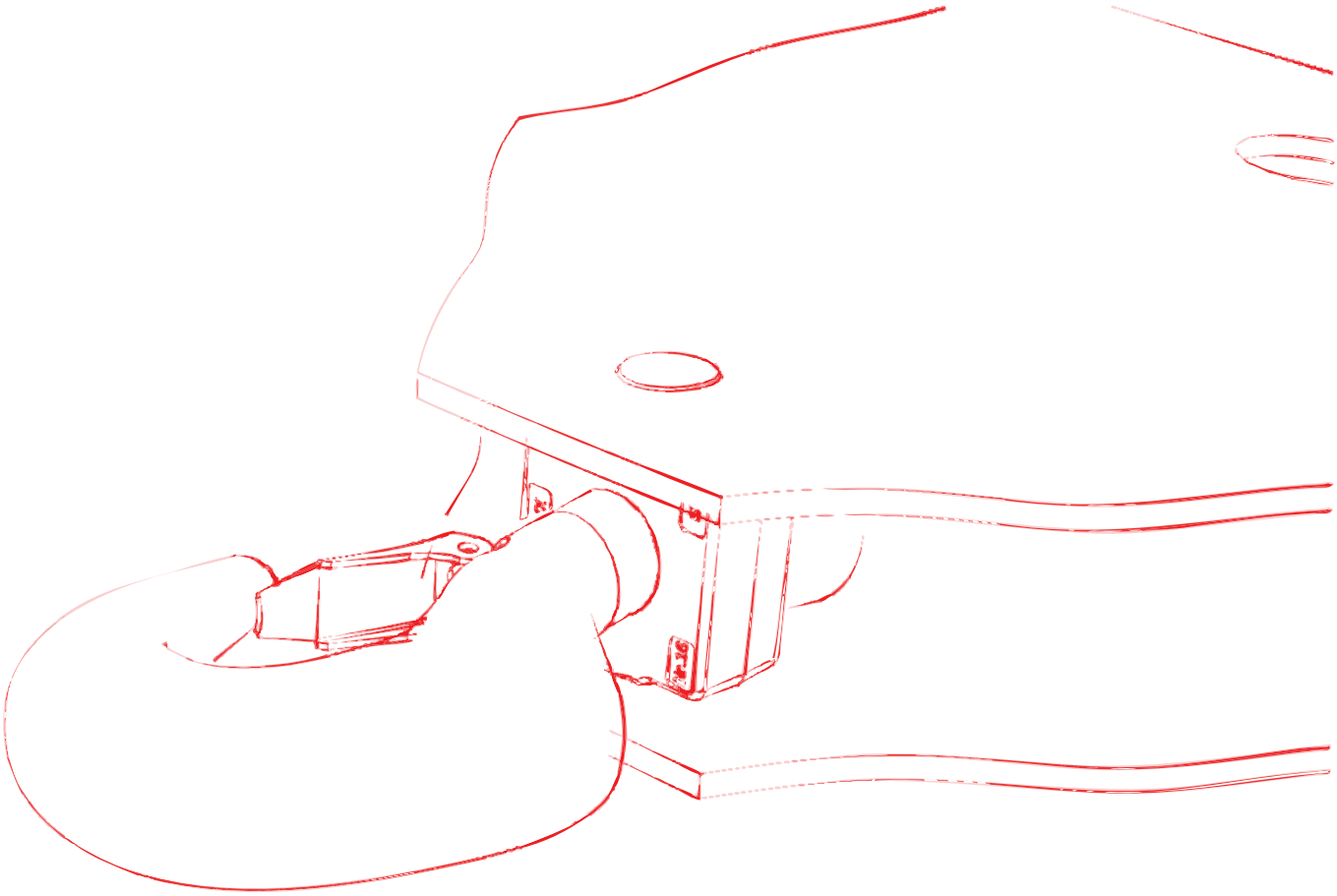
WOLFFKRAN

TI_2017-3

Slewing tower crane

WOLFF 8033.20 cross

Technical information



English

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Published by

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At the time of printing, the information, data, illustrations and notes comprised in this manual were up-to-date.

Subject to change of design, error and typos.

Stand: 03/2017

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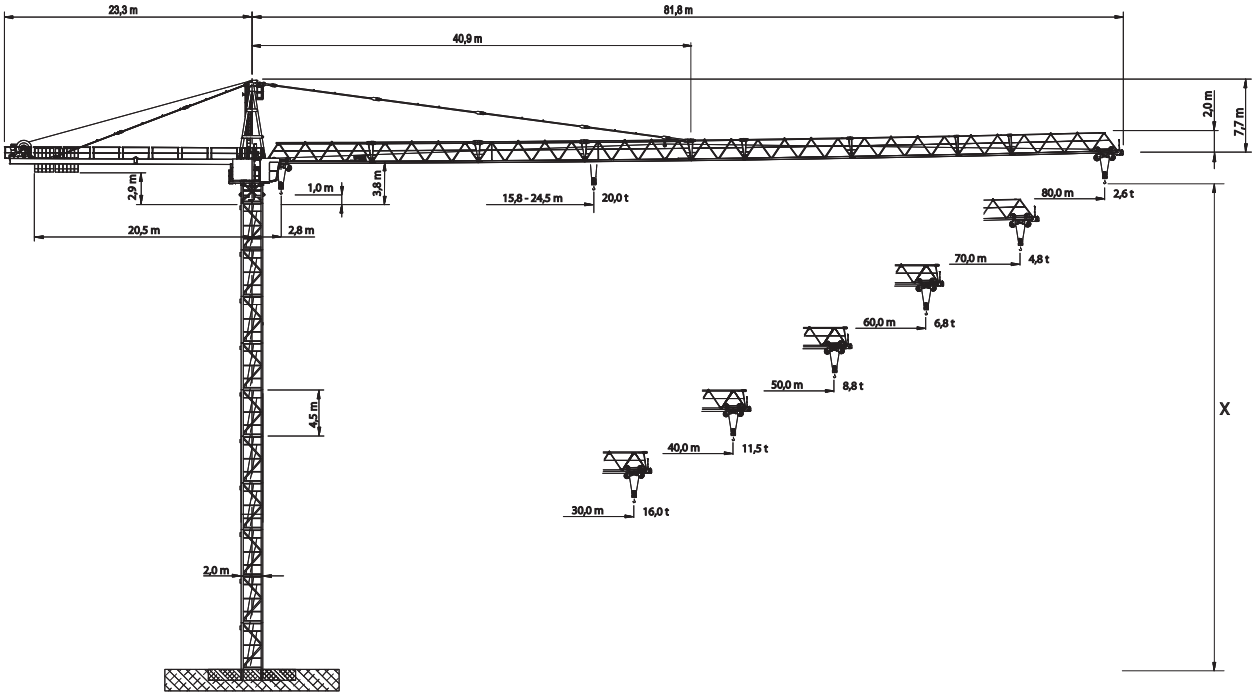
1 Schedule drawing

1.1 Schedule drawing WOLFF 8033.20cross



[X]	max. hook height above ground

Data WOLFF 8033.20

Item	Data
Crane type	BGL GROUP C.0.10.0450
Design	Overhead travelling crane with top slewing trolley jib, with climbing feature
Type of setup	Stationary or travelling
Basis of calculation	EN
Payload torque	max. 4900 kNm
Hoist winch	Hw 2075 FU / Hw 20110 FU

2 Load carrying capacities

NOTICE

WOLFF-Boost

With the WOLFF-Boost function, the load is allowed to exceed the load torque range specified for the lifting capacities by up to 10%. This is, however, subject to the restriction that hoisting gear and trolley drive (trolley crane) respectively hoisting gear and derricking gear (luffing crane) must only be moved alternatingly.

2.1 Table of load carrying capacity WOLFF 8033.20 (2 fall operation)

 20.0 t		Operating radius [m]		30	35	40	45	50	55	60	65	70	75	80	
JL	80	2.8 – 15.8		9.8	8.1	6.9	5.9	5.2	4.6	4.0	3.6	3.2	2.9	2.6	LCC
[m]	77.5	2.8 – 17.5		10.9	9.1	7.8	6.7	5.9	5.2	4.6	4.1	3.7	3.4		[t]
	75	2.8 – 19.0		12.0	10.1	8.6	7.5	6.6	5.8	5.2	4.6	4.2	3.8		
	72.5	2.8 – 20.0		12.8	10.7	9.2	8.0	7.0	6.2	5.6	5.0	4.5			
	70	2.8 – 21.0		13.5	11.3	9.7	8.4	7.4	6.6	5.9	5.3	4.8			
	67.5	2.8 – 21.8		14.0	11.8	10.1	8.8	7.8	6.9	6.2	5.6				
	65	2.8 – 22.5		14.5	12.2	10.5	9.1	8.1	7.2	6.4	5.8				
	62.5	2.8 – 23.0		15.0	12.6	10.8	9.4	8.3	7.4	6.6					
	60	2.8 – 23.5		15.3	12.9	11.1	9.6	8.5	7.6	6.8					
	57.5	2.8 – 23.8		15.5	13.1	11.2	9.8	8.7	7.7						
	55	2.8 – 24.1		15.7	13.2	11.4	9.9	8.8	7.8						
	52.5	2.8 – 24.2		15.8	13.3	11.4	10.0	8.8							
	50	2.8 – 24.2		15.8	13.3	11.4	10.0	8.8							
	47.5	2.8 – 24.3		15.9	13.4	11.5	10.0								
	45	2.8 – 24.3		15.9	13.3	11.5	10.0								
	42.5	2.8 – 24.3		15.9	13.4	11.5									
	40	2.8 – 24.3		15.9	13.4	11.5									
	37.5	2.8 – 24.4		15.9	13.4										
	35	2.8 – 24.4		15.9	13.4										
	32.5	2.8 – 24.4		16.0											
	30	2.8 – 24.5		16.0											

Caption	
JL	Jib length
LCC	Load carrying capacity

The load carrying capacity is related to a hook range of 42.0 m. Hook ranges greater than that reduce the maximum load carrying capacity by the weight of the additional hoisting ropes (2 fall operation = 5.64 kg per meter of the hook range).

2.2 Table of load carrying capacities (kg) in meter intervals, WOLFF 8033.20 (20.0t, 2 fall operation)

Operating radius	Jib length [m]																				
[m]	30	32.5	35	37.5	40	42.5	45	47.5	50	52.5	55	57.5	60	62.5	65	67.5	70	72.5	75	77.5	80
15	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000
16	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	19760
17	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	18500
18	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	19360	17380
19	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	19980	18260	16370
20	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**18900**	**17260**	**15470**
21	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	19940	18990	17920	16360	14650
22	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	19760	18960	18050	17030	15540	13910
22.5	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**20000**	**19950**	**19280**	**18500**	**17610**	**16610**	**15150**	**13560**
23	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	19480	18820	18060	17190	16210	14790	13230
24	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	19850	19540	19120	18600	17970	17240	16400	15470	14100	12610
25	**19540**	**19490**	**19440**	**19450**	**19410**	**19370**	**19350**	**19380**	**19290**	**19290**	**19190**	**18990**	**18690**	**18290**	**17780**	**17180**	**16480**	**15680**	**14780**	**13470**	**12040**
26	18720	18670	18620	18630	18600	18560	18540	18570	18480	18480	18390	18190	17900	17520	17040	16460	15780	15010	14150	12890	11510
27	17970	17920	17870	17880	17850	17810	17790	17820	17740	17740	17640	17460	17180	16810	16340	15790	15140	14390	13560	12350	11020
27.5	**17610**	**17560**	**17520**	**17520**	**17500**	**17460**	**17440**	**17470**	**17380**	**17380**	**17290**	**17110**	**16830**	**16470**	**16010**	**15470**	**14830**	**14100**	**13280**	**12090**	**10790**
28	17260	17220	17170	17180	17150	17120	17100	17120	17040	17040	16950	16770	16500	16140	15700	15160	14540	13820	13020	11840	10570
29	16610	16570	16520	16530	16500	16470	16450	16470	16400	16400	16310	16140	15880	15530	15100	14580	13980	13290	12510	11380	10140
30	**16000**	**15960**	**15920**	**15920**	**15900**	**15860**	**15850**	**15870**	**15790**	**15790**	**15710**	**15540**	**15290**	**14960**	**14540**	**14040**	**13450**	**12790**	**12040**	**10940**	**9750**
31		15390	15350	15350	15330	15300	15280	15300	15230	15230	15150	14990	14740	14420	14010	13530	12960	12320	11590	10540	9380
32		14850	14810	14820	14800	14770	14750	14770	14700	14700	14620	14460	14230	13920	13520	13050	12510	11880	11180	10150	9040
32.5		**14600**	**14560**	**14570**	**14540**	**14510**	**14500**	**14520**	**14450**	**14450**	**14370**	**14220**	**13980**	**13680**	**13290**	**12830**	**12290**	**11670**	**10980**	**9970**	**8870**
33			14310	14320	14300	14270	14250	14270	14200	14200	14130	13970	13750	13440	13060	12610	12080	11470	10790	9790	8710
34			13840	13850	13830	13800	13780	13800	13740	13740	13660	13510	13290	13000	12630	12190	11670	11080	10420	9460	8400
35			**13400**	**13410**	**13380**	**13360**	**13340**	**13360**	**13300**	**13300**	**13220**	**13080**	**12860**	**12580**	**12220**	**11790**	**11290**	**10720**	**10070**	**9140**	**8120**
36				12990	12970	12940	12920	12940	12880	12880	12810	12670	12460	12180	11830	11420	10930	10370	9750	8840	7840
37				12590	12570	12540	12530	12550	12490	12490	12420	12280	12080	11810	11470	11060	10590	10050	9440	8550	7590
37.5				**12400**	**12380**	**12350**	**12340**	**12360**	**12300**	**12300**	**12230**	**12090**	**11890**	**11630**	**11290**	**10890**	**10420**	**9890**	**9290**	**8420**	**7460**
38					12190	12170	12150	12170	12110	12110	12050	11910	11720	11450	11120	10730	10270	9740	9150	8280	7340
39					11840	11810	11800	11820	11760	11760	11690	11560	11370	11110	10790	10410	9960	9450	8870	8030	7110
40					**11500**	**11470**	**11460**	**11480**	**11420**	**11420**	**11360**	**11230**	**11050**	**10790**	**10480**	**10110**	**9670**	**9170**	**8600**	**7780**	**6890**
41						11150	11140	11160	11100	11100	11040	10920	10730	10490	10180	9820	9390	8900	8350	7550	6680
42						10850	10840	10850	10800	10800	10740	10620	10440	10200	9900	9540	9130	8650	8110	7330	6480
42.5						**10700**	**10690**	**10700**	**10650**	**10650**	**10590**	**10470**	**10300**	**10060**	**9770**	**9410**	**9000**	**8530**	**8000**	**7230**	**6390**
43							10540	10560	10510	10510	10450	10330	10160	9920	9630	9280	8880	8410	7890	7120	6290
44							10270	10280	10230	10230	10170	10060	9890	9660	9370	9030	8640	8180	7670	6920	6110
45							**10000**	**10020**	**9970**	**9970**	**9910**	**9800**	**9630**	**9410**	**9130**	**8800**	**8410**	**7960**	**7460**	**6730**	**5940**
46								9760	9710	9710	9660	9550	9380	9170	8890	8570	8190	7750	7260	6550	5770
47								9520	9470	9470	9420	9310	9150	8940	8670	8350	7980	7550	7070	6370	5610
47.5								**9400**	**9350**	**9350**	**9300**	**9190**	**9030**	**8820**	**8560**	**8240**	**7870**	**7450**	**6980**	**6290**	**5540**
48									9240	9240	9180	9080	8920	8710	8450	8140	7770	7360	6890	6210	5460
49									9010	9010	8960	8860	8710	8500	8250	7940	7580	7170	6710	6040	5310
50									**8800**	**8800**	**8750**	**8650**	**8500**	**8300**	**8050**	**7750**	**7400**	**7000**	**6550**	**5890**	**5170**
51										8590	8540	8450	8300	8100	7860	7560	7220	6830	6380	5740	5040
52										8400	8350	8250	8110	7910	7670	7380	7050	6660	6230	5600	4910
52.5										**8300**	**8250**	**8160**	**8010**	**7820**	**7580**	**7300**	**6960**	**6580**	**6150**	**5530**	**4850**
53											8160	8060	7920	7730	7500	7210	6880	6500	6080	5460	4790
54											7980	7880	7740	7560	7330	7050	6720	6350	5940	5330	4670
55											**7800**	**7710**	**7570**	**7390**	**7160**	**6890**	**6570**	**6210**	**5800**	**5200**	**4550**
56												7540	7410	7230	7000	6740	6420	6060	5660	5080	4440
57												7380	7250	7070	6850	6590	6280	5930	5530	4960	4330
57.5												**7300**	**7170**	**6990**	**6780**	**6520**	**6210**	**5860**	**5470**	**4900**	**4280**
58													7090	6920	6700	6440	6140	5800	5410	4840	4230
59													6940	6770	6560	6310	6010	5670	5290	4730	4130
60													**6800**	**6630**	**6420**	**6170**	**5880**	**5550**	**5170**	**4630**	**4030**
61														6500	6290	6040	5760	5430	5060	4520	3940
62														6360	6160	5920	5640	5310	4950	4420	3850
62.5														**6300**	**6100**	**5860**	**5580**	**5260**	**4900**	**4370**	**3800**
63															6040	5800	5520	5200	4850	4330	3760
64															5920	5680	5410	5100	4740	4230	3670
65															**5800**	**5570**	**5300**	**4990**	**4640**	**4140**	**3590**
66																5460	5190	4890	4550	4050	3510
67																5350	5090	4790	4460	3970	3430
67.5																**5300**	**5040**	**4740**	**4410**	**3920**	**3390**
68																	4990	4700	4370	3880	3360
69																	4890	4600	4280	3800	3280
70																	**4800**	**4510**	**4190**	**3720**	**3210**
71																		4430	4110	3650	3140
72																		4340	4030	3570	3080
72.5																		**4300**	**3990**	**3540**	**3040**
73																			3950	3500	3010
74																			3870	3430	2950

Operating radius	Jib length [m]																			
[m]	30	32.5	35	37.5	40	42.5	45	47.5	50	52.5	55	57.5	60	62.5	65	67.5	70	72.5	75	77.5	80
75																			**3800**	**3360**	**2890**
76																				3300	2830
77																				3230	2770
77.5																				**3200**	**2740**
78																					2710
79																					2650
80																					**2600**

3 Tower combinations

⚠ DANGER

Usage of incorrect tower combinations.

The slewing tower crane may overturn.

1) Use the specified tower combinations.

2) If you need another tower combination that is not specified here, please contact WOLFFKRAN to get an approved alternative setup in writing.

NOTICE

All tower combinations apply to free standing slewing tower cranes without climbing gear.

3.1 Tower combinations on foundation (slewing section with TV 20 - connection)

Jib length		**30 m – 80 m**			
Item					
1	4.5 m	TV 20.4			
2	9.0 m	TV 20.4			
3	13.5 m	TV 20.4			
4	18.0 m	TV 20.4			
5	22.5 m	TV 20.4			
6	27.0 m	TV 20.4			
7	31.5 m	TV 20.4			
8	36.0 m	TV 20.4			
9	40.5 m	TV 20.4			
10	45.0 m	TV 20.4			
11	49.5 m	TV 20.4			
12	54.0 m	TV 20.4			
Foundation anchors		TYPE D 140/ FUA 140			
Tower height [m]		54.0			
Hook height double reeving [m]		55.0			
Wind category		C25			

3 Tower combinations

Jib length		**30 m – 80 m**			
Item					
1	4.5 m	TV 20.4			
2	9.0 m	TV 20.4			
3	13.5 m	TV 20.4			
4	18.0 m	TV 20.4			
5	22.5 m	TV 20.4			
6	27.0 m	TV 20.4			
7	31.5 m	TV 20.4			
8	36.0 m	TV 20.4			
9	40.5 m	TV 20.4			
10	45.0 m	TV 20.4			
11	49.5 m	TV 20.4			
12	50.5 m	VR 2023			
13	55.0 m	TV 23			
14	59.5 m	TV 23			
Foundation anchors		TYPE D-140 / FUA 140			
Tower height [m]		59.5			
Hook height double reeving [m]		60.5			
Wind category		C25			

Jib length		**30 m – 80 m**			
Item					
1	4.5 m	TV 20.4			
2	9.0 m	TV 20.4			
3	13.5 m	TV 20.4			
4	18.0 m	TV 20.4			
5	22.5 m	TV 20.4			
6	27.0 m	TV 20.4			
7	31.5 m	TV 20.4			
8	36.0 m	TV 20.4			
9	40.5 m	TV 20.4			
10	45.0 m	TV 20.4			
11	46.0 m	VR 2023			
12	50.5 m	TV 23			
13	55.0 m	TV 23			
14	59.5 m	HTA 23			
15	64.0 m	HT 23			
16	68.5 m	HT 23			
17	73.0 m	HT 23			
Foundation anchors		FUA G 160			
Tower height [m]		73.0			
Hook height double reeving [m]		74.0			
Wind category		C25			

3 Tower combinations

Jib length		**30 m – 80 m**			
Item					
1	4.5 m	TV 20.4			
2	9.0 m	TV 20.4			
3	13.5 m	TV 20.4			
4	18.0 m	TV 20.4			
5	22.5 m	TV 20.4			
6	27.0 m	TV 20.4			
7	31.5 m	TV 20.4			
8	36.0 m	TV 20.4			
9	40.5 m	TV 20.4			
10	41.5 m	VR 2023			
11	46.0 m	TV 23			
12	50.5 m	TV 23			
13	55.0 m	HTA 23			
14	59.5 m	HT 23			
15	64.0 m	HT 23			
16	68.5 m	HT 23			
17	79.8 m	BT 23			
Foundation anchors		FUA 210 G			
Tower height [m]		79.8			
Hook height double reeving [m]		80.8			
Wind category		C25			

Jib length		30 m – 80 m			
Item					
1	4.5 m	TV 20.4			
2	9.0 m	TV 20.4			
3	13.5 m	TV 20.4			
4	18.0 m	TV 20.4			
5	22.5 m	TV 20.4			
6	27.0 m	TV 20.4			
7	31.5 m	TV 20.4			
8	36.0 m	TV 20.4			
9	40.5 m	TV 20.4			
10	41.5 m	VR 2023			
11	46.0 m	TV 23			
12	50.5 m	TV 23			
13	55.0 m	HTA 23			
14	59.5 m	HT 23			
15	64.0 m	HT 23			
16	68.5 m	HT 23			
17	69.7 m	VR 23/25-29			
18	74.2 m	UV 29			
19	84.2 m	BT 29			
Foundation anchors		FUA BT 29			
Tower height [m]		84.2			
Hook height double reeving [m]		85.2			
Wind category		C25			

3.2 Tower combinations on foundation (slewing section with HT 23 - connection)

Jib length		**30 m – 80 m**			
Item					
1	4.5 m	HT 23			
2	9.0 m	HT 23			
3	13.5 m	HT 23			
4	18.0 m	HT 23			
5	22.5 m	HT 23			
6	27.0 m	HT 23			
7	31.5 m	HT 23			
8	36.0 m	HT 23			
9	40.5 m	HT 23			
10	45.0 m	HT 23			
11	49.5 m	HT 23			
12	54.0 m	HT 23			
13	58.5 m	HT 23			
14	63.0 m	HT 23			
15	67.5 m	HT 23			
16	78.8 m	BT 23			
Foundation anchors		FUA 210 G			
Tower height [m]		78.8			
Hook height double reeving [m]		79.8			
Wind category		C25			

3.3 Tower combinations on cross frame (slewing section with TV 20 - connection)

Jib length		**30 m – 80 m**			
Item					
1	4.5 m	TV 20.4			
2	9.0 m	TV 20.4			
3	13.5 m	TV 20.4			
4	18.0 m	TV 20.4			
5	22.5 m	TV 20.4			
6	27.0 m	TV 20.4			
7	31.5 m	TV 20.4			
8	36.0 m	TV 20.4			
9	40.5 m	TV 20.4			
10	45.0 m	TV 20.4			
11	49.5 m	TV 20.4			
12	54.0 m	TV 20.4			
Substructure		KR 12-60 / KR 12-60/80			
Corner distance [m x m]		6.0 x 6.0 8.0 x 8.0			
Substructure height [m]		1.4			
Tower height [m]		55.4			
Hook height double reeving [m]		56.4			
Wind category		C25			

3 Tower combinations

Jib length		**30 m – 80 m**			
Item					
1	4.5 m	TV 20.4			
2	9.0 m	TV 20.4			
3	13.5 m	TV 20.4			
4	18.0 m	TV 20.4			
5	22.5 m	TV 20.4			
6	27.0 m	TV 20.4			
7	31.5 m	TV 20.4			
8	36.0 m	TV 20.4			
9	40.5 m	TV 20.4			
10	45.0 m	TV 20.4			
11	49.5 m	TV 20.4			
12	50.5 m	VR 2023			
13	55.0 m	TV 23			
14	59.5 m	TV 23			
Substructure		KR 12-60 / KR 12-60/80			
Corner distance [m x m]		6.0 x 6.0 8.0 x 8.0			
Substructure height [m]		1.4			
Tower height [m]		60.9			
Hook height double reeving [m]		61.9			
Wind category		C25			

Jib length		**30 m – 80 m**			
Item					
1	4.5 m	TV 20.4			
2	9.0 m	TV 20.4			
3	13.5 m	TV 20.4			
4	18.0 m	TV 20.4			
5	22.5 m	TV 20.4			
6	27.0 m	TV 20.4			
7	31.5 m	TV 20.4			
8	36.0 m	TV 20.4			
9	40.5 m	TV 20.4			
10	45.0 m	TV 20.4			
11	46.0 m	VR 2023			
12	50.5 m	TV 23			
13	55.0 m	TV 23			
14	59.5 m	HTA 23			
15	64.0 m	HT 23			
16	68.5 m	HT 23			
Substructure		KR 12-60 / KR 12-60/80			
Corner distance [m x m]		6.0 x 6.0 8.0 x 8.0			
Substructure height [m]		1.4			
Tower height [m]		69.9			
Hook height double reeving [m]		70.9			
Wind category		C25			

3 Tower combinations

Jib length		**30 m – 80 m**			
Item					
1	4.5 m	TV 20.4			
2	9.0 m	TV 20.4			
3	13.5 m	TV 20.4			
4	18.0 m	TV 20.4			
5	22.5 m	TV 20.4			
6	27.0 m	TV 20.4			
7	31.5 m	TV 20.4			
8	36.0 m	TV 20.4			
9	40.5 m	TV 20.4			
10	45.0 m	TV 20.4			
11	46.0 m	VR 2023			
12	50.5 m	TV 23			
13	55.0 m	TV 23			
14	59.5 m	HTA 23			
15	64.0 m	HT 23			
16	68.5 m	HT 23			
Substructure		KR 16-80 / KR 16-80/100			
Corner distance [m x m]		8.0 x 8.0 10.0 x 10.0			
Substructure height [m]		1.8			
Tower height [m]		70.3			
Hook height double reeving [m]		71.3			
Wind category		C25			

Jib length		30 m – 80 m			
Item					
1	4.5 m	TV 20.4			
2	9.0 m	TV 20.4			
3	13.5 m	TV 20.4			
4	18.0 m	TV 20.4			
5	22.5 m	TV 20.4			
6	27.0 m	TV 20.4			
7	31.5 m	TV 20.4			
8	36.0 m	TV 20.4			
9	40.5 m	TV 20.4			
10	41.5 m	VR 2023			
11	46.0 m	TV 23			
12	50.5 m	TV 23			
13	55.0 m	HTA 23			
14	59.5 m	HT 23			
15	64.0 m	HT 23			
16	68.5 m	HT 23			
17	69.7 m	VR 23/25-29			
18	79.7 m	BT 29			
Substructure		KR 16-80			
Corner distance [m x m]		8.0 x 8.0			
Substructure height [m]		1.8			
Tower height [m]		81.5			
Hook height double reeving [m]		82.5			
Wind category		C25			

3 Tower combinations

Jib length		**30 m – 80 m**			
Item					
1	4.5 m	TV 20.4			
2	9.0 m	TV 20.4			
3	13.5 m	TV 20.4			
4	18.0 m	TV 20.4			
5	22.5 m	TV 20.4			
6	27.0 m	TV 20.4			
7	31.5 m	TV 20.4			
8	36.0 m	TV 20.4			
9	40.5 m	TV 20.4			
10	41.5 m	VR 2023			
11	46.0 m	TV 23			
12	50.5 m	TV 23			
13	55.0 m	HTA 23			
14	59.5 m	HT 23			
15	64.0 m	HT 23			
16	68.5 m	HT 23			
17	69.7 m	VR 23/25-29			
18	74.2 m	UV 29			
19	84.2 m	BT 29			
Substructure		KR 16-80/100			
Corner distance [m x m]		10.0 x 10.0			
Substructure height [m]		1.8			
Tower height [m]		86.0			
Hook height double reeving [m]		87.0			
Wind category		C25			

3.4 Tower combinations on cross frame element (slewing section with TV 20 - connection)

Jib length		**30 m – 80 m**			
Item					
1	4.5 m	TV 20.4			
2	9.0 m	TV 20.4			
3	13.5 m	TV 20.4			
4	18.0 m	TV 20.4			
5	22.5 m	TV 20.4			
6	27.0 m	TV 20.4			
Substructure		KRE 260.2			
Corner distance [m x m]		6.0 x 6.0			
Substructure height [m]		4.0			
Tower height [m]		31.0			
Hook height double reeving [m]		32.0			
Wind category		C25			

3 Tower combinations

Jib length		**30 m – 80 m**			
Item					
1	4.5 m	TV 20.4			
2	9.0 m	TV 20.4			
3	13.5 m	TV 20.4			
4	18.0 m	TV 20.4			
5	22.5 m	TV 20.4			
6	27.0 m	TV 20.4			
7	31.5 m	TV 20.4			
8	36.0 m	TV 20.4			
9	40.5 m	TV 20.4			
10	45.0 m	TV 20.4			
11	49.5 m	TVÜ 20.4			
12	54.0 m	UVA 25			
Substructure		KRE 480			
Corner distance [m x m]		8.0 x 8.0			
Substructure height [m]		4.0			
Tower height [m]		58.0			
Hook height double reeving [m]		59.0			
Wind category		C25			

3.5 Tower combinations on mobile cross frame (slewing section with TV 20 - connection)

Jib length		**30 m – 80 m**			
Item					
1	4.5 m	TV 20.4	TV 20.4		
2	9.0 m	TV 20.4	TV 20.4		
3	13.5 m	TV 20.4	TV 20.4		
4	18.0 m	TV 20.4	TV 20.4		
5	22.5 m	TV 20.4	TV 20.4		
6	27.0 m	TV 20.4	TV 20.4		
7	31.5 m	TV 20.4	TV 20.4		
8	36.0 m	TV 20.4	TV 20.4		
9	40.5 m	TV 20.4	TV 20.4		
10	45.0 m	TV 20.4	TV 20.4		
Substructure		KRF4 12-60/80	KRF6 12-60/80		
Corner distance [m x m]		8.0 x 8.0	8.0 x 8.0		
Substructure height [m]		2.5	2.9		
Tower height [m]		47.5	47.9		
Hook height double reeving [m]		48.5	48.9		
Wind category		C25			

3 Tower combinations

Jib length		**30 m – 80 m**			
Item					
1	4.5 m	TV 20.4	TV 20.4		
2	9.0 m	TV 20.4	TV 20.4		
3	13.5 m	TV 20.4	TV 20.4		
4	18.0 m	TV 20.4	TV 20.4		
5	22.5 m	TV 20.4	TV 20.4		
6	27.0 m	TV 20.4	TV 20.4		
7	31.5 m	TV 20.4	TV 20.4		
8	36.0 m	TV 20.4	TV 20.4		
9	40.5 m	TV 20.4	TV 20.4		
10	41.5 m	VR 2023	VR 2023		
11	46.0 m	TV 23	TV 23		
12	50.5 m	TV 23	TV 23		
13	55.0 m	TV 23	TV 23		
Substructure		KRF4 12-60/80	KRF6 12-60/80		
Corner distance [m x m]		8.0 x 8.0	8.0 x 8.0		
Substructure height [m]		2.5	2.9		
Tower height [m]		57.5	57.9		
Hook height double reeving [m]		58.5	58.9		
Wind category		C25			

Jib length		**30 m – 80 m**			
Item					
1	4.5 m	TV 20.4			
2	9.0 m	TV 20.4			
3	13.5 m	TV 20.4			
4	18.0 m	TV 20.4			
5	22.5 m	TV 20.4			
6	27.0 m	TV 20.4			
7	31.5 m	TV 20.4			
8	36.0 m	TV 20.4			
9	40.5 m	TV 20.4			
10	41.5 m	VR 2023			
11	46.0 m	TV 23			
12	50.5 m	TV 23			
13	55.0 m	HTA 23			
14	59.5 m	HT 23			
15	64.0 m	HT 23			
Substructure		KRF6 12-60/80			
Corner distance [m x m]		8.0 x 8.0			
Substructure height [m]		2.9			
Tower height [m]		66.9			
Hook height double reeving [m]		67.9			
Wind category		C25			

3 Tower combinations

Jib length		**30 m – 80 m**			
Item					
1	4.5 m	TV 20.4			
2	9.0 m	TV 20.4			
3	13.5 m	TV 20.4			
4	18.0 m	TV 20.4			
5	22.5 m	TV 20.4			
6	27.0 m	TV 20.4			
7	31.5 m	TV 20.4			
8	36.0 m	TV 20.4			
9	37.0 m	VR 2023			
10	41.5 m	TV 23			
11	46.0 m	TV 23			
12	50.5 m	HTA 23			
13	55.0 m	HT 23			
14	59.5 m	HT 23			
15	64.0 m	HT 23			
16	68.5 m	HT 23			
Substructure		KRF 16-80/100			
Corner distance [m x m]		10.0 x 10.0			
Substructure height [m]		3.3			
Tower height [m]		71.8			
Hook height double reeving [m]		72.8			
Wind category		C25			

Jib length		**30 m – 80 m**			
Item					
1	4.5 m	TV 20.4			
2	9.0 m	TV 20.4			
3	13.5 m	TV 20.4			
4	18.0 m	TV 20.4			
5	22.5 m	TV 20.4			
6	27.0 m	TV 20.4			
7	31.5 m	TV 20.4			
8	36.0 m	TV 20.4			
9	37.0 m	VR 2023			
10	41.5 m	TV 23			
11	46.0 m	TV 23			
12	50.5 m	HTA 23			
13	55.0 m	HT 23			
14	59.5 m	HT 23			
15	64.0 m	HT 23			
16	65.2 m	VR 23/25-29			
17	69.7 m	UV 29			
18	78.7 m	BT 29			
Substructure		KRF 16-80/100			
Corner distance [m x m]		10.0 x 10.0			
Substructure height [m]		3.3			
Tower height [m]		83.0			
Hook height double reeving [m]		84.0			
Hook height 4 fall operation [m]		83.6			
Wind category		C25			

3.6 Tower combinations on undercarriage (slewing section with TV 20 - connection)

Jib length		**30 m – 80 m**			
Item					
1	4.5 m	TV 20.4			
2	9.0 m	TV 20.4			
3	13.5 m	TV 20.4			
4	18.0 m	TV 20.4			
5	22.5 m	TV 20.4			
Substructure		UW 260.3			
Corner distance [m x m]		6.0 x 6.0			
Substructure height [m]		4.5			
Tower height [m]		27.0			
Hook height double reeving [m]		28.0			
Wind category		C25			

Jib length		**30 m – 80 m**			
Item					
1	4.5 m	TV 20.4			
2	9.0 m	TV 20.4			
3	13.5 m	TV 20.4			
4	18.0 m	TV 20.4			
5	22.5 m	TV 20.4			
6	27.0 m	TV 20.4			
7	31.5 m	TV 20.4			
8	36.0 m	TV 20.4			
9	40.5 m	TV 20.4			
10	45.0 m	TVÜ 20.4			
11	49.5 m	TV 25			
12	54.0 m	UVA 25			
Substructure		UW 480			
Corner distance [m x m]		8.0 x 8.0			
Substructure height [m]		5.0			
Tower height [m]		59.0			
Hook height double reeving [m]		60.0			
Wind category		C25			

4 Foundation loads / central ballast weights / corner loads in compliance with EN 14439 / EN 13001

⚠ DANGER

Usage of incorrect tower combinations.

The slewing tower crane may overturn.

1) Use the specified tower combinations.

2) If you need another tower combination that is not specified here, please contact WOLFFKRAN to get an approved alternative setup in writing.

NOTICE

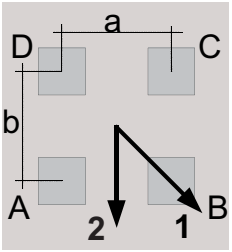
If you need foundation loads for tower combination with tower element TV 25 and UV 25, please contact WOLFFKRAN to get an approved alternative setup.

Jib positions

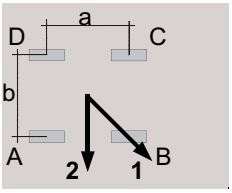
The corner loads are given for two jib positions with the maximum corner load resulting from jib position 1.

For square setup, the following equation is true: a = b

For rectangular setup, the following equation is true: a > b



Cross frame or cross frame element



Undercarriage

NOTICE! For undercarriage details, please refer to the relevant operating manual.

Wind load with crane out of service

The stability for stormy weather is calculated on the basis of wind region C (EN 13001-2). The reference wind speed for zone C is 28 m/s (10 m above ground, averaged over 10 minutes).As a basis, a recurrence interval of 25 years is used. As a basis, a recurrence interval of 25 years is used.

4 Foundation loads / central ballast weights / corner loads in compliance with EN 14439 / EN 13001

Please contact WOLFFKRAN for stability calculations in other wind regions.

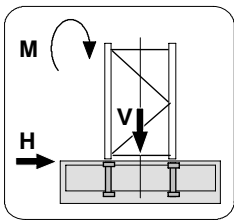
NOTICE

The quadruple reeving hook height is only for the crane 8033.16 in quadruple reeving mode.

For information on the different substructures, refer to Section 5 of the Operating Manual.

4.1 Foundation loads jib 30 m - 80 m (TV 20 - connection)

Slewing section 8033 *cross* with 30 m – 80 m jib on foundation.
Slewing tower crane without climbing device.



Foundation load in compliance with EN 14439 / EN 13001 – typical loads

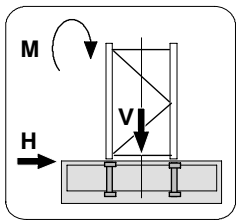
Includes all dynamical factors under consideration of second-order theory for stationary slewing tower cranes on concrete foundation in compliance with a tower combination without climbing device.

HH		Crane in service			Crane out of service			Assembly		
4	2	Slewing torque: 500 kNm			Wind category C25					
STR	STR	M	V	H	M	V	H	M	V	H
[m]	[m]	[kNm]	[kN]	[kN]	[kNm]	[kN]	[kN]	[kNm]	[kN]	[kN]
5.1	5.5	3240	765	28	2670	595	45	3740	396	9
9.6	10.0	3380	793	30	2890	623	51	3790	424	10
14.1	14.5	3530	821	32	3140	651	57	3850	452	11
18.6	19.0	3700	850	34	3420	679	63	3910	481	12
23.1	23.5	3890	878	35	3750	708	69	3990	509	13
27.6	28.0	4100	906	37	4100	736	75	4070	537	15
32.1	32.5	4330	935	39	4500	764	82	4170	566	16
36.6	37.0	4730	1055	44	4940	793	88	4280	594	17
41.1	41.5	5030	1083	46	5430	821	94	4400	622	18
45.6	46.0	5370	1112	48	5960	849	100	4530	651	19
50.1	50.5	5830	1290	50	6550	878	106	4680	679	20
54.6	55.0	6280	1318	52	7190	906	112	5170	911	21
55.6	56.0	6290	1345	53	7280	933	116	5170	939	22
60.1	60.5	6740	1376	55	8680	1241	178	5370	969	23
64.6	65.0	7090	1432	58	9840	1297	191	5520	1025	24
69.1	69.5	7570	1471	60	11200	1337	203	5730	1064	25
73.6	74.0	8100	1510	62	12700	1376	215	5970	1104	27
75.9	76.3	8190	1556	64	13320	1422	223	6000	1150	28
80.4	80.8	8790	1596	66	15030	1461	236	6270	1189	29
Tower combination with base tower element BT 29										
80.3	80.7	8560	1609	66	14710	1475	237	6160	1202	29
84.8	85.2	9090	1655	69	16420	1521	251	6400	1249	30

Caption					
HH:	Hook height	V:	Vertical load	STR:	Number of falls
H:	Horizontal load	M:	Torque		

4.2 Foundation loads jib 30 m - 80 m (HT 23 - connection)

Slewing section 8033 *cross* with 30 m – 80 m jib on foundation.
Slewing tower crane without climbing device.



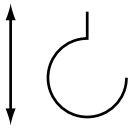
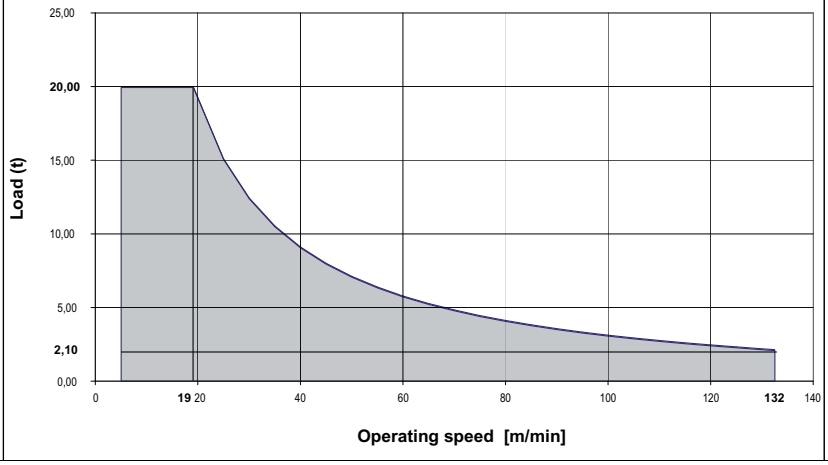
Foundation load in compliance with EN 14439 / EN 13001 – typical loads

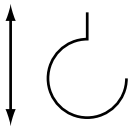
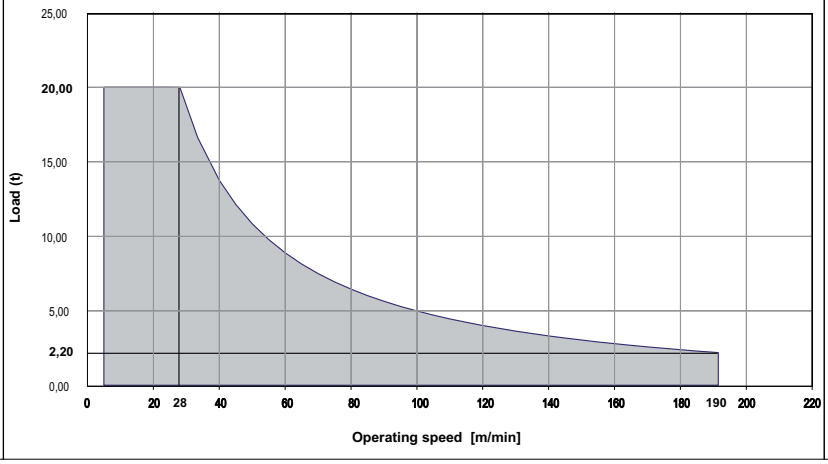
Includes all dynamical factors under consideration of second-order theory for stationary slewing tower cranes on concrete foundation in compliance with a tower combination without climbing device.

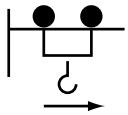
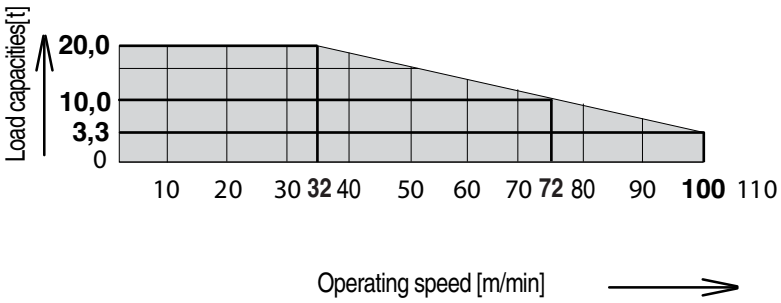
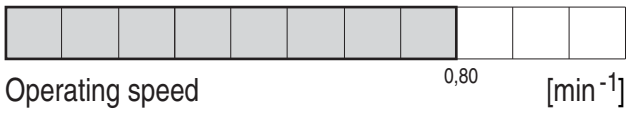
HH		Crane in service			Crane out of service			Assembly		
4	2	Slewing torque: 500 kNm			Wind category C25					
STR	STR	M	V	H	M	V	H	M	V	H
[m]	[m]	[kNm]	[kN]	[kN]	[kNm]	[kN]	[kN]	[kNm]	[kN]	[kN]
5.1	5.5	3240	776	28	2670	606	45	3740	407	9
9.6	10.0	3380	815	30	2890	645	53	3790	446	10
14.1	14.5	3530	855	32	3150	684	60	3840	486	12
18.6	19.0	3690	894	35	3440	724	67	3910	525	13
23.1	23.5	3950	1025	39	3770	763	74	3980	564	14
27.6	28.0	4160	1064	42	4140	803	81	4060	604	15
32.1	32.5	4390	1104	44	4540	842	88	4150	643	17
36.6	37.0	4640	1143	46	4990	881	95	4250	682	18
41.1	41.5	4910	1182	48	5480	921	102	4360	722	19
45.6	46.0	5200	1222	50	6010	960	109	4480	761	20
50.1	50.5	5520	1261	53	6590	999	116	4610	801	22
54.6	55.0	5870	1301	55	7220	1040	123	4990	1044	23
59.1	59.5	6240	1340	57	8590	1356	188	5170	1084	24
63.6	64.0	6760	1530	60	9870	1395	200	5370	1123	25
68.1	68.5	7240	1569	62	11280	1435	212	5590	1162	27
74.9	75.3	7950	1643	66	13520	1510	232	5910	1237	29
79.4	79.8	8550	1683	68	15290	1548	244	6180	1276	30

Caption					
HH:	Hook height	V:	Vertical load	STR:	Number of falls
H:	Horizontal load	M:	Torque		

5 Operating speeds

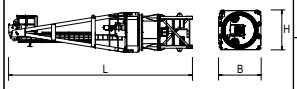
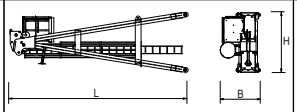
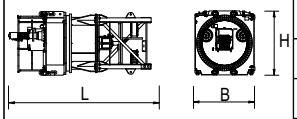
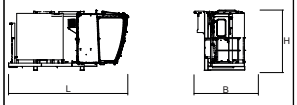
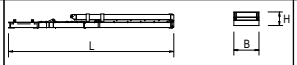
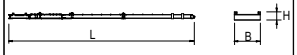
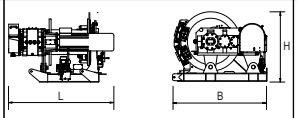
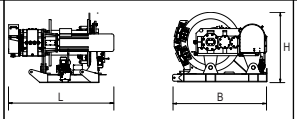
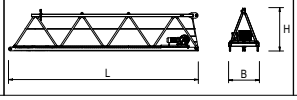
Drive unit [type]	Operating speed Carrying load		Hook travel distance max. [m]	Power [kW]	Total connected wattage [kVA]
Hw2075FU	**Lifting / lowering**		**400**	**75**	**98.0** Total connected load at coincidence factor of 0.7
					

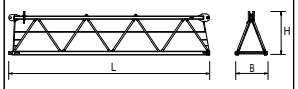
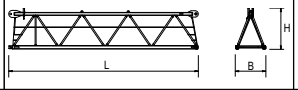
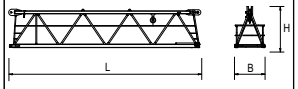
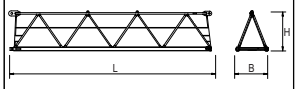
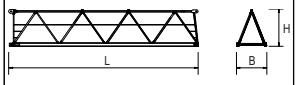
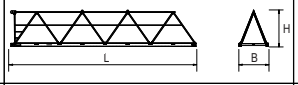
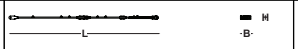
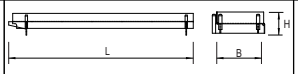
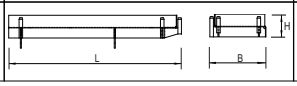
Drive unit [type]	Operating speed Carrying load		Hook travel distance max. [m]	Power [kW]	Total connected wattage [kVA]
Hw20110FU	**Lifting / lowering**		**400**	**110**	**125.0** Total connected load at coincidence factor of 0.7
					

KW	Trolley movement		9.0
			
SG	**Slewing**		**2 x 7.5**
			

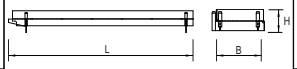
6 Package list

6.1 Package list 8033.20

Quantity	Description	Package	L [m]	W [m]	H [m]	Weight [kg]	Volume [m³]
1	Tower head section, complete with slewing frame, ball race bearing, slewing gear and slip ring system (stay parts on counterjib)		with UV 20 lower part of tower head section				
			11.55	2.30	2.50	15000 (410)	66.41
			with HT 23 lower part of tower head section				
			11.75	2.32	2.80	16300 (410)	76.34
	Tower head section upper part (stay parts for counterjib)		7.39	2.49	1.66	2925 (410)	30.55
	Tower head section lower part with slewing frame, ball race bearing, slewing gear and slip ring system		with UV 20 lower part of tower head section				
			5.60	2.30	2.50	12075	32.20
			with HT 23 lower part of tower head section				
			5.80	2.32	2.80	13370	37.68
1	Driver's cab with driver's cab suspension and control cabinet		4.82	2.19	2.55	3030	26.92
1	Counterjib in hinged position (stay parts on counterjib)		11.98	2.30	1.31	7140 (865)	36.10
	Counterjib (stay parts on counterjib)		22.24	2.30	0.72	7140 (865)	36.83
1	Hoist winch platform Hw21110FU without hoisting rope (2. Brake) (210 m hoisting rope)		2.58	2.31	1.70	4930 (680) (600)	10.13
	Hoist winch platform Hw2075FU without hoisting rope (2. Brake) (210 m hoisting rope)		2.58	2.31	1.70	4880 (680) (600)	10.13
1	Jib element 1 with traverse gear		10.19	1.64	2.29	3400	38.54

Quant-ity	Description	Package	L [m]	W [m]	H [m]	Weight [kg]	Volume [m³]
1	Jib element 2		10.19	1.64	2.08	2460	34.76
1	Jib element 3		10.23	1.64	2.08	2320	34.90
1	Jib element 4		10.30	1.64	2.07	2300	34.97
1	Jib element 5		5.33	1.64	2.03	1135	17.74
1	Jib element 6		2.83	1.64	2.03	695	9.42
1	Jib element 7		10.28	1.64	2.03	1815	34.22
1	Jib element 8		10.22	1.64	2.02	1290	33.86
1	Jib element 9		5.20	1.64	2.01	660	17.14
1	Jib element 10		10.19	1.64	2.01	1040	33.59
1	Rope swivel cross-beam		1.38	1.54	0.50	245	1.06
1	Trolley LK 20		2.00	1.88	1.33	600	5.00
1	Maintenance cage		0.75	0.55	1.69	55	0.70
1	Hook block U 20		0.72	0.29	1.84	750	0.38
1	Brace rods for 80 m operating radius		10.17	0.25	0.60	2780	1.53
1	Auxiliary crane (stand)		2.53	0.30	2.96	220 (80)	2.25
1	Insert platform under hoisting winch platform		1.93	1.88	0.24	100	0.87
1	Platform 1 on counterjib 8033		2.73	0.66	0.33	100	0.59
2	Platform 2/3 on counterjib		1.72	0.66	0.33	75	0.37

6 Package list

Quant-ity	Description	Package	L [m]	W [m]	H [m]	Weight [kg]	Volume [m³]
1	Platform 4 on counterjib 8033		2.89	0.66	0.33	105	0.63
1	Platform 5 on counterjib 8033		2.77	0.66	0.33	100	0.60
1	Platform 6 on counterjib 8033		2.61	0.66	0.33	95	0.57

NOTICE! Bracketed weights must be added to their associated components.

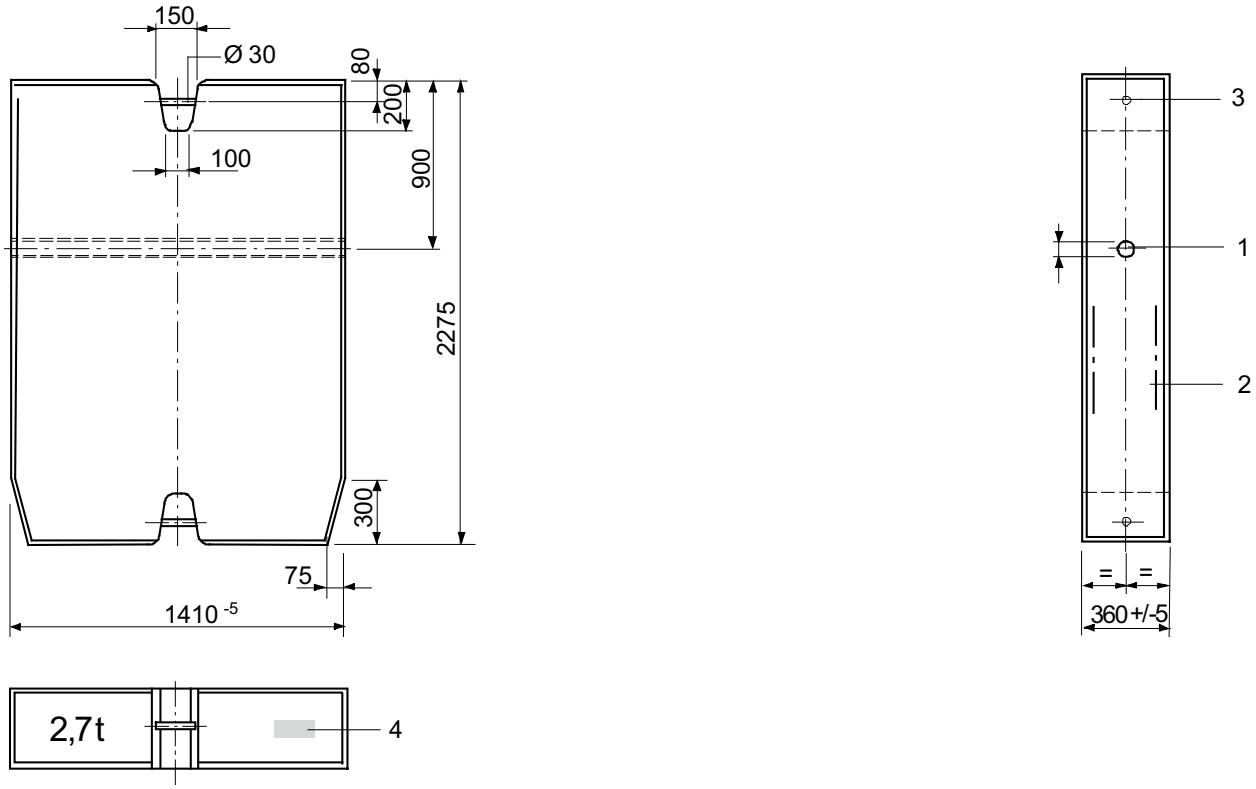
7 Assembly weights

7.1 Counterweight blocks

NOTICE

The described diagrams of the concrete counterweights and central ballast blocks only show sketches. Have them issue the reinforcement charts by experts.

7.1.1 Counterweight block, 2.7 t



Data counterweight block 2.7 t

Item	Data
Material	Concrete, min. C 20/25
Max. permitted weight tolerance	+/- 3 %
Order number	30021887
1	Connection for stub shaft (Ø 40x 215 Item no.: 30024871)
2	Structural steel reinforcement
3	Suspension
4	Component identifier

7.2 Total weight jib assembly

Trolley jib, complete: Trolley, trolley ropes, hook block, standard railings and rope swivel crossbeam

Jib length [m]	Weight [kg] WOLFF 8033.20 cross
80.0	20905
77.5	20940
75.0	20245
72.5	19805
70.0	19110
67.5	19900
65.0	19205
62.5	18765
60.0	18070
57.5	18610
55.0	16265
52.5	15825
50.0	15130
47.5	15670
45.0	14975
42.5	14535
40.0	13840
37.5	13855
35.0	13160
32.5	12720
30.0	12025

7.3 Assembly weight slewing section

Module	Crane parts	Weight [kg]	
Tower head section, complete – tower connection TV 20 tower top lower part			15410
	▪ Tower head section upper part including brace plates	3335	
	▪ Tower head section lower part including slewing frame, ball race bearing, slewing gears, standard railings and slip ring system	12075	
Tower head section, complete – tower connection HT 23 tower top lower part			16710
	▪ Tower head section upper part including brace plates	3335	
	▪ Tower head section lower part including slewing frame, ball race bearing, slewing gears, standard railings and slip ring system	13375	
Operator cabinet platform, complete			2625
	▪ Operator cabin with operator cabin platform	2625	
Operator cabinet platform, complete			3030
	▪ Driver's cab	940	
	▪ Operator cabinet platform	1110	
	▪ Control cabinet, resistor and small parts	980	
Counter jib with Hw20110FU, complete			14840
	▪ Counterjib with brace plates and standard railings	8910	
	▪ Hoist winch platform Hw20110FU (incl. 210m hoisting rope)	5530	
	▪ Pedestal under hoisting winch platform	100	
	▪ Auxiliary crane incl. stand	300	
Counter jib with Hw2075FU, complete			14790
	▪ Counterjib with brace plates and standard railings	8910	
	▪ Hoist winch platform Hw2075FU (incl. 210 m hoisting rope)	5480	
	▪ Pedestal under hoisting winch platform	100	
	▪ Auxiliary crane incl. stand	300	

7.4 Assembly weight cross frame

Module	Crane part	Weight [kg]	
Cross frame KR 12 - 60 (without accessories)			14271
(6 m x 6 m)	▪ 4 bolted spigots AZ 140 M	788	
	▪ 4 bolted spigots AZ 140 E 10	788	
	▪ 4 bolted spigots AZ 156 M	844	
	▪ 4 bolted spigots AZ 140 E 17	875	
	▪ 4 bolted spigots AZ 160 HT23	668	
Cross frame KR 12 – 60/80 (without accessories)			17732
(8 m x 8 m)	▪ 4 bolted spigots AZ 140 M	788	
	▪ 4 bolted spigots AZ 140 E 10	788	
	▪ 4 bolted spigots AZ 156 M	844	
	▪ 4 bolted spigots AZ 140 E 17	875	
	▪ 4 bolted spigots AZ 160 HT23	668	
Cross frame KR 16 - 80 (without accessories)			21450
(8 m x 8 m)	▪ 4 bolted spigots AZ 140 E KR 16 – 80	620	
	▪ 4 bolted spigots AZ 156 M KR 16 – 80	680	
	▪ 4 bolted spigots AZ 156S M KR 16 - 80	675	
Cross frame KR 16 - 80/ 100 (without accessories)			25400
(10 m x 10 m)	▪ 4 bolted spigots AZ 140 E KR 16 – 80	620	
	▪ 4 bolted spigots AZ 156 M KR 16 – 80	680	
	▪ 4 bolted spigots AZ 156S M KR 16 - 80	675	

7.5 Assembly weights traveling cross frame

Module	Crane part	Weight [kg]	
Traveling cross frame KRF4 12-60/80 complete			32300
(8.0 m x 8.0 m)	▪ Cross frame	14170	
	▪ Backing braces	2875	
	▪ Drive gear corners	4560	
	▪ Subframe	9380	
	▪ Platforms and ladders	255	
	▪ Control cabinet	130	
	▪ small items	930	
	▪ Set of bolted spigots AZR 140 M KR 12-60/80	790	
	▪ Set of bolted spigots AZ 120 E 15,5 KR 12-60/80	730	
	▪ Set of bolted spigots AZ 140 E 15,5 KR 12-60/80	875	
	▪ Set of bolted spigots AZR 160 M KR 12-60/80	905	
	▪ Set of bolted spigots AZ 140 E 10 KR 12-60/80	790	
	▪ Set of bolted spigots AZR 156 M KR 12-60/80	845	
Traveling cross frame KRF6 12-60/80 complete			41200
(8.0 m x 8.0 m)	▪ Cross frame	14170	
	▪ Backing braces	2875	
	▪ Drive gear corners	4560	
	▪ Subframe	18270	
	▪ Platforms and ladders	255	
	▪ Control cabinet	130	
	▪ small items	940	
	▪ Set of bolted spigots AZR 140 M KR 12-60/80	790	
	▪ Set of bolted spigots AZ 120 E 15,5 KR 12-60/80	730	
	▪ Set of bolted spigots AZ 140 E 15,5 KR 12-60/80	875	
	▪ Set of bolted spigots AZR 160 M KR 12-60/80	905	
	▪ Set of bolted spigots AZ 140 E 10 KR 12-60/80	790	
	▪ Set of bolted spigots AZR 156 M KR 12-60/80	845	

7.6 Assembly weight cross frame elements

Module	Crane parts	Weight [kg]	
Cross frame element KRE 260.2, complete			10 900
	▪ Cross frame platform with hinged section, corner plates and transport locks	5 455	
	▪ Mast base with diagonal struts and tie rods	5 445	
Cross frame element KRE 480 complete			24 250
	▪ Mast base	7 100	
	▪ Hinged sections with corner plates	6 250	
	▪ Diagonal struts and ballast carrier	9 260	
	▪ Assembly platform, ladder, and small parts	1 640	

7.7 Assembly weight undercarriage

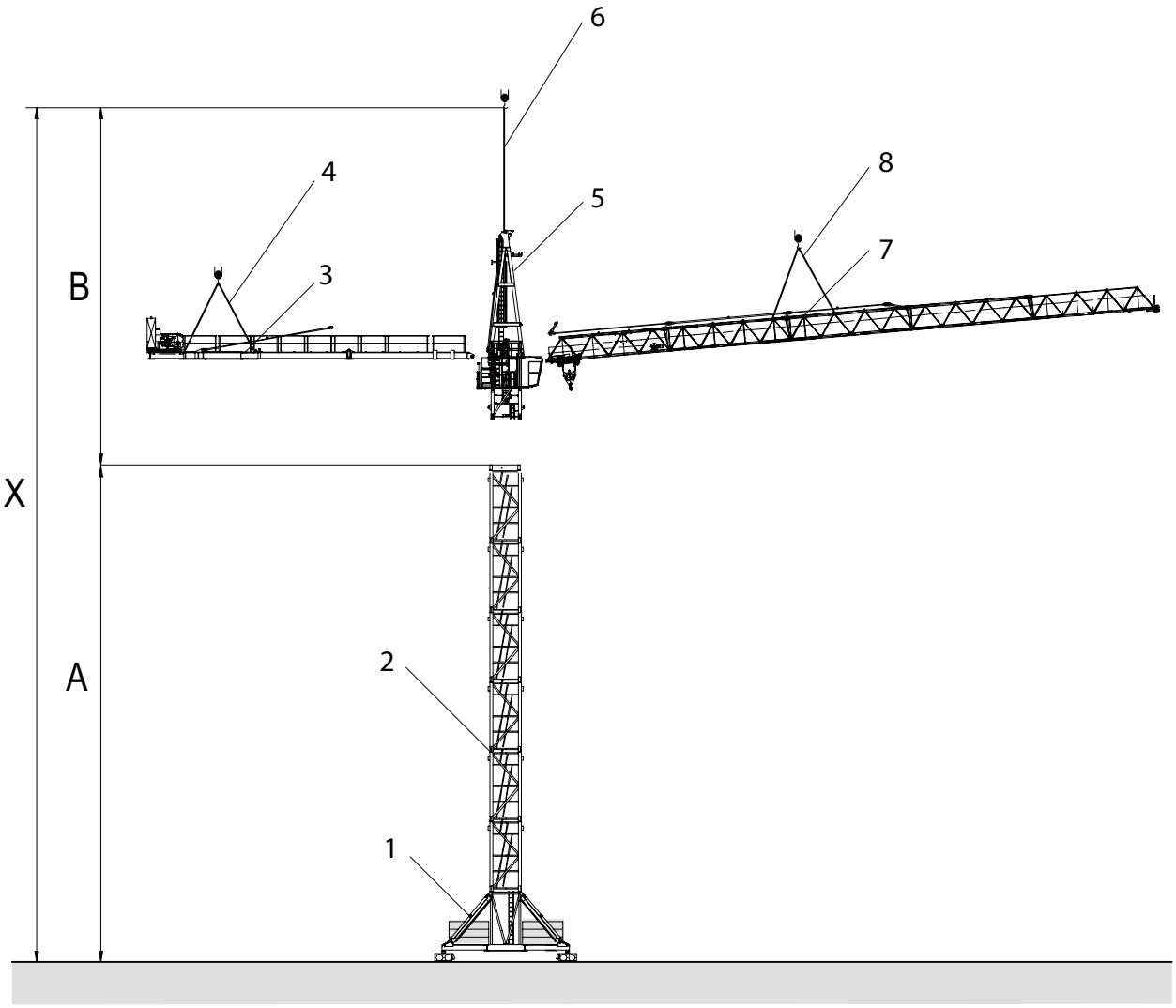
Module	Crane parts	Weight [kg]	
Undercarriage UW 260.3, complete			17 200
	▪ Undercarriage platform with hinged sections, subframes and transport locks	11 300	
	▪ Mast base with diagonal struts and tie rods	5 900	
Undercarriage UW 480, complete			34 000
	▪ Mast base	7 100	
	▪ Hinged sections with mounting device and subframes	16 000	
	▪ Diagonal struts and ballast carrier	9 260	
	▪ Assembly platform, ladder, and small parts	1 640	

7.8 Required hook height for mobile cranes

For information about the height of the WOLFF slewing tower crane, refer to Tower combinations [10].

NOTICE! During assembly, allowances must be made for level differences (mobile crane to base of the slewing tower crane).

Hook height above ground required for mobile cranes (X) = height of the WOLFF slewing tower crane (A) + clearance of 15 m (B).



Exemplary illustration

[A]	Height of the WOLFF slewing tower crane	[B]	Clearance 15 m
[X]	Hook height above ground required for the mobile crane		
1	Substructure	5	Tower head section, complete
2	Tower element	6	Single-point lifting tackle (1 m with shackle)
3	Counterjib including hoisting winch platform	7	Jib, complete
4	Four-point lifting tackle (6 m with shackle)	8	Four-point lifting tackle (6 m with shackle)

7 Assembly weights

(see also):

- Tower combinations [10]

8 Assembly diagrams

8.1 Jib attachment diagram

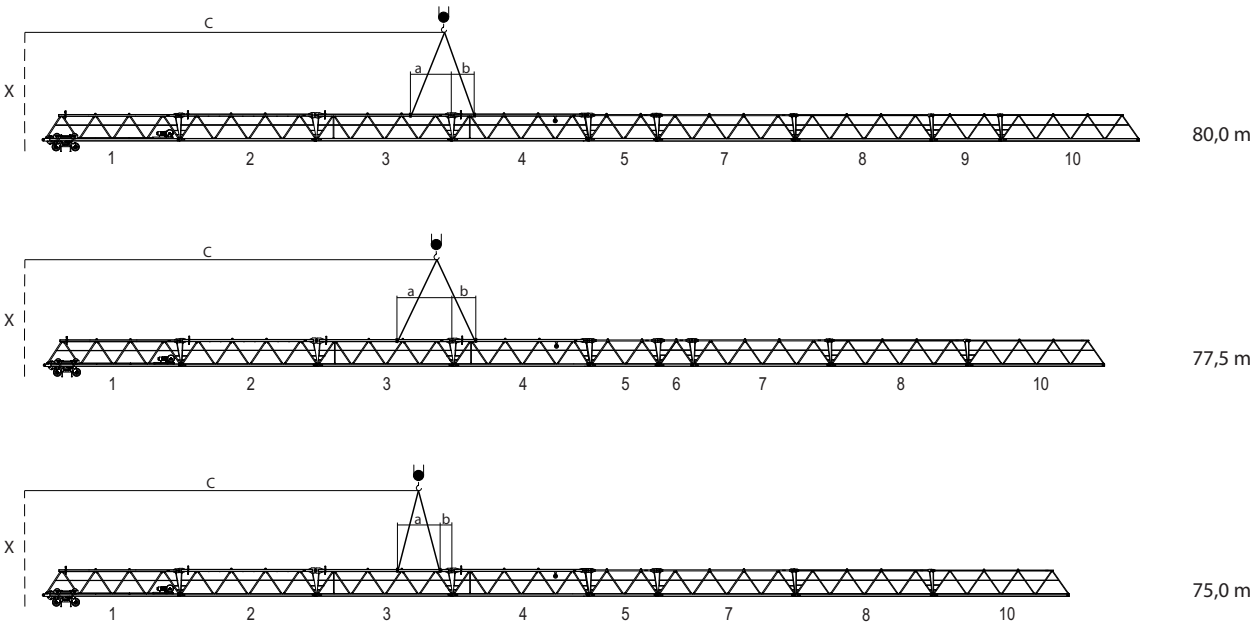
NOTICE

For jib assembly, use a Four-point lifting tackle (6 m with shackle).

Length of jib elements

Item	Length [m]
Jib element 1, 2, 3, 4, 7, 8, 10	10
Jib element 5, 9	5
Jib element 6	2.5

8.1.1 Trolley jib - attachment diagram 80.0 m to 75.0 m

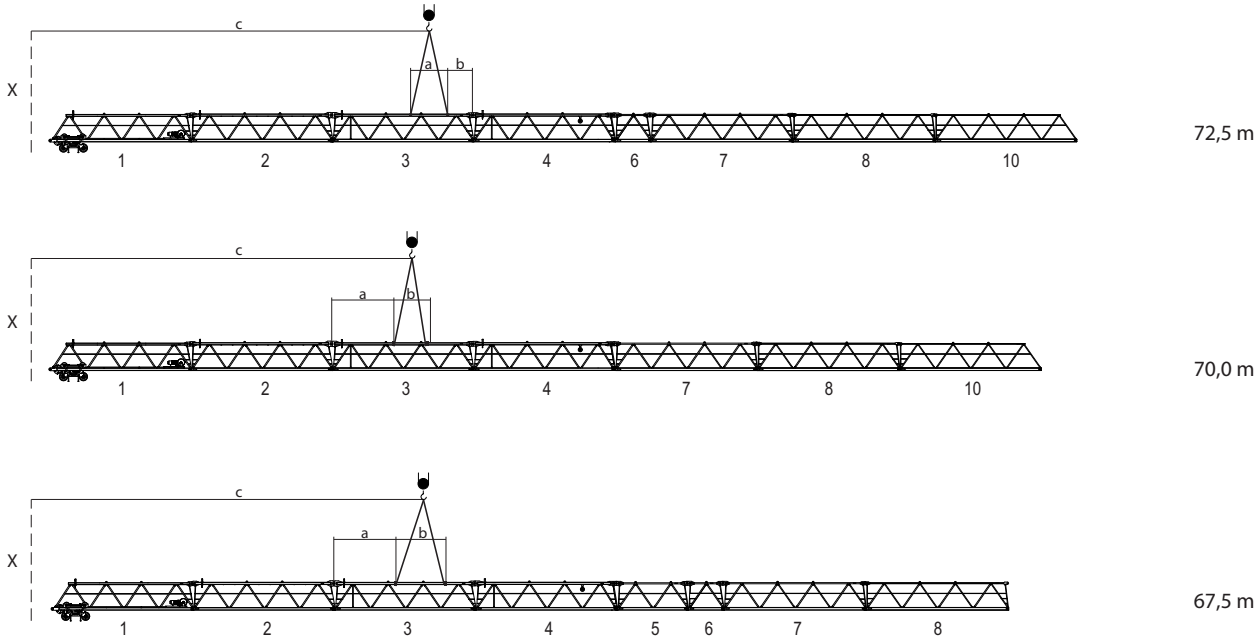


a	Dimension a	b	Dimension b
c	Dimension c	X	Middle of tower

Attachment data 8033.20

	Jib length [m]		
Data	**80.0**	**77.5**	**75.0**
a [m]	2.94	3.91	3.02
b [m]	1.61	1.61	0.89
c [m]	30.50	30.00	28.80
Weight [kg]	20905	20940	20245

8.1.2 Trolley jib - attachment diagram 72.5 m to 67.5 m

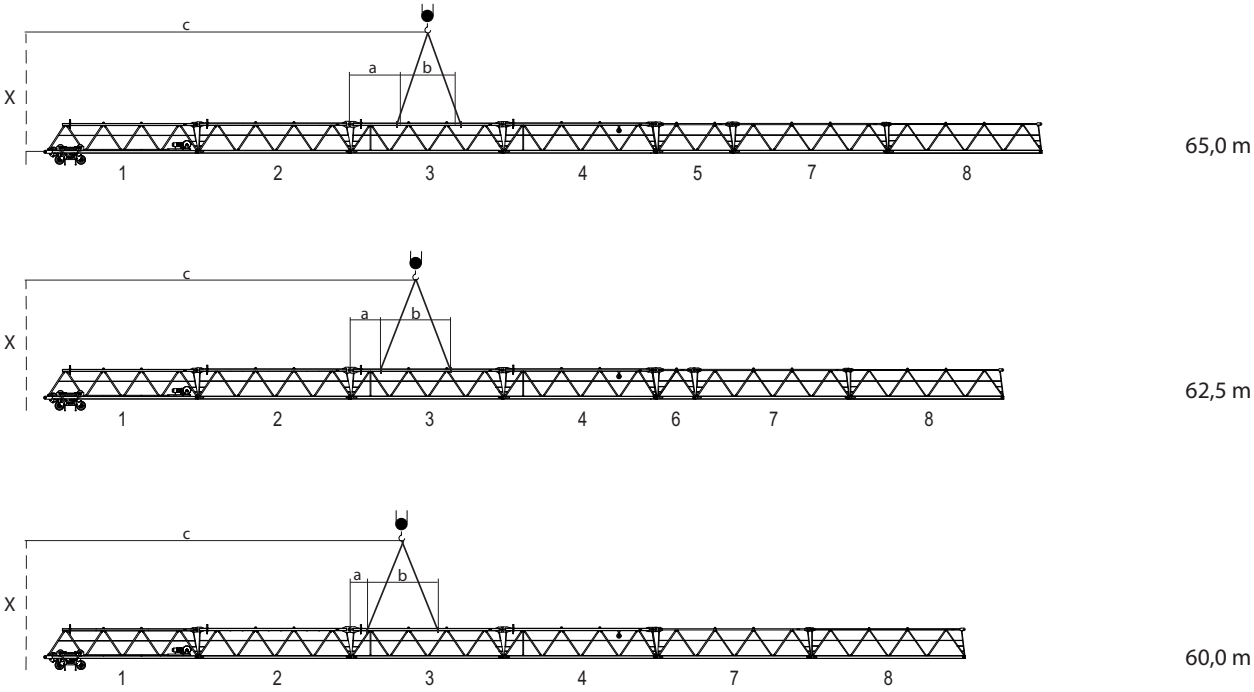


a	Dimension a	b	Dimension b
c	Dimension c	X	Middle of tower

Attachment data 8033.20

	Jib length [m]		
Data	**72.5**	**70.0**	**67.5**
a [m]	2.79	4.56	4.56
b [m]	1.85	2.06	3.59
c [m]	27.90	26.70	27.50
Weight [kg]	19805	19110	19900

8.1.3 Trolley jib - attachment diagram 65.0 m to 60.0 m

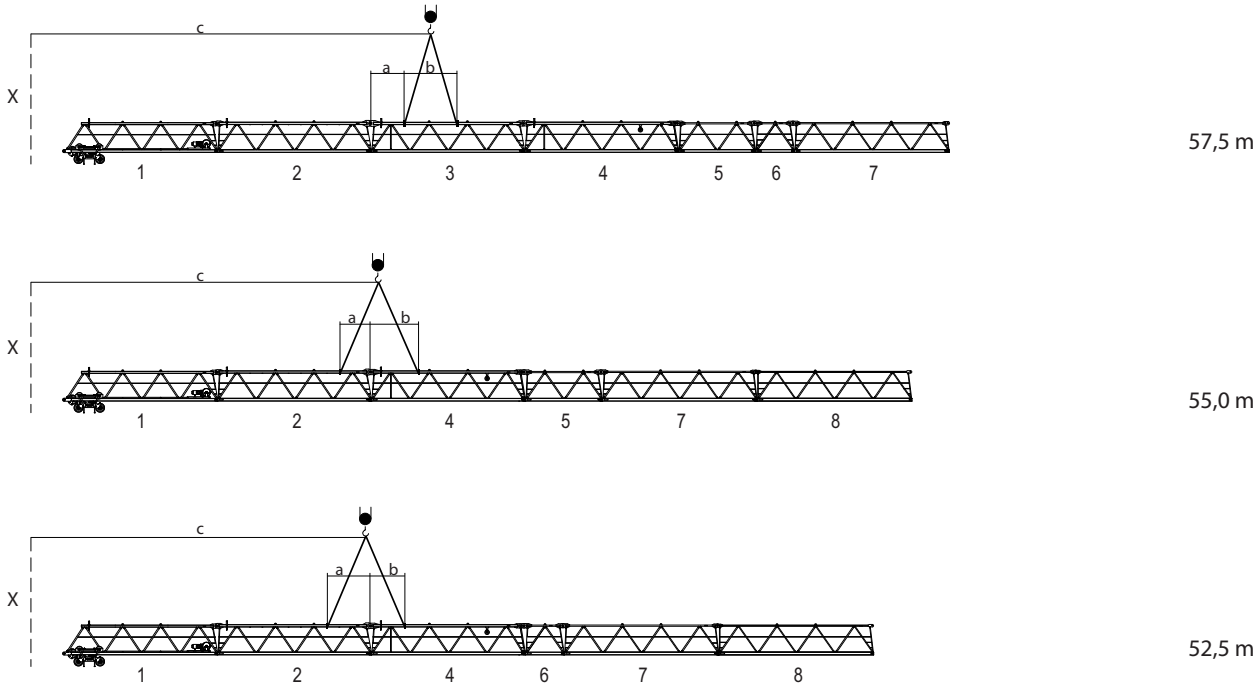


a	Dimension a	b	Dimension b
c	Dimension c	X	Middle of tower

Attachment data 8033.20

	Jib length [m]		
Data	**65.0**	**62.5**	**60.0**
a [m]	2.86	2.06	1.09
b [m]	4.49	4.56	4.56
c [m]	26.30	25.50	24.50
Weight [kg]	19205	18765	18070

8.1.4 Trolley jib - attachment diagram 57.5 m to 52.5 m

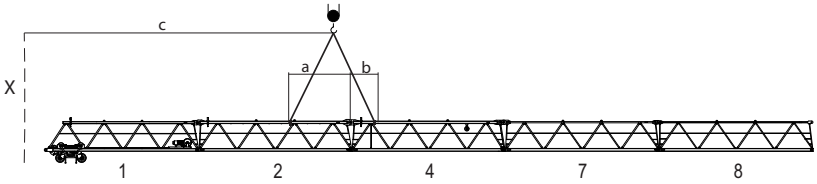


a	Dimension a	b	Dimension b
c	Dimension c	X	Middle of tower

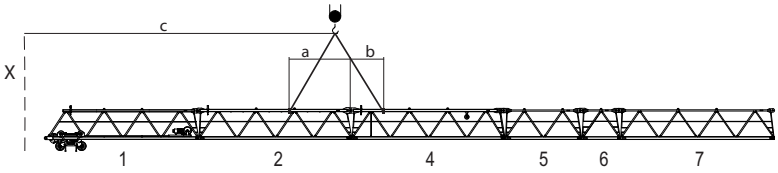
Attachment data 8033.20

	Jib length [m]		
Data	**57.5**	**55.0**	**52.5**
a [m]	2.06	2.14	2.94
b [m]	3.59	3.15	2.35
c [m]	25.00	21.70	20.90
Weight [kg]	18610	16265	15825

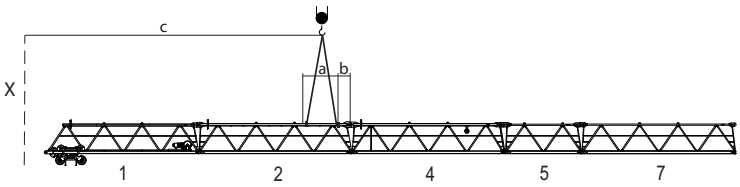
8.1.5 Trolley jib - attachment diagram 50.0 m to 45.0 m



50,0 m



47,5 m



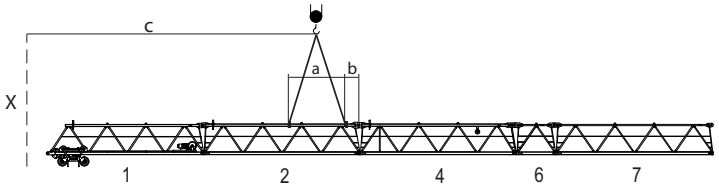
45,0 m

a	Dimension a	b	Dimension b
c	Dimension c	X	Middle of tower

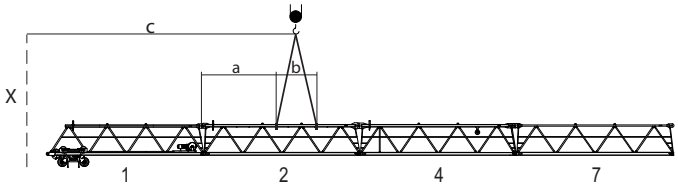
Attachment data 8033.20

	Jib length [m]		
Data	**50.0**	**47.5**	**45.0**
a [m]	3.92	3.92	2.06
b [m]	1.61	2.35	0.89
c [m]	20.00	20.40	19.20
Weight [kg]	15130	15670	14975

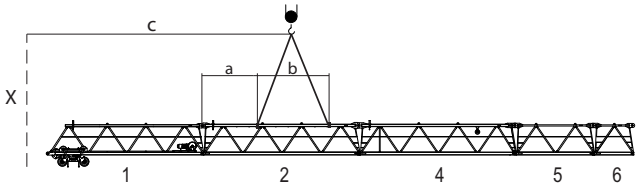
8.1.6 Trolley jib - attachment diagram 42.5 m to 37.5 m



42,5 m



40,0 m



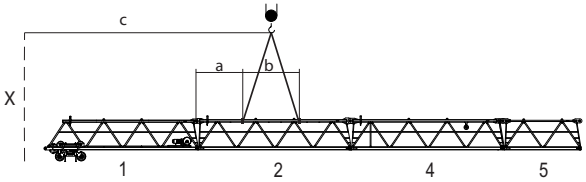
37,5 m

a	Dimension a	b	Dimension b
c	Dimension c	X	Middle of tower

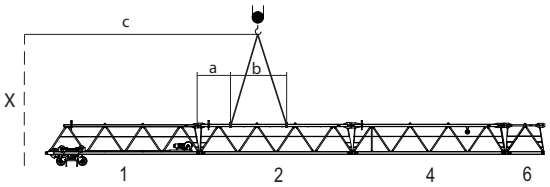
Attachment data 8033.20

	Jib length [m]		
Data	**42.5**	**40.0**	**37.5**
a [m]	3.76	4.56	3.58
b [m]	0.89	2.79	4.57
c [m]	18.40	17.10	17.00
Weight [kg]	14535	13840	13855

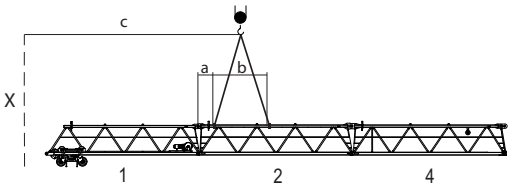
8.1.7 Trolley jib - attachment diagram 35.0 m to 30.0 m



35,0 m



32,5 m



30,0 m

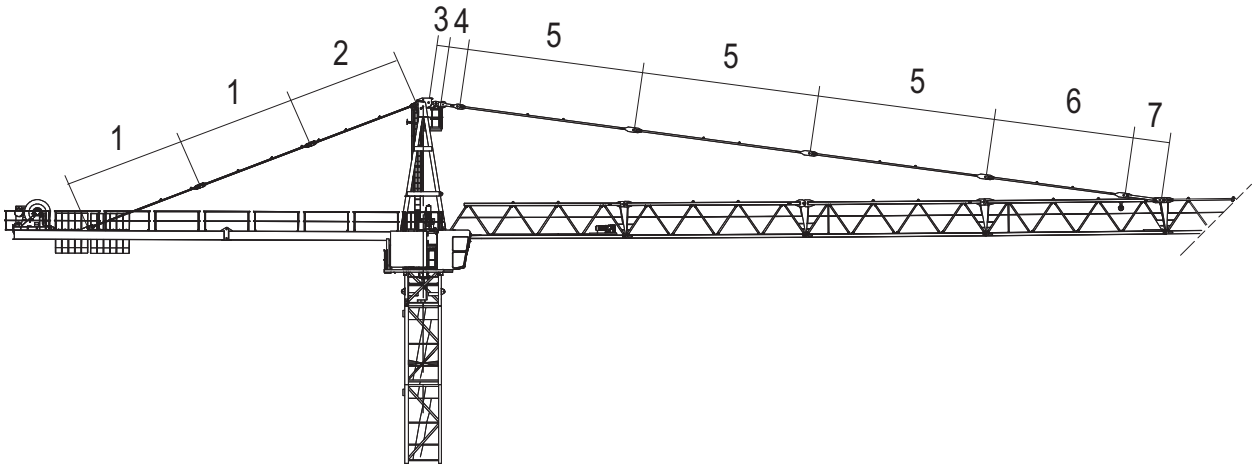
a	Dimension a	b	Dimension b
c	Dimension c	X	Middle of tower

Attachment data 8033.20

	Jib length [m]		
Data	**35.0**	**32.5**	**30.0**
a [m]	2.86	2.06	1.08
b [m]	3.76	3.59	3.77
c [m]	15.90	15.00	14.10
Weight [kg]	13160	12720	12025

8.2 Jib brace diagram

Brace diagram 80.0 m – 57.5 m



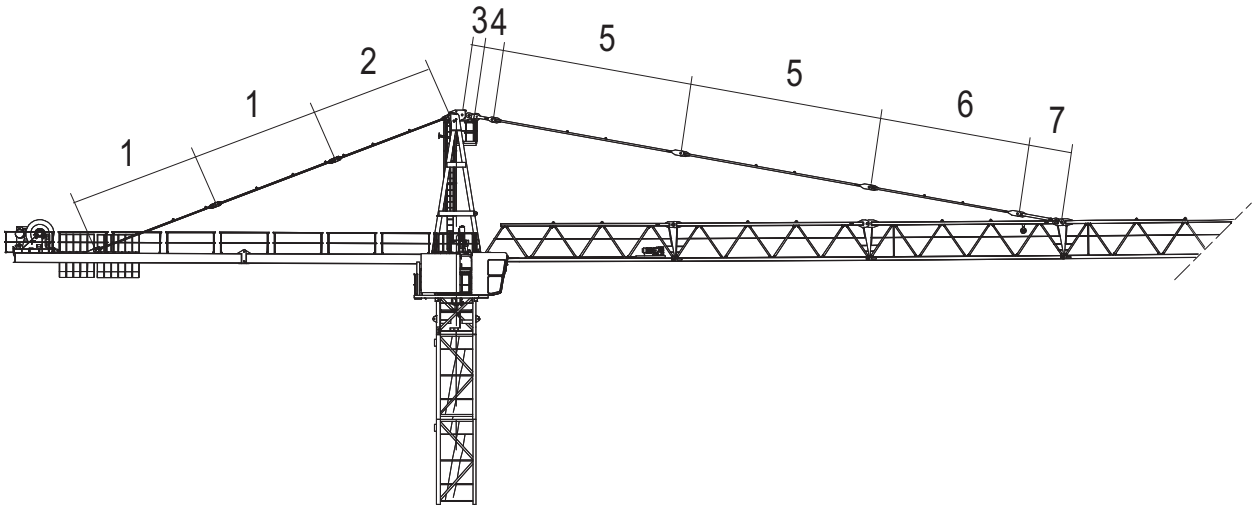
Brace table

Brace	Lengths [mm]							Brace types
	Brace no. 1	Brace no. 2	Brace no. 3	Brace no. 4	Brace no. 5	Brace no. 6	Brace no. 7	
Counterjib	6579	6225	-	-	-	-	-	double
Jib	-	-	400	1210	9856	7752	2020	single

Bolt table brace 80.0 m – 57.5 m

Item	Brace	Fastening			Fuse		
		Quantity	Designation	Dimensions	Quantity	Component	Dimensions
Counterjib brace	1	4	Bolts	Ø 70/60x152	4	Spring retainers	10/60-80
	2	2	Bolts	Ø 70/60x152	2	Spring retainers	10/60-80
Jib brace	3	1	Bolts	Ø 100/90x235	1	Cotter pin	13x125
	4	2	Bolts	Ø 100/90x225	2	Cotter pin	13x125
					2	Washer	130/91x4
	5	3	Bolts	Ø 100/90x225	3	Cotter pin	13x125
	6	1	Bolts	Ø 100/90x225	1	Cotter pin	13x125
	7	1	Collar bolt	Ø 110/90x325	1	Axle retainer	40x10x140
					2	Circlip	A16
					2	Hexagonal head screw	M16x40-8.8

Brace diagram 55.0 m – 30.0 m



Brace table

Brace	Lengths [mm]							Brace types
	Brace no. 1	Brace no. 2	Brace no. 3	Brace no. 4	Brace no. 5	Brace no. 6	Brace no. 7	
Counterjib	6579	6225	-	-	-	-	-	double
Jib	-	-	400	1210	9856	7752	2020	single

Bolt table brace 80.0 m – 57.5 m

Item	Brace	Fastening			Fuse		
		Quantity	Designation	Dimensions	Quantity	Component	Dimensions
Counterjib brace	1	4	Bolts	Ø 70/60x152	4	Spring retainers	10/60-80
	2	2	Bolts	Ø 70/60x152	2	Spring retainers	10/60-80
Jib brace	3	1	Bolts	Ø 100/90x235	1	Cotter pin	13x125
	4	2	Bolts	Ø 100/90x225	2	Cotter pin	13x125
					2	Washer	130/91x4
	5	2	Bolts	Ø 100/90x225	2	Cotter pin	13x125
	6	1	Bolts	Ø 100/90x225	1	Cotter pin	13x125
	7	1	Collar bolt	Ø 110/90x325	1	Axle retainer	40x10x140
					2	Circlip	A16
					2	Hexagonal head screw	M16x40-8.8

8.3 Trolley jib mounting rig

NOTICE

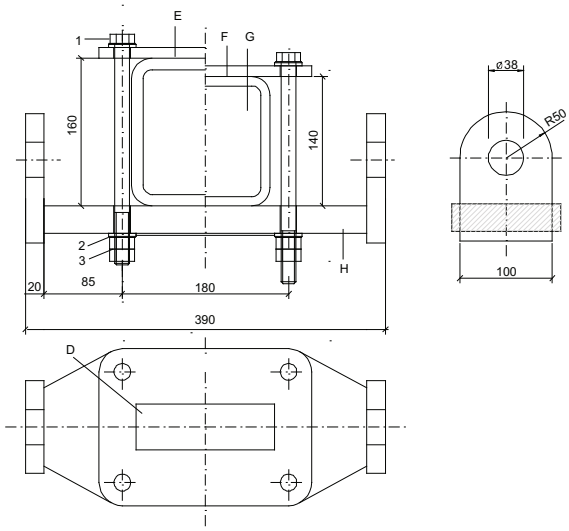
For information on the arrangement of the mounting rig, refer to the attachment diagram.

Two mounting rigs are required per slewing tower crane.

Elements required for each mounting rig

Quantity	Item	Type
1	Mounting rig	
4	Hexagonal head bolt	M16x220-8.8 ISO 4014
8	Hexagonal nut	M16-8 ISO 4032
8	Lock nut	M16 DIN 7967

Mounting rig



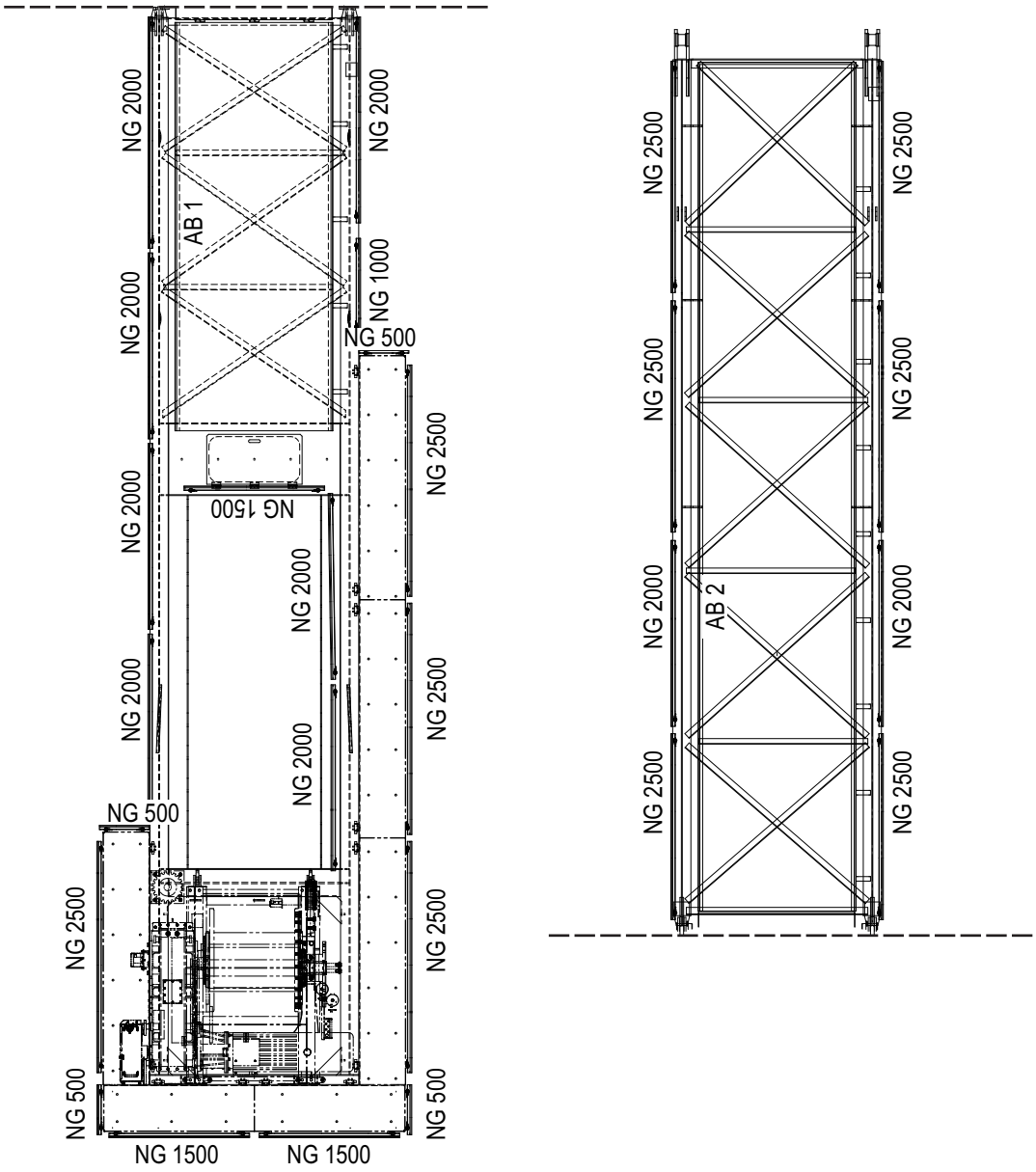
1	Hexagonal head screw	A	Mounting rig
2	HSFG washer	B	Top chord trolley jib
3	Hexagonal nut		

8.4 Arrangement of standard railings

8.4.1 Standard railings (NG) and accessories

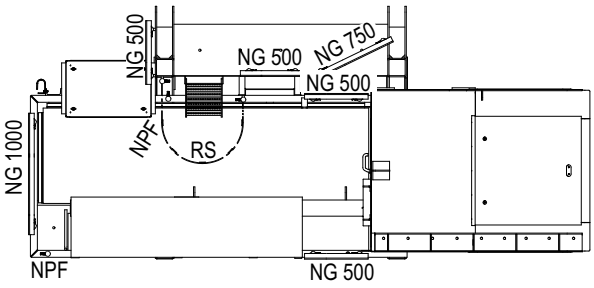
Quant-ity	Standard railings (NG) / accessories	Article no.
10	Standard railing NG 2500	30018798
12	Standard railing NG 2000	30018797
3	Standard railing NG 1500	30018796
2	Standard railing NG 1000	30018795
2	Standard railing NG 750	30018794
11	Standard railings NG 500	30018793
4	Standard posts Ø 42.4 mm x 1090 mm	30000167
1	RS (hoop guard)	30044244
1	Support block 645 mm (AB 1)	30050695
1	Support block 1140 mm (AB 2)	30050697

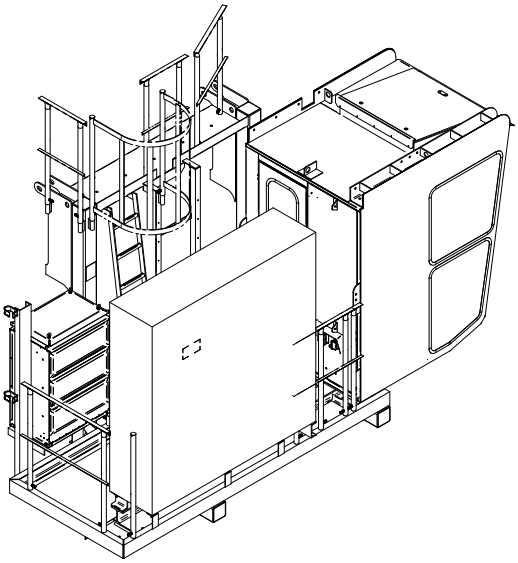
8.4.2 Arrangement of standard railings



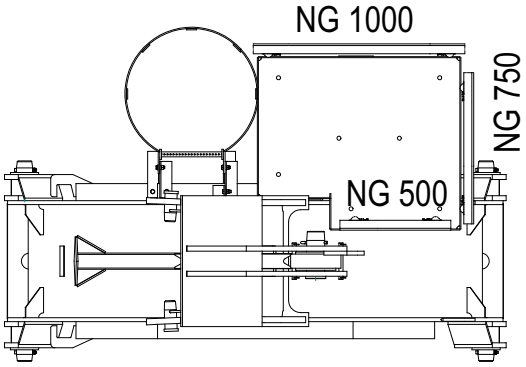
Arrangement of standard railings, counterjib

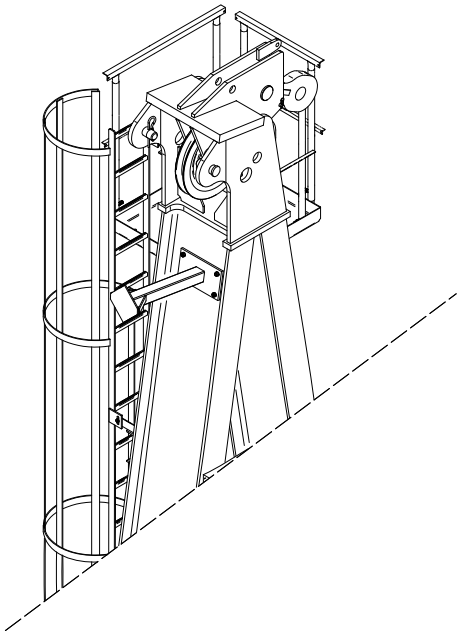
8 Assembly diagrams



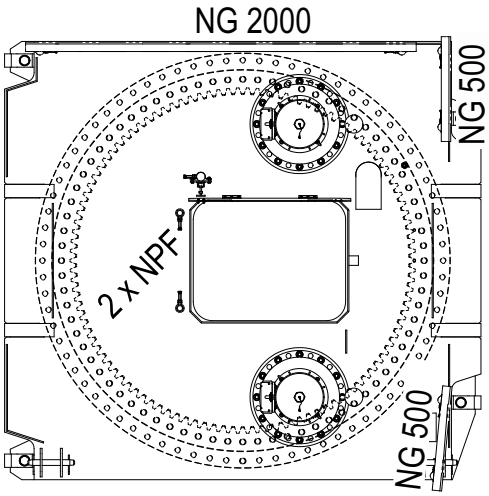


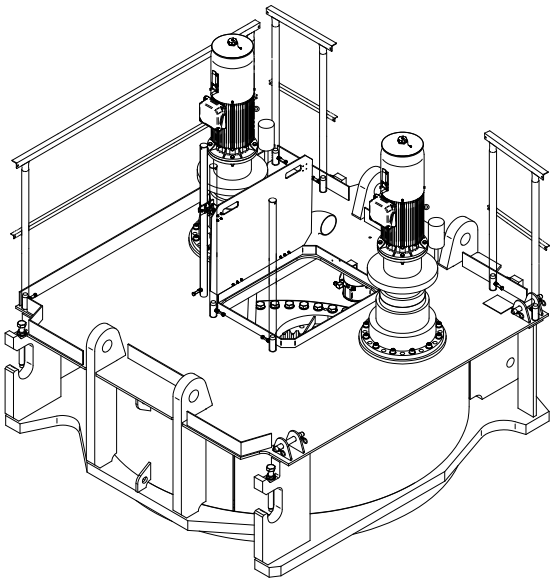
Arrangement of standard railings, driver's cab



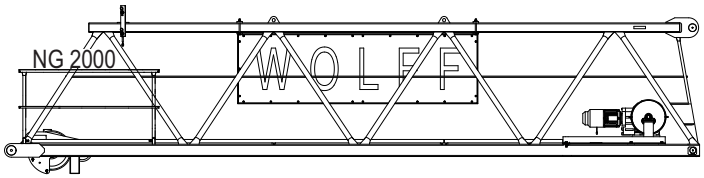


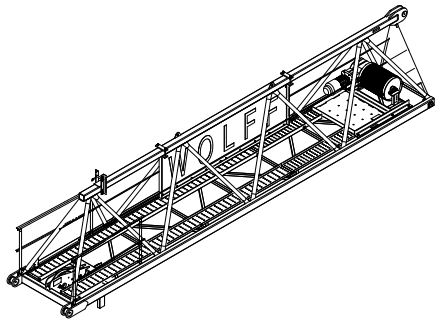
Arrangement of standard railings, tower head section





Arrangement of standard railings, slewing frame





Arrangement of standard railings, jib element 1

9 Suitable climbing devices

This section contains information on

- Outer climbing devices (KWH)
- Inner climbing devices (KSH)

NOTICE

Details on the climbing device

Always refer to the details in the documentation of the climbing device.

NOTICE

The operating radius specified is measured from the tower center and is to be considered a reference value. Exact balancing can be achieved by changing the operating radius with the tower elements or loads specified in the table.

NOTICE

Details for climbing balancing

The climbing balancing details apply to the snatch block in maximum hook position.

NOTICE

If feasible, preferably operate your climbing device without balancing weight.

9.1 Outer climbing devices

⚠ DANGER

Climbing device attached to the lower part of the tower head section lower part.

Increased wind surface. The slewing tower crane may overturn.

► Dismantle the climbing device after the climbing procedure is finished or lower the climbing device down on the ground or lower the climbing device down to the uppermost tower brace.

NOTICE

Tower element on the transfer carriage

The data on climbing balance was specified under the assumption that a tower element is on the transfer carriage.

9.1.1 Outer climbing device KWH 20.6 / KWH 20.6.1 / KWH 20.6.2

Climbing radius 8033.20 cross

Climbing radius for the balancing weights

	Jib length [m]						
8033.20	**80**	**77.5**	**75**	**72.5**	**70**	**67.5**	**65**
no weight	22.9	27.9	56.6	-	-	-	-
TV 20 = 2.98 t	7.1	8.8	18.7	25.6	24.5	26.5	25.6
Weight = 5.0 t	-	5.7	12.5	17.4	16.6	18.0	17.4
Weight = 10.0 t	-	-	-	-	-	-	-

Climbing radius for the balancing weights

	Jib length [m]						
8033.20	**62.5**	**60**	**57.5**	**55**	**52.5**	**50**	**47.5**
no weight	-	-	-	-	-	-	-
TV 20 = 2.98 t	32.0	30.6	35.3	38.0	36.1	39.3	38.1
Weight = 5.0 t	21.8	20.8	24.1	25.9	24.6	26.8	26.0
Weight = 10.0 t	-	-	-	-	-	-	-

Climbing radius for the balancing weights

	Jib length [m]						
8033.20	**45**	**42.5**	**40**	**37.5**	**35**	**32.5**	**30**
no weight	-	-	-	-	-	-	-
TV 20 = 2.98 t	36.8	39.2	-	-	-	-	-
Weight = 5.0 t	25.1	26.7	25.4	25.8	27.1	29.7	-
Weight = 10.0 t	-	-	-	-	-	-	15.8

9.1.2 Outer climbing device KWH 23 / KWH 23.1

NOTICE

Climbing radiuses marked with *

Jib lengths marked with * can only be climbed with additional ballast. Please contact WOLFFKRAN for information.

NOTICE

Usage of KWH 23 on WOLFF 8033 with TV 20 lower part of tower head section

You must use a joining frame VR 2023 to operate the outer climbing device KWH 23 in connection with the WOLFF 8033 on TV 20 tower head section lower part.

Climbing radius 8033.20 cross

Climbing radius for the balancing weights, lower part of tower head section TV 20 with outer climbing device

	Jib length [m]						
8033.20	**80**	**77.5**	**75**	**72.5**	**70**	**67.5**	**65**
no weight	*	*	40.0	-	-	-	-
TV 23 = 3.04 t	-	-	12.7	19.5	18.6	20.4	19.7
Weight = 5.0 t	-	-	8.5	13.3	12.6	13.9	13.4

Climbing radius for the balancing weights, lower part of tower head section TV 20 with outer climbing device

	Jib length [m]						
8033.20	**62.5**	**60**	**57.5**	**55**	**52.5**	**50**	**47.5**
no weight	-	-	-	-	-	-	-
TV 23 = 3.04 t	26.0	24.7	29.3	32.2	30.5	33.7	32.5
Weight = 5.0 t	17.8	16.9	20.1	22.2	21.0	23.2	22.4

Climbing radius for the balancing weights, lower part of tower head section TV 20 with outer climbing device

	Jib length [m]						
8033.20	**45**	**42.5**	**40**	**37.5**	**35**	**32.5**	**30**
no weight	-	-	-	-	-	-	-
TV 23 = 3.04 t	31.3	33.7	32.0	32.4	-	-	-
Weight = 5.0 t	21.5	23.2	22.0	22.3	23.7	26.2	25.5

9 Suitable climbing devices

Climbing radius for the balancing weights, lower part of tower head section HT 23 with outer climbing device

	Jib length [m]						
8033.20	**80**	**77.5**	**75**	**72.5**	**70**	**67.5**	**65**
no weight	*	*	38.4	-	-	-	-
HT 23 = 3.94 t	-	-	9.9	15.7	14.9	16.4	15.8
Weight = 5.0 t	-	-	8.1	12.9	12.3	13.5	13.0

Climbing radius for the balancing weights, lower part of tower head section HT 23 with outer climbing device

	Jib length [m]						
8033.20	**62.5**	**60**	**57.5**	**55**	**52.5**	**50**	**47.5**
no weight	-	-	-	-	-	-	-
HT 23 = 3.94 t	21.1	20.0	23.8	26.3	24.8	27.5	26.5
Weight = 5.0 t	17.4	16.5	19.7	21.8	20.6	22.8	22.0

Climbing radius for the balancing weights, lower part of tower head section HT 23 with outer climbing device

	Jib length [m]						
8033.20	**45**	**42.5**	**40**	**37.5**	**35**	**32.5**	**30**
no weight	-	-	-	-	-	-	-
HT 23 = 3.94 t	25.5	27.5	26.1	26.4	28.0	-	-
Weight = 5.0 t	21.2	22.8	21.6	21.9	23.3	25.9	25.1

9.2 Inner climbing devices

NOTICE

The data required and the instructions for tower assemblies with inner climbing device is available in the separate description of the inner climbing device.

DANGER! Observe the special tower combination for the inner climbing device.

NOTICE

Clamping forces for the inner climbing device (KSH) are specified based on a building height of < 250m and wind category C 25.

9.2.1 Inner climbing device KSH 20 SH

Tower combinations for slewing tower cranes with inner climbing device.

Item				
1	TV 20.4	TV 20.4	TV 20.4	TV 20.4
2	TV 20.4	TV 20.4	TV 20.4	TV 20.4
3	TV 20.4	TV 20.4	TV 20.4	TV 20.4
4	TV 20.4	TV 20.4	TV 20.4	TV 20.4
5	TV 20.4	TV 20.4	TV 20.4	TV 20.4
6	TV 20.4	TV 20.4	TV 20.4	TV 20.4
7	TV 20.4	TV 20.4	TV 20.4	
8	TV 20.4	TV 20.4		
9	TV 20.4			
inner climbing device	KSH 20 SH	KSH 20 SH	KSH 20 SH	KSH 20 SH
Foundation	FUA TYPE FS-156 / FUA 156S	FUA TYPE FS-156 / FUA 156S	FUA TYPE FS-156 / FUA 156S	FUA TYPE FS-156 / FUA 156S
Tower height [m]	55.5	51.0	46.5	42.0
Hook height (2 fall operation) [m]	56.5	52.0	47.5	43.0

Climbing radius 8033.20 cross

Climbing radius [m] for the balancing weights

	Jib length [m]						
8033.20	**80**	**77.5**	**75**	**72.5**	**70**	**67.5**	**65**
TV 20.4 = 2.98 t	34.3	36.0	45.7	52.5	50.5	53.4	51.6
Weight = 5.0 t	23.7	24.9	31.6	36.3	35.0	37.0	35.7
Weight = 10.0 t	-	-	-	-	-	-	-

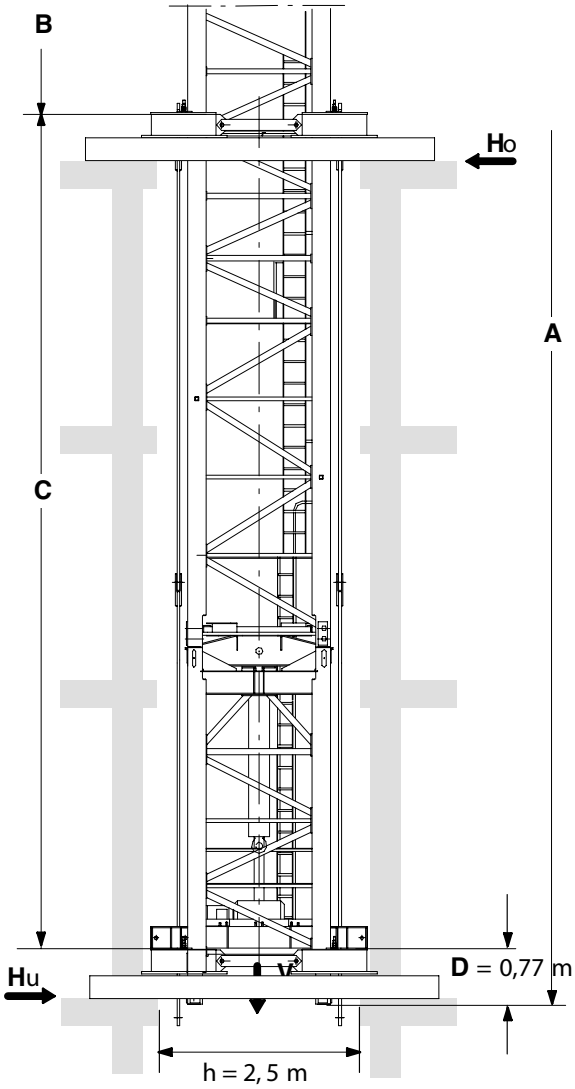
Climbing radius [m] for the balancing weights

	Jib length [m]						
8033.20	**62.5**	**60**	**57.5**	**55**	**52.5**	**50**	**47.5**
TV 20.4 = 2.98 t	57.9	55.6	-	-	-	-	-
Weight = 5.0 t	40.1	38.5	42.3	42.8	40.9	43.0	42.2
Weight = 10.0 t	-	-	-	-	-	-	-

Climbing radius [m] for the balancing weights

	Jib length [m]						
8033.20	**45**	**42.5**	**40**	**37.5**	**35**	**32.5**	**30**
TV 20.4 = 2.98 t	-	-	-	-	-	-	-
Weight = 5.0 t	40.7	-	-	-	-	-	-
Weight = 10.0 t	-	24.0	22.9	23.1	23.8	25.2	24.3

9 Suitable climbing devices

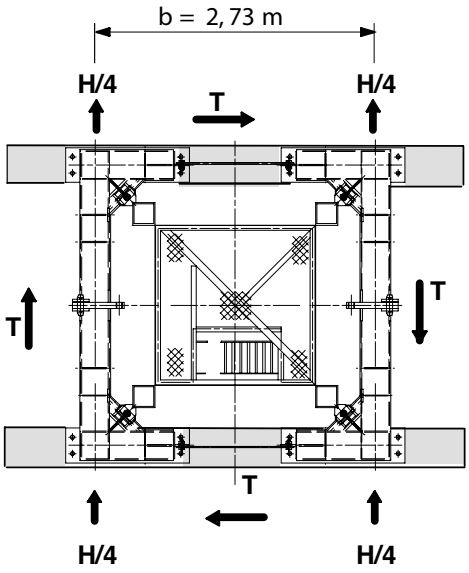


C_{min} = 11,0 m
C_{max} = 14,0 m

$Ho = \frac{M}{C} + H$

$Hu = Ho - H$

$T = \frac{M_D}{2 \times b}$



A	Tower height	C	Distance between guide frames
B	A-C-D		

In service clamping forces

In service clamping forces [kN] inside a building																
A [m]	55.5				51.0				46.5				42.0			
C [m]	11.0	12.0	13.0	14.0	11.0	12.0	13.0	14.0	11.0	12.0	13.0	14.0	11.0	12.0	13.0	14.0
V	1510				1481				1453				1425			
Ho	530	490	450	420	500	460	430	400	470	430	400	370	450	410	380	350
Hu	480	430	400	370	450	410	370	340	420	380	350	320	400	360	330	300
T	100				100				100				100			

Out of service clamping forces

Out of service clamping forces [kN] inside a building																
A [m]	55.5				51.0				46.5				42.0			
C [m]	11.0	12.0	13.0	14.0	11.0	12.0	13.0	14.0	11.0	12.0	13.0	14.0	11.0	12.0	13.0	14.0
V	1293				1265				1236				1208			
Ho	950	870	810	750	840	770	710	660	730	670	620	580	640	580	540	500
Hu	680	600	540	480	580	510	450	400	490	430	380	330	400	350	310	270
T	-				-				-				-			

9.2.2 Inner climbing device KSH 23/ KSH E 23

NOTICE

Lower clamping length for the inner climbing device KSH 23 / KSH E 23.

Subject to coordination with WOLFFKRAN, it is also possible to realize a clamping length of 10.0 to 15.5 m with a lower tower height. Contact WOLFFKRAN to discuss this option.

Tower combinations 8033 cross, on lower part of tower head section HT 23 with inner climbing device

Item	Jib length 30 m - 80 m			
1	HT 23	HT 23	HT 23	HT 23
2	HT 23	HT 23	HT 23	HT 23
3	HT 23	HT 23	HT 23	HT 23
4	HT 23	HT 23	HT 23	HT 23
5	HT 23	HT 23	HT 23	HT 23
6	HT 23	HT 23	HT 23	HT 23
7	HT 23	HT 23	HT 23	HT 23
8	HT 23	HT 23	HT 23	HT 23
9	HT 23	HT 23	HT 23	HT 23
10	HT 23	HT 23	HT 23	
11	HT 23	HT 23		
12	HT 23			
inner climbing device	KSH E 23	KSH E 23	KSH E 23	KSH E 23
Foundation	FUA 210 G	FUA 210 G	FUA 210 G	FUA 210 G
Tower height [m]	70.5	66.0	61.5	57.0
Hook height [m] 2 fall operation	71.5	67.0	62.5	58.0
Hook height [m] 4 fall operation	71.1	66.6	62.1	57.6

Climbing radius 8033.20 cross

Climbing radius [m] for the balancing weights

	Jib length [m]						
8033.20	**80**	**77.5**	**75**	**72.5**	**70**	**67.5**	**65**
HT 23 = 3.94 t	28.3	29.7	37.7	43.3	41.7	44.1	42.6
Weight = 5.0 t	23.7	24.9	31.6	36.3	35.0	37.0	35.7
Weight = 10.0 t	-	-	-	-	-	-	-

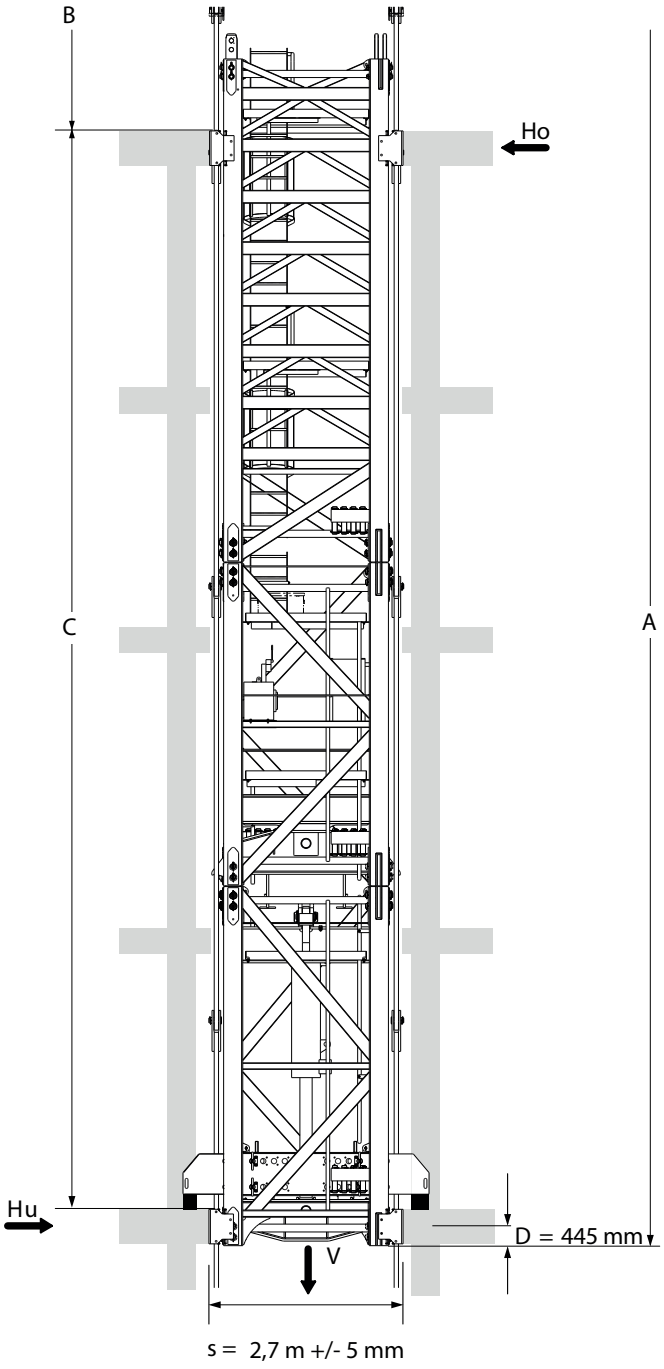
Climbing radius [m] for the balancing weights

	Jib length [m]						
8033.20	**62.5**	**60**	**57.5**	**55**	**52.5**	**50**	**47.5**
HT 23 = 3.94 t	47.8	45.9	50.5	51.0	48.8	-	-
Weight = 5.0 t	40.1	38.5	42.3	42.8	40.9	43.0	42.2
Weight = 10.0 t	-	-	-	-	-	-	-

Climbing radius [m] for the balancing weights

	Jib length [m]						
8033.20	**45**	**42.5**	**40**	**37.5**	**35**	**32.5**	**30**
HT 23 = 3.94 t	-	-	-	-	-	-	-
Weight = 5.0 t	40.7	-	-	-	-	-	-
Weight = 10.0 t	-	24.0	22.9	23.1	23.8	25.2	24.3

9 Suitable climbing devices

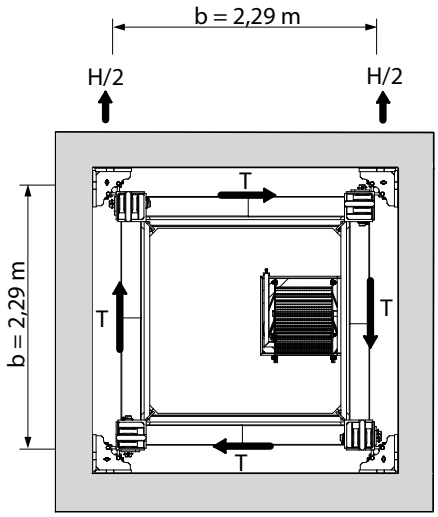


C_{min} = 12,0 m
C_{max} = 15,5 m

$Ho = \frac{M}{C} + H$

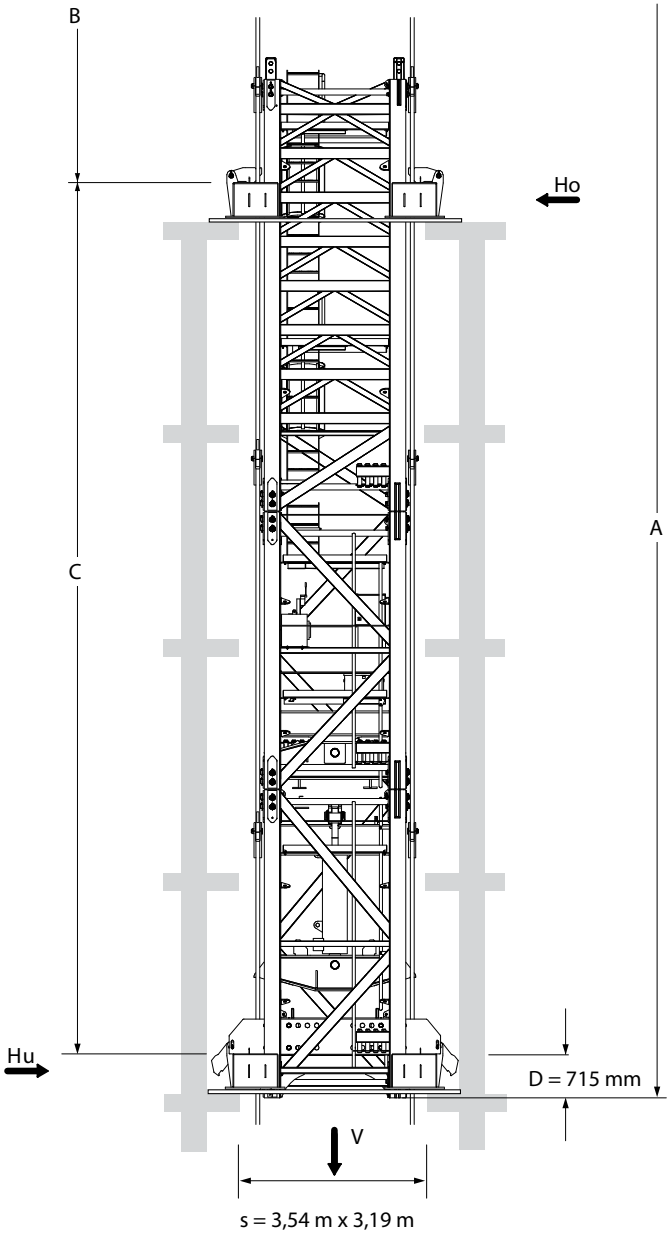
$Hu = Ho - H$

$T = \frac{M_D}{2 \times b}$



KSH E 23

A	= Tower height	C	= Distance between corner guides
B	= A-C-D		

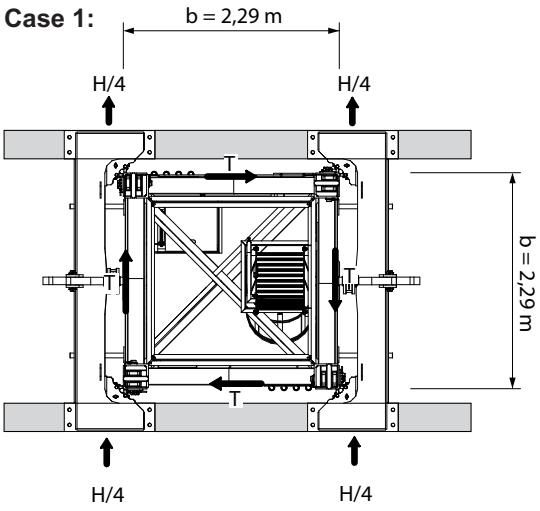


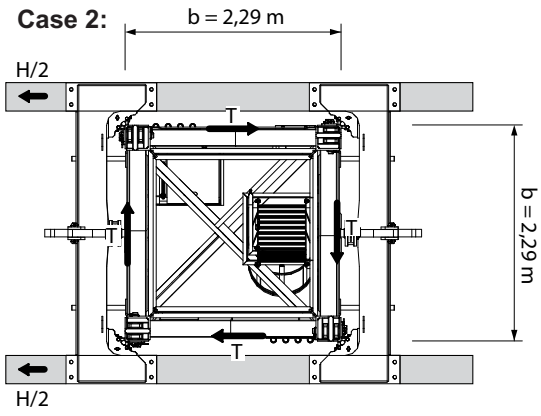
C_{min} = 12,0 m
C_{max} = 15,5 m

$Ho = \frac{M}{C} + H$

$Hu = Ho - H$

$T = \frac{M_D}{2 \times b}$





KSH 23

A	= Tower height	C	= Distance between climbing frames
B	= A-C-D		

9 Suitable climbing devices

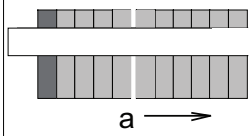
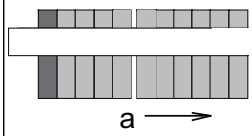
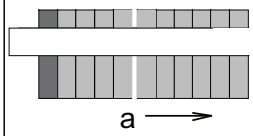
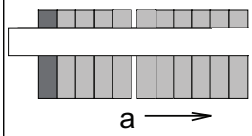
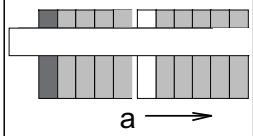
In service clamping forces

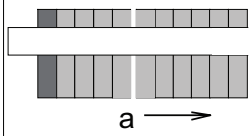
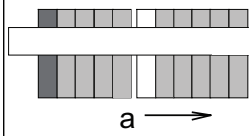
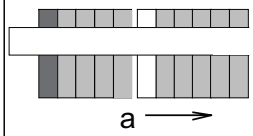
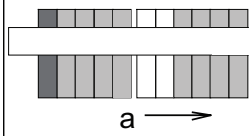
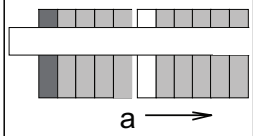
In service clamping forces [kN] inside a building																				
A (m)	70.5					66.0					61.5					57.0				
C (m)	12.0	13.0	14.0	15.0	15.5	12.0	13.0	14.0	15.0	15.5	12.0	13.0	14.0	15.0	15.5	12.0	13.0	14.0	15.0	15.5
V (kN)	1936					1897					1857					1818				
Ho (kN)	580	540	500	470	450	550	510	470	440	430	520	480	440	410	400	490	450	420	390	380
Hu (kN)	510	470	430	400	380	480	440	410	370	360	450	420	380	350	340	430	390	360	330	320
T (kN)	110					110					110					110				

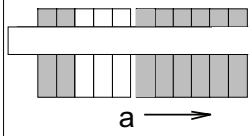
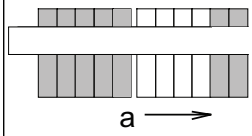
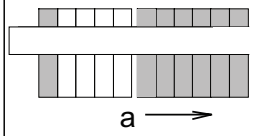
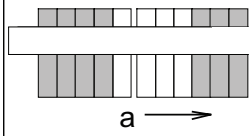
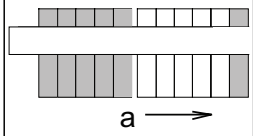
Out of service clamping forces

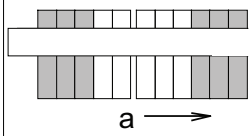
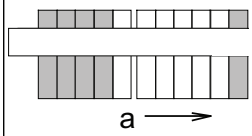
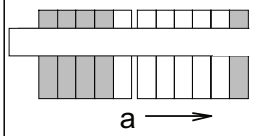
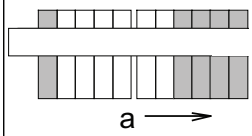
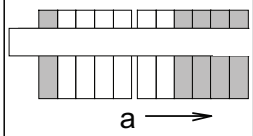
Out of service clamping forces [kN] inside a building																				
A (m)	70.5					66.0					61.5					57.0				
C (m)	12.0	13.0	14.0	15.0	15.5	12.0	13.0	14.0	15.0	15.5	12.0	13.0	14.0	15.0	15.5	12.0	13.0	14.0	15.0	15.5
V (kN)	1720					1680					1641					1601				
Ho (kN)	1330	1220	1140	1060	1030	1190	1100	1020	950	920	1070	990	920	850	830	950	880	810	760	740
Hu (kN)	980	880	790	720	680	860	770	690	620	590	750	670	600	540	510	650	570	510	460	430
T (kN)	–					–					–					–				

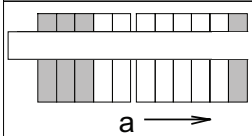
10 Arrangement of counterweight blocks

L = 80 m	L = 77.5 m	L = 75 m	L = 72.5 m	L = 70 m
11 x 2.7 t	11 x 2.7 t	11 x 2.7 t	11 x 2.7 t	10 x 2.7 t
				
W = 29.7 t	W = 29.7 t	W = 29.7 t	W = 29.7 t	W = 27.0 t

L = 67.5 m	L = 65 m	L = 62.5 m	L = 60 m	L = 57.5 m
11 x 2.7 t	10 x 2.7 t	10 x 2.7 t	9 x 2.7 t	10 x 2.7 t
				
W = 29.7 t	W = 27.0 t	W = 27.0 t	W = 24.3 t	W = 27.0 t

L = 55 m	L = 52.5 m	L = 50 m	L = 47.5 m	L = 45 m
8 x 2.7 t	7 x 2.7 t	7 x 2.7 t	7 x 2.7 t	6 x 2.7 t
				
W = 21.6 t	W = 18.9 t	W = 18.9 t	W = 18.9 t	W = 16.2 t

L = 42.5 m	L = 40 m	L = 37.5 m	L = 35 m	L = 32.5 m
6 x 2.7 t	5 x 2.7 t	5 x 2.7 t	5 x 2.7 t	5 x 2.7 t
				
W = 16.2 t	W = 13.5 t	W = 13.5 t	W = 13.5 t	W = 13.5 t

L = 30 m				
4 x 2.7 t				
				
W = 10.8 t				

	Intermediate ballast 1 x 2.7 t		Counterweight block 1 x 2.7 t

10 Arrangement of counterweight blocks

	No counterweight	L	Jib length [m]
a	To the tower	G	Total weight [t]

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