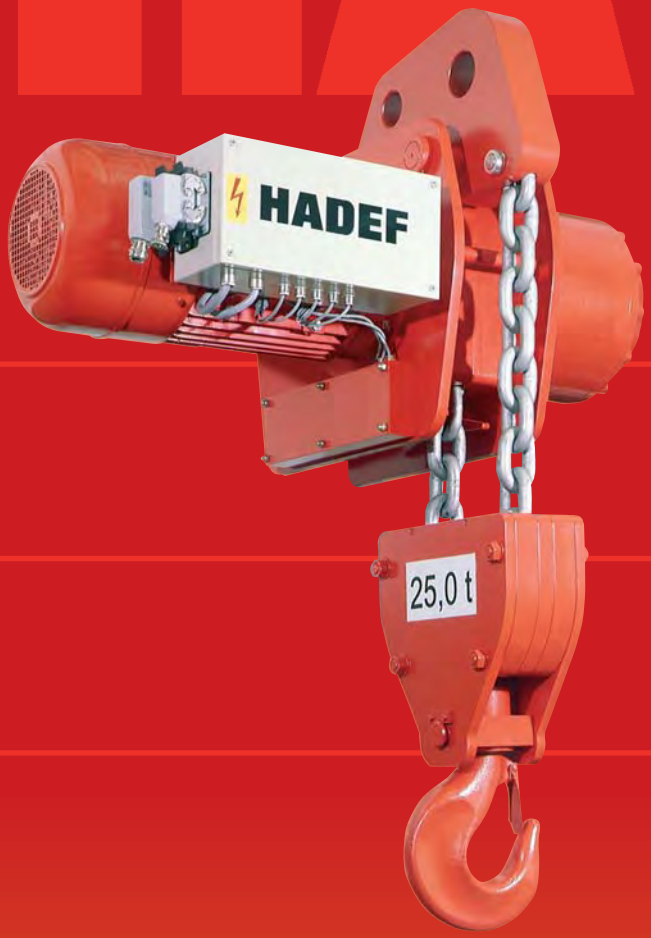
HADEF

HADEF®



Hebezeuge
HOISTS

Winden
WINCHES

Krane
CRANES

HADEF®

DNV Certified Company

Program

Electric and Pneumatic Chain Hoists and Winches

- *Hoists of standard, low or ultralow headroom configuration*
- *zinc plated hand and load chains*
- *various accessories*
- *explosion-proof Chain Hoists and Winches*
- *Pneumatic Chain Hoists and Winches for offshore use*

Manual Chain Hoists and Winches

- *reliable quality*
- *custom-built Hoists and Winches*
- *explosion-proof Spur Gear Hoists and Trolleys*
- *zinc plated hand and load chains*
- *hoists fitted with overload protection by slipping-clutch*

HADEF *professional line*

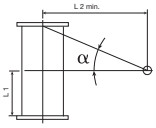
- *favourable balance of price and performance*
- *short delivery times*
- *low maintenance work*
- *reliability and safety in use*

Cranes and Crane components

- *complete Cranes and Adapter Cranes without main beam*

Accessories

- *large variety of accessories*
- *reliable quality*



Important technical information about hoists, winches and cranes

This brochure shows an extract from our current product range.

For more information, please visit our website:

www.hadef.com

Content

HADEF Hoists in use

Single Girder Electric Underslung Crane
Type EDEE
with Electric Chain Hoist Type 66/04 AKE
capacity: 20 t

incl. HADEF steel construction

special paint suitable for pharmaceutical industry

Electric Chain Hoist
Type 29/06 EE
ultralow headroom configuration with electric trolley
capacity: 1 t

Electric Chain Hoist
Type 62/05 R
with push travel trolley
capacity: 125 kg

Offshore

rack and pinion drive

Single Girder Manual Underslung Crane Type EDHH
with Spur Gear Hoist Type 29/98 HH
rack and pinion drive
capacity: 3 t

special surface treatment and offshore-paint to withstand rough conditions of use

ultralow headroom configuration for use in confined space i.e. for ships' engine room installation

Electric Chain Hoist Type 29/06 EH
ultralow headroom configuration with hand geared trolley
capacity: 2 t

Electric Wirerope Winch Type 42/87 E
capacity: 2 t
used for service work on the platform's anchorage chains

HADEF®

Ultralow headroom

for curved beam

Electric Chain Hoist Type 29/06 EE
ultralow headroom configuration
with swivelling electric trolley
capacity: 5 t

Traffic Tunnelling

Jib Crane
with Electric Chain Hoist
ultralow headroom
configuration and beam
locking device

Adapter Crane
with Electric Chain Hoist ultralow headroom configuration
Type 29/06 EE, capacity: 1 t
only 2,95 m height available

Wall-mounted Jib Crane Type 320/01 E
with Electric Chain Hoist Type 28/06 ER
with push travel trolley
capacity: 400 kg

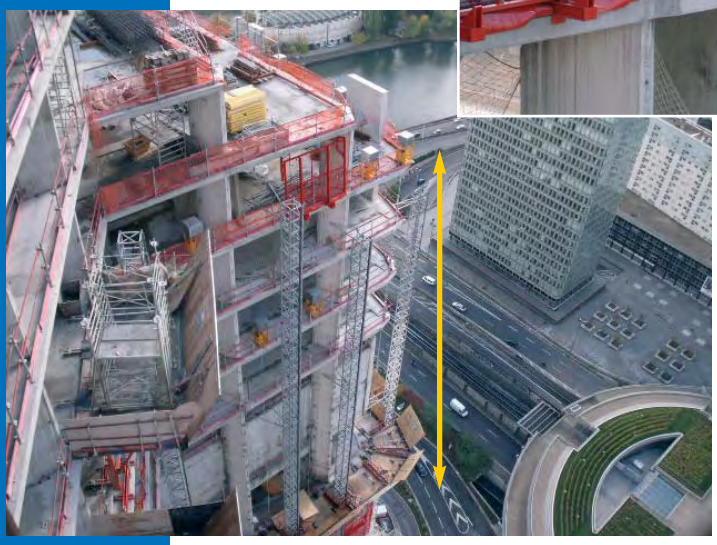
in rescue container

Electric Chain Hoist
with electric trolley
Type 66/04 AKE
capacity: 5 t
installed in a sewage plant in Tunisia

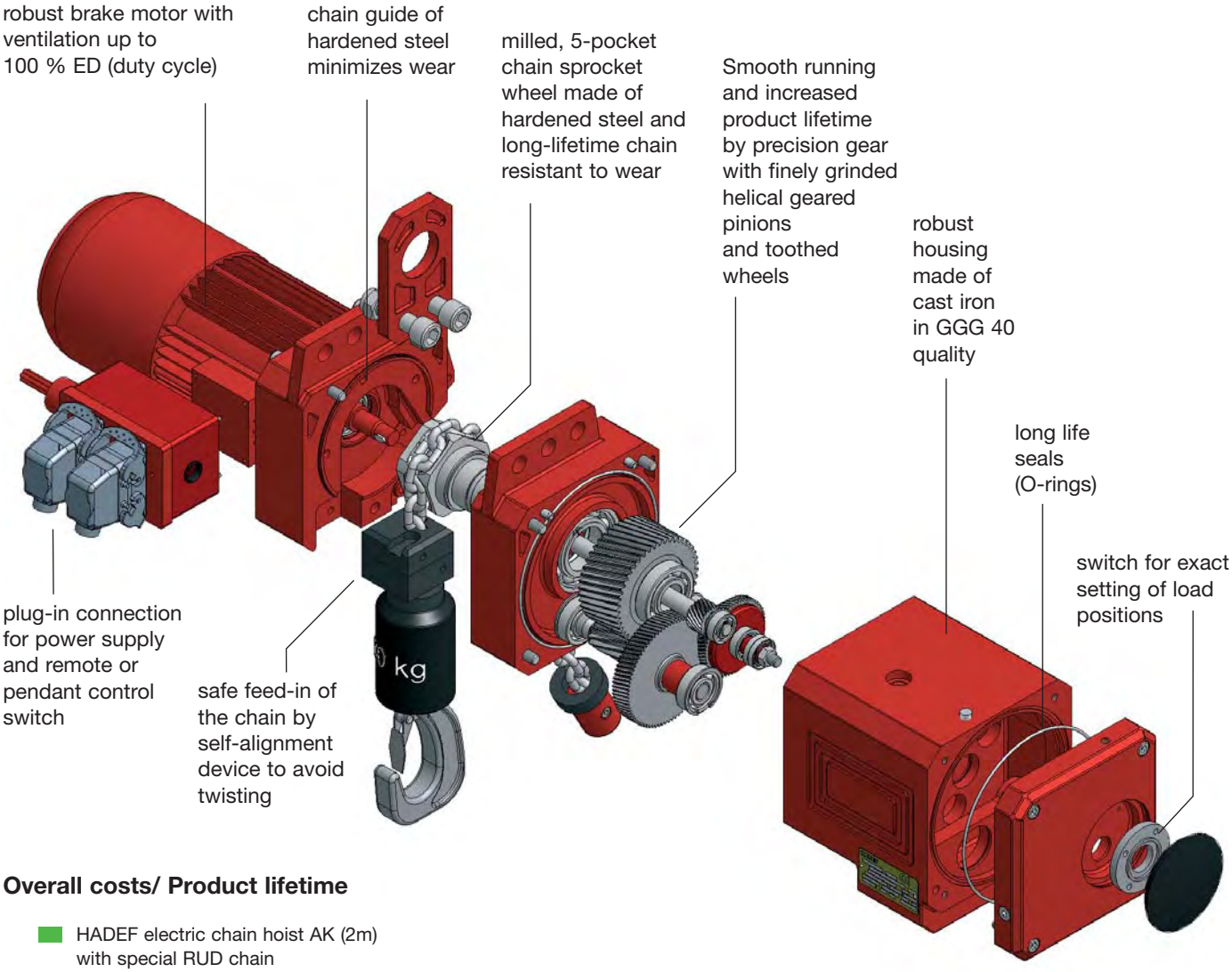
More than 30 HADEF Electric Chain Hoists
Type 66/04 AKE
with positionning switch are used to fill
building material into industrial mixers.

Electric Chain Hoists
Type 66/04 AKE - 25 t
Type 66/04 AKE – 40 t
used for static rotor
blade tests

Custom-built HADEF
hoisting device to move
a platform used in
building construction

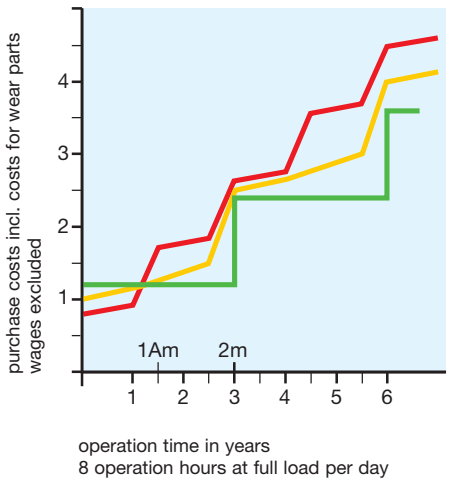


Type 66/04 AK
Technical Details



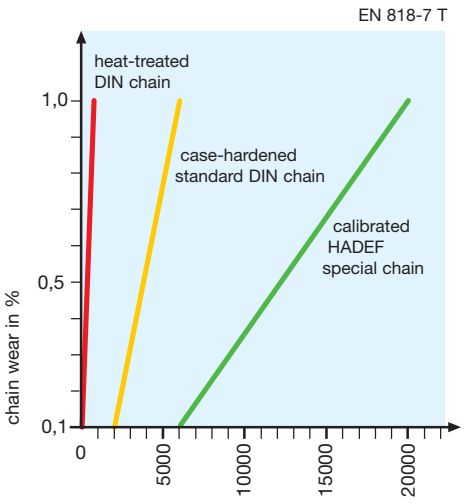
Overall costs/ Product lifetime

- HADEF electric chain hoist AK (2m) with special RUD chain
- electric chain hoist (2m) with standard chain
- electric chain hoist (1Am) with standard chain



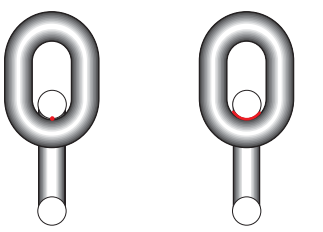
operation time in years
8 operation hours at full load per day

Comparison of chains



number of load movements (lifting + lowering)

Force on the chain



standard chain
punctual load

calibrated HADEF special chain
in line load

66/04 AK

HADEF®

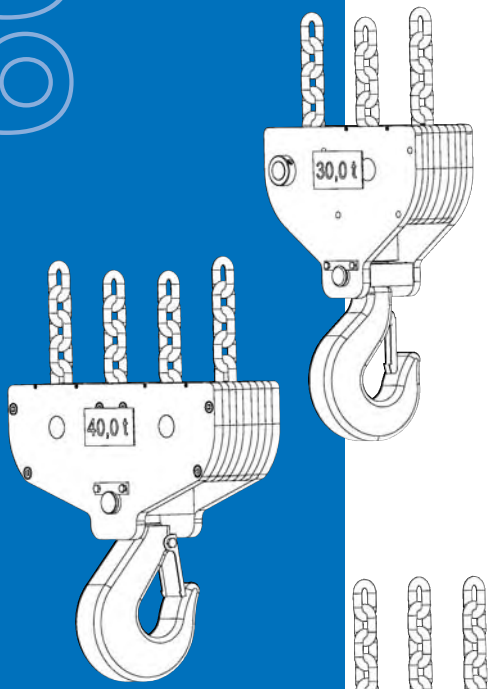
The premium solution for heavy duty installations!

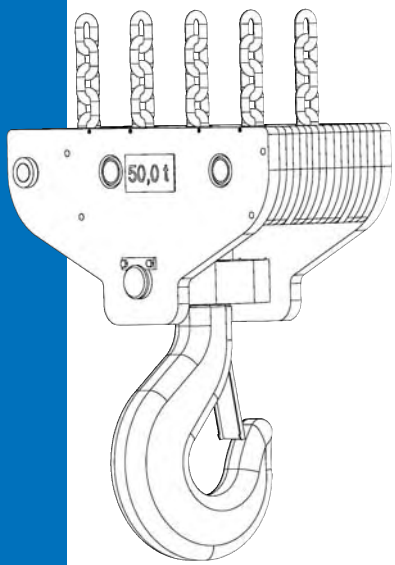
Electric Chain Hoists

12,5 t single fall

Addition to the AK PREMIUM LINE!

AK 10
10 - 60 t





Sicherheit **Safety**

- 42 V low voltage control
- phase monitoring relay
- thermal protected hoist motor
- emergency and operational limit switches
- hoist protection by power cut-off
- plug-in connection for power supply and remote or pendant control switch
- IP 55 enclosure protects the hoist from penetration of humidity and dust
- operating time meter
- available up to “5 m” classifiation [1]
- variable trolley speed of 0,1 – 8 m/min
- 5 years guarantee [2]

Ex - version on request

(1) Hooks and chains are wear parts and must be verified acc. to the operation instructions and exchanged, if necessary.
(2) on condition of proper use, - wear parts excluded
See our General Terms and guarantee conditions.

HADEF®

Type 66/04 AK

Electric Chain Hoists

Available up to 60 t capacity

capacity W.L.L. kg	chain falls no.	lifting speed main/ slow m/min	type	FEM 9.511/ ISO 4301 (1)
250	1	16,0/ 4,0	**AK 402 DT 80 N 8/2**	3m/M6
500	1	6,0	**AK 405 DT 80 K 4**	3m/M6
500	1	9,4/ 2,3	**AK 405 DT 80 N 8/2**	3m/M6
630	1	6,0	**AK 406 DT 80 K 4**	3m/M6
630	1	9,4/ 2,3	**AK 406 DT 80 N 8/2**	3m/M6
1000	2	3,0	**AK 410 DT 80 K 4**	3m/M6
1000	2	4,5/ 1,1	**AK 410 DT 80 N 8/2**	3m/M6
1000	1	8,0/ 2,0	**AK 610 DT 90 L 8/2**	3m/M6
1250	2	4,5/ 1,1	**AK 412 DT 80 N 8/2**	3m/M6
1250	1	8,0/ 2,0	**AK 612 DT 90 L 8/2**	3m/M6
1600	1	8,0/ 2,0	**AK 716 DT 100 L 8/2**	3m/M6
1600	1	11,0/ 2,6	**AK 716 DT 100 L 8/2**	3m/M6
2000	2	4,0/ 1,0	**AK 620 DT 90 L 8/2**	3m/M6
2000	1	10,0/ 2,5	**AK 820 FN 100 M8/2**	3m/M6
2500	2	4,0/ 1,0	**AK 625 DT 90 L 8/2**	3m/M6
2500	2	5,5/ 1,3	**AK 725 DT 100 L 8/2**	3m/M6
2500	1	8,0/ 2,0	**AK 825 FN 100 M8/2**	3m/M6
3200	2	4,0/ 1,0	**AK 732 DT 100 L 8/2**	3m/M6
3200	2	5,0/ 1,25	**AK 832 FN 100 M8/2**	3m/M6
4000	2	5,0/ 1,25	**AK 840 FN 100 M8/2**	3m/M6
5000	2	4,0/ 1,0	**AK 850 FN 100 M8/2**	3m/M6
5000	1	5,4/ 1,35	**AK 905 FN 112 M8/2**	3m/M6
5000	1	8,0/ 2,0	**AK 905 FN 132 M8/2**	3m/M6
6300	1	5,4/ 1,35	**AK 906 FN 112 M8/2**	3m/M6
6300	1	8,0/ 2,0	**AK 906 FN 132 M8/2**	3m/M6
10000	1	5,8/ 1,4	**AK 1010 FN 160 M8/2**	3m/M6
10000	2	2,8/ 0,7	**AK 910 FN 112 M8/2**	3m/M6
10000	2	4,0/ 1,0	**AK 910 FN 132 M8/2**	3m/M6
12000	2	2,8/ 0,7	**AK 912 FN 112 M8/2**	3m/M6
12000	2	4,0/ 1,0	**AK 912 FN 132 M8/2**	3m/M6
12500	1	5,8/ 1,4	**AK 1012 FN 160 M8/2**	3m/M6
15000	3	1,8/ 0,45	**AK 915 FN 112 M8/2**	3m/M6
15000	3	2,6/ 0,6	**AK 915 FN 132 M8/2**	3m/M6
20000	2	2,9/ 0,7	**AK 1020 FN 160 M8/2**	3m/M6
20000	4	1,35/ 0,35	**AK 920 FN 112 M8/2**	3m/M6
20000	4	2,0/ 0,5	**AK 920 FN 132 M8/2**	3m/M6
25000	2	2,9/ 0,7	**AK 1025 FN 160 M8/2**	3m/M6
25000	5	1,1/ 0,27	**AK 925 FN 112 M8/2**	3m/M6
25000	5	1,6/ 0,4	**AK 925 FN 132 M8/2**	3m/M6
30000	6	1,0/ 0,2	**AK 930 FN 112 M8/2**	3m/M6
30000	6	1,3/ 0,3	**AK 930 FN 132 M8/2**	3m/M6
30000	3	1,9/ 0,47	**AK 1030 FN 160 M8/2**	3m/M6

(1) Hooks and chains are wear parts and must be verified acc. to the operation instructions and exchanged, if necessary.

66/04 AKS
stationary with suspension eye

66/04 AKR
with push travel trolley

66/04 AKH
with hand geared trolley

66/04 AKE
with electric trolley

travel speed of 16/4 m/min for electric trolleys as standard, other speeds on request.

HADEF testing stand
(up to 100 t)

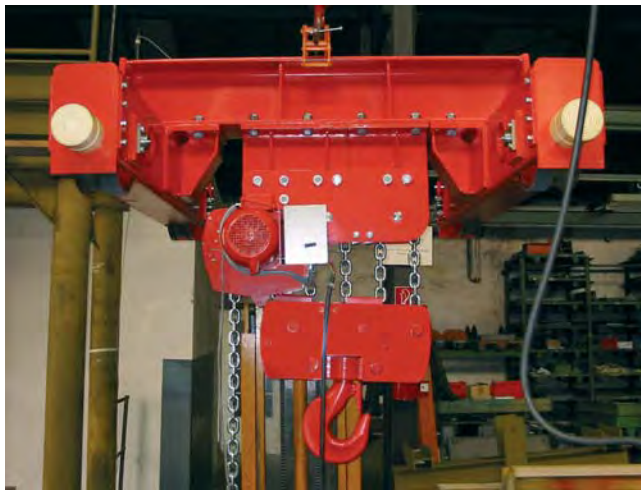
Electric Chain Hoist
Type 66/04 AKS
stationary
used in the food industry

Electric Chain Hoists

66/04 AK

Optionally available:

- up to 8 lifting/lowering positions programmable by „teach in“ method
(see page 47)
- load measuring device with load indicator
- operating time meter
- hook suspension instead of suspension eye
- load factor memory to log operation data
- monitoring of brake lining wear
- special voltages or frequencies
- radio control
- IP 66 - protection against dust and overflow
- continuous speed adjustment by frequency converter control
(see page 47)
- modification for curved beam
- variable trolley speed of 0,1 - 8 m/min.
(for AK 4 - AK 7)
- Ex -version



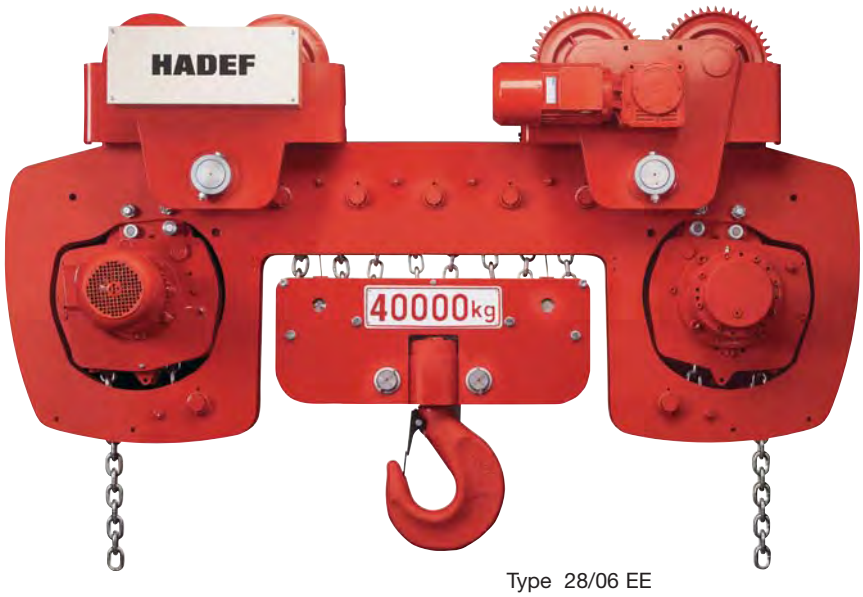
HADEF double-rail crab Type 35/04
with electric chain hoist **Type 66/04 AK**
capacity: 25 t
for Double Grider Electric Overhead
Travelling Crane **Type ZEE**
span: 15 m

radio (remote) control

HADEF®

Electric Chain Hoists

Low Headroom Configuration



Type 28/06 EE
capacity 40 t / 8 chain falls

Type 28/06 E

HADEF Electric Chain Hoist combined with monorail trolley
Low headroom configuration
with push travel trolley Type 28/06 ER
with hand geared trolley Type 28/06 EH
with electric trolley Type 28/06 EE

Favourable for low headroom purposes

capacity W.L.L. kg	chain falls no.	hook to hook dimension mm	lifting speed main/ slow m/min	FEM 9.511/ ISO 4301
500	1	300	9 / 2,2	2m/M5
1000	1	361	8 / 2	2m/M5
1600	1	479	11 / 2,6	2m/M5
2000	2	456	4 / 1	2m/M5
2500	1	405	8,0/ 2,0	2m/M5
2500	2	567	5,5 / 1,3	2m/M5
3200	2	567	5,5 / 1,3	2m/M5
5000	2	543	4,0 / 1,0	2m/M5
5000	1	569	5,4 / 1,35	2m/M5
5000	1	569	8,0 / 2,0	2m/M5
6300	1	569	5,4 / 1,35	1Bm/M3
6300	1	569	8,0 / 2,0	1Bm/M3
10000	2	775	2,8 / 0,7	2m/M5
10000	2	775	4,0 / 1,0	2m/M5
12000	2	775	2,8 / 0,7	1Bm/M3
12000	2	775	4,0 / 1,0	1Bm/M3
15000	3	821	1,8 / 0,45	2m/M5
15000	3	821	2,6 / 0,6	2m/M5
20000	4	821	1,35 / 0,35	2m/M5
20000	4	821	2,0 / 0,5	2m/M5
25000	5	925	1,1 / 0,27	2m/M5
25000	5	925	1,6 / 0,4	2m/M5
30000	6	975	1 / 0,2	2m/M5
30000	6	975	1,3 / 0,3	2m/M5
40000	2 x 4	1155	1,35 / 0,35	2m/M5
40000	2 x 4	1155	2,0 / 0,5	2m/M5
50000	2 x 5	(1)	1,1 / 0,27	1Bm/M3
60000	2 x 6	(1)	1,0 / 0,2	1Bm/M3

Note: electric trolleys with two travel speeds of 16/4 m/min, other travel speeds on request

1) dimensions on request

Type 29/06 Synchro

Electric Chain Hoists ultralow headroom configuration

with hand geared trolley Type 29/06 EHS – Synchro
with electric trolley Type 29/06 EES – Synchro

modification for curved beam on request

two drives for smooth lifting/lowering with high lifting speeds

capacity W.L.L. kg	chain falls no.	hook to hook dimension mm	lifting speed m/min	FEM 9.511/ ISO 4301	load chain ø mm
500	2	155	9/2,2	2m/M5	5,0
1000	2	155	9/2,2	2m/M5	5,0
2000	2	185	8/2	2m/M5	7,0
2500	2	213	11/2,6	2m/M5	9,0
3200	2	213	8/2	2m/M5	9,0

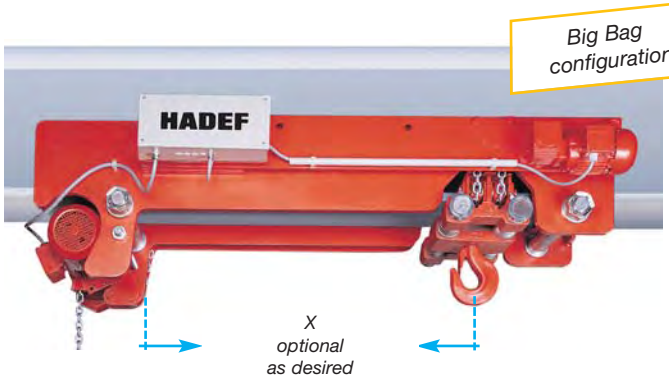
Note: electric trolleys with two travel speeds of 16/4 m/min, other travel speeds on request

Type 29/06 EEL Big Bag

HADEF Electric Chain Hoist combined with monorail trolley ultralow headroom configuration with electric trolley

capa-city W.L.L. k≥≥g	chain falls no.	hook to hook dimension mm	lifting speed m/min	FEM 9.511/ ISO 4301	horizontal width between hook and hoist unit x mm
1000	2	155	4,5 /1,1	2m/M5	545
2000	2	185	4,0/1,0	2m/M5	620
3200	2	213	4,0/1,0	2m/M5	680
5000	4	254	2,8/0,7	2m/M5	750
6300	4	254	2,0/0,5	1Bm/M3	750

Note: electric trolleys with two travel speeds of 16/4 m/min, other travel speeds on request



HADEF®

Type 29/06 EH + EE

HADEF Electric Chain Hoist
combined with monorail trolley
ultralow headroom configuration

with hand geared trolley Type 29/06 EH
with electric trolley Type 29/06 EE

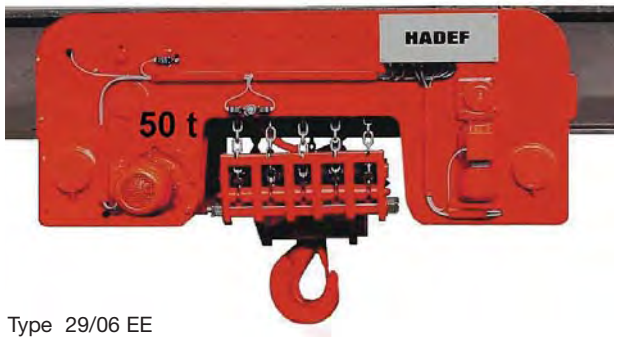
Type 29/06 EE
capacity 16 t
4 chain falls

The favourable solution in reduced headroom areas.

capacity W.L.L. kg	chain falls no.	hook to hook dimension mm	lifting speed main/ slow m/min	FEM 9.511/ ISO 4301
1000	2	155	4,5/ 1,1	2m/M5
2000	2	185	4,0/ 1,0	2m/M5
2500	2	213	5,5/ 1,3	2m/M5
3200	2	213	5,5/ 1,3	2m/M5
5000	4	276	2,8/ 0,7	2m/M5
5000	2	280	4,0/ 1,0	2m/M5
6300	4	276	2,0/ 0,5	1Bm/M3
10000	4	305	2,0/ 0,5	2m/M5
10000	2	360	2,8/ 0,7	2m/M5
12000	2	360	2,8/ 0,7	1Bm/M3
16000	4	407	1,4/ 0,3	3m/M6
20000	4	487	1,4/ 0,3	2m/M5
25000	6	575	1,0/ 0,2	2m/M5
30000	6	575	1,0/ 0,2	2m/M5
40000	2x4	710	1,4/ 0,3	2m/M5
50000	2x5	730	1,1/ 0,27	2m/M5
60000	2x6	(1)	1,0/ 0,2	1Bm/M3

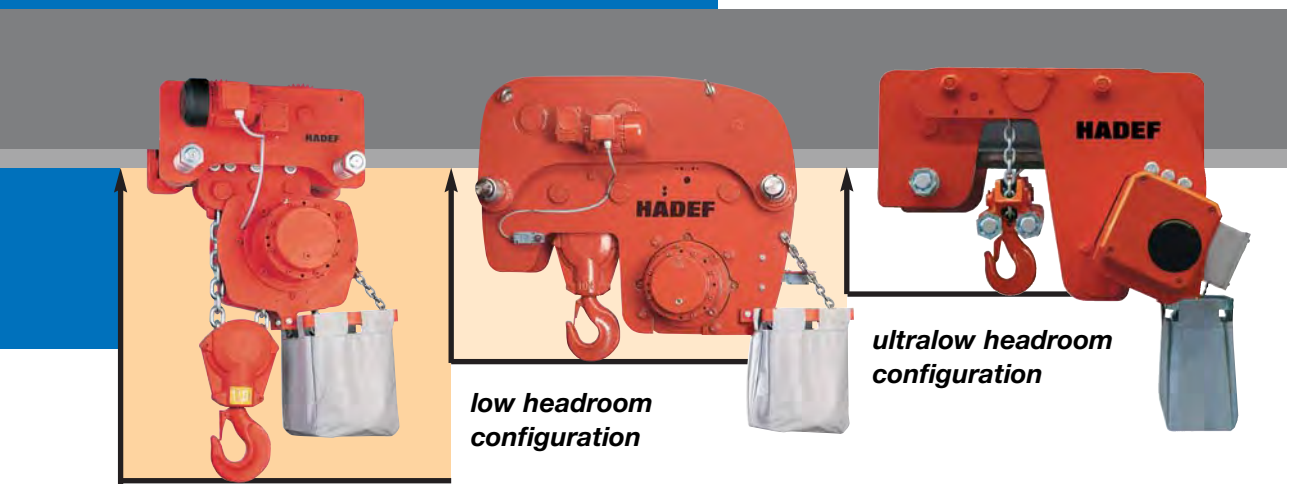
Note: electric trolleys as standard with 16/4 m/min, other travel speeds on request

1) dimensions on request.



Type 29/06 EE
capacity 50 t
10 chain falls

modification for curved beam on request



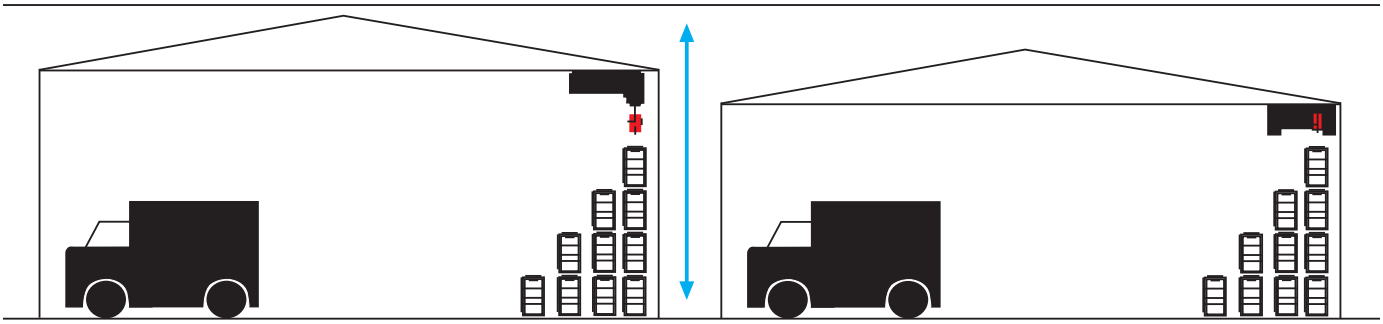
compact design

low headroom configuration

ultralow headroom configuration

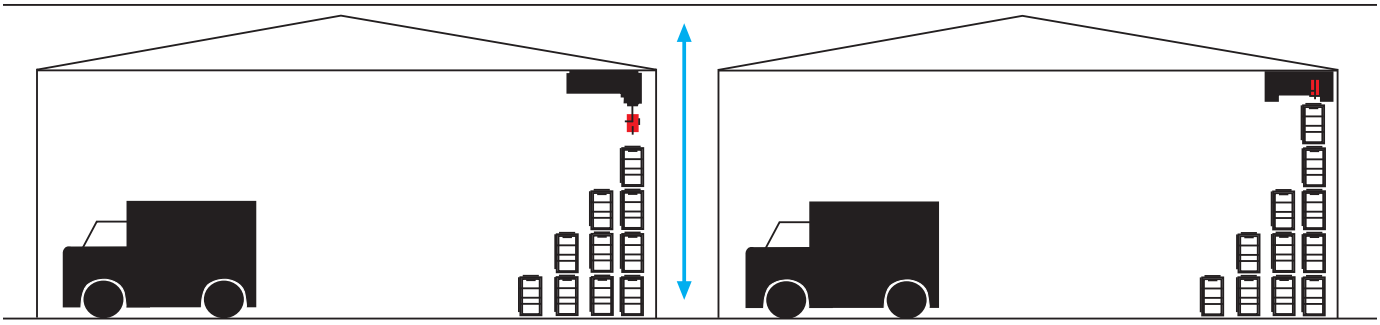
ultralow headroom configuration

height of the building can be reduced or, if the building does already exist the ultralow headroom hoist is an ideal solution where there is lack of space available



ultralow headroom configuration

Up to 1000 mm additional operating height available with ultralow headroom hoist



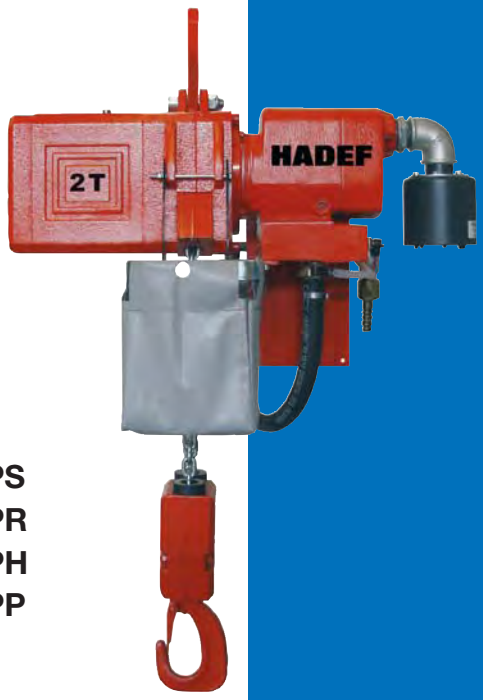
ultralow headroom configuration

HADEF®

Serial model up to EX-class:
II 2G IIB c T4
II 2D c 135°C

Type 70/06 AP

Pneumatic Chain Hoist



stationary hoist with suspension eye **Type 70/06 APS**
with push travel trolley **Type 70/06 APR**
with hand geared trolley **Type 70/06 APH**
with pneumatic trolley **Type 70/06 APP**

capacity W.L.L.	chain falls	lifting speed		Type	FEM 9.511/ ISO 4301	load chain ø
		lifting	lowering			
kg	no.	m/min	m/min			mm
500	1	7,0	16,0	**AP 405 TI 8**	2m/M5	5
1000	2	3,5	8,0	**AP 410 TI 8**	2m/M5	5
1000	1	8,0	15,0	**AP 610 TI 15**	2m/M5	7
1600	1	8,0	16,0	**AP 716 TI 25**	2m/M5	9
2000	2	4,0	7,0	**AP 620 TI 15**	2m/M5	7
2000	1	(1)	(1)	**AP 820 TI 35**	2m/M5	9
3200	2	4,0	8,0	**AP 732 TI 25**	2m/M5	9
3200	2	(1)	(1)	**AP 832 TI 35**	2m/M5	11,3
5000	2	(1)	(1)	**AP 850 TI 35**	2m/M5	11,3
5000	1	2,7	3,6	**AP 905 TI 50**	2m/M5	16
6300	1	2	3,6	**AP 906 TI 50**	1Bm/M3	16
10000	2	1,5	2,2	**AP 910 TI 50**	2m/M5	16
12000	2	1,2	2,2	**AP 912 TI 50**	1Bm/M3	16
15000	3	0,9	2,2	**AP 915 TI 50**	2m/M5	16
20000	4	0,7	1,1	**AP 920 TI 50**	2m/M5	16
25000	5	0,6	0,7	**AP 925 TI 50**	2m/M5	16
30000	6	0,45	0,6	**AP 930 TI 50**	2m/M5	16

1) dimensions on request

modification for curved beam on request

70/06 AP

Pneumatic Chain Hoist Type 70/06 APP
with pneumatic trolley
capacity 1 t / 2 chain falls

Serial model up to EX-class:
II 2G IIB c T4
II 2D c 135°C

Type 28/06 AP low headroom configuration

Pneumatic Chain Hoist combined with monorail trolley. Low headroom configuration
with push travel trolley Type 28/06 APR
with hand geared trolley Type 28/06 APH
with pneumatic trolley Type 28/06 APP

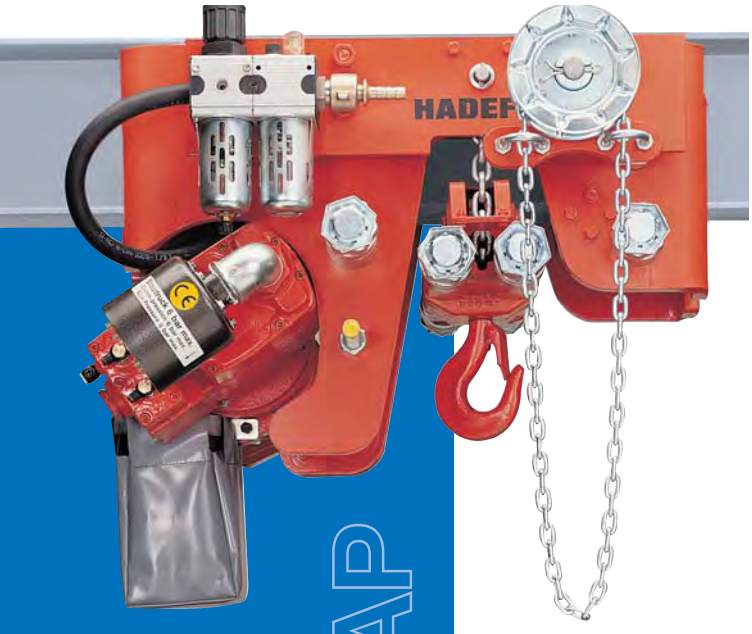
capacity W.L.L.	chain falls	hook to hook dimension	lifting speed		FEM 9.511/ ISO 4301	load chain ø
			lifting	lowering		
kg	no.	mm	m/min	m/min		mm
500	1	300	7,0	16,0	2m/M5	5,0
1000	1	361	8,0	15,0	2m/M5	7,0
1600	1	479	8,0	16,0	2m/M5	9,0
2000	2	456	4,0	7,0	2m/M5	7,0
3200	2	567	4,0	8,0	2m/M5	9,0
5000	2	(1)	3,0	6,0	2m/M5	11,3
6300	1	569	2,0	3,6	1Bm/M3	16,0
12000	2	775	1,2	2,2	2m/M5	16,0

Intermediate capacities and capacities up to 60 t available.

1) On request.

28/06 AP

modification for curved beam on request



29/06 AP

modification for curved beam on request

Type 29/06 AP ultralow headroom configuration

Pneumatic Chain Hoist combined with monorail trolley.
with hand geared trolley Type 29/06 APH
with pneumatic trolley Type 29/06 APP

capacity W.L.L.	chain falls	hook to hook dimension	lifting speed		FEM 9.511/ ISO 4301	load chain Ø
			lifting	lowering		
kg	no.	mm	m/min	m/min		mm
1000	2	155	3,5	8,0	2m/M5	5,0
2000	2	185	4,0	7,0	2m/M5	7,0
2500	2	213	4,0	8,0	2m/M5	9,0
3200	2	213	4,0	8,0	2m/M5	9,0
6300	4	254	1,8	3,6	1Bm/M3	9,0
12000	2	360	1,2	2,2	1Bm/M3	16,0

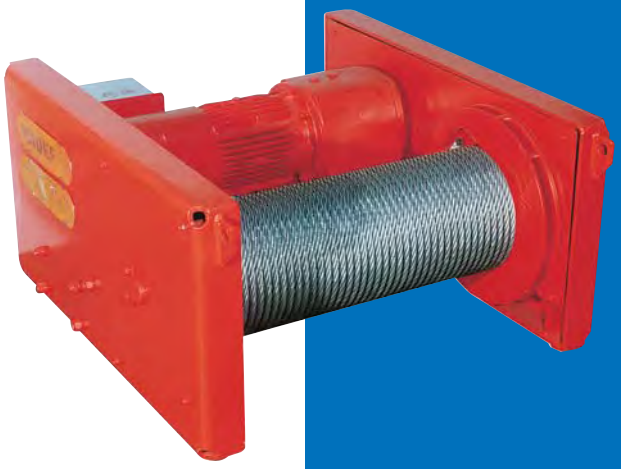
Intermediate capacities and capacities up to 60 t available.

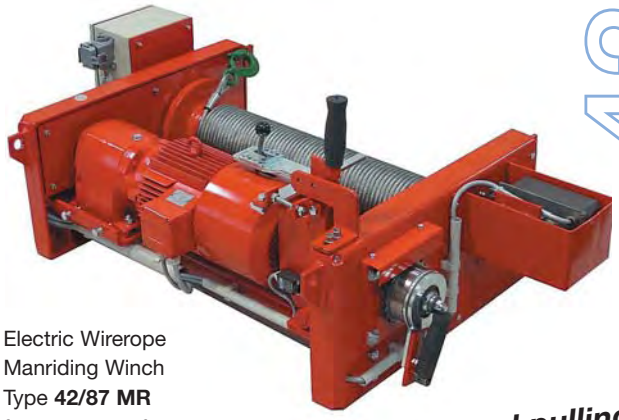
HADEF®

Type 42/87 E

Electric Wirerope Winches

42/87 E





Electric Wirerope
Manriding Winch
Type **42/87 MR**
for transport of persons

for lifting [1] ***and pulling***

(1) If used for lifting, limit switch required

pulling rope force 1st layer kg	wirerope speed 1st layer m/min	wirerope Ø mm	wirerope nec. minimum breaking load kN	FEM 9.511/ ISO 4301	wirerope storage 1st layer m	wirerope storage total in top rope layer m
500	6,0	6	20	1Am/M4	24,0	179
500	16,0/4,0	6	20	1Am/M4	24,0	179
990	6,0	9	40	1Am/M4	25,0	145
990	16,0/4,0	9	40	1Am/M4	25,0	145
1000	6,0	9	40	1Am/M4	25,0	145
1000	16,0/4,0	9	40	1Am/M4	25,0	145
2000	6,0	12	80	1Am/M4	30,0	226
2000	16,0/4,0	12	80	1Am/M4	30,0	226
3200	8,0/2,0	16	128	1Am/M4	31,0	23
5000	6,0/1,5	20	200	1Am/M4	35,0	259
7500	5,5/1,4	24	300	1Am/M4	47,0	350
10000	4,0/1,0	28	400	1Am/M4	50,0	280

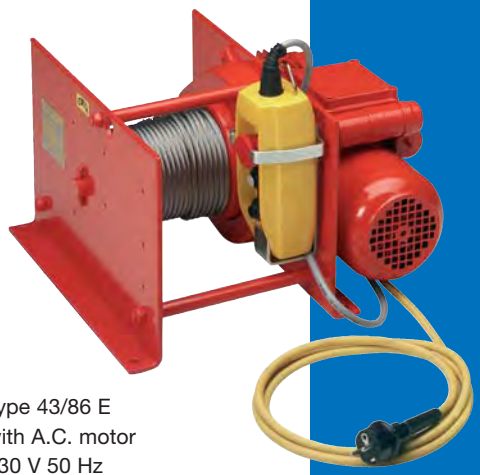
Type 43/86 E Liftboy

pulling rope force 1st layer kg	wirerope speed top layer m/min	wirerope Ø mm	wirerope nec. minimum breaking load kN	FEM 9.511/ ISO 4301	wirerope storage 1st layer m	wirerope storage (2) total in top rope layer m
125	11,0	4	5	1Bm/M3	6,4	32
250	7,0	4	9	1Bm/M3	7,1	35
500	4,0	6	18	1Bm/M3	5,7	30
990	6,0	8	36	1Bm/M3	8,4	30
1000	6,0	8	36	1Bm/M3	8,4	30
2000	6,0 (1)	11	70	1Bm/M3	8,0	30
3200	5,5	16	114	1Bm/M3	9,0	37

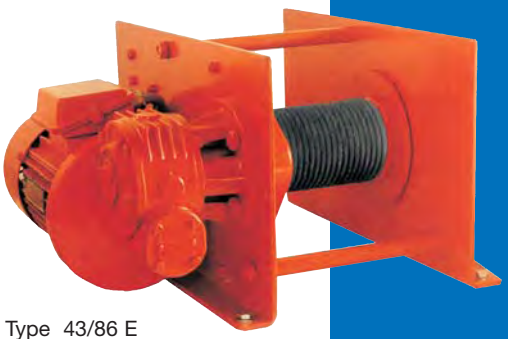
(1) for single phase current 3 m/min.
(2) with ungrooved drum

for lifting [1] ***and pulling***

(1) If used for lifting, limit switch required and low voltage control for 3-phase current



Type 43/86 E
with A.C. motor
230 V 50 Hz
complete model



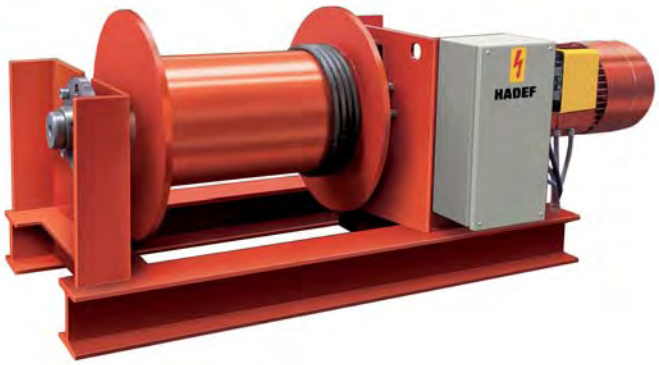
Type 43/86 E
with threephase current motor

43/86 E

for lifting [1] ***and pulling***

(1) If used for lifting, limit switch required.

Type 45/10 E



Electric Wirerope Winches

45/10 E

Pulling rope force		Wirerope speed			wirerope Ø	wirerope storage		motor output [1]
1st layer	5th layer	1st layer	3rd layer	5th layer		1st layer	5th layer	A
kg	kg	m/min	m/min	m/min	mm	m/min	m/min	kW
2000	1550	14	18	22	10	35	230	1,5/6
		23	30	36				2,2/9
		35	45	55				3/12
3200	2375	9	12	14	12	30	205	1,5/6
		13	16	20				2,2/9
		19	25	30				3/12
4000	2900	6	8	10	13	28	190	1,5/6
		11	14	17				2,2/9
		14	18	22				3/12
5000	3600	6	7	7,5	14	26	180	1,5/6
		8	10	13				2,2/9
		12	16	19				3/12
6300	4300	4	5,5	7	16	23	160	1,5/6
		7	8,5	10,5				2,2/9
		10	12	15,5				3/12
8000	5600	3,5	4,5	5,5	18	23	160	1,5/6
		5,5	7,7	8				2,2/9
		7,5	9,5	11,5				3/12
10000	6900	2,5	3,5	4,3	20	23	170	1,5/6
		4	5,5	6,5				2,2/9
		6	7,5	9				3/12
12500	8700	2,2	2,8	3,5	22	26	175	1,5/6
		3,5	4,5	5,4				2,2/9
		4,5	6	7				3/12
16000	10500	1,8	2,3	2,8	25	20	155	1,5/6
		2,5	3,2	3,8				2,2/9
		3,5	4,4	5,3				3/12
20000	14410	2,1	2,7	3,2	28	17	150	2,2/9
		3	3,8	4,6				3/12

(1) FU = Frequency control necessary

HADEF®

High speeds on all rope layers
maintenance-free
duty classification 1Bm up to 5m

for lifting (1) and pulling

(1) If used for lifting, limit switch required.

Type 47/05 E

Electric Wirerope Winches

- very high, adjustable wirerope speeds
- long lifetime
- large wirerope storage capacities
- frequency control for smooth running
- high performance planetary gear integrated in the drum
- IP 54 enclosure

The serial winch is suitable for various purposes of use such as:

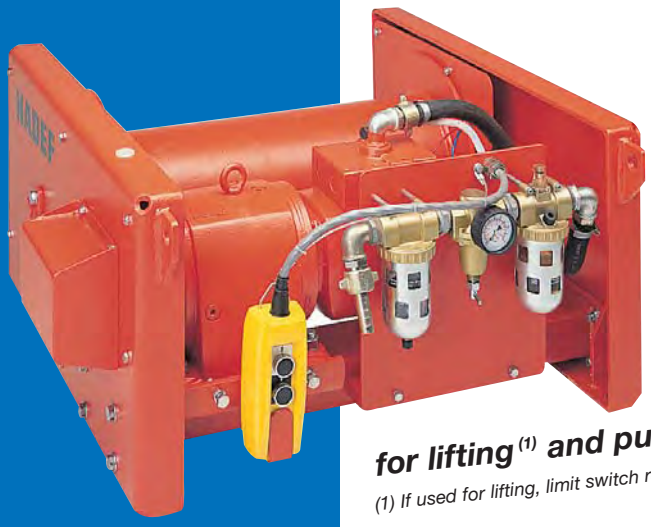
- material handling winch
- deck winch
- builder's winch
- rescue and towing winch

Large variety of accessories available such as:

- secondary brake as safety brake (motor brake) or as brake acting directly on the drum
- accessory drive (motor or manual)
- manrider winch
- winch for different kinds of conveyors
- pressure roller
- wirerope winding device
- free-wheeling of drum
- slack-rope monitoring device
- load factor memory
- radio control
- higher enclosure classification
- drum with separation spacers
- hydraulic drive units

pulling rope force		wirerope speed at 50 Hz rated frequency			wire-rope	wirerope storage		motor-output
1st layer	**5. layer**	1st layer	3. layer	5. layer	Ø	1st layer	5. layer	
kg	**kg**	m/min	m/min	m/min	mm	m	m	kW
5000	**3700**	6	7,1	8	14	67	400	6/1,5
		7,7	9	10				9/2
		11	13	15				12/3
6300	**4600**	5,2	6,0	6,9	16	60	370	6/1,5
		7	9	10				9/2
		9	10	11				12/3
8000	**5850**	3,8	4,5	5,2	18	62	365	6/1,5
		6	7	8				9/2
		8	9	10,5				12/3
10000	**7250**	3,3	3,9	4,5	20	55	350	6/1,5
		5	6	6,9				9/2
		6,5	7,7	8,9				12/3
12500	**9000**	2,6	3	3,5	22	54	350	6/1,5
		4	4,7	5,5				9/2
		4,9	5,8	6,9				12/3
16000	**11400**	3	3,6	4,1	25	52	345	9/2
		4	4,7	5,5				12/3
		6,5	6,5	9,5				22
		18	22	26				55
20000	**14500**	2,6	3,1	3,7	28	50	340	9/2
		3,2	3,8	4,5				12/3
		5,5	6,5	8				22
		14	17	19				55
25000	**18000**	4,5	5,5	6,5	32	52	340	22
		6,5	7,5	8,5				30
		8,5	10	11,5				45
		10	12	15				55
32000	**22000**	4,5	5,5	6,5	36	46	315	30
		7	8,5	10				45
		8,5	10	12				55
36000	**24500**	4	5	6	36	49	335	30
		6,5	8	9,5				45
		7,5	9	10,5				55
40000	**28000**	4	4,7	5,5	40	54	360	30
		5,5	6,5	8				45
		7	8,5	10				55

47/05 E



Type 42/87 P

Pneumatic Wirerope Winches

for lifting [1] ***and pulling***

(1) If used for lifting, limit switch required.

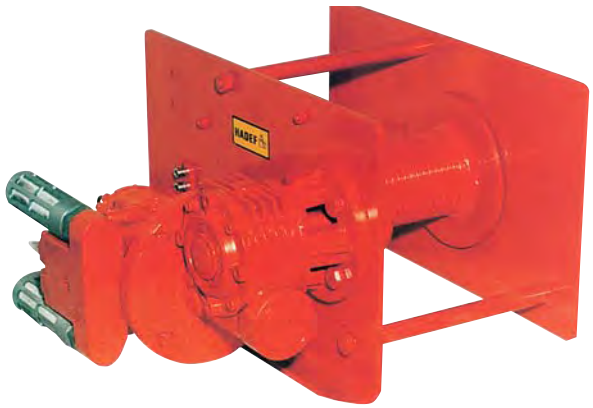
-version on request

42/87 P

pulling rope force 1. layer kg	pulling rope force top layer kg	wirerope speed lifting m/min	wirerope speed lowering m/min	wirerope Ø mm	wirerope nec. minimum breaking load kN	FEM 9.511/ ISO 4301	wirerope storage 1st layer m	wirerope storage total in top rope layer m
500	**320**	15,0	28,0	6	20	1Am/M4	24	179
990	**650**	10,0	17,0	9	40	1Am/M4	25	145
1000	**650**	10,0	17,0	9	40	1Am/M4	25	145
2000	**1400**	5,0	9,0	12	80	1Am/M4	30	226
3200	**2000**	7,0	12,0	16	128	1Am/M4	31	230
5000	**3200**	5,0	9,0	20	200	1Am/M4	35	259
7500	**5000**	5,0	9,0	24	300	1Am/M4	47	351
10000	**6300**	4,0	7,0	28	400	1Am/M4	50	282

pulling rope force 1. layer kg	wirerope speed lifting m/min	wirerope speed lowering m/min	wirerope Ø mm	wirerope nec. minimum breaking load kN	FEM 9.511/ ISO 4301	wirerope storage 1st layer m	wirerope storage total in top rope layer m
250	7,0	12,0	4	9	1Bm/M3	5,6	35
250	12,0	18,0	4	9	1Bm/M3	5,6	35
500	4,0	7,0	6	18	1Bm/M3	4,8	30
500	8,0	16,0	6	18	1Bm/M3	4,8	30
500	12,0	16,0	6	18	1Bm/M3	4,8	30
990	6,0	12,0	8	36	1Bm/M3	6,8	30
1000	6,0	12,0	8	36	1Bm/M3	6,8	30
2000	3,0	6,0	11	70	1Bm/M3	6,3	30

Type 43/86 P



for lifting [1] ***and pulling***

(1) If used for lifting, limit switch required.

43/86 P

-version on request

HADEF®

Special Hoist Program

explosion-proof Chain Hoists

Ex-version

Photo: SIRI

Various manual and pneumatic chain hoists and winches are available in exlosion-proof design.

Offshore

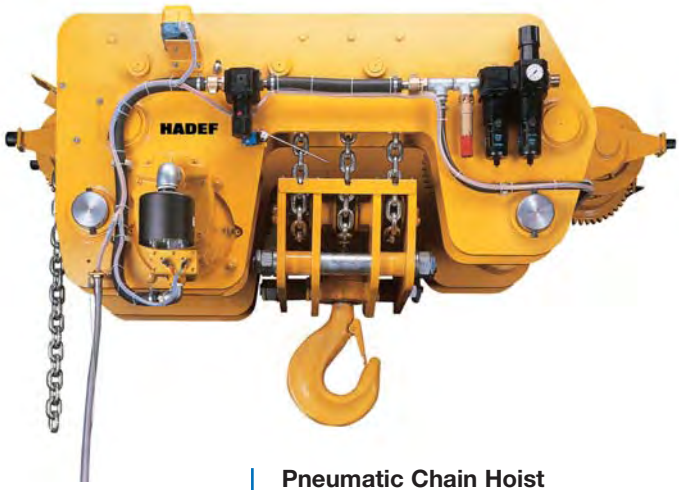
Photo: Øyvind Hagen, Statoil

Spezialgeräte

Special Hoists

Application

Pneumatic Chain Hoist
Type 29/06 APP
with pneumatic trolley
capacity 12 t / 2 chain falls



Pneumatic Chain Hoist
Type 29/06 APP
with pneumatic trolley
capacity 30 t / 6 chain falls
offshore-design

HADEF®

fitted with hoist protection by slipping-clutch

Spur Gear Hoists

as standard for 3 m suspension height

Type 9/12

capacity W.L.L. kg	chain falls no.	hook to hook dimension mm	weight kg
500	1	275	8
1000	1	342	11
1500	1	378	17
2000	1	403	17
3000	2	510	23
5000	2	615	37
10000	4	760	99
20000	8	1150	187

Type 24/12

Spur Gear Hoist combined with monorail trolley. Compact design

with push travel trolley
Type 24/12 HR
with hand geared trolley
Type 24/12 HH

capacity W.L.L. kg	chain falls no.	hook to hook dimension mm	weight kg
500	1	231	19,2
1000	1	286	25,5
1500	1	314	48
2000	1	358	48
3000	2	412	72
5000	2	505	93
10000	4	620	178
20000	8	(1)	(1)

(1) on request

Nearly enclosed Aluminium housing ensures high corosion resistance

Type 11/09

Robust Aluminium Spur Gear Hoist

capacity W.L.L. kg	chain falls no.	hook to hook dimension mm	weight kg
250	1	325	11,0
500	1	325	11,0
1000	1	365	13,0
1500	1	440	18,0
2000	2	505	22,0
3000	2	580	30,0
5000	3	655	39,0

Type 23/09

Robust Aluminium Spur Gear Hoist combined with monorail trolley. Compact design

with push travel trolley
Type 23/09 HR
with hand geared trolley
Type 23/09 HH

capacity W.L.L. kg	chain falls no.	hook to hook dimension mm	weight kg
500	1	305	22,5
1000	1	355	28,0
1500	1	455	45,0
2000	2	490	49,0
3000	2	535	76,0
5000	3	550	93,0

Spur Gear Hoists

14/12

Type 14/12

capacity W.L.L. kg	chain falls no.	hook to hook dimension mm	weight kg
500	1	285	7,5
1000	1	315	13
1500	1	380	16
2000	1	404	23
3000	2	524	24
5000	2	687	41
7500	3	825	57
10000	4	820	66

Lifetime guarantee for the sintered brake lining (1)

fitted with hoist protection by slipping-clutch

Ex -version on request

27/12

Type 27/12

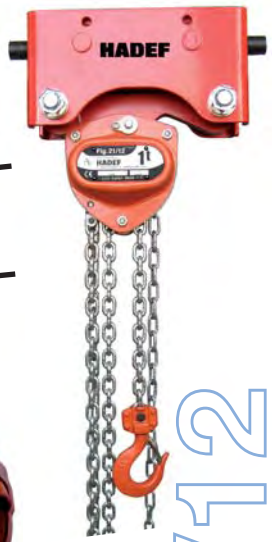
capacity W.L.L. kg	chain falls no.	hook to hook dimension mm	weight kg
500	1	255	18,7
1000	1	310	27,5
1500	1	355	47,0
2000	1	400	54,0
3000	2	435	73,0
5000	2	640	96,0
7500	3	630	134,5
10000	4	690	143,5

Type 12/12

capacity W.L.L. kg	chain falls no.	hook to hook dimension mm	weight kg
500	1	285	7,5
1000	1	315	13
1500	1	380	16
2000	1	404	23
3000	2	524	24
5000	2	687	41
7500	3	825	57
10000	4	820	66

Lifetime guarantee for the sintered brake lining (1)

12/12



21/12

Type 21/12

capacity W.L.L. kg	chain falls no.	hook to hook dimension mm	weight kg
500	1	255	18,7
1000	1	310	27,5
1500	1	355	47,0
2000	1	400	54,0
3000	2	435	73,0
5000	2	640	96,0
7500	3	630	134,5
10000	4	690	143,5

(1) Shoud the sinered brake linings be worn, please return the ratchet wheel to us and we will send you free of charge a new ratchet wheel with sintered brake lining.
Costs for installation of the new parts will not be refunded.

HADEF®

Type 16/12

Only one operator required up to 25 t

Spur Gear Hoists

capacity W.L.L. kg	chain falls no.	hook to hook dimension mm	weight kg
5000	1	795	98
10000	2	824	100
15000	3	1115	135
20000	4	1165	170
25000	5	1233	198
30000	2 x 3	1160	270
40000	2 x 4	1280	340
50000	2 x 5	1470	396

fitted with hoist protection by slipping-clutch

Ex

-version on request

16/12

Type 26/12 HH

Compact design with hand geared trolley

capacity W.L.L. kg	chain falls no.	hook to hook dimension mm	weight kg
5000	1	765	210
10000	2	888	215
15000	3	1120	360
20000	4	1153	600
25000	5	1252	700

fitted with hoist protection by slipping-clutch

Ex

-version on request

26/12 HH

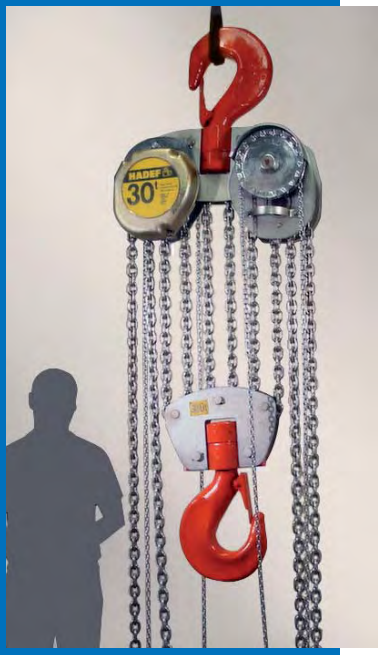
HADEF®

Type 16/12

Spur Gear Hoist

The advantages of Hadef

Only one operator required up to 25 t



HADEF®

Monorail Trolleys

Type 19/90
Type 22/90
Type 22/90 E

Monorail push travel trolley **Type 19/90**
Monorail hand geared trolley **Type 22/90**
Monorail electric trolley **Type 22/90 E**

capacity W.L.L. kg	flange width 1 N from - to mm	flange width 2 N from - to mm
500	50 - 146	147 - 302
1000	50 - 179	180 - 310
1500	50 - 173	174 - 316
2000	50 - 173	174 - 316
2500	66 - 186	187 - 310
3200	66 - 186	187 - 310
5000	74 - 182	183 - 310
6300	74 - 164	165 - 310
7500	119 - 189	190 - 310
10000	119 - 189	190 - 310
capacities up to 100 t available (combination of trolleys)		

curve radius on request

Type 19/90

Type 22/90

Type 22/90 E

Beam locking device

-version on request

runs with the trolley
blocks the trolley
including the load

modification for curved beam on request

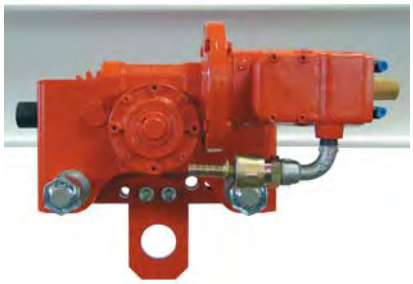
Type 20/94

Monorail push travel trolley **Type 20/94 AFR**
Monorail hand geared trolley **Type 20/94 AFH**
Monorail electric trolley **Type 20/94 AFE**
Monorail pneumatic trolley **Type 20/94 AFP**

capacity W.L.L. kg	flange width 1 N from - to mm	flange width 2 N from - to mm
500	50 - 146	147 - 302
1000	50 - 135	136 - 220
2000	66 - 185	186 - 310
3200	74 - 196	197 - 310
4000	74 - 196	197 - 310
5000	74 - 192	193 - 310
6300	119 - 215	216 - 312
7500	119 - 215	216 - 312
10000	119 - 215	216 - 312
capacities up to 25 t available		

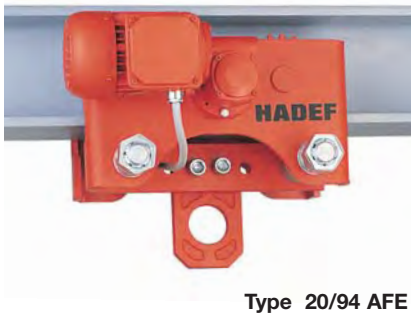
curve radius on request

Type 20/94 AFR

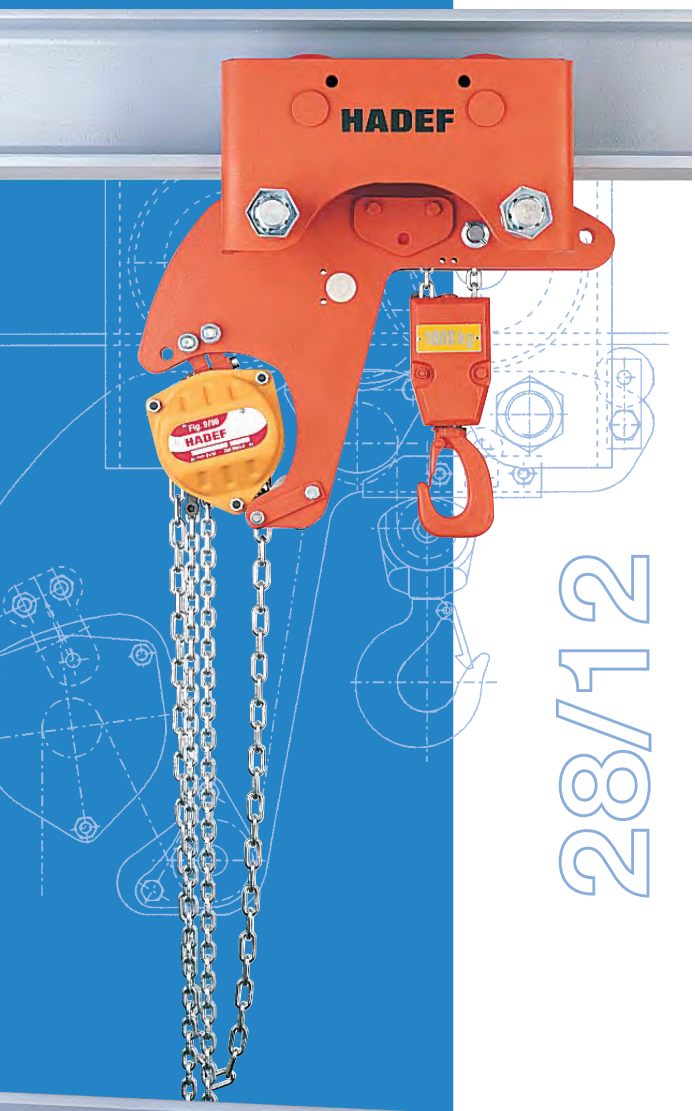


Type 20/94 AFP

Type 20/94 AFH



Type 20/94 AFE



Type 28/12

Spur Gear Hoist combined with monorail trolley.
Low headroom configuration
with push travel trolley Type 28/12 HR
with hand geared trolley Type 28/12 HH

capacity W.L.L. kg	chain falls no.	hook to hook dimension mm	weight kg
500	1	222	35
1000	1	264	42
1500	1	327	76
2000	2	325	78
3000	2	384	104
5000	3	507	165
10000	2	760	810
capacities up to 25 t available			

-version on request

Spur Gear Hoists

as standard for 3 m suspension height

Type 29/12

Spur Gear Hoist combined with monorail trolley.
ultralow headroom configuration
with hand geared trolley Type 29/12 HH

capacity W.L.L. kg	chain falls no.	hook to hook dimension mm	weight kg
1000	2	140	75
2000	2	163	145
3200	2	193	225
5000	4	249	370
6300	4	249	370
10000	2	270	1020
capacities up to 30 t available			

-version on request

HADEF®

Ratchet Lever Hoists

53/07 A

Type 53/07A

Aluminium Ratchet Lever Hoist

250 kg

capacity W.L.L. kg	chain falls no.	standard lifting height m	weight with standard lifting height kg
250	1	1	1,5
500	1	1	2,5
750	1	1,5	3,4
1500	1	1,5	5,9

DER KRAFT-ZWERG®

Light weight, easy handling

250 kg

500 kg

750 kg

1500 kg

1600 + 3200 kg
Ship hook as option

Type 53/07

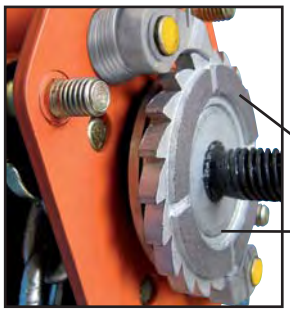
- **forged load hook with 360° rotation**
- **strong safety latch**
- **precision gear**
- **powder coated steel body**
- **free-wheeling of unloaded chain**
- **high-tensile, zinc plated load chain**

capacity W.L.L. kg	chain falls no.	standard lifting height m	weight with standard lifting height kg
800	1	1,5	5,7
1600	1	1,5	8,0
2500	1	1,5	11,2
3200	1	1,5	15,0
6300	2	1,5	26,0
9000	3	1,5	40,0

Ratchet Lever Hoists

53/07

53/09



Brake mechanism

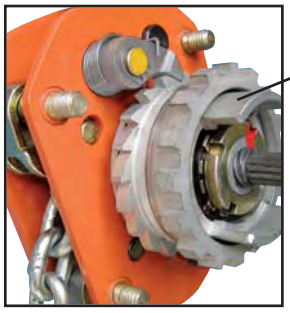
Lifetime guarantee
for the sintered brake lining (1)

Longer maintenance intervals due to
sintered brake linings

Corrosion protection
of components not painted

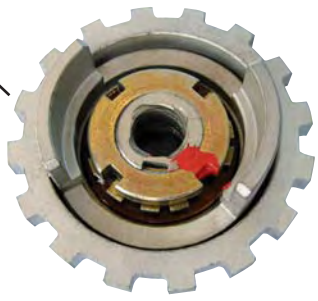
Type 53/09

Ratchet Lever Hoist
+ slipping clutch



+ Slipping clutch

Hoist protection
by slipping clutch as option



(1) Should the sintered brake linings be worn, please return the ratchet wheel to us and we will send you free of charge a new ratchet wheel with sintered brake lining. Costs for installation of the new parts will not be refunded.

Wirerope winches

Type 199/75

Aluminium
Wirerope Winch

pulling rope force 1st layer	wirerope		FEM 9.511/ ISO 4301	wirerope storage		crank effort	drum Ø	weight without wirerope
	Ø	nec. minimum breaking load		1st layer	6. layer	1st layer		
kg	mm	kN		m	m	daN (kg)	mm	kg
63	3	3	1Cm/M2	2,0	18,0	10	40	3
125	3	5	1Cm/M2	2,0	18,0	12	40	3
250	4	9	1Cm/M2	1,4	14,0	16	46	5

Type 200/77

Wirerope Winch

pulling rope force 1st layer	wirerope		FEM 9.511/ ISO 4301	wirerope storage		crank effort	weight without wirerope
	Ø	nec. minimum breaking load		1st layer	6. layer	1st layer	
kg	mm	kN		m	m	daN (kg)	kg
50	3	2	1Cm/M2	0,4	5,3	8	1,0
100	3	4	1Cm/M2	0,45	7,8	6	2,1

Type 190/94
Type 192/98

Stainless Steel
Wirerope Winch

additional high gear ratio for speed-controlled rope pay-out

Type 190/94

pulling rope force 1st layer	wirerope		FEM 9.511/ ISO 4301	wirerope storage		crank effort	drum Ø	weight without wirerope
	Ø	nec. minimum breaking load		1st layer	4. layer	1st layer		
kg	mm	kN		m	m	daN (kg)	mm	kg
500	6	18	1Em	4,9	25,0	17	82,5	11

Type 192/98

pulling rope force 1st layer	wirerope		FEM 9.511/ ISO 4301	wirerope storage		crank effort	drum Ø	weight without wirerope
	Ø	nec. minimum breaking load		1st layer	4. layer	1st layer		
kg	mm	kN		m	m	daN (kg)	mm	kg
500	6	18	1Em	4,9	25,0	17	82,5	10

Type 430/91

Worm Gear
Wirerope Winch

pulling rope force 1st layer	wirerope		FEM 9.511/ ISO 4301	wirerope storage		crank effort	drum Ø	weight without wirerope
	Ø	nec. minimum breaking load		1st layer	3. layer	1st layer		
kg	mm	kN		m	m	daN (kg)	mm	kg
125	3	5	1Bm/M3	3,2	11,4	5,5	70	5,5
250	4	9	1Bm/M3	2,3	8,8	11,5	70	5,5
300	5	11	1Bm/M3	1,8	-	14	70	5,5

Wirerope winches

pulling rope force 1st layer kg	wirerope Ø mm	wirerope nec. minimum breaking load kN	FEM 9.511/ ISO 4301	wirerope storage 1st layer m	wirerope storage top layer m	crank effort daN (kg)	drum Ø mm	weight without wirerope kg
250	4	9	1Cm/M2	3	90	6	48	13
500	6	17	1Cm/M2	4	63	10	70	16
1000	8	34	1Cm/M2	5	65	13	102	29
1500	10	51	1Dm/M1	4	36	14	102	28
2000	11	67	1Cm/M2	5	58	12	133	60
3000	14	101	1Cm/M2	6	66	14	165	78
5000	18	168	1Cm/M2	6	38	17	219	117

Type 238/10

Worm Gear Wirerope Winch

also available with separating partition for operation with two wireropes

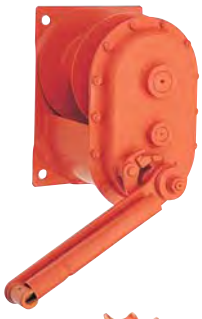
pulling rope force 1st layer kg	wirerope Ø mm	wirerope nec. minimum breaking load kN	FEM 9.511/ ISO 4301	wirerope storage 1st layer m	wirerope storage top layer m	crank effort 1st layer daN (kg)	drum Ø mm	weight without wirerope kg
300	5	11	1Bm/M3	4,8	42,2	10,3	120	34
500	6	18	1Bm/M3	5,2	67,4	15,4	150	50
1000	9	36	1Bm/M3	6,1	15,3	16,4	200	87
1500	11	54	1Bm/M3	5,4	13,8	20,3	205	110

Type 250/33

Wall Winch

optional with load pressure brake or with brake regulator

pulling rope force 1st layer kg	wirerope Ø mm	wirerope nec. minimum breaking load kN	FEM 9.511/ ISO 4301	wirerope storage 1st layer m	wirerope storage top layer m	crank effort 1st layer daN (kg)	drum Ø mm	weight without wirerope kg
300	6	10	1Dm/M1	2,3	11,8	19	70	10
500	6	16	1Dm/M1	2,3	11,8	21	70	10
1000	9	32	1Dm/M1	3,4	12,0	18	102	15
2000	12	63	1Dm/M1	4,1	9,0	32	120	23
3000	13	95	1Dm/M1	3,0	7,0	30	120	23



Type 260/76

Manual Spur Gear Wirerope Winch

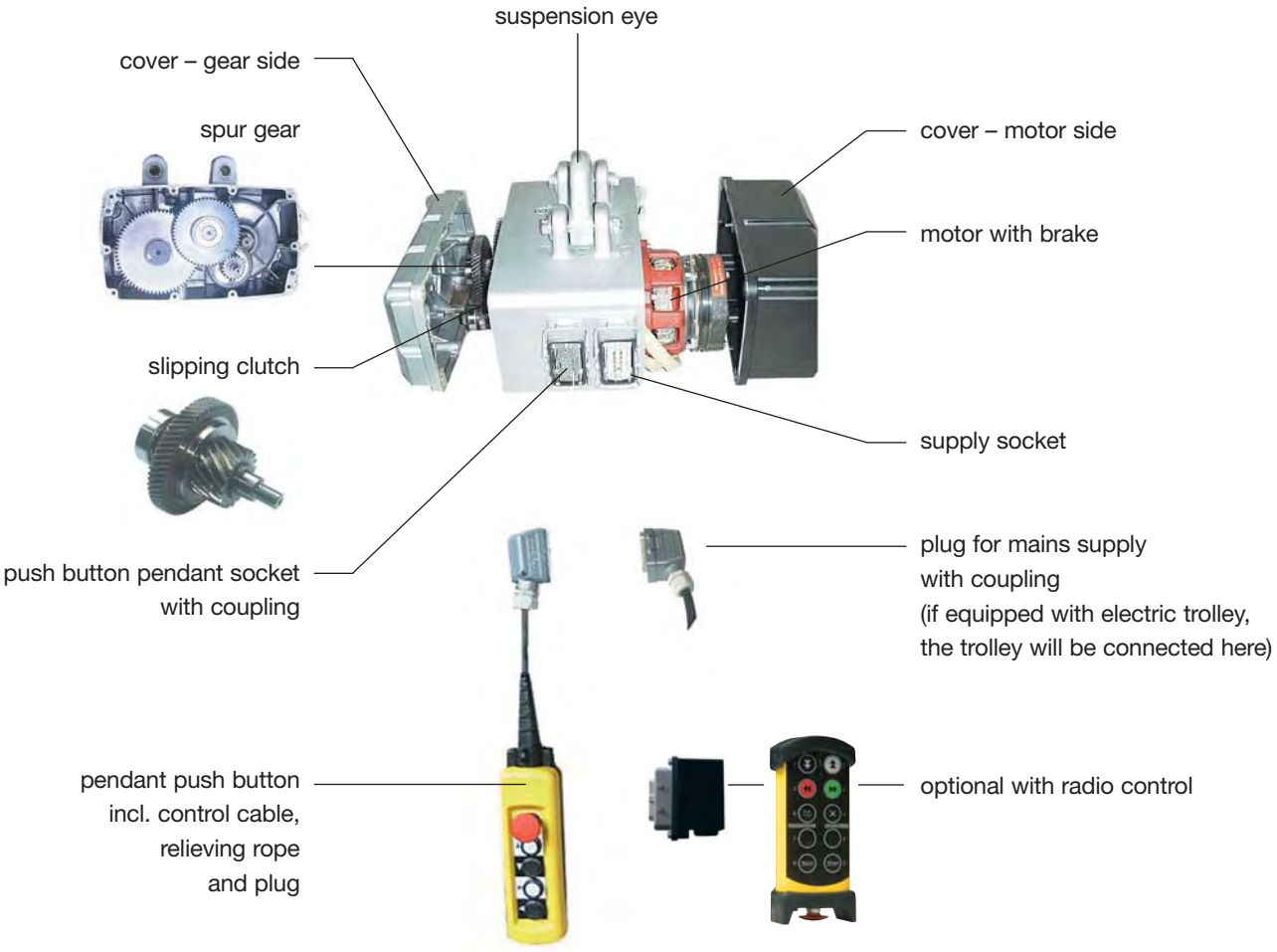
capacity W.L.L. kg	lifting height mm	crank effort daN	lift per crank turn mm	weight kg
1500	350	25	14	13
3000	350	25	8	20
5000	350	25	4	27
10000	350	50	4	42

Steel Jack

acc. to DIN 7355

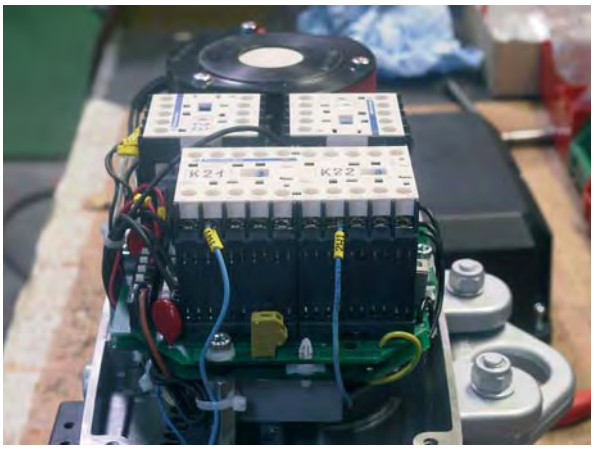
Type 62/05

Technical Details

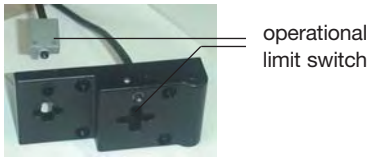


low voltage control for lifting/lowering is integrated in the Electric Chain Hoist (incl. phase monitoring relay)

Trolley optionally with separate low voltage control or with frequency converter



operational limit switch
stops the hoist at highest and lowest hook position



variable limit switch
stops the hoist at multiple points up to max. 25 m
(lifting and lowering)

Type 62/05

Electric Chain Hoist

easy to install
comfortable to use

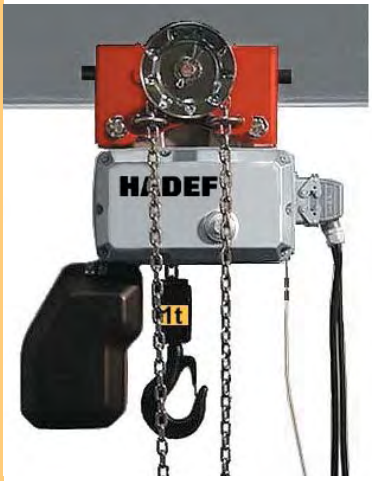
plug-in connections

Made in Germany

Type 62/05 E
with electric trolley

Type 62/05 R
with push
travel trolley

Type 62/05 S
stationary hoist
with suspension eye



Type 62/05 H
with hand geared trolley

capacity W.L.L.	chain falls	hook to hook dimension (1)	lifting speed	weight (2)
kg	no.	mm	m/min	kg
125	1	367	8,0/2,0	30
250	1	367	8,0/2,0	30
500	1	400	8,0/2,0	31
1000	2	463	4,0/1,0	33
1000	1	480	10,0/2,5	51
2000	2	570	5,0/1,25	54

(1) stationary hoist
(2) standard suspension height = 3m

62/05

Type 208/05
Type 209/05

Trolleys

208/05

209/05

optional with threaded bolt for easy adjustment to flange width

capacity W.L.L. kg	flange width 1 N from - to mm	flange width 2 N from - to mm	weight without hand chain kg
push travel trolley Type 208/05			
500	64 - 152	153 - 310	7
1000	64 - 190	191 - 310	14
2000	88 - 190	191 - 310	21
3000	102 - 190	191 - 310	35
5000	114 - 185	186 - 310	48
hand geared trolley Type 209/05			
1000	64 - 190	191 - 310	18
2000	88 - 190	191 - 310	26
3000	102 - 190	191 - 310	41
5000	114 - 185	186 - 310	54
10000	125 - 300	-	113

Type 147/05

Wirerope Pull Hoist

pulling rope force kg	lever force at full load daN	wirerope Ø mm	weight without wirerope kg
800	28,4	8	6
1600	41,2	11	12
3200	44,1	16	23

Type 221/05

Beam Clamp

capacity W.L.L. kg	flange width mm	weight approx. kg
1000	75 - 230	4
2000	75 - 230	5
3000	90 - 320	10
5000	90 - 320	12
10000	90 - 320	16

Spur Gear Hoist

Type 8/12

same hoist as HADEF high quality hoist Type 9/98 but without overload protection

standard hoist for 3 m suspension height

capacity W.L.L. kg	chain falls no.	hook to hook dimension mm	weight kg
250	1	250	5
500	1	275	8
1000	1	342	11
1500	1	378	17
2000	1	403	17
3000	2	510	23
5000	2	615	37
10000	4	760	99

Type 240/12

Spur Gear Hoist
combined with monorail trolley
compact design

with push travel trolley
Type 240/12 HR

with hand geared trolley
Type 240/12 HH

capacity W.L.L. kg	chain falls no.	hook to hook dimension mm	weight kg
500	1	260	20,1
1000	1	290	26,7
1500	1	345	50,6
2000	1	370	44,6
3000	2	420	76,0
5000	2	550	97,0

Lever Hoist

Type 25/05

standard hoist for 1,5 m lifting height

capacity W.L.L. kg	chain falls no.	weight with 1,5 m lifting height kg
250	1	2

Type 50/07

standard hoist for
1,5 m lifting height

capacity W.L.L. kg	chain falls no.	weight with 1,5 m lifting height kg
750	1	6,2
1500	1	9,6
3000	1	15,5
6000	2	27,0

HADEF®

Type TA

Articulated Crane

HADEF Articulated Single Girder Underslung Crane Type TA

-version on request

combined with Spur Gear Hoist Type 27/12 HR

capacity W.L.L. kg	Hoist HADEF Spur Gear Hoist Type 27/12 HR	beam profile IPE	span up to mm	weight of crane without hoist kg
250	27/12 HR 0,5 t	160	4000	90
		160	5000	105
		160	6000	125
		180	7000	170
500	27/12 HR 0,5 t	160	4000	90
		180	5000	130
		200	6000	180
		220	7000	240
1000	27/12 HR 1 t	200	4000	130
		220	5000	180
		240	6000	240
		270	7000	320
1250	27/12 HR 1,5 t	240	4000	150
		240	5000	200
		270	6000	270
		300	7000	360

with Electric Chain Hoist Type 66/04 AKR or
with Electric Chain Hoist Type 62/05 R

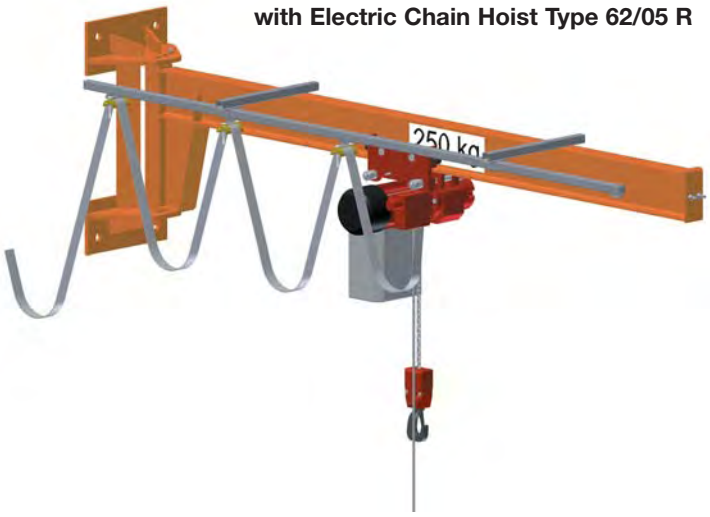
capacity W.L.L. kg	Hoist HADEF Electric Chain Hoist Type 66/04 AKR or Type 62/05 R	lifting speed m/min	FEM 9.511/ ISO 4301	span up to mm	weight of crane without hoist kg
250	62/05 R	8,0/ 2,0	1Am/M4	4000	90
				5000	105
				6000	125
				7000	170
500	AK 405 DT 80 N 8/2 62/05 R	9,4/ 2,3 8,0/ 2,0	2m/M5 1Am/M4	4000	90
				5000	130
				6000	180
				7000	240
1000	AK 410 DT 80 N 8/2 62/05 R	4,5/ 1,1 4,0/ 1,0	2m/M5 1Am/M4	4000	130
				5000	180
				6000	240
				7000	320
1250	AK 412 DT 80 N 8/2	4,5/ 1,1	1Bm/M3	4000	150
				5000	200
				6000	270
				7000	360

capacity W.L.L. kg	span clearance mm	hook to hook dim. Type 66/04 AK mm	weight of crane without hoist kg
125	2000	393	92
	3000		107
	4000		170
	5000		192
	6000		307
250	2000	393	92
	3000		147
	4000		170
	5000		277
	6000		307
500	2000	393	125
	3000		147
	4000		246
	5000		354
	6000		396
1000	2000	453	184
	3000		270
	4000		312
	5000		354
1500	2000	610	227
	3000		270
	3500		291
2000	2000	610	227
	3000		270

SCHWENKBEREICH
slewing range / Rotation
180°

Type 320/01 E
Wall-mounted Jib Crane

with Electric Chain Hoist Type 66/04 AKR or
with Electric Chain Hoist Type 62/05 R



Jib Cranes

Combination with all HADEF PREMIUM LINE and professional line Chain Hoists

capacity W.L.L. kg	span clearance mm	hook to hook dim. Type 66/04 AK mm	weight of crane without hoist kg
125	2000	393	252
	3000		268
	4000		354
	5000		377
	6000		604
250	2000	393	252
	3000		332
	4000		354
	5000		573
	6000		604
500	2000	393	310
	3000		332
	4000		542
	5000		784
	6000		827
630	2000	393	310
	3000		512
	4000		742
	5000		784
1000	2000	453	481
	3000		700
	4000		742
	5000		784
1250	2000	453	481
	3000		700
	4000		742
1500	2000	610	658
	3000		700
	3500		721
2000	2000	610	658
	3000		700

SCHWENKBEREICH
slewing range / Rotation
270°

Type 360/01 E
Jib Crane

with Electric Chain Hoist Type 66/04 AKR or
with Electric Chain Hoist Type 62/05 R

HADEF®

Type EDHH

-version on request

Single Girder Manual Underslung Crane

EDHH

capacity W.L.L. kg	span up to mm	wheel base mm	max. wheel load per wheel pair kg
1000	7000	1200	795
	10000	1200	900
	14000	1600	1200
1500	7000	1200	1110
	10000	1200	1225
	14000	1600	1600
2000	7000	1200	1400
	10000	1200	1500
	14000	1600	1900
3000	7000	1600	1900
	10000	1600	2090
	14000	1600	2400
5000	6000	1600	3100
	10000	1600	3300
	14000	2000	3750
10000	7000	2000	6030
	10000	2000	6300
	14000	2000	6580

Type EHH

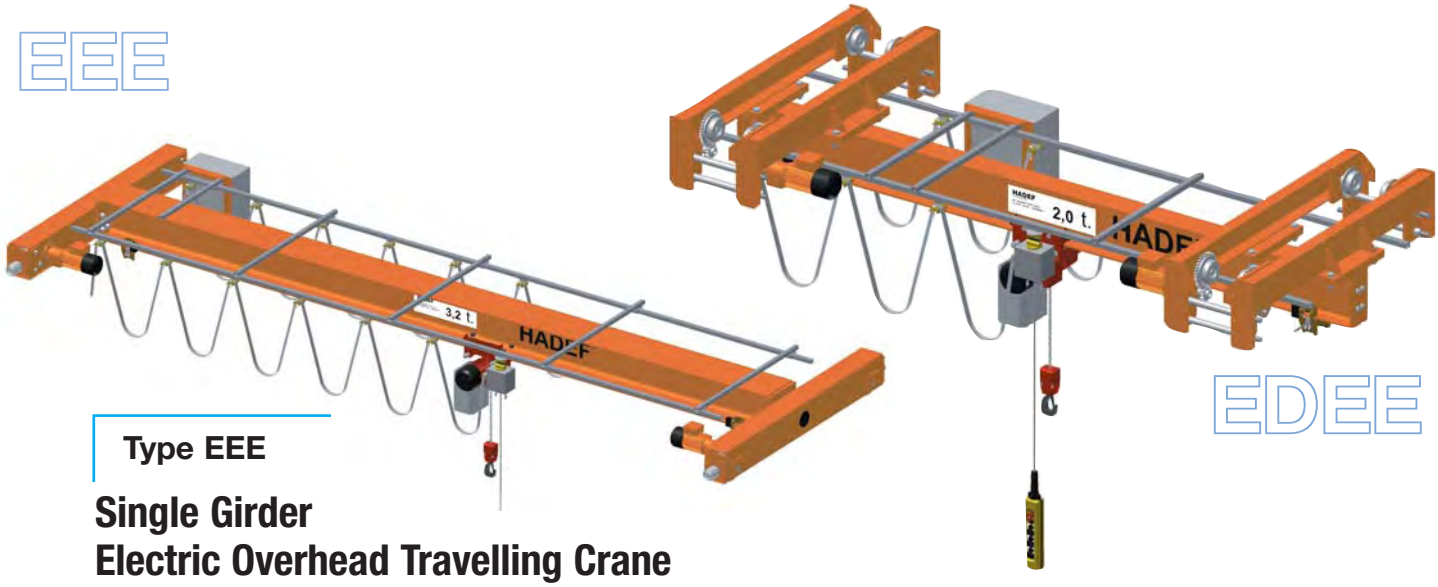
-version on request

Single Girder Manual Overhead Travelling Crane

EHH

capacity W.L.L. kg	span up to mm	wheel base mm	max. wheel load per wheel pair kg
1000	6000	800	635
	10000	1200	725
	14000	1600	910
1500	6000	800	883
	10000	1200	980
	14000	1600	1233
2000	6000	800	1164
	10000	1200	1264
	14000	1600	1524
3000	5000	1200	1739
	10000	1200	1874
	14000	1600	2094
5000	6000	1200	2638
	10000	1600	2924
	14000	1600	3167
10000	7000	1600	5155
	10000	1600	5475
	14000	2200	5936

EEE



EDEE

Single Girder Electric Cranes

Type EEE

Single Girder Electric Overhead Travelling Crane

capacity W.L.L. kg	Hoist HADEF Electric Chain Hoist Type 66/04 AK	lifting speed m/min	FEM 9.511/ ISO 4301	span up to mm
1000	AK 410 DT 80 N 8/2	4,5/1,1	2 m/ M5	7000
				9000
				12000
				16000
				17000
				18000
				20000
2000	AK 620 DT 90 L 8/2	4/1	2 m/ M5	7000
				9000
				12000
				14000
				16000
				18000
				20000
2000	AK 820 FN 100 M 8/2	10,0/2,5	2 m/ M5	7000
				9000
				12000
				14000
				16000
				18000
				20000
3200	AK 732 DT 100 L 8/2	4/1	2 m/ M5	7000
				9000
				12000
				13000
				16000
				18000
				20000
5000	AK 850 FN 100 M 8/2	4,0/1,0	2 m/ M5	7000
				11000
				12000
				16000
				18000
				20000
5000	AK 905 FN 112 M 8/2	5,4/1,35	2 m/ M5	7000
				11000
				12000
				16000
				18000
				20000
6300	AK 906 FN 112 M 8/2	5,4/1,35	1 Bm/ M3	7000
				10000
				12000
				14000
				17000
				18000
				20000
10000	AK 910 FN 112 M 8/2	2,8/0,7	2 m/ M5	6000
				9000
				11000
				12000
				14000
				15000
				18000
				20000

Type EDEE

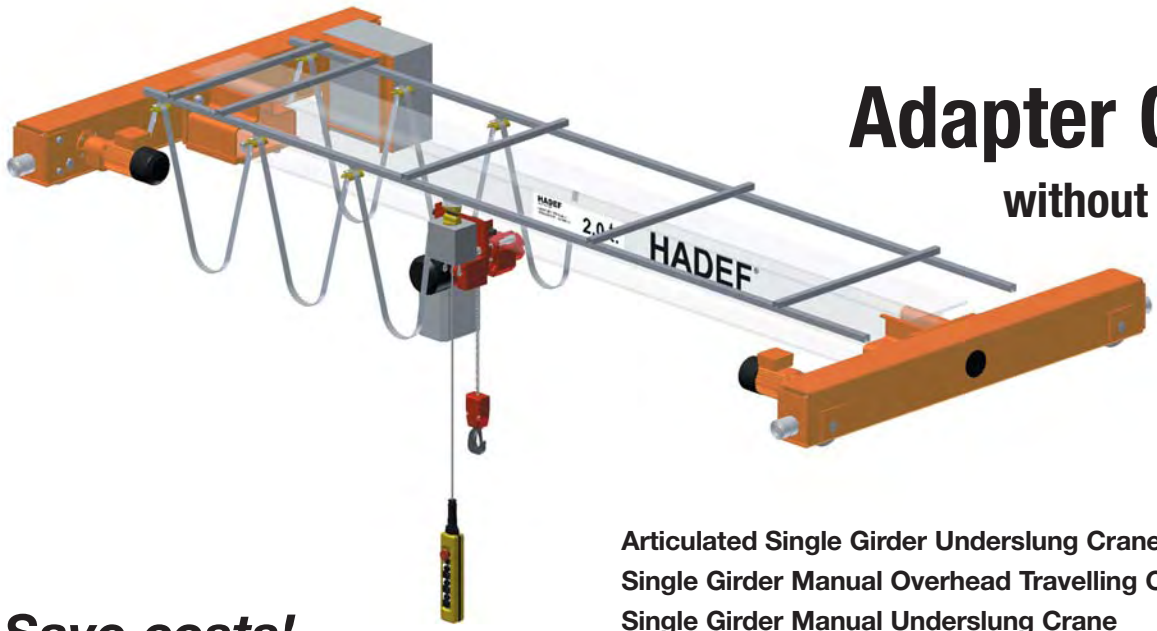
Single Girder Electric Underslung Crane

capa-city W.L.L. kg	Hoist HADEF Electric Chain Hoist Type 66/04 AK	lifting speed m/min	FEM 9.511/ ISO 4301	span up to mm
1000	AK 410 DT 80 N 8/2	4,5/1,1	2 m/ M5	7000
				9000
				12000
				15000
2000	AK 620 DT 90 L 8/2	4/1	2 m/ M5	7000
				9000
				12000
				13000
				15000
3200	AK 732 DT 100 L 8/2	4/1	2 m/ M5	7000
				9000
				12000
				13000
				15000
5000	AK 850 FN 100 M 8/2	4,0/1,0	2 m/ M5	6000
				10000
				13000
				15000
6300	AK 906 FN 112 M 8/2	5,4/1,35	1 Bm/M3	6000
				7000
				10000
				12000
				15000
10000	AK 910 FN 112 M 8/2	2,8/0,7	2 m/ M5	8000
				10000
				11000
				12000

Single Girder Pneumatic Underslung Crane
Type EDDD
capacity: 1 t
span: 7 m

crane installation

Single Girder Manual Overhead Travelling Crane
Type EHH
capacity: 6 t
span: 6 m



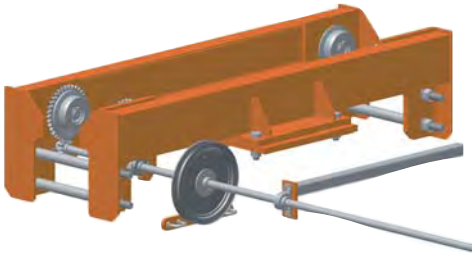
Adapter Cranes

without main beam

Articulated Single Girder Underslung Crane	Type TA
Single Girder Manual Overhead Travelling Crane	Type EHH
Single Girder Manual Underslung Crane	Type EDHH
Single Girder Electric Overhead Travelling Crane	Type EEE
Single Girder Electric Underslung Crane	Type EDEE

Save costs!

HADEF Adapter Cranes help to reduce expensive cost for transport as the components are supplied and the main beam can be bought nearby and installed on site.



End Carriages

ultralow headroom hoist

HADEF gantry crane
with ultralow headroom
Electric Chain Hoist
Type 29/06 EE
capacity: 5 t

wireropes

screw shackles

eye hooks

heart shaped thimbles

wirerope clamps

Accessories Zubehör

wirerope pulleys

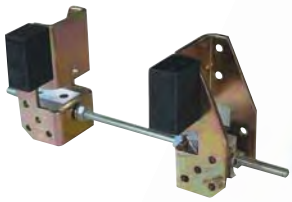
pedestals

trolley wheels with or without gear ring

hand chain wheels

wirerope pulley blocks

wirerope pulley, spheroidal graphite iron with red bronze bushing



trolley end stops

pendant control

Important technical information and mechanical engineering formula about hoists and winches

Important technical information about chain hoists and winches
(with electric, pneumatic or hydraulic drive)

according to „DIN-Taschenbuch 44(DIN-booklet 44) „Cranes and Hoists 1“
and “DIN-Taschenbuch 185 (DIN-booklet 185) “Cranes and Hoists 2”
acc. to “safety for cranes” BGV D6

Extract:
Duty classification according to DIN 15020, FEM 9.511 and ISO 4301

FEM 9.511	1 Bm	1 Am	2 m
ISO 4301	M3	M4	M5

Classify the load conditions
(kind of use):

light	moderate	heavy	very heavy

Determine the average daily utilization time in hours.

The duty classification is calculated as follows:

state of loading:	**average daily utilization time in hours**		
light	up to 2	2 - 4	4 - 8
moderate	up to 1	1 - 2	2 - 4
heavy	up to 0,5	0,5 - 1	1 - 2
very heavy	up to 0,25	0,25 - 0,5	0,5 - 1

This leads to the following duty classification:

1 Bm	**1 Am**	**2m**

Important mechanical engineering formula

torque	$T = F \times r \qquad T = 9{,}55 \times \frac{P}{n}$
power	$P = \frac{W}{t} \qquad \frac{(work)}{(time)}$
lifting power	$P = G \times v$
braking period	$t = \frac{1}{9{,}55} \times \frac{J \times n}{T}$

F = force in N
r = radius

G = weight in Newton
v = velocity (speed) in meters/sec.
J = mass moment of inertia
n = rpm

Conversion factors

Power P in kW =	102 kgm/s
Power P in PS =	75 kgm/s
Power P in kW =	$PS \times \frac{75}{102} = PS \times 0{,}735$
Power P in PS =	kW x 1,36

Important factors

factor	formula designation	measure	note
length	L	m	1 km = 1000 m
square measure / area	A	m^2	1 m^2 = 100 dm^2 1dm^3 = 1L
time			1 min = 60 s 1 h = 60 min
period of time	t	s	1 d = 24 h
duration			1 a = 24 h
frequency	f	Hz	1 Hz = 1/s
rpm	n	min^{-1}	revolutions/minute
speed	v	m/s	1 km/h = 1/3,6 m/s
acceleration acceleration of the fall	a	m/s^2	g = 9,81 m/s^2
load	m	kg	
force	F	N	9,81 x 1 N = 1kg x 1 m/s^2
weight	G	N	
pressure	P	Pa	1 Pa = 1 N/m^2
work	W		
torque	T	Nm	1 Nm = 1 J
power	P	W	735,5 1 W = 1 J/s = Nm/s
mass moment of inertia	J	kgm^2	9,81
efficiency	η		z.B. 0,95

Simplified check of the chain (DIN 5684, part 3)

$$A = \frac{D^2 \times \pi}{4}$$

D = chain thickness in mm
π = 3,14
A = square measure in mm²

$$p = \frac{G \times 9{,}81}{2 \times A}$$

p = special stress/load in N/mm²
G = capacity in kg

1 Am admissible 125 N/mm²
1 Bm admissible 160 N/mm²

calculation example:
capacity = 3200 kg
chain Ø = 11,2 mm

$$A = \frac{11{,}2^2 \times \pi}{4} = 100 \text{ mm}^2$$

$$p = \frac{3200 \times 9{,}81}{2 \times 100} = 160 \text{ N/mm}^2$$

admissible for 1 Bm

	capacity in kg	
chain Ø	**1 Bm**	**1 Am/ 2m**
4	400	320
5	630	500
5,6	800	630
6	900	750
6,3	1000	780
7 u. 7, 1	1250	1000
8	1600	1250
9	2000	1600
10	2500	2000
11, 2	3150	2500
13	4250	3200
16	6300	5000

Simplified wirerope determination

HADEF standard values (acc. to FEM 9.661)

wirerope Ø mm	capacity daN (kg)
14	3200
16	4000
18	5000
20	6300
22	8000
24	10000
26	12500
30	16000
34	20000
38	25000
42	32000

Determination of wirerope ø in mm (acc. to FEM 9.661)
Nominal strength of single rope strands : 1960 N/mm² (recommended by HADEF)

$$d \text{ min} = c \times \sqrt{\text{largest wirerope pulling capacity in kg}} \times 9{,}81$$

calculation example:
wirerope pulling capacity of 3200 kg
2 m: c = 0,07 (assumed)

d min = 0,07 x 32000
d min = 0,07 x 178 = 12,5 mm wirerope Ø (minimum)

1 kg = 0,981 daN ~ 1daN
1 kg = 9,81 N ~ 10 N

Power

Calculation of power for Electric Chain Hoists and Electric Wirerope Winches

$$P = \frac{W}{t}$$

$$P = G \times v$$

W = work
t = time in sec.
G = weight in N

G in kg = N x 9,81
v = lifting speed in m/s
η = efficiency

Generally, capacity (kg) and lifting speed (m/min) are known values, it results the following calculation:

$$P_{kW} = \frac{G \times v}{1{,}36 \times 75 \times 60 \times \eta\ (=0{,}95)} = \frac{G \times v}{5800}$$

calculation example for a Wirerope Winch or a Chain Hoist:

capacity/pulling rope capacity = 3200 kg
lifting speed = 25 m/min

$$P_{kW} = \frac{3200 \times 25}{5800} = 13{,}8 \text{ kW}$$

Torque

necessary torque

$$T_{Nm} = G \times \frac{D}{2} \times 9{,}81$$

D = drum or chain sprocket diameter

calculation example:

T_{Nm} = 3200 x 0,150 x 9,81 = 4700 Nm

Gear transmission

necessary gear transmission

$$n_2 = \frac{v}{2 \times r \times \pi}$$

$$i = \frac{n_1}{n_2}$$

r = radius

calculation example:

$$n_2 = \frac{25}{2 \times 0{,}150 \times 3{,}14} = 27$$

$$i = \frac{1480}{27} = 55 : 1$$

Braking moment

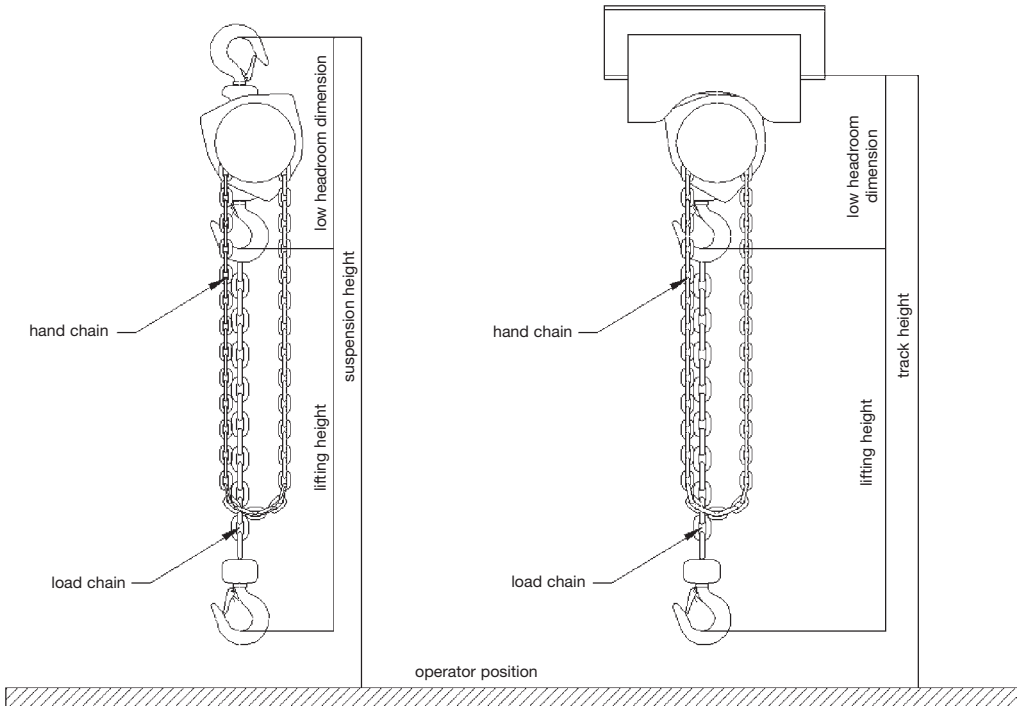
necessary braking moment

$$T_{Nm} = 9550 \times \frac{P_{kW}}{n_1}$$

calculation example:

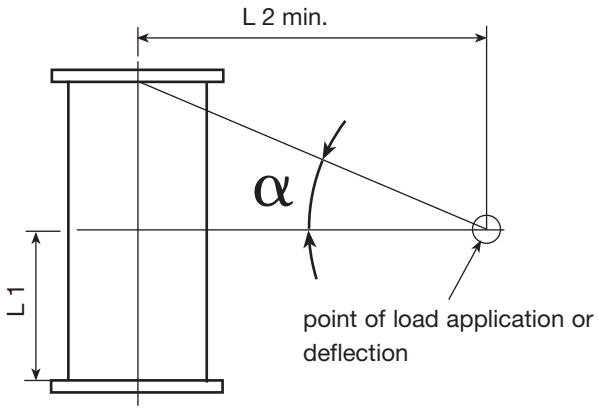
$$T_{Nm} = 9550 \times \frac{13{,}8}{1480} = 89 \text{ Nm}$$

necessary braking moment with double safety factort = 180 Nm

Term	Definition
Suspension height / Lifting height / Track height	
Frequency converter	The frequency converter makes it possible to operate threephase current motors with variable frequencies. This allows smooth motions for lifting and lowering of the load. Furthermore this reduces brake wear to a minimum.
Notes for dimensioning of beam – **motor-driven Hoists of ultralow headroom configuration**	The patented kind of chain deflection used to achieve ultralow headroom configuration leads to symmetric shifting. This is shown by oscillations during lifting and lowering. Please stop the hoist in this case for some time to let the equipment settle down before operating again. This phenomenon is no failure, it is a characteristic feature of the ultralow headroom hoist. Therefore, it is very important to chose a sufficiently stable beam (at least lifting class H3 acc. to DIN 15018). Please take into consideration that wheel pressure (for hoists with trolley) differs for the trolley wheels. Please take the proper weight of hoist and beam into consideration and consult a static engineer in case of doubt! HADEF Electric Chain Hoist Type 29/06 Synchro with two drives avoids symmetric shifting.
Positionning switch (Incremental position transducer)	A mechanic-electronic device that allows to program fixed lifting/lowering positions. Programming is done by “teach-in” method that means it is programmed by driving to the desired position and pressing a button so that this position will be remembered automatically in the future. The load is lifted or lowered up to the desired position/s and stopps automatically.

Term	Definition
Phase monitoring relay	This device assures correct connection of the motor to the threephase current net and thus prevents the hoist from damage. This is very important for hoists that are used not only at one single area but at different places and are therefore moved and connected again. In case of wrong connection or phase failure the phase monitoring relay prevents operation of the hoist.
Testing of Cranes [1)]	It is up to the responsibility of the user to make sure that power-driven cranes are tested by an expert prior to first commissioning and after substantial changes before putting them into operation again. Sentence no. 1 also applies to manual or partly-power-driven cranes with a capacity of more than 1000 kg.
Inspection before first commissioning	Testing before first commissioning concerns correct installation, equipment and readiness for operation. It consists of preliminary test, manufacturing test and approval test. Inspection before first commissioning is not necessary when the crane is supplied ready for operation and a certificate of homologation or a certificate of EU-Conformity is available for the crane.
Recurring inspection	It is up to the responsibility of the user to have cranes tested by an expert, in accordance with their service and working conditions but at least once a year. The instructions of the manufacturer regarding testing must be observed. Test results must be written down in a test book. The test book must be shown on demand.
Low voltage control	This device guarantees safe operation of high-performance motors. A control transformer reduces the control voltage to $\geq$ 50 V and thus protects the operator from high voltage. The pendant control only carries control voltage and not the entire net voltage (i.e. 400 V). Furthermore, hoists with low voltage control can easily be backfitted with limit switches for lifting or travel.

1) source: Extract from the UVV (accident prevention regulations) for Cranes (BGV D6)

Term	Definition
Angle of wirerope exit	

acc. to DIN 15020 page 1 and BGV D 8

α = max. 4° for standard wireropes (L2 = 15 x L1)
α = max. 1,5° for non rotating wireropes (L2 = 30 x L1)

In order to make sure that the wirerope is winded round the drum correctly, the a.m. angle of side-deflection must not be exceeded. Should this not be possible due to technical reasons, a wirerope winding device must be used.

Insulation Classes

Insulation Classes – Temperature limits
The Insulation Classes indicate the maximum temperatures that are allowed for the motor windings inside the stator. Motor size and power depend on the Insulation class required.

The HADEF Premium Line Electric Chain Hoist Series AK with low voltage control is fitted with thermal protection that cuts-off the motor when the max. permitted temperature is reached.

Example: Should the max. motor temperature of 155 °C (Insulation class F) be reduced to 130 °C (Insulation class B) a motor of bigger size must be selected to achieve this.

HADEF Electric Chain Hoists are classified for Insulation class F.

The temperature rise for motor windings must not exceed the following values:

Insulation Class	max. motor temperature °C	max. ambient temperature °C
Y	90	40
A	105	40
E	120	40
B	130	40
F	155	40
H	180	60
C	> 180	60

Term

ATEX

Definition

HADEF equipment in explosion-proof configuration (EX-hoists) complies with directive ATEX (EU-directive 94/9/EU).They are suitable for the following or lower classifications,they must not be used for other classifications:

Manual and Pneumatic Hoists

EX II 2G IIB c T4 for gas
EX II 2D c 135°C for dust
EX II 2G IIB c T3 for gas
EX II 2D c 200 °C for dust

Electric Hoists

EX II 2G IIB T4 for gas
EX II 2D 135°C for dust
EX II 2G IIB T3 for gas
EX II 2D 200 °C for dust

EX-Zones

Areas with explosion hazard are classified in zones. Information about explosion zones are given in IEC 60079-10 and in the national standards. The following table shows the zones in relation to the equipment category.

Gas/Mist/Steam	Equipment category	Dust	Equipment category	Existing explosive atmosphere
Zone 0	1G	Zone 20	1D	Permanently, long lasting or often
Zone 1	2G	Zone 21	2D	From time to time
Zone 2	3G	Zone 22	3D	Seldomly or shortly

G= gas D= dust

HADEF offers equipment suitable for use in zones 1 and 21 or lower classifications.

Explosion Groups for gas

Combustible gases and steam can be classified by the following temperature classes according to their inflammability:

Chemical agent	inflammation temperature	temperature class	explosion group
Acetone	540°C	T1	IIA
Ammonia	630°C	T1	IIA
Benzol (pure)	555°C	T1	IIA
Ethanoic Acid	485°C	T1	IIA
Ethane	515°C	T1	IIA
Ethylacetat	460°C	T1	IIA
City Gas(lighting gas)	560°C	T1	IIB
Hydrogen Sulfide	270°C	T3	IIB
Hydrogen	560°C	T1	IIC
Ethanol	425°C	T2	IIB
Azetylen	305°C	T2	IIC
Heating Oil	300°C	T3	IIA
Ethanal	140°C	T4	IIA
Ethyl Ether	180°C	T4	IIB

Extract from the table “Explosion groups for gas”

Term

ATEX

Definition

Temperature Classes
The maximum surface temperature of the hoist must always be lower than the inflammation temperature of the gas/steam air mixture. It is possible to use the equiment in lower temperature classes if it is classified for higher temperature classes.

When operating the hoist, the stipulated temperature class must be observed and the max. surface temperature of the units must not be exceeded.

HADEF equipment is suitable for temperature classes from T1 to T4.

Temperature class	Inflammation temperature of gas °C	max. surface temperature of hoist °C
T1	>450	450
T2	>300 <450	300
T3	>200 <300	200
T4	>135 <200	135
T5	>100 <135	100
T6	>85 <100	85

The following HADEF equipment can be supplied in explosion-proof configuration:

II 2G IIB c T4
II 2D c 135°C
Manual and Pneumatic Hoists/ Trolleys/ Winches

	Type	**capacity**
Spur Gear Hoists	9/98 +14/12	500 kg – 10 t/ 4 chain falls
Spur Gear Hoists with trolley	24/98 + 27/12 HR + HH	500 kg – 10 t/ 4 chain falls
Spur Gear Hoists with trolley low headroom configuration	28/98 + 28/12 HR + HH	500 kg – 5 t/ 3 chain falls
Spur Gear Hoists with trolley ultralow headroom configuration	29/98 HH + 29/12 HH	1 t – 6,3 t/ 4 chain falls
Pneumatic Chain Hoists	70/06 APS; APR; APH; APP	500 kg – 30 t
Pneumatic Chain Hoists low headroom	28/06 APR; APH; APP	500 kg – 40 t
Pneumatic Chain Hoists ultralow headroom configuration	29/06 APH + APP	1000 kg – 60 t
Pneumatic Winches	43/86 P 42/87 P	250 kg – 2 t 500 kg – 10 t
Trolleys	19/90 + 22/90 20/94 AFR; AFH; AFP	500 kg – 25 t

II 2G IIB T4
II 2D 135°C
Electric Chain Hoists

	Type	**capacity**
Electric Chain Hoist	90/09 EX E	250 kg - 60 t
Electric Chain Hoist ultralow headroom configuration	91/09 EX E	250 kg - 60 t

II 2G IIB c T3
II 2D c 200°C
Manual and Pneumatic Hoists

	Type	**capacity**
Spur Gear Hoists	9/98 + 16/12	10 t/ 2 chain falls and up
Spur Gear Hoists with trolley	24/98 + 26/12 HR + HH	10 t/ 2 chain falls and up
Spur Gear Hoists with trolley low headroom configuration	28/98 + 28/12 HR + HH	10 t/ 2 chain falls and up
Spur Gear Hoists with trolley ultralow headroom configuration	29/98 HH + 29/12 HH	10 t/ 2 chain falls and up

HADEF®