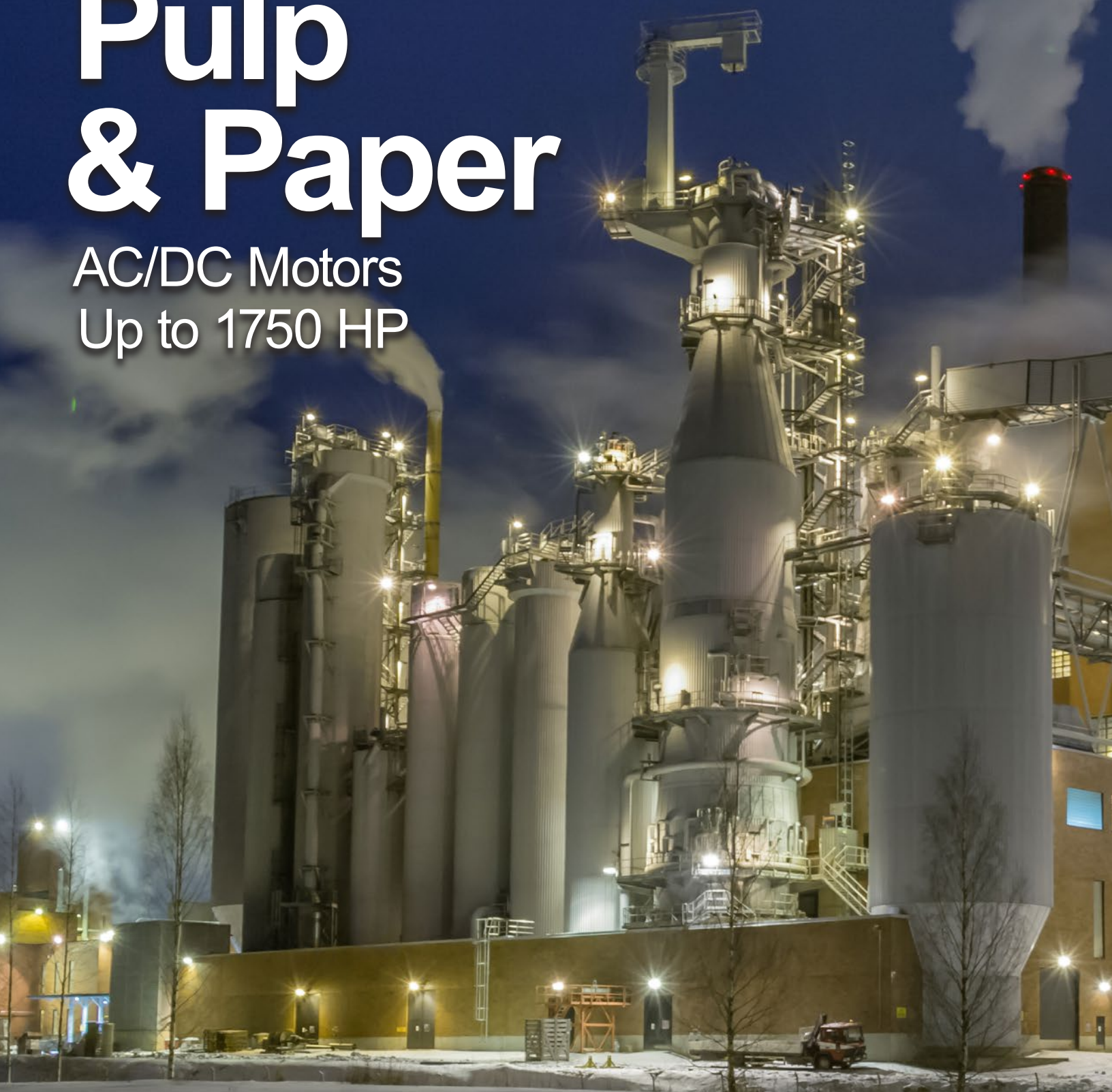




GE INDUSTRIAL MOTORS  
*a WOLONG company*

# Pulp & Paper

AC/DC Motors  
Up to 1750 HP

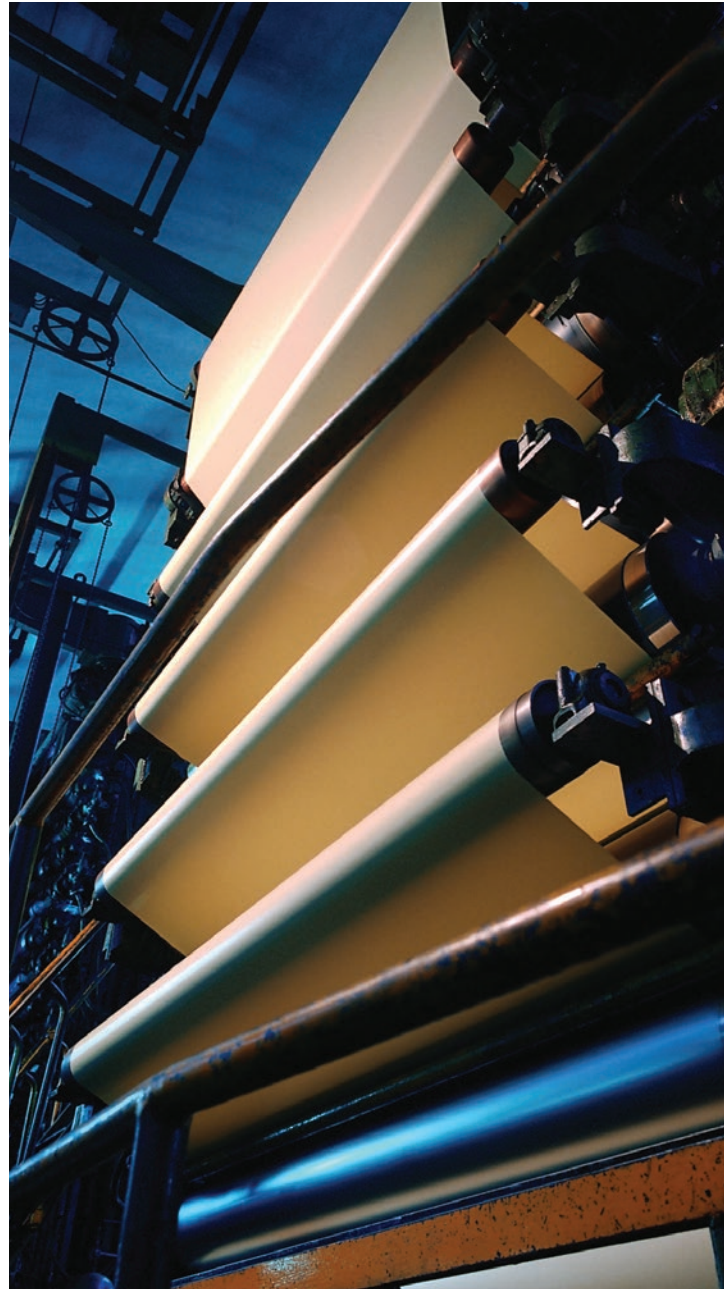


Electric motors make  
an average of

**70%**  
total power cost\*

**\$87k** /hr

Average cost  
of unplanned downtime  
for a typical industrial  
processing plant\*\*



### Challenges

- Multiple suppliers, designs and specifications tying up resources.
- Frequent unplanned maintenance disrupting operations requiring replacement motors onsite.
- Older low efficient motors eating profits.

### Our Solutions

- Frame agreements increase supply and specification efficiency freeing up resources.
- Less unplanned maintenance and downtime with more robust motor designs.
- +1% energy efficiency gains translate to less than a two year payback.









# Higher Efficiency and Less Downtime

## Meeting Heavy Industrial Application Requirements

GEIM offers comprehensive motor solutions for pulp and paper applications. Energy consumption is one of the largest expenses in operating a pulp processing or paper production plant. In these facilities the largest proportion of energy is used in electric drives, generally in the range of 60-70%.

**Upgrading motors can make a big difference. For instance a recent large plant audit uncovered over \$930,000 of energy efficiencies.**

Strict adherence to industry and application specifications also help ensure less downtime.

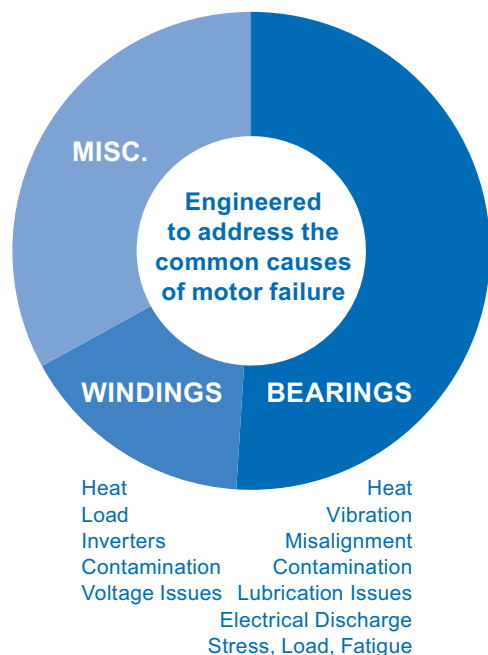
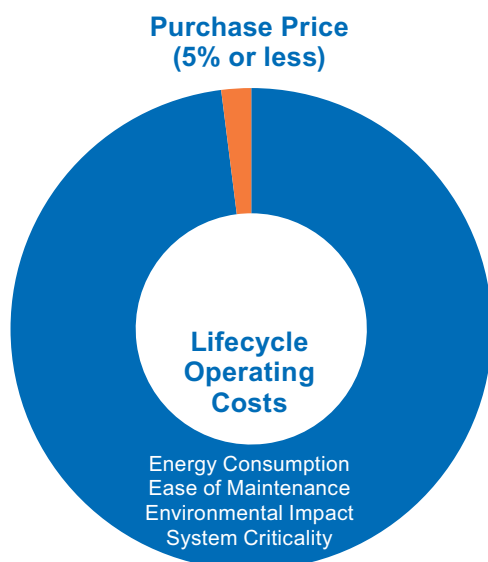
Application	Type	Requirements
 Conveyors	Dryers Coaters Winders/Rollers Wood/pulp	Starting restrictions ASD applied IEEE-841, NEMA, IEC, ANSI
 Blowers	Cooling Ventilation Aerator	Belt load specifications Starting Restrictions ASD Applied IEEE-841, NEMA, ANSI
 Heat Exchangers	Air Cooling	Belt load specifications IEEE-841, API 661
 Crushers	Barker drum Chipper Grinder	High Inertia Starting Conditions and Frequency Vibration Restrictions VFD Compatible NEMA, IEC, IEEE, ANSI
 Pumps	Evaporator Refiner Vacuum Washing/bleaching	Starting restrictions ASD applied Vertical thrust loads Low inrush IEEE-841, NEMA, ANSI
 Mixers	Slurry thickener	Belt load specifications Starting restrictions ASD applied / Low inrush Special shaft and load designs Torque pulsation High rotor inertia IEEE-841



# Application Considerations

## Consider Lifecycle Operating Costs First

The initial cost of an electric motor makes up 5% or less of the total cost of operation. So all aspects of the motor operation should be considered when purchasing motors.



## Engineering Requirements

Each petroleum, chemical, power generation, pulp/paper, mining, metal, mineral, water/wastewater, and general process application has unique torque, speed, voltage, enclosure, temperature, and industry standard requirements that must be designed into motors.



Pumps



Compressors



Blowers



Heat Exchangers



Mixers



Conveyors



Crushers

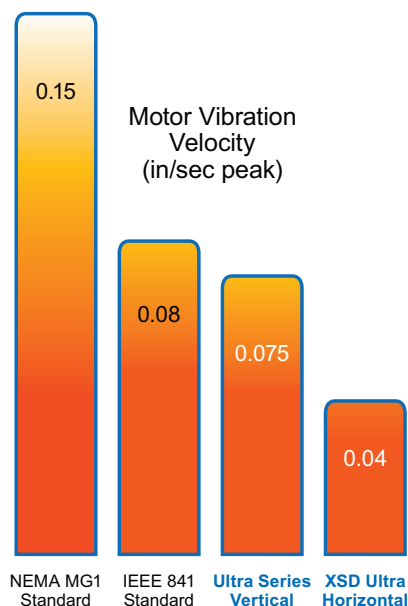


Augers

We also have the expertise to diagnose the mechanical and electrical requirements for special applications and custom engineer designs as they warrant.

## Low Vibration Means Long Life

Vibration is bad for motors and driven equipment. Motor bearings, in particular, begin to wear faster with high vibration levels. Beyond focusing on proper alignment, base, and voltage, users should also pay more attention to the design of the motor itself. In most cases, manufacturers are content to simply stay within the NEMA or IEEE standards because many engineers, of course, specify these limits.



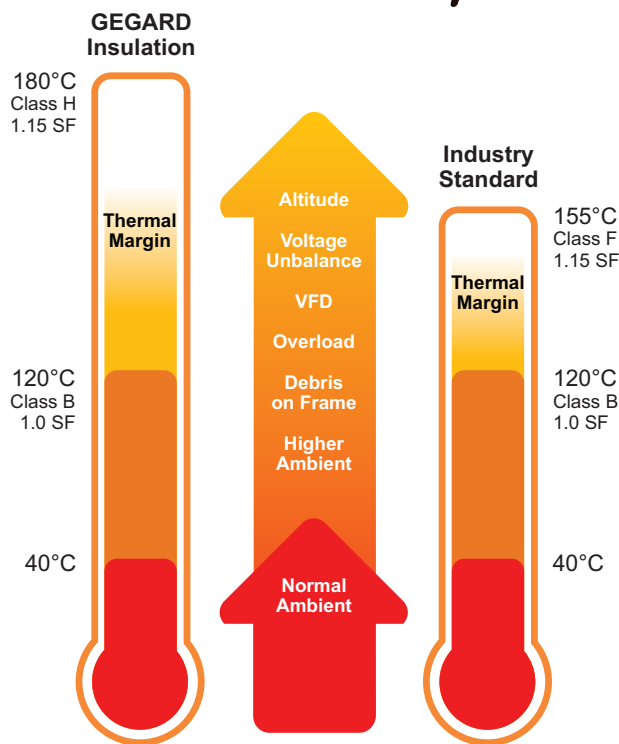
**It is well documented that motors designed with low vibration have longer bearing life.**

Since bearing wear is one of the leading causes of motor failure, reducing its chances reduces your unplanned downtime. Our application engineers have been told by many users that their driven equipment tends to run smoother with low vibration motors. All of this leads to lower maintenance costs on the entire drive system.

# Durable and Reliable Technology

## GEGARD™ Insulation offers added protection in severe applications.

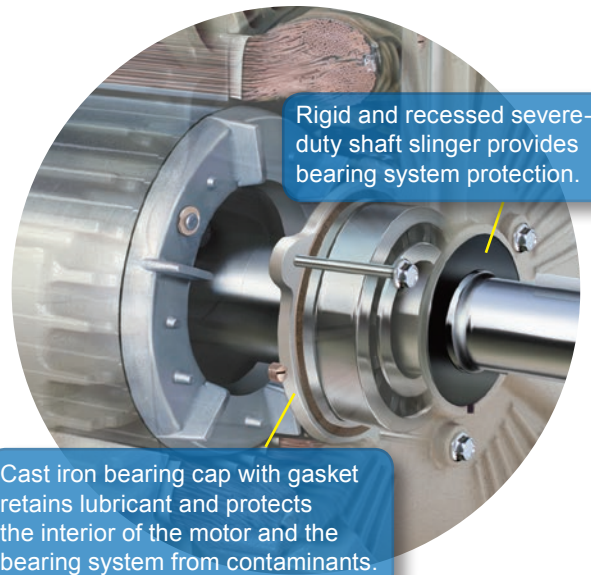
Our Class H GEGARD insulation system is designed to excel in variable frequency drive applications where lesser designs often short circuit and cause overcurrent trips.



**Larger Thermal Margin = Longer Motor Life**

## Guarding Against Bearing Failure

Common shaft currents create voltage spikes that reach bearings causing them to vibrate in operation. Over a short period, this vibration (fluting) will degrade bearings to the point of failure. We include bearing insulation for higher ratings and Aegis™ shaft grounding rings are optional on all ratings.



## Rotational Varnish Application

Motor coils are rotationally varnished with a "Trickle Treat" process while an electric current is passed through the windings to ensure a penetrating, thorough and even coating. This proven process fills air gaps that could cause corona inception damage during operation.

## Wire Bonding

Resin penetrates deep into tightly packed coil wire creating a strong bond that guards against end-turn vibration.

## Moisture Protection

Contaminants can't penetrate carefully and tightly packed stator coils bonded by deep resin penetration into the slots.

## SEVERE DUTY NEMA IE3

### NEMA Premium Efficient



This versatile and robust design is ideal for a wide range of challenging industrial applications and environments.

### MODELS

- XSD Ultra
- XSD Ultra 841
- Energy Saver

### TECHNICAL CAPABILITIES

0.75-300 HP, 900-3600 RPM  
230/460, 460, 575V / 60 Hz  
Alternate 50 Hz data on nameplate  
TEFC (IP55) and ODP  
Frame sizes: 143T-449T  
NEMA, UL, CSA, IEEE 45, 841, 112B, and GM 7E-TA  
Division 2 applications  
C-Face and high-torque  
Design "C" models available.  
VFD ready with GEGARD Class H (XSD Ultra) or Class F (ES) insulation  
Five (XSD Ultra) or  
Three (ES) Year Warranty

## SEVERE DUTY IEC IE3

### Rugged and Reliable



Based on the XSD Ultra mechanical and electrical design for the global market. Ideal for extreme environments.

### MODEL

- XSD Ultra 841 IEC

### TECHNICAL CAPABILITIES

0.55-220 kW,  
750-3000 / 900-3600 RPM  
200, 400, 400/690, 690V / 50 Hz  
230/460, 460, 575, 690V / 60 Hz  
TEFC (IP55)  
Frame size: 90S-280H  
IEC, IEEE 841, IEEE 45, ATEX, and IEC Exn  
Zone II, ABS  
VFD ready with GEGARD Class H insulation  
Five Year Warranty

## AERATOR NEMA IE3

### Premium Energy Savings



One of the most robust, reliable and energy efficient aerator motors in the industry today. Engineered and built to last.

### MODEL

- XSD Ultra 841 Aerator

### TECHNICAL CAPABILITIES

1-200 HP, 1200 RPM  
Variable Torque Freq. 0-60 Hz  
TEFC  
Frame sizes: 180-449  
NEMA, IEEE 841  
Five Year Warranty



## VERTICAL PUMP NEMA IE3

Inverter-Duty and Efficient



Combines extra severe duty engineering with advanced thrust and cooling technologies.

### MODELS

- Ultra Series Vertical
- Large Custom Vertical
- Vertical Fire Pump

### TECHNICAL CAPABILITIES

3-1000HP, 600-3600 RPM  
460, 575, 2300/4160 V  
60Hz or 50Hz  
WPI and TEFC Enclosures  
Hollow and Solid Shaft  
Normal, High, and  
Extra High Thrusts  
Frame Size: 182-5013  
API 610 12th Edition  
P-Base mountings  
VFD ready with GEGARD  
Class H insulation  
Three Year Warranty

## MEDIUM VOLTAGE NEMA

Severe Duty, Long Lasting



Designed to operate in extreme Petrochemical, Power Generation, Mining and general process environments and applications.

### MODEL

- Quantum LMV

### TECHNICAL CAPABILITIES

100-1750 HP  
900-3600 RPM / 60 Hz  
900-3000 RPM / 50 Hz  
460, 575, 2300/4000, 6600V  
TEFC  
Available in IEEE 841 config.  
Frame sizes: 440-7000  
NEMA, CSA, UL,  
IEEE 112B, AEx nA  
API 547 and 541,  
Division 2, Zone 2  
Class F insulation  
Three Year or  
Five Year Warranties (IEEE 841)

## DIRECT CURRENT

Reliable Workhorses



A reliable lifeline to driven equipment and backbone for production and operation.

### MODELS

- Kinamatic
- CD6000 Series
- Mill Duty

### TECHNICAL CAPABILITIES

1-500 HP, 300-3600 RPM  
Armature voltage: 180, 240, 500  
Field voltage: 300/150, 240/120  
DPFG, DPFG-BV, TE,  
and Explosion proof  
TREC coils on large frames  
Two Year Warranty  
**(CD6000 Series)**  
500-2000 HP, 300-1750 RPM  
Armature voltage: 500, 600  
**(Mill Duty)**  
5-500 HP, 340-1025 RPM  
Armature and Field voltage: 230, 460  
Meets AIST standard

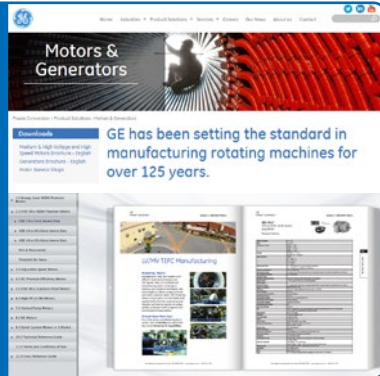
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## Website

The latest information  
on custom and standard  
rotating machines.

## e-Catalog

GE motors on your computer  
Auto-update online.  
Can be viewed offline.



"GE Motors"

## PC Store

Find a distributor.  
Download data packs.  
Access support library.



"GE Motor Store"

## Manufacturing

Monterrey, Mexico  
Employs over 500 people.  
ISO9000-2008 facility  
YouTube Virtual Tour



"Monterrey  
AC Capabilities"



**GE INDUSTRIAL MOTORS**  
a **WOLONG** company

[www.gemotors.com](http://www.gemotors.com)

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\* <http://energy.gov/eere/amo/downloads/optimizing-your-motor-driven-system> \*\* <https://iac.university/technicalDocs/prodman.pdf> (Page 67)

\*\*\* Large pulp and paper producer motor audit results 2014

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