

# Metso

Thickener & clarifier services

## Thickener & clarifier aftermarket offering

Setting the industry standard in performance  
Your #1 service partner from pit to port



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## Thickener aftermarket offering

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# 01

## Introduction

A diverse portfolio of thickening and clarifying products and services to suit a wide range of applications

# Thickener and clarifier portfolio

Metso  
PLUS

2<sup>nd</sup> Generation  
Paste Thickener



Achieve maximized underflow density, while experiencing ease of operation, reliability and consistency in applications requiring a high degree of dewatering.

Metso  
PLUS

Inclined Plate  
Settler (IPS)



The IPS equipment has proven to provide maximum recovery rates and a decreased plant footprint for a wide range of applications.

Metso  
PLUS

High Rate Thickener



The result of continuous product development and world-class innovations, enabling guaranteed process performance and reliability. The portfolio consists of two products: HRT and HRT-S.

Metso  
PLUS

High compression  
thickener



Market leading technology for slurry thickening, based on proven successful innovations developed over decades, guaranteeing high performance even under variable process conditions.

Metso  
PLUS

Reactorwell™



A first-class feed system that maximizes thickener performance while minimizing flocculant consumption and bringing significant cost efficiencies to your operations.



Read more about our offering here >>

# Service performance you can rely on

Our comprehensive service portfolio is supported by deep technical knowledge, experienced people, and specialized tools to maximize profitability throughout the plant life cycle.



Spare & wear parts



Modernizations,  
upgrades & retrofits



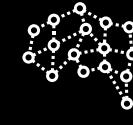
Maintenance,  
shutdowns & repairs



Process  
optimization &  
connected services



Life cycle services



Training services

# Your #1 service partner from pit to port



## END-TO-END SOLUTIONS



We carry the industry's most comprehensive aftermarket offering, and it's not limited to Metso equipment. You set the target. We provide the solution.

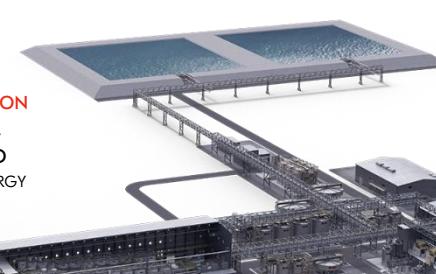
**SCREENING**  
UP TO  
**100%**  
LESS WATER



**CRUSHING**  
UP TO  
**30%**  
LESS ENERGY

**HAULING**  
UP TO  
**9%**  
LESS FUEL/TON

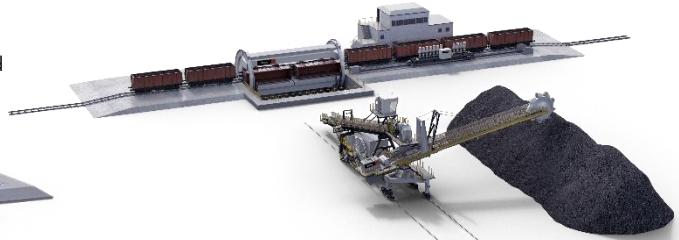
**FLOTATION**  
UP TO  
**20%**  
LESS ENERGY



**GRINDING**  
UP TO  
**25%**  
LESS ENERGY

**THICKENING**  
UP TO  
**91%**  
LESS PRODUCT LOSS

**FILTRATION**  
UP TO  
**25%**  
CAPACITY INCREASE



I'm committed to helping you exceed your targets!  
Alejandra Pereda  
Metso Expert

## OPTIMIZED PERFORMANCE



- Unmatched know-how of equipment, parts and services
- Unique simulation tools
- Widest offering to choose from
- Pioneering innovations, patented technologies

## DIGITAL MINE



- Intelligent instruments
- Remote monitoring and support
- Parts optimization
- Digital twins

## TRUSTED PARTNER



- Support, sustainable manufacturing and parts stock close by
- Reliable, high-performing parts and services
- High safety, ethical and environmental standards
- Training and expertise to bridge knowledge gaps

## SUSTAINABLE OPERATIONS



- Optimized, long-lasting parts produced with renewable electricity\*
- Parts designed for minimized wastage and energy efficient operation
- Recycling of worn parts
- Lower risks and less energy, water, parts, fuel, waste, transportation

# 02

## Spare and wear parts

Parts built to perform, because not all parts are equal

# Full span thickener spare parts

THICKENER TANK, MECHANISM, BRIDGE, FEED SYSTEM & DRIVE UNIT

Hydraulic power unit  
Drive unit

Spiggets

Feedwell

Transition box

Feedpipe

Drive shaft

Rake arms

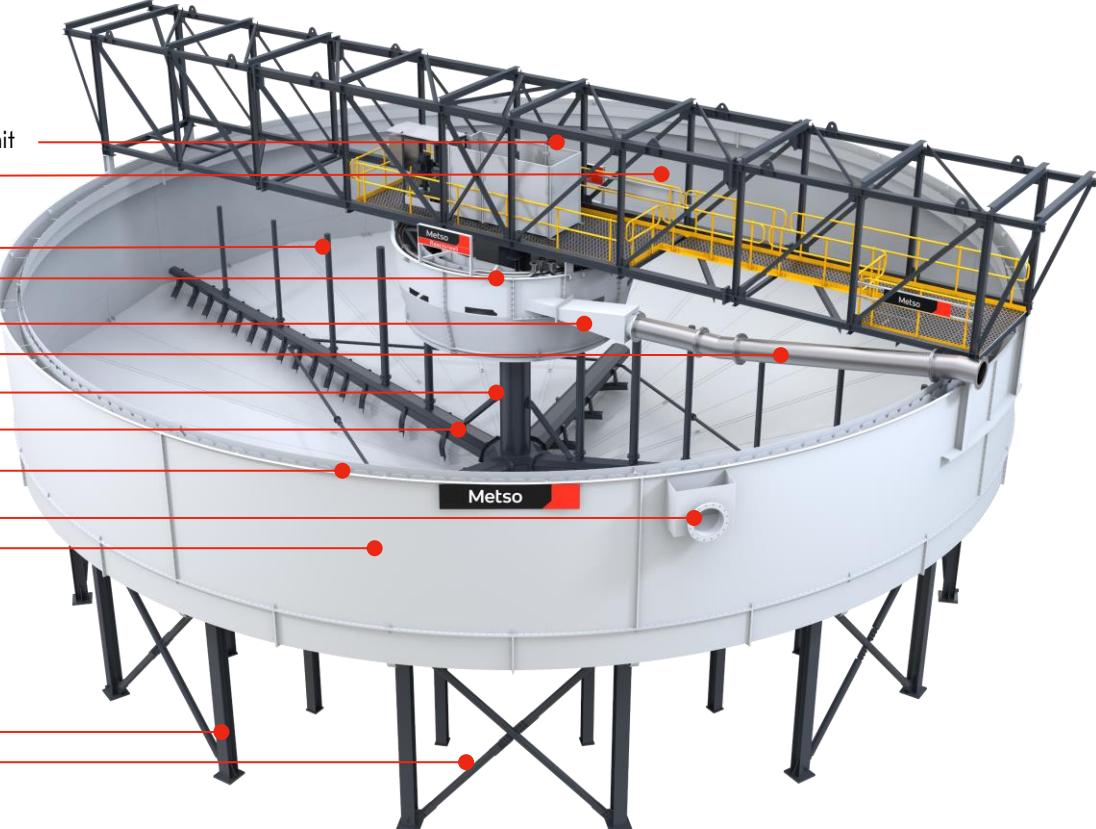
Launder

Overflow box

Tank

Tank supports

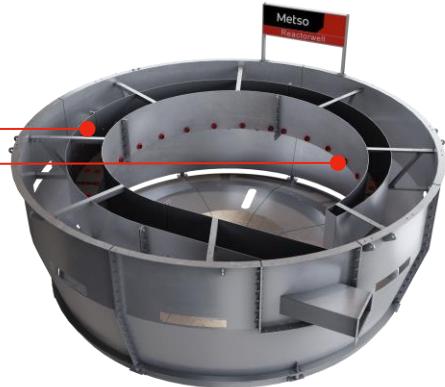
Support struts



REACTORWELL

Trough

Nozzles



RAKE MECHANISM

Rake arms

Drive shaft

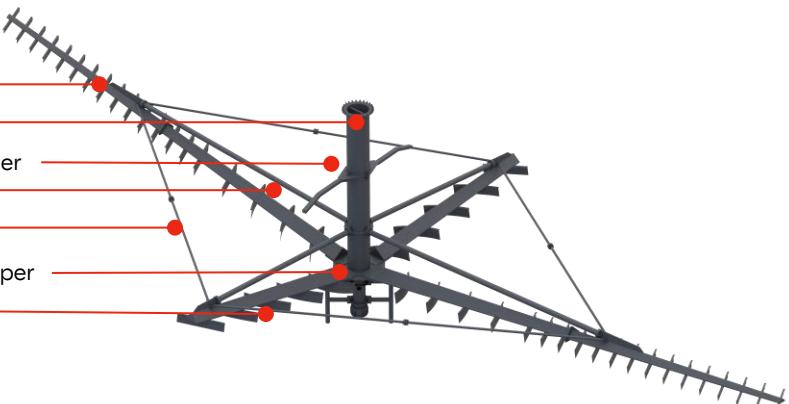
Deflector cone scraper

Struts

Tie rod

Underflow cone scraper

Rake blades



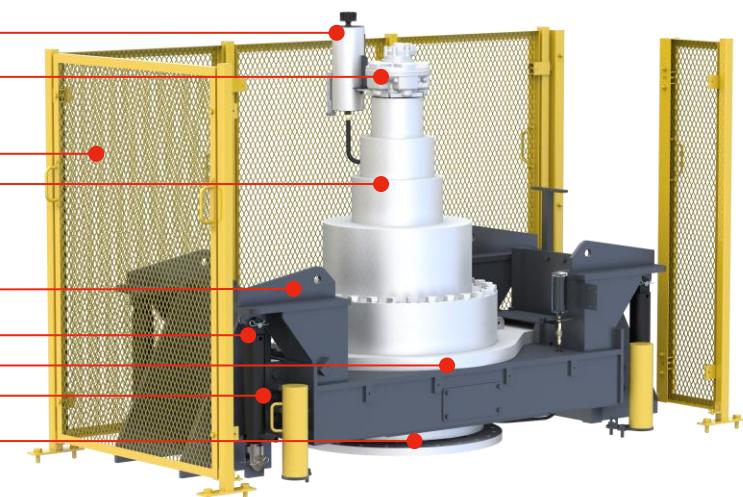
DRIVE UNIT

Oil canister

Hydraulic motor

Safety fencing

Gearbox



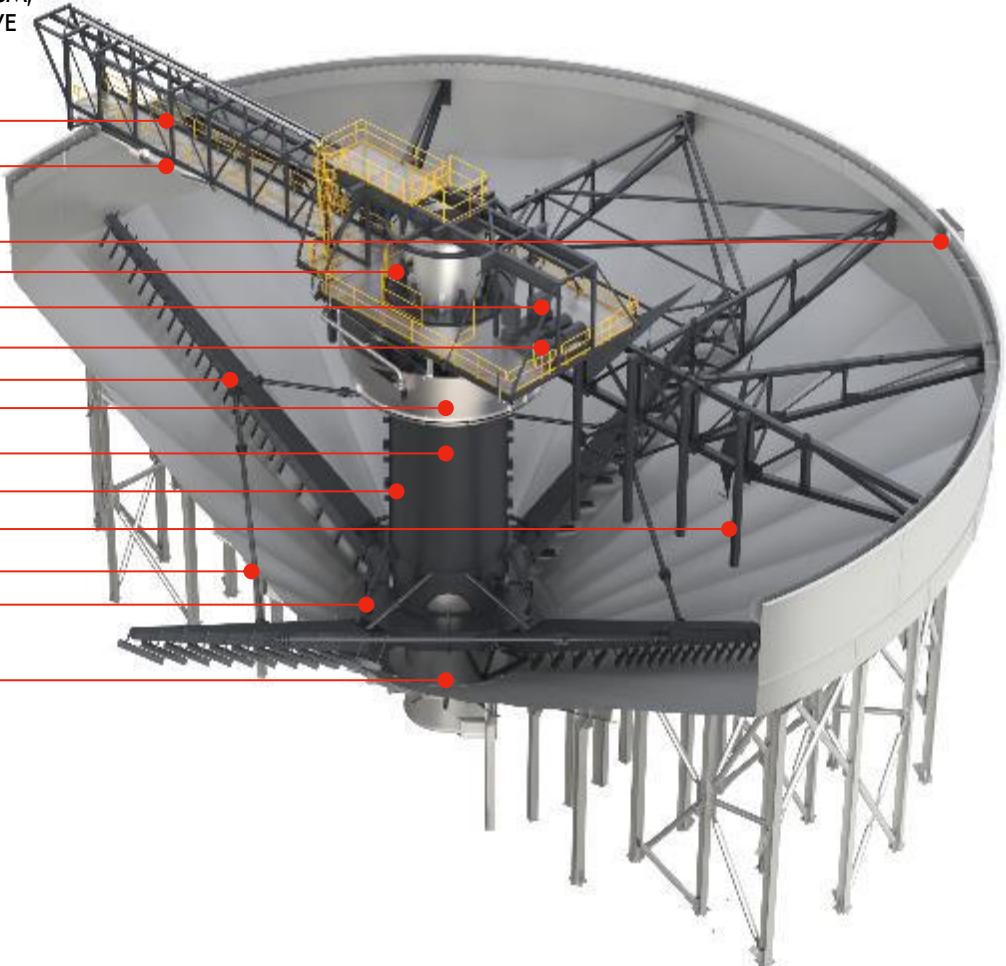
Purchase essential long-lead components like gearboxes, split rings, and hydraulic drive parts in advance when placing an order for a new thickener in greenfield projects.

# Centre column thickener spare parts

THICKENER TANK, MECHANISM, BRIDGE, FEED SYSTEM & DRIVE UNIT

Bridge & walkway  
Feedpipe

Launder  
Drive unit  
Control panel  
Hydraulic power unit  
Rake arms  
Feedwell  
Centre column  
Rake cage guide block  
Spiggots  
Tie rods  
Struts  
Underflow cone scraper



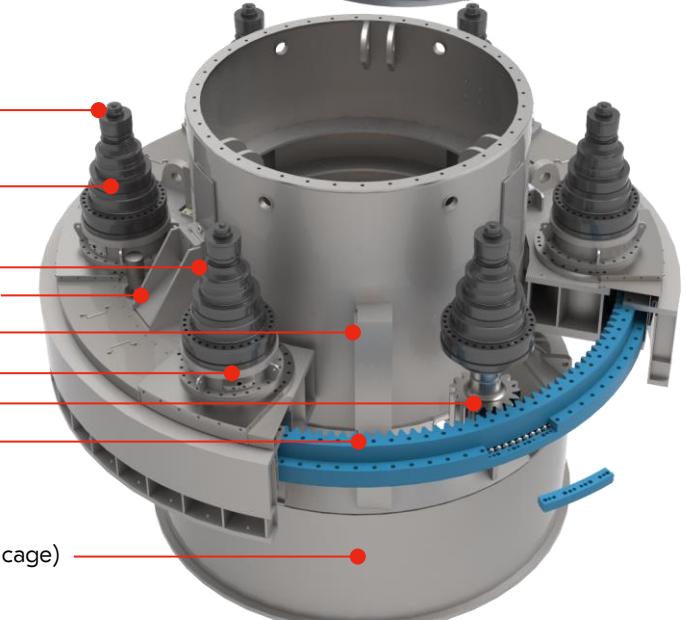
REACTORWELL

Nozzles  
Trough



DRIVE UNIT

Drive motor  
Gearbox  
Slide bearing  
Hydraulic cylinder  
Slide bearings  
Pinion tower  
Pinion  
Slew bearing



Guide blocks (rake cage)



SPLIT SLEW BEARING

Inner race

Outer race



Purchase essential long-lead components like gearboxes, split rings, and hydraulic drive parts in advance when placing an order for a new thickener in greenfield projects.

# 03

## Modernizations, upgrades & retrofits

Delivering a real and sustainable  
difference



## Get the most out of your thickener equipment with a modernization, upgrade or retrofit

The efficiency of your process equipment plays a vital role in enhancing operational profitability. When dealing with aging equipment, you're faced with a challenging decision: either invest substantial capital in new equipment or opt for modernizing your current setup.

Our team of experts is dedicated to collaborating closely with you, developing a tailored modernization solution that perfectly aligns with your plant and operational requirements.



**Metso**

# Reasons to modernize

Increase production capacity

Improve efficiency

Enhance process control

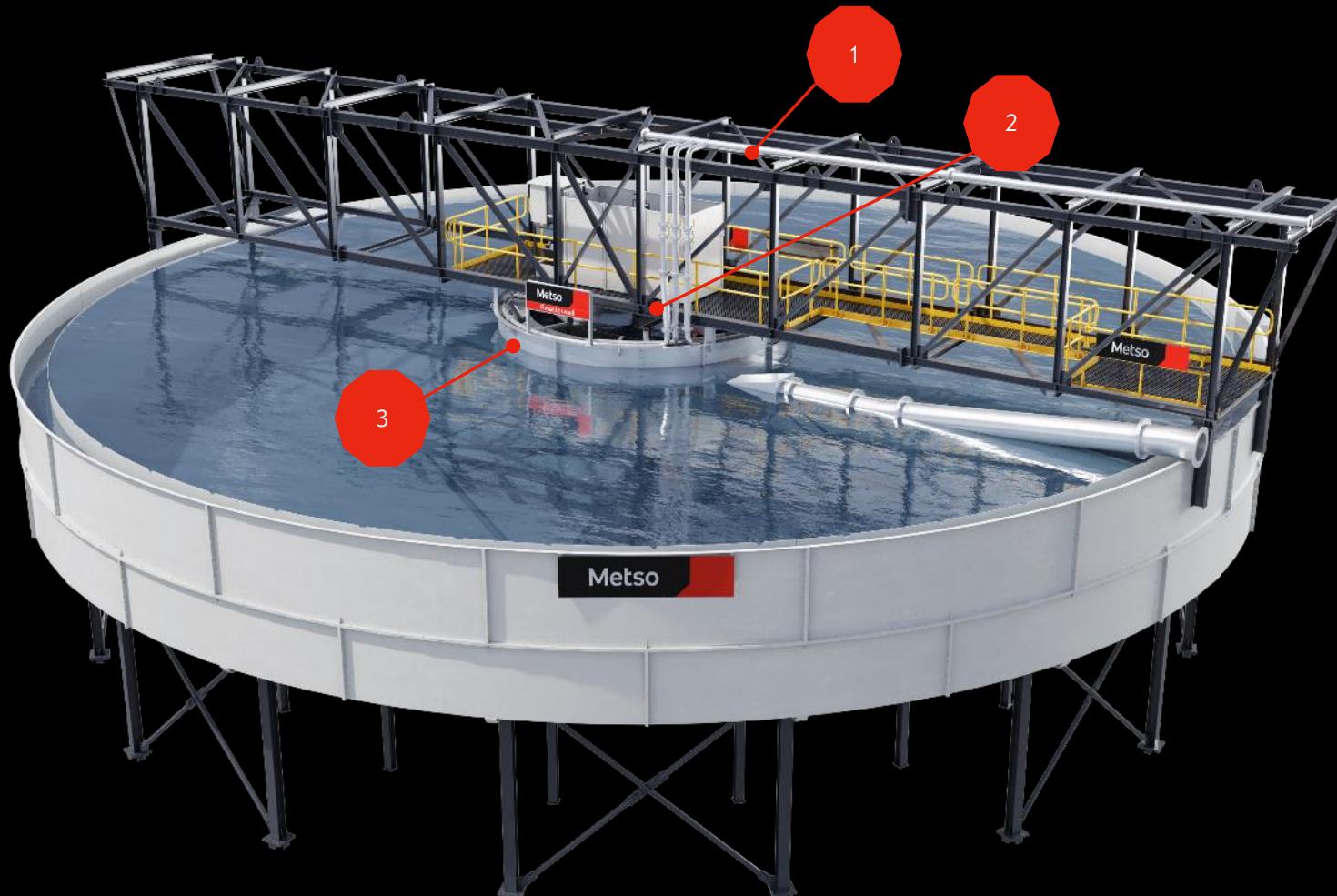
Environmental regulations

Maintenance and reliability

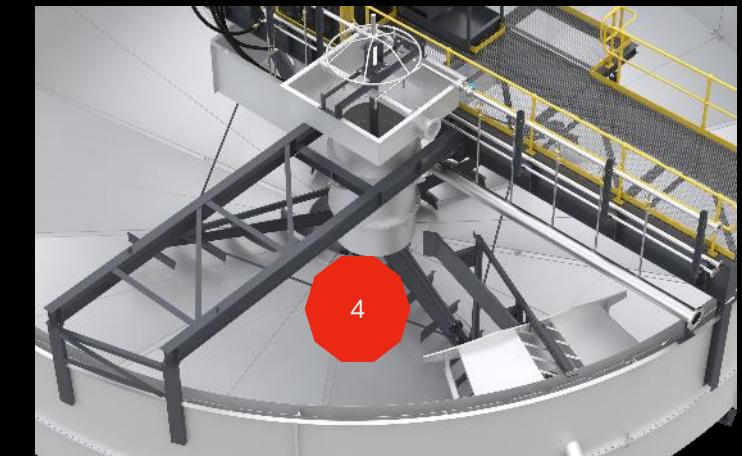
Technology advancements

Increase safety

# Thickener modernizations, upgrades & services



- 1 Full bridge & mechanism upgrade with Reactorwell™ technology
- 2 SCD split ring upgrades
- 3 Feed system upgrades with Reactorwell™ technology
- 4 Froth management upgrades



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# Metso

## Thickener and clarifier upgrade Bridge & mechanism upgrade

MORE INFO:



Improve performance and extend the life of equipment by upgrading your aged thickener.

Bridge and mechanism modernizations can replace all internal elements of your thickener, including bridge, gearboxes, power units, rakes, and torque shafts or cages.

- Latest equipment design takes into consideration improved safety features
- Possibility of reusing existing tank and supports
- Brings existing thickener up to current best standards of safety, performance and operability

### Benefits

- Improves capital efficiency
- Improves operational stability
- Extends availability
- Addresses insufficient rake torque
- Provides a safer work environment
- Improves availability of spare parts

### Scope

- Engineering study
- Upgrade may include:
  - Bridge, full span or center column
  - Feed System including latest Reactorwell™ Technology
  - Drive assembly, gearbox, and rake lift
  - Powerpack, control panel, instrumentation
  - Overflow launder, box and underflow cone
  - Upgrade to Metso installed base and 3rd party equipment



# Metso

## Thickener and clarifier upgrade SCD split ring

MORE INFO:



The SCD split ring series has been designed to meet the same capacity as the original slewing bearings, offering drastically reduced plant downtime and ensures continued operation of the thickener.

The geared slewing bearing is the connecting element between the static column and the rake cage of the mechanism delivering torques of up to 14,500,000 Nm.

Our unique SCD split ring series design offers faster, safer and easier replacement of the slewing bearing in the drive unit

The SCD split ring series allows in-situ replacement of existing rings without removing or disassembling the bridge. The two-part design also allows delivery via the existing bridge monorails, eliminating the need for large cranes.

Available sizes:

- SCD2000, SCD3000, SCD4000 split ring
- SCDH4500 split ring

### Benefits

- Minimal downtime due to quick change design
- No need to remove or lift the bridge
- No long reach crane required
- Suitable for existing SCD dimensions

### Features

- Can be replaced without removing the bridge and feedwell
- A long reach, a high-capacity crane is not required
- Superior shelf-life by individually protected components
- Reduced transport dimensions allow for a more economical method of transport and allow full containerization
- The split ring components are individually protected and sealed for long-term warehouse storage
- The protection of individual parts, as opposed to a fully assembled ring, provides excellent long-term storage capability while requiring less warehouse space



# Metso

Thickener and clarifier upgrade

## Thickener feed system upgrade

MORE INFO:



An upgrade of your thickener feed system is tailored for changing process conditions and requirements experienced throughout the lifetime of any minerals processing plant.

The geared slewing bearing is the connecting element between the static column and the rake cage of the mechanism delivering torques of up to 14,500,000 Nm.

Our unique SCD split ring series design offers faster, safer and easier replacement of the slewing bearing in the drive unit

The SCD split ring series allows in-situ replacement of existing rings without removing or disassembling the bridge. The two-part design also allows delivery via the existing bridge monorails, eliminating the need for large cranes.

Available sizes:

- SCD2000, SCD3000, SCD4000 split ring
- SCDH4500 split ring

### Benefits

- Increases the throughput
- Improves underflow density, overflow clarity and water recovery
- Improves adjacent processes such as concentrate filtration and tailings
- Minimizes environmental impact
- Better operational stability
- Optimizes mineral recovery
- Lowers flocculant consumption

### Scope

- Feedwell upgrade with industry-leading Reactorwell™
- Equipped with Autodil™ or Turbodil™ dilution system™
- Feed tanks and or break tanks
- Feed pipe modifications
- Additional modifications to ensure compatibility to the equipment, i.e., bridge & mechanism reinforcement
- Supporting offering; Process Review/Audit, thickener process test work, engineering study
- Upgrade to Metso installed base and 3rd party equipment



# Metso

Thickener and clarifier upgrade

## Reactorwell™ upgrade

MORE INFO:



Metso redefines industry's sustainability targets with the Reactorwell™, a first-class feed system that maximizes thickener performance while minimizing flocculant consumption and bringing significant cost efficiencies to your operations.

**Innovation leap:** A new generation feedwell with high solids retention and mixing efficiency that eliminates feed short-circuiting. The Reactorwell™ offers low shear for ideal floccule growth, even discharge symmetry and excellent feed preparation.

**Unparalleled performance:** The Reactorwell™ enables maximum thickener usage due to a higher exit symmetry, resulting in better thickener operability & improved response to process changes. It also enables improved overflow clarity with higher underflow density.

Metso's highly experienced design team can quickly, accurately and cost-effectively produce various design options, with reassurance for full-scale replication.

This unique combination of CFD capability, backed by decades of real-life experience, generates cutting-edge customized designs.

### Benefits

- Reduced plant operating costs
- Reduced flocculant consumption
- Increased underflow density
- Higher solids throughput
- Improved water recovery and clarity
- Increased mineral recovery
- Stable operation, less downtime

### Features

- A unique channel and mixing jet design
- Optimized with hundreds of industry-leading CFD simulations
- Covered by multiple global patents
- Performs exceptionally well in process scenarios where current Feedwells struggle
- >90% of the volume is utilized for floccule growth
- Delivers well mixed & evenly distributed exit flows even with large feedwells (>6m) & across a large solids fraction range



# Metso

Thickener and clarifier upgrade

## Thickener froth management

MORE INFO:



Reducing or eliminating froth can save an operation millions in lost minerals per year, as well as reducing maintenance and reagent costs.

A range of options are available depending on the level and tenacity of the froth:

### Boom and beach

- Sprays and baffle
- Floating boom replaced with rigid boom
- Beach collection point with tank wall penetration for froth removal
- Highly effective on denser, more tenacious froth

### Rotating floating boom

- Sprays and baffle
- Effective for light and fluffy froth

### Deaeration tank

- Stops froth from entering thickener
- Feed enters tangentially to create a vortex to aid deaeration
- Thickener feed is withdrawn from below the liquid level to prevent air and froth entrainment

### Benefits

- Improves minerals recovery
- Decreases operating costs through reduced reagent consumption
- Results in cost savings as less need to clean process water dams or tanks
- Reduces the amount of solids in the returned process water

### Scope

- Process Review
- Engineering Study
- Upgrade, which may include:
  - Rotating boom
  - Sprays and piping
  - Baffle
  - Beach
  - Deaeration tank

# 04

## Life Cycle Services

Customizable mining service packages delivering performance and sustainability outcomes



# Metso

Professional services

## Life Cycle Services packages

MORE INFO:



With Metso LCS packages you get everything you need in one place and our service portfolio covers everything from spares and wears to advanced maintenance, remote monitoring and other expert services.

Life Cycle Services takes our entire aftermarket portfolio and conveniently bundles them into customizable, easily manageable packages.

Depending on the scale of your needs, our packages are flexible and equipped to cover a single event or to span multiple years, measured against strict KPIs.

Whether as a supplement to your team or managing all aspects of your maintenance and operations, LCS packages are designed to help you meet your goals.

### Benefits

- Improved equipment availability
- Better process results
- Increased production due to less stoppages
- Preventative maintenance
- and proactive repairs

### LCS packages

#### 1. Inspections & technical support

Focuses on well-executed annual maintenance, resulting in higher equipment availability

#### 2. Maintenance & reliability

Highest reliability with minimum downtime

#### 3. Process optimization

Ensures excellent filter performance and optimized processes

# 05

## Maintenance, shutdowns & repairs

Trust those who know the equipment  
best

## Maintenance, shutdowns & repairs

Trust those who know the equipment best to ensure that your production goals are met

- Asset maintenance readiness
- Field services
- Component replacement labor
- Equipment inspections
- Installation & commissioning
- Maintenance & repairs
- Repair centers

# Reliability when you need it to achieve targets, quality & capacity



Metso



# Metso

Professional services

## Asset maintenance readiness (AMR)

MORE INFO:



Having a dependable reliability & maintenance strategy is critical, particularly in the first weeks and months you are ramping up and stabilizing your production.

AMR integrates the as-built CAPEX design, procurement, construction, and commissioning data with reliability engineering software, ReliaSoft, utilizing Reliability and Availability Modelling (RAM) and Reliability Centered Maintenance (RCM).

We provide a highly competent RCM facilitation, combined with product expertise, industry standards, local legal obligations and operating context to ensure a structured approach.

AMR can equally be applied to existing operations where assurance is required, where existing maintenance strategies are due to be reviewed or improved, even on non-Metso assets.

### Benefits

- Improved production
- Reduced downtime
- Reduced inventory holding
- Improved total cost of ownership (TCO)

Partner with our team to achieve Automated Maintenance and Reliability (AMR) success by using Failure Modes and Effects Analysis (FMEA) as the foundation for developing a comprehensive maintenance strategy.

We incorporate expertise and feedback from our product engineers, field service experts, current contracts, and remote monitoring. Throughout the entire AMR process, we collaborate closely with site operations personnel, ensuring the operating context is fully integrated.

All AMR deliverables are provided in site-specific document and data templates for easy upload to your Computerized Maintenance Management System (CMMS). Utilizing data collected from filters operating globally, we provide performance guarantees to ensure the benefits are achieved.



# Metso

Professional services

## Field services

MORE INFO:



Our professional field service offering ranges from comprehensive solutions covering maintenance and optimization projects to performing spare part assessments.

Know the condition of your equipment with detailed technical inspections, professional reporting and expert recommendations.

Our team of field service professionals are committed to serving our customers in a safe and efficient manner with adherence to strict safety procedures. Outotec has comprehensive EHS training programs and an impressive safety record of accomplishment.

Our life cycle service agreements include planned, preventive and corrective tasks that will increase your plant availability and improve equipment uptime with access to our expert technical knowledge.

### Benefits

- Increased safety
- Reduced downtime
- Improved plant availability & reliability
- Spare part optimization
- Increased equipment life
- Increased competencies

Our field services team will ensure the correct critical and operational spares availability to avoid extended downtimes by means of inventory assessments. Spare and wear parts recommendations, highlighting lead times and criticality. Our field service team offers a full range of maintenance solutions. These include planned preventive, corrective and emergency maintenance activities. We also provide refurbishment, installation and commissioning services.

Our certified field service experts are best equipped to train your technical team on the maintenance of our equipment. We have customized training on key maintenance and repair procedures as well as product specific training and with a focus on safety in all procedures.

We have a flexible global operating model which brings us to wherever our customers are. Our global presence and local operations enable world-class engineering, project delivery and service for our customers.

Our experts form a worldwide network of extensive technical, engineering and operational capabilities. Additionally, we operate with our partners in order to deliver fast and reliable ramp-up and guarantee the best performance for our customer's investment.



# Metso

Professional services

## Component replacement labor

MORE INFO:



Metso not only provides OEM parts for thickener equipment, but our experts can also carry out the replacement of major thickener components.

Replacing major components for thickeners requires finding trained personnel with specialized skills. Quick and safe component changes are crucial for maximizing the thickener circuit's capacity and minimizing downtime.

The handling and installation of large and heavy components necessitate specialized procedures and tools to ensure safety. Precise installation tolerances and alignment requirements must be met to avoid component damage and production issues.

The process begins with an inspection by Metso's certified specialist to determine the scope of work and required parts. Shutdown planning and final scope agreement follow. Metso Engineers, Supervisors, and/or Technicians are then deployed to the site to replace components according to the agreed-upon scope.

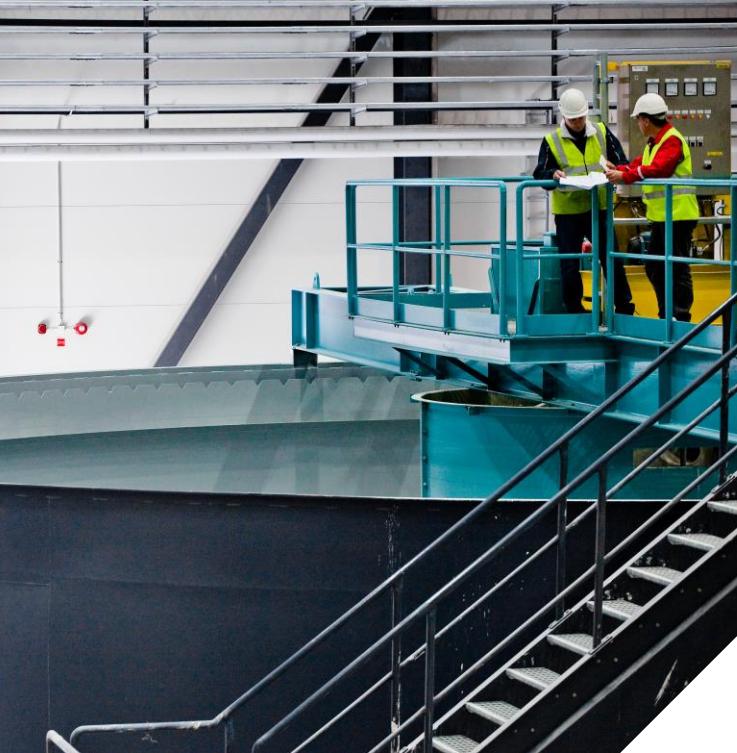
Special lifting procedures are identified and carried out. Metso experts follow engineering specifications, standard procedures, and best practices for component replacement.

### Benefits

- Improved safety
- Increased uptime and availability
- Reduced maintenance costs

### Core offering

- Split slew bearing replacement
- Hydraulic power replacement
- Drive components replacement
- Rake arms replacement
- Guide blocks replacement
- Gearbox replacement
- Motor replacement
- Instrumentation replacement



# Metso

Professional services

## Thickener inspections

MORE INFO:



Inspection packages are designed to reduce unplanned downtime, equipment failure, and risks associated with operating faulty equipment.

Get fast, accurate information about the condition of your equipment, recommendations for maintenance and improved operation with our systematic equipment inspections.

Regularly and proactively scheduled inspections are critical for ensuring the longevity and peak performance of equipment and processes. Unplanned equipment downtime can cause severe financial losses.

Equipment failures, multiple service center calls and degrading process efficiency are all potential outcomes of equipment that has not been regularly inspected and maintained.

### Inspection packages

1. Visuals and vitals  
A quick thickener and clarifier health check
2. Mechanical verification  
A detailed condition check to improve your thickener and clarifier availability
3. Comprehensive/customized  
A comprehensive inspection with adjustments for maximum performance

### Benefits

- Higher equipment availability
- Better process results
- Increased production due to less stoppages
- Preventative maintenance
- and proactive repairs

### Features

- Faster, easier inspections mean you get recommendations you can quickly act on
- Reports are clear, thorough and easy to share with colleagues
- Benchmark your thickener and clarifier equipment and identify trends based on current and historical data
- Comprehensive data gathering improves your decision-making



# Metso

Professional services

## Installation and commissioning

MORE INFO:



Get expert support during your project start-up phase wherever you are in the world. Our experts will help to ensure your equipment performs according to agreed targets.

We offer professional, effective, and safe installation and commissioning services for delivered equipment. Our team includes metallurgists and process specialists who provide expert assistance.

Training services are included to ensure personnel are well-equipped to manage the plant operation optimally with the new process and technology.

Additionally, we offer an optional extended warranty for added peace of mind.

Depending on the equipment and process, the installation and commissioning service scope may differ.

### Benefits

- Improved safety
- Minimized delays and breakdowns
- Smooth production startup

### Scope

- Inspection of the plant and foundation
- Delivery package expedition and checking
- Equipment assembly/installation advice & inspection
- Pre-operational equipment testing
- Electrical and automation testing and inspection
- Water tests and test runs
- An initial continuous feed of raw material
- Process and equipment start-up



# Metso

Professional services

## Maintenance and repairs

MORE INFO:



As equipment ages, production efficiency and reliability can decline. However, proper maintenance and repairs can reduce aging to ensure your production goals are met.

### Inspections and diagnostics

Get ahead of problems before they start. More effective management comes from better information. Our diagnostic services help with maintenance planning, issue identification and analysis, and determining improvement areas. Expert assistance from metallurgists and process specialists through:

- Mechanical and electrical inspections
- Equipment audits
- Inventory assessments
- Online condition monitoring

### Benefits

- In-depth expertise and knowledge
- Over 1,500 field technicians globally
- OEM quality for guaranteed safety and reliability
- End-to-end solutions
- Cost savings through reduced failure rates and extended equipment life

### Repairs and refurbishments

**Planned repairs:** Metso offers a full range of maintenance services for mining equipment and repairs, from reconstructing surfaces to full rebuilds of large components. Skilled technicians with specialized tools are available at our repair centers or on-site at your facility. All repairs are handled end-to-end, guaranteeing safe execution and the correct parts

**Emergency repairs:** 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. Once we have fixed the problem, we will identify long-term solutions to prevent issues from reoccurring.

### Maintenance planning tools

Experts focus on your specific priorities, bringing together safety, planning, documentation, inventory, staffing and reporting requirements. Services include:

- Criticality analysis to prioritize issues
- Failure analysis using FRACAS and other tools
- Custom maintenance software, CMMS
- Predictive maintenance and condition monitoring through Metso Metrics



# Metso

Professional services

## Service and repair centers

MORE INFO:



Add years of efficient use and valuable life to your equipment. We restore a wide range of equipment and components to the desired level with minimal downtime.

### Tried and tested procedures

As an OEM, we have in-depth knowledge of OEM repair procedures and can ensure the use of genuine parts that fit your machine. We combine our decades of equipment experience with modern repair techniques and technology to offer the best repair even for older equipment.

### No weak link in the equipment chain

Every component in a piece of equipment is like a link in a chain, if there is even one weak link, performance can suffer. Our repairs ensure equipment performs to its designed standards.

#### Benefits

- Improves efficiency
- Reduces operational and maintenance costs
- Reduces energy consumption
- Improves sustainability through lower waste disposal costs, parts recycling, and reutilization
- Allows continued use of familiar equipment

### Risk reduction

Working with a Metso repair center ensures risk reduction. Firstly, you get firm quotes from the OEM repair center, minimizing surprises once the repair has been agreed upon.

Secondly, the use of OEM drawings and parts ensures that parts fit and perform to specifications, reducing further unplanned downtime.

### Competitive rates

A Metso repair means you get a competitive rate and can rest assured that service problems will be fixed quickly the first time, resulting in long-term savings.

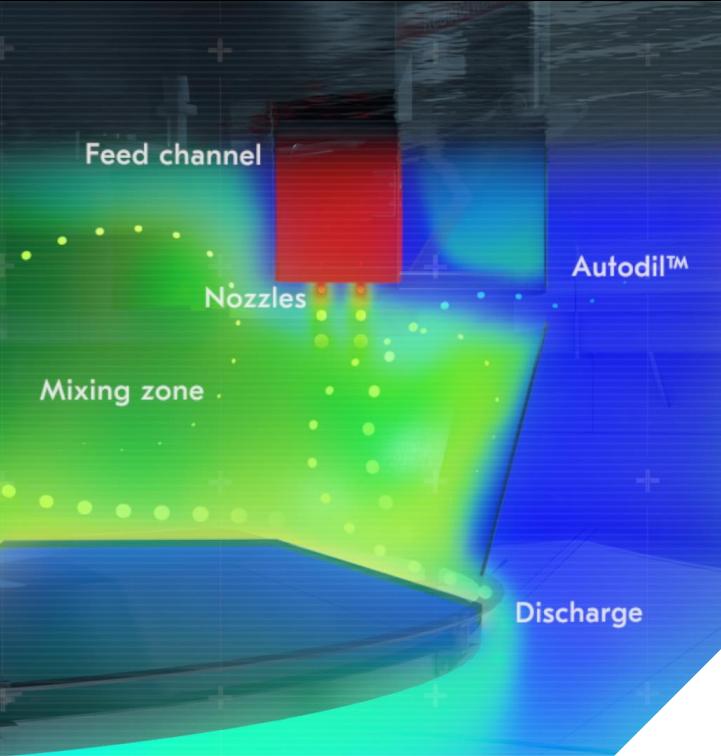
#### What to expect:

- Minimized downtime
- Higher machine availability
- Lower maintenance and parts costs
- Increased safety

06

## Process optimization & connected services

Get the most out of your thickener operation



# Metso

Optimization services

## Thickener process assessment

MORE INFO:



Get expert support during your project start-up phase wherever you are in the world. Our experts will help to ensure your equipment performs according to agreed targets.

The service comprises data preparation and analysis, process evaluations on-site, and a full report, with follow-up as agreed.

For further troubleshooting and the implementation of recommendations, Metso Process Advisory Services can assist you on-site and guide you through corrective actions and performance improvement steps.

### Benefits

- Provides a clear picture of current thickener performance
- Benchmarks performance against laboratory results
- Identifies potential areas for improvement
- Recommends an upgrade path with solid ROI calculations

### Features

- Evaluation of your process situation
- Mechanical and control evaluations
- Process set-up and performance evaluations
- Improvement potential analysis
- Lab-based test work to benchmark current thickener performance and potential improvements



# Metso

Optimization services

## Thickener optimizer

MORE INFO:



Improve thickening performance by controlling the key variables of a thickener, including underflow density, the overflow solids content, and the thickener inventory level.

The Thickener optimizer overcomes the challenges of conventional single-loop controllers and combines a multivariable, model-based controller with in-depth process knowledge to stabilize and optimize thickener performance.

The Thickener optimizer utilizes measurements available from the process and manipulates the underflow pumping rate and flocculant dosage to maintain a stable process.

Information from the thickener feed line – the input flow rate and slurry density – is used when available.

The Thickener optimizer controls:

- Underflow density
- Overflow solids content
- Thickener inventory level

### Benefits

- Sustained higher underflow density
- Improved overall thickener performance
- Stabilized thickening process with variable feed
- Reduced flocculant consumption and cost
- Reduced operator time for manual work

### Applications

- Concentrate thickeners
- Thickened tailings
- Paste thickeners
- CCD loops

# Metso

Optimization services

## Performance Centers

MORE INFO:



Our Performance Centers provide remote access to the best equipment and process expertise when you need it, to help you stay ahead of problems and prevent them before they occur.

Mining continues to be more remote and complex than ever. However, this is no excuse for a lack of responsiveness. When things go wrong, the consequences can add up quickly. This highlights the need for timely and accurate service, to stay ahead of problems and prevent them before they occur.

This is the benefit at the heart of our state-of-the-art, Metso Performance Centers. With our proactive services, you'll be ready for what comes next.

With a team of equipment, process, and technology experts, Metso Performance Centers provide:

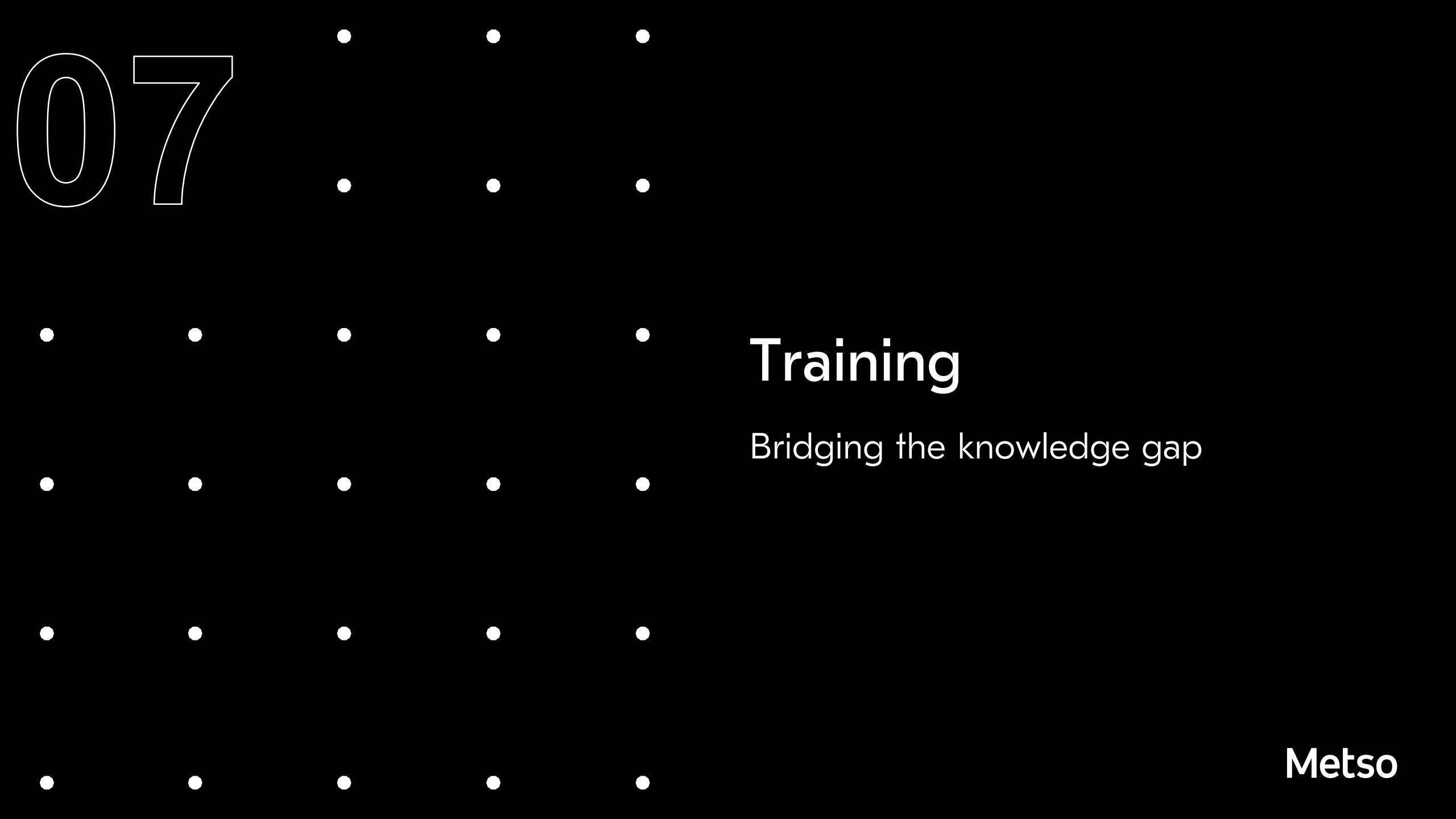
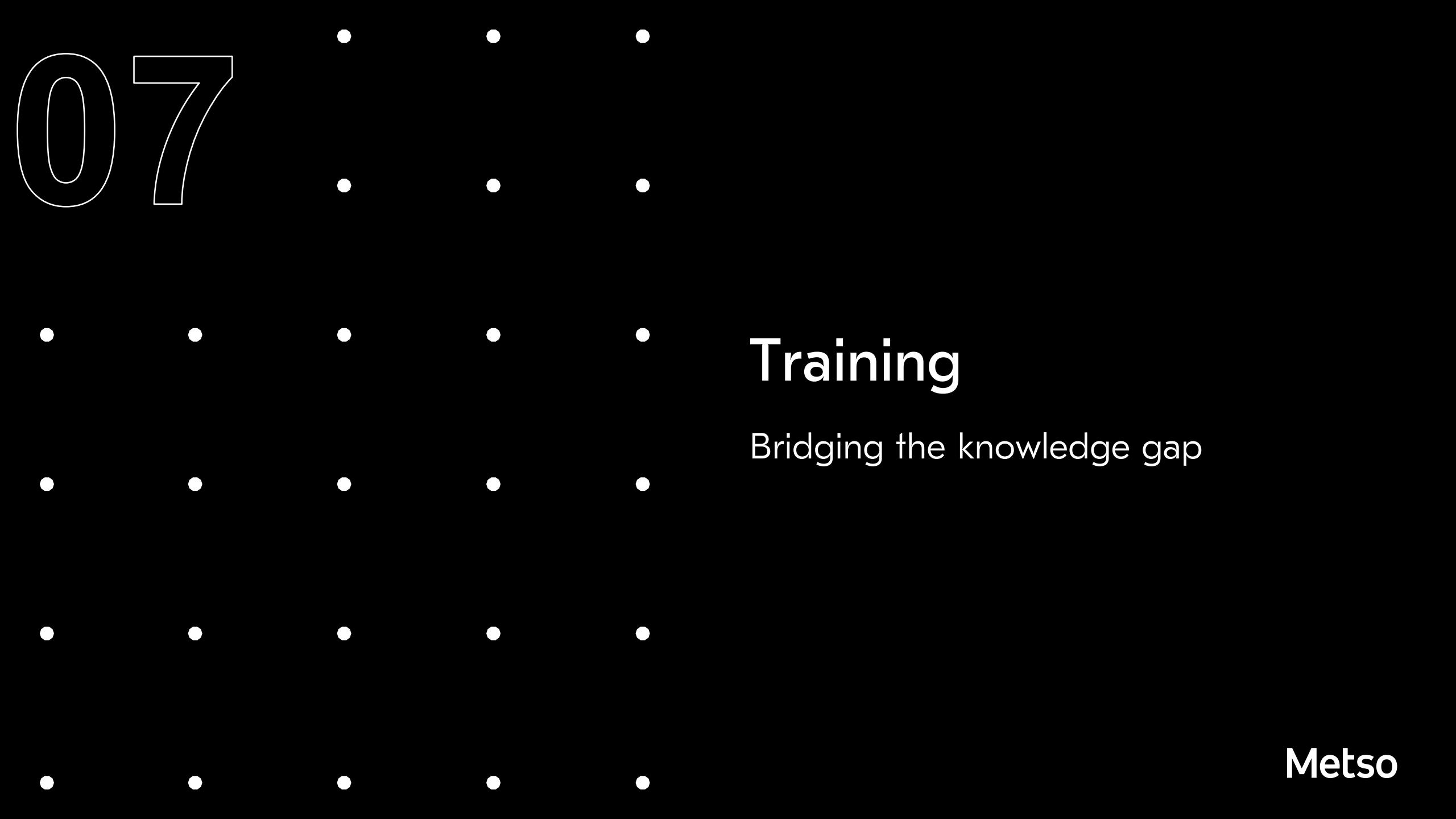
- State-of-the-art facilities custom-built for collaboration
- The highest level of cybersecurity
- Services for both Metso and non-Metso equipment
- Data-driven insights to complement and amplify the performance of Metso services and products

### Benefits

- Real-time analytics
- Expert recommendations & assessments
- Predict and prevent issues
- Identify & sustain continuous development & performance
- Process optimization
- Reduced costs
- Improved sustainability & reliability

### Three service levels

1. Basic connectivity  
Connected equipment to assist with remote support
2. Real-time visibility  
Measure, monitor and optimize critical data and KPIs
3. Expert monitoring and recommendations  
Building smart equipment and benchmarking





# Metso

Training services

## Metso Academy

MORE INFO:



We offer comprehensive and tailored training programs to improve your team's technical knowledge and improve safety, reliability and operational performance.

Metso Academy provides training that helps bridge the knowledge gap between your personnel, equipment and operational goals.

Metso Academy brings together a global team of Technical Training Instructors who are considered subject matter experts in their respective fields. With decades of experience and broad industry knowledge, we can provide high-quality training to your personnel.

Metso Academy can cover everything from theory to practical training, ranging from training on single pieces of equipment to plant-wide solutions.

### Benefits

- Improved safety
- Higher performance
- Global expert network
- Culture of safety and learning

We offer training on-demand and tailor our courses to customer-specific machines and processes.

### Training

#### Theory training

Classroom-based course which covers basic operation principles, operator interface, safe use of Metso equipment as well as after-sales support.

#### Practical training

The practical course connects the classroom-based information to practical experience. The course provides operators and technical specialists with practical knowledge of running, maintaining, and troubleshooting Metso equipment.

#### Customized training

Builds up competence in Metso products and provides more in-depth information for designated equipment with thorough information on our equipment and technologies, process optimization insights as well as service procedures and tips to help customers move from reactive to proactive maintenance.

# How our services help you achieve your targets



Improved safety



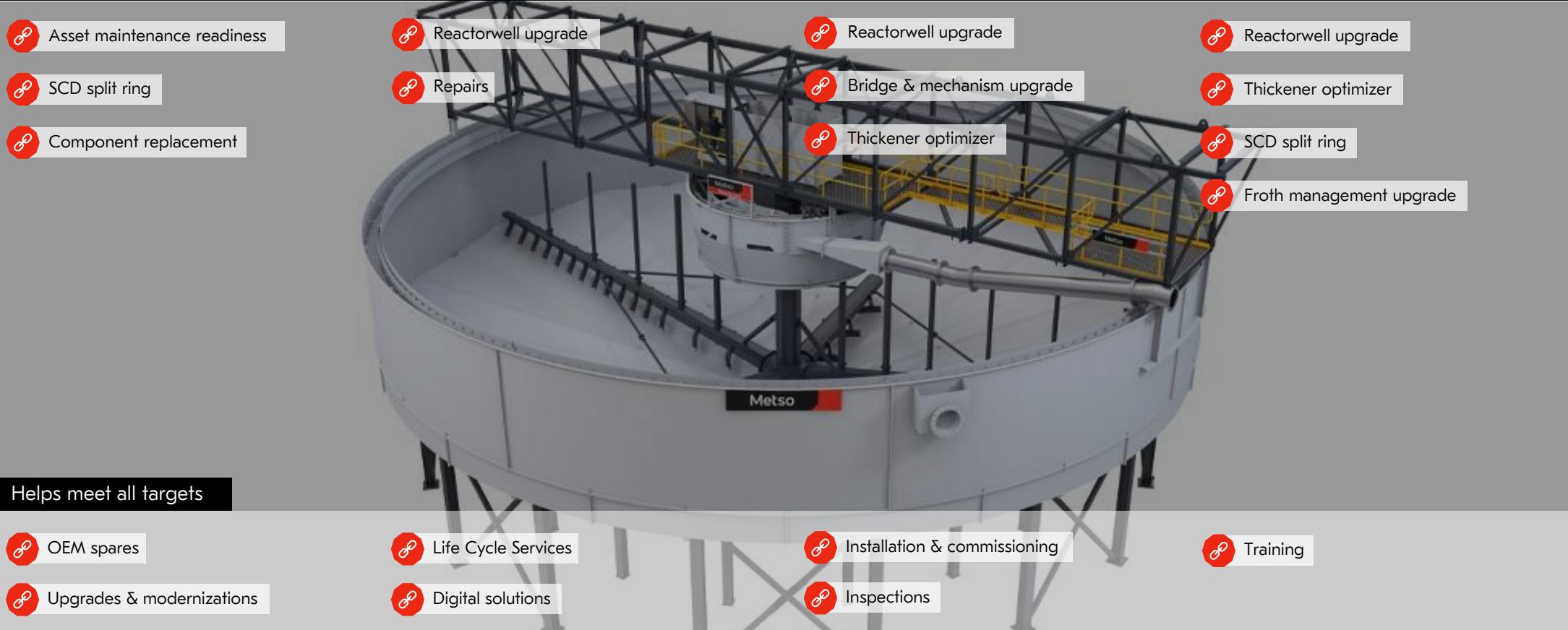
Lower environmental impact



Optimized production



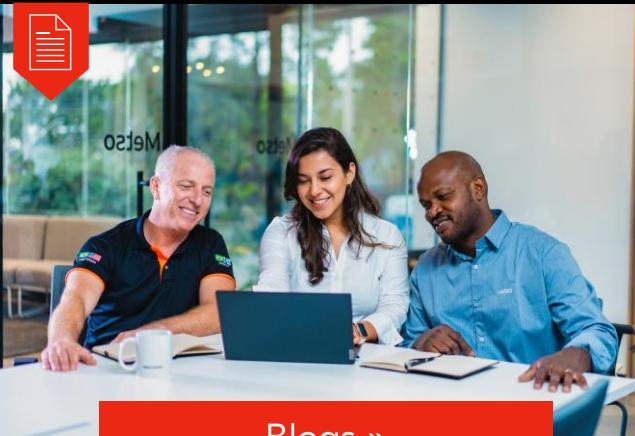
Reduced costs



High-rate thickeners • Spiral dewaterers • High compression & paste thickeners • Inclined plate settlers & clarifiers • Spare parts & upgrades • Services & digital solutions

# Insights

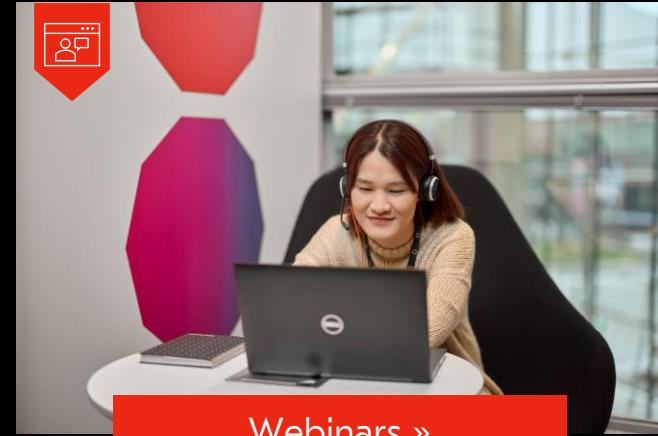
Our expert's knowledge as articles, tips and real-life examples



[Blogs »](#)



[Customer cases »](#)



[Webinars »](#)

# Your #1 service partner from pit to port



## END-TO-END SOLUTIONS

We carry the industry's most comprehensive aftermarket offering, and it's not limited to Metso equipment.



## OPTIMIZED PERFORMANCE

We connect the dots and solve bottlenecks in a holistic way, elevating your process performance to a whole new level.



## DIGITAL MINE

45+ digital solutions that help supercharge your already optimized process, adding an extra boost to performance.



## SUSTAINABLE OPERATIONS

Responsibly produced, long-lasting parts, designed and optimized to minimize wastage, improve energy efficiency and emphasize safety.



## TRUSTED PARTNER

Our dedicated team of experts bring you the unique advantage of local presence backed up with a global network of first-class engineering, manufacturing and service.

You set the target. We provide the solution.

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**