

# Manitowoc MLC300

## Product Guide

ASME B30.5

Imperial

Preliminary

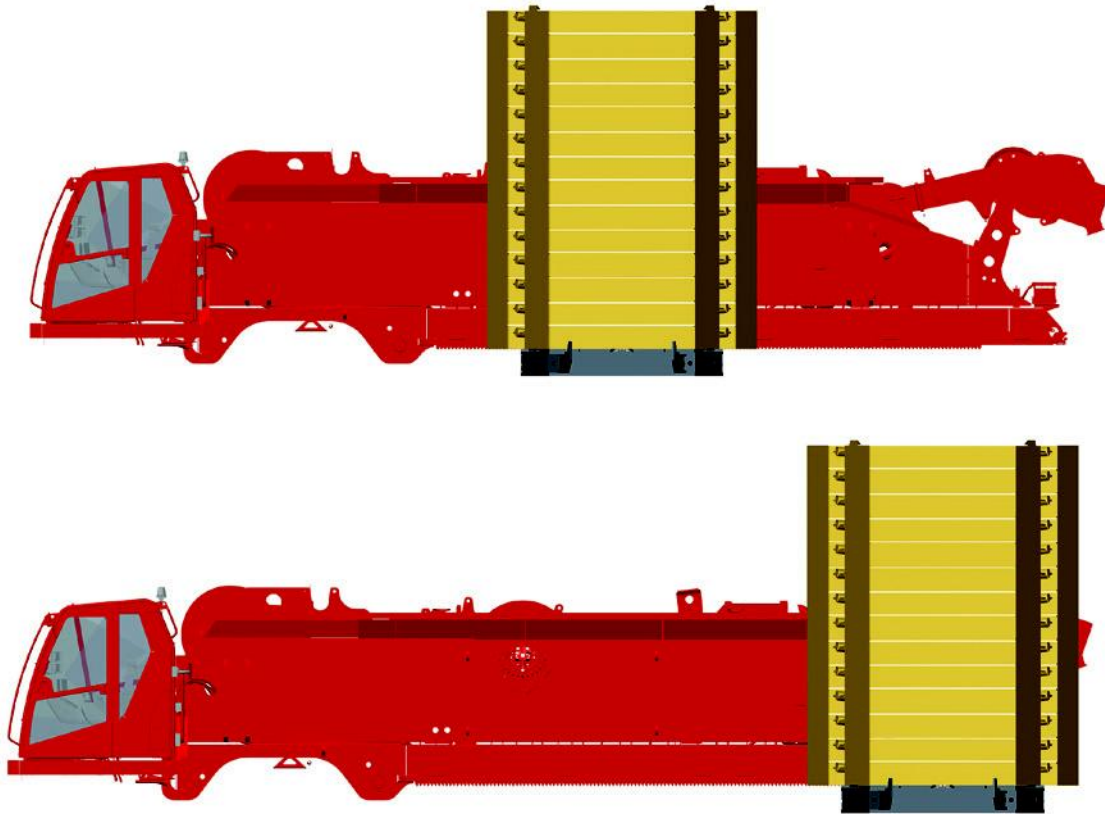


## Features

- 330 USt capacity
- 14,410 ft-kips maximum load moment
- 29,790 ft-kips maximum load moment with VPC-MAX
- 315 ft No. 500 boom
- 98 ft No. 148 fixed jib on No. 500 boom
- 315 ft No. 501 luffing jib on No. 500 boom

# Variable Position Counterweight

- > The Variable Position Counterweight (VPC) is proprietary technology available exclusively on Manitowoc crawler cranes. By allowing the crane's counterweight to be positioned automatically, the VPC provides an unmatched level of versatility and lifting capability.



## Jobsite benefits

### Reduced ground bearing pressure

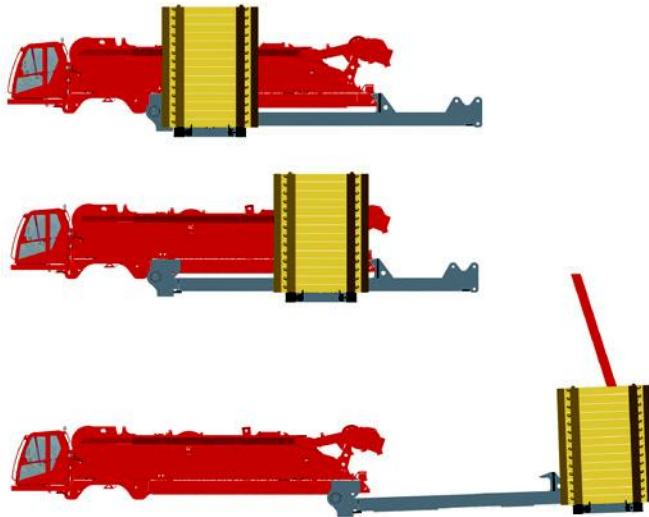
Moving counterweight allows counterweight to be positioned to better distribute ground bearing pressure during setup and lifting operations.

### Less counterweight without sacrificing capacity

The VPC technology allows the upperworks counterweight to move based on stability requirements, eliminating the need for carbody counterweights. The weight typically added to the carbody can now be added to the upperworks to increase capacity while retaining performance and on-site mobility.

# VPC-MAX (option)

Unlike VPC counterweight movement which is dictated by changes in boom angle, VPC-MAX counterweight movement is dictated by load and radius (forward moment) changes. As forward moment is increased or decreased VPC-MAX counterweight position is changed to offset changes in moment.



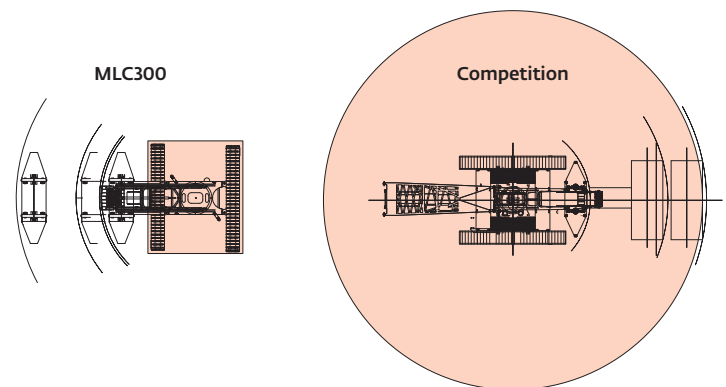
In VPC-MAX configuration, the counterweight tray moves to the end of the VPC-MAX beam prior to beam extension, thus minimizing tailswing and increasing job site mobility.

Counterweight is automatically positioned to optimize rearward moment as forward moment is increased or decreased.

## Minimal ground preparation

In VPC-MAX configuration the counterweight assembly never touches the ground, allowing for minimal ground preparation. The MLC300 ground preparation area is approximately one-tenth of that required by the leading competition, saving time and cost during job site preparation.

## Ground prep area comparison



## Water applications

Counterweight never touches ground allowing use in barge applications where wheeled or hanging attachments that contact the operating surface are typically not allowed. Moving counterweight also better maintains center of gravity for reduced ground bearing pressures.

# Features



## Crane Control System

The Crane Control System offers a user-friendly interface, two full graphic displays mounted horizontally for better visibility, a jog dial for easier data input and ergonomic joysticks.

## Variable Position Counterweight (VPC)

The Manitowoc MLC300 features a counterweight system which automatically positions the crane's counterweight as required to match lifting demands. Crane lifting capability is optimized by automatic positioning of the counterweight; eliminating the need for carbody counterweight. Additionally, counterweight boxes are designed to be common across multiple crane platforms and will be utilized on Manitowoc Model MLC650 as well as future new models.

## Crawler Tensioning System

Each crawler is equipped with a dedicated hydraulic cylinder and hydraulic supply, allowing independent track tension adjustment via crane setup remote.

## VPC-MAX

Capacity and boom and jib combination lengths can be increased through addition of the exclusive VPC-MAX attachment. The VPC-MAX attachment, utilizing all of the standard VPC components, increases the max load moment of the MLC300 when a 98' 5" fixed mast, VPC-MAX counterweight beam and additional 88,185 lb of counterweight is added to the base MLC300. The position of the VPC-MAX counterweight is automatically positioned based on lifted load, boom length or boom and jib length and load radius.

## Transport

The MLC300 is designed to be transported globally with optimized component weights and dimensions. The MLC300 features a removable live mast shipping module and boom inserts designed to allow luffing jib inserts to ship within the boom inserts for cost effective transport.

## FACT™ Connectors

Manitowoc's Fast Aligning Connection Technology (FACT) automatically aligns crane components for fast, safe and easy assembly.

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# Specifications

## Upperworks



### Engine

Cummins Model QSG-12 diesel, 11.8 liter displacement, inline 6 cylinder, 450 BHP @1800 governed RPM. Emissions Level: U.S. EPA/ CARB Tier 4 Final/ EU Stage IV Compliant.

Included are engine block heater (240 V), engine oil pan heater (240 V), air intake grid heater, disconnect clutch for cold weather starting, exhaust after treatment, variable speed hydraulic cooling fan, hydraulic oil cooler, radiator, charge air cooler, and fuel cooler.

Also included are two 12 volt maintenance-free, Group 8D batteries, 1375 CCA at - 0°F, 24 volt starting and 110 amp alternator.

Single diesel fuel tank is 264 gal capacity complete with physical level indicator on tank and electronic level indicator in the operator's cabin.

- Optional: Cold-weather package including heaters for fluids and batteries.



### Crane Control System

The Crane Control System offers a user-friendly interface, two full graphic displays mounted horizontally for better visibility, a jog dial for easier data input and ergonomic joysticks.



### Hydraulic system

Efficient, independent, full power multi-functional control is achieved in all operating modes through a combination of open and closed loop system optimized by Manitowoc's proprietary onboard Crane Control System.

145 gal hydraulic reservoir is equipped with sight gauge, breather, clean out access, 100 micron mesh internal strainers, and 40 micron inlet screens. Primary filtration system is equipped with 8 micron absolute filters.



### Drums

Basic machine is equipped with an independent main drum assembly and independent luffing/aux drum assembly mounted in the boom butt. Each drum is driven by a variable-displacement hydraulic motor through a planetary reduction. Drums are grooved for 28 mm wire rope. Main hoist has 36,760 lb linepull on all layers with a 26.77" drum diameter; luffing/aux drum has 30,000 lb linepull on all layers with a 26.77" drum diameter.

Powered hoisting/ lowering operation with automatic spring applied, hydraulically released multi-disc brakes, and drum rotation indicators standard.

Basic machine is equipped with a rigging winch mounted in the boom butt. Drum utilizes 8 mm wire rope with 2250 lb max linepull capability.

- Optional: auxiliary hoists – Rotating bed mounted, can be fitted with one or two auxiliary drums grooved for 28 mm wire rope, and both having 36,760 lb linepull on all layers. These two drums can be used independently or in tandem to suit a variety of lift applications.
- Optional: freefall hoists – Rotating bed mounted, can be fitted with one or two free fall equipped drums grooved for 28 mm wire rope. Freefall function is controlled by wet disk brake manually applied by foot pedal with locking latch in operator's cabin. Operator may select free-fall or powered lowering mode using a selector switch in the cab.



### Moving mast system

Independent boom hoist consists of a single drum grooved for 26 mm (1") diameter wire rope. Includes 1394 ft of 26 mm diameter wire rope to accommodate 24 part live mast reeving.

Drum is powered by a variable displacement hydraulic motor coupled to an internal spring applied, hydraulically released multi-disc brake multi-disc brake and planetary gearbox equipped with ratcheting pawl and drum rotation indicators.

Live mast system assembly module includes live mast, boom hoist drum and rear sheave nest. The assembly weighs 19,325 lbs and may be removed from the rotating bed for an upperworks module transport weight reduction.

# Specifications

## Swing system

Rotating bed mounted independent swing is powered by a fixed displacement hydraulic motor coupled to an internal brake and planetary reduction engaging a 9'10" diameter triple row roller turntable bearing.

Swing system maximum speed: 2.0 rpm.

## Boom support system

Moving mast is 30' long and connects the boom hoist reeving to the high strength steel boom suspension strap rigging. When used with optional self-erect package, the mast with integral hydraulic cylinder is used for handling crawlers, counterweight and boom sections.

Spring cushioned boom stop and automatic electrical boom stop are standard.

## Variable Position Counterweight

The Variable Position Counterweight (VPC) system, with only rotating bed counterweight, maintains optimum crane stability by automatically positioning crane counterweight based on boom length and load radius. No carbody counterweight is required.

The crane is equipped with 380,000 lbs of upperworks counterweight made up of a single piece counterweight tray and sixteen 10 t (22,000 lbs) counterweight boxes. Left and right side counterweights are interchangeable and common with the Model MLC650 counterweight.

## Vision operator's cab

The Vision Cab™ is a fully enclosed and insulated galvanized steel module mounted to the left front corner of rotating bed. Module is equipped with power tilt, sliding door, large safety glass windows, front and roof windshield wipers, dome light, sun visor and shade, fire extinguisher, air conditioning, swing and travel alarms, and radio/CD player. Operator's station swings over front of rotating bed for transport.

■ Optional: Nylon protective window covers.

## Lowerworks

### Carbody

Connects rotating bed to crawler assemblies. High strength fabricated steel assembly with FACT™ connection system and hydraulically powered pin actuators for safe, fast installation and removal of crawler assemblies.

### Crawlers

Crawler assemblies are 31' 10" long with 48" wide cast steel crawler pads and automatically lubricated intermediate rollers. Left and right side crawlers are interchangeable to provide assembly/disassembly flexibility on job sites. Each crawler is powered independently by a variable displacement hydraulic motor connected via screw together hydraulic quick disconnects. Crawlers provide ample tractive effort for travel and counter-rotating with full rated load.

Maximum ground speed of 0.8 mph.

■ Optional: 60" wide treads.

## Attachments

### No. 500 boom

The liftcrane is equipped with 98' 5" No. 500 basic boom consisting of 26' 3" butt, 39' 4" insert with luffing hoist sheaves and 32' 9" top with nine 30" diameter tapered roller bearing sheaves. Includes rope guides, boom hoist wire rope, boom angle indicator and hook and weight ball. The boom utilizes Manitowoc's exclusive FACT boom connection system. Includes spring cushioned boom stop, automatic boom stop, hydraulically powered boom hinge system including cylinder, hydraulic piping, operating controls, and locking device.

■ Optional: 19' 8" and 39' 4" No. 500 boom inserts with steel boom suspension straps for a maximum boom length of 315'.

Detachable upper boom point with 30" diameter tapered roller bearing steel sheave grooved for 28 mm rope with rope guard.

# Specifications



## No. 148 fixed jib

39' 4" No. 148 fixed jib including pin connected 19' 8" butt, 19' 8" top, jib strut and mounting hardware.

- Optional: 19' 8" No. 148 inserts with pin connectors and pendants for a maximum jib length of 98' 5".



## No. 501 luffing jib

78' 8" No. 501 luffing jib includes 19' 8" butt, 19' 8" transition insert, 39' 4" top, basic pendants, main strut, jib strut, backstay pendants and jib point guide wheel.

- Optional: 19' 8" and 39' 4" No. 501 luffing jib inserts with steel boom suspension straps for a maximum luffing jib length of 315'.



## VPC-MAX

The VPC-MAX attachment components include:

- 98' 5" of No. 503 mast consisting of a 26' 3" butt, 15' 1" insert, 39' 4" insert, and 17' 9" top.
- One additional swing drive (for a total of two) mounted on the front of the rotating bed. Each swing drive is powered by a fixed-displacement hydraulic motor coupled to a planetary reduction gearbox and internal spring applied, hydraulically released multi-disc brake.
- VPC-MAX counterweight actuator assembly consisting of a high strength steel frame, 2 drive assemblies, hydraulic piping and controls.
- VPC-MAX counterweight beam assembly consisting of a high strength steel frame fitted with gear teeth and roller path prepared to receive VPC-MAX actuator assembly.
- The base machine VPC actuator assembly, crane counterweight tray and counterweight are utilized in conjunction with 88,185 lb of additional VPC-MAX counterweight.

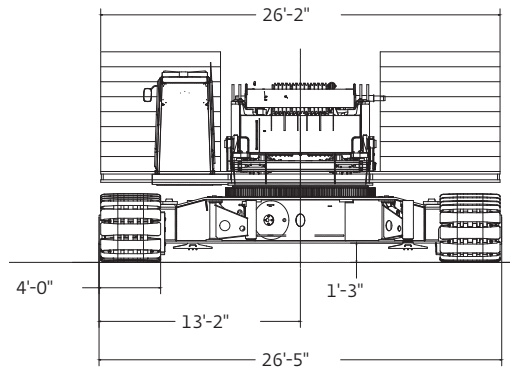
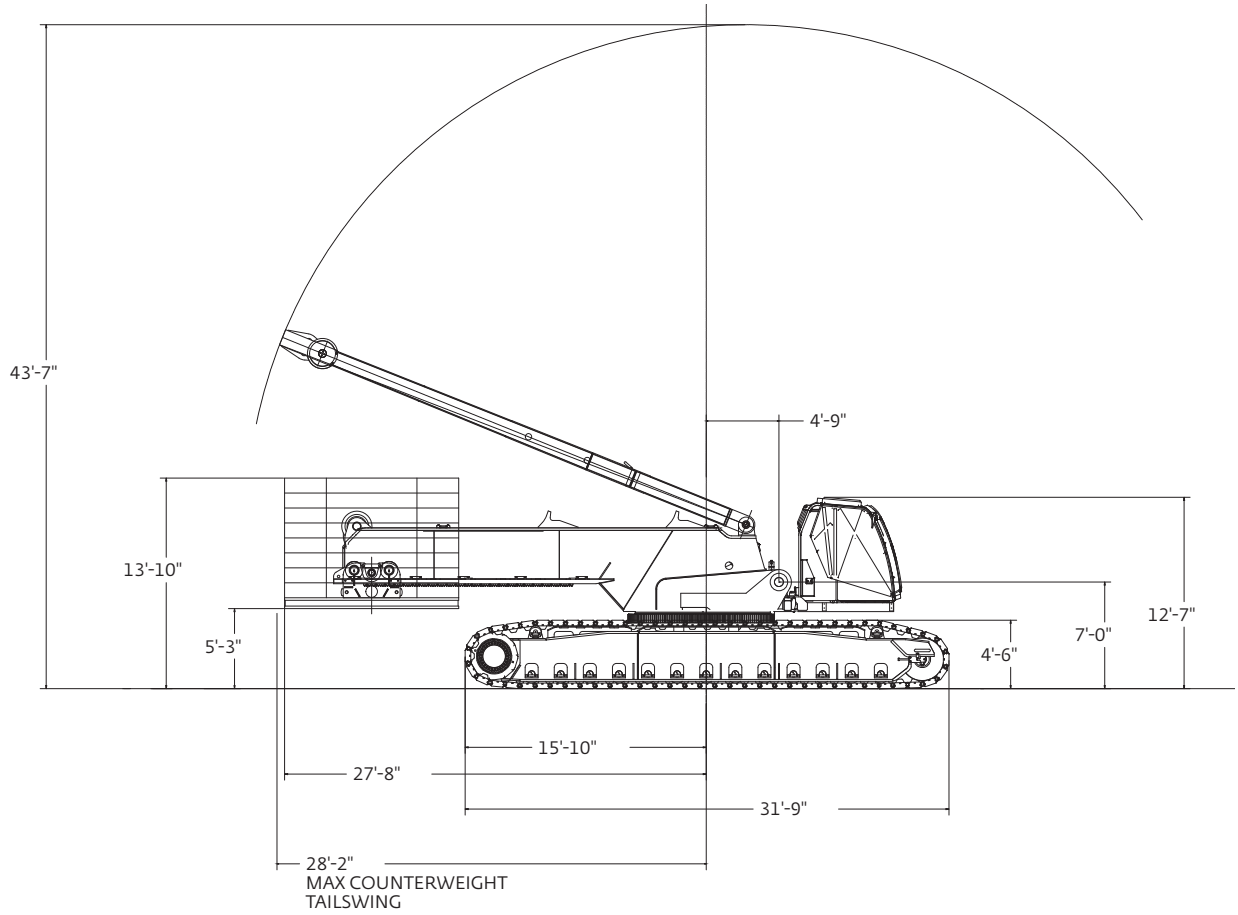
The VPC-MAX system maintains optimum crane stability by automatically positioning crane counterweight behind the crane's centerline of rotation based on lifted load, boom length and load radius.

## Optional equipment

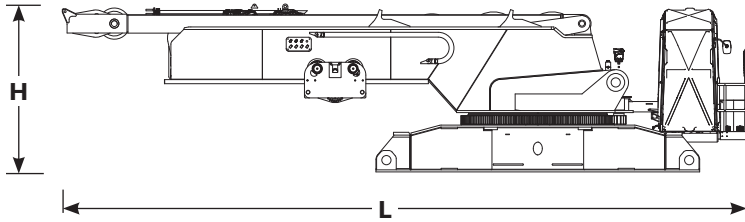
- Self erect system including carbody jacking cylinders with pads, self erect cylinder fitted to the live mast assembly and crawler handling chains.
- Hydraulic Test Kit: recommended to properly analyze the performance of the CCS control system.
- Service Interval Kits for the regularly scheduled maintenance of general crane operations.
- Special paint color(s) other than Manitowoc standard red and black.
- Custom vinyl decal(s) of customer name and/or logo from artwork supplied by customer.
- Export Packaging: basic crane, boom and jib sections.
- Additional load blocks available upon request.



# Outline dimensions



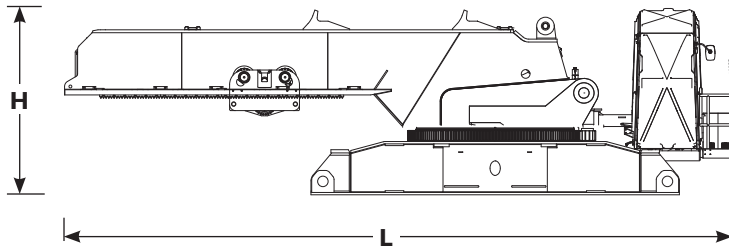
# Outline dimensions



## Rotating bed assembly

Length	44' 10"
Width	9' 11"
Height	10' 6"
Weight	118,470 lb

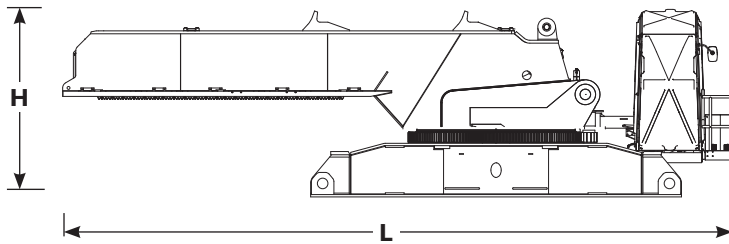
*Note: includes live mast, boom hoist, carbody jacks.*



## Rotating bed assembly

Length	38' 1"
Width	9' 11"
Height	10' 6"
Weight	99,145 lb

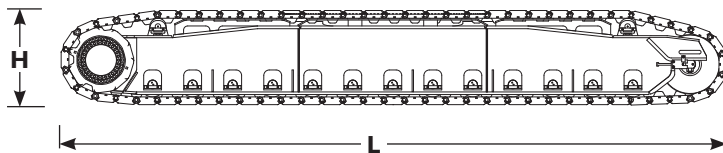
*Note: includes boom hoist, carbody jacks.  
Note: excludes live mast, boom hoist*



## Rotating bed assembly

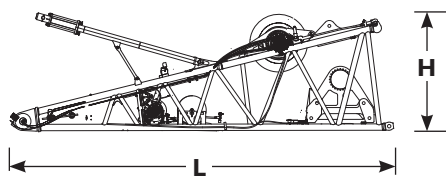
Length	38' 1"
Width	9' 11"
Height	10' 6"
Weight	93,845 lb

*Note: includes carbody jacks.  
Note: excludes live mast, boom hoist and VPC trolley.*



## Crawlers

Length	31' 9"
Width	4' 0"
Height	4' 5"
Weight	49,300 lb

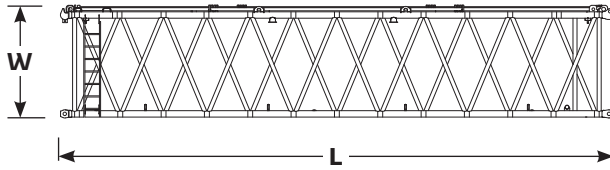


## 26' 3" No. 500 boom butt

Length	27' 6"
Width	9' 8"
Height	8' 4"
Weight	37,850 lb

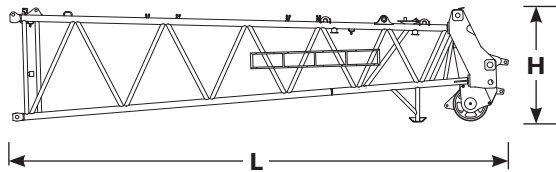
*Note: includes main hoist, luffing/auxiliary hoist,  
rigging winch and spring boom stop.*

# Outline dimensions



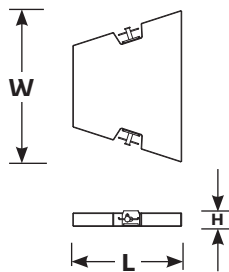
## 39' 4" No. 500 main boom heavy insert

Length	40' 0"
Width	9' 8"
Height	8' 2"
Weight	12,500 lb



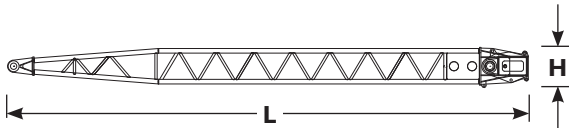
## 32' 9" No. 500 boom top

Length	36' 0"
Width	9' 8"
Height	8' 6"
Weight	21,010 lb



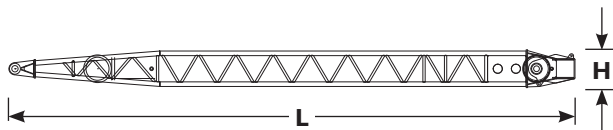
## Counterweight box

Length	7' 10"
Width	10' 10"
Height	1' 2"
Weight	22,046 lb



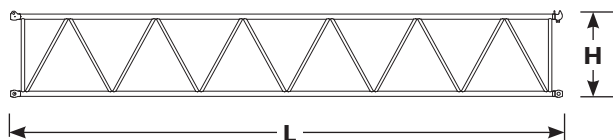
## 34' 5" No. 501 luffing jib main strut

Length	37' 8"
Width	7' 0"
Height	2' 10"
Weight	8,800 lb



## 37' 9" No. 501 luffing jib strut

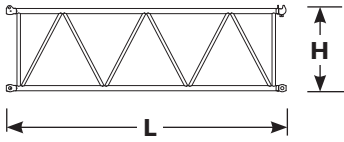
Length	40' 11"
Width	5' 9"
Height	2' 8"
Weight	8,100 lb



## 39' 4" No. 501 luffing jib insert

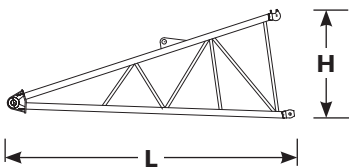
Length	39' 10"
Width	8' 7"
Height	6' 2"
Weight	5,790 lb

# Outline dimensions



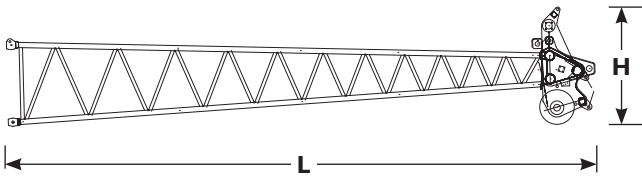
## 19' 8" No. 501 luffing jib insert

Length	20' 2"
Width	8' 7"
Height	6' 2"
Weight	3,450 lb



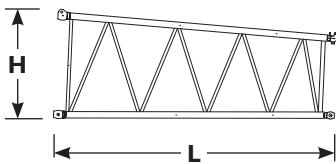
## 19' 8" No. 501 luffing jib butt

Length	20' 9"
Width	8' 7"
Height	7' 10"
Weight	5,000 lb



## 39' 4" No. 501 luffing jib top

Length	42' 6"
Width	8' 7"
Height	8' 7"
Weight	15,120 lb



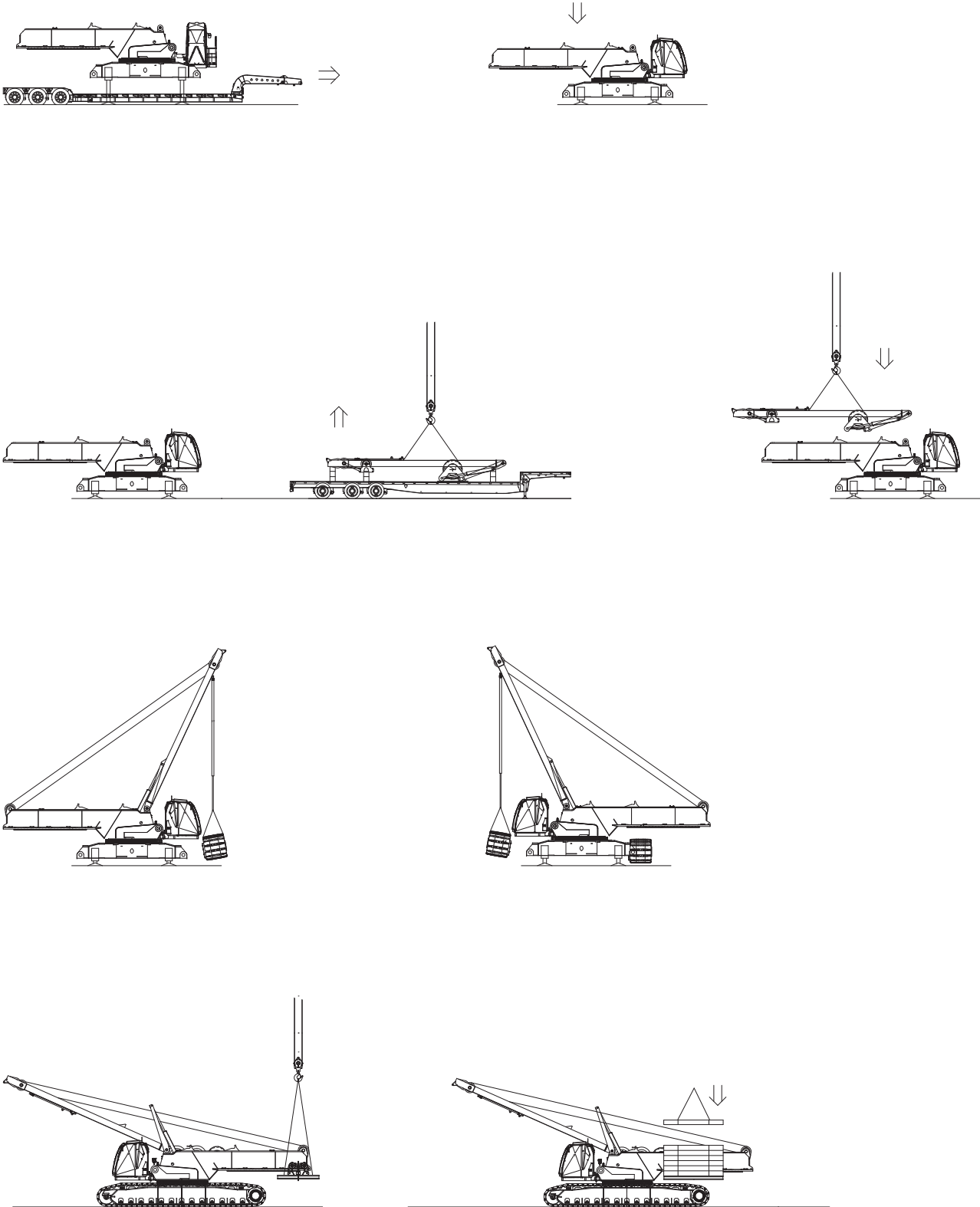
## 19' 8" No. 500-501 transition insert

Length	20' 6"
Width	8' 7"
Height	7' 10"
Weight	3,880 lb

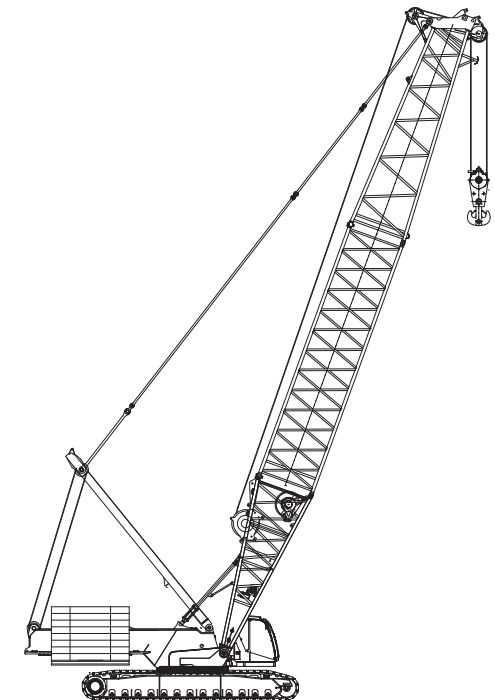
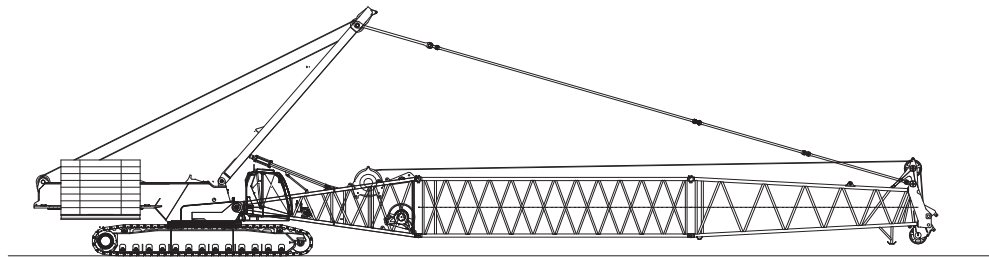
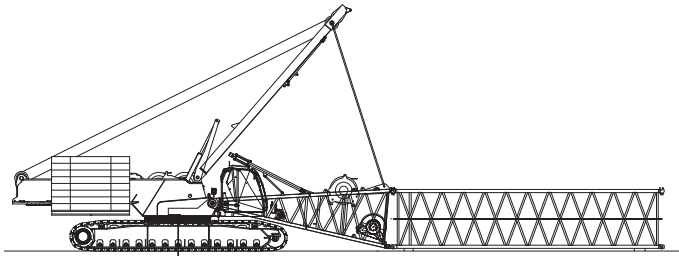
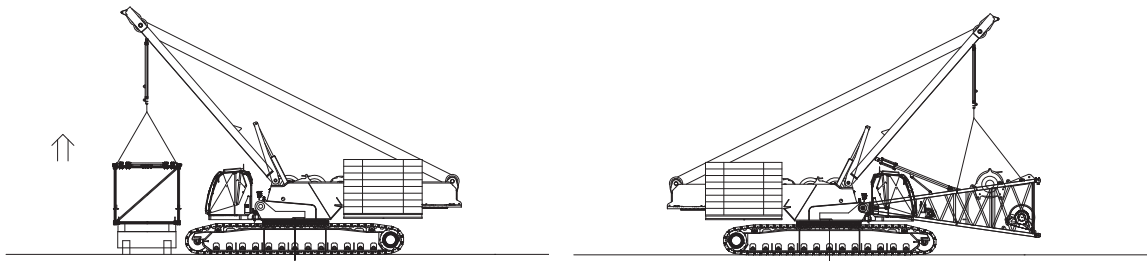
# Transport data

Load summary																		
Item	Qty	Weight lb	256 ft No. 500 heavy lift main boom + 40 ft No. 148 fixed jib Series 3 counterweight Quantity on trailer load # (Does not include blocking, strapping, etc.)															
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Upperworks module	1	99,200	1															
Crawler Assembly	2	49,500		1	1													
No. 500 Boom butt	1	37,850				1												
Counterweight tray	1	23,000					1											
Upper counterweight box	16	22,050					1		1	1	1	1	1	1	1	2	2	2
Mast shipping module	1	19,500						1										
VPC Actuator	1	5,900						1										
39' 4" No. 500 Insert w/sheaves	1	10,500							1									
39' 4" No. 500 Insert	4	10,000								1	1	1	1					
No. 500 Boom top	1	22,000												1				
No. 148 Fixed jib assembly	1	8,000													1			
220T Block	1	7,000								1								
100T Block	1	4,100									1							
Weight ball	1	1,500										1						
Misc. job box	2	2,000											1		1			
Approximate total shipping weight lb			99,200	48,480	49,500	49,500	37,850	45,050	25,400	39,050	36,150	33,550	34,050	44,050	32,050	44,100	44,100	44,100

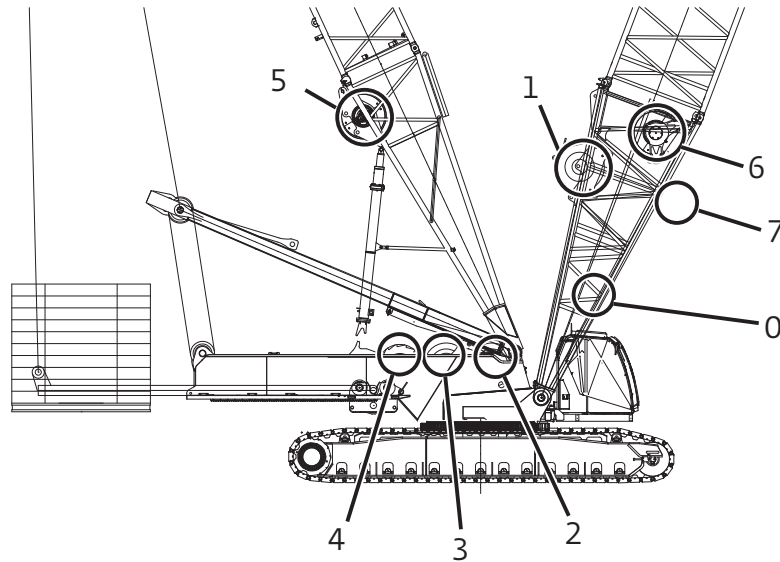
# Assembly



# Assembly



# Performance data



Drum identification	
Drum number	Function
1	Main hoist
2*	Auxiliary front hoist (optional)
3*	Auxiliary rear hoist (optional)
4	Mast hoist (standard)
5	Boom hoist (VPC-MAX)
6	Luffing/auxiliary hoist
7	Tagline winch (optional)
0	Rigging winch (optional)

*\*freefall optional*

Working weight	
	lb
98' No. 500 main boom	662,500
upper boom point,	
15 ton hook ball,	
300 ton hook block,	
380,000 lbs counterweight	
2 swing drives	



# Performance data

## No. 500 boom Hoist reeving for main load block single lead line - 28 mm wire rope

No. Parts of Line	Maximum Load lb
1	36,760
2	73,520
3	110,280
4	147,040
5	183,800
6	220,560
7	257,320
8	294,080
9	330,840
10	367,600
11	404,360
12	441,120
13	477,880
14	514,640
15	551,400
16	588,160
17	624,920
18	660,000

## No. 500 boom Hoist reeving for drum #6 28 mm wire rope

No. Parts of Line	Maximum Load lb
1	30,000
2	60,000

## Performance for aux/luffing (drum #6) 28 mm wire rope 30,000 maximum line pull

Single line pull lb	Single line pull/single line speed ft/min						
	Layer						
	1	2	3	4	5	6	7
0	240	259	278	297	316	335	354
5,000	236	254	273	291	309	327	345
10,000	232	249	267	284	302	319	336
15,000	228	245	261	278	294	296	298
20,000	221	223	225	227	229	232	234
25,000	182	184	186	189	191	193	195
30,000	156	158	161	163	165	167	169

## Performance for main (drum #1) 28 mm wire rope 36,760 maximum line pull

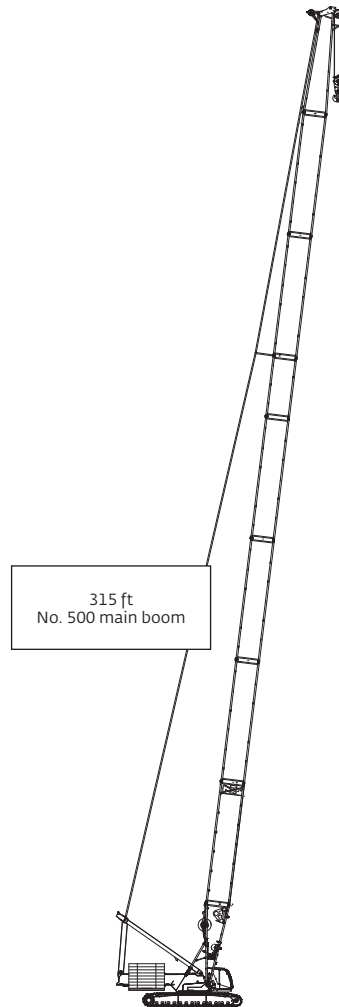
Single line pull lb	Single line pull/single line speed ft/min							
	Layer							
	1	2	3	4	5	6	7	8
0	345	372	400	427	454	482	509	536
5,000	339	366	392	404	444	470	496	522
10,000	334	359	384	409	434	459	484	508
15,000	328	352	376	385	387	389	391	393
20,000	291	293	295	297	299	301	303	305
25,000	238	240	242	244	246	248	250	252
36,760	170	172	174	176	178	180	182	184

# Boom combinations

No. 500 main boom combinations				
Boom length ft	Main boom inserts ft			
	19.7 <sup>**</sup>	39.4	39.4 <sup>**</sup>	39.4 <sup>*</sup>
98.4	0	1	0	0
118.1	1	1	0	0
137.8	0	1	0	1
157.5	1	1	0	1
177.2	0	1	0	2
196.9	1	1	0	2
216.5	0	1	0	3
236.2	1	1	0	3
255.9	0	1	1	3
275.6	1	1	1	3
295.3	0	1	2	3
315	1	1	2	3

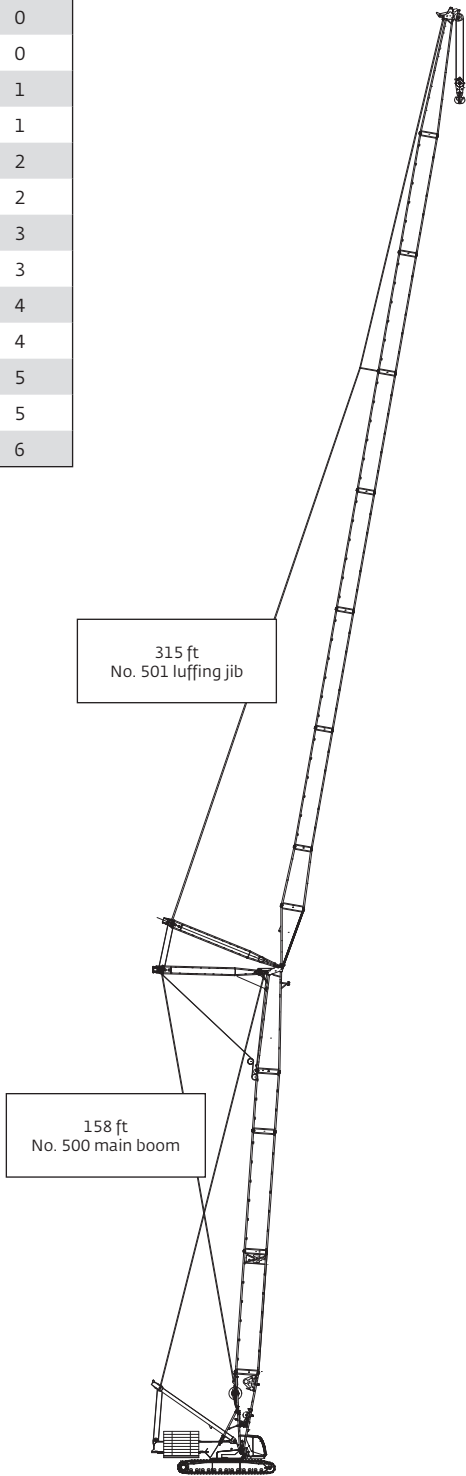
\* Light inserts

\*\* Medium inserts

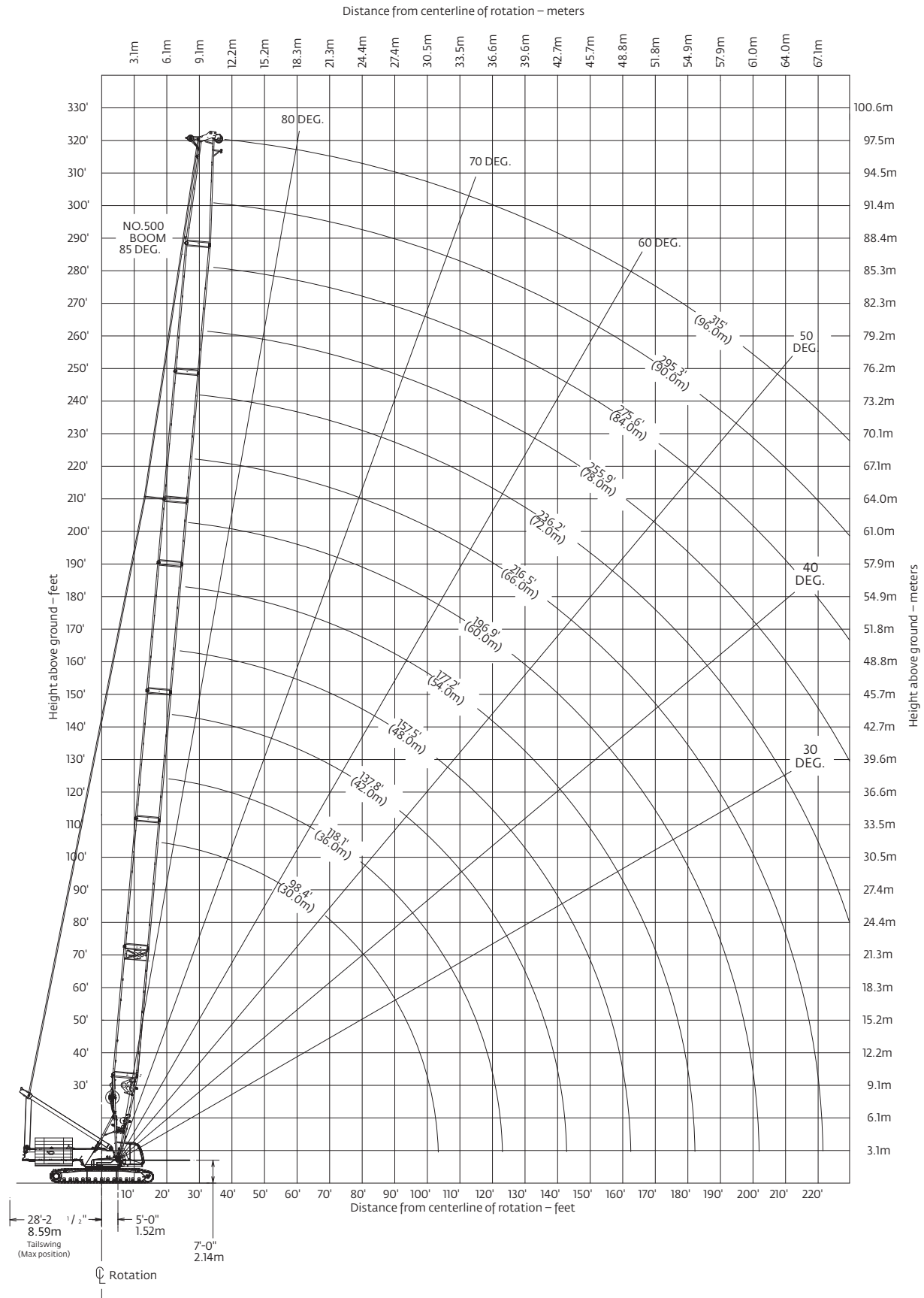


# Boom combinations

No. 501 luffing jib combinations		
Luffing jib length ft	Luffing jib inserts ft	
	19.7	39.4
78.7	0	0
98.4	1	0
118.1	0	1
137.8	1	1
157.5	0	2
177.2	1	2
196.9	0	3
216.5	1	3
236.2	0	4
255.9	1	4
275.6	0	5
295.3	1	5
315	0	6



# Main boom range diagram

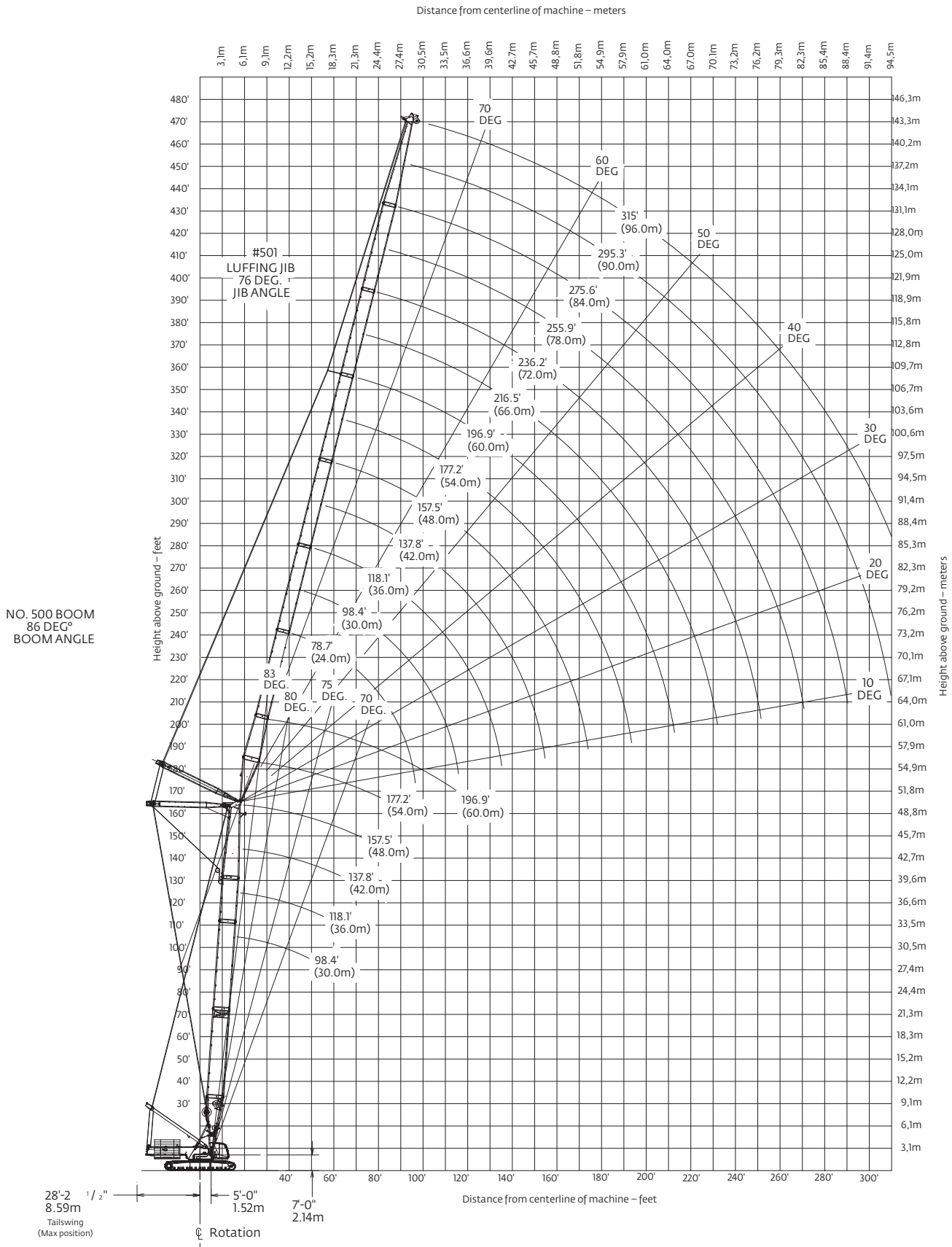


# Main boom load charts

No. 500 boom												
380,000 lb counterweight												
360° Rating												
lb x 1000												
	Boom length ft											
Radius ft	98	118	138	157	177	197	217	236	256	276	295	315
17	661.3											
18	661.3											
19	661.3	620.0										
20	661.3	616.5										
21	661.3	613.2	565.3									
22	627.8	610.0	562.2	519.2								
24	587.1	573.3	556.2	513.9	471.5							
26	551.1	539.4	525.8	508.9	467.0	425.2						
28	519.2	509.0	497.3	484.2	463.0	421.7	376.4					
30	477.3	481.8	471.6	460.1	447.2	410.3	366.9	324.5				
32	430.1	434.8	437.9	438.2	426.8	398.9	357.7	319.3	264.5			
34	391.3	395.6	398.5	402.3	404.9	387.9	348.8	312.0	261.9	221.8	185.2	
36	358.9	362.8	365.5	369.1	371.5	374.8	340.0	304.7	259.3	219.4	183.3	158.2
38	331.3	335.0	337.5	340.8	343.1	346.2	331.5	297.7	256.6	217.2	181.4	156.6
40	307.6	311.1	313.4	316.5	318.6	321.5	323.1	290.8	254.0	214.9	179.5	155.0
45	260.6	263.7	265.8	268.5	270.3	272.8	274.4	274.0	247.8	209.5	174.9	151.1
50	225.9	228.7	230.5	232.9	234.5	236.7	238.1	240.2	240.2	204.3	170.4	147.3
55	199.1	201.6	203.4	205.5	206.9	208.9	210.2	212.0	212.0	199.4	163.6	143.6
60	177.9	180.2	181.8	183.7	185.0	186.8	188.0	189.6	189.6	191.1	156.8	140.0
65	160.6	162.8	164.3	166.0	167.2	168.8	169.9	171.4	171.4	172.8	150.6	136.6
70	146.3	148.3	149.7	151.3	152.5	153.9	154.9	156.3	156.3	157.6	144.8	133.3
75	134.2	136.1	137.5	139.0	140.0	141.4	142.3	143.6	143.6	144.7	139.4	130.2
80	123.9	125.7	127.0	128.4	129.4	130.7	131.5	132.7	132.7	133.8	134.3	127.2
85	114.9	116.7	117.9	119.3	120.2	121.4	122.2	123.3	123.3	124.3	124.8	124.2
90	107.2	108.9	110.0	111.3	112.2	113.3	114.1	115.1	115.2	116.1	116.5	115.6
95	100.3	102.0	103.1	104.3	105.2	106.2	106.9	107.9	107.9	108.3	108.0	106.4
100	94.2	95.8	96.9	98.1	98.9	99.9	100.6	101.5	101.5	100.1	99.8	98.2
105		90.4	91.4	92.5	93.3	94.3	94.9	95.8	94.5	92.8	92.5	90.9
110		85.4	86.5	87.6	88.3	89.2	89.8	89.5	87.9	86.3	85.9	84.3
115		81.0	82.0	83.0	83.8	84.6	85.1	83.5	82.0	80.3	80.0	78.3
120			77.9	79.0	79.7	80.2	79.7	78.1	76.6	74.9	74.6	72.9
125			74.2	75.2	75.9	75.2	74.8	73.2	71.7	70.0	69.7	68.0
130			70.8	71.8	72.1	70.7	70.2	68.6	67.2	65.5	65.2	63.5
135			67.7	68.1	67.9	66.6	66.1	64.5	63.1	61.4	61.1	59.4
140				64.2	64.1	62.7	62.2	60.6	59.3	57.6	57.3	55.5
145				60.6	60.5	59.2	58.7	57.1	55.8	54.0	53.7	52.0
150				57.3	57.2	55.9	55.4	53.7	52.5	50.8	50.4	48.7
155				54.1	54.1	52.8	52.3	50.7	49.4	47.7	47.4	45.7
160					51.2	49.9	49.4	47.8	46.6	44.8	44.5	42.8
165					48.5	47.2	46.7	45.1	43.9	42.2	41.9	40.1
170					45.9	44.6	44.2	42.6	41.4	39.7	39.4	37.6
175					43.4	42.3	41.8	40.2	39.1	37.3	37.0	35.3
180						40.0	39.6	38.0	36.9	35.1	34.8	33.1
185						37.8	37.5	35.9	34.8	33.0	32.8	31.0
190						35.8	35.5	33.9	32.8	31.1	30.8	29.0
195						33.8	33.5	32.0	31.0	29.2	28.9	27.2
200							31.7	30.2	29.2	27.4	27.2	25.4
205							30.0	28.4	27.5	25.8	25.5	23.7
210							28.3	26.8	25.9	24.2	23.9	22.1
215							26.7	25.2	24.4	22.6	22.4	20.6
220								23.8	22.9	21.2	20.9	19.2
225								22.3	21.5	19.8	19.6	17.8
230								20.9	20.2	18.5	18.2	16.5
235									18.9	17.2	17.0	15.2
240									17.7	16.0	15.8	14.0
245									16.5	14.8	14.6	12.8
250									15.4	13.7	13.5	11.7
255										12.6	12.4	10.7
260										11.6	11.4	
265										10.6	10.4	

For complete chart, refer to [www.cranelibrary.com](http://www.cranelibrary.com).

# Luffing jib range diagram



# Luffing jib load charts

## No. 501 luffing jib on No. 500 boom

380,000 lb counterweight

360° Rating

lb x 1000

86° boom angle

98 ft boom length					
Radius ft	Luffing jib length ft				
	79	138	197	256	295
38	319.1				
40	298.8				
45	271.7				
50	248.7				
55	225.2	192.7			
60	201.9	183.4			
65	183.0	174.6			
70	167.3	166.2	123.4		
75	154.0	156.0	120.8		
80	142.8	144.5	118.3		
85	133.0	134.7	116.0	71.8	
90	118.2	126.0	113.7	70.8	
95		118.4	111.6	69.8	49.1
100		111.7	109.0	68.8	48.3
105		105.7	104.1	67.8	47.4
110		100.3	99.7	66.8	46.6
115		95.4	95.4	65.8	45.8
120		90.9	91.5	64.9	45.0
125		86.9	87.7	63.9	44.2
130		83.2	84.0	63.1	43.5
135		79.8	80.5	62.1	42.7
140		76.3	77.2	61.2	42.0
145		66.2	73.6	60.4	41.3
150		54.7	70.3	59.5	40.7
155			67.2	58.7	40.0
160			64.3	57.9	39.4
165			61.6	57.2	38.8
170			59.1	55.8	38.2
175			56.7	53.5	37.7
180			54.4	51.2	37.1
185			52.3	49.1	36.6
190			49.4	47.1	36.1
195			44.4	45.2	35.6
200			39.3	43.4	35.2
205			33.9	41.7	34.6
210			27.1	40.1	34.0
215				38.6	33.4
220				37.1	32.8
225				35.7	32.3
230				34.4	31.7
235				33.1	31.0
240				31.2	29.8
245				28.2	28.6
250				25.2	27.5
255				22.1	26.4
260				19.0	25.4
265				15.4	24.4
270				10.2	23.4
275					21.2
280					18.9
285					16.6
290					14.3
295					12.0

138 ft boom length					
Radius ft	Luffing jib length ft				
	79	138	197	256	295
40	298.2				
45	280.2				
50	257.9				
55	228.2				
60	204.7	180.2			
65	185.5	172.5			
70	169.6	165.2			
75	156.2	158.0	113.2		
80	144.7	146.5	112.4		
85	134.8	136.5	111.6		
90	126.2	127.7	110.2	65.5	
95	118.6	120.0	108.3	64.8	
100		113.2	106.4	64.0	45.6
105		107.1	104.6	63.3	45.0
110		101.6	102.6	62.6	44.3
115		96.7	97.6	61.9	43.7
120		92.2	93.1	61.1	43.0
125		88.1	88.9	60.4	42.4
130		84.3	84.6	59.7	41.8
135		80.9	80.4	59.0	41.1
140		77.7	76.6	58.4	40.5
145		74.7	73.1	57.7	39.9
150		71.0	69.8	57.0	39.4
155			66.7	56.4	38.8
160			63.8	55.8	38.3
165			61.1	55.2	37.7
170			58.6	54.6	37.2
175			56.2	52.9	36.7
180			54.0	50.7	36.2
185			51.9	48.6	35.8
190			49.8	46.6	35.3
195			47.9	44.8	34.9
200			46.1	43.0	34.5
205			43.1	41.3	34.0
210			39.4	39.7	33.6
215				38.2	33.3
220				36.7	32.8
225				35.3	32.3
230				34.0	31.8
235				32.7	30.6
240				31.5	29.4
245				30.3	28.2
250				29.2	27.1
255				27.6	26.1
260				25.5	25.0
265				23.3	24.0
270				19.8	23.1
275					22.2
280					21.3
285					20.2
290					18.7
295					17.2

For complete chart, refer to [www.cranelibrary.com](http://www.cranelibrary.com).

# Luffing jib load charts

## No. 501 luffing jib on No. 500 boom

380,000 lb counterweight

360° Rating

lb x 1000

86° boom angle

157 ft boom length					
Radius ft	Luffing jib length ft				
	79	138	197	256	295
45	268.2				
50	251.2				
55	229.8				
60	206.3	176.9			
65	187.0	170.0			
70	170.9	163.2			
75	157.4	156.6	104.9		
80	145.9	147.6	104.2		
85	135.9	137.5	103.5		
90	127.2	128.7	102.8	62.2	
95	119.5	121.0	102.0	61.7	
100		114.1	101.2	61.1	43.9
105		107.9	100.3	60.4	43.3
110		102.4	99.5	59.8	43.3
115		97.4	97.3	59.2	42.2
120		92.9	92.7	58.6	41.6
125		88.8	88.4	58.0	41.1
130		85.0	84.2	57.4	40.5
135		81.5	80.1	56.8	40.0
140		78.3	76.2	56.2	39.4
145		75.3	72.7	55.6	38.9
150		70.2	69.4	55.0	38.4
155		63.3	66.3	54.4	37.9
160			63.5	53.9	37.4
165			60.8	53.4	36.9
170			58.3	52.8	36.4
175			55.9	52.3	36.0
180			53.7	50.4	35.5
185			51.6	48.3	35.1
190			49.6	46.3	34.6
195			47.7	44.5	34.2
200			45.3	42.7	33.8
205			42.1	41.0	33.5
210			38.8	39.4	33.1
215			34.6	37.9	32.7
220				36.5	32.4
225				35.1	32.1
230				33.8	31.6
235				32.5	30.3
240				31.3	29.1
245				30.1	28.0
250				28.3	26.9
255				26.4	25.8
260				24.5	24.8
265				22.5	23.8
270					22.9
275					21.9
280					20.5
285					19.1
290					17.7
295					16.2
290					14.3
295					11.9

For complete chart, refer to [www.cranelibrary.com](http://www.cranelibrary.com).



# Luffing jib load charts

## No. 501 luffing jib on No. 500 boom

380,000 lb counterweight

360° Rating

lb x 1000

86° boom angle

197 ft boom length					
Radius ft	Luffing jib length ft				
	79	118	157	177	197
45	218.8				
50	210.3				
55	198.0	160.6			
60	186.3	158.2			
65	175.4	155.3	118.3		
70	164.4	151.6	117.2	101.7	
75	153.0	144.4	115.9	101.0	87.4
80	143.4	137.6	114.4	100.0	86.8
85	135.5	129.1	112.9	99.0	86.1
90	128.9	121.5	111.2	97.9	85.3
95	121.1	114.8	109.1	96.7	84.5
100		108.9	104.8	95.5	83.7
105		103.7	100.3	94.3	82.8
110		99.2	95.5	92.6	81.9
115		95.2	91.1	89.2	81.0
120		91.8	87.1	85.5	80.1
125		89.0	83.5	81.9	78.9
130		85.7	80.2	78.6	76.2
135		80.1	77.3	75.6	73.6
140			74.6	72.8	71.1
145			72.3	70.3	68.6
150			70.2	68.0	66.3
155			67.6	65.9	64.0
160			64.8	63.7	61.7
165			61.7	61.0	59.6
170			57.4	58.5	57.5
175			52.8	56.1	55.2
180				53.9	53.0
185				50.7	50.9
190				47.1	49.0
195				43.3	47.1
200					44.4
205					41.6
210					38.6
215					35.4

For complete chart, refer to [www.cranelibrary.com](http://www.cranelibrary.com).

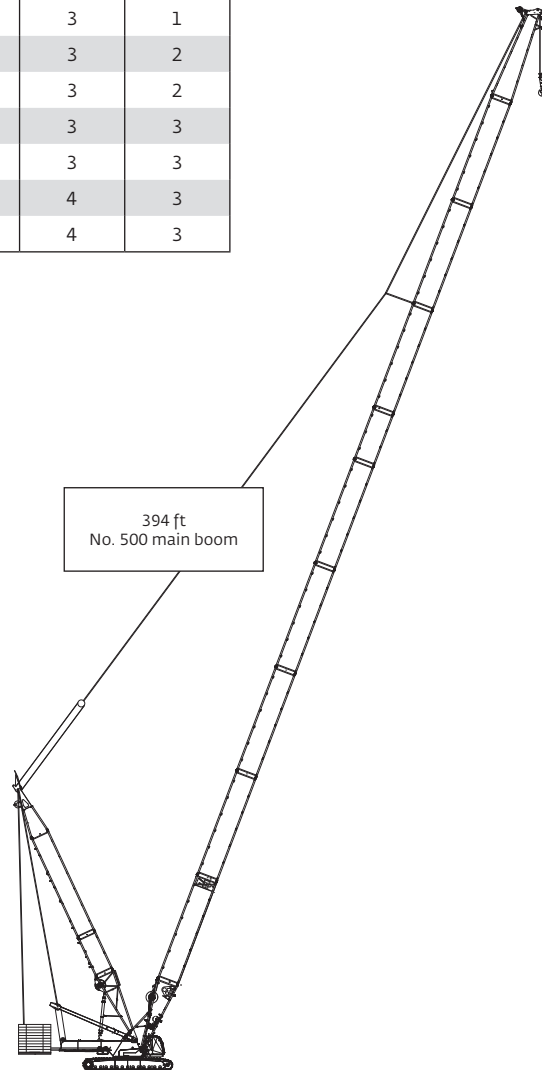
# Boom combinations

## VPC-MAX

No. 500 VPC-MAX main boom combinations				
Boom length ft	Main boom inserts ft			
	19.7**	39.4	39.4**	39.4*
137.8	0	1	1	0
157.5	1	1	1	0
177.2	0	1	2	0
196.9	1	1	2	0
216.5	0	1	3	0
236.2	1	1	3	0
255.9	0	1	3	1
275.6	1	1	3	1
295.3	0	1	3	2
315	1	1	3	2
334.6	0	1	3	3
354.3	1	1	3	3
374	0	1	4	3
393.7	1	1	4	3

\* Light inserts

\*\* Medium inserts

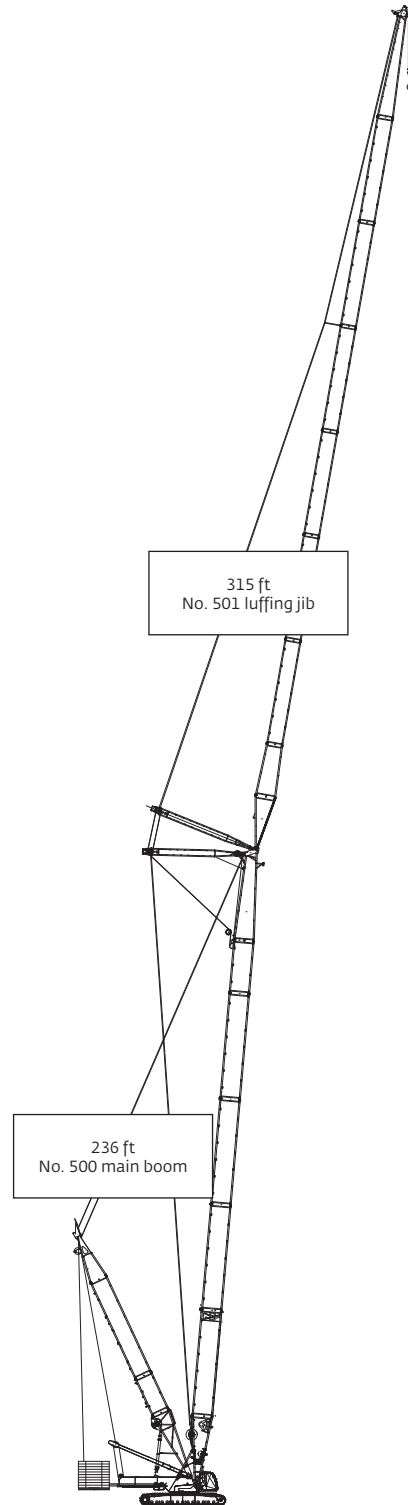


# Boom combinations

## VPC-MAX

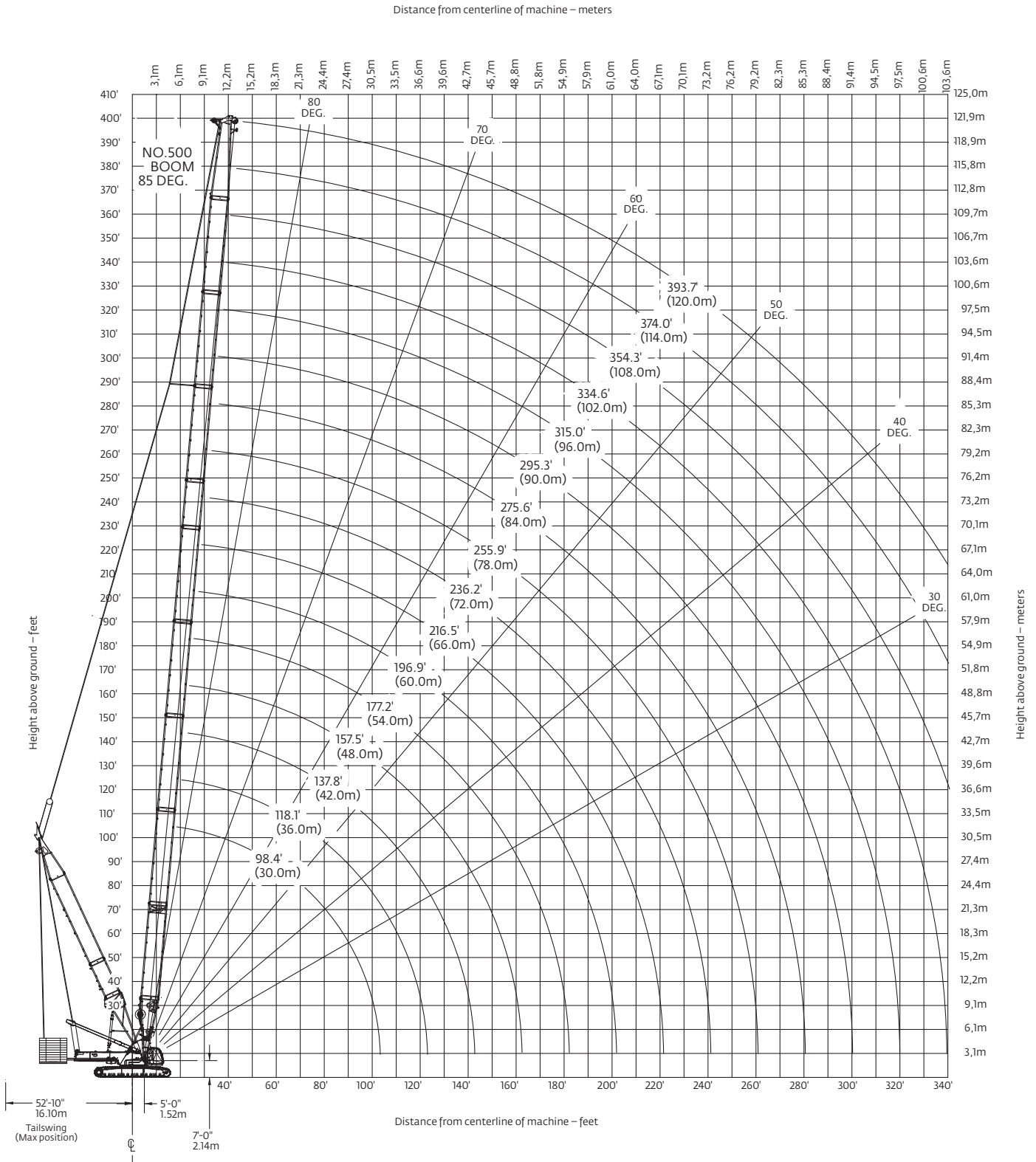
**No. 501 VPC-MAX luffing jib combinations**

Luffing jib length ft	Luffing jib inserts ft	
	19.7	39.4
78.7	0	0
98.4	1	0
118.1	0	1
137.8	1	1
157.5	0	2
177.2	1	2
196.9	0	3
216.5	1	3
236.2	0	4
255.9	1	4
275.6	0	5
295.3	1	5
315.0	0	6



# Main boom range diagram

## VPC-MAX



# Main boom load charts

## VPC-MAX

### No. 500 boom VPC-MAX

468,000 lb counterweight

360° Rating

lb x 1000

Radius ft	Boom length ft																																
	138	157	177	197	217	236	256	276	295	315	335	354	374	394																			
22	650.6																																
24	650.6	572.9	522.5																														
26	650.6	572.9	522.5	472.7																													
28	650.6	572.9	522.5	472.7	427.0																												
30	650.6	572.9	522.5	472.7	427.0	373.7																											
32	650.6	572.9	522.5	472.7	427.0	373.7	309.5																										
34	650.6	572.9	522.5	472.7	427.0	373.7	309.5	262.3																									
36	650.6	572.9	522.5	472.7	427.0	373.7	309.5	262.3	219.3	188.5																							
38	650.6	572.9	522.5	472.7	427.0	373.7	309.5	262.3	219.3	188.5	158.3																						
40	650.6	572.9	522.5	472.7	427.0	373.7	309.5	262.3	219.3	188.5	158.3	138.5																					
45	650.6	572.9	522.5	472.7	427.0	373.7	309.5	262.3	219.3	188.5	158.3	138.5	120.9	105.8																			
50	596.7	572.9	522.5	472.7	425.4	369.3	309.5	262.3	219.3	188.5	158.3	138.5	120.9	105.8																			
55	536.8	536.6	522.5	469.8	416.4	361.9	309.5	262.3	219.3	188.5	158.3	138.5	120.9	105.8																			
60	478.7	478.5	478.7	463.4	407.5	354.5	309.5	262.3	219.3	188.5	158.3	138.5	120.9	105.8																			
65	431.6	431.2	431.3	430.4	398.6	347.1	303.6	262.3	219.3	188.5	158.3	138.5	120.9	105.8																			
70	392.4	392.0	392.1	391.1	389.8	339.7	297.4	262.3	219.3	188.5	158.3	138.5	120.9	105.8																			
75	359.4	358.9	359.0	358.0	357.8	332.4	291.2	262.3	219.3	188.5	158.3	138.5	120.9	105.8																			
80	331.2	330.7	330.7	329.7	329.4	325.1	285.0	262.3	214.2	188.5	158.3	138.5	120.9	105.8																			
85	306.9	306.3	306.3	305.2	305.0	303.6	278.9	262.3	209.2	188.5	158.3	138.5	120.9	105.7																			
90	285.6	285.0	285.0	283.9	283.6	282.2	271.3	257.0	204.2	188.5	158.3	138.5	120.9	105.7																			
95	266.8	266.2	266.2	265.1	264.8	263.4	261.7	249.8	199.3	188.5	158.3	138.5	120.9	105.6																			
100	250.2	249.5	249.5	248.4	248.1	246.7	246.4	242.8	193.9	188.5	158.3	138.5	120.8	105.4																			
105	235.4	234.6	234.6	233.5	233.1	231.7	231.5	229.6	188.5	188.5	158.3	138.5	120.7	105.3																			
110	222.0	221.3	221.2	220.1	219.7	218.3	218.0	216.1	183.3	188.5	158.1	134.9	120.3	105.2																			
115	209.9	209.2	209.1	207.9	207.6	206.2	205.9	204.0	178.3	188.5	157.2	131.1	119.5	104.8																			
120	198.9	198.2	198.1	196.9	196.6	195.1	194.9	192.9	173.6	188.5	156.2	127.5	118.8	104.1																			
125	188.9	188.2	188.1	186.9	186.5	185.1	184.8	182.8	169.1	181.1	152.9	123.9	118.0	103.3																			
130	179.7	179.0	178.9	177.7	177.3	175.9	175.6	173.6	164.8	171.8	149.4	120.6	115.3	102.6																			
135	171.2	170.5	170.4	169.2	168.9	167.4	167.1	165.1	160.9	163.3	146.0	117.3	112.4	101.9																			
140		162.7	162.6	161.4	161.1	159.6	159.3	157.3	157.0	155.5	142.7	114.2	109.6	100.3																			
145		155.4	155.4	154.2	153.8	152.4	152.1	150.1	149.8	148.2	139.6	111.3	106.9	97.9																			
150		148.7	148.7	147.5	147.1	145.6	145.4	143.4	143.1	141.5	136.5	108.5	104.3	95.6																			
155		142.4	142.4	141.2	140.9	139.4	139.1	137.1	136.8	135.3	133.6	105.7	101.7	93.3																			
160			136.6	135.4	135.0	133.6	133.3	131.3	131.0	129.4	128.9	103.1	99.3	91.2																			
165			131.1	129.9	129.6	128.1	127.8	125.8	125.5	124.0	123.5	100.7	97.0	89.0																			
170			125.9	124.8	124.5	123.0	122.7	120.7	120.4	118.8	118.3	98.3	94.8	87.0																			
175			121.1	120.0	119.7	118.2	117.9	115.9	115.6	114.0	113.5	96.1	92.7	85.1																			
180				115.4	115.1	113.6	113.4	111.4	111.1	109.5	109.0	93.9	90.6	83.2																			
185					111.1	110.8	109.4	109.1	107.1	106.8	105.2	104.7	91.9	88.7	81.3																		
190					107.1	106.8	105.3	105.1	103.1	102.8	101.2	100.7	89.9	86.8	79.6																		
195					103.2	103.0	101.5	101.2	99.2	99.0	97.4	96.9	88.0	85.0	78.0																		
200						99.3.0	97.9	97.6	95.6	95.4	93.8	93.3	86.3	83.2	76.3																		
205						95.9.0	94.4	94.2	92.2	91.9	90.3	89.9	84.6	81.6	74.8																		
210							92.5.0	91.2	90.9	88.9	88.7	87.1	86.6	83.0	80.0	73.3																	
215								89.4.0	88.0	87.8	85.8	85.6	84.0	83.5	81.5	71.9																	
220									85.0	84.8	82.9	82.6	81.0	80.6	79.0	77.0	70.5																
225									82.2	82.0	80.0	79.8	78.2	77.7	76.2	75.2	69.2																
230									79.4	79.3	77.4	77.1	75.5	75.1	73.5	72.5	67.9																
235										76.7	74.8	74.5	73.0	72.5	70.9	69.9	66.7																
240										74.2	72.3	72.1	70.5	70.0	68.5	67.5	65.5																
245										71.8	69.9	69.7	68.1	67.7	66.1	65.1	63.4																
250										69.5	67.6	67.5	65.9	65.4	63.8	62.9	61.1																
255											65.5	65.3	63.7	63.2	61.7	60.7	58.9																
260												63.3	63.2	61.6	61.2	59.6	58.6	56.9															
265													61.3	61.2	59.6	58.6	56.9	54.9															
270														59.2	57.7	57.2	55.7	53.0															
275															59.3	59.2	57.7	55.7	53.0														
280																57.3	55.8	55.4	53.8	51.1													
285																	55.5	54.0	53.6	52.0	51.1	49.3											
290																		53.8	52.3	51.9	50.3	49.3	47.6										
295																			52.1	50.6	50.2	48.7	47.7	45.9									
300																				48.9	48.6	47.0	46.1	44.3									
305																					47.4	47.0	45.5	44.5	42.8								
310																						45.8	45.5	44.0	43.0	41.3							
315																							44.3	44.0	42.5	41.6	39.8						
320																								42.6	41.1	40.2	38.4						
325																								41.2	39.8	38.8	37.1						
330																									39.9	38.4	37.5	35.8					
335																										37.1	36.2	34.5					
340																										35.9	35.0	33.3					
345																											34.7	33.8	32.1				
350																												33.2	32.6	30.9			
355																													31.4	29.7			
360																													30.3	28.6			
365																													28.7	27.6			
370																													26.5	26.5	25.2		
375																														23.2	23.2		
380																															21.2	21.2	
385																																19.2	19.2



# Luffing jib load charts

## VPC-MAX

### No. 501 luffing jib on No. 500 boom VPC-MAX

468,000 lb counterweight

360° Rating

lb x 1000

85° boom angle

138 ft boom length					
Radius ft	Luffing jib length ft				
	79	138	197	236	315
45	321.3				
50	293.7				
55	258.0				
60	230.5	187.8			
65	208.7	179.9			
70	190.9	172.1			
75	176.3	164.5	117.6		
80	164.3	157.3	116.9		
85	154.6	149.5	114.9	80.9	
90	147.0	141.8	112.8	80.2	
95	140.7	134.5	110.9	79.6	
100		127.7	108.9	78.9	
105		120.6	107.1	78.2	38.6
110		114.2	105.2	77.5	38.0
115		108.6	103.1	76.8	37.4
120		103.6	101.1	76.0	36.7
125		99.2	99.2	75.3	36.1
130		95.1	95.5	74.6	35.5
135		90.8	91.1	73.9	34.9
140		86.7	87.2	73.2	34.3
145		83.0	83.6	72.6	33.7
150		79.4	80.3	71.9	33.2
155		67.1	77.3	71.2	32.6
160			74.6	70.4	32.1
165			72.1	69.2	31.5
170			69.9	68.0	31.0
175			67.8	66.2	30.5
180			66.0	64.5	30.0
185			64.3	62.7	29.6
190			62.6	60.5	29.1
195			60.1	58.0	28.7
200			57.7	55.7	28.2
205			51.2	53.5	27.8
210			44.2	51.4	27.4
215			35.4	49.4	27.0
220				47.5	26.7
225				45.2	26.3
230				43.9	26.0
235				42.2	25.7
240				39.0	25.3
245				34.3	25.0
250				29.1	24.7
255				21.9	24.3
260					23.9
265					23.5
270					23.1
275					22.7
280					22.4
285					22.0
290					21.7
295					20.9
300					20.9

177 ft boom length					
Radius ft	Luffing jib length ft				
	79	138	197	236	315
50	259.6				
55	235.8				
60	211.0				
65	191.2	164.6			
70	175.2	158.7			
75	161.9	152.6			
80	150.9	146.7	97.3		
85	141.9	140.5	97.0		
90	134.7	130.9	96.8	68.7	
95	129.4	122.6	96.4	68.4	
100	127.5	115.4	95.9	68.0	
105		109.0	95.4	67.6	
110		103.4	95.0	67.1	34.0
115		98.4	94.5	66.7	33.6
120		94.0	93.1	66.3	33.1
125		90.1	88.6	65.8	32.6
130		86.7	84.5	65.3	32.3
135		83.7	80.8	64.7	31.8
140		81.3	77.5	64.3	31.3
145		79.2	74.4	63.8	30.8
150		77.3	71.6	63.3	30.4
155		74.1	69.0	62.8	30.0
160		63.7	66.7	62.5	29.6
165			64.6	62.0	29.1
170			62.7	60.6	28.7
175			60.8	58.9	28.3
180			59.3	57.0	27.9
185			57.8	55.3	27.5
190			56.6	53.7	27.1
195			55.5	52.2	26.7
200			54.7	50.7	26.4
205			54.0	49.2	26.0
210			50.9	47.7	25.6
215			44.4	46.4	25.3
220				45.2	24.9
225				43.9	24.7
230				42.9	24.4
235				41.2	24.0
240				39.6	23.7
245				37.6	23.4
250				34.3	23.2
255				29.7	22.9
260					22.7
265					22.3
270					21.9
275					21.5
280					21.2
285					20.9
290					20.6
295					20.3
300					20.0
305					19.5

For complete chart, refer to [www.cranelibrary.com](http://www.cranelibrary.com).

# Luffing jib load charts

## VPC-MAX

### No. 501 luffing jib on No. 500 boom VPC-MAX

468,000 lb counterweight

360° Rating

lb x 1000

85° boom angle

217 ft boom length					
Radius ft	Luffing jib length ft				
	79	138	197	236	315
50	206.6				
55	205.3				
60	198.2				
65	180.2	129.5			
70	165.5	129.4			
75	153.2	128.9			
80	142.9	127.9	81.9		
85	134.4	126.8	81.8		
90	127.3	121.3	81.7	60.2	
95	121.8	113.9	81.5	60.0	
100	118.2	107.5	81.1	59.8	
105		101.8	80.7	59.5	
110		96.8	80.2	59.2	
115		92.2	79.8	58.9	30.8
120		88.2	79.2	58.6	30.5
125		84.6	78.6	58.2	30.3
130		81.5	76.6	57.8	30.0
135		78.7	74.1	57.4	29.6
140		76.3	71.2	57.0	29.3
145		74.3	68.4	56.6	28.9
150		72.8	66.0	56.2	28.6
155		71.9	63.8	55.8	28.3
160		71.9	61.7	54.5	27.9
165			59.8	53.0	27.6
170			58.0	51.4	27.2
175			56.4	50.0	26.9
180			54.9	48.6	26.6
185			53.2	47.2	26.3
190			51.5	45.8	26.0
195			50.0	44.5	25.6
200			48.8	43.2	25.3
205			47.6	41.9	25.0
210			46.7	40.8	24.7
215			46.1	39.7	24.5
220			45.0	38.6	24.2
225				37.7	23.9
230				36.7	23.6
235				36.0	23.3
240				35.2	23.1
245				34.6	22.8
250				34.2	22.6
255				33.7	22.4
260				30.2	22.2
265					22.0
270					21.8
275					21.4
280					21.0
285					20.8
290					20.4
295					20.0
300					19.6
305					19.2
310					19.0

For complete chart, refer to [www.cranelibrary.com](http://www.cranelibrary.com).



# Luffing jib load charts

## VPC-MAX

### No. 501 luffing jib on No. 500 boom VPC-MAX

468,000 lb counterweight

360° Rating

lb x 1000

85° boom angle

276 ft boom length					
Radius ft	Luffing jib length ft				
	79	138	177	217	256
55	125.1				
60	121.3				
65	116.8				
70	111.9	82.1			
75	106.7	80.0			
80	101.6	77.8	62.6		
85	96.6	75.2	61.3		
90	91.8	72.5	59.8	47.6	
95	87.5	69.7	58.2	46.8	
100	83.7	66.9	56.5	45.8	
105	80.8	64.2	54.7	44.8	35.3
110		61.3	52.9	43.7	34.6
115		58.7	51.0	42.5	34.0
120		56.1	49.1	41.3	33.3
125		53.5	47.3	40.0	32.5
130		51.3	45.4	38.8	31.8
135		49.0	43.7	37.6	30.9
140		46.9	41.8	36.3	30.1
145		45.0	40.1	35.0	29.3
150		43.3	38.5	33.8	28.5
155		41.8	37.0	32.6	27.6
160		40.6	35.6	31.4	26.7
165		39.9	34.2	30.3	25.9
170			32.8	29.1	25.0
175			31.6	28.1	24.3
180			30.5	27.0	23.4
185			29.5	26.0	22.7
190			28.6	25.0	21.9
195			27.9	24.2	21.1
200			27.3	23.3	20.4
205			27.0	22.6	19.7
210				21.8	19.0
215				21.0	18.4
220				20.5	17.7
225				19.9	17.1
230				19.4	16.6
235				19.0	16.0
240				18.8	15.5
245				18.8	15.1
250					14.6
255					14.2
260					13.8
265					13.5
270					13.3
275					13.1

For complete chart, refer to [www.cranelibrary.com](http://www.cranelibrary.com).

# Manitowoc Crane Care

Manitowoc Crane Care is the industry's most advanced service and support program, designed to keep your cranes up and running. Manitowoc's distributor network and customer support personnel are available to support you 24 hours a day, 7 days a week, 365 days a year. There are five key disciplines of Manitowoc Crane Care:

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Assistance with crane selection, lift planning and ground bearing calculations or field service and maintenance.

## **Technical publications**

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A variety of training courses are available online or through Manitowoc training centers.

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Rebuild, repair, remanufacture or exchange your current crane through our local network, for a fraction of the cost of a new crane.

[www.manitowoccranecare.com](http://www.manitowoccranecare.com)

## **CraneSTAR**

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