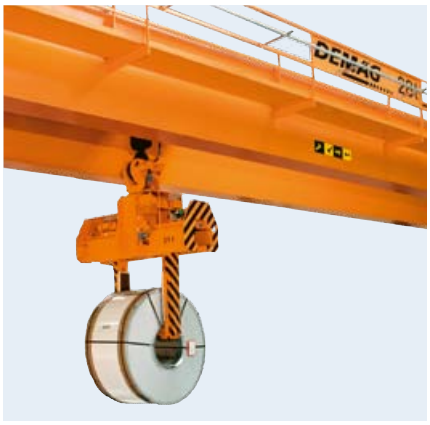
DEMAG
Cranes & Components

Demag process cranes

Efficient process interlinking by semi- and fully automatic cranes and hoists optimised for specific applications



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Cranes and components expertise since 1819

The history of Demag Cranes & Components dates back to 1819, when Mechanische Werkstätten Harkort & Co. was established in Wetter/Ruhr.

The company already started manufacturing overhead travelling cranes in 1840 and concentrated on the production of cranes and crane components. In 1867, the company consolidated its reputation as a crane building pioneer with the development of the first steam-powered crane, which was one of the attractions at the World Exhibition in Vienna in 1873. The first overhead travelling crane with separate electric motors for the long-travel and moist motions was built in 1890. From 1963, cranes were manufactured in series.

Today, Demag Cranes & Components is a subsidiary of Demag Cranes AG, a global player with locations in Germany and subsidiaries and many partner agencies all over the world.

With the product range of its Cranes, Handling Technology/Drives and Service business units, Demag Cranes & Components provides material flow, logistics and industrial drive solutions for companies of all sizes – from small workshops to major industrial corporations.

Automatic material flow with Demag process and production cranes

Demag Process Cranes changing tools in a press plant in the automotive industry

Fully automatic process cranes are optimised to meet the specific requirements of the given application. They communicate with integrated higher-level control systems, such as a warehouse management computer, for example. All motions, including the load pick-up and deposit sequences, are controlled by a computer program. Continuous supervision is not necessary; manual intervention is limited to an emergency stop or switchover to manual control.

The decision between a standard or a fully automatic crane depends on the throughput rate in many applications. There is a clear trend towards automation, when the crane connects production, storage and shipping as an integral part of the intralogistics solution. In this case, the crane has a great influence on the efficiency and flexibility, and, ultimately, also on the profitability of the entire process.

The use of an automatic crane requires close co-operation between the owner, the planners and the manufacturer at an early date. Only co-ordinated teamwork between the partners, from planning and order processing to commissioning, can ensure that an integrated system will function well for many years. The starting point of any profitability study is always the given load range to which the load handling attachment has to be adapted.

The type and design of the load handling attachments are determined by the load or its load handling accessories. In fully automatically controlled installations, the load handling attachment plays a key role, as only a load handling device that is suitable for the load to be handled will enable the load to be picked up automatically. The positioning tolerance defined by the load, within which the load handling device has to pick up and deposit the load, also has to be considered.


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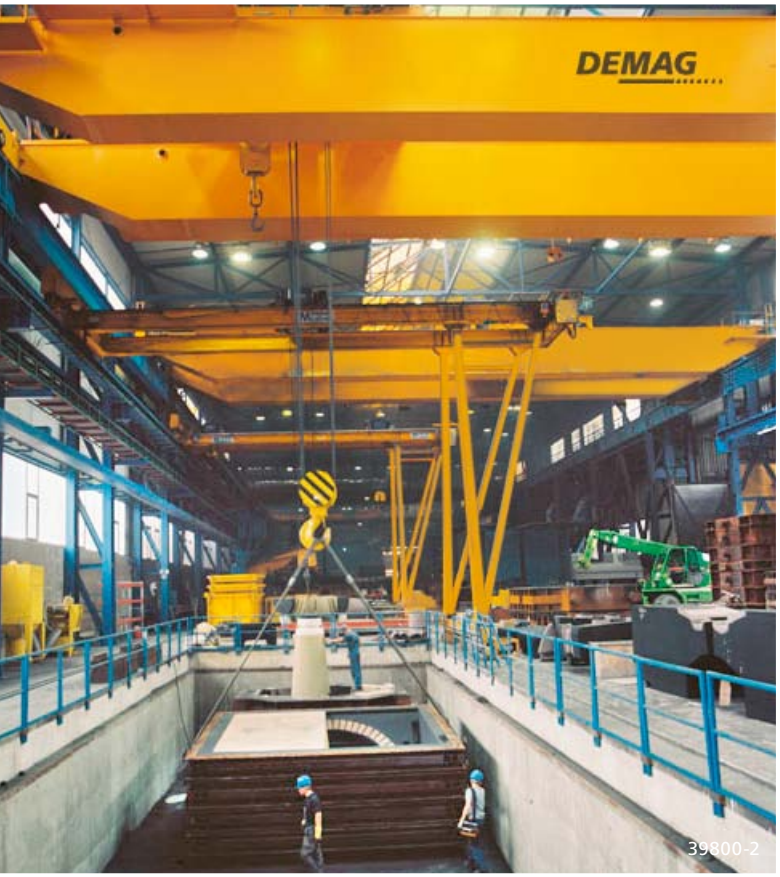
Demag process and production cranes in foundries

The harsh operating conditions in foundries, with difficult loads, complex handling functions and high or extremely fluctuating ambient temperatures, demand high levels of safety and functional reliability of the systems to be used.

For this reason, Demag has developed a three-pillar system specially for difficult applications. First of all "redundant systems", thanks to the multiple specification of sub-systems for hoists and travel units as well as for the power supply and crane control system. If sub-system fails or is being maintained, the installation can continue operation with the redundant systems to avoid any downtimes. Secondly, "intelligent controls" for versatile operating modes, with integrated control mode and error management for the drive control system, the bypass controls and control of the general systems. The third pillar comprises "crane visualisation". This provides a clear representation of the complex systems and gives the operator an overview of the installation status at all times.



The casting ladle is precisely positioned and molten iron is safely and reliably transported to the casting machine in a foundry

Demag cranes safely transport loads to the next step of the process in foundries

Process cranes for semi and fully automatic steel handling

Systems used in the steel industry need to perform increasingly faster and more flexible materials handling operations. The use of cranes is not only limited to the steel production sector, but they are used above all in the steel trade, which has to respond more and more with just-in-time concepts to meet the demands of companies that process steel.

Demag cranes guarantee both permanent availability and high capacity utilisation in storage facilities, as well as the required flexibility for handling the products.

Materials handling systems are a decisive factor for profitability in the steel trade, while having a major impact on the efficiency and flexibility of entire processes in the manufacturing industry. The trend is growing more and more towards full automation to make logistics processes more efficient.

A major contribution is provided by crane concepts developed by Demag Cranes & Components that are tailored to meet the specific needs of individual processes, to satisfy all of the requirements of industry for clearly and reliably organised storage facilities with a high level of capacity utilisation.

Demag Steelmaster with a magnet spreader for handling long materials, single items or metal plates

Demag Coilmaster in a fully automatic coil store with magnets or grabs as load handling attachments

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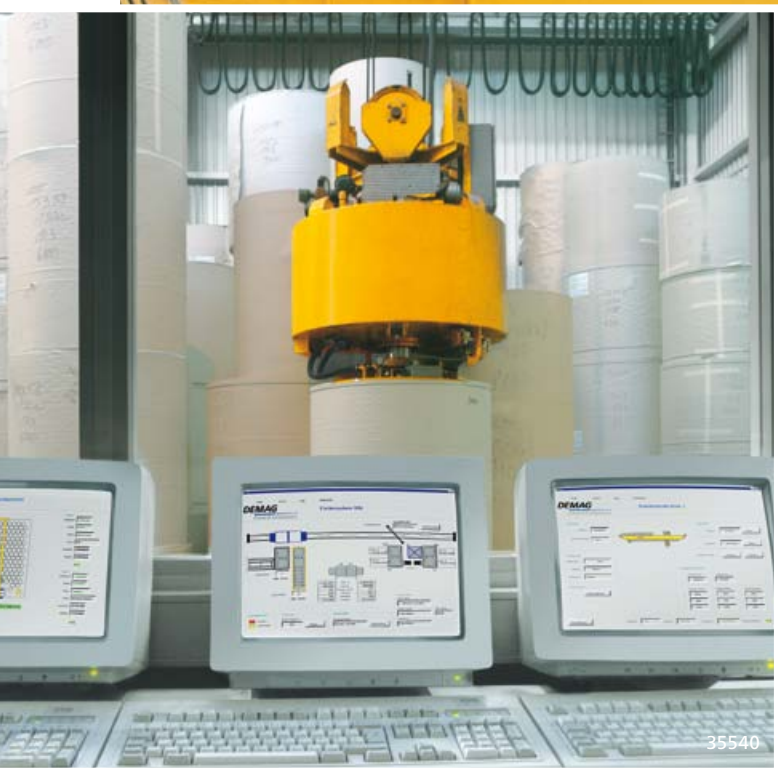
Demag process and production cranes in the paper industry

On the one hand, the paper industry demands a high level of reliability for serving the paper machines at their wet and dry ends. On the other hand, the efficient storage and retrieval of rolls of paper require a high level of automation and, at the same time, smooth and precise handling. Demag cranes have been specially developed to satisfy these needs.

Besides the special requirements at the wet end of the paper production process with high humidity and temperature levels, precision is particularly necessary for the hoist motions when paper reels are changed.

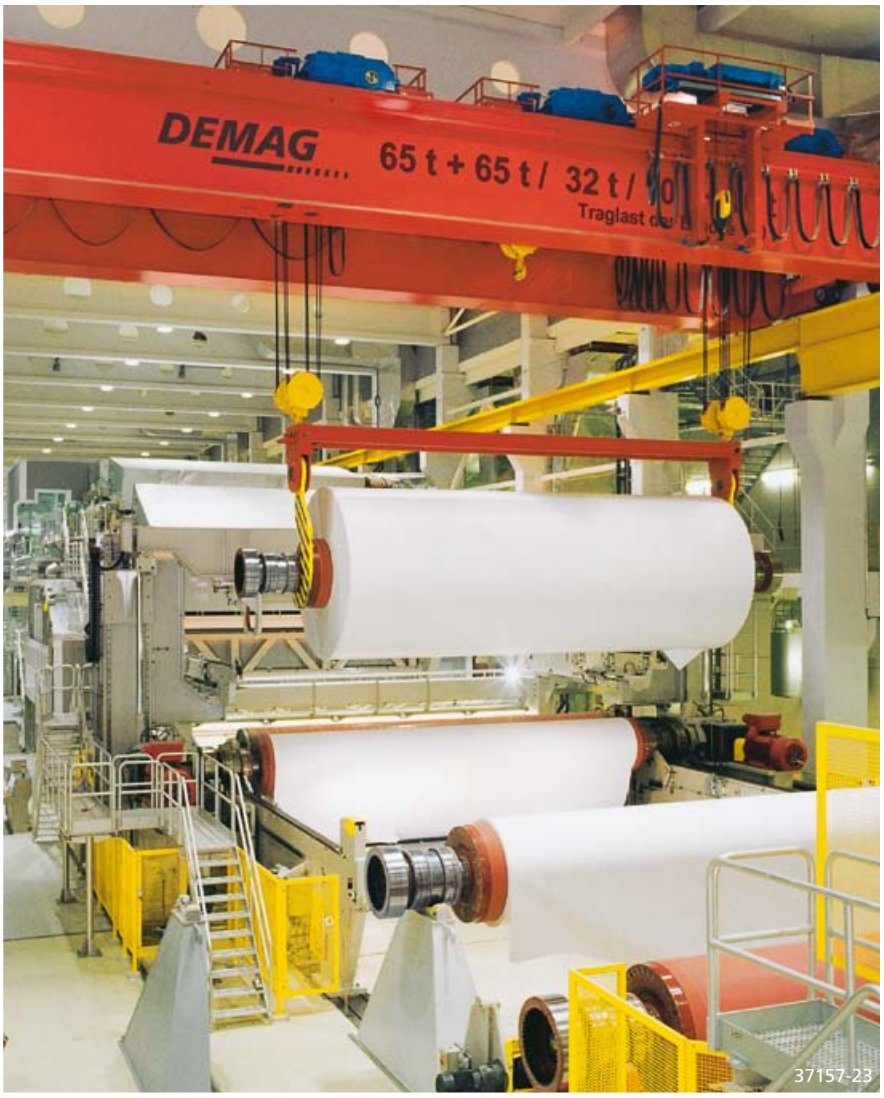
Automated processes with high lifting and travel speeds are needed for the vertical storage of rolls of paper. With annual production levels frequently in excess of a million tons, extremely high availability of the installations must be ensured.

Demag Cranes & Components provides cranes that are optimised for handling rolls of paper in storage facilities. This means that the customer receives a package that is tailored to meet his particular needs as well as the most efficient solution.



Warehouse management system with hardware and software specifically adapted to the installation

Demag process cranes in paper stores and in paper production



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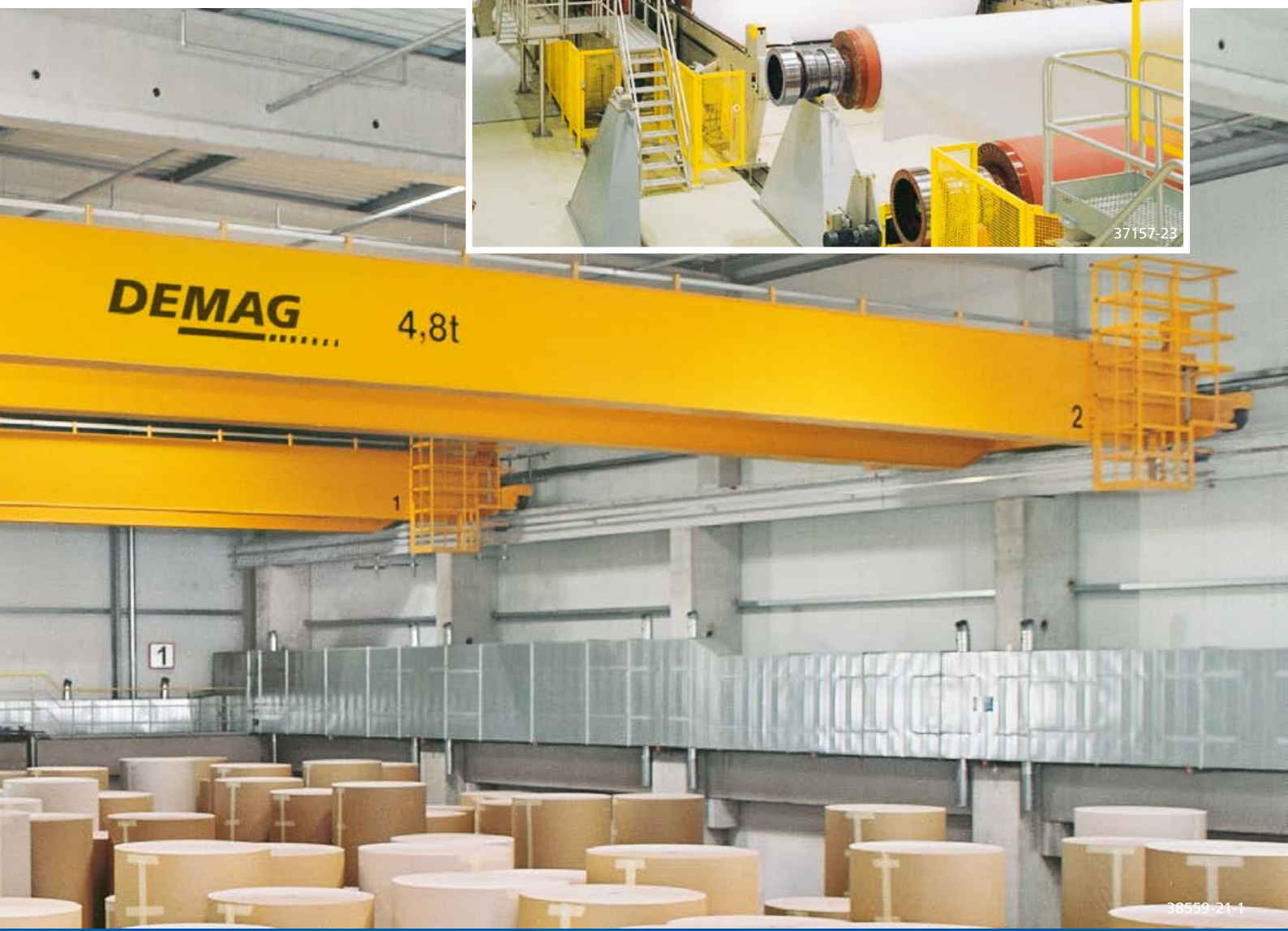

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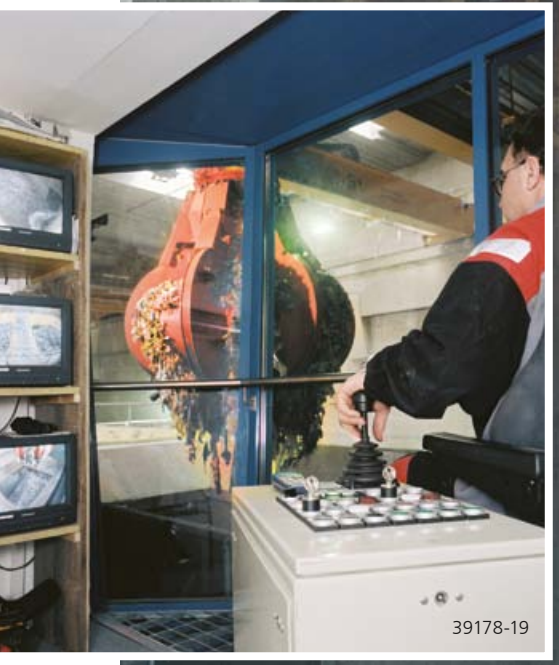

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Demag process cranes in refuse disposal and recycling

Cranes often work in fully automatic mode and around the clock, particularly during the delivery times, at the refuse incineration installations operated by refuse processing facilities.
Blending refuse, serving incineration furnaces and removing the waste ash resulting from several thousand tons of refuse every year place high demands on crane installations and their operators.

In order to operate economically, thermal waste processing installations have to process large quantities of refuse. The cranes that operate in these facilities have to be able to provide high handling rates reliably around the clock.

A special requirement for operation in refuse and ash bunkers is active load-sway damping due to the mostly very large lifting heights to prevent the grabs from hitting the bunker walls, which may lead to damage of the installation. In addition, the blending and storage operations cannot be carried out automatically at high speed without load-sway damping.

Demag cranes which are individually specified for refuse handling applications are of optimum design for serving bunkers and pits. By means of laser-assisted height measurement, they are able to perform all processes fully automatically. This enables movements to be reduced to a minimum to achieve efficient handling rates.

Demag Process Cranes in the refuse disposal sector

Demag Process Cranes used for fully automatic filling of composting boxes with residual waste in a waste disposal installation

Demag process cranes in the cement and lime industry

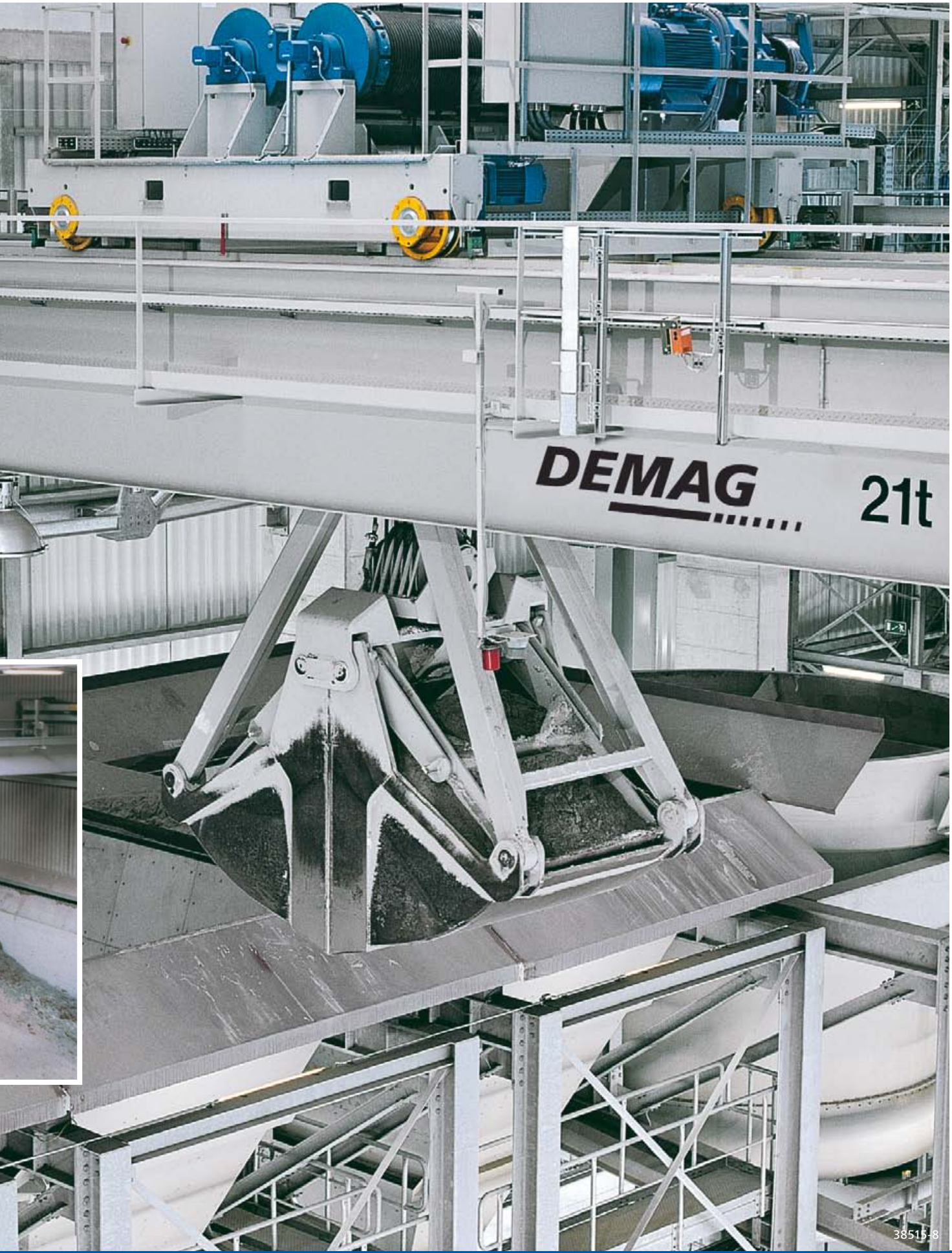
Various bulk goods, such as raw materials and fuels, are stored in the cement industry. The required transport systems are specially designed for these applications and are provided with control and visualisation software.

Fully automatic process cranes are recommended from the very beginning wherever various materials have to be continuously stored and retrieved. Corresponding parameters, such as for areas reserved for certain additives, can be specified by means of a visualisation system, which represents both the grid of the store as well as its surroundings. At a central control station, the personnel can use a PC to switch the installation on and off or create special blends, while simultaneously viewing fault messages or operating status information.

An automatic process crane carries out the often difficult positioning processes more quickly and usually more accurately than a human operator. For sway motions that particularly occur with the short positioning times and high travel and braking speeds, damping systems are used to prevent load sway by continuous detection of the load condition variables followed by appropriate adjustments.

Fully automatic replenishment and retrieval of the various additives by a Demag automatic crane in a cement works

Demag automatic process cranes operating in a cement works



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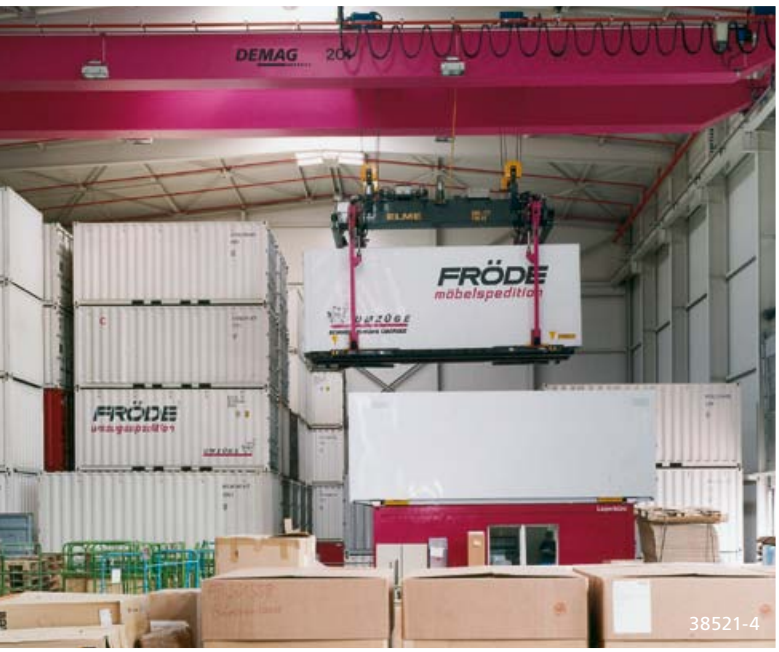
Demag process cranes for handling furniture containers

The fast and efficient handling of containers is not only a major challenge in ports and railway goods terminals. The efficient utilisation of space with furniture containers is increasingly being employed, not only for overseas traffic, but also for classic transport operations and intermediate storage applications. The standardised containers can be stored close together, thus ensuring optimum utilisation of the available space. Operations become critical when it comes to the question of efficient handling, i.e. "finding and transporting" specific containers. Demag Cranes & Components has perfect crane solutions for companies and areas of all sizes.

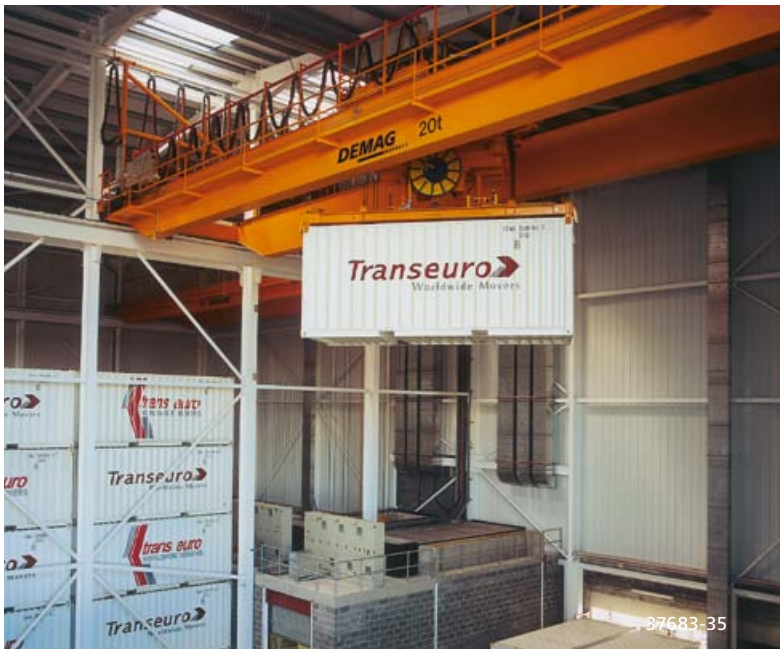
Due to the close storage of furniture containers, only fully automatic systems are usually employed. This means that Demag cranes find the containers on the basis of a warehouse management system. These "intelligent" cranes enable the operator to store, transfer and retrieve items quickly and, therefore, efficiently with a minimum personnel requirement.

Whether the crane is controlled manually by radio remote control or by a warehouse management system, all Demag crane variants offer the benefits of optimum space utilisation and simultaneously rapid access to the given furniture containers.



Optimum utilisation of space thanks to warehouse management systems and intelligent Demag process cranes

Demag automatic process crane handling containers at a shipping company



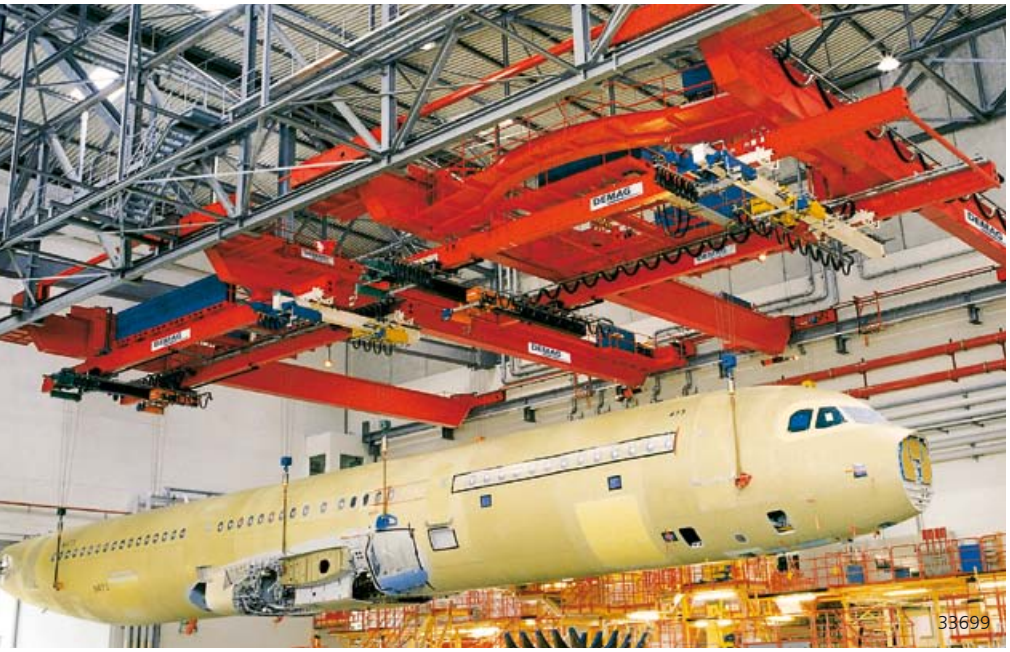
Automatic spreaders for 20 and 40-foot containers

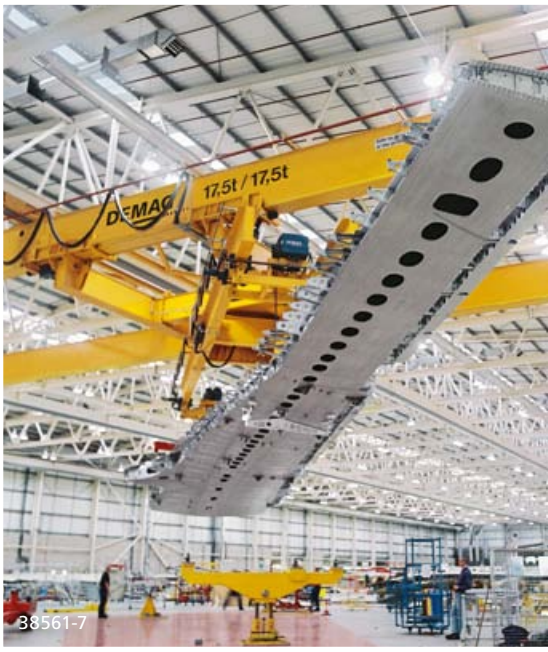
Demag process cranes in the aviation industry

Large parts have to be regularly lifted, turned and positioned in the aviation industry. The requirements to be met by the cranes and hoists used in these applications demand specially developed solutions in many cases. In close co-operation with the operators, this often results in key developments that also attract great attention in other sectors of industry.

Wherever complex components are developed as parts of a complete product, loads generally have to be handled gently and precisely. In addition, loads with a large surface area usually have to be suspended from several points to prevent them from twisting. This requires a sophisticated combination of functions and mechanisms which can be achieved by a combination of crane motions with traversing crabs and travelling hoists.
Frequency inverters provide for high positioning accuracy as well as gentle and variable acceleration and braking.

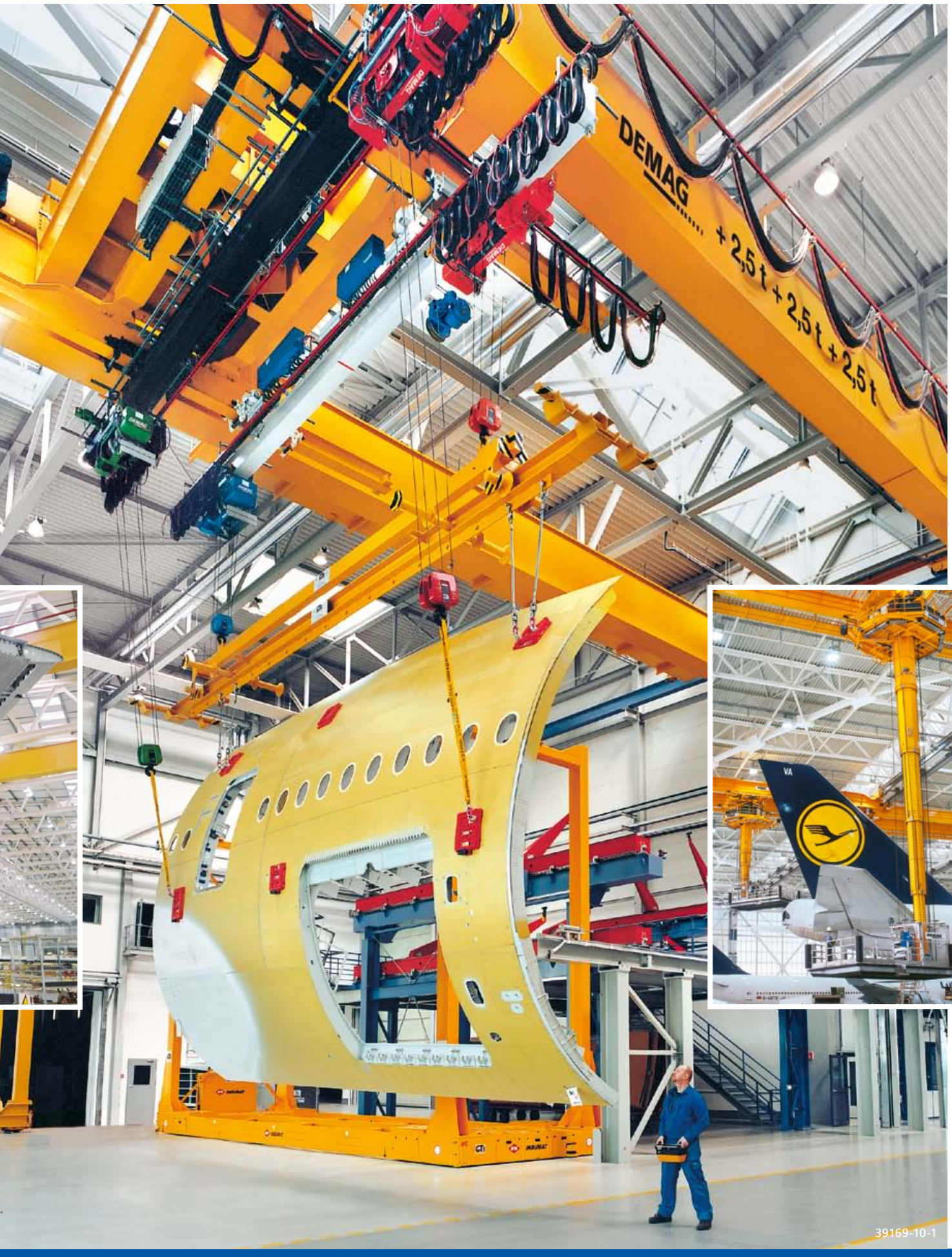
Safety functions such as synchronised operation, light barriers or safety brakes integrated into the rope hoists ensure a high level of installation safety and reliability for the operator and the load.





Demag process cranes offer individual solutions for transporting entire aircraft fuselages, wings or fuselage sections in aircraft production

Telescoping cranes are used for aircraft maintenance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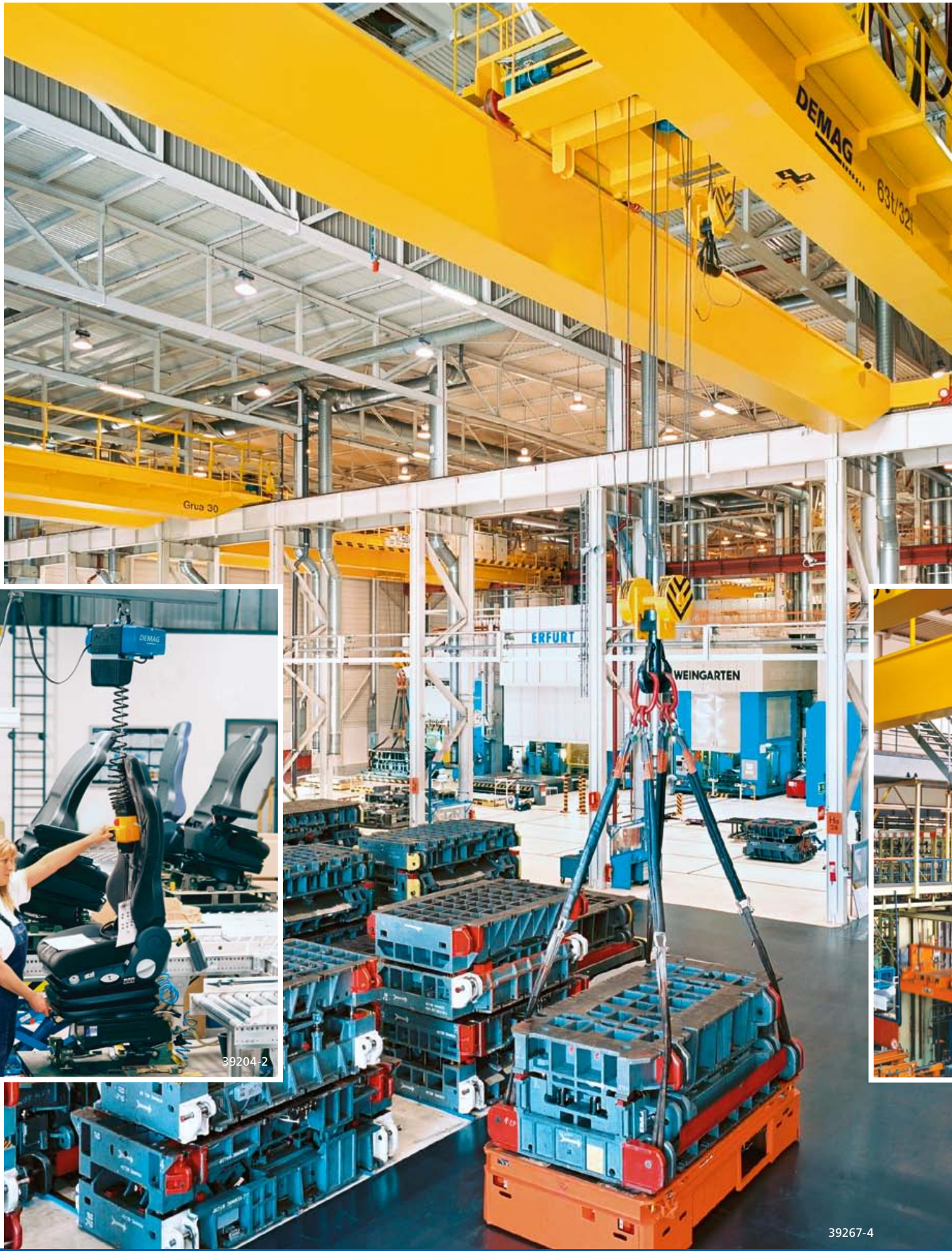

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Demag process cranes in the automotive industry

The increasingly shorter development and production times in the automotive industry pose great challenges for manufacturers and suppliers to meet the just-in-time demands of logistics operations. This means that materials handling components used in production have to offer a high level of availability, since the failure of just one important component may have a considerable financial impact on the overall production process.

Demag cranes transport, turn, pivot and lift loads into optimum assembly positions and satisfy operators' demands for precise positioning throughout the assembly operation.

At the same time, they are used wherever press tools for car body parts have to be handled or heavy injection moulding tools have to be changed in the production of plastic parts, for example.
In assembly operations, hoist units help to provide ergonomically favourable and, at the same time, efficient workplaces for the workers.

Demag hoist units provide for ergonomically optimum workplace design.

Demag cranes in operation in a press plant

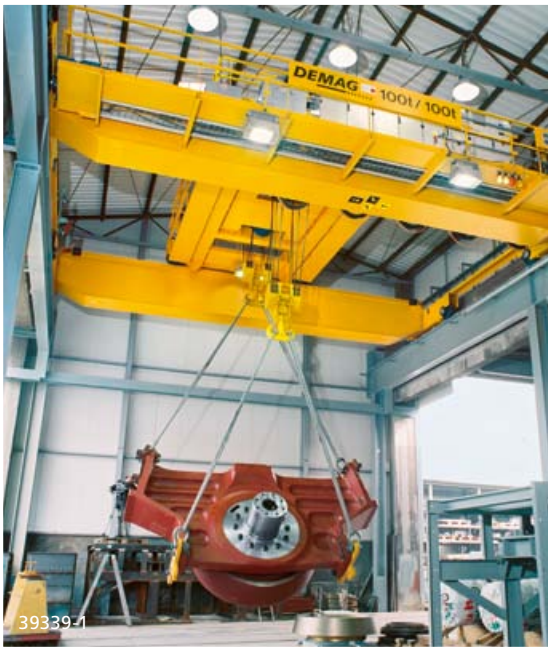
Demag process cranes in mechanical engineering

The need for the efficient handling of large and small loads does not usually depend on the size of a company or the handling rate of an application. For this reason, modular load handling concepts are required to enable individual and, at the same time, economical solutions to be achieved.

From lifting and positioning loads at the workplace, to serving machinery or installations, Demag Cranes & Components offers a complete range of solutions that are tailored to meet individual requirements and provide improved ergonomics, flexibility and high efficiency.

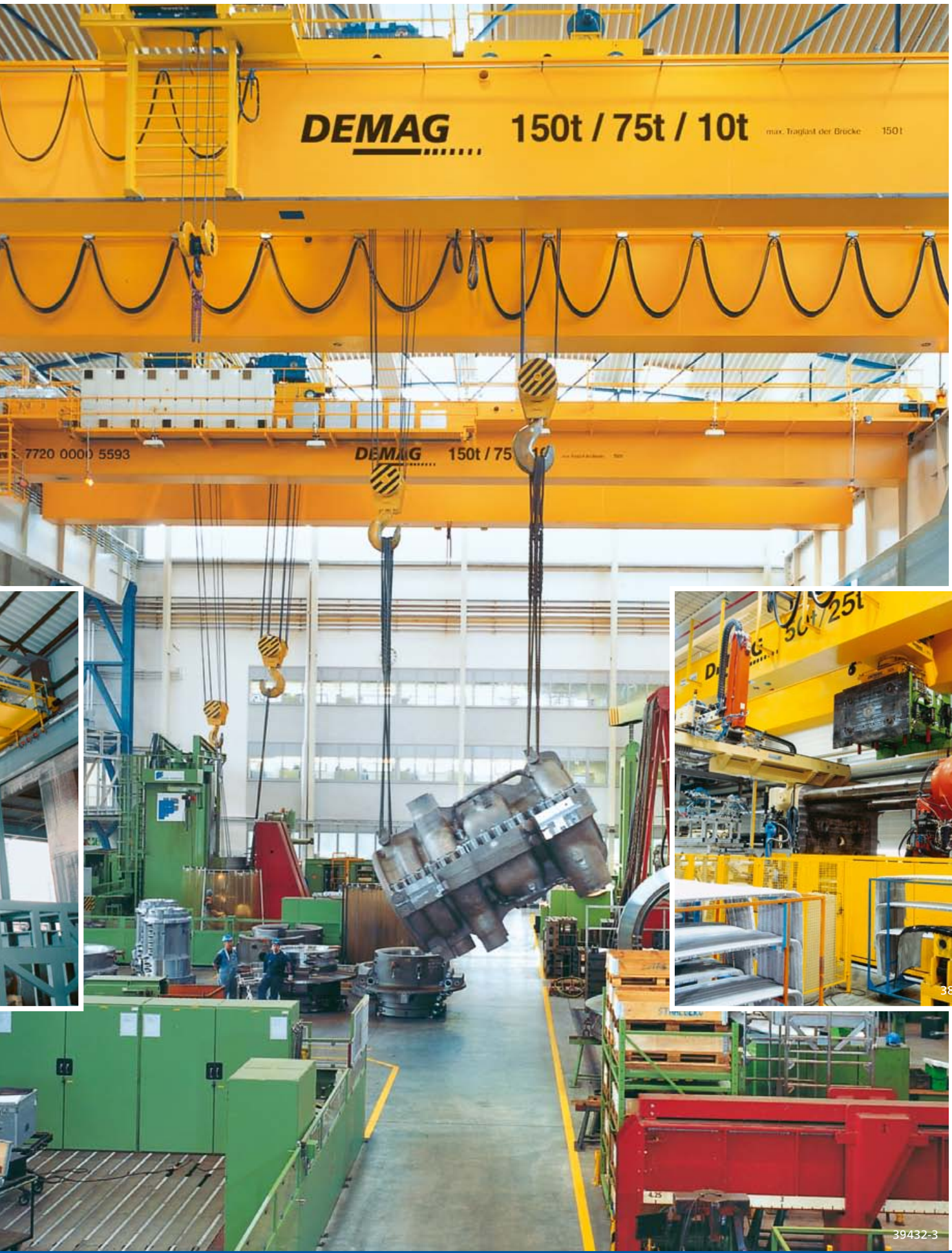
Thanks to their smooth and reliable motions, Demag cranes ensure that a wide variety of machining centres, machine tools, assembly bays and test stations are served with high precision.
Cranes equipped with automatic segments or fully automatic processes optimise precision operations for the changeover and setup of tools and machines.
Reliable load-sway damping and automatic positioning systems ensure that Demag process cranes provide for high handling rates and gentle handling.

Demag process cranes transporting workpieces weighing up to 200 t with millimetre precision for the production of turbines and generators



Cranes are used for turning components in the production of crusher parts

Demag cranes being used in the manufacture of turbines and injection moulded parts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From planning to commissioning and maintenance

Qualified consultation, efficient transport solutions, rapid processing and complete project management – our CES® sales engineers are available to provide you with expert advice at all times, even after your installation has been installed.

As the first company in the industry, Demag Cranes & Components was awarded the Certified Engineer of Sales (CES®) qualification by the personnel certification office of the TÜV Akademie GmbH. This confirms that the specialist knowledge and personal expertise of our sales employees satisfy the high quality standards for the CES® seal of approval of the TÜV Rheinland Group. Benefit from the advantages offered by a Certified Engineer of Sales.

Certified Engineers of Sales have extensive knowledge of a wide variety of industries.
This ensures that you receive an analysis of the materials handling requirements of your specific industry and transport solutions tailored to meet your needs.

Whoever invests in a crane system wants to have the certainty of a secure long-term investment. Demag Service uses its expertise to ensure that cranes and components are used efficiently throughout their entire life cycle. This entails maintaining value and, at the same time, extending product life cycles by means of preventive maintenance, general overhauls and modernisation of our own and third-party products.

The spare parts logistics service ensures that any parts and components that might be required are quickly available when needed. By means of a complete approach ranging from planning to removal and from erection to commissioning for the refurbishment and modernisation of industrial installations, we can also offer an alternative to complete new crane installations or materials handling components that often represents better value for money.

Leading companies have successfully used Demag cranes for many years

Customer	Application
Automotive industry	
BMW Munich (DE)	Press plant crane
Mercedes-Mettingen (DE)	Tool production
VW Wolfsburg (DE)	Press plant crane
Coil handling	
Bilstein (DE)	Automatic coil store
Hoesch Hohenlimburg (D)	Coil store
Nybor (DK)	Automatic coil store
Panopa (DE)	Coil store
Preymesser (DE, GB, HU)	Coil store
Container handling	
Baxter Moving Excellence (GB)	Auto. container store
Charl Antoine (FR)	Container store
Spedition Fröde (DE)	Container store
Trans Euro (GB)	Auto. container store
TUCON Security Storage (US)	Auto. container store
Aircraft industry, production	
Airbus (DE / ES / FR / GB)	Transport & assembly cranes
Alenia (IT)	Automatic section store
Aviastar (RU)	Transport & assembly cranes
Boeing (US)	Assembly cranes
Embraer (BR)	Assembly cranes
Xian Aircraft Manufacture (CN)	Teleplatform system
Aircraft industry, maintenance	
ANA (JP)	Teleplatform system
British Airways (GB)	Maintenance cranes
Iberia (ES)	Teleplatform system
Lufthansa (DE)	Teleplatform system
Olympic Airways (GR)	Maintenance cranes
Shanghai Airlines (CN)	Maintenance cranes

Customer	Application
Paper industry/paper machine	
Gold East Paper (CN)	Paper production cranes
Holmen Paper Peninsular (ES)	Paper production cranes
Huatai Paper (CN)	Paper production cranes
Jass Schwarza (DE)	Paper production cranes
Myllykoski (DE)	Paper production cranes
SCA Packaging (DE)	Winder Annex
Paper industry/paper roll stores	
Cascades Arnsberg (DE)	Automatic cranes
Gold East Paper (CN)	Automatic cranes
Jass Schwarza (DE)	Automatic cranes
Nine Dragons (CN)	Automatic cranes
Oudegem Papier (BE)	Automatic cranes
Sun Paper (CN)	Automatic cranes
Recycling	
AVA Frankfurt Nordweststst. (D)	Refuse and slag cranes
Borlänge Energi (SE)	Refuse and slag cranes
MVA Allington (GB)	Refuse and slag cranes
MVA Moskau (RU)	Refuse and slag cranes
SCA Sundsvall (SE)	Handling of shredded wood chips
Heavy mechanical engineering	
Flender-Winergy (DE)	Gearbox production
MAN Turbo (CH)	Turbine production
MMG-Waren (DE)	Production of ship screws

Customer	Application
Steel production	
Alcoa (HU)	Coil transport
Böhler Edelstahl (AT)	Foundry cranes
Green Metal (CZ)	Mixing crane
Hoesch Hohenlimburg (DE)	Coil transport
KazZinc (KZ)	Foundry cranes
MAN B&W Diesel (DE)	Foundry cranes
Meuselwitz (DE)	Foundry cranes
Meuselwitz Guss (DE)	Foundry cranes
Norddeutsche Affinerie (DE)	Foundry cranes
Schmolz + Bickenbach (DE)	Foundry cranes
Swiss Steel AG (CH)	Foundry cranes
United Steel Industrie (AE)	Billet transport
Vestas Casting (DE)	Foundry cranes
Steel trade	
Aceros (ES)	Steel trade
Aratubo (ES)	Transporting bundles of tubes
ASD (GB)	Transporting long materials
Böhler (AT)	Coil transport
Donges Stahlbau (DE)	Transporting steel components
Exelsior (CA)	Coil transport
Finkenholl (DE)	Steel trade
Ib Andresen (HU)	Coil transport
Panopa (DE)	Transporting long materials
Stinnes Stahlhandel (DE)	Steelmaster in the service centre
Süderelbe (DE)	Coil transport
ThyssenKrupp Schulte (DE)	Steelmaster in the service centre
Cement industry	
Adelaide Brighton Cement (AU)	Clinker crane
Anneliese Zement Ennigerloh (DE)	Handling of refuse derived fuels
Castle Cement Padeswood (GB)	Clinker crane
Holcim Werk Höver (D)	Handling of refuse derived fuels
Leheigh Cement Union Bridge (US)	Clinker crane
Spenner Zement Erwitte (DE)	Clinker crane

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