

**Manitex**



**CM220**

**22-ton (20.0 mt) TELESCOPIC CRANE**  
**CM220 SERIES PRODUCT GUIDE**

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The photographs, and /or images in this document are for illustrative purposes only and may include optional equipment and accessories and may not include all standard equipment.

Refer to the appropriate Operator's Manual and Load Charts for instructions on the proper use of this equipment to determine allowable crane lifting capacities, assembly and operating procedures.

Failure to follow the appropriate operator's manual or load chart(s) when using our equipment or to otherwise act irresponsibly may result in serious injury or death.

The only warranty applicable to our equipment is the standard written warranty applicable to the particular product and sale. Manitex makes no other warranty, expressed or implied.



















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# KEY

	Operator aids
	Cab
	Heating / Air conditioning
	Controls
	Hoist speed
	1 - Main hoist 2 - Auxiliary winch 3 - Recovery winch
	Rope length
	Rope - standard/optional
	Rope diameter
	Permissible line pull
	Maximum line pull
	Slewing / Allowable slewing range
	Slewing gears
	Slewing brake
	Outriggers / Lifting on outriggers
	A-Frame outriggers
	2-Person man basket
	Counterweight

	Hook block
	Distance from hook to head sheave pin
	Hook and ball
	Hydraulics
	Boom elevation angle
	Max. boom length with extension
	Boom with extension retracted
	Boom angle
	Telescoping mode
	Working radius
	Boom length
	Hydraulic actuated boom
	Full power mechanical synchronized
	Boom head / Hook block dimension
	Main boom with auxiliary head
	Tip height
	Radio remote control



## THE CM220 SERIES TELESCOPIC CRANE

### Maximize use and value

The CM220 series strikes the perfect balance between the three things customers tell us they care about most: features, cost and ease of use.

The CM220 offers:

- A Greer Insight™ load moment indicator, the industry's only monitoring display that offers the feature-rich capabilities and high-resolution VGA graphics to help operators work safer and smarter
- Self-lubricating boom slider pads, to minimize maintenance costs
- A compact size; properly equipped, the unit is just 38' 6" long

#### Other features include:

- 22-ton Capacity at 5 ft. radius
- 50 ft. 3-section proportional boom
- 62 ft. 3-section proportional boom
- 70 ft. 3-section proportional boom
- 81 ft. 4-section proportional boom
- Optional 20 ft., 24 ft., 29 ft. fixed jib
- Optional 20ft/34 ft., 24 ft./42 ft., 29 ft./52 ft. telescopic jib
- Wired anti-two block with lockout ATB
- Removable boom rest

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### USER-FRIENDLY CONTROLS

Dual operator stations are equipped with engine start/stop, foot throttle, signal horn, boom angle indicator, load chart, bubble level and range diagram.

### OUTRIGGER DEPLOYMENT

Equipped with double-acting hydraulic cylinders, large pivoting pads and audible alerts when outriggers/stabilizers are in motion.

### TWO-SPEED PLANETARY HOIST

The two-speed planetary hoist lets you change line speed on the fly. Grooved drum and tapered flanges minimize rope stacking to increase productivity and minimize downtime.



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### INCREASE PROFITABILITY

The versatile CM220 series, designed to be used with a commercial carrier, helps both owners and operators make the most of their investment.

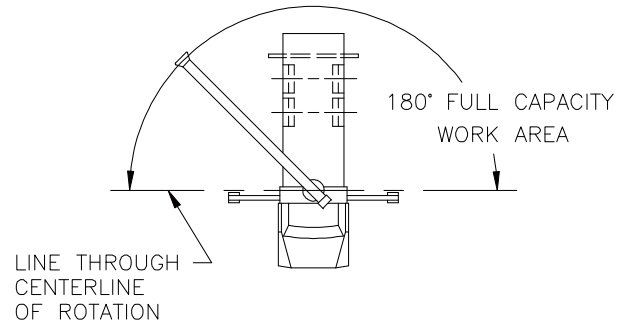
- Travel to and between jobs at highway speed.
- Ride in comfort with a carrier suspension designed for highway driving.
- Get repairs done quickly and by qualified technicians at commercial truck centers.



# AREA OF OPERATION

Deductions from rated loads for load handling devices supplied by Manitex

Auxiliary block	50 lbs. (22,7 kg)
Overhaul ball	See overhaul ball mfr. nameplate
Load blocks	See block mfr. nameplate
Hose reel	160 lbs. (117,9 kg)
Swing around jib	See load chart



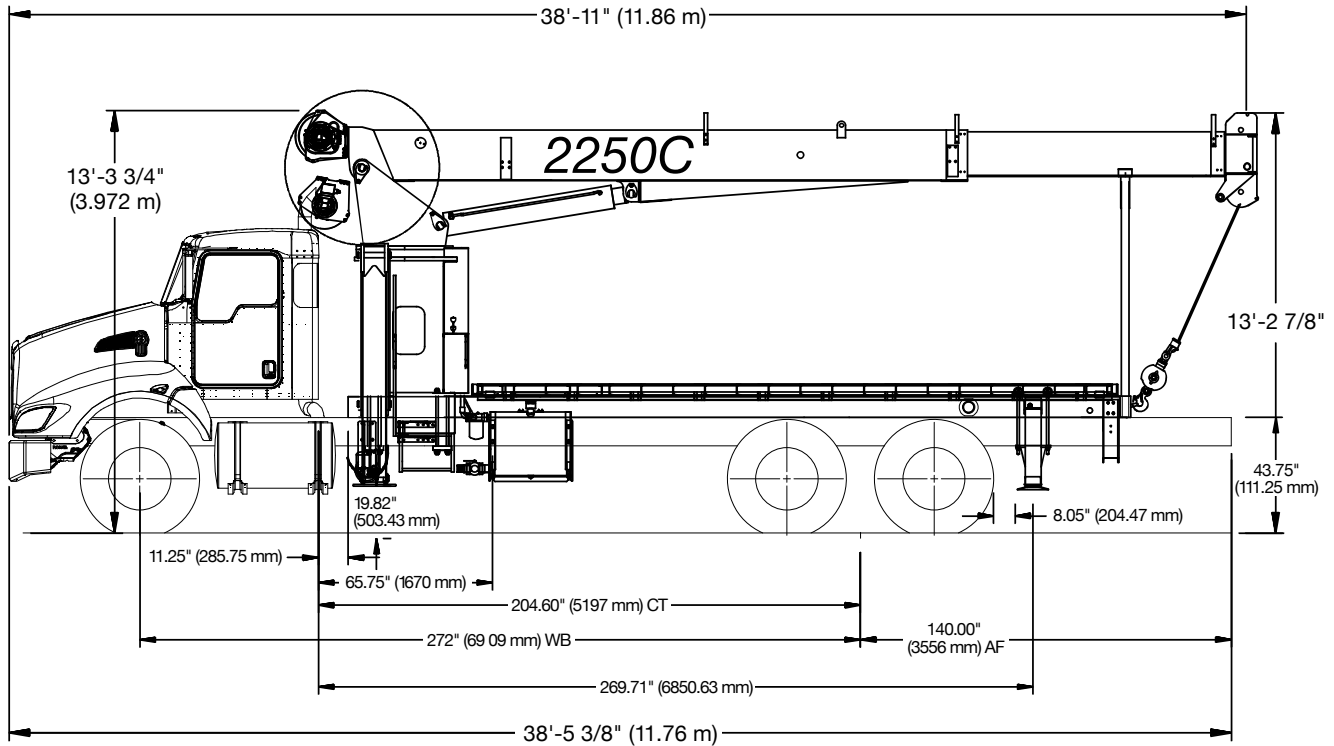
**WARNING:** Lifting off the main boom point while the jib is erected is not intended nor approved.

# REEVING DIAGRAMS

ALLOWABLE LINE PULL						<b>WARNING</b>
1 PART LINE	2 PART LINE	3 PART LINE	4 PART LINE	5 PART LINE	6 PART LINE	
						<p>ANTI-TWO-BLOCK SYSTEM MUST BE IN GOOD OPERATING CONDITION BEFORE OPERATING CRANE. REFER TO OWNER'S MANUAL.</p> <p>KEEP AT LEAST 3 WRAPS OF LOAD LINE ON DRUM AT ALL TIMES.</p>
8500 LBS	17000 LBS	25500 LBS	34000 LBS	42500 LBS	44000 LBS	
7400 LBS	14800 LBS	22200 LBS	29600 LBS	37000 LBS	44000 LBS	
						<p>9/16" - 6X25 IWRC (3.5:1 S.F.) 29750 LBS. BREAKING STRENGTH</p> <p>9/16" ROT RESISTANT (5.0:1 S.F.) 37000 LBS. BREAKING STRENGTH</p>

# 2250C A-FRAME OUTRIGGERS

## 2250C Model Dimensions



### CRANE WEIGHT

Total Crane standard A-Frame outriggers	13,787 (6,254 kg)
Flatbed 18'	1550 lb (703 kg)
Flatbed 22'	1,890 lb (857 kg)
Tele Jib	958 lb (435 kg)
Fixed Jib	832 lb (377 kg)

### TRUCK AXLE WEIGHT

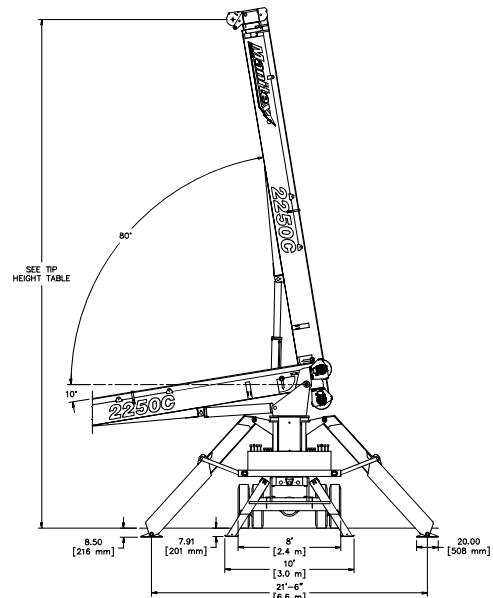
Front Axle Gross Weight Rating	20,000 lbs. (9,072 kg)
Rear Axle Gross Weight Rating	34,000 lbs. (15,422 kg)
Minimum truck axle weight - Front**	Consult Factory
Minimum truck axle weight - Back**	Consult Factory

### CHASSIS DATA

Wheel Base (WB)	272 in. (6,9 mm)
Cab to Tandem (CT)	204.6 in. (5,2 mm)
After Frame (AF)	140 in (3,6 mm)
Nominal frame width	34 in. (.86 mm)
Frame Section Modulus at 180/360° area of operation*	30 in. <sup>3</sup> (491.6 cm <sup>3</sup> ) 110,000 psi (758,422 kPa)

\* Frame selection modulus at 360° area of operation requires front bumper stabilizer.  
 \*\* Minimum chassis weight is required to meet 85% stability requirements. Chassis data is general - not for engineering. Some dimensions depend on truck selection.  
 Notes: Additional axles required for federal bridge legal configuration - consult Manitex. Manitex highly recommends addition of a front stabilizer and may be required on some installations - consult Manitex.

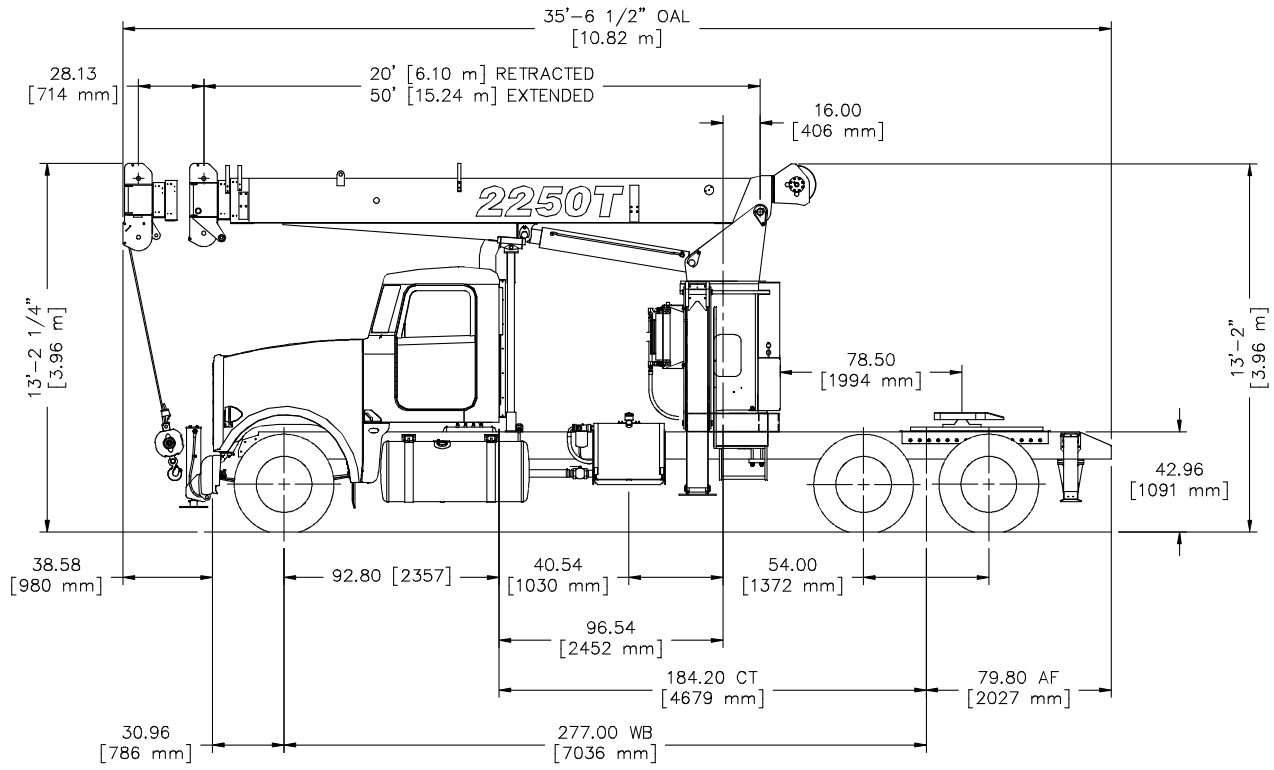
### 2250C OUTRIGGER REAR



Data published herein is intended as a guide only. Crane operation is subject to machine specific load charts and information.

# 2250T A-FRAME OUTRIGGERS

## 2250T Model Dimensions



### CRANE WEIGHT

Total Crane A-Frame outriggers	12,874 lb (5,840 kg)
Tele Jib	1,220 lb (553 kg)
Fixed Jib	832 lb (377 kg)

### TRUCK AXLE WEIGHT

Front Axle Gross Weight Rating	20,000 lbs. (9,072 kg)
Rear Axle Gross Weight Rating	34,000 lbs. (15,422 kg)
Minimum truck axle weight - Front**	Consult Factory
Minimum truck axle weight - Back**	Consult Factory

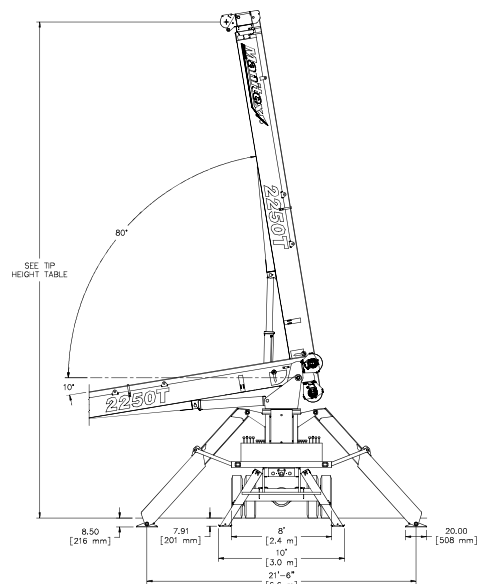
### CHASSIS DATA

Wheel Base (WB)	277 in. (7,0 mm)
Cab to Tandem (CT)	184.20 in. (4,7 mm)
After Frame (AF)	79.8 in. (2,0 mm)
Nominal frame width	34 in. (.86 mm)
Frame Section Modulus at 180/360° area of operation*	30 in. <sup>3</sup> (491.6 cm <sup>3</sup> ) 110,000 psi (758,422 kPa)

\* Frame selection modulus at 360° area of operation requires front bumper stabilizer.  
 \*\* Minimum chassis weight is required to meet 85% stability requirements. Chassis data is general - not for engineering. Some dimensions depend on truck selection.

Notes: Additional axles required for federal bridge legal configuration - consult Manitex. Manitex highly recommends addition of a front stabilizer and may be required on some installations - consult Manitex.

### 2250T OUTRIGGER REAR

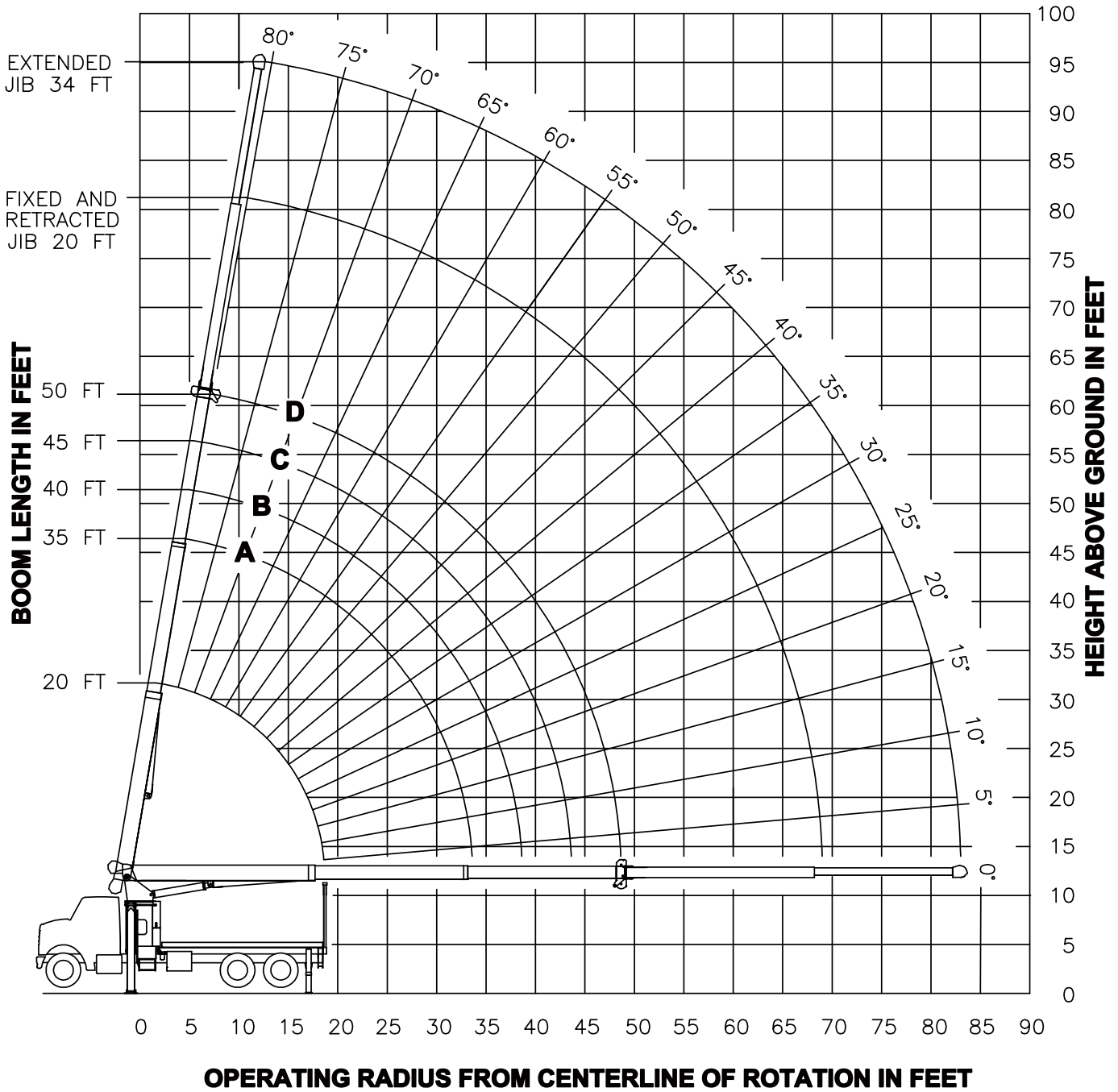


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# 2250CT BOOM DIAGRAM

A-Frame Outriggers

## RANGE DIAGRAM - FULLY EXTENDED OUTRIGGER CONFIGURATION -



Data published herein is intended as a guide only. Crane operation is subject to machine specific load charts and information.





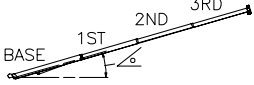
# 2250CT LOAD CHART: Main Boom

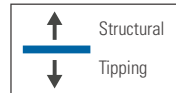
A-Frame Outriggers: Lifting Capacities  
3-section Boom 20 ft. - 50 ft. (6 m - 15,2 m)

  
Outriggers  
21'-6" (6.6 m)

  
A-Frame Outriggers  
8' (2.4 m)

  
180° Non-continuous

Load Ratings in lbs. with Outriggers and Stabilizers Extended											Jib Load Ratings with Outriggers and Stabilizers Extended									
LMI Code #1											Jib Load Ratings with Outriggers and Stabilizers Extended									
Operating Radius	Loaded Boom Angle	Boom Length & Marker									Operating Radius	Fixed Jib		Telescopic Jib						
			A		B		C		D			LMI Code #2		LMI Code #3		LMI Code #4				
			20 FT.	35 FT.	40 FT.	45 FT.	50 FT.	24 ft. Jib for All Boom Lengths See Warning Note 4	42 ft. Jib for All Boom Lengths See Warning Note 4	24 ft. Jib for All Boom Lengths See Warning Note 4										
5	74	44,000																		
8	65	37,400																		
10	58	30,420	73	24,000	76	24,000	78	23,400	79	20,680	10									
12	51	25,270	70	24,000	73	22,590	75	20,710	77	18,530	12									
14	43	21,530	66	21,740	70	20,060	73	18,540	75	17,000	14	79	8,500	79	8,500					
17	26	17,500	61	17,730	65	17,110	69	16,260	71	14,820	17	77	8,500	77	8,500	79	7,340			
20			55	14,800	60	14,830	64	14,150	67	13,030	20	74	8,500	74	8,500	77	6,600			
25			44	11,370	51	11,410	57	11,440	61	10,820	25	70	7,460	70	7,240	74	5,600			
30			29	9,120	41	9,160	48	9,180	54	9,190	30	66	6,470	66	6,250	70	4,830			
35					27	7,560	39	7,590	46	7,610	35	61	5,690	61	5,460	67	4,240			
40							26	6,390	37	6,420	40	56	5,070	56	4,850	63	3,750			
45									25	5,370	45	51	4,560	51	4,330	59	3,360			
50											50	46	4,140	46	3,910	55	3,030			
55											55	39	3,780	39	3,550	51	2,750			
60											60	32	3,390	32	3,170	46	2,520			
65											65	22	2,950	22	2,730	41	2,320			
70											70					35	2,140			
75											75					28	1,990			
80											80					18	1,860			
85											85									
90											90									
		340 LBS.		200 LBS.		170 LBS.		150 LBS.		140 LBS.		DEDUCTIONS FOR STOWED FIXED JIB								
		510 LBS.		290 LBS.		260 LBS.		230 LBS.		210 LBS.		DEDUCTIONS FOR STOWED TELESCOPIC JIB								



**NOTES:**

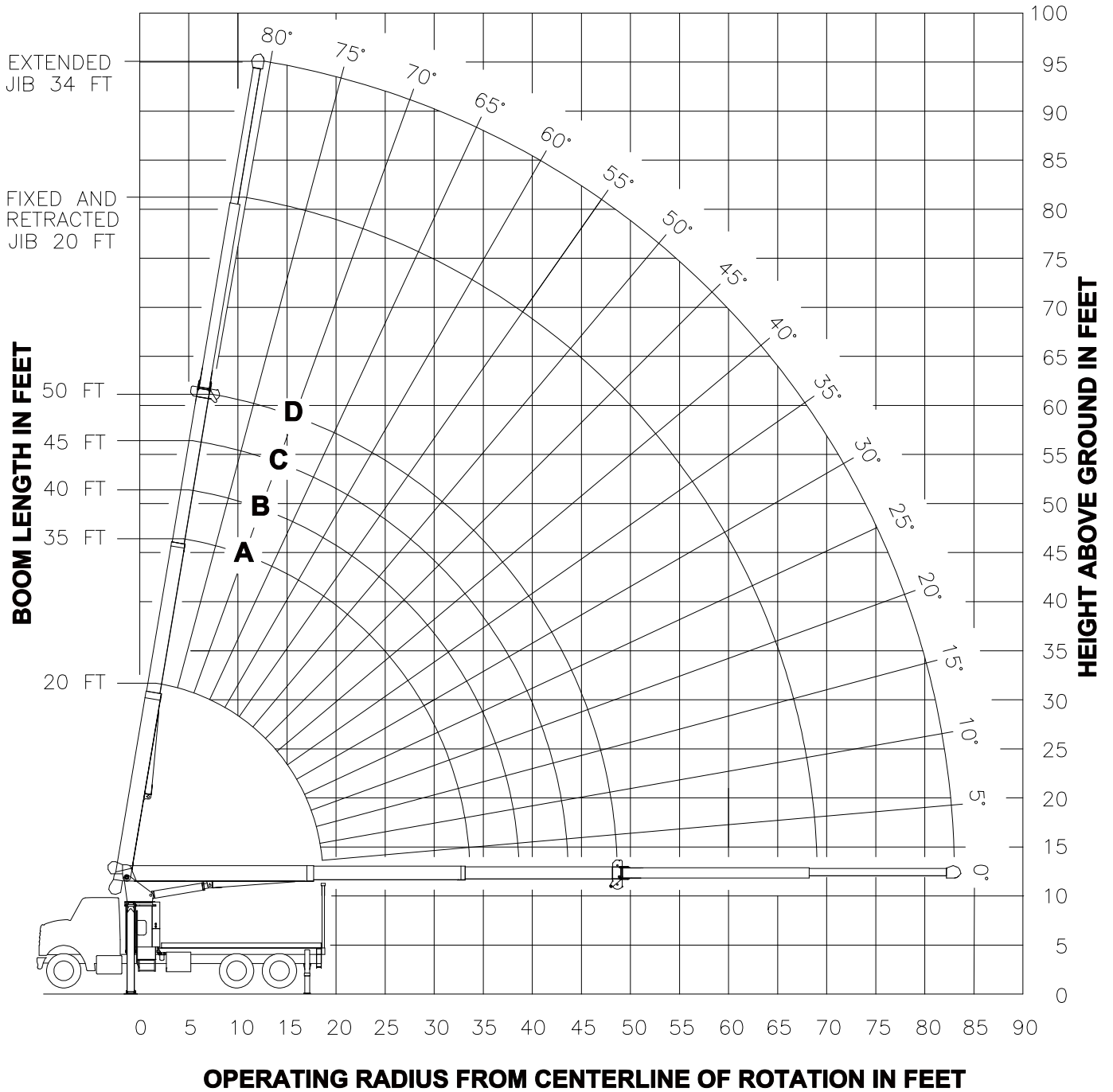
- All loads rated at 180° pick
- Loads above heavy line are based on structural rating
- All "on outriggers" loads are based on 85% tipping
- Loads based on crane on fully extended outriggers and stabilizers
- Loads below heavy line are based on tipping rating

Data published herein is intended as a guide only. Crane operation is subject to machine specific load charts and information.

# 2250C BOOM DIAGRAM

Out & Down Outriggers

## RANGE DIAGRAM - FULLY EXTENDED OUTRIGGER CONFIGURATION -





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# 2250C LOAD CHART: Main Boom

Outriggers Lifting Capacities  
3-section Boom 20 ft. - 50 ft. (6 m - 15,24 m)

  
Outriggers  
19'-8" (5,9 m)

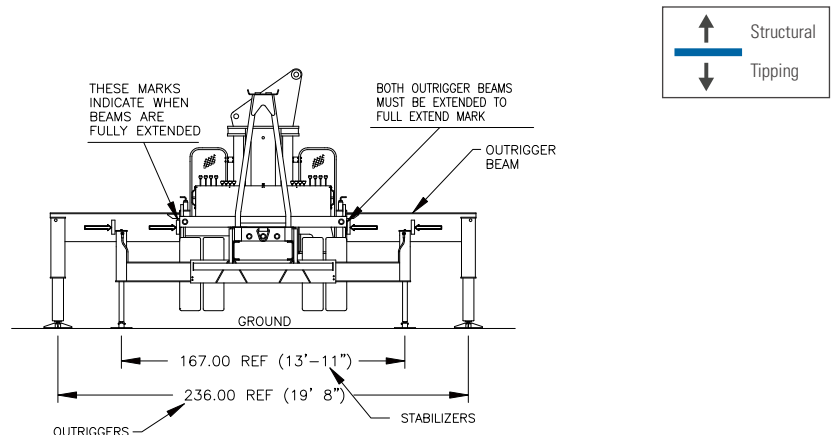
  
Stabilizers  
13'-11" (4,2 m)

  
180° Non-continuous

MAIN BOOM LMI CODE 1										JIB LOAD CAPACITIES							
Load radius ∠	20 ft.		35 ft. (A)		40 ft. (B)		45 ft. (C)		50 ft. (D)		Load radius ∠	26 ft. Fixed Jib		20 ft. Tele. Jib		34 ft. Tele. Jib	
	(deg)	Load Capacity (lbs.)	(deg)	Load Capacity (lbs.)	(deg)	Load Capacity (lbs.)	(deg)	Load Capacity (lbs.)	(deg)	Load Capacity (lbs.)		(deg)	Load Capacity (lbs.)	(deg)	Load Capacity (lbs.)	(deg)	Load Capacity (lbs.)
5	74	44,000									5						
8	65	37,400									8						
10	58	30,420	73	24,000	76	24,000	78	23,400	79	20,680	10						
12	51	25,270	70	24,000	73	22,590	75	20,710	77	18,530	12						
14	43	21,530	66	21,740	70	20,060	73	18,540	75	17,000	14	79	8,500	79	8,500		
17	26	17,500	61	17,730	65	17,110	69	16,260	71	14,820	17	77	8,500	77	8,500	79	7,340
20			55	14,800	60	14,830	64	14,150	67	13,030	20	74	8,500	74	8,500	77	6,600
25			44	11,370	51	11,410	57	11,440	61	10,820	25	70	7,460	70	7,240	74	5,600
30			29	9,120	41	9,160	48	9,180	54	9,190	30	66	6,470	66	6,250	70	4,830
35					27	7,560	39	7,590	46	7,610	35	61	5,690	61	5,460	67	4,240
40							26	6,390	37	6,420	40	56	5,070	56	4,850	63	3,750
45									25	5,350	45	51	4,560	51	4,330	59	3,360
50											50	46	4,140	46	3,910	55	3,030
55											55	39	3,780	39	3,550	51	2,750
60											60	32	3,390	32	3,170	46	2,520
65											65	22	2,960	22	2,730	41	2,320
70											70					35	2,140
75											75					28	1,990
80											80					18	1,860
85											85						
90											90						
		340 lbs.		200 lbs.		170 lbs.		150 lbs.		140 lbs.	DEDUCTIONS FOR STOWED FIXED JIB						
		510 lbs		290 lbs.		260 lbs.		230 lbs.		210 lbs.	DEDUCTIONS FOR STOWED TELESCOPIC JIB						

**NOTES:**

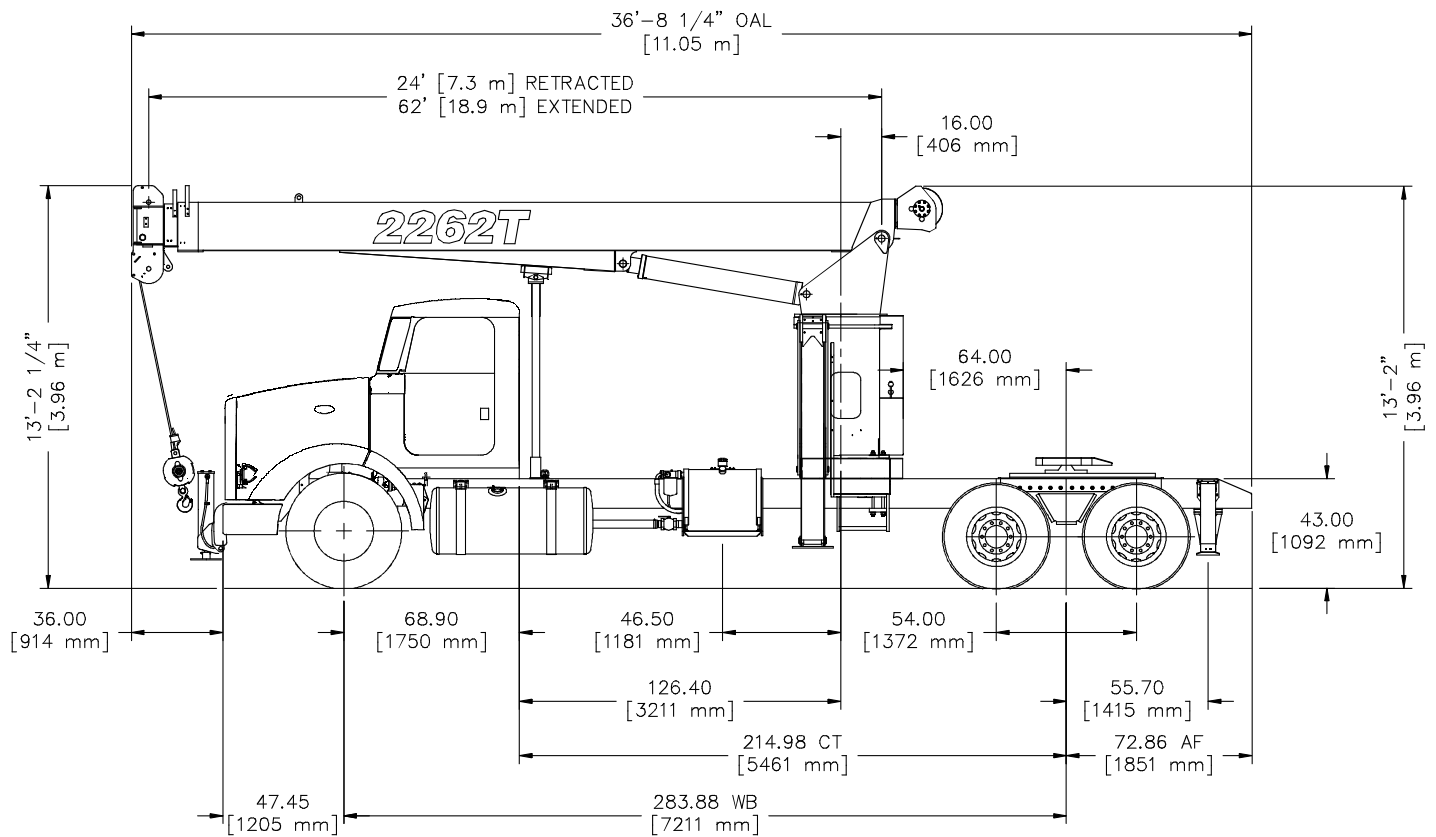
- All loads rated at 180° pick
- Loads above heavy line are based on structural rating
- All "on outriggers" loads are based on 85% tipping
- Loads based on crane on fully extended outriggers and stabilizers
- Loads below heavy line are based on tipping rating



Data published herein is intended as a guide only. Crane operation is subject to machine specific load charts and information.

# 2262T A-FRAME OUTRIGGERS

## 2262T Model Dimensions



### CRANE WEIGHT

Total Crane A-Frame Outriggers	13,665 lbs. (6,198 kg)
Tele Jib	1,085 lbs. (492 kg)
Fixed Jib	815 lbs. (370 kg)

### TRUCK AXLE WEIGHT

Front Axle Gross Weight Rating	20,000 lbs. (9,072 kg)
Rear Axle Gross Weight Rating	40,000 lbs. (18,144 kg)

Notes: Additional axles required for federal bridge legal configuration - consult Manitex. Manitex highly recommends addition of a front stabilizer and may be required on some installations - consult Manitex.

### CHASSIS DATA

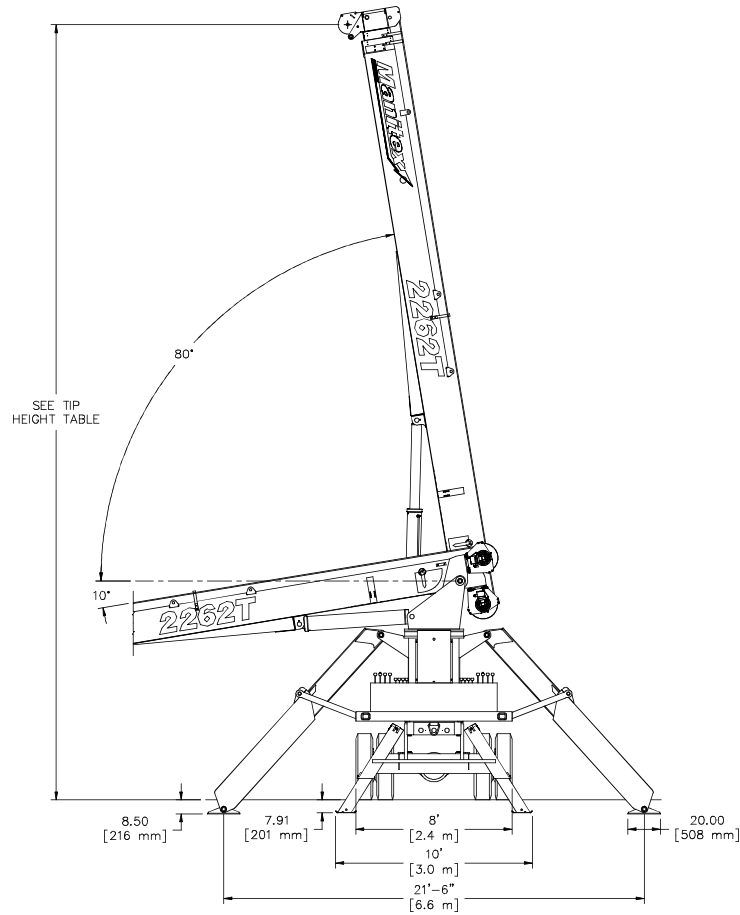
Wheel Base (WB)	283.88 in. (7,2mm)
Cab to Tandem (CT)	214.98 in. (5,5 mm)
After Frame (AF)	72.86 in (1,9 mm)
Nominal frame width	34 in. (.86 mm)
Frame Section Modulus at 180/360° area of operation*	30 in. <sup>3</sup> (491.6 cm <sup>3</sup> ) 110,000 psi (758,422 kPa)

\* Frame selection modulus at 360° area of operation requires front bumper stabilizer.

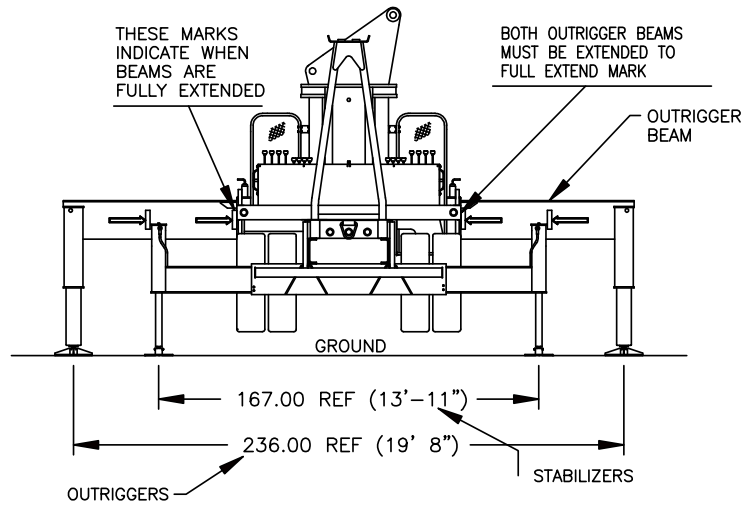


# 2262T OUTRIGGER REAR

## 2262T Rear Dimensions for A-Frame Outriggers



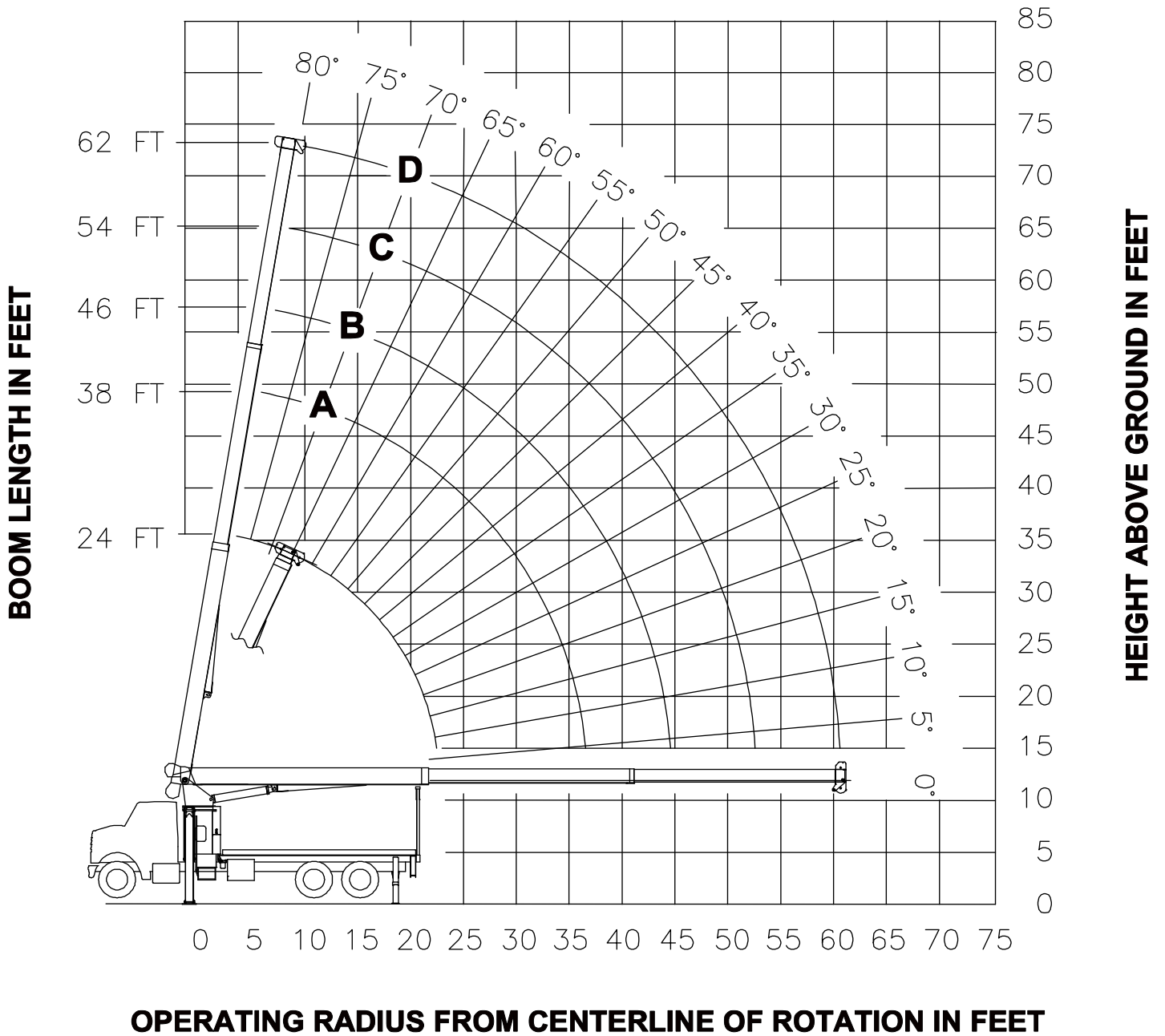
## 2262C Rear Dimensions for Out & Down Outriggers



# 2262C BOOM DIAGRAM

A-Frame Outriggers

## RANGE DIAGRAM



Data published herein is intended as a guide only. Crane operation is subject to machine specific load charts and information.



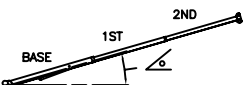





# 2262C LOAD CHART: Main Boom

Lifting Capacities 3-section  
Boom 24 ft. - 62 ft. (7,3 m - 18,9 m)

  
Outriggers  
21'-6" (6.6 m)

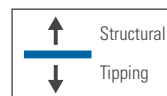
  
A-Frame Stabilizers  
10' (3.0 m)

  
180° Non-continuous

Load Ratings in lbs. with Outriggers and Stabilizers Extended										
Operating Radius	Loaded Boom Angle	Boom Length & Marker								
			A		B		C		D	
		24 FT.		38 FT.		46 FT.		54 FT.		62 FT.
5	77	44,000								
8	70	35,900								
10	64	30,200	75	23,000	78	23,000				
12	59	25,040	72	23,000	75	20,730	78	18,430		
14	53	21,300	68	21,410	73	18,560	76	16,880	78	15,000
17	43	17,270	63	17,460	69	16,110	73	14,570	75	13,180
20	30	14,330	58	14,560	65	14,000	69	12,760	73	11,660
25			48	11,120	57	11,180	63	10,480	68	9,700
30			37	8,860	49	8,920	57	8,820	62	8,420
35			19	7,240	40	7,320	50	7,350	57	7,230
40					28	5,830	43	5,880	51	5,910
45							33	4,800	44	4,830
50							20	3,980	37	4,020
55									27	3,380
60									14	2,860
65										
70										
75										

**NOTES:**

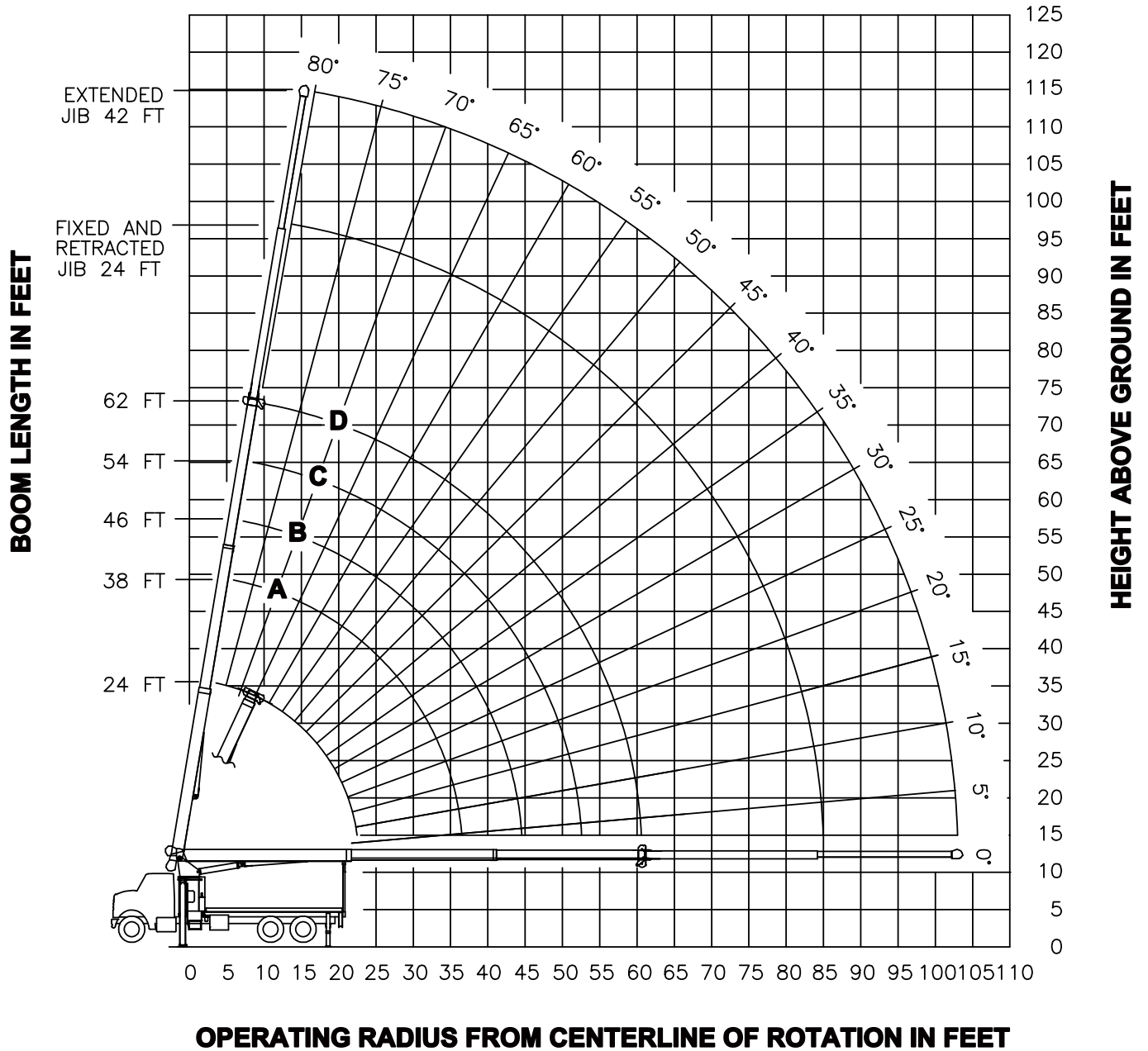
- All loads rated at 180° pick
- Loads based on crane on outriggers
- All "on outriggers" loads are based on 85% tipping
- Loads above heavy line are based on structural rating
- Loads below heavy line are based on tipping rating



# 2262C BOOM DIAGRAM

Out & Down Outriggers

## RANGE DIAGRAM - FULLY EXTENDED OUTRIGGER CONFIGURATION -



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# 2262C LOAD CHART: Main Boom

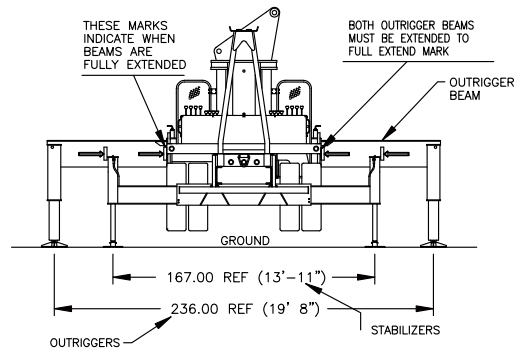
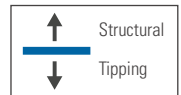
Outriggers Lifting Capacities  
3-section Boom 20 ft. - 50 ft. (6 m - 15,24 m)

Outriggers  
19'-8" (5,9 m)

Stabilizers  
13'-11" (4,2 m)

180° Non-continuous

MAIN BOOM LMI CODE 1										JIB LOAD CAPACITIES							
Load radius ∠°	24 ft.		38 ft. (A)		46 ft. (B)		54 ft. (C)		6 ft. (D)		Load radius ∠°	24 ft. Fixed Jib LMI CODE 2		24 ft. Tele. Jib LMI CODE 3		42 ft. Tele. Jib LMI CODE 4	
	(deg)	Load Capacity (lbs.)	(deg)	Load Capacity (lbs.)	(deg)	Load Capacity (lbs.)	(deg)	Load Capacity (lbs.)	(deg)	Load Capacity (lbs.)		(deg)	Load Capacity (lbs.)	(deg)	Load Capacity (lbs.)	(deg)	Load Capacity (lbs.)
5	77	44,000									5						
8	70	35,900									8						
10	64	30,200	75	23,000	78	23,000					10						
12	59	25,040	72	23,000	76	20,730	78	18,430			12						
14	53	21,300	69	21,410	73	18,560	76	16,880	78	15,000	14						
17	43	17,270	64	17,460	69	16,110	73	14,570	76	13,180	17	80	7,670	80	7,440		
20	30	14,330	58	14,560	65	14,000	69	12,760	73	11,660	20	78	6,960	78	6,730		
25			48	11,120	58	11,180	64	10,480	68	9,700	25	75	6,020	75	5,770	78	4,080
30			37	8,860	50	8,920	57	8,920	63	8,420	30	71	5,250	71	5,000	75	3,660
35			19	7,240	40	7,350	51	7,350	57	7,230	35	68	4,630	68	4,380	72	3,310
40					29	6,120	43	6,160	51	6,180	40	64	4,120	64	3,860	69	3,000
45							34	5,200	45	5,230	45	60	3,700	60	3,420	67	2,750
50							21	4,350	37	4,380	50	56	3,290	56	3,000	64	2,500
55									28	3,720	55	52	2,940	52	2,640	60	2,270
60									12	3,180	60	48	2,630	48	2,340	57	2,070
65											65	43	2,370	43	2,080	54	1,900
70											70	37	2,140	37	1,850	50	1,750
75											75	31	1,940	31	1,640	46	1,620
80											80	22	1,770	22	1,470	42	1,490
85											85					37	1,340
90											90					32	1,210
95											95					26	1,090
100											100					17	990
		440 lbs.		280 lbs.		230 lbs.		200 lbs.		170 lbs.		DEDUCTIONS FOR STOWED FIXED JIB					
		580 lbs.		370 lbs.		310 lbs.		260 lbs.		230 lbs.		DEDUCTIONS FOR STOWED TELESCOPIC JIB					



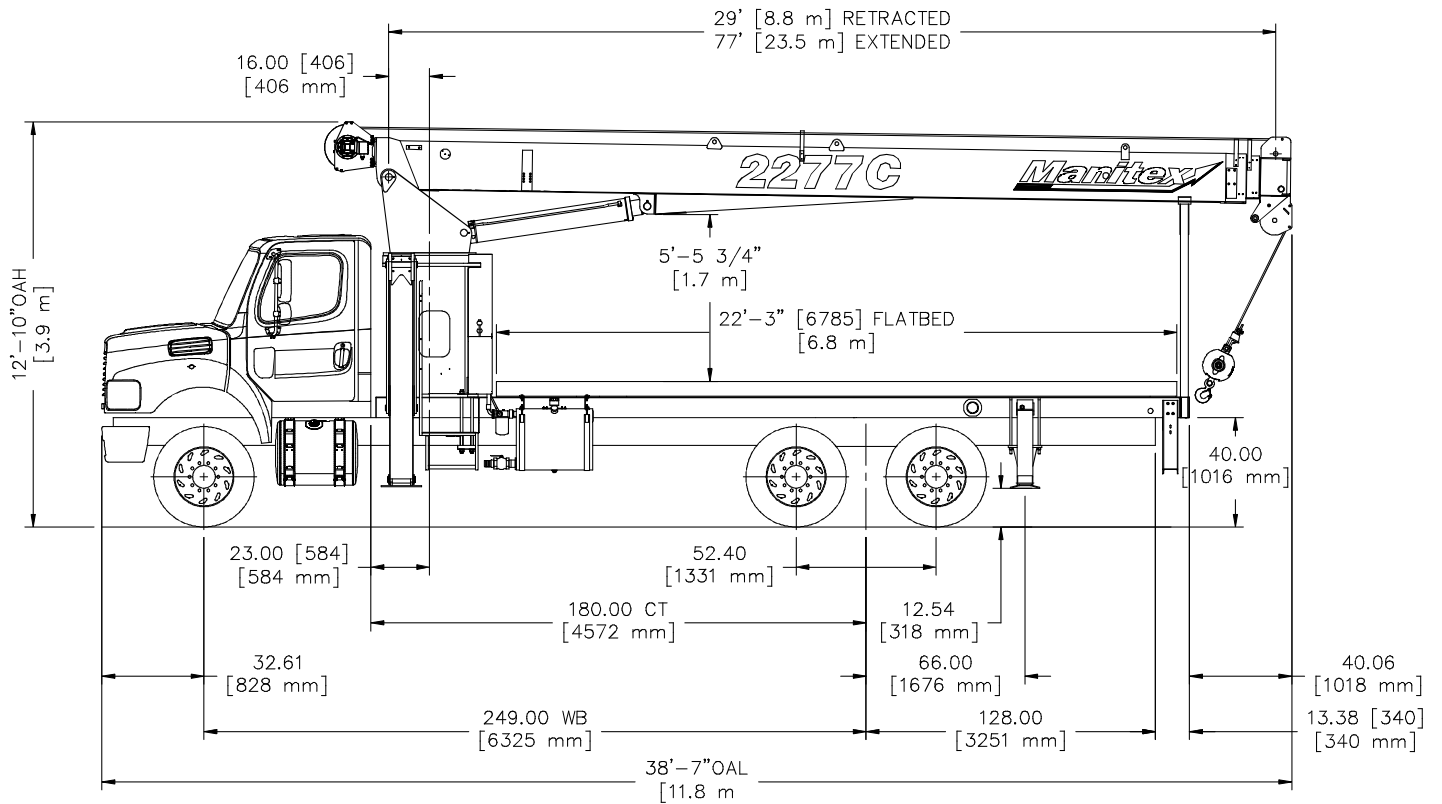
**NOTES:**

- All loads rated at 180° pick
- Loads above heavy line are based on structural rating
- All "on outriggers" loads are based on 85% tipping
- Loads based on crane on fully extended outriggers and stabilizers
- Loads below heavy line are based on tipping rating

Data published herein is intended as a guide only. Crane operation is subject to machine specific load charts and information.

# 2277C A-FRAME OUTRIGGERS

## 2277C Model Dimensions



### CRANE WEIGHT

Total Crane A-frame Outriggers	16,620 lbs. (7,538 kg)
18' Wood/steel	1,550 lbs. (703 kg)
20' Wood/steel	1,890 lbs. (857 kg)
Tele Jib	1,285 lbs. (582 kg)
Fixed Jib	630 lbs. (285 kg)

### TRUCK AXLE WEIGHT

Front Axle Gross Weight Rating	16,000 lbs. (7,257 kg)
Rear Axle Gross Weight Rating	34,000 lbs. (15,422 kg)
Minimum truck axle weight - Front**	8,500 lbs. (3,856 kg)
Minimum truck axle weight - Back**	8,150 lbs. (3,697 kg)

\*\* Minimum chassis weight is required to meet 85% stability requirements. Chassis data is general - not for engineering. Some dimensions depend on truck selection.

Notes: Additional axles required for federal bridge legal configuration - consult Manitex. Manitex highly recommends addition of a front stabilizer and may be required on some installations - consult Manitex.

### CHASSIS DATA

Wheel Base (WB)	249 in. (6,324mm)
Cab to Tandem (CT)	180 in. (4,572 mm)
After Frame (AF)	128 in. (3,251 mm)
Nominal frame width	34 in. (.86 mm)
Frame Section Modulus at 180/360° area of operation*	28 in. <sup>3</sup> (491.6 cm <sup>3</sup> ) 110,000 psi (758,422 kPa)

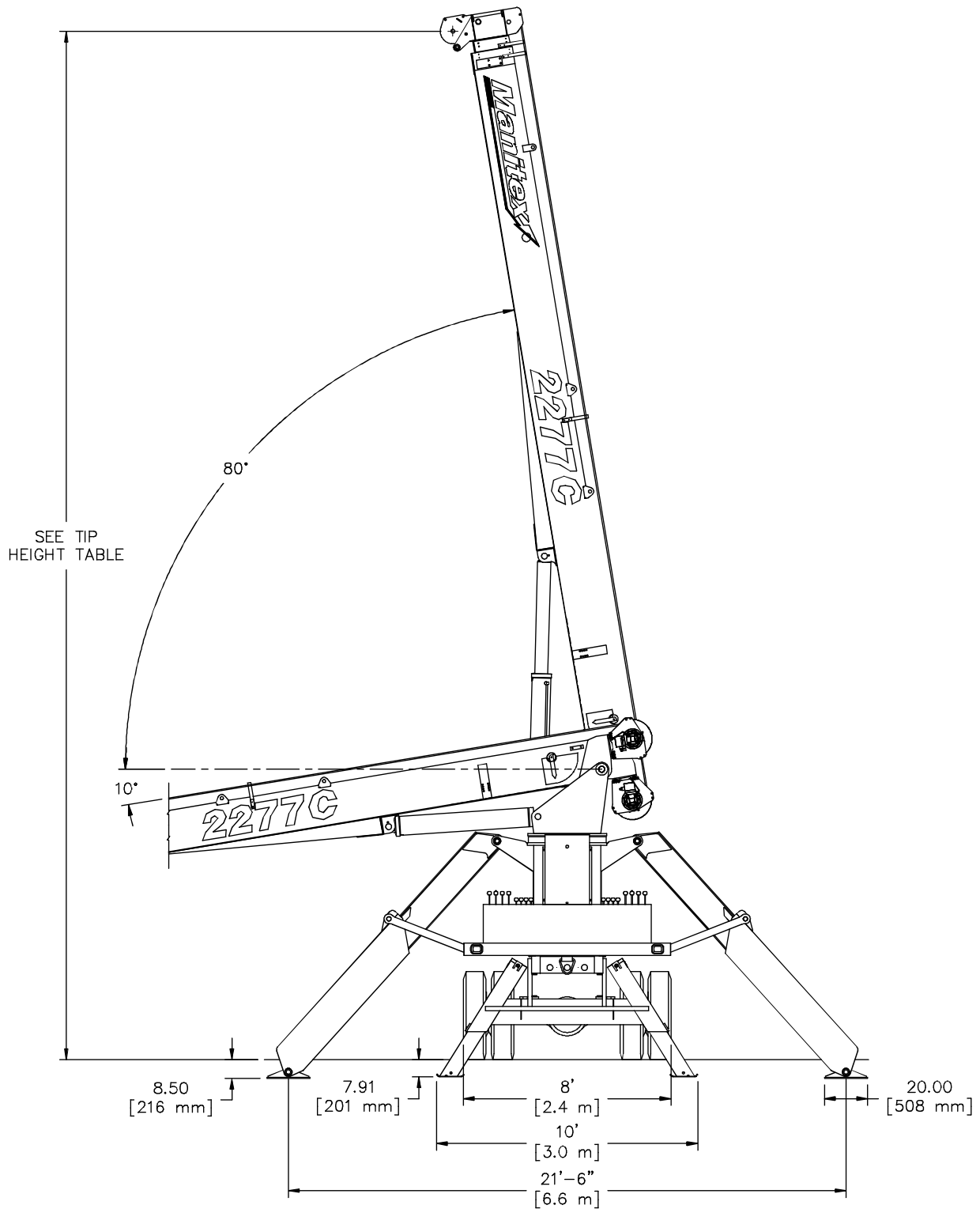
\* Frame selection modulus at 360° area of operation requires front bumper stabilizer.

Data published herein is intended as a guide only. Crane operation is subject to machine specific load charts and information.



# 2277C OUTRIGGER REAR

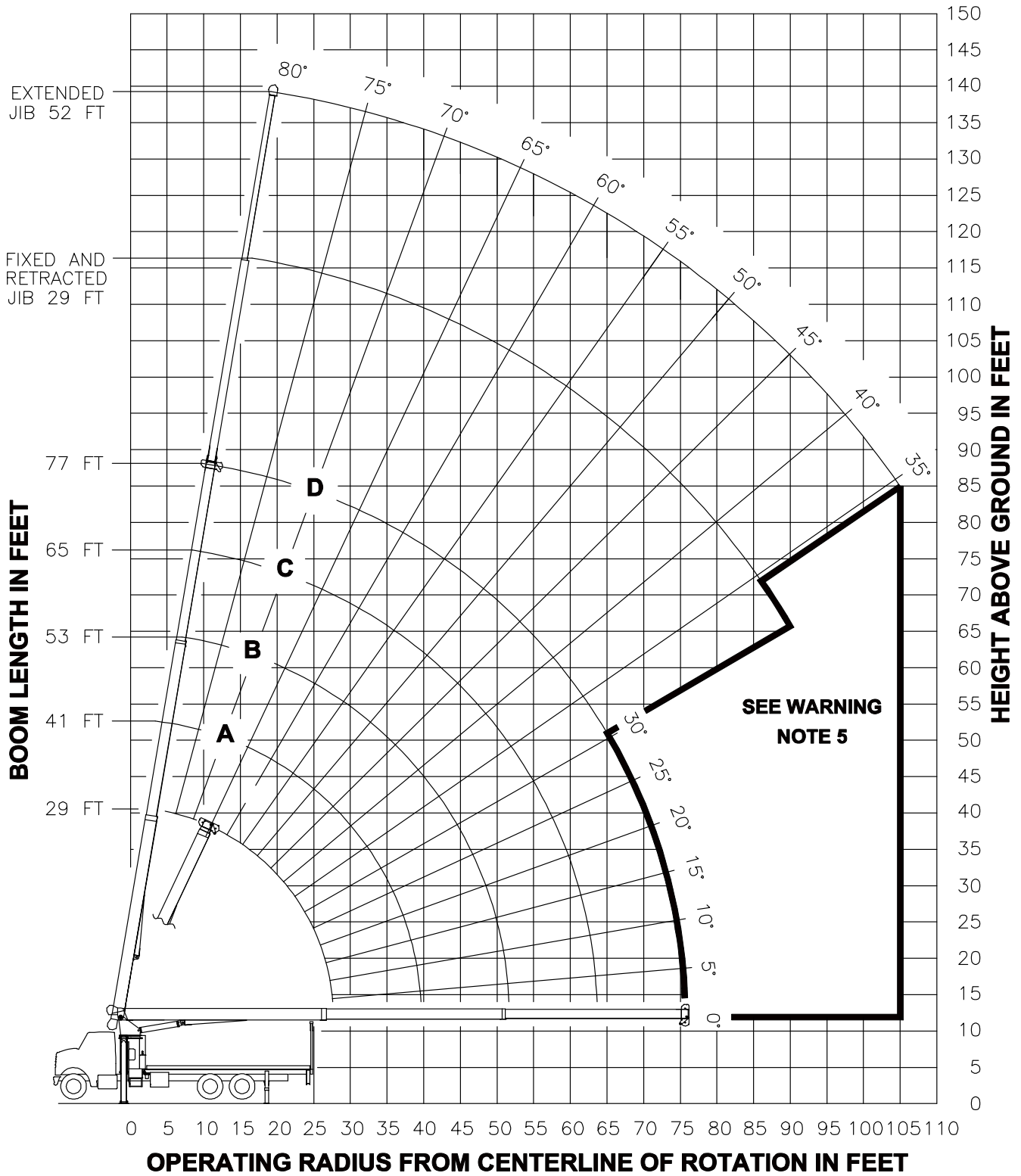
## 2277C Rear Dimensions for A-Frame Outriggers



# 2277C BOOM DIAGRAM

A-Frame Outriggers

**RANGE DIAGRAM**



Data published herein is intended as a guide only. Crane operation is subject to machine specific load charts and information.



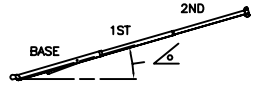
# 2277C LOAD CHART: Main Boom

Lifting Capacities 3-section Boom 29 ft. - 77 ft. (8,8 m - 23,5 m)  
 Jib 29 ft. - 52 ft. (8,8 m - 15,8 m)

 A-frame Outrigger  
 10' (3,0 m)

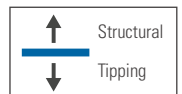
 Stabilizer  
 21'-6" (6,6 m)

 180° Non-continuous

Load Ratings in t with Outriggers and Stabilizers Extended										Jib Load Ratings with Outriggers and Stabilizers Extended									
LMI Code #1										LMI Code #2									
Operating Radius	Loaded Boom Angle	Boom Length & Marker									Operating Radius	Fixed Jib		Telescopic Jib					
			A		B		C		D			LMI Code #2		LMI Code #3		LMI Code #4			
			29 FT.	41 FT.	53 FT.	65 FT.	77 FT.	29 ft. Jib for All Boom Lengths See Warning Note 4	29 ft. Jib for All Boom Lengths See Warning Note 4	52 ft. Jib for All Boom Lengths See Warning Note 4		Rated in Lbs.	Rated in Lbs.	Rated in Lbs.	Rated in Lbs.				
5	80	44,000																	
8	74	34,340																	
10	69	28,910	76	22,000						10									
12	65	24,730	73	22,000	78	18,500				12									
14	60	20,970	70	20,120	75	16,850	79	14,340		14									
17	53	16,940	66	17,000	72	14,430	76	12,540	79	11,500	17								
20	45	14,080	61	14,250	69	12,560	73	11,060	77	9,800	20								
25	27	10,790	52	10,980	63	10,200	69	9,120	73	8,270	25	79	5,070	79	4,820				
30			42	8,750	56	8,500	64	7,840	69	7,030	30	77	4,530	77	4,270	80	3,000		
35			30	7,100	49	7,200	59	6,670	65	6,050	35	74	4,050	74	3,790	78	2,900		
40					41	5,730	53	5,750	61	5,240	40	71	3,640	71	3,330	76	2,640		
45					31	4,620	47	4,690	56	4,570	45	68	3,220	68	2,900	74	2,410		
50					17	3,770	40	3,850	51	3,890	50	65	2,860	65	2,540	71	2,200		
55							33	3,200	46	3,240	55	62	2,550	62	2,220	69	2,020		
60							22	2,670	40	2,720	60	59	2,270	59	1,940	67	1,840		
65									34	2,290	65	55	2,040	55	1,710	64	1,670		
70									25	1,930	70	51	1,830	51	1,490	61	1,510		
75									13	1,620	75	47	1,650	47	1,300	58	1,350		
80											80	43	1,400	43	1,080	55	1,200		
85											85	39	1,170	39	860	52	1,060		
90											90	34	980	34	660	49	940		
95											95					46	830		
100											100					43	710		
105											105					39	560		
	0	7,360	0	4,590	0	3,070	0	2,110	0	1,440									
		430 lbs.		310 lbs.		240 lbs.		190 lbs.		170 lbs.									
		680 lbs.		480 lbs.		370 lbs.		300 lbs.		260 lbs.									

**NOTES:**

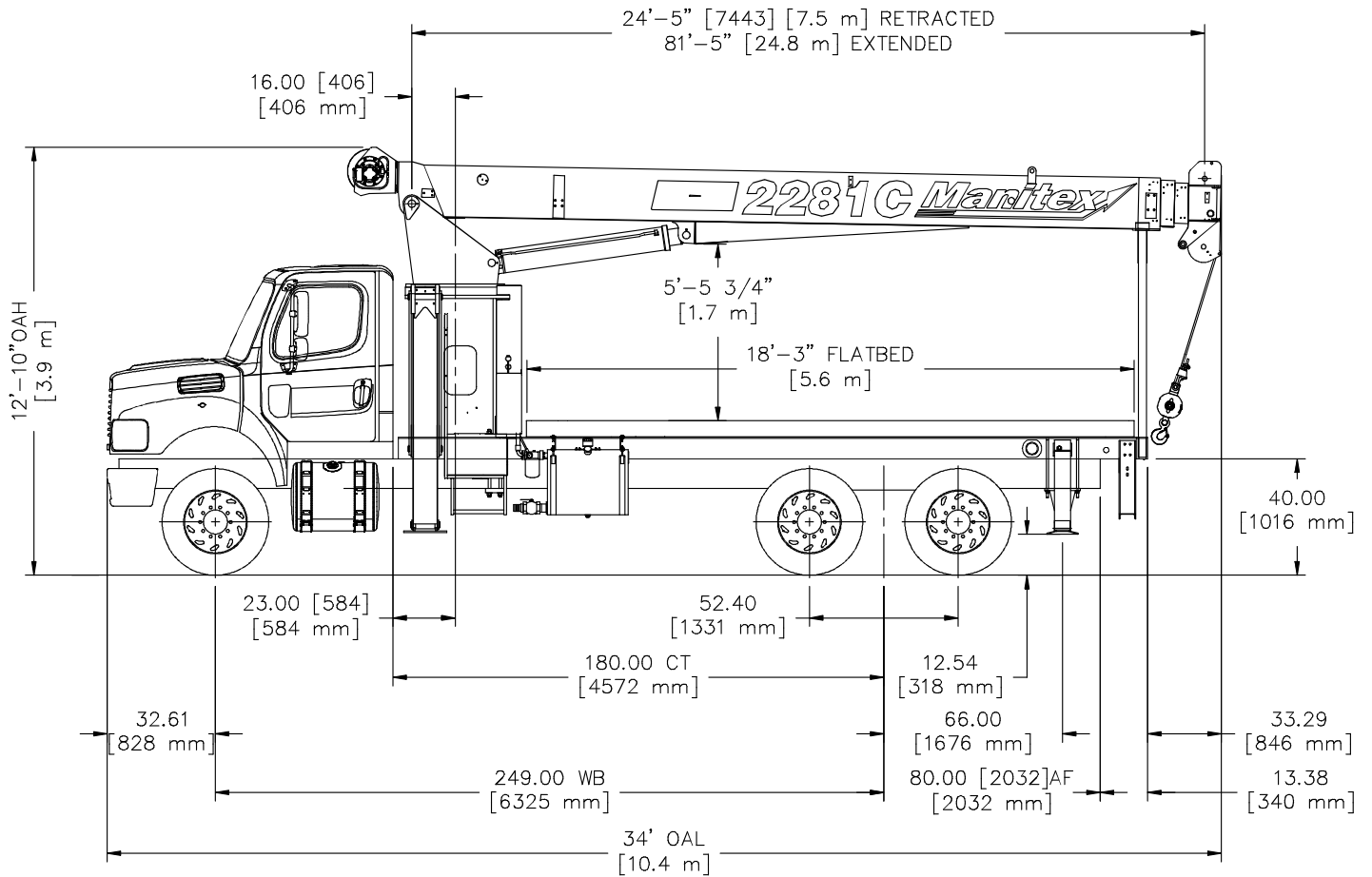
- All loads rated at 180° pick
- Loads based on crane on outriggers
- All "on outriggers" loads are based on 85% tipping
- Loads above heavy line are based on structural rating
- Loads below heavy line are based on tipping rating



Data published herein is intended as a guide only. Crane operations is subject to machine specific load charts and information.

# 2281C A-FRAME OUTRIGGERS

## 2281C Model Dimensions



### CRANE WEIGHT

Total Crane A-Frame outriggers	16,912 lbs. (7,671 kg)
Flatbed 18'	1,500 lbs. (703 kg)
Flatbed 20'	1,720 lbs. (780 kg)
Flatbed 22'	1,890 lbs. (857 kg)
Tele Jib	886 lbs. (401 kg)
Fixed Jib	630 lbs. (285 kg)

### TRUCK AXLE WEIGHT

Front Axle Gross Weight Rating	16,000 lbs. (7,257 kg)
Rear Axle Gross Weight Rating	34,000 lbs. (15,422 kg)
Minimum truck axle weight - Front**	7,100 lbs. (3,220 kg)
Minimum truck axle weight - Back**	7,400 lbs. (3,356 kg)

\*\* Minimum chassis weight is required to meet 85% stability requirements. Chassis data is general - not for engineering. Some dimensions depend on truck selection.

Notes: Additional axles required for federal bridge legal configuration - consult Manitex. Manitex highly recommends addition of a front stabilizer and may be required on some installations - consult Manitex.

### CHASSIS DATA

Wheel Base (WB)	249 in. (6,325mm)
Cab to Tandem (CT)	180 in. (4,572 mm)
After Frame (AF)	80 in. (2,032 mm)
Nominal frame width	34 in. (.86 mm)
Frame Section Modulus at 180/360° area of operation*	28 in. <sup>3</sup> (491.6 cm <sup>3</sup> ) 110,000 psi (758,422 kPa)

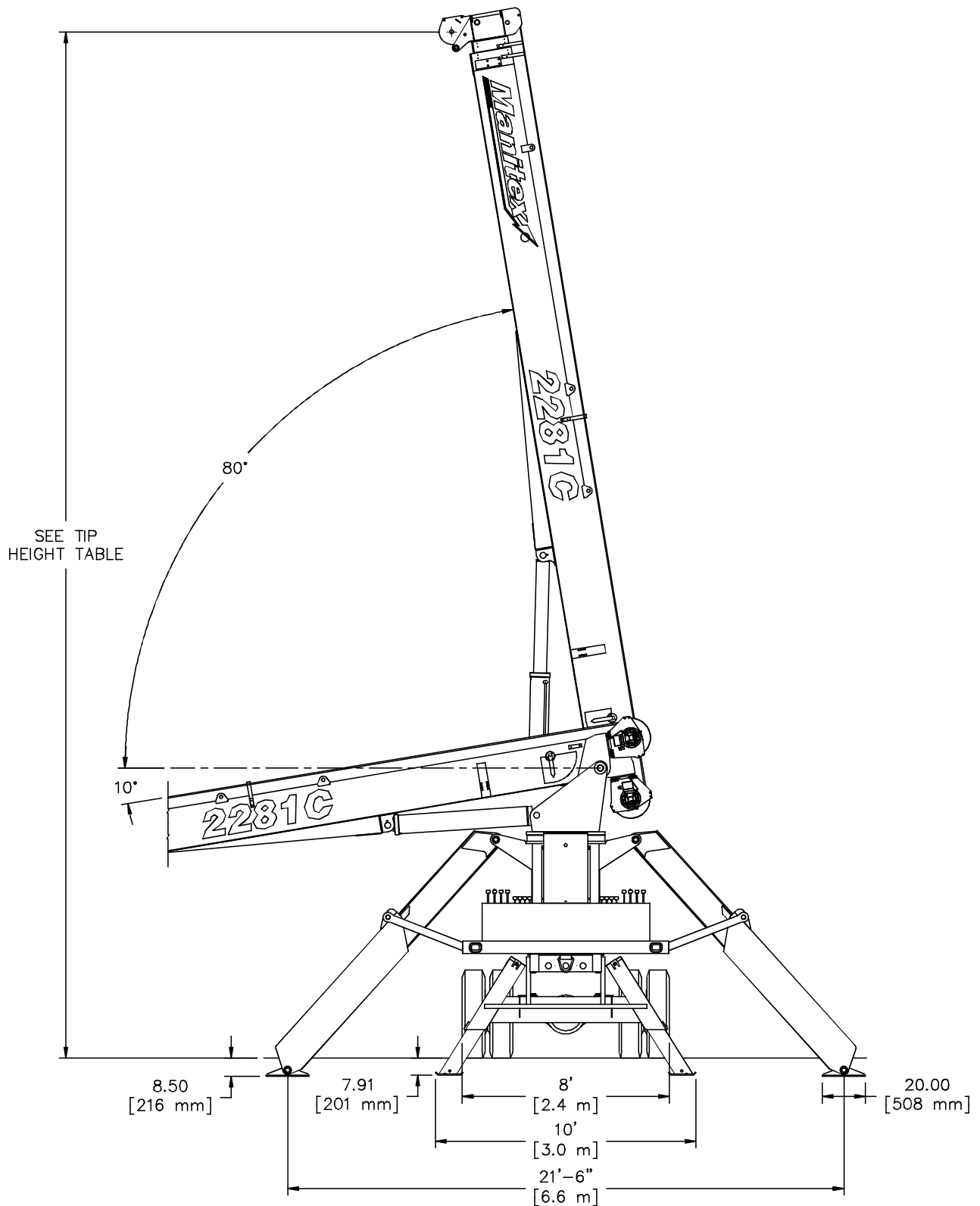
\* Frame selection modulus at 360° area of operation requires front bumper stabilizer.

Data published herein is intended as a guide only. Crane operation is subject to machine specific load charts and information.



# 2281C OUTRIGGER REAR

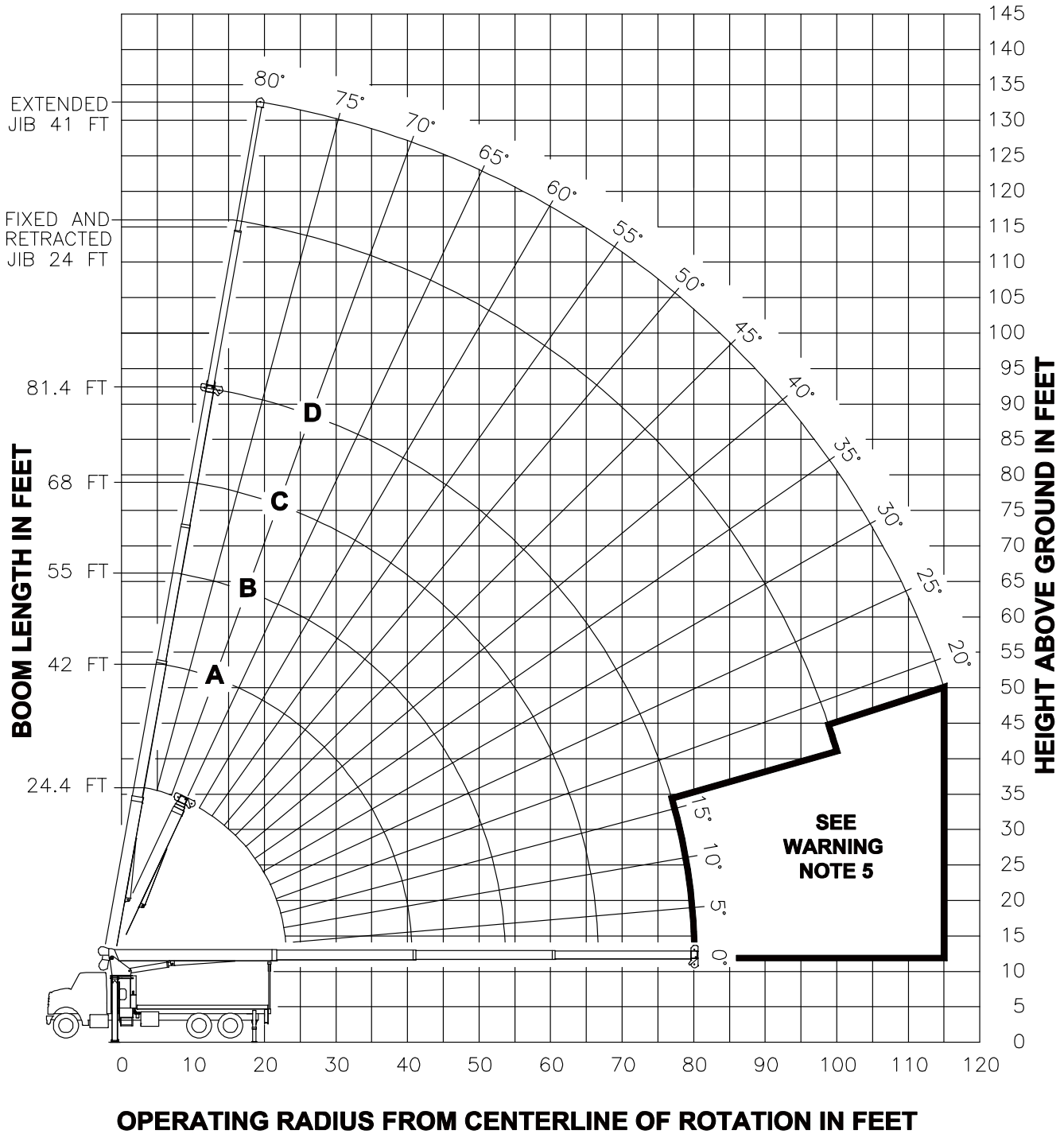
## 2281C Rear Dimensions for A-Frame Outriggers



# 2281C BOOM DIAGRAM

A-Frame Outriggers

## RANGE DIAGRAM



NOTE 5: Boom must be fully retracted when jib is erected, before lowering boom through this area.

Data published herein is intended as a guide only. Crane operation is subject to machine specific load charts and information.

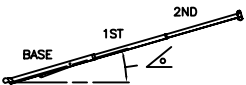




# 2281C LOAD CHART: Main Boom

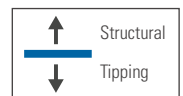
Lifting Capacities 4-section Boom 24.4 ft. - 81.4 ft. (7,4 m - 24,8 m)  
 Jib 24 ft. - 41 ft. (7,3 m - 12,5 m)

 A-Frame Outriggers 21'-6" (6,6 m)  
 Stabilizer 10' (3,0 m)  
 180° Non-continuous

Load Ratings in t with Outriggers and Stabilizers Extended										Jib Load Ratings with Outriggers and Stabilizers Extended							
LMI Code #1										LMI Code #2, #3, #4							
Operating Radius	Loaded Boom Angle	Boom Length & Marker								Operating Radius	Fixed Jib		Telescopic Jib		Telescopic Jib		
			A	B	C	D	LMI Code #2	LMI Code #3	LMI Code #4								
										Loaded Boom Angle	See Warning Note 4	Loaded Boom Angle	See Warning Note 4	Loaded Boom Angle	See Warning Note 4		
5	78	44,000															
8	70	35,150															
10	65	29,700	76	14,500						10							
12	60	24,640	74	14,500	78	14,500				12							
14	54	20,870	71	14,500	76	14,500	80	13,050		14							
17	44	16,830	66	14,500	73	14,500	77	11,700	80	9,200							
20	32	13,940	62	14,270	70	13,430	75	10,550	78	8,500	20	80	4,650	80	4,450		
25			54	10,990	64	11,000	70	9,000	75	7,550	25	78	4,360	78	4,160	80	3,000
30			44	8,780	58	8,880	66	8,120	71	6,640	30	76	3,900	76	3,700	78	2,740
35			32	7,180	51	7,290	61	7,120	67	5,880	35	73	3,500	73	3,290	76	2,490
40			13	5,620	44	5,770	56	5,840	63	5,260	40	70	3,160	70	2,940	74	2,260
45					35	4,650	50	4,720	59	4,700	45	67	2,850	67	2,640	71	2,070
50					24	3,800	44	3,880	55	3,930	50	64	2,590	64	2,370	69	1,900
55							37	3,230	50	3,270	55	61	2,370	61	2,140	66	1,730
60							28	2,700	45	2,750	60	59	2,170	59	1,950	64	1,580
65							15	2,260	39	2,320	65	55	2,000	55	1,770	61	1,430
70									32	1,960	70	51	1,840	51	1,620	58	1,310
75									24	1,650	75	47	1,710	47	1,470	55	1,210
80									3	1,380	80	43	1,490	43	1,260	52	1,110
85											85	39	1,260	39	1,030	49	1,020
90											90	34	1,070	34	830	46	940
95											95	27	890	27	650	42	870
100											100	19	730	19	500	38	790
105											105					34	650
110											110					29	520
115											115					22	410
		290 lbs.	170 lbs.	130 lbs.	110 lbs.	90 lbs.	DEDUCTIONS FOR STOWED FIXED JIB										
		440 lbs.	260 lbs.	2000 lbs.	160 lbs.	140 lbs.	DEDUCTIONS FOR STOWED TELESCOPIC JIB										

**NOTES:**

- All loads rated at 180° pick
- Loads based on crane on outriggers
- All "on outriggers" loads are based on 85% tipping
- Loads above heavy line are based on structural rating
- Loads below heavy line are based on tipping rating



Data published herein is intended as a guide only. Crane operation is subject to machine specific load charts and information.

# TECHNICAL DESCRIPTIONS

## Boom



Boom length: Proportional boom

- 3-Section Telescopic Boom 50' (15,24 m)
- 3-Section Telescopic Boom 62' (18,90 m)
- 3-Section Telescopic Boom 77' (23,5 m)
- 4-Section Telescopic Boom 81' (24,7 m)

3- Sheave Quick Reeve Boom Point



2250C

- Boom max. tip height 61'-6" (18,7 m)

2262C

- Boom max. tip height 73' (22.2 m)

2277C

- Boom max. tip height 88'-2" (26,9 m)

2281C

- Boom max. tip height 93' (28,3 m)



Boom angle (min/max): -10° / 80°

## Rotation



Ball-bearing swing circle with external gear Double-reduction planetary gearbox driven by hydraulic motor



Slewing brake: Spring-applied pressure released parking brake



Slewing speed: 0 - 1.5 rpm  
Boom rotation: 372° non-continuous

## Outriggers



Outriggers A-Frame

- A-frame, center to center of pad: 21 ft.-6 in. (6.55 m)



Outriggers Out-Down

- Out & Down 19 ft.-8 in. (6,0 m)



Stabilizer A-frame, Outside to Outside

- A-frame 10 ft. (3 m)



Stabilizer Out-Down

- 13 ft.-11 in. (4,24 m)

## Operator aids



LMI with crane functions cut-offs for over-load protection.

- External Wired anti-two block system.

## Hoist, Rope and Hook



Maximum theoretical line-speed: 300 fpm (91 mpm)



Maximum theoretical bottom-layer line pull: 11,500 lbs. ( 5,216 kg)



Main winch cable diameter: 9/16 in. (14.3 mm) EIPS IWRC Wire rope.



Line length: 300 ft. (91.44 m)



Main Winch Motor: 2 speed Gear type hydraulic motor activated electrically. Combined flows for high speed operation.



Hook & ball: 7 T (6,3 mt) capacity hook with heavy-duty swivel and weight is provided for single line operation.

## Hydraulics



Direct mounted PTO with SAE B input and SAE BB output

3-Section Gear Pump standard CCW Rotation

Hydraulic reservoir capacity: 70 Gallons (265 liter)

Pump sections @ 2000 rpm with 100 psi

- Shaft end pump: 32.4 GPM (123 lpm)
- Center pump: 20.6 GPM (79 lpm)
- Cover end pump: 10 GPM (38 lpm)

## Mounting System

Pedestal sub-frame and stabilizers are mounted to chassis by threaded rods and clamp plates  
Sub-frame: Torsion resistant, rigid 4-plate design mounted under crane full length of truck frame  
Rear under-ride protection: Standard on factory mounted cranes.  
Boom rest: Heavy-duty fabrication, easily removed

## Control System



Dual operating stations are equipped with four single-lever crane controls arranged in accordance with ANSI B30.5 standards.

Fully proportional control valves

Each station includes:

- Individual control levers for each outrigger and stabilizer
- Engine start and stop
- Electronic foot throttle
- Signal horn
- Boom angle indicator
- Beverage holder
- Load chart with range diagram and mount for removable LMI display

## Electrical System

State-of-the-art, weather-resistant components throughout

Hermetically sealed enclosure includes power in relays and circuit status LEDs

## Options

### Flatbeds

- 22 ft. (6.7m) Wood Bed
- 22 ft. (6.7m) Steel Bed
- 18 ft. (5.5m) Wood Bed
- 18 ft. (5.5 m) Steel Bed

### Hoist, Rope and Hook



9/16 in. (14.3mm) rotation resistant rope

### Hydraulics



- 3 Section Vane Pump, CCW or CW
- FBS – Front Bumper Stabilizer
  - Hydraulic Oil cooler
  - Hose Reel

### Operator Aids



- 4-Function radio remote crane control system
- Hycas System available with Radio Load Cell for Jib overload protection only

## Options

### Jib

#### 2250C

- 1 section fixed jib 20 ft (6m)
- 2 section telescopic jib 20 ft - 34 ft (6m -10.4m)

#### 2262 C

- 1 section fixed jib 24 ft (7.3m)
- 2 section telescopic jib 24 ft - 42 ft (7.3m - 12.8m)

#### 2277C

- 1 section fixed jib 29 ft (8.8m)
- 2 section telescopic jib 29 ft - 52 ft (8.8m - 15.9m)

#### 2281C

- 1 section jib 24 ft. (3m)
- 2 section telescopic jib 24 ft - 41 ft (7.3m - 12.5m)

### Max. Tip Height with Extension



#### 2250C

- Max. tip height with extension: 95 ft. (28,9m)
- Max Tip height with extension retracted: 82 ft. (24,9m)

#### 2262C

- Max. tip height with extension: 114' (34,7 m)
- Max Tip height with extension retracted: 97' (29,6m)

#### 2277C

- Max. tip height with extension: 139' (42,4 m)
- Max Tip height with extension retracted: 116' (35,4 m)

#### 2281C

- Max. tip height with extension: 132 ft. (40,2m)
- Max Tip height with extension retracted: 116 ft. (35,4m)

### 2-Person Baskets



2-person man basket - steel

- 2 Person Gravity Level with Friction Brake Steel (600 lbs. cap.)
- 2 Person Steel Gravity Rotating Manbasket (1,000 lbs. cap.) Main Boom only

### Tool Box & Bulkhead

- 24 in. L x 18 in. W x 18 in. H - Steel (610mm L x 457mm W x 457mm H)
- 48 in. L x 24 in. W x 24 in. H - Aluminum (1219mm L x 610mm W x 610mm H)
- Bulkhead: 24 in. (610mm)

**Manitex**



# CM220

22-ton (20.0 mt) TELESCOPIC CRANE  
CM220 SERIES PRODUCT GUIDE

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