

Compact and fast | More efficiency for cranes
The new Demag DR rope hoist | with capacities up to 10 t





Demag Cranes & Components – leading the way with innovative solutions

- Benefits
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Efficiency and high operating reliability are clearly defined requirements to be met by material flow, logistics and drive solutions. Demag Cranes & Components has been developing and manufacturing solutions for industrial drives, load handling and material flow applications in the manufacturing and storage sector for almost two centuries.

Today, the company is the world market leader for materials handling components, cranes and hoists and supplies innovative product solutions and services to customers of all sizes. Demag Cranes & Components places priority on meeting your needs, so that products and services can be seamlessly integrated into the value creation process of your company.

The development of the new Demag DR rope hoist, which is optimised for crane applications, was designed to be more than “just” a further product development to bring existing products up to date with solid expertise and experience. The requirement to be met was an innovative product which satisfies all the needs of the market for more efficiency and, therefore, a better investment for the owner of the installation. Particularly in the lower load ranges up to 10 t and, above all, for standard applications, demand today centres on higher lifting speeds, greater operating reliability and higher availability. Therefore, the main challenges were for a faster lifting speed to achieve higher handling rates, frequency inverter-fed travel drives for low-sway travel motions and exact positioning of the load as well as a compact, space-saving design.



The new standard for rope hoists

Optimised for crane applications, the new Demag DR rope hoist meets all the requirements for state-of-the-art hoists for tomorrow's needs. Besides the space-saving design and particularly long service life, it also offers a higher lifting speed for faster handling rates – comprehensive standard features at an attractive price.

Higher hoist speed for faster handling

Most sub-assemblies of the Demag DR rope hoist have a lifting speed of at least 6 m/min with 4/1 reeving as standard. A frequency inverter provides infinitely variable cross travel speeds up to 30 m/min for low-sway travel motions,

fast and exact positioning and gentle handling of sensitive loads. This also results in a significant reduction of the mechanical load on the crane installation.

Greater efficiency thanks to higher availability

The crab is supplied with FEM classification 2m⁺. The rope reeving components are classified in 2m, the gearbox service life is rated at 1900 hours at full load instead of the 1600 hours at full load specified for the 2m classification. This means that there is 20 per cent more time before the general overhaul is due when the safe working period has elapsed.

The generous dimensioning of all components also ensures constant availability.

The modular design of the rope hoist facilitates simple and rapid maintenance and repair of individual components, thus cutting any downtime to a minimum.

Compact design for optimum utilization of space

The Demag DR rope hoist design provides outstanding approach dimensions for better utilization of the space served by the crane. This means that either a larger area can be served or new buildings can be designed smaller. This cuts new construction and subsequent costs.



Safety and efficiency down to the last detail

Low-vibration, quiet-running motor

- Optimised motor design for low-vibration, quiet operation
- 12/2-pole or 4-pole squirrel-cage motor with cylindrical rotor
- Thermal contacts to protect against overheating as standard
- IP 55 enclosure

Fast acting brake

- Demag DC disk brake with brake release and motor start-up monitoring, minimum brake safety factor of 1.8
- Fast acting brake thanks to integrated electronic modules

Gearbox lubricated for life

- Three-stage helical gearbox with high endurance gearing and oil lubrication for the entire service life
- Modular gearbox design facilitates simple modification of the basic transmission ratio

Protective rope guide

- Rope guide made of tough plastic
- Smooth rope lead-in by means of hardened pressure rollers mounted on anti-friction bearings
- Inclined pull up to 4° without touching the rope guide

Frequency inverter for stepless travel motions

- For low-sway travel motions and exact positioning

Electrics featuring CAN bus technology

- Reliable internal signal transmission
- Complete PCB design
- Load spectrum recorder to determine the remaining safe working period integrated in the controls
- Cross-travel inverter and braking resistor integrated in the electrical enclosure
- Pulse generator to monitor the motor function



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Precision geared limit switch

- Automatic cut-off of the lifting and lowering motions in the upper and lower limit positions
- 4 contacts set for emergency cut-off in the upper and lower positions as standard
- Additional safety thanks to fast-to-slow cut-off
- Other functions, e.g. an operating limit switch, can also be set

Overload protection

- Electro-mechanical overload protection integrated in the rope retaining cross-head
- Evaluation by means of the central electronic unit which also specifies the partial load switching point for a measuring run at slow lifting speed
- Electronic overload protection for summation when several hoists are used, load display and slack rope cut-off

User-friendly bottom block

- Guard for improved safety – moving plastic elements close the opening where the wire rope enters the bottom block
- Two handle recesses make it easier to handle and guide the bottom block

Ergonomically optimised controls

- DSE-8R control pendant
 - for two-stage and stepless operation
 - User friendly with key-operated switch to check the emergency limit switch for the operating limit switch function as standard
 - Display for the load range and specific installation status information
 - IrDA interface for direct data transfer with a laptop
 - Load display for use with electronic overload protection
- Demag DRC-10 radio control
 - with proportional pushbuttons
 - Radio technology of hand-held transmitter compliant with mobile radio standards
 - Bidirectional signal transmission
 - Intelligent charging system
 - Display to show the load range and installation-specific data

Double-rail crab and foot hoist

- The range of possible applications for the EKDR is extended by the compact double-rail crab and the versatile foot hoist variant



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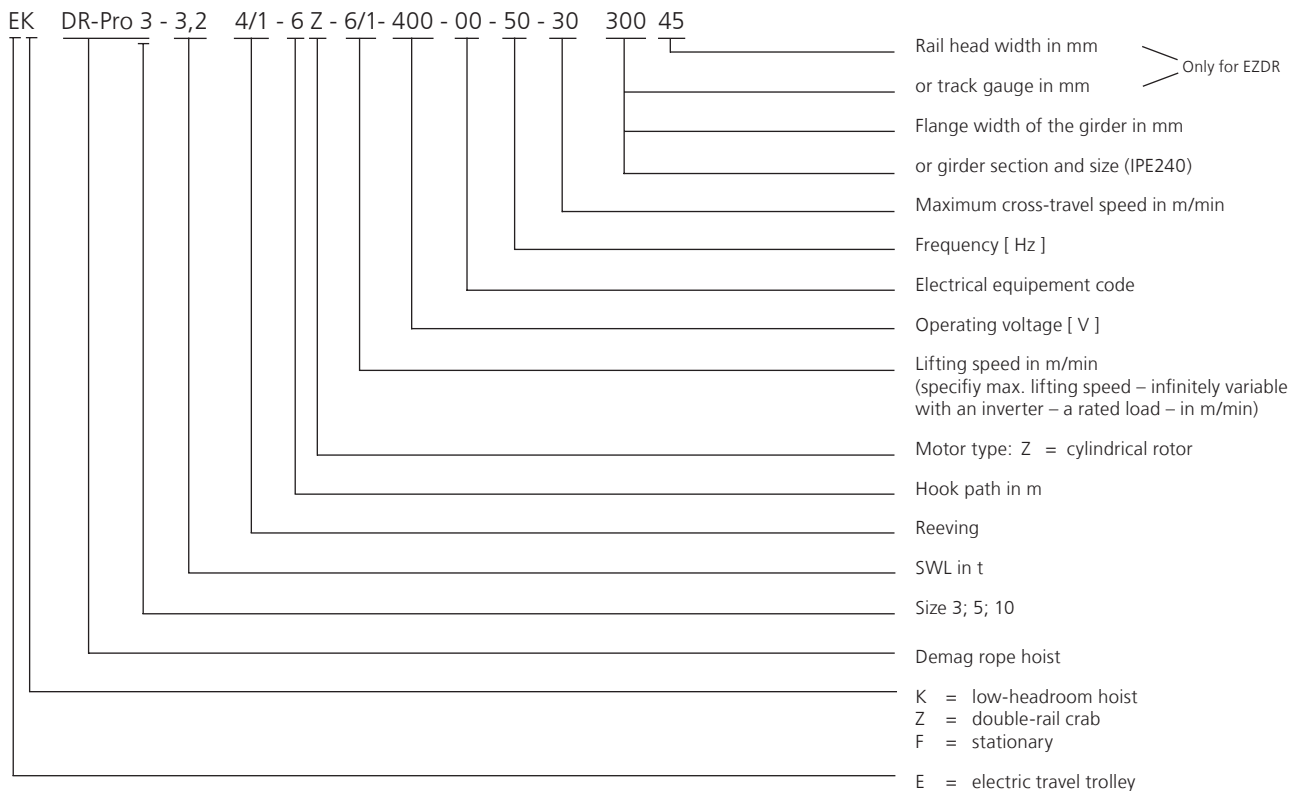
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Technical Data



Explanation of size designations



Selection criteria

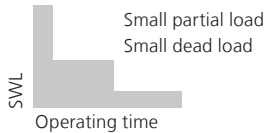
The size of the hoist is determined by the load spectrum, average operating time, SWL and reeving.

The load spectrum

(estimated in most cases) can be ascertained in accordance with the following definitions:

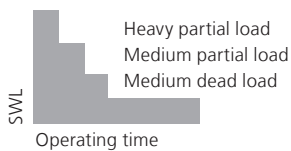
1 Light

Hoist units which are usually subject to very small loads and in exceptional cases only to maximum loads.



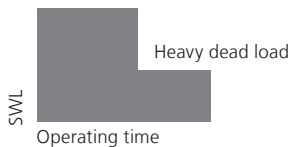
2 Medium

Hoist units which are usually subject to small loads but rather often to maximum loads.



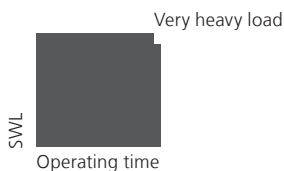
3 Heavy

Hoist units which are usually subject to medium loads but frequently to maximum loads.



4 Very heavy

Hoist units which are usually subject to maximum or almost maximum loads.



1. What are the operating conditions?
2. What is the specified safe working load?
3. To what height must the load be lifted?
4. What is the required lifting speed?

5. Do the loads need to be lifted and lowered with great accuracy?
6. Is horizontal load travel necessary?
7. How is the hoist to be controlled?

The group is determined from the operating time and load spectrum

Load spectrum	Average operating time per working day in hours								
1	Light	4-8		8-16		over 16			
2	Medium	2-4		4-8		8-16			
3	Heavy	1-2		2-4		4-8			
4	Very Heavy	0,5-1		1-2		2-4			
Group of mechanisms to	FEM	2 m		3 m		4 m			
	ISO	M 5		M 6		M 7			
Group of mechanisms to FEM/ISO*	2 m/M 5	3 m/M 6	4 m/M 7	2 m/M 5	3 m/M 6	4 m/M 7	2 m/M 5	3 m/M 6	
	Rope reeving method		2/1, 4/2		4/1		6/1		
Range		SWL in t							
DR 3	1,6	1,25	1	3,2	2,5	2	-	-	
DR 5	2,5	2	1,6	5	4	3,2	-	-	
DR 10	5	4	3,2	10	8	6,3	16	12,5	

* The gearbox service life of the new Demag DR rope hoist is approximately 20% higher than the FEM rating

Example

Load capacity	5 t
Load spectrum	"medium" from table
Lifting speed	6 m/min
Creep lifting speed	1 m/min
Reeving	4/1
Average hook path	3 m
Cycles per hour	20
Working time per day	8 hours

The average operating time per working day is estimated or calculated as follows:

$$\text{Operating time/day} = \frac{2 \cdot \text{av. hook path} \cdot \text{no. of cycles/h} \cdot \text{working time/day}}{60 \cdot \text{lifting speed}}$$

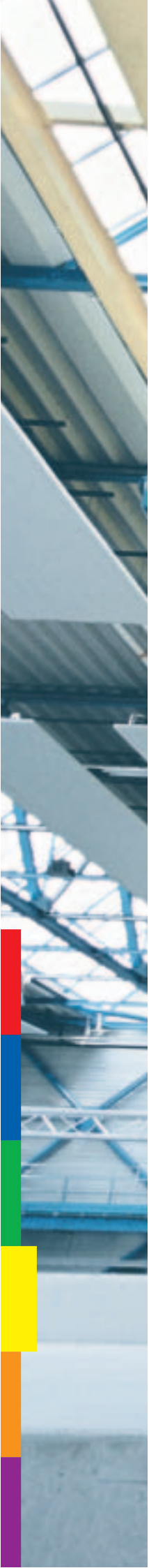
$$\text{Operating time/day} = \frac{2 \cdot 3 \cdot 20 \cdot 8}{60 \cdot 6} = 2,66 \text{ hours}$$

For the "light" load spectrum and an average daily operating time of 2.66 hours, the table shows FEM group 2 m. For a load capacity of 5 t and 4/1 rope reeving, the table indicates hoist size DR 5 - 5.

Selection tables

Size	Group of mechanisms FEM/ISO	SWL t	Hook path m	Lifting speed m/min			SWL t	Hook path m	Lifting speed m/min			
				V1	V2	V3**			V1	V2	V3**	
DR 3	2 m/M 5	1,6	12; 20	12/2	18/3	1 - 25	3,2	6; 10	6/1	9/1,5	0,5 - 12,5	
	3 m/M 6	1,25					2,5					
	4 m/M 7	1					2					
DR 5	2 m/M 5	2,5	12; 20	12/2	18/3	1 - 25	5	6; 10	6/1	9/1,5	0,5 - 12,5	
	3 m/M 6	2					4					
	4 m/M 7	1,6					3,2					
DR 10	2 m/M 5	5	12; 20	10/1,7	1 - 18**	1 - 25	10	6; 10	5/0,8	0,4 - 9**	0,5 - 12,5	
	3 m/M 6	4					8					
	4 m/M 7	3,2					6,3					
	DR 10				4/2			6/1				
		2 m/M 5	5	5,8; 11,35; 25,2	10/1,7	1 - 18**	1 - 25	16	6,7; 13,3	2,7/0,4	0,3 - 6**	-
		3 m/M 6	4					12,5				
		4 m/M 7	3,2					-				

** Prohub enables loads of up to one third of the rated load to be handled at 1.5 times the rated speed.



Demag Service

– ready to help around the clock

All over the world

We offer you service around the clock with our world-wide network of expert service teams. This ensures the highest availability and safety in your installation.

Rapid and reliable spare part supply

Any spare parts needed can be shipped 24 hours a day, 7 days a week.

Effective training of your employees

Your employees learn all they need to know about hoists and crane installations in training courses lasting one or more days. Operator and product training courses increase productivity, familiarisation with the relevant regulations contributes towards maximum safety at the workplace. Training courses can be held at our training centres and at your company.

Comprehensive monitoring reduces downtime

The performance and safety status of your installation are kept under surveillance by the monitoring system. A diagnostics tool constantly shows the operator or maintenance engineer the relevant status information and any unusual operating status, if applicable.

This enables any necessary maintenance and repair work to be identified and carried out in good time, downtime is reduced. Regular monitoring cuts maintenance and operating costs in the long term.

Your individual service package

Demag Service offers a comprehensive portfolio of services to ensure the lasting availability of your installation throughout its entire lifecycle:

- Recurring inspections according to relevant accident prevention regulations
- Inspection and maintenance according to contract schedules
- Fault elimination both with and without an on-call standby agreement
- Crane and crane runway surveys
- Service training for operators and maintenance engineers

On this basis, we can assemble a package tailored to meet your individual production and operating needs.



Hoist Designer DR

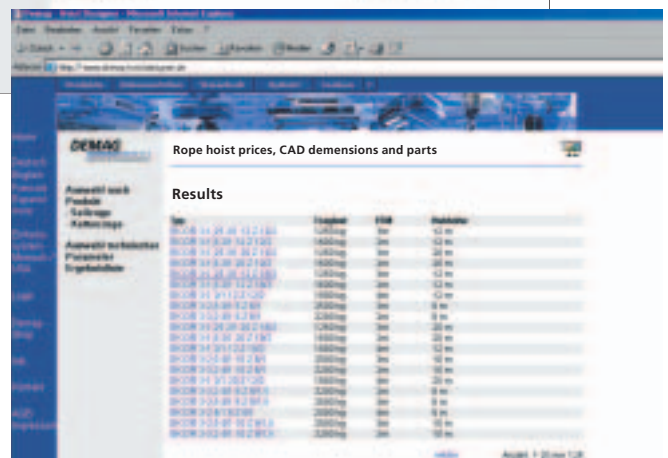
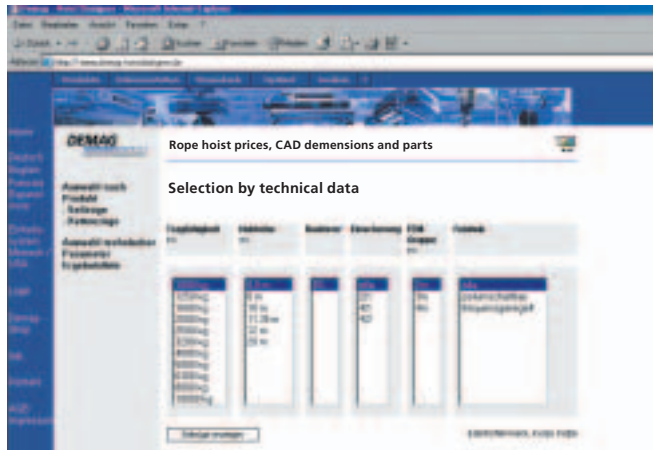
– the fast way to select your Demag rope hoist

You can simply integrate the Demag DR rope hoist into your design (AutoCAD) using the Hoist Designer at www.demag-hoistdesigner.com. You quickly “click together” the information and calculations you need by direct entry using the model code, or by technical selection using an assistant. You are provided with all the technical data and CAD drawings you need and you can obtain price information. A link to Demag Shop enables you place your order direct.

As the Hoist Designer enables you to make a quick selection, you save valuable time in specifying the right hoist units and equipment.

Decisive benefits

- Requires no installation and no hard disk space
- Fast and individual selection
- Latest technical data and dimensions
- Latest documentation in various foreign languages
- All information available round the clock worldwide
- Rapid transmission of your enquiry
- Possible connection to our online order system (www.demag-shop.com)
- No transmission errors



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– DR rope hoist Product Promotion
P.O. Box 67

58286 Wetter/Germany

Please send the quote to

Company _____

P.O.Box/Street _____

Town/post code _____

Contact partner _____

Telephone/extension _____

Telefax _____

E-mail _____

SWL _____ kg

FEM-Group (if known) FEM _____

If you do not know the FEM Group, please specify the type of application (e.g. workshop, production or similar)

Actual operating time of the hoist per day _____ Hours

Lifting path _____ m

Lifting speed _____ m/min

Stepless lifting speed by means of an inverter Yes No

Rope hoist and trolley design

Stationary rope hoist Yes No

Monorail hoist Yes No

Travel girder profile (flange width) _____ mm

Double-rail crab Yes No

Track gauge _____ mm

Electrical equipment

Operating voltage _____ V _____ Hz

Option: Remote control Yes No

Special ambient conditions (e.g. operation indoors or outdoors, ambient temperatures, operation in a galvanizing facility or similar)

Demag – Ideas to take your load.

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