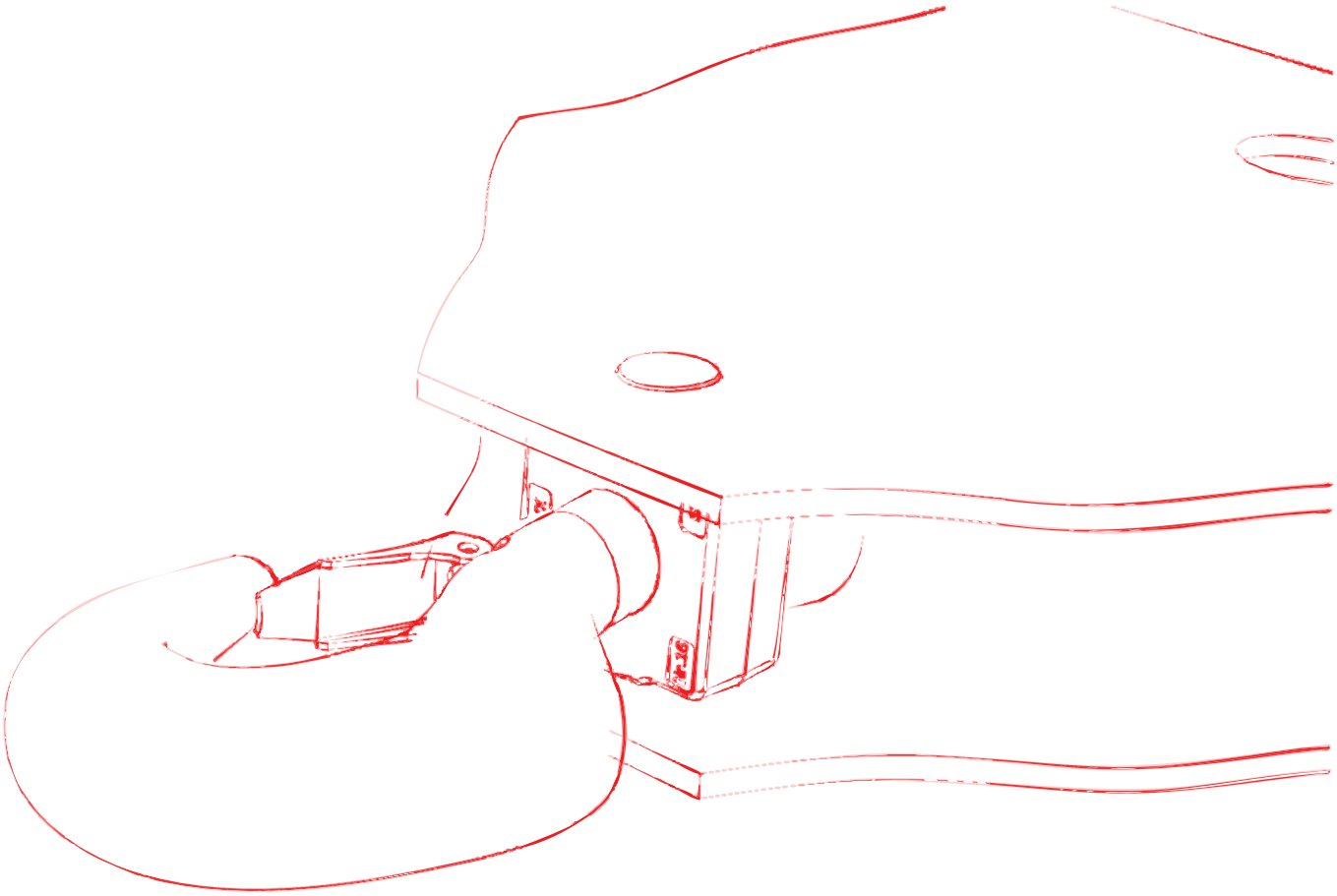
WOLFFKRAN

TI_2017-3

Slewing tower crane

WOLFF 355 B

Technical information



English

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Stand: 03/2017

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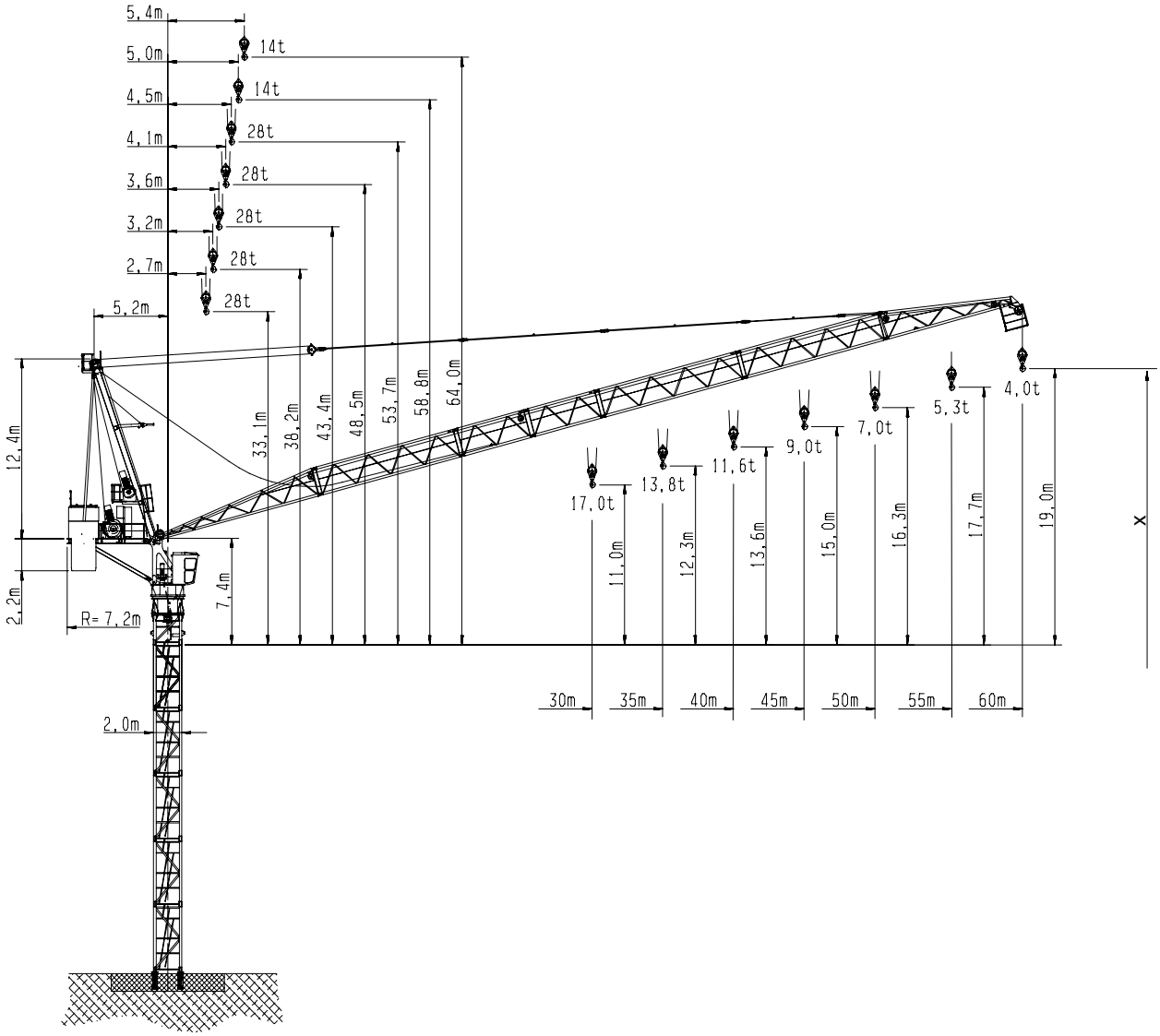
1 Schedule drawing

1.1 Schedule drawing WOLFF 355 B



[X]	max. hook height above ground

Data WOLFF 355B

Item	Data
Crane type	BGL GROUP C.0.11.0355
Design	Overhead travelling crane with top slewing luffing jib, with climbing feature
Type of setup	Stationary or traveling
Basis of calculation	EN
Load moment	max. 5100 kNm
Hoist winch	Hw 28110FU / Hw 28132FU

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 355 B (1 fall operation)

 14.0 t		Operating radius [m]		20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	
JL [m]	60	5.4 - 27.0		14.0	14.0	12.2	9.8	8.1	6.7	5.6	4.7	**4.0**	LCC [t]
	55	5.0 - 28.0		14.0	14.0	12.8	10.5	8.7	7.3	6.2	**5.3**		
	50	4.5 - 29.5		14.0	14.0	13.7	11.3	9.5	8.1	**7.0**			
	45	4.1 - 31.0		14.0	14.0	14.0	12.2	10.4	**9.0**				
	40	3.6 - 33.5		14.0	14.0	14.0	13.4	**11.6**					
	35	3.2 - 34.5		14.0	14.0	14.0	**13.8**						
	30	2.7 - 30.0		14.0	14.0	**14.0**							
JL			Jib length										
LCC			Load carrying capacity										

The load carrying capacity is related to a tower height of 40.5 m. Tower heights greater than that reduce the maximum load carrying capacity by the weight of the additional hoisting ropes (one fall operation = 3.25 kg per meter of the hook range).

2.2 Table of load carrying capacities (kg) in meter intervals, WOLFF 355 B (1 fall operation)

Operating radius	Jib length [m]						
[m]	30	35	40	45	50	55	60
26	14000	14000	14000	14000	14000	14000	14000
27	14000	14000	14000	14000	14000	14000	14000
28	14000	14000	14000	14000	14000	14000	13350
29	14000	14000	14000	14000	14000	13390	12750
30	**14000**	**14000**	**14000**	**14000**	**13700**	**12800**	**12200**
31		14000	14000	14000	13170	12280	11650
32		14000	14000	13500	12670	11780	11160
33		14000	14000	13030	12190	11310	10690
34		14000	13780	12580	11740	10870	10260
35		**13800**	**13400**	**12200**	**11300**	**10500**	**9800**
36			12970	11770	10920	10060	9450
37			12600	11390	10540	9690	9090
38			12250	11040	10180	9340	8740
39			11920	10700	9840	9000	8410
40			**11600**	**10400**	**9500**	**8700**	**8100**
41				10080	9210	8380	7790
42				9790	8920	8090	7510
43				9510	8640	7820	7230
44				9250	8370	7560	6980
45				**9000**	**8100**	**7300**	**6700**
46					7880	7070	6490
47					7640	6840	6260
48					7420	6620	6050
49					7210	6400	5840
50					**7000**	**6200**	**5600**
51						6010	5440
52						5820	5260
53						5640	5080
54						5470	4910
55						**5300**	**4700**
56							4580
57							4430
58							4280
59							4140
60							**4000**

2.3 Table of load carrying capacity WOLFF 355 B (2 fall operation)

		Operating radius [m]		20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	
 28.0 t													
JL	60	-		-	-	-	-	-	-	-	-	-	LCC
[m]	55	-		-	-	-	-	-	-	-	-	-	[t]
	50	4.5 - 16.0		21.7	16.7	13.4	11.0	9.2	7.8	**6.7**			
	45	4.1 - 16.5		22.7	17.6	14.3	11.9	10.1	**8.7**				
	40	3.6 - 17.0		23.6	18.7	15.4	13.1	**11.3**					
	35	3.2 - 17.5		24.4	19.3	15.9	**13.5**						
	30	2.7 - 18.0		25.3	20.3	**17.0**							

JL	Jib length
LCC	Load carrying capacity

The load carrying capacity is related to a tower height of 40.5 m. Tower heights greater than that reduce the maximum load carrying capacity by the weight of the additional hoisting ropes (2 fall operation = 6.5 kg per meter of the hook range).

2.4 Table of load carrying capacities (kg) in meter intervals, WOLFF 355 B (2 fall operation)

Operating radius	Jib length [m]						
[m]	30	35	40	45	50	55	60
16	28000	28000	28000	28000	28000	-	-
17	28000	28000	28000	27100	26160	-	-
18	28000	27190	26390	25460	24520	-	-
19	26550	25710	24940	23990	23050	-	-
20	**25300**	**24400**	**23600**	**22700**	**21700**	**-**	**-**
21	24070	23170	22470	21470	20540	-	-
22	23000	22070	21400	20380	19460	-	-
23	22020	21070	20420	19390	18470	-	-
24	21130	20150	19530	18480	17560	-	-
25	**20300**	**19300**	**18700**	**17600**	**16700**	**-**	**-**
26	19540	18520	17950	16870	15950	-	-
27	18830	17800	17240	16150	15240	-	-
28	18180	17130	16590	15480	14580	-	-
29	17570	16500	15980	14860	13960	-	-
30	**17000**	**15900**	**15400**	**14300**	**13400**	**-**	**-**
31		15370	14880	13750	12840	-	-
32		14860	14390	13240	12340	-	-
33		14380	13920	12760	11860	-	-
34		13930	13480	12320	11420	-	-
35		**13500**	**13100**	**11900**	**11000**	**-**	**-**
36			12670	11490	10600	-	-
37			12300	11120	10220	-	-
38			11950	10760	9870	-	-
39			11620	10420	9530	-	-
40			**11300**	**10100**	**9200**	**-**	**-**
41				9790	8900	-	-
42				9500	8610	-	-
43				9220	8330	-	-
44				8950	8070	-	-
45				**8700**	**7800**	**-**	**-**
46					7570	-	-
47					7340	-	-
48					7120	-	-
49					6900	-	-
50					**6700**	**-**	**-**
51						-	-
52						-	-
53						-	-
54						-	-
55						**-**	**-**
56						-	-
57						-	-
58						-	-
59						-	-
60						**-**	**-**

2.5 Table of load carrying capacity WOLFF 355 B (1 fall operation, BOOST)

 14.0 t		Operating radius [m]		20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	
JL	60	5.4 – 29.0		14.0	14.0	13.4	10.8	8.9	7.4	6.2	5.2	**4.4**	LCC
[m]	55	5.0 – 30.2		14.0	14.0	14.0	11.5	9.6	8.0	6.8	**5.8**		[t]
	50	4.5 – 31.9		14.0	14.0	14.0	12.5	10.5	8.9	**7.7**			
	45	4.1 – 33.7		14.0	14.0	14.0	13.4	11.4	**9.9**				
	40	3.6 – 36.7		14.0	14.0	14.0	14.0	**12.8**					
	35	3.2 – 35.0		14.0	14.0	14.0	**14.0**						
	30	2.7 - 30.0		14.0	14.0	**14.0**							
JL			Jib length										
LCC			Load carrying capacity										

The load carrying capacity is related to a tower height of 40.5 m. Tower heights greater than that reduce the maximum load carrying capacity by the weight of the additional hoisting ropes (one fall operation = 3.25 kg per meter of the hook range).

2.6 Table of load carrying capacities (kg) in meter intervals, WOLFF 355 B (1 fall operation, BOOST)

Operating radius	Jib length [m]						
[m]	30	35	40	45	50	55	60
26	14000	14000	14000	14000	14000	14000	14000
27	14000	14000	14000	14000	14000	14000	14000
28	14000	14000	14000	14000	14000	14000	14000
29	14000	14000	14000	14000	14000	14000	14000
30	**14000**	**14000**	**14000**	**14000**	**14000**	**14000**	**13400**
31		14000	14000	14000	14000	13510	12820
32		14000	14000	14000	13940	12960	12280
33		14000	14000	14000	13410	12440	11760
34		14000	14000	13840	12910	11960	11290
35		**14000**	**14000**	**13380**	**12450**	**11510**	**10820**
36			14000	12950	12010	11070	10400
37			13860	12530	11590	10660	10000
38			13480	12140	11200	10270	9610
39			13110	11770	10820	9900	9250
40			**12760**	**11420**	**10470**	**9550**	**8900**
41				11090	10130	9220	8570
42				10770	9810	8900	8260
43				10460	9500	8600	7950
44				10180	9210	8320	7680
45				**9900**	**8930**	**8030**	**7400**
46					8670	7780	7140
47					8400	7520	6890
48					8160	7280	6660
49					7930	7040	6420
50					**7700**	**6820**	**6200**
51						6610	5980
52						6400	5790
53						6200	5590
54						6020	5400
55						**5830**	**5210**
56							5040
57							4870
58							4710
59							4550
60							**4400**

2.7 Table of load carrying capacity WOLFF 355 B (2 fall operation, BOOST)

 28.0 t		Operating radius [m]		20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	
JL	60	-		-	-	-	-	-	-	-	-	-	LCC
[m]	55	-		-	-	-	-	-	-	-	-		[t]
	50	4.5 – 17.4		23.9	18.4	14.7	12.1	10.1	8.6	**7.4**			
	45	4.1 – 18.0		24.9	19.4	15.7	13.1	11.1	**9.6**				
	40	3.6 – 18.6		26.0	20.6	17.0	14.4	**12.4**					
	35	3.2 – 19.2		26.8	21.2	17.5	**14.9**						
	30	2.7 – 19.8		27.8	22.3	**18.7**							

JL	Jib length
LCC	Load carrying capacity

The load carrying capacity is related to a tower height of 40.5 m. Tower heights greater than that reduce the maximum load carrying capacity by the weight of the additional hoisting ropes (two fall operation = 6.5 kg per meter of the hook range).

2.8 Table of load carrying capacities (kg) in meter intervals, WOLFF 355 B (2 fall operation, BOOST)

Operating radius	Jib length [m]						
[m]	30	35	40	45	50	55	60
16	28000	28000	28000	28000	28000	-	-
17	28000	28000	28000	28000	28000	-	-
18	28000	28000	28000	28000	26970	-	-
19	28000	28000	27430	26390	25360	-	-
20	**27780**	**26820**	**26000**	**24940**	**23910**	-	-
21	26480	25490	24720	23620	22590	-	-
22	25300	24280	23540	22420	21410	-	-
23	24220	23180	22460	21330	20320	-	-
24	23240	22170	21480	20330	19320	-	-
25	**22330**	**21230**	**20580**	**19400**	**18390**	-	-
26	21490	20370	19750	18560	17550	-	-
27	20710	19580	18960	17770	16760	-	-
28	20000	18840	18250	17030	16040	-	-
29	19330	18150	17580	16350	15360	-	-
30	**18700**	**17510**	**16950**	**15720**	**14720**	-	-
31		16910	16370	15130	14120	-	-
32		16350	15830	14560	13570	-	-
33		15820	15310	14040	13050	-	-
34		15320	14830	13550	12560	-	-
35		**14850**	**14370**	**13080**	**12100**	-	-
36			13940	12640	11660	-	-
37			13530	12230	11240	-	-
38			13150	11840	10860	-	-
39			12780	11460	10480	-	-
40			**12430**	**11110**	**10130**	-	-
41				10770	9790	-	-
42				10450	9470	-	-
43				10140	9160	-	-
44				9850	8880	-	-
45				**9570**	**8590**	-	-
46					8330	-	-
47					8070	-	-
48					7830	-	-
49					7590	-	-
50					**7370**	-	-
51						-	-
52						-	-
53						-	-
54						-	-
55						-	-
56							-
57							-
58							-
59							-
60							-

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.

NOTICE

For tower combination with tower element TV 25 and UV 25 please contact WOLFFKRAN.

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

Jib length		**30 m – 40 m**			
Elements					
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			
Foundation anchors		FUA 140 / Type D-140			
Tower height [m]		40.5			
Wind category		C25			

Jib length		30 m – 40 m			
Elements					
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	TV 23			
13	55.0 m	TV 23			
Foundation anchors		FUA 140 Type D-140			
Tower height [m]		55.0			
Wind category		C25			

3 Tower combinations

Jib length		**30 m – 40 m**			
Elements					
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	32.5 m	VR 2023			
9	37.0 m	TV 23			
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			
Foundation anchors		FUA 160 G			
Tower height [m]		68.5			
Wind category		C25			

Jib length		30 m – 40 m			
Elements					
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	32.5 m	VR 2023			
9	37.0 m	TV 23			
10	41.5 m	TV 23			
11	46.0 m	HTA 23			
12	50.5 m	HT 23			
13	55.0 m	HT 23			
14	59.5 m	HT 23			
15	64.0 m	HT 23			
16	75.3 m	BT 23			
Foundation anchors		FUA 210 G			
Tower height [m]		75.3			
Wind category		C25			

3 Tower combinations

Jib length		30 m – 40 m			
Elements					
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	28.0 m	VR 2023			
8	32.5 m	TV 23			
9	37.0 m	TV 23			
10	41.5 m	TV 23			
11	46.0 m	HTA 23			
12	50.5 m	HT 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	74.2 m	UV 29			
19	84.2 m	BT 29			
Foundation anchors		FUA BT 29			
Tower height [m]		84.2			
Wind category		C25			

Jib length		45 m – 50 m			
Elements					
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			
Foundation anchors		FUA 140 / Type D-140			
Tower height [m]		40.5			
Wind category		C25			

3 Tower combinations

Jib length		**45 m – 50 m**			
Elements					
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	TV 23			
Foundation anchors		FUA 160 G			
Tower height [m]		50.5			
Wind category		C25			

Jib length		45 m – 50 m			
Elements					
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	32.5 m	VR 2023			
9	37.0 m	TV 23			
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			
Foundation anchors		FUA 160 G			
Tower height [m]		64.0			
Wind category		C25			

3 Tower combinations

Jib length		**45 m – 50 m**			
Elements					
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	32.5 m	VR 2023			
9	37.0 m	TV 23			
10	41.5 m	TV 23			
11	46.0 m	HTA 23			
12	50.5 m	HT 23			
13	55.0 m	HT 23			
14	59.5 m	HT 23			
15	70.8 m	BT 23			
Foundation anchors		FUA 210 G			
Tower height [m]		70.8			
Wind category		C25			

Jib length		45 m – 50 m			
Elements					
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	28.0 m	VR 2023			
8	32.5 m	TV 23			
9	37.0 m	TV 23			
10	41.5 m	TV 23			
11	46.0 m	HTA 23			
12	50.5 m	HT 23			
13	55.0 m	HT 23			
14	59.5 m	HT 23			
15	60.7 m	VR 23/25-29			
16	65.2 m	UV 29			
17	69.7 m	UV 29			
18	79.7 m	BT 29			
Foundation anchors		FUA BT 29			
Tower height [m]		79.7			
Wind category		C25			

3 Tower combinations

Jib length		55 m – 60 m			
Elements					
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			
Foundation anchors		FUA 140 / Type D-140			
Tower height [m]		40.5			
Wind category		C25			

Jib length		55 m – 60 m			
Elements					
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	TV 23			
Foundation anchors		FUA 160 G			
Tower height [m]		50.5			
Wind category		C25			

3 Tower combinations

Jib length		55 m – 60 m			
Elements					
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			
Foundation anchors		FUA 160 G			
Tower height [m]		59.5			
Wind category		C25			

Jib length		55 m – 60 m			
Elements					
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	32.5 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	66.3 m	BT 23			
Foundation anchors		FUA 210 G			
Tower height [m]		66.3			
Wind category		C25			

3 Tower combinations

Jib length		**55 m – 60 m**			
Elements					
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	HTA 23			
12	50.5 m	HT 23			
13	55.0 m	HT 23			
14	56.2 m	VR 23/25-29			
15	60.7 m	UV 29			
16	65.2 m	UV 29			
17	75.2 m	BT 29			
Foundation anchors		FUA BT 29			
Tower height [m]		75.2			
Wind category		C25			

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

Jib length		**30 m – 40 m**			
Elements					
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			
Foundation anchors		FUA 160 G			
Tower height [m]		67.5			
Wind category		C25			

3 Tower combinations

Jib length		30 m – 40 m			
Elements					
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	74.3 m	BT 23			
Foundation anchors		FUA 210 G			
Tower height [m]		74.3			
Wind category		C25			

Jib length		30 m – 40 m			
Elements					
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	64.2 m	VR 23/25-29			
16	68.7 m	UV 29			
17	73.2 m	UV 29			
18	83.2 m	BT 29			
Foundation anchors		FUA BT 29			
Tower height [m]		83.2			
Wind category		C25			

3 Tower combinations

Jib length		45 m – 50 m			
Elements					
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			
Foundation anchors		FUA 160 G			
Tower height [m]		63.0			
Wind category		C25			

Jib length		45 m – 50 m			
Elements					
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	69.8 m	BT 23			
Foundation anchors		FUA 210 G			
Tower height [m]		69.8			
Wind category		C25			

3 Tower combinations

Jib length		45 m – 50 m			
Elements					
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	59.7 m	VR 23/25-29			
15	64.2 m	UV 29			
16	68.7 m	UV 29			
17	78.7 m	BT 29			
Foundation anchors		FUA BT 29			
Tower height [m]		78.7			
Wind category		C25			

Jib length		55 m – 60 m			
Elements					
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			
Foundation anchors		FUA 160 G			
Tower height [m]		58.5			
Wind category		C25			

3 Tower combinations

Jib length		55 m – 60 m			
Elements					
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	65.3 m	BT 23			
Foundation anchors		FUA 210 G			
Tower height [m]		65.3			
Wind category		C25			

Jib length		55 m – 60 m			
Elements					
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	55.2 m	VR 23/25-29			
14	59.7 m	UV 29			
15	64.2 m	UV 29			
16	74.2 m	BT 29			
Foundation anchors		FUA BT 29			
Tower height [m]		74.2			
Wind category		C25			

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

Jib length		**30 m – 40 m**			
Elements					
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		
11	46.0 m		TV 23		
Substructure		KRV 10-60	KRV 10-60		
Corner distance [m x m]		5.0 x 5.0 6.0 x 6.0	5.0 x 5.0		
Substructure height [m]		1.2	1.2		
Tower height [m]		41.7	47.2		
Wind category		C25			

Jib length		30 m – 40 m			
Elements					
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	TV 23			
Substructure		KRV 10-60			
Corner distance [m x m]		6.0 x 6.0			
Substructure height [m]		1.2			
Tower height [m]		51.7			
Wind category		C25			

3 Tower combinations

Jib length		30 m – 40 m			
Elements					
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	32.5 m	VR 2023	VR 2023		
9	37.0 m	TV 23	TV 23		
10	41.5 m	TV 23	TV 23		
11	46.0 m	TV 23	TV 23		
12	50.5 m	HTA 23	HTA 23		
13	55.0 m	HT 23	HT 23		
14	59.5 m	HT 23	HT 23		
15	64.0 m	HT 23	HT 23		
16	68.5 m	HT 23	HT 23		
Substructure		KR 12-60 KR 12-60/80	KR 16-80 KR 16-80/100		
Corner distance [m x m]		6.0 x 6.0 8.0 x 8.0	8.0 x 8.0 10.0 x 10.0		
Substructure height [m]		1.4	1.8		
Tower height [m]		69.9	70.3		
Wind category		C25			

Jib length		30 m – 40 m			
Elements					
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	28.0 m	VR 2023			
8	32.5 m	TV 23			
9	37.0 m	TV 23			
10	41.5 m	TV 23			
11	46.0 m	HTA 23			
12	50.5 m	HT 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			
17	69.7 m	VR 23/25-29			
18	79.7 m	BT 29			
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]		81.5			
Wind category		C25			

3 Tower combinations

Jib length		45 m – 50 m			
Elements					
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			
Substructure		KRV 10-60			
Corner distance [m x m]		5.0 x 5.0 6.0 x 6.0			
Substructure height [m]		1.2			
Tower height [m]		41.7			
Wind category		C25			

Jib length		45 m – 50 m			
Elements					
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			
Substructure		KRV 10-60			
Corner distance [m x m]		5.0 x 5.0 6.0 x 6.0			
Substructure height [m]		1.2			
Tower height [m]		47.2			
Wind category		C25			

3 Tower combinations

Jib length		45 m – 50 m			
Elements					
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	32.5 m	VR 2023	VR 2023		
9	37.0 m	TV 23	TV 23		
10	41.5 m	TV 23	TV 23		
11	46.0 m	TV 23	TV 23		
12	50.5 m	HTA 23	HTA 23		
13	55.0 m	HT 23	HT 23		
14	59.5 m	HT 23	HT 23		
15	64.0 m	HT 23	HT 23		
Substructure		KR 12-60 KR 12-60/80	KR 16-80 KR 16-80/100		
Corner distance [m x m]		6.0 x 6.0 8.0 x 8.0	8.0 x 8.0 10.0 x 10.0		
Substructure height [m]		1.4	1.8		
Tower height [m]		65.4	65.8		
Wind category		C25			

Jib length		45 m – 50 m			
Elements					
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	28.0 m	VR 2023			
8	32.5 m	TV 23			
9	37.0 m	TV 23			
10	41.5 m	TV 23			
11	46.0 m	HTA 23			
12	50.5 m	HT 23			
13	55.0 m	HT 23			
14	59.5 m	HT 23			
15	60.7 m	VR 23/25-29			
16	65.2 m	UV 29			
17	75.2 m	BT 29			
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]		77.0			
Wind category		C25			

3 Tower combinations

Jib length		55 m – 60 m			
Elements					
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			
Substructure		KRV 10-60	KRV 10-60		
Corner distance [m x m]		5.0 x 5.0	6.0 x 6.0		
Substructure height [m]		1.2	1.2		
Tower height [m]		41.7	37.2		
Wind category		C25			

Jib length		55 m – 60 m			
Elements					
1	4.5 m	TV 20.4	TV 20.4	TV 20.4	TV 20.4
2	9.0 m	TV 20.4	TV 20.4	TV 20.4	TV 20.4
3	13.5 m	TV 20.4	TV 20.4	TV 20.4	TV 20.4
4	18.0 m	TV 20.4	TV 20.4	TV 20.4	TV 20.4
5	22.5 m	TV 20.4	TV 20.4	TV 20.4	TV 20.4
6	27.0 m	TV 20.4	TV 20.4	TV 20.4	TV 20.4
7	31.5 m	TV 20.4	TV 20.4	TV 20.4	TV 20.4
8	36.0 m	TV 20.4	TV 20.4	TV 20.4	TV 20.4
9	37.0 m	VR 2023	VR 2023	VR 2023	VR 2023
10	41.5 m	TV 23	TV 23	TV 23	TV 23
11	46.0 m		TV 23	TV 23	TV 23
12	50.5 m		HTA 23	HTA 23	HTA 23
13	55.0 m		HT 23	HT 23	HT 23
14	59.5 m		HT 23		HT 23
Substructure		KRV 10-60	KR 12-60	KR 12-60/80	KR 16-80 KR 16-80/100
Corner distance [m x m]		6.0 x 6.0	6.0 x 6.0	8.0 x 8.0	8.0 x 8.0 10.0 x 10.0
Substructure height [m]		1.2	1.4	1.4	1.8
Tower height [m]		42.7	60.9	56.4	61.3
Wind category		C25			

3 Tower combinations

Jib length		55 m – 60 m			
Elements					
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	32.5 m	VR 2023			
9	37.0 m	TV 23			
10	41.5 m	TV 23			
11	46.0 m	HTA 23			
12	50.5 m	HT 23			
13	55.0 m	HT 23			
14	56.2 m	VR 23/25-29			
15	60.7 m	UV 29			
16	70.7 m	BT 29			
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]		72.5			
Wind category		C25			

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

Jib length		**30 m – 40 m**			
Elements					
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		
8	36.0 m		TVÜ 20.4		
9	40.5 m		TV 25		
10	45.0 m		TV 25		
11	49.5 m		TV 25		
12	54.0 m		UVA 25		
Substructure		KRE 260.2	KRE 480		
Corner distance [m x m]		6.0 x 6.0	8.0 x 8.0		
Substructure height [m]		4.0	4.0		
Tower height [m]		31.0	58.0		
Wind category		C25			

3 Tower combinations

Jib length		45 m – 50 m			
Elements					
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		
7	31.5 m		TV 20.4		
8	36.0 m		TVÜ 20.4		
9	40.5 m		TV 25		
10	45.0 m		TV 25		
11	49.5 m		UVA 25		
Substructure		KRE 260.2	KRE 480		
Corner distance [m x m]		6.0 x 6.0	8.0 x 8.0		
Substructure height [m]		4.0	4.0		
Tower height [m]		26.5	53.5		
Wind category		C25			

Jib length		55 m – 60 m			
Elements					
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		
6	27.0 m		TV 20.4		
7	31.5 m		TV 20.4		
8	36.0 m		TVÜ 20.4		
9	40.5 m		TV 25		
10	45.0 m		UVA 25		
Substructure		KRE 260.2	KRE 480		
Corner distance [m x m]		6.0 x 6.0	8.0 x 8.0		
Substructure height [m]		4.0	4.0		
Tower height [m]		22.0	49.0		
Wind category		C25			

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

Jib length		**30 m – 40 m**			
Elements					
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	28.0 m	VR 2023			
8	32.5 m	TV 23			
9	37.0 m	TV 23			
10	41.5 m	TV 23			
11	46.0 m	HTA 23			
Substructure		KRF4 12-60/80			
Corner distance [m x m]		8.0 x 8.0			
Substructure height [m]		2.5			
Tower height [m]		48.5			
Wind category		C25			

Jib length		30 m – 40 m			
Elements					
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	23.5 m	VR 2023	VR 2023		
7	28.0 m	TV 23	TV 23		
8	32.5 m	TV 23	TV 23		
9	37.0 m	HTA 23	HTA 23		
10	41.5 m	HT 23	HT 23		
11	46.0 m	HT 23	HT 23		
12	50.5 m	HT 23	HT 23		
13	55.0 m	HT 23	HT 23		
14	59.5 m	HT 23	HT 23		
15	64.0 m	HT 23	HT 23		
Substructure		KRF6 12-60/80	KRF 16-80/100		
Corner distance [m x m]		8.0 x 8.0	10.0 x 10.0		
Substructure height [m]		2.9	3.3		
Tower height [m]		66.9	67.3		
Wind category		C25			

3 Tower combinations

Jib length		30 m – 40 m			
Elements					
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	23.5 m	VR 2023			
7	28.0 m	TV 23			
8	32.5 m	TV 23			
9	37.0 m	HTA 23			
10	41.5 m	HT 23			
11	46.0 m	HT 23			
12	50.5 m	HT 23			
13	55.0 m	HT 23			
14	59.5 m	HT 23			
15	60.7 m	VR 23/25-29			
16	65.2 m	UV 29			
17	75.2 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]		78.5			
Wind category		C25			

Jib length		45 m – 50 m			
Elements					
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	28.0 m	VR 2023			
8	32.5 m	TV 23			
9	37.0 m	TV 23			
10	41.5 m	HTA 23			
11	46.0 m	HT 23			
Substructure		KRF4 12-60/80			
Corner distance [m x m]		8.0 x 8.0			
Substructure height [m]		2.5			
Tower height [m]		48.5			
Wind category		C25			

3 Tower combinations

Jib length		45 m – 50 m			
Elements					
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	23.5 m	VR 2023	VR 2023		
7	28.0 m	TV 23	TV 23		
8	32.5 m	TV 23	TV 23		
9	37.0 m	HTA 23	HTA 23		
10	41.5 m	HT 23	HT 23		
11	46.0 m	HT 23	HT 23		
12	50.5 m	HT 23	HT 23		
13	55.0 m	HT 23	HT 23		
14	59.5 m	HT 23	HT 23		
Substructure		KRF6 12-60/80	KRF 16-80/100		
Corner distance [m x m]		8.0 x 8.0	10.0 x 10.0		
Substructure height [m]		2.9	3.3		
Tower height [m]		62.4	62.8		
Wind category		C25			

Jib length		45 m – 50 m			
Elements					
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	23.5 m	VR 2023			
7	28.0 m	TV 23			
8	32.5 m	HTA 23			
9	37.0 m	HT 23			
10	41.5 m	HT 23			
11	46.0 m	HT 23			
12	50.5 m	HT 23			
13	55.0 m	HT 23			
14	56.2 m	VR 23/25-29			
15	60.7 m	UV 29			
16	70.7 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]		74.0			
Wind category		C25			

3 Tower combinations

Jib length		55 m – 60 m			
Elements					
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	32.5 m	VR 2023			
9	37.0 m	TV 23			
10	41.5 m	TV 23			
Substructure		KRF4 12-60/80			
Corner distance [m x m]		8.0 x 8.0			
Substructure height [m]		2.5			
Tower height [m]		44.0			
Wind category		C25			

Jib length		55 m – 60 m			
Elements					
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	28.0 m	VR 2023			
8	32.5 m	TV 23			
9	37.0 m	TV 23			
10	41.5 m	TV 23			
11	46.0 m	HTA 23			
12	50.5 m	HT 23			
13	55.0 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]		57.9			
Wind category		C25			

3 Tower combinations

Jib length		55 m – 60 m			
Elements					
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	23.5 m	VR 2023			
7	28.0 m	TV 23			
8	32.5 m	TV 23			
9	37.0 m	HTA 23			
10	41.5 m	HT 23			
11	46.0 m	HT 23			
12	50.5 m	HT 23			
13	55.0 m	HT 23			
14	59.5 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]		62.8			
Wind category		C25			

Jib length		55 m – 60 m			
Elements					
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	23.5 m	VR 2023			
7	28.0 m	TV 23			
8	32.5 m	HTA 23			
9	37.0 m	HT 23			
10	41.5 m	HT 23			
11	46.0 m	HT 23			
12	50.5 m	HT 23			
13	55.0 m	HT 23			
14	56.2 m	VR 23/25-29			
15	60.7 m	UV 29			
16	70.7 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]		74.0			
Wind category		C25			

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

Jib length		**30 m – 40 m**			
Elements					
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		
6	27.0 m		TV 20.4		
7	31.5 m		TV 20.4		
8	36.0 m		TVÜ 20.4		
9	40.5 m		TV 25		
10	45.0 m		TV 25		
11	49.5 m		UVA 25		
Substructure		UW 260.3	UW 480		
Corner distance [m x m]		6.0 x 6.0	8.0 x 8.0		
Substructure height [m]		4.5	5.0		
Tower height [m]		22.5	54.5		
Wind category		C25			

Jib length		45 m – 50 m			
Elements					
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		
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		TVÜ 20.4		
9	40.5 m		TV 25		
10	45.0 m		UVA 25		
Substructure		UW 260.3	UW 480		
Corner distance [m x m]		6.0 x 6.0	8.0 x 8.0		
Substructure height [m]		4.5	5.0		
Tower height [m]		18.0	50.0		
Wind category		C25			

3 Tower combinations

Jib length		**55 m – 60 m**			
Elements					
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		
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		TVÜ 20.4		
9	40.5 m		UVA 25		
Substructure		UW 260.3	UW 480		
Corner distance [m x m]		6.0 x 6.0	8.0 x 8.0		
Substructure height [m]		4.5	5.0		
Tower height [m]		13.5	45.5		
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

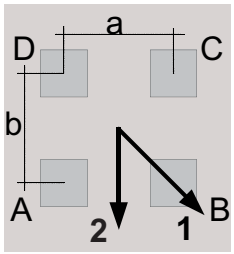
If you need foundation loads for tower combination with tower element TV 25 and UV 25, please contact WOLFFKRAN to get an approved alternative setup.

Jib positions

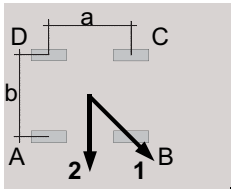
The corner loads are given for two jib positions with the maximum corner load resulting from jib position 1.

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.

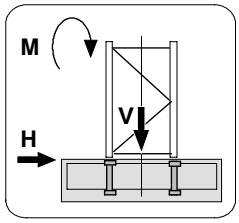
4 Foundation loads / central ballast weights / corner loads in compliance with EN 14439 / EN 13001

Please contact WOLFFKRAN for stability calculations in other wind regions.

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

4.1 Foundation loads slewing section with TV 20 connection (jib 30 m - 40 m)

Slewing section 355 B with TV 20 connection and 30 m – 40 m jib on foundation.
Slewing tower crane without climbing device.



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

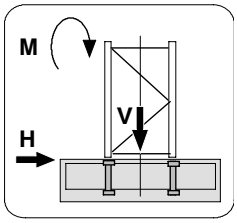
Includes all dynamical factors under consideration of second-order theory for stationary slewing tower cranes on concrete foundation in compliance with a tower combination without climbing device.

TH:	Crane in service			Crane out of service			Assembly		
	Slewing torque: 340 kNm			Wind category C25					
	M	V	H	M	V	H	M	V	H
[m]	[kNm]	[kN]	[kN]	[kNm]	[kN]	[kN]	[kNm]	[kN]	[kN]
4.5	4070	992	25	3650	992	59	1660	512	9
9.0	4200	1020	27	3940	1020	65	1700	540	10
13.5	4350	1048	29	4270	1048	71	1750	568	11
18.0	4530	1077	31	4650	1077	77	1810	597	12
22.5	4730	1105	33	5070	1105	84	1880	625	13
27.0	4950	1133	35	5530	1133	90	1950	653	14
31.5	5200	1162	37	6050	1162	96	2040	682	15
36.0	5480	1190	39	6630	1190	102	2130	710	16
40.5	5800	1218	41	7270	1218	108	2240	738	17
41.5	5810	1245	42	7360	1245	112	2250	765	18
46.0	6130	1276	44	8040	1276	118	2360	796	19
50.5	6490	1306	46	8790	1306	125	2480	826	20
55.0	6880	1337	48	9620	1337	132	2610	857	22
59.5	7170	1401	51	10350	1401	140	2730	921	23
64.0	7590	1441	53	11280	1441	147	2870	961	24
68.5	8370	1784	63	12300	1480	154	3030	1000	26
70.8	8510	1828	64	12670	1524	160	3090	1044	26
75.3	9170	1867	67	13820	1564	167	3270	1084	28
Tower combination with base tower element BT 29									
79.7	9460	1930	69	14650	1625	258	3400	1145	29
84.2	10100	1975	72	16530	1671	272	3590	1191	31

Caption:			
TH:	Tower height	V:	Vertical load
H:	Horizontal load	M	Torque

4.2 Foundation loads slewing section with TV 20 connection (jib 45 m - 50 m)

Slewing section 355 B with TV 20 connection and 45 m – 50 m jib on foundation.
Slewing tower crane without climbing device.



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

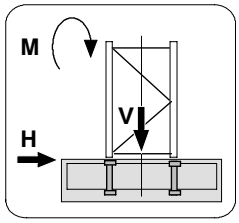
Includes all dynamical factors under consideration of second-order theory for stationary slewing tower cranes on concrete foundation in compliance with a tower combination without climbing device.

TH:	Crane in service			Crane out of service			Assembly		
	Slewing torque: 340 kNm			Wind category C25					
	M	V	H	M	V	H	M	V	H
[m]	[kNm]	[kN]	[kN]	[kNm]	[kN]	[kN]	[kNm]	[kN]	[kN]
4.5	4140	1011	28	3840	1011	66	2720	531	9
9.0	4280	1040	30	4170	1040	72	2770	560	10
13.5	4450	1068	32	4530	1068	78	2820	588	11
18.0	4640	1096	34	4940	1096	84	2890	616	12
22.5	4850	1125	36	5400	1125	91	2970	645	13
27.0	5090	1153	38	5900	1153	97	3050	673	14
31.5	5360	1181	40	6460	1181	103	3150	701	16
36.0	5660	1209	42	7080	1209	109	3260	729	17
40.5	6000	1238	44	7770	1238	115	3380	758	18
41.5	6020	1265	45	7860	1265	119	3390	785	18
46.0	6360	1295	47	8590	1295	125	3510	815	20
50.5	6740	1326	49	9390	1326	132	3650	846	21
55.0	7050	1382	51	10140	1382	140	3770	902	22
59.5	7460	1421	54	11040	1421	147	3930	941	23
64.0	7910	1460	56	12020	1460	154	4090	980	25
66.3	8030	1504	58	12390	1504	160	4150	1024	25
70.8	8890	1847	67	13450	1544	243	4330	1064	27
Tower combination with base tower element BT 29									
75.2	9180	1909	70	14920	1605	258	4460	1125	28
79.7	9790	1955	73	16770	1652	272	4650	1172	30

Caption:			
TH:	Tower height	V:	Vertical load
H:	Horizontal load	M:	Torque

4.3 Foundation loads slewing section with TV 20 connection (jib 55 m - 60 m)

Slewing section 355 B with TV 20 connection and 55 m – 60 m jib on foundation.
Slewing tower crane without climbing device.



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

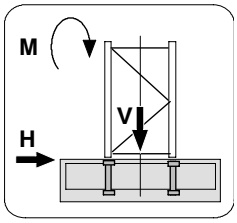
Includes all dynamical factors under consideration of second-order theory for stationary slewing tower cranes on concrete foundation in compliance with a tower combination without climbing device.

TH:	Crane in service			Crane out of service			Assembly		
	Slewing torque: 340 kNm			Wind category C25					
	M	V	H	M	V	H	M	V	H
[m]	[kNm]	[kN]	[kN]	[kNm]	[kN]	[kN]	[kNm]	[kN]	[kN]
4.5	4290	1028	31	4170	1028	73	3800	548	9
9.0	4450	1056	33	4530	1056	79	3850	576	10
13.5	4630	1085	35	4920	1085	85	3910	605	11
18.0	4830	1113	37	5370	1113	91	3980	633	13
22.5	5060	1141	39	5860	1141	97	4070	661	14
27.0	5320	1170	41	6400	1170	104	4170	690	15
31.5	5610	1198	43	7010	1198	110	4280	718	16
36.0	5930	1226	45	7670	1226	116	4400	746	17
40.5	6290	1254	46	8410	1254	122	4540	774	18
41.5	6300	1282	48	8500	1282	126	4540	802	19
46.0	6660	1312	50	9280	1312	132	4690	832	20
50.5	7070	1342	52	10130	1342	139	4840	862	21
55.0	7420	1396	54	10950	1396	147	4990	916	22
59.5	7860	1436	56	11900	1436	154	5160	956	24
61.8	8010	1471	58	12300	1471	158	5220	991	24
66.3	8490	1510	60	13780	1510	242	5410	1030	26
Tower combination with base tower element BT 29									
70.7	8740	1579	63	15180	1579	257	5520	1099	27
75.2	9230	1625	66	16990	1625	271	5720	1145	29

Caption:			
TH:	Tower heights	V:	Vertical load
H:	Horizontal load	M	Torque

4.4 Foundation loads slewing section with HT 23 connection (jib 30 m - 40 m)

Slewing section 355 B with HT 23 connection and 30 m – 40 m jib on foundation.
Slewing tower crane without climbing device.



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

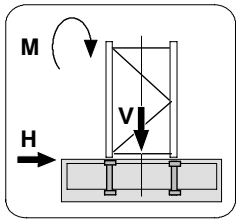
Includes all dynamical factors under consideration of second-order theory for stationary slewing tower cranes on concrete foundation in compliance with a tower combination without climbing device.

TH:	Crane in service			Crane out of service			Assembly		
	Slewing torque: 340 kNm			Wind category C25					
	M	V	H	M	V	H	M	V	H
[m]	[kNm]	[kN]	[kN]	[kNm]	[kN]	[kN]	[kNm]	[kN]	[kN]
4.5	4070	1003	26	3650	1003	60	1660	523	9
9.0	4190	1042	28	3940	1042	67	1700	562	10
13.5	4340	1082	30	4270	1082	74	1750	602	11
18.0	4500	1121	32	4640	1121	81	1810	641	13
22.5	4680	1160	34	5060	1160	88	1880	680	14
27.0	4880	1200	37	5510	1200	95	1950	720	15
31.5	5100	1239	39	6020	1239	102	2030	759	16
36.0	5350	1278	41	6570	1278	109	2120	798	18
40.5	5610	1318	43	7170	1318	116	2220	838	19
45.0	5910	1357	45	7830	1357	123	2330	877	20
49.5	6230	1396	48	8560	1396	130	2440	916	21
54.0	6580	1436	50	9350	1436	137	2570	956	23
58.5	6970	1475	52	10210	1475	144	2710	995	24
63.0	7400	1515	54	11160	1515	152	2860	1035	25
67.5	7870	1554	56	12200	1554	159	3030	1074	26
69.8	8030	1590	58	12610	1589	163	3090	1109	27
74.3	8920	1932	68	13780	1628	170	3270	1148	28
Tower combination with base tower element BT 29									
78.7	9240	1991	71	14830	1688	263	3410	1208	30
83.2	9880	2037	73	16740	1734	277	3600	1254	31

Caption:			
TH:	Tower height	V:	Vertical load
H:	Horizontal load	M	Torque

4.5 Foundation loads slewing section with HT 23 connection (jib 45 m - 50 m)

Slewing section 355 B with HT 23 connection and 45 m – 50 m jib on foundation.
Slewing tower crane without climbing device.



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

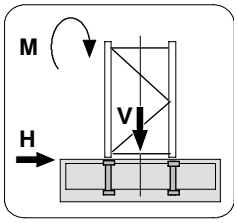
Includes all dynamical factors under consideration of second-order theory for stationary slewing tower cranes on concrete foundation in compliance with a tower combination without climbing device.

TH:	Crane in service			Crane out of service			Assembly		
	Slewing torque: 340 kNm			Wind category C25					
	M	V	H	M	V	H	M	V	H
[m]	[kNm]	[kN]	[kN]	[kNm]	[kN]	[kN]	[kNm]	[kN]	[kN]
4.5	4140	1022	29	3840	1022	67	2720	542	9
9.0	4280	1062	31	4170	1062	74	2770	582	10
13.5	4440	1101	33	4530	1101	81	2820	621	12
18.0	4610	1141	35	4940	1141	88	2880	661	13
22.5	4810	1180	37	5380	1180	95	2950	700	14
27.0	5020	1219	40	5870	1219	102	3030	739	15
31.5	5260	1259	42	6410	1259	109	3120	779	17
36.0	5520	1298	44	7000	1298	116	3220	818	18
40.5	5800	1337	46	7650	1337	123	3330	857	19
45.0	6120	1377	48	8350	1377	130	3450	897	20
49.5	6460	1416	51	9120	1416	137	3580	936	22
54.0	6830	1455	53	9950	1455	144	3730	975	23
58.5	7240	1495	55	10870	1495	151	3880	1015	24
63.0	7690	1534	57	11870	1534	158	4060	1054	25
65.3	7850	1569	59	12280	1569	163	4120	1089	26
69.8	8620	1912	68	13530	1609	248	4310	1129	27
Tower combination with base tower element BT 29									
74.2	8950	1971	71	14990	1668	263	4450	1188	29
78.7	9560	2018	74	16870	1714	277	4640	1234	30

Caption:			
TH:	Tower height	V:	Vertical load
H:	Horizontal load	M:	Torque

4.6 Foundation loads slewing section with HT 23 connection (jib 55 m - 60 m)

Slewing section 355 B with HT 23 connection and 55 m – 60 m jib on foundation.
Slewing tower crane without climbing device.



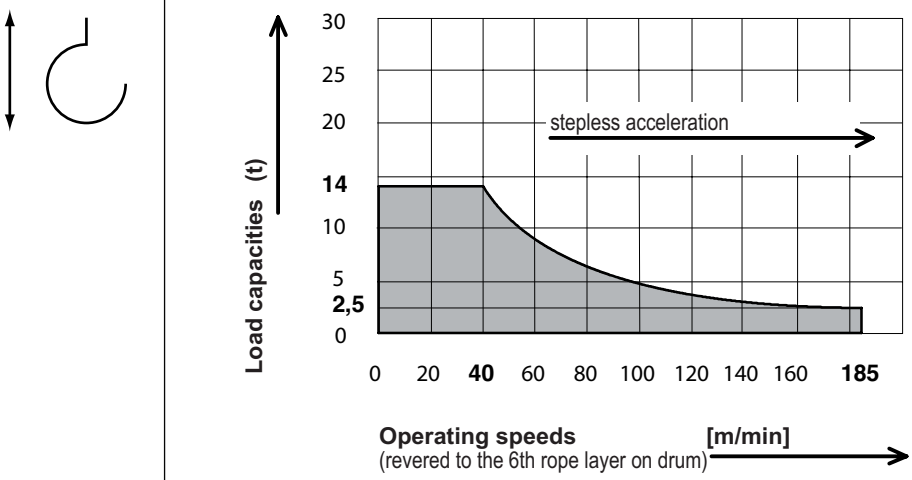
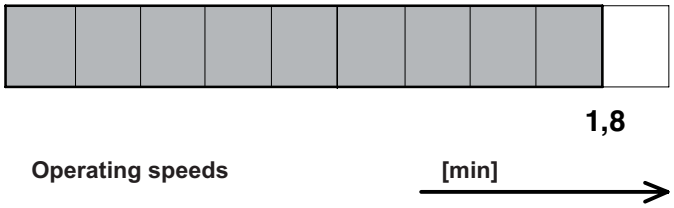
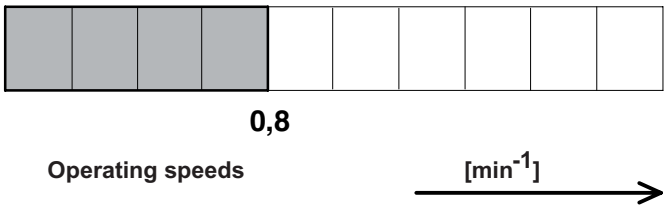
Foundation load in compliance with EN 14439 / EN 13001 – typical loads

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.

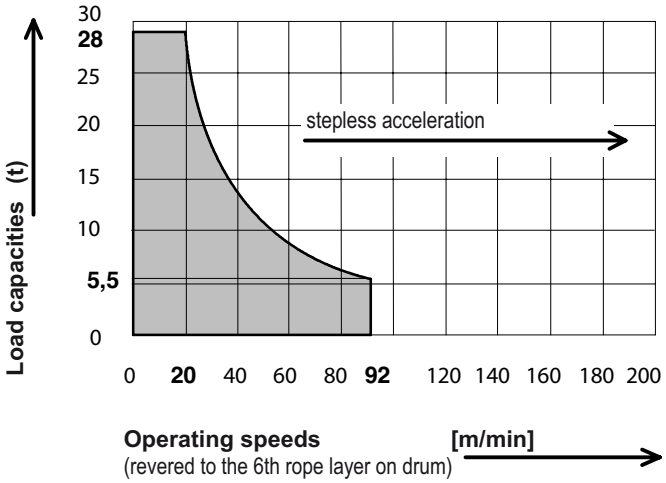
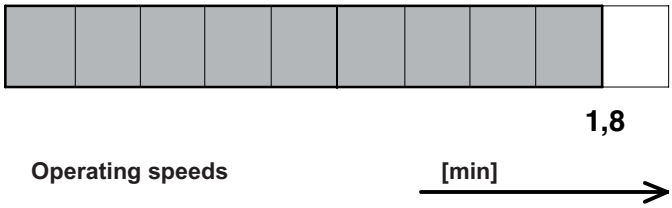
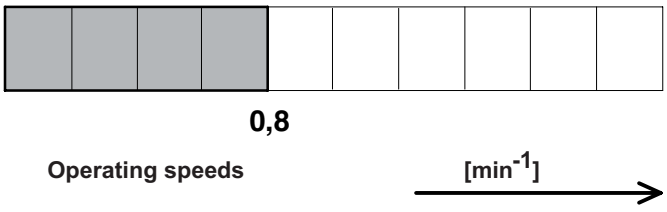
TH:	Crane in service			Crane out of service			Assembly		
	Slewing torque: 340 kNm			Wind category C25					
	M	V	H	M	V	H	M	V	H
[m]	[kNm]	[kN]	[kN]	[kNm]	[kN]	[kN]	[kNm]	[kN]	[kN]
4.5	4290	1039	31	4170	1039	74	3800	559	9
9.0	4440	1079	34	4520	1079	81	3850	599	11
13.5	4610	1118	36	4920	1118	88	3910	638	12
18.0	4800	1157	38	5360	1157	95	3970	677	13
22.5	5010	1197	40	5840	1197	102	4050	717	14
27.0	5240	1236	42	6370	1236	109	4140	756	16
31.5	5500	1275	45	6940	1275	116	4230	795	17
36.0	5770	1315	47	7570	1315	123	4340	835	18
40.5	6070	1354	49	8260	1354	130	4460	874	19
45.0	6400	1393	51	9000	1393	137	4600	913	21
49.5	6760	1433	53	9820	1433	144	4740	953	22
54.0	7160	1472	56	10700	1472	151	4900	992	23
58.5	7590	1511	58	11670	1511	158	5080	1031	24
60.8	7750	1547	59	12050	1547	236	5150	1067	25
65.3	8240	1586	61	13730	1586	248	5340	1106	26
Tower combination with base tower element BT 29									
69.7	8530	1645	64	15190	1645	263	5470	1165	28
74.2	9020	1692	67	17040	1692	277	5670	1212	29

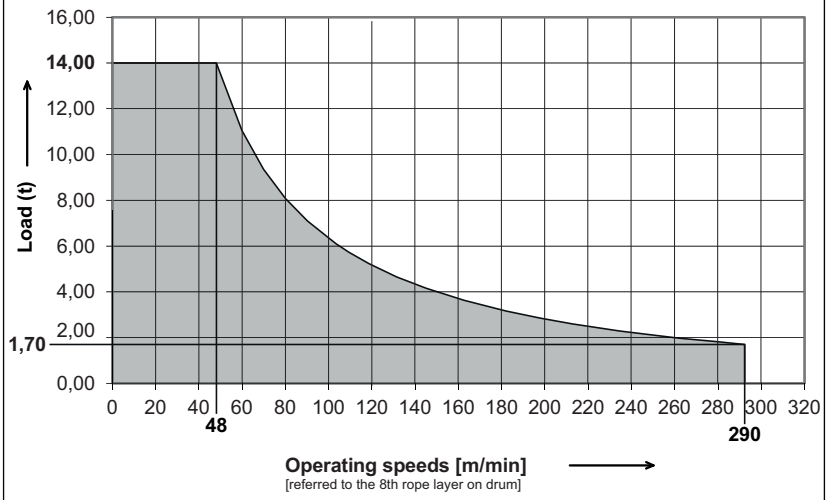
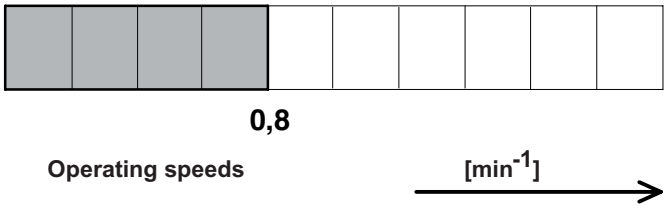
Caption:			
TH:	Tower heights	V:	Vertical load
H:	Horizontal load	M	Torque

5 Operating speeds

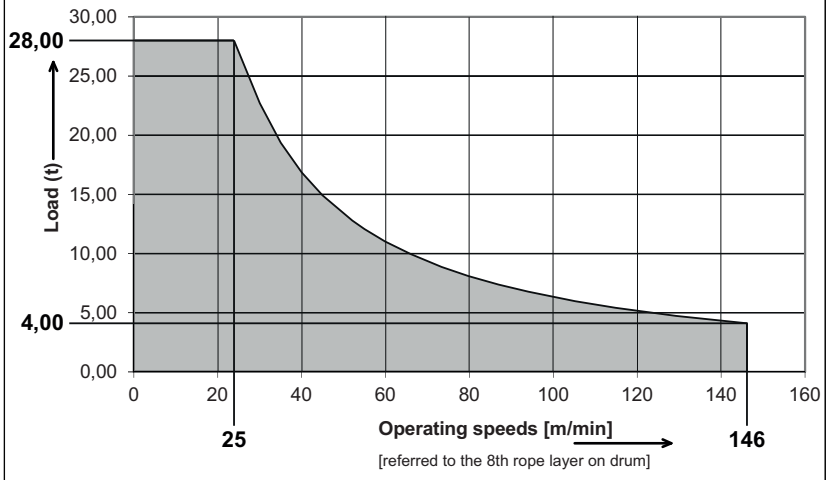
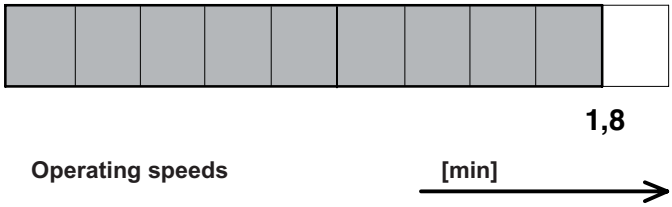
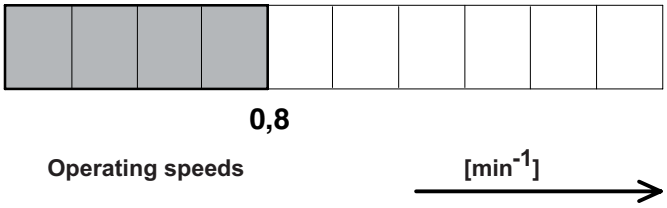
Drive unit [type]	Operating speed Carrying load		Hook travel distance max. [m]	Power [kW]	Total connected wattage [kVA]
Hw 28110FU	**Lifting**		**920**	**110**	194.0 Total connected load at coincidence factor of 0.8
					
LG 1575FU	**Jib up-down**			**75**	
					
SG	**Slewing**			**1 x 7.5**	
					

5 Operating speeds

Drive unit [type]	Operating speed Carrying load		Hook travel distance max. [m]	Power [kW]	Total connected load [kVA]
Hw 28110FU	**Lifting**		**460**	**110**	194.0 Total connected load at coincidence factor of 0.8
					
LG 1575FU	**Jib up-down**			**75**	
					
SG	**Slewing**			**1 x 7.5**	
					

Drive unit [type]	Operating speed Carrying load		Hook travel distance max. [m]	Power [kW]	Total connected wattage [kVA]
Hw 28132FU	**Lifting**		**920**	**132**	205.0 Total connected load at coincidence factor of 0.8
					
LG 1575FU	**Jib up-down**			**75**	
					
SG	**Slewing**			**1 x 7.5**	
					

5 Operating speeds

Drive unit [type]	Operating speed Carrying load		Hook travel distance max. [m]	Power [kW]	Total connected load [kVA]
Hw 28132FU	**Lifting**		**460**	**132**	205.0 Total connected load at coincidence factor of 0.8
					
LG 1575FU	**Jib up-down**			**75**	
					
SG	**Slewing**			**1 x 7.5**	
					

6 Out of service positions

⚠ WARNING

Parking the jib outside the area for the out of service position.

The slewing tower crane may overturn.

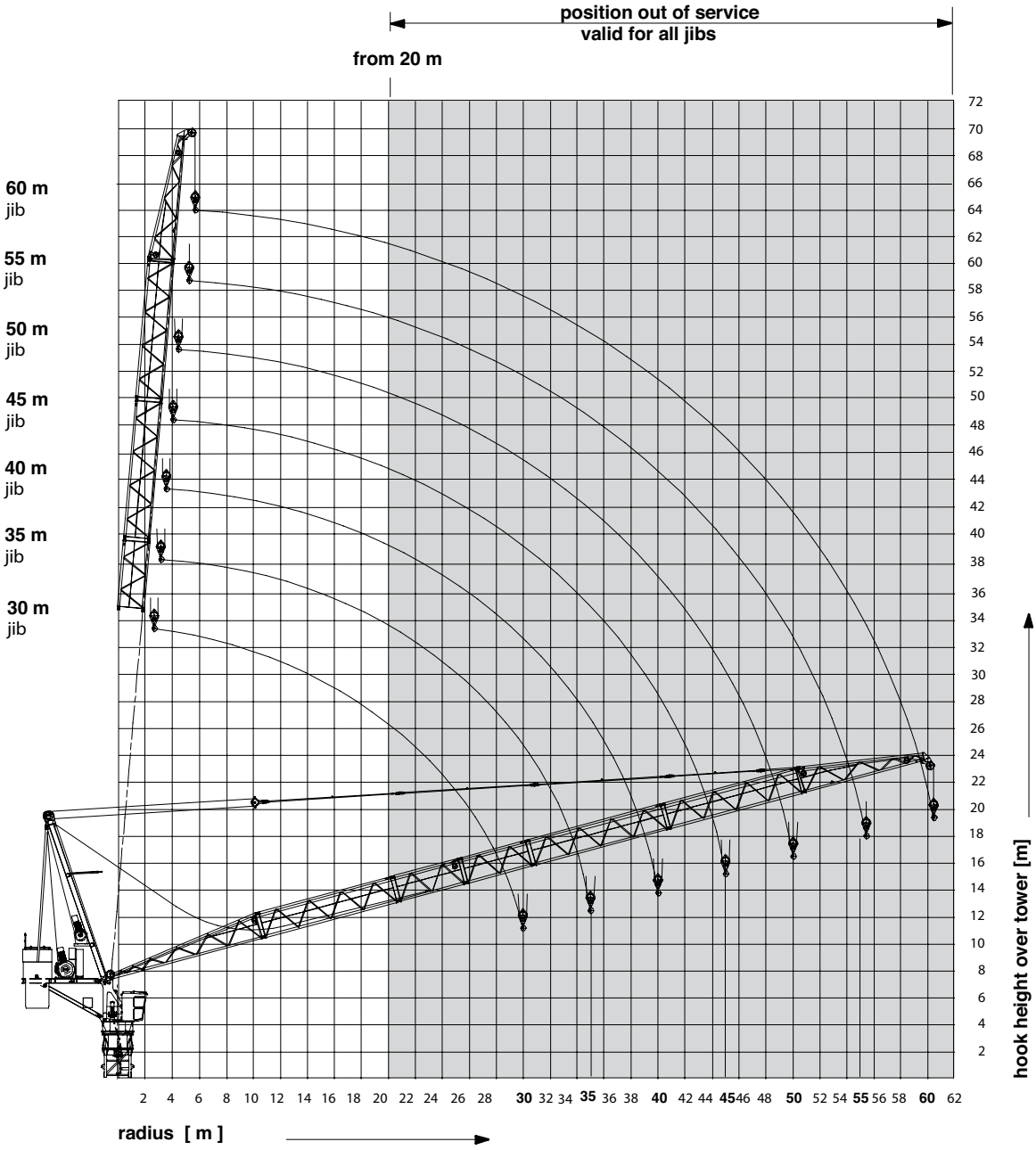
► Park the jib only in the grey shaded area for the out of service position.

NOTICE

Out of service position with smaller operating radius.

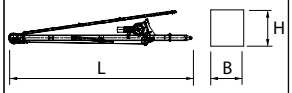
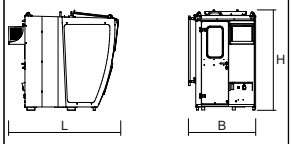
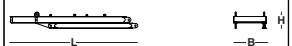
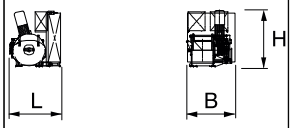
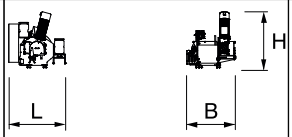
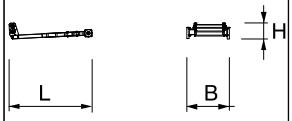
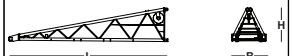
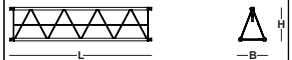
At your request, shutdown with smaller operating radius can be implemented in cases of reduced tower height or increased central ballast, and possibly use of a wind sail. Please contact WOLFFKRAN for information.

6 Out of service positions

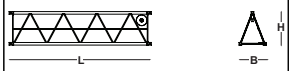
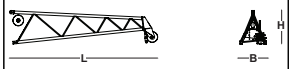
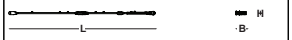
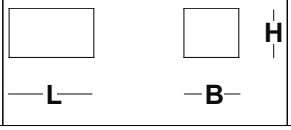


7 Package list

7.1 Package list 355 B

Quantity	Description	Package	L [m]	W [m]	H [m]	Weight [kg]	Volume [m³]
1	Tower head section upper part including luffing gear, pulley block, platforms and struts		13.36	2.30	2.52	9800	77.40
1	Tower head section lower part		with TV 20 lower part of tower head section				
			5.63	2.30	2.53	11700	32.76
			with HT 23 lower part of tower head section				
			5.82	2.32	2.80	12995	37.81
1	Connecting block		3.77	2.14	2.53	3600	20.41
1	Driver's cab suspension		2.80	2.07	0.51	400	2.96
1	Driver's cab		2.26	1.45	2.30	940	7.54
1	Counterjib (including struts, platforms and standard railing)		6.58	2.30	0.93	5150	14.08
1	Machine platform Hw28110FU (incl. 920m Ø26 mm hoisting rope (3036 kg))		2.31	2.19	2.41	8200	12.12
1	Machine platform Hw28132FU (incl. 920m Ø26 mm hoisting rope (3036 kg) and 2nd brake)		2.98	2.56	2.81	11196	21.44
1	Rope swing-reduction device for Hw28132FU		2.71	1.39	0.52	215	1.96
1	Jib element 1 (including walkways)		11.92	2.22	2.00	2250	52.93
1	Jib element 2		10.56	1.71	1.96	1710	35.40
1	Jib element 3		5.39	1.71	1.96	960	18.07

7 Package list

Quantity	Description	Package	L [m]	W [m]	H [m]	Weight [kg]	Volume [m³]
1	Jib element 4		5.39	1.71	1.96	930	18.07
2	Jib element 5		10.56	1.71	1.96	1630	35.40
1	Jib element 6 (including walk-ways)		10.16	1.71	1.99	2020	34.58
1	Hook block		0.68	0.26	1.63	540	0.29
5	Stay rods for 60 m operating radius		10.51	0.24	0.61	1350	1.54
	Standard railings		2.60	1.10	0.65	300	1.86
1	Box (small parts)		0.63	0.50	0.38	100	1.12

8 Assembly weights

8.1 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.

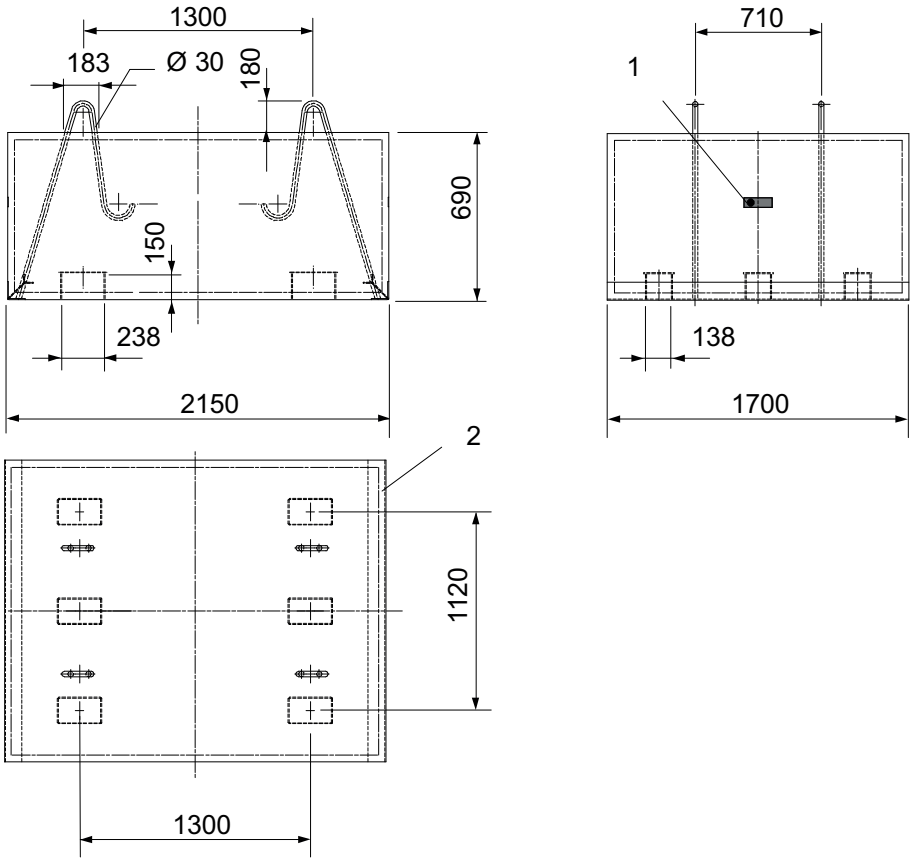
8.1.1 Counterweight block, 6.2 t

⚠ DANGER

Use of improper counterweight blocks may cause the slewing tower crane to overturn.

The slewing tower crane may overturn, resulting in severe injury and death.

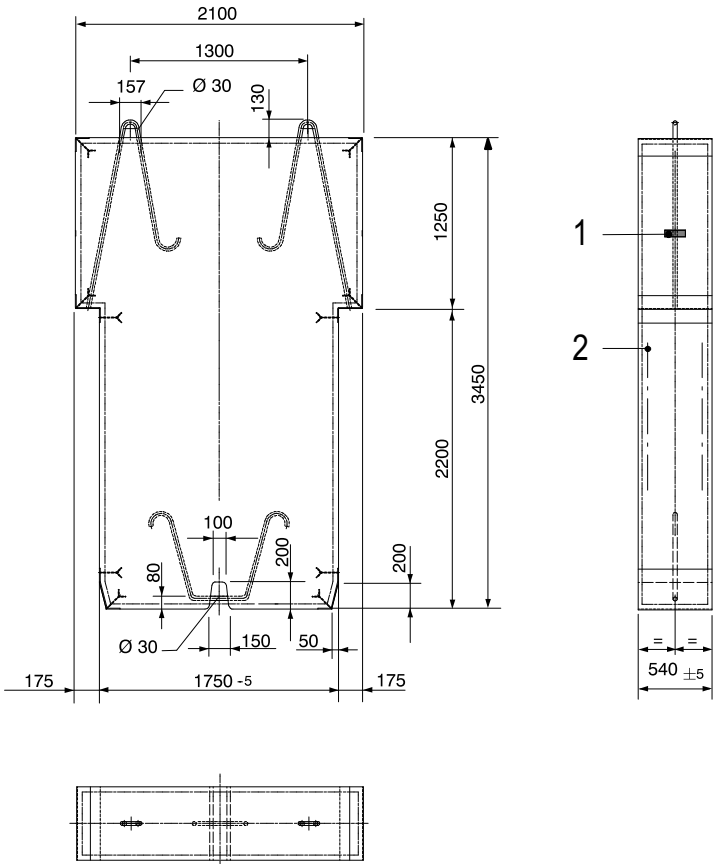
► Use of the horizontal counterweight block weighing 6.2 t is only permitted when using the hoist winch Hw28132FU.



Data counterweight block 6.2 t, lying

Item	Data
Material	Concrete, min. C 20/25
Max. permitted weight tolerance	+/- 3 %
Order number	30055489
1	Component identifier
2	Structural steel reinforcement

8.1.2 Counterweight block, 8.0 t



Data counterweight block 8.0 t

Item	Data
Material	Concrete, min. C 20/25
Max. permitted weight tolerance	+/- 3 %
Order number	30043944
1	Component identifier
2	Structural steel reinforcement

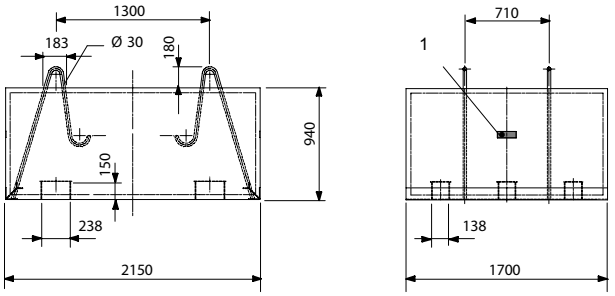
8.1.3 Counterweight block, 8.0 t

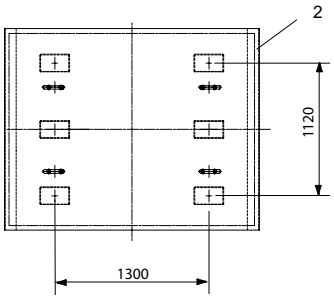
⚠ DANGER

Use of improper counterweight blocks may cause the slewing tower crane to overturn.

The slewing tower crane may overturn, resulting in severe injury and death.

► Use of the horizontal counterweight block weighing 8.0 t is only permitted when using the hoist winch Hw28110FU.





Data counterweight block 8.0 t, lying

Item	Data
Material	Concrete, min. C 20/25
Max. permitted weight tolerance	+/- 3 %
Order number	30043943
1	Component identifier
2	Structural steel reinforcement

8.1.4 Counterweight block, 6.2 t with edge protection

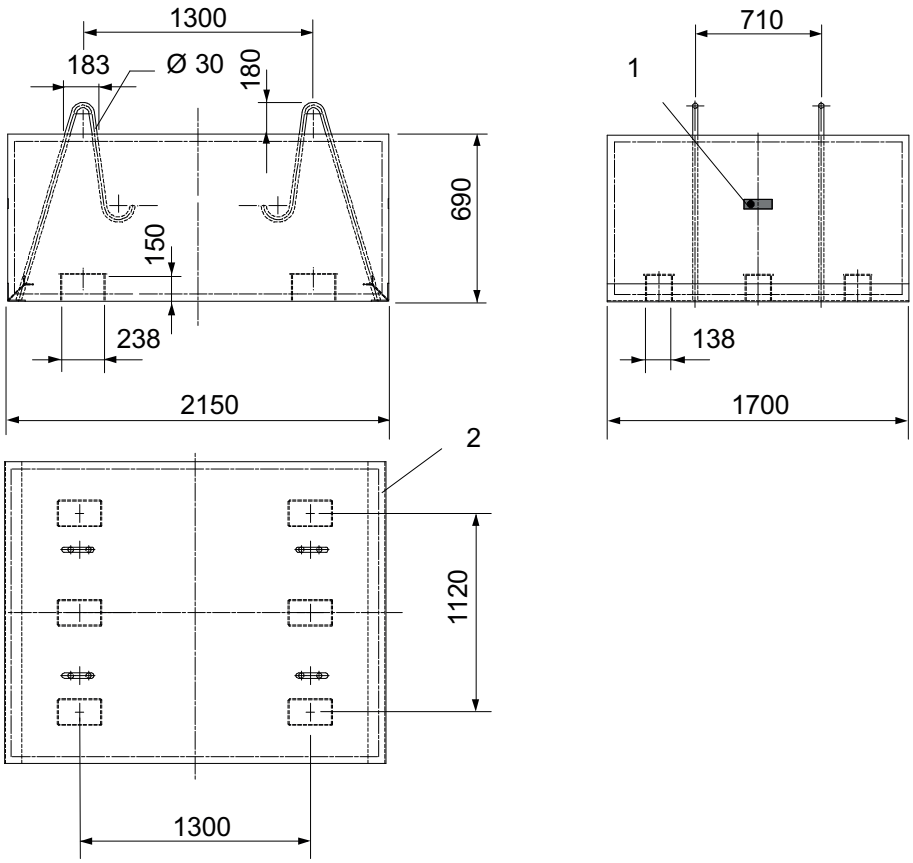
⚠ DANGER

Use of improper counterweight blocks may cause the slewing tower crane to overturn.

The slewing tower crane may overturn, resulting in severe injury and death.

► Use of the horizontal counterweight block weighing 6.2 t is only permitted when using the hoist winch Hw28132FU.

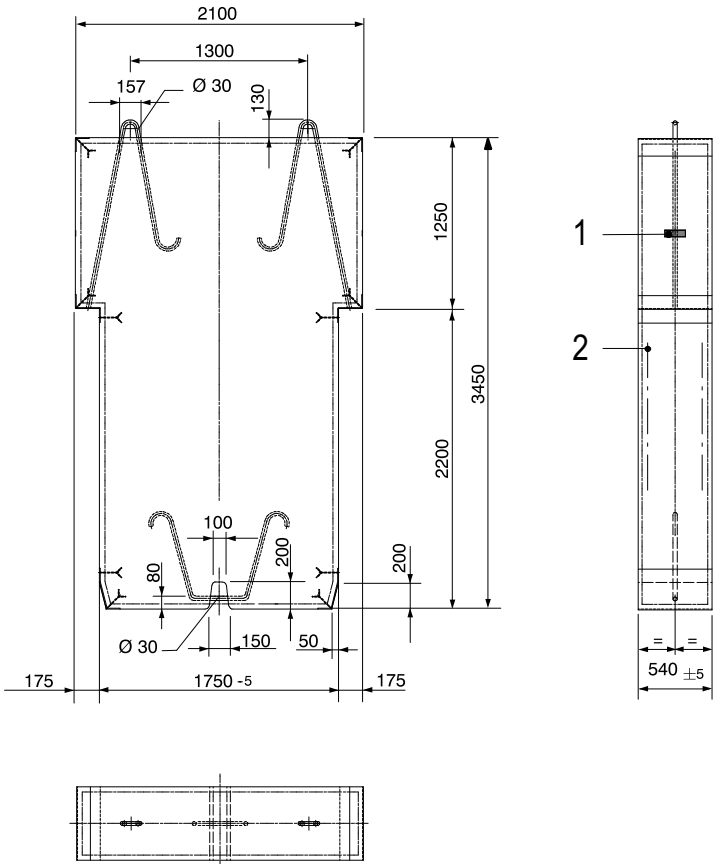
8 Assembly weights



Data counterweight block 6.2 t, lying

Item	Data
Material	Concrete, min. C 20/25
Max. permitted weight tolerance	+/- 3 %
Order number	30056178
1	Component identifier
2	Structural steel reinforcement

8.1.5 Counterweight block, 8.0 t with edge protection



Data counterweight block 8.0 t

Item	Data
Material	Concrete, min. C 20/25
Max. permitted weight tolerance	+/- 3 %
Order number	10033277
1	Component identifier
2	Structural steel reinforcement

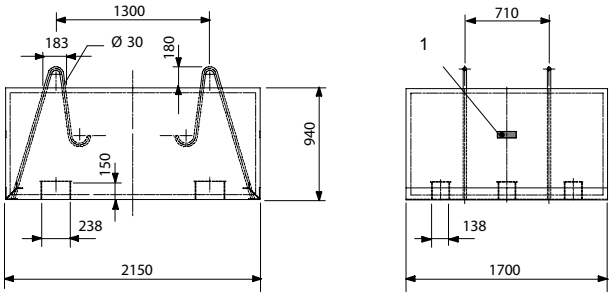
8.1.6 Counterweight block, 8.0 t with edge protection

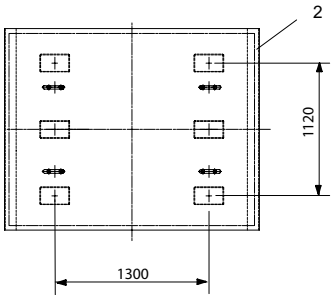
⚠ DANGER

Use of improper counterweight blocks may cause the slewing tower crane to overturn.

The slewing tower crane may overturn, resulting in severe injury and death.

► Use of the horizontal counterweight block weighing 8.0 t is only permitted when using the hoist winch Hw28110FU.





Data counterweight block 8.0 t, lying

Item	Data
Material	Concrete, min. C 20/25
Max. permitted weight tolerance	+/- 3 %
Order number	10033276
1	Component identifier
2	Structural steel reinforcement

8.2 Total weight jib assembly

Complete jib: mechanical parts, brace, supports, assembly brace ropes, assembly rope guides, hook block

Jib length [m]	Weight [kg] WOLFF 355 B
60.0	13330
55.0	12170
50.0	11270
45.0	10200
40.0	9300
35.0	8230
30.0	7070

8.3 Assembly weight slewing section

Module	Crane parts	Weight [kg]	
Tower head section upper part (including luffing gear, pulley block, struts, platforms, standard railings, compensor)			9800
Tower head section lower part			15300
Driver's cab			1340
Counterjib (including struts, platforms, standard railing, control cabinet, resistors, hoisting winch Hw28110FU, and hoisting rope (920 m))			13400
Counterjib (including struts, platforms, standard railing, control cabinet, resistors, hoisting winch Hw28132FU, hoisting rope (920 m), 2nd brake and rope swing-reduction device)			15531

8.4 Assembly weight cross frame

Module	Crane part	Weight [kg]	
Cross frame KR 1000-8 (without accessories)			14000
(8 m x 8 m)	▪ 4 x bolted spigots AZ 140 E 10	630	
	▪ 4 bolted spigots AZ 156 M	686	
Cross frame KR 16 - 80 (without accessories)			21450
(8m x 8m)	▪ 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	

8.5 Assembly weights traveling cross frame

Module	Crane parts	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	

8.6 Assembly weight cross frame elements

Module	Crane part	Weight [kg]	
Cross frame element KRE 260.2, complete			10 900
	▪ Mast base with diagonal struts and tie rods	5 445	
	▪ Cross frame platform with jibs, corner plates and transport locks	5 455	
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	

8.7 Assembly weight undercarriage

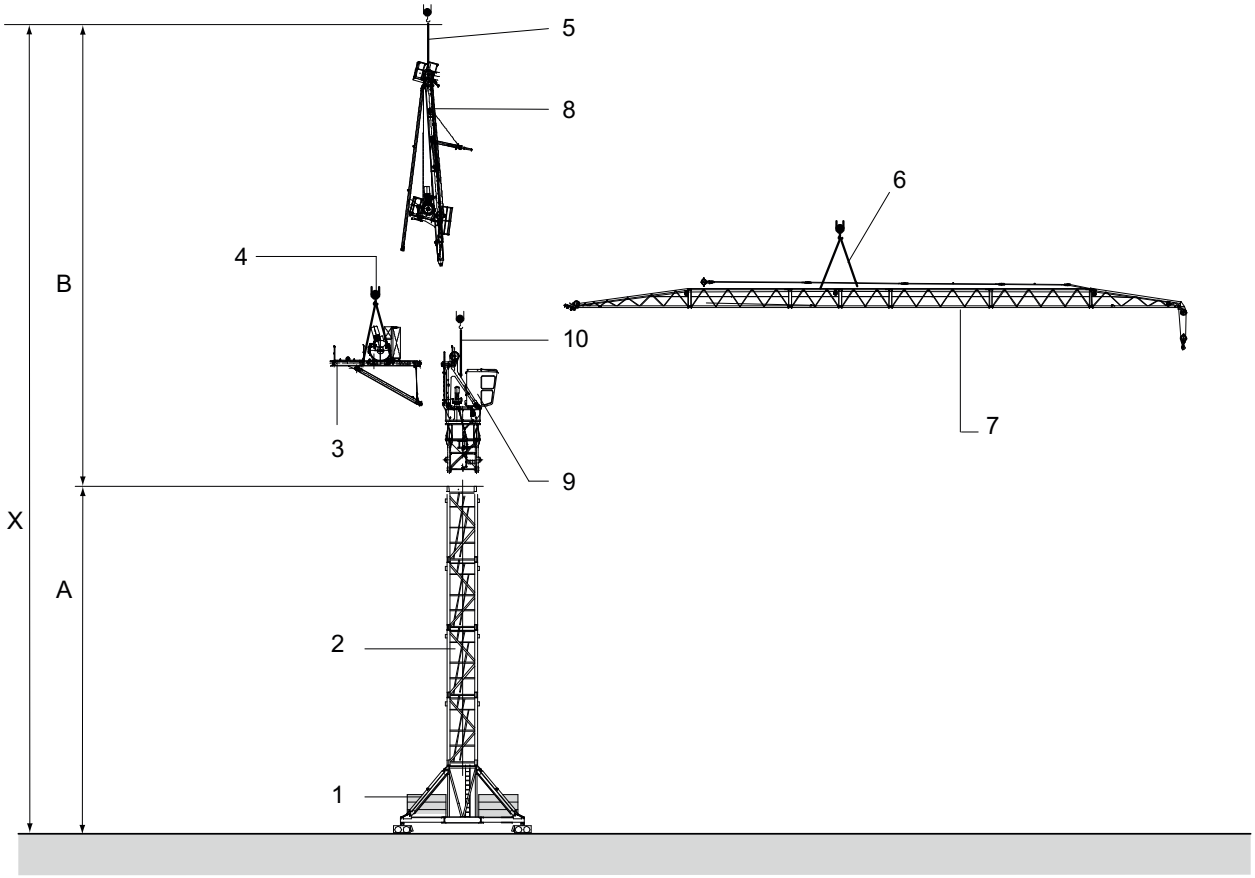
Module	Crane part	Weight [kg]	
Undercarriage UW 260.3, complete			17 100
	▪ Mast base with diagonal struts and tie rods	5 880	
	▪ Undercarriage platform with hinged sections, subframes and transport locks	11 220	
Undercarriage UW 480, complete			34 000
	▪ Mast base	7 100	
	▪ Hinged sections with mounting device and subframes	16 000	
	▪ Diagonal struts and ballast carrier	9 260	
	▪ Assembly platform, ladder, and small parts	1 640	

8.8 Required hook height for mobile cranes

For information about the height of the WOLFF slewing tower crane, refer to Tower combinations [17].

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 24 m (B).



Exemplary illustration

[A]	Height of the WOLFF slewing tower crane	[B]	Clearance 24 m
[X]	Hook height above ground required for the mobile crane		
1	Undercarriage	6	Two-point lifting tackle (6 m with shackle)
2	Tower element	7	Jib, complete
3	Counterjib, complete	8	Tower head section, complete
4	4-fall attachment (4 m with shackle)	9	Tower head section lower part
5	Single-point lifting tackle (2 m with shackle)	10	Two-point lifting tackle (4 m with shackle)

(see also):

- Tower combinations [17]

9 Assembly diagrams

9.1 Jib attachment diagram

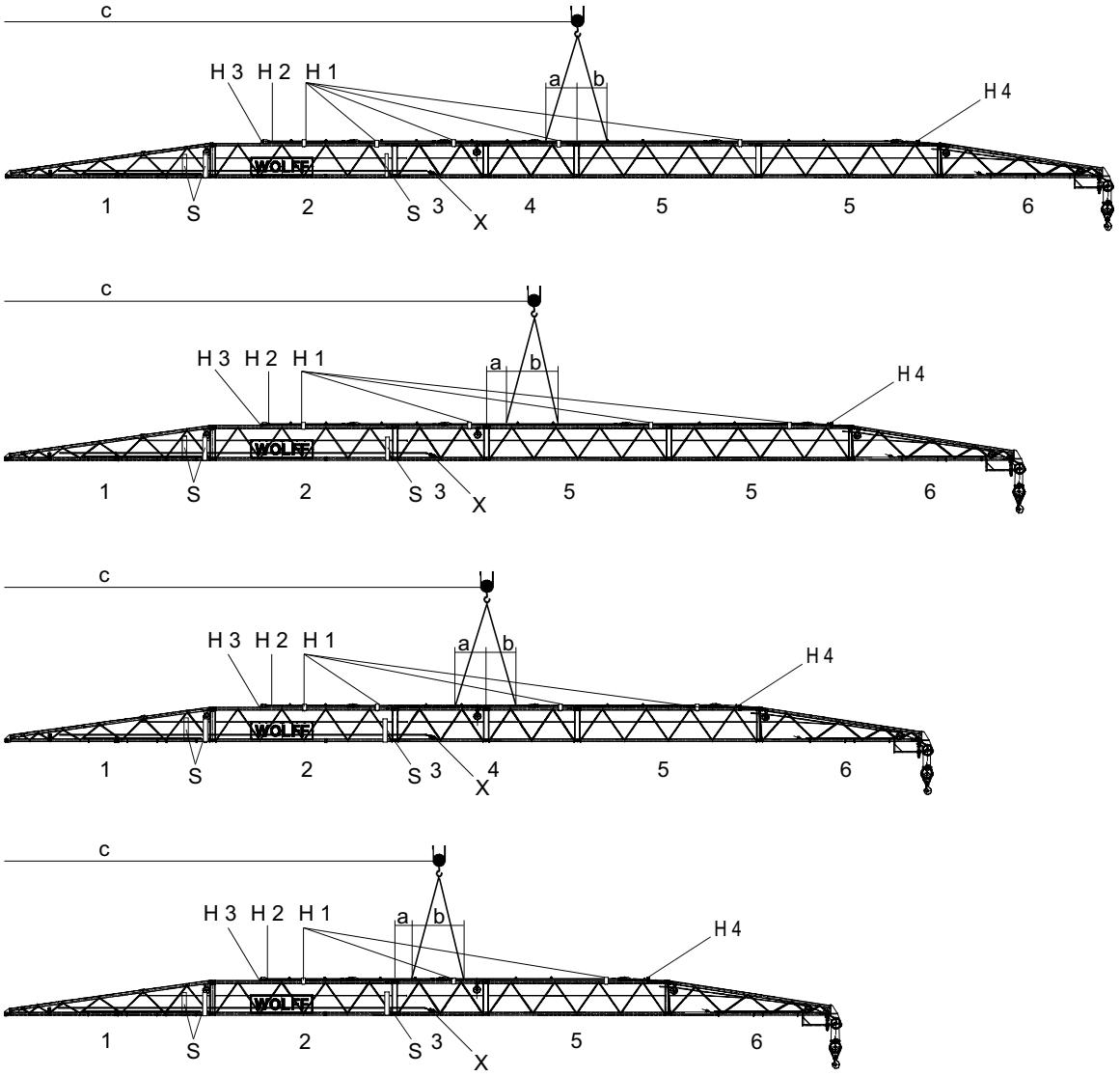
NOTICE

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

Length of jib elements

Item	Length [m]
Jib element 1	11.70
Jib element 2, 5	10.35
Jib element 3, 4	5.18
Jib element 6	9.54

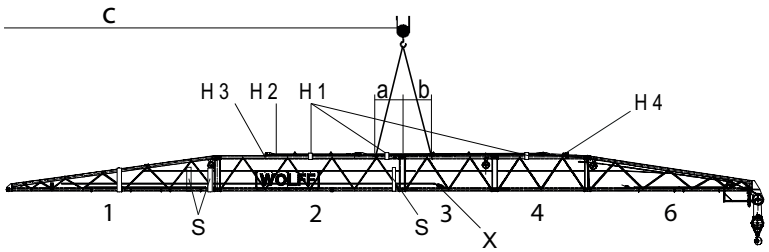
9.1.1 Jib attachment diagram 60 m to 45 m



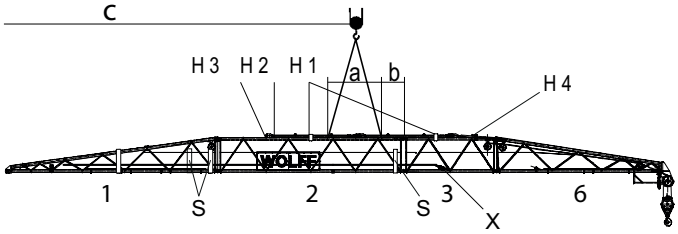
	Jib length [m]			
Data	**60**	**55**	**50**	**45**
a [m]	1.53	1.24	1.53	1.24
b [m]	1.53	2.70	1.53	2.70
c [m]	32.70	30.10	27.60	25.00
Weight [kg]	13330	12170	11270	10200

Caption			
H 1 – H 2	Support blocks for jib brace	S	Assembly rope guides at the bottom boom
H 3	Support block for pulley block	X	Fastening assembly brace ropes
H 4	Support block for brace rod 1		

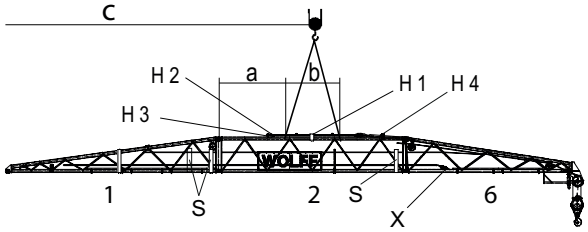
9.1.2 Jib attachment diagram 40 m to 30 m



40 m



35 m



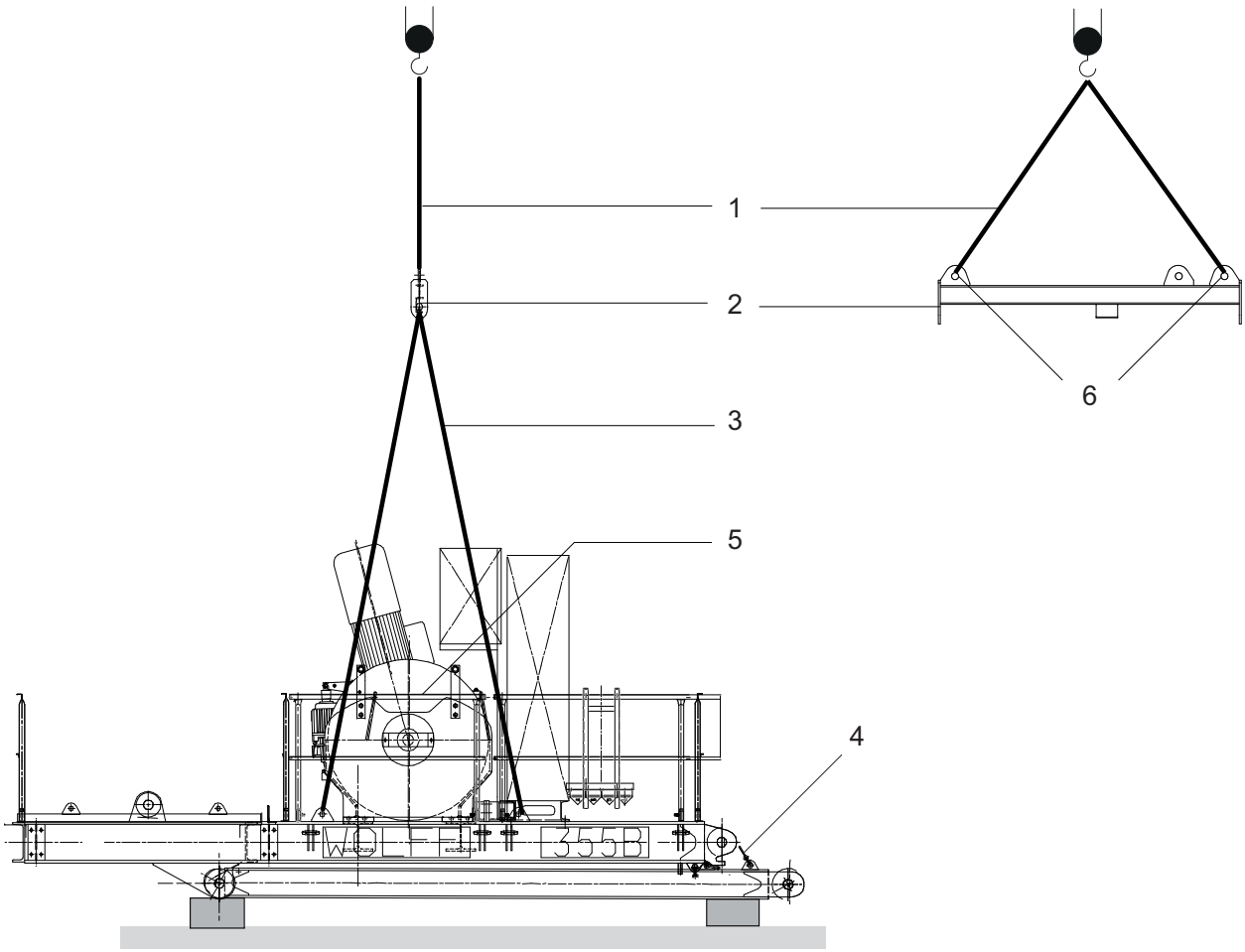
30 m

	Jib length [m]		
Data	**40**	**35**	**30**
a [m]	1.53	2.70	3.64
b [m]	1.53	1.24	2.70
c [m]	22.60	19.90	17.30
Weight [kg]	9300	8230	7070

Caption			
H 1 – H 2	Support blocks for jib brace	S	Assembly rope guides at the bottom boom
H 3	Support block for pulley block	X	Fastening assembly brace ropes
H 4	Support block for brace rod 1		

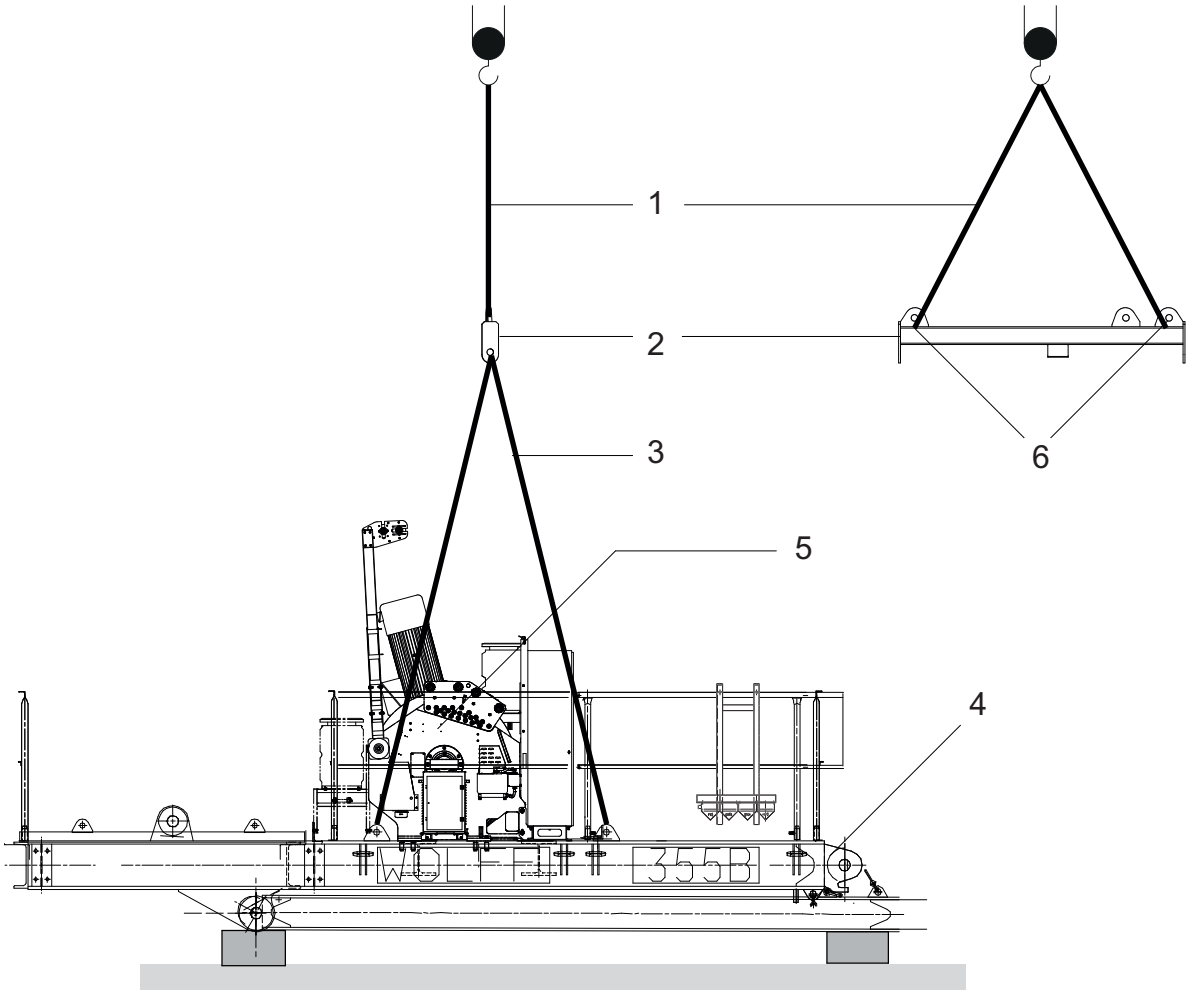
9.2 Counterjib lifting diagram

Counterjib with Hw28110FU



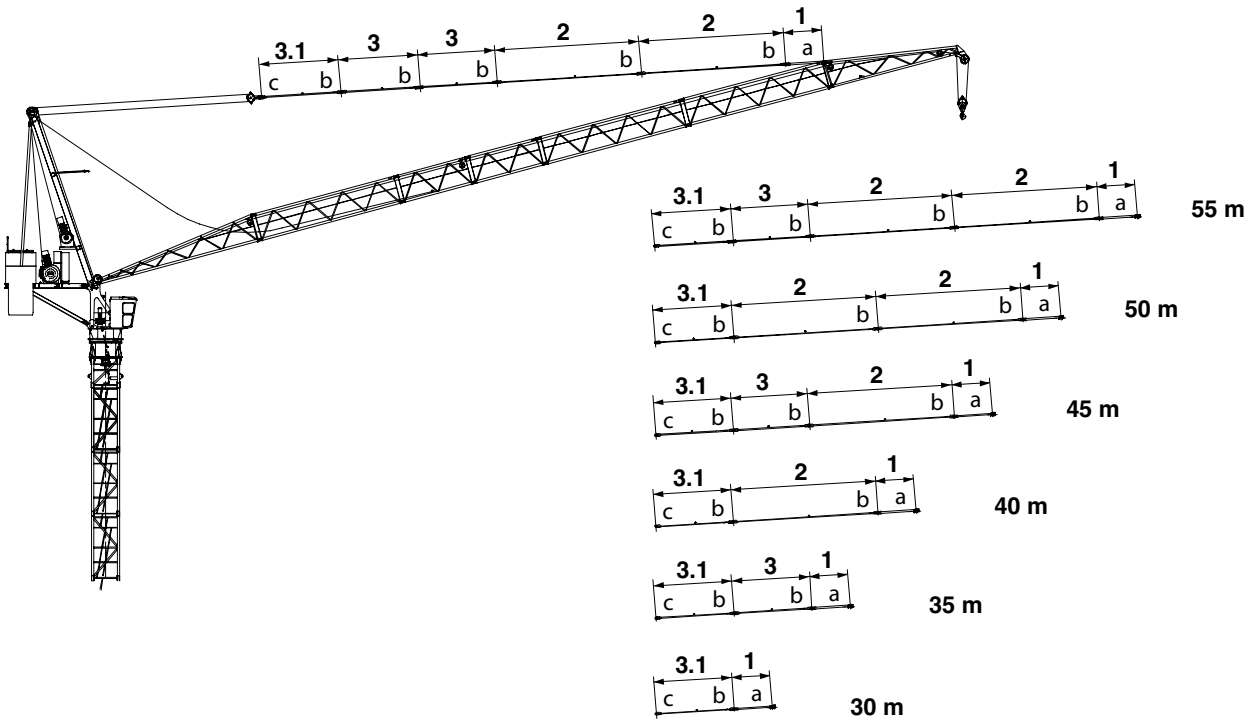
1	2-fall attachment	4	Counterjib
2	Mounting device	5	Hoist winch Hw28110FU
3	4 x attachment ropes (Ø 24 mm x 3 m) with shackles (D5650)	6	Lifting points of the mounting device

Counterjib with Hw28132FU



1	2-fall attachment	4	Counterjib
2	Mounting device	5	Hoist winch Hw28132FU
3	4 x attachment ropes (Ø 24 mm x 3 m) with shackles (D5650)	6	Lifting points of the mounting device

9.3 Jib brace diagram



Brace table

Jib length	Lengths [m]								Total weight [t]
	Pulley block	Brace 3.1	Brace 3	Brace 3	Brace 2	Brace 2	Brace 1	Total length	
Jib – 60 m	0.50	5.15	5.15	5.15	10.30	10.30	2.48	39.03	1.4
Jib – 55 m	0.50	5.15	5.15		10.30	10.30	2.48	33.88	1.2
Jib – 50 m	0.50	5.15			10.30	10.30	2.48	28.73	1.0
Jib – 45 m	0.50	5.15	5.15			10.30	2.48	23.58	0.9
Jib – 40 m	0.50	5.15				10.30	2.48	18.43	0.7
Jib – 35 m	0.50	5.15	5.15				2.48	13.28	0.5
Jib – 30 m	0.50	5.15					2.48	8.13	0.3

9 Assembly diagrams

Bolt table

Jib length	Brace	Bolts				Spring retainers	
			Quantity	Dimension [mm]	Item no.	Dimension [mm]	Item no.
Jib – 60 m	1	a	1	Ø 95/80x285	30044028	10/60-80, galvanized, yellow	10022204
	2	b	2	Ø 80/70x180	30044034	10/60-80, galvanized, yellow	10022204
	3	b	2	Ø 80/70x180	30044034	10/60-80, galvanized, yellow	10022204
	3.1	c	1	Ø 80/70x305	30044035	10/60-80, galvanized, yellow	10022204
Jib – 55 m	1	a	1	Ø 95/80x285	30044028	10/60-80, galvanized, yellow	10022204
	2	b	2	Ø 80/70x180	30044034	10/60-80, galvanized, yellow	10022204
	3	b	1	Ø 80/70x180	30044034	10/60-80, galvanized, yellow	10022204
	3.1	c	1	Ø 80/70x305	30044035	10/60-80, galvanized, yellow	10022204
Jib – 50 m	1	a	1	Ø 95/80x285	30044028	10/60-80, galvanized, yellow	10022204
	2	b	2	Ø 80/70x180	30044034	10/60-80, galvanized, yellow	10022204
	3.1	c	1	Ø 80/70x305	30044035	10/60-80, galvanized, yellow	10022204
Jib – 45 m	1	a	1	Ø 95/80x285	30044028	10/60-80, galvanized, yellow	10022204
	2	b	1	Ø 80/70x180	30044034	10/60-80, galvanized, yellow	10022204
	3	b	1	Ø 80/70x180	30044034	10/60-80, galvanized, yellow	10022204
	3.1	c	1	Ø 80/70x305	30044035	10/60-80, galvanized, yellow	10022204
Jib – 40 m	1	a	1	Ø 95/80x285	30044028	10/60-80, galvanized, yellow	10022204
	2	b	1	Ø 80/70x180	30044034	10/60-80, galvanized, yellow	10022204
	3.1	c	1	Ø 80/70x305	30044035	10/60-80, galvanized, yellow	10022204
Jib – 35 m	1	a	1	Ø 95/80x285	30044028	10/60-80, galvanized, yellow	10022204
	3	b	1	Ø 80/70x180	30044034	10/60-80, galvanized, yellow	10022204
	3.1	c	1	Ø 80/70x305	30044035	10/60-80, galvanized, yellow	10022204
Jib – 30 m	1	a	1	Ø 95/80x285	30044028	10/60-80, galvanized, yellow	10022204

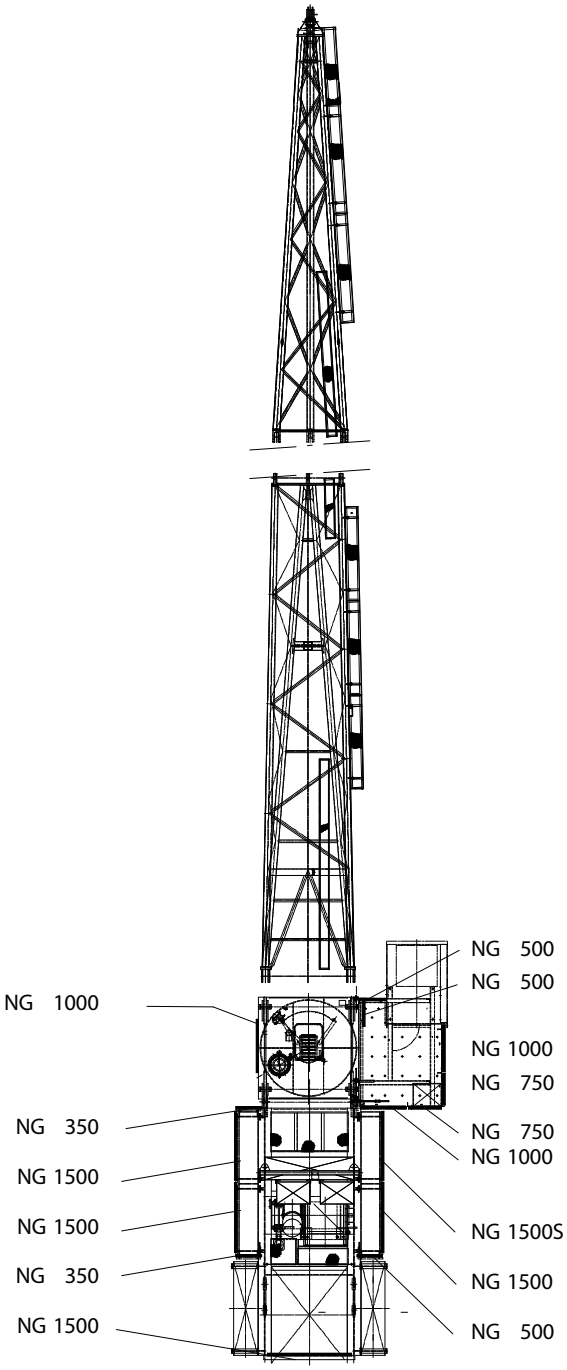
Jib length	Brace	Bolts				Spring retainers	
			Quantity	Dimension [mm]	Item no.	Dimension [mm]	Item no.
Jib – 30 m	3.1	c	1	Ø 80/70x305	30044035	10/60-80, galvanized, yellow	10022204

9.4 Arrangement of standard railings

9.4.1 Standard railings (NG) and accessories

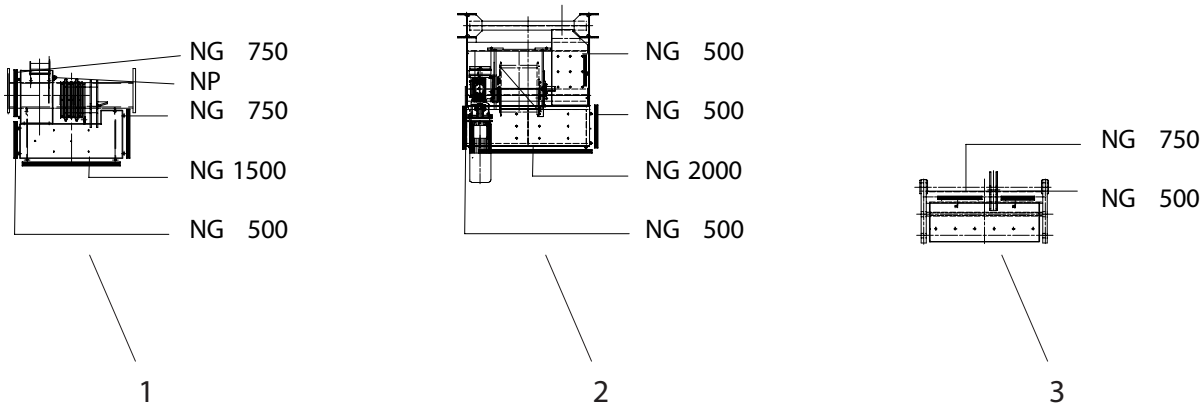
Quantity *	Standard railings (NG)
1	Standard post (NP)
2	Standard railing 350
8	Standard railing 500
5	Standard railing 750
3	Standard railing 1000
5	Standard railing 1500
1	Standard railing 1500-S
1	Standard railing 2000

9.4.2 Arrangement of standard railings



Arrangement of standard railings

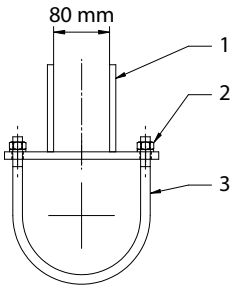
9 Assembly diagrams



Arrangement of standard railings tower head section, luffing gear, connection block

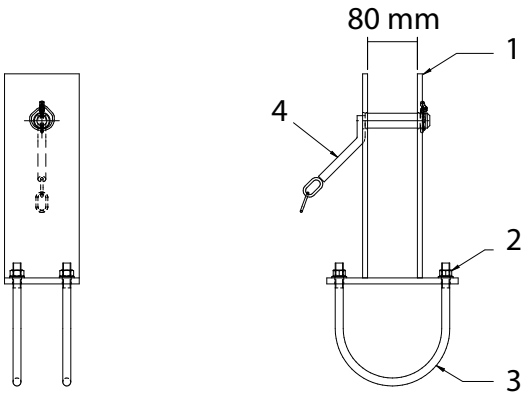
1	Tower head section	3	Connecting block
2	luffing gear		

9.5 Support blocks for brace



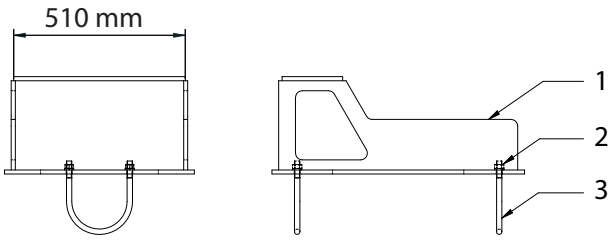
Support block H 1 for jib brace

1	Support block	3	Bracket
2	Nut and washer		



Support block H 2 for jib brace

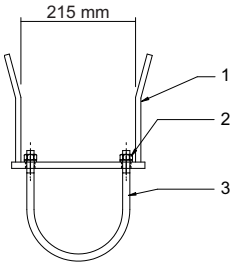
1	Support block	3	Bracket
2	Nut and washer	4	Bolts with handle



Support block H 3 for pulley block

1	Support block	3	Bracket
2	Nut and washer		

9 Assembly diagrams



Support block H 4 for brace rod 1

1	Support block	3	Bracket
2	Nut and washer		

10 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

For jib lengths 30 m to 50 m, the data applies to the 2-fall snatch block with the hook at the height of the lower edge of the tower head section lower part (hook height = tower height).
For jib lengths 55 m to 60 m, the data applies to the 1-fall snatch block with the hook at the height of the lower edge of the tower head section lower part (hook height = tower height).

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

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

10.1 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.

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

Climbing radius [m] for the balancing weights

	Jib length [m]						
355 B	**60**	**55**	**50**	**45**	**40**	**35**	**30**
no weight	34.2	37.0	38.5	41.9	-	-	-
TV 20 = 2.98 t	-	-	-	-	28.8	30.5	-
Weight = 5.0 t	-	-	-	-	22.9	24.1	25.4

10.1.2 Outer climbing device KWH 23 / KWH 23.1

Climbing radius [m] for the balancing weights

	Jib length [m]						
355 B	**60**	**55**	**50**	**45**	**40**	**35**	**30**
no weight	29.8	32.3	33.8	36.8	-	-	-
HT 23 = 3.94 t	18.6	19.7	20.3	21.4	22.3	23.6	25.1
Weight = 5.0 t	-	-	-	-	19.8	21.0	22.2

10.2 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.

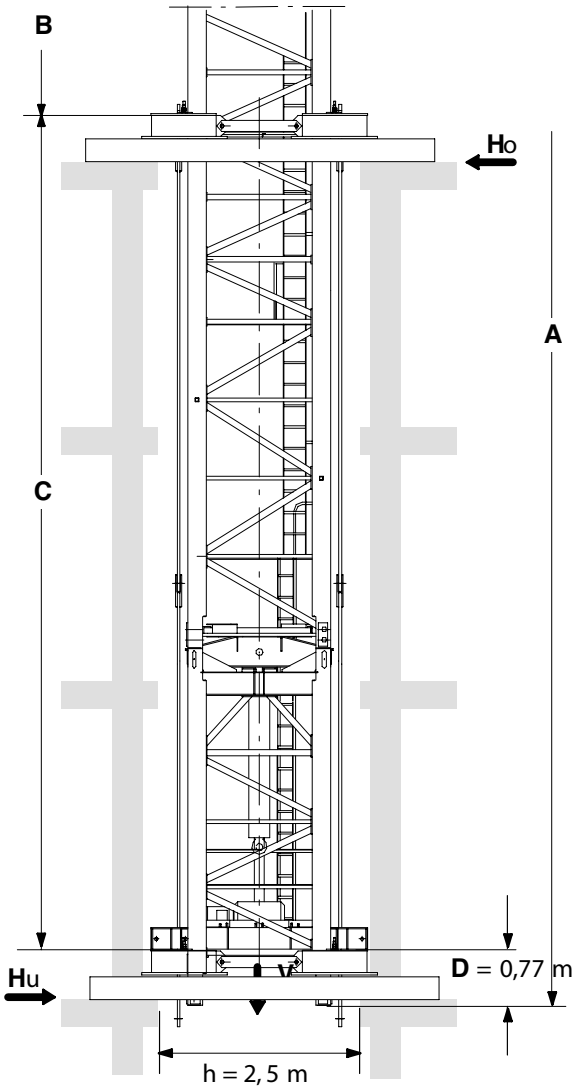
10.2.1 Inner climbing device KSH 20 SH

Tower combinations for slewing tower cranes with inner climbing device.

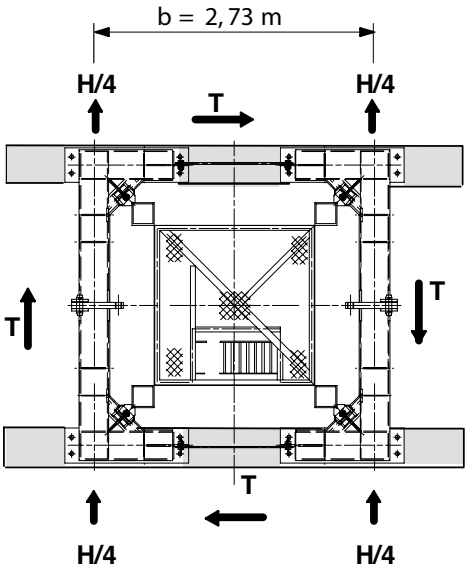
Item	Jib length 30 m - 60 m			
1	TV 20	TV 20		
2	TV 20	TV 20		
3	TV 20	TV 20		
4	TV 20	TV 20		
5	TV 20	TV 20		
6	TV 20			
inner climbing device	KSH 20 SH	KSH 20 SH		
Foundation anchors	FUA TYPE FS-156 / FUA 156S	FUA TYPE FS-156 / FUA 156S		
Tower height [m]	42.0	37.5		

Climbing radius [m] for the balancing weights

	Jib length [m]						
355 B	60	55	50	45	40	35	30
no weight	53.2	-	-	-	-	-	-
TV 20.4 = 2.98 t	38.0	39.9	41.0	43.2	-	-	-
Weight = 5.0 t	-	-	-	35.1	36.1	-	-
Weight = 7.5 t	-	-	-	-	29.3	30.4	-
Weight = 10.0 t	-	-	-	-	-	25.3	26.1



$$C_{min} = 11{,}0\ m$$
$$C_{max} = 14{,}0\ m$$
$$Ho = \frac{M}{C} + H$$
$$Hu = Ho - H$$
$$T = \frac{M_D}{2 \times b}$$



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

10 Suitable climbing devices

In service clamping forces

In service clamping forces [kN] inside a building								
A [m]	42.0				37.5			
C [m]	11	12	13	14	11	12	13	14
V	1519				1490			
Ho	550	510	470	440	530	490	450	420
Hu	500	460	420	390	480	440	400	370
T	60				60			

Out of service clamping forces

Out of service clamping forces [kN] inside a building								
A [m]	42.0				37.5			
C [m]	11	12	13	14	11	12	13	14
V	1364				1335			
Ho	930	860	790	730	810	750	690	640
Hu	650	570	500	450	540	470	420	370
T	0				0			

10.2.2 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.

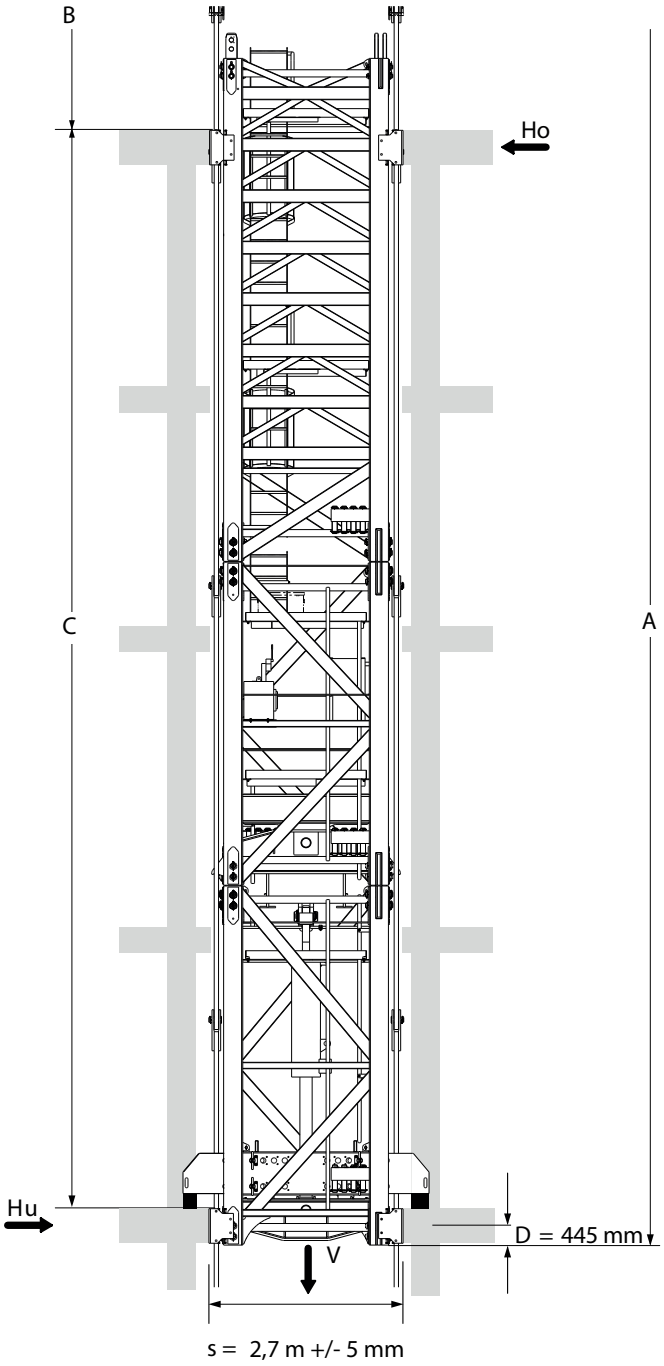
Tower combinations for slewing tower cranes with inner climbing device.

Item	Jib length 30 m - 60 m			
1	HT 23	HT 23	HT 23	
2	HT 23	HT 23	HT 23	
3	HT 23	HT 23	HT 23	
4	HT 23	HT 23	HT 23	
5	HT 23	HT 23	HT 23	
6	HT 23	HT 23	HT 23	
7	HT 23	HT 23	HT 23	
8	HT 23	HT 23		
9	HT 23			
inner climbing device	KSH 23 / KSH E 23	KSH 23 / KSH E 23	KSH 23 / KSH E 23	
Foundation anchors	FUA 210 G	FUA 210 G	FUA 210 G	
Tower height [m]	57.0	52.5	48.0	

Climbing radius [m] for the balancing weights

	Jib length [m]						
355 B	60	55	50	45	40	35	30
no weight	53.2	-	-	-	-	-	-
HT 23 = 3.94 t	34.6	36.2	37.1	38.9	-	-	-
Weight = 5.0 t	-	-	-	35.1	36.1	-	-
Weight = 7.5 t	-	-	-	-	29.3	30.4	-
Weight = 10.0 t	-	-	-	-	-	25.3	26.1

10 Suitable climbing devices

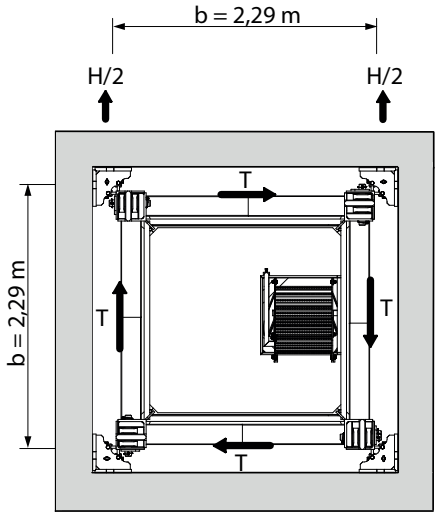


C_{min} = 12,0 m
C_{max} = 15,5 m

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

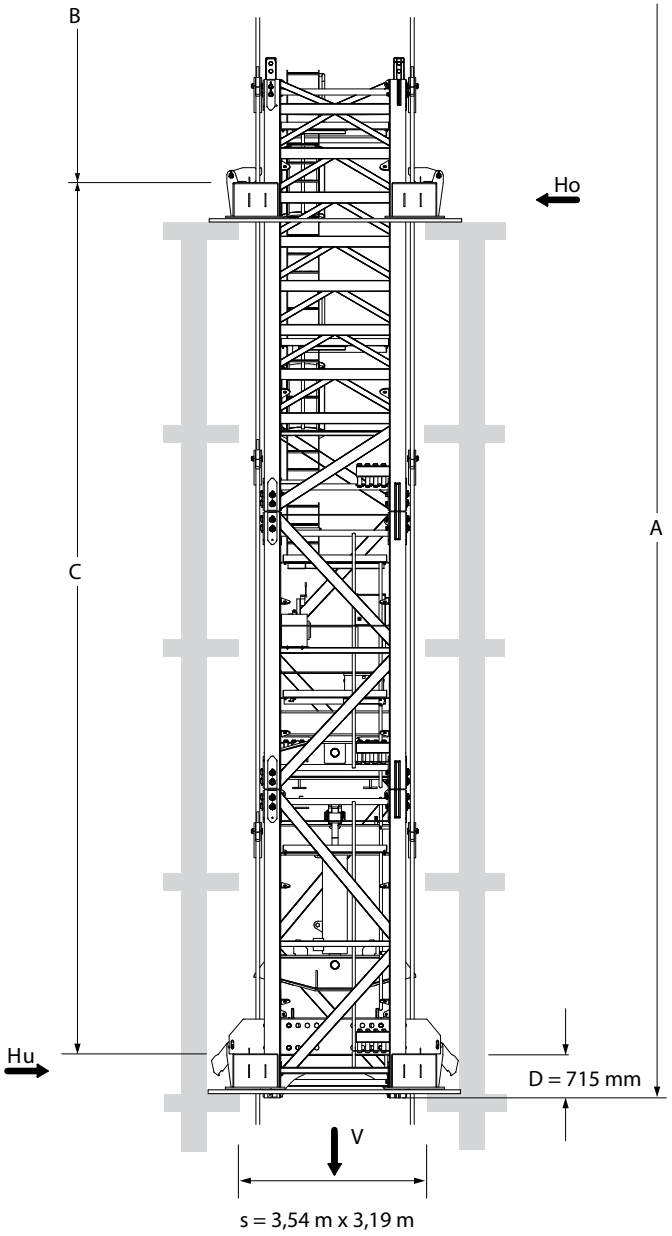
$Hu = Ho - H$

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



KSH E 23

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

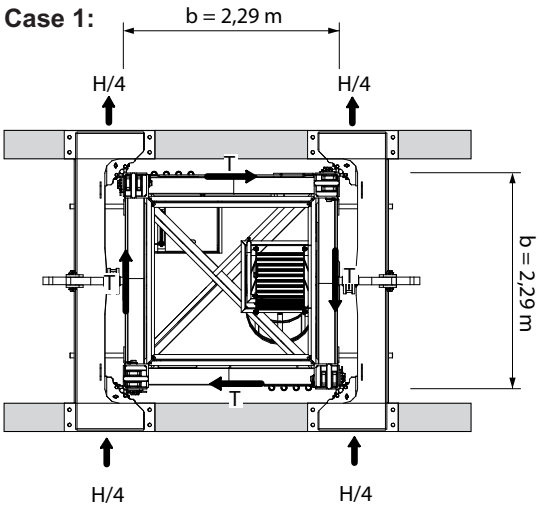


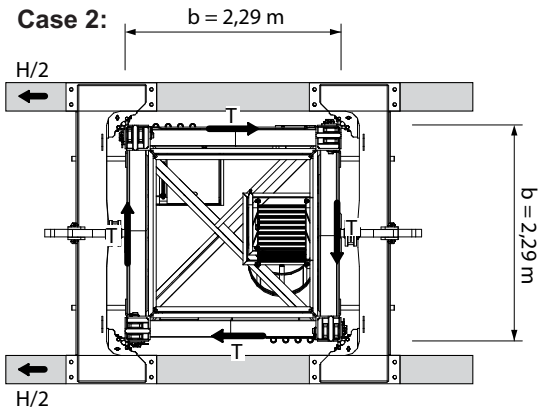
C_{min} = 12,0 m
C_{max} = 15,5 m

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

$Hu = Ho - H$

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





KSH 23

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

10 Suitable climbing devices

In service clamping forces

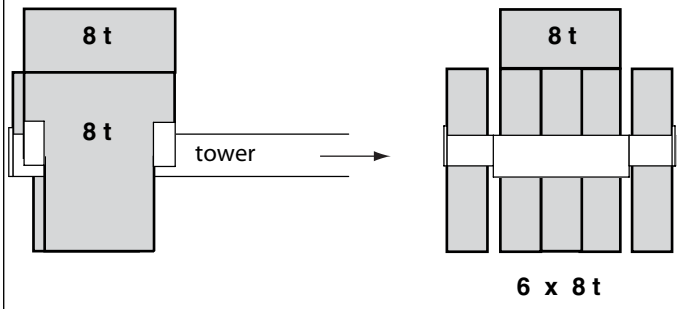
In service clamping forces [kN] inside a building															
A (m)	57.0					52.5					48.0				
C (m)	12.0	13.0	14.0	15.0	15.5	12.0	13.0	14.0	15.0	15.5	12.0	13.0	14.0	15.0	15.5
V (kN)	2044					2004					1965				
Ho (kN)	590	550	510	470	460	560	520	480	450	440	540	500	460	430	420
Hu (kN)	530	480	440	410	390	500	460	420	390	370	480	440	400	370	360
T (kN)	75					75					75				

Out of service clamping forces

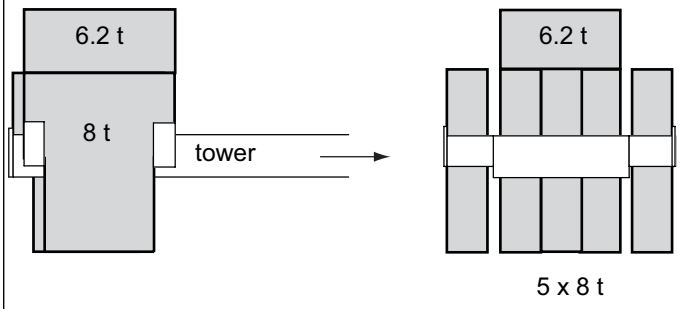
Out of service clamping forces [kN] inside a building															
A (m)	57.0					52.5					48.0				
C (m)	12.0	13.0	14.0	15.0	15.5	12.0	13.0	14.0	15.0	15.5	12.0	13.0	14.0	15.0	15.5
V (kN)	1757					1718					1678				
Ho (kN)	1280	1190	1100	1030	1000	1150	1060	990	920	890	1020	940	880	820	790
Hu (kN)	930	830	740	670	640	810	720	640	580	550	700	620	550	490	470
T (kN)	-					-					-				

11 Arrangement of counterweight blocks

Arrangement of counterweight blocks Hw28110FU

Jib length [m]	60.0	55.0	50.0	45.0	40.0	35.0	30.0
Total weight 48 t							
					5 x	8 tons suspended concrete weight	
					1 x	8 tons lying concrete weight	

Arrangement of counterweight blocks Hw28132FU

Jib length [m]	60.0	55.0	50.0	45.0	40.0	35.0	30.0
Total weight 46.2 t							
					5 x	8 tons suspended concrete weight	
					1 x	6.2 tons lying concrete weight	

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