

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





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## Demag Cranes & Components – leading the way with innovative solutions

Benefits

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.

Engineering

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.

Data

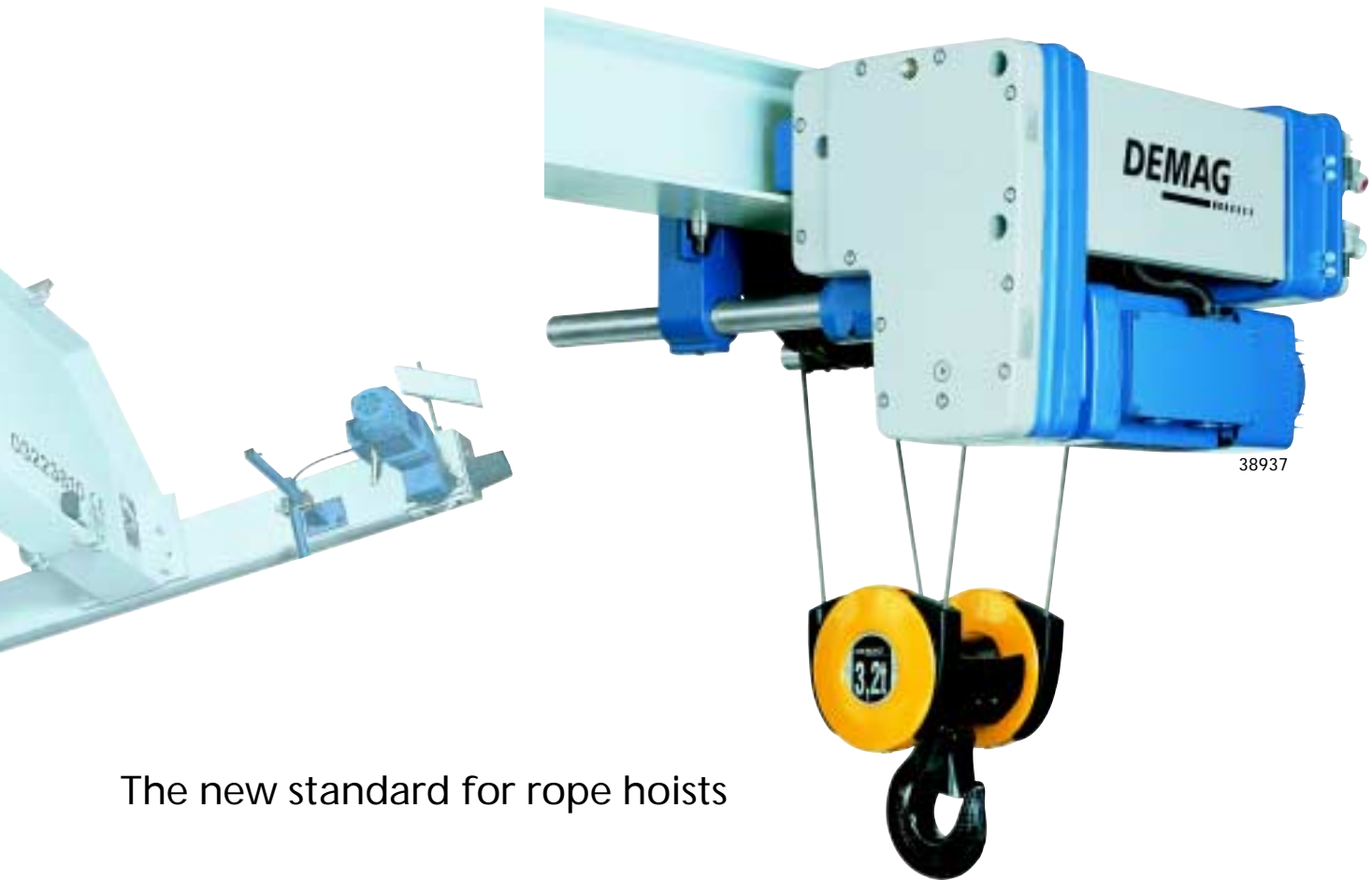
Demag Cranes & Components places priority on meeting your needs, so that products and services can be seamlessly integrated into the value creation process of your company.

Service

The development of the new Demag DR rope hoist, which is optimized 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. Above all, for standard applications, today's demand now centers on higher lifting speeds, greater operating reliability and longer lifetime. Therefore, the main challenges were for a faster lifting speed to achieve higher handling rates, true variable speed inverter travel drives for low-sway travel motions and exact positioning of the load as well as a compact, space-saving design.

Planning support

Contact



## The new standard for rope hoists

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 models-assemblies of the Demag DR rope hoist have a lifting speed of at least 24 fpm with 4/1 reeving as standard.

A frequency inverter provides infinitely variable cross travel speeds up to 120 Fpm 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.

### Designed for longer service life

The hoist is supplied with FEM classification on 2m<sup>+</sup>(H4<sup>+</sup>). 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 service life than comparable 2m units or heavy duty hoists

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, heavy duty quiet-running motor

- Optimised motor design for low-vibration, quiet operation
- 12/2-pole or 4-pole squirrel-cage motor with cylindrical rotor
- Thermal contact to protect against overheating as standard
- IP 55 enclosure outdoor rated Rated for 60% running time 360 starts/hour

### Fast acting brake

- Demag DC disk brake for exact positioning 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 for safety

- Rope guide made of tough nylon
- 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 with true variable speed travel motions for smooth safe positioning

- For low-sway travel motions and exact positioning

### Standard technology package for maintaince communication

- 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



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- Pulse generator to monitor the motor function, break wear, and correct phasing
- Low current control switching for substantially increase contactor life.

**Precision geared limit switch for safety**

- 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 and phase failure detection
- Other functions, e.g. an operating limit switch, can also be set

**Standard overload protection for increased safety**

- 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 - optional

**Safety designed 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-R 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
  - Newly developed radio control with proportional pushbuttons
  - GSM standard radio technology
  - Bidirectional signal transmission
  - Intelligent charging system
  - Display to show the load range and installation-specific data

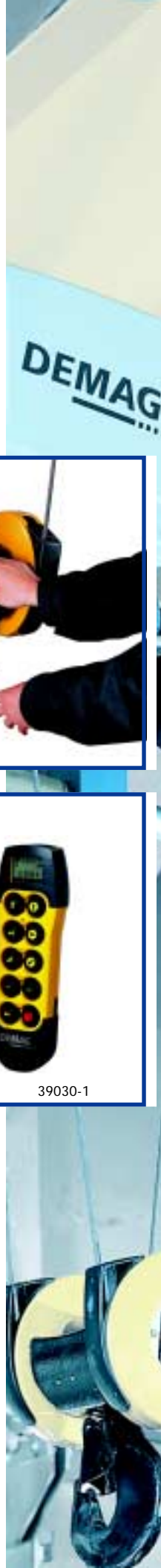


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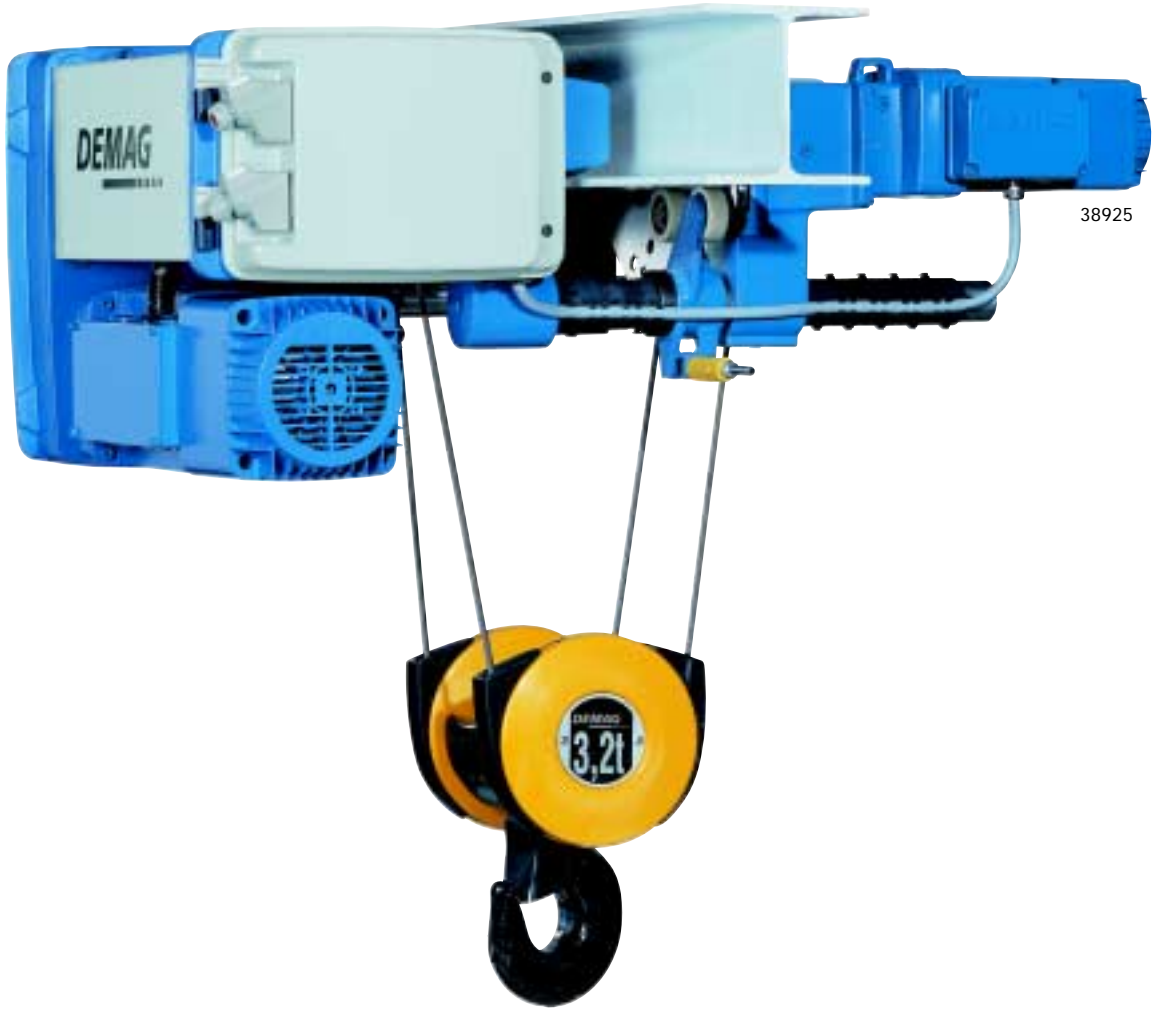


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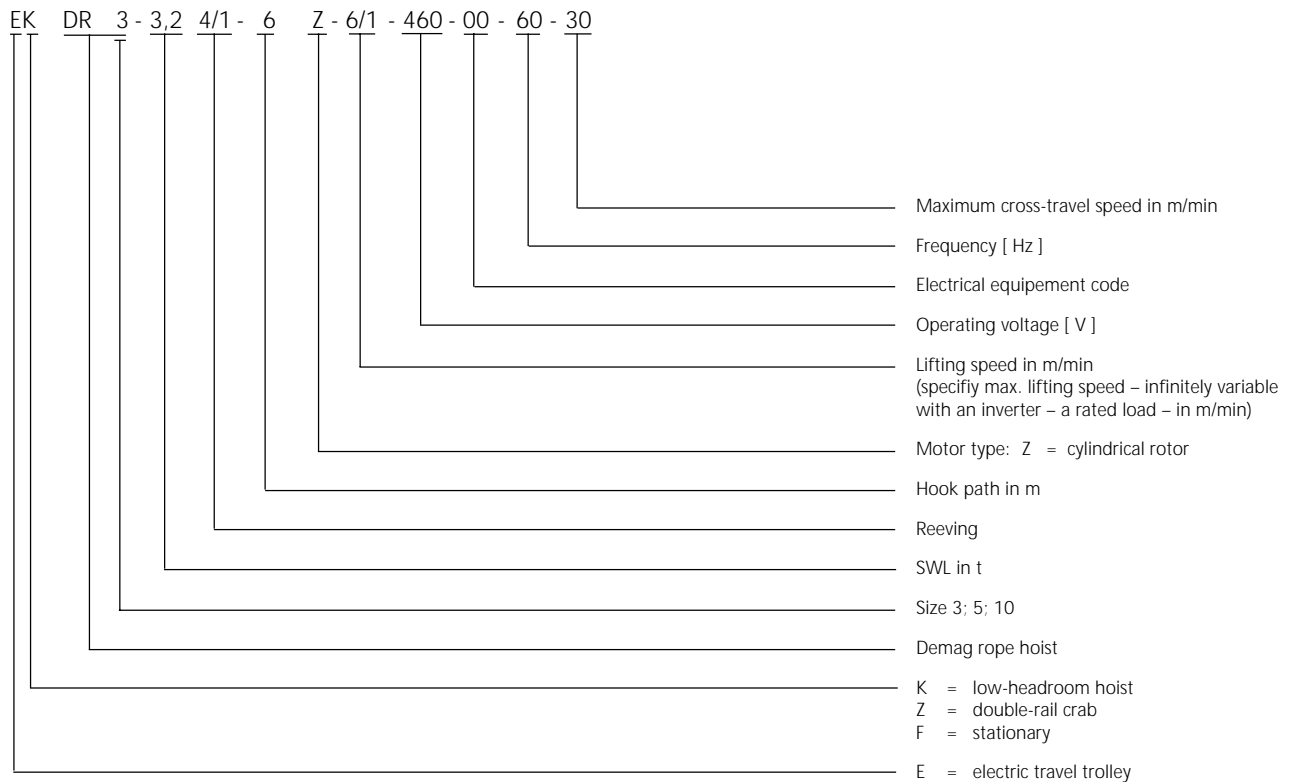
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# Technical Data



## Explanation of size designations



## 2.3 Selection criteria

The size of the hoist is determined by the load spectrum, average operating time per working day, Capacity and reeving.

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 high precision?
6. Is horizontal load travel necessary?
7. How is the hoist to be controlled?

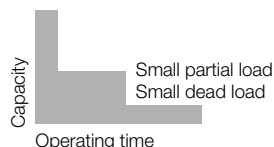
The group is determined from the operating time and load spectrum

### The load spectrum

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

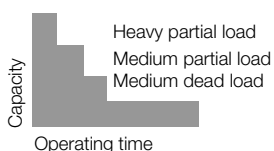
#### 1 Light

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.



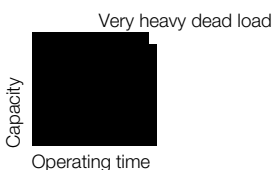
#### 3 Heavy

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.



Load spectrum		Average operating time per day in hours					
<b>1</b>	<b>Light</b>	4-8	8-16	over 16			
<b>2</b>	<b>Medium</b>	2-4	4-8	8-16			
<b>3</b>	<b>Heavy</b>	1-2	2-4	4-8			
<b>4</b>	<b>Very heavy</b>	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 FEM/ISO 1)		2 m/M 5	3 m/M 6	4 m/M 7	2 m/M 5	3 m/M 6	4 m/M 7
Rope reeving arrangement		2/1, 4/2			4/1		
Range		Capacity 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

#### Example

Capacity	5 t
Load spectrum	"medium" from table
Hoist speed	6 m/min
Creep hoist speed	1 m/min
Reeving	4/1
Average hook path	3 m
No. of cycles/hour	20
Working time/day	8 hours

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

$$\text{Operatingtime/day} = \frac{2 \times \text{averagehook path} \times \text{no. of cycles/h} \times \text{working time/day}}{60 \times \text{lifting speed}}$$


$$\text{Operatingtime/day} = \frac{2 \times 3 \times 20 \times 8}{60 \times 6} = 2,66 \text{ hours}$$

For the "medium" load spectrum and an average daily operating time of 2,66 hours, the table shows group 2 m. For a load capacity of 5 t and 4/1 rope reeving, the table indicates hoist size DR 5 - 5.

### Selection table

Range	Group of mechanisms to FEM/ISO	Capacity			Hook path			Lifting speed FPM (m/min)						
		t	ft (m)	V1	V2	t	ft (m)	V1	V2	t	ft (m)	V1		
DR 3	2 m/M 5	1.6	39.3; 65.6 (12; 20)	48/8 (12/2)	72/12 (18/3)	3.2	19.7; 32.8 (6; 10)	24/4 (6/1)	36/6 (9/1.5)	-	-	-		
	3 m/M 6	1.25				2.5								
	4 m/M 7	1				2								
DR 5	2 m/M 5	2.5	39.3; 65.6 (12; 20)	48/8 (12/2)	72/12 (18/3)	5	19.7; 32.8 (6; 10)	24/4 (6/1)	36/6 (9/1.5)	-	-	-		
	3 m/M 6	2				4								
	4 m/M 7	1.6				3.2								
DR 10	2 m/M 5	5	39.3; 65.6 (12; 20)	40/7 (10/1.7)	-	10	19.7; 32.8 (6; 10)	20/3 (5/0.8)	-	-	-	5		
	3 m/M 6	4				8						4	19; 37.2 (5.8; 11.35)	40/7 (10/1.7)
	4 m/M 7	3.2				6.3						3.2		

1) Gearbox service life 20 % above the FEM value



## 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 center and at your company.

#### **Comprehensive monitoring reduces downtime**

The performance and safety status of your hoist are continuously monitored by the control system. A diagnostics LCD readout constantly shows the operator or maintenance engineer status information and gives alerts to any unusual conditions, if applicable. Two-way communication via a PC or PDA can be established with the hoist via IRDA (infrared) or through Laptop COM port

cables. The standard onboard electronic package offers a variety of diagnostic tools. Diagnostics available are; brake wear indicator, load indicator, history recorder, hour counter, and service history, to name a few. The diagnostics tools help eliminate unnecessary down time and remove the uncertainty of maintenance schedule requirements. This enables any necessary maintenance and repair work to be identified and carried out in a timely fashion. Downtime is reduced. Regular monitoring reduces maintenance and operating costs.

#### **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
- 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.



**DEMAG** 3,2t

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# Hoist Designer DR

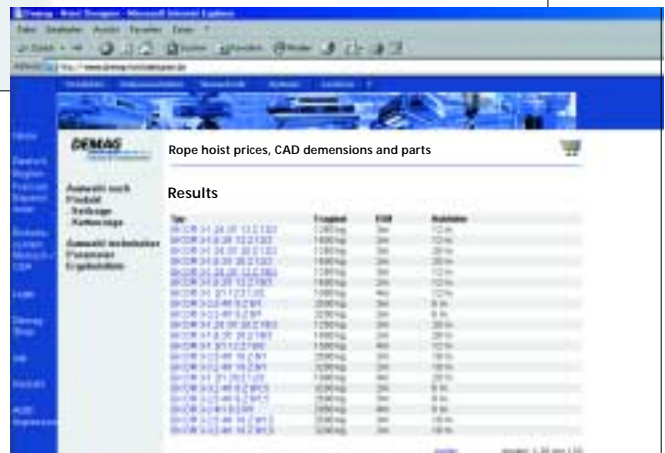
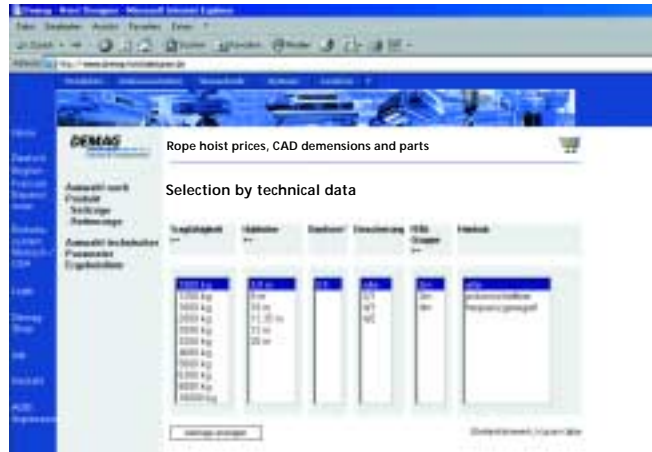
## – the fast way to select your Demag rope hoist

You can simply integrate the Demag DR rope hoist into your design (AutoCAD) using the AQS online system. 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 online.

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

### Decisive benefits of AQS online

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





## Sales and Service Centers in North America

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