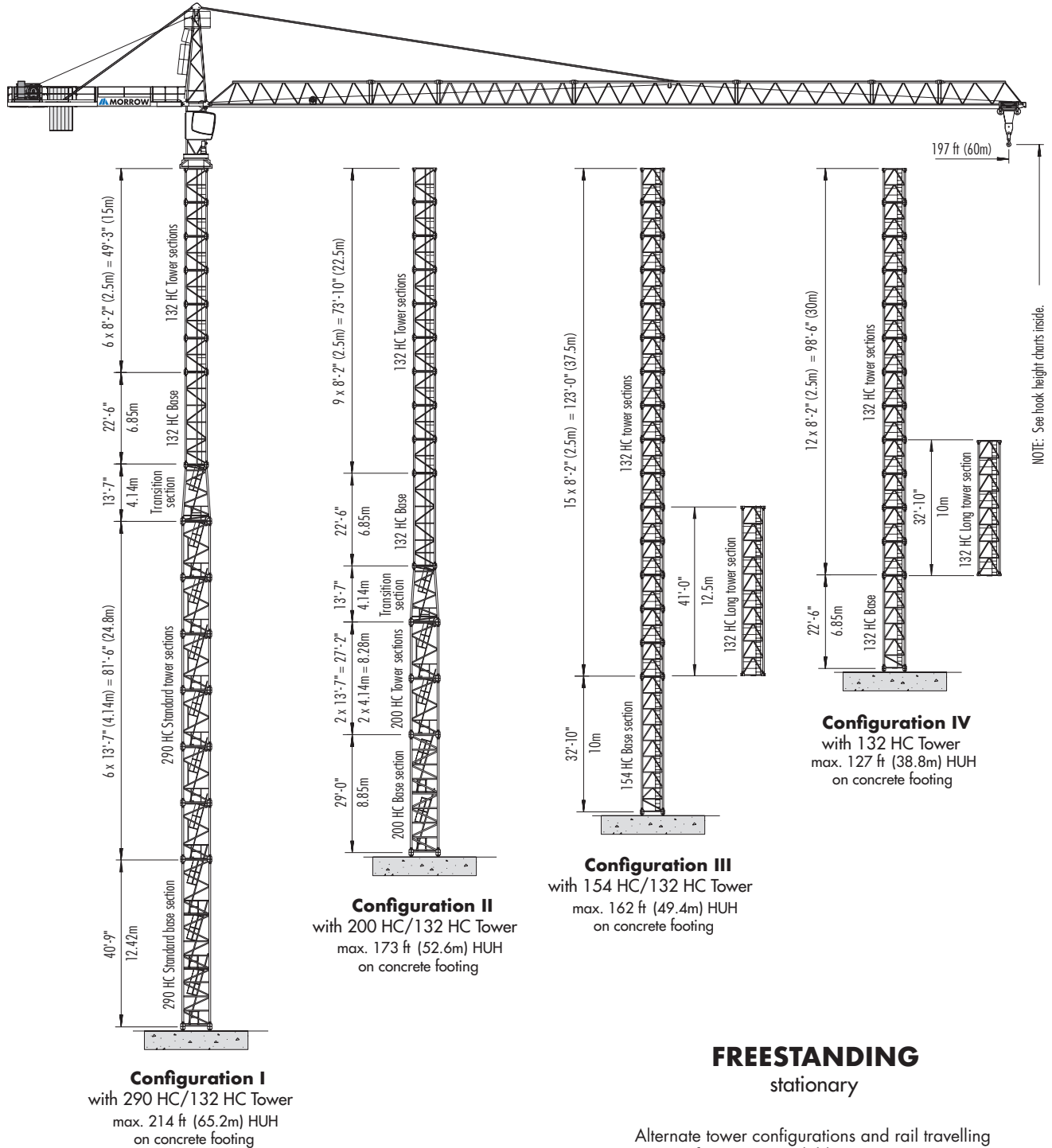
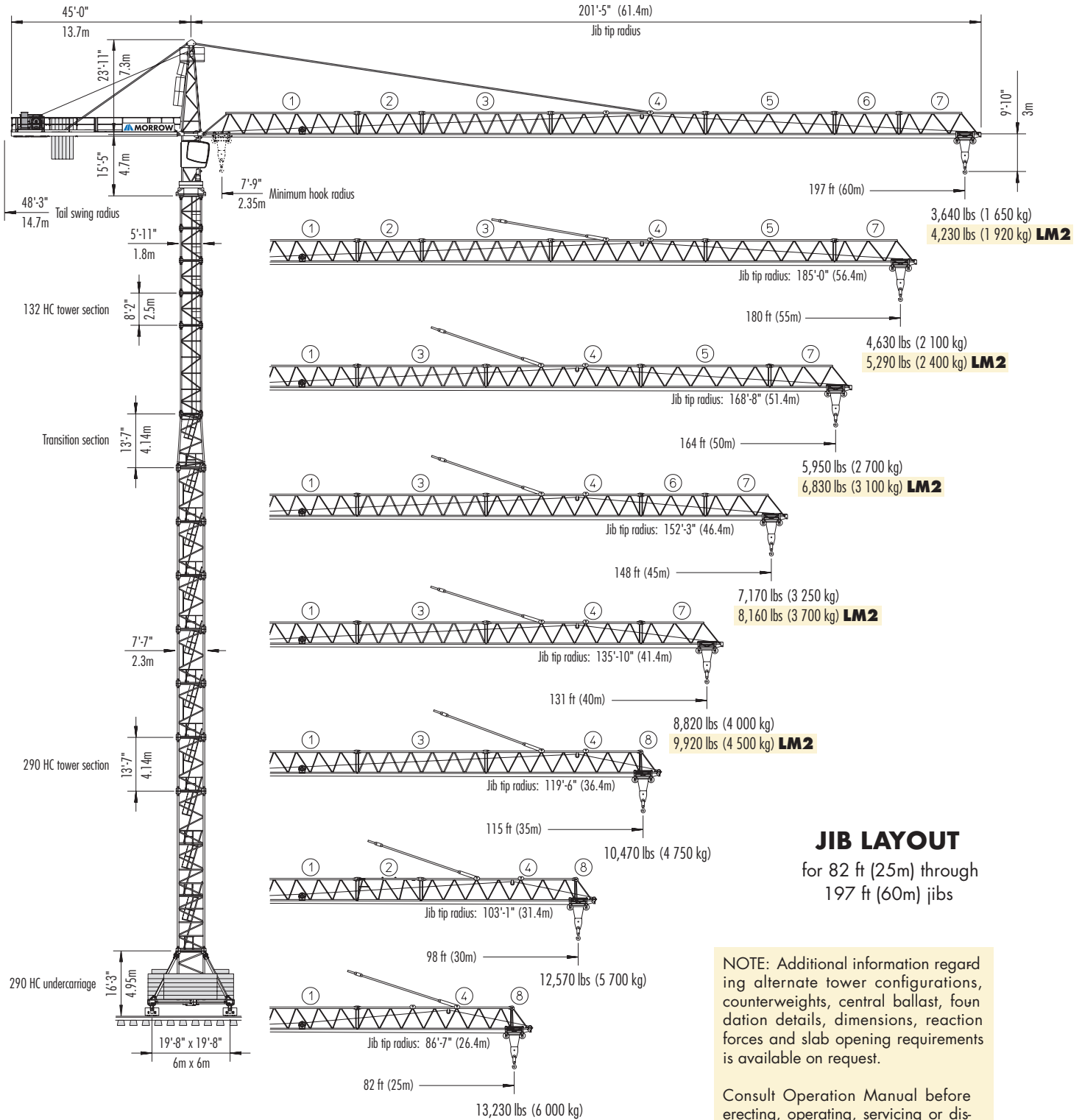


154 EC-H 6 Litronic®

LIEBHERR Hammerhead Tower Crane

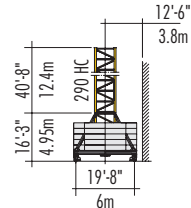
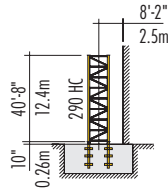




Alternate tower configurations and rail travelling information available upon request.

Hook Heights: Configuration I

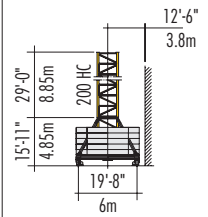
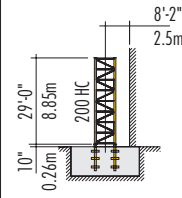
290 HC/132 HC
on 40'-8" (12.4m) base



No. of Tower Elements	Tower Element Type	static concrete footing		rail-travelling undercarriage	
		feet	meters	feet	meters
1	290 HC BS	47	14.4	63	19.1
2	290 HC STS	61	18.5	76	23.2
3	290 HC STS	74	22.7	90	27.4
4	290 HC STS	88	26.8	103	31.5
5	290 HC STS	102	30.9	117	35.6
6	290 HC STS	115	35.1	130	39.8
7	290 HC STS	129	39.2	144	43.9
8	Transition	142	43.4	158	48.1
9	132 HC BS	165	50.2	180	54.9
10	132 HC STS	173	52.7	188	57.4
11	132 HC STS	181	55.2	197	59.9
12	132 HC STS	189	57.7	205 ²	62.4 ²
13	132 HC STS	198	60.2	213 ¹	64.9 ¹
14	132 HC STS	206 ²	62.7 ²	—	—
15	132 HC STS	214 ²	65.2 ²	—	—

Hook Heights: Configuration II

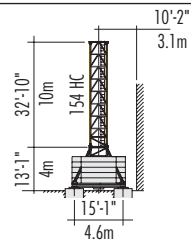
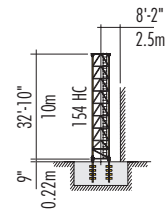
200 HC/132 HC
on 29'-0" (8.85m) base



No. of Tower Elements	Tower Element Type	static concrete footing		rail-travelling undercarriage	
		feet	meters	feet	meters
1	200 HC BS	35	10.8	50	15.4
2	200 HC STS	49	15	64	19.5
3	200 HC STS	62	19.1	78	23.7
4	Transition	76	23.2	91	27.8
5	132 HC BS	99	30.1	114	34.7
6	132 HC STS	107	32.6	122	37.2
7	132 HC STS	115	35.1	130	40
8	132 HC STS	123	37.6	138	42.2
9	132 HC STS	131	40.1	147	44.7
10	132 HC STS	140	42.6	155	47.2
11	132 HC STS	148	45.1	163	49.7
12	132 HC STS	156	47.6	171	52.2
13	132 HC STS	164 ²	50.1 ²	179 ²	54.7 ²
14	132 HC STS	173 ²	52.6 ²	188 ²	57.2 ²

Hook Heights: Configuration III

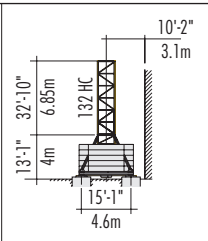
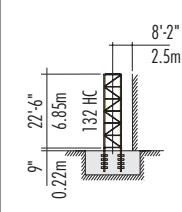
154 HC/132 HC
on 32'-10" (10m) base



No. of Tower Elements	Tower Element Type	static concrete footing		static undercarriage	
		feet	meters	feet	meters
1	154 HC BS	39	11.9	52	15.7
2	132 HC STS	48	14.4	60	18.2
3	132 HC STS	56	16.9	68	20.7
4	132 HC STS	64	19.4	76	23.2
5	132 HC STS	72	21.9	84	25.7
6	132 HC STS	80	24.4	93	28.2
7	132 HC STS	88	26.9	101	30.7
8	132 HC STS	97	29.4	109	33.2
9	132 HC STS	105	31.9	117	35.7
10	132 HC STS	113	34.4	125	38.2
11	132 HC STS	121	36.9	134	40.7
12	132 HC STS	129	39.4	142	43.2
13	132 HC STS	138	41.9	150 ¹	45.7 ¹
14	132 HC STS	146 ¹	44.4 ¹	158 ²	48.2 ²
15	132 HC STS	154 ²	46.9 ²	166 ³	50.7 ³
16	132 HC STS	162 ³	49.4 ³	—	—

Hook Heights: Configuration IV

132 HC
on 22'-6" (6.85m) base



No. of Tower Elements	Tower Element Type	static concrete footing		static undercarriage	
		feet	meters	feet	meters
1	132 HC BS	29	8.8	41	12.5
2	132 HC STS	37	11.3	49	15
3	132 HC STS	45	13.8	57	17.5
4	132 HC STS	53	16.3	66	20
5	132 HC STS	62	18.8	74	22.5
6	132 HC STS	70	21.3	82	25
7	132 HC STS	78	23.8	90	27.5
8	132 HC STS	86	26.3	98	30
9	132 HC STS	94	28.8	107	32.5
10	132 HC STS	103	31.3	115	35
11	132 HC STS	111	33.8	123 ²	37.5 ²
12	132 HC STS	119	36.3	131 ²	40 ²
13	132 HC STS	127 ²	38.8 ²	—	—

¹ Lower top climbing unit prior to operating crane at specified hook height when using LM2.

² Lower top climbing unit prior to operating crane at specified hook height. Applies to both LM1 and LM2.

³ Lower top climbing unit prior to operating crane at specified hook height. Heavy lift mode (LM2) NOT permitted.

⁴ Remove top climbing unit prior to operating crane at specified hook height.

Radius and Capacities

STANDARD LIFT MODE

2-Part Line	Hook Radius	Jib Tip Radius	Maximum Capacity – Radius	ft m	7 2.2	82 25	98 30	115 35	125 38	131 40	138 42	148 45	157 48	164 50	171 52	180 55	190 58	197 60
	197 ft 60m	201'-5" 61.4m	13,230 lbs – 68 ft 6 000 kg – 20.6m	lbs kg	13,230 6 000	10,630 4 820	8,620 3 910	7,190 3 260	6,510 2 955	6,130 2 780	5,750 2 610	5,290 2 400	4,870 2 210	4,630 2 100	4,410 2 000	4,080 1 850	3,810 1 730	3,640 1 650
	180 ft 55m	185'-0" 56.4m	13,230 lbs – 74 ft 6 000 kg – 22.6m	lbs kg	13,230 6 000	12,390 5 365	9,610 4 360	8,050 3 650	7,300 3 310	6,880 3 120	6,480 2 940	5,950 2 700	5,490 2 490	5,220 2 370	4,980 2 260	4,630 2 100		
	164 ft 50m	168'-8" 51.4m	13,230 lbs – 82 ft 6 000 kg – 25.1m	lbs kg	13,230 6 000	13,230 6 000	10,840 4 915	9,080 4 120	8,270 3 750	7,780 3 530	7,340 3 330	6,770 3 070	6,260 2 840	5,950 2 700				
	148 ft 45m	152'-3" 46.4m	13,230 lbs – 86 ft 6 000 kg – 26.3m	lbs kg	13,230 6 000	13,230 6 000	11,440 5 190	9,610 4 360	8,730 3 960	8,220 3 730	7,780 3 530	7,170 3 250						
	131 ft 40m	135'-10" 41.4m	13,230 lbs – 92 ft 6 000 kg – 28m	lbs kg	13,230 6 000	13,230 6 000	12,220 5 545	10,270 4 660	9,350 4 240	8,820 4 000								
	115 ft 35m	119'-6" 36.4m	13,230 lbs – 93 ft 6 000 kg – 28.42m	lbs kg	13,230 6 000	13,230 6 000	12,460 5 650	10,470 4 750										
	98 ft 30m	103'-1" 31.4m	13,230 lbs – 94 ft 6 000 kg – 28.65m	lbs kg	13,230 6 000	13,230 6 000	12,570 5 700											
	82 ft 25m	86'-7" 26.4m	13,230 lbs – 82 ft 6 000 kg – 25m	lbs kg	13,230 6 000	13,230 6 000												
																		LM 1

HEAVY LIFT MODE

2-Part Line	Hook Radius	Jib Tip Radius	Maximum Capacity – Radius	ft m	7 2.2	82 25	98 30	115 35	125 38	131 40	138 42	148 45	157 48	164 50	171 52	180 55	190 58	197 60
	197 ft 60m	201'-5" 61.4m	13,230 lbs – 76 ft 6 000 kg – 23.1m	lbs kg	13,230 6 000	12,090 5 485	9,830 4 460	8,230 3 735	7,470 3 390	7,030 3 190	6,640 3 010	6,110 2 770	5,640 2 560	5,360 2 430	5,090 2 310	4,740 2 150	4,430 2 010	4,230 1 920
	180 ft 55m	185'-0" 56.4m	13,230 lbs – 82 ft 6 000 kg – 25.1m	lbs kg	13,230 6 000	13,230 6 000	10,840 4 915	9,080 4 120	8,260 3 745	7,780 3 530	7,340 3 330	6,770 3 070	6,260 2 840	5,950 2 700	5,670 2 570	5,290 2 400		
	164 ft 50m	168'-8" 51.4m	13,230 lbs – 92 ft 6 000 kg – 28.1m	lbs kg	13,230 6 000	13,230 6 000	12,310 5 585	10,350 4 695	9,420 4 275	8,880 4 030	8,400 3 810	7,740 3 510	7,170 3 250	6,830 3 100				
	148 ft 45m	152'-3" 46.4m	13,230 lbs – 96 ft 6 000 kg – 29.4m	lbs kg	13,230 6 000	13,230 6 000	12,930 5 865	10,880 4 935	9,910 4 495	9,350 4 240	8,840 4 010	8,160 3 700						
	131 ft 40m	135'-10" 41.4m	13,230 lbs – 102 ft 6 000 kg – 31m	lbs kg	13,230 6 000	13,230 6 000	13,230 6 000	11,540 5 235	10,520 4 770	9,920 4 500								LM 2

IMPORTANT: Litronic® cranes are equipped with PLC systems that provide precise monitoring, control and coordination of all crane functions. This feature permits a load increase of up to 20% as illustrated in the heavy lift mode (**LM2**) chart above. Restrictions may apply. Please note that heavy lift mode (**LM2**) is only permitted for wind speeds less than 31 mph (50 km/h). Contact Morrow for more information regarding the many features of the 154 EC-H 6 Litronic tower crane.

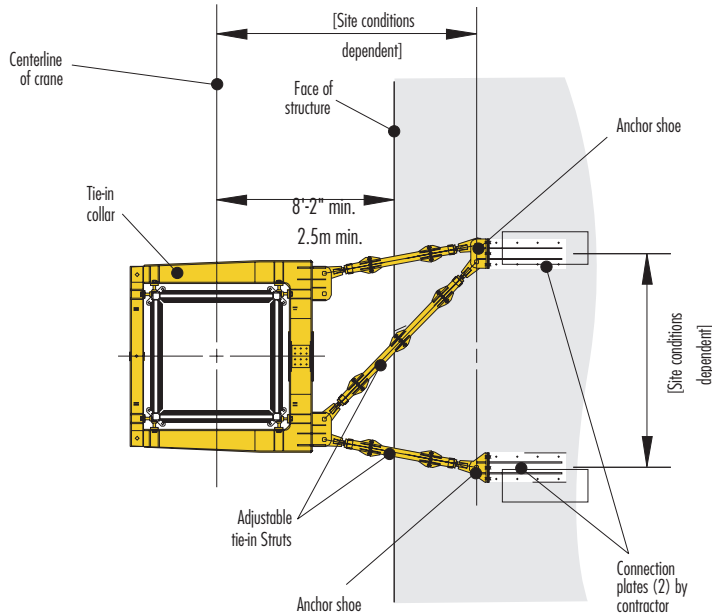
NOTE: The heavy lift mode (**LM2**) is not available for the 115 ft (35m), 98 (30m) and 82 ft (25m) jibs. Additional restrictions may apply. Contact Morrow for more information.

NOTE: For information regarding bottom climbing inside of structure, please contact Morrow.

¹ NOTE: Restrictions may apply; please consult Operation Manual or Morrow engineering.

Tie-in collars to be installed at tower connections. For alternative tie-in locations, contact Morrow engineering.

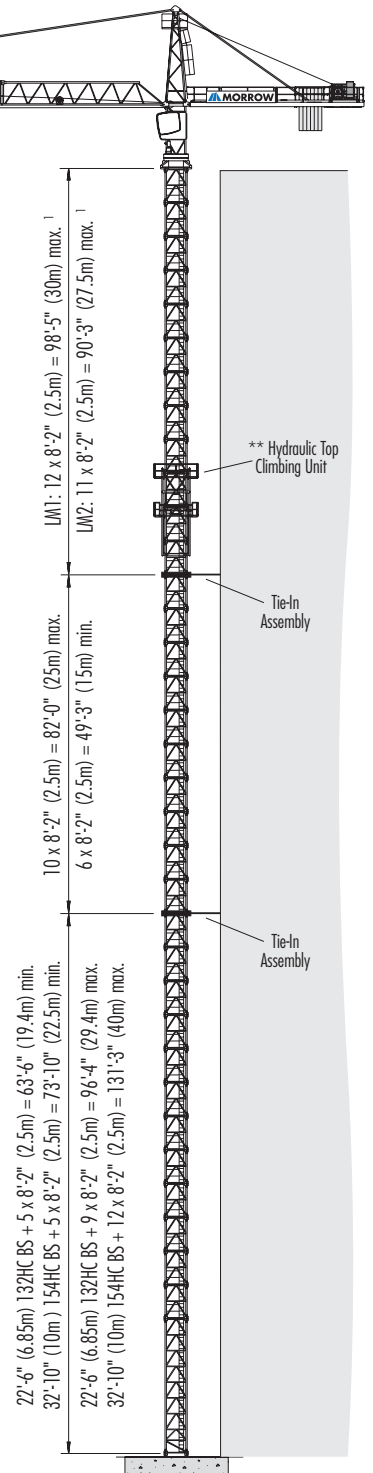
** Lower top climbing unit to upper tie-in assembly prior to operating crane.



TIE-IN ASSEMBLY with 132 HC Tower Sections plan view

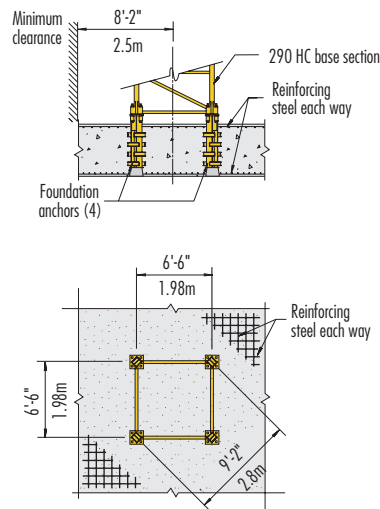
NOTE: The tie-in assembly shown is an example of a typical installation using 132 HC tower. Please note, however, that factors determining the installation of tie-in assemblies may vary due to job site requirements.

NOTE: Verify all dimensions. Contact Morrow for additional information regarding dimensions, alternate tower configurations, reactions forces, tie-in installation and slab opening requirements. Consult Operation Manual before erecting, operating, servicing or dismantling crane.

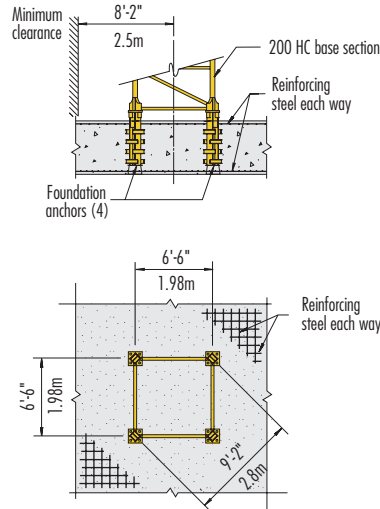


TOP CLIMBING with 132 HC Tower Sections tied to structure

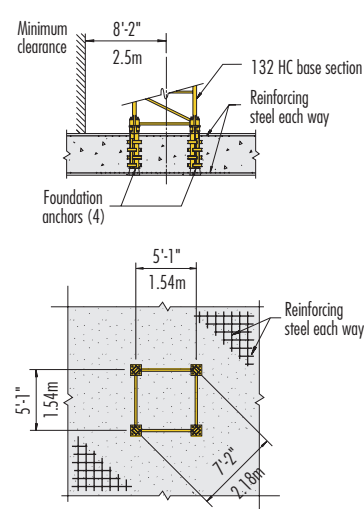
Foundation Details



with 290 HC Tower
concrete footing

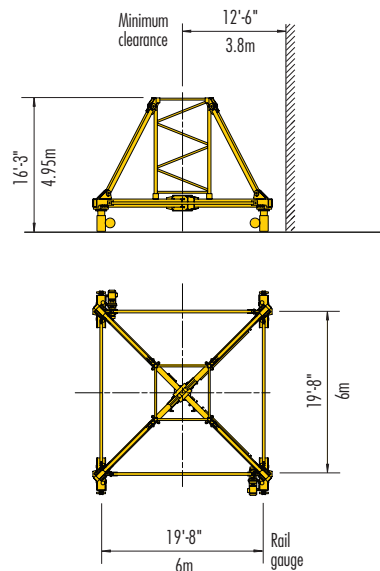


with 200 HC Tower
concrete footing

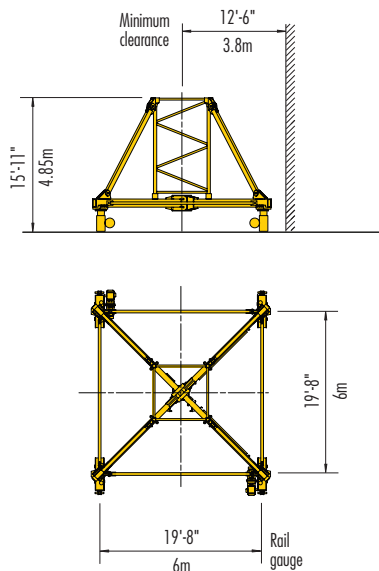


with 132 HC Tower
concrete footing

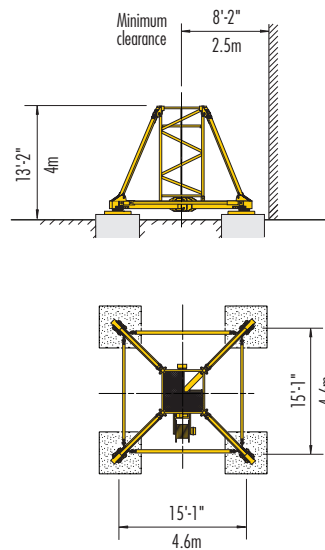
Undercarriage Details



290 HC
rail-travelling undercarriage



200 HC
rail-travelling undercarriage



132 HC
static undercarriage

NOTE: For information regarding rail-travelling, static undercarriages and central ballast configurations, refer to the 154 EC-H 6 Litronic Operation Manual.

Hoist Speed and Capacity

Hoist Unit	2-Part Line				LM 1
60 hp (45 kW) FC hoist unit with variable frequency drive (VFD) 5L - 168	Speed	Capacity	Line Speed	Capacity	Line Speed
	1	up to 13,230 lbs @ 0 - 125 fpm up to 1,210 lbs @ 0 - 600 fpm		up to 6 000 kg @ 0 - 38m/min up to 550 kg @ 0 - 183m/min	

IMPORTANT: Capacities and line speeds indicated will vary depending on the amount of hoist wire rope installed. This crane model may be equipped with a hoist unit other than that specified in the data shown above. To verify, check serial number and refer to 154 EC-H 6 Operations Manual for additional information.

Motor Information

Drive Unit	Horsepower	Kilowatts	Speed	
Trolley (VFD)	7.4 hp	5.5 kW	0 - 330 fpm	0 - 100 m/min
Swing (VFD)	10 hp	7.5 kW	0.8 rpm	
Travelling	Information available upon request.			

Counterweight Data³

Jib	Block Configuration									Weight
197 ft (60m)	7 x A + 1 x B	A ¹	A	A	A	A	A	A	B ²	42,110 lbs (19 100 kg)
180 ft (55m)	5 x A + 3 x B	A	A	A	A	A	B	B	B ²	38,140 lbs (17 300 kg)
164 ft (50m)	4 x A + 3 x B	A	A	A	A	B	B	B ²	—	32,630 lbs (14 800 kg)
148 ft (45m)	4 x A + 2 x B	A	A	A	A	B	B ²	—	—	29,100 lbs (13 200 kg)
131 ft (40m)	3 x A + 3 x B	A	A	A	B	B	B ²	—	—	27,120 lbs (12 300 kg)
115 ft (35m)	4 x A + 1 x B	A	A	A	A	B ²	—	—	—	25,570 lbs (11 600 kg)
98 ft (30m)	3 x A + 1 x B	A	A	A	B ²	—	—	—	—	20,060 lbs (9 100 kg)
82 ft (25m)	2 x A + 1 x B	A	A	B ²	—	—	—	—	—	14,550 lbs (6 600 kg)

¹ Before installing the 197 ft (60m) jib, one A-block [5,510 lbs (2 500 kg)] MUST be installed in the counterjib. See 154 EC-H 6 Operation Manual for specific information.

² Place one B-block [3,530 lbs (1 600 kg)] beneath the hoist unit frame before installing the counterjib. See 154 EC-H 6 Operation Manual for specific information.

³ Counterweight data above is for hoist unit WiW 260 MZ 404. If other hoist unit is installed, refer to 154 EC-H 6 Operation Manual for counterweight requirements.

Power Requirements

Power supply: 3-phase 480 V, 60 Hz; 3-wire plus ground; no Neutral.

480 V phase-phase, 277 V each phase to ground with 120° phase shift between phases.

Service size: 125 Amperes

NOTES:

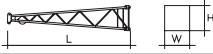
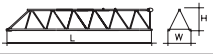
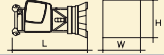
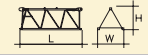
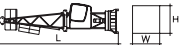
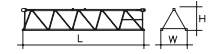
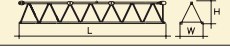
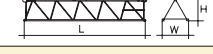
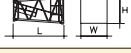
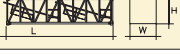
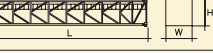
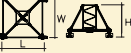
1. For electric power provided by an electric utility, do not use open Delta transformers.

2. For electric power provided by a generator, the minimum generator size required is 100 kW.

Verify the generator provided is suitable for use with variable frequency drives (VFDs). A properly sized generator is critical to the safe operation of the crane.

Specifications subject to change without prior notice. For additional information, contact Morrow Equipment.

Component List

Description	Dimensions L x W x H	Weight	Description	Dimensions L x W x H	Weight
Tower Top 	23'-11" x 4'-10" x 5'-7" 7.3m x 1.48m x 1.7m	4,120 lbs 1 870 kg	Jib Section ① 	40'-2" x 5'-2" x 5'-10" 12.24m x 1.58m x 1.79m	4,850 lbs 2 200 kg
Slewing Assembly Complete ¹ 	16'-11" x 8'-0" x 8'-2" 5.15m x 2.44m x 2.48m	15,430 lbs 7 000 kg	Jib Section ② 	17'-2" x 4'-1" x 5'-6" 5.25m x 1.25m x 1.68m	1,390 lbs 630 kg
Slewing Assembly and Tower Top 	40'-0" x 8'-0" x 8'-7" 12.2m x 2.45m x 2.62m	19,550 lbs 8 870 kg	Jib Section ③ 	33'-10" x 4'-1" x 5'-7" 10.3m x 1.25m x 1.7m	2,490 lbs 1 130 kg
Hoist Unit (VFD) ² 60 hp (45 kW) 	7'-10" x 7'-3" x 5'-3" 2.4m x 2.2m x 1.6m	5,290 lbs 2 400 kg	Jib Section ④ 	40'-4" x 4'-1" x 5'-7" 12.3m x 1.25m x 1.7m	3,620 lbs 1 640 kg
Counterjib w/o Hoist or B block 	45'-0" x 7'-11" x 5'-7" 13.72m x 2.42m x 1.7m	7,280 lbs 3 300 kg	Jib Section ⑤ 	33'-10" x 4'-1" x 5'-7" 10.3m x 1.25m x 1.7m	1,650 lbs 750 kg
Counterjib with Hoist & B block 	44'-0" x 7'-11" x 7'-3" 13.72m x 2.42m x 2.2m	16,090 lbs 7 300 kg	Jib Section ⑥ 	17'-2" x 4'-1" x 5'-6" 5.25m x 1.25m x 1.68m	820 lbs 370 kg
Base Section 290 HC 	40'-9" x 7'-7" x 7'-7" 12.42m x 2.3m x 2.3m	17,500 lbs 7 940 kg	Jib Section ⑦ 	21'-4" x 4'-8" x 6'-2" 6.51m x 1.43m x 1.88m	1,100 lbs 500 kg
Std. Tower Section 290 HC 	13'-7" x 7'-7" x 7'-7" 4.14m x 2.3m x 2.3m	5,070 lbs 2 300 kg	Jib Section ⑧ 	5'-5" x 4'-8" x 6'-1" 1.65m x 1.42m x 1.85m	470 lbs 215 kg
Transition Section 290 HC/132 HC 	13'-7" x 7'-7" x 7'-7" 4.14m x 2.3m x 2.3m	5,290 lbs 2 400 kg	Jib Assembly ⁴ 197-ft (60m) ①②③④⑤⑥⑦	197'-2" x 5'-2" x 6'-2" 60.1m x 1.58m x 1.88m	19,310 lbs 8 760 kg
Base Section 200 HC 	29'-0" x 7'-7" x 7'-7" 8.85m x 2.3m x 2.3m	8,960 lbs 4 070 kg	Jib Assembly ⁴ 180-ft (55m) ①②③④⑤⑦	180'-9" x 5'-2" x 6'-2" 55.1m x 1.58m x 1.88m	18,300 lbs 8 300 kg
Std. Tower Section 200 HC 	13'-7" x 7'-7" x 7'-7" 4.14m x 2.3m x 2.3m	4,520 lbs 2 050 kg	Jib Assembly ⁴ 164-ft (50m) ①③④⑤⑦	164'-4" x 5'-2" x 6'-2" 50.1m x 1.58m x 1.88m	16,360 lbs 7 420 kg
Base Section 154 HC 	32'-10" x 5'-11" x 5'-11" 10m x 1.8m x 1.8m	8,800 lbs 3 990 kg	Jib Assembly ⁴ 148-ft (45m) ①③④⑥⑦	148'-0" x 5'-2" x 6'-2" 45.1m x 1.58m x 1.88m	15,540 lbs 7 050 kg
Base Section 132 HC 	22'-6" x 5'-11" x 5'-11" 6.85m x 1.8m x 1.8m	5,640 lbs 2 560 kg	Jib Assembly ⁴ 131-ft (40m) ①③④⑦	131'-7" x 5'-2" x 6'-2" 40.1m x 1.58m x 1.88m	14,770 lbs 6 700 kg
Long Section 132 HC 	32'-10" x 5'-11" x 5'-11" 10m x 1.8m x 1.8m	7,500 lbs 3 400 kg	Jib Assembly ⁵ 115-ft (35m) ①③④⑧	115'-2" x 5'-2" x 6'-1" 35.1m x 1.58m x 1.85m	14,110 lbs 6 400 kg
Long Sect. 132 HC 	41'-0" x 5'-11" x 5'-11" 12.5m x 1.8m x 1.8m	9,260 lbs 4 200 kg	Jib Assembly ⁵ 98-ft (30m) ①②④⑧	98'-9" x 5'-2" x 6'-1" 30.1m x 1.58m x 1.85m	12,680 lbs 5 750 kg
Std. Tower Section 132 HC 	8'-2" x 5'-11" x 5'-11" 2.5m x 1.8m x 1.8m	2,320 lbs 1 050 kg	Jib Assembly ⁵ 82-ft (25m) ①④⑧	82'-4" x 5'-2" x 6'-1" 25.1m x 1.58m x 1.85m	11,240 lbs 5,100 kg
Trolley 	6'-3" x 4'-8" x 4'-6" 1.9m x 1.42m x 1.38m	570 lbs 260 kg	Top Climbing Unit ³ w/hydraulics (132HC) 	21'-2" x 10'-10" x 12'-6" 6.45m x 3.3m x 3.8m	9,390 lbs 4 260 kg
290 HC Rail-travelling ³ Undercarriage 	19'-8" x 19'-8" x 16'-3" 6m x 6m x 4.95m	29,320 lbs 13 300 kg	Counterweight Block A 	3'-10" x 11" x 10'-11" 1.18m x 0.28m x 3.3m	5,510 lbs 2 500 kg
200 HC Rail-travelling ³ Undercarriage 	19'-8" x 19'-8" x 15'-11" 6m x 6m x 4.85m	24,250 lbs 11 000 kg	Counterweight Block B 	3'-10" x 11" x 6'-9" 1.18m x 0.28m x 2.06m	3,530 lbs 1 600 kg
132 HC Static ³ Undercarriage 	15'-1" x 15'-1" x 13'-1" 4.6m x 4.6m x 4m	9,920 lbs 4 500 kg	Hook Block 	3'-3" x 1'-8" x 1'-1" 1m x 0.5m x 0.32m	705 lbs 320 kg

NOTE: Weights and dimensions are approximate. Scale components before lifting. Please consult Operation Manual before erecting, operating, servicing or dismantling crane.

¹ Slewing Assembly (Complete) includes operator's cab, control panel, slewing drive, slewing ring and slewing ring support.

² 60 hp (45 kW) hoist drive unit includes hoist drive, switchgear panels and hoist unit frame. Weight indicated DOES NOT include wire rope.

³ Can be broken down into easily transportable components. Contact Morrow from additional information or consult the 154 EC-H 6 Operation Manual.

⁴ Jib Assemblies include jib sections, pendant bars, pendant bar connecting pins and plates, trolley drive unit, trolley wire rope, hook block and trolley.

⁵ Jib Assemblies include jib sections, jib tip section ⑧, pendant bars, pendant bar connecting pins and plates, trolley drive unit, trolley wire rope, hook block and trolley.

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