Renown Electric motors & repair inc.

Mining Industry

Importance of Motor & Generator Maintenance & Repair in the Mining Industry

Mining Industry

Electric motors and generators are essential components for mining industry equipment and the Battery Electric Vehicle (BEV) market. These sectors rely upon this equipment heavily to meet high production demands in rugged environments, and so they require careful design, construction, and maintenance to provide longevity and durability. Pumps, hoists, crushers, muckers, haulers, and mills are only some examples of mining and milling equipment utilizing electric motors.

Since 1984, Renown Electric Motors & Repair Inc. has provided electric motor repair, rewind, rebuild, and replacement services to various industries. We are an authorized dealer, warranty center, and service provider for most big-name manufacturers. From our state-of-the-art, ISO 9001:2015-certified facilities, we offer reliable services to support AC or DC motors, inverters, and drives, such as preventative maintenance, winding inspections, motor rewinding, and bearings maintenance and replacement.

Renown understands the importance of keeping machinery operating efficiently and effectively, especially when exposed to harsh conditions. Equipment shutdowns are cost-prohibitive due to expensive replacements or losses in production time, but they also pose a possible risk of physical harm to operators.

Importance of Motor & Generator Maintenance & Repair in the Mining Industry

Electric motors and generators are at the heart of the mining industry, keeping vital machinery and systems running. These pieces of equipment must be resilient, efficient, and capable of withstanding harsh environments to meet production demands.

If machinery breaks down during the mining process, it can be devastating for production. System repairs can take weeks, particularly if any required replacement parts aren't in stock, resulting in substantial revenue loss and idle employees. While this is detrimental for any industry, dependably functioning equipment is particularly important in mining, as remote mines or places where power is unreliable or unstable are significantly impacted by a failed generator or electric motor. Interruptions to the power grid can be catastrophic to mining operations.

Regularly scheduled preventative maintenance is essential for providing valuable data about equipment's current and future performance. Taking a proactive approach to identifying problems before they become significant can eliminate the risk of complete equipment or system failure, which would be more expensive to address than fixing a single part and cause significant disruptions to operations.

Types of Electric Motor & Generator Maintenance & Repair Services

Maintaining and repairing electric motors and generators can improve their life span and functional reliability. For the mining industry, some of the services we recommend include:

PREVENTATIVE MAINTENANCE

Proactively inspecting machine components on a regular basis will help identify potential performance or operational issues. If the service provider finds a problem, they can offer a solution to safeguard against system failure or unexpected downtime.

WINDING ANALYSIS

Winding analysis looks at dielectric strength (the insulation value) in a motor or generator that acts to protect your equipment from voltage spikes or contaminants and could lead to process complications. Periodically evaluating windings to confirm their dielectric strength will also identify whether or not an overhaul or replacement is necessary.

MOTOR & GENERATOR REWINDING

Depending upon usage and the operating environment, the Institute of Electrical and Electronics Engineers (IEEE) generally deems the design life of an electric motor's winding to be a maximum of 30 years. Rewinding can effectively and affordably restore a generator or motor to like-new condition. Additionally, it can potentially improve the overall efficiency and horsepower output of a motor.

BEARING MAINTENANCE OR REPLACEMENT

As much as 85% of all problems relating to electric motor operation are the result of mechanical failures. Bearings like Babbitt, ball, and roller bearings are often at fault, as they wear out more quickly than other motor parts because they carry the motor's load. Frequent inspections and preventative maintenance, however, can help protect against unanticipated electric motor issues.

INVERTER/DRIVE MAINTENANCE OR REPAIR

By converting energy from an electrical to a mechanical form, motor drives provide controls to regulate torque and speed, enable smooth performance, and minimize any damage to a machine. A variable frequency drive (VFD) that's functioning properly can save you as much as 55% in energy costs.

If your electric motor drive is experiencing difficulties, now is the time to take control of the system and contact Renown for maintaining equipment efficiency. Being proactive about your motor drive preventative maintenance (PM) and predictive maintenance (PdM) repairs will help reduce the risk of catastrophic system failure.

DIAGNOSING & REPAIRING MOTOR DRIVES

Renown's fast and cost-effective motor drive repair services include diagnostics and repairs for a wide array of drives like AC and DC drives and inverters. When it is practical to do so, our team will load-test all drives.

CAPABILITIES

The team at Renown works hard to provide comprehensive motor and drive repair solutions. By combining our expert staff with state-of-the-art technology, Renown gives you the peace of mind that your motors and drives are in the right hands. Our broad spectrum of motor and drive maintenance programs include:

- **AC/DC motor drive repair.** To keep your motor drives working optimally, Renown offers load testing and preventive overhaul services, as well as emergency repair and replacement to quickly assist in unexpected circumstances.

- **Infrared thermography.** By carrying out a temperature analysis, Renown can help detect problems with your internal drives before they become an issue and force you to shut down production.

- **Motor and drive surveillance.** Surveillance is among the most comprehensive of the available PdM technologies. It provides an early indication of the health of a machine by examining if your bus voltage is stable and reviews system harmonics for changes and many other functions required to help keep your equipment running. A common mode current signature will also help determine root causes of other system phenomena and avoid the risk of critical failure due to unwanted stray currents.

Electric Motor & Generator Repair Is Crucial to Keeping the Mining Industry Going

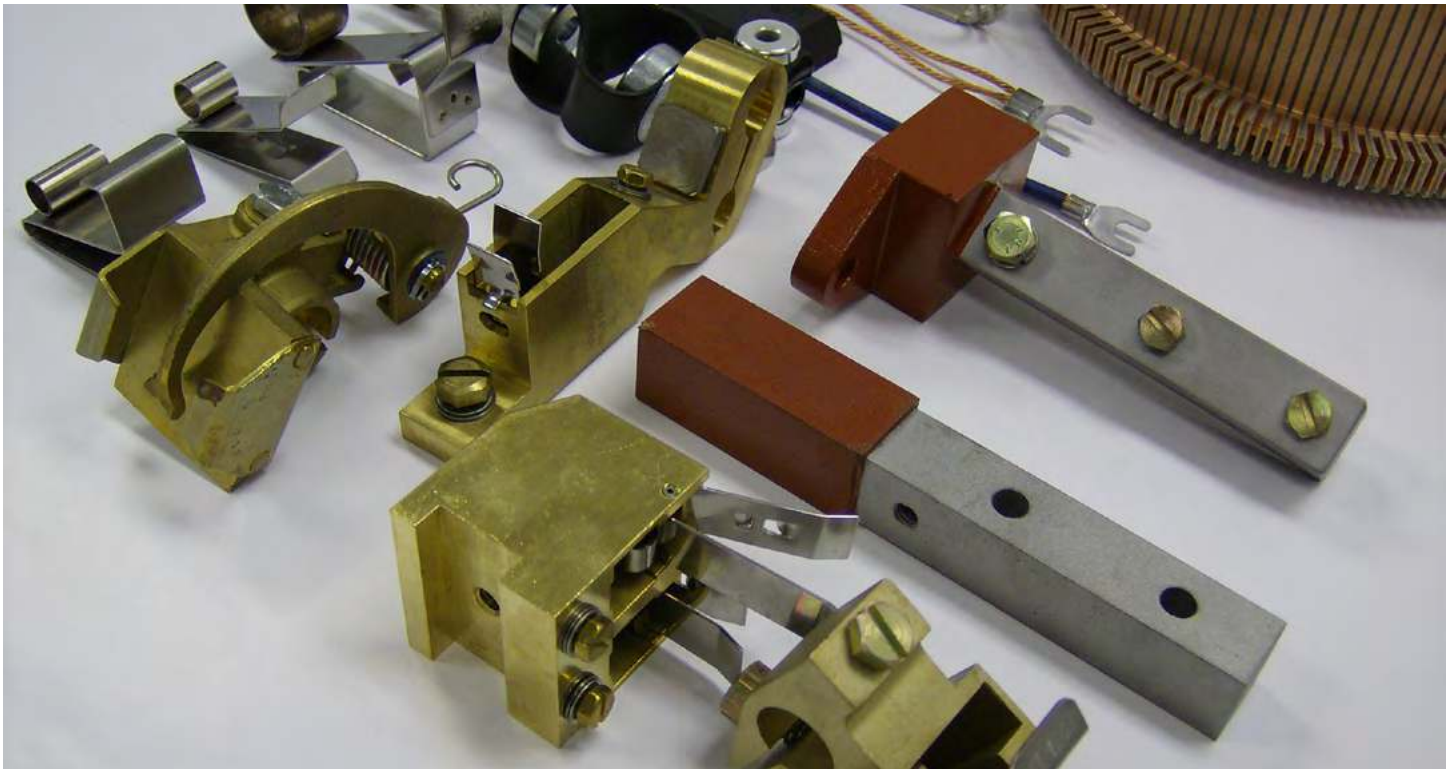
The mining sector is transitioning to AC motors that have VFDs to provide analog speed control, decreasing the demand for speed regulation methods. As such, the following components aren't necessary for AC motors:

- Hydraulic speed control
- Mechanical gears
- Starters
- Fan inlet vane controls
- Cascade drives
- Fan damper controls

Instead, the quality of performance that users receive from motors possessing VFDs relies on cooling systems. These systems increase a motor's operational life span while removing heat from power semiconductor devices, the inverter and converter, and any additional parts.

Optimized VFDs are compact units. Their ability to generate rated power while maintaining a small footprint makes them an ideal solution for tight spaces or hazardous working conditions. Mining equipment also utilizes high-voltage drives to generate additional operational efficiency. High-voltage drives in large soft-starting mill motors can alleviate stress on power delivery systems by eliminating voltage dips and low current inrush. For motors running large draglines and shovels, these drives provide the appropriate power, speed, and torque control for optimal performance.

Regular inspections and maintenance routines should include soft starters and VFDs. We track the input and output of drives so that, over time, we can compare measurements to pinpoint any performance variations. We also watch for any changes or trends in DC bus voltage, ripple, or other internal drive functions that might indicate capacitor performance problems. Not only will these evaluations help ensure smooth operations but, like with mechanical systems, there are tools available for enhancing the performance and reliability of drives as well.



Reliable Parts & Repairs From Renown

Proactively managing your electric motor and generator repair and maintenance optimizes your equipment's functionality and life span. Working with a reputable service team is a part of smart maintenance planning to best set your operation up for success.

With nearly four decades of experience and our expansion into multiple facility locations to best serve you, Renown has the expertise and resources to get the job done. Our extensive background in the industry allows Renown to assist mining operations in preventing unexpected downtime and resulting revenue losses through dependable repairs and preventive maintenance at affordable prices.

We can repair or replace parts or systems under warranty as needed, and Renown will then bill the manufacturer directly for all authorized warranty services. In turn, we offer a one-year warranty on all Renown products and repairs. We also provide 24/7 services that can extend the longevity and performance of your generators and electric motors.

Renown holds numerous certifications to reflect our unsurpassed commitment to safety and quality. We are an ISN-, BROWZ-, EXIROS-, QUAREM-, and ISO compliant company, and we are also a member of the Electrical Apparatus Service Association (EASA).

Do not wait for electric motors and generators to malfunction and cause costly production delays. Contact us today to request a quote for our preventative maintenance programs, schedule service, or talk to one of our experts.

About Renown Electric

Founded in 1984 and centrally located in Concord, Ontario, Renown Electric operates from a 25,000-square-foot state-of-the-art main repair facility, a 34,000-square-foot large motor repair facility with 50-ton cranes throughout, and a 12,000-square-foot warehouse dedicated to motor management and inventory of new products. Our team includes over 50 employees who excel in all aspects of electric and mechanical motor repair, remanufacture, overhaul, field service, and engineering support.

We are proud to serve a diverse customer base from a wide range of industries from across the globe. No matter the size of the company, from a small start-up to a massive multinational concern, Renown offers unmatched customer service to support you every step of the way.

Renown is an authorized dealer and service representative for most major manufacturers, so our customers are assured the highest-quality products and repairs. Our engineering expertise and production capability allow us to remanufacture all major AC and DC motors up to 5,000 hp.

Our company has CSA qualification for the repair and service of motors and generators in hazardous locations, as well as ISO 9001:2015 certification; we utilize the latest computerized testing techniques to ensure our repairs meet or exceed OEM specifications.

Renown has a large fleet of service and delivery vehicles—including a selection with cranes for simple and prompt job-site pick-up and returns.

Renown's commitment to service extends beyond the reaches of our shop by offering predictive maintenance programs designed to meet the customers' requirements. Programs include on-site laser alignment, balancing, vibration analysis, infrared thermography, oil analysis, and non-destructive testing.

To learn more about Renown Electric and the services we provide, contact us today.

Click on the **Resources for more information**

Contact Renown Electric Today