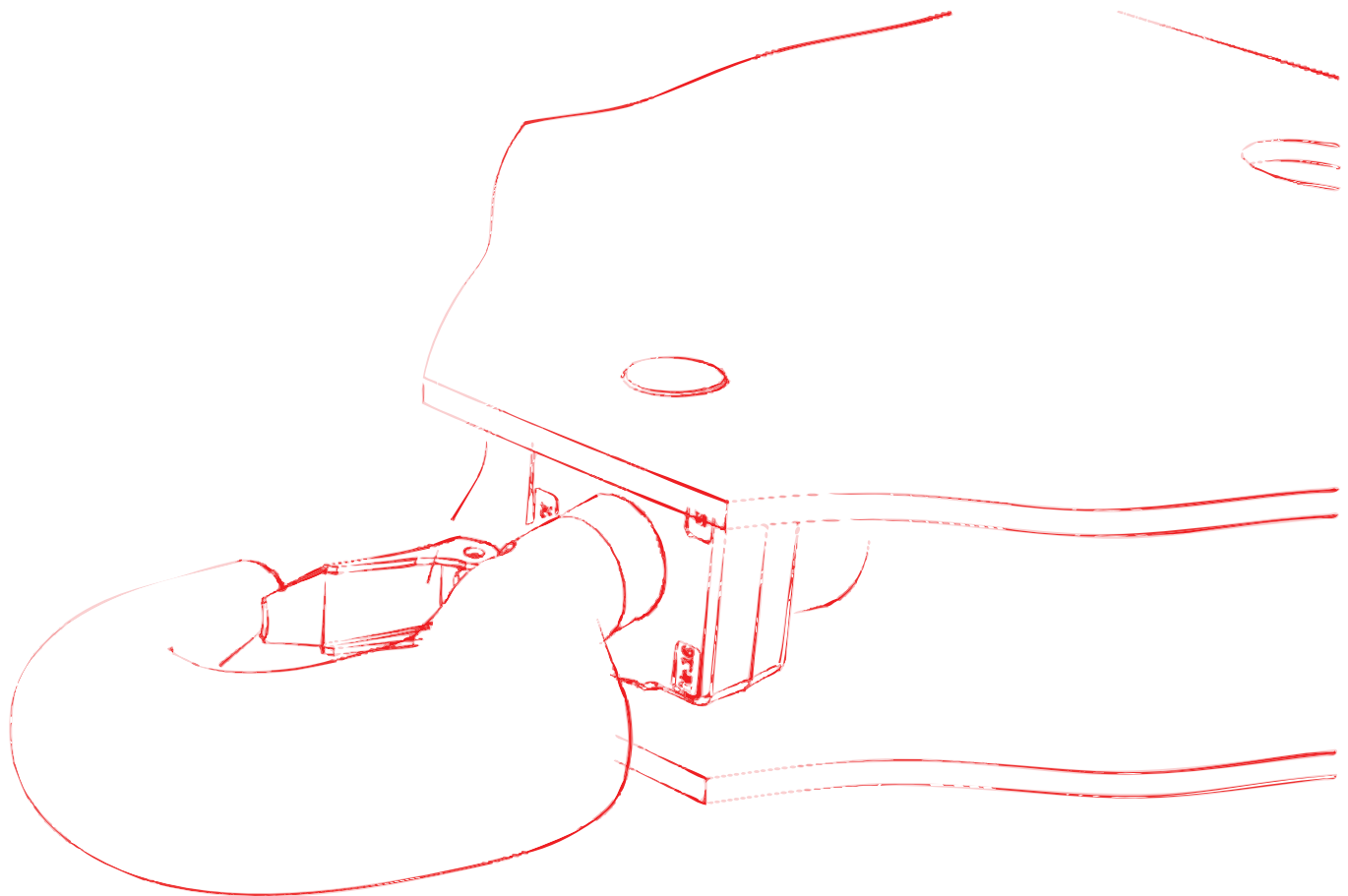


Slewing tower crane

WOLFF 6531.8 cross

Technical information



English

English



*Published by*

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Stand: 03/2017

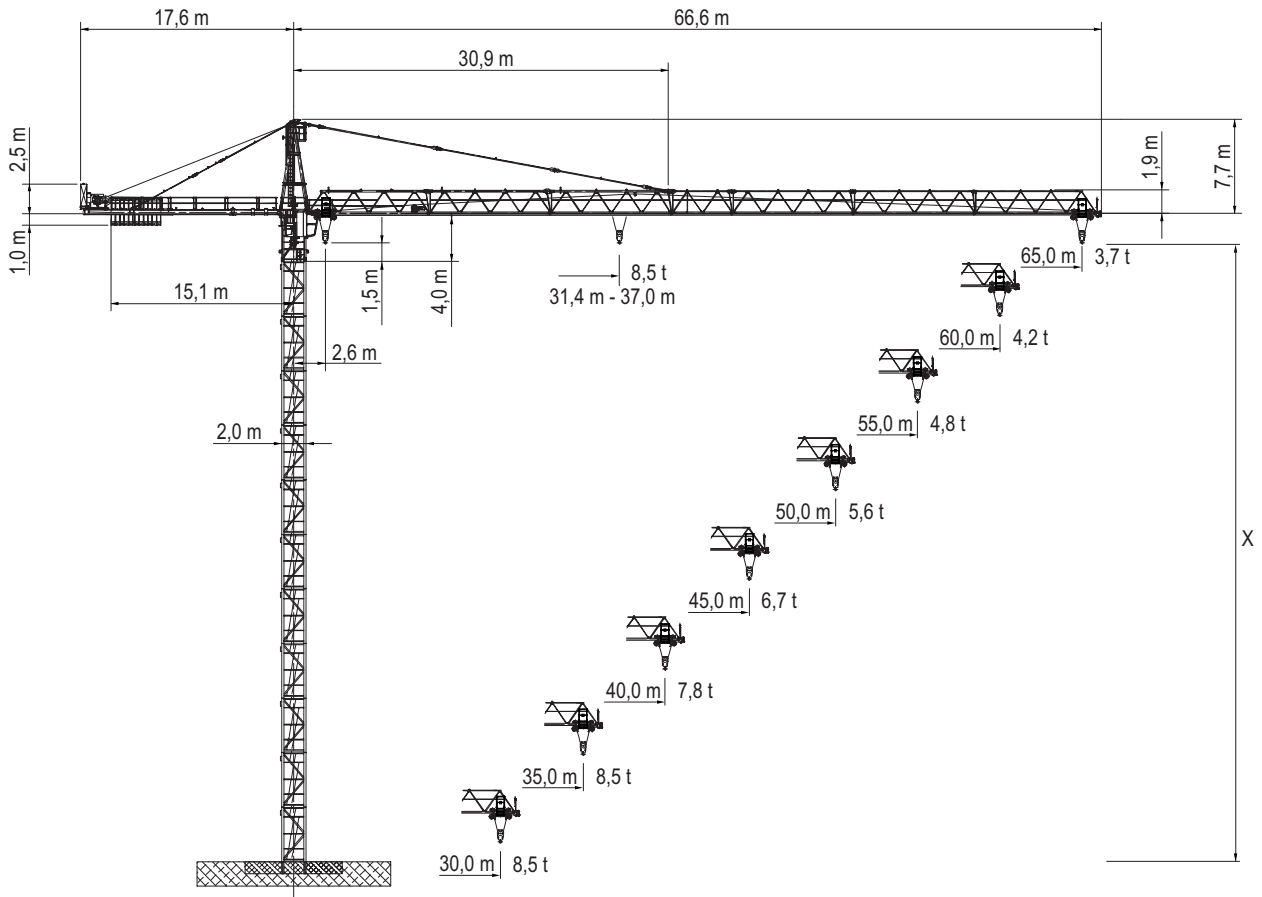
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## 1 Schedule drawing

### 1.1 Schedule drawing WOLFF 6531.8cross




#### Data WOLFF 6531.8

Item	Data
Crane type	BGL GROUP C.0.10.0250
Design	Overhead travelling crane with top slewing trolley jib, with climbing feature
Type of setup	Stationary or travelling
Basis of calculation	EN 14439 (C25)
Payload torque	max. 3150 kNm
Hoist winch	Hw 845 FU

## 2 Load carrying capacities

## 2 Load carrying capacities

	<b>NOTICE</b>
	<p>WOLFF-Boost</p> <p>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 alternately.</p>

### 2.1 Table of load carrying capacity WOLFF 6531.8 (8.5 t, 2 fall operation)

8.5 t		Operating radius [m]	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	
JL [m]	65.0	2.6 – 31.4	8.5	8.5	8.5	7.5	6.5	5.7	5.0	4.5	4.1	3.7	LCC [t]
	60.0	2.6 – 32.2	8.5	8.5	8.5	7.8	6.7	5.9	5.2	4.7	4.2		
	55.0	2.6 – 33.1	8.5	8.5	8.5	8.0	6.9	6.0	5.4	4.8			
	50.0	2.6 – 34.4	8.5	8.5	8.5	8.3	7.2	6.3	5.6				
	45.0	2.6 – 36.3	8.5	8.5	8.5	8.5	7.6	6.7					
	40.0	2.6 – 37.0	8.5	8.5	8.5	8.5	7.8						
	35.0	2.6 – 35.0	8.5	8.5	8.5	8.5							
	30.0	2.6 – 30.0	8.5	8.5	8.5								

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 = 2.5 kg per meter of the hook range).




## 2 Load carrying capacities

### 2.2 Table of load carrying capacities (kg) in meter intervals, WOLFF 6531.8 (8.5 t, 2 fall operation)

Operating radius [m]	Jib length [m]							
	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0
10	8500	8500	8500	8500	8500	8500	8500	8500
11	8500	8500	8500	8500	8500	8500	8500	8500
12	8500	8500	8500	8500	8500	8500	8500	8500
13	8500	8500	8500	8500	8500	8500	8500	8500
14	8500	8500	8500	8500	8500	8500	8500	8500
15	8500	8500	8500	8500	8500	8500	8500	8500
16	8500	8500	8500	8500	8500	8500	8500	8500
17	8500	8500	8500	8500	8500	8500	8500	8500
18	8500	8500	8500	8500	8500	8500	8500	8500
19	8500	8500	8500	8500	8500	8500	8500	8500
20	8500	8500	8500	8500	8500	8500	8500	8500
21	8500	8500	8500	8500	8500	8500	8500	8500
22	8500	8500	8500	8500	8500	8500	8500	8500
23	8500	8500	8500	8500	8500	8500	8500	8500
24	8500	8500	8500	8500	8500	8500	8500	8500
25	8500	8500	8500	8500	8500	8500	8500	8500
26	8500	8500	8500	8500	8500	8500	8500	8500
27	8500	8500	8500	8500	8500	8500	8500	8500
28	8500	8500	8500	8500	8500	8500	8500	8500
29	8500	8500	8500	8500	8500	8500	8500	8500
30	8500	8500	8500	8500	8500	8500	8500	8500
31		8500	8500	8500	8500	8500	8500	8500
32		8500	8500	8500	8500	8500	8500	8320
33		8500	8500	8500	8500	8500	8270	8040
34		8500	8500	8500	8500	8250	8010	7780
35		8500	8500	8500	8330	7990	7760	7540
36			8500	8500	8080	7750	7520	7310
37			8500	8320	7840	7510	7300	7090
38			8250	8080	7610	7300	7080	6880
39			8020	7850	7400	7090	6880	6690
40			7800	7640	7200	6890	6690	6500
41				7430	7000	6710	6510	6320
42				7230	6820	6530	6330	6150
43				7050	6640	6360	6170	5990
44				6870	6470	6200	6010	5840
45				6700	6310	6040	5860	5690
46					6150	5890	5720	5550
47					6010	5750	5580	5420
48					5870	5610	5450	5290
49					5730	5480	5320	5160
50					5600	5360	5200	5040
51						5240	5080	4930
52						5120	4970	4820
53						5010	4860	4710
54						4900	4750	4610
55						4800	4650	4510
56							4560	4420
57							4460	4330
58							4370	4240
59							4280	4160
60							4200	4070
61								3990
62								3920
63								3840
64								3770
65								3700



## 3 Tower combinations

	<p style="text-align: center;"><b>! DANGER</b></p> <p>Usage of incorrect tower combinations. The slewing tower crane may overturn.</p> <ol style="list-style-type: none"><li>1) Use the specified tower combinations.</li><li>2) If you need another tower combination that is not specified here, please contact WOLFFKRAN to get an approved alternative setup in writing.</li></ol>
	<p style="text-align: center;"><b>NOTICE</b></p> <p>All tower combinations apply to free standing slewing tower cranes without climbing gear.</p>
	<p style="text-align: center;"><b>NOTICE</b></p> <p>For tower combination with tower element TV 25 and UV 25 please contact WOLFFKRAN.</p>

## 3 Tower combinations

### 3.1 Tower combinations on foundation (slewing section with UV20/TV20 - connection)

Jib length	30 m – 65 m				
Item					
1	4.5 m	UV 20.4	TV 20.4	UV 20.4	
2	9.0 m	UV 20.4	TV 20.4	UV 20.4	
3	13.5 m	UV 20.4	TV 20.4	UV 20.4	
4	18.0 m	UV 20.4	TV 20.4	UV 20.4	
5	22.5 m	UV 20.4	TV 20.4	UV 20.4	
6	27.0 m	UV 20.4	TV 20.4	UV 20.4	
7	31.5 m	UV 20.4	TV 20.4	UV 20.4	
8	36.0 m	UV 20.4	TV 20.4	UV 20.4	
9	40.5 m	UV 20.4	TV 20.4	TVA 20.4	
10	45.0 m	UV 20.4	TV 20.4	TV 20.4	
11	49.5 m		TV 20.4	TV 20.4	
12	54.0 m		TV 20.4	TV 20.4	
13	58.5 m		TV 20.4	TV 20.4	
14	63.0 m		TV 20.4	TV 20.4	
15	67.5 m			TV 20.4	
Foundation anchors		FUA 120 / Type C-120	FUA 140 / Type D-140	FUA 140 / Type D-140	
Tower height [m]		45.0	63.0	67.5	
Hook height double reeving [m]		46.5	64.5	69.0	
Wind category		C25			

Jib length	30 m – 65 m			
Item				
1	4.5 m	UV 20.4		
2	9.0 m	UV 20.4		
3	13.5 m	UV 20.4		
4	18.0 m	UV 20.4		
5	22.5 m	UV 20.4		
6	27.0 m	UV 20.4		
7	31.5 m	UV 20.4		
8	36.0 m	UV 20.4		
9	40.5 m	TVA 20.4		
10	45.0 m	TV 20.4		
11	49.5 m	TV 20.4		
12	54.0 m	TV 20.4		
13	58.5 m	TV 20.4		
14	59.5 m	VR 2023		
15	64.0 m	TV 23		
16	68.5 m	HTA 23		
17	73.0 m	HT 23		
18	77.5 m	HT 23		
Foundation anchors		FUA G 160		
Tower height [m]		77.5		
Hook height double reeving [m]		79.0		
Wind category	C25			



Jib length	30 m – 65 m			
Item				
1	4.5 m	UV 20.4		
2	9.0 m	UV 20.4		
3	13.5 m	UV 20.4		
4	18.0 m	UV 20.4		
5	22.5 m	UV 20.4		
6	27.0 m	UV 20.4		
7	31.5 m	UV 20.4		
8	36.0 m	UV 20.4		
9	40.5 m	TVA 20.4		
10	45.0 m	TV 20.4		
11	49.5 m	TV 20.4		
12	54.0 m	TV 20.4		
13	55.0 m	VR 2023		
14	59.5 m	TV 23		
15	64.0 m	HTA 23		
16	68.5 m	HT 23		
17	73.0 m	HT 23		
18	77.5 m	HT 23		
19	78.7 m	VR 23/25-29		
20	83.2 m	UV 29		
21	93.2 m	BT 29		
Foundation anchors		FUA BT 29		
Tower height [m]		93.2		
Hook height double reeving [m]		94.7		
Wind category	C25			

## 3 Tower combinations

### 3.2 Tower combinations on cross frame (slewing section with UV20/TV20 - connection)

Jib length	30 m – 65 m				
Item					
1	4.5 m	UV 20.4	UV 20.4	UV 20.4	
2	9.0 m	UV 20.4	UV 20.4	UV 20.4	
3	13.5 m	UV 20.4	UV 20.4	UV 20.4	
4	18.0 m	UV 20.4	UV 20.4	UV 20.4	
5	22.5 m	UV 20.4	UV 20.4	UV 20.4	
6	27.0 m	UV 20.4	UV 20.4	UV 20.4	
7	31.5 m	UV 20.4	UV 20.4	UV 20.4	
8	36.0 m	UV 20.4	UV 20.4	UV 20.4	
9	40.5 m	UV 20.4	TVA 20.4	UV 20.4	
10	45.0 m	TVA 20.4	TV 20.4	TVA 20.4	
11	49.5 m	TV 20.4	TV 20.4	TV 20.4	
12	54.0 m	TV 20.4	TV 20.4	TV 20.4	
13	58.5 m		TV 20.4	TV 20.4	
14	63.0 m		TV 20.4	TV 20.4	
15	67.5 m		TV 20.4		
Substructure		KR 10-46 KR10-46/60	KRV 10-60	KRV 10-60	
Corner distance [m x m]		4.6 x 4.6 6.0 x 6.0	5.0 x 5.0	6.0 x 6.0	
Substructure height [m]		1.2	1.2	1.2	
Tower height [m]		55.2	68.7	64.2	
Hook height double reeving [m]		56.7	70.2	65.7	
Wind category		C25			

Jib length	30 m – 65 m			
Item				
1	4.5 m	UV 20.4		
2	9.0 m	UV 20.4		
3	13.5 m	UV 20.4		
4	18.0 m	UV 20.4		
5	22.5 m	UV 20.4		
6	27.0 m	UV 20.4		
7	31.5 m	UV 20.4		
8	36.0 m	UV 20.4		
9	40.5 m	TVA 20.4		
10	45.0 m	TV 20.4		
11	49.5 m	TV 20.4		
12	54.0 m	TV 20.4		
13	58.5 m	TV 20.4		
14	63.0 m	TV 20.4		
15	64.0 m	VR 2023		
16	68.5 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]		69.7		
Hook height double reeving [m]		71.2		
Wind category		C25		

## 3 Tower combinations

Jib length	30 m – 65 m			
Item				
1	4.5 m	UV 20.4	UV 20.4	
2	9.0 m	UV 20.4	UV 20.4	
3	13.5 m	UV 20.4	UV 20.4	
4	18.0 m	UV 20.4	UV 20.4	
5	22.5 m	UV 20.4	UV 20.4	
6	27.0 m	UV 20.4	UV 20.4	
7	31.5 m	UV 20.4	UV 20.4	
8	36.0 m	UV 20.4	UV 20.4	
9	40.5 m	UV 20.4	TVA 20.4	
10	45.0 m	TVA 20.4	TV 20.4	
11	49.5 m	TV 20.4	TV 20.4	
12	54.0 m	TV 20.4	TV 20.4	
13	58.5 m	TVÜ 20.4	TV 20.4	
14	63.0 m	TV 25	TV 20.4	
15	67.5 m		TV 20.4	
Substructure		KR 1000-8	KR 12-60 KR 12-60/80	
Corner distance [m x m]		8.0 x 8.0	6.0 x 6.0 8.0 x 8.0	
Substructure height [m]		1.2	1.4	
Tower height [m]		64.2	68.9	
Hook height double reeving [m]		65.7	70.4	
Wind category	C25			



Jib length	30 m – 65 m			
Item				
1	4.5 m	UV 20.4	UV 20.4	
2	9.0 m	UV 20.4	UV 20.4	
3	13.5 m	UV 20.4	UV 20.4	
4	18.0 m	UV 20.4	UV 20.4	
5	22.5 m	UV 20.4	UV 20.4	
6	27.0 m	UV 20.4	UV 20.4	
7	31.5 m	UV 20.4	UV 20.4	
8	36.0 m	UV 20.4	UV 20.4	
9	40.5 m	TVA 20.4	TVA 20.4	
10	45.0 m	TV 20.4	TV 20.4	
11	49.5 m	TV 20.4	TV 20.4	
12	54.0 m	TV 20.4	TV 20.4	
13	58.5 m	TV 20.4	TV 20.4	
14	59.5 m	VR 2023	VR 2023	
15	64.0 m	TV 23	TV 23	
16	68.5 m	HTA 23	HTA 23	
17	73.0 m	HT 23	HT 23	
18	77.5 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]		78.9	79.3	
Hook height double reeving [m]		80.4	80.8	
Wind category	C25			

## 3 Tower combinations

Jib length	30 m – 65 m			
Item				
1	4.5 m	UV 20.4		
2	9.0 m	UV 20.4		
3	13.5 m	UV 20.4		
4	18.0 m	UV 20.4		
5	22.5 m	UV 20.4		
6	27.0 m	UV 20.4		
7	31.5 m	UV 20.4		
8	36.0 m	UV 20.4		
9	40.5 m	TVA 20.4		
10	45.0 m	TV 20.4		
11	49.5 m	TV 20.4		
12	54.0 m	TV 20.4		
13	55.0 m	VR 2023		
14	59.5 m	TV 23		
15	64.0 m	HTA 23		
16	68.5 m	HT 23		
17	73.0 m	HT 23		
18	77.5 m	HT 23		
19	78.7 m	VR 23/25-29		
20	83.2 m	UV 29		
21	93.2 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]		95.0		
Hook height double reeving [m]		96.5		
Wind category	C25			

## 3.3 Tower combinations on cross frame element (slewing section with UV20/TV20 - connection)

Jib length		30 m – 65 m			
Item					
1	4.5 m	UV 20.4	UV 20.4	UV 20.4	UV 20.4
2	9.0 m	UV 20.4	UV 20.4	UV 20.4	UV 20.4
3	13.5 m	UV 20.4	UV 20.4	UV 20.4	UV 20.4
4	18.0 m		UV 20.4	UV 20.4	UV 20.4
5	22.5 m		UV 20.4	UV 20.4	UV 20.4
6	27.0 m		UV 20.4	UV 20.4	UV 20.4
7	31.5 m		UV 20.4	TVA 20.4	UV 20.4
8	36.0 m		UV 20.4	TV 20.4	UV 20.4
9	40.5 m		TVA 20.4	TV 20.4	UV 20.4
10	45.0 m			TV 20.4	TVA 20.4
11	49.5 m				TV 20.4
Substructure		KRE 260.1	KRE 260.2	KRE 260.2	KRE 260.2
Corner distance [m x m]		6.0 x 6.0	5.0 x 6.79	5.0 x 6.79	6.0 x 6.0
Substructure height [m]		4.0	4.0	4.0	4.0
Tower height [m]		17.5	44.5	49.0	53.5
Hook height double reeving [m]		19.0	46.0	50.5	55.0
Wind category		C25			

## 3 Tower combinations

Jib length	30 m – 65 m			
Item				
1	4.5 m	UV 20.4		
2	9.0 m	UV 20.4		
3	13.5 m	UV 20.4		
4	18.0 m	UV 20.4		
5	22.5 m	UV 20.4		
6	27.0 m	UV 20.4		
7	31.5 m	UV 20.4		
8	36.0 m	UV 20.4		
9	40.5 m	TVA 20.4		
10	45.0 m	TV 20.4		
11	49.5 m	TV 20.4		
12	54.0 m	TV 20.4		
13	58.5 m	TVÜ 20.4		
14	63.0 m	UVA 25		
Substructure		KRE 480		
Corner distance [m x m]		8.0 x 8.0		
Substructure height [m]		4.0		
Tower height [m]		67.0		
Hook height double reeving [m]		68.5		
Wind category			C25	

## 3.4 Tower combinations on mobile cross frame (slewing section with UV20/TV20 - connection)

Jib length	30 m – 65 m			
Item				
1	4.5 m	UV 20.4	UV 20.4	UV 20.4
2	9.0 m	UV 20.4	UV 20.4	UV 20.4
3	13.5 m	UV 20.4	UV 20.4	UV 20.4
4	18.0 m	UV 20.4	UV 20.4	UV 20.4
5	22.5 m	UV 20.4	UV 20.4	UV 20.4
6	27.0 m	UV 20.4	UV 20.4	UV 20.4
7	31.5 m	UV 20.4	UV 20.4	UV 20.4
8	36.0 m	UV 20.4	TVA 20.4	TVA 20.4
9	40.5 m	TVA 20.4	TV 20.4	TV 20.4
10	45.0 m	TV 20.4	TV 20.4	TV 20.4
11	49.5 m	TV 20.4	TV 20.4	TV 20.4
12	54.0 m	TV 20.4	TV 20.4	TV 20.4
13	58.5 m		TV 20.4	TV 20.4
14	63.0 m		TV 20.4	TV 20.4
Substructure		KRF 10-46/60	KRF4 12-60/80	KRF6 12-60/80
Corner distance [m x m]		6.0 x 6.0	8.0 x 8.0	8.0 x 8.0
Substructure height [m]		2.0	2.5	2.9
Tower height [m]		56.0	65.5	65.9
Hook height double reeving [m]		57.5	67.0	67.4
Wind category		C25		

## 3 Tower combinations

Jib length	30 m – 65 m			
Item				
1	4.5 m	UV 20.4	UV 20.4	
2	9.0 m	UV 20.4	UV 20.4	
3	13.5 m	UV 20.4	UV 20.4	
4	18.0 m	UV 20.4	UV 20.4	
5	22.5 m	UV 20.4	UV 20.4	
6	27.0 m	UV 20.4	UV 20.4	
7	31.5 m	UV 20.4	UV 20.4	
8	36.0 m	TVA 20.4	TVA 20.4	
9	40.5 m	TV 20.4	TV 20.4	
10	45.0 m	TV 20.4	TV 20.4	
11	49.5 m	TV 20.4	TV 20.4	
12	54.0 m	TV 20.4	TV 20.4	
13	58.5 m	TV 20.4	TV 20.4	
14	59.5 m	VR 2023	VR 2023	
15	64.0 m	TV 23	TV 23	
16	68.5 m	HTA 23	HTA 23	
17	73.0 m	HT 23	HT 23	
18	77.5 m		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]		75.9	80.8	
Hook height double reeving [m]		77.4	82.3	
Wind category		C25		

Jib length	30 m – 65 m			
Item				
1	4.5 m	UV 20.4		
2	9.0 m	UV 20.4		
3	13.5 m	UV 20.4		
4	18.0 m	UV 20.4		
5	22.5 m	UV 20.4		
6	27.0 m	UV 20.4		
7	31.5 m	TVA 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		
13	55.0 m	VR 2023		
14	59.5 m	TV 23		
15	64.0 m	HTA 23		
16	68.5 m	HT 23		
17	73.0 m	HT 23		
18	77.5 m	HT 23		
19	78.7 m	VR 23/25-29		
20	88.7 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]		92.0		
Hook height double reeving [m]		93.5		
Wind category			C25	

## 3 Tower combinations

### 3.5 Tower combinations on undercarriage (slewing section with UV20/TV20 - connection)



Jib length	30 m – 65 m				
Item					
1	4.5 m	UV 20.4	UV 20.4	UV 20.4	UV 20.4
2	9.0 m	UV 20.4	UV 20.4	UV 20.4	UV 20.4
3	13.5 m	UV 20.4	TVA 20.4	UV 20.4	UV 20.4
4	18.0 m			UV 20.4	UV 20.4
5	22.5 m			TVA 20.4	UV 20.4
6	27.0 m				UV 20.4
7	31.5 m				UV 20.4
8	36.0 m				UV 20.4
9	40.5 m				TVA 20.4
Substructure		UW 260.1	UW 260.2	UW 260.2	UW 260.3
Corner distance [m x m]		6.0 x 6.0	5.0 x 6.79	6.0 x 6.0	5.0 x 6.79
Substructure height [m]		4.5	4.5	4.5	4.5
Tower height [m]		18.0	18.0	27.0	45.0
Hook height double reeving [m]		19.5	19.5	28.5	46.5
Wind category		C25			



Jib length	30 m – 65 m			
Item				
1	4.5 m	UV 20.4	UV 20.4	
2	9.0 m	UV 20.4	UV 20.4	
3	13.5 m	UV 20.4	UV 20.4	
4	18.0 m	UV 20.4	UV 20.4	
5	22.5 m	UV 20.4	UV 20.4	
6	27.0 m	UV 20.4	UV 20.4	
7	31.5 m	UV 20.4	UV 20.4	
8	36.0 m	UV 20.4	TVA 20.4	
9	40.5 m	TVA 20.4	TV 20.4	
10	45.0 m	TV 20.4	TV 20.4	
11	49.5 m	TV 20.4	TV 20.4	
12	54.0 m		TV 20.4	
13	58.5 m		TVÜ 20.4	
14	63.0 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]		54.0	68.0	
Hook height double reeving [m]		55.5	69.5	
Wind category		C25		

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

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

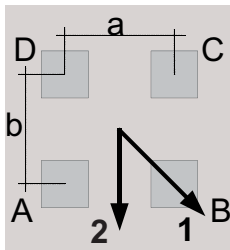
	<div style="background-color: red; color: white; text-align: center; padding: 5px;"><b>⚠ DANGER</b></div> <p>Usage of incorrect tower combinations. The slewing tower crane may overturn.</p> <ol style="list-style-type: none"> <li>1) Use the specified tower combinations.</li> <li>2) If you need another tower combination that is not specified here, please contact WOLFFKRAN to get an approved alternative setup in writing.</li> </ol>
	<div style="background-color: #00a0e3; color: white; text-align: center; padding: 5px;"><b>NOTICE</b></div> <p>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.</p>

## Jib positions

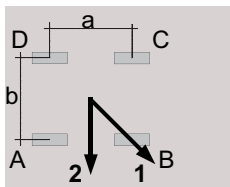
The corner loads are given for two jib positions with the maximum corner load resulting from jib position 1.

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.

	<p data-bbox="794 315 1075 383"><b>NOTICE</b></p> <p data-bbox="469 405 1366 436">The 4 fall hook height is only for the crane 6531.12 <i>cross</i> in 4 fall operation.</p>
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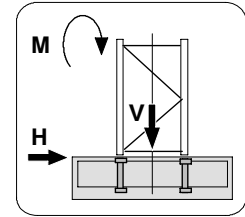
For information on the different substructures, refer to Section 5 of the Operating Manual.

## 4.1 Foundation loads jib 30 m - 65 m

Slewing section 6531 cross with 30 m – 65 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.



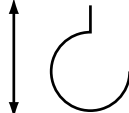
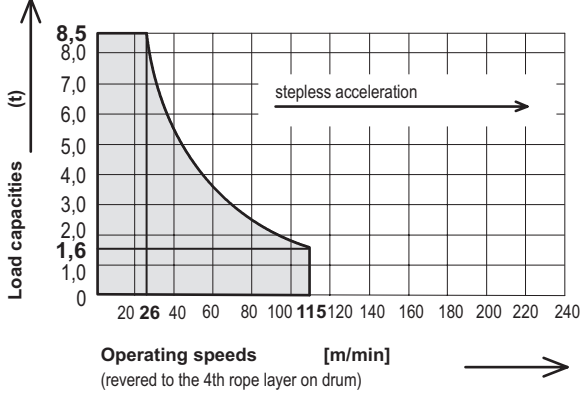
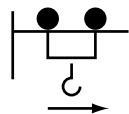
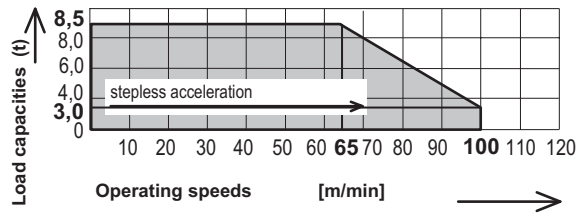

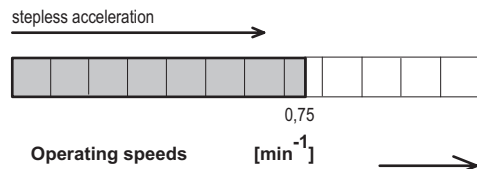
HH		Crane in service			Crane out of service			Assembly		
4	2	Slewing torque: 320 kNm			Wind category C25			M	V	H
STR	STR	M	V	H	M	V	H	M	V	H
[m]	[m]	[kNm]	[kN]	[kN]	[kNm]	[kN]	[kN]	[kNm]	[kN]	[kN]
5.6	6.0	2070	460	19	1890	460	37	2590	373	7
10.1	10.5	2160	479	20	2070	479	42	2630	391	8
14.6	15.0	2270	497	22	2280	497	46	2680	409	9
19.1	19.5	2380	515	23	2510	515	51	2730	427	10
23.6	24.0	2510	533	25	2780	533	56	2800	445	11
28.1	28.5	2650	551	27	3070	551	61	2870	464	12
32.6	33.0	2810	570	28	3390	570	65	2960	482	12
37.1	37.5	2980	588	29	3750	588	70	3050	500	13
41.6	42.0	3170	606	31	4150	606	75	3160	518	14
46.1	46.5	3540	754	36	4590	624	80	3280	536	15
50.6	51.0	3720	803	39	5300	754	100	3350	585	17
55.1	55.5	3980	831	41	5860	782	106	3470	613	18
59.6	60.0	4370	967	43	6480	810	112	3610	641	19
64.1	64.5	4710	995	45	7820	1050	170	3760	670	20
68.6	69.0	5090	1024	47	8170	997	165	3920	698	21
69.6	70.0	5040	1067	48	8250	1041	171	3900	742	22
74.1	74.5	5370	1107	51	9420	1080	182	4050	781	23
78.6	79.0	5740	1146	53	10700	1119	194	4220	821	24
80.9	81.3	5880	1181	54	11280	1155	201	4280	856	25
85.4	85.8	6290	1221	56	12730	1194	213	4460	895	26
Tower combination with base tower element BT 29										
89.8	90.2	6540	1284	59	14000	1258	227	4580	959	28
94.3	94.7	6950	1330	62	15600	1304	241	4760	1005	29

### Caption

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

## 5 Operating speeds

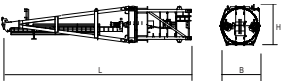
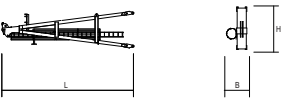
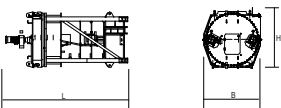

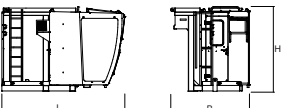
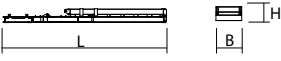
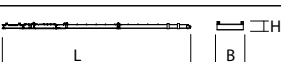
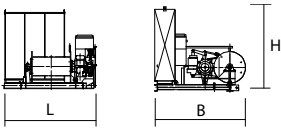
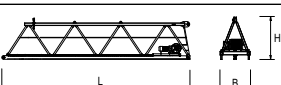
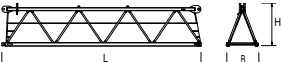
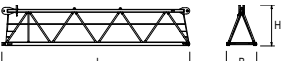

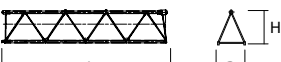
WOLFF 6531.8cross

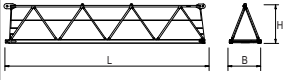
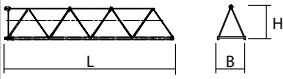




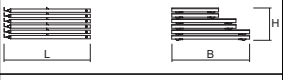
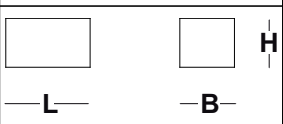
Drive unit [type]	Operating speed Carrying load	Hook travel distance max. [m]	Power [kW]	Total connected wattage [kVA]
Hw845FU	Lifting / lowering	190	45	68.0 Total connected load at coincidence factor of 0.8
	 <p>Operating speeds [m/min] (referred to the 4th rope layer on drum)</p>			
<b>KW</b>	<b>Trolley movement</b>		<b>9.0</b>	
	 <p>Operating speeds [m/min]</p>			
<b>SG</b>	<b>Slewing</b>		<b>2x6.0</b>	
	 <p>Operating speeds [min<sup>-1</sup>]</p>			

## 6 Package list

## 6 Package list

### 6.1 Package list 6531.8


Quantity	Description	Package	L [m]	W [m]	H [m]	Weight [kg]	Volume [m <sup>3</sup> ]
1	Tower head section, complete including platforms and misc. stay parts		11.72	2.42	2.42	10830	68.64
	Tower head section upper part including platforms and misc. stay parts		7.45	1.37	2.42	2730	24.70
	Tower head section lower part including slewing frame, ball slew bearing, slewing gears and slip ring system		5.39	2.42	2.42	8100	31.57
1	Driver's cab suspension		2.14	1.95	2.42	680	10.10
1	Driver's cab with driver's cab suspension		3.57	2.29	2.42	1700	19.78
1	Counterjib in hinged position (stay parts)		12.40	2.49	1.05	4700 (430)	32.29
	Counterjib (stay parts)		16.34	2.49	0.65	4700 (430)	26.45
1	Machine platform Hw845FU including hoisting rope (Ø 16 mm x 280 m)		2.48	2.46	2.18	3270	13.30
1	Jib element 1 with traverse gear		10.16	1.64	2.30	2960	38.32
1	Jib element 2		10.27	1.64	2.05	1810	34.53
1	Jib element 3		10.27	1.64	2.05	1725	34.53
1	Jib element 5		5.26	1.64	2.02	1000	17.43
1	Jib element 6		10.24	1.64	2.01	1700	33.76

Quantity	Description	Package	L [m]	W [m]	H [m]	Weight [kg]	Volume [m³]
1	Jib element 7		10.22	1.64	2.00	1260	33.52
1	Jib element 8		10.20	1.64	2.00	1010	33.46
1	Rope swivel cross-beam		1.05	1.54	0.47	135	0.76
1	Trolley LK 8		1.87	1.87	0.94	335	3.29
	Maintenance cage		0.75	0.58	1.69	55	0.74
1	Hook block U 8		0.50	0.22	1.11	350	0.12
1	Brace rods		10.12	0.56	0.36	1480	2.04
	Standard railings		2.60	1.10	0.65	300	1.86
1	Box (small parts)		0.63	0.50	0.38	100	1.12

7 Assembly weights

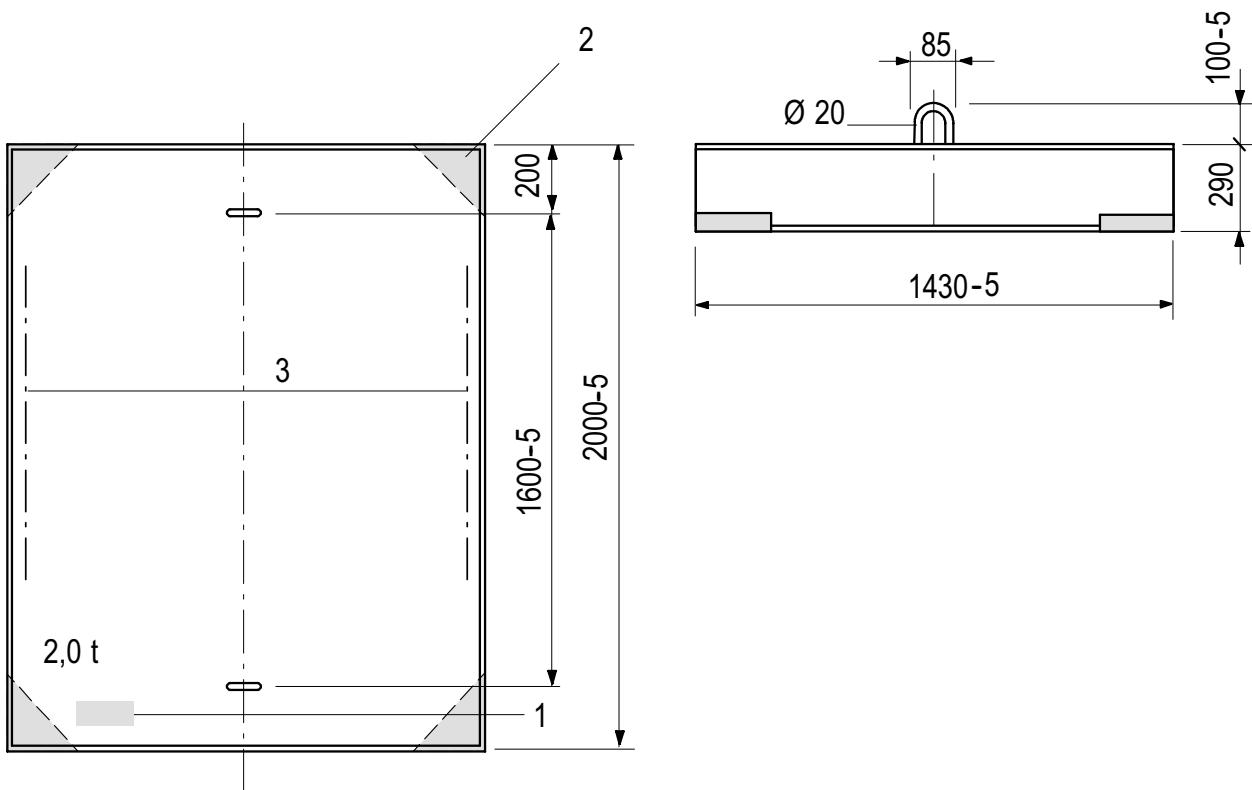
7 Assembly weights

7.1 Counterweight blocks

	<h2>NOTICE</h2>
	<p>The described diagrams of the concrete counterweights and central ballast blocks only show sketches. Have them issue the reinforcement charts by experts.</p>



## 7.1.1 Counterweight block, 2.0 t

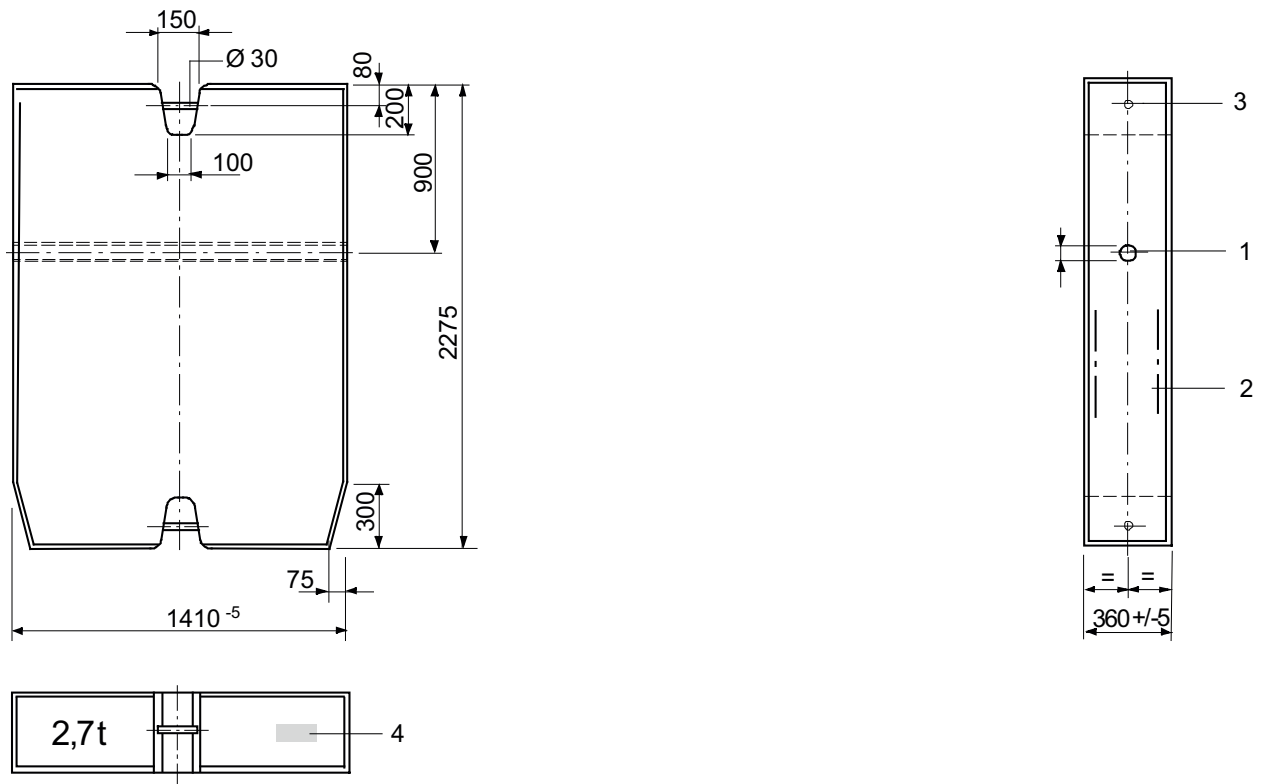


Data counterweight block 2.0 t

Item	Data
Material	Concrete, min. C 20/25
Max. permitted weight tolerance	+/- 3 %
Order number	962-2-006590
1	Component identifier
2	Corner guard
3	Structural steel reinforcement

## 7 Assembly weights

### 7.1.2 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

### Assembly weights 6531

Trolley jib, complete: Brace plates, crab, trolley drive rope, snatch block and standard railings

<b>Jib length [m]</b>	<b>Weight [kg] WOLFF 6531</b>
65.0	13885
60.0	12885
55.0	12875
50.0	11875
45.0	11615
40.0	10615
35.0	9915
30.0	8915

## 7 Assembly weights

### 7.3 Assembly weight slewing section

Module	Crane parts	Weight [kg]	
Tower head section complete (including brace plates, driver's cab, driver's cab suspension, platform and standard railings)			12530
	<ul style="list-style-type: none"> <li>▪ Driver's cab with driver's cab suspension</li> </ul>	1700	
	<ul style="list-style-type: none"> <li>▪ Tower head section lower part including slewing frame, ball race bearing, slewing gears, standard railings and slip ring system</li> </ul>	8100	
	<ul style="list-style-type: none"> <li>▪ Tower head section upper part complete</li> </ul>	2730	
Counterjib with Hw845FU			10270
	<ul style="list-style-type: none"> <li>▪ Counterjib with 4 brace plates and standard railings</li> </ul>	5000	
	<ul style="list-style-type: none"> <li>▪ Machine platform Hw845FU including hoisting rope (Ø 16 mm x 280 m)</li> </ul>	3270	
	<ul style="list-style-type: none"> <li>▪ Counterweight 2 t (below machine platform)</li> </ul>	2000	

## 7.4 Assembly weight cross frame

Module	Crane part	Weight [kg]	
Cross frame KR 16-46/60 (without accessories)			7000
(4.6m x 4.6m)	▪ 4 bolted spigots AZR 120 E 15.5	560	
	▪ 4 bolted spigots AZ 140 M	684	
Cross frame KR 16-46/60 (without accessories)			8805
(6.0m x 6.0m)	▪ 4 bolted spigots AZR 120 E 15.5	560	
	▪ 4 bolted spigots AZ 140 M	684	
Cross frame KR 1000-8			14630
	▪ 4 bolted spigots AZ 140 E	684	
	▪ 4 bolted spigots AZ 156 M	748	
Cross frame KR 16-80/ 100 (without accessories)			21450
(8.0m x 8.0m)	▪ 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
(10.0m x 10.0m)	▪ 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 Assembly weights

### 7.5 Assembly weights traveling cross frame

Module	Crane parts	Weight [kg]	
Mobile cross frame KRF 10 – 46/60 complete			17500
(6.0 m x 6.0 m)	▪ Cross frame	7000	
	▪ Drive gear corners	2385	
	▪ Backing braces	1510	
	▪ Subframe	5645	
	▪ Platforms + ladders	510	
	▪ Control cabinet	130	
	▪ small items	320	
	▪ Set of bolted spigots AZR 120 E 15,5 KRF 10-46/60	605	
	▪ Set of bolted spigots AZR 140 M KRF 10-46/60	760	
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	

Module	Crane parts	Weight [kg]
	▪ 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 Assembly weights

### 7.6 Assembly weight cross frame elements

Module	Crane parts	Weight [kg]	
Cross frame element KRE 260.1, complete			8100
	▪ Cross frame platform with hinged section, corner plates and transport locks	4320	
	▪ Mast base with diagonal struts and tie rods	3780	
Cross frame element KRE 260.2, complete			10900
	▪ Cross frame platform with hinged section, corner plates and transport locks	5455	
	▪ Mast base with diagonal struts and tie rods	5445	
Cross frame element KRE 480 complete			24250
	▪ Mast base	7100	
	▪ Hinged sections with corner plates	6250	
	▪ Diagonal struts and ballast carrier	9260	
	▪ Assembly platform, ladder, and small parts	1640	



## 7.7 Assembly weight undercarriage

Module	Crane parts	Weight [kg]	
Undercarriage UW 260.1, complete			11400
	▪ Undercarriage platform with hinged sections, subframes and transport locks	7150	
	▪ Mast base with diagonal struts and tie rods	4250	
Undercarriage UW 260.2, complete			13930
	▪ Undercarriage platform with hinged sections, subframes and transport locks	8050	
	▪ Mast base with diagonal struts and tie rods	5880	
Undercarriage UW 260.3, complete			17200
	▪ Undercarriage platform with hinged sections, subframes and transport locks	11300	
	▪ Mast base with diagonal struts and tie rods	5900	
Undercarriage UW 480, complete			34000
	▪ Mast base including control cabinet	7100	
	▪ Hinged sections with mounting device and subframes	16000	
	▪ Diagonal struts and ballast carrier	9260	
	▪ Assembly platform, ladder, and small parts	1640	

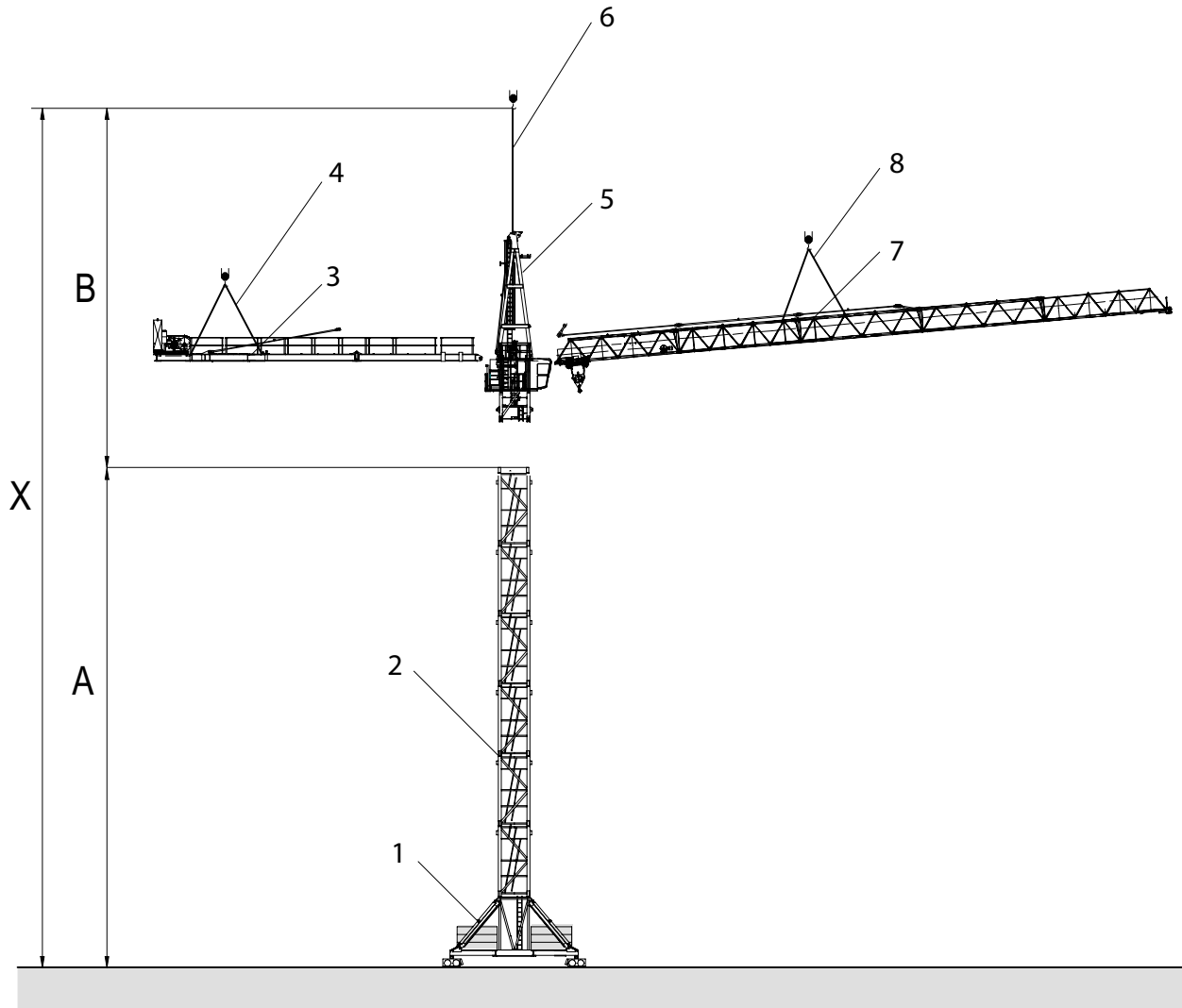
## 7 Assembly weights

### 7.8 Required hook height for mobile cranes

For information about the height of the WOLFF slewing tower crane, refer to Tower combinations [9].

**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)


**(see also):**

- Tower combinations [\[9\]](#)

8 Assembly diagrams

8 Assembly diagrams

8.1 Jib attachment diagram

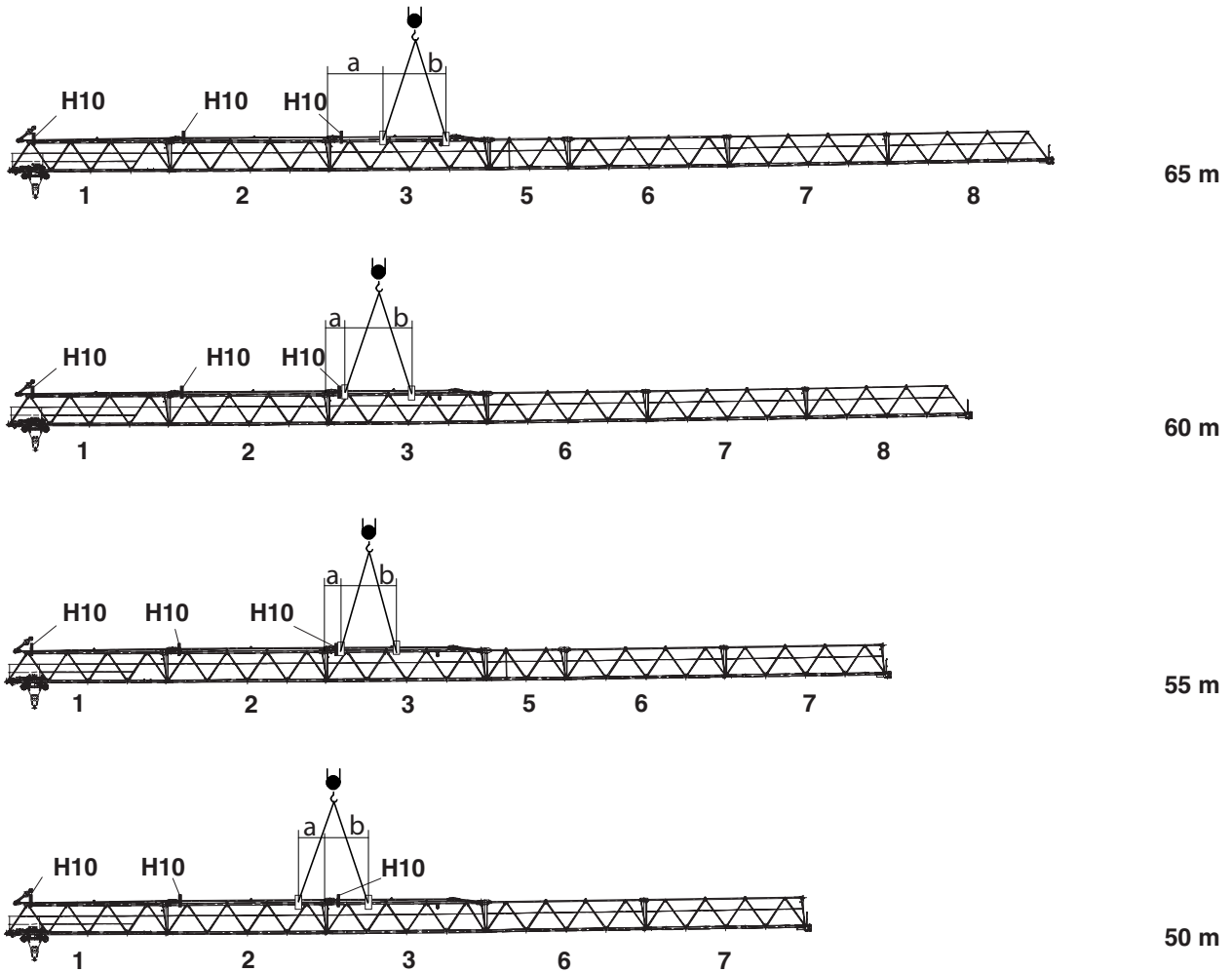
	<b>NOTICE</b>
	For jib assembly, use a Four-point lifting tackle (6 m with shackle).

### Length of jib elements

Item	Length [m]
Jib element 1, 2, 3, 6, 7, 8	10.0
Jib element 5	5.0

## 8.1.1 Trolley jib - attachment diagram 2 fall operation

### 8.1.1.1 Trolley jib - attachment diagram 65 m to 50 m



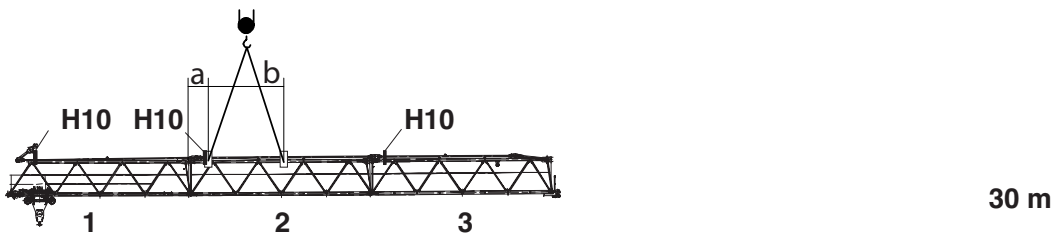
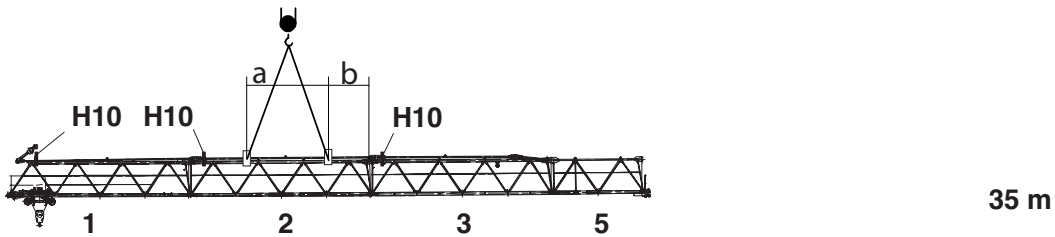
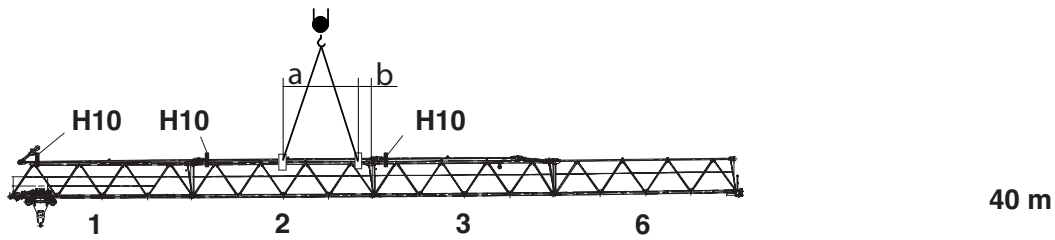
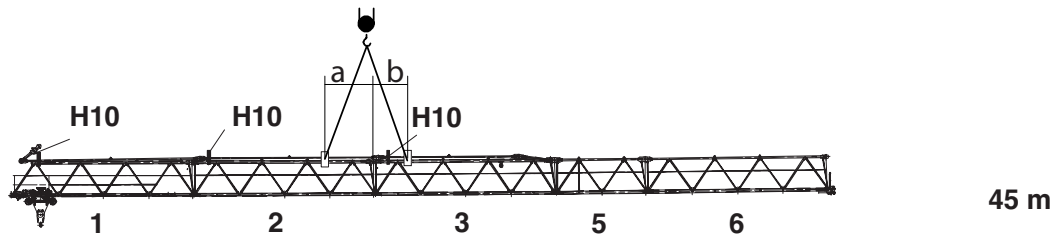
a	Dimension a	H10	Mounting rig H10
b	Dimension b		

#### Attachment data 6531 cross

Data	Jib length [m]			
	65.0	60.0	55.0	50.0
a [m]	3.59	1.09	1.09	1.42
b [m]	3.71	4.15	3.01	2.74
Weight [kg]	13600	12600	12590	11590

## 8 Assembly diagrams

### 8.1.1.2 Trolley jib - attachment diagram 45 m to 30 m

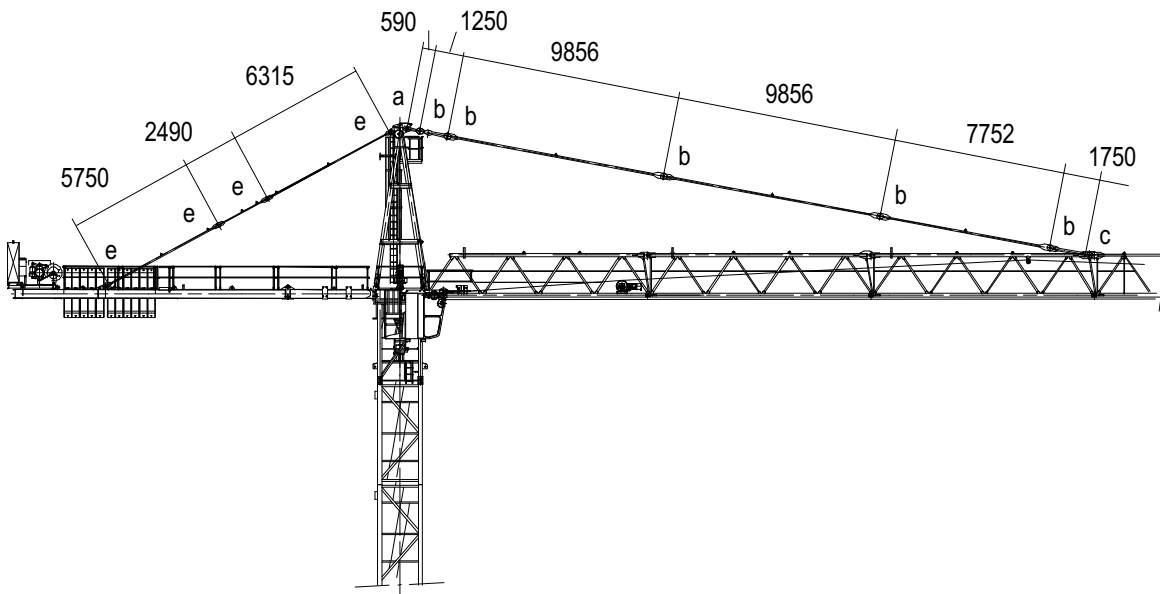


a	Dimension a	H10	Mounting rig H10
b	Dimension b		

#### Attachment data 6531 cross

Data	Jib length [m]			
	45.0	40.0	35.0	30.0
a [m]	2.55	4.15	4.16	1.08
b [m]	1.60	0.90	2.26	4.16
Weight [kg]	11330	10330	9630	8630


## 8.2 Jib brace diagram



Bolt table

Jib length	Item	Bolts		Fuse	
		Quantity	Dimension [mm]	Quantity	Dimension [mm]
Jibs - all	a	1	Ø 100/90x225	1	Spring retainers Ø10/60-80, steel galvanized, yellow
	b	5	Ø 80/70x180	5	Spring retainers Ø10/60-80, steel galvanized, yellow
	c	1	Ø 80/70x272	1	Axle retainer 40x10x140
				2	Hex. screws M16 x 30 ISO 4017-8.8 galv.
				2	Lock washer A 16 DIN 127 Fed.steel, galvanized
Counterjib	e	8	Ø 70/60x150	8	Spring retainers Ø10/60-80, steel galvanized, yellow

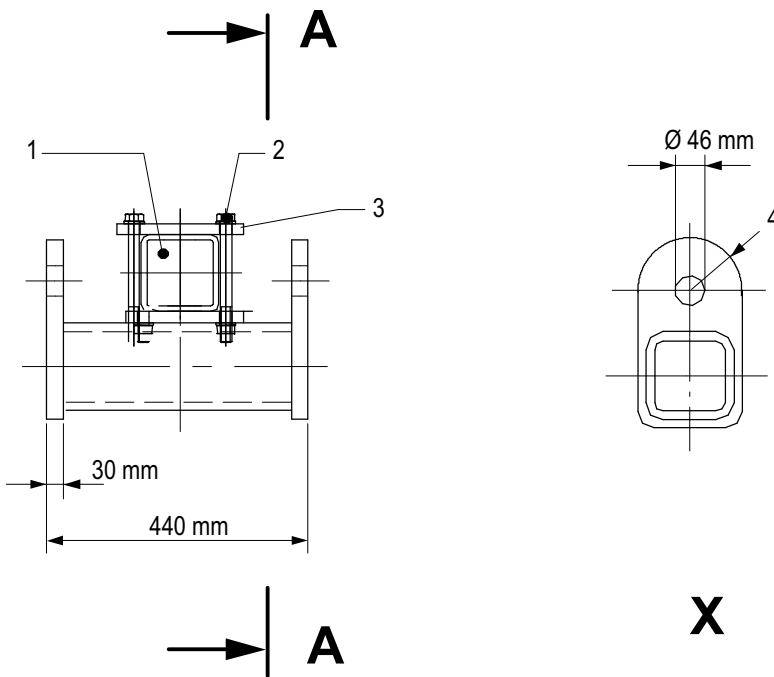
## 8.3 Trolley jib mounting rig

	NOTICE
	<p>For information on the arrangement of the mounting rig, refer to the attachment diagram.</p> <p>Two mounting rigs are required per slewing tower crane.</p>

### Elements required for each mounting rig

Quantity	Item	Dimensions	Material
1	Mounting rig		
4	Hexagonal head bolt	M16 x 220	ISO 4014-8.8 galv.
4	HSFG washer	17	EN 14399 galvanized
4	Hexagonal nut	M16	ISO 4032-8 galvanized
4	Hexagonal nut	M16	DIN 7967, galvanized


### Mounting rig



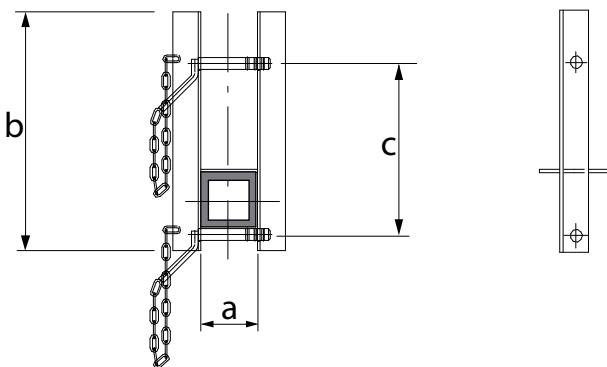
1	Top chord trolley jib	4	Radius 65 mm
2	Hexagonal head screw	A	Section A-A
3	Metal plate 12x240x240	X	View section A-A



## 8.4 Mounting rig for trolley jib

	<b>NOTICE</b>		
	<p>For information on the arrangement of the mounting rig, refer to the attachment diagram. For information on the arrangement of the mounting rig, refer to the attachment diagram.</p> <p>Two mounting rigs are required per slewing tower crane.</p>		

### Dimensions for mounting rig



Mounting rig H10

Type	Dimensions		
	a [mm]	b [mm]	c [mm]
H10	144	450	312

## 8 Assembly diagrams

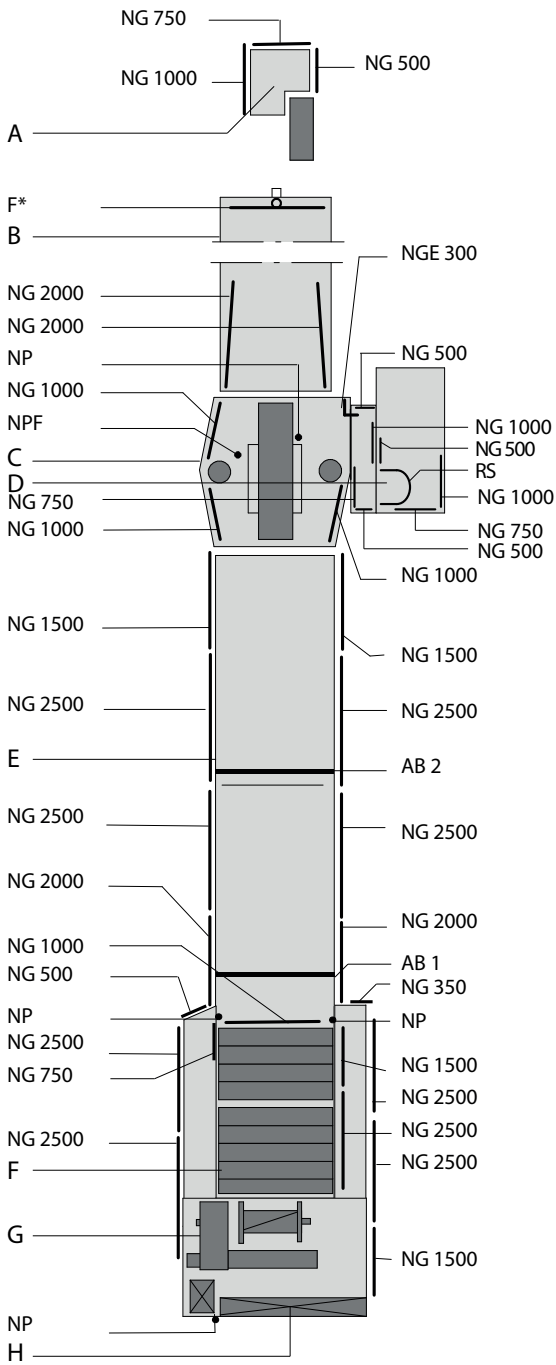
### 8.5 Arrangement of standard railings

#### 8.5.1 Standard railings (NG) and accessories

Arrangement of standard railings Hw675FU

Quantity	Standard railings (NG)/ accessories	Dimensions / spacing of posts / height
4	Standard posts (NP)	–
1	Standard posts with holder (NPF)	–
1	Flagpole holder (F*)	1400 mm
1	NGE 300	–
1	Standard railing 350	200 mm
5	Standard railing 500	400 mm
4	Standard railing 750	600 mm
7	Standard railing 1000	900 mm
4	Standard railing 1500	1400 mm
5	Standard railing 2000	1900 mm
8	Standard railing 2500	2400 mm
1	RS (hoop guard)	–
1	Support block AB 1	700 mm
1	Support block AB 2	1400 mm

## 8.5.2 Arrangement of standard railings



Arrangement of standard railings, counter jib Hw845FU





A	Cat head pedestal	E	Counterjib
B	Trolley jib	F	Counterweights
C	Slewing frame	G	Machine platform
D	Driver's cab	H	Control cabinet

## 9 Suitable climbing devices



### 9 Suitable climbing devices

This section contains information on

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

	<p style="text-align: center;"><b>NOTICE</b></p> <p>Details on the climbing device Always refer to the details in the documentation of the climbing device.</p>
	<p style="text-align: center;"><b>NOTICE</b></p> <p>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.</p>
	<p style="text-align: center;"><b>NOTICE</b></p> <p>Details for climbing balancing The climbing balancing details apply to the snatch block in maximum hook position.</p>
	<p style="text-align: center;"><b>NOTICE</b></p> <p>If feasible, preferably operate your climbing device without balancing weight.</p>

## 9.1 Outer climbing devices

	<p style="text-align: center;"><b>! DANGER</b></p> <p>Climbing device attached to the lower part of the tower head section lower part.</p> <p>Increased wind surface. The slewing tower crane may overturn.</p> <ul style="list-style-type: none"><li>▶ 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.</li></ul>
	<p style="text-align: center;"><b>NOTICE</b></p> <p>Tower element on the transfer carriage</p> <p>The data on climbing balance was specified under the assumption that a tower element is on the transfer carriage.</p>


## 9 Suitable climbing devices

### 9.1.1 Outer climbing device KWH 20.3 / KWH 20.3.1


Climbing radius [m] for the balancing weights

<b>6531.6</b> <b>6531.8</b>	<b>Jib length [m]</b>							
	<b>65</b>	<b>60</b>	<b>55</b>	<b>50</b>	<b>45</b>	<b>40</b>	<b>35</b>	<b>30</b>
UV 20.4 = 2.05 t	25.2	32.7	35.7	32.3	37.4	-	-	-
TV 20.4 = 2.98 t	17.7	23.4	25.6	23.1	26.9	29.3	30.6	-
Weight = 5.00 t	-	-	-	-	-	-	19.5	20.7

## 9.2 Inner climbing devices

	<b>NOTICE</b>
	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.**

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

## 9 Suitable climbing devices

### 9.2.1 Inner climbing device KSH 20 SH

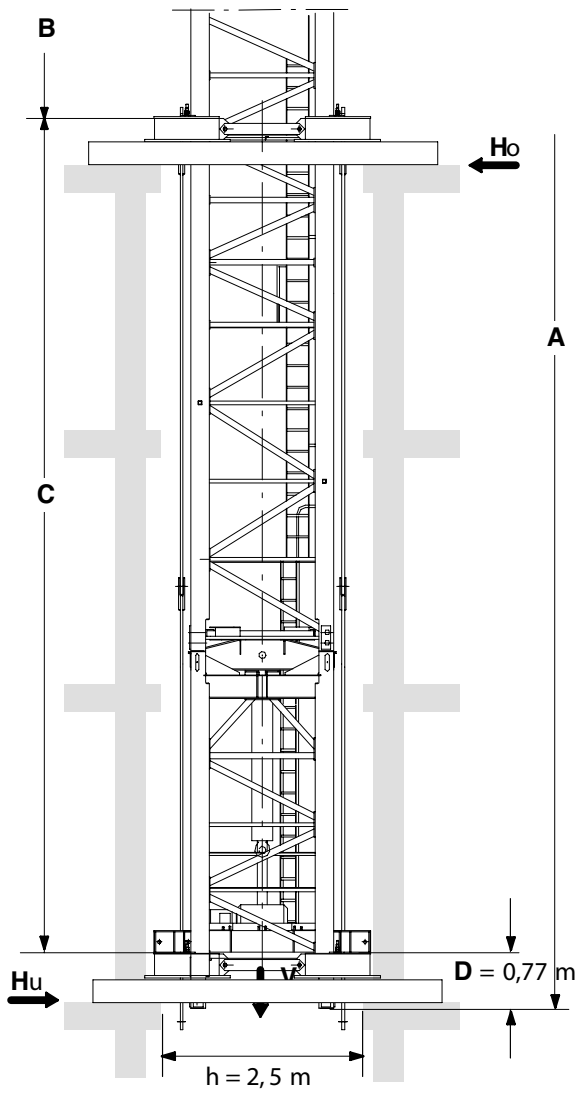
Tower combinations for slewing tower cranes with inner climbing device.

Item				
1	UV 20.4	UV 20.4	UV 20.4	UV 20.4
2	UV 20.4	UV 20.4	UV 20.4	UV 20.4
3	UV 20.4	UV 20.4	UV 20.4	UV 20.4
4	UV 20.4	UV 20.4	UV 20.4	UV 20.4
5	UV 20.4	UV 20.4	UV 20.4	UV 20.4
6	UV 20.4	UV 20.4	UV 20.4	UV 20.4
7	TVA 20.4	TVA 20.4	TVA 20.4	TVA 20.4
8		TV 20.4	TV 20.4	TV 20.4
9			TV 20.4	TV 20.4
10				TV 20.4
inner climbing device	KSH 20 SH	KSH 20 SH	KSH 20 SH	KSH 20 SH
Foundation anchors	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]	46.5	51.0	55.5	60.0
Hook height (2 fall operation) [m]	48.0	52.5	57.0	61.5

Climbing radius [m] for the balancing weights

6531.6 6531.8	Jib length [m]							
	65	60	55	50	45	40	35	30
UV 20.4 = 2.05 t	57.9	-	-	-	-	-	-	-
TV 20.4 = 2.98 t	43.6	48.1	50.4	45.8	-	-	-	-
Weight = 5.00 t	-	-	-	-	32.2	33.0	-	-
Weight = 8.00 t	-	-	-	-	-	21.8	21.8	22.1





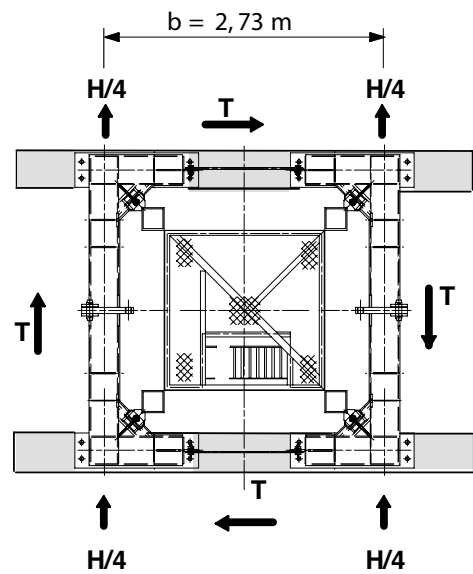
$$C_{\min} = 11,0 \text{ m}$$

$$C_{\max} = 14,0 \text{ m}$$

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

$$H_u = H_o - H$$

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



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

## 9 Suitable climbing devices

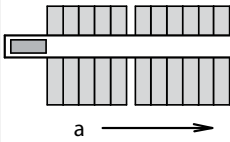
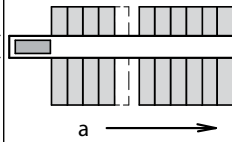
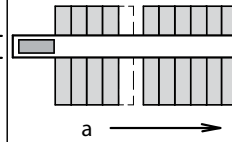
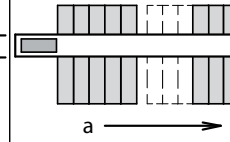
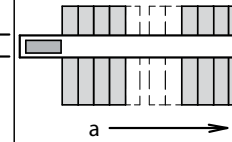
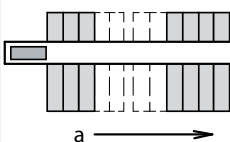
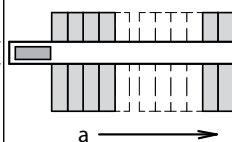
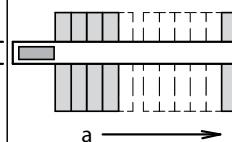
### In service clamping forces



In service clamping forces [kN] inside a building																
A (m)	60.0				55.5				51.0				46.5			
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	1200				1172				1143				1115			
Ho	380	350	320	300	360	330	300	280	330	310	280	260	310	290	270	250
Hu	330	300	280	250	310	280	260	240	290	260	240	220	270	250	230	210
T	59				59				59				59			

### Out of service clamping forces

Out of service clamping forces [kN] inside a building																
A (m)	60.0				55.5				51.0				46.5			
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	1070				1041				1013				985			
Ho	820	750	700	650	720	660	610	570	630	580	530	490	540	500	460	430
Hu	570	500	450	400	490	430	380	330	400	350	310	270	330	290	250	220
T	-				-				-				-			

## 10 Arrangement of counterweight blocks

L = 65 m	L = 60 m	L = 55 m	L = 50 m	L = 45 m
11 x 2.7 t	10 x 2.7 t	10 x 2.7 t	8 x 2.7 t	8 x 2.7 t
				
W = 31.7 t	W = 29.0 t	W = 29.0 t	W = 23.6 t	W = 23.6 t
Permanent counterweight below machine platform = 2.0 t				
L = 40 m	L = 35 m	L = 30 m		
7 x 2.7 t	6 x 2.7 t	5 x 2.7 t		
				
W = 20.9 t	W = 18.2 t	W = 15.5 t		

	Counterweight block 1 x 2.7 t	L	Jib length [m]
	No counterweight	G	Total weight [t]
a	To the tower		

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