

BIG IRON

Large and Extra-Large Motors and Generators



BIG-TIME EXPERIENCE WITH BIG IRON

We keep electric motors and generators running



Roughing Mill Motor: A 214,000-lb. armature for a Westinghouse 6,000 HP 700 VDC roughing motor arrives via a 26-axle supercarrier (we delivered a turnkey rewind in 32 days, or three weeks faster than the nearest competitor would commit to).



IPS is the leading provider of power services for big iron—large and extra-large rotating equipment—for one reason. We have more ways to test, repair, rewind, remanufacture and reverse engineer than anyone else in the business.

Whether we're working within an outage window, or providing emergency response and outage support, we minimize downtime.

For specific details on our experience with your industry's big iron and the IPS single-source approach to delivering reliability, talk to your regional IPS sales representative or visit us at www.ips.us or www.ips.ca.

IPS maintains a strong corporate commitment to a safe work environment and also offers ISO-compliant quality management systems at all IPS regional service centers.

Hydroelectric Generator:
Technicians complete on-site IntegraCoil™ rewind of a 10 MW, 6.9 kV stator.



IPS offers repair services, field services and product sales for the following critical continuous process applications:

Air Separation

- Main compressor motors

Power Generation

Fossil

- Circulating water pump motors
- Boiler pump feed motors
- Condensate pump motors
- ID fan motors
- FD fan motors
- PA fan motors
- Pulverizer and crusher motors
- Steam turbine generators

Nuclear

- Circulating water pump motors
- Reactor coolant pump motors

Hydro

- Hydroelectric generators
- Main shafts

Petrochem / Oil & Gas

- Main compressor motors
- Pipeline booster station motors
- Pipeline compressor station motors
- Oil rig anchors

Paper, Pulp & Wood

- Chipper motors
- Refiner motors
- Pump motors
- Steam turbine generators
- Pulp grinder motors

Metals

- Main drive motors
- Roughing mill motors
- Finishing mill motors
- Tandem mill motors
- Cold strip mill motors
- Compressor motors
- Piercer mill motors
- Mandrel mill motors

Mining

- Compressor motors
- Slope belt conveyor motors
- Fan motors
- Dryer motors
- Main hoist motors
- Main generators
- Large excavation motors

Aggregate & Cement

- Crusher motors
- Raw mill motors
- Finish mill motors

Water / Waste water

- Main pump motors

Rubber

- Banbury mixer motors

Glass

- Compressor motors

Scrap Metals

- Shredder motors



Main Compressor Motor:
22,500 HP, 13.8 kV, 35,000 lb. stator



Circulating Water Pump Motor:
2,500 HP, 6,600 V, 52,000 lbs.



ID Fan Motor: 13,600 HP, 13.2 kV and 84,000 lbs.

BIG IRON SERVICES

Your single source for in-shop repair, field services and product sales



Engineered rewind technologies

Developed in the research laboratory and backed by decades of use in motors and generators around the world, IPS engineered insulation systems provide the reliability and performance for your most demanding applications. IPS rewind technologies are available with motor redesign or uprates, and mechanical modifications to enclosures, shafts, seals, fans and bearings:

- IntegraCoil™ B-stage coils up to 15 kV
- MegaSeal™ VPI engineered insulation systems from 6.6–15 kV
- PowerSeal™ VPI engineered insulation systems up to 7.2 kV
- Industry-leading warranties



IPS technicians complete an IntegraCoil™ B-stage hard coil high-voltage rewind on a large stator.



Comprehensive testing

IPS has the industry's most advanced array of diagnostics, to validate recommendations, document "as received" and "as shipped" performance, and support one standard for quality coast to coast.

- AC test panel to 7.5 MVA / 15 kV
- DC test panel to 1,750 A / 1,000 VDC
- No-load testing to 37,500 HP
- Dynamometer load testing to 4,500 HP
- 500 kVA core loss testing
- IEEE 1776-2008 water immersion
- IEEE 1043 voltage endurance
- Additional in-shop/on-site diagnostics
 - » Doble®
 - » Corona probe
 - » Partial discharge
 - » MCE
 - » EL CID

IEEE 1776-2008 water immersion test of Circulating Water Pump stator (3,500 HP / 13.8 kV / 327 RPM)



Technicians lower a MegaSeal™ high-voltage rewind into the 14' diameter VPI tank—the biggest in a U.S. service center.



Main compressor synchronous motor (15,000 HP, 13.8 kV, 96,000 lbs.) on test. Test stand is capable of no-load tests up to 37,500 HP and load tests up to 4,500 HP - both at 15 kV.



The quality and delivery advantages of in-house coil manufacturing

IPS manufactures a wide range of stator, rotor, armature and field coils up to 15 kV. In-house manufacturing means better QA and faster turn times for breakdowns and emergency repairs. Combining control of coil manufacturing with the rewind process ensures superior quality and performance with minimal downtime.



We have extensive engineering and manufacturing experience with all major OEM coil designs, plus an engineering form coil database with over 100,000 design configurations, including many Allis-Chalmers designs.



BIG IRON SERVICES

Your single source for in-shop repair, field services and product sales



We offer complete machining capabilities for Big Iron motors and generators.



Cryogenic cleaning—one of the many IPS Big Iron services designed to deliver reliability.

Mechanical repairs and machining

We specialize in mechanical services and mill work on large, highly engineered components. IPS repair technicians have spent years providing mechanical repair and machining in your industry. We also manufacture CNC precision-machined parts in-house for improved quality and faster delivery. Our machining services include:

- Lathes: up to 76" x 564" and 126" x 384"
- Vertical milling: up to 84"
- Horizontal boring mill: up to 72" x 100"
- Planer mill: 6' wide x 6' high x 26' bed
- Pressing up to 600 tons
- Diamond burnishing
- Nickel brush plating
- Flame spray metalizing
- Sub-Arc/MIG/TIG welding
- Bearing rebabbiting



IPS technician profiles a large DC commutator.

Preventive maintenance

We offer the following preventive services to minimize or eliminate unplanned outages:

- Precision laser alignment
- Cryogenic "dry ice" cleaning
- On-site balancing
- Commutator and slip ring service
- Filter replacements
- Lubrication programs
- Equipment inspections
- Motor, pump and gearbox management
- Maintenance assessments
- Training programs

Predictive maintenance

IPS predictive services supply the data you need to see developing trends. We recommend multiple diagnostic technologies, for more accurate predictions of your equipment reliability.

- Vibration and modal analysis
- Motor Circuit Evaluation (MCE)
- Doble® testing
- Partial discharge testing
- EL CID testing
- Corona probe
- Baker surge testing
- Operational Deflection Mode Shape (ODMS)
- Finite Element Analysis (FEA) software
- Synchronous rotor diagnostics
- Current analysis trending
- Thermography
- Ultrasonic testing
- Oil analysis
- Motor efficiency testing



IPS field service technicians work on a 44 MW GE hydrogen-cooled generator.

Comprehensive on-site services

Our dedicated field service teams of big iron professionals mobilize a complete set of resources, focusing on predictive and preventive services that extend service life, improve reliability and efficiency, and eliminate unplanned downtime.

- Equipment removal and installation
- Emergency and outage support
- Disaster assessment/recovery programs
- AC & DC motor and generator repair
- Stator and armature rewinding
- Mechanical machining and repair



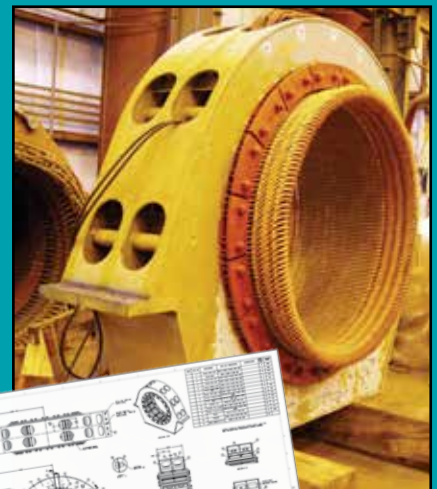
Commissioning of a 21,000 HP main air compressor motor in the Southeast.



Installation of 7,000 HP synchronous rotor at a west coast refinery.

Custom Manufacturing

We manufacture all types and sizes of AC and DC motors and generators to meet specific needs. We reverse engineer existing equipment, create new assembly and parts drawings, manufacture all parts and then assemble new units — to improve reliability and decrease downtime.



Product Sales

We keep electric motors and generators running. There are times, however, when it's more economical to replace a unit than repair it. As part of our single-source commitment to delivering reliability, we back our repair and field services with product sales and remanufacturing.



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 Denver, CO
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 334.699.8080
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 Glassport, PA
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 Rock Springs, WY
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 Shreveport, LA
 800.366.6030
 Sulphur, LA
 337.888.3068
 Washington, PA
 800.441.2553
 Winnipeg, MB
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Your Single Source for Big Iron Repair Services, Field Services and New Product Sales

IPS is a power services company, providing premium-quality motor, generator and mechanical services on all OEM brands to a wide range of customers. We're also an authorized reseller and distributor for leading OEMs.

IPS regional service centers give you 24/7 dependability, with trained professionals offering years of experience in your industry. They're backed by unmatched technical resources and capabilities, plus a network for North American coverage and documented standards for workmanship and materials.

To explore your options, talk to your regional IPS sales engineer or visit www.ips.us.

NORTH AMERICAN COVERAGE FOR 24/7 BIG IRON SERVICE AND DELIVERY



www.ips.us • www.ips.ca

