

## Demag DH hoist units

The solution to meet special requirements



## Demag DH hoist units – for solutions beyond classic crane applications



Synchronised DH hoist units lift and lower a roof segment in a shopping centre

Demag DH hoist units are not designed for conventional lifting operations on cranes and monorails alone, but are also ideal for special applications. Installed as stationary or travelling units, they are more than just hoists – thanks to gentle handling with high load capacities and flexible integration into almost any superstructure, they are used as key elements in lifting stations, winch arrangements and architectural applications, for example.



DH hoist units operating under arduous conditions in a galvanising plant

### **Tough solution**

DH hoist units are specially designed for rugged applications to ensure reliable operation even in the toughest environments, such as in foundries or galvanising facilities which have high ambient temperatures, high dust levels and aggressive atmospheres.

### **Versatile application**

Their modular design concept and flexible mounting arrangements enable DH hoist units to be integrated into almost any superstructure with ease. Their many variants and options facilitate an almost unlimited range of applications.

### **Key features**

- Rugged design – tried and tested in thousands of applications worldwide
- Simple integration into any design
- High switching frequencies and high duty factors
- Precise positioning with mechanical microspeed
- Load capacity up to 100 t
- Hook path up to 104 m

### Special technical features to meet demanding operating requirements

- High number of starts/stops and high duty factor thanks to mechanical microspeed and conical-rotor brake motors; also for high ambient temperatures
- Highly precise positioning with mechanical microspeed
- Various rope drum designs available: one, two, four, six and eight grooves
- Limit positions reliably monitored by precision limit switches that are driven direct by the drum
- Rugged, low-maintenance contactor control for reliable operation also in arduous environments

### Simple integration into any design

- Torsionally rigid frame open on all sides – for bolted connection on all sides
- Rope lead-off possible in any direction
- Rope reeving arrangement configured to meet specific technical requirements
- Freely selectable lifting speeds over a wide range
- Basic hoist with electrical enclosure, optionally with or without electrical equipment
- Wide variety of options available, such as the mechanical coupling of several hoist units



Demag DH hoist unit – key element in a wide variety of applications



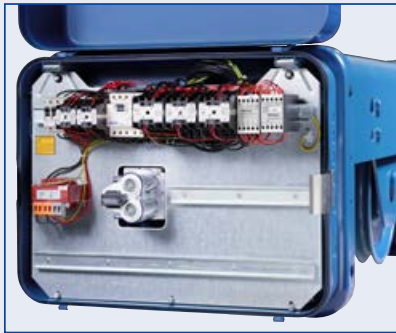
DH hoist units operating outdoors in high temperatures in a pipeline construction application

DH hoist units in the production line of a car manufacturing plant



# Versatile, reliable and rugged – a hoist unit that has many strengths

Demag DH hoist units are of consistent modular construction and are based on perfectly matched components of rugged design. Consequently, they provide ideal solutions to meet individual requirements, even for unusual applications. Demag DH hoist units are in operation in more than 100 countries all over the world, offering outstanding safety and reliability.



### Electric control equipment

- Rugged, low-maintenance control
- Integrated electric equipment for lifting and cross-travel motions
- Geared limit switch for reliable cut-off of the hoist unit in the upper and lower hook positions; with switching elements for additional operating points
- Load detector for overload protection and overload cut-off; either as a limit switch or with electronic strain gauge carrier link
- Electric equipment enclosure optionally without any electric equipment

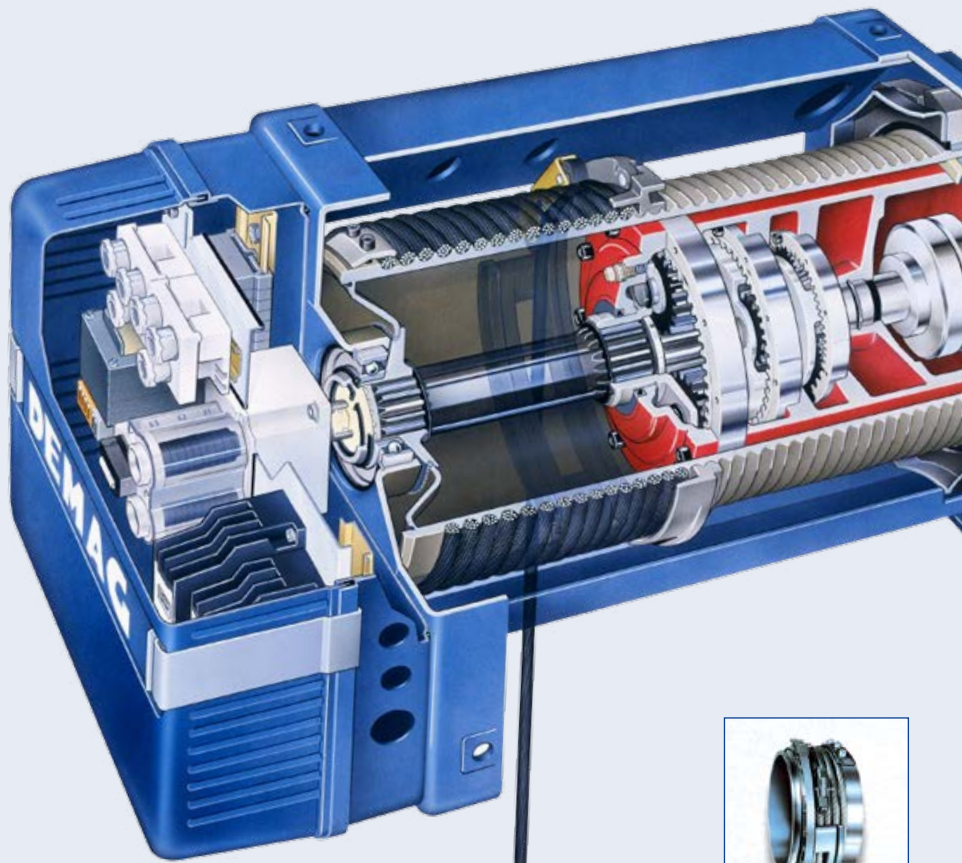
### Bottom blocks fitted with DIN-rated load hooks

- Rope sheaves with uniform hardness for a longer service life
- Single or multi-sheave bottom blocks depending on the reeving arrangement
- Safe and reliable handling thanks to improved grip



### Gearbox assembly

- Space-saving planetary gearbox arrangement, integrated and protected inside the drum
- High safety and reliability and long service life thanks to load and output distribution
- High efficiency, low-noise operation, lubricated for life

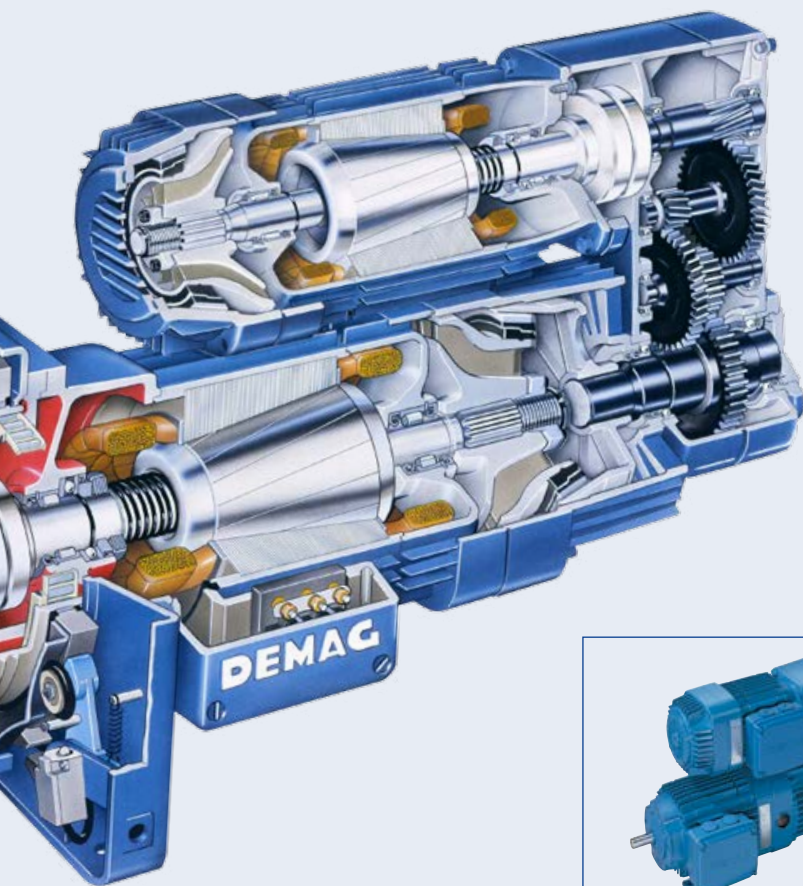


### Rope guide

- Made of tough, wear-resistant plastic
- Can be replaced without the need for special tools
- Inclined pull up to 4° without touching the rope guide
- Special designs available

### Rope drum brake

- Optional emergency brake or holding brake, acting directly on the rope drum



### Drive with mechanical microspeed unit

- Separate motors for main and creep lifting motions
- Particularly precise positioning
- High number of starts/stops and high duty factor also for high ambient temperatures
- Sliding-rotor motors with integrated conical brake
- High braking capacity and reliable braking without any control devices when the system is switched off or in the event of a power failure



- Alternative creep lifting motion by means of pole-changing function
- Infinitely variable speed control thanks to optional frequency inverter

### Precise engineering for hands-on control



### Demag DST control pendant

- Pendant switch arrangements for controlling Demag DH hoist units
- Direct or contactor control
- High switching capacity
- Ergonomic handling thanks to the sloping housing design of the control pendant



### Demag DRC radio control

- Hand-held transmitters for controlling Demag DH hoist units, also at a relatively large distance
- Highly reliable data transmission thanks to frequency hopping
- Simple and fast commissioning by means of wireless transmitter log-on
- Impact and temperature-resistant housing design
- 100 m range

## Stationary or travelling units – to meet your needs

Demag DH hoist units can be used in a wide variety of applications. They can be integrated into lift stations, towing winches and many other appliances or made up into travelling hoist units with a variety of trolleys.

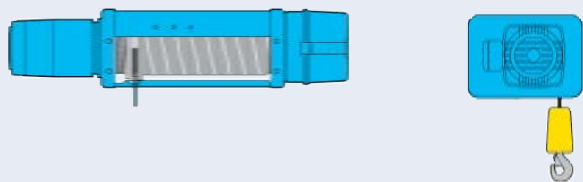
### Travel units

- Travel wheels of highly wear-resistant spheroidal-graphite cast iron
- Quiet running characteristics and high inherent vibration-damping effect that is kind to the rail
- Low friction and high resistance to wear thanks to the self-lubricating properties of graphite inclusions

- Optimum statics thanks to special travel wheel shape which transmits wheel contact forces close to the centre of the girder
- Generously dimensioned anti-friction bearings with long service life

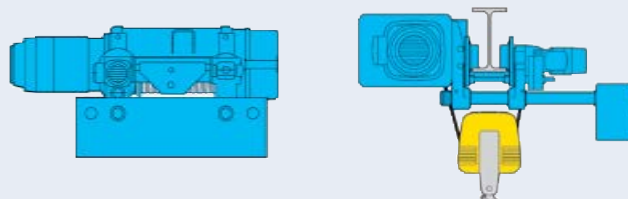
### Travel motors

- Smooth starting and braking
- Low-sway load motion
- Fast and precise travel to the required target position



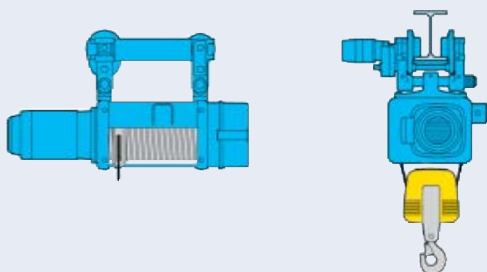
### Direct connection for Demag DH hoist units

The two foot-mounting flanges of the square frame design enable DH hoists to be simply mounted on any of the four sides. Rope lead-off in virtually any direction suits all applications.



### EKDH low-headroom monorail hoist

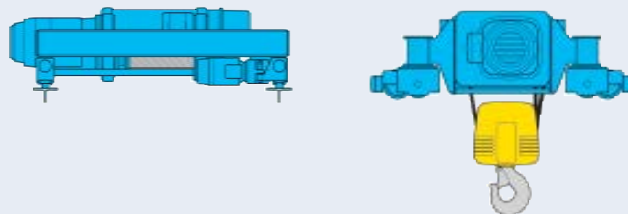
The ideal solution for optimum utilisation of the available headroom and particularly favourable hook dimensions. Also available as an **EKDDH articulated monorail hoist** for suspension monorail systems with many branches.



### EUDH standard-headroom monorail hoist

The cost-effective solution for monorails and single-girder cranes. The travel unit is infinitely adjustable to fit a wide range of flange widths.

Also available as an **EUDDH articulated monorail hoist** for travel on curved tracks; up to 25 t also as double trolley units.



### EZDH double-rail crab

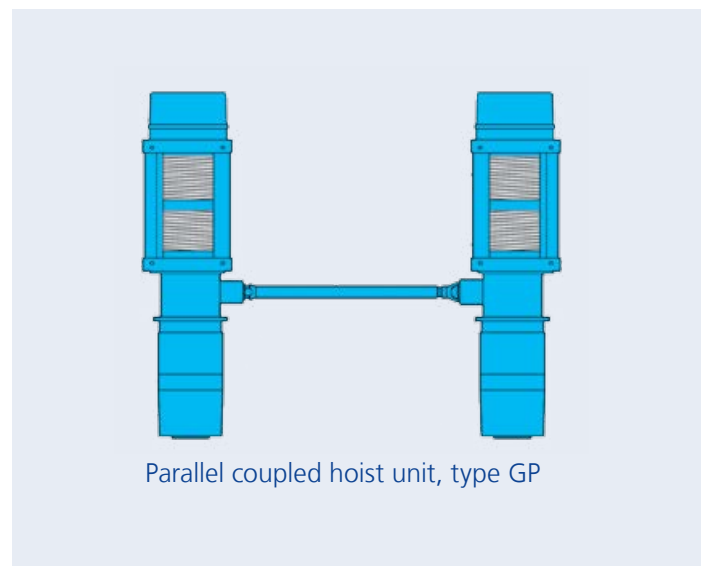
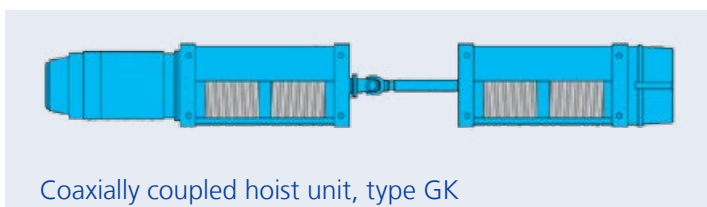
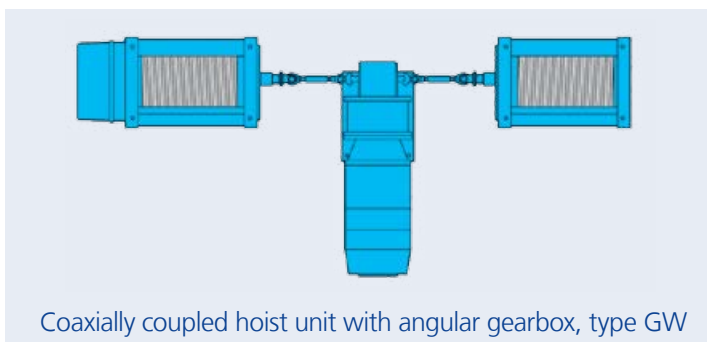
For higher loads on double-girder cranes; optimum utilisation of the available space thanks to the low-headroom design and favourable approach dimensions. Also available as an **EZLDH double-rail crab** with symmetrical load distribution on the crane girders for optimum crane girder dimensions.



DH hoist units with a rope stabilising arrangement transporting sheet steel with the help of magnet spreaders at a steel supplier's depot

### Coupled hoist units

- Rugged solution for spreader operation, transporting long materials and non-crane applications
- Exact simultaneous operation also for large distances between ropes
- Designed as a modular system for two and four-point rope suspensions
- Can be combined with all options
- Universal joint shaft connection for compensation of any misalignment
- Easy assembly



# Rope guides – protection against extreme loads

Rope guides protect Demag DH hoist units against extreme loads resulting from inclined pull, swinging loads and rope vibration. Made of tough and wear-resistant plastic, our rope guides accommodate inclined

rope pull of up to 4° without any contact and can be replaced without the need for special tools. Rope guides in a variety of special designs are available for special loads.



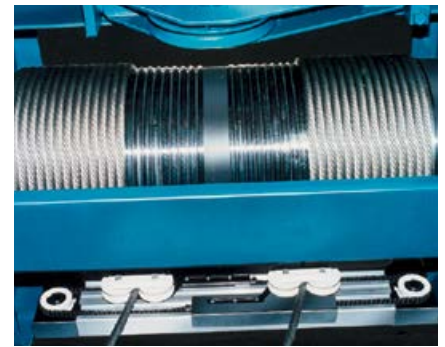
### F type rope guide

For outdoor operation in all seasons



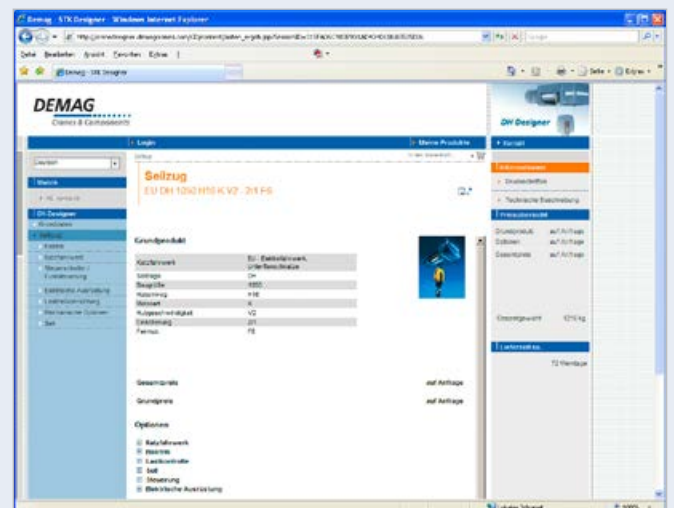
### S type rope guide

For loads resulting from medium inclined pull on single-groove rope drums



### DSZ double rope guide

Reliable protection for double-groove hoist units against extreme loads resulting from inclined pull, swinging loads and rope vibration





## After-sales service all over the world



### **Professional, fast and reliable**

Not only do we ensure that your crane installations and components are professionally installed and put into service, we are also your experienced partner for your maintenance, refurbishment and modernisation needs.

We offer you comprehensive service including fast and reliable spare part supplies with our global network of Demag expert service teams and Demag partners.

### **Demag Service provides for:**

- Maximum availability of your installations
- Cost-effective operation
- Maximum safety and reliability
- Efficient utilisation
- Long-term maintenance of your investment



# DH hoist unit selection criteria

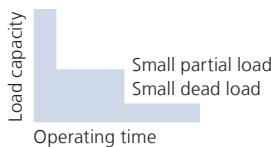
The size of the hoist is determined by the load spectrum, average operating time per working day, load capacity and reeving.

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

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

## 1 Light

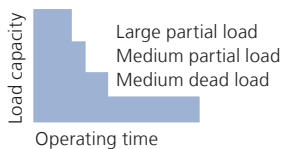
Hoist units which are usually subject to very small loads and in exceptional cases only to maximum loads.



Example	(see ▶)			
Load capacity	10,000 kg	Reeving	2/1	
Load spectrum	"light" from table	Average hook path	4 m	
Lifting speed	8 m/min	No. of cycles/hour	20	
Creep lifting speed	1.3 m/min	Working time/day	8 hours	

## 2 Medium

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



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

$$\text{Operating time/day} = \frac{2 \cdot \text{average hook path} \cdot \text{no. of cycles/hour} \cdot \text{working time/day}}{60 \cdot \text{lifting speed}} = \frac{2 \cdot 4 \cdot 20 \cdot 8}{60 \cdot 8} = 2.66 \text{ hours}$$

For the "light" load spectrum and an average daily operating time of 2.66 hours, the table shows group 1Am. For a load capacity of 10,000 kg and 2/1 rope reeving, the diagram indicates hoist size DH 1050.

The group is determined by the load spectrum and operating time.

Load spectrum	Average operating time per working day in hours					
	1	2	3	4	5	6
<b>1 Light</b>	up to 2	2-4	4-8	8-16	more than 16	
<b>2 Medium</b>	up to 1	1-2	2-4	4-8	8-16	
<b>3 Heavy</b>	up to 0.5	0.5-1	1-2	2-4	4-8	
<b>4 Very heavy</b>	up to 0.25	0.25-0.5	0.5-1	1-2	2-4	
Group of mechanisms to	FEM	1Bm	1Am	2m	3m	4m
	ISO	M3	M4	M5	M6	M7
Reeving arrangement	Range Size					
2/2	4/2	8/2				
1/1	2/1	4/1	6/1 1)	8/1 1)		
Load capacity [kg]	1,600	3,200	6,300	-	-	616
	2,000	4,000	8,000	12,500	16,000	DH -
	2,500	5,000	10,000	16,000	20,000	DH -
	3,200	6,300	12,500	20,000	25,000	DH -
	4,000	8,000	16,000	25,000	32,000	DH 640
	5,000	10,000	20,000	32,000	40,000	DH -
	6,300	12,500	25,000	40,000	50,000	DH 1050
	6,300	12,500	25,000	40,000	50,000	DH 1063
	8,000	16,000	32,000	50,000	63,000	DH -
	10,000	20,000	40,000	63,000	80,000	DH -
	12,500	25,000	50,000	80,000	100,000	DH 2125

1) Only available in groups of mechanisms 1Bm, 1Am and 2m.

### Explanation of size designation

E U DH 1050 H16 K V1 - 4 / 1 F6 1400 12.5

- 12.5: Cross travel in m/min
- 1400: Track gauge in mm
- F6: F 6 – creep lifting 1:6 DH (pole-changing)
- F10: F 10 – creep lifting 1:10 DH (microspeed unit)
- Single-groove drum
- Four-fall reeving
- Lifting speed
- Motor type: K = Squirrel-cage, S = Slip-ring rotor
- Hook path 16 m (for 2/1 reeving)
- Rope pull on the drum 25 kN
- Size 1050
- Range 1000
- Demag hoist unit type DH
- U = Standard-headroom monorail hoist
- K = Low-headroom monorail hoist
- Z = Double-rail crab
- E = Electric-travel trolley

Check the frequency of starts per hour when selecting motors for DH hoist units

DH hoist unit with pole-changing motor  
Main lifting speed = 80 starts per hour  
Creep lifting speed = 160 starts/h

DH hoist unit with mechanical microspeed  
Main lifting speed = 240 starts/h  
Creep lifting speed = 240 starts/h

# DH hoist unit selection table

Range	Group of mechanisms ISO	Load capacity [kg]	Hook path for reeving		Max, lifting speed <sup>1)</sup> [m/min]	Load capacity [kg]	Hook path for reeving		Max, lifting speed <sup>1)</sup> [m/min]	Load capacity [kg]	Hook path for reeving		Max, lifting speed <sup>1)</sup> [m/min]
			[m]	[m]			[m]	[m]			[m]	[m]	
			1/1	2/2-2			2/1	4/2			4/1	-	
DH 616 <sup>2)</sup>	4m	1,600	24; 40; 80; 104	10.4; 20.4; 45.2; 60.4	20; 32	3,200	12; 20; 40; 52	5.2; 10.2; 22.6; 30.2	10; 16	6,300	6; 10; 20; 26	-	5; 8
DH 620 <sup>2)</sup>	3m	2,000			16; 25	4,000			8; 12.5	8,000			4; 6.3
DH 625 <sup>2)</sup>	2m	2,500			16; 25	5,000			8; 12.5	10,000			4; 6.3
DH 632 <sup>2)</sup>	1Am	3,200			12.5; 20	6,300			6.3; 10	12,500			3.1; 5
DH 640 <sup>2)</sup>	1Bm					8,000			5; 8	16,000			2.5; 4
			1/1	2/2-2			2/1	4/2			4/1	8/2	
DH 1025	4m	2,500	32; 48; 80; 102	16; 27; 49.6; 66	20; 32; 50	5,000	16; 24; 40; 51	8; 13.5; 24.8; 33	10; 16; 25	10,000	8; 12; 20; 25.5	4; 6.7; 12.4; 16.5	5; 8; 12.5
DH 1032	3m	3,200			16; 25; 36	6,300			8; 12.5; 18	12,500			4; 6.3; 9
DH 1040	2m	4,000			16; 25; 36	8,000			8; 12.5; 18	16,000			4; 6.3; 9
DH 1050	1Am	5,000			12.5; 20; 32	10,000			6.3; 10; 16	20,000			3.1; 5; 8
DH 1063	1Bm	6,300			10; 16; 24.2	12,500			5; 8; 12.5	25,000			2.5; 4; 6.3
			6/1	-			8/1	-					
DH 1040	2m	25,000	5.3; 8; 13.3; 17	-	2.6; 4.1; 6	32,000	4; 6; 10; 12.7	-	2; 3.1; 4.5				
DH 1050	1Am	32,000			2; 3.3; 5.3	40,000			1.5; 2.5; 4				
DH 1063	1Bm	40,000			1.6; 2.6; 4	50,000			1.2; 2; 3				
			1/1	2/2-2			2/1	4/2			4/1	8/2	
DH 2050	4m	5,000	36; 54; 94	13.8; 24.8; 48.8	16; 25; 32	10,000	18; 27; 47	6.9; 12.4; 24.4	8; 12.5; 16	20,000	9; 13.5; 23.5	3.4; 6.1; 12.1	4; 6.3; 8
DH 2063	3m	6,300			12.5; 20; 25	12,500			6.3; 10; 12.5	25,000			3.1; 5; 6.3
DH 2080	2m	8,000			12.5; 20; 25	16,000			6.3; 10; 12.5	32,000			3.1; 5; 6.3
DH 2100	1Am	10,000			10; 16; 20	20,000			5; 8; 10	40,000			2.5; 4; 5
DH 2125	1Bm	12,500			8; 12.5; 16	25,000			4; 6.3; 8	50,000			2; 3.1; 4
			6/1	-			8/1	-					
DH 2080	2m	50,000	6; 9; 15.7	-	2; 3.3; 4.1	63,000	4.5; 6.8; 11.8	-	1.5; 2.5; 3.1				
DH 2100	1Am	63,000			1.6; 2.6; 3.3	80,000			1.2; 2; 2.5				
DH 2125	1Bm	80,000			1.3; 2; 2.6	100,000			1; 1.6; 2				

1) Available creep-lifting mode:

F6 (1:6) with a 2/12-pole motor

F10 (1:10) with mechanical microspeed

other creep lifting speeds on request.

2) DH 600 hoist units with H40 and H52 hook paths are only supplied as foot-mounted hoists.

## Rope reeving arrangements – the right variant for every application

