Compact.
Versatile.
High performance.

Demag DVR rope hoists

DEMAG

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Versatile.
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The DVR rope hoist DVR offers high efficiency and productivity. Thanks to its comprehensive options, the range includes solutions that can be configured to match a wide variety of crane and lifting requirements. From the standard version to high-performance equipment with smart safety functions, DVR rope hoists satisfy the demands of efficient lifting solutions.

Compact

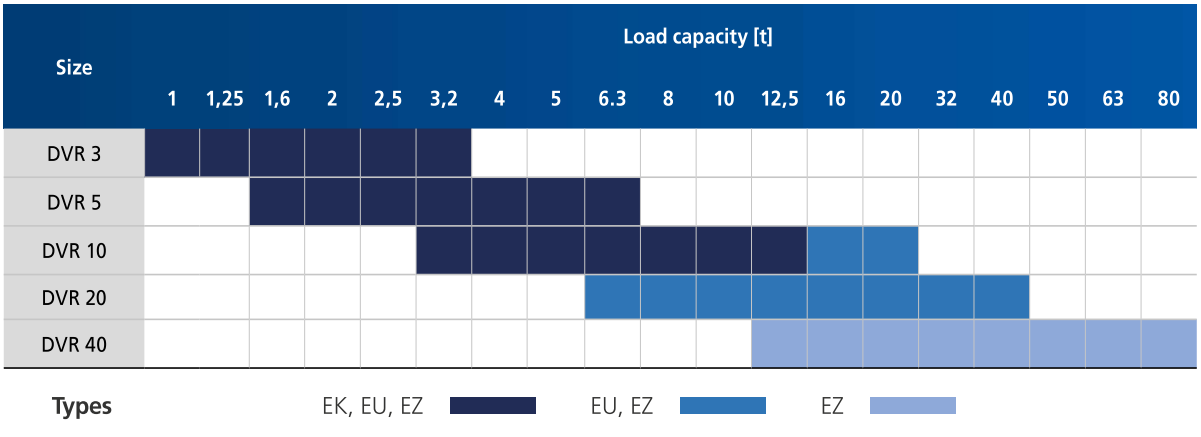
Low approach dimensions and reduced C-dimension: DVR hoists have a compact design and low dead-weight, providing the best possible utilization of the available space for crane applications.

Versatile

DVR hoists offer tailored solutions on the basis of a single platform. Besides many possible model and reeving combinations, comprehensive basic equipment is already included as standard. Further hardware options and Smart features can turn a DVR rope hoist into a smart hoist that is well equipped to fulfill future needs.

High performance

Demag DVR rope hoists are available in five sizes with load capacities from 1 to 80 t.



Configuration to meet your needs

DVR hoist solutions can meet virtually any requirement: as a single trolley on a monorail as well as for optimized applications on single and double-girder cranes. The range is completed by a basic hoist for plant engineering applications and rotating trolleys.

EK-DVR: Low-headroom monorail hoist

- Optimised design with low headroom dimension for use on cranes and monorails
- Very short side approach dimensions
- Standard rubber buffers
- Integrated drop stop
- Freely adjustable flange width 80 - 610 mm

EU-DVR: Normal headroom trolley

- For installation on monorails
- Variable flange width 80 - 610 mm
- Also available with an articulated trolley, another variant is also suitable for travel on curved track
- Precise positioning possible without hook travel
- For sizes DVR 3 to 20 with load capacities up to 40 t

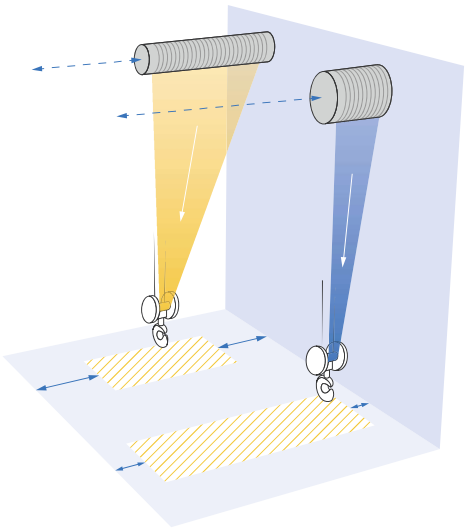
EZ-DVR: Double-girder-trolley

- Compact design thanks to narrow track gauges and wheel base dimensions
- Uniform distribution of wheel loads to all 4 wheels
- Individual adjustment thanks to different headroom dimensions and several mounting points for the hoist
- Direct drive arrangements
- Double girder trolley rail gauges:
- Low connection: 1,400-2,000 mm
- Medium connection: 1,200 - 4,200
- High connection : 900 - 2,400 mm

DVR rope hoist: Overview

Rope drum/rope drive

- Large drum diameter with improved space utilization
- Low wear on ropes and return sheaves
- Minimum hook travel: Also due to limited inclined pull, loads can be moved and positioned safely and precisely
- Easy access to the upper return sheaves and anchorage points
- Rope drum encapsulated as standard with powder-coated metal surfaces

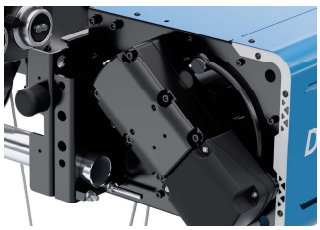


Rope guide

- Metal design
- The rope is guided reliably and with little wear on the drum for a longer rope service

Hoist gearbox

- Five different transmission ratios
- Compact and lightweight design
- Quiet and low-vibration operation thanks to ground helical gear wheels
- Lubricated for life



Hoist motor

- Two-stage cylindrical-rotor motors, 6:1 ratio
- Pole-changing
- Motor outputs up to 35 kW
- Insulation class F, IP55 enclosure
- Standard fan cooling
- Standard temperature monitoring
- 60% duty factor (40/20)
- 300 starts per hour

Hoist brake

- Magnetic disc brake with high brake torque
- Fully enclosed design, IP55 enclosure
- Rated for a service life of 1 million switching cycles

Lifting limit switches

- Installed and protected in the housing (no loss of headroom)
- 4 fully adjustable switching points
- High reliability, since there are no mechanical wearing parts
- Fast-to-slow cut-off in the upper position
- Phase monitoring
- Optional: hook-actuated limit switches

Overload protection

- Reliable force measurement on the rope anchorage
- Optional: Torque measurement by strain gauge
- Optional connection to safety control unit

Electric enclosure

- Robust contactor control for reliable operation also in demanding environments
- Standard 3-phase supply: 380-415 V, 50 Hz (440-480 V, 60 Hz)
- Metal switchgear cabinet
- Easy to service: Hinged doors can be opened without special tools
- IP 55 enclosure

Travel motor

- Standard 4:1 ratio
- 5/20 m/min (pole-changing)
- Optional: With inverter for variable travel speeds from 5 to 20 m/min
- 40% CDF, FEM 2m (ISO M5)
- Lubricated for life
- Bi-metallic overheating protection
- Programmable frequency inverters

Travel wheels

- Two driven travel wheels, pressure rollers not needed
- GGG70 material

Controller

DSB (Standard):

- 4 sizes with up to 10 buttons and 1 emergency off
- 2-stage buttons and 1 emergency off for crane motions in 3 axes
- Up to 4 other control elements (freely assignable)
- IP 65 enclosure

DSB

DST pendant controller (option):

- User-friendly design in various configurations with up to 9 control elements
- Low-fatigue operation thanks to ergonomic housing design
- Sloping pendant controller design permits operators to work in a natural, comfortable posture
- High operating reliability thanks to additional strain relief elements

Bottom block

- Ergonomic hook with handle (up to size DVR 10)
- (DIN hook for sizes DVR 20 and 40)
- Freely rotating 360°
- Additional safety thanks to hook safety catch

Configured to meet specific application needs

A variety of options are available to equip DVR rope hoists to meet given application requirements.

DVR units can offer variable-speed drive solutions for lifting and travel motions at different technology levels. The benefits of their inverters are self-evident:

- Variable speeds: 1:10, 1:25, ESR 1:37
- Reduced wear: Gentle start-up/lifting reduces the load on the crane system
- Longer motor/brake service life
- Significant energy savings by up to 50%

Load-dependent lifting speed for higher productivity:
High speed without load (up to 10%)

- Medium speed with partial load
- Precise speed with full load

OWL

Compact unit for overload cut-off and status display for improved safety and predictive maintenance.

- Overload protection for individual hoists
- Simple condition monitoring
- Number of switching operations
- Operating time
- Number of braking operations
- Number of control operations
- ON time
- Temperature index
- Number of events with overload
- Can be used for SWP calculation

DMU

Monitoring unit with CAN bus functionalities for improved safety, extended service life of the brake and optimized maintenance intervals. Determines training need for operators.

- Overload protection
- Monitoring for sudden load increase
- Temperature monitoring for motors
- SWP hour counter
- Monitoring of the motor function
- Monitoring of the supply voltage phase
- Motor start/stop due to slow speed
- Multi-hoisting tandem (up to five units)
- Design limits (warnings)
- Optional remote monitoring modem
- Smart functions
- CAN bus functionalities

Further options for tailored configuration:

- Radio control
- Second hoist brake for DVR 3, 5, 10
- Drum brake for DVR 20 and 40
- DIN single or double hooks
- Rope pressure roller
- Horn
- Large load display
- Maintenance platform
- Stainless-steel switchgear cabinets
- Rain cover

Smart Features

...turn your rope hoist into a smart hoist. They enable faster load cycle times, higher productivity and improved safety at the workplace.

Follow me

Makes lifting operations much faster because the crane can be moved above the load by simply guiding the hook by hand. (Recommended for cranes up to 10 t).

Hook centering

Positions the crane hook automatically directly over the load. The benefits: faster load cycle times and ease of operation.

Slack-rope monitoring

Continuous monitoring of the rope tension: The hoist drive automatically switches off when the load has been lowered to its target position or if the hook is accidentally snagged. Reduces the risk of damage to the load, crane and surrounding area.

Active sway control

Prevents increased load sway by active counter-motions of the crane. Active system based on rope angle measurement to detect and dampen any existing load sway.

Tandem control

Loads can be safely transported by two DVR rope hoists – via a single control unit. Two cranes with up to four rope hoists can also be synchronised.

Slack rope prevention

Slack Rope Prevention eliminates the problems caused by slack ropes automatically. This feature is designed for the smooth placement of loads.

By-pass control

Areas to be blocked for the travelling hoist can be specified. In this way, you can safely by-pass high parts of machinery or zones that are out of bounds.

Area-specific load reduction

Areas can be defined which the travelling hoist may only enter if the load does not exceed a reference value. This reduces the load on the runway and building structure – especially when several cranes operate on one runway.

Demag DVR: At a glance

Range	Reeving	Load capacity [t]	Hook path [m]	Lifting speed (2-stage)* at 50 Hz				Group of mechanisms	Model***		
				Entry [m/min]	Standard [m/min]	Medium [m/min]	Fast [m/min]	[FEM/ISO]	EU	EK	EZ
DVR 3	2/1	1	12 - 19		10 / 1,7	12,5 / 2,1	16 / 2,7	3m / M6	•	•	•
		1,6						2m / M5	•	•	•
	4/1	2,5	6 - 9,5		5 / 0,8	6,3 / 1,1	8 / 1,3	3m / M6	•	•	•
		3,2						2m / M5	•	•	•
DVR 5	2/1	2	12, 18, 24, 30		10 / 1,7	16 / 2,7		3m / M6	•	•	•
		2,5						2m / M5	•	•	•
		3,2						1Am / M4	•	•	•
	4/1	4	6, 9, 12, 15	4 / 0,7	5 / 0,8	8 / 1,3		3m / M6	•	•	•
		5						2m / M5	•	•	•
		6,3						1Am / M4	•	•	•
DVR 10	2/1*	4	18, 24, 32, 40		10 / 1,7	16 / 2,7	20 / 3,3	3m / M6	•	•	•
		5						2m / M5	•	•	•
		6,3						1Am / M4	•	•	•
	4/1*	5	9 - 20	4 / 0,7	5 / 0,8	8 / 1,3	10 / 1,7	3m / M6	•	•	•
		6,3						3m / M6	•	•	•
		8						3m / M6	•	•	•
		10						2m / M5	•	•	•
		12,5						1Am / M4	•	•	•
	6/1*	12,5	6, 8, 10, 13		3,2 / 0,5	5 / 0,8	6,3 / 1,1	3m / M6	•		•
		16						2m / M5	•		•
	8/1*	12,5	4,5, 6, 8, 10		2,5 / 0,4	4 / 0,7	5 / 0,8	3m / M6	•		•
		16						2m / M5	•		•
		20						1Am / M4	•		•
	4/2	4	8,5 - 46		10 / 1,7	16 / 2,7	20 / 3,3	3m / M6	•		•
		5						2m / M5	•		•
	8/2	6,3	4 - 23		5 / 0,8	8 / 1,3	10 / 1,7	3m / M6	•		•
		8						3m / M6	•		•
		10						2m / M5	•		•
	12/2	12,5	4 - 15		3,2 / 0,5	5 / 0,8	6,3 / 1,1	3m / M6**	•		•
		16						2m / M5**	•		•
	16/2	16	4,5 - 11,5		2,5 / 0,4	4 / 0,7	5 / 0,8	2m / M5	•		•
		20						1Am / M4	•		•
DVR 20	2/1*	6,3	15,5 - 97		8 / 1,3	10 / 1,7	12,5 / 2,1	3m / M6	•		•
		8						2m / M5	•		•
		10						1Am / M4	•		•
	4/1*	12,5	7,5 - 49		4 / 0,7	5 / 0,8	6,3 / 1,1	3m / M6	•		•
		16						2m / M5	•		•
		20						1Am / M4	•		•
	6/1*	20	5 - 32,5		2,5 / 0,4	3,2 / 0,5	4 / 0,7	3m / M6	•		•
		25						2m / M5	•		•
	8/1*	32	7 - 24		2,0 / 0,3	2,5 / 0,4	3,2 / 0,5	2m / M5	•		•
		40						1Am / M4	•		•
	4/2	6,3	15 - 98,5		8 / 1,3	10 / 1,7	12,5 / 2,1	3m / M6	•		•
		8						2m / M5	•		•
		10						1Am / M4	•		•
	8/2	12,5	7,5 - 48,5		4 / 0,7	5 / 0,8	6,3 / 1,1	3m / M6	•		•
		16						2m / M5	•		•
		20						1Am / M4	•		•
	12/2	20	5 - 32		2,5 / 0,4	3,2 / 0,5	4 / 0,7	3m / M6	•		•
		25						2m / M5	•		•
	16/2	32	5 - 24,5		2,0 / 0,3	2,5 / 0,4	3,2 / 0,5	2m / M5	•		•
		40						1Am / M4	•		•
DVR 40	4/2	12,5	15 - 71		8 / 1,3	10 / 1,7	12, 5 / 2,1*	3m / M6			•
		16						2m / M5			•
		20						1Am / M4			•
	8/2	25	7,5 - 33,5		4 / 0,7	5 / 0,8	6,3 / 1,1*	3m / M6			•
		32						2m / M5			•
		40						1Am / M4			•
	12/2	40	5 - 23,5		2,5 / 0,4	3,2 / 0,5	4 / 0,7*	3m / M6			•
		50						2m / M5			•
	16/2	63	6,5 - 17,5		2,0 / 0,3	2,5 / 0,4	3,2 / 0,5	2m / M5			•
		80						1Am / M4			•

* Lifting speeds can differ or not be available (depending on FEM classification and load)

** DVR 10: For 6/1 and 12/2 reeving only M6 = 12 t/M5 = 15 t

*** Not all trolley configurations are available for all loads

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