



---

## **COIL HANDLING AND COMPACTING SYSTEMS**

FOR HIGH PRODUCTIVITY, CONSISTENT  
COILS AND RELIABLE OPERATION

# HIGHEST PRODUCT QUALITY GREATER FLEXIBILITY. GREATER RELIABILITY.

## VERSATILE HANDLING SOLUTIONS

The finishing end of high-speed rod rolling mills and bar-in-coil mills plays a crucial role in the production of high-quality product. Upstream rolling and cooling components of the mill have worked in concert to make a high quality product, with consistent size and coil shape. Now, the coil must be transported for further cooling, compacting and storage or shipment.

The rod coils need to be handled and compacted carefully to prevent damage, yet processed efficiently to keep up with production. Compacted coils must be tied or strapped firmly to withstand the rigors of shipment without scratching and deformation of the rod rings, avoiding risk of rejection by your customers.

The Primetals Technologies vertical stem pallet and horizontal hook carrier systems feature a modular design with standardized components for ease of maintenance. They can be custom configured to meet your specific needs for production and coil processing.

For compacting of coils, both horizontal and vertical compactor systems are available for seamless interfacing with the upstream coil handling system and with the downstream unloaders to coil storage and shipment. Our compactors are versatile and can be offered with wire binding or strapping systems. The binding heads are designed to make a consistent, high-strength knot for safe transport through storage and shipping.

Our coil handling systems and compactors are supplied as complete mechatronic packages that combine mechanical and electrical components designed to be used together, with standard, proven modules that bring new value to any long rolling mill.

---

Primetals Technologies has pioneered key technologies with installed and upgraded long rolling mills on six continents.

---

## ADVANTAGES OF PRIMETALS TECHNOLOGIES COIL HANDLING AND COMPACTING SYSTEMS

- Customized configurations with arrangements of standard modules.
- System flexibility and efficiency with individually driven and controlled modularized conveyor units.
- Modules designed for serviceability and low maintenance costs.
- Uniform press force distribution throughout the coil from unique compactor design.
- Can use either wire binding or strapping heads with standardized compactor design.
- Address special cooling requirements on a range of steel grades with optional blowing stations and insulated tunnels.
- Consistent setup and operation control of mechatronic system offers full flexibility.



Horizontal hook system

**COIL HANDLING WITH HORIZONTAL HOOKS**

Still the workhorse of many rolling mills, our horizontal hook systems are reliable and coil inspector-friendly. Standardized modules allow for easy installation and maintenance.

Coil movement through the horizontal system starts with the two-arm mandrel at coil reforming, then onto the coil transfer car to the C-hook, continuing through inspection and trimming as the coil cools, into the horizontal compactor, and then to weighing and unloading.

**COIL LOADING STATIONS**

For flexibility in coil processing, stations for loading unbound, loose or damaged coils can be integrated into the system, using a hook unit operating on a carriage for coil pickup. The coil is then shifted and rotated for transfer to either a hook in a horizontal system or onto a stem positioned on a downender, for rotation and continuation on a pallet system to the compactor.



Coil loading station



Vertical stem pallets

**VERTICAL PALLET COIL HANDLING**

Vertical stem pallets have a base and vertical central stem to fully support the coil during handling.

The use of our vertical pallets allows for easy system installation and maintenance, limiting the transport mechanisms to the mill floor. Wheel modules are standardized and the stem pallets contain sensors for coil tracking. Turntable assemblies are used to change direction of coil movement.

If the system configuration requires elevation changes, elevators can be installed as necessary.

Air blowing stations accelerate cooling of the coils for scale control and improved mechanical and metallurgical properties. Slow cooling options include insulated tunnels along the coil transport route or insulated pots for ultra-low cooling rates.

Coil downenders enable the coil to be placed onto horizontal hooks, inspected, trimmed or unloaded for storage and shipment.

Coil unloader cars transfer tied or strapped coils from the stem and pallet to the unload position. The unloading station can be configured to meet a variety of needs.



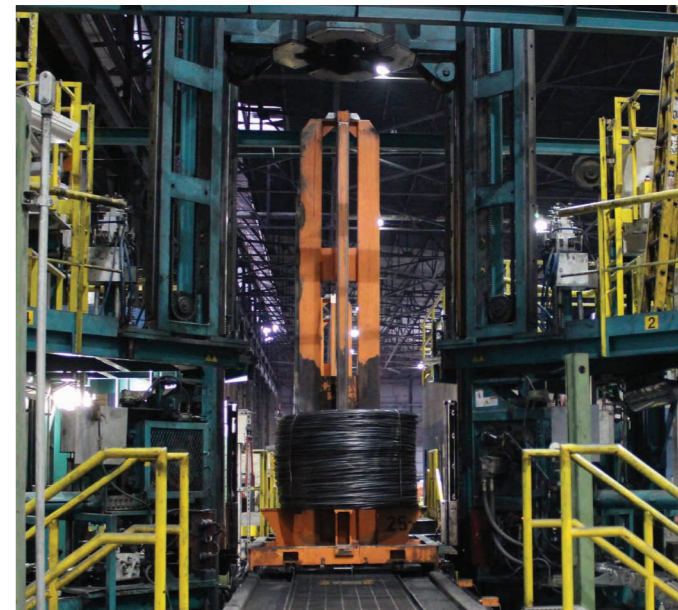
Compacted coil exiting horizontal compactor

**HORIZONTAL COIL COMPACTORS**

Usually interfaced with horizontal hook carrier systems, our horizontal compactor is a well-proven and reliable system for high-quality coil compaction. Full interchangeability between wire binding or strapping provides flexibility to meet customer needs.



Horizontal compactor with strapping heads



Vertical compactor

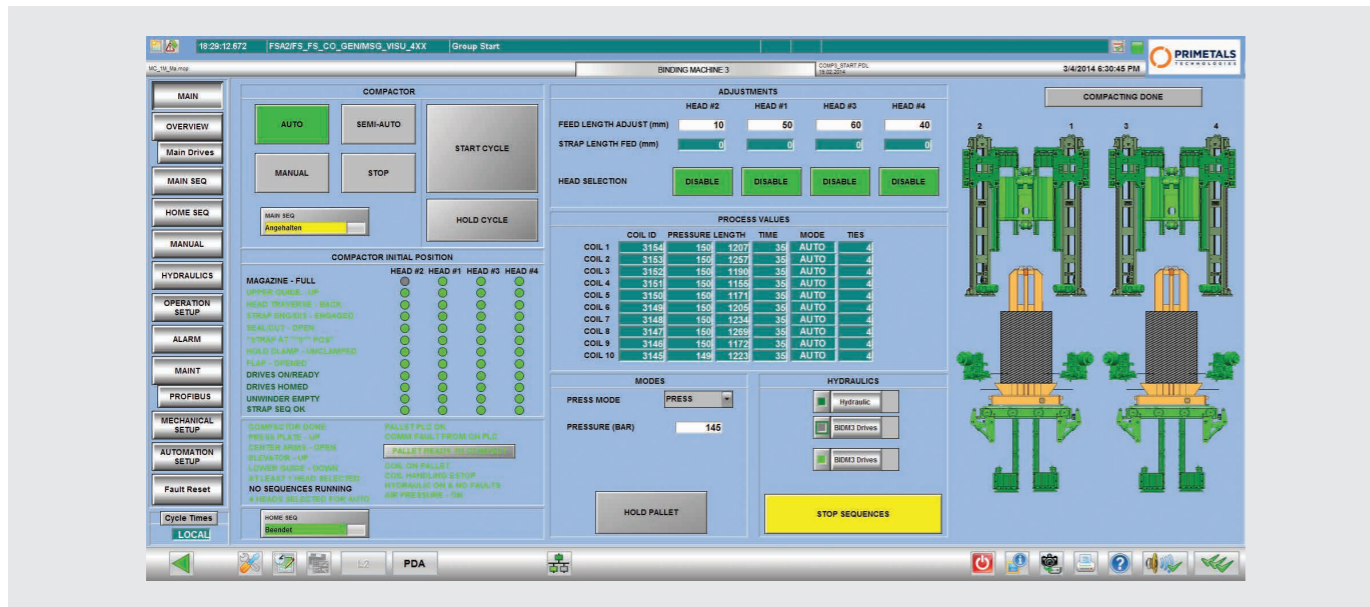
**VERTICAL COMPACTORS**

The new design of our vertical compactor enables compaction, wire tying or strapping of the coil on a vertical stem pallet. It compacts the coil in a smooth vertical motion that eliminates disturbance to the coil package and prevents ring damage.

Independently-driven binding or strapping machines traverse to feed, stretch and fix the wire or strap to bind the coil.



Compacted coils at unloading station



Main operator screen for vertical compactors

### MECHATRONIC SOLUTIONS ON COIL HANDLING SYSTEMS

For maximum benefits from the horizontal or vertical coil handling system, we provide a mechatronic system for:

- Fully-automated coil transport
- Minimized installation and start-up times
- Control and coordination of individual AC drive motors
- Customized coil distribution and storage
- Automatic “pushing” and “pulling” strategies to maximize cooling time and product throughput
- Recipe use for product variation
- Coil tracking and coil identification
- Wireless operator control

### MECHATRONIC SOLUTIONS FOR COMPACTORS

The automation of the horizontal or vertical compactor system includes:

- Automated compression of coils into compact bundles for efficient transport and storage
- Automatic wire feeding and monitoring of coil compression monitoring
- Controlled strap delivery and arrangement on the coil, combined with coil compression monitoring
- Recipe system for consistent use of different press force settings across the range of different products



Compactor operator station

# EXCELLENCE FROM EXPERIENCE

## SELECTED SUCCESS STORIES WITH OUR COIL HANDLING AND COMPACTING SYSTEMS



### BAR-IN-COIL MILL WITH COIL COOLING OPTIONS

**Customer**  
Třinecké Železárny, Třinec, Czech Republic

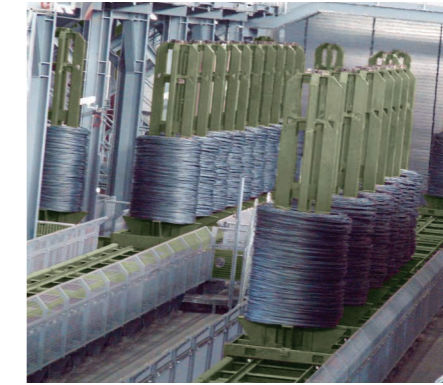
**Plant type**  
Two-strand rod mill

**System type**  
Vertical stem pallets with fast and slow cooling to horizontal hooks

**Our solution**  
For the new bar-in-coil outlet with pouring reels, an initial vertical stem pallet segment incorporated elevators, air blowing stations, slow cool tunnels and coil downender transfer ring to horizontal hooks for transport through a strap compactor, circumferential bander and coil unloader.

**Technical data**  
Plain bar sizes 16.0 mm - 50.0 mm, low and medium carbon steels and alloy grades, 2500 kg coils, 120 tph

**The result**  
Quality grades are now produced with excellent properties and in a uniform and consistent coil package.



### HIGH QUALITY COILS, HIGH PRODUCTION RATES

**Customer**  
Badische Stahlwerke GmbH, Germany

**Plant type**  
Two-strand rod mill

**System type**  
Vertical stem pallets and vertical compactors

**Our solution**  
Modernization of a two-strand rod mill for increased production, expanded product qualities and high quality coils.

**Technical data**  
Plain rod sizes 5.5mm - 21.5 mm, ribbed sizes 6.0 mm - 20.0 mm, including fine grain rebar, low to medium carbon steel grades, 322 tph, coils up to 1800 kg

**The result**  
The upgraded rod mill provides the capability for a wide range of product sizes in a high quality coil package.



### IMPROVED COIL QUALITY AND MORE EFFICIENT HANDLING

**Customer**  
Sterling Steel, LLC, Sterling, Illinois, USA

**Plant type**  
Single-strand rod mill

**Our solution**  
A new reform tub with ring distributor, interfacing with a new vertical pallet system and compactor.

**Technical data**  
Plain rod sizes 5.5 mm, 6.35 mm and 7.94 mm with maximum finishing speeds up to 100 m/s, designed for up to 2700 kg coils

**The result**  
Mill utilization has increased to more than 90%, resulting in several new production records. Coil shape has been greatly improved and ring damage has been significantly reduced.

**Primetals Technologies USA LLC**

A joint venture of Mitsubishi Heavy Industries  
and partners

93 Gilmore Drive  
Sutton, MA 01590, USA

[primetals.com](http://primetals.com)

Brochure No.: T06-O-N178-L2-P-V3-EN

Printed in USA

© 2020 Primetals Technologies USA LLC

All rights reserved.

The information (including, e.g., figures and numbers) provided in this document contains merely general descriptions or characteristics of performance based on estimates and assumptions which have not been verified.

It is no representation, does not constitute and/or evidence a contract or an offer to enter into a contract to any extent and is not binding upon the parties. Any obligation to provide and/or demonstrate respective characteristics shall only exist if expressly agreed in the terms of the contract.

These estimates and assumptions have to be analyzed on a case-to-case basis and might change as a result of further product development.

Primetals Technologies excludes any liability whatsoever under or in connection with any provided information, estimates and assumptions. The provided information, estimates and assumptions shall be without prejudice to any possible future offer and/or contract.

Any use of information provided by Primetals Technologies to the recipient shall be subject to applicable confidentiality obligations and for the own convenience of and of the sole risk of the recipient.