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**Precise. Smart.
High performance.**

**System solutions for the
paper industry**

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All processes under control

High performance materials handling

A sheet of paper weighs only a few grams. However, rolls of paper weighing several tons have to be moved for the production of newsprint paper, base papers for packaging and tissue paper: from production to a store, or initially to the next step in the process, and finally to a shipping store and then to the shipping area – precisely, safely and at high handling rates. This requires reliable, high-capacity materials handling equipment and sophisticated control of complex store logistics.

All over the world, customers rely on our comprehensive crane engineering expertise and our detailed knowledge of their processes. They benefit from efficient system solutions from a single source. Our fully automated process cranes offer maximum availability, safety and precision. With our warehouse management system (Demag WMS), we can reliably control all processes in a paper roll store. And we can optimise your intralogistics with concepts that are tailored to meet your needs – made by Demag.

OUR OFFERING AT A GLANCE

- Automated process cranes and load handling systems for maximum efficiency in paper stores
- Smart store management with the Demag WMS warehouse management system (WMS)
- Efficient control of the crane installations and the ground-level materials handling equipment
- Concepts tailored to meet specific paper roll store needs with simulation and yard management
- Comprehensive service over the entire life cycle of our cranes

Efficient utilisation

Process cranes for automated shipping stores

Paper machines never take a break. They produce rolls of paper measuring kilometres in length around the clock. To accommodate this high output, shipping stores need to be able to “breathe”, since product is often not shipped according to a 24/7 delivery schedule. For this reason, rolls of paper in different sizes and for different product groups need to be stored and retrieved quickly and gently in a space-saving arrangement.

This is where our rugged and reliable automated process cranes can demonstrate their strengths. With their high lifting and travel speeds as well as maximum positioning accuracy, they can provide rapid handling and optimum utilisation of storage capacities. In automated stores, our highly developed control and gripper systems enable a particularly effective and honeycomb layout to save space with a high density of stacks.

YOUR BENEFITS

- Efficient, automated storage of paper
- Optimum utilisation of storage space
- Short operating cycle times
- Careful and gentle handling of paper rolls
- Continuous delivery performance
- High safety standards





PAPERMASTER

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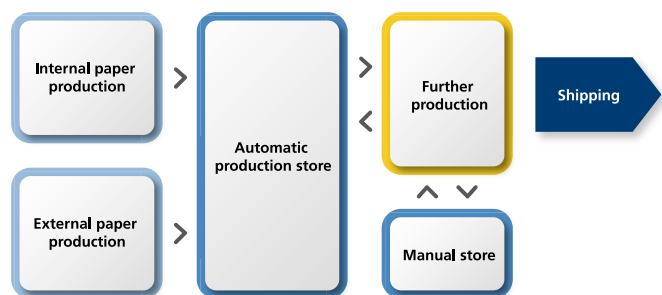
Just in time

Flexible solutions for complex logistics in production stores

Production stores need high-performance logistics solutions to stage base paper or corrugated papers in time and to channel the output from production efficiently.

A production store forms a key interface in a complex production operation: it serves as a store for components needed in production; internal and external deliveries need to be continuously stored and retrieved. For these reasons, optimum utilisation of storage capacities, high handling rates and smooth operation 24/7 are essential.

Our reliable, high-performance materials handling equipment, our service concepts that can be tailored to meet your individual needs and the Demag warehouse management system can optimise your logistics for maximum results: take advantage of simulation to see for yourself.



Unlike the articles located in a conventional shipping store, the components in a production store can be processed both by machinery as well as by hand before they are transported to the shipping area. This requires maximum and efficient utilisation of the storage space as well as smooth handling processes.

Accurate positioning

Grippers designed for precise and gentle materials handling

Whether you need to move hard wrapped or packed paper – we have the right solution to meet all your needs: load handling devices that combine high performance and precision with gentle materials handling. Exactly in line with your requirements, we can offer you single or double grippers as a vacuum solution or with mechanical gripper operation, with one or several cranes.

Quickly, gently and with uniform contact pressure, our vacuum grippers can pick up unpacked single rolls for safe and reliable storage and retrieval with millimetre accuracy.

For sensitive tissue papers and rolls that are wrapped in paper packing, we utilise mechanical grippers that gently grasp the paper rolls, thus avoiding any deformation. They can transport up to four rolls at the same time and achieve higher handling rates.

Systems that are equipped with trolleys and double grippers that can operate independently of each other require fewer crane travel operations and can improve flexibility and handling rates even further.

YOUR BENEFITS

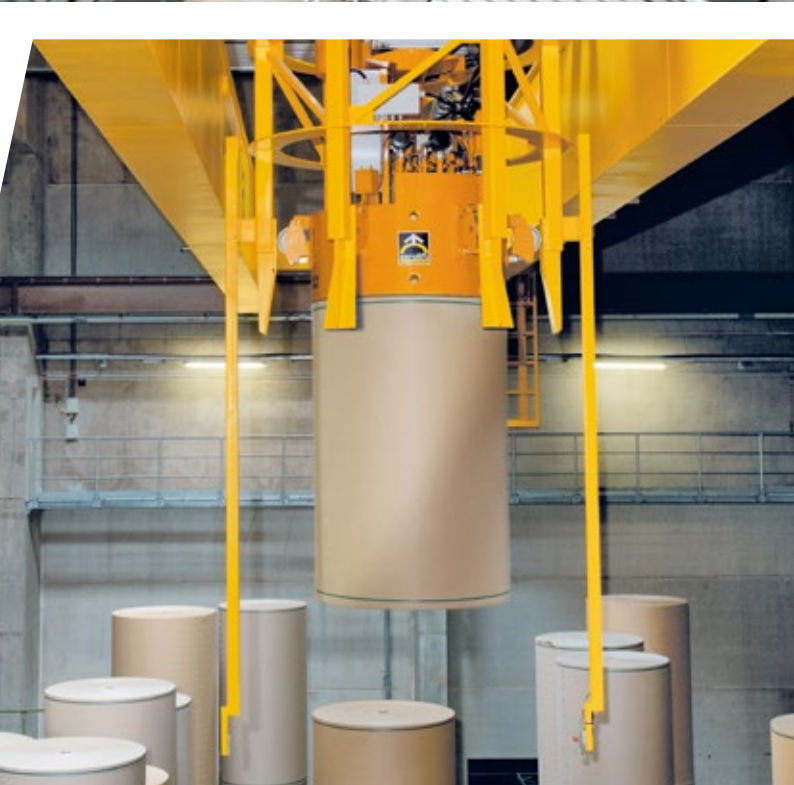
- Fully automated, careful and gentle materials handling
- Gripper solutions to match your needs
- High handling rates
- Safe and reliable operation thanks to integrated, redundant monitoring sensors



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Perfect integration

Smart control with the Demag warehouse management system

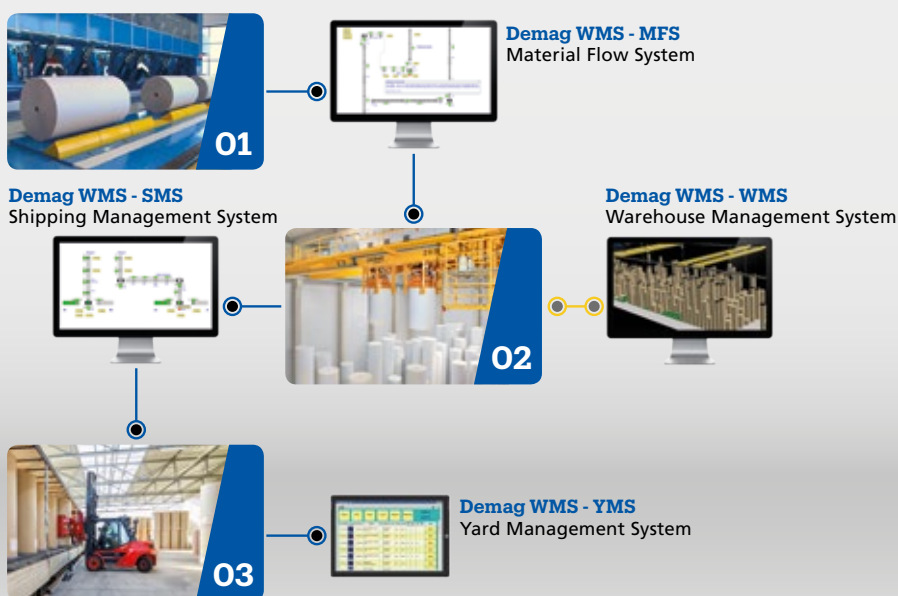
Efficient storage logistics requires smart control. Our modular warehouse management system (Demag WMS) is the “brain” of your paper store. It incorporates our continuous innovation and decades of materials handling expertise in the paper industry.

Demag WMS can be connected direct to your systems for production planning, warehouse management, shipping management and transport control. It controls all processes in a paper store. With storage strategies that can be configured to match your individual needs, such as stacks for specific product types or first in/first out, it can optimise the material flow and enables versatile adjustment of the storage grid pattern – depending on whether you aim for maximum handling rates or the best possible utilisation of the available space.

Demag WMS can provide continuous inventory information with details of the storage locations, it can prepare load lists for shipping and can control information screens for incoming trucks. Continuous online monitoring can supply all relevant details relating to installation availability in real time. In this way, you can identify and eliminate problems in good time – with support from our remote maintenance solutions.

UNIQUE SOLUTION – FROM A SINGLE SOURCE

An autonomous solution – fully integrated into your system environment



Demag WMS controls all processes: from production planning, warehouse management and shipping management to transport system control



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Virtual planning

Comprehensive simulation for intralogistics and yard management

Efficient paper roll logistics operations begin long before the first crane enters service: with careful planning of the paper roll store.

We can use WMS statistics and comprehensive material flow analyses to develop concepts that are tailored to meet your needs for sustainable and efficient operation of your store. When we design your system, we can consider many variables: such as average and maximum production output, average cycle times and system handling capacity as well as paper and roll format variants.

To ensure that you invest in the right solution, we can develop a virtual model of your store and analyse various scenarios. To optimise your yard management, we can simulate a model of your entire in-house traffic system under real demand scenarios. We can already identify and solve your most challenging tasks in advance.

YOUR BENEFITS

- Sustainable solution to match your future needs
- More reliable basis for planning and investments
- Optimised logistics and traffic processes
- Shorter waiting times for transport logistics
- Reduced truck traffic on your premises

Success all over the world

Where Demag solutions are in operation

Optimised outbound logistics thanks to prior simulation

Maximum handling rates thanks to independently travelling hoist units

REQUIREMENT

- Establish a fully automated shipping store with process cranes (capacity > 12,000 tons)
- Link the new store to an existing shipping store
- Support optimisation of intralogistics incl. yard management

- Shipping store (15,250-ton capacity) equipped for efficient, fully automated material handling
- Shipping time window: 75 hours per week with 24/7 production of base paper for corrugated paper packaging

SOLUTION

- Shipping store with 2 Demag process cranes, equipped with Demag MPW winch units and vacuum grippers
- Highlight: outbound logistics (material flow, storage strategies and traffic flow on the premises) simulated to scale and in advance on the basis of real demand scenarios

- Highlight: 2 Demag automated process cranes – the first process cranes in the world each equipped with 2 independently travelling winch crabs
- Equipped with vacuum lifting devices
- Smart warehouse management with Demag WMS

RESULTS

- Faster fully automated materials handling with up to 58 rolls per hour
- Optimised processes including delivery to the customer thanks to significantly shorter truck waiting times

- Significant increase in handling capacity for lower number of crane travel cycles (system performing up to 100 roll movements per hour)
- Greater flexibility
- Accelerated shipping



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We are a global leader for the supply of system solutions for the paper industry. We have already fully equipped more than 70 paper stores and installed more than 170 cranes with customer-specific load handling attachments.

New dimensions in a paper roll store

- Equip one of the world's largest production facilities for newsprint paper
- Crane systems for production (400,000 tons/year)
- Automated shipping store with capacity of 65,000 tons, incl. solution to interlink production and logistics

Maximum efficiency in a production store

- Equip a production store measuring 4,500 m² in size for the production of high-quality corrugated paper

- Highlight: 6 fully automated double-girder overhead travelling cranes with mechanical grippers for the paper roll shipping store
- Demag WMS with direct interface to customer's host system

- Demag process cranes with vacuum lifting devices
- Demag WMS for smart warehouse management

- Optimum use of the available space by storage in a honeycomb layout with stacks measuring up to 17.5 metres high
- High handling rates in the shipping store with up to 400 paper rolls per hour

- Smooth warehouse operation with high material handling rates
- Particularly fast and efficient transportation of the paper rolls for further processing





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