Lifting Magnets
Products & Services
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Magnetech Overview

Magnetech Industrial Services is a recognized leader in the repair, service and supply of electrical apparatus, and we are the only company that services equipment from the transformer to the driven component. We service all your equipment, including transformers, switchgear/circuit breakers, AC/DC motors and generators, exhaust fans, pumps, compressors, gear boxes, overhead cranes, electromagnetically lifting magnets and more.

We provide in-house services, including recondition, rewind and remanufacturing, field services, predictive/preventive maintenance, Total Motor Management® and MagneTrac® asset management programs.

Magnetech offers comprehensive support services to improve the performance of nearly every aspect of your manufacturing or processing operations. We have on-staff engineers and service experts to help you:

- Lower maintenance and repair costs
- Reduce downtime
- Improve productivity
- Upgrade existing equipment to meet new demands
- Extend equipment life
- Achieve a better return on assets

Magnetech Industrial Services, Inc. is an established leader in electrical mechanical service with a long heritage of quality dating back to 1937.

We are committed to operating this business with the values of exceptional customer service, integrity, comprehensive repair and service capabilities, high quality, and competitive pricing. We are working every day to do the things necessary to increase the value we can offer your company. One thing that will never change is our total dedication to meeting your needs – to get what you need, when you need it, with the quality you require.

Industries Served

- Aerospace
- Automotive
- Chemical Processing
- Education
- Food Processing
- Glass
- Healthcare
- Manufacturing
- Metal Producing
- Metalworking
- Military
- Mining
- Naval/Marine
- Oil/Pipeline
- Plastics and Rubber
- Power Generation and Distribution
- Pulp and Paper
- Railroad, Light and Class 1
- Scrap and Recycling
- Steel
- Wastewater Treatment
- Wind Power Services

A Proactive Asset Management Program

Unlike other asset management programs of the past that simply managed inventory or warehouse space, the MagneTrac® program is a complete, proactive system of innovative tools that track, analyze and maintain efficient production line performance. Our single driving goal is to improve the extended life of your capital investments with efficient solutions to prevent further unnecessary equipment failures.

Our MagneTrac® program includes the following critical customer benefits:

Field Survey

- Trained service technicians inspect & inventory each magnet & system component
- Each magnet is assigned a S/N or ID number
- Magnet system compatibility is documented
- Application & usage of each component is documented

Assessment & Profile

- Components identified by manufacturer, model, S/N, etc.
- Each magnet component evaluated based on safety, wear, usage & application
- Repair/Replacement cost history documented
- Rank/Risk Assignment based on overall component rating analysis
- Probable cause of failure evaluated if applicable

Comprehensive Report

- Detailed preventive maintenance schedule recommendation
- Repair list for defective units
- Component standardization recommendation

Components Inspected:

- Magnet Case
- Outer Pole Shoe
- Center Pole Shoe
- Center Pole Bolts
- Bottom Plate
- Lifting Ears
- Chain Pins
- Chain/Yoke
- Tag Line Ends
- Hard Surfacing
- Terminal Box
- Cable Clamps
- Magnet Leads
- Power Cable
- Poles in Plane
- Coil Megger Reading
- Coil Ohm Reading
- Magnet to Cable Connection

Components Inspected:
### Mill Duty “H” Series

**Ideal For:**
- Steel Mill & Foundry
- Heavy Duty Scrap Handling
- Slabs & Billets

**Quality is Customary:**
- 75% Duty Cycle
- Maximized Lift-to-Weight Ratio
- Class “H” Insulation
- Fabricated Steel Construction
- Waterproof Double Welded & Sealed Terminal Box

**ALUMINUM COIL TECHNICAL DATA**

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<thead>
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### Copper Duty “L” Series

**FDAL Ideal For:**
- Material Handler
- Scrap Handling

**FDCL Ideal For:**
- Scrap Handler

**Quality is Customary:**
- 75% Duty Cycle
- Maximized Lift-to-Weight Ratio
- Class “H” Insulation
- Fabricated Steel Construction
- Waterproof Double Welded & Sealed Terminal Box

**ALUMINUM COIL TECHNICAL DATA**

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<tr>
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An electro magnet lifting capacity is based on optimum conditions. Variables in the size, density, composition and arrangement of materials to be lifted or variables within the magnetic power system can affect lift performance. Material descriptions are based upon specifications for iron and steel scrap published by the Institute of Scrap Recycling Industries. Lifting capacities are based on an all day average per lift. Magnet weights do not include weight of chain.
Scrap Star Series

Ideal For:
- Light Weight Material Handler
- Scrap Handling

Quality is Customary:
- 75% Duty Cycle
- Maximized Lift-to-Weight Ratio
- Class “H” Insulation Throughout
- 3 Leg Conventional Chain Assemblies
- Strong & Durable Cast Steel Construction
- Twist Lock Magnet Plugs for Easy Installation

ALUMINUM COIL TECHNICAL DATA

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<th>MODEL</th>
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Scrap Reclamation Duty “B” Series

Ideal For:
- Cable Crane using Drop Ball for Slag Reclaiming
- Highly Abusive Applications

Quality is Customary:
- 75% Duty Cycle
- Maximized Lift-to-Weight Ratio
- Class “H” Insulation Throughout
- 3 Leg Conventional Chain Assemblies
- Strong & Durable Cast Steel Construction
- Twist Lock Magnet Plugs for Easy Installation

ALUMINUM/COPPER COIL TECHNICAL DATA

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Rectangular/Tri-Pole Magnets

Ideal For:
- Steel Mills & Steel Distributors Handling: Slabs, Plate, Rebar Bundles, Pipe, Billets, Coil and Structural Steel

Quality is Customary:
- Steel Mill Duty
- 75% Duty Cycle
- Hot Bottom Designs
- Copper or Aluminum
- Available in Various Sizes
- Class “H” Insulation Throughout
- Standard 230 VDC - Special Voltages Available

ALUMINUM COIL TECHNICAL DATA

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Rectangular Shaped Magnets

Ideal For:
- Steel Mills & Port Terminals
- Heavy Duty Scrap Handling for Charge Buckets
- Railcar & Barge

Quality is Customary:
- Steel Mill Duty
- 75% Duty Cycle
- Copper or Aluminum
- Available in Various Sizes
- Class “H” Insulation Throughout
- Standard 230 VDC - Special Voltages Available

ALUMINUM COIL TECHNICAL DATA

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**Bi-Polar Magnets**

**Ideal For:**
- Steel Mills & Steel Distributors Handling: Slabs, Plate, Rebar Bundles, Pipe, Billets, Coil and Structural Steel

**Quality is Customary:**
- Steel Mill Duty
- 75% Duty Cycle
- Hot Bottom Designs
- Copper or Aluminum
- Available in Various Sizes
- Class “H” Insulation Throughout
- Standard 230 VDC - Special Voltages Available
- Customized Pole Shoes Available for Irregular Shaped Materials

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**Powerpro® Diesel Gen-Set**

**Self Contained Lifting Magnet Generator**

These Heavy Duty Skid Mounted Systems are Completely Self Contained Including Fuel Tank, Battery, Controls, Automatic Oil Pressure Shut Down, Balanced Lifting Point and Vibration Isolation Mounts.

- Does not interfere with operation of the crane
- One system can be used on multiple cranes
- Alleviates the need for a permanent generator system
- Easily removed for major maintenance or idle crane transfers
- Powered by its own fuel efficient diesel engine
- Self contained system simply mounts to the skid
- Does not require removal for maintenance
- Wires just connect to the Lift/Drop switch and the Boom/Stick
- Integrated magnet controller

**100% Duty Cycle**

**Baldor 10kw DC Generator:**

- 219 ATC Frame
- 2500 RPM
- 230 Volt DC
- 43.5 Amps
- 200 Ohm Field Control Rheostat
- Uses (2) 100 Ohm 225 Watt Slide Bar Resistors

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**Railroad Magnets**

**Ideal For:**
- Material Handlers Handling: Tie Plate, Rail Spikes, Rail Wheel, and Scrap

**Quality is Customary:**
- Railroad Duty
- 75% Duty Cycle
- Copper or Aluminum
- Available in Various Sizes
- Class “H” Insulation Throughout
- Standard 230 VDC - Special Voltages Available
- Customized Pole Shoes or Lifting Ears

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**Self Contained Lifting Magnet Generator**

**POWERPRO SKID MOUNTED SYSTEM TECHNICAL DATA**

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<td>62&quot;</td>
<td>24&quot;</td>
<td>36&quot;</td>
<td>METAL</td>
</tr>
</tbody>
</table>

---

Ideal For:
- Steel Mills & Steel Distributors Handling: Slabs, Plate, Rebar Bundles, Pipe, Billets, Coil and Structural Steel

---

Ideal For:
- Material Handlers Handling: Tie Plate, Rail Spikes, Rail Wheel, and Scrap

---

Ideal For:
- Steel Mills & Steel Distributors Handling: Slabs, Plate, Rebar Bundles, Pipe, Billets, Coil and Structural Steel
Hydraulic Gen-Set

Magnetech’s Fluid Control Gen-Set Systems offer efficiency in operations and cost effectiveness. The operator has the convenience of total in-cab control, which means added productivity with less downtime. Pollutant-free hydraulic generators are environmentally friendly while allowing lowered maintenance costs. Custom configurations are available.

- 12 or 24 VDC Operation
- Available in Sizes: 5-33kw
- Includes Magnet Controls with Meter Package & Pistol Grip
- Self-contained, Frame Mounted
- Ready to Install & Operate on Delivery
- Includes All Hydraulic Controls with Integrated Single Manifold

Lifting Magnet DC Generator

- Class ’H’ Insulation, Class ’F’ Rise
- Brush Holders with Constant Force Springs
- Extra Heavy Steel Frame with Casted Endplates
- F-2 Box Location Optical C-Face Mounting
- Drip Proof Fully Guarded Enclosure with Weather Resistant Paint
- Sealed Ball Bearings, Compound Wound with Dropping Voltage Characteristics 1.0 Service Factor

EDP Conception Controllers

Control Inputs/Outputs:
- Digital input: Dedicated to magnetic circuit function
- +24Vdc @ 50mA max
- Supports main angle and double action switches via configuration setting
- Digital output: Dedicated to system indication light
- +24Vdc @ 200mA max
- Relay output: Dedicated to hydraulic valve operation
- Time delay adjustable via configuration setting
- Real time display:
  - Armature volt
  - Armature Current (Amps)
  - Field Volatge
  - DYNE Switch Status
  - System Ground Detection
  - Located on controller unit
- Remote Unit:
  - Cab mounted
  - Access to digital inputs/outputs
  - System indication light

EDP-C2 TECHNICAL DATA:
- Input supply: 12 – 24 VDC @ 2 A max.
- Output to field: 5 – 36VDC @ 5 Amps max.
- Output to magnet: 5 – 36VDC programmable up to 20 Amps max.
- Temperature: Unit rated -40º F min. to +176 º F max
- Nominal operation: 46°F to 121°F
- Output to isolator: 12% form 176º F to 180 º F

Magnet Controllers

APEX, EDP CONCEPTION CONTROLLER AND HUBBELL CONTROLLERS DISTRIBUTED BY MAGNETECH INDUSTRIAL SERVICES, INC.

Type Controller 4291/4292/4295

- Automatically Discharges Magnet
- Fast & Clean Release of Load
- Peak Induced Voltage Limited to Under 700 Volts
- Wide Reverse Current Adjustment for Different Types of Loads
- Mechanically Interlocked Mill Type Lift/Drop Contactors
- High Thermal Capacity Variator Discharge

Permanently Connected Discharge Path
- Drop Controller Opens Automatically at End of Drop Cycle
- Front Wired, Front Removable Components
- Long Contact Life, Minimum Maintenance
- Full Voltage Reverse Current

Generator For KW Generators

Generator-Solid State Controller Systems

- Load limit control
- Torque control
- Integrated system tester
- Integrated insulation monitoring
- Adjustable magnetic power

TECHNICAL DATA

<table>
<thead>
<tr>
<th>Generator</th>
<th>Weight</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Amp</th>
</tr>
</thead>
<tbody>
<tr>
<td>5KW</td>
<td>270</td>
<td>40&quot;</td>
<td>27&quot;</td>
<td>46&quot;</td>
<td>25</td>
</tr>
<tr>
<td>10KW</td>
<td>308</td>
<td>40&quot;</td>
<td>27&quot;</td>
<td>46&quot;</td>
<td>50</td>
</tr>
<tr>
<td>15KW</td>
<td>480</td>
<td>40&quot;</td>
<td>35&quot;</td>
<td>52&quot;</td>
<td>100</td>
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<td>20KW</td>
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<td>40&quot;</td>
<td>35&quot;</td>
<td>52&quot;</td>
<td>110</td>
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<tr>
<td>25KW</td>
<td>896</td>
<td>40&quot;</td>
<td>35&quot;</td>
<td>52&quot;</td>
<td>130</td>
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<tr>
<td>30KW</td>
<td>1750</td>
<td>40&quot;</td>
<td>35&quot;</td>
<td>52&quot;</td>
<td>175</td>
</tr>
</tbody>
</table>

Note: Customer to supply mounting for hydraulic pump or Priority Flow Valve and plumbing from the hydraulic pump or Priority Flow Valve to the hydraulic motor valve.

APEX Lifting Magnet Controllers

SERIES | SIZE | CONTROL VOLTAGE | INDICATES RATED CURRENT |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ACS</td>
<td>106W</td>
<td>0.5 – 12 x VDC</td>
<td>106W x 106 AMPs</td>
</tr>
<tr>
<td>ACS</td>
<td>156W</td>
<td>0.24 – 24 x VDC</td>
<td>156W x 156 AMPs</td>
</tr>
<tr>
<td>ACS</td>
<td>275W</td>
<td>250 – 230 VDC</td>
<td>275W x 275 AMPs</td>
</tr>
</tbody>
</table>

Rated 5-175 Amps
- Automatic Variator Discharge
- Outdoor Rated
- Custom Configurations Available
- 50MV Shunt Included

ACS 106W
ACS 156W
ACS 275W

www.magnetech.com

Magnetech Industrial Services, Inc.
Magnet Accessories

Twist-Lock Magnet Connector

- Locks in Any Position
- Connects with “Push & Twist” Action
- Uses Set Screws to Fasten Cable Ends
- Constructed with Heavy Gauge Copper
- Single Pole Solderless Connector
- Requires only Knife & Screwdriver for Application
- Safe Low Cost & Easy-to-Use Industrial Electrical Connector

**TECHNICAL DATA**

<table>
<thead>
<tr>
<th>PART #</th>
<th>AMP CAPACITY</th>
<th>O.D. (IN)</th>
<th>WEIGHT (LBS)</th>
<th>AMP/COND</th>
</tr>
</thead>
<tbody>
<tr>
<td>M27</td>
<td>250 AMP</td>
<td>.40</td>
<td>.32</td>
<td>2.4</td>
</tr>
<tr>
<td>M4</td>
<td>400 AMP</td>
<td>.40</td>
<td>.40</td>
<td>2.75</td>
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</tbody>
</table>

Magnet Crane Cable

- Stranded Copper Conductor
- Royal Double Pass Reinforced Jacket Rubber Fill
- EP Rated 90°C 600/2000 Volt
- Oil Resistant Neoprene Jacket
- MSHA Approved

**TECHNICAL DATA (TYPE W)**

<table>
<thead>
<tr>
<th>PART #</th>
<th>AWG/CON</th>
<th>O.D. (IN)</th>
<th>WEIGHT (LBS/FT)</th>
<th>AMP/COND</th>
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</thead>
<tbody>
<tr>
<td>532000008</td>
<td>8/2</td>
<td>.81</td>
<td>.42</td>
<td>92</td>
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<td>532000006</td>
<td>6/5</td>
<td>.91</td>
<td>.58</td>
<td>99</td>
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<tr>
<td>532000006</td>
<td>6/3</td>
<td>.93</td>
<td>.58</td>
<td>85</td>
</tr>
<tr>
<td>532000006</td>
<td>6/1</td>
<td>.93</td>
<td>.76</td>
<td>79</td>
</tr>
<tr>
<td>532000004</td>
<td>4/2</td>
<td>1.08</td>
<td>.52</td>
<td>127</td>
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<td>4/1</td>
<td>1.08</td>
<td>1.17</td>
<td>104</td>
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<tr>
<td>532000002</td>
<td>2/2</td>
<td>1.27</td>
<td>1.17</td>
<td>167</td>
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<tr>
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<td>1.34</td>
<td>1.49</td>
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**TECHNICAL DATA (TYPE SOW-A/SO CORD)**

<table>
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<th>AWG/CON</th>
<th>O.D. (IN)</th>
<th>WEIGHT (LBS/FT)</th>
<th>AMP/COND</th>
</tr>
</thead>
<tbody>
<tr>
<td>AN07B-0404</td>
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<td>.27</td>
<td>20</td>
</tr>
</tbody>
</table>

**Magnet Chains**

**Standard Magnet Chains**

- **STANDARD LIFT CHAINS**
- **STOCK #**
- **SIZE (INCHES)**
- **WEIGHT (LBS)**
- **AMP/COND**

<table>
<thead>
<tr>
<th>STOCK #</th>
<th>SIZE (INCHES)</th>
<th>LENGTH (INCHES)</th>
<th>WORKING LOAD LIMIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>780070625</td>
<td>5/8</td>
<td>16</td>
<td>47,000</td>
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<tr>
<td>780070750</td>
<td>3/4</td>
<td>20</td>
<td>73,000</td>
</tr>
<tr>
<td>780070875</td>
<td>7/8</td>
<td>22</td>
<td>89,100</td>
</tr>
<tr>
<td>780071000</td>
<td>1</td>
<td>26</td>
<td>124,700</td>
</tr>
<tr>
<td>780071250</td>
<td>1 1/4</td>
<td>32</td>
<td>184,400</td>
</tr>
</tbody>
</table>

**Steady Lift Magnet Chains**

- **STEADY LIFT CHAINS**
- **STOCK #**
- **SIZE (INCHES)**
- **LENGTH (INCHES)**
- **WEIGHT (LBS)**

<table>
<thead>
<tr>
<th>STOCK #</th>
<th>SIZE (INCHES)</th>
<th>LENGTH (INCHES)</th>
<th>WORKING LOAD LIMIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>780070625</td>
<td>5/8</td>
<td>16</td>
<td>47,000</td>
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<tr>
<td>780070750</td>
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<td>26</td>
<td>124,700</td>
</tr>
<tr>
<td>780071250</td>
<td>1 1/4</td>
<td>32</td>
<td>184,400</td>
</tr>
</tbody>
</table>

**Meter Packages**

- Meter packages contain both volt and amp meters. They are also available with either rheostats or slide bar resistors. The rheostat and slide bar resistors allow the operator to maintain a constant 230 VDC output to the magnet. Remote packages are also available.

**Magnetech Industrial Services, Inc.**

www.magnetech.com
Grapple Magnet Towers & Accessories

**Grapple Towers**
- Available for 34’’ - 68’’ Magnets
- Towers & Other Attachments Can be Removed or Permanently Welded to a Magnet

**ACS Industries Couplers**
- Allows Lifting Magnets to be Attached to a Backhoe or Other Type of Equipment Made in the USA
- Dozens of Sizes Based on Type of Equipment, Brand, Model & Lifting Capacity

**Backhoe Attachments**
- Magnetech fabricates custom couplers to fit customer’s equipment

**Battery Back Up**
A battery back up system is used to continue the excitation of the magnet so that it continues to hold its load for the time specified. The system activates when there is an interruption or loss of DC power to the magnet. For DC powered cranes, an AC supply source is needed for the battery charger.

**Magnet Rectifiers**
When only AC power is available the rectifier is used to convert the present AC power to the required DC power for the magnet system.

**Other Available Components**
- Lift/Drop Switches of All Types
- Safety Disconnect Switches
- Cable Reels
- Replacement Batteries
- Generator Replacement Parts
- Replacement Parts for All Types of DC Magnet Controllers

**Other Services Provided**

**Transformers**
- Repair, Rewind & Remanufacturing Oil Filled, Dry-Type
- Core-Form & Shell Form Transformers
- 100 KVA - 25,000 KVA (Base Rating)
- Voltage Regulator Maintenance
- Field Refurbishment
- Bushing Replacement
- Internal Inspection & Repair
- Oil Testing & Processing Services

**Circuit Breakers**
- Complete Low & Medium Voltage Refurbishment
- LV & MV Retrofit, Clean & Test
- High Voltage Field Service
- Breaker Parts/Components
- Trip Relay Upgrades
- Contact Resistance Testing

**Turbines**
- Dye Penetrant & Magnetic Particle Testing
- Annual Overspeed Trip Testing
- Blade & Shaft Repair
- Rebuild Linkage, Trip & Throttle Valves
- Steam Chest Repairs
- Valve Rebuilds

**Blowers**
- Turnkey/Fan/Rotor Removal
- Laser Alignment & Leveling
- Bearing Inspection, Change Out, Installation & Rebabbiting
- Shaft Repair & Fabrication
- Coupling Machining & Installation
- Dynamic Balancing to ANSI & ISO Standards
- Vibration Analysis & Data Collection

**Switchgear**
- Complete Upgrade & Replacement
- Low & Medium Voltage
- Substation Design
- Engineered Turnkey Projects
- Remanufacture of all OEM Switchgears
- On-Site Custom Bus Fabrication

**Split Ring Manufacturing**

**Spin Cast Babbit Bearings**

**Pumps**
- Complete Rebuild & Repair to Manufacturer Specifications
- Preventative Maintenance
- New Equipment Sales

**Air Compressors**
- Preventative Maintenance
- Plant Air System Audits
- Sales & Service for:
  - Compressors
  - Dryers
  - Aftercoolers
  - Filters
  - Separators
- Rental Units Available

**Cranes**
- Breakdown Service
- Conversions, Upgrades & Repairs
- New Installs
- OSHA Inspections & Consulting Services
- Preventative Maintenance
- Service & Supply of Crane Systems & Components

**New Equipment & Spare Parts**
- Authorized Distributor For Over 23 Major Brands
- Total Motor Management™ & Warehousing Available
- Authorized ABB Service Provider
- Installation/Start-Up Available

**Form Coil Manufacturing**
- AC & DC Coils to 15kV
- Hydro Generator Coils
- Turbine Generator Coils
**Other Services Provided**

**Motors**
- All Makes & Models
  - AC Motors to 80,000 HP (13.8kV)
  - DC Motors to 10,000 HP (750 V)
- Complete Rewind, Reconditioning & Remanufacturing
- Scheduled Outage Services
- Motor Redesign & UL Re-rating
- 12’ VPI
- Dynamic Balancing to ANSI & ISO Standards
- Dynamometer Load Testing to 13.8kV
- Complete Mechanical Repair Services

**Preventative Maintenance**
- Vibration Analysis
- Oil Analysis
- Ultrasonic Examination
- Physical Inspections
- Infrared Thermal Imaging
- Laser Shaft Alignment
- Motor Circuit Testing
- Balancing & Alignment

**Upgrades & Diagnostics**
- Motor Design & UL Re-Rating
- Root Cause Failure Analysis
- Performance Verification Testing & Analysis
- Power System Studies
- CAD Engineering/Documentation
- Energy Efficiency Studies

**Specialty Equipment**
- Class 1 Rail (UTEX) on Main Generators, Alternators & all Auxiliary Equipment
- Light Rail Traction Motors & Alternators
- Nuclear Reactor Coolant Pump Motors