

Metso

Pyro processing

Rotary equipment services



The need to reduce operating costs while improving equipment availability is a continuous balancing act.

We are here to support you, from expert advice to parts supply to maintenance.





Keep your kiln running at its best

With over 100 years of designing, manufacturing and servicing kilns, dryers, coolers and similar trunnion-supported rotary equipment, our experts have seen it all.

Help with your pyro equipment

Metso offers end-to-end services for rotary kilns as well as full pyro processing systems. Our experience in servicing hundreds of installations worldwide gives us the know-how to help you achieve your business goals, cost-effectively, with minimal interruption to your production.

Metso is home to many heritage kiln brands:

- Allis-Chalmers
- Allis Mineral Systems
- Boliden Allis
- Svedala
- Kennedy Van Saun (KVS)
- MPSI/Hardinge
- Stansteel

We also service non-Metso equipment.

OEM knowledge and parts

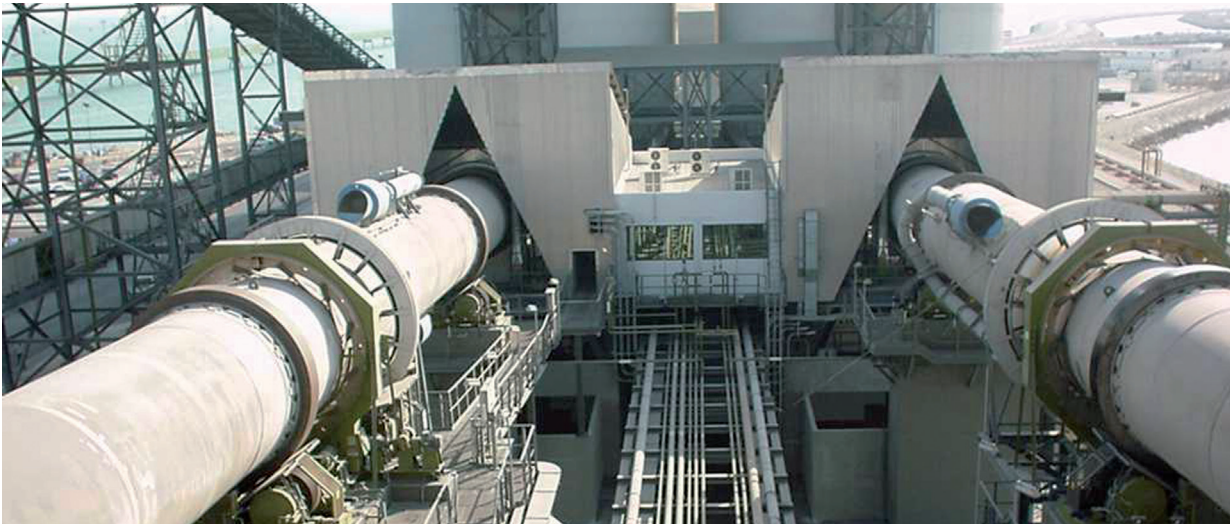
- Fit and function
- Safety
- Warranty
- Access to expertise
- Lower total cost

A comprehensive approach to maintenance

From a simple inspection to alignment and refurbishing to a full kiln overhaul—we have you covered. All Metso service activities are backed by a global network of experts, ensuring best practices are applied, and that repairs and refurbishments are implemented to the highest level of quality.

Metso has experience in many application areas:

- Iron ore
- Cement
- Lime
- Pulp and paper
- Coke
- Lithium
- Waste incineration
- Alumina



Services at a glance

Metso provides expert services for rotary kilns, dryers, coolers and all roller-supported rotary equipment. Our comprehensive service portfolio is supported by deep technical knowledge, experienced people and specialized tools.

Diagnostics and alignment

An optimized alignment relationship between the various kiln components equalizes the load charge and contributes to lower component wear rates.

Maintenance and repairs

From replacement services to full rebuilds of large components, we have many options to reduce the risk of equipment failure.

Upgrades and retrofits

As your production goals evolve, so should your equipment. Achieve improved profitability, uptime and safety.

Combustion solutions

An effective and controlled heat release profile for a given application solves flow, thermal, combustion and chemistry problems

Parts supply

Reliable original parts that fit and function perfectly are a key part of optimizing equipment performance, reliability uptime, safety and maintenance costs.

Specialized training

Ensuring proper kiln maintenance starts with having the right knowledge and skills. With specialized on-site training and regional seminars, we can provide the guidance your teams need.

Expect results

All designed with your goals in mind.

- Reduce maintenance costs
- Lower fuel costs
- Reduce emissions
- Extend equipment life
- Long-term performance improvements

Diagnostics and alignment

An alignment analysis of your kiln is often combined with a mechanical inspection to identify, diagnose and correct any issues before they develop into major problems.

Proper alignment is critical

It is essential that everything is rotating correctly with the proper machine alignment and full contact for efficient and cost-effective operation. Alignment of the shell or drum between the support piers, gear to pinion and fires to support rollers is necessary for all rotary units. Alignment is also a key factor in extending the lifetime of equipment and optimizing maintenance costs.

Metso's comprehensive method

The Metso alignment method uses state-of-the-art high frequency laser equipment to capture data with a high degree of accuracy and calculate the position of the kiln shell rotational axis at each support. The calculation includes allowance for flexure, shape distortion and eccentricity of the shell. From these results, the adjustments of the positions of the support rollers required to restore the kiln to optimum alignment condition are calculated. Last but not least, the kiln's alignment is corrected, and recommendations are made to improve mechanical and refractory performance.

Flexible enough to meet your unique needs

What's included?

Metso alignment analysis and mechanical inspections typically include:

- Kiln alignment in elevation and plan view (kiln axis)
- Kiln shell ovality using a state-of-the-art electronic ovality device
- Kiln shell axis eccentricity (run out) and shape distortion including a 3D simulation
- Differential roller shaft flexing measurement
- Hot kiln axial alignment check
- Roller slope and skew alignment
- fire axial run-out and gear axial/radial run-out checks
- Measurement of tie and roller diameters
- Detailed inspection report and recommendations

*Certain services are subject to availability depending on region and operating condition



Metso offers both

- Hot alignment with the unit in full production
- Cold alignment while the unit is shut down for other work





Maintenance and repairs

The correction of the normal wear that occurs on riding rings, support rollers and thrust rollers by in-situ resurfacing will reduce the risk of equipment failure and extend the life of kiln components.

Periodic riding ring and support roller resurfacing is important to correct surface wear and distortion, as well as enable top equipment performance and reliability. Our grinding machines were engineered for purpose—cutting a true arc around no fixed center, while still maintaining a smooth surface finish that follows OEM recommendations.

In-situ grinding can be carried out on all fires, including thrust surfaces, trunnion rollers and thrust rollers to restore them to original shape.



Upgrades and retrofits

Upgrades and retrofits are a great way to get new life out of your equipment, allowing you to achieve modern-day performance. Our experts can help you understand and select the best retrofit solution for your operations.

With access to OEM drawings and specifications as well as our design engineers, you can be sure that any upgrades will be planned and executed to the highest standards.



Combustion solutions

Metso offers more than 20 years of experience delivering results for customers through superior combustion system design and processes.

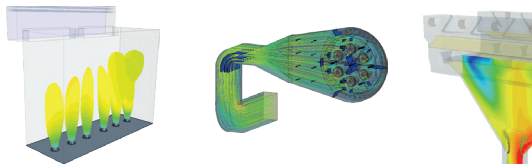
Combustion equipment rotary kiln burners

Every combustion solution we propose is truly custom. We take the time to learn and understand your specific operations, utilize proven analytical tools and complete each model and design in-house, providing tailored burner designs to meet individual needs.

- OptiMix
- Direct-fired nozzle (DFN)
- HSB warm up burners

Computational fluid dynamics (CFD) modeling

CFD is an integral part of our design process for combustion systems. Whether as a standalone consultancy or a part of our standard combustion offering, FD allows for a detailed examination of flame and temperature profiles, as well as their impact on process conditions and emissions..



Auxiliary equipment

As part of system design, we offer a number of ancillary items that enhance or complete the combustion system.

- Fuel handling
- NCG lances
- Primary air systems
- Flame scanners
- Burner management systems
- Ignitor systems
- Selective non-catalytic reduction (SNCR)

Engineering and site services

We offer a comprehensive range of engineering services to enhance and complement core products. Using our solution-based approach, we can provide a total lifecycle offering.

- Plant safety studies
- Combustion system optimization studies
- Mechanical and electrical design services
- Project management

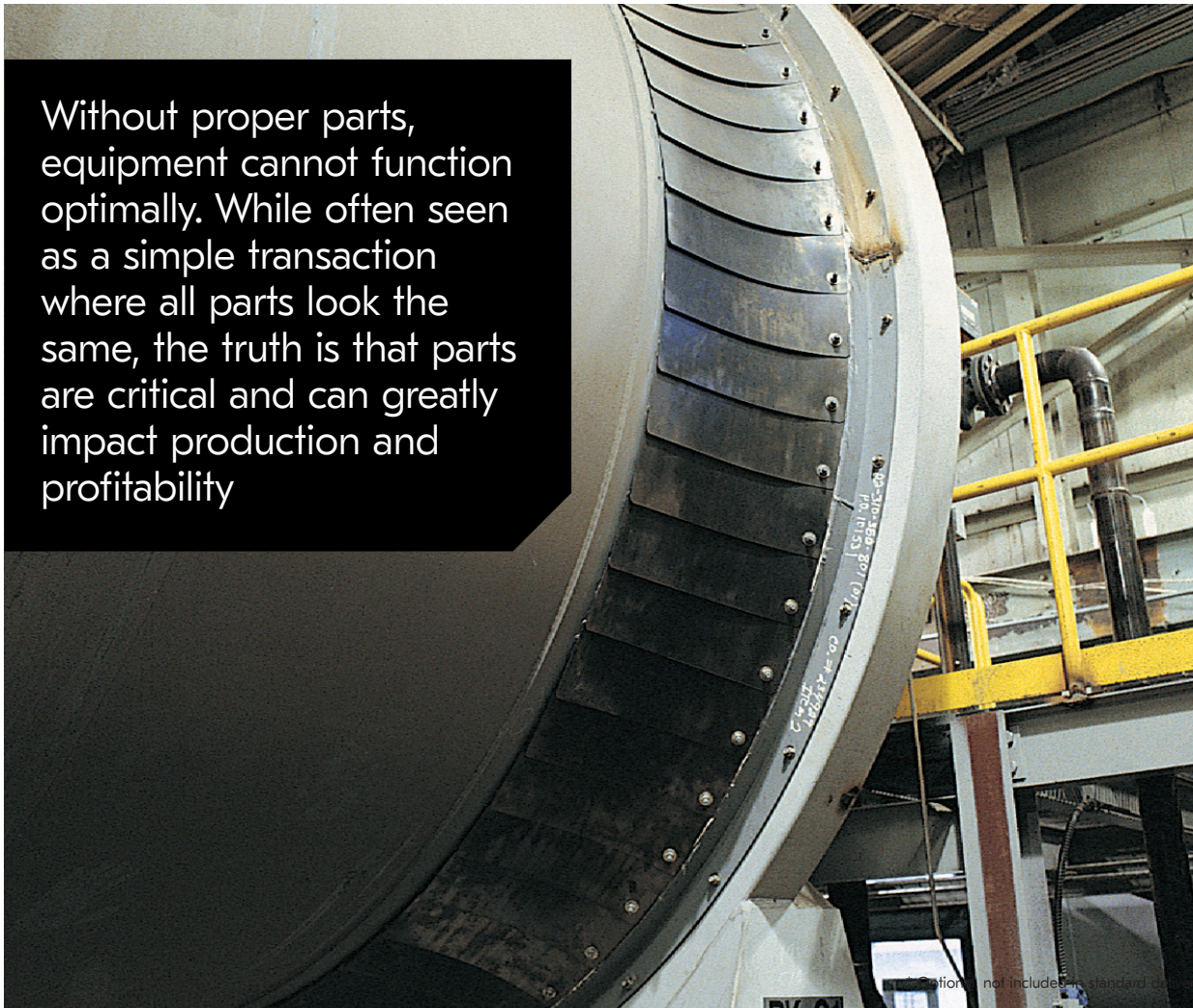


Parts supply

With Metso, critical doesn't mean complicated

We take advantage of the latest designs and improvements. All of our parts are held to stringent OEM standards by our quality assurance group and we stand behind what we supply 100%.

Without proper parts, equipment cannot function optimally. While often seen as a simple transaction where all parts look the same, the truth is that parts are critical and can greatly impact production and profitability



Pyro parts to the original material specifications and tolerances including:



- Riding rings
- Filler bars
- Retaining components
- Drive components
- Chains, lifters and dams
- Carrying rollers and stations
- Shells
- Thrust stations

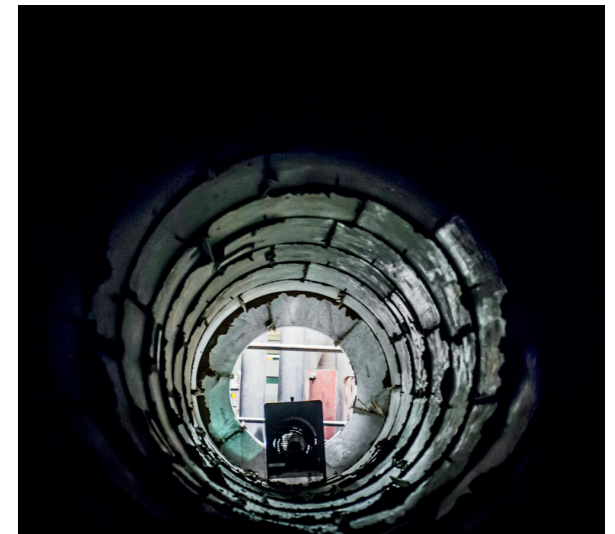


Training services

Metso offers an extensive array of training programs designed for real-world operations.

In addition to keeping equipment in good working order, knowledge is power for operators and staff to get the most out of equipment features and support safe operations.

Metso offers an extensive selection of training programs. We specialize in hands-on training for operators and maintenance staff, carried out by experts who work closely with your equipment and have deep knowledge from installers worldwide.



Why partner with Metso?

Metso's experienced field service engineers are equipped with advanced measurement techniques and specialized equipment to efficiently and safely service and install pyro processing equipment and systems in the field.

Consult Metso's pyro processing experts for:

- One source for parts and technical service
- Access to specialized knowledge and tools
- 24/7 support
- Minimized production interruption
- Improved productivity
- Troubleshooting know-how
- Safe working practices
- Lower failure risk
- Easier maintenance planning

The Metso team offers rapid response, on-time delivery, quality control and emergency support

Metso offers further services to help you extend equipment life



Life Cycle Services (LCS)

Life Cycle Services takes the entire range of Metso services and conveniently bundles them into tailored and easy-to-manage packages. These can range from basic services to more complete solutions, depending on the scale of your needs. Packages are equipped to cover single-event shutdowns or span multiple years, measured against strict KPIs



Field Services

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

Metso is a frontrunner in providing sustainable technologies, end-to-end solutions and services for the aggregates, minerals processing and metals refining industries globally. By helping our customers increase their productivity, improve their energy and water efficiency and environmental performance with our process and product expertise, we are the **partner for positive change**.

Metso

Metso Corporation, Töölönlahdenkatu 2, FI-00100, Helsinki, Finland
tel. +358 20 484 100
[metso.com](https://www.metso.com)