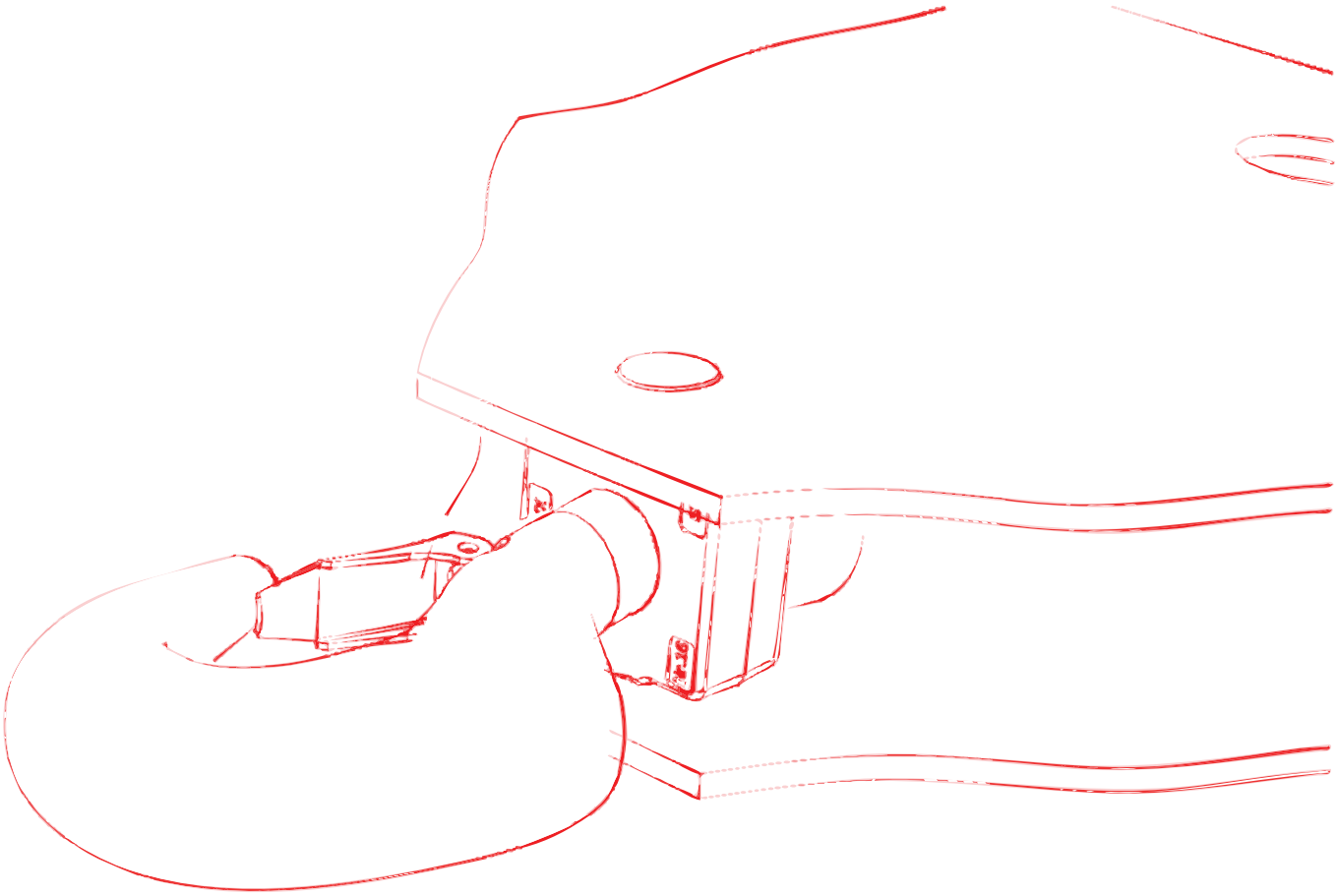
WOLFFKRAN

TI_2017-3

# Slewing tower crane

# WOLFF 275 B

# Technical information



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

Subject to change of design, error and typos.

Stand: 03/2017

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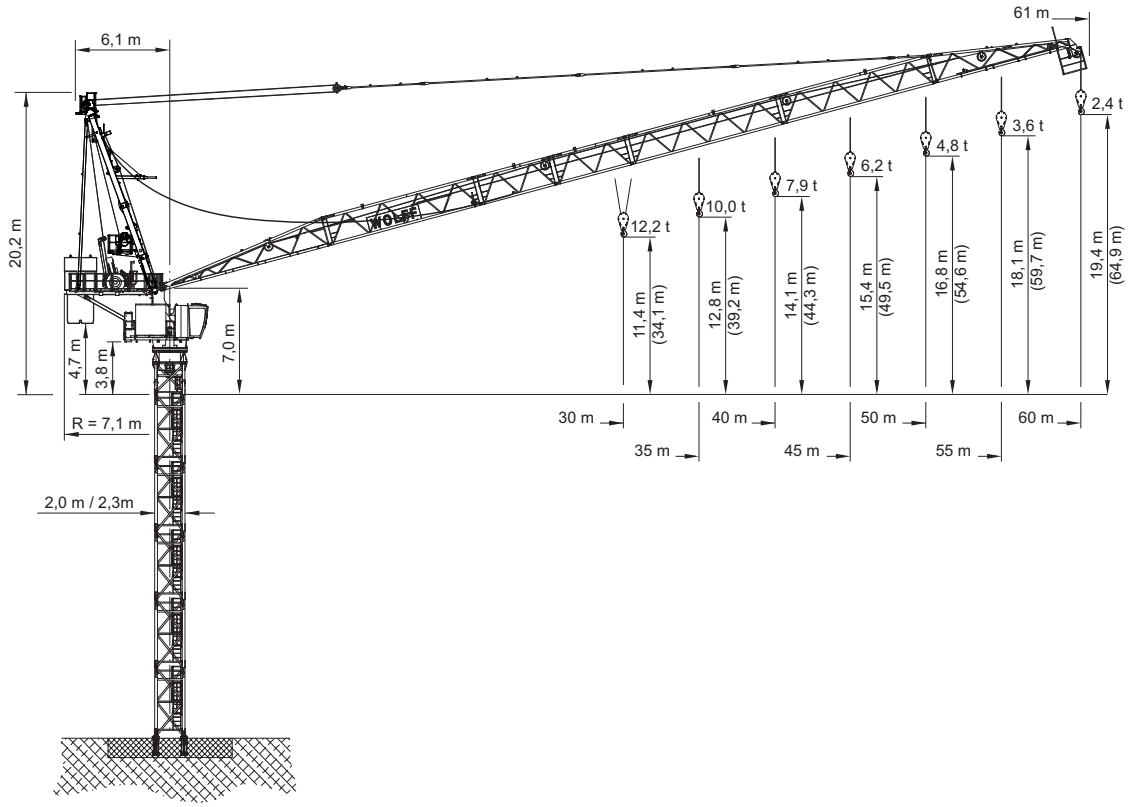
# 1 Schedule drawing

## 1.1 Schedule drawing WOLFF 275 B




Data WOLFF 275 B

| Item | Data |
|---|---|
| Crane type | BGL GROUP C.0.11.0250 |
| Design | Overhead travelling crane with top slewing luffing jib, with climbing feature |
| Type of setup | Stationary or travelling |
| Basis of calculation | EN 14439 |
| Load moment | max. 3860 kNm |
| Hoist winch | Hw 2475 FU |

# 2 Load carrying capacities

## NOTICE

WOLFF-Boost

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

## 2.1 Table of load carrying capacity [t] WOLFF 275 B (1 fall operation)

| WOLFF 275 B | | Load carrying capacities [t] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Max. LCC | Operating radius [m] | | | | | | | | |
| JL [m] | Operating radius for max. LCC [m] | | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 60 | 7.8 - 24.9 | 12.0 | 12.0 | 11.9 | 9.2 | 7.3 | 5.8 | 4.7 | 3.8 | 3.0 | **2.4** |
| 55 | 7.1 - 25.8 | | 12.0 | 12.0 | 9.8 | 7.8 | 6.4 | 5.3 | 4.3 | **3.6** | |
| 50 | 6.5 - 26.6 | | 12.0 | 12.0 | 10.3 | 8.3 | 6.9 | 5.7 | **4.8** | | |
| 45 | 5.8 - 27.5 | | 12.0 | 12.0 | 10.8 | 8.8 | 7.3 | **6.2** | | | |
| 40 | 5.2 - 28.6 | | 12.0 | 12.0 | 11.3 | 9.4 | **7.9** | | | | |
| 35 | 4.6 - 29.9 | | 12.0 | 12.0 | 12.0 | **10.0** | | | | | |
| 30 | 3.9 - 30.0 | | 12.0 | 12.0 | **12.0** | | | | | | |
| 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 275 B (1 fall operation)

| WOLFF 275 B | Load carrying capacities [kg] | | | | | | |
|---|---|---|---|---|---|---|---|
| | Jib length [m] | | | | | | |
| **Operating radius [m]** | **30** | **35** | **40** | **45** | **50** | **55** | **60** |
| 10 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 11 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 12 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 13 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 14 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| **15** | **12000** | **12000** | **12000** | **12000** | **12000** | **12000** | **12000** |
| 16 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 17 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 18 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 19 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| **20** | **12000** | **12000** | **12000** | **12000** | **12000** | **12000** | **12000** |
| 21 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 22 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 23 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 24 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| **25** | **12000** | **12000** | **12000** | **12000** | **12000** | **12000** | **11930** |
| 26 | 12000 | 12000 | 12000 | 12000 | 12000 | 11880 | 11310 |
| 27 | 12000 | 12000 | 12000 | 12000 | 11770 | 11300 | 10720 |
| 28 | 12000 | 12000 | 12000 | 11730 | 11230 | 10760 | 10180 |
| 29 | 12000 | 12000 | 11800 | 11230 | 10730 | 10250 | 9680 |
| **30** | **12000** | **11950** | **11330** | **10760** | **10260** | **9780** | **9210** |
| 31 | | 11510 | 10890 | 10320 | 9820 | 9350 | 8770 |
| 32 | | 11100 | 10470 | 9900 | 9400 | 8930 | 8360 |
| 33 | | 10710 | 10080 | 9510 | 9020 | 8550 | 7970 |
| 34 | | 10340 | 9720 | 9150 | 8650 | 8180 | 7610 |
| **35** | | **10000** | **9370** | **8800** | **8310** | **7840** | **7260** |
| 36 | | | 9040 | 8480 | 7980 | 7520 | 6940 |
| 37 | | | 8730 | 8170 | 7680 | 7210 | 6630 |
| 38 | | | 8440 | 7880 | 7380 | 6920 | 6340 |
| 39 | | | 8160 | 7600 | 7110 | 6640 | 6070 |
| **40** | | | **7900** | **7340** | **6850** | **6380** | **5810** |
| 41 | | | | 7090 | 6600 | 6130 | 5560 |
| 42 | | | | 6850 | 6360 | 5900 | 5320 |
| 43 | | | | 6620 | 6130 | 5670 | 5090 |
| 44 | | | | 6410 | 5920 | 5460 | 4880 |
| **45** | 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 (1 fall operation = 3.25 kg per meter of the hook range). | | | **6200** | **5710** | **5250** | **4670** |
| 46 | | | | | 5510 | 5050 | 4470 |
| 47 | | | | | 5320 | 4860 | 4280 |
| 48 | | | | | 5140 | 4680 | 4100 |
| 49 | | | | | 4970 | 4510 | 3930 |
| **50** | | | | | **4800** | **4340** | **3760** |
| 51 | | | | | | 4180 | 3600 |
| 52 | | | | | | 4030 | 3450 |
| 53 | | | | | | 3880 | 3300 |
| 54 | | | | | | 3740 | 3160 |
| **55** | | | | | | **3600** | **3020** |
| 56 | | | | | | | 2890 |
| 57 | | | | | | | 2760 |
| 58 | | | | | | | 2630 |
| 59 | | | | | | | 2520 |
| **60** | | | | | | | **2400** |

# 2.3 Table of load carrying capacity [t] WOLFF 275 B (1 fall operation, BOOST)

| WOLFF 275 B | | Load carrying capacities with BOOST [t] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Max. LCC | Operating radius [m] | | | | | | | | |
| JL [m] | Operating radius for max. LCC [m] | | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 60 | 7.8 - 26.7 | 12.0 | 12.0 | 12.0 | 10.1 | 8.0 | 6.4 | 5.1 | 4.1 | 3.3 | **2.6** |
| 55 | 7.1 - 27.7 | | 12.0 | 12.0 | 10.8 | 8.6 | 7.0 | 5.8 | 4.8 | **4.0** | |
| 50 | 6.5 - 28.6 | | 12.0 | 12.0 | 11.3 | 9.1 | 7.5 | 6.3 | **5.3** | | |
| 45 | 5.8 - 29.7 | | 12.0 | 12.0 | 11.8 | 9.7 | 8.1 | **6.8** | | | |
| 40 | 5.2 - 30.9 | | 12.0 | 12.0 | 12.0 | 10.3 | **8.7** | | | | |
| 35 | 4.6 - 32.5 | | 12.0 | 12.0 | 12.0 | **11.0** | | | | | |
| 30 | 3.9 - 30.0 | | 12.0 | 12.0 | **12.0** | | | | | | |
| 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).

# 2.4 Table of load carrying capacities [kg] in meter intervals, WOLFF 275 B (1 fall operation, BOOST)

| WOLFF 275 B | Load carrying capacities with BOOST [kg] | | | | | | |
|---|---|---|---|---|---|---|---|
| | Jib length [m] | | | | | | |
| **Operating radius [m]** | **30** | **35** | **40** | **45** | **50** | **55** | **60** |
| 10 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 11 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 12 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 13 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 14 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| **15** | **12000** | **12000** | **12000** | **12000** | **12000** | **12000** | **12000** |
| 16 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 17 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 18 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 19 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| **20** | **12000** | **12000** | **12000** | **12000** | **12000** | **12000** | **12000** |
| 21 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 22 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 23 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 24 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| **25** | **12000** | **12000** | **12000** | **12000** | **12000** | **12000** | **12000** |
| 26 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 |
| 27 | 12000 | 12000 | 12000 | 12000 | 12000 | 12000 | 11790 |
| 28 | 12000 | 12000 | 12000 | 12000 | 12000 | 11840 | 11200 |
| 29 | 12000 | 12000 | 12000 | 12000 | 11800 | 11280 | 10650 |
| **30** | **12000** | **12000** | **12000** | **11840** | **11290** | **10760** | **10130** |
| 31 | | 12000 | 11980 | 11350 | 10800 | 10290 | 9650 |
| 32 | | 12000 | 11520 | 10890 | 10340 | 9820 | 9200 |
| 33 | | 11780 | 11090 | 10460 | 9920 | 9410 | 8770 |
| 34 | | 11370 | 10690 | 10070 | 9520 | 9000 | 8370 |
| **35** | | **11000** | **10310** | **9680** | **9140** | **8620** | **7990** |
| 36 | | | 9940 | 9330 | 8780 | 8270 | 7630 |
| 37 | | | 9600 | 8990 | 8450 | 7930 | 7290 |
| 38 | | | 9280 | 8670 | 8120 | 7610 | 6970 |
| 39 | | | 8980 | 8360 | 7820 | 7300 | 6680 |
| **40** | | | **8690** | **8070** | **7540** | **7020** | **6390** |
| 41 | | | | 7800 | 7260 | 6740 | 6120 |
| 42 | | | | 7540 | 7000 | 6490 | 5850 |
| 43 | | | | 7280 | 6740 | 6240 | 5600 |
| 44 | | | | 7050 | 6510 | 6010 | 5370 |
| **45** | 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 (1 fall operation = 3.25 kg per meter of the hook range). | | | **6820** | **6280** | **5780** | **5140** |
| 46 | | | | | 6060 | 5560 | 4920 |
| 47 | | | | | 5850 | 5350 | 4710 |
| 48 | | | | | 5650 | 5150 | 4510 |
| 49 | | | | | 5470 | 4960 | 4320 |
| **50** | | | | | **5280** | **4770** | **4140** |
| 51 | | | | | | 4600 | 3960 |
| 52 | | | | | | 4430 | 3800 |
| 53 | | | | | | 4270 | 3630 |
| 54 | | | | | | 4110 | 3480 |
| **55** | | | | | | **3960** | **3320** |
| 56 | | | | | | | 3180 |
| 57 | | | | | | | 3040 |
| 58 | | | | | | | 2890 |
| 59 | | | | | | | 2770 |
| **60** | | | | | | | **2640** |

## 2.5 Table of load carrying capacity [t] WOLFF 275 B (2 fall operation)

| WOLFF 275 B | | Load carrying capacities [t] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Max. LCC | Operating radius [m] | | | | | | | | |
| JL [m] | Operating radius for max. LCC [m] | | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 60 | 7.8 - 21.8 | 14.0 | 14.0 | 11.6 | 8.9 | 7.0 | 5.5 | 4.4 | 3.5 | 2.7 | **2.1** |
| 55 | 7.1 - 18.4 | 18.0 | 16.2 | 12.2 | 9.5 | 7.5 | 6.1 | 4.9 | 4.0 | **3.3** | |
| 50 | 6.5 - 15.9 | 22.0 | 16.7 | 12.7 | 9.9 | 8.0 | 6.5 | 5.4 | **4.5** | | |
| 45 | 5.8 - 15.1 | 24.0 | 17.3 | 13.2 | 10.5 | 8.5 | 7.0 | **5.9** | | | |
| 40 | 5.2 - 15.4 | | 17.9 | 13.8 | 11.0 | 9.1 | **7.6** | | | | |
| 35 | 4.6 - 15.8 | | 18.5 | 14.4 | 11.7 | **9.7** | | | | | |
| 30 | 3.9 - 16.1 | | 19.0 | 14.9 | **12.2** | | | | | | |
| 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).

# 2.6 Table of load carrying capacities [kg] in meter intervals, WOLFF 275 B (2 fall operation)

| WOLFF 275 B | Load carrying capacities [kg] | | | | | | |
|---|---|---|---|---|---|---|---|
| | Jib length [m] | | | | | | |
| **Operating radius [m]** | **30** | **35** | **40** | **45** | **50** | **55** | **60** |
| 10 | 24000 | 24000 | 24000 | 24000 | 22000 | 18000 | 14000 |
| 11 | 24000 | 24000 | 24000 | 24000 | 22000 | 18000 | 14000 |
| 12 | 24000 | 24000 | 24000 | 24000 | 22000 | 18000 | 14000 |
| 13 | 24000 | 24000 | 24000 | 24000 | 22000 | 18000 | 14000 |
| 14 | 24000 | 24000 | 24000 | 24000 | 22000 | 18000 | 14000 |
| **15** | **24000** | **24000** | **24000** | **24000** | **22000** | **18000** | **14000** |
| 16 | 24000 | 23670 | 23000 | 22470 | 21840 | 18000 | 14000 |
| 17 | 22650 | 22160 | 21490 | 20960 | 20340 | 18000 | 14000 |
| 18 | 21310 | 20810 | 20150 | 19610 | 19010 | 18000 | 14000 |
| 19 | 20110 | 19610 | 18950 | 18410 | 17810 | 17300 | 14000 |
| **20** | **19030** | **18530** | **17870** | **17330** | **16740** | **16230** | **14000** |
| 21 | 18060 | 17550 | 16890 | 16350 | 15770 | 15270 | 14000 |
| 22 | 17170 | 16650 | 16000 | 15460 | 14890 | 14390 | 13830 |
| 23 | 16360 | 15840 | 15190 | 14640 | 14080 | 13580 | 13020 |
| 24 | 15620 | 15090 | 14440 | 13900 | 13340 | 12850 | 12290 |
| **25** | **14930** | **14410** | **13760** | **13210** | **12660** | **12170** | **11610** |
| 26 | 14300 | 13770 | 13130 | 12580 | 12030 | 11540 | 10980 |
| 27 | 13720 | 13190 | 12540 | 11990 | 11450 | 10960 | 10400 |
| 28 | 13180 | 12640 | 12000 | 11450 | 10910 | 10430 | 9860 |
| 29 | 12670 | 12130 | 11490 | 10940 | 10410 | 9930 | 9360 |
| **30** | **12200** | **11660** | **11020** | **10470** | **9940** | **9460** | **8890** |
| 31 | | 11220 | 10580 | 10030 | 9500 | 9020 | 8450 |
| 32 | | 10800 | 10170 | 9610 | 9090 | 8610 | 8040 |
| 33 | | 10410 | 9780 | 9220 | 8700 | 8230 | 7660 |
| 34 | | 10050 | 9410 | 8860 | 8340 | 7860 | 7290 |
| **35** | | **9700** | **9070** | **8510** | **8000** | **7520** | **6950** |
| 36 | | | 8740 | 8190 | 7670 | 7200 | 6630 |
| 37 | | | 8430 | 7880 | 7370 | 6900 | 6320 |
| 38 | | | 8140 | 7580 | 7080 | 6610 | 6030 |
| 39 | | | 7860 | 7310 | 6800 | 6330 | 5760 |
| **40** | | | **7600** | **7040** | **6540** | **6070** | **5500** |
| 41 | | | | 6790 | 6290 | 5820 | 5250 |
| 42 | | | | 6550 | 6050 | 5590 | 5010 |
| 43 | | | | 6330 | 5830 | 5360 | 4780 |
| 44 | | | | 6110 | 5610 | 5150 | 4570 |
| **45** | 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). | | | **5900** | **5410** | **4940** | **4360** |
| 46 | | | | | 5210 | 4750 | 4170 |
| 47 | | | | | 5020 | 4560 | 3980 |
| 48 | | | | | 4840 | 4380 | 3800 |
| 49 | | | | | 4670 | 4200 | 3620 |
| **50** | | | | | **4500** | **4040** | **3460** |
| 51 | | | | | | 3880 | 3300 |
| 52 | | | | | | 3730 | 3140 |
| 53 | | | | | | 3580 | 3000 |
| 54 | | | | | | 3440 | 2850 |
| **55** | | | | | | **3300** | **2720** |
| 56 | | | | | | | 2590 |
| 57 | | | | | | | 2460 |
| 58 | | | | | | | 2330 |
| 59 | | | | | | | 2220 |
| **60** | | | | | | | **2100** |

# 2.7 Table of load carrying capacity [t] WOLFF 275 B (2 fall operation, BOOST)

| WOLFF 275 B | | Load carrying capacities with BOOST [t] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Max. LCC | Operating radius [m] | | | | | | | | |
| JL [m] | Operating radius for max. LCC [m] | | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 60 | 7.8 - 23.4 | 14.0 | 14.0 | 12.8 | 9.8 | 7.7 | 6.1 | 4.8 | 3.8 | 3.0 | **2.3** |
| 55 | 7.1 - 19.9 | 18.0 | 17.9 | 13.4 | 10.4 | 8.3 | 6.7 | 5.4 | 4.4 | **3.6** | |
| 50 | 6.5 - 17.2 | 22.0 | 18.4 | 13.9 | 10.9 | 8.8 | 7.2 | 6.0 | **5.0** | | |
| 45 | 5.8 - 16.4 | 24.0 | 19.1 | 14.5 | 11.5 | 9.4 | 7.7 | **6.5** | | | |
| 40 | 5.2 - 16.8 | | 19.7 | 15.1 | 12.1 | 10.0 | **8.4** | | | | |
| 35 | 4.6 - 17.2 | | 20.4 | 15.9 | 12.8 | **10.7** | | | | | |
| 30 | 3.9 - 17.6 | | 20.9 | 16.4 | **13.4** | | | | | | |
| 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 275 B (2 fall operation, BOOST)

| WOLFF 275 B | Load carrying capacities with BOOST [kg] | | | | | | |
|---|---|---|---|---|---|---|---|
| | Jib length [m] | | | | | | |
| Operating radius [m] | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 10 | 24000 | 24000 | 24000 | 24000 | 22000 | 18000 | 14000 |
| 11 | 24000 | 24000 | 24000 | 24000 | 22000 | 18000 | 14000 |
| 12 | 24000 | 24000 | 24000 | 24000 | 22000 | 18000 | 14000 |
| 13 | 24000 | 24000 | 24000 | 24000 | 22000 | 18000 | 14000 |
| 14 | 24000 | 24000 | 24000 | 24000 | 22000 | 18000 | 14000 |
| **15** | **24000** | **24000** | **24000** | **24000** | **22000** | **18000** | **14000** |
| 16 | 24000 | 24000 | 24000 | 24000 | 22000 | 18000 | 14000 |
| 17 | 24000 | 24000 | 23640 | 23060 | 22000 | 18000 | 14000 |
| 18 | 23440 | 22890 | 22170 | 21570 | 20910 | 18000 | 14000 |
| 19 | 22120 | 21570 | 20850 | 20250 | 19590 | 18000 | 14000 |
| **20** | **20930** | **20380** | **19660** | **19060** | **18410** | **17850** | **14000** |
| 21 | 19870 | 19310 | 18580 | 17990 | 17350 | 16800 | 14000 |
| 22 | 18890 | 18320 | 17600 | 17010 | 16380 | 15830 | 14000 |
| 23 | 18000 | 17420 | 16710 | 16100 | 15490 | 14940 | 14000 |
| 24 | 17180 | 16600 | 15880 | 15290 | 14670 | 14140 | 13520 |
| **25** | **16420** | **15850** | **15140** | **14530** | **13930** | **13390** | **12770** |
| 26 | 15730 | 15150 | 14440 | 13840 | 13230 | 12690 | 12080 |
| 27 | 15090 | 14510 | 13790 | 13190 | 12600 | 12060 | 11440 |
| 28 | 14500 | 13900 | 13200 | 12600 | 12000 | 11470 | 10850 |
| 29 | 13940 | 13340 | 12640 | 12030 | 11450 | 10920 | 10300 |
| **30** | **13420** | **12830** | **12120** | **11520** | **10930** | **10410** | **9780** |
| 31 | | 12340 | 11640 | 11030 | 10450 | 9920 | 9300 |
| 32 | | 11880 | 11190 | 10570 | 10000 | 9470 | 8840 |
| 33 | | 11450 | 10760 | 10140 | 9570 | 9050 | 8430 |
| 34 | | 11060 | 10350 | 9750 | 9170 | 8650 | 8020 |
| **35** | | **10670** | **9980** | **9360** | **8800** | **8270** | **7650** |
| 36 | | | 9610 | 9010 | 8440 | 7920 | 7290 |
| 37 | | | 9270 | 8670 | 8110 | 7590 | 6950 |
| 38 | | | 8950 | 8340 | 7790 | 7270 | 6630 |
| 39 | | | 8650 | 8040 | 7480 | 6960 | 6340 |
| **40** | | | **8360** | **7740** | **7190** | **6680** | **6050** |
| 41 | | | | 7470 | 6920 | 6400 | 5780 |
| 42 | | | | 7210 | 6660 | 6150 | 5510 |
| 43 | | | | 6960 | 6410 | 5900 | 5260 |
| 44 | | | | 6720 | 6170 | 5670 | 5030 |
| **45** | 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). | | | **6490** | **5950** | **5430** | **4800** |
| 46 | | | | | 5730 | 5230 | 4590 |
| 47 | | | | | 5520 | 5020 | 4380 |
| 48 | | | | | 5320 | 4820 | 4180 |
| 49 | | | | | 5140 | 4620 | 3980 |
| **50** | | | | | **4950** | **4440** | **3810** |
| 51 | | | | | | 4270 | 3630 |
| 52 | | | | | | 4100 | 3450 |
| 53 | | | | | | 3940 | 3300 |
| 54 | | | | | | 3780 | 3140 |
| **55** | | | | | | **3630** | **2990** |
| 56 | | | | | | | 2850 |
| 57 | | | | | | | 2710 |
| 58 | | | | | | | 2560 |
| 59 | | | | | | | 2440 |
| **60** | | | | | | | **2310** |

# 3 Tower combinations

**⚠ DANGER**

Usage of incorrect tower combinations.

The slewing tower crane may overturn.

1) Use the specified tower combinations.

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

***NOTICE***

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

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

| **Jib length** | | **30 m – 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 | 45.0 m | TV 20.4 | TV 20.4 | | |
| 11 | 49.5 m | TV 20.4 | TVÜ 20-23 | | |
| 12 | 54.0 m | | HT 23 | | |
| 13 | 58.5 m | | HT 23 | | |
| 14 | 63.0 m | | HT 23 | | |
| | | | | | |
| Foundation anchors | | FUA 140 / Type D-140 | FUA G 160 | | |
| Tower height [m] | | 49.5 | 63.0 | | |
| 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 | 40.5 m | TV 20.4 | | | |
| 10 | 45.0 m | TVÜ 20-23 | | | |
| 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 | | | |

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 | 36.0 m | TV 20.4 | | | |
| 9 | 40.5 m | TV 20.4 | | | |
| 10 | 45.0 m | TVÜ 20-23 | | | |
| 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 | | 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 | | | |
| 10 | 45.0 m | TVÜ 20-23 | | | |
| 11 | 49.5 m | HT 23 | | | |
| 12 | 54.0 m | HT 23 | | | |
| 13 | 58.5 m | HT 23 | | | |
| 14 | 59.7 m | VR 23/25-29.1 | | | |
| 15 | 64.2 m | TV 29 | | | |
| 16 | 68.7 m | TV 29 | | | |
| 17 | 73.2 m | TV 29 | | | |
| 18 | 77.7 m | TV 29 | | | |
| 19 | 82.2 m | TV 29 | | | |
| | | | | | |
| Foundation anchors | | FUA 210 G | | | |
| Tower height [m] | | 82.2 | | | |
| Wind category | | C25 | | | |

3 Tower combinations

| Jib length | | 45 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 | 45.0 m | TV 20.4 | TVÜ 20-23 | | |
| 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 140 / Type D-140 | FUA G 160 | | |
| Tower height [m] | | 45.0 | 63.0 | | |
| Wind category | | C25 | | | |

| Jib length | | 45 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 | | | |
| 10 | 45.0 m | TVÜ 20-23 | | | |
| 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 | | | |
|---|---|---|---|---|---|
| **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 | | | |
| 10 | 45.0 m | TVÜ 20-23 | | | |
| 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 | 74.2 m | BT 29 | | | |
| | | | | | |
| | | | | | |
| Foundation anchors | | FUA BT 29 | | | |
| Tower height [m] | | 74.2 | | | |
| Wind category | | C25 | | | |

| Jib length | | 45 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 | TVÜ 20-23 | | | |
| 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 23/25-29.1 | | | |
| 15 | 64.2 m | TV 29 | | | |
| 16 | 68.7 m | TV 29 | | | |
| 17 | 73.2 m | TV 29 | | | |
| 18 | 77.7 m | TV 29 | | | |
| 19 | 82.2 m | TV 29 | | | |
| | | | | | |
| Foundation anchors | | FUA 210 G | | | |
| Tower height [m] | | 82.2 | | | |
| Wind category | | C25 | | | |

3 Tower combinations

| Jib length | | 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 | 36.0 m | TV 20.4 | TV 20.4 | | |
| 9 | 40.5 m | TV 20.4 | TV 20.4 | | |
| 10 | 45.0 m | TV 20.4 | TVÜ 20-23 | | |
| 11 | 49.5 m | | HT 23 | | |
| 12 | 54.0 m | | HT 23 | | |
| 13 | 58.5 m | | HT 23 | | |
| | | | | | |
| Foundation anchors | | FUA 140 / Type D-140 | FUA G 160 | | |
| Tower height [m] | | 45.0 | 58.5 | | |
| Wind category | | C25 | | | |

| Jib length | | 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 | TVÜ 20-23 | | | |
| 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 | | | |

3 Tower combinations

| Jib length | | 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 | TVÜ 20-23 | | | |
| 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 | | | |

| Jib length | | 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 | TVÜ 20-23 | | | |
| 10 | 45.0 m | HT 23 | | | |
| 11 | 49.5 m | HT 23 | | | |
| 12 | 54.0 m | HT 23 | | | |
| 13 | 55.2 m | VR 23/25-29.1 | | | |
| 14 | 59.7 m | TV 29 | | | |
| 15 | 64.2 m | TV 29 | | | |
| 16 | 68.7 m | TV 29 | | | |
| 17 | 73.2 m | TV 29 | | | |
| 18 | 77.7 m | TV 29 | | | |
| | | | | | |
| Foundation anchors | | FUA 210 G | | | |
| Tower height [m] | | 77.7 | | | |
| 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 | TVÜ 20-23 | | |
| 10 | 45.0 m | | HT 23 | | |
| 11 | 49.5 m | | HT 23 | | |
| 12 | 54.0 m | | HT 23 | | |
| | | | | | |
| Foundation anchors | | FUA 140 / Type D-140 | FUA G 160 | | |
| Tower height [m] | | 40.5 | 54.0 | | |
| 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 | 31.5 m | TV 20.4 | | | |
| 8 | 36.0 m | TVÜ 20-23 | | | |
| 9 | 40.5 m | HT 23 | | | |
| 10 | 45.0 m | HT 23 | | | |
| 11 | 49.5 m | HT 23 | | | |
| 12 | 60.8 m | BT 23 | | | |
| | | | | | |
| | | | | | |
| Foundation anchors | | FUA 210 G | | | |
| Tower height [m] | | 60.8 | | | |
| 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 | TVÜ 20-23 | | | |
| 9 | 40.5 m | HT 23 | | | |
| 10 | 45.0 m | HT 23 | | | |
| 11 | 49.5 m | HT 23 | | | |
| 12 | 50.7 m | VR 23/25-29 | | | |
| 13 | 55.2 m | UV 29 | | | |
| 14 | 59.7 m | UV 29 | | | |
| 15 | 69.7 m | BT 29 | | | |
| | | | | | |
| | | | | | |
| Foundation anchors | | FUA BT 29 | | | |
| Tower height [m] | | 69.7 | | | |
| 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 | TVÜ 20-23 | | | |
| 9 | 40.5 m | HT 23 | | | |
| 10 | 45.0 m | HT 23 | | | |
| 11 | 49.5 m | HT 23 | | | |
| 12 | 50.7 m | VR 23/25-29.1 | | | |
| 13 | 55.2 m | TV 29 | | | |
| 14 | 59.7 m | TV 29 | | | |
| 15 | 64.2 m | TV 29 | | | |
| 16 | 68.7 m | TV 29 | | | |
| 17 | 73.2 m | TV 29 | | | |
| | | | | | |
| Foundation anchors | | FUA 210 G | | | |
| Tower height [m] | | 73.2 | | | |
| 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 | | | |
| | | | | | |
| Foundation anchors | | FUA G 160 | | | |
| Tower height [m] | | 63.0 | | | |
| 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 | 69.8 m | BT 23 | | | |
| | | | | | |
| | | | | | |
| Foundation anchors | | FUA 210 G | | | |
| Tower height [m] | | 69.8 | | | |
| 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 | 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 | | 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 | 59.7 m | VR 23/25-29.1 | | | |
| 15 | 64.2 m | TV 29 | | | |
| 16 | 68.7 m | TV 29 | | | |
| 17 | 73.2 m | TV 29 | | | |
| 18 | 77.7 m | TV 29 | | | |
| 19 | 82.2 m | TV 29 | | | |
| | | | | | |
| Foundation anchors | | FUA 210 G | | | |
| Tower height [m] | | 82.2 | | | |
| Wind category | | C25 | | | |

3 Tower combinations

| Jib length | | 45 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 G 160 | | | |
| Tower height [m] | | 63.0 | | | |
| Wind category | | C25 | | | |

| Jib length | | 45 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 | | | |
|---|---|---|---|---|---|
| **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 | 74.2 m | BT 29 | | | |
| | | | | | |
| | | | | | |
| Foundation anchors | | FUA BT 29 | | | |
| Tower height [m] | | 74.2 | | | |
| Wind category | | C25 | | | |

| Jib length | | 45 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 23/25-29.1 | | | |
| 15 | 64.2 m | TV 29 | | | |
| 16 | 68.7 m | TV 29 | | | |
| 17 | 73.2 m | TV 29 | | | |
| 18 | 77.7 m | TV 29 | | | |
| | | | | | |
| Foundation anchors | | FUA 210 G | | | |
| Tower height [m] | | 77.7 | | | |
| Wind category | | C25 | | | |

3 Tower combinations

| Jib length | | 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 | | | |
| | | | | | |
| Foundation anchors | | FUA G 160 | | | |
| Tower height [m] | | 58.5 | | | |
| Wind category | | C25 | | | |

| Jib length | | 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 | 65.3 m | BT 23 | | | |
| | | | | | |
| | | | | | |
| Foundation anchors | | FUA 210 G | | | |
| Tower height [m] | | 65.3 | | | |
| Wind category | | C25 | | | |

3 Tower combinations

| Jib length | | 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 | 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 | | | |

| Jib length | | 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 | 55.2 m | VR 23/25-29.1 | | | |
| 14 | 59.7 m | TV 29 | | | |
| 15 | 64.2 m | TV 29 | | | |
| 16 | 68.7 m | TV 29 | | | |
| 17 | 73.2 m | TV 29 | | | |
| 18 | 77.7 m | TV 29 | | | |
| | | | | | |
| Foundation anchors | | FUA 210 G | | | |
| Tower height [m] | | 77.7 | | | |
| 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 | | | |
| | | | | | |
| Foundation anchors | | FUA G 160 | | | |
| Tower height [m] | | 54.0 | | | |
| 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 | 60.8 m | BT 23 | | | |
| | | | | | |
| | | | | | |
| Foundation anchors | | FUA 210 G | | | |
| Tower height [m] | | 60.8 | | | |
| 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 | 50.7 m | VR 23/25-29 | | | |
| 13 | 55.2 m | UV 29 | | | |
| 14 | 65.2 m | BT 29 | | | |
| | | | | | |
| | | | | | |
| Foundation anchors | | FUA BT 29 | | | |
| Tower height [m] | | 65.2 | | | |
| 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 | 50.7 m | VR 23/25-29.1 | | | |
| 13 | 55.2 m | TV 29 | | | |
| 14 | 59.7 m | TV 29 | | | |
| 15 | 64.2 m | TV 29 | | | |
| 16 | 68.7 m | TV 29 | | | |
| 17 | 73.2 m | TV 29 | | | |
| | | | | | |
| Foundation anchors | | FUA 210 G | | | |
| Tower height [m] | | 73.2 | | | |
| Wind category | | C25 | | | |

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

| **Jib length** | | **30 m – 40 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 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 |
| 8 | 36.0 m | | | TV 20.4 | TV 20.4 |
| 9 | 40.5 m | | | TV 20.4 | TV 20.4 |
| 10 | 45.0 m | | | TV 20.4 | TV 20.4 |
| 11 | 49.5 m | | | TV 20.4 | |
| | | | | | |
| Substructure | | KR 10-46 | KR 10-46/60 | 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 | 1.2 |
| Tower height [m] | | 32.7 | 28.2 | 50.7 | 46.2 |
| Wind category | | C25 | | | |

| **Jib length** | | **30 m – 40 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 1 | 4.5 m | TV 20.4 | TV 20.4 | | |
| 2 | 9.0 m | TV 20.4 | TV 20.4 | | |
| 3 | 13.5 m | TV 20.4 | TV 20.4 | | |
| 4 | 18.0 m | TV 20.4 | TV 20.4 | | |
| 5 | 22.5 m | TV 20.4 | TV 20.4 | | |
| 6 | 27.0 m | TV 20.4 | TV 20.4 | | |
| 7 | 31.5 m | TV 20.4 | TV 20.4 | | |
| 8 | 36.0 m | TV 20.4 | TV 20.4 | | |
| 9 | 40.5 m | TV 20.4 | TV 20.4 | | |
| 10 | 45.0 m | TV 20.4 | TV 20.4 | | |
| 11 | 49.5 m | TVÜ 20-23 | TVÜ 20-23 | | |
| 12 | 54.0 m | HT 23 | HT 23 | | |
| 13 | 58.5 m | HT 23 | HT 23 | | |
| 14 | 63.0 m | HT 23 | HT 23 | | |
| | | | | | |
| Substructure | | KR 12-60<br>KR 12-60/80 | KR 16-80<br>KR 16-80/100 | | |
| Corner distance [m x m] | | 6.0 x 6.0<br>8.0 x 8.0 | 8.0 x 8.0<br>10.0 x 10.0 | | |
| Substructure height [m] | | 1.4 | 1.8 | | |
| Tower height [m] | | 64.4 | 64.8 | | |
| Wind category | | C25 | | | |

3 Tower combinations

| **Jib length** | | **30 m – 40 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 1 | 4.5 m | TV 20.4 | | | |
| 2 | 9.0 m | TV 20.4 | | | |
| 3 | 13.5 m | TV 20.4 | | | |
| 4 | 18.0 m | TV 20.4 | | | |
| 5 | 22.5 m | TV 20.4 | | | |
| 6 | 27.0 m | TV 20.4 | | | |
| 7 | 31.5 m | TV 20.4 | | | |
| 8 | 36.0 m | TV 20.4 | | | |
| 9 | 40.5 m | TV 20.4 | | | |
| 10 | 45.0 m | TVÜ 20-23 | | | |
| 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 | 74.2 m | BT 29 | | | |
| | | | | | |
| | | | | | |
| Substructure | | KR 16-80<br>KR 16-80/100 | | | |
| Corner distance [m x m] | | 8.0 x 8.0<br>10.0 x 10.0 | | | |
| Substructure height [m] | | 1.8 | | | |
| Tower height [m] | | 76.0 | | | |
| Wind category | | C25 | | | |

| **Jib length** | | **45 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 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 |
| 8 | 36.0 m | | | TV 20.4 | TV 20.4 |
| 9 | 40.5 m | | | TV 20.4 | TV 20.4 |
| 10 | 45.0 m | | | TV 20.4 | TV 20.4 |
| 11 | 49.5 m | | | | TVÜ 20-23 |
| 12 | 54.0 m | | | | HT 23 |
| 13 | 58.5 m | | | | HT 23 |
| | | | | | |
| Substructure | | KR 10-46 | KR 10-46/60 | KRV 10-60 | KR 12-60<br>KR 12-60/80 |
| Corner distance [m x m] | | 4.6 x 4.6 | 6.0 x 6.0 | 5.0 x 5.0<br>6.0 x 6.0 | 6.0 x 6.0<br>8.0 x 8.0 |
| Substructure height [m] | | 1.2 | 1.2 | 1.2 | 1.4 |
| Tower height [m] | | 32.7 | 28.2 | 46.2 | 59.9 |
| Wind category | | C25 | | | |

3 Tower combinations

| **Jib length** | | **45 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 1 | 4.5 m | TV 20.4 | | | |
| 2 | 9.0 m | TV 20.4 | | | |
| 3 | 13.5 m | TV 20.4 | | | |
| 4 | 18.0 m | TV 20.4 | | | |
| 5 | 22.5 m | TV 20.4 | | | |
| 6 | 27.0 m | TV 20.4 | | | |
| 7 | 31.5 m | TV 20.4 | | | |
| 8 | 36.0 m | TV 20.4 | | | |
| 9 | 40.5 m | TV 20.4 | | | |
| 10 | 45.0 m | TVÜ 20-23 | | | |
| 11 | 49.5 m | HT 23 | | | |
| 12 | 54.0 m | HT 23 | | | |
| 13 | 58.5 m | HT 23 | | | |
| 14 | 63.0 m | HT 23 | | | |
| | | | | | |
| Substructure | | KR 16-80<br>KR 16-80/100 | | | |
| Corner distance [m x m] | | 8.0 x 8.0<br>10.0 x 10.0 | | | |
| Substructure height [m] | | 1.8 | | | |
| Tower height [m] | | 64.8 | | | |
| Wind category | | C25 | | | |

| **Jib length** | | **45 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 1 | 4.5 m | TV 20.4 | | | |
| 2 | 9.0 m | TV 20.4 | | | |
| 3 | 13.5 m | TV 20.4 | | | |
| 4 | 18.0 m | TV 20.4 | | | |
| 5 | 22.5 m | TV 20.4 | | | |
| 6 | 27.0 m | TV 20.4 | | | |
| 7 | 31.5 m | TV 20.4 | | | |
| 8 | 36.0 m | TV 20.4 | | | |
| 9 | 40.5 m | TV 20.4 | | | |
| 10 | 45.0 m | TVÜ 20-23 | | | |
| 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 | 69.7 m | BT 29 | | | |
| | | | | | |
| | | | | | |
| Substructure | | KR 16-80 | | | |
| Corner distance [m x m] | | 8.0 x 8.0 | | | |
| Substructure height [m] | | 1.8 | | | |
| Tower height [m] | | 71.5 | | | |
| Wind category | | C25 | | | |

3 Tower combinations

| **Jib length** | | **45 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 1 | 4.5 m | TV 20.4 | | | |
| 2 | 9.0 m | TV 20.4 | | | |
| 3 | 13.5 m | TV 20.4 | | | |
| 4 | 18.0 m | TV 20.4 | | | |
| 5 | 22.5 m | TV 20.4 | | | |
| 6 | 27.0 m | TV 20.4 | | | |
| 7 | 31.5 m | TV 20.4 | | | |
| 8 | 36.0 m | TV 20.4 | | | |
| 9 | 40.5 m | TV 20.4 | | | |
| 10 | 45.0 m | TVÜ 20-23 | | | |
| 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 | 74.2 m | BT 29 | | | |
| | | | | | |
| | | | | | |
| Substructure | | KR 16-80-100 | | | |
| Corner distance [m x m] | | 10.0 x 10.0 | | | |
| Substructure height [m] | | 1.8 | | | |
| Tower height [m] | | 76.0 | | | |
| Wind category | | C25 | | | |

| Jib length | | 50 m | | | |
|---|---|---|---|---|---|
| Item | | | | | |
| 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 |
| 7 | 31.5 m | | | TV 20.4 | TV 20.4 |
| 8 | 36.0 m | | | TV 20.4 | TV 20.4 |
| 9 | 40.5 m | | | TV 20.4 | TV 20.4 |
| 10 | 45.0 m | | | TV 20.4 | |
| | | | | | |
| Substructure | | KR 10-46 | KR 10-46/60 | 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 | 1.2 |
| Tower height [m] | | 28.2 | 23.7 | 46.2 | 41.7 |
| Wind category | | C25 | | | |

3 Tower combinations

| **Jib length** | | **50 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 1 | 4.5 m | TV 20.4 | TV 20.4 | | |
| 2 | 9.0 m | TV 20.4 | TV 20.4 | | |
| 3 | 13.5 m | TV 20.4 | TV 20.4 | | |
| 4 | 18.0 m | TV 20.4 | TV 20.4 | | |
| 5 | 22.5 m | TV 20.4 | TV 20.4 | | |
| 6 | 27.0 m | TV 20.4 | TV 20.4 | | |
| 7 | 31.5 m | TV 20.4 | TV 20.4 | | |
| 8 | 36.0 m | TV 20.4 | TV 20.4 | | |
| 9 | 40.5 m | TV 20.4 | TV 20.4 | | |
| 10 | 45.0 m | TVÜ 20-23 | TVÜ 20-23 | | |
| 11 | 49.5 m | HT 23 | HT 23 | | |
| 12 | 54.0 m | HT 23 | HT 23 | | |
| 13 | 58.5 m | | HT 23 | | |
| | | | | | |
| Substructure | | KR 12-60<br>KR 12-60/80 | KR 16-80<br>KR 16-80/100 | | |
| Corner distance [m x m] | | 6.0 x 6.0<br>8.0 x 8.0 | 8.0 x 8.0<br>10.0 x 10.0 | | |
| Substructure height [m] | | 1.4 | 1.8 | | |
| Tower height [m] | | 55.4 | 60.3 | | |
| Wind category | | C25 | | | |

| **Jib length** | | **50 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 1 | 4.5 m | TV 20.4 | | | |
| 2 | 9.0 m | TV 20.4 | | | |
| 3 | 13.5 m | TV 20.4 | | | |
| 4 | 18.0 m | TV 20.4 | | | |
| 5 | 22.5 m | TV 20.4 | | | |
| 6 | 27.0 m | TV 20.4 | | | |
| 7 | 31.5 m | TV 20.4 | | | |
| 8 | 36.0 m | TV 20.4 | | | |
| 9 | 40.5 m | TVÜ 20-23 | | | |
| 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 | 69.7 m | BT 29 | | | |
| | | | | | |
| | | | | | |
| Substructure | | KR 16-80<br>KR 16-80/100 | | | |
| Corner distance [m x m] | | 8.0 x 8.0<br>10.0 x 10.0 | | | |
| Substructure height [m] | | 1.8 | | | |
| Tower height [m] | | 71.5 | | | |
| Wind category | | C25 | | | |

3 Tower combinations

| **Jib length** | | **55 m – 60 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 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 |
| 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 | | KR 10-46 | KR 10-46/60 | 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 | 1.2 |
| Tower height [m] | | 28.2 | 23.7 | 41.7 | 37.2 |
| Wind category | | C25 | | | |

| **Jib length** | | **55 m – 60 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 1 | 4.5 m | TV 20.4 | TV 20.4 | | |
| 2 | 9.0 m | TV 20.4 | TV 20.4 | | |
| 3 | 13.5 m | TV 20.4 | TV 20.4 | | |
| 4 | 18.0 m | TV 20.4 | TV 20.4 | | |
| 5 | 22.5 m | TV 20.4 | TV 20.4 | | |
| 6 | 27.0 m | TV 20.4 | TV 20.4 | | |
| 7 | 31.5 m | TV 20.4 | TV 20.4 | | |
| 8 | 36.0 m | TV 20.4 | TV 20.4 | | |
| 9 | 40.5 m | TVÜ 20-23 | TVÜ 20-23 | | |
| 10 | 45.0 m | HT 23 | HT 23 | | |
| 11 | 49.5 m | HT 23 | HT 23 | | |
| 12 | 54.0 m | | HT 23 | | |
| | | | | | |
| Substructure | | KR 12-60<br>KR 12-60/80 | KR 16-80<br>KR 16-80/100 | | |
| Corner distance [m x m] | | 6.0 x 6.0<br>8.0 x 8.0 | 8.0 x 8.0<br>10.0 x 10.0 | | |
| Substructure height [m] | | 1.4 | 1.8 | | |
| Tower height [m] | | 50.9 | 55.8 | | |
| Wind category | | C25 | | | |

3 Tower combinations

| **Jib length** | | **55 m – 60 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 1 | 4.5 m | TV 20.4 | | | |
| 2 | 9.0 m | TV 20.4 | | | |
| 3 | 13.5 m | TV 20.4 | | | |
| 4 | 18.0 m | TV 20.4 | | | |
| 5 | 22.5 m | TV 20.4 | | | |
| 6 | 27.0 m | TV 20.4 | | | |
| 7 | 31.5 m | TV 20.4 | | | |
| 8 | 36.0 m | TVÜ 20-23 | | | |
| 9 | 40.5 m | HT 23 | | | |
| 10 | 45.0 m | HT 23 | | | |
| 11 | 49.5 m | HT 23 | | | |
| 12 | 50.7 m | VR 23/25-29 | | | |
| 13 | 55.2 m | UV 29 | | | |
| 14 | 65.2 m | BT 29 | | | |
| | | | | | |
| | | | | | |
| Substructure | | KR 16-80<br>KR 16-80-100 | | | |
| Corner distance [m x m] | | 8.0 x 8.0<br>10.0 x 10.0 | | | |
| Substructure height [m] | | 1.8 | | | |
| Tower height [m] | | 67.0 | | | |
| Wind category | | C25 | | | |

## 3.4 Tower combinations on city portal (slewing section with TV 20 - connection)

| **Jib length** | | **30 m – 40 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 1 | 4.5 m | TV 20.4 | TV 20.4 | | |
| 2 | 9.0 m | TV 20.4 | TV 20.4 | | |
| 3 | 13.5 m | TV 20.4 | TV 20.4 | | |
| 4 | 18.0 m | TV 20.4 | TV 20.4 | | |
| 5 | 22.5 m | TV 20.4 | TV 20.4 | | |
| 6 | 27.0 m | TV 20.4 | TV 20.4 | | |
| 7 | 31.5 m | TV 20.4 | TV 20.4 | | |
| 8 | 36.0 m | | TV 20.4 | | |
| 9 | 40.5 m | | TV 20.4 | | |
| 10 | 45.0 m | | TV 20.4 | | |
| 11 | 49.5 m | | TVÜ 20-23 | | |
| 12 | 54.0 m | | HT 23 | | |
| 13 | 58.5 m | | HT 23 | | |
| 14 | 63.0 m | | HT 23 | | |
| | | | | | |
| Substructure | | CP 520 | CP 690 | | |
| Corner distance [m x m] | | 5.24 x 5.24 | 6.92 x 6.92 | | |
| Substructure height [m] | | 5.8 | 6.3 | | |
| Tower height [m] | | 37.3 | 69.3 | | |
| Wind category | | C25 | | | |

3 Tower combinations

| **Jib length** | | **45 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 1 | 4.5 m | TV 20.4 | TV 20.4 | | |
| 2 | 9.0 m | TV 20.4 | TV 20.4 | | |
| 3 | 13.5 m | TV 20.4 | TV 20.4 | | |
| 4 | 18.0 m | TV 20.4 | TV 20.4 | | |
| 5 | 22.5 m | TV 20.4 | TV 20.4 | | |
| 6 | 27.0 m | TV 20.4 | TV 20.4 | | |
| 7 | 31.5 m | | TV 20.4 | | |
| 8 | 36.0 m | | TV 20.4 | | |
| 9 | 40.5 m | | TV 20.4 | | |
| 10 | 45.0 m | | TVÜ 20-23 | | |
| 11 | 49.5 m | | HT 23 | | |
| 12 | 54.0 m | | HT 23 | | |
| 13 | 58.5 m | | HT 23 | | |
| | | | | | |
| Substructure | | CP 520 | CP 690 | | |
| Corner distance [m x m] | | 5.24 x 5.24 | 6.92 x 6.92 | | |
| Substructure height [m] | | 5.8 | 6.3 | | |
| Tower height [m] | | 32.8 | 64.8 | | |
| Wind category | | C25 | | | |

| **Jib length** | | **50 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 1 | 4.5 m | TV 20.4 | TV 20.4 | | |
| 2 | 9.0 m | TV 20.4 | TV 20.4 | | |
| 3 | 13.5 m | TV 20.4 | TV 20.4 | | |
| 4 | 18.0 m | TV 20.4 | TV 20.4 | | |
| 5 | 22.5 m | TV 20.4 | TV 20.4 | | |
| 6 | 27.0 m | TV 20.4 | TV 20.4 | | |
| 7 | 31.5 m | | TV 20.4 | | |
| 8 | 36.0 m | | TV 20.4 | | |
| 9 | 40.5 m | | TV 20.4 | | |
| 10 | 45.0 m | | TVÜ 20-23 | | |
| 11 | 49.5 m | | HT 23 | | |
| 12 | 54.0 m | | HT 23 | | |
| 13 | 58.5 m | | HT 23 | | |
| | | | | | |
| Substructure | | CP 520 | CP 690 | | |
| Corner distance [m x m] | | 5.24 x 5.24 | 6.92 x 6.92 | | |
| Substructure height [m] | | 5.8 | 6.3 | | |
| Tower height [m] | | 32.8 | 64.8 | | |
| Wind category | | C25 | | | |

3 Tower combinations

| **Jib length** | | **55 m – 60 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 1 | 4.5 m | TV 20.4 | TV 20.4 | | |
| 2 | 9.0 m | TV 20.4 | TV 20.4 | | |
| 3 | 13.5 m | TV 20.4 | TV 20.4 | | |
| 4 | 18.0 m | TV 20.4 | TV 20.4 | | |
| 5 | 22.5 m | TV 20.4 | TV 20.4 | | |
| 6 | 27.0 m | | TV 20.4 | | |
| 7 | 31.5 m | | TV 20.4 | | |
| 8 | 36.0 m | | TV 20.4 | | |
| 9 | 40.5 m | | TVÜ 20-23 | | |
| 10 | 45.0 m | | HT 23 | | |
| 11 | 49.5 m | | HT 23 | | |
| | | | | | |
| Substructure | | CP 520 | CP 690 | | |
| Corner distance [m x m] | | 5.24 x 5.24 | 6.92 x 6.92 | | |
| Substructure height [m] | | 5.8 | 6.3 | | |
| Tower height [m] | | 28.3 | 55.8 | | |
| Wind category | | C25 | | | |

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

| **Jib length** | | **30 m – 40 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 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 |
| 8 | 36.0 m | | TV 20.4 | TV 20.4 | TVÜ 20-23 |
| 9 | 40.5 m | | TVÜ 20-23 | TVÜ 20-23 | HT 23 |
| 10 | 45.0 m | | HT 23 | HT 23 | HT 23 |
| 11 | 49.5 m | | HT 23 | HT 23 | HT 23 |
| 12 | 54.0 m | | | HT 23 | HT 23 |
| 13 | 58.5 m | | | HT 23 | HT 23 |
| 14 | 63.0 m | | | | HT 23 |
| | | | | | |
| Substructure | | KRF 10-46/60 | KRF4 12-60/80 | KRF6 12-60/80 | KRF 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] | | 2.0 | 2.5 | 2.9 | 3.3 |
| Tower height [m] | | 29.0 | 52.0 | 61.4 | 66.3 |
| Wind category | | C25 | | | |

3 Tower combinations

| **Jib length** | | **30 m – 40 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 1 | 4.5 m | TV 20.4 | | | |
| 2 | 9.0 m | TV 20.4 | | | |
| 3 | 13.5 m | TV 20.4 | | | |
| 4 | 18.0 m | TV 20.4 | | | |
| 5 | 22.5 m | TV 20.4 | | | |
| 6 | 27.0 m | TV 20.4 | | | |
| 7 | 31.5 m | TV 20.4 | | | |
| 8 | 36.0 m | TVÜ 20-23 | | | |
| 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 | 74.2 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] | | 77.5 | | | |
| Wind category | | C25 | | | |

| Jib length | | 45 m | | | |
|---|---|---|---|---|---|
| Item | | | | | |
| 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 |
| 8 | 36.0 m | | TV 20.4 | TVÜ 20-23 | TVÜ 20-23 |
| 9 | 40.5 m | | TVÜ 20-23 | HT 23 | HT 23 |
| 10 | 45.0 m | | HT 23 | HT 23 | HT 23 |
| 11 | 49.5 m | | HT 23 | HT 23 | HT 23 |
| 12 | 54.0 m | | | HT 23 | HT 23 |
| 13 | 58.5 m | | | HT 23 | HT 23 |
| 14 | 63.0 m | | | | HT 23 |
| | | | | | |
| Substructure | | KRF 10-46/60 | KRF4 12-60/80 | KRF6 12-60/80 | KRF 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] | | 2.0 | 2.5 | 2.9 | 3.3 |
| Tower height [m] | | 29.0 | 52.0 | 61.4 | 66.3 |
| Wind category | | C25 | | | |

3 Tower combinations

| **Jib length** | | **45 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 1 | 4.5 m | TV 20.4 | | | |
| 2 | 9.0 m | TV 20.4 | | | |
| 3 | 13.5 m | TV 20.4 | | | |
| 4 | 18.0 m | TV 20.4 | | | |
| 5 | 22.5 m | TV 20.4 | | | |
| 6 | 27.0 m | TV 20.4 | | | |
| 7 | 31.5 m | TV 20.4 | | | |
| 8 | 36.0 m | TVÜ 20-23 | | | |
| 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 | 69.7 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] | | 73.0 | | | |
| Wind category | | C25 | | | |

| Jib length | | 50 m | | | |
|---|---|---|---|---|---|
| Item | | | | | |
| 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 |
| 7 | 31.5 m | | TV 20.4 | TV 20.4 | TV 20.4 |
| 8 | 36.0 m | | TV 20.4 | TVÜ 20-23 | TVÜ 20-23 |
| 9 | 40.5 m | | TVÜ 20-23 | HT 23 | HT 23 |
| 10 | 45.0 m | | HT 23 | HT 23 | HT 23 |
| 11 | 49.5 m | | | HT 23 | HT 23 |
| 12 | 54.0 m | | | HT 23 | HT 23 |
| 13 | 58.5 m | | | | HT 23 |
| | | | | | |
| Substructure | | KRF 10-46/60 | KRF4 12-60/80 | KRF6 12-60/80 | KRF 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] | | 2.0 | 2.5 | 2.9 | 3.3 |
| Tower height [m] | | 24.5 | 47.5 | 56.9 | 61.8 |
| Wind category | | C25 | | | |

3 Tower combinations

| **Jib length** | | **50 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 1 | 4.5 m | TV 20.4 | | | |
| 2 | 9.0 m | TV 20.4 | | | |
| 3 | 13.5 m | TV 20.4 | | | |
| 4 | 18.0 m | TV 20.4 | | | |
| 5 | 22.5 m | TV 20.4 | | | |
| 6 | 27.0 m | TV 20.4 | | | |
| 7 | 31.5 m | TV 20.4 | | | |
| 8 | 36.0 m | TVÜ 20-23 | | | |
| 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 | 69.7 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] | | 73.0 | | | |
| Wind category | | C25 | | | |

| Jib length | | 55 m – 60 m | | | |
|---|---|---|---|---|---|
| Item | | | | | |
| 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 |
| 7 | 31.5 m | | TV 20.4 | TV 20.4 | TV 20.4 |
| 8 | 36.0 m | | TV 20.4 | TV 20.4 | TV 20.4 |
| 9 | 40.5 m | | TV 20.4 | TVÜ 20-23 | TVÜ 20-23 |
| 10 | 45.0 m | | | HT 23 | HT 23 |
| 11 | 49.5 m | | | HT 23 | HT 23 |
| 12 | 54.0 m | | | | HT 23 |
| | | | | | |
| Substructure | | KRF 10-46/60 | KRF4 12-60/80 | KRF6 12-60/80 | KRF 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] | | 2.0 | 2.5 | 2.9 | 3.3 |
| Tower height [m] | | 24.5 | 43.0 | 52.4 | 57.3 |
| Wind category | | C25 | | | |

3 Tower combinations

| **Jib length** | | **55 m – 60 m** | | | |
|---|---|---|---|---|---|
| **Item** | | | | | |
| 1 | 4.5 m | TV 20.4 | | | |
| 2 | 9.0 m | TV 20.4 | | | |
| 3 | 13.5 m | TV 20.4 | | | |
| 4 | 18.0 m | TV 20.4 | | | |
| 5 | 22.5 m | TV 20.4 | | | |
| 6 | 27.0 m | TV 20.4 | | | |
| 7 | 31.5 m | TV 20.4 | | | |
| 8 | 36.0 m | TVÜ 20-23 | | | |
| 9 | 40.5 m | HT 23 | | | |
| 10 | 45.0 m | HT 23 | | | |
| 11 | 49.5 m | HT 23 | | | |
| 12 | 50.7 m | VR 23/25-29 | | | |
| 13 | 60.7 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] | | 64.0 | | | |
| Wind category | | C25 | | | |

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

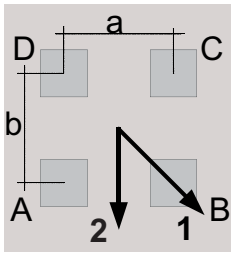
| | |
|---|---|
|  | **⚠ DANGER**<br>Usage of incorrect tower combinations.<br>The slewing tower crane may overturn.<br>1) Use the specified tower combinations.<br>2) If you need another tower combination that is not specified here, please contact WOLFFKRAN to get an approved alternative setup in writing. |

## Jib positions

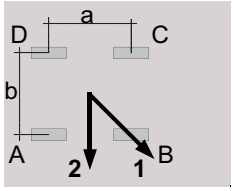
The corner loads are given for two jib positions with the maximum corner load resulting from jib position 1.

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

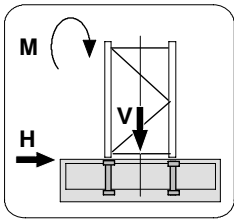
The stability for stormy weather is calculated on the basis of wind region C (EN 13001-2). The reference wind speed for zone C is 28 m/s (10 m above ground, averaged over 10 minutes).As a basis, a recurrence interval of 25 years is used. As a basis, a recurrence interval of 25 years is used.

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 275 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**

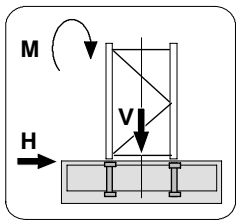
Includes all dynamic factors under consideration of second-order theory for stationary slewing tower cranes on concrete foundation in compliance with a tower combination without climbing device.

| TH: | Crane in service | | | Crane out of service | | | Assembly | | |
|---|---|---|---|---|---|---|---|---|---|
| | Slewing torque: 310 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 | 3290 | 871 | 29 | 3060 | 871 | 69 | 1340 | 519 | 10 |
| 9.0 | 3430 | 899 | 31 | 3390 | 899 | 75 | 1390 | 547 | 11 |
| 13.5 | 3590 | 927 | 33 | 3770 | 927 | 82 | 1450 | 575 | 12 |
| 18.0 | 3770 | 955 | 35 | 4180 | 955 | 88 | 1510 | 604 | 13 |
| 22.5 | 3970 | 984 | 37 | 4630 | 984 | 94 | 1580 | 632 | 15 |
| 27.0 | 4190 | 1012 | 39 | 5130 | 1012 | 100 | 1660 | 660 | 16 |
| 31.5 | 4440 | 1040 | 40 | 5680 | 1040 | 106 | 1750 | 689 | 17 |
| 36.0 | 4710 | 1069 | 42 | 6280 | 1069 | 112 | 1850 | 717 | 18 |
| 40.5 | 5000 | 1097 | 44 | 6940 | 1097 | 118 | 1960 | 745 | 19 |
| 45.0 | 5340 | 1125 | 46 | 7670 | 1125 | 125 | 2070 | 774 | 20 |
| 49.5 | 5970 | 1419 | 54 | 8470 | 1154 | 131 | 2200 | 802 | 21 |
| 54.0 | 6310 | 1473 | 57 | 9180 | 1208 | 139 | 2310 | 857 | 23 |
| 58.5 | 6750 | 1513 | 59 | 10010 | 1248 | 146 | 2450 | 896 | 24 |
| 63.0 | 7220 | 1552 | 61 | 11310 | 1287 | 220 | 2590 | 935 | 25 |
| 65.3 | 7300 | 1598 | 63 | 11910 | 1333 | 229 | 2640 | 981 | 26 |
| 69.8 | 7830 | 1638 | 65 | 13510 | 1372 | 241 | 2800 | 1021 | 27 |
| 74.3 | 8420 | 1677 | 68 | 15270 | 1412 | 254 | 2980 | 1060 | 28 |
| **Tower combination with base tower element BT 29** | | | | | | | | | |
| 78.7 | 8670 | 1760 | 71 | 16710 | 1495 | 270 | 3110 | 1143 | 30 |
| **Tower combination with base tower element TV 29** | | | | | | | | | |
| 77.7 | 8470 | 1819 | 72 | 16230 | 1554 | 272 | 3060 | 1202 | 31 |
| 82.2 | 9000 | 1876 | 75 | 18070 | 1610 | 288 | 3240 | 1259 | 33 |

| 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)

Slewing section 275 B with TV 20 connection and 45 m jib on foundation.
Slewing tower crane without climbing device.




**Foundation load to EN 14439 / EN 13001 – typical loads**

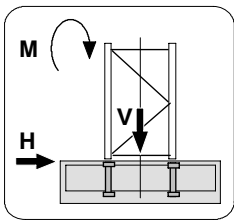
Includes all dynamic factors under consideration of second-order theory for stationary slewing tower cranes on concrete foundation in compliance with a tower combination without climbing device.

| TH: | Crane in service | | | Crane out of service | | | Assembly | | |
|---|---|---|---|---|---|---|---|---|---|
| | Slewing torque: 310 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 | 3340 | 877 | 30 | 3210 | 877 | 73 | 1700 | 525 | 10 |
| 9.0 | 3490 | 905 | 32 | 3560 | 905 | 79 | 1760 | 554 | 11 |
| 13.5 | 3660 | 934 | 34 | 3950 | 934 | 85 | 1810 | 582 | 13 |
| 18.0 | 3850 | 962 | 36 | 4380 | 962 | 91 | 1880 | 610 | 14 |
| 22.5 | 4060 | 990 | 38 | 4860 | 990 | 98 | 1960 | 639 | 15 |
| 27.0 | 4290 | 1019 | 40 | 5370 | 1019 | 104 | 2040 | 667 | 16 |
| 31.5 | 4540 | 1047 | 42 | 5940 | 1047 | 110 | 2130 | 695 | 17 |
| 36.0 | 4820 | 1075 | 44 | 6570 | 1075 | 116 | 2230 | 724 | 18 |
| 40.5 | 5130 | 1104 | 46 | 7250 | 1104 | 122 | 2350 | 752 | 19 |
| 45.0 | 5470 | 1132 | 48 | 8010 | 1132 | 128 | 2470 | 780 | 20 |
| 49.5 | 6010 | 1452 | 57 | 8690 | 1186 | 137 | 2580 | 835 | 22 |
| 54.0 | 6410 | 1491 | 59 | 9490 | 1226 | 144 | 2710 | 874 | 23 |
| 58.5 | 6860 | 1530 | 61 | 10610 | 1265 | 216 | 2850 | 914 | 24 |
| 63.0 | 7350 | 1570 | 63 | 12100 | 1305 | 228 | 3000 | 953 | 25 |
| 65.3 | 7520 | 1605 | 65 | 12780 | 1340 | 236 | 3060 | 988 | 26 |
| 69.8 | 8070 | 1644 | 67 | 14450 | 1379 | 248 | 3230 | 1027 | 27 |
| **Tower combination with base tower element BT 29** | | | | | | | | | |
| 74.2 | 8380 | 1720 | 70 | 15910 | 1455 | 263 | 3360 | 1103 | 29 |
| **Tower combination with base tower element TV 29** | | | | | | | | | |
| 73.2 | 8150 | 1780 | 71 | 15450 | 1515 | 265 | 3310 | 1163 | 30 |
| 77.7 | 8640 | 1837 | 74 | 17220 | 1571 | 281 | 3480 | 1220 | 31 |
| 82.2 | 9180 | 1893 | 77 | 19130 | 1628 | 296 | 3670 | 1276 | 33 |

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

## 4.3 Foundation loads slewing section with TV 20 connection (jib 50 m)

Slewing section 275 B with TV 20 connection and 50 m jib on foundation.
Slewing tower crane without climbing device.




**Foundation load to EN 14439 / EN 13001 – typical loads**

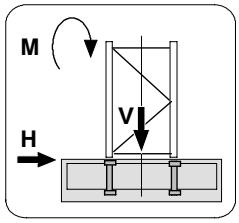
Includes all dynamic factors under consideration of second-order theory for stationary slewing tower cranes on concrete foundation in compliance with a tower combination without climbing device.

| TH: | Crane in service | | | Crane out of service | | | Assembly | | |
|---|---|---|---|---|---|---|---|---|---|
| | Slewing torque: 310 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 | 3380 | 887 | 32 | 3340 | 887 | 77 | 2220 | 536 | 10 |
| 9.0 | 3540 | 916 | 34 | 3710 | 916 | 83 | 2270 | 564 | 12 |
| 13.5 | 3720 | 944 | 36 | 4110 | 944 | 89 | 2340 | 592 | 13 |
| 18.0 | 3910 | 972 | 38 | 4560 | 972 | 95 | 2410 | 621 | 14 |
| 22.5 | 4130 | 1001 | 40 | 5050 | 1001 | 101 | 2480 | 649 | 15 |
| 27.0 | 4370 | 1029 | 42 | 5590 | 1029 | 107 | 2570 | 677 | 16 |
| 31.5 | 4630 | 1057 | 44 | 6180 | 1057 | 114 | 2670 | 706 | 17 |
| 36.0 | 4920 | 1086 | 45 | 6830 | 1086 | 120 | 2780 | 734 | 18 |
| 40.5 | 5240 | 1114 | 47 | 7540 | 1114 | 126 | 2900 | 762 | 19 |
| 45.0 | 5810 | 1385 | 55 | 8320 | 1142 | 132 | 3040 | 790 | 20 |
| 49.5 | 6140 | 1440 | 58 | 9020 | 1197 | 140 | 3150 | 845 | 22 |
| 54.0 | 6550 | 1479 | 60 | 10100 | 1236 | 210 | 3290 | 884 | 23 |
| 58.5 | 7000 | 1519 | 62 | 11520 | 1275 | 222 | 3430 | 924 | 24 |
| 60.8 | 7100 | 1565 | 64 | 12140 | 1322 | 231 | 3480 | 970 | 25 |
| 65.3 | 7600 | 1604 | 66 | 13730 | 1361 | 243 | 3650 | 1009 | 26 |
| **Tower combination with base tower element BT 29** | | | | | | | | | |
| 69.7 | 7910 | 1680 | 69 | 15160 | 1437 | 258 | 3770 | 1085 | 28 |
| 74.2 | 8420 | 1727 | 71 | 16930 | 1483 | 272 | 3950 | 1132 | 29 |
| **Tower combination with base tower element TV 29** | | | | | | | | | |
| 68.7 | 7760 | 1729 | 70 | 14750 | 1486 | 260 | 3730 | 1134 | 29 |
| 73.2 | 8230 | 1785 | 73 | 16450 | 1542 | 275 | 3900 | 1191 | 30 |
| 77.7 | 8730 | 1842 | 76 | 18290 | 1599 | 290 | 4080 | 1247 | 32 |

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

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

Slewing section 275 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**

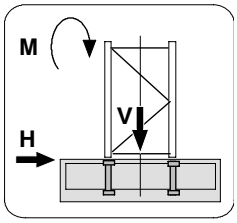
Includes all dynamic factors under consideration of second-order theory for stationary slewing tower cranes on concrete foundation in compliance with a tower combination without climbing device.

| TH: | Crane in service | | | Crane out of service | | | Assembly | | |
|---|---|---|---|---|---|---|---|---|---|
| | Slewing torque: 310 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 | 3480 | 904 | 35 | 3680 | 904 | 84 | 3260 | 552 | 11 |
| 9.0 | 3650 | 932 | 37 | 4090 | 932 | 90 | 3320 | 581 | 12 |
| 13.5 | 3840 | 961 | 39 | 4530 | 961 | 96 | 3380 | 609 | 13 |
| 18.0 | 4050 | 989 | 41 | 5020 | 989 | 102 | 3460 | 637 | 14 |
| 22.5 | 4290 | 1017 | 43 | 5550 | 1017 | 109 | 3550 | 665 | 15 |
| 27.0 | 4540 | 1045 | 45 | 6130 | 1045 | 115 | 3640 | 694 | 16 |
| 31.5 | 4820 | 1074 | 47 | 6760 | 1074 | 121 | 3760 | 722 | 17 |
| 36.0 | 5130 | 1102 | 48 | 7450 | 1102 | 127 | 3880 | 750 | 18 |
| 40.5 | 5470 | 1286 | 53 | 8210 | 1130 | 133 | 4020 | 779 | 19 |
| 45.0 | 5770 | 1340 | 56 | 9090 | 1185 | 201 | 4130 | 833 | 21 |
| 49.5 | 6140 | 1380 | 58 | 10390 | 1224 | 213 | 4270 | 873 | 22 |
| 54.0 | 6550 | 1419 | 60 | 11800 | 1264 | 225 | 4430 | 912 | 23 |
| 56.3 | 6650 | 1465 | 62 | 12430 | 1310 | 233 | 4470 | 958 | 24 |
| 60.8 | 7100 | 1504 | 64 | 14010 | 1349 | 246 | 4640 | 998 | 26 |
| **Tower combination with base tower element BT 29** | | | | | | | | | |
| 65.2 | 7410 | 1581 | 67 | 15450 | 1425 | 260 | 4760 | 1074 | 27 |
| 69.7 | 7860 | 1627 | 69 | 17210 | 1472 | 274 | 4940 | 1120 | 29 |
| **Tower combination with base tower element TV 29** | | | | | | | | | |
| 64.2 | 7280 | 1629 | 68 | 15050 | 1474 | 262 | 4720 | 1122 | 28 |
| 68.7 | 7710 | 1686 | 71 | 16750 | 1531 | 277 | 4890 | 1179 | 29 |
| 73.2 | 8170 | 1742 | 74 | 18590 | 1587 | 292 | 5070 | 1235 | 31 |

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

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

Slewing section 275 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**

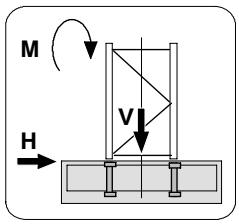
Includes all dynamic factors under consideration of second-order theory for stationary slewing tower cranes on concrete foundation in compliance with a tower combination without climbing device.

| TH: | Crane in service | | | Crane out of service | | | Assembly | | |
|---|---|---|---|---|---|---|---|---|---|
| | Slewing torque: 310 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 | 3290 | 882 | 29 | 3060 | 882 | 70 | 1340 | 530 | 10 |
| 9.0 | 3430 | 921 | 31 | 3400 | 921 | 77 | 1390 | 569 | 12 |
| 13.5 | 3580 | 960 | 34 | 3770 | 960 | 84 | 1450 | 609 | 13 |
| 18.0 | 3760 | 1000 | 36 | 4180 | 1000 | 91 | 1510 | 648 | 14 |
| 22.5 | 3940 | 1039 | 38 | 4630 | 1039 | 98 | 1580 | 687 | 15 |
| 27.0 | 4150 | 1078 | 40 | 5130 | 1078 | 105 | 1660 | 727 | 17 |
| 31.5 | 4370 | 1118 | 42 | 5670 | 1118 | 112 | 1750 | 766 | 18 |
| 36.0 | 4620 | 1157 | 45 | 6250 | 1157 | 119 | 1840 | 805 | 19 |
| 40.5 | 4880 | 1197 | 47 | 6890 | 1197 | 126 | 1940 | 845 | 20 |
| 45.0 | 5170 | 1236 | 49 | 7580 | 1236 | 134 | 2060 | 884 | 22 |
| 49.5 | 5480 | 1275 | 51 | 8330 | 1275 | 141 | 2180 | 924 | 23 |
| 54.0 | 6040 | 1580 | 60 | 9140 | 1315 | 148 | 2310 | 963 | 24 |
| 58.5 | 6490 | 1619 | 62 | 10120 | 1354 | 220 | 2450 | 1002 | 25 |
| 63.0 | 6970 | 1659 | 64 | 11630 | 1393 | 232 | 2610 | 1042 | 26 |
| 65.3 | 7140 | 1694 | 66 | 12320 | 1428 | 240 | 2670 | 1077 | 27 |
| 69.8 | 7690 | 1733 | 68 | 14010 | 1468 | 253 | 2840 | 1116 | 29 |
| **Tower combination with base tower element BT 29** | | | | | | | | | |
| 74.2 | 8010 | 1809 | 71 | 15490 | 1544 | 268 | 2980 | 1192 | 30 |
| 78.7 | 8550 | 1855 | 73 | 17360 | 1590 | 282 | 3160 | 1238 | 32 |
| **Tower combination with base tower element TV 29** | | | | | | | | | |
| 73.2 | 7840 | 1858 | 72 | 15060 | 1592 | 269 | 2930 | 1241 | 31 |
| 77.7 | 8340 | 1914 | 74 | 16850 | 1649 | 284 | 3110 | 1297 | 32 |
| 82.2 | 8880 | 1971 | 77 | 18780 | 1706 | 300 | 3300 | 1354 | 34 |

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

## 4.6 Foundation loads slewing section with HT 23 connection (jib 45 m)

Slewing section 275 B with HT 23 connection and 45 m jib on foundation.
Slewing tower crane without climbing device.




**Foundation load to EN 14439 / EN 13001 – typical loads**

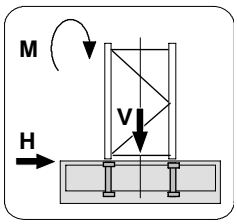
Includes all dynamic factors under consideration of second-order theory for stationary slewing tower cranes on concrete foundation in compliance with a tower combination without climbing device.

| TH: | Crane in service | | | Crane out of service | | | Assembly | | |
|---|---|---|---|---|---|---|---|---|---|
| | Slewing torque: 310 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 | 3340 | 888 | 31 | 3210 | 888 | 74 | 1700 | 537 | 11 |
| 9.0 | 3490 | 928 | 33 | 3570 | 928 | 81 | 1760 | 576 | 12 |
| 13.5 | 3650 | 967 | 35 | 3960 | 967 | 88 | 1810 | 615 | 13 |
| 18.0 | 3830 | 1006 | 37 | 4390 | 1006 | 95 | 1880 | 655 | 14 |
| 22.5 | 4030 | 1046 | 40 | 4860 | 1046 | 102 | 1950 | 694 | 15 |
| 27.0 | 4240 | 1085 | 42 | 5370 | 1085 | 109 | 2030 | 733 | 17 |
| 31.5 | 4470 | 1124 | 44 | 5930 | 1124 | 116 | 2120 | 773 | 18 |
| 36.0 | 4730 | 1164 | 46 | 6530 | 1164 | 123 | 2220 | 812 | 19 |
| 40.5 | 5000 | 1203 | 48 | 7190 | 1203 | 130 | 2330 | 851 | 20 |
| 45.0 | 5300 | 1242 | 51 | 7900 | 1242 | 137 | 2440 | 891 | 22 |
| 49.5 | 5620 | 1282 | 53 | 8670 | 1282 | 144 | 2570 | 930 | 23 |
| 54.0 | 6220 | 1586 | 61 | 9470 | 1321 | 214 | 2710 | 969 | 24 |
| 58.5 | 6670 | 1626 | 64 | 10900 | 1361 | 227 | 2850 | 1009 | 25 |
| 63.0 | 7170 | 1665 | 66 | 12460 | 1400 | 239 | 3020 | 1048 | 27 |
| 65.3 | 7350 | 1700 | 67 | 13170 | 1435 | 247 | 3080 | 1083 | 27 |
| 69.8 | 7910 | 1739 | 69 | 14930 | 1474 | 259 | 3260 | 1123 | 29 |
| **Tower combination with base tower element BT 29** | | | | | | | | | |
| 74.2 | 8240 | 1816 | 72 | 16450 | 1550 | 274 | 3400 | 1199 | 30 |
| **Tower combination with base tower element TV 29** | | | | | | | | | |
| 73.2 | 8070 | 1864 | 73 | 15990 | 1599 | 276 | 3350 | 1247 | 31 |
| 77.7 | 8580 | 1921 | 76 | 17840 | 1656 | 291 | 3530 | 1304 | 32 |

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

## 4.7 Foundation loads slewing section with HT 23 connection (jib 50 m)

Slewing section 275 B with HT 23 connection and 50 m jib on foundation.
Slewing tower crane without climbing device.




**Foundation load to EN 14439 / EN 13001 – typical loads**

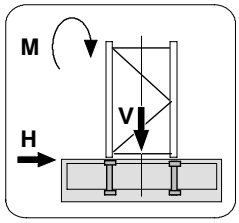
Includes all dynamic factors under consideration of second-order theory for stationary slewing tower cranes on concrete foundation in compliance with a tower combination without climbing device.

| TH: | Crane in service | | | Crane out of service | | | Assembly | | |
|---|---|---|---|---|---|---|---|---|---|
| | Slewing torque: 310 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 | 3380 | 898 | 32 | 3340 | 898 | 78 | 2220 | 547 | 11 |
| 9.0 | 3540 | 938 | 35 | 3710 | 938 | 85 | 2270 | 586 | 12 |
| 13.5 | 3710 | 977 | 37 | 4120 | 977 | 92 | 2330 | 625 | 13 |
| 18.0 | 3900 | 1017 | 39 | 4560 | 1017 | 99 | 2400 | 665 | 14 |
| 22.5 | 4100 | 1056 | 41 | 5050 | 1056 | 106 | 2480 | 704 | 16 |
| 27.0 | 4320 | 1095 | 43 | 5580 | 1095 | 113 | 2560 | 744 | 17 |
| 31.5 | 4560 | 1135 | 46 | 6160 | 1135 | 120 | 2650 | 783 | 18 |
| 36.0 | 4820 | 1174 | 48 | 6790 | 1174 | 127 | 2760 | 822 | 19 |
| 40.5 | 5100 | 1213 | 50 | 7460 | 1213 | 134 | 2870 | 862 | 21 |
| 45.0 | 5410 | 1253 | 52 | 8200 | 1253 | 141 | 2990 | 901 | 22 |
| 49.5 | 5930 | 1535 | 60 | 8920 | 1292 | 209 | 3120 | 940 | 23 |
| 54.0 | 6350 | 1575 | 62 | 10280 | 1331 | 221 | 3270 | 980 | 24 |
| 58.5 | 6810 | 1614 | 64 | 11770 | 1371 | 233 | 3430 | 1019 | 26 |
| 60.8 | 6990 | 1649 | 66 | 12470 | 1406 | 241 | 3490 | 1054 | 26 |
| 65.3 | 7500 | 1688 | 68 | 14130 | 1445 | 253 | 3670 | 1094 | 28 |
| **Tower combination with base tower element BT 29** | | | | | | | | | |
| 69.7 | 7820 | 1765 | 71 | 15620 | 1521 | 268 | 3800 | 1170 | 29 |
| 74.2 | 8340 | 1811 | 73 | 17460 | 1568 | 282 | 3980 | 1216 | 31 |
| **Tower combination with base tower element TV 29** | | | | | | | | | |
| 68.7 | 7670 | 1813 | 72 | 15190 | 1570 | 270 | 3750 | 1218 | 30 |
| 73.2 | 8150 | 1870 | 75 | 16960 | 1627 | 285 | 3930 | 1275 | 31 |
| 77.7 | 8670 | 1926 | 78 | 18880 | 1683 | 301 | 4120 | 1331 | 33 |

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

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

Slewing section 275 B with HT 23 connection and 55 m – 60 m jib on foundation.
Slewing tower crane without climbing device.



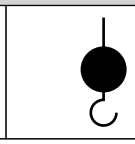
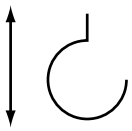
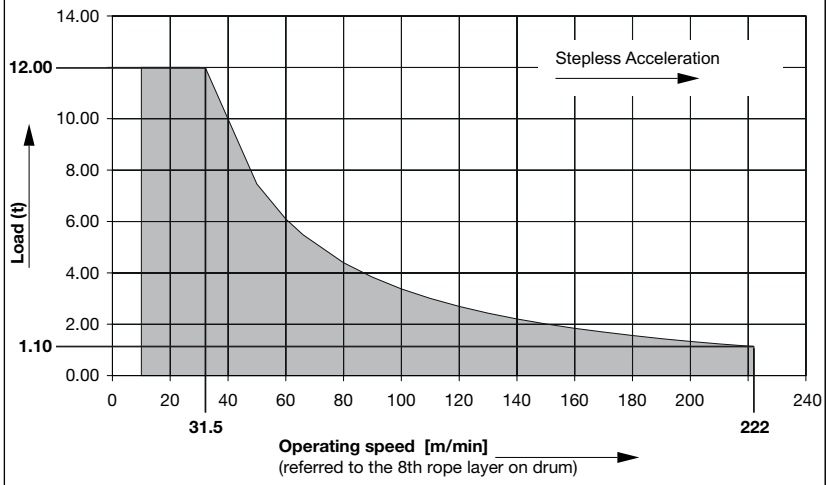
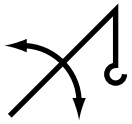
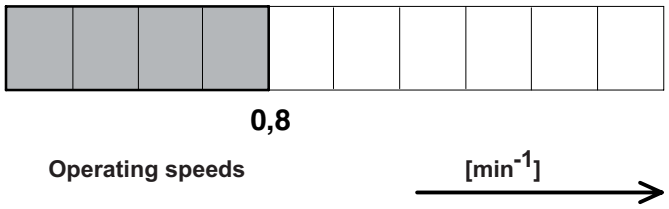

**Foundation load in compliance with EN 14439 / EN 13001 – typical loads**

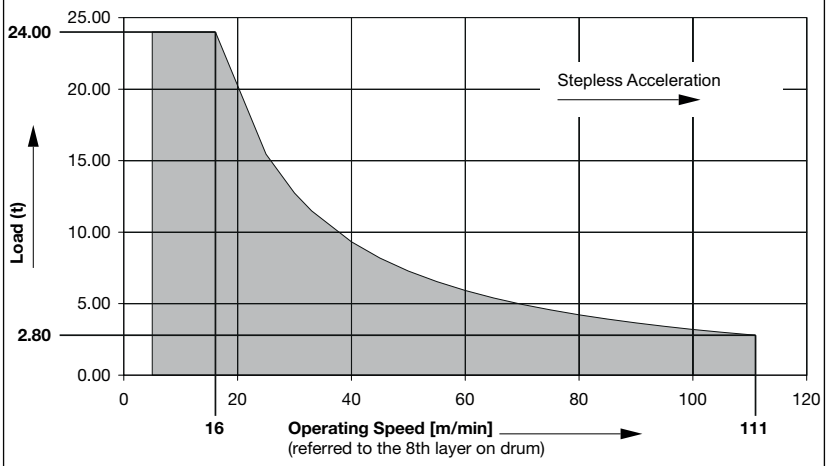
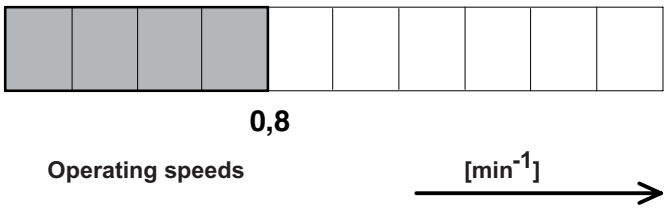
Includes all dynamic factors under consideration of second-order theory for stationary slewing tower cranes on concrete foundation in compliance with a tower combination without climbing device.

| TH: | Crane in service | | | Crane out of service | | | Assembly | | |
|---|---|---|---|---|---|---|---|---|---|
| | Slewing torque: 310 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 | 3480 | 915 | 35 | 3680 | 915 | 85 | 3260 | 563 | 11 |
| 9.0 | 3650 | 954 | 37 | 4090 | 954 | 92 | 3310 | 603 | 12 |
| 13.5 | 3830 | 994 | 40 | 4530 | 994 | 99 | 3380 | 642 | 13 |
| 18.0 | 4030 | 1033 | 42 | 5010 | 1033 | 106 | 3450 | 681 | 15 |
| 22.5 | 4250 | 1072 | 44 | 5540 | 1072 | 113 | 3530 | 721 | 16 |
| 27.0 | 4490 | 1112 | 46 | 6110 | 1112 | 120 | 3620 | 760 | 17 |
| 31.5 | 4750 | 1151 | 48 | 6720 | 1151 | 127 | 3720 | 800 | 18 |
| 36.0 | 5020 | 1191 | 51 | 7390 | 1191 | 134 | 3830 | 839 | 20 |
| 40.5 | 5320 | 1230 | 53 | 8110 | 1230 | 141 | 3960 | 878 | 21 |
| 45.0 | 5650 | 1269 | 55 | 9170 | 1269 | 210 | 4090 | 918 | 22 |
| 49.5 | 6020 | 1464 | 60 | 10520 | 1309 | 222 | 4240 | 957 | 23 |
| 54.0 | 6430 | 1503 | 62 | 11990 | 1348 | 234 | 4400 | 996 | 25 |
| 56.3 | 6590 | 1538 | 64 | 12690 | 1383 | 242 | 4460 | 1031 | 25 |
| 60.8 | 7050 | 1578 | 66 | 14330 | 1422 | 254 | 4640 | 1071 | 27 |
| **Tower combination with base tower element BT 29** | | | | | | | | | |
| 65.2 | 7370 | 1654 | 69 | 15820 | 1499 | 269 | 4770 | 1147 | 28 |
| **Tower combination with base tower element TV 29** | | | | | | | | | |
| 64.2 | 7240 | 1702 | 70 | 15400 | 1547 | 271 | 4720 | 1195 | 29 |
| 68.7 | 7680 | 1759 | 73 | 17160 | 1604 | 286 | 4900 | 1252 | 30 |
| 73.2 | 8150 | 1816 | 76 | 19060 | 1660 | 301 | 5090 | 1309 | 32 |

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

# 5 Operating speeds

<table>
<tr><th>Drive unit [type]</th><th colspan="2">Operating speed<br>Carrying load</th><th>Hook travel distance max. [m]</th><th>Power [kW]</th><th>Total connected wattage [kVA]</th></tr>
<tr><td>Hw 2475FU</td><td>Lifting</td><td>  </td><td>700</td><td>75</td><td rowspan="4">134<br>Total connected load at coincid-ence factor of 0.8</td></tr>
<tr><td>  </td><td colspan="3"> 
</td></tr>
<tr><td>LG 1460FU</td><td colspan="2">Jib up-down</td><td>60</td></tr>
<tr><td>  </td><td colspan="3"> 
</td></tr>
<tr><td>SG</td><td colspan="2">Slewing</td><td>1 x 7.5</td></tr>
<tr><td>  </td><td colspan="3"> 
</td></tr>
</table>

| Drive unit [type] | Operating speed Carrying load | Hook travel distance max. [m] | Power [kW] | Total connected load [kVA] |
|---|---|---|---|---|
| **Hw 2475FU** | **Lifting** | **350** | **75** | 134<br>Total connected load at coincidence factor of 0.8 |
| |  | | | |
| **LG 1460FU** | **Jib up-down** | | **60** | |
| |  | | | |
| **SG** | **Slewing** | | **1 x 7.5** | |
| |  | | | |

# 6 Out of service positions

**⚠ WARNING**

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

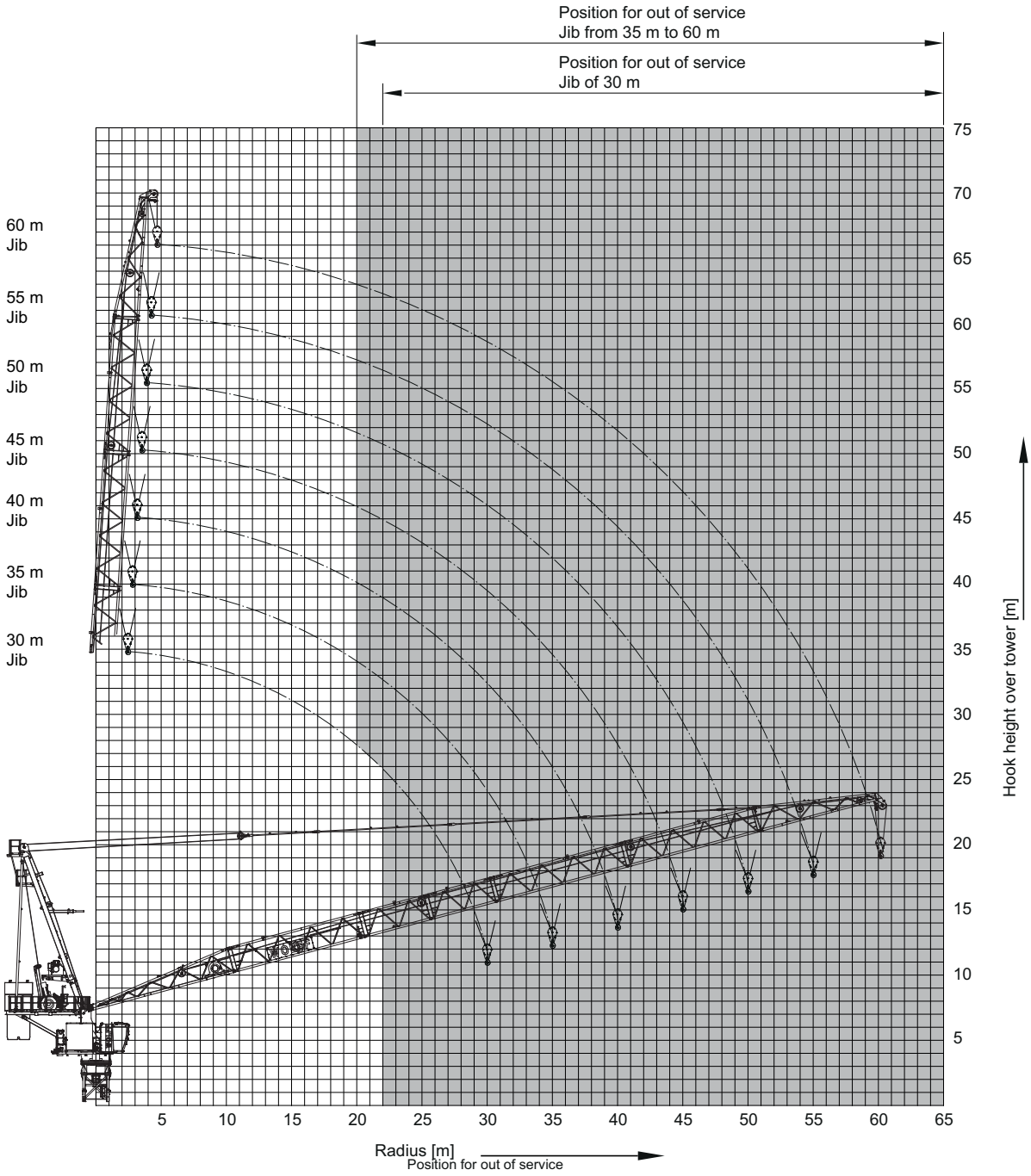
The slewing tower crane may overturn.

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

**NOTICE**

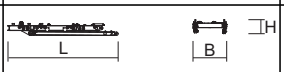
Out of service position with smaller operating radius.

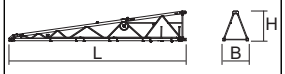
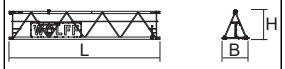
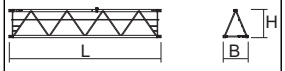
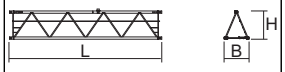
At your request, out of service positions with smaller operating radius can be implemented in cases of reduced tower height or increased central ballast and possibly use of a wind sail and/or use of a supplementary weight at the hook block. Please contact WOLFFKRAN for information.


Position for out of service
Jib from 35 m to 60 m
Position for out of service
Jib of 30 m
60 m
Jib
55 m
Jib
50 m
Jib
45 m
Jib
40 m
Jib
35 m
Jib
30 m
Jib
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
Hook height over tower [m]
5
10
15
20
25
30
35
40
45
50
55
60
65
Radius [m]
Position for out of service

# 7 Package list

## 7.1 Package list 275 B

| Quantity | Description | Package | L [m] | B [m] | H [m] | Weight [kg] | Volume [m³] |
|---|---|---|---|---|---|---|---|
| 1 | Tower head section upper part incl. luffing gear with 2nd brake, platforms, 215 m luffing rope and counterjib brace |  | 12.71 | 2.30 | 2.92 | 11455 | 85.36 |
| | Tower head section upper part, incl. platforms without luffing gear and without counterjib brace |  | 11.31 | 2.30 | 1.69 | 7225 | 43.96 |
| | Counterjib brace |  | 11.48 | 0.32 | 0.61 | 965 | 0.59 |
| | Luffing gear platform with 2nd brake, platforms and 215 m luffing rope |  | 2.25 | 1.90 | 1.60 | 3265 | 6.84 |
| 1 | Tower head section lower part |  | with TV 20 lower part of tower head section | | | | |
| | | | 8.03 | 2.71 | 2.56 | 14755 | 55.71 |
| | | | with HT 23 lower part of tower head section | | | | |
| | | | 8.22 | 2.80 | 2.56 | 16075 | 58.92 |
| | Connecting block |  | 4.17 | 2.25 | 2.48 | 3350 | 23.34 |
| | Slewing frame |  | 2.71 | 2.30 | 2.41 | 9445 | 15.08 |
| | Tower top lower part adapter |  | with TV 20 lower part of tower head section | | | | |
| | | | 2.43 | 2.24 | 2.11 | 1960 | 11.49 |
| | | | with HT 23 lower part of tower head section | | | | |
| | | | 2.80 | 2.32 | 2.30 | 3280 | 14.94 |
| 1 | Counterjib incl. platforms |  | 6.64 | 2.30 | 0.84 | 3935 | 12.83 |
| 1 | Hoisting winch Hw2475FU incl. 2nd bake and 820 m hoisting rope |  | 2.62 | 2.06 | 2.47 | 8235 | 13.33 |
| 1 | Rope swing-reduction device |  | 2.84 | 1.75 | 0.52 | 215 | 2.58 |
| 1 | Driver's cab station incl. control cabinet |  | 5.56 | 2.08 | 2.56 | 2865 | 29.61 |

| Qua-ntity | Description | Package | L [m] | B [m] | H [m] | Weight [kg] | Volume [m³] |
|---|---|---|---|---|---|---|---|
| 1 | Jib element 1 |  | 11.76 | 2.19 | 1.97 | 2460 | 50.74 |
| 1 | Jib element 2 incl. WOLFF sign |  | 10.56 | 1.73 | 1.96 | 1780 | 35.81 |
| 1 | Jib element 3 |  | 5.39 | 1.73 | 1.96 | 960 | 18.28 |
| 1 | Jib element 4 |  | 5.39 | 1.73 | 1.96 | 880 | 18.28 |
| 1 | Jib element 5 |  | 10.56 | 1.73 | 1.96 | 1380 | 35.81 |
| 1 | Jib element 6 |  | 10.56 | 1.73 | 1.96 | 1260 | 35.81 |
| 1 | Jib element 7 |  | 10.13 | 1.73 | 1.98 | 1990 | 34.70 |
| 6 | Brace rods for 60 m jib |  | 10.48 | 0.71 | 0.18 | 1245 | 1.34 |
| 1 | Hook block |  | 0.68 | 0.26 | 1.66 | 535 | 0.29 |
| 54 | Standard railings |  | 1.10 | 2.00 | 1.98 | 515 | 4.36 |
| 1 | Box (small parts) |  | 1.00 | 1.00 | 1.00 | 150 | 1.00 |

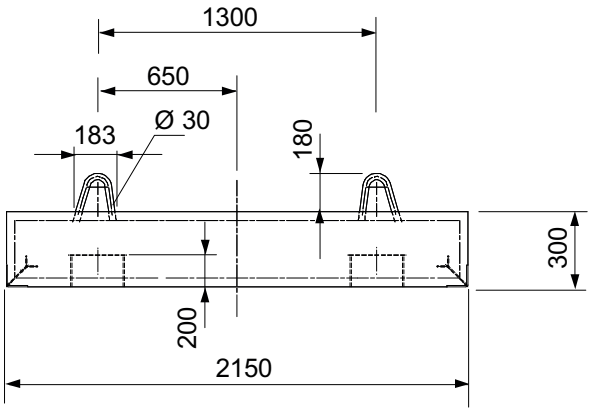
# 8 Assembly weights

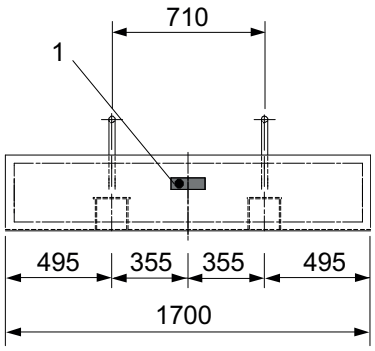
## 8.1 Counterweight blocks

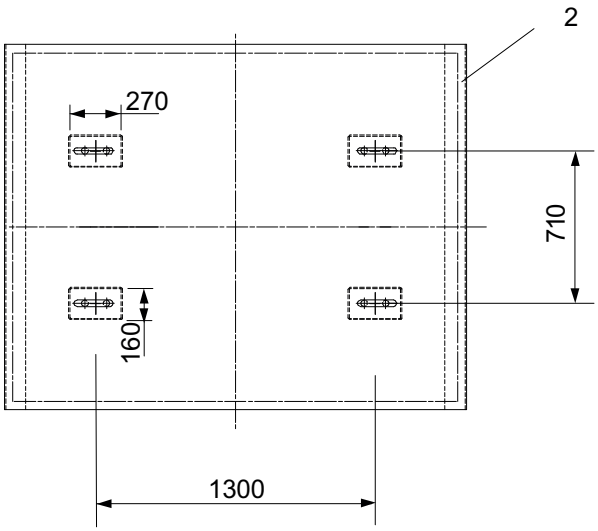
**NOTICE**

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, 2.5 t



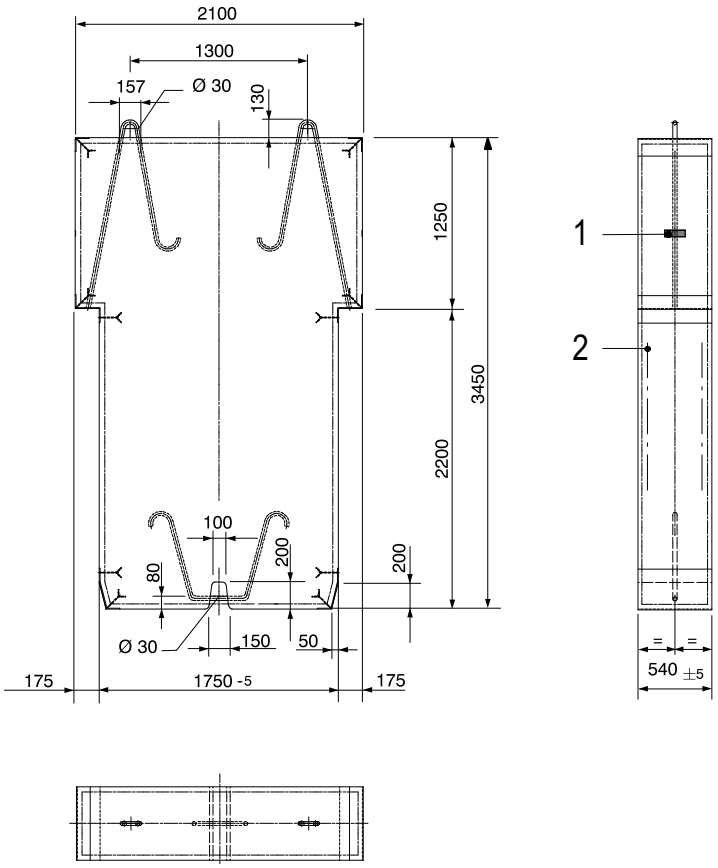




Data counterweight block 2.5 t

| Item | Data |
|---|---|
| Material | Concrete, min. C 20/25 |
| Max. permitted weight tolerance | +/- 3 % |
| Order number | 10034435 |
| 1 | Component identifier |
| 2 | Structural steel reinforcement |

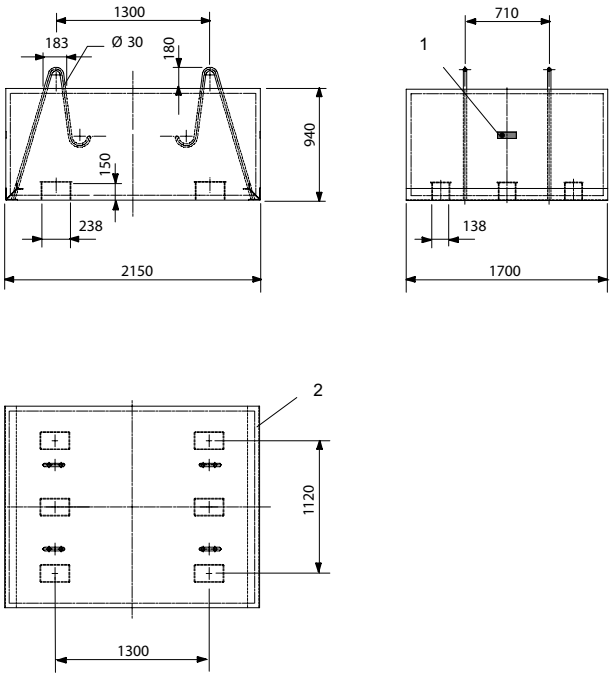
## 8.1.2 Counterweight block, 8.0 t




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




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 |

## 8.2 Total weight jib assembly

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

| Jib length [m] | Weight [kg]<br>WOLFF 275 B |
|---|---|
| 60.0 | 12690 |
| 55.0 | 11630 |
| 50.0 | 11070 |
| 45.0 | 10040 |
| 40.0 | 9360 |
| 35.0 | 8330 |
| 30.0 | 7190 |

## 8.3 Assembly weight slewing section

| Module | Crane parts | Weight [kg] | |
|---|---|---|---|
| Tower head section upper part (with luffing gear, 215 m luffing rope, second brake, pulley block, mechanical parts, brace plates to the counterjib, platforms, standard railings and shock absorber) | | | 11455 |
| | ▪ Brace plates to counterjib | 965 | |
| | ▪ Tower head section upper part, part 3 with pulley block, platforms and standard railings | 4520 | |
| | ▪ Tower head section upper part, part 1, part 2 with luffing gear, platforms and standard railings | 5970 | |
| Tower head section lower part (with connection block, slewing frame, slewing gear and ball race bearing, tower top lower part adapter TV 20, mechanical parts and standard railings) | | | 14755 |
| | Lower part of tower head section TV 20 | 1960 | |
| | ▪ Slewing frame with ball race bearing, slewing gear, mechanical parts and standard railings | 9445 | |
| | ▪ Connecting block | 3350 | |
| Tower head section lower part (with connection block, slewing frame, slewing gear and ball race bearing, tower top lower part adapter HT 23, mechanical parts and standard railings) | | | 16075 |
| | ▪ Tower top lower part adapter HT 23 | 3280 | |
| | ▪ Slewing frame with ball race bearing, slewing gear, mechanical parts and standard railings | 9445 | |
| | ▪ Connecting block | 3350 | |
| Counterjib (with hoisting winch, 320 m hoisting rope, 2 struts and standard railings) | | | 10545 |
| | ▪ Counterjib with struts, platforms and standard railings | 3935 | |
| | ▪ Hoisting winch platform Hw2475FU incl. 320 m hoisting rope and 2nd brake | 6610 | |
| Driver's cab station (with driver's cab suspension, control cabinet, resistors and standard railings) | | | 2905 |

## 8.4 Assembly weight cross frame

| Module | Crane parts | Weight [kg] | |
|---|---|---|---|
| Cross frame KR 10-46 (without accessories) | | | 7020 |
| (4.6 m x 4.6 m) | ▪ Set of bolted spigots AZ 120 E 15.5 | 552 | |
| | ▪ Set of bolted spigots AZ 140 M | 698 | |
| Cross frame KR 16-46/60 (without accessories) | | | 8875 |
| (6.0 m x 6.0 m) | ▪ Set of bolted spigots AZR 120 E 15.5 | 552 | |
| | ▪ Set of bolted spigots AZ 140 M | 698 | |
| Cross frame KRV 10-60 (without accessories) | | | 9990 |
| (6.0 m x 6.0 m) | ▪ Set of bolted spigots AZ 140 M KRV 10-60 | 745 | |
| | ▪ Set of bolted spigots AZ 120 E 15.5 KRV 10-60 | 685 | |
| | ▪ Set of bolted spigots AZ 140 M KRV 10-60 | 745 | |
| | ▪ Set of bolted spigots AZ 140 E 10 KRV 10-60 | 745 | |
| Cross frame KR 12-60 (without accessories) | | | 15650 |
| (6.0 m x 6.0 m) | ▪ 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 E17 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 | |
| Cross frame KR 12-60/ 80 (without accessories) | | | 19260 |
| (8.0 m x 8.0 m) | ▪ 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 E17 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 | |
| Cross frame KR 16-80 (without accessories) | | | 21450 |
| (8.0 m x 8.0 m) | ▪ Set of bolted spigots AZ 140 E KR 16-80 | 620 | |
| | ▪ Set of bolted spigots AZ 156 M KR 16-80 | 680 | |
| | ▪ Set of bolted spigots AZ 156S M KR 16-80 | 675 | |
| | ▪ Set of bolted spigots AZ 160 M KR 16-80 | 1135 | |
| | ▪ Set of bolted spigots AZ 210 M KR 16-80 | 3015 | |
| Cross frame KR 16-80/ 100 (without accessories) | | | 25400 |
| (10.0 m x 10.0 m) | ▪ Set of bolted spigots AZ 140 E10 KR 16-80 | 620 | |
| | ▪ Set of bolted spigots AZ 156 M KR 16-80 | 680 | |

| Module | Crane parts | Weight [kg] | |
|---|---|---|---|
| | ▪ Set of bolted spigots AZ 156S M KR 16-80 | 675 | |
| | ▪ Set of bolted spigots AZ 160 M KR 16-80 | 1135 | |
| | ▪ Set of bolted spigots AZ 210 M KR 16-80 | 3015 | |

## 8.5 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 AZ 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 | |
| Mobile cross frame KRF 16 – 80/100 complete | | | 49530 |
| (10.0 m x 10.0 m) | ▪ Cross frame KR 16-80/100 with traversing gear corners | 26980 | |
| | ▪ Drives | 19000 | |
| | ▪ Backing braces | 3450 | |
| | ▪ small items | 100 | |
| | ▪ Set of bolted spigots AZ 140 E KR 16-80 | 620 | |
| | ▪ Set of bolted spigots AZ 156 M KR 16-80 | 680 | |
| | ▪ Set of bolted spigots AZ 156S M KR 16-80 | 675 | |
| | ▪ Set of bolted spigots AZ 160 M KR 16-80 | 1135 | |
| | ▪ Set of bolted spigots AZ 210 M KR 16-80 | 3015 | |

## 8.6 Assembly weights city portal

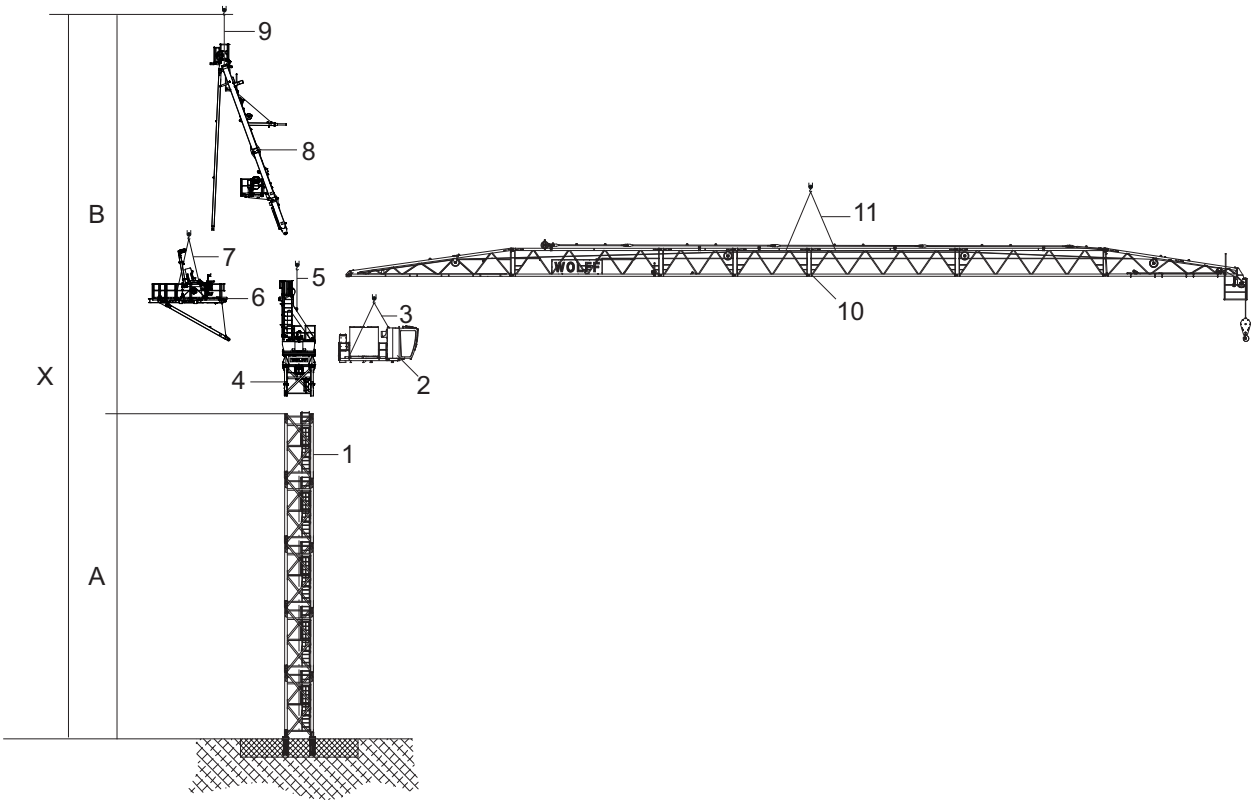
| Module | Crane parts | Weight [kg] | |
|---|---|---|---|
| City portal CP 520, complete (without bolted spigots) | | | 13335 |
| (5.24 m x 5.24 m) | ▪ Cross frame (without accessories) | 7000 | |
| | ▪ City Portal undercarriage | 6335 | |
| | ▪ small items | 425 | |
| | ▪ Set of bolted spigots AZ 120 E 15,5 | 560 | |
| | ▪ Set of bolted spigots AZ 140 M | 684 | |
| City portal CP 690, complete (without bolted spigots) | | | 24735 |
| (6.92 m x 6.92 m) | ▪ Cross frame (without accessories) | 14200 | |
| | ▪ City Portal undercarriage | 10535 | |
| | ▪ small items | 325 | |
| | ▪ 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 E17 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 | |

## 8.7 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 | Tower | 7 | 4-fall attachment (4 m with shackle) |
| 2 | Driver's cab | 8 | Upper tower head section |
| 3 | Three-point lifting tackle (4 m with shackle) | 9 | 2-fall attachment (2 m with shackle) |
| 4 | Tower head section lower part | 10 | Jib |
| 5 | 2-fall attachment (2 m with shackle) | 11 | 2-fall attachment (4 m) |
| 6 | Counterjib | | |

### (see also):

- Tower combinations [17]

# 9 Assembly diagrams

## 9.1 Jib attachment diagram

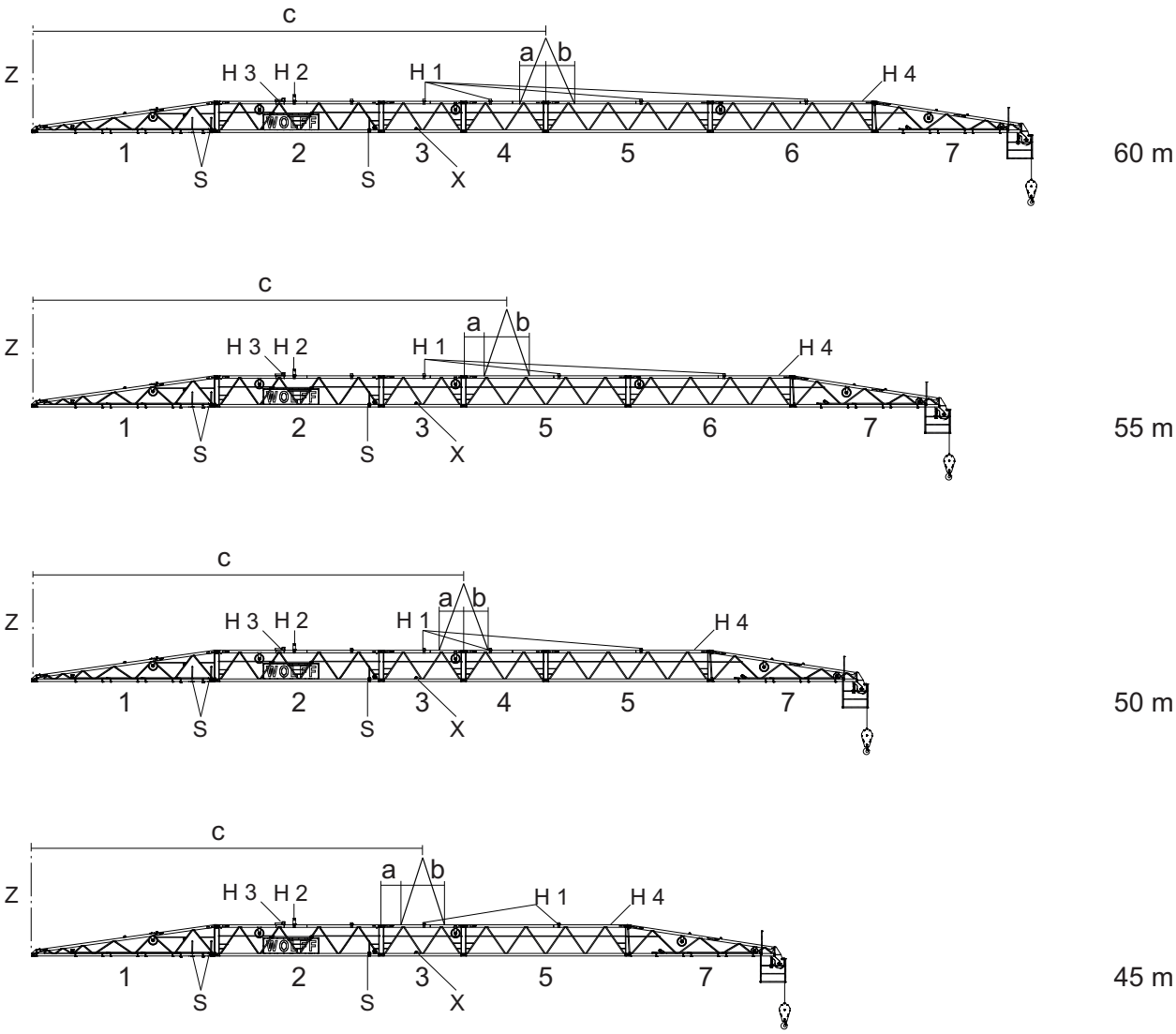
**NOTICE**

For jib assembly, use a 2-fall attachment (4 m).

### Length of jib elements

| Item | Length [m] |
|---|---|
| Jib element 1 | 11.54 |
| Jib element 2, 5, 6 | 10.35 |
| Jib element 3, 4 | 5.18 |
| Jib element 7 | 9.54 |

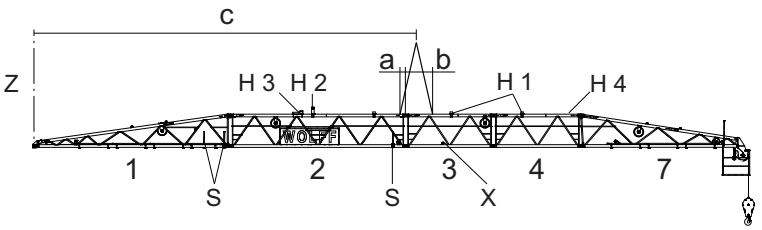
## 9.1.1 Jib attachment diagram 60 m to 45 m



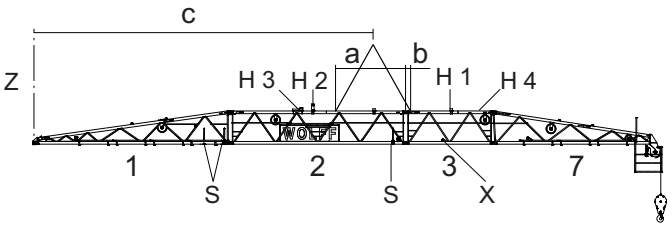

| | Jib length [m] | | | |
|---|---|---|---|---|
| **Data** | **60** | **55** | **50** | **45** |
| a [m] | 1.49 | 1.33 | 1.49 | 1.29 |
| b [m] | 1.53 | 2.70 | 1.49 | 2.60 |
| c [m] | 32.26 | 29.75 | 27.07 | 24.48 |
| Weight [kg] | 12690 | 11630 | 11070 | 10040 |

| Caption | | | |
|---|---|---|---|
| H 1 – H2 | 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 | Z | Jib attachment point |

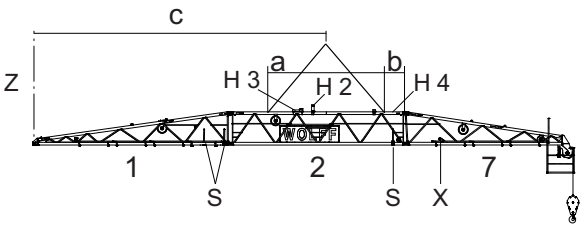
## 9.1.2 Jib attachment diagram 40 m to 30 m




40 m




35 m



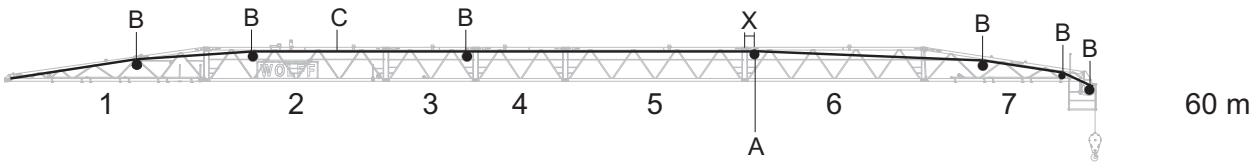

30 m

| | Jib length [m] | | |
|---|---|---|---|
| **Data** | **40** | **35** | **30** |
| a [m] | 0.24 | 4.03 | 6.44 |
| b [m] | 1.49 | 0.24 | 1.33 |
| c [m] | 22.52 | 20.00 | 17.34 |
| Weight [kg] | 9360 | 8330 | 7190 |

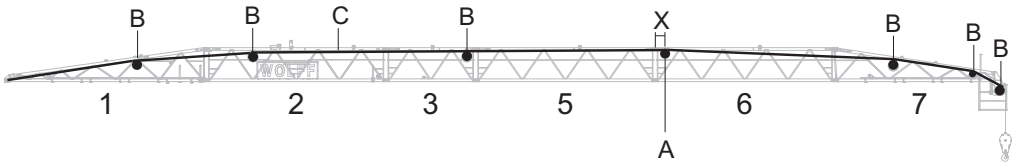
| Caption | | | |
|---|---|---|---|
| H 1 – H2 | Support blocks for jib brace | S | Assembly rope guides at the bottom boom |
| H 3 | Support block for pulley block | X | Fastening assembly brace ropes |
| H 4 | Support block for brace rod 1 | Z | Jib attachment point |

## 9.2 Rope reeving scheme - hoisting rope

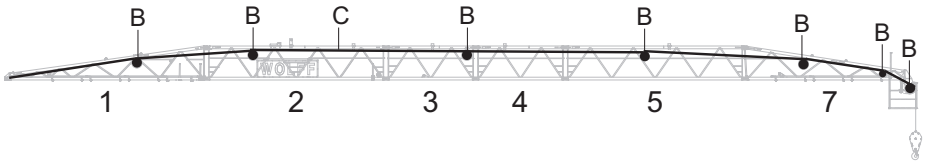
### 9.2.1 Rope reeving scheme - hoisting rope for jib 60 m - 45 m



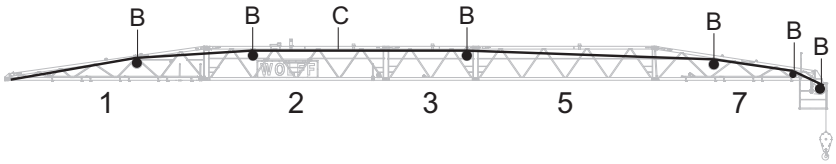

60 m




55 m



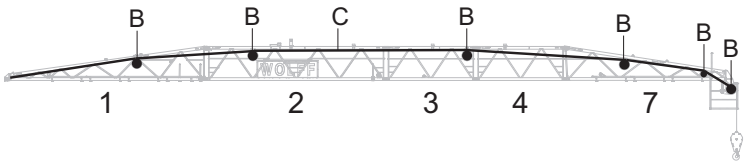

50 m



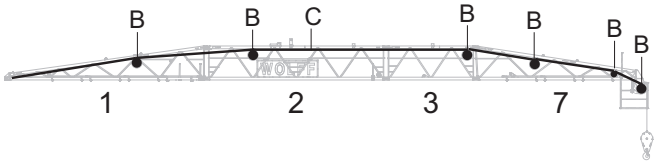

45 m

| | | | |
|---|---|---|---|
| 1-7 | Jib elements | C | Hoisting rope |
| A | Clamped rope pulley | X | Dimension X = 500 mm |
| B | Fixed rope pulley | | |

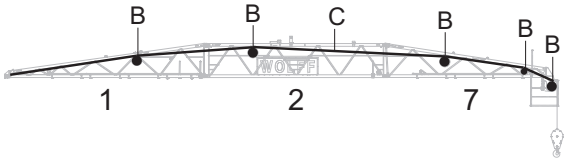
## 9.2.2 Rope reeving scheme - hoisting rope for jib 40 m - 30 m




40 m




35 m




30 m

| | | | |
|---|---|---|---|
| 1-7 | Jib elements | C | Hoisting rope |
| B | Fixed rope pulley | | |

## 9.3 Counterjib lifting diagram

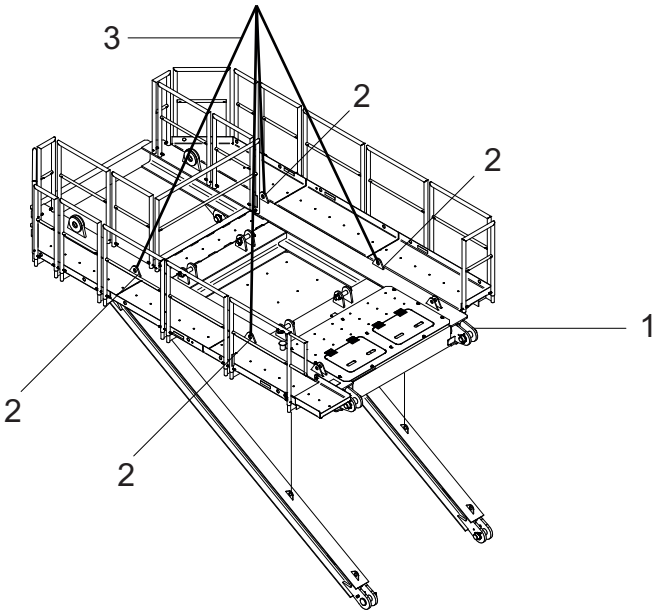
**NOTICE**

Attachment points valid for counterjib:

> with mounted hoist winch

> without mounted hoist winch

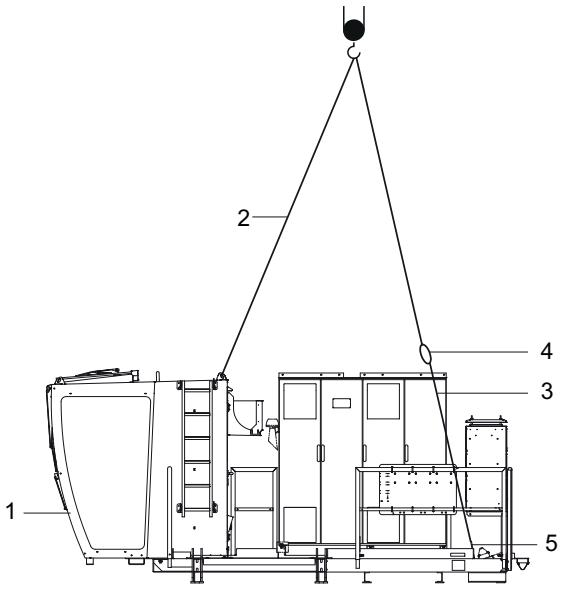
► The hoist winch is not shown in the following drawing to provide a better overview of the attachment points.

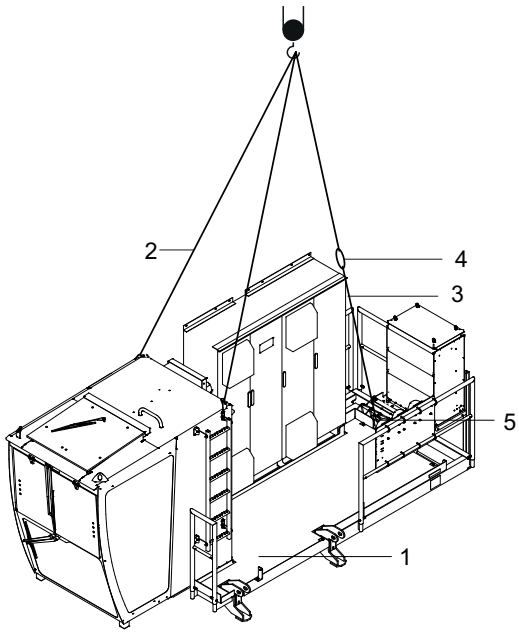



Hoist winch not shown for better overview

| | | | |
|---|---|---|---|
| 1 | Counterjib | 3 | 4-fall attachment (4 m with shackle) |
| 2 | Lifting eyes | | |

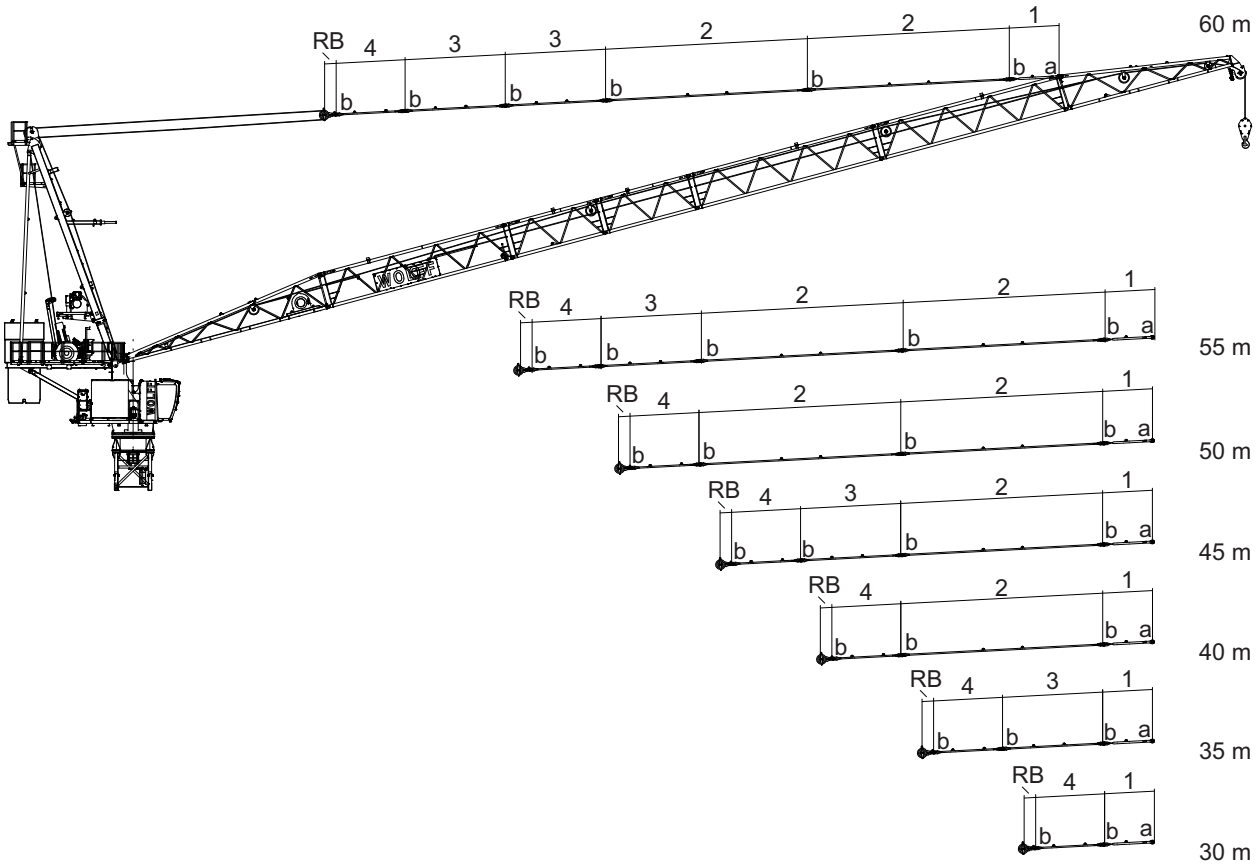
## 9.4 Driver's cab attachment diagram




| | | | |
|---|---|---|---|
| 1 | Driver's cab | 4 | Oval ring (attachment sided) |
| 2 | Triple-point lifting tackle (4 m with shackle) | 5 | Turnbuckle, shackle, nut and cotter pin (driver's cab suspension) |
| 3 | Attachment rope (1 fall, item-no: 10033999) | | |

## 9.5 Jib brace diagram




Brace table

| Jib length [m] | Lengths [m] | | | | | | Total weight [kg] |
|---|---|---|---|---|---|---|---|
| | Pulley block (RB) | Brace no. 4 | Brace no. 3 | Brace no. 2 | Brace no. 1 | Total length | |
| Jib - 60 m | 0.65 | 3.50 | 5.15 **2 x** | 10.30 **2 x** | 2.48 | 37.53 | 1250 |
| Jib - 55 m | 0.65 | 3.50 | 5.15 | 10.30 **2 x** | 2.48 | 32.38 | 1070 |
| Jib - 50 m | 0.65 | 3.50 | - | 10.30 **2 x** | 2.48 | 27.23 | 890 |
| Jib - 45 m | 0.65 | 3.50 | 5.15 | 10.30 | 2.48 | 22.08 | 740 |
| Jib - 40 m | 0.65 | 3.50 | - | 10.30 | 2.48 | 16.93 | 560 |
| Jib - 35 m | 0.65 | 3.50 | 5.15 | - | 2.48 | 11.78 | 410 |
| Jib - 30 m | 0.65 | 3.50 | - | - | 2.48 | 6.63 | 230 |

9 Assembly diagrams

Bolt table

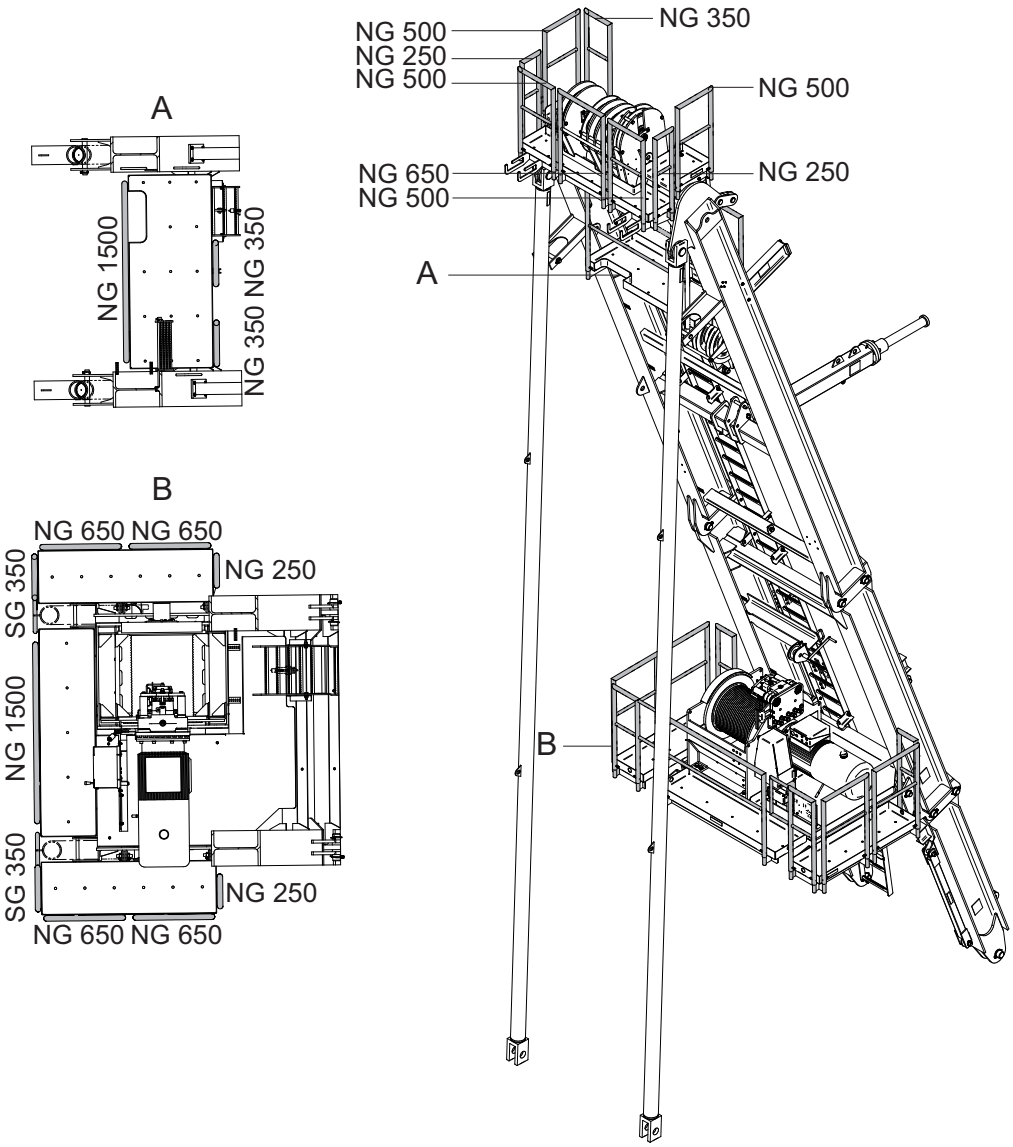
| Jib length | Brace | Bolts | | | | Linch pin | |
|---|---|---|---|---|---|---|---|
| | | | Qua-ntity | Dimension [mm] | Item no. | Dimension [mm] | Item no. |
| Jibs - all | 1 | A | 1 | Ø 95/80x268 | 10033327 | 10x100 | 10024804 |
| Jib – 60 m | 1 | b | 1 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| | 2 | b | 2 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| | 3 | b | 2 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| | 4 | b | 1 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| Jib – 55 m | 1 | b | 1 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| | 2 | b | 2 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| | 3 | b | 1 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| | 4 | b | 1 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| Jib – 50 m | 1 | b | 1 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| | 2 | b | 2 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| | 4 | b | 1 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| Jib – 45 m | 1 | b | 1 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| | 2 | b | 1 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| | 3 | b | 1 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| | 4 | b | 1 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| Jib – 40 m | 1 | b | 1 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| | 2 | b | 1 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| | 4 | b | 1 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| Jib – 35 m | 1 | b | 1 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| | 3 | b | 1 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| | 4 | b | 1 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| Jib – 30 m | 1 | b | 1 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |
| | 4 | b | 1 | Ø 65/55x170 | 10033860 | 10x75 | 10025012 |

## 9.6 Arrangement of standard railings

### 9.6.1 Standard railings (NG) and accessories

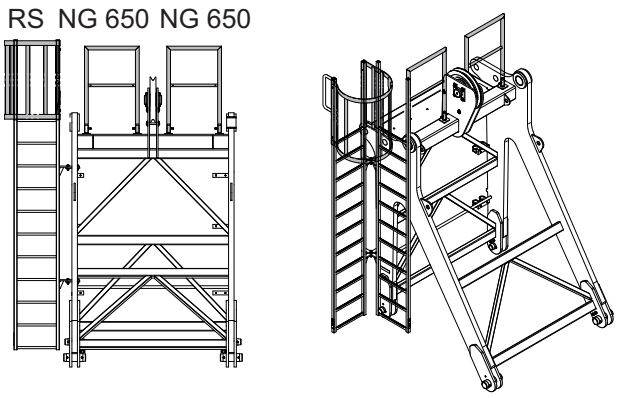
| Quant-ity | Designation<br>standard post (NP) / standard railing (NG) / special railing (SG) / back guard (RS) | Article number |
|---|---|---|
| 1 | NP | 30055213 |
| 6 | Standard railing 250 | 30055194 |
| 6 | Standard railing 350 | 30055176 |
| 6 | Standard railing 500 | 30055131 |
| 16 | Standard railing 650 | 30055188 |
| 4 | Standard railing 850 | 30055175 |
| 5 | Standard railing 1000 | 30055132 |
| 2 | Standard railing 1500 | 30055133 |
| 2 | Standard railing 1750 | 30056861 |
| 2 | SG 350 | 30057466 |
| 1 | SG 1000 | 30055788 |
| 1 | RS | 30056340 |

## 9.6.2 Arrangement of standard railings

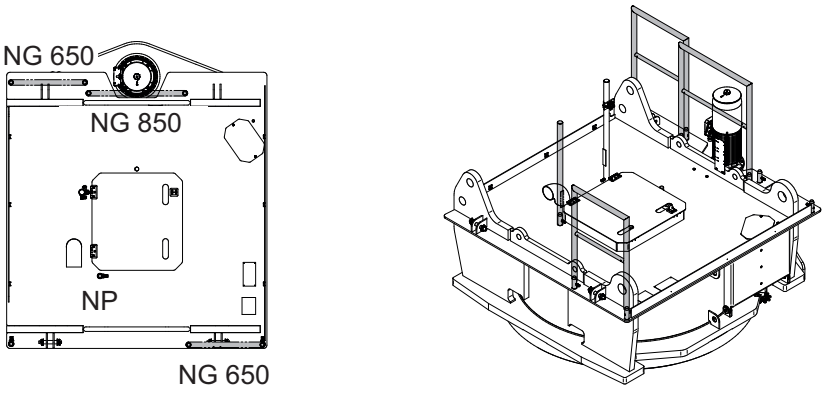



Standard railings at tower head section upper part

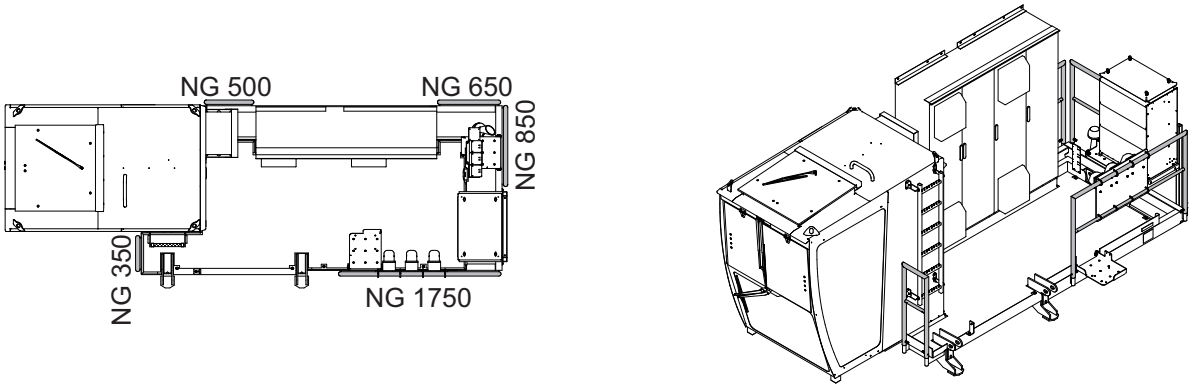
| | | | |
|---|---|---|---|
| A | Platform at tower head section upper part | B | Luffing gear platform |




Standard railing at connection block

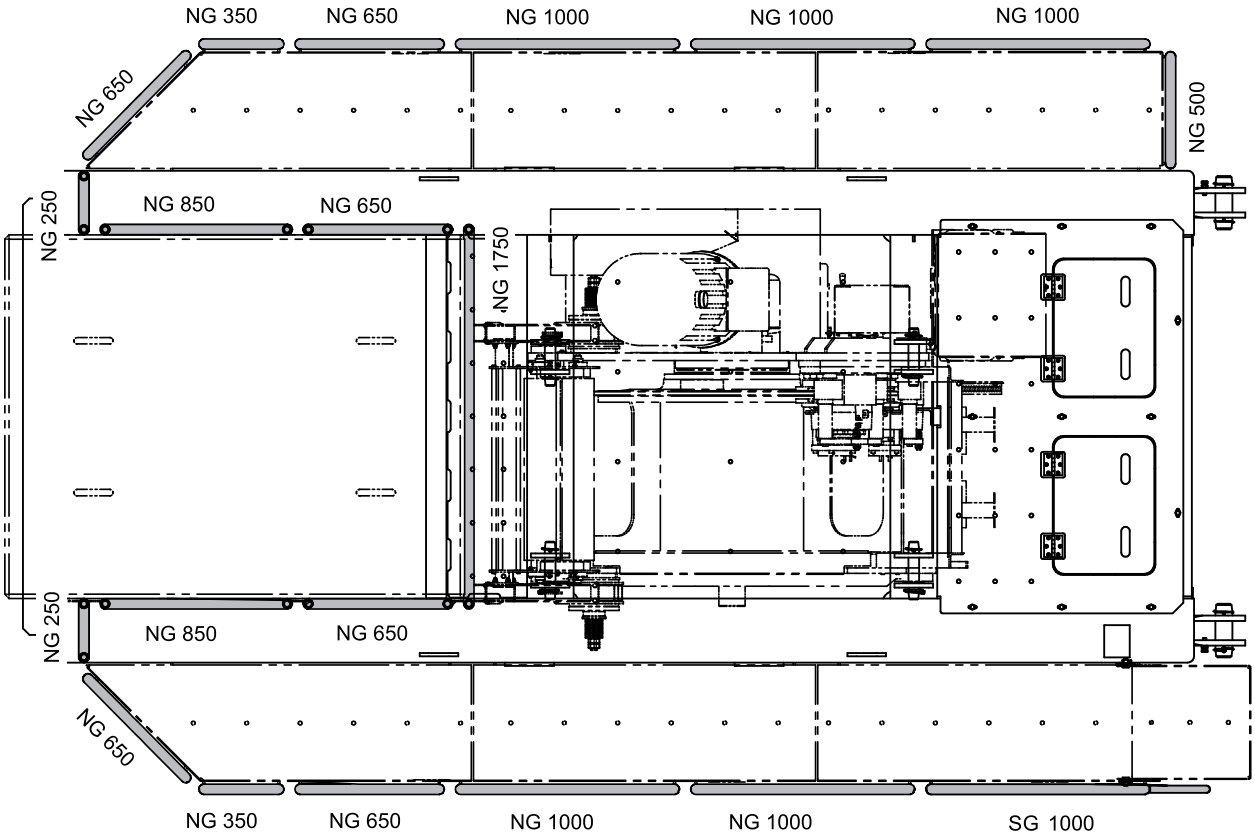



Standard railings at slewing frame



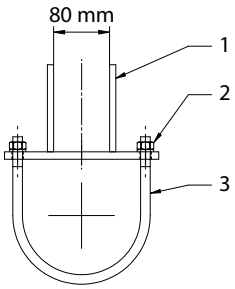

Standard railings at the driver's cab station

9 Assembly diagrams



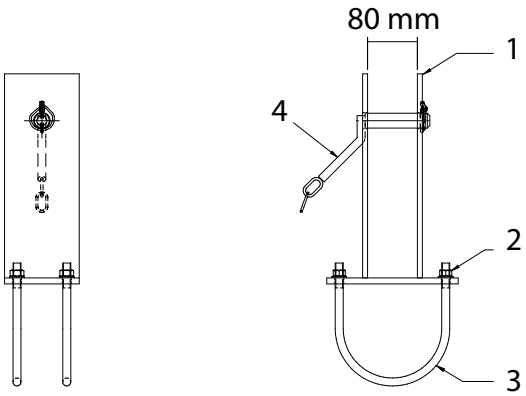

Standard railings at counterjib

## 9.7 Support blocks for brace



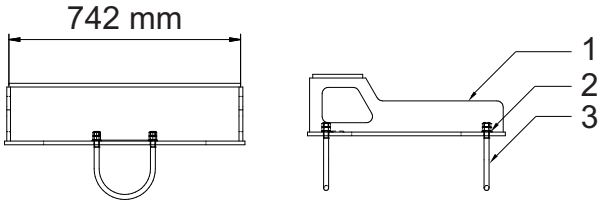

Support block H 1 for jib brace

| | | | |
|---|---|---|---|
| 1 | Support block | 3 | Bracket |
| 2 | Nut and washer | | |




Support block H 2 for jib brace

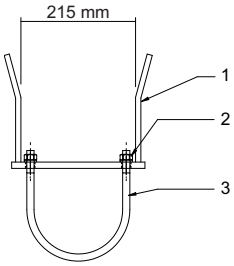
| | | | |
|---|---|---|---|
| 1 | Support block | 3 | Bracket |
| 2 | Nut and washer | 4 | Bolts with handle |




Support block H 3 for pulley block

| | | | |
|---|---|---|---|
| 1 | Support block | 3 | Bracket |
| 2 | Lock nut, 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**

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

**NOTICE**

Details for climbing balancing

The climbing balancing details obtain to the double reeving hook block which includes that the Hook position is on the same height as at hook heights in height of the bottom edge of the tower head section lower part (hook height = tower height).

**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

| 275 B | Jib length [m] | | | | | | |
|---|---|---|---|---|---|---|---|
| | 60 | 55 | 50 | 45 | 40 | 35 | 30 |
| no weight | 27.1 | 29.1 | 30.0 | 32.4 | 33.4 | - | - |
| TV 20 = 2.98 t | - | - | - | - | 21.2 | 22.4 | 23.9 |
| Weight = 5.0 t | - | - | - | - | - | - | 18.5 |

## 10.1.2 Outer climbing device KWH 23 / KWH 23.1

Climbing radius [m] for the balancing weights

| 275 B | Jib length [m] | | | | | | |
|---|---|---|---|---|---|---|---|
| | 60 | 55 | 50 | 45 | 40 | 35 | 30 |
| no weight | 23.1 | 24.8 | 25.6 | 27.7 | 28.6 | 31.0 | - |
| HT 23 = 3.94 t | - | - | - | - | - | 16.8 | 17.8 |
| Weight = 5.0 t | - | - | - | - | - | - | 15.6 |

## 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 - 40 m | | | |
|---|---|---|---|---|
| 1 | TV 20.4 | TV 20.4 | TV 20.4 | TV 20.4 |
| 2 | TV 20.4 | TV 20.4 | TV 20.4 | TV 20.4 |
| 3 | TV 20.4 | TV 20.4 | TV 20.4 | TV 20.4 |
| 4 | TV 20.4 | TV 20.4 | TV 20.4 | TV 20.4 |
| 5 | TV 20.4 | TV 20.4 | TV 20.4 | |
| 6 | TV 20.4 | TV 20.4 | | |
| 7 | 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 | 42.0 | 37.5 | 33.0 |

Tower combinations for slewing tower cranes with inner climbing device.

| Item | Jib length 45 m. | | | |
|---|---|---|---|---|
| 1 | TV 20.4 | TV 20.4 | TV 20.4 | TV 20.4 |
| 2 | TV 20.4 | TV 20.4 | TV 20.4 | TV 20.4 |
| 3 | TV 20.4 | TV 20.4 | TV 20.4 | TV 20.4 |
| 4 | TV 20.4 | TV 20.4 | TV 20.4 | |
| 5 | TV 20.4 | TV 20.4 | | |
| 6 | 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] | 42.0 | 37.5 | 33.0 | 28.5 |

Tower combinations for slewing tower cranes with inner climbing device.

| Item | Jib length 50 m. | | | |
|---|---|---|---|---|
| 1 | TV 20.4 | TV 20.4 | TV 20.4 | |
| 2 | TV 20.4 | TV 20.4 | TV 20.4 | |
| 3 | TV 20.4 | TV 20.4 | TV 20.4 | |
| 4 | TV 20.4 | TV 20.4 | | |
| 5 | TV 20.4 | | | |
| | | | | |
| inner climbing device | 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 | |
| Tower height [m] | 37.5 | 33.0 | 28.5 | |

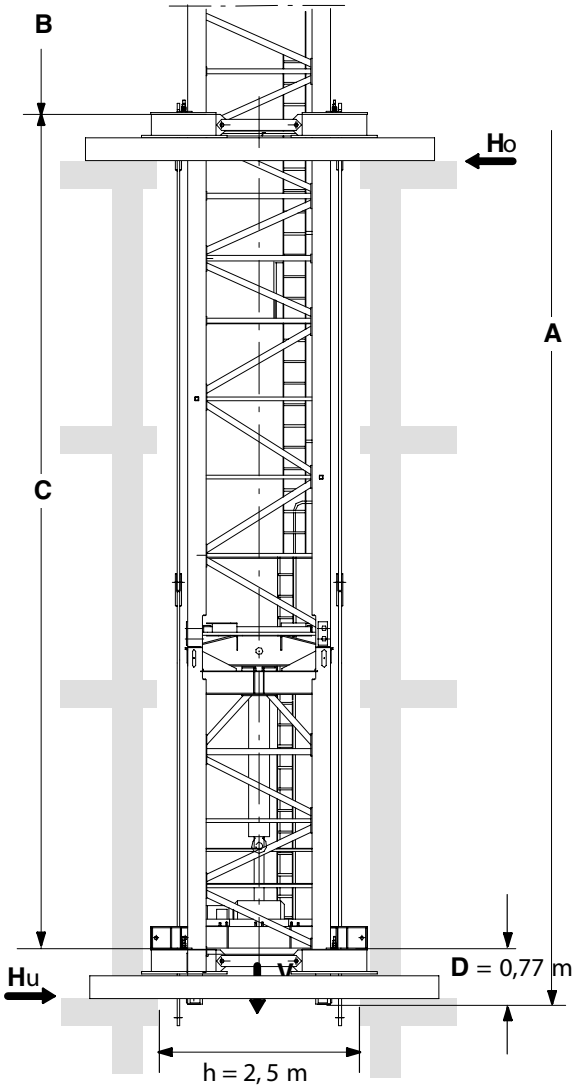
Tower combinations for slewing tower cranes with inner climbing device.

| Item | Jib length 55 m - 60 m | | | |
|---|---|---|---|---|
| 1 | TV 20.4 | TV 20.4 | | |
| 2 | TV 20.4 | TV 20.4 | | |
| 3 | TV 20.4 | TV 20.4 | | |
| 4 | TV 20.4 | | | |
| | | | | |
| 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] | 33.0 | 28.5 | | |

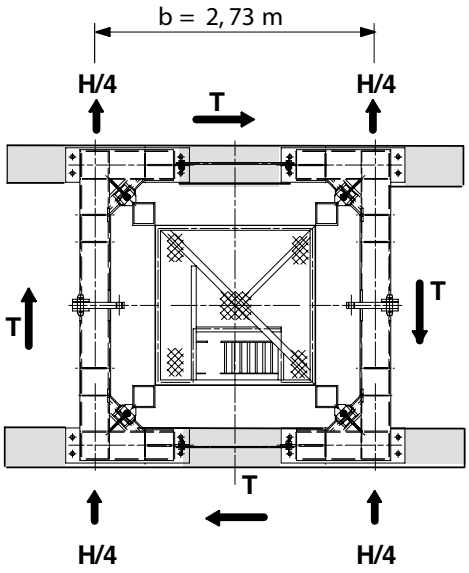
Climbing radius [m] for the balancing weights

| | Jib length [m] | | | | | | |
|---|---|---|---|---|---|---|---|
| **275 B** | **60** | **55** | **50** | **45** | **40** | **35** | **30** |
| no weight | 45.0 | 47.9 | - | - | - | - | - |
| TV 20 = 2.98 t | - | 32.9 | 33.5 | 35.0 | - | - | - |
| Weight = 5.0 t | - | - | - | 28.5 | 28.9 | 30.0 | - |
| Weight = 7.5 t | - | - | - | - | - | 24.0 | 24.9 |
| Weight = 10.0 t | - | - | - | - | - | - | 20.6 |

10 Suitable climbing devices




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




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

## In service clamping forces for jibs of 30 m – 40 m

| In service clamping forces [kN] inside a building | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A [m] | 46.5 | | | | 42.0 | | | | 37.5 | | | | 33.0 | | | |
| C [m] | 11 | 12 | 13 | 14 | 11 | 12 | 13 | 14 | 11 | 12 | 13 | 14 | 11 | 12 | 13 | 14 |
| V | 1500 | | | | 1471 | | | | 1443 | | | | 1415 | | | |
| Ho | 480 | 440 | 400 | 380 | 450 | 410 | 380 | 360 | 430 | 390 | 360 | 340 | 410 | 380 | 350 | 320 |
| Hu | 420 | 380 | 350 | 320 | 400 | 360 | 330 | 300 | 380 | 340 | 310 | 290 | 360 | 330 | 300 | 270 |
| T | 57 | | | | 57 | | | | 57 | | | | 57 | | | |

## Out of service clamping forces for jibs of 30 m – 40 m

| Out of service clamping forces [kN] inside a building | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A [m] | 46.5 | | | | 42.0 | | | | 37.5 | | | | 33.0 | | | |
| C [m] | 11 | 12 | 13 | 14 | 11 | 12 | 13 | 14 | 11 | 12 | 13 | 14 | 11 | 12 | 13 | 14 |
| V | 1234 | | | | 1206 | | | | 1178 | | | | 1149 | | | |
| Ho | 920 | 850 | 780 | 730 | 810 | 740 | 680 | 640 | 740 | 680 | 630 | 590 | 690 | 630 | 580 | 540 |
| Hu | 630 | 560 | 490 | 430 | 530 | 460 | 410 | 360 | 480 | 420 | 370 | 320 | 430 | 380 | 330 | 290 |
| T | 0 | | | | 0 | | | | 0 | | | | 0 | | | |

## In service clamping forces for jibs of 45 m

| In service clamping forces [kN] inside a building | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A [m] | 42.0 | | | | 37.5 | | | | 33.0 | | | | 28.5 | | | |
| C [m] | 11 | 12 | 13 | 14 | 11 | 12 | 13 | 14 | 11 | 12 | 13 | 14 | 11 | 12 | 13 | 14 |
| V | 1478 | | | | 1450 | | | | 1421 | | | | 1393 | | | |
| Ho | 460 | 420 | 390 | 360 | 440 | 400 | 370 | 350 | 420 | 380 | 350 | 330 | 400 | 370 | 340 | 310 |
| Hu | 410 | 370 | 340 | 310 | 390 | 350 | 320 | 290 | 370 | 330 | 300 | 280 | 350 | 320 | 290 | 260 |
| T | 57 | | | | 57 | | | | 57 | | | | 57 | | | |

## Out of service clamping forces for jibs of 45 m

| Out of service clamping forces [kN] inside a building | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A [m] | 42.0 | | | | 37.5 | | | | 33.0 | | | | 28.5 | | | |
| C [m] | 11 | 12 | 13 | 14 | 11 | 12 | 13 | 14 | 11 | 12 | 13 | 14 | 11 | 12 | 13 | 14 |
| V | 1213 | | | | 1184 | | | | 1156 | | | | 1128 | | | |
| Ho | 870 | 800 | 740 | 690 | 780 | 710 | 660 | 610 | 720 | 660 | 610 | 560 | 660 | 600 | 560 | 520 |
| Hu | 590 | 520 | 450 | 400 | 500 | 440 | 390 | 340 | 460 | 400 | 350 | 300 | 410 | 360 | 310 | 270 |
| T | 0 | | | | 0 | | | | 0 | | | | 0 | | | |

## In service clamping forces for jibs of 50 m

| In service clamping forces [kN] inside a building | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A [m] | 37.5 | | | | 33.0 | | | | 28.5 | | | | | | | |
| C [m] | 11 | 12 | 13 | 14 | 11 | 12 | 13 | 14 | 11 | 12 | 13 | 14 | | | | |
| V | 1438 | | | | 1410 | | | | 1381 | | | | | | | |
| Ho | 450 | 410 | 380 | 350 | 430 | 390 | 360 | 340 | 400 | 370 | 340 | 320 | | | | |
| Hu | 390 | 360 | 330 | 300 | 370 | 340 | 310 | 280 | 350 | 320 | 290 | 270 | | | | |
| T | 57 | | | | 57 | | | | 57 | | | | | | | |

## Out of service clamping forces for jibs of 50 m

| Out of service clamping forces [kN] inside a building | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A [m] | 37.5 | | | | 33.0 | | | | 28.5 | | | | | | | |
| C [m] | 11 | 12 | 13 | 14 | 11 | 12 | 13 | 14 | 11 | 12 | 13 | 14 | | | | |
| V | 1195 | | | | 1166 | | | | 1138 | | | | | | | |
| Ho | 840 | 770 | 710 | 660 | 740 | 680 | 630 | 590 | 680 | 630 | 580 | 540 | | | | |
| Hu | 550 | 490 | 430 | 380 | 480 | 410 | 360 | 320 | 430 | 370 | 330 | 280 | | | | |
| T | 0 | | | | 0 | | | | 0 | | | | | | | |

## In service clamping forces for jibs of 55 m – 60 m

| In service clamping forces [kN] inside a building | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A [m] | 33.0 | | | | 28.5 | | | | | | | | | | | |
| C [m] | 11 | 12 | 13 | 14 | 11 | 12 | 13 | 14 | | | | | | | | |
| V | 1371 | | | | 1343 | | | | | | | | | | | |
| Ho | 440 | 400 | 370 | 350 | 420 | 380 | 350 | 330 | | | | | | | | |
| Hu | 390 | 350 | 320 | 290 | 370 | 330 | 300 | 280 | | | | | | | | |
| T | 57 | | | | 57 | | | | | | | | | | | |

## Out of service clamping forces for jibs of 55 m – 60 m

| Out of service clamping forces [kN] inside a building | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A [m] | 33.0 | | | | 28.5 | | | | | | | | | | | |
| C [m] | 11 | 12 | 13 | 14 | 11 | 12 | 13 | 14 | | | | | | | | |
| V | 1183 | | | | 1155 | | | | | | | | | | | |
| Ho | 870 | 800 | 740 | 690 | 760 | 700 | 650 | 600 | | | | | | | | |
| Hu | 590 | 520 | 460 | 400 | 490 | 430 | 370 | 330 | | | | | | | | |
| 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 - 40 m | | | |
|---|---|---|---|---|
| 1 | HT 23 | HT 23 | HT 23 | HT 23 |
| 2 | HT 23 | HT 23 | HT 23 | HT 23 |
| 3 | HT 23 | HT 23 | HT 23 | HT 23 |
| 4 | HT 23 | HT 23 | HT 23 | HT 23 |
| 5 | HT 23 | HT 23 | HT 23 | HT 23 |
| 6 | HT 23 | HT 23 | HT 23 | HT 23 |
| 7 | HT 23 | HT 23 | HT 23 | HT 23 |
| 8 | HT 23 | HT 23 | HT 23 | |
| 9 | HT 23 | HT 23 | | |
| 10 | HT 23 | | | |
| | | | | |
| inner climbing device | KSH 23 / KSH E 23 | 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 | FUA 210 G |
| Tower height [m] | 61.5 | 57.0 | 52.5 | 48.0 |

Tower combinations for slewing tower cranes with inner climbing device.

| Item | Jib length 45 m - 50 m | | | |
|---|---|---|---|---|
| 1 | HT 23 | HT 23 | HT 23 | HT 23 |
| 2 | HT 23 | HT 23 | HT 23 | HT 23 |
| 3 | HT 23 | HT 23 | HT 23 | HT 23 |
| 4 | HT 23 | HT 23 | HT 23 | HT 23 |
| 5 | HT 23 | HT 23 | HT 23 | HT 23 |
| 6 | HT 23 | HT 23 | HT 23 | HT 23 |
| 7 | HT 23 | HT 23 | HT 23 | |
| 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 | KSH 23 / KSH E 23 |
| Foundation anchors | FUA 210 G | FUA 210 G | FUA 210 G | FUA 210 G |
| Tower height [m] | 57.0 | 52.5 | 48.0 | 43.5 |

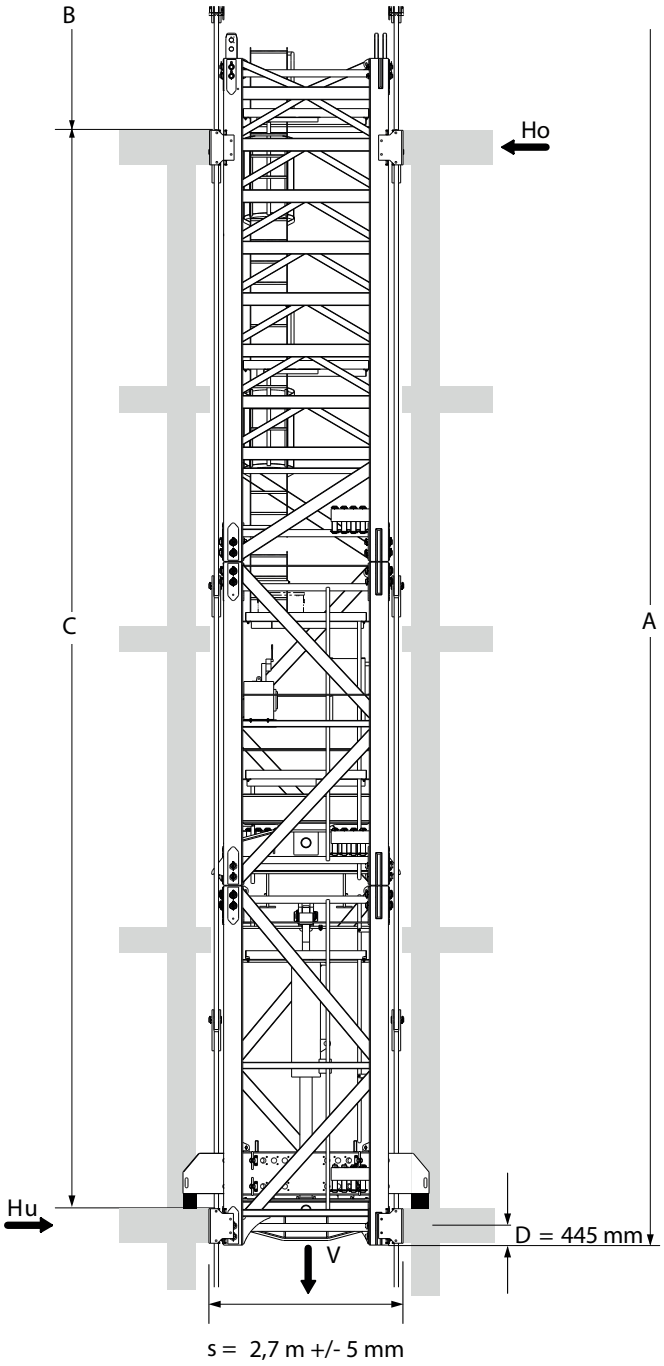
Tower combinations for slewing tower cranes with inner climbing device.

| Item | Jib length 55 m - 60 m | | | |
|---|---|---|---|---|
| 1 | HT 23 | HT 23 | HT 23 | HT 23 |
| 2 | HT 23 | HT 23 | HT 23 | HT 23 |
| 3 | HT 23 | HT 23 | HT 23 | HT 23 |
| 4 | HT 23 | HT 23 | HT 23 | HT 23 |
| 5 | HT 23 | HT 23 | HT 23 | |
| 6 | HT 23 | HT 23 | | |
| 7 | HT 23 | | | |
| | | | | |
| inner climbing device | KSH 23 / KSH E 23 | 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 | FUA 210 G |
| Tower height [m] | 48.0 | 43.5 | 39.0 | 34.5 |

Climbing radius [m] for the balancing weights

| | Jib length [m] | | | | | | |
|---|---|---|---|---|---|---|---|
| **275 B** | **60** | **55** | **50** | **45** | **40** | **35** | **30** |
| no weight | 45.0 | 47.9 | - | - | - | - | - |
| HT 23 = 3.94 t | - | 29.8 | 30.3 | 31.6 | 32.1 | - | - |
| Weight = 5.0 t | - | - | - | - | 28.9 | 30.0 | - |
| Weight = 7.5 t | - | - | - | - | - | 24.0 | 24.9 |
| Weight = 10.0 t | - | - | - | - | - | - | 20.6 |

10 Suitable climbing devices

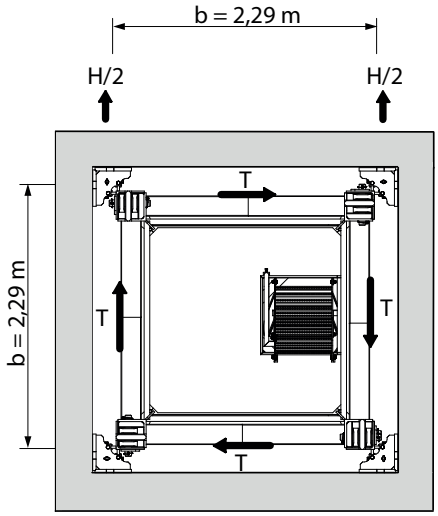



$C_{min}$ = 12,0 m
$C_{max}$ = 15,5 m

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

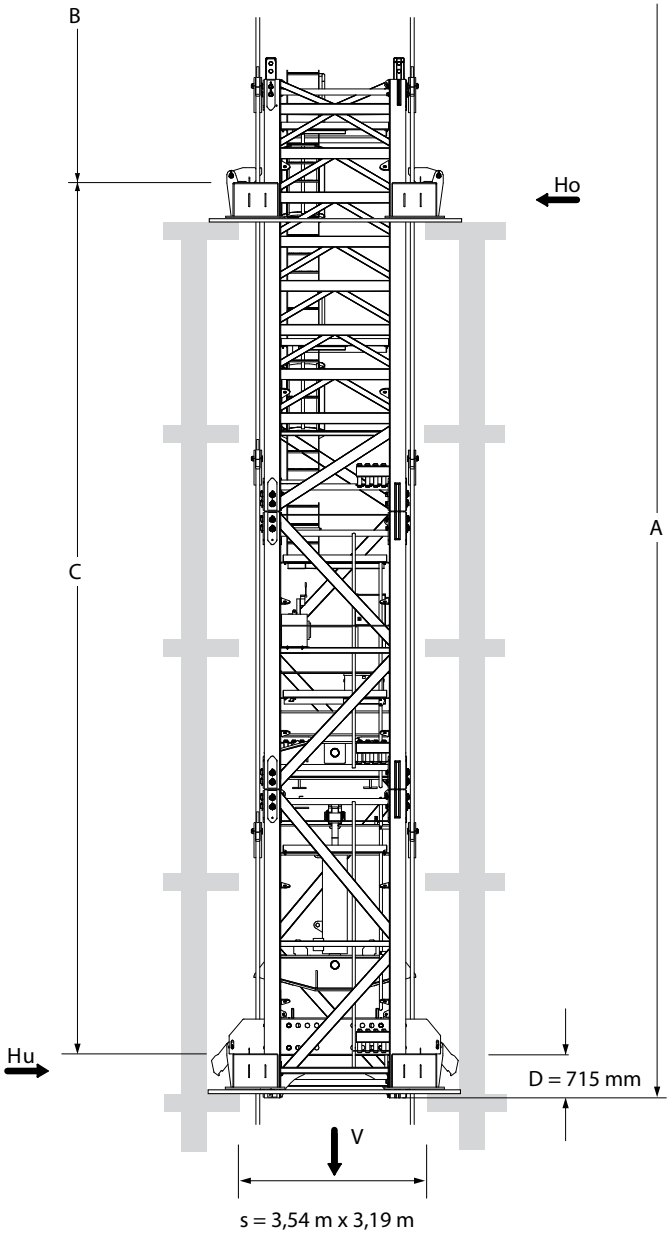
$Hu = Ho - H$

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




KSH E 23

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

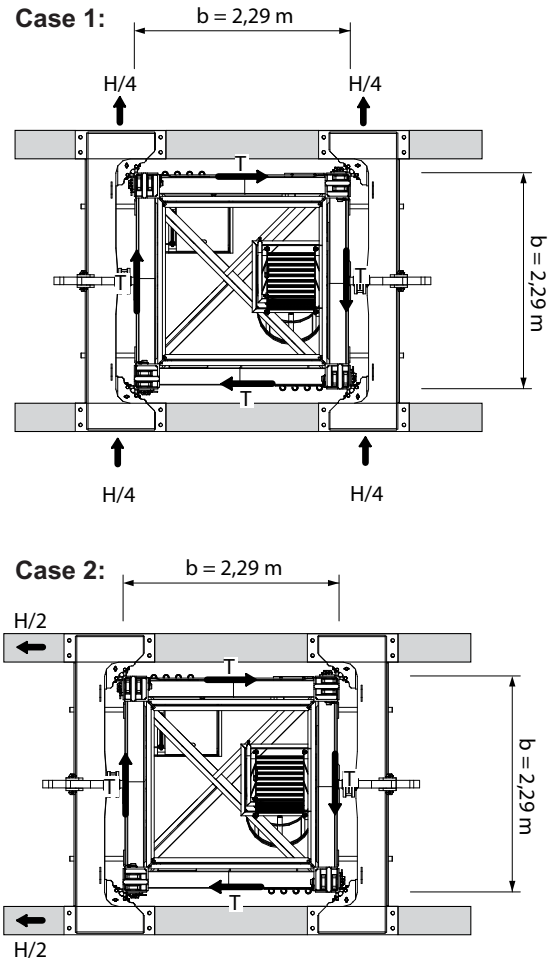



$C_{min} = 12{,}0\ m$
$C_{max} = 15{,}5\ m$

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

$$Hu = Ho - H$$

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




KSH 23

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

## 10 Suitable climbing devices

### In service clamping forces for jibs of 30 m – 40 m

| In service clamping forces [kN] inside a building | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A (m) | 61.5 | | | | | 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 | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 |
| V (kN) | 1904 | | | | | 1865 | | | | | 1825 | | | | | 1786 | | | | |
| Ho (kN) | 530 | 490 | 460 | 430 | 410 | 500 | 460 | 430 | 400 | 390 | 470 | 430 | 400 | 380 | 360 | 450 | 410 | 380 | 360 | 350 |
| Hu (kN) | 460 | 420 | 390 | 360 | 350 | 430 | 400 | 360 | 340 | 320 | 410 | 370 | 340 | 310 | 300 | 390 | 350 | 320 | 300 | 290 |
| T (kN) | 68 | | | | | 68 | | | | | 68 | | | | | 68 | | | | |

### Out of service clamping forces for jibs of 30 m – 40 m

| Out of service clamping forces [kN] inside a building | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A (m) | 61.5 | | | | | 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 | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 |
| V (kN) | 1639 | | | | | 1600 | | | | | 1560 | | | | | 1521 | | | | |
| Ho (kN) | 1330 | 1230 | 1140 | 1070 | 1030 | 1190 | 1100 | 1020 | 950 | 920 | 1060 | 980 | 910 | 850 | 820 | 940 | 870 | 800 | 750 | 730 |
| Hu (kN) | 960 | 860 | 770 | 700 | 660 | 840 | 750 | 670 | 600 | 570 | 720 | 640 | 570 | 510 | 480 | 610 | 540 | 480 | 430 | 400 |
| T (kN) | 0 | | | | | 0 | | | | | 0 | | | | | 0 | | | | |

### In service clamping forces for jibs of 45 m

| In service clamping forces [kN] inside a building | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A (m) | 57.0 | | | | | 52.5 | | | | | 48.0 | | | | | 43.5 | | | | |
| C (m) | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 |
| V (kN) | 1871 | | | | | 1832 | | | | | 1793 | | | | | 1753 | | | | |
| Ho (kN) | 510 | 470 | 440 | 410 | 400 | 480 | 450 | 410 | 390 | 380 | 460 | 420 | 390 | 370 | 350 | 430 | 400 | 370 | 350 | 340 |
| Hu (kN) | 450 | 410 | 370 | 350 | 330 | 420 | 380 | 350 | 320 | 310 | 390 | 360 | 330 | 300 | 290 | 370 | 340 | 310 | 290 | 280 |
| T (kN) | 68 | | | | | 68 | | | | | 68 | | | | | 68 | | | | |

### Out of service clamping forces for jibs of 45 m

| Out of service clamping forces [kN] inside a building | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A (m) | 57.0 | | | | | 52.5 | | | | | 48.0 | | | | | 43.5 | | | | |
| C (m) | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 |
| V (kN) | 1606 | | | | | 1567 | | | | | 1527 | | | | | 1488 | | | | |
| Ho (kN) | 1270 | 1170 | 1090 | 1010 | 980 | 1130 | 1050 | 970 | 910 | 880 | 1000 | 930 | 860 | 800 | 780 | 890 | 820 | 760 | 710 | 690 |
| Hu (kN) | 900 | 810 | 720 | 650 | 620 | 780 | 700 | 620 | 560 | 530 | 670 | 600 | 530 | 470 | 450 | 570 | 500 | 440 | 390 | 370 |
| T (kN) | 0 | | | | | 0 | | | | | 0 | | | | | 0 | | | | |

## In service clamping forces for jibs of 50 m

| In service clamping forces [kN] inside a building | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A (m) | 57.0 | | | | | 52.5 | | | | | 48.0 | | | | | 43.5 | | | | |
| C (m) | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 |
| V (kN) | 1860 | | | | | 1820 | | | | | 1781 | | | | | 1741 | | | | |
| Ho (kN) | 520 | 480 | 450 | 420 | 410 | 490 | 460 | 420 | 400 | 380 | 470 | 430 | 400 | 370 | 360 | 440 | 410 | 380 | 350 | 340 |
| Hu (kN) | 460 | 420 | 380 | 350 | 340 | 430 | 390 | 360 | 330 | 320 | 400 | 370 | 340 | 310 | 300 | 380 | 350 | 320 | 290 | 280 |
| T (kN) | 68 | | | | | 68 | | | | | 68 | | | | | 68 | | | | |

## Out of service clamping forces for jibs of 50 m

| Out of service clamping forces [kN] inside a building | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A (m) | 57.0 | | | | | 52.5 | | | | | 48.0 | | | | | 43.5 | | | | |
| C (m) | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 |
| V (kN) | 1616 | | | | | 1577 | | | | | 1538 | | | | | 1498 | | | | |
| Ho (kN) | 1350 | 1250 | 1160 | 1080 | 1050 | 1210 | 1120 | 1040 | 970 | 940 | 1080 | 1000 | 930 | 870 | 840 | 960 | 880 | 820 | 770 | 740 |
| Hu (kN) | 980 | 880 | 790 | 710 | 680 | 860 | 760 | 680 | 610 | 580 | 740 | 660 | 590 | 530 | 500 | 630 | 560 | 500 | 440 | 420 |
| T (kN) | 0 | | | | | 0 | | | | | 0 | | | | | 0 | | | | |

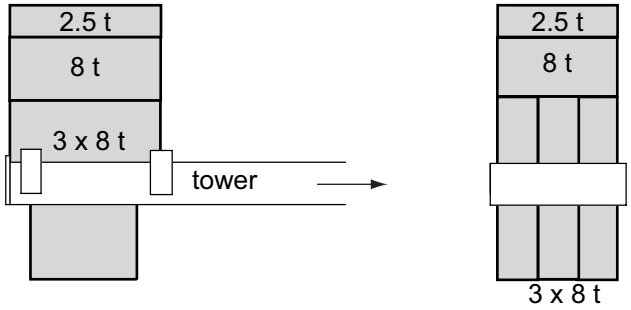
## In service clamping forces for jibs of 55 m – 60 m

| In service clamping forces [kN] inside a building | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A (m) | 48.0 | | | | | 43.5 | | | | | 39.0 | | | | | 34.5 | | | | |
| C (m) | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 |
| V (kN) | 1743 | | | | | 1703 | | | | | 1664 | | | | | 1625 | | | | |
| Ho (kN) | 480 | 440 | 410 | 390 | 370 | 460 | 420 | 390 | 370 | 350 | 430 | 400 | 370 | 350 | 340 | 410 | 380 | 350 | 330 | 320 |
| Hu (kN) | 420 | 380 | 350 | 320 | 310 | 400 | 360 | 330 | 300 | 290 | 370 | 340 | 310 | 290 | 280 | 360 | 320 | 300 | 270 | 260 |
| T (kN) | 68 | | | | | 68 | | | | | 68 | | | | | 68 | | | | |

## Out of service clamping forces for jibs of 55 m – 60 m

| Out of service clamping forces [kN] inside a building | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A (m) | 48.0 | | | | | 43.5 | | | | | 39.0 | | | | | 34.5 | | | | |
| C (m) | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 | 12.0 | 13.0 | 14.0 | 15.0 | 15.5 |
| V (kN) | 1554 | | | | | 1515 | | | | | 1475 | | | | | 1436 | | | | |
| Ho (kN) | 1240 | 1140 | 1060 | 990 | 960 | 1110 | 1020 | 950 | 890 | 860 | 990 | 910 | 850 | 790 | 760 | 870 | 800 | 750 | 700 | 670 |
| Hu (kN) | 880 | 790 | 710 | 640 | 600 | 770 | 680 | 610 | 550 | 520 | 660 | 580 | 520 | 460 | 440 | 560 | 490 | 430 | 380 | 360 |
| T (kN) | 0 | | | | | 0 | | | | | 0 | | | | | 0 | | | | |

# 11 Arrangement of counterweight blocks

| Jib length [m] | 60 | 55 | 50 | 45 | 40 | 35 | 30 |
|---|---|---|---|---|---|---|---|
| Total weight 34.5 t |  | | | | | | |
| | 3 x | 8.0 tons suspended concrete weight | | | | | |
| | 1 x | 8.0 tons lying concrete weight | | | | | |
| | 1 x | 2.5 tons lying concrete weight | | | | | |

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