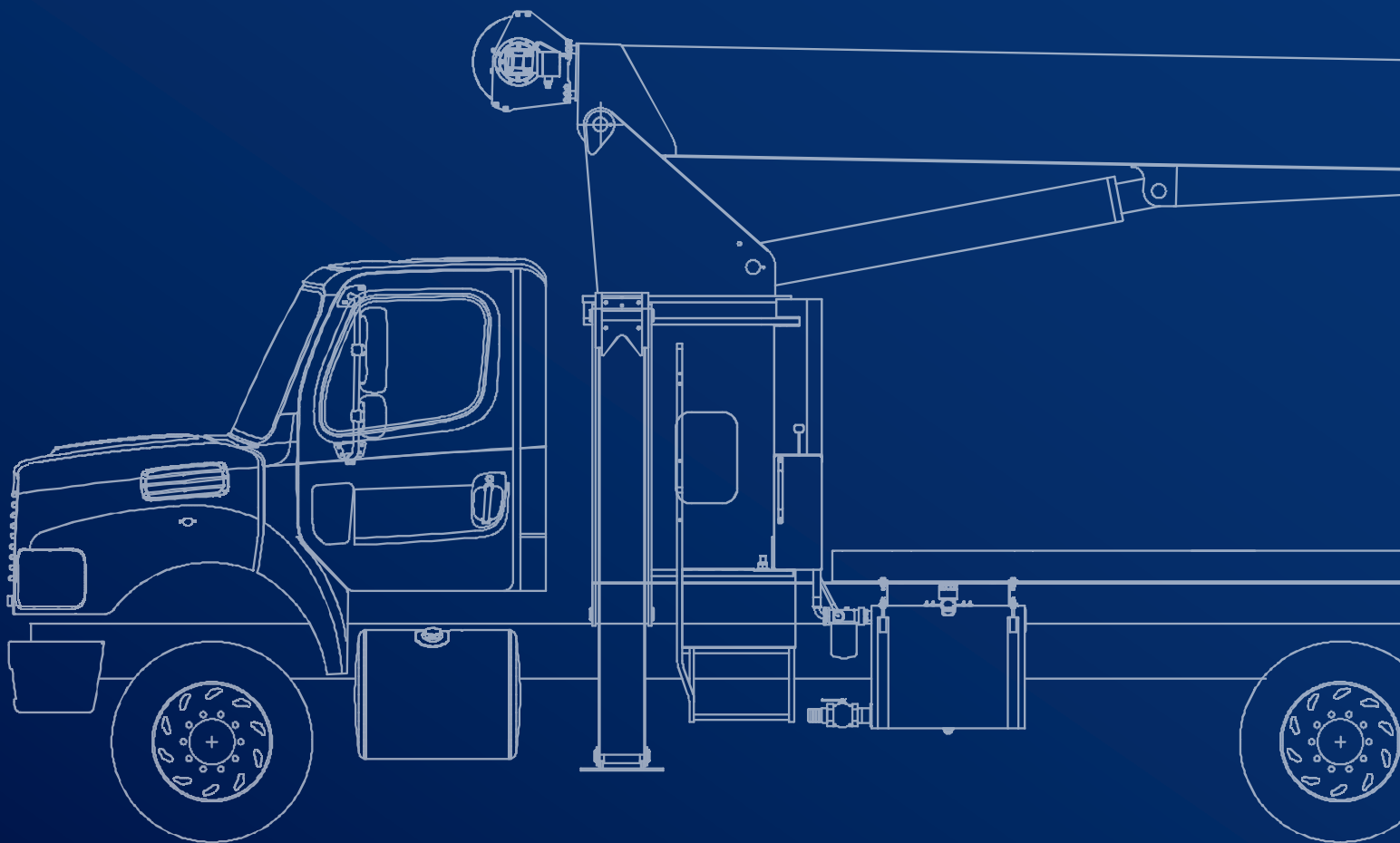


# CM280

## SERIES PRODUCT GUIDE

28 TON (25.5 MT) TELESCOPIC CRANE

***Manitex***





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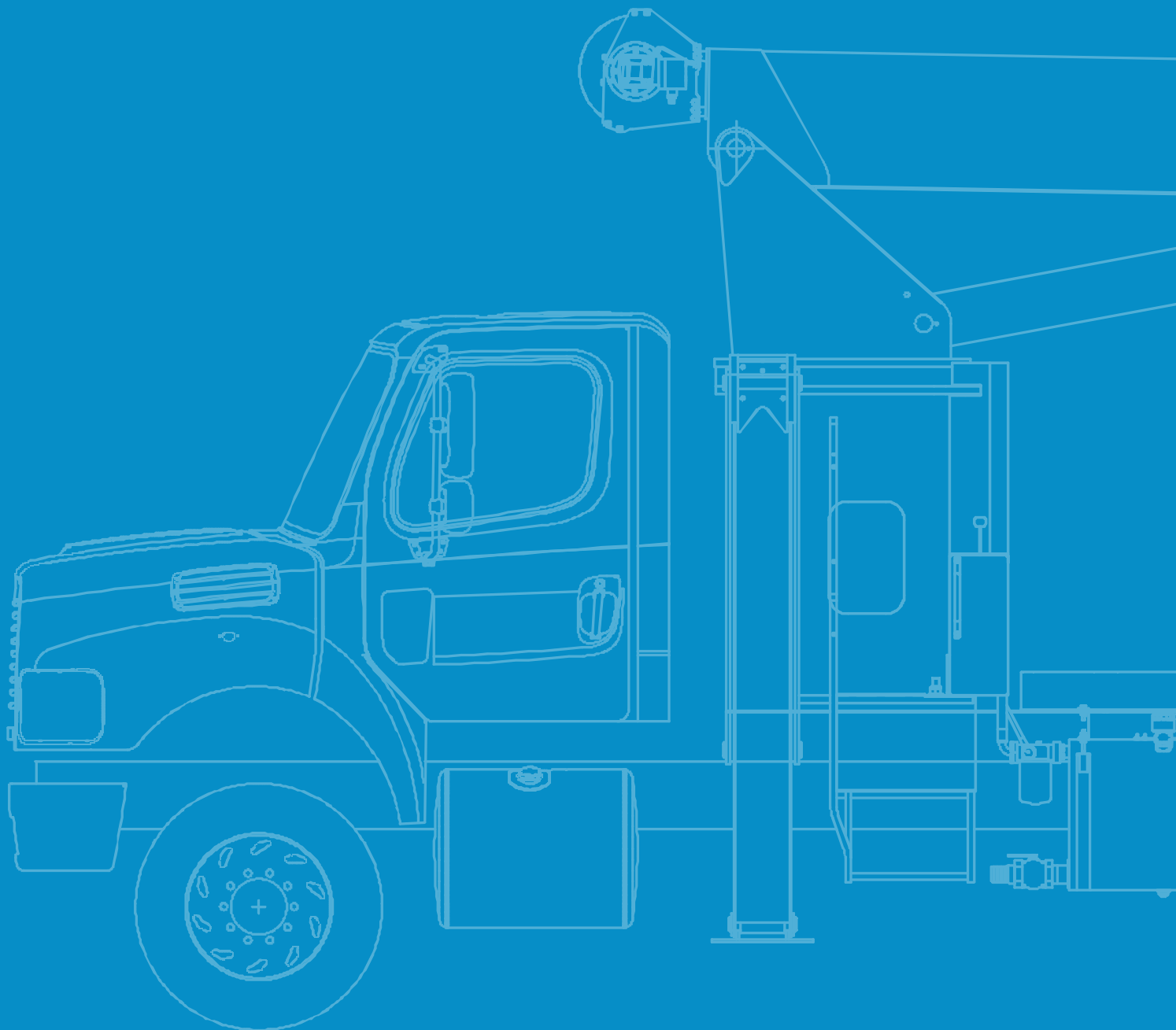
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# Key

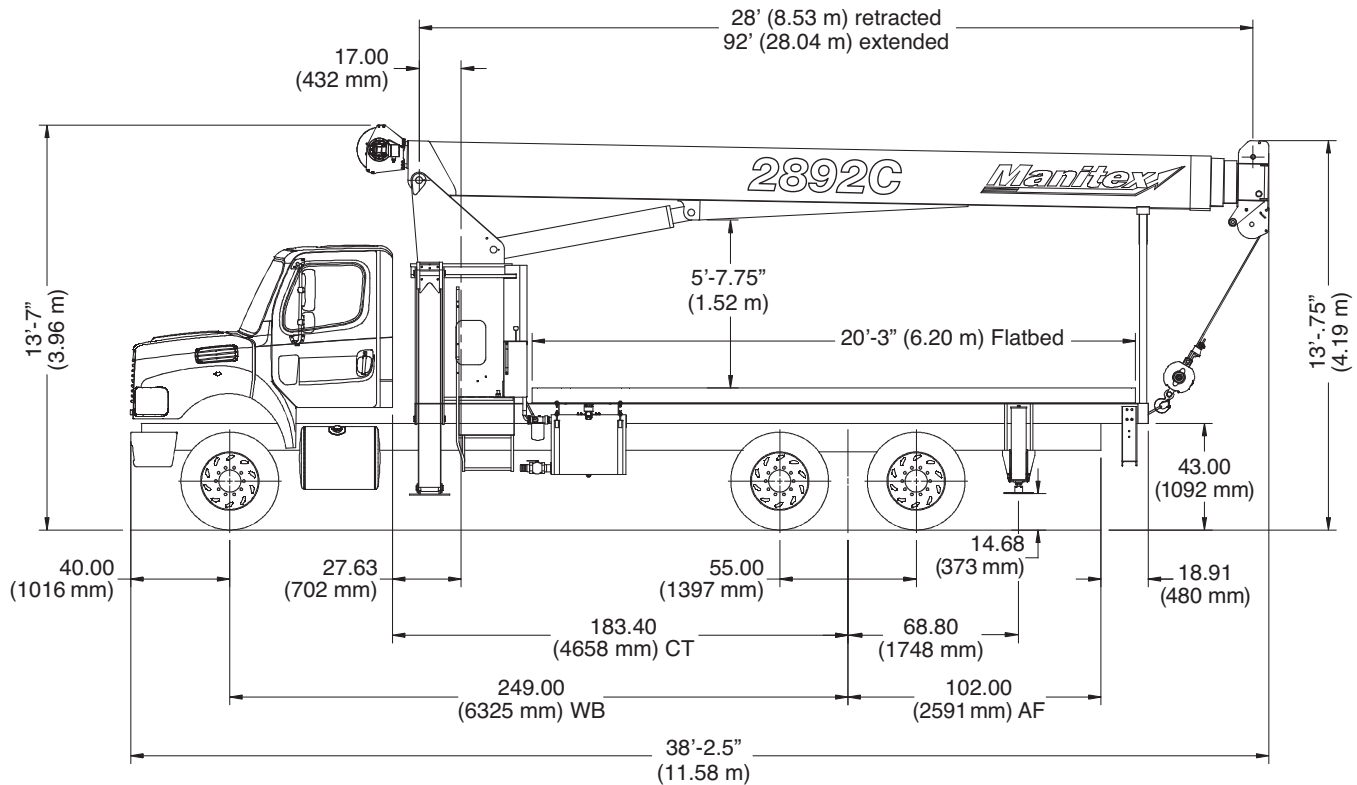
	Operator aids		Radio remote control
	Cab		Hook block
	Heating / Air conditioning		Distance from hook to head sheave pin
	Controls		Hook and ball
	Hoist speed		Hydraulics
	1 - Main hoist 2 - Auxiliary winch 3 - Recovery winch		Boom elevation angle
	Rope length		Max. boom length with extension
	Rope – Standard / optional		Boom with extension retracted
	Rope diameter		Boom angle
	Permissible line pull		Telescoping mode
	Maximum line pull		Working radius
	Slewing / Allowable slewing range		Boom length
	Slewing gears		Hydraulic actuated boom
	Slewing brake		Full power mechanical synchronized
	Outriggers / Lifting on outriggers		Boom head / Hook block dimension
	A-Frame outriggers		Main boom with auxiliary head
	2-person man basket		Tip height
	Counterweight		

**CM 280**



# Chassis Data

## A-frame Outriggers – Dimensions



### Chassis Data

Model	2892C
Wheelbase (WB)	249 in. (6,325 mm)
Cab to tandem (CT)	183.40 in. (4,658 mm)
After frame (AF)	102 in. (2,591 mm)
Nominal frame width	34 in. (864 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.

### 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)
Min. truck axle weight – Front**	8,500 lbs (3,856 kg)
Min. truck axle weight – Rear**	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.

### Crane Weight

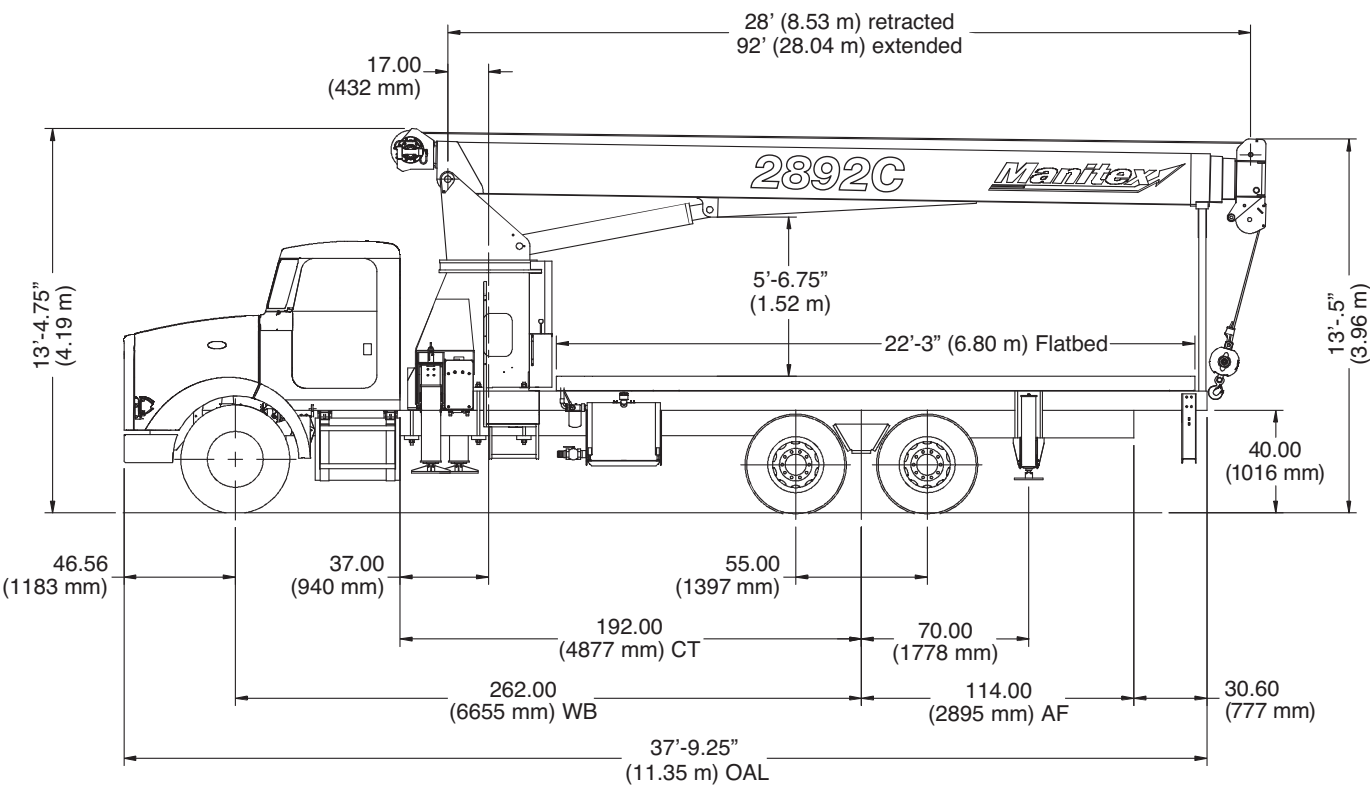
Model	2892C
Total crane standard A-Frame outriggers	20,465 lb (9,376 kg)
Flatbed 20 ft (6.1 m)	1,720 lbs (780 kg)
Flatbed 22 ft (6.7 m)	1,890 lbs (857 kg)
Tele jib	1,220 lbs (553 kg)
Fixed jib	832 lbs (377 kg)

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.

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

# Chassis Data

## Out and Down Outriggers – Dimensions



Chassis Data	
Model	2892C
Wheelbase (WB)	262 in. (6,655 mm)
Cab to tandem (CT)	192 in. (4,877 mm)
After frame (AF)	114 in. (2,895 mm)
Nominal frame width	34 in. (864 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.

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)
Min. truck axle weight – Front**	8,500 lbs (3,856 kg)
Min. truck axle weight – Rear**	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.

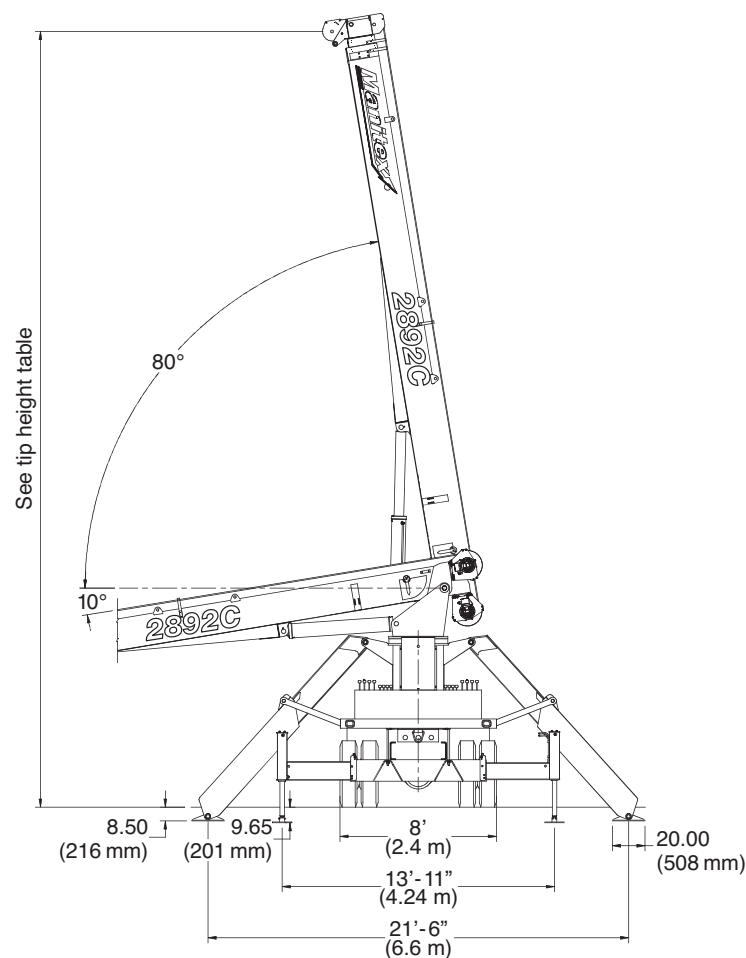
Crane Weight	
Model	2892C
Total crane	
Out and Down outriggers	21,625 lbs (9,902 kg)
Flatbed 20 ft (6.1 m)	1,720 lbs (780 kg)
Flatbed 22 ft (6.7 m)	1,890 lbs (857 kg)
Tele jib	1,220 lbs (553 kg)
Fixed jib	832 lbs (377 kg)

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.

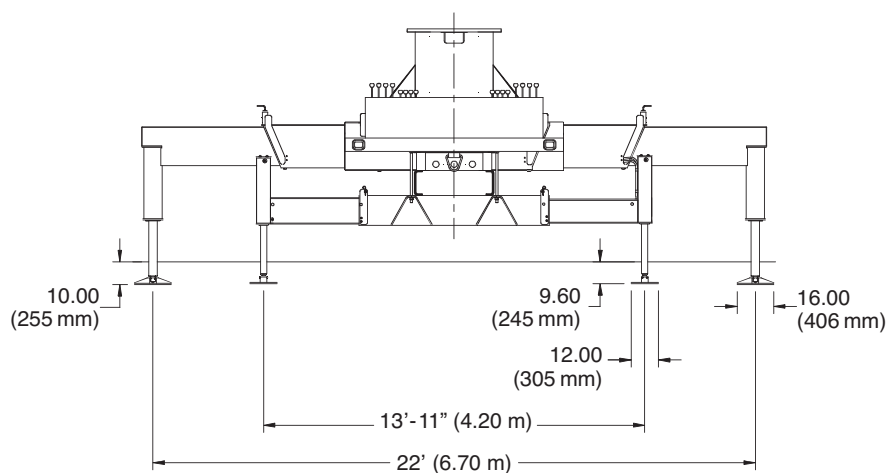
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# Outrigger Extension

## Rear Dimensions for A-Frame Outriggers



## Rear Dimensions for Out and Down Outriggers

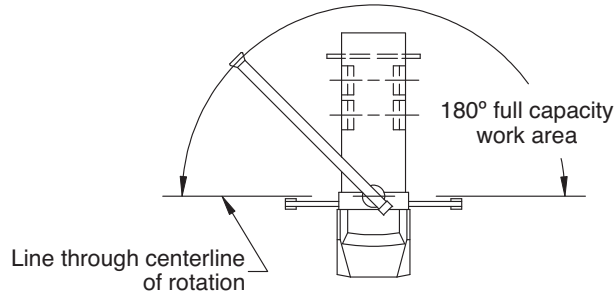


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# Area of Operation · Reeving Diagram

## Area of Operation



## Deductions from rated loads for load handling devices supplied by Manitex

Auxiliary block	50 lbs (22.7 kg)
Auxiliary sheave	50 lbs (22.7 kg)
Overhaul ball	See overhaul ball mfgr. nameplate
Load blocks	See block mfgr. nameplate
Hose reel	260 lbs (117.9 kg)
Swing-around jib	See load chart

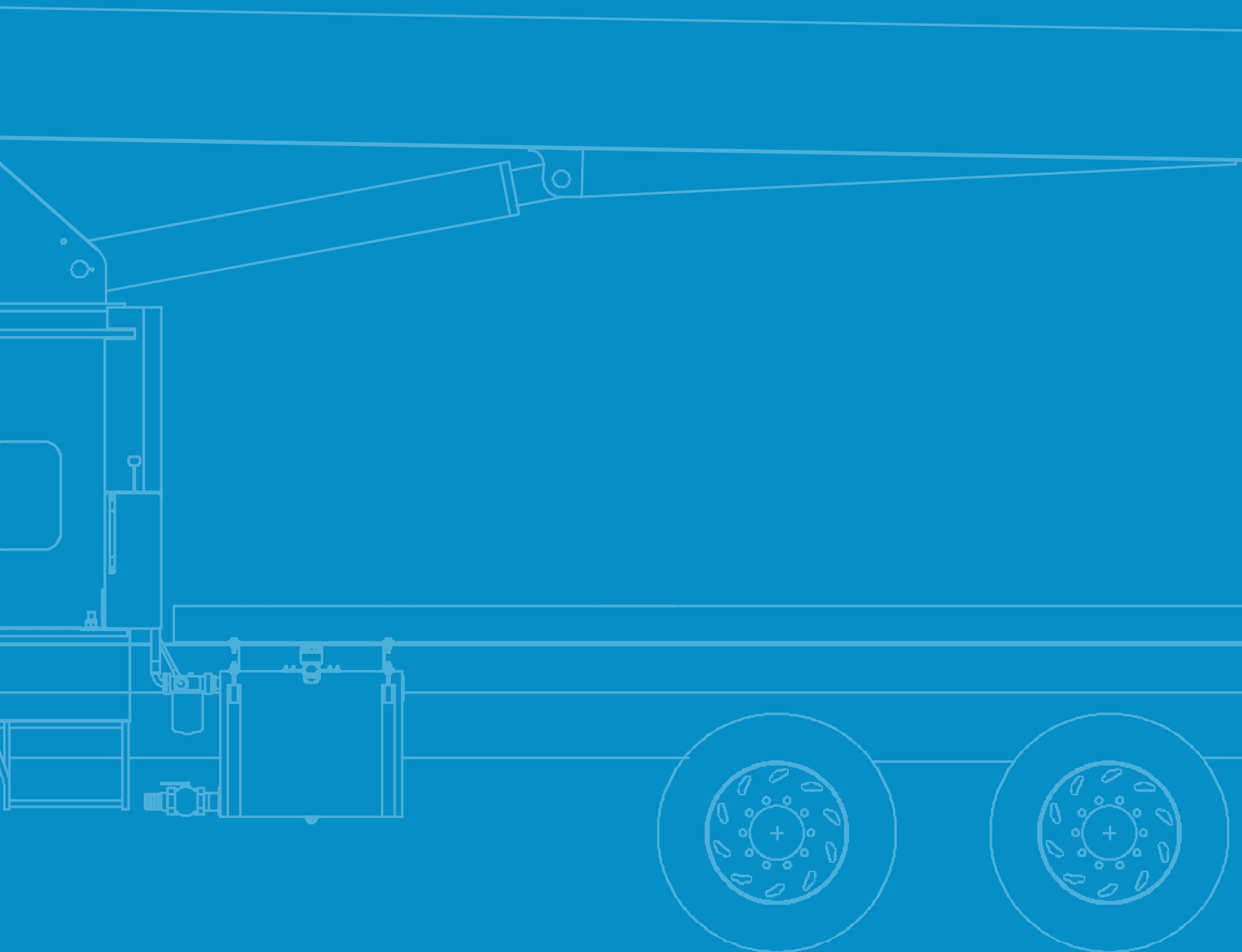
**WARNING:** Lifting off the main boom point while the jib is erected is not intended nor approved.

## Reeving Diagram

Allowable Line Pull							<b>WARNING</b>  <b>Anti-Two-Block System must be in good operating condition before operating crane.</b>  <b>Refer to the owner's manual.</b>  <b>Keep at least 3 wraps of load line on the drum at all times.</b>
1 part line	2 part line	3 part line	4 part line	5 part line	6 part line	7 part line	
8,500 lbs	17,000 lbs	25,500 lbs	34,000 lbs	42,500 lbs	51,000 lbs	56,000 lbs	9/16" 6 x 25 IWRC (3.5 : 1 SF) 29,750 lbs min. breaking strength
7,700 lbs	15,400 lbs	23,100 lbs	30,800 lbs	38,500 lbs	46,200 lbs	53,900 lbs	9/16" rot resistant (5.0 : 1 SF) 38,500 lbs min. breaking strength

## Notes

**CM 280**











# Load Chart

# Main Boom Jib

## A-Frame Outriggers

28 ft – 92 ft – 4 section Jib 26 ft – 46 ft 180° non-continuous 22 ft (6.7 m) Outriggers 13.8 ft (4.2 m) Stabilizers

																							
28 ft			47 ft (A)			62 ft (B)			77 ft (C)			92 ft (D)			Fixed Jib			Telescopic Jib					
															26 ft			26 ft			46 ft		
ft	°	lbs	°	lbs	°	lbs	°	lbs	°	lbs	°	lbs	ft	°	lbs	°	lbs	°	lbs	ft	°	lbs	
5	79	56,000	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	
8	73	40,670	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	
10	69	34,520	78	22,500	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	
12	64	30,130	76	22,500	80	22,500	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	
15	57	25,430	72	22,310	77	20,960	80	15,920	-	-	-	-	15	-	-	-	-	-	-	-	-	-	
20	43	20,130	65	17,540	72	16,290	77	13,540	79	10,700	-	-	20	-	-	-	-	-	-	-	-	-	
25	22	15,630	58	14,500	67	13,340	73	11,710	76	9,290	-	-	25	79	5,600	79	5,400	-	-	-	-	-	
30	-	-	50	12,120	62	11,290	69	10,160	73	8,330	-	-	30	77	5,300	77	5,100	79	3,400	-	-	-	
35	-	-	41	9,040	57	9,200	65	8,830	70	7,320	-	-	35	75	4,960	75	4,700	77	3,300	-	-	-	
40	-	-	30	6,990	51	7,150	60	7,240	66	6,460	-	-	40	72	4,490	72	4,230	76	3,200	-	-	-	
45	-	-	11	5,510	44	5,700	56	5,780	63	5,730	-	-	45	70	4,080	70	3,820	74	3,040	-	-	-	
50	-	-	-	-	36	4,600	51	4,690	59	4,740	-	-	50	67	3,710	67	3,440	72	2,800	-	-	-	
55	-	-	-	-	27	3,750	46	3,840	55	3,890	-	-	55	65	3,380	65	3,100	69	2,630	-	-	-	
60	-	-	-	-	10	3,050	40	3,160	51	3,210	-	-	60	62	3,080	62	2,810	67	2,480	-	-	-	
65	-	-	-	-	-	-	33	2,610	47	2,660	-	-	65	59	2,790	59	2,500	65	2,310	-	-	-	
70	-	-	-	-	-	-	24	2,140	42	2,200	-	-	70	56	2,320	56	2,030	63	2,110	-	-	-	
75	-	-	-	-	-	-	9	1,730	37	1,800	-	-	75	53	1,930	53	1,640	60	1,940	-	-	-	
80	-	-	-	-	-	-	-	-	31	1,470	-	-	80	50	1,590	50	1,300	58	1,760	-	-	-	
85	-	-	-	-	-	-	-	-	23	1,170	-	-	85	46	1,300	46	1,010	55	1,460	-	-	-	
90	-	-	-	-	-	-	-	-	9	910	-	-	90	42	1,040	42	750	52	1,200	-	-	-	
95	-	-	-	-	-	-	-	-	-	-	-	-	95	38	810	38	520	49	970	-	-	-	
100	-	-	-	-	-	-	-	-	-	-	-	-	100	-	-	-	-	46	770	-	-	-	
105	-	-	-	-	-	-	-	-	-	-	-	-	105	-	-	-	-	43	580	-	-	-	
110	-	-	-	-	-	-	-	-	-	-	-	-	110	-	-	-	-	-	-	-	-	-	

## Deductions from main boom capacities for stowed jibs

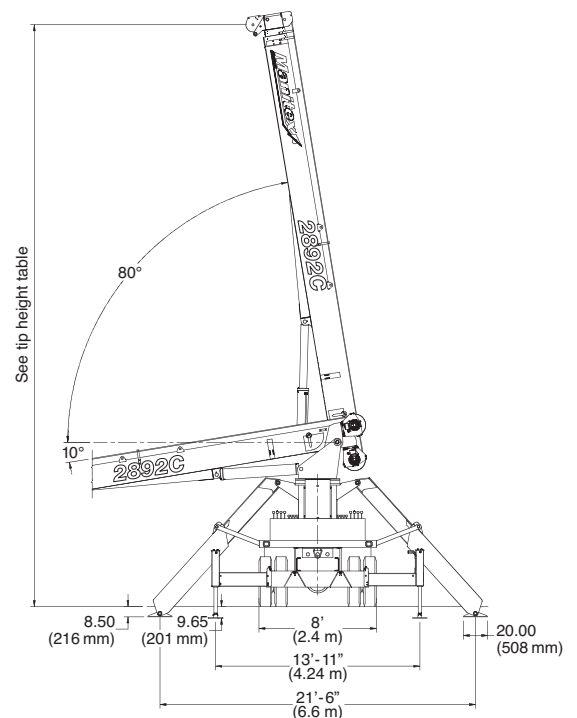
SFJ	460 lbs	270 lbs	210 lbs	170 lbs	140 lbs
STJ	690 lbs	410 lbs	310 lbs	250 lbs	210 lbs

SFJ = Stowed fixed jib · STJ = Stowed telescopic jib

↑	Structural
↓	Stability

### NOTES:

All loads rated at 180° pick  
 Loads based on crane on fully extended outriggers and stabilizers  
 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 stability rating

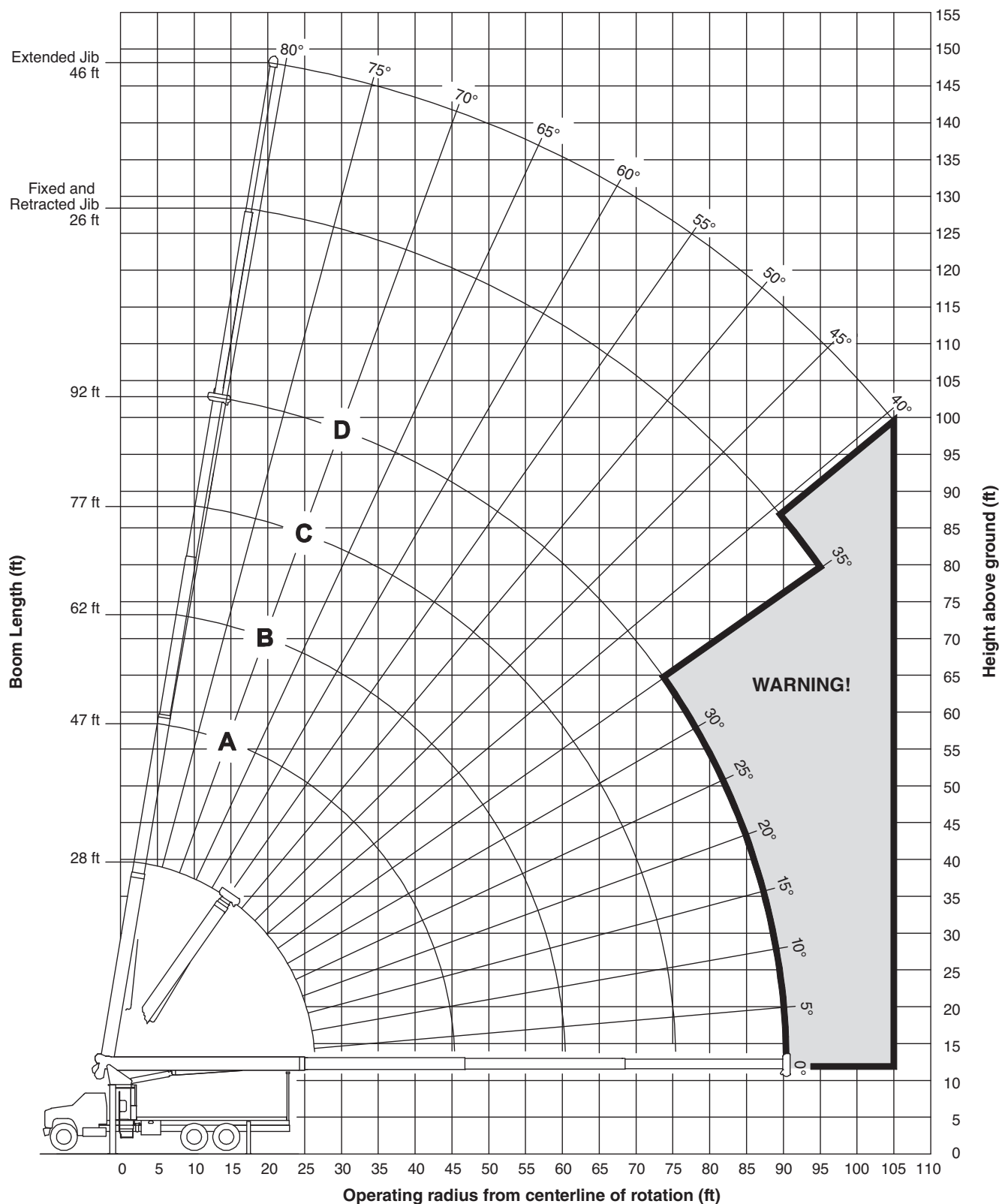


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# Boom Diagram

# Main Boom Jib

## A-Frame Outriggers



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# Load Chart

# Main Boom Jib

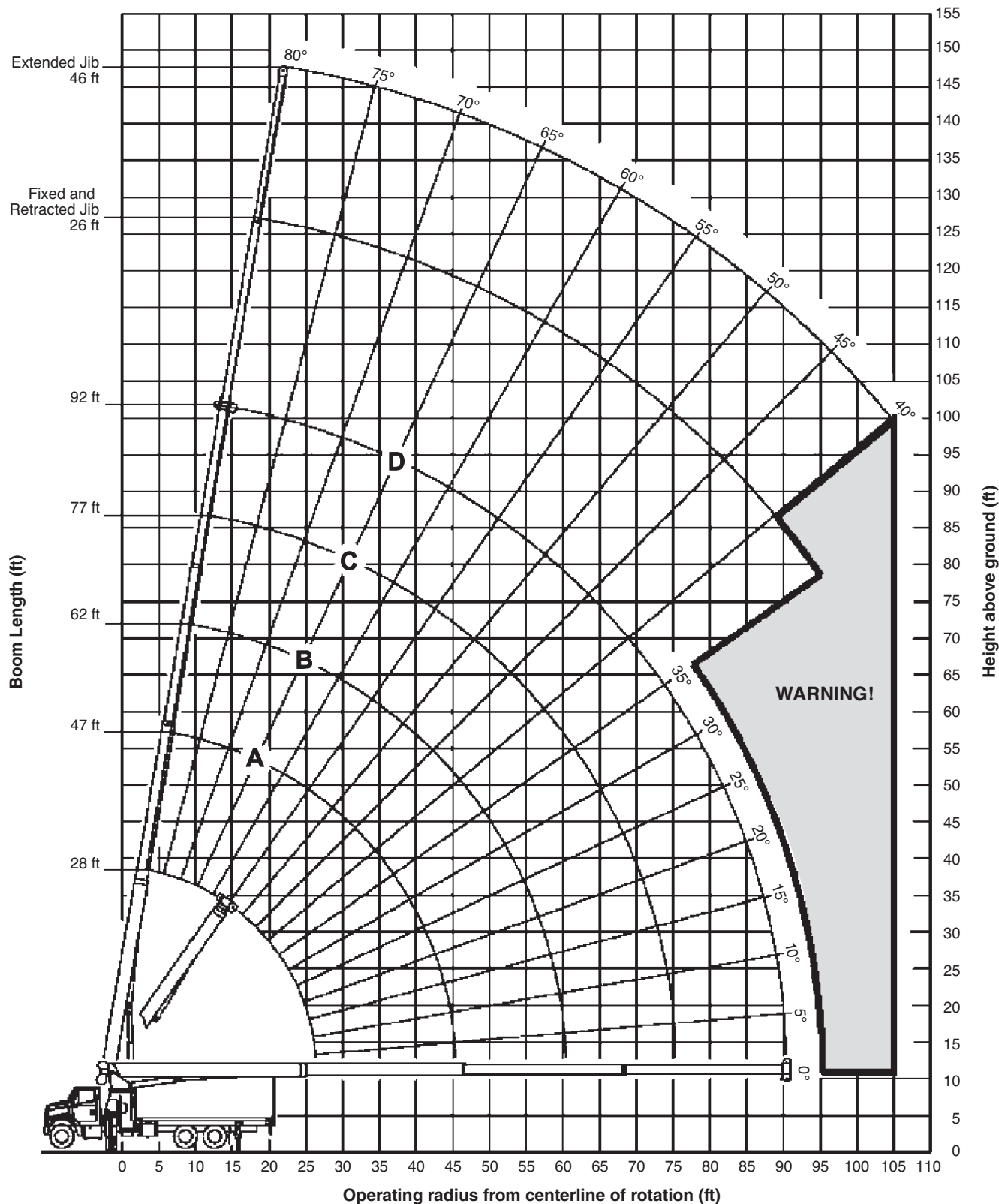
## Out and Down Outriggers

28 ft – 92 ft – 4 section Jib 26 ft – 46 ft						180° non-continuous		22 ft (6.7m) Outriggers		13.8 ft (4.2 m) Stabilizers	

# Boom Diagram

# Main Boom Jib

## Out and Down Outriggers



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

# LMI Operating Codes

LMI Operating Codes		
Code	Crane Configuration	Outrigger Configuration
1	Main boom	Fully extended
2	Fixed jib	Fully extended
3	Telescopic jib – Retracted	Fully extended
4	Telescopic jib – Extended	Fully extended
5	Personnel lifting platform on main boom	Fully extended
6	Personnel lifting platform on fixed jib	Fully extended
7	Personnel lifting platform on telescopic jib – Retracted	Fully extended
8	Personnel lifting platform on telescopic jib – Extended	Fully extended
9	Main boom	Intermediate
10	Fixed jib	Intermediate
11	Telescopic jib – Retracted	Intermediate
12	Telescopic jib – Extended	Intermediate
13	Main boom	Fully retracted

## WARNING

1. The operator must read and understand the owner's manual before operating the crane.
2. Positioning or operation of crane beyond areas shown on these charts is not intended or approved except where specified in owner's manual.
3. Loaded boom angles at specified boom lengths give only an approximation of the operating radius. The boom angle before loading should be greater to account for deflections. Do not exceed the operating radius for rated loads.
4. The operating radius shown in the jib rating chart is for fully extended boom only. When boom is not fully extended, use only loaded boom angle to determine load rating of jib.
5. For boom angles not shown on jib load rating chart, use rating of next lower boom angle.
6. For boom lengths not shown, use rating of next shorter or longer boom length, whichever is less. For radii not shown, use rating of next longer radius.
7. Crane load ratings on outriggers are based on freely suspended loads with the machine leveled and standing on a firm uniform supporting surface. No attempt shall be made to move a load horizontally on the ground in any direction.
8. Practical working loads depend on supporting surface, wind, and other factors affecting stability such as hazardous surroundings, experience of personnel, and proper handling, all of which must be taken into account by the operator.
9. The maximum load which may be telescoped is limited by hydraulic pressure, boom angle, and boom lubrication. It is safe to attempt to telescope any load within the limits of the load rating chart.
10. Lifting off the main boom point while the swing around jib is erected is not intended or approved.
11. 360° area of operation is only valid with the use of a front bumper stabilizer.

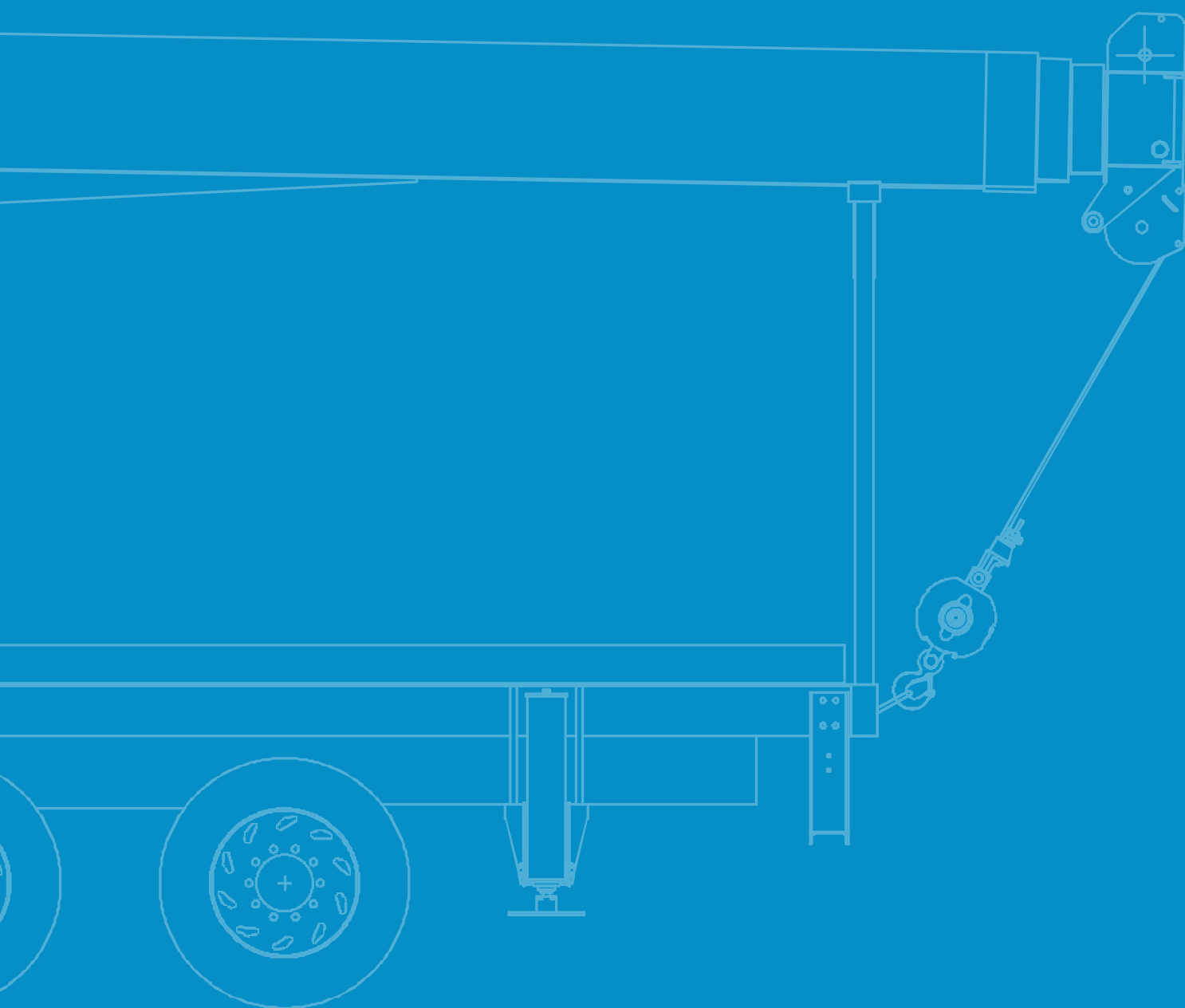
## DEFINITIONS

1. Operating radius is the horizontal distance from the axis of rotation to the center of the vertical hoist line or tackle with load applied.
2. Loaded boom angle as shown in the column head, is the included angle between the horizontal and longitudinal axes of the boom base after lifting rated load at rated radius.

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CM 280



# Technical Description

## Boom



Boom length: Proportional boom  
• 4-Section telescopic boom 91.9 ft (28 m)  
3-sheave quick reeve boom point



2892C:  
Boom max. tip height: 101.7 ft (31 m)  
Boom min. tip height: 39.3 ft (12 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, to outer edge of pad: 23.2 ft (7.07 m)



Outriggers Out-Down  
• Out and Down 22 ft (6.7 m)



Stabilizer Out-Down, center to center  
• Out and down 13.8 ft (4.2 m)

## 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: 0.5625 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 and ball:  
7 t (6.4 mt) capacity hook with heavy-duty swivel and weight is provided for single line operation

# Technical Description

## 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 l)

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)

## Operator Aids



LMI with crane functions cut-offs for overload protection

- External wired anti-two block system

## 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

## 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

# Technical Description – Options

## Flatbeds

- 22 ft (6.7 m) Wood bed
- 22 ft (6.7 m) Steel bed
- 22 ft (6.7 m) Heavy hauler 0.1875 in. – Steel
- 20 ft (6.0 m) Wood bed
- 20 ft (6.0 m) Steel bed

## Jib

- 2892C:
- 1 section fixed jib 26 ft (7.9 m)
  - 2 section telescopic jib 26 ft - 46 ft (7.9 m - 14 m)



- 2892C:
- Max. tip height with extension 148.3 ft (45.2 m)
  - Max. tip height with extension retracted 128.6 ft (39.2 m)

## Hoist, Rope and Hook



0.5625 in. (14.3 mm) rotation resistant rope

# Technical Description – Options

## Hydraulics



3-section vane pump, CCW or CW

- FBS – Front Bumper Stabilizer
- Hydraulic oil cooler
- Hose reel

## 2-Person Basket



2-person man basket – Steel

- Non-rotating (600 lbs capacity) – Steel
- 2 person gravity level with hydraulic brake steel (1200 lbs capacity)
- 2 person quick attached aluminum rotating basket (1200 lbs capacity) – Main boom

## Radio Remote



4-function radio remote crane control system

Hycas system available with radio load cell for jib overload protection only

## Tool Boxes and Bulkhead

Tool Boxes

- 24 in. L x 18 in. W x 18 in. H ( 610 mm L x 457 mm W x 457 mm H) – Steel
- 48 in. L x 24 in. W x 24 in. H (1,219 mm L x 610 mm W x 610 mm H) – Aluminium

Bulkhead:

- 24 in. (610 mm)

## Notes

## Notes

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

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Reaching new heights

