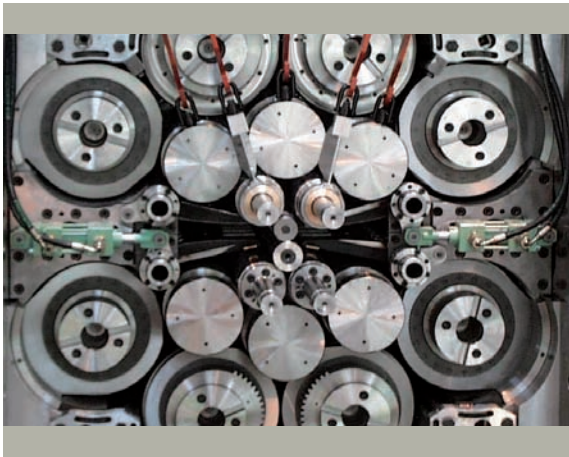


Drive and Automation Solutions for Cold Rolling Mills

Converteam is a world leading company in providing electrical equipment for new or existing cold rolling mills with more than 150 successfully commissioned cold rolling mills.

Converteam has worked with all the major mechanical builders based in the UK, France, Germany, Italy, China, Japan and the USA. Therefore, we have a vast experience and an unsurpassed understanding of metal-finishing processes. This experience, gained over several decades, is contained in our comprehensive range of technical solutions.



Typical scope of supply

- Power distribution system
- Drive systems
- Process control system
- Level 1 and level 2 automation systems
- Operator and maintenance aids
- Utilities (ventilation, CCTV, fire protection, lighting...)
- Erection, cabling and commissioning on site
- Training

Benefits for our customers

Using our electrical equipment designed for world-class cold rolling mills, we improve the performance of our customers. This improvement is assessed against important metrics, such as product quality, plant availability and process efficiency.

- Higher throughput
- Better quality
- Improved yield
- Higher availability
- Greater efficiency
- Faster start-up

Applications

We cover all types of cold rolling mills for carbon steel (sheet, tinplate), special steel, silicon and stainless applications such as:

- Coil to coil reversible and non-reversible tandem mills
- Fully continuous/coupled tandem cold mills
- Sendzimir and cluster mills
- Skin-pass mills
- Conventional reversing mills

We provide also complete solutions for aluminum and copper industries.

Furthermore, we have handled projects involving all current mechanical technologies, such as: integrated rolling in annealing and pickling lines and new stand design (4-high with work-roll shifting, 6-high, cluster, Z-high).



Drive and Automation Solutions for Cold Rolling Mills

Complete drive solutions

Converteam's complete experience with drives and power technology leaves nothing to chance.

We are experts in all types of drive and actuator applications, with ready-made solutions for every area of the cold rolling mill.

Comprehensive monitoring and diagnostics built into our drives, together with our powerful HMI systems and networked databases, provide everything needed to integrate the plant drives into the control hierarchy and achieve perfect results.

Common DC bus solution

A common DC bus system has been developed by Converteam.

This solution is used in applications with both monitoring and regenerating motors (typically left and right tension reels in a reversing cold mill).

Thus, Converteam contributes to reduce energy usage and to protect environment.

Furthermore, our solutions are based on key concepts: managed structure, re-usability, consistent model, modular economy, off-line support.

Converteam expertise:

Process management

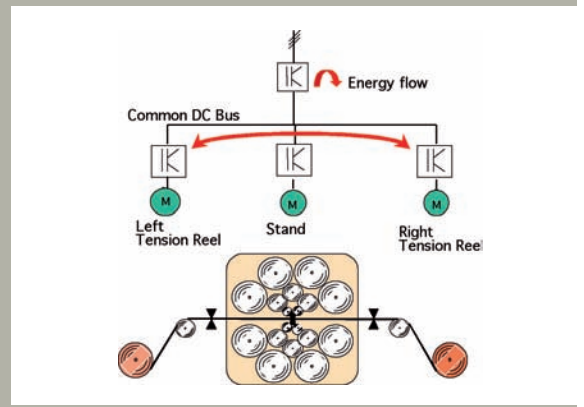
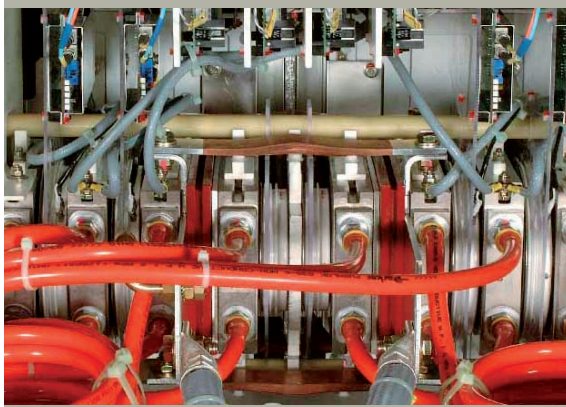
- Mill scheduling/loading prime data acquisition, etc...
- Product tracking
- Operational/maintenance reporting...

Process control

- Mill set-up with on line adaptation
- Flying gauge change for fully continuous mills
- Integrated dynamic control
- AGC feed-forward flatness control...

Process support

- Automatic roll-change sequence
- Simulation test
- Maintenance monitoring
- Fluid systems...



Powerful models and control strategies

Converteam solutions are thorough. They are based on a practical blend of theory, simulation and experience, and are fully proven and tested within Converteam's own comprehensive offline support environment.

- **Process model library:** to describe the process physics. Typical models: roll bite model, stand stretch model, roll deflection model, etc...
- **Optimizing calculations:** to produce the on-line rolling strategy.
- **On-line adaptation**
- **Process simulation models:** to predict mill performance and to support design and validate control strategies.
- **Real-time simulation:** to validate the final control system.