



Safe processes

**Explosion-protected
lifting technology**

DEMAG.....





Safety through proven Demag quality

Powerful and reliable light crane systems, crane components, hoists and drives are our core competencies.

As one of the world's leading manufacturers, we have been offering our customers a comprehensive portfolio of solutions for their material flow and logistics for more than 200 years - helping them achieve the highest levels of efficiency and performance.

Demag has a global presence and a large network of partners and distributors.

With our wide portfolio of lifting equipment, we offer the best possible solution for the specific requirements of our customers. This includes solutions for lifting equipment in hazardous environments.



**Potentially
explosive atmospheres**

Certified explosion protection

Wherever dust and gases occur in production and operations, we ensure the highest possible safety with certified crane components. For your employees, loads, machines and the environment.

UNCOMPROMISING QUALITY:

THIS IS WHAT DEMAG STANDS FOR

Our explosion-protected hoists meet the highest safety standards. They comply with EU Directives 2014/34/EU (ATEX) and all European safety standards (EN).

Our product portfolio ranges from our DXR rope hoist and DXC chain hoist to crane sets – our customised component packages for crane installations. The Demag product portfolio of explosion-protected lifting equipment covers zones 1, 2, 21 or 22.

Depending on the requirements, components are designed and protected accordingly. Our products are reliable tools for all relevant industries and applications with sensitive environments.

Industries and zones

Classification of ATEX zones

Explosion hazard areas for gases and dusts are divided into zones whose classification depends on two parameters:

- the type of fuel (dusts or gases) that may be present,
- the frequency or duration with which an explosive atmosphere may occur.

GAS

- Chemicals industry
- Refineries
- Power supply
- Paint shops
- Pharmaceutical industry
- Wastewater treatment
- Distilleries
- Production facilities

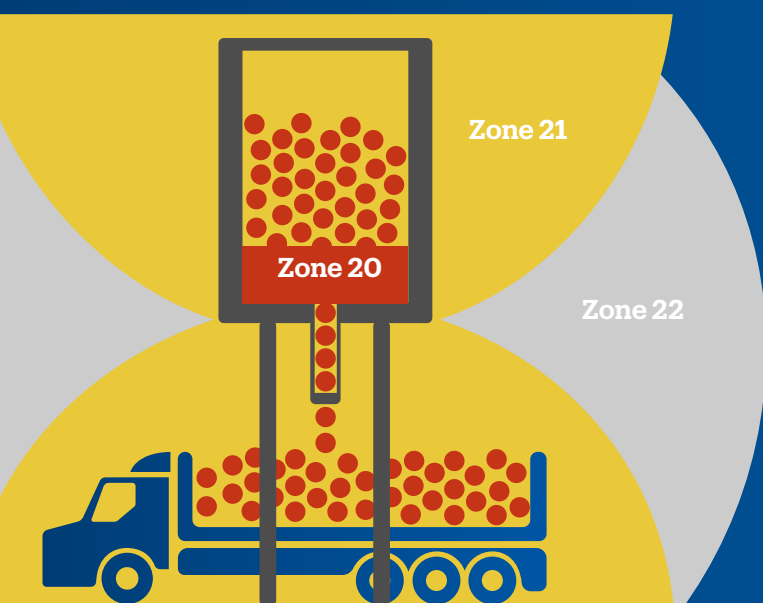
DUST

- Silo systems
- Mills
- Wood processing
- Grinding mills
- Feed plants
- Bulk materials
- Synthetic fiber production

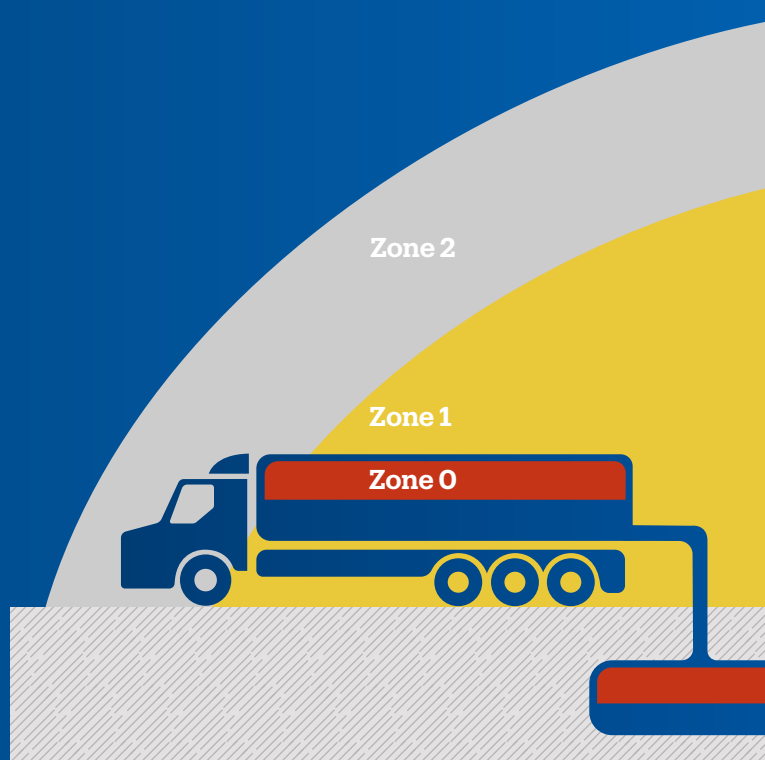
Classification of explosive atmospheres into three zones.

- Zone 0/20 - explosive atmosphere is present continuously or for long periods or frequently.
- Zone 1/21 - explosive atmosphere is likely to occur in normal operation occasionally.
- Zone 2/22 - explosive atmosphere is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

Dusts



Gases

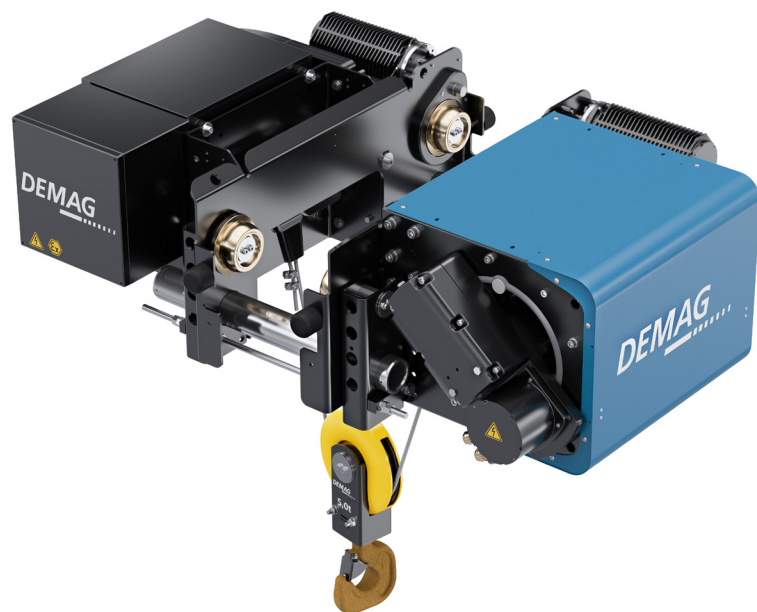


Demag DXR rope hoist

The DXR is an impressive rope hoist for hazardous areas (explosion-protected areas) for gases or dusts. The lifting equipment is designed so that it is not a source of ignition (for example, from a high surface temperature, gases, flames, self-heating, or mechanically or electrically generated sparks).

The electric rope hoist is equipped for use in zones 1/21 and 2/22. The advantages of the optimal use of space of the rope hoist are retained thanks to its compact design. The components of the DXR rope hoist are designed and secured for highly sensitive areas.

The enclosure of the housings prevents the cable pull from serving as an ignition source, for example through heating of the surface, gases, flames, self-heating, or mechanically or electrically generated sparks.



- Enclosed electrical housing
 - Designed according to protection class "d"
 - Pressure-resistant enclosure
 - Robust contactor control for 2-stage travel and lifting speeds
 - Optional: variable travel and lifting speeds possible
- Durable motors
 - Enclosed travel motor with electric brake
 - Hoist motor with two-stage lifting speeds of up to 16 m/min
 - Brake designed for the entire service life

Load capacity up to 80 tonnes

DEMAG



Explosion protection in detail

EXPLOSION-PROTECTED WIRE ROPE HOIST IN SERIES

- Compact design for optimal use of space



RELIABLE

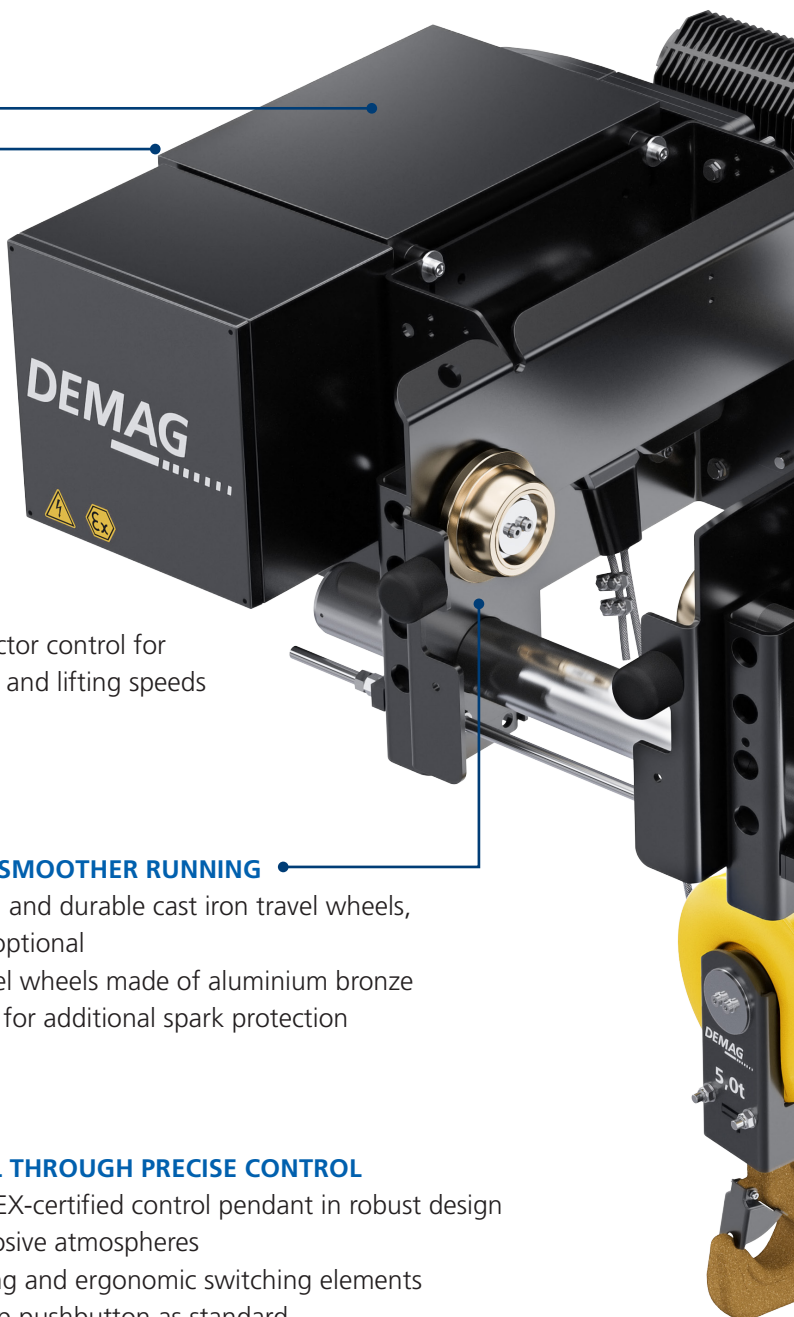
- Robust contactor control for 2-stage travel and lifting speeds

QUIETER AND SMOOTHER RUNNING

- High-strength and durable cast iron travel wheels, guide rollers optional
- Optional travel wheels made of aluminium bronze solid material for additional spark protection

LOAD CONTROL THROUGH PRECISE CONTROL

- Proven and ATEX-certified control pendant in robust design for use in explosive atmospheres
- Smooth-running and ergonomic switching elements
- Emergency stop pushbutton as standard



SAFE DRIVE CONCEPT

- Travel motors:
enclosed with electric brake
- Two travel speeds up to 32 m/min
- Variable with inverter control
as an option

FLEXIBLE ROPE REEVING

- Rope drive, single rope
2/1, 4/1 to DXR 20
- Rope drive, single rope
6/1, 8/1 to DXR 40

TRUE VERTICAL LIFT

- True vertical lift reevings
as standard on DXR 40
- Optional for DXR 10 and 20

DURABLE ROPE GUIDE

- Protective and precise rope guide
- Optional rope pressure roller



HIGH PRECISION AND SAFETY

- Powerful hoist motor
- Insulation class H, protection class IP66
- Brake designed for lifetime
- Lifting speeds: 2-stage up to 16 m/min

FOR ZONE 1-21

- With pressure-resistant enclosure
- Fully enclosed with fan cooling

FOR ZONE 2-22

- Standard "nA" motor (zone 2)
- "tc" motor (zone 22)

HIGH PRECISION AND SAFETY

- Low hook travel
- Load hook optionally
bronzed to prevent sparks

42020



Tailor-made for special requirements

DXR ELECTRIC ROPE HOIST STANDARD EQUIPMENT

- Two lifting speeds (6:1)
- Two travel speeds (4:1)
- Overheating protection for lifting and travelling
- 2-step hoisting limit switch
- Electromechanical overload protection
- Equipped with operating hours counter
- Hook block fully reeved
- Load hook with hook safety catch
- Hook rotation 360°
- Ambient temperature from +5°C to +40°C

MOTOR ZONE 1-21

- Fully enclosed, fan-cooled
- Thermistor temperature sensor
- Pressure-resistant enclosure (d)
- Insulation class H, protection class IP66
- Brake designed for lifetime

OPTIONAL DXR ELECTRIC ROPE HOIST

- Wheels and fall protection made of aluminium bronze
- Bronze coated load hook
- Radio-controlled system
- Service platform
- Second hoist brake
- Drum brake
- DIN or double load hook
- Rope pressure roller
- Ambient temperature from -20°C to +50°C
- Ambient temperature over +55°C on request

MOTOR ZONE 2-22

- Standard "nA" motor (zone 2)
- "tc" motor (zone 22)
- Thermistor temperature sensor
- Insulation class H, protection class IP66
- Brake designed for lifetime

Demag DXR – Your safety is our responsibility

F-DXR foot hoist

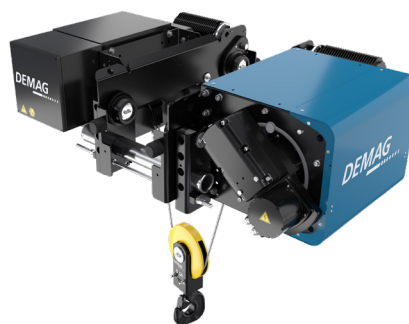
Load capacity [t]	0.8 - 80
Hook path [m]	up to 98.5
Lifting speed [m/min]	up to 16
Sizes	5, 10, 20, 40



42016

EK-DXR monorail hoist (low-headroom design)

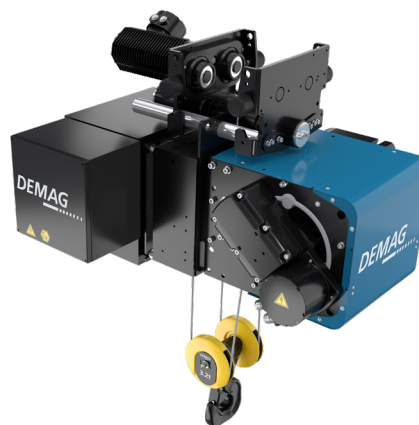
Load capacity [t]	0.8 - 10
Hook path [m]	up to 32
Flange width [mm]	100–610
Lifting speed [m/min]	up to 16
Sizes	5, 10



42017

EU-DXR monorail standard-headroom travelling hoist

Load capacity [t]	0.8 - 40
Hook path [m]	up to 98.5
Flange width [mm]	80 - 610
Lifting speed [m/min]	up to 16
Sizes	5, 10, 20, 40



42018

EZ-DXR double-rail trolley

Load capacity [t]	0.8 - 80
Hook path [m]	up to 98.5
Track width [mm]	1,200 - 4,200
Lifting speed [m/min]	up to 16
Sizes	5, 10, 20, 40



42019

Demag DXC Chain Hoist



PROVEN LIFTING TECHNOLOGY FOR HIGHLY SENSITIVE AREAS

The Demag DXC chain hoist is designed for operation in explosion-protected areas.

The different protection variants allow operation in:

- Zone 1, equipment category 2G
- Zone 21, equipment category 2D
- Zone 2, equipment category 3G

The components of the chain hoist are all designed to prevent sparks.

RELIABLE AND SAFE FOR HANDLING LOADS UP TO 2.5 T

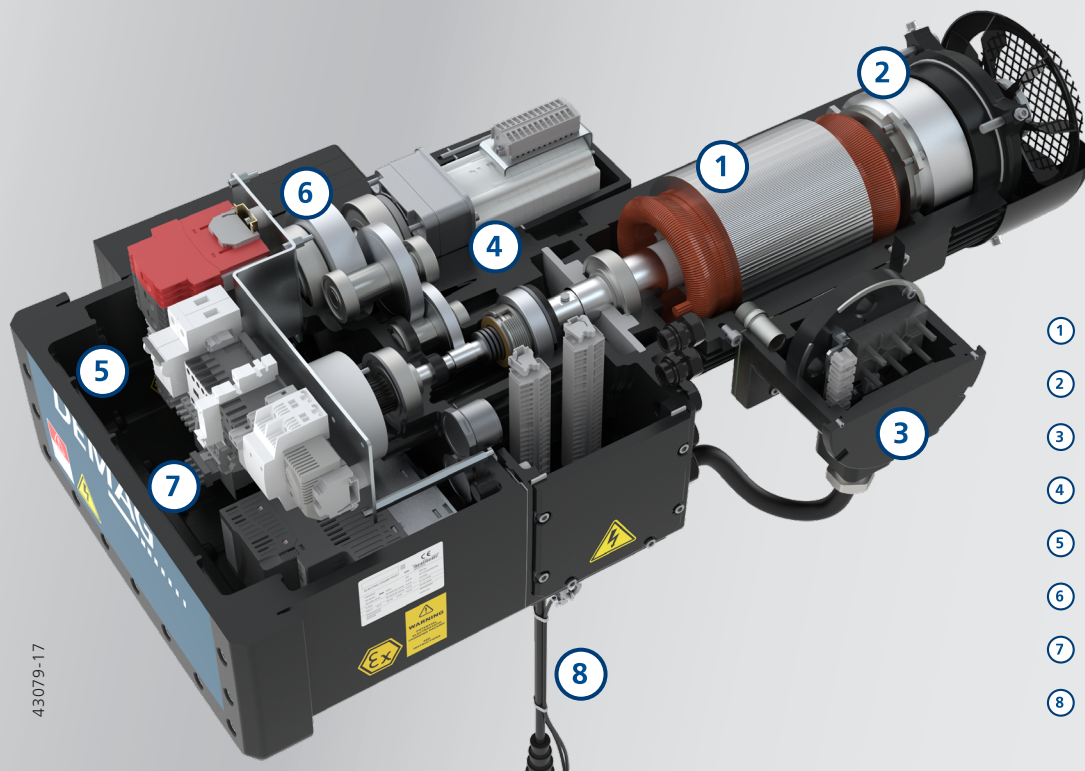
You benefit from reliable components designed for a long service life.

The various options create the optimal solution for your application. All components of the DXC chain hoist are earthed with earthing cables and a potential difference between the assemblies is avoided.

The electronic components are specially protected, for example with an explosion-proof terminal box and cable glands.

THE PERFORMANCE OF THE DXC

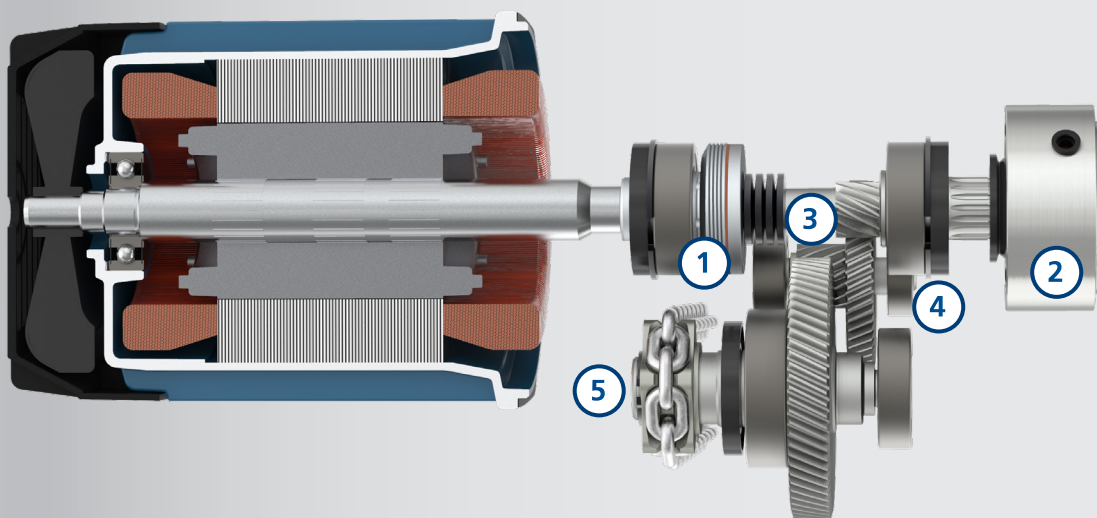
The DXC is designed for a lifting height of up to 40 metres and can lift and lower loads from 320 kg up to a maximum of 2,500 kg. The temperature range is +5°C to +40°C as standard.



- ① Hoist motor
- ② Brakes
- ③ External connection box
- ④ Slipping clutch
- ⑤ Electrical connection box "d" housing
- ⑥ Gearbox
- ⑦ Control system
- ⑧ Control cable

43079-17

- ① Slipping clutch
- ② Brakes
- ③ Gearbox
- ④ Bearing
- ⑤ Sprocket



43073-16

The slipping clutch to prevent load sag is already included in the standard design. This is adjustable and is located in the power flow behind the brake.

However, this temperature range can be extended for the optional equipment categories:

- Equipment category 2: -20°C to +55°C
- Equipment category 3: -20°C to +60°C

The DXC chain hoist contains a protection control (CC). The FEM/ISO and EN classifications are listed in section DXC: Overview of technology (p. 15).

LIFTING TECHNOLOGY WITH CERTIFICATE

The DXC chain hoist has the following certifications:

- Type approval certificate EESF 23 ATEX 033X
- IECEx Certificate of Conformity IEXEx EESF 23.033X
- Production quality assurance report Presafe 18 ATEX 12095Q
- IECEx Quality Assessment Report NO/PRE/QAR18.0011/03
- As per products in focus DXC DE V2

DXC: Stationary - or on the move

We offer different trolleys for precise movement of the DXC chain hoist: Manually moved or as an electrically driven version.

Manual trolley

- Flange width from 80 to 330 mm

Motorised trolley

- Standard-headroom travelling hoist: Flange width from 80 to 330 mm
- Low-headroom travelling hoist: Flange width from 100 to 330 mm
- Trolley for curved travel: Flange width from 100 to 350 mm



43086

DXC CHAIN HOIST SUSPENSIONS

- In addition, four different mounting options are available for the safe suspension of the explosion-protected DXC chain hoist:



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FIXED SUSPENSION
Zone 1, 2, 21



43079-30

SUSPENSION BRACKET
Zone 2



43079-32

SUSPENSION RING, 90° TURNED
Zone 2



43079-31

SUSPENSION HOOK
Zone 2

DXC: Technical Overview

ADDITIONAL OPTIONS:

- Brass wheels and anti-derailing devices
- Travel limit switches
- Warning signal systems
- Horn
- Light
- Bronze coated load hook
- Brass rail sweeps
- Rain cover
- Thermostat-controlled heating for control casing
- Standby heating for motor
- Self-locking hook
- Stainless steel hook and hook block
- Food lubrication
- Second hoist brake
- Guide rollers

DIN EN 14492-2 / ISO 4301			
Full load cycles		Average cycle route [m]	
A1	8,000	Dh0	0.63
A3	32,000	Dh2	2.5
A4	64,000	Dh3	5
A5	125,000	Dh4	10
A6	250,000	Dh5	20
A7	500,000	Dh6	40

Frame size	Load capacity [kg]	Reeving	Classification		Lifting speed [m/min]	Frequency [Hz]
			FEM/ISO	EN 14492-2		
DXC 10	320	1/1	3m / M6	A6 / Dh3	16 / 2.7	50
	500	1/1	3m / M6	A6 / Dh2	4 / 0.7	
				A6 / Dh3	8 / 1.3	
	630	1/1	2m / M5	A5 / Dh2	16 / 2.7	
				A6 / Dh2	4 / 0.7	
			1Am / M4		8 / 1.3	
	1,000	1/1	2m / M5	A5 / Dh2	16 / 2.7	
				A6 / Dh2	4 / 0.7	
	1,250	1/1	1Am / M4	A4 / Dh2	8 / 1.3	
				A5 / Dh2	4 / 0.7	
	1,600	2/1	2m / M5	A5 / Dh2	8 / 1.3	
	2,000	2/1	2m / M5	A5 / Dh2	4 / 0.7	
	2,500	2/1	1Am / M4	A4 / Dh2	4 / 0.7	



Demag crane sets

Standardised components for individual applications

The Demag crane sets and components are your option for overhead travelling cranes and overhead cranes in single and double-girder designs as well as wall-mounted travelling cranes and gantry cranes. The crane components are equipped for hazardous areas and challenging use and enable crane operation in these zones.

■ High security and cost-effectiveness

One-stop-shop principle: All components for your crane from a single source ensure reliable and safe interaction.

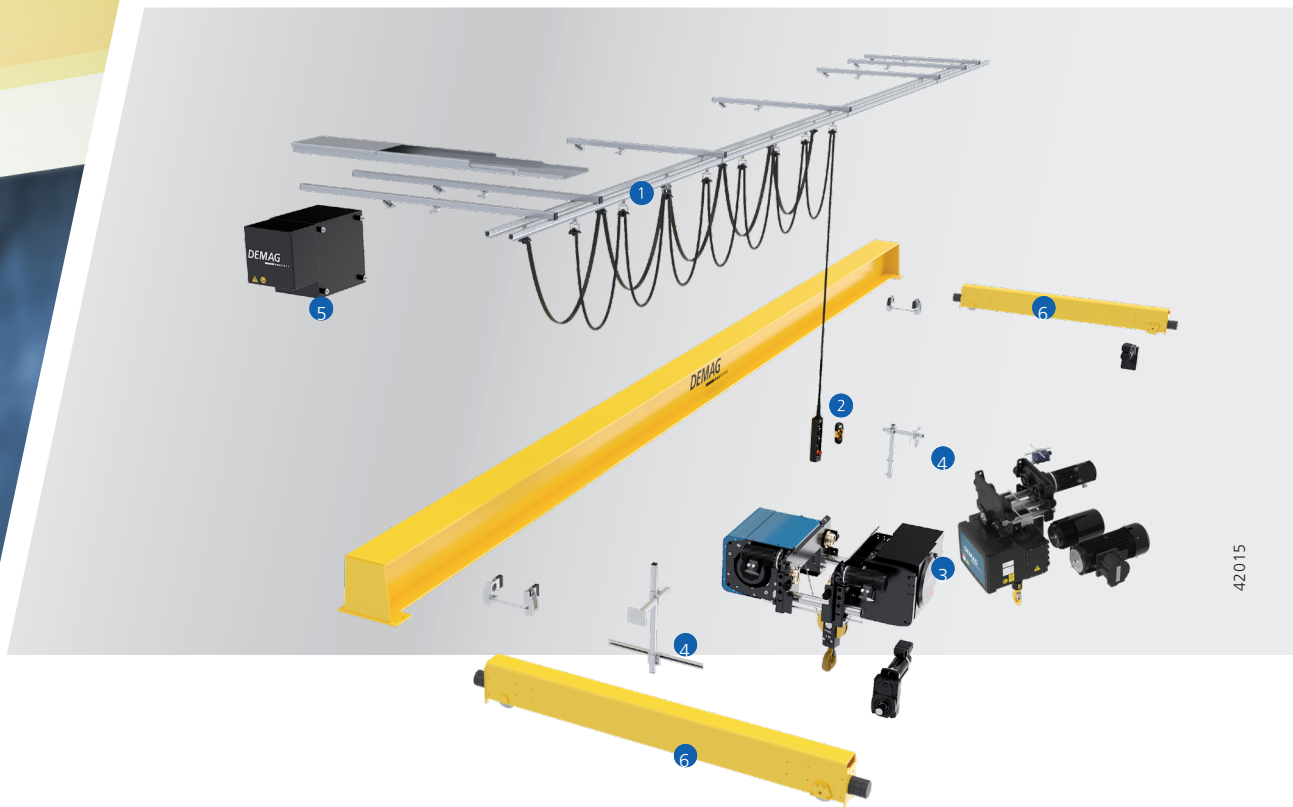
■ Short assembly time

Coordinated, pre-assembled and wired components.

■ Versatile designs

Sophisticated component base made up of standardised components, planning support and configuration by our Demag CraneExpert software.

Crane components for load capacities up to 80 t



42015

CRANE COMPONENTS FOR LOAD CAPACITIES UP TO 80 T

- DXR or DXC crane sets contain all components needed to build an explosion-protected crane, except for the crane bridge
- Crane set end carriage
- Pre-assembled electrics
- Flat cable power feeds pre-assembled and wired
- EU Declaration of confirmation

DXR CRANE SET ROPE HOIST

- 1 Cross-travel power supply
- 2 Control pendant with emergency stop
- 3 DXR rope hoist or DXC chain hoist
- 4 Cross/long travel limit switches
- 5 Crane control cabinet
- 6 End carriage with travel drive

OPTIONAL EQUIPMENT

- Radio control system
- Anti-collision devices
- Anti-condensation heating
- Spark-proof features
- Warning indication for travelling movement
- Inverter control (Long and cross travel)
- Crane lighting
- Horn
- Signal lamp

Demag components

Benefit from our wide range

MAIN SWITCH/SAFETY SWITCH

- Safety switch for isolating the electrical power supply of systems in potentially explosive areas during cleaning and repair work
- Approved for use in hazardous areas of certain zones

TERMINAL BOXES

- Explosion-protected equipment for stationary installation
- Safe distribution of electrical energy in potentially explosive areas
- Housings in different sizes

END CARRIAGES AND TRAVEL DRIVES

- Numerous end carriage and travel drive variants for operation in explosive atmospheres
- Enables coordination according to requirements for new systems and modernisations
- Easily integrated single and double girder bridge cranes as tailor-made solutions

CRANE LIGHTING

- Increased safety during crane operation thanks to good illumination
- Explosion-proof versions enable lighting of surfaces, work areas and objects indoors and outdoors
- Permanently mounted, approved for certain zones

SIGNAL LAMP AND HORN

- Ex-proof signal lamp and horn increase safety during crane and trolley operation via visual and acoustic indication of various system statuses
- Help to avoid accidents:
signal to the crane operator, for example, an overload or the activation of the radio control
- Optimal customisation of the signal lamp to the relevant requirements thanks to different light modes and colour caps
- Ex-proof horn depending on zone
- Protection against mechanical damage and external influences thanks to robust housings of the compact and encapsulated EX-proof components – including first-class corrosion protection



41409

Good advice – perfectly planned

We support you in the early planning phase
with our expertise in innovative crane solutions.

WE PLAN - YOU BENEFIT

Our planning tool simplifies and speeds up the project planning and design of the crane installation and verifies the plausibility of the data. Whether the design and layout are correct is not only determined during installation, but is checked in advance by simulation – this ensures constructive precision and adherence to the budget.

THIS IS DONE BY:

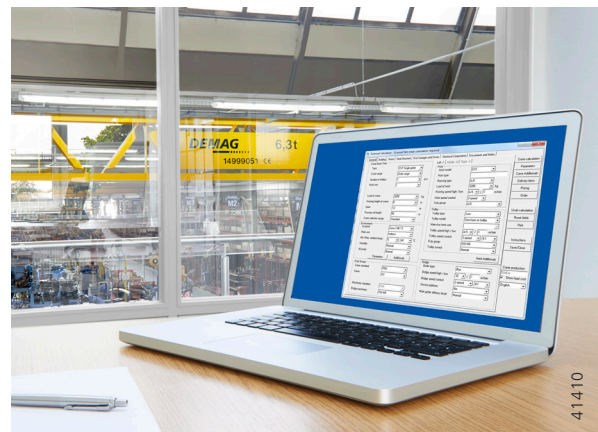
- Consistent consideration of your requirements
- Logistical interfaces defined at an early stage

This provides security for both the overall concept and the detailed solution.

USE OF CAD SYSTEMS

When planning Demag crane sets, the necessary documents are generated from the project-related parameters using the system:

- Illustrations
- Project Drawings
- Assembly and component drawings



41410

This allows the planning to be checked in advance.



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