



Metso:Outotec

Pyro Processing

Rotary Equipment Services

Optimize
performance with
minimal interruption
to production

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.



Keeping your kiln running at its best

The Metso Outotec advantage

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 Outotec 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 Outotec is home to many heritage kiln brands:

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

* We also service non-Metso Outotec equipment.

Metso Outotec has experience in many application areas:

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

A comprehensive approach to maintenance

From a simple inspection, to alignment and resurfacing, to a full kiln overhaul – we have you covered. All Metso Outotec 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.

OEM knowledge and parts

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

Services at a Glance

Metso Outotec 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 & alignment

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



Maintenance & repairs

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



Upgrades & 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 & Alignment

An alignment analysis of your kiln is often combined with a mechanical inspection in order 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 Outotec's comprehensive method

The Metso Outotec 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 to 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.

Metso Outotec offers both:

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



What's included?

Flexible to meet your unique needs

Metso Outotec 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
- Tire axial run-out and gear axial/radial run-out checks
- Measurement of fire and roller diameters
- Detailed inspection report and recommendations

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

Maintenance & 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 tires, including thrust faces, trunnion rollers, and thrust rollers to restore them to original shape.



Upgrades & 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.

Key upgrades:

- Switch traditional seals to leaf
- Convert flange-mounted gearing to tangent-plate
- Upgrade burner for lower NO_x emissions

Combustion Solutions

A new division at Metso Outotec KFS brings over 20 years of 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

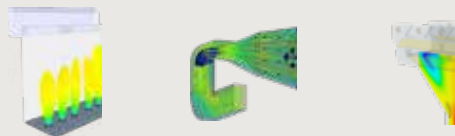
Auxiliary Equipment

As part of system design, we offer a number of ancillary items which 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)

Computational Fluid Dynamics (CFD) Modelling

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



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.

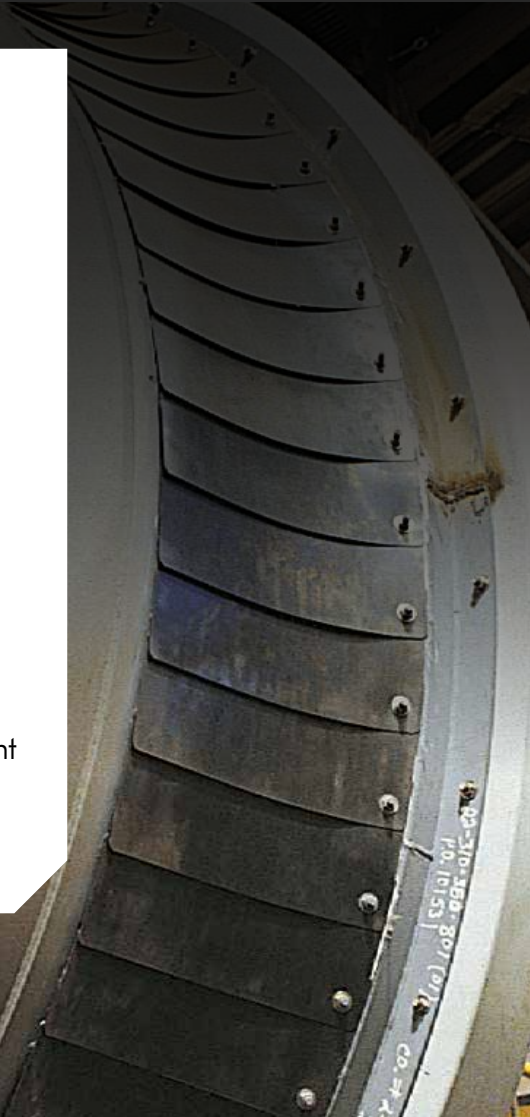
- Plant safety studies
- Combustion system optimization studies
- Mechanical and electrical design services
- Project management

Parts Supply

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.

With Metso Outotec, 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%.



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

Extensive array of training programs designed for real world operations

Training Services

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



Why partner with Metso Outotec

Metso Outotec'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.



Metso Outotec experts can find the root cause of problems, provide expert options for time and cost-savings, and recommend solutions to help you get more out of your equipment. All service activities are backed by a global network of experts.

Consult Metso Outotec's pyro processing experts for:

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

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

Metso Outotec offers further services to help you extend equipment life:



Life Cycle Services (LCS)

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

→ mogroup.com

We aim to be a sustainability leader in our industry. Sustainability at Metso Outotec is founded on our strategy, and code of conduct, as well as on selected, globally acknowledged guidelines and principles. By providing new and better technologies and changing current ways of operating, we help our customers meet their sustainability goals..

Partner for positive change

Metso:Outotec

Metso Outotec, PO Box 1220, FI-00101, Helsinki, Finland
tel. +358 20 484 100, fax +358 20 484 101
mogroup.com