



Focus on your productivity

Crane systems to meet your application needs

DEMAG.....



We listen to your needs



Achieving optimum intralogistics is not an easy task. Your processes can be more efficient with our cranes.

Demag can offer industrial customers tailor-made solutions for process structures in a wide variety of sectors. Our expertise covers the paper, automotive and aviation industries, bulk materials, metal production and handling as well as many other fields.

From our many years of experience with in-house materials handling solutions we have learned one thing for sure: to achieve a dedicated process solution, you need to discuss details from the customer's point of view. For this reason, we develop the right concept to meet your needs and implement it together with you.

Our solutions offer many benefits: efficiency, safety and reliability. But not just cranes.



Virtual planning – practical implementation

Comprehensive planning including simulation for your intralogistics

Efficient intralogistics operations begin long before the first crane enters service, e.g. with careful planning.



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

■ We can use production statistics and comprehensive material flow analyses to develop and simulate 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 product range 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.

Solutions tailored to meet demanding industry needs

Key industries for Demag process cranes at a glance



Paper industry

- Paper production
- Paper roll stores



Metal handling

- Coils
- Long material, cassettes
- Sheet and plate metal



Automotive industry

- Storage and maintenance of press tools
- Handling of tools to serve presses



Special applications

- Straw bale handling
- Wooden panel production and storage
- Other industry solutions on request

Demag process cranes are solutions tailored to meet specific needs for smooth material flow concepts. Planning, manufacture, installation – we use our expertise to develop efficient materials handling systems for the most complex process structures.

Control options

- Radio control
- Cab control
- Semi-automatic control
- Automatic mode
- Warehouse management system (WMS)



Metal production

- Molten metal
- Scrap handling



Bulk material and recycling

- Waste, sludge
- Cement
- Secondary fuels, biomass



Aviation industry

- Aircraft assembly
- Maintenance



General mechanical engineering

- Turbine and generator assembly
- Machines and machinery parts



Benefit from smart storage logistics

Process cranes for the paper industry

Processes in the paper industry are demanding. Everything needs to run to schedule, safety and reliability are essential. With more than 70 fully automated paper roll stores and more than 170 process cranes installed all over the world, in storage operations alone, we know what counts.

- Cranes and hoists play a major role in paper production: Our comprehensive product range delivers solutions for every requirement. Handling full and empty reels, maintenance work such as changing screens and felts, the replacement of wearing parts and transporting complete parts of machinery – all of these tasks can be implemented with ease.
- Automate your paper store: With reliable material handling from Demag, you have full control of the production output of a paper machine at all times. Fully automated paper roll stores organise the produced rolls of material in vertical stacks and make them available when required. Our process cranes can be equipped with load handling attachments to meet your needs: either with a vacuum lifting unit to pick up loads from above or with mechanical grippers, which can pick up as many as four packed rolls at the same time. To manage regular peaks in turnover, our cranes can be equipped with two independently operating hoist units.
- The storage process can be co-ordinated by the Demag warehouse management system, which can communicate direct with the customer's host system, the roll transport system and the control terminals in the various parts of the factory. You can adjust the storage strategy configuration via visualisation screens at any time. The result: planning to meet specific customer requirements can boost your performance significantly – both in the production or shipping store.

>70

STORES WORLDWIDE

>170

INSTALLED AUTOMATED
PROCESS CRANES





Lift your business to a new level

Metal handling – straightforward and well designed

In the metal trade, tons of material needs to be transported and loaded as quickly and simply as possible. Our crane concepts are designed to meet specific process requirements and offer solutions for all areas of the steel trade.

- For transporting long materials, such as tubes, profile sections or rods as well as for the in-process handling of large metal sheets and plates, our crane systems provide not only precision, but also the speed needed for the process.
- Whether used in semi- or fully automatic operation – Demag process crane also ensure that aluminium or steel coils, steel plates and other products are stored and staged to meet the materials requirements of the steel industry. By minimising the distances between steel coils, for example, space utilisation can be significantly improved in storage operations.
- The faster and more efficiently raw materials can be transported, the more cost-effectively logistics operations can be performed. With an investment in Demag cranes, you can boost your productivity and operate even more cost-effectively. In addition, we can supply complete logistics solutions with our warehouse management system (WMS) for the semi- and fully automated handling of coils, sheet and plate metal and long material.



Load attachments to meet your specific needs

Depending on the application and process, we select the optimum load handling attachment for your needs:

- Magnet
- Grab
- Coil tongs
- Vacuum spreader





Keep molten metal on the move

Metal production with dedicated crane systems

Smelting furnaces, extreme temperature fluctuations and goods weighing many tons to be transported – operating conditions in the metal industry are very demanding. With our dedicated process cranes, we provide the ideal requirements for metal production and scrap handling.

- Demag casting cranes ensure that casting ladles are handled safely and efficiently. Our process cranes also provide for in-house handling of components such as mould boxes or the castings to be machined – safely and reliably.
- Our cranes also offer high efficiency for assembling the ingredients for the perfect blend of materials. Demag charging cranes with a material blend management system can assemble the right scrap material, blend it and then transfer their load to the induction furnace.



120 t

CRANE LOAD CAPACITY FOR
HANDLING MOLTEN MASSES



Enhance your material flow concept

Process cranes for bulk materials and the recycling industry

The waste industry features highly demanding operating conditions: heat, dust and continuous operation are major challenges for crane systems. Thanks to their rugged design, Demag process cranes are ideal for refuse recycling installations, facilities for refuse-derived fuels and cogeneration plants.

■ The waste industry thrives on regular processes. For this reason, semi- or fully automated crane solutions offer compelling benefits. Based on our many years of industry expertise, we develop highly effective and particularly cost-efficient processes together with our customers.

■ Process cranes from Demag are also used in wood-fired cogeneration power stations. Untreated wood chips can be used as fuel and need to be stored and transported reliably. Good solutions can be provided by mostly automated double-girder overhead travelling cranes, which can be controlled autonomously and precisely with the help of a warehouse management computer.

■ With our Demag ROS, we offer crane operators an ergonomic solution to control and monitor process cranes in the recycling industry.





350 CRANES

FOR REFUSE INCINERATION
FACILITIES SINCE 1970



Bolster your bulk material process

Automated handling for the cement industry

Besides the waste and recycling sector, our crane systems are also suitable for bulk load handling, for example in the cement industry. Here Demag cranes ensure reliable handling and transparent storage.



- Process cranes can perform many bulk load handling tasks: storage, transportation, blending and the just-in-time provision of clinker and additives are just a few of their applications.
- Demag can supply solutions already for loading and unloading basic material for a high level of efficiency. Our well designed process cranes provide ease of management for bulk material stores. Overhead materials handling solutions enable the available ground space to be almost fully utilised, offering a significant advantage over stores that are served by wheel-loaders. We equip our cranes for these applications with powered clam-shell grabs, which are

particularly suited for handling bulk materials such as clay, iron ore, sand or gypsum.

- For the storage operation, Demag can supply its warehouse management system, which enables the installation to operate completely autonomously, if required, 24 hours per hour. Thanks to its smart scanners, the system can continuously measure the fill levels and automatically trigger replenishment jobs, if necessary. In addition, the optimum pick-up and deposit point can be determined, which ensures that the materials can be reliably transferred.



Boost your processes for more performance

High-performance cranes for automotive

Efficiency is decisive in the automotive sector. That not only applies to the cars, but production processes must also run smoothly. For decades, Demag has supplied many sectors with cranes for safe, reliable and optimised process sequences.

- Car production starts in the press plant. Wherever tools weighing several tons need to be automatically transported for optimised tooling times, Demag can supply customised cranes equipped with tool grippers. Tasks can include:
 - Tools stored in up to 5 layers above each other
 - Tools placed on the press transfer stations as required
- The Demag warehouse management system (WMS) with interfaces to ERP and press control systems provides for optimised travel motions and allows for any obstacle contours. Supported by a camera-based active load control system incl. twist and sway compensation, the crane can also transport the tools to their destination without any sway.
- For the maintenance and repair of the press tools, Demag delivers process cranes that are designed to meet specific customer needs. They are equipped with open winch units arranged on a common trolley or on separate trolleys, as needed. If required, these cranes can be equipped with laser positioning systems as well as active load sway damping systems. To ensure that turning operations are performed safely and reliably, sensors monitor any permissible inclined pull and continuously measure any overload in both directions.
- In vehicle assembly operations, mainly light crane systems are used to relieve the burden placed on specialists on the assembly lines. Based on the modular crane construction kit principle, our Demag KBK system can be used to create the right solution for all applications.
- Demag process cranes are also used for storing and handling coils for seamless operations.

ServoDirekt Technologie

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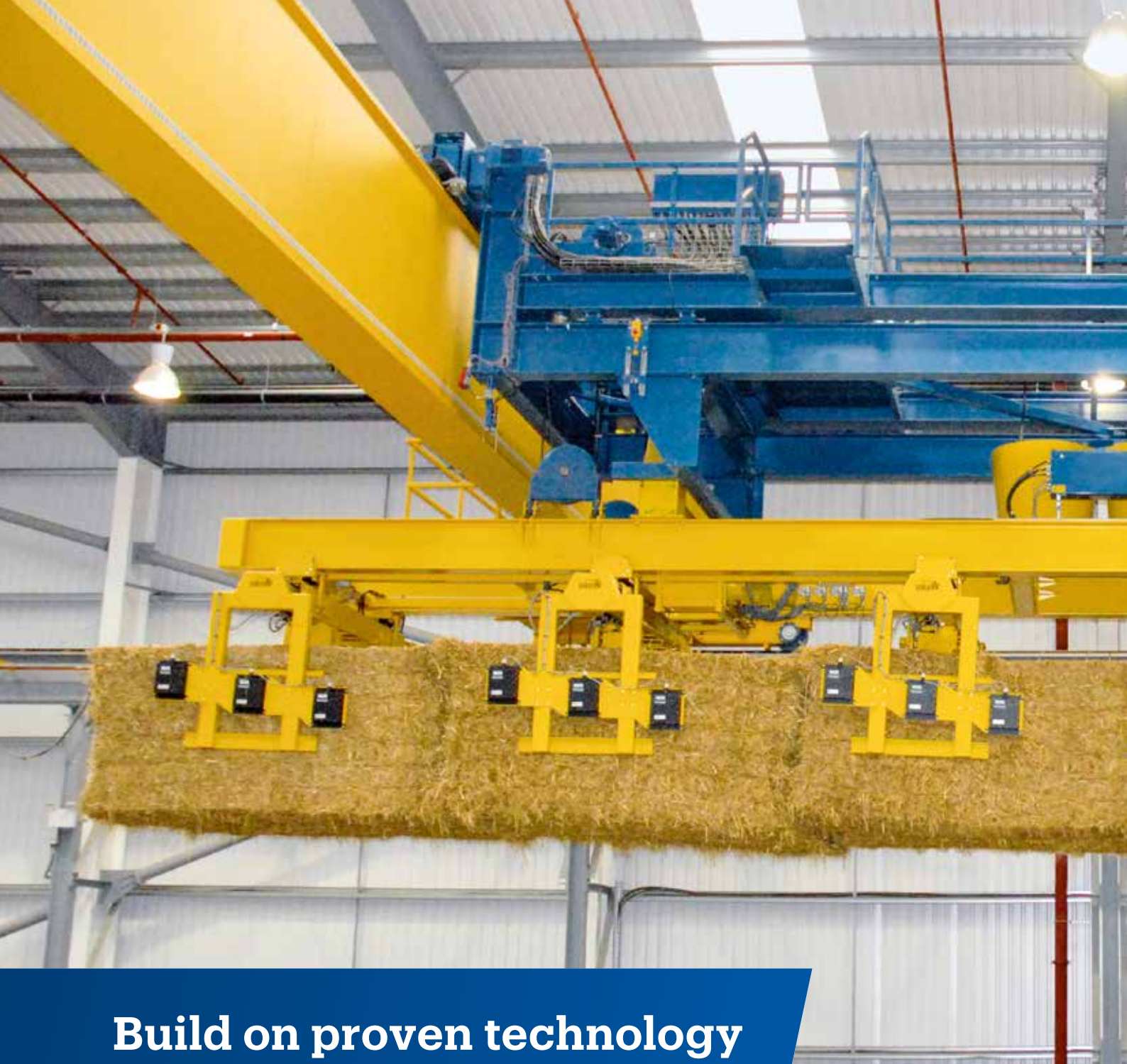
DEMAG

DEMAG 63t

KRAN-NR

>700

PROCESS CRANES IN THE
AUTOMOTIVE INDUSTRY
(WORLDWIDE)



Build on proven technology

Cranes for special applications

Processes in special industries are highly dependent on the raw materials to be handled. Intralogistics tailored to match specific needs are decisive. Demag cranes are versatile and can be adapted to match the properties of the relevant materials to ensure optimum handling.



Straw bale handling

■ Straw needs to be transported and stored for various purposes in many processes. It is often used as an efficient source of energy in biomass power plants. Double-girder process cranes with versatile smart gripper units in connection with position measuring systems to achieve high positioning accuracy have proven themselves in these applications. The system can be controlled by a warehouse management system (WMS) with an interface to the customer's ERP system. Straw is fed to the furnaces on the basis of moisture levels in biomass power plants. Sensors that utilise microwaves are used to measure the moisture levels of the straw bales.

Wooden panel handling

■ Process cranes also play an important role in wood processing operations. Handling high density fibre-board panels (abbreviated as HDF panels), which are mostly transported in stacks, is just one of many applications. Here, electric motor-powered grabs on Demag double-girder overhead travelling cranes provide for convenient handling. When they are permanently reeved with the hoist unit via four rope attachment points, this is not only very safe and reliable, but also enable a high level of efficiency.



Let your processes take off

Cranes for the aviation industry

The material flow concept is an essential feature of aircraft construction and maintenance operations. Optimum use of process cranes is decisive for business success in this sector. We know what we are talking about: every second passenger aircraft is assembled using Demag cranes and there are more than 700 process cranes in operation all over the world.

- Aircraft belong in the air. We make sure that they take off: Demag delivers complete solutions for aircraft manufacturers and maintenance hangar operators. They optimise operating sequences for assembling, maintaining and painting aircraft. The aim is to minimise downtimes in production and maintenance bays.
- Demag cranes provide functionality in all steps of production. Among other things, they are used for assembling components such as individual fuselage panels, but are also used for the in-house handling of complete aircraft fuselages and wings. Overhead transport and handling systems are ideally suited for large-volume sub-assemblies. We design and build solutions to meet specific architectural requirements. By using rotating crabs, we also ensure that aircraft components can be positioned with millimetre accuracy. Maintenance and painting work can be performed most easily from teleplatforms. The floating work platforms provide direct access to almost any point of the aircraft, which allows painting, inspection and maintenance work to be performed in a minimum of time.
- Flexibility can also be found in internal material Handling. Thanks to their latching functions, crane installations can transport components from one production line to neighbouring production areas with ease – even if they have spans of up to 100 metres. And with our many options for semi-automated motion sequences and fully automated installations, we can make your processes even safer, more efficient and more cost-effective.



>50%

OF ALL PASSENGER
AIRCRAFT ARE ASSEMBLED
WITH DEMAG CRANES

>700

DIFFERENT CRANES FOR
THE INDUSTRY



Support at all levels

Solutions for mechanical engineering applications

Mechanical and heavy mechanical engineering is a varied industry and often involves demanding processes. Whether for large industrial enterprises or small, local companies – Demag supports this sector with products that are tailored to meet specific needs and can ensure an optimum material flow for a wide variety of processes.

■ From turn-key process cranes to integrated intralogistics solutions for production facilities, we are a committed partner to the mechanical and plant engineering sector. Demag cranes can ensure that products are handled as required by the relevant material for improved productivity.

■ For heavy mechanical engineering, for example, we can offer crane systems that operate on three levels. For simple and straightforward operation at all steps in the process. The lowest level can assist workers on the assembly line, while the middle level can supply new

parts to be assembled. The finished products can then be transported away overhead on the upper crane level. In this way, all process steps can be synchronised for cost-effective production.



DEMAG

160/10/80t






Versatile cranes to meet your needs

High performance for a wide variety of applications



Save space and costs

- Cranes equipped with SAW winches have a lower headroom dimension than comparable models.
- That makes them more versatile, without sacrificing performance.
- Low headroom dimension saves building costs
- Short hoist approach dimensions increase the useful area



Demag cranes equipped with SAW winches (standard application winch) are an outstanding solution for a wide variety of steps in your process. Whether for the overhead handling of very heavy components or the precise positioning of bulky workpieces – they can provide the right solution in many situations thanks to their compact design and high performance.

- Cranes equipped with SAW winches feature a very compact design, which affords them extremely good approach dimensions. Many semi-automatic assistance functions can boost productivity and further enhance safety and reliability. In addition, the rope service life is significantly increased thanks to the minimised rope angle (rope sheaves angled in the hook block). For improved maintenance, all relevant points are designed for good access and are arranged on one side of the trolley.
- For simple control to meet tomorrow's needs, all open winch cranes with SAW and smart electric features have a tablet connected to the radio control. It can be used to display all relevant data (loads on all hoist units, optional camera images and entries for smart features and error messages, if necessary). All SAW cranes offer the possibility of remote service (remote diagnosis) for effective planning of preventive maintenance.
- Space utilisation, efficient use of energy or value for money– these are just some of the benefits that cranes equipped with SAW winches offer compared to other solutions. Their modular design makes them the first choice for a wide variety of applications.

6.3 t → **250 t**
(M8/5M) (M3/1BM)

Your benefits

- Standardised product for universal applications
- Short delivery and commissioning times
- Proven technology with high availability
- Equipped with many smart features

Compelling details

Process cranes with SAW winch units

1 Compact: Hoist/trolley

- Compact, straightforward design
- Good accessibility for ease of maintenance
- Components to be maintained on one side of the winch unit: only one maintenance platform required
- Option: pivoting maintenance platform
- Much shorter approach dimensions
- Protected components



2 Practical: Tablet for operator and service

- All service information can be called up
- Load display for all hoists
- Optional camera images direct on the tablet
- WLAN connection to the crane
- Industrial design
- Removeable



3 Sustainable: Modified rope sheave arrangement

- Significantly reduces hoist rope wear
- Cuts operating costs

5 Reliable: Additional safety

- Innovative hook safety catch with retainer

4 Versatile: Precise adjustment

- Adjustable crane travel wheels for fast and precise adaptation to match crane runway geometry on site
- Achieves optimum travel characteristics



Active load sway damping system



Final positioning



Target positioning



Slack rope monitoring



Anti-skewing control



Defined working areas



By-pass control



Synchronised hoist units



Precise positioning in lifting axis



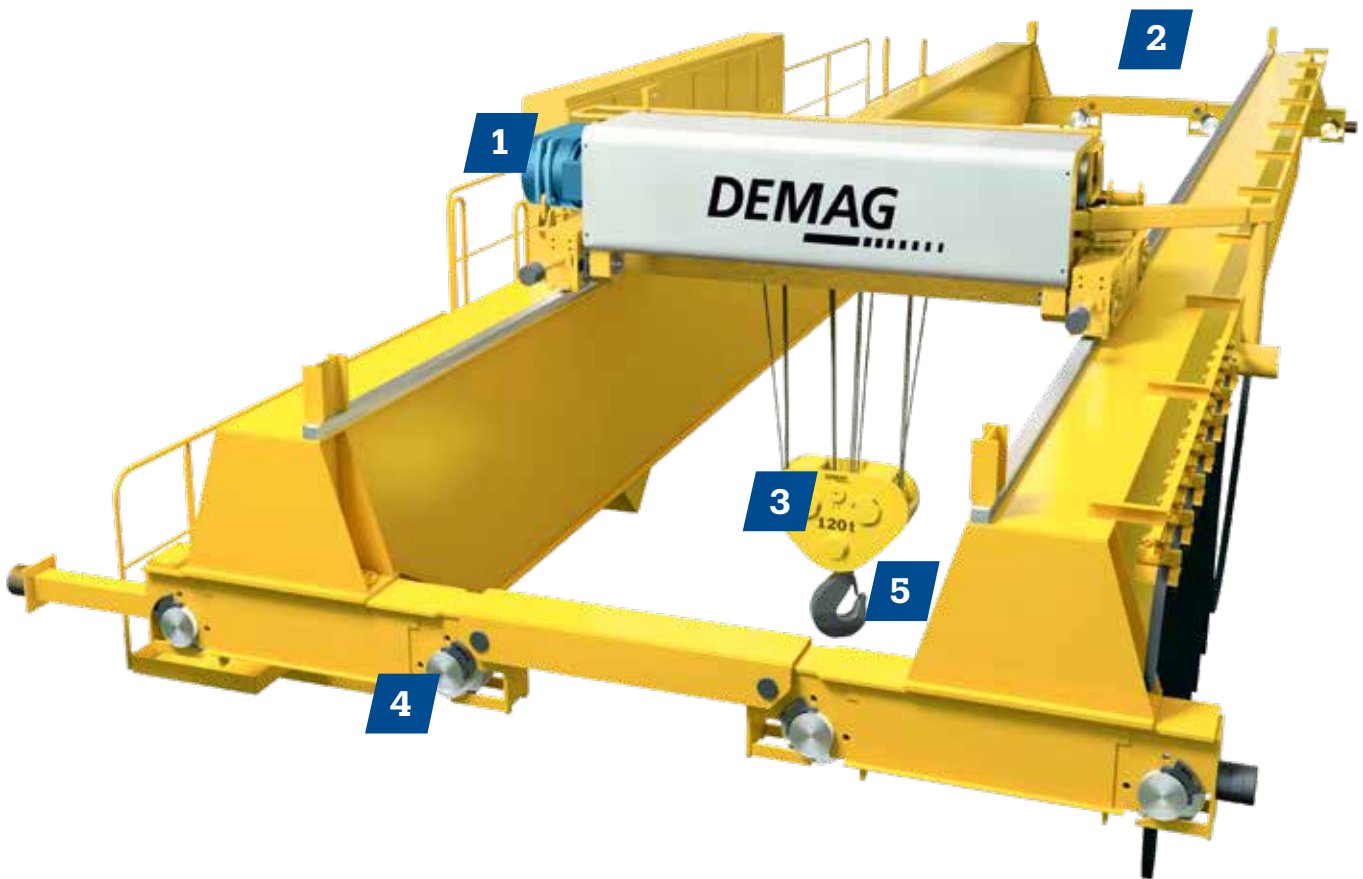
Semi-auto-matic positioning in x, y and z axes

Smart crane control solutions

Our smart solutions can support the crane operator and give him maximum control of the crane. Cranes equipped with SAW winches are pre-configured for many assistance functions, e.g.

- Electronic load-sway reduction for efficient operation and improved safety
- Minimisation of load peaks reduces loads on the crane system and building structure
- ESR: automatic speed adjustment to match the load
- Microspeed for sensitive travel

Features to improve safety and further enhance productivity.



Load display



Positioning display



Automatic speed control



Hook height adjustment



Minimised load peaks



Energy recovery



Microspeed



Load limitation for crane runways



Hook centring



Detection of load obstacles

We have smart solutions in stock

The warehouse management system for many industries

What is the smart approach to warehouse management and inventory control? This question not only refers to the hardware, but also places demands on warehouse management software. We offer you our entire expertise, combined into a smart management system that is configured to match your process.

- With our Demag warehouse management system (WMS), we supply a solution that is individually tailored to meet the needs of your material flow processes. Following a comprehensive consultation and analysis phase, our application specialists develop a corresponding concept with various models which can then also be analysed and tested with state-of-the-art simulation tools. On this basis, a customised WMS can be developed and integrated into your process.
- Beyond customisation to your specific needs, our software offers many function benefits: The WMS can support inventory control, manage travel operations and optimise process cycle times. Furthermore, it can

monitor all system statuses and provide information in real time about operating and equipment statuses. At the same time, it can communicate direct with the customer's host system and the control terminals.

- The Demag warehouse management system can be connected to your ERP system and can even link to logistics processes outside the process chain. Besides the storage operation, for example for paper industry, it can also organise and monitor the management of forklift and truck traffic on your premises. WMS can ensure fast and efficient operations at all phases of the process.



Demag WMS - MFS
Material Flow System



Demag WMS - SMS
Shipping Management System



Demag WMS - WMS
Warehouse Management System



Demag WMS - YMS
Yard Management System





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DEMAG CRANES & COMPONENTS GMBH

Ruhrstrasse 28
58300 Wetter, Germany
E info@demagcranes.com
T +49 2335 92-0
F +49 2335 92-7676
www.demagcranes.com

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