DEMAG

Cranes & Components

System solutions for the steel processing sector

Efficient handling in coil stores

38400-2

Automotive industry and steel service centres

Efficient logistics in coil stores

Coils being delivered by train in a steel service centre

Three Demag Process Cranes fitted with coil magnets on one crane runway

In order to concentrate on its core business, the automotive industry is increasingly outsourcing processes to external suppliers, particularly for direct material deliveries to its production facilities.

This approach poses new challenges for logistics and service centres, which have to ensure that steel coils are supplied from external stores to the press plants and cutting facilities operated by the automotive manufacturers as required and just-in-time.

Requirements to be met by state-of-the-art conveyor and storage systems in steel coil stores

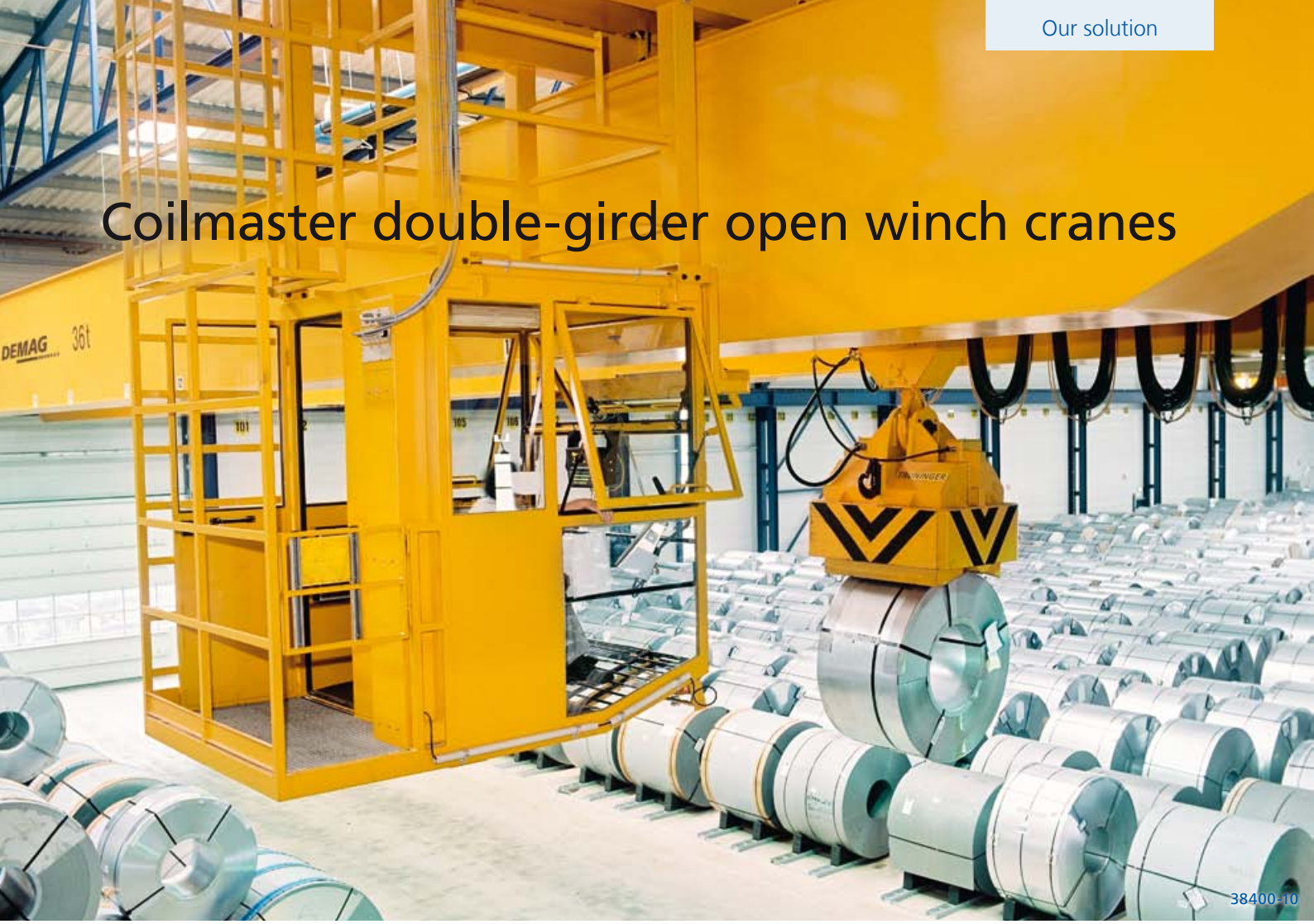
The automotive industry as well as logistics and steel service centres increasingly demand optimised material flow solutions for steel coils with just-in-time delivery – i.e. efficient storage and retrieval of steel coils and their scheduled delivery to customers for further processing. This makes it essential to maintain a constantly high level of information at all times. Nevertheless, costs and process reliability cannot be ignored in such tightly scheduled operations. The goods must be stored and retrieved efficiently and, at the same, handled gently and carefully; possible downtimes must be reduced to a minimum or completely eliminated to ensure highly reliable supplies.

Optimum utilisation of existing storage capacity

Individual requirements with consideration given to improved efficiency

- Efficient transport and storage of the steel coils
- Deliveries to customers precisely to schedule
- Continuous availability of information such as the quantity, location and weight of the coils
- Uninterrupted monitoring of goods-in and goods-out operations
- Optimum utilisation of existing storage capacities
- Cost reduction by eliminating unnecssary travel paths
- Short access times for steel coils with widely differing characteristics
- Material handling that is kind to the load by the use of magnet load handling attachments (coil magnet)

Coilmaster double-girder open winch cranes



Coilmaster double-girder open winch crane with cab control

Crane configuration
To increase the efficiency of steel coil storage and transport operations, Demag Cranes & Components offers different types of Coilmaster cranes that are fitted with coil magnets to meet specific customer requirements. The cranes can be controlled optionally by radio or from a cab. The cranes are fitted with scanners and automatic weighing devices, which record all of the data of the incoming coils. Protection against collisions and by-pass control systems to avoid fixed obstacles are further configuration features which ensure that the cranes operate smoothly.

Storage manager system:
The transport system is supplemented by the storage manager system – a warehouse management software package with an integrated visualisation system. This software is connected to

- the host computer system operated by the owner of the installation
- a main terminal located at a central position in the building
- further operating terminals
- the scanner on the crane
- the weighing device
- a mobile barcode scanner.

Benefits of the storage manager system

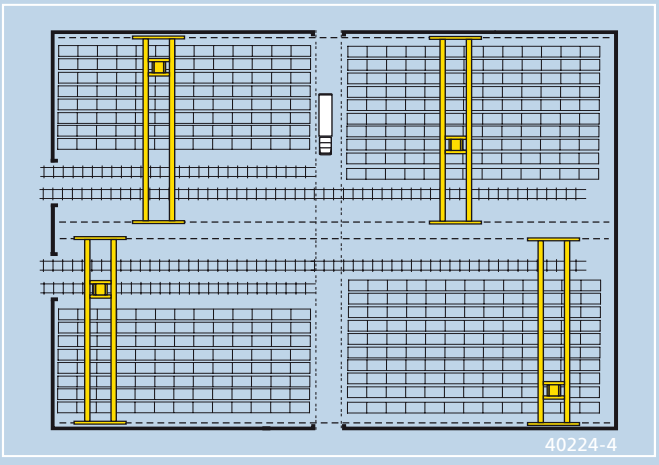
- Rapid, paperless recording of the incoming goods by means of mobile terminals as well as labelling of the goods
- Direct overview of inventories and availability
- Dedicated and rapid detection of the goods during the storage and retrieval operations
- Increased storage capacity by eliminating the walkways and aisles
- Handling which is kind to the material by means of optimum storage location selection
- Improved workplace safety as a result of labour-saving methods

Higher storage capacity, faster access times
Elimination of the walkways and aisles achieves greater storage capacity and repositioning operations during slower phases provide for faster access for retrieval operations. Visualisation of the travel paths over the entire storage area, which includes position information on roads and railway tracks, also enables the operator to maintain an overview of the storage areas from the terminal.

Store utilisation always at a glance
The current utilisation of the coil lines is shown in the form of a graphic display. This arrangement provides dynamic visualisation of the position of the crane and the storage and retrieval points. The operator is shown both storage and retrieval operations at the terminal, whereby the storage manager system can also dynamically include his position in the display. In phases of low utilisation, the software generates relocation operations, which enables the crane travel paths and the time required to retrieve material to be significantly reduced (by up to 25%).

Precise monitoring of goods-in and goods-out operations
Coils arriving in the store are scanned and weighed, and then provided with a label, which makes it possible to check exactly which items enter and leave the store, thus facilitating continuous inventory monitoring of the stock. The storage manager system specifies the exact storage location allocated for each coil to the operator. The storage data (incl. the position, storage time and coil number) acknowledged by the storage manager system can be used by the customer. This ensures that precise inventory information is available at any time and that specific items are delivered.

Rapid information availability
Simple data entry screens make it possible for the operator to call up information via terminals quickly and easily and to forward it to the storage manager system. The movements of individual coils can be tracked back over a period of several months.



Technical data

Crane

Coilmaster

ZKKW double-girder open winch cranes

- Equipped with a maintenance platform
- Crab type: open winch crab
- Long-travel speed: 0–120 m/min
- Cross-travel speed: 0–63 m/min
- Hoist speed: 0–10 m/min
- With partial load: 0–16 m/min
- Coil magnet rotating speed: 1 rpm
- Load handling attachment: Coil magnet, C-hook, coil grab

Control

Manual operation:

- Cab control
- Radio control

Storage manager

- Warehouse management computer with peripherals
- Production terminals
- Visualisation system

Further reference installations

Goods being loaded and unloaded on ships, rail and trucks at ILL in Linz, Austria

Coil handling and processing at Welser in Ybbsitz, Austria

Automatic handling of aluminium coils at Pechiney Rhenalu in Rugles, France

Just-in-time delivery to an automotive plant by Panopa in Wolfsburg, Germany

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