

## Technical data/accessories

### Demag DC-Com chain hoist



43488244.jpg

Quickly select your chain hoist – with our online product configurator

www.demag-designer.com is the address where all important facts and data on Demag DC chain hoists can be found.

This information and planning platform provides you with a comprehensive product overview and contains all the data you need for project engineering. Various languages can be selected.

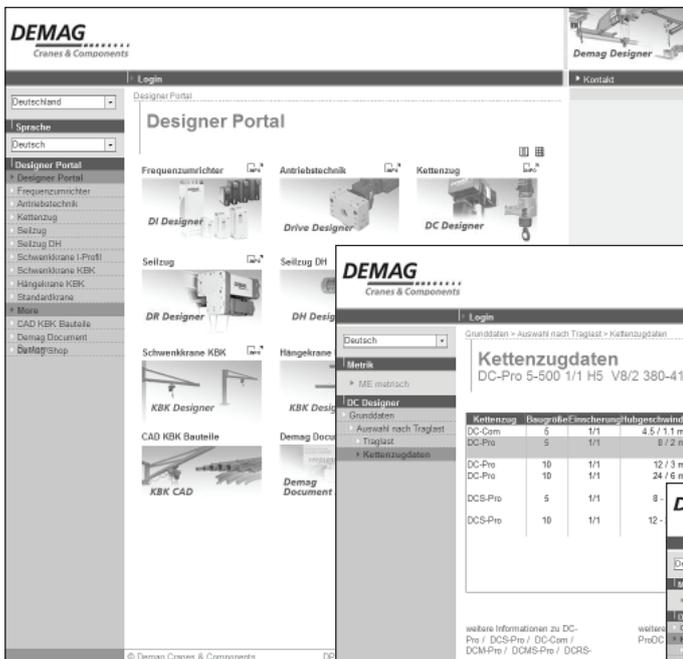
You can also download 3D CAD drawings of the entire Demag chain hoist range and integrate them into your design drawings.

Suitable hoists and accessories can be selected simply and reliably.

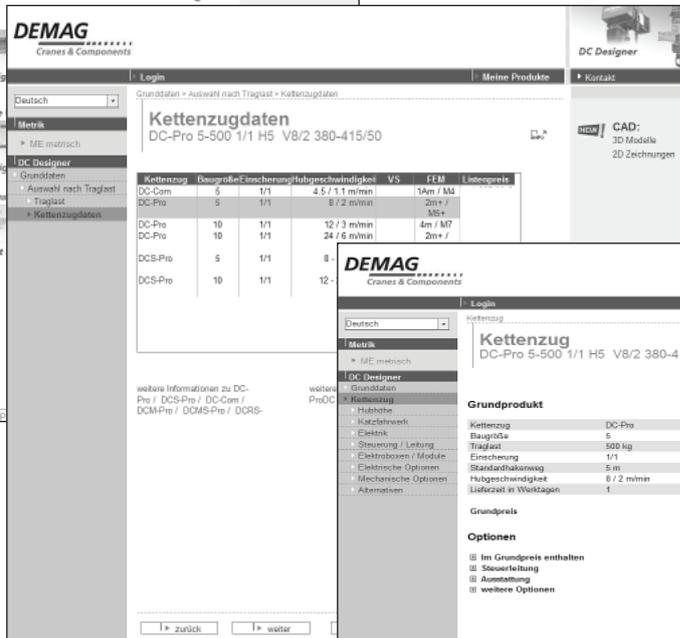
A practical and intuitive user interface ensures that you find the right solution to meet your needs quickly and easily.

The Demag Internet order system at www.demag-shop.com also makes it possible to order chain hoists and components immediately.

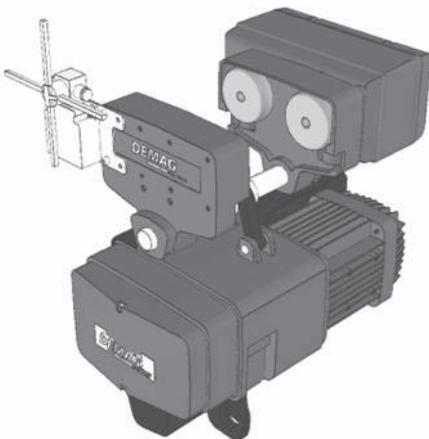
Designer Portal



Product selection



Product result



Guided 3D CAD geometry selection

## Contents

<b>1</b>	<b>Chain hoist</b>	<b>4</b>
1.1	General	4
1.2	Product characteristics at a glance	6
1.3	Selection criteria	8
1.4	Model code	10
1.5	DC documents	11
1.6	Design overview	12
1.7	Selection table	13
1.8	Hoist chains	14
1.9	Electric key data	15
1.10	Dimensions	18
1.11	Suspension	20
<b>2</b>	<b>Trolleys</b>	<b>22</b>
2.1	Track girder characteristics	22
2.2	General information on standard trolleys	22
2.3	Curve radii for standard trolleys	23
2.4	Cross and long-travel speeds	23
2.5	CF 5 trolley	24
2.6	U11 trolley	25
2.7	U22/U34 trolley	26
2.8	E11/E22-C/E34 travel drive	27
2.9	Dual-output gearbox for E11 - E34 travel drive	30
2.10	EU11 - EU34 trolley with ZBF three-phase motor	31
2.11	Hook dimension C with trolleys	32
<b>3</b>	<b>Accessories</b>	<b>33</b>
3.1	Mechanical options	33
3.1.1	Buffer stop	33
3.2	Electric options	34
3.2.1	Long and cross-travel limit switches	34
3.2.2	Power supply lines	36
	<b>DC chain hoist project engineering sheet</b>	<b>38</b>

### The following information can be found in our “Demag DC-Pro chain hoist technical data” document:

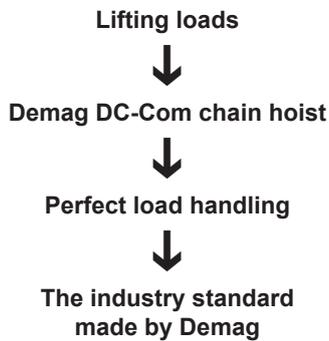
Chain hoist	Operating conditions; size overview; long hook path > 8 m.
Trolleys	EU 11 DK/EU 22 DK trolley with PKF AC motor; RU56/EU56 trolley; ZBF electric key data; DRF 200 friction-wheel travel drive with travel motor for profile-section girders.
Chain hoist modles	Low-headroom hoist, double chain hoist, articulated trolley
Accessories – Mechanical options	Chain hoists that have a horizontal chain lead-off; foot-mounted hoist, attached from below; chain return arrangement; friction force checking device; hook accessories; canopy; guard plates; trolley buffers; supporting roller fittings; link bar.
Accessories – Chain hoists for special safety regulations	Double brake; chain hoists for mobile entertainment systems
Accessories – Electric options	Geared limit switches; pluse encoder fittings; overload cut-off with ZMS strain gauge carrier link; electric enclosures and signal converters; installation parts for electric enclosures; tandem operation
Control devices	Control pendants, control cable, radio control, infrared control



The metric system is used in this document and all figures are shown with a comma as the decimal separator.

# 1 Chain hoist

## 1.1 General



High productivity, efficiency and operating reliability are the most important requirements to be met by state-of-the-art material flow systems. Demag Cranes & Components develops and produces materials flow solutions for all industries and companies of all sizes, from small workshops to major industrial corporations.

All inclusive: fully featured with no need for extras. Many features are already integrated into the Demag DC-Com chain hoist as standard that have to be ordered and bought as extras elsewhere. DC-Com is a fully featured, highly versatile chain hoist, which can be installed and put into service in a minimum of time.

### Certified

DC-Com chain hoists satisfy the relevant provisions of

- EC Machinery Directive 2006/42/EC,
- EC Low Voltage Directive 2006/95/EC and
- EC EMC Directive 2004/108/EC.

Electromagnetic compatibility is rated for interference immunity in industrial environments and for interference emissions in commercial and industrial environments.

In addition, an optional variant of these chain hoists meets the strict cCSA<sub>US</sub> regulations for Canada and the USA.

### Safety-related functions:

A performance level of at least PL = c is achieved for the safety-related functions specified in EN 14492-2. This applies to these functions included in DC-Pro, DCS-Pro and DC-Com units (not DC/CC/FC):

- Emergency stop
- Lifting and lowering limiters
- Overload protection (as of 1 t)

for travelling hoists to EN 15011:

- Emergency stop
- Travel limiters (right/left)

and for tandem operation with two hoist units by means of tandem box:

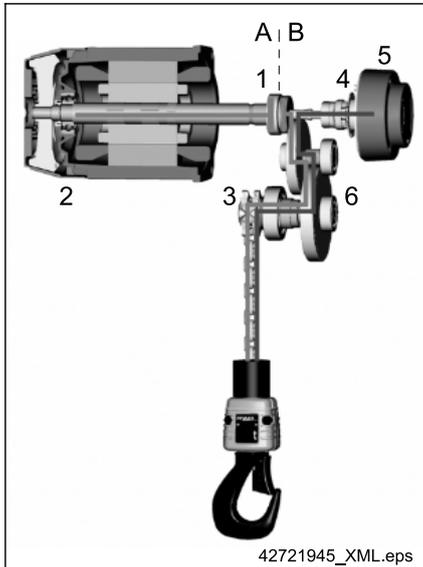
- Interlocking of the hoist units

### Main differences between the product types

	DCS-Pro (DCMS-Pro)	DC-Pro (DCM-Pro)	DC-Com	DC-ProDC / CC
Control, control voltage	Inverter, 24 V	Contactor, 24 V Tri-state signal transmission		Direct/conventional contactor
Group of mechanisms	1Am to 4m		2m to 4m	see DC-Pro
Standard lifting speed up to 125 kg, [m/min]	0,15-30/30	8/2; 16/4; 24/6	8/2	
Standard lifting speed 160-500 kg, [m/min]	0,15-16/30; 0,08-8/15	8/2; 12/3; 16/4; 24/6	6/1,5; 4,4/1,1	
Standard lifting speed 630-2000 kg, [m/min]	0,04-4/7; 0,06-6/11; 0,11-12/22	4/1; 6/1,5; 8/2; 12/3; 24/6	4/1	
Standard lifting speed 2500-5000 kg, [m/min]	0,04-4/7 for 2500 kg	4/1; 6/1,5; 8/2	---	
Duty factor [CDF%]	60 (20 at $v_{smin}$ )	60 (40/20)	60 (40/20); 40 (25/15)	
Speed ratio	Variable 1:100	F4		
Hook path (standard) [m]	5; 8 (Manulift 2,8; 4,3)		4	see DC-Pro
Hook path (order-specific) [m]	> 8		> 4	
Type of enclosure: chain hoist, trolley	IP55, IP55			No
Height-adjustable control pendant, plug connections	Yes, yes			No
Hook assembly	Pro		Com	see DC-Pro
Control pendant (can be fitted)	DSC, DSE, DSM, DSK, DST		DSC, DSE, DSK, DST	DSK, DST
Limit-switch cut-off for DC 1-10 1/1	Yes		Optional	Optional (lifting)
Limit-switch cut-off for DC 10 2/1 to DC 25	Yes			
Elapsed operating time counter	Yes (can be read from the outside)		Yes, under elec. equip. cover	No
Diagnostic interface	Yes (can be read from the outside)		Yes, under elec. equip. cover	No
Gearbox	Maintenance-free for up to 10 years			
Slipping clutch	Maintenance-free for up to 10 years		No	
Brake	Maintenance-free for up to 10 years (DC 10-25 brake 5 years)			
Adjustable brake	Not required			Yes
Speed monitoring	Yes			No
Regenerative braking main to 0 via creep speed	---	Yes		No
Wide voltage range input	Yes			Yes
Pro-Hub: $V_{max}$ in partial load range	Yes	No		
Fast-to-slow cut-off	Yes	No		
V, acc., dec. parameters adjustable via control pendant	Yes	No		
Motor temperature monitoring	Yes	Optional		Optional
Electric equipment cover	Aluminium	Aluminium (DC16/25 plastic)	Plastic	Partly extended cover
Surface of aluminium parts	Powder-coated			

## 1.2 Product characteristics at a glance

### DC-Com (2 hoist speeds)



A Drives	B Brakes
1 Slipping clutch	4 Speed detection
2 Motor	5 Brake
3 Chain drive	6 Gearbox

The DC-Com chain hoist standard scope of delivery already includes the following features:

- Load capacities up to 2000 kg,
- FEM classification from 2m to 4m (1600 – 6300 full load hours of operation),
- 24 V contactor control with internal tri-state signal transfer, can be extended with modules,
- Operating limit switches for the upper and lower hook position for DC-Com 10 with 2/1 reeving,
- Elapsed operating time counter,
- Slipping clutch with automatic cut-out by means of speed monitoring (no continuous slipping),
- Gearbox maintenance-free for up to 10 years,
- Height-adjustable control pendant:

The control cable is available in 3 different lengths and is adjustable in height (H5: 0,8–3,8 m/H8: 3,8–6,8 m/H11: 6,8–9,8 m), enabling the position of the control pendant to be adjusted without the need for any wiring. The length of control cable that is not required is accommodated under the service cover,

- “Plug & Lift” and “Plug & Drive” plug-in electric connections:
  - Mains connection on the chain hoist,
  - Control cable on the chain hoist/control pendant,
  - Signal and power cable between the chain hoist and trolley,
- 7-segment display (beneath the electric equipment cover) to enable operating hours and operating statuses to read off,
- Infrared diagnostic interface (to read out and manage specific data by means of Demag IDAPSY software),
- Surface protection for the aluminium housing parts provided by UV-resistant powder coating (resistant to scratches),
- Two speeds with main and creep lifting with F4 ratio,
- Various lifting speeds available: 4/1; 4,5/1,1; 6/1,5; 8/2,
- Duty factor: 60% (40%/20%), switching operations/hour: 360 (120/240), operation permitted without any reduction in the duty factor from -20 °C to +45 °C,
- Hoist motor rated to insulation class F,
- Chain hoist and travel drive enclosure: IP 55.
- Slipping clutch, hoist motor and brake are monitored by means of integrated speed sensors,
- Low-wearing brake thanks to regenerative braking from main to creep lifting until standstill, mechanical braking from creep lifting to standstill,
- The brake does not need to be adjusted,
- The brake arranged before the slipping clutch prevents the from load sinking when the unit is at rest,
- Automatic braking if the control system fails,
- Up to 1000 kg only 1/1 reeving: reduced chain wear, improved ergonomics,
- Robust cylindrical-rotor motor with fan and separate DC brake beneath the electric equipment cover (brake double encapsulated for enclosure type, no brake sticking).

**Even longer service life, improved safety and reduced wear**

**Simple commissioning and optimum ergonomics**

- Ergonomic DSC/DSE control pendants with gentle actuation force,
- Length of the control cable or position of the control pendant individually adaptable on site without any need for wiring (can be extended or shortened at any time),
- Control cable and control board signals designed for 3-axis applications,
- Pivoting suspension bracket enables the chain hoist to be attached when the trolley has been fitted.

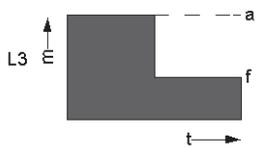
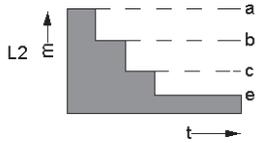
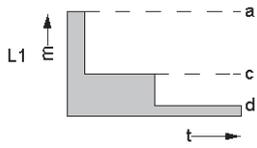
**Service-friendly**

- Elapsed operating time counter, status and error messages shown on 7-segment display,
- Infrared diagnostic interface (to read out and manage specific data by means of IDAPSY software),

Everything in one place under the service cover – rapid access for commissioning and service:

- Plug-and-socket connections (for power cable, control cable, limit switches, trolley connection),
- Strain relief (for power supply and trolley supply cables),
- Storage for 3 m of control cable,
- Chain drive (fitted to output shaft),
- Chain lubrication (through lubrication opening in the chain guide for improved lubrication between the chain links on DC 1-10),
- Reduced downtimes as the entire chain drive can be replaced without dismantling motor or gearbox parts.

### 1.3 Selection criteria



42699344.eps

- m = Load capacity
- t = Operating time
- a = Full load
- b = Medium partial load
- c = Small to medium partial load
- d = Small dead load
- e = Small to medium dead load
- f = Heavy dead load
- g = Very heavy dead load

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:

##### L1 Light

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

##### L2 Medium

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

##### L3 Heavy

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

##### L4 Very heavy

Hoist units which are regularly subject to maximum and almost maximum loads.

Example:

Load capacity	250 kg
Load spectrum from table	"Medium"
Lifting speed	4 m/min
Reeving	1/1
Average hook path	3 m
No. of cycles/hour	9
Working time/day	8 hours

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

$$\begin{aligned} \text{Operating time/day} &= \frac{2 \times \text{average hook path} \times \text{no. of cycles/h} \times \text{working time/day}}{60 \times \text{lifting speed}} \\ &= \frac{2 \bullet 4 \bullet 9 \bullet 8}{60 \bullet 4} \\ &= 1,8 \text{ hours} \end{aligned}$$

For the medium load spectrum and an average daily operating time of 1,8 hours, the table shows group 1Am. For a load capacity of 250 kg, the diagram shows size DC-Com 2–250.

The chain hoist group of mechanisms is determined by the load spectrum and operating time.

Load spectrum		Average operating time per working day in hours			
L1	Light	2-4	4-8	8-16	More than 16
L2	Medium	1-2	2-4	4-8	8-16
L3	Heavy	0,5-1	1-2	2-4	4-8
L4	Very heavy	0,25-0,5	0,5-1	1-2	2-4
Group of mechanisms to FEM 9.511		1Am	2m	3m	4m

Load capacity for reeving		Product type and size	Lifting speed at 50 Hz [m/min]		
1/1 [kg]	2/1 [kg]				
80		DC-Com 1	8/2		80
100					100
125					125
160		DC-Com 2	6/1,5		160
200					200
250		DC-Com 2			250
315		DC-Com 5	4,5/1,1		315
400					400
500					500
630		DC-Com 10	4/1		630
800					800
1000					1000
	1250				1250
	1600		1600		
	2000		2000		

## 1.4 Model code

E	K	L	D	DC-Pro	-D	10-	1000	X X X	H5	V6/1,5	2/4-	2000	380 - 415 /	50	24/6	200	220 - 480																																																																																																					
Travel drive voltage range/ voltage [V]																																																																																																																						
Max. flange width of the trolley [mm]																																																																																																																						
Travel speed [m/min]																																																																																																																						
Frequency [Hz]																																																																																																																						
Chain hoist voltage range [V]																																																																																																																						
Double chain hoist load hook centre distance																																																																																																																						
Double chain hoist load hook run-off position																																																																																																																						
Lifting speed [m/min]																																																																																																																						
V 2-stage = Main/creep lifting																																																																																																																						
VS Stepless = VS at rated load up to VS <sub>max</sub> in the partial load range																																																																																																																						
Hook path [m]																																																																																																																						
1/1, 2/1 reeving																																																																																																																						
LDC-D 2x1/1; 2x2/1																																																																																																																						
KLDC-D 2/2-2; 4/2-2																																																																																																																						
Total load capacity [kg]																																																																																																																						
Size <sup>1)</sup>																																																																																																																						
Double chain hoist (2 chain lead-offs)																																																																																																																						
<table border="0"> <tr> <td colspan="8"><b>DC-Pro product range</b></td> <td colspan="9"><b>DC-Pro product range</b></td> </tr> <tr> <td>DC-Pro</td> <td colspan="7">2-stage chain hoist (Demag chain hoist)</td> <td>DC-ProCC</td> <td colspan="8">2-stage chain hoist for conventional contactor control</td> </tr> <tr> <td>DCM-Pro</td> <td colspan="7">2-stage Manulift</td> <td>DC-ProDC</td> <td colspan="8">2-stage chain hoist for direct control</td> </tr> <tr> <td>DCS-Pro</td> <td colspan="7">Variable-speed chain hoist</td> <td>DC-ProFC</td> <td colspan="8">Variable-speed chain hoist for control by means of an external frequency inverter</td> </tr> <tr> <td>DCMS-Pro</td> <td colspan="7">Variable-speed Manulift</td> <td colspan="9"><b>DC-Com product range</b></td> </tr> <tr> <td>DCRS-Pro</td> <td colspan="7">Stepless rocker switch</td> <td>DC-Com</td> <td colspan="8">2-stage chain hoist</td> </tr> </table>																	<b>DC-Pro product range</b>								<b>DC-Pro product range</b>									DC-Pro	2-stage chain hoist (Demag chain hoist)							DC-ProCC	2-stage chain hoist for conventional contactor control								DCM-Pro	2-stage Manulift							DC-ProDC	2-stage chain hoist for direct control								DCS-Pro	Variable-speed chain hoist							DC-ProFC	Variable-speed chain hoist for control by means of an external frequency inverter								DCMS-Pro	Variable-speed Manulift							<b>DC-Com product range</b>									DCRS-Pro	Stepless rocker switch							DC-Com	2-stage chain hoist							
<b>DC-Pro product range</b>								<b>DC-Pro product range</b>																																																																																																														
DC-Pro	2-stage chain hoist (Demag chain hoist)							DC-ProCC	2-stage chain hoist for conventional contactor control																																																																																																													
DCM-Pro	2-stage Manulift							DC-ProDC	2-stage chain hoist for direct control																																																																																																													
DCS-Pro	Variable-speed chain hoist							DC-ProFC	Variable-speed chain hoist for control by means of an external frequency inverter																																																																																																													
DCMS-Pro	Variable-speed Manulift							<b>DC-Com product range</b>																																																																																																														
DCRS-Pro	Stepless rocker switch							DC-Com	2-stage chain hoist																																																																																																													
D Articulated trolley																																																																																																																						
L Long trolley																																																																																																																						
K Low-headroom travelling hoist																																																																																																																						
U Standard-headroom monorail hoist																																																																																																																						
11 Trolley size load capacity [kg • 100]																																																																																																																						
22																																																																																																																						
34																																																																																																																						
56																																																																																																																						
R Push-travel trolley																																																																																																																						
E Travel drive																																																																																																																						
C	F	5 Click-fit (push-travel trolley)																																																																																																																				



Not all features of the mounting code can be combined.

10 1) Since 04/2006, the designation for sizes DC 10 and DC 20 have been changed to DC 10 1/1 and DC 10 2/1, respectively.

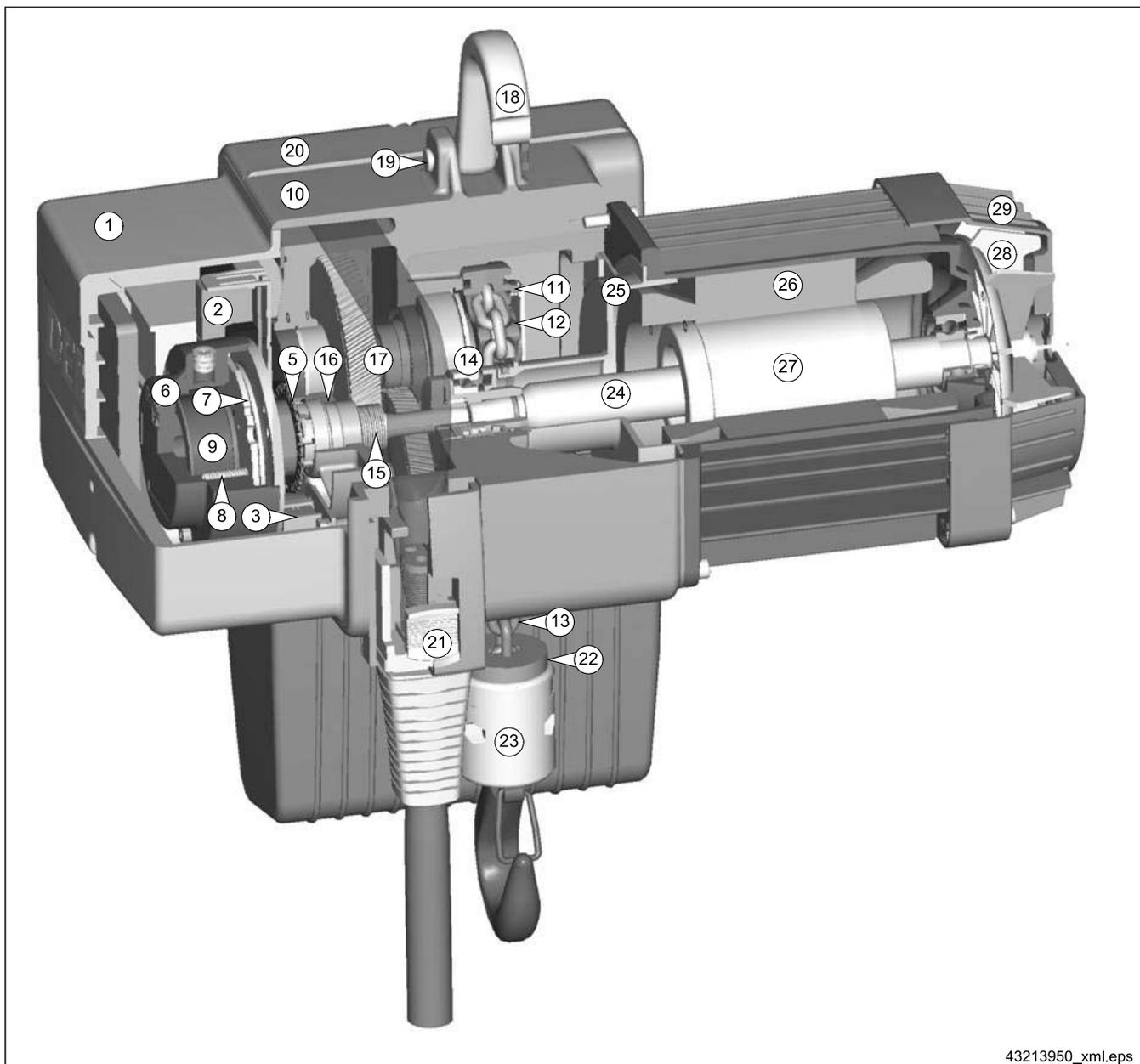
## 1.5 DC documents

Documents	Part no.	
Technical data/catalogues	Demag DC-Pro 1 – 25 chain hoist Demag DCS-Pro 1 – 15 chain hoist	203 525 44
	Demag DC-Com chain hoist	203 571 44
	CF5-DC/DCM trolley	203 568 44
	U11-U34/DC/DCM/DK trolley	203 569 44
	RU/EU56 trolley	203 691 44
	DC electric accessories	203 656 44
	POLU box electric accessories	203 682 44
	KBK classic (steel, powder-coated)	202 976 44
	KBK Aluline (anodised)	203 245 44
	KBK trailing cable	202 617 44
	KBK pillar and wall-mounted slewing jib cranes	203 565 44
	DCL-Pro conductor line	203 751 44
	Clamp-fitted buffer	203 313 44
	Operating instructions/component parts	DC-Pro 1 - 15 chain hoist
DC-Pro 16 - 25 chain hoist		211 033 44
DC-Com chain hoist		214 802 44
DCS-Pro chain hoist		214 827 44
DC-ProDC/CC/FC 1-15 chain hoist		211 191 44
DC-ProDC/CC/FC16-25 chain hoist		211 163 44
DC-Wind chain hoist		211 010 44
PGS parallel grippers		214 095 44
DPM permanent magnet		206 623 44
Assembly instructions (Adjustment/dimensions)	Z motor external pulse generator	214 372 44
	Braking resistor for DCS-Pro	211 166 44
	Dedrive Compact STO (frequency inverter quick-step operating instructions)	211 170 44
	DC double brake	211 217 44
	LDC-D double chain hoist	211 162 44
	KDDC/UDDC articulated trolley	211 159 44
	Limit switch	211 210 44
	DRF 200 travel drive	214 395 44
	E11-E34 DC travel drive (I)	214 810 44
	E11-E34 DC travel drive (II) (circuit diagrams)	211 229 44
	DCS + E22-C parameter programming	211 247 44
	EU 11 DK trolley	206 604 44
	EU 22 DK trolley	206 605 44
	DRC-DC radio control system	214 689 44
	DRC-DC quick-step instructions	211 045 44
	DC geared limit switches	211 011 44
	DCM-Pro, DCMS-Pro, DKM, PM, PMV Manulift chain twist element	211 164 44
	KDC chain hoist	211 017 44
	DC protective sleeve	211 227 44
	ZNA, ZBA, ZBF motors	214 228 44
	Friction force checking device	206 973 44
	DC 1 - 25 safety hook	211 228 44
	DC PWM/3ST signal converter	211 094 44
	DCS analogue/PWM signal converter	214 951 44
	DSC-EX control pendant	214 832 44
	DSE10-C control pendant	214 998 44
	DC 1 - 25 tandem	211 108 44
	DSK+DST support sleeve	211 207 44
	VG11-34 EU11-34 dual-output gearbox	211 122 44
	Long hook path accessories	211 178 44
DSC strain relief device	211 092 44	
Test and inspection booklet	DC test and inspection booklet	214 745 44
	Certificates	235 309 44

The documents can be ordered from the relevant Demag office.

## 1.6 Design overview

Single-fall design, e.g. DC-Com 5



43213950\_xml.eps

Item	Designation	Item	Designation	Item	Designation
1	Electric equipment cover	11	Chain guide	21	Adjusting mechanism for control cable
2	Control system	12	Chain sprocket	22	Cut-off buffer for operating limit switch
3	Elapsed operating time counter	13	Round section steel chain	23	Hook assembly with load capacity plate
		14	Slipping clutch	24	Motor shaft
5	Pulse wheel for speed monitoring	15	Dished washer pack	25	Winding head cap
6	Magnet brake	16	Slipping clutch adjusting nut	26	Stator
7	Brake disc with linings	17	DC 1 - 5 two-stage helical gearbox DC 10 three-stage helical gearbox	27	Rotor
8	Brake springs	18	Suspension bracket	28	Fan
9	Brake magnet	19	Suspension pin	29	Fan cover
10	Gearbox housing	20	Service cover		

## 1.7 Selection table

Load capacity [kg]	Chain hoist size DC-Com	Reeving	Group of mechanisms DIN EN 14492 FEM / ISO	Chain size [mm]	Lifting speed		Standard hook path <sup>1)</sup> H [m]	Motor size <sup>2)</sup>	Max. weight for hook path										
					at 50 Hz [m/min]	at 60 Hz [m/min]			4 m [kg]	5 m [kg]	8 m [kg]								
80	1	1/1	4m / M7	4,2x12,2	8,0/2,0	9,6/2,4	4, 5 and 8	ZNK 71 B 8/2	21	22	24								
100			3m / M6																
125			2		2m / M5	6,0/1,5						7,2/1,8	ZNK 71 B 8/2						
160	5			3m / M6	5,3x15,2	4,5/1,1		5,4/1,3	ZNK 80 A 8/2	27	28	30							
200				2m / M5															
250			10	1/1	3m / M6	7,4x21,2		4,0/1,0					4,8/1,2	ZNK 100 A 8/2	47	48	52		
315	2m / M5																		
400	2/1	3m / M6			ZNK 100 B 8/2		63		65	73									
500		2m / M5																	
630		10		2/1		3m / M6		7,4x21,2			4,0/1,0	4,8/1,2	ZNK 100 A 8/2	47	48	52			
800	2m / M5																		
1000	10		2/1		3m / M6	7,4x21,2	4,0/1,0		4,8/1,2	ZNK 100 B 8/2							63	65	73
1250					2m / M5														
1600	10	2/1	3m / M6	7,4x21,2	4,0/1,0	4,8/1,2	ZNK 100 B 8/2	63	65	73									
2000											2m / M5								

## 1.8 Hoist chains

Genuine Demag chain is a round-section steel chain tested to EN 818-7 which is subject to the regulations for round-section steel chains used in hoist applications issued by the Main Association of Industrial Employers' Mutual Insurance Societies, Central Department for Accident Prevention and the test criteria for round-section steel chains used in hoist applications and the inspection regulations to DIN 685 part 5 of Nov. 1981 as well as BGV D8 and BGV D6.



### Pay attention to reduced load capacities.

For non-standard operating conditions, the special chains listed below are available for special ambient conditions.

	Chain hoist Size	Max. load capacity for reeving		Dimension [mm]	Stamp, chain quality	Weight per metre [kg]	Production test force [kN]	Minimum breaking force [kN]	Minimum elongation at rupture [%]
		1/1 [kg]	2/1 [kg]						
<b>Demag RDC/TDK standard chain</b>									
	DC 1 - 2	250	-	4,2 x 12,2	DAT RDC/TDK	0,38	13,8	22	10
	DC 5	500	-	5,3 x 15,2		0,62	22	35	
	DC 10	1250	2500	7,4 x 21,2		1,20	43	70	
Properties	High-strength ageing-resistant material with a high degree of surface hardening, galvanised with additional surface treatment, blue-chromated, colour: silver								
Material	Ni-Mo special chain steel to EN 818-7, part 5.3.1								
Lubrication	GP00H-30REN.SO-GFB grease								
<b>Demag Corrud special chain</b>									
Application, e.g. galvanising, electroplating facilities	DC 1 - 2	250	-	4,2 x 12,2	DAT RDC/TDK	0,38	13,8	22	10
	DC 5	500	-	5,3 x 15,2		0,62	22	35	
	DC 10	1250	2500	7,4 x 21,2		1,20	43	70	
Properties	Ageing-resistant, corrosion-free, "Corrud DS" micro-layer corrosion protection, black-coated, colour: black, Stabylan 2001								
Material	Ni-Mo special chain steel to EN 818-7, part 5.3.1								
Lubrication	Acid-resistant chain grease, e.g. GLEITMO 582								
<b>Demag HS7 special chain</b>									
Application, e.g. foundry, dust, emery, blasting	DC 1 - 2	160	-	4,2 x 12,2	RSX / DS	0,38	12,5	19,3	5
	DC 5	400	-	5,3 x 15,2		0,62	19,8	30,8	
	DC 10	800	1600	7,4 x 21,2		1,20	38,7	60	
Properties	Ageing-resistant, blue-chromated, with deeper surface hardening								
Material	Ni-Mo special chain steel to EN 818-7, part 5.3.1								
Lubrication	Dry or with dry lubricant, e.g. Ceplatlyn 300								
<b>Demag RS6 special chain</b>									
Application, e.g. foodstuffs sector	DC 1 - 2	125 <sup>1)</sup> - 160 <sup>2)</sup>	-	4,2 x 12,2	RSA / S	0,38	10	16	15
	DC 5	200 <sup>1)</sup> - 250 <sup>2)</sup>	-	5,3 x 15,2		0,62	16	25	
	DC 10	400 <sup>1)</sup> - 500 <sup>2)</sup>	800 <sup>3)</sup> - 1000 <sup>4)</sup>	7,4 x 21,2		1,20	32	50	
Properties	Non-rusting chain, not hardened, bright								
Material	Stainless steel AISI 316 (V4A) 1,4401								
Lubrication	Food-safe lubricant, e.g. Paraliq chain spray								

1) For max. 25-50 cycles per day

2) For max. 10 cycles per day

3) For max. 12-25 cycles per day

14 4) For max. 5 cycles per day

## 1.9 Electric key data

### DC-Com (2 hoist speeds)

Chain hoist size	Motor size	No. of poles	P <sub>N</sub>	CDF	n <sub>N</sub>	Starts/h	Min./max. currents and start-up current				
							I <sub>N min.</sub>	I <sub>N max.</sub>	I <sub>max.</sub> <sup>1)</sup>	I <sub>A</sub> /I <sub>N max.</sub>	cos φ <sub>N</sub>
DC-Com			[kW]	[%]	[rpm]		[A]	[A]	[A]		
<b>220-240 V, 50 Hz, 3 ~ (CE)<sup>2)</sup></b>											
1	ZNK 71 B 8/2	8	0,05	20	720	240	1,75	2,10	2,10	1,45	0,48
		2	0,18	40	2925	120	2,10	2,80	2,80	2,75	0,46
2	ZNK 71 B 8/2	8	0,10	20	675	240	1,80	2,10	2,35	1,45	0,56
		2	0,37	40	2825	120	2,40	2,80	3,20	2,75	0,63
5	ZNK 80 A 8/2	8	0,18	20	665	240	2,45	2,80	2,95	1,45	0,51
		2	0,72	40	2745	120	3,80	4,20	4,70	3,00	0,77
10	ZNK 100 A 8/2	8	0,27	20	690	240	2,95	3,30	3,80	1,80	0,54
		2	1,10	40	2745	120	5,40	5,40	6,10	3,60	0,81
	ZNK 100 B 8/2	8	0,57	20	675	240	-				
		2	2,30	40	2790	120	-				
<b>380-415 V, 50 Hz, 3 ~ (CE)<sup>2)</sup></b>											
1	ZNK 71 B 8/2	8	0,05	20	720	240	1,00	1,20	1,20	1,45	0,48
		2	0,18	40	2925	120	1,20	1,60	1,60	2,75	0,46
2	ZNK 71 B 8/2	8	0,10	20	675	240	1,00	1,20	1,35	1,45	0,56
		2	0,37	40	2825	120	1,40	1,60	1,85	2,75	0,63
5	ZNK 80 A 8/2	8	0,18	20	665	240	1,40	1,60	1,70	1,45	0,51
		2	0,72	40	2745	120	2,20	2,40	2,70	3,00	0,77
10	ZNK 100 A 8/2	8	0,27	20	690	240	1,70	1,90	2,20	1,80	0,54
		2	1,10	40	2745	120	3,10	3,10	3,50	3,60	0,81
	ZNK 100 B 8/2	8	0,57	20	675	240	3,00	3,40	3,90	1,85	0,58
		2	2,30	40	2790	120	5,50	6,20	6,40	4,15	0,77
<b>500-525 V, 50 Hz, 3 ~ (CE)<sup>2)</sup></b>											
1	ZNK 71 B 8/2	8	0,05	20	720	240	0,75	0,95	0,95	1,45	0,48
		2	0,18	40	2925	120	0,90	1,25	1,25	2,75	0,46
2	ZNK 71 B 8/2	8	0,10	20	675	240	0,80	0,95	1,10	1,45	0,56
		2	0,37	40	2825	120	1,10	1,25	1,45	2,75	0,63
5	ZNK 80 A 8/2	8	0,18	20	665	240	1,20	1,30	1,35	1,45	0,51
		2	0,72	40	2745	120	1,80	1,90	2,15	3,00	0,77
10	ZNK 100 A 8/2	8	0,27	20	690	240	1,35	1,50	1,75	1,80	0,54
		2	1,10	40	2745	120	2,40	2,50	2,80	3,60	0,81
	ZNK 100 B 8/2	8	0,57	20	675	240	2,50	2,70	3,10	1,85	0,58
		2	2,30	40	2790	120	4,60	4,90	5,10	4,15	0,77

1) I<sub>max</sub> = maximum current for lowering motion.

2) Temporary voltage tolerances of ± 10% and temporary frequency tolerances of ± 2% are possible. Motors are rated to insulation class F.

Chain hoist size	Motor size	No. of poles	P <sub>N</sub>	CDF	n <sub>N</sub>	Starts/h	Min./max. currents and start-up current				
							I <sub>N min.</sub>	I <sub>N max.</sub>	I <sub>max.</sub> <sup>1)</sup>	I <sub>A</sub> /I <sub>N max.</sub>	cos φ <sub>N</sub>
DC-Com			[kW]	[%]	[rpm]		[A]	[A]	[A]		
<b>220-240 V, 60 Hz, 3 ~ (CE / cCSAus)<sup>2)</sup></b>											
1	ZNK 71 B 8/2	8	0,06	20	870	240	2,10	2,50	2,50	1,45	0,47
		2	0,22	40	3525	120	2,50	3,35	3,35	2,75	0,45
2	ZNK 71 B 8/2	8	0,11	20	825	240	2,10	2,50	2,80	1,45	0,55
		2	0,44	40	3425	120	2,90	3,30	3,85	2,75	0,62
5	ZNK 80 A 8/2	8	0,22	20	815	240	2,90	3,30	3,50	1,45	0,50
		2	0,86	40	3345	120	4,60	5,00	5,60	3,00	0,76
10	ZNK 100 A 8/2	8	0,32	20	840	240	3,55	3,90	4,60	1,80	0,53
		2	1,30	40	3345	120	6,50	6,40	7,30	3,60	0,80
	ZNK 100 B 8/2	8	0,68	20	825	240	-				
		2	2,80	40	3390	120	-				
<b>380-400 V, 60 Hz, 3 ~ (CE)<sup>2)</sup></b>											
1	ZNK 71 B 8/2	8	0,06	20	870	240	1,35	1,60	1,60	1,45	0,47
		2	0,22	40	3525	120	1,70	2,00	2,00	2,75	0,45
2	ZNK 71 B 8/2	8	0,11	20	825	240	1,50	1,60	1,80	1,45	0,55
		2	0,44	40	3425	120	1,80	2,00	2,30	2,75	0,62
5	ZNK 80 A 8/2	8	0,22	20	815	240	1,80	1,95	2,00	1,45	0,50
		2	0,86	40	3345	120	1,75	2,90	3,20	3,00	0,76
10	ZNK 100 A 8/2	8	0,32	20	840	240	2,40	2,70	2,90	1,80	0,53
		2	1,30	40	3345	120	3,80	4,00	4,60	3,60	0,80
	ZNK 100 B 8/2	8	0,68	20	825	240	3,90	4,30	4,90	1,85	0,57
		2	2,80	40	3390	120	7,20	7,70	8,00	4,15	0,76
<b>440-480 V, 60 Hz, 3 ~ (CE / cCSAus)<sup>2)</sup></b>											
1	ZNK 71 B 8/2	8	0,06	20	870	240	1,05	1,25	1,25	1,45	0,47
		2	0,22	40	3525	120	1,25	1,65	1,65	2,75	0,45
2	ZNK 71 B 8/2	8	0,11	20	825	240	1,05	1,25	1,40	1,45	0,55
		2	0,44	40	3425	120	1,45	1,65	1,95	2,75	0,62
5	ZNK 80 A 8/2	8	0,22	20	815	240	1,50	1,70	1,80	1,45	0,50
		2	0,86	40	3345	120	2,30	2,50	2,80	3,00	0,76
10	ZNK 100 A 8/2	8	0,32	20	840	240	1,80	1,95	2,30	1,80	0,53
		2	1,30	40	3345	120	3,25	3,20	3,70	3,60	0,80
	ZNK 100 B 8/2	8	0,68	20	825	240	3,10	3,50	4,00	1,85	0,57
		2	2,80	40	3390	120	5,70	6,40	6,60	4,15	0,76
<b>575 V, 60 Hz, 3 ~ (CE / cCSAus)<sup>2)</sup></b>											
1	ZNK 71 B 8/2	8	0,06	20	870	240	0,85		0,85	1,45	0,48
		2	0,22	40	3525	120	0,90		0,90	2,75	0,46
2	ZNK 71 B 8/2	8	0,11	20	825	240	0,90		1,00	1,45	0,65
		2	0,44	40	3425	120	1,00		1,15	2,75	0,63
5	ZNK 80 A 8/2	8	0,22	20	815	240	1,10		1,35	1,45	0,54
		2	0,86	40	3345	120	1,75		2,10	3,00	0,88
10	ZNK 100 A 8/2	8	0,32	20	840	240	1,35		1,55	2,10	0,58
		2	1,30	40	3345	120	2,40		2,70	3,80	0,87
	ZNK 100 B 8/2	8	0,68	20	825	240	2,40		2,70	1,85	0,62
		2	2,80	40	3390	120	4,40		4,50	4,15	0,83

1) I<sub>max</sub> = maximum current for lowering motion.

2) Temporary voltage tolerances of ± 10% and temporary frequency tolerances of ± 2% are possible. Motors are rated to insulation class F.

### Mains connection delay fuse links

Voltage		220-240V	380-415V	500-525V	220-240V	380-400V	440-480V	575V
Frequency		50Hz			60Hz			
Size	Motor size	[A]	[A]	[A]	[A]	[A]	[A]	[A]
DC-Com 1	ZNK 71 B 8/2	6	6	6	6	6	6	6
DC-Com 2	ZNK 71 B 8/2				6			
DC-Com 5	ZNK 80 A 8/2	10	10	10	10	16	10	
DC-Com 10	ZNK 100 A 8/2				-			
	ZNK 100 B 8/2	-	10	10	-	16	10	



**Danger – live components.  
Danger to life and limb.**

Electric energy may cause very severe injuries. Danger of death caused by electric current if the insulation or individual components are damaged.

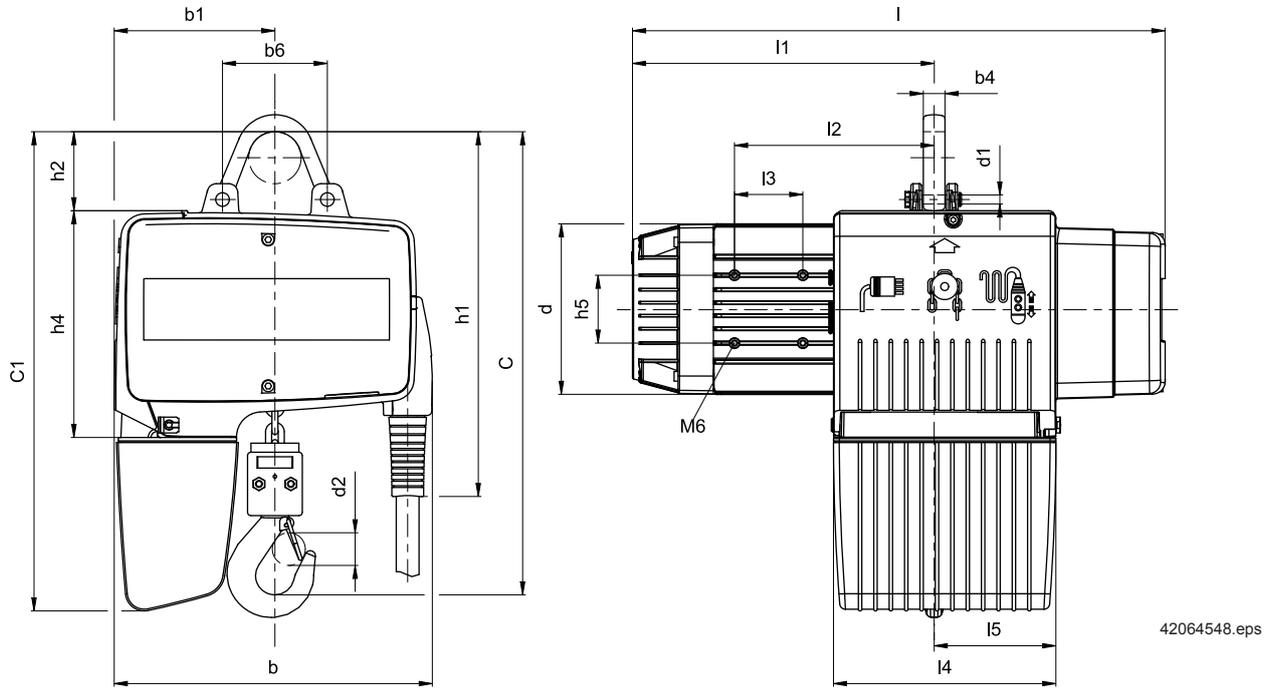
For safety reasons, we recommend the use of 3-pole automatic circuit breakers/circuit breakers (to DIN EN 60898-1, tripping characteristic B or C) instead of separate fuse links. This arrangement ensures that all phases are disconnected from the power supply in the event of a short circuit.

### Supply lines <sup>1)</sup> for 5% voltage drop $\Delta U$ and starting current $I_A$

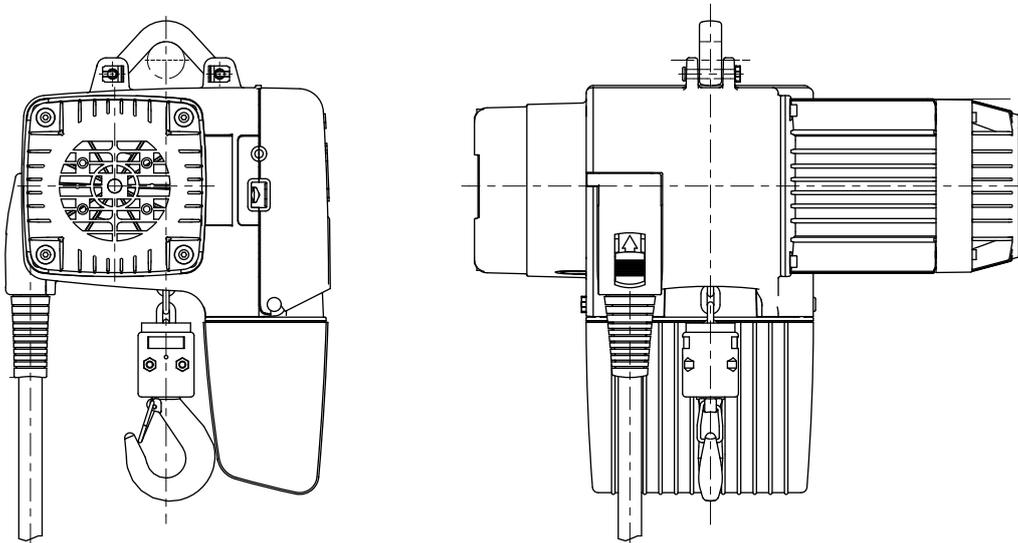
Voltage		220-240V		380-415V		500-525V		220-240V		380-400V		440-480V		575V	
Frequency		50Hz						60Hz							
Size	Motor size	[mm <sup>2</sup> ]	[m]												
DC-Com 1	ZNK 71 B 8/2	1,5	89	1,5	100	1,5	100	1,5	76	1,5	100	1,5	100	1,5	100
DC-Com 2	ZNK 71 B 8/2		31		94		26		75						
DC-Com 5	ZNK 80 A 8/2		34		38		29		78						
DC-Com 10	ZNK 100 A 8/2	-	-	-	-	-	-	-	-	2,5	45	-	43	-	78
	ZNK 100 B 8/2														

# 1.10 Dimensions

Load capacity ≤ 1000 kg, 1/1 reeving, with long suspension bracket



Load capacity ≤ 1000 kg, 1/1 reeving, with short suspension bracket (optional)



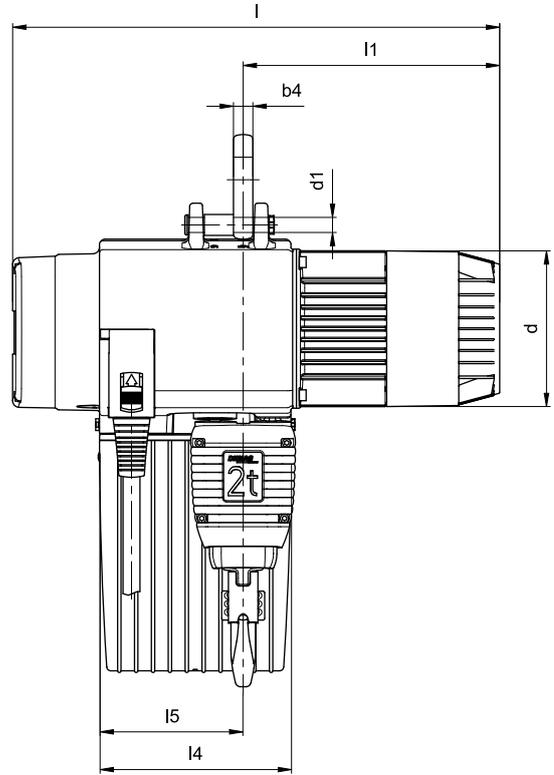
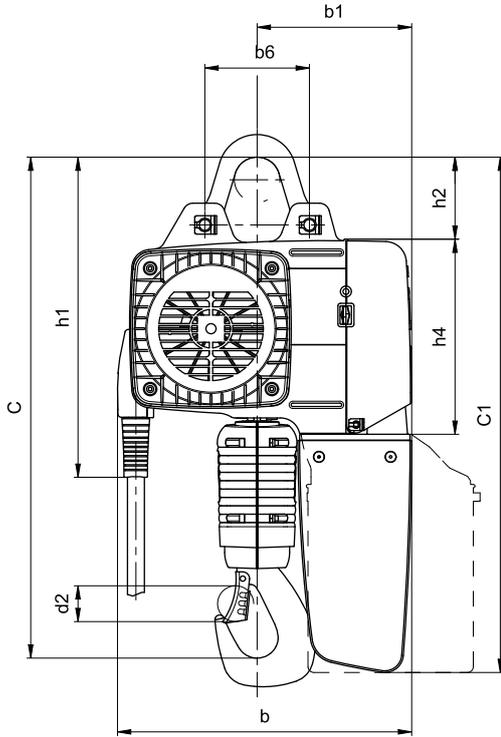
The following dimensions change due to larger cut-off springs for higher speeds:

1) H8 chain collector boxes are used for H5 hook paths and speed v2.

42064449.eps

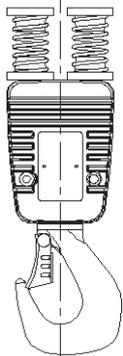
Chain hoist size	Motor	Suspension bracket																		Suspension bracket												
		short		long		short		long												short		long										
										Chain collector box size																						
				H4	H5	H8	H4	H5	H8	C 1 <sup>1)</sup>				b	b1	l	l1	l2	l3	l4	l5	b4	b6	d	d1	d2	h1	h2	h1	h2	h4	h5
DC-Com 1/2	ZNK 71 B 8/2	326	364	335	365	373	403	268	138	422	237	170	183	100	19	92	124	8	22	263	40	300	78	163	50							
DC-Com 5	ZNK 80 A 8/2	378	416	395	425	435	465	280	141	468	265	175	60	195	107	19	92	151	8	24	293	40	323	78	201	60						
DC-Com 10	ZNK 100 A 8/2	472	505	493	582	526	615	349	184	528	289	183	227	135	23	124	187	18	33	350	65	383	98	233								

Load capacity > 1000 kg, 2/1 reeving, with long suspension bracket

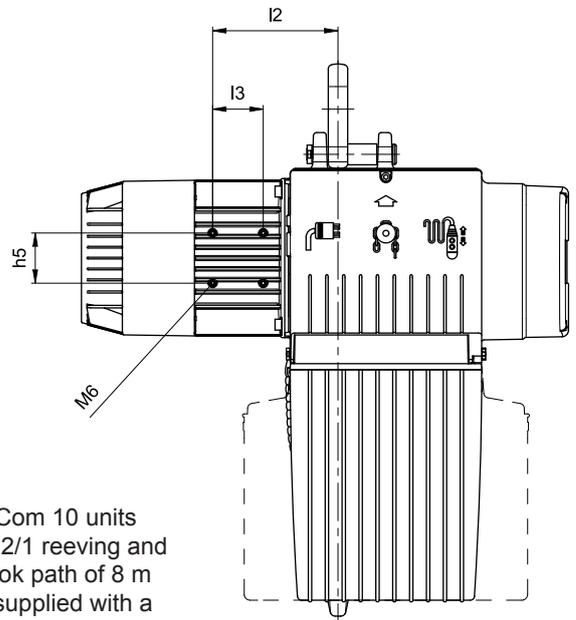


Bottom block with external cut-off springs, 2/1 reeving

Dimension C is increased by 60 mm when this bottom block is used.



42666144.jpg



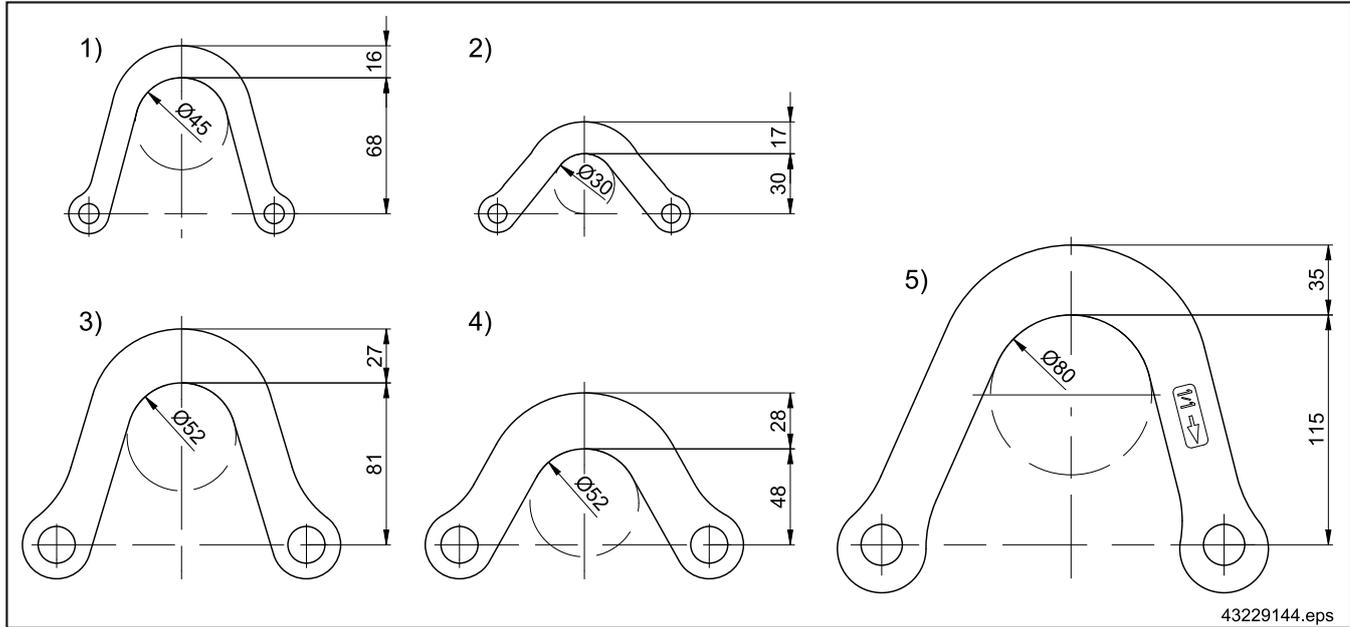
42666051.eps

DC-Com 10 units with 2/1 reeving and a hook path of 8 m are supplied with a flexible chain collector bag (pay attention to dimensions).

Size	Motor	Suspension bracket				Chain collector box size												Suspension bracket												
		short	long	short	long	H4	H8	H4	H8	H4	H8	H4	H8	H4	H8	H4	H8	l	l1	l2	l3	b4	b6	d	d1	d2	h1	h2	h1	h2
DC-Com 10	ZNK 100 B 8/2	C		C 1		b		b1		l4		l5		l	l1	l2	l3	b4	b6	d	d1	d2	h1	h2	h1	h2	h4	h5		
		564	597	582	632	615	665	349	409	184	244	227	340	170	225	578	304	149	60	23	124	187	18	42	350	65	383	98	233	60

## 1.11 Suspension

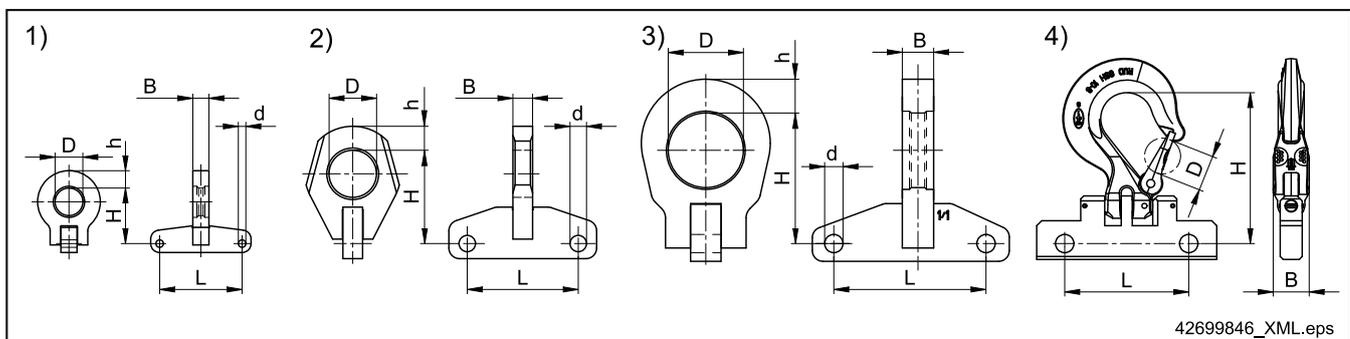
### Standard suspensions



Item	Designation	Scope of delivery	Chain hoist size
1	Long suspension bracket	Standard	DC 1-5
2	Short suspension bracket	Optional	
3	Long suspension bracket	Standard	DC 10
4	Short suspension bracket	Optional	
5	Suspension bracket	Standard	DC 15 / 16-25

The suspension bracket facilitates installation, since the chain hoist can be directly suspended from the trolley. It is not necessary to dismantle existing trolleys.

### Optional suspensions



Item	Designation	Chain hoist size	Order no.	Dimensions [mm]					
				L	B	H	h	D	d
1	Suspension ring, for suspension parallel to the track girder	DC 1 - 5	718 278 45	92	18	62,5	19,5	31	8,4
2		DC 10	715 278 45	124	22	117	27	53	18,4
3		DC 16 - 25	721 278 45	170	35	147	38	84	20,5
4	Suspension hook, folding	DC 1 - 5	718 910 45	92	22	104	-	25	-
		DC 10	715 910 45	124	36	152	-	36	-
		DC 16 - 25	721 910 45	170	44,5	193	-	40	-
Not shown	Suspension bracket for KBK III up to 3200 kg	DC 15 - 16	721 870 45	Contour as for item 5 in "Standard suspension"					

## Standard suspension assignment

Chain hoist load capacity [kg]					80-125	80-250	160-500	315-1250	1250-2500	1000-1600	2000-3200	1250-1600	2500-3200	2000-2500	4000-5000
Reeving					1/1			2/1	1/1	2/1	1/1	2/1	1/1	2/1	
Trolley size	Trolley load capacity [kg]	Flange width [mm]	Flange thickness [mm]	Crossbar diameter [mm]	DC 1	DC 2	DC 5	DC 10	DC 15	DC 16	DC 25				
See "Standard suspension" for diagram															
RU 3	450	60-90	12	21	1+2 <sup>1)</sup> 11)	1+2 <sup>1)</sup> 11)	1+2 <sup>1)</sup> 11)								
RU 6	450	58-143	20	30	1	1	1 <sup>1)</sup>								
		144-300	18	35											
RU / EU 11 DK	700	58-143	20	30											
		144-300	18	38											
RU / EU 22 DK	850	58-300	16	34	1	1	1								
		1350		144-300	45										
RU / EU 22 DK	2600	82-300	22	51				3 <sup>13)</sup>	3 <sup>13)</sup>	5 <sup>4)</sup>	5 <sup>4)</sup> 7)	5 <sup>4)</sup>			
RU / EU 36 DK <sup>10)</sup>	3600	106-300	30	56							5	5	5	5	5
RU / EU 55 DK <sup>10)</sup>	5500	106-186		70									5	5	5
		187-300	82,5												
CF 5	550	50-91	15	16											
U / EU11	1100	58-200	22	30	1+2	1+2	1+2	3+4 <sup>5)</sup>							
		201-310													
U / EU22	2200	82-200	30 <sup>2)</sup>	40	1	1	1	3+4 <sup>5)</sup> 12)	3+4 <sup>6)</sup> 12)	5	5 <sup>9)</sup>	5			
U / EU34	3400	82-310					5	5	5	5	5	5	5	5	5
RU / EU56	5600	98-200	30	55				3 <sup>8)</sup>	3 <sup>8)</sup>	5	5	5	5	5	
		201-310													

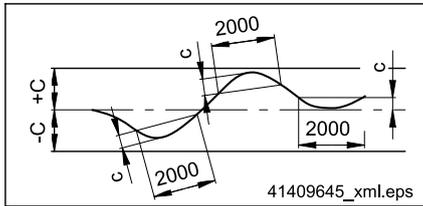
  

KBK															
Trolley	100	100			2	2	2								
	I	300						3+4 <sup>3)</sup>							
	II	600						3							
Load bar (double trolley)	III	1300													
	I	400			1	1	1								
	II	1200						3	3	3 <sup>14)</sup>					
Load bar	III	2600													
	I	200			1	1	1								
	II	600						3	3	3 <sup>14)</sup>					
Crab frame	III	2600													
	I	200													
	II	600						3	3	3 <sup>14)</sup>					
Crab frame	II	1200/2400													
	III	3300													

- 1) up to 400 kg
- 2) max. 28 mm for DC16/25
- 3) up to 500 kg
- 4) max. flange thickness 15 mm
- 5) DC 10 - 1250 1/1 with U / EU22
- 6) DC 10 - 2500 2/1 with U / EU34
- 7) up to 2500 kg
- 8) DC 10 with RU / EU56 on request
- 9) up to 2200 kg
- 10) discontinued, no longer available
- 11) short suspension bracket = from flange width 75 mm
- 12) short suspension bracket = from flange width 170 mm
- 13) from flange width 120 mm
- 14) Suspension bracket for KBK III up to 3200 kg = contour as for item 5 in "Standard suspension"

## 2 Trolleys

### 2.1 Track girder characteristics



Position of a rail seen in elevation (longitudinal slope)

Pay attention to the following when our trolleys are employed:

Tolerance designation	Crane runways		
Tolerance C of straightness with reference to the height of the crane rail centre and crane rail length.	Tolerance class 1	$C = \pm 5 \text{ mm}$	$c = 1 \text{ mm}$
	Tolerance class 2	$C = \pm 10 \text{ mm}$	$c = 2 \text{ mm}$
Tolerance c of straightness with reference to 2000 mm measured length (sample measurement) at any point of the crane runway.	Tolerance class 3	$C = \pm 20 \text{ mm}$	$c = 4 \text{ mm}$

Source: VDI 3576, recommendation: minimum tolerance class 2

- I beams with parallel or sloping flanges to DIN 1025 can be used as tracks. The track must satisfy at least tolerance class 2 for manufacturer tolerance C. Displacement between the rails and gaps at the joint must be avoided. Any displacement between the rails should be ground flat, if required.
- The trolleys must not be obstructed by protruding suspension pins, bolt heads, clamping plates and joint flanges, etc., on the track.
- The running surface of the track girder must only be given a primer coat of  $40 \mu\text{m}$  in the area engaged by the trolley wheels.
- In unclean environments, the running surface of the track should be cleaned regularly and should be free of oil and grease.
- Resilient buffers should be mounted at the level of the travel wheel axle at the ends of tracks to prevent the trolley from derailing.
- Supporting rollers must be fitted to the trolleys if U11/U22/U34/EU56 trolleys are used with ZBF motors in combination with small flange widths.
- Metal or similar hard stops must not be approached as this may result in damage to the electronic equipment. Resilient buffers should be mounted at the level of the travel wheel axle at the ends of tracks to prevent the trolley from derailing.

### 2.2 General information on standard trolleys

#### Properties

The trolleys have the following product features:

- Infinitely variable adjustment of the flange width by means of adjusting rings,
- U11 travel wheels made of plastic (optional steel rollers),
- U22/U34/RU56 travel wheels made of spheroidal-graphite cast iron,
- Universal travel wheels for parallel and sloping running surfaces,
- Travel wheels without flanges, additional lateral steel guide rollers,
- Integrated drop stops in the individual die-cast aluminium halves,
- The side cheek surfaces are powder-coated.

#### U11 - U34 travel on curved track

The minimum permissible curve radius for push-travel trolleys is 1000 mm for U11 and 2000 mm for U22/34 trolleys. However, to ensure good travel characteristics and a longer trolley service life, we recommend that much larger curve radii be used, e.g. 1500 mm or 3000 mm, respectively.

The minimum permissible curve radius for electric-travel trolleys is 2000 mm (U11) and 3000 mm (U22/U34).

Wear of the travel wheels is highly dependent on the curve radius. I beam tracks should be bent with the utmost care to obtain a clean, regular curve. The forces required to move the load may strongly increase in the case of small curve radii in connection with high loads.

#### Trolleys with steel and spheroidal-graphite cast iron travel wheels

We recommend that steel travel wheels be used for:

- frequent travel on curved tracks,
- extreme ambient conditions (dirt accumulation, hot atmospheres, etc.),
- heavily worn girders,
- very heavy dead loads.

## Articulated trolleys

The travel wheels and guide rollers of four-wheel trolleys may display increased wear in installations featuring intensive operation, we recommend the use of double-wheel articulated trolleys for:

- frequent travel on curved tracks that have small curve radii (1000 mm) and high load capacities,
- automatic operation in connection with travel on curved tracks, small curve radii (1000 mm) and high load capacities.

## 2.3 Curve radii for standard trolleys

The specified curve radii apply for normal applications.

Contact the manufacturer or his representative for frequent curve travel operation (e.g. automatic installations).

Trolley size Push-travel trolley	Travel drive/ travel motor	Load capacity [kg]	Push travel		Electric travel		Travel wheel material
			Girder flange width <sup>1)</sup> [mm]	R <sub>min</sub> [mm]	Girder flange width <sup>1)</sup> [mm]	R <sub>min</sub> [mm]	
CF 5		550	50-91	800	-	-	Plastic
U11	E11	1100	58-310	1000	58-310	2000	Plastic <sup>2)</sup>
U22	E22-C	2200	82-200	2000	82-200	3000	Spheroidal-graphite cast iron <sup>3)</sup>
U34	E34	2200	201-310		201-310		
		3400	82-310		82-310		
RU56	EU56	5600	98-310	2000 <sup>4)</sup>	98-310	2500 <sup>4)</sup>	Spheroidal-graphite cast iron

## 2.4 Cross and long-travel speeds

Load capacity [kg]	Chain hoist size DC-Com <sup>6)</sup>	Reeving	Possible speeds in approx. ... m/min	Trolley <sup>5)</sup>	Travel drive/travel motor
125 250 500	1 2 5	1/1 1/1 1/1	20/5	U11	ZBF 63 A 8/2
			24/6	U11	E11
			40/10	U11	ZBF 63 A 8/2
1000	10	1/1	12/4	EU56	ZBF 80 A 12/4
			20/5	U11	ZBF 63 A 8/2
			24/6	U11	E11
				EU56	ZBF 71 A 8/2
			40/10	U11	ZBF 63 A 8/2
				EU56	ZBF 80 A 8/2
1250 2000	10 10	1/1 2/1	12/4	EU56	ZBF 80 A 12/4
			20/5	U22	ZBF 63 A 8/2
			24/6	U22	E22-C
				U34	E22-C
				EU56	ZBF 71 A 8/2
			40/10	U22	ZBF 71 A 8/2
				EU56	ZBF 80 A 8/2

1) Max. flange width 500 mm (except CF 5)  
2) Steel travel wheels optional

3) Plastic travel wheels on request  
4) From flange width 106 mm

5) U11 - U34 trolleys can only be used together with ZBF motors in combination with a VGZ11-34 dual-output gearbox.  
6) A special crossbar is needed when DC 10 units are combined with EU56 trolleys

## 2.5 CF 5 trolley

Max. load capacity 550 kg  
for girders to DIN 1025, part 1 + 5

Suitable for

Demag chain hoist:

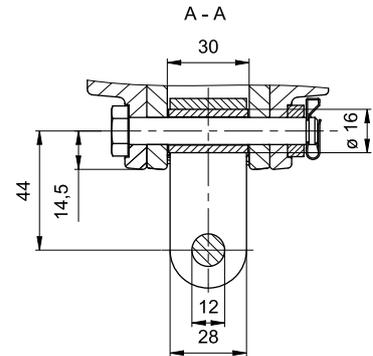
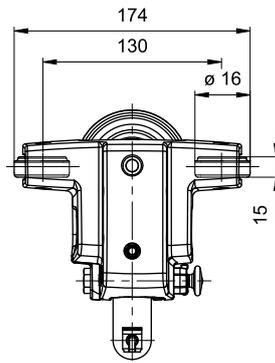
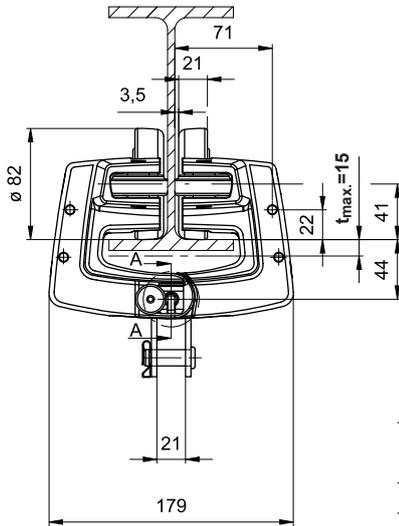
DC-Com 1 - 80 to 125,

DC-Com 2 - 80 to 250,

DC-Com 5 - 80 to 500

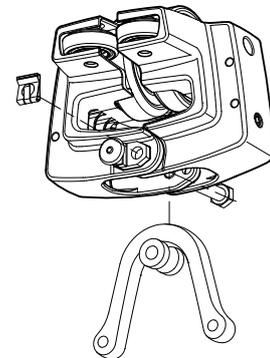
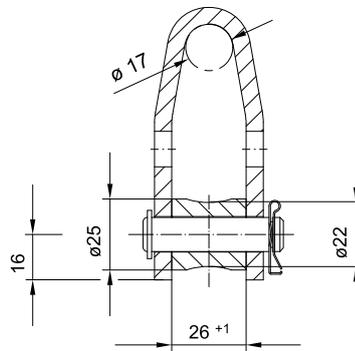
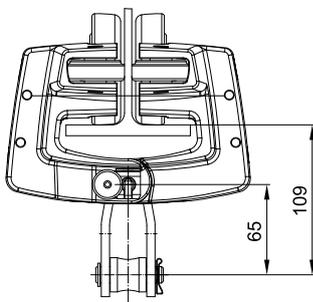


For further information, see "CF5-DC/DCM trolley technical data", refer to the table on page 11.



Designation	Max. flange thickness t [mm]	Flange width [mm]	Order no.	Weight [kg]
CF 5	15	50 - 91	840 007 44	2,6

CF 5 universal bracket  
Order no. 840 045 44



**Chain hoist parallel to the track girder**

The long suspension bracket of the DC chain hoist must be used.



Girder connections by means of fish plates are not permitted in the area of the guide rollers

41777948.eps

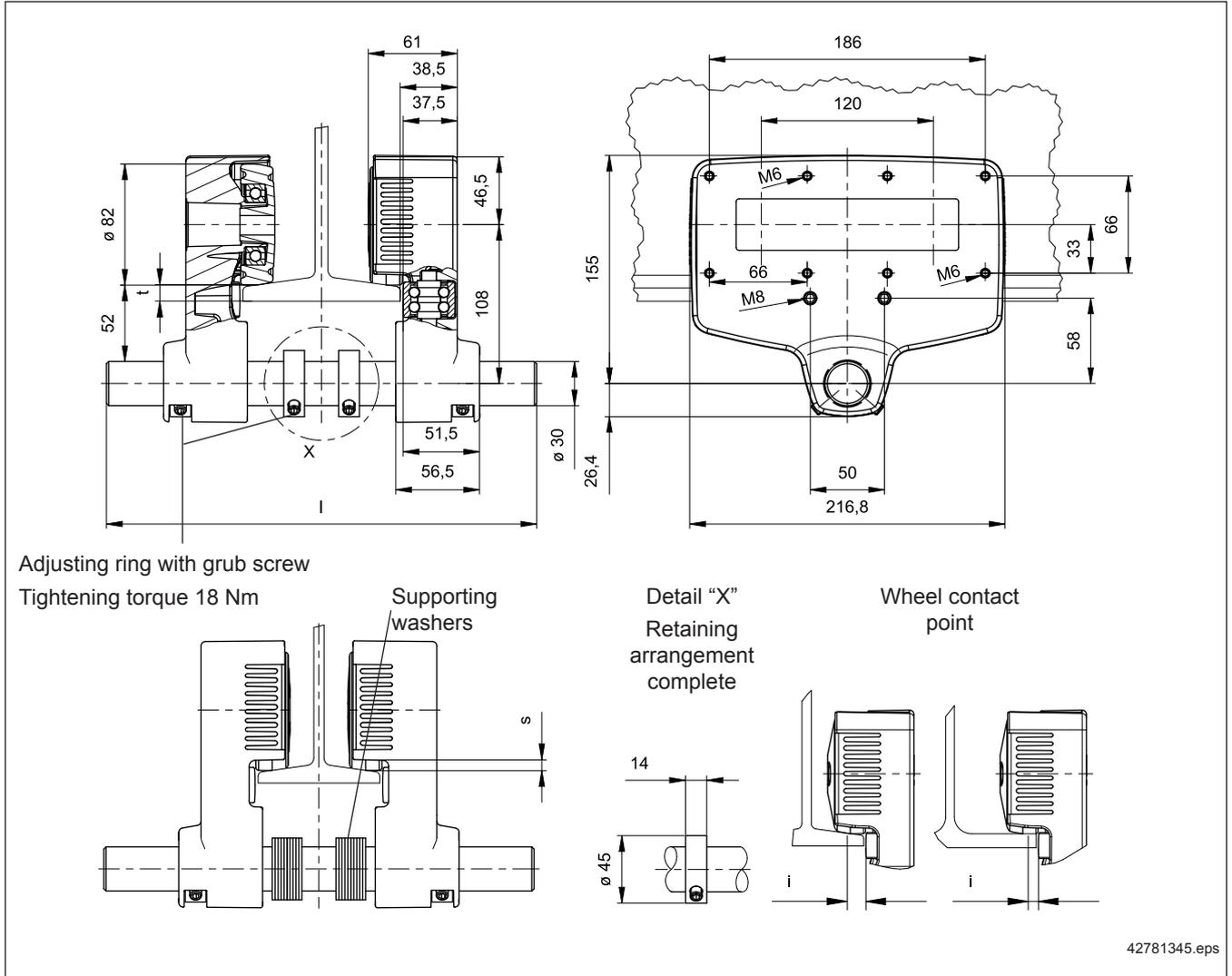
## 2.6 U11 trolley

Max. load capacity 1100 kg  
for girders to DIN 1025, part 1 + 5

For use with Demag chain hoists  
≤ 1000 kg load capacity:  
DC 1, DC 2, DC 5  
DC 10 up to 1000 kg  
DCM 1, DCM 2, DCM 5  
DKUN 1, DKUN 2, DKUN 5, DKUN 10



For further information, see "U11-U34/DC/DCM/DK trolley technical data", refer to the table on page 11.



42781345.eps



**Pay attention to clearance dimension for girder connection by means of fish plates.**

Total play between adjusting rings and suspension bracket: U11 = 4 - 8 mm.

Travel wheel material: plastic, steel travel wheels optional

Designation	Load capacity [kg]	Order no.	Flange width [mm]	Max. flange thickness t [mm]	Load bar l [mm]	Sloping flange		Parallel flange		Weight [kg]	Track girder curve radii		
						i [mm]	s [mm]	i [mm]	s [mm]		Push travel R <sub>min</sub> [mm]	Electric travel R <sub>min</sub> [mm]	
U11 - 200	1100	716 502 45	58 - 200	22	320	13	min. 3 to 6	7,8	min. 4 to 7	7,3	1000	2000	
U11 S - 200		716 507 45											
U11 - 310		716 503 45	201 - 310		430								9,0
U11 - 500		On request	311 - 500		620								7,7

Screws for fittings	Tightening torque [Nm]	Thread depth		Number of supporting washers	Flange width [mm]					
		min. [mm]	max. [mm]		58	66	74	82	90	98 - 310
M6	9	12	17	10	Adjusting rings					
M8	18	16	21	10						
				8						
				8						



## 2.8 E11/E22-C/E34 travel drive

220-480 V, 50 / 60 Hz, 3 ~

Suitable for

Trolleys:

U11 - U34

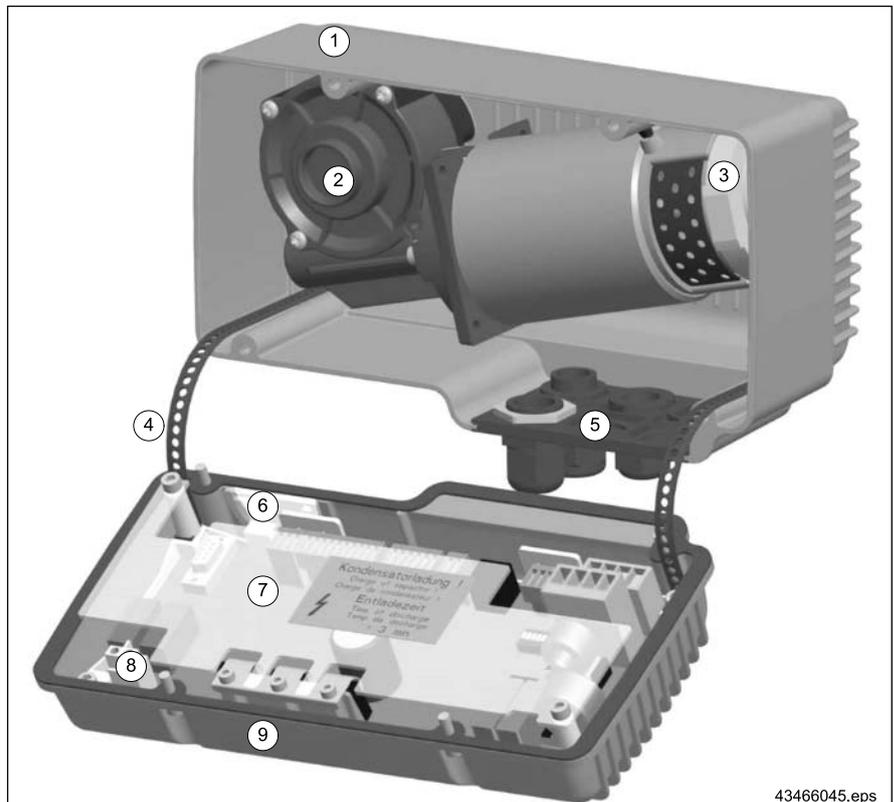
KBK RF 125



For further information, see "E11-E34 DC travel drive assembly instructions (I)+(II)", refer to the table on page 11.

### Design overview

- 1 Housing lower part
- 2 DC worm geared motor
- 3 Rotary encoder (E22-C)
- 4 Housing cover safety retainer
- 5 Plug-in module with unions
- 6 Window for 7-segment display (E22-C)
- 7 Cover plate of control board
- 8 Control board
- 9 Housing cover



43466045.eps

### Selection table

Max. displaceable weight incl. dead load <sup>2)</sup>	Travel drive	Travel speed for 50/60 Hz <sup>1)</sup>				Possible trolleys	Order no.	Max. weight
		Steps		Stepless				
[kg]	Type	v <sub>rated</sub> at full load <sup>3)</sup> [m/min]	v <sub>max</sub> at partial load <sup>3)</sup> [m/min]	v at full load <sup>3)</sup> [m/min]	v at partial load <sup>3)</sup> [m/min]			[kg]
1100	E11	24/6	30/7,5	1,92 - 24	2,40 - 30	U11	716 570 45	4
2200	E22-C	24/3	30/3,7	1,2 - 24	1,5 - 30	U22 / U34	716 950 45	5
		27/3,5	33/4	1,4 - 27	4 - 33	RF 125		
3400	E34	14/3,5	-	1,12 - 14	-	U34	716 740 45	

### Electric key data

Size	Motor size	Min./max. currents and start-up current						
						220-480 V, 50 / 60 Hz, 3 ~ (CE/CSA) <sup>4)</sup>		
		P <sub>N</sub> [kW]	CDF [%]	n <sub>N</sub> [rpm]	Starts/h	I <sub>N 220</sub> [A]	I <sub>N 480</sub> [A]	I <sub>max</sub> [A]
E11	MP 56 M	0,025	20	862	240	0,30	0,15	1,30
		0,1	40	3450	120	1,10	0,55	0,65
E22-C	MP 56 L	0,05	20	630	240	0,50	0,24	1,16
		0,2	40	2525	120	1,80	0,90	4,30
E34	MP 56 XL	0,04	20	478	240	0,50	0,24	1,16
		0,15	40	1914	120	1,60	0,80	3,80

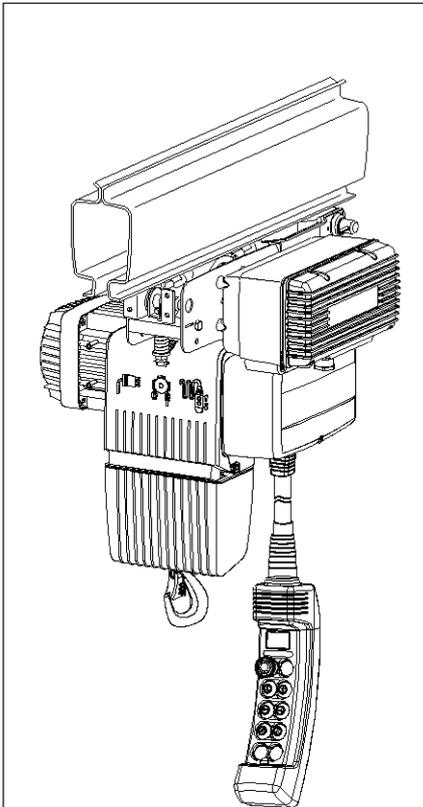
1) In connection with DCS (stepless) from 0,5 m/min to v<sub>max</sub>

2) Max. gradient 1%, > 1% on request

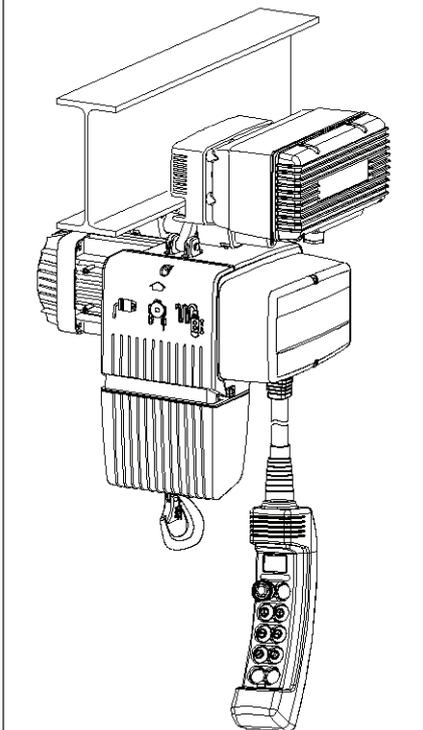
3) Travel speed values = default. They can be changed by programming the parameters.

4) Temporary voltage tolerances of +5% and -10% are possible. Motors are rated to insulation class F.

## Properties



42670747.jpg



42670746.jpg

- IP 55 enclosure,
- Ambient temperature -20 °C to +40 °C,
- Temperature monitoring,
- 7-segment display for operating status, error messages, parameter programming,
- All electrical connections are of plug-in design,
- Inputs for limit switches and fast-to-slow limit switches are integrated into the control board,
- Smooth starting via ramps,
- For voltages from 480 V - 575 V, a single-phase isolating transformer with the following technical data be integrated into the line power supply:
 

Type:	TTT 0,25
Voltage, primary:	575 V
Voltage, secondary:	230 V
Output:	250 VA
- E11 - E34 is fitted to the relevant U11 - U34 trolley,
- E22 can also be fitted to the new RF 125 friction wheel travel drive,
- The travel drive is designed to match the electric concept of the DC chain hoist,
- Line voltage relayed from the travel drive to the chain hoist,
- Signal transmission in steps with 24 V tri-state signals for controlled DC chain hoists (half-wave evaluation),
- Stepless signal transmission with 0–24 V PWM (pulse width modulation) signals in connection with stepless DCS chain hoists.

E11 - E34 units are shipped ready for operation.

The following settings are also possible:

- Travel speed, acceleration and braking parameters can be programmed via DSE-10C/CS control pendants.
- Infinitely variable cross-travel speed only in connection with DCS-Pro and DSE-10CS.

The new E22-C travel drive offers the following advantages compared to E22 units:

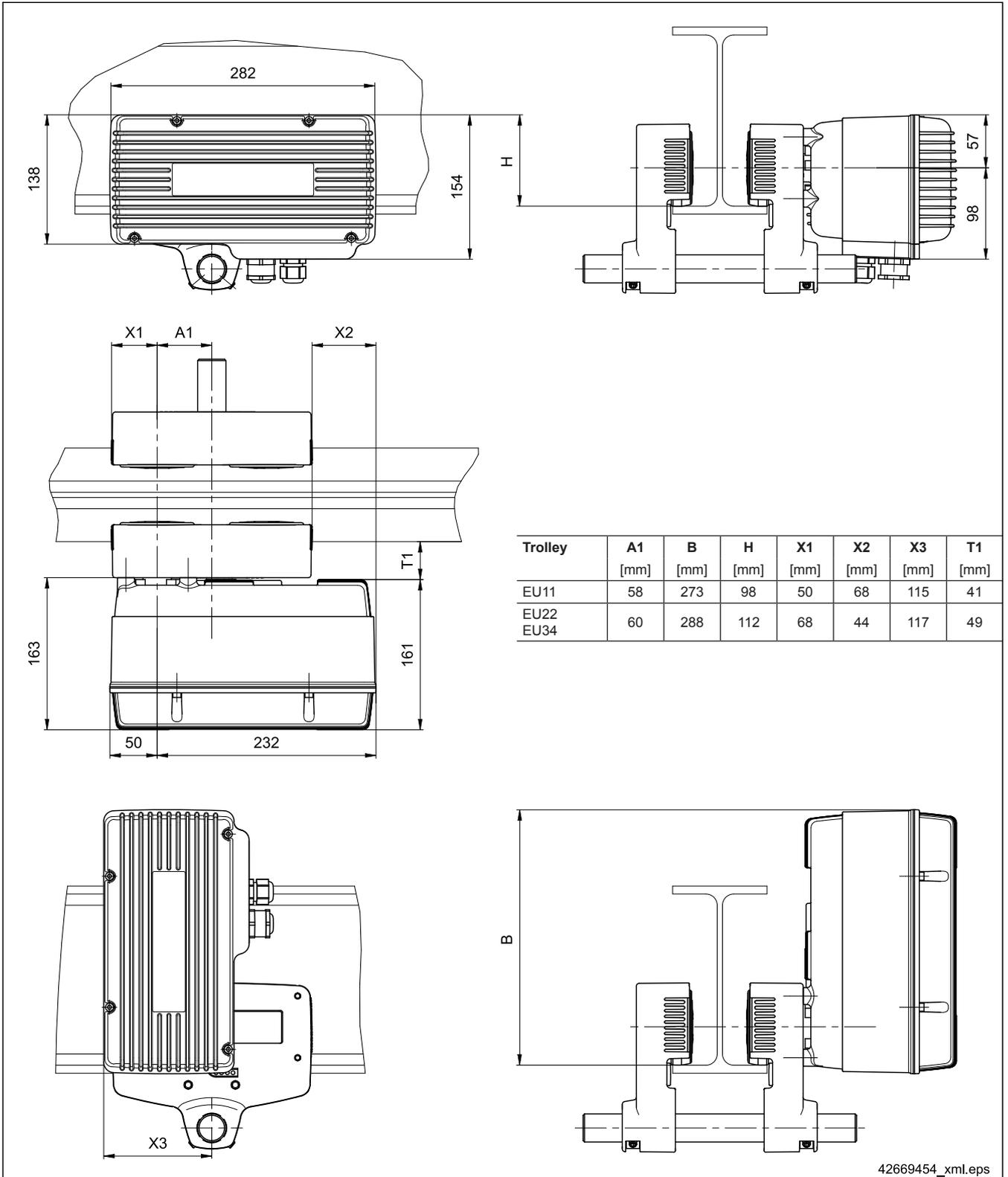
- Improved long-travel characteristics, since there is less potential for skewing of the crane bridge thanks to master/slave operation.
- Variable long-travel speeds.
- The 7-segment display is visible from the outside.
- The parameters can be programmed without opening the cover. The master unit transfers the parameters to the slave unit.
- The master unit receives the speed command (from the control pendant) and communicates the speed reference value to the slave drives (maximum of 2 possible).
- Motor speed detection by means of a separate encoder, which eliminates the need to synchronise the long-travel drives; the influence of the load is also reduced.
- E22 and E22-C travel drives cannot be combined with each other within one travel axis.

The following are provided for the electric connection between the chain hoist and the trolley travel drive:

### DC 1-10

Control cable set (part no. 720 070 45) and  
Power supply cable (part no. 720 072 45).

**E11 - E34 travel drive on U11 - U34 trolley**



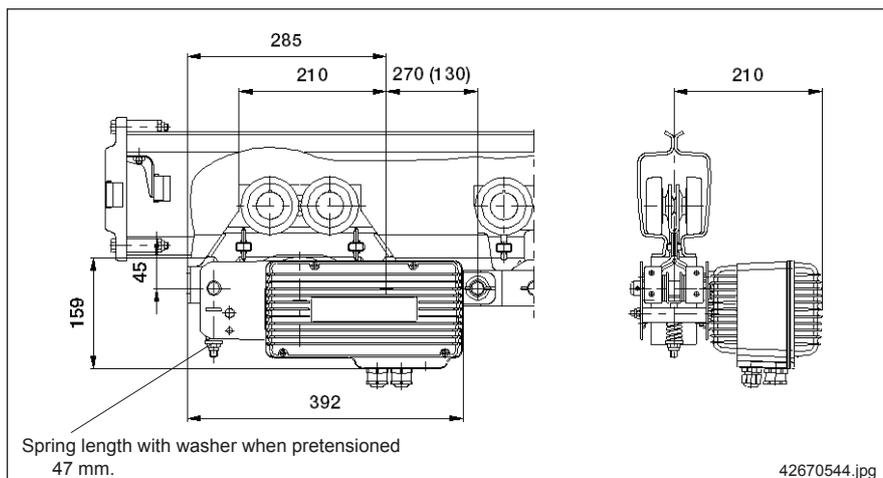
42669454\_xml.eps



**The following must also be considered:**

- Application as a long-travel drive on bottom flanges is not recommended because of the single-wheel drive.
- E11 to E34 travel drives cannot be used in combination with a dual-output gearbox in a vertical mounting arrangement.
- We recommend horizontal mounting of the travel drive for outdoor operation.

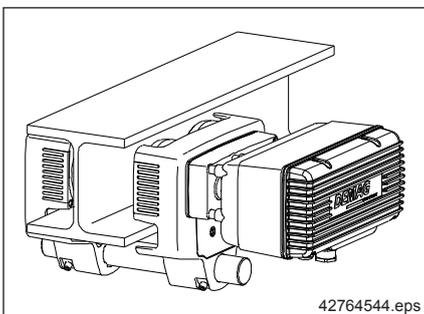
**E22-C travel drive on KBK RF 125**



**i** For further information, see “KBK classic (steel, powder-coated) technical data”, refer to the table on page 11.

**2.9 Dual-output gearbox for E11 - E34 travel drive**

Size	Trolley			Dual-output gearbox	
	Flange width [mm]	Order no.	Weight [kg]	Order no.	Weight [kg]
U11 - 200	58 - 200	716 502 45	7,3	716 680 45	2,2
U11 S - 200		716 507 45	9,0		
U11 - 310	201 - 310	716 503 45	7,7		
U22 - 200	82 - 200	716 621 45	13,6		
U34 - 310	82 - 310	716 731 45	14,6		



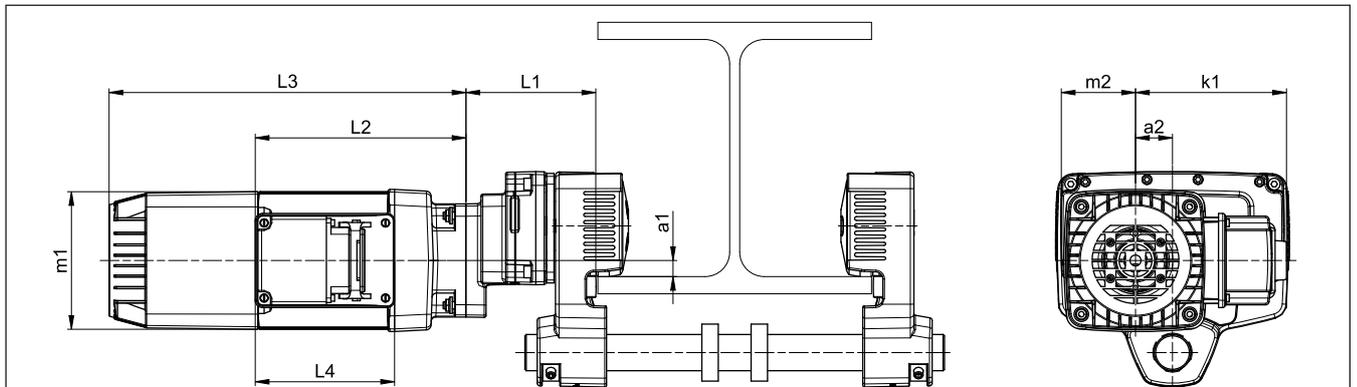
When U11-34 trolleys are fitted with E11-34 travel drives, 1 travel wheel is driven. Under certain ambient conditions, e.g. travel track contaminated with oil, it may be necessary to drive more than one travel wheel. The VG dual-output gearbox is used for driving both travel wheels on the driven side cheek.

Older trolley designs cannot be combined with the dual-output gearbox, as they partly have only one travel wheel that can be driven per trolley (U22-34) or different axle centre distances (U11). If all 4 travel wheels are to be driven, 2 separately driven side cheeks, 1 crossbar and 2 drives and 2 dual-output gearboxes must be ordered.

If a dual-output gearbox is installed between the trolley and the travel drive, the travel drive protrudes a further 51 mm beyond the girder.

**i** For further information, see “VG11-34 EU11-34 dual-output gearbox assembly instructions”, refer to the table on page 11.

## 2.10 EU11 - EU34 trolley with ZBF three-phase motor



42734945.eps

Trolley size	Motor	a1	a2	m1	m2	k1	L1	L2	L3	L4	Weight for flange width	
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	≤ 200 mm [kg]	> 200 - 310 mm [kg]
EU11	ZBF 63	3,44	40,53	140	70	124	134	218	335	153	22,6 <sup>1)</sup>	23,0 <sup>1)</sup>
EU22 / EU34	ZBF 71	18,44		157	80	134	142				231	391
	ZBF 80									39,3	40,3	

Designation	Trolley size Load capacity [kg]	EU11	EU22	EU34	Motor type	Order no.	Weight [kg]		
		1100	2200	3400					
1 VG11-34 ZBF travel drive cpl. without trolley and motor		Travel speed [m/min]					5,3		
		16/4						ZBF 63 A 8/2	716 750 45
			20/5						
		20/5		20/5				ZBF 63 A 8/2	716 751 45
			28/7						
		30/7,5		28/7				ZBF 71 A 8/2	716 752 45
			40/10						
		40/10		40/10				ZBF 80 A 8/2	716 753 45
	50/12,5								

### Example for ordering

#### EU11 cpl. up to flange width 310 mm

#### Consisting of:

- 1 U11 - 310 trolley complete
- 1 Travel motor with specification of voltage and type of enclosure
- 1 Travel gearbox according to speed and load capacity assignment

### Supporting roller fittings

Supporting rollers need to be fitted to trolleys for smaller flange widths in combination with the larger motors. Supporting rollers are required for trolleys in the following cases:

- with ZBF 80 motors up to flange width 130,
- with ZBF 90 motors up to flange width 200.

### Cross-travel unit control

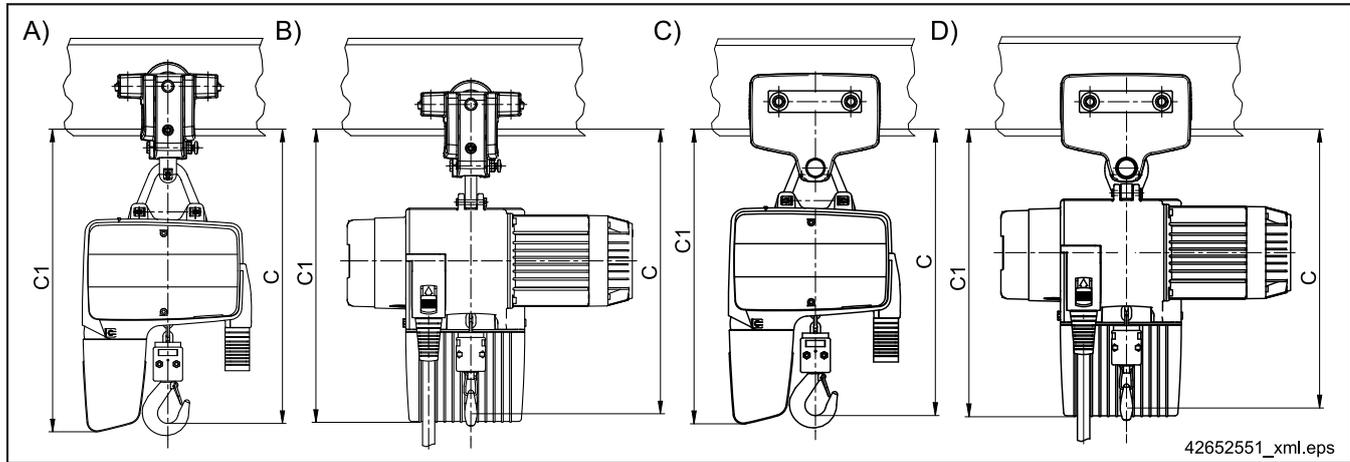
The Polu-Box (DC 1-10) contains the brake controls. GF brake modules are used and motors are supplied with a star point for voltages higher than 500 V.

### Long-travel unit control

An additional GF brake module must be included.

## 2.11 Hook dimension C with trolleys

### DC-Com 1-10 chain hoist with CF 5 trolley, U11 - U34



Chain hoist size <sup>1)</sup>	Reeving	Motor size	Trolley	(A), (C) trolley at right angles to the girder			(B), (D) trolley parallel to the girder			
				C	C1 with chain collector (hook path)		C	C1 with chain collector (hook path)		
					H4/H5	H8		H4/H5	H8	
DC-Com 1/2	1/1	ZNK 71 ...	U11	416	425	455	410	419	449	
			CF 5	406	415	445	401	410	440	
DC-Com 5		ZNK 80 ...	U11	468	487	517	462	481	511	
			CF 5	458	477	507	453	472	502	
DC-Com 10		2/1	ZNK 100 A 8/2	U11	557	578	667	581	602	691
				U22	569	590	679	593	614	703
	ZNK 100 B 8/2		U22 / U34	661	679	729	685	703	753	

1) Dimensions C and C1 decrease when the short suspension bracket is used:  
by 38 mm for DC-Com 1-5 units,  
by 33 mm for DC-Com 10 units.

# 3 Accessories

## 3.1 Mechanical options

### 3.1.1 Buffer stop

#### Use

We recommend that track ends be provided with elastic buffers and that our KP-A and KP-T clamp-fitted buffers are used:

#### Properties

- simple installation;
- for sloping and parallel flanges;
- for various trolleys, from CF 5 Click-fit trolleys to U11 and RU56 trolleys;
- tightening torques for assembly cast into clamp-type buffer;
- buffers can be easily replaced;
- operating temperature range: from -20°C to +70°C;
- sufficient resistance to ageing, ozone and weather;
- resistant to acids and lyes;
- not suitable for chain hoists with suspension and support roller for chain collector box;
- not suitable for articulated trolleys.

#### General operating conditions

Buffer size	KP-A10				KP-T16			
Flange thickness	max. 21 mm				max. 31 mm			
Flange width	50 mm to 314 mm				82 mm to 305 mm			
Smallest DIN girder profile section	INP 100	IPE 100	IPB 120	IPBL 120	INP 180	IPE 180	IPB 180	IPBL 180
Largest DIN girder profile section	INP 300	IPE 600	IPB 320	IPBL 450	INP 500	IPE 600	IPB 650	IPBL 1000
Travel wheel diameter	56 mm to 80 mm				80 mm to 125 mm			

KP-A10 (KP-T16) clamp-fitted buffer

1) Two of the part no. parts given are required for providing limit stops at both ends of the runway.

Clamp-fitted buffer <sup>1)</sup>	KP-A10			KP-T16		
Designation	KP-A10/150	KP-A10/250	KP-A10/360	KP-T16/250	KP-T16/360	KP-T16/420
Order no.	826 924 44	826 926 44	826 928 44	826 982 44	826 984 44	826 986 44
Flange width [mm]	50 - 104	105 - 204	205 - 314	82 - 195	196 - 305	306 - 420



## 3.2 Electric options

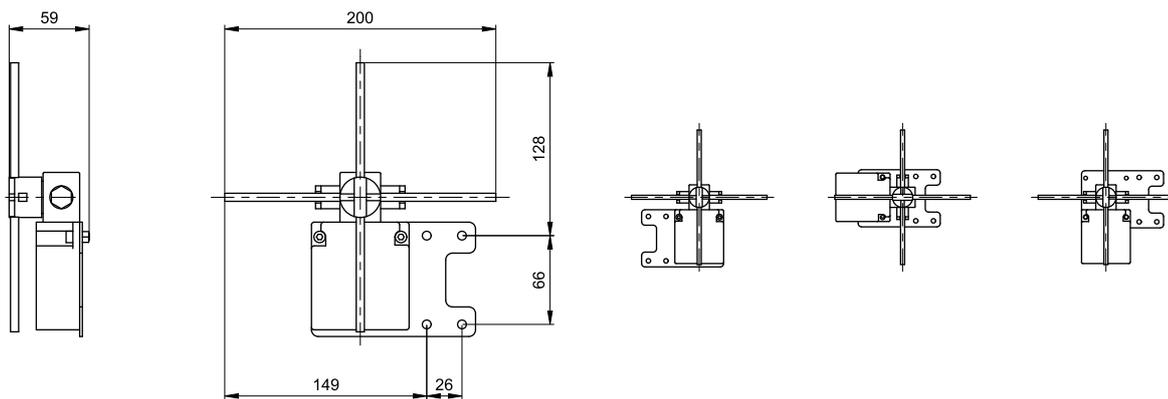
### 3.2.1 Long and cross-travel limit switches



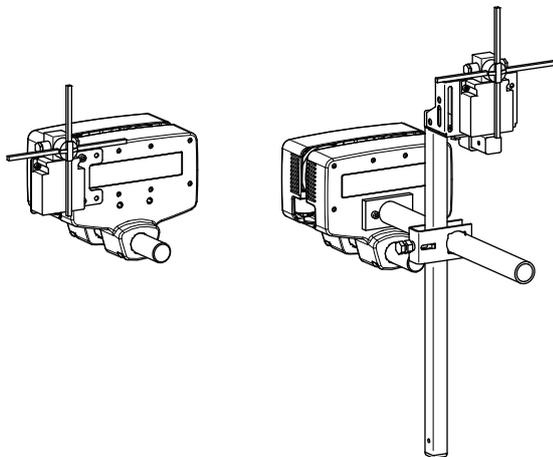
For further information, see “E11-E34 DC travel drive assembly instructions (I)+(II)” and “KBK classic technical data”, refer to the table on page 11.

Cross-type limit switches for single or double-stage cut-off of the travel motion

#### Dimensions

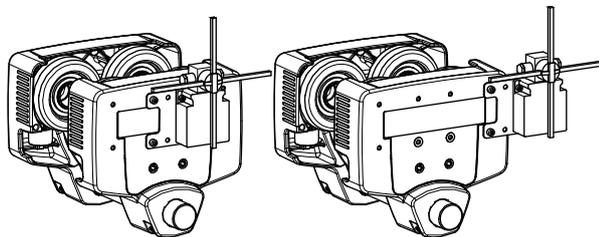


#### Examples for mounting U11

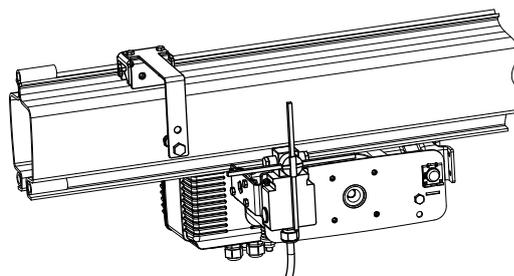
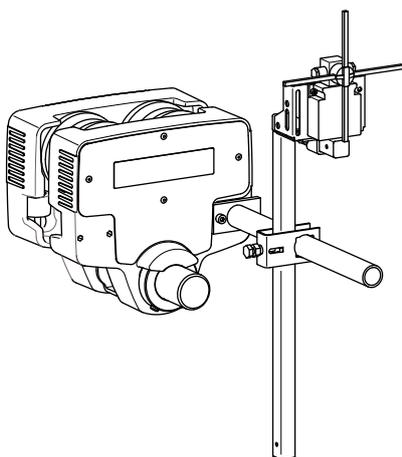


RU56

#### U22 / U34

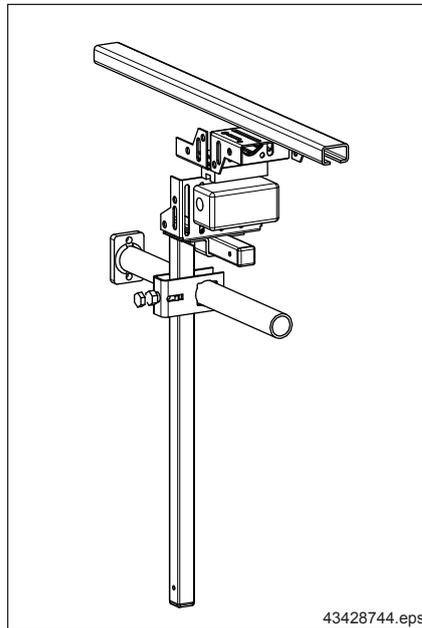


KBK II

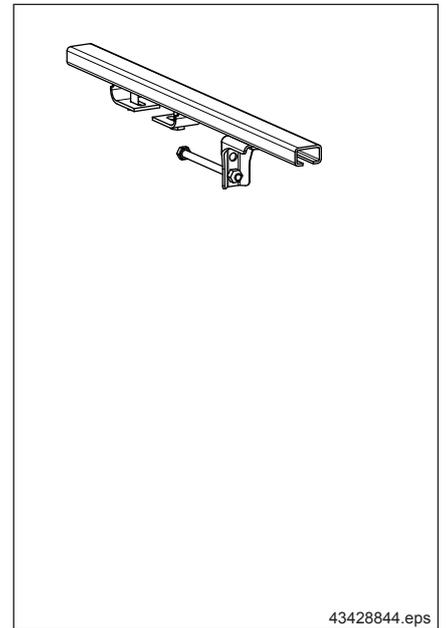


Designation		Order no.	Weight [kg]
Limit switch	EU11 to EU56	716 663 45	1,60
	KBK II-L, KBK II, KBK II-H	858 351 44	0,85
Switching vane	KBK II-L, KBK II	851 352 44	0,60
	KBK II-H	858 352 44	0,66

### Maintained contact magnet switch



### Switching vane on profile sections



Designation	Order no.	Weight [kg]
Installation parts for maintained contact magnet switch	748 671 46	7,5
Switching vane on profile sections	748 032 46	2,6

The travel motion can be cut off mechanically by means of a travel limit switch at a switching vane/limit switch fitting or electrically by means of a maintained contact magnet switch.

### 3.2.2 Power supply lines

**A)**

**B)**

**i** The following must also be considered:

- Only use M8x30 bolts on DC trolleys U11 to RU56.
- A maximum torque of 100 Nm may be applied to towing arm tube (1).

42638149\_xml.eps

Item	Designation	Trolley	Order no.
A)	Current collector	CF 5 Click-fit	840 085 44
B)	Current collector consisting of: Towing arm tube (1), current collector tube (2), tube clip (3)	U11 - U34 RU / EU56	716 560 45

**Example: KBK 25**

KBK 25 trailing cable power supply line for straight track sections up to 30 m in length, comprising:

- 1 KBK 25 rail section (galvanised)
- 2 Towing trolley
- 3 Flange clamp
- 4 C-rail 800 mm
- 5 Steel girder (by the customer)
- 6 Clamp-fitted buffer
- 7 Control pendant
- 8 Chain hoist
- 9 C-rail bracket
- 10 Cable trolleys
- 11 Trailing cable
- 12 Rail end cable clamp
- 13 Adjustable limit stop
- 14 Terminal box
- 15 Mains connection switch
- 16 Rising line (by the customer)

42531645.jpg

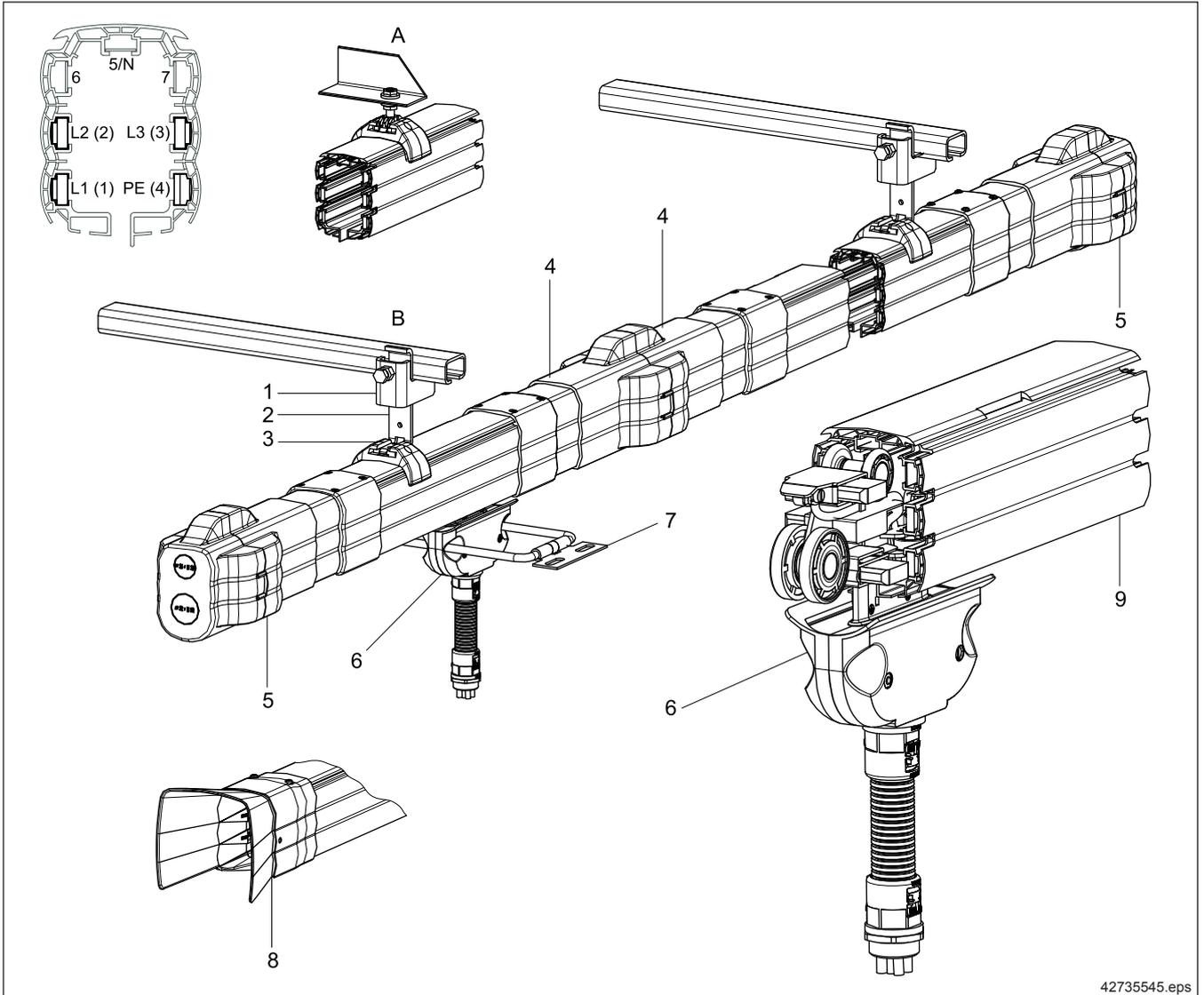
**i** For further information, see “KBK trailing cable technical data”, refer to the table on page 11.

**DCL-Pro with end powerfeed or line powerfeed**

The DCL-Pro system (Demag Compact Line) can be used as an alternative to a trailing cable power supply arrangement.

It can be installed quickly and easily thanks to patented connectors. The rail elements are supplied pre-assembled and do not have any loose parts. It can be connected to its supporting superstructure either by threaded pins or by suspensions for C-rails.

DCL-Pro can be supplied as an enclosed conductor line system that has 4 to 7 poles with IP23 protection (IP24 optional). Thanks to its modular design, it can be easily adapted to your superstructure.



42735545.eps

- A) Suspension with M8 threaded pin
- B) Suspension from C-rail
- 1) Clamp section
- 2) Attachment bracket

- 3) Sliding suspension
- 4) Connector caps
- 5) Connector end cap (with powerfeed)
- 6) Current-collector trolley

- 7) Towing arm
- 8) Entry/transfer section
- 9) Straight section (standard length 4000 mm)



# DC chain hoist project engineering sheet

Please configure your DC chain hoist and send the project engineering sheet to your next Demag Cranes & Components sales office or to your relevant agent, authorised reseller or head office in Wetter.

<b>Customer:</b> _____ _____ _____ <b>Contact:</b> _____ <b>Telephone/mobile:</b> _____ <b>Fax:</b> _____ <b>Email:</b> _____	<b>Project no.:</b> _____ <b>Customer no.:</b> _____ <b>Visit/ Tel./ Fax dated:</b> _____ <b>Quotation submission date:</b> _____ <b>Filled in by (name)/dept.:</b> _____ <b>Date:</b> _____
---	---

- |  |  |  |  |
|--|--|--|--|
| <input type="checkbox"/> Consultation by telephone | <input type="checkbox"/> With acceptance       | <input type="checkbox"/> Customer has forklift | <input type="checkbox"/> With installation       |
| <input type="checkbox"/> Customer requests visit   | <input type="checkbox"/> Test weight available | <input type="checkbox"/> Customer has platform | <input type="checkbox"/> In normal working hours |
|  |  |  | <input type="checkbox"/> At the weekend          |

Delivery date \_\_\_\_\_ Delivery location \_\_\_\_\_

**Please enter model code:**

Trolley type	Chain hoist type	Load capacity	Reeving	Hook path	Hoist speed	Oper. voltage/ frequency	Travel speed	Flange width
Trolley size	Chain hoist size	[kg]		[m]	[v/min]	[V/Hz]	[m/min]	[mm]

Number of chain hoists: \_\_\_\_\_

**Type:**

<input type="checkbox"/> Stationary	<input type="checkbox"/> Travelling	<input type="checkbox"/> Low headroom	<input type="checkbox"/> Low headroom in extended KLDC design	Grid dimension _____
<input type="checkbox"/> DC Wind	<input type="checkbox"/> Double chain hoist	<input type="checkbox"/> LDC-D (with connecting shaft)	<input type="checkbox"/> KLDC-D (low-headroom design)	
		Type <input type="checkbox"/> 2/4	<input type="checkbox"/> 3/4	<input type="checkbox"/> 4/5
		Hook distance L1 _____	L2 (only for 3/4) _____	

**Ambient conditions:**

<input type="checkbox"/> Electroplating, pickling, galvanising plant	<input type="checkbox"/> Clean room, class _____
<input type="checkbox"/> Foundry	<input type="checkbox"/> Foodstuffs sector
<input type="checkbox"/> Special ambient temperature < -20 °C / > +45 °C:	_____
Other ambient conditions:	_____

**Special chain:**  Corrud chain     HS 7 chain     RS 6 stainless steel V4A chain

**Paint finish:**  Special colour in RAL \_\_\_\_\_

**Suspension:**

<input type="checkbox"/> Standard	<input type="checkbox"/> ZMS	<input type="checkbox"/> Short suspension bracket (only for DC-Com)
<input type="checkbox"/> Suspension ring turned 90°		<input type="checkbox"/> Susp. bracket for KBK III (only for DC 15/16)
<input type="checkbox"/> Suspension hook		

**Trolley:**

<input type="checkbox"/> Click-fit push-travel trolley	<input type="checkbox"/> EU electric-travel trolley	Travel speed _____
<input type="checkbox"/> U push-travel trolley		
<input type="checkbox"/> EUD articulated trolley	Curve radius _____	Girder type/size:
<input type="checkbox"/> Suitable for KBK size _____	<input type="checkbox"/> straight	<input type="checkbox"/> articulated

**Trolley options:**

<input type="checkbox"/> U11 steel travel wheels	<input type="checkbox"/> Supporting roller fittings	<input type="checkbox"/> Current collector
<input type="checkbox"/> Trolley buffer	<input type="checkbox"/> Mechanically coupled at distance of _____	
<input type="checkbox"/> Clamp-fitted buffer	<input type="checkbox"/> Thoraxol paint finish for EU56 travel motor/articulated trolley	

**Motor:**  CSA design     Microtherm

**LAM load handling attachment for Manulift/rocker switch:**

<input type="checkbox"/> LAM to ident. no. Ident. no.: _____	<input type="checkbox"/> LAM w/o ident. no. Container/load: _____
--	---

**Control units:**  None     Standard     DSK     DST    Radio control  DRC-DC     DRC-MP

**Control cable:**  None     Standard     DC support sleeve     2TY     Mobile

**Control cable length:**

<input type="checkbox"/> for H 5 (0,8-3,8 m)	<input type="checkbox"/> for H 8 (3,9-6,8 m)	<input type="checkbox"/> for H11 (6,9-9,8 m)
Cable length longer than H11: _____		

**Additional plug connection:**  Harting main power supply     Harting control cable



**The current addresses of our sales offices, subsidiaries and agencies worldwide can be found on the Demag Cranes & Components GmbH homepage at [www.demagcranes.com/Contact](http://www.demagcranes.com/Contact)**

**Demag Cranes & Components GmbH**

PO Box 67 · 58286 Wetter (Germany)

Phone +49 (0)2335 92-0

Fax +49 (0)2335 92-7676

[www.demagcranes.com](http://www.demagcranes.com)