Mining

Field Services

Making the big difference for our customers
We understand our customers’ real issues and that success comes from helping you reach your operational and financial goals. Combining our global service network and deep industry knowledge with your operational expertise ensures that we provide the best solutions to deliver increased productivity, eliminate waste and reduce risk.
Metso strives to understand your aims and challenges

**Your aims**

**Availability** – You strive to reduce downtime of planned shutdowns so that production time can be maximized. When unplanned downtime occurs, you look to a partner who can quickly get your plant operating again.

**Reliability** – You expect equipment to be correctly maintained and repaired so that unexpected failures and downtime are minimized.

**Lowest sustainable cost** – You aim to achieve the lowest total cost of ownership over the lifetime of the plant.

**Resource management** – You look to minimize resources to meet your production goals.

**Production output** – You strive to maximize the production of your plant through carrying out effective maintenance of your equipment.

**Your challenges**

**Maximized safety measures** – Safety must not be compromised. Accidents not only impact employees through direct injury, but they can also affect work morale and the community. Safety incidents disrupt workflow and can have long-term consequences such as increased regulation and insurance premiums.

**Efficient management** – Streamlined management activities and reduced overhead. To be efficient requires excellent coordination, communication and preparation of resources, parts, tooling and technical information. Ineffective or insufficient management will increase costs and result in lost time and delays.

**Experienced people** – Finding skilled personnel to do the job correctly. The wrong choices can compromise safety, quality and results.

**Quality repairs** – Maintenance and repairs should be carried out correctly and to a high standard. Poor quality repairs or refurbishment can increase costly downtime, increase maintenance costs and create safety risks.

**The right information** – Personnel require access to the right information and training. Efficient and effective service work requires timely access to equipment specifications, procedures and product engineering support.
Metso Field Services

Metso offers a comprehensive set of field services to help meet your maintenance, repair and refurbishment needs. Each service is fully customizable to your exact requirements. Our highly specialized services cover all Metso and 3rd party crushing, screening, conveying, grinding, bulk material handling, mineral separation and pyro processing equipment.

Learn more at:
www.metso.com/services/field-services/
Metso service footprint
Ensuring rapid global response times

- **20+** Factory hubs
- **40+** Service centers
- **1500+** Field service technicians
- Global support network of dealers

Map of Metso Service Centers and Authorized Partner Service Centers around the world.
Diagnostic services

Diagnostic services help you plan your activities, better identify issues you may be having, as well as identify potential improvements. We can also propose recommendations for shutdowns, maintenance, maintainability, upgrades and process adjustments.
Mechanical and electrical inspection
We carry out thorough inspections of equipment to accurately determine the operating condition. These inspections typically look for potential hidden failures such as stress cracking and abnormal wear, leaks, excessive consumption, excessive vibrations, abnormal temperature and noise. We also carry out non-destructive testing of critical components. After the inspection, we provide a detailed report highlighting any issues found, the needed actions to be taken and maintenance recommendations.

Equipment audit
Small adaptations and adjustments to equipment can have large results by dramatically improving process performance. With our equipment audit service, we review your existing equipment configuration and make recommendations on how the equipment can be upgraded or modified in order to better your process goals and performance potential.

Inventory optimization
Through our expert examination of your mine sites, historical maintenance records and operating conditions, we can assist you by calculating the optimal parts inventory. Our aim is to help you minimize your parts inventory while ensuring that all the critical spare parts are at hand, so your target availability level can be achieved.

Online condition monitoring
We continuously monitor the condition of your critical devices and components, alert you to potential failures and recommend corrective actions. In eliminating unplanned shutdowns or potentially catastrophic failures, production losses and maintenance costs can be minimized.

Discover more from the following link:
www.metso.com/services/field-services/diagnostic-services2/

Expert diagnostic services help you eliminate unforeseen failures and improve planning
Shutdown services

Metso works closely with customers to help plan and execute effective shutdowns that reduce downtime. These service activities will streamline repairs to damaged or underperforming equipment and the changing of parts or wear items.
Site HSE program
Health and safety is a critical part of any service order or request, we work closely with our customers to eliminate risks before work takes place. The Metso HSE program is designed in collaboration with the customer, ensuring safety for all.

Shutdown planning
Metso’s shutdown planning service can help you reduce production downtime, help ensure that the correct parts and people are available as needed and improve shutdown safety. Based on experience from hundreds of Metso-staffed shutdowns, we bring in-depth equipment knowledge, effective maintenance procedures and necessary parts logistics to help you plan for efficient shutdowns.

On-site technical support and supervision
When you wish to utilize your own resources for maintenance, we offer supervision, assistance and expert technical support on Metso and 3rd party equipment. As a result, you can be assured that equipment has been effectively maintained so you can minimize the risk of unexpected shutdowns.

Component assembly
Incorrect assembly can significantly shorten the life of equipment and reduce process performance. Metso’s experienced engineers have access to detailed design and maintenance specifications so that you can be sure that equipment has been properly assembled for a long and productive life.

Shutdown optimization:
Metso can optimize your repetitive planned shutdown times and maximize the use of your resources through the use of detailed time and motion analysis studies.

Health + safety

Discover more from the following links:

www.metso.com/services/field-services/shutdown-services/
www.metso.com/solutions/life-cycle-services/
Emergency services

When an unexpected failure occurs, Metso can help you restore production quickly. We identify the root cause, fix the problem and restore production as fast as possible. We will also identify long-term solutions to prevent issues from reoccurring.
On demand mechanical services
When you have an issue or a mechanical problem, it is important that it is resolved quickly and production is restored as soon as possible. Our teams are supported by a global service network, extensive technical library and knowledge centers to ensure our engineers have the know-how and tools they need to solve your problem quickly and efficiently.

Root cause failure analysis (RCA)
If a failure occurs, it is likely a symptom of a deeper underlying problem. Our experts will assist you in investigating the issue and pinpoint the root cause. Metso engineers’ detailed technical knowledge, operational data and vast experience gained from similar cases at hundreds of mines worldwide, result in thorough and accurate analysis.

Discover more from the following link:
www.metso.com/services/field-services/emergency-services/

Getting you up and running faster with 1,500 field service staff on call
Installation and commissioning

No one understands our machines quite like our dedicated personnel. Whatever the product, location or application, Metso’s experienced and highly-trained specialists will handle the installation with professionalism, adeptness and in accordance with local safety requirements.
Project management
Eliminate the challenge of coordinating multiple on-site teams when installing new equipment. Metso project managers can handle the installation and commissioning of equipment from start to finish. From the early project planning stage, coordinating needed tools and manpower, executing the project on-site to conducting follow up meetings with your staff, our team manages each step of the process to ensure that installations are on time and under budget. Project meetings throughout the process guarantee that everyone is on the same page in terms of safety, costs and installation times.

System configuration
All newly installed equipment is run through rigorous on-site testing to ensure that system equipment hardware and software is working as it should. Predetermined operation sequences are tested and all on-site adjustments are configured to ensure your equipment is ready for your most demanding applications.

Performance verification and documentation
Your new equipment is now installed and fully commissioned, but is it running at its optimal levels over time? Metso experts can also provide performance verification backed up by comprehensive documentation to make sure your new equipment is delivering maximum performance, based on your site specific conditions. Documenting equipment’s performance over time, allows you to spot performance trends and make adjustments when needed.

Client training
Once equipment is installed and running, we remain available for you. Metso is able to deliver employee training programs based on expert knowledge of comminution equipment and maintenance. Training programs offered include online e-training, hands-on modules, specialized courses on crushing, grinding and screening equipment, along with safety and maintenance training in accordance with global best practices.

Installation quality, cost management and safety makes Metso an ideal partner

Discover more from the following the link:
www.metso.com/services/field-services/installation-and-commissioning/
Repairs and refurbishments

As equipment ages over time, production efficiency as well as reliability can decline. Metso provides a full set of services that can repair and refurbish equipment so that it is returned to as new, or latest design condition. If required we can manage the complete cycle of removal, repair, refurbishment and installation on a ‘turnkey’ basis.
**Machine repair/ refurbishment**
Our committed service teams are well-equipped with experience, thorough knowledge of specifications and the correct tools. This ensures that you get the highest quality repairs and refurbishments safeguarding your devices and maximizing the lifetime of equipment and components.

**Turnkey refurbishment and rebuild**
Refurbishment and rebuilds can be complex and time-consuming projects, where even a small mistake can lead to significant delays in returning a plant to full production. Metso will make your life simpler and reduce project risks. With our comprehensive service offerings, Metso can take care of all aspects of the refurbishment and rebuild process from project management to planning and execution, including parts supply and skilled labor for the on-site teams.

**On demand mechanical services**
Long equipment life, good performance and safe operation depend on an extensive understanding of equipment and maintenance procedures. Our on-site crews have expert experience, follow the manufacturer’s defined maintenance and repair procedures, and have access to equipment specialists around the world. With this in mind, you can be confident that diagnostic work, mechanical repair work, adjustments and the installation of components have been done correctly and efficiently.

**Refurbishment process main steps:**

1. **Budgetary quote**
2. **Detailed inspection**
3. **Equipment design and engineering review**
4. **Scope and cost defined with customer**
5. **Customer acceptance and release**
6. **Detailed report and quality verification**
7. **Inspection, testing and final preparation**
8. **Execute work scope with certified resources**
9. **On-site evaluation and scope with customer**

**Discover more from the following link:**

www.metso.com/services/field-services/repairs-and-refurbishment/
Engineered upgrades

Upgrading equipment typically results in an improvement of one or more of the following: Production efficiency, availability, mechanical performance and safety. Metso will help you by identifying upgrade options, planning changes and implementing the work or project.
Control system upgrades
We can carry out control system software upgrades in order to ensure that you get the most out of your equipment. Our technical specialists can advise on, as well as implement software upgrades for all types of legacy control systems.

Select process upgrades
Even small adjustments to equipment may have a large impact on improving process performance. Our experts can implement select process upgrades on your equipment so that you can get more out of the equipment you have in place.

Machine upgrades
Over time machine designs improve, increasing reliability and production efficiency. Metso experts, supported by our engineering designers, can help you understand the upgrade options available to you and help you choose the best option or solution for your business. We then implement the upgrade in the field or at our repair centers, according to the manufacturer’s design specifications and guidelines, so that you can be confident of a long and efficient machine life.

Project Management
Metso can take care of your engineered upgrade projects from start to finish. With access to OEM drawings and specifications as well as our team of expert design engineers, you can be sure that any upgrades will be planned and executed to the highest standards. Whether the work is done in the field by our trained service staff or at one of our global accredited Metso facilities, our team is ready to meet all of your project requirements.

Discover more from the following link:
www.metso.com/services/field-services/engineered-upgrades/
Spares, Wears and Life-Cycle Services
Ensured availability and performance

Shutdown parts

Spare parts
Genuine Metso parts ensure that you get the most out of your existing equipment and help safeguard plant health and safety. Our expert knowledge of specifications, materials and manufacturing means you can be sure that the spare parts are made for the equipment and will live up to the tasks. Our spare parts, paired with our field services, return equipment to optimal operating condition.

More information is available at:

www.metso.com/mining/spareparts

Wear parts
Metso wear parts can help you reduce planned shutdown time and boost production efficiency. Our equipment knowledge, process expertise, manufacturing capabilities and extensive logistics network means that we can help provide a customized wear parts solution that helps you extract more from your production process.

More information is available at:

www.metso.com/mining/wearparts

A complete shutdown solution

Life-cycle services
Our customizable life-cycle services can help you optimize asset performance while you concentrate on your business. We take responsibility for specific maintenance and operations processes and commit to delivering tangible business performance improvements. Solutions range from optimizing plant shutdowns to complete maintenance of equipment where customers can conveniently pay per ton produced.

More information available at:

www.metso.com/solutions/life-cycle-services/
Choose Metso as your partner to eliminate unplanned downtime and improve plant availability.
Satisfied customers

Shutdown case study

Reduced shutdown times

**Background**
- Customer in eastern Canada with Metso Superior MKII 60” x 89” Crusher
- Wished to reduce lost revenue, without compromising safety
- Wanted to reduce the shutdown time required to change liners
- Chose Metso to carry out shutdown and liner change

**Our solution**
- Metso helped plan and execute shutdown
- Metso shutdown team and engineer experts on-site
- Specially designed safety platform and tooling

**Results**
- On-schedule replacement of concaves, mantel, performed full inspection and spider repair
- No lost time due to safety incidents

Upgrade case study

Production boosted by upgrade

**Background**
- A copper mine complex in Chile
- The customer wished to increase production
- On-site there were nine Metso MP1000 crushers which were 16 years old
- Chose Metso to upgrade the crushers to MP1250 crushers

**Our solution**
- Two teams of 12, working in 12-hour shifts
- Tools and equipment to enable the upgrade
- An upgrade kit for each machine
- Two main frame changes

**Results**
- Safety improvements
- Production increased by 20% with upgrade kits
- Better quality end product which helped increase copper recovery

Emergency services case study

Minimized production losses

**Background**
- A mine in western Canada
- Gear problems on their 32” diameter x 15’ long SAG mill
- SAG mill failure would have stopped production for months
- Chose Metso Services to prevent failure and keep mill running to next shutdown

**Our solution**
- Holistic approach to issue finding including: gearing, drive system and operating parameters
- Proposed short-term measures for production to continue until planned shutdown
- Reviewed customer maintenance practices and monitoring procedures

**Results**
- Production losses minimized
- Maintenance practices put in place that prevent issues from being repeated
- Metso returned components to as-new condition at shutdown
Satisfied customers

Repairs and refurbishments case study

Improved return on asset

Background
- Kiln reliability and performance had fallen over the many years since installation
- The customer wished to improve reliability and performance and the life of the kiln
- Chose Metso Services to refurbish the rotary kiln and rotary cooler

Our solution
- Kiln gear reversal and shell section replacement
- In the rotary cooler, we carried out the shell section and filled bar system replacement
- Metso service teams on-site carried out rebuild and refurbishment around the clock

Results
- Production losses minimized
- Operational and maintenance recommendations
- Components returned to as-new condition
- Extended equipment lifetime, reducing cost of ownership

Repairs and refurbishments case study

Minimized downtime

Background
- A coal ship loader in the USA
- Shuttle conveyors 8’ wide by 88’ long and 8’ by 62’ (extended partially over water)
- Severe corrosion and aging equipment had reduced availability, raised safety concerns and increased maintenance costs
- Chose Metso to refurbish and rebuild ship loaders

Our solution
- Two complete conveyor assemblies with electrical end
- Two 21-day outages, one for each machine
- Decayed structural steel found and replaced
- Old equipment was disposed of in an environmentally safe manner

Results
- Fast 21-day refurbishment, conveyors restored to as-new condition
- Improved reliability, lower maintenance and safer working environment

Upgrade case study

Faster delivery with conversion

Background
- A mine in eastern Canada
- Wished to install an AG mill as part of its mine development
- Lead times for new mill were 90 weeks, which represented a considerable delay
- Decided to convert an existing SAG mill to an AG mill
- Chose Metso to carry out the upgrade due to knowledge and project experience, which minimized delivery risks

Our solution
- The mill was dismantled at existing site in British Columbia, and packed and transported
- Converted to autogenous application with parts added and remaining parts refurbished
- The AG mill was transported to its new site in Ontario where Metso supervised installation

Results
- The AG mill was available in half the time of a new mill (44 weeks)
The Metso Way – Making the big difference to our customers

Everything we do is based on deep industry knowledge and expertise that makes the big difference to our customers. Decades of close customer collaboration and adapting to our customers’ ever changing needs have transformed us into a knowledge company.
Through our knowledge and experience, we work with our customers to create solutions that enable them to attain their objectives. We call this The Metso Way which focuses on creating value to our customers.

The Metso Way is built upon:

### Knowledge –

Working closely with our customers globally for many years has given us the unique advantage of learning from a wide variety of operational situations. This has allowed us to develop world-leading expertise in all areas we serve.

Whether we deliver a single product or take comprehensive responsibility for a complete business process, our knowledge guarantees that we can help you maximize your performance. As the world changes, we can help our customers adapt and sustain that performance.

### People –

Our highly-competent and committed professionals around the world can help bring knowledge, experience and visionary thinking to your operations.

We listen to your needs and always put your interests at the center of what we do. A strong part of our culture is based on honesty and resilience. Once we make a commitment to you, we will always strive to deliver and will be there to correct problems if issues arise. We deliver world class solutions even under the most challenging conditions.

### Solutions –

Our sustainable solutions help you improve your productivity, performance and profitability. Our wide spectrum of solutions range from supplying parts to conducting comprehensive maintenance services and highly sophisticated process analysis.

Our service professionals are always available and responsive to your requests to ensure your needs are quickly addressed. Underpinning our global presence is our worldwide network of service centers ensuring that our solutions are supported over the full lifecycle of your project.