

# Reliable and efficient warehousing

Speed and safety are crucial in coil storage. Automated cranes and a Warehouse Management System can streamline and optimize warehouse operations giving you improved efficiency, safety and productivity.

## Coil handling crane

### 01 CONTROL OPTIONS

The crane can be controlled with a radio remote control or a cabin. Manual, semi-automated and fully-automated functions can be provided.

### 02 SMOOTH MOVES

Smooth inverter controlled traveling movements shorten material handling times and boost productivity.



### 03 SMART FEATURES

Smart Features such as Load Positioning, Sway Control and Overload Protection help shorten handling times, reduce wear on the crane and speed up workflow.

### 04 LIFTING DEVICES

A wide range of lifting devices can be attached including magnets, coil grabs, hydraulic tons and more.

# Konecranes Warehouse Management System

The Konecranes Warehouse Management System (WMS) is designed for managing an automatic coil warehouse operated by cranes with mechanical grippers or magnets. The WMS consists of a basic module plus extension modules for yard management, production management and AGV management.

## Warehouse Management System

- Achieve high throughput combined with high storage capacity.
- Rule configurator allows for easy adding and editing of position rules when storage requirements change.
- Reorganization of coil storage significantly reduces crane movements during peak times.
- Distribution of workload across all storage areas and cranes helps speed up the supply to the production line.
- Crane operating data can be analyzed for further warehouse optimization.
- System allows order prioritization for the most efficient retrieval sequences which helps increase productivity.
- Storage, retrieval and store selection strategies provide better organization and help increase safety and productivity.



### Yard Management Module

- Provides one system to control the material flow from the train or truck to the warehouse and vice versa.
- High throughput can be achieved with the coordination between manual operation and automatic crane warehouse.
- Provides central interface between material handling technology and customer IT.



### Production Management Module

- Provides automatic load optimization for increased efficiency.
- Production orders are automatically generated and managed with status updates to host systems.



### AGV Management Module

- Automation of material handling outside the storage area provides increased efficiency.
- Safety is improved with the monitoring of AGV movements.
- Inventory tracking is enhanced by integrating the AMM in the WMS.

## WMS planning

### Visualization using a digital twin

Cutting-edge simulation technology replicates the entire warehouse system—focusing on emulating crane movements. It enables real-time visualization and analysis of material flow inside the storage, allowing for the optimization of storage and retrieval strategies.

### Detailed view using simulation

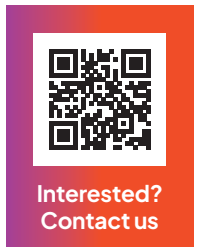
Conceptual planning with simulation and cost analysis aids in the development of a system that meets future demands in terms of throughput, storage and handling capacity in the most cost-efficient way.

## Control concepts

**Full automation:** The operator defines the settings and the crane functions without further human input.

- Can reduce costs by optimizing available space with shorter travel paths.
- Minimizes the potential for human error and improves safety of equipment, loads and personnel.
- Gives you more reliable and predictable processes and a larger volume of throughput.
- Increases accuracy and efficiency of stacking and retrieving items.

**Semi automation:** The operator maintains manual control with various features assisting.



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