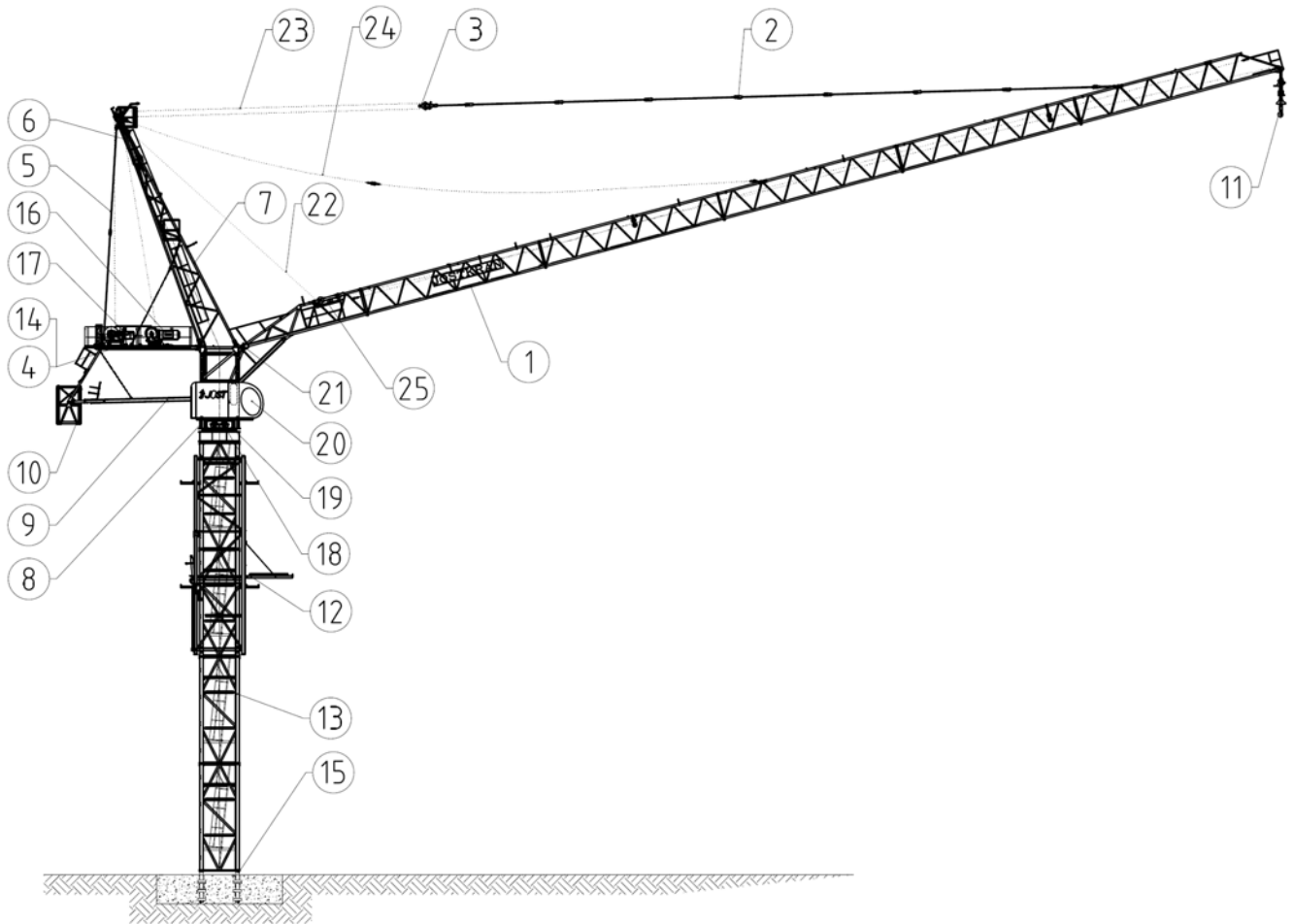


## 2 Technical Data

2.1	General	2
2.1.1	Crane components	2
2.1.2	Jib lengths & Tower TH 20.5	3
2.1.3	Jib & Tie bar configurations	4
2.1.4	Counter jib ballast	5
2.1.5	Ballast weight 3,4 t - steel	5
2.1.6	Ropes dimensions and constructions	6
2.1.7	Packing list Jib length 60,0m	7
2.2	Foundation Loadings Tower TH 20.5	8
2.2.1	Jib lengths 30,0 m - 40,0 m	8
2.2.2	Jib lengths 50,0 m - 60,0 m	9
2.3	Foundation anchor FH 5.2	10
2.4	Earthing	11
2.4.1	Electric power supply	11

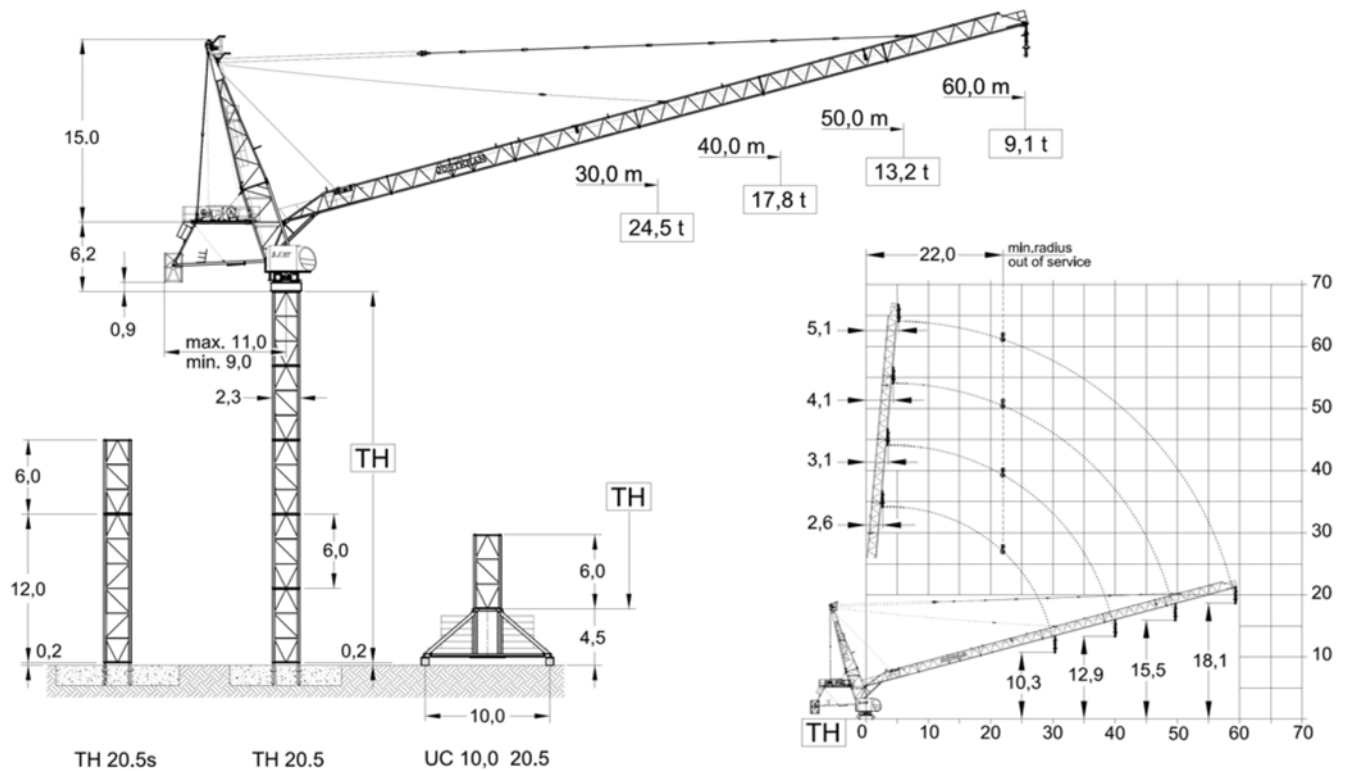
## 2.1 General

### 2.1.1 Crane components



- |                           |                                     |
|---------------------------|-------------------------------------|
| ① Jib                     | ⑭ Counter weight                    |
| ② Tie bars - jib          | ⑮ Fixing plates                     |
| ③ Luffing pulley block    | ⑯ Hoist unit                        |
| ④ Counter jib             | ⑰ Luffing unit with emergency brake |
| ⑤ Tie bars - counter jib  | ⑱ Slewing unit                      |
| ⑥ Tower top - upper part  | ⑲ Slewing ring                      |
| ⑦ Tower top - bottom part | ⑳ CACON                             |
| ⑧ Turntable + Cabin mast  | ㉑ Emergency limit switch            |
| ⑨ Ballast moving system   | ㉒ Hoist rope                        |
| ⑩ Basket                  | ㉓ Luffing rope                      |
| ⑪ Hook block              | ㉔ Guy rope                          |
| ⑫ Telescopic cage         | ㉕ Load pin                          |
| ⑬ Tower                   | ㉖ Limit switch 2/4 fall             |

## 2.1.2 Jib lengths & Tower TH 20.5



		Foundation		Chassis	
Jib length (m)		30,0 - 40,0	50,0 - 60,0	30,0 - 40,0	50,0 - 60,0
TH	TH 20.5	48,0 m	42,0 m	42,0 m	36,0 m
	TH 20.5s	54,0 m	48,0 m	--	--

Speeds 400 V - 50 Hz						
Hoist unit 2 x 75 kW			Frequency inverter			
Pmax			16,0 - 32,0 ( to )			
	Load [to]	8,0	10,0	12,0	14,0	16,0
	v [m/min]	84,0	74,0	68,0	60,0	54,0
	Load [to]	16,0	20,0	24,0	28,0	32,0
	v [m/min]	42,0	37,0	34,0	30,0	27,0
Drum capacity			1060,0 m			

Radius & Capacity													
Jib		max Load											
m	rope	t	m	22	25	27	30	35	40	45	50	55	60
60		16,0	35,2	16,00	16,00	16,00	16,00	14,53	12,60	11,10	9,90	9,50	9,10
		-	-	-	-	-	-	-	-	-	-	-	-
50		16,0	41,6	16,00	16,00	16,00	16,00	16,00	16,00	14,75	13,20	-	-
		-	-	-	-	-	-	-	-	-	-	-	-
40		16,0	40,0	16,00	16,00	16,00	16,00	16,00	16,00	-	-	-	-
		32,0	22,9	32,00	29,14	26,90	24,10	20,50	17,80	-	-	-	-
30		16,0	30,0	16,00	16,00	16,00	16,00	-	-	-	-	-	-
		32,0	23,2	32,00	29,63	27,35	24,50	-	-	-	-	-	-

\* Further hoist models available on request.

Motor	2 x 75,0 kW FI	2 x 4,4 kW	4 x 10,0 kW
t / v	2,50 min	0,67 rpm	25,0 m / min
Power requirement		Hoist 132 kW	280 kVA

CE

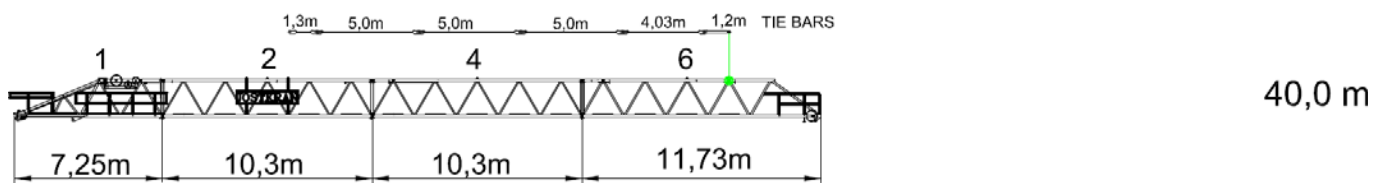
FEM A3  
DIN 15018 H1-B3  
TÜV CERT  
DIN EN ISO 9001

Edition 02/09. Subject to modification.  
Specifications and data not binding.

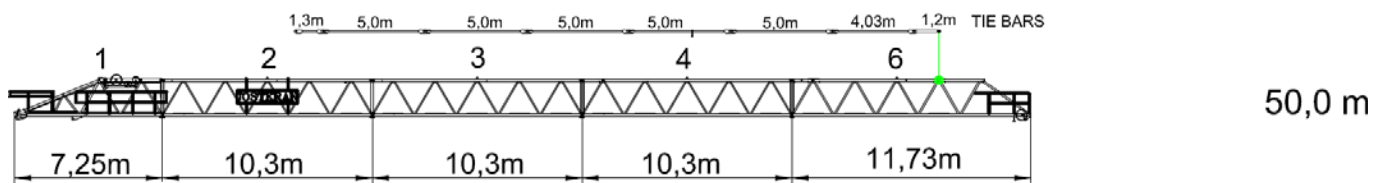
### 2.1.3 Jib & Tie bar configurations



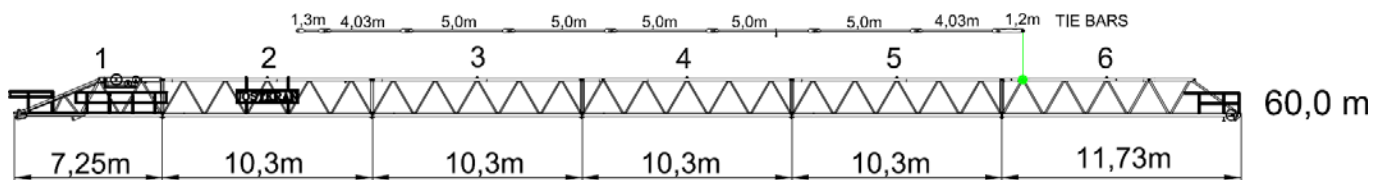
30,0 m



40,0 m

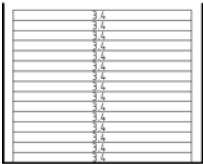
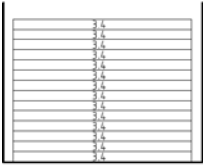



50,0 m



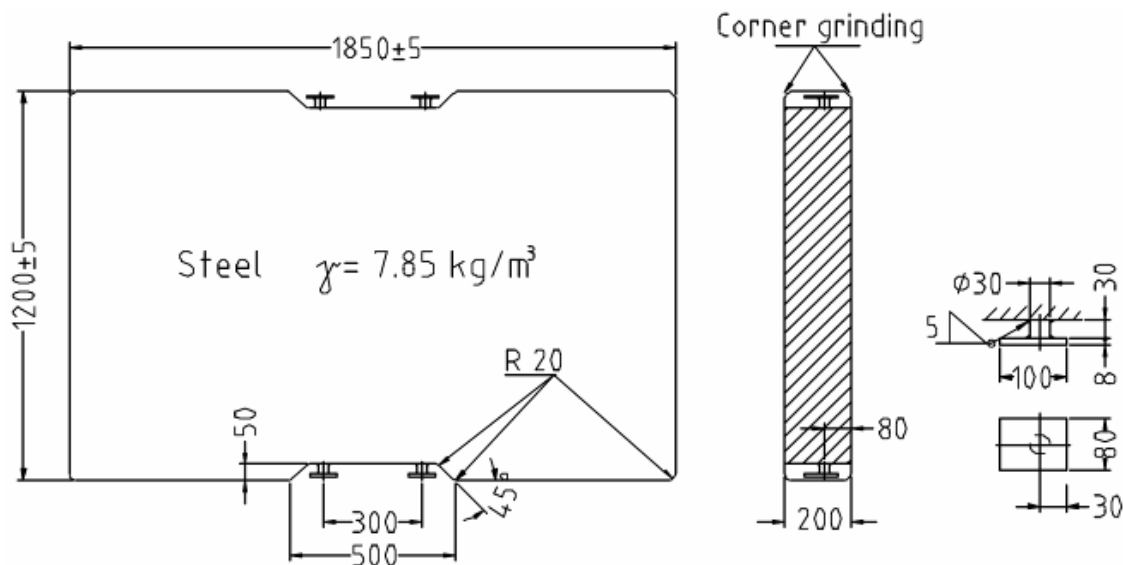
60,0 m

### 2.1.4 Counter jib ballast

	Jib reach	Ballast
	60,0 m	15 x 3,4 t = 51,0 t (steel)
	50,0 m	<u>51,0 t</u>
	40,0 m	14 x 3,4 t = 47,6 t (steel)
		<u>47,6 t</u>
	30,0 m	12 x 3,4 t = 40,8 t (steel)
		<u>40,8 t</u>

### 2.1.5 Ballast weight 3,4 t - steel

Weight tolerance +/- 1 %



## 2.1.6 Ropes dimensions and constructions

### Hoist rope \*

Rated diameter:	22 mm
Construction:	nearly twistless, similar to DIN 3071 SE; Casar - Eurolift
Surface of wires:	bright (bk) or tinning (ZnK)
Rated strength of wires:	1960 N / mm <sup>2</sup>
Minimum breaking load:	441,40 kN
Type of lay and its direction:	cross lay, right-handed (sZ) or <b>long-lay; right-handed (zZ)</b>
Number of carried wires in the out strand:	min. 126
Finish of rope ends:	both ends welded and pointed
Rope end fastening:	- rope joint size Gr. 7 (Demag) - rope wedge size Gr. 7 (Demag) - wire rope clips S 22

### Dead lengths of rope (m)

Jib length m	30,0	40,0	50,0	60,0	Drum capacity
Hoist rope <sup>1</sup>	70,0	80,0	90,0	100,0	1060,0

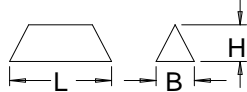

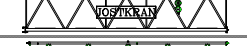

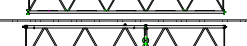










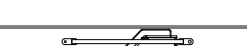










- <sup>1</sup> for determination of total length of hoist rope add to dead length:  
 2-fall rope - add 2 times of hook height  
 4-fall rope - add 4 times of hook height

\* contact manufacturer when using other makers

### Luffing rope \*

Rated diameter:	22 mm
Length:	200,0 m
Construction:	nearly twistless, similar to DIN 3071 SE; Superplast
Surface of wires:	bright (bk) or tinning (ZnK)
Rated strength of wires:	1960 N / mm <sup>2</sup>
Minimum breaking load:	433,70 kN
Type of lay and its direction:	long-lay; right-handed (zZ)
Number of carried wires in the out strand:	min. 208
Finish of rope ends:	both ends welded and pointed
Rope end fastening:	- rope joint size Gr. 7 (Demag) - rope wedge size Gr. 7 (Demag) - wire rope clip S 22

## 2.1.7 Packing list      Jib length    60,0m

Piece	Description		L (m)	B (m)	H (m)	Kg*
1	Jib section 1 + Bracket		9,81	1,88	2,38	3200
1	Jib section 2		10,36	1,88	2,02	1630
1	Jib section 3		10,36	1,88	2,02	1480
1	Jib section 4		10,36	1,88	2,02	1340
1	Jib section 5		10,36	1,88	2,02	1200
1	Jib section 6		11,73	1,88	2,19	2130
1	Counter jib		6,87	2,07	0,93	1390
1	Hoist unit + rope		2,65	2,26	1,66	8200
1	Luffing unit + rope + brake		2,38	2,01	1,20	4250
1	Cabin mast		4,82	1,92	3,03	4300
1	Tower top - upper + bottom part		11,88	2,12	2,32	8650
1	Hook-block		1,40	1,86	0,60	1205
1	Turntable + slewing unit		3,01	2,30	2,26	10800
1	Platform with controlhouses + cabin		4,00	1,31	2,20	2000
1	Basket - upper + lower part		2,96	1,93	3,03	1110
1	Swing		4,21	1,60	1,30	470
1	Moving bar		10,40	1,59	0,35	820
15	Ballast plate - steel		1,85	1,20	0,20	3400
1	Tie bars - Jib ( bundle )		6,30	0,50	0,40	1465
1	Tie bars - counter jib ( bundle )		6,40	0,50	0,30	400
1	Luffing pulley block		1,47	1,03	0,63	380
1	Platform counter jib + Prop		6,20	2,35	1,50	560
1	Platform tower top		2,50	0,90	1,18	110
1	Platform tower top		2,37	1,10	1,18	75
2	Tower TH 20.5		6,00	2,24	2,28	7100
(*) Weight per piece						

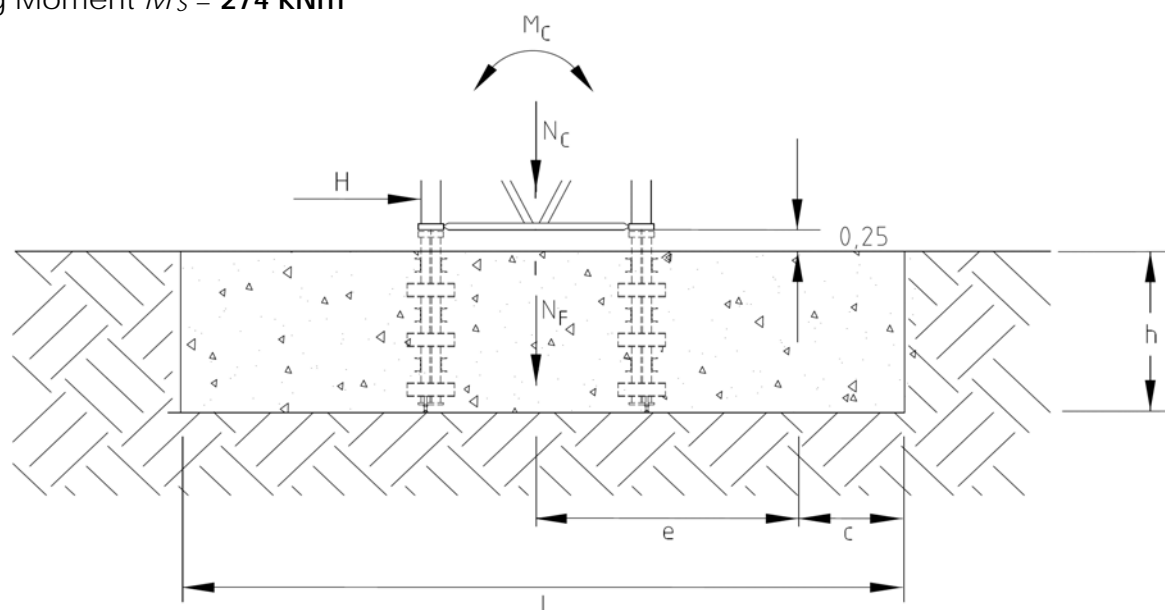
## 2.2 Foundation Loadings Tower TH 20.5

### 2.2.1 Jib lengths 30,0 m - 40,0 m

Tower height m	Tower	Foundation loading			Foundation plate		
	A	$N_C$ kN	$M_C$ kNm	H kN	l m	h m	P Ground kN / m <sup>2</sup>
12,3	2	1665,0	7644	60,7	9,4	1,8	118,33
18,3	3	1731,1	8095	64,2	9,6	1,8	117,98
24,3	4	1797,3	8599	67,6	9,7	1,8	119,83
30,3	5	1863,4	9161	71,1	9,9	1,8	119,83
36,3	6	1929,6	9788	74,6	10,2	1,8	118,10
42,3	7	1605,3	10939	166,2	10,4	1,8	118,02
48,3	8	1671,5	12287	178,7	10,7	1,8	119,70

A = Tower section TH 20.5 - length 6,0 m - weight 7,1 t - bottom 2 bolts M100  
 Tower height = Found. anchor 0,3 + Tower section  
 These loadings are valid for free slewing crane out of service.

Slewing Moment  $M_S = 274 \text{ kNm}$



Calculation of the foundation plate:

$$N_T = N_C + N_F$$

$$M_T = M_C + H * h$$

$$N_F = L^2 * h * 24$$

First condition:

Eccentricity

$$e = M_T / N_T < L / 3$$

$$c = L / 2 - e$$

Second condition:

Ground-pressure

$$p = 2 * N_T / 3 * L * c$$



The admitted ground pressure must be checked by the customer.

For further information on tower erection, see original operating manual from tower manufacturer.



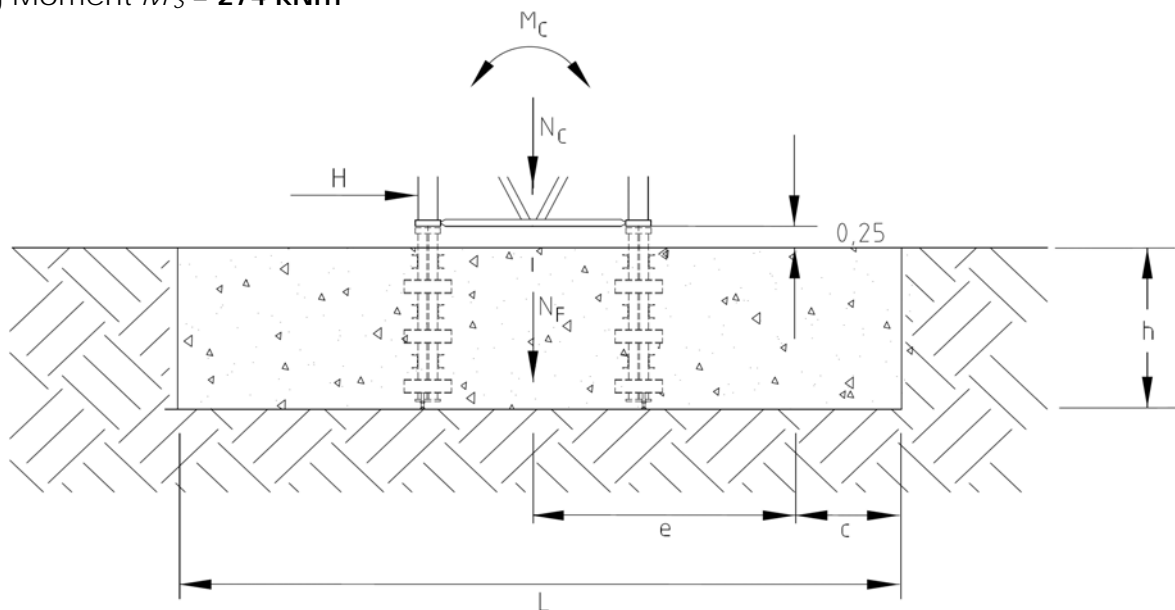
## Foundation Loadings Tower TH 20.5

### 2.2.2 Jib lengths 50,0 m - 60,0 m

Tower height m	Tower A	Foundation loading			Foundation plate		
		N <sub>C</sub> kN	M <sub>C</sub> kNm	H kN	l m	h m	P Ground kN / m <sup>2</sup>
12,3	2	1523,7	7001	54,4	9,1	1,8	118,33
18,3	3	1408,1	8135	141,0	9,4	1,8	119,75
24,3	4	1474,3	9172	153,5	9,8	1,8	118,81
30,3	5	1540,4	10323	166,0	10,2	1,8	118,10
36,3	6	1606,6	11596	178,4	10,5	1,8	119,69
42,3	7	1672,7	13005	190,9	10,9	1,8	119,32

A = Tower section TH 20.5 - length 6,0 m - weight 7,1 t - bottom 2 bolts M100  
 Tower height = Found. anchor 0,3 + Tower section  
 These loadings are valid for free slewing crane out of service.

Slewing Moment  $M_S = 274 \text{ kNm}$



Calculation of the foundation plate:

$$N_T = N_C + N_F$$

$$N_F = L^2 * h * 24$$

$$M_T = M_C + H * h$$

First condition:

Eccentricity

$$e = M_T / N_T < L / 3$$

$$c = L / 2 - e$$

Second condition:

Ground-pressure

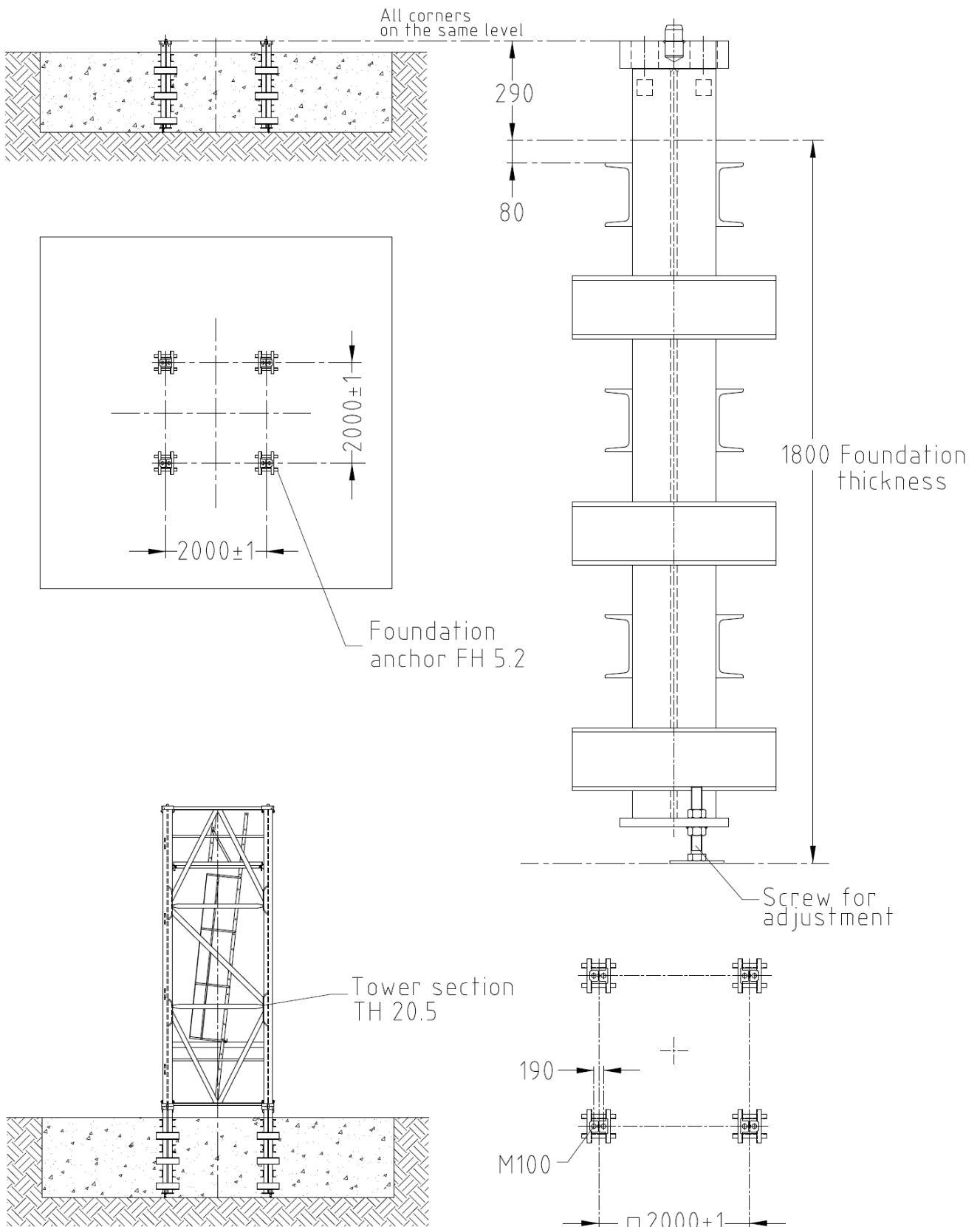
$$p = 2 * N_T / 3 * L * c$$



The admitted ground pressure must be checked by the customer.

For further information on tower erection, see original operating manual from tower manufacturer.

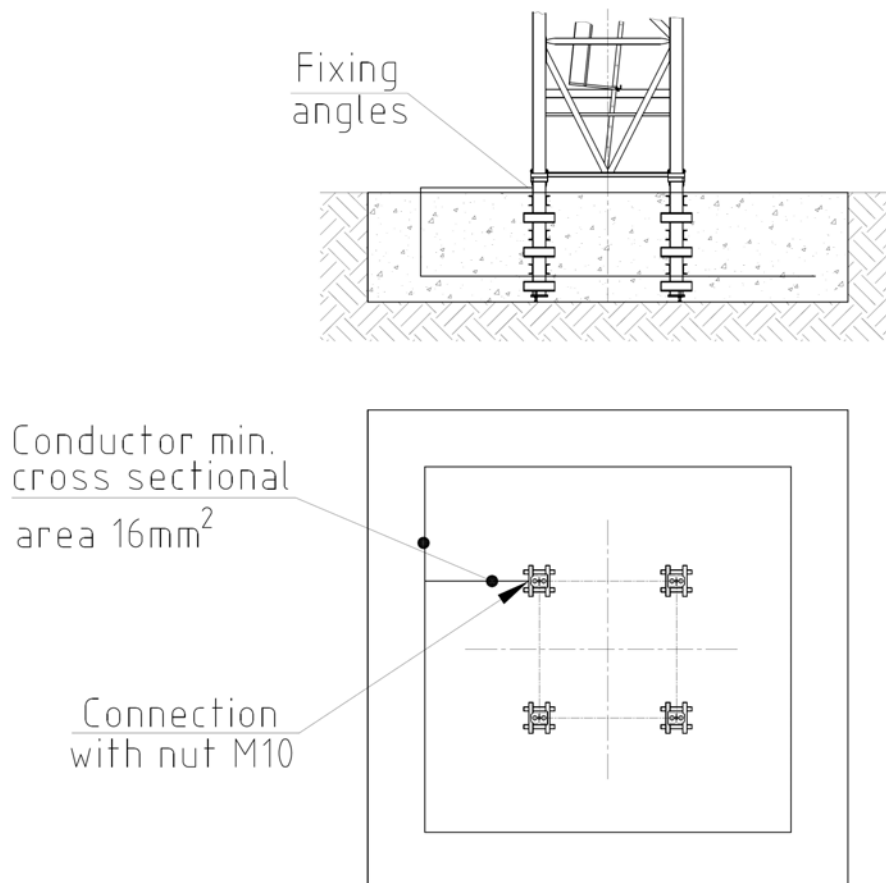
## 2.3 Foundation anchor FH 5.2



## 2.4 Earthing

The user is responsible for the installation of the protective bonding system and must ensure that the minimum requirements established by the standard are attent.

As for sizes, installation, test and maintenance of the protective earthing system against atmospheric discharges, the laws and standards of the country, where the crane is assembled are to attend.



**Conductor must be connected on one of the fixing angles!**

### 2.4.1 Electric power supply

The electric equipment of the crane must always be connected to the bonding circuit.

The user must provide the necessary electrical supply and wiring/connections for the crane to meet its electric energy needs, adhere to the specifications described herein, and conform to standard electrical codes as well as conform to the norms for electrical installations in the place and country where the crane in being installed.