



# OUTOTEC TUBE MILL RELINE MACHINE

The Outotec Tube Mill Reline Machine (Tube MRM) is a compact relining solution for smaller SAG and ball mills. The patented tube design minimizes the required mill opening size while maximizing the usable open area for liner delivery. The Tube MRM features industry-leading safety systems and is backed by Outotec's full range of support services.

## BENEFITS

- Enables safe relining of smaller SAG and ball mills unsuitable for traditional reline machines
- Easier navigation of small mill decks enabled by four-wheel drive and tight steering angle
- User-friendly operation with multi-language display
- Lower capital cost and simplified maintenance due to simple tube structure
- Backed by service solutions that maximize performance and productivity throughout the mill life cycle



### Safe and efficient relining of smaller mills

Mechanical assistance is a critical requirement for safe relining and is often challenging in smaller SAG and ball mills. The Outotec Tube MRM provides fixed three-axis hydraulic crane support for relining tasks in mills that are unsuitable for traditional reline machines. This ensures stable lifting and minimizes time lost during mill inching.

### Lower capital cost and simplified maintenance

The main tube structure maximizes both the structural support through small mill openings and the open space available for liner delivery. This streamlines the relining process by allowing the machine to use a high-capacity crane and large liner designs. The simple tube design decreases both maintenance requirements and machine cost due to the reduced number of moving components.

### Industry-leading safety features

A range of safety systems is provided as standard to provide the highest possible level of protection for personnel. Rated capacity limiting and installation monitoring mitigate the risk of instability and overload during operation, while remote-control operation and hydraulic spool monitoring prevent unexpected machine movement. All safety systems can rapidly cut hydraulic power if a dangerous situation is detected.

### User-friendly interface

Maintenance is greatly simplified thanks to the built-in multi-language display that provides diagnostic information for all aspects of the machine. System alerts and USB data-logging capabilities assist with optimizing relining tasks. Remote connectivity is available for applications where the ability to monitor machine operation online is desirable.

### Comprehensive service support

Outotec's global service support ensures that every Tube MRM is backed by service solutions that maximize performance and productivity throughout the mill life cycle

Our services portfolio includes:

- Full mill reline equipment package including Outotec Mill Equipment Transporter (MET), Outotec Mill Reline Machine (MRM), Outotec Tube Mill Reline Machine (Tube MRM), bolt hammers, and support tooling
- Equipment inspection, maintenance, and training services
- Remote troubleshooting support
- OEM spare parts and spare parts advisory services, and easy online parts identification and ordering

Outotec develops leading technologies and services for the sustainable use of Earth's natural resources. Our 4,000 top experts are driven by each customer's unique challenges across the world. Outotec's comprehensive offering creates the best value for our customers in the mining, metal, and chemical industries. Outotec had sales of approximately EUR 1.2 billion in 2019, and its shares are listed on NASDAQ Helsinki.

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