

**Manitex**



**CM280**

**28-ton (25.5 mt) TELESCOPIC CRANE**  
**CM280 SERIES PRODUCT GUIDE**



















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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 2892C SERIES TELESCOPIC CRANE

### Maximize use and value

The CM280 series strikes the perfect balance between the three things customers tell us they care about most: features, cost and ease of use.

The CM280 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:

- 28 –ton Capacity at 5 ft. radius
- 92 ft. 4-section proportional boom
- Optional 26 ft. fixed jib
- Optional 26 ft./46 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

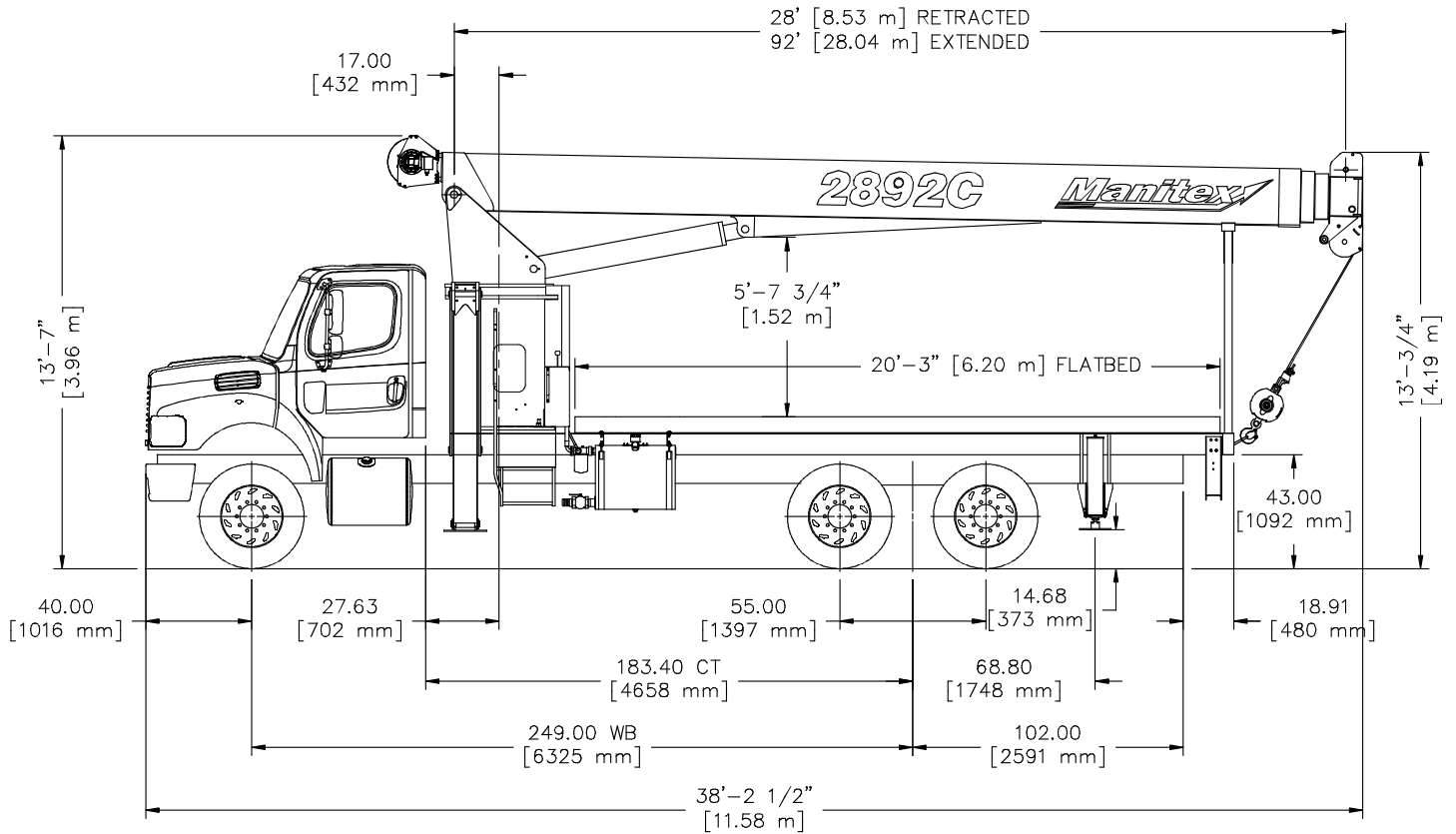
The versatile CM280 series, designed to be used with a commercial carrier, helps both owners and operators make the most of their investment.

- 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.



# 2892C A-FRAME OUTRIGGERS

## 2892C Model Dimensions



### CRANE WEIGHT

Total Crane standard A-Frame outriggers	20,465 lb ( 9,376 kg)
Flatbed 20'	1,720 lb (780 kg)
Flatbed 22'	1,890 lb (857 kg)
Tele Jib	1,220 lb (553 kg)
Fixed Jib	832 lb (377 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

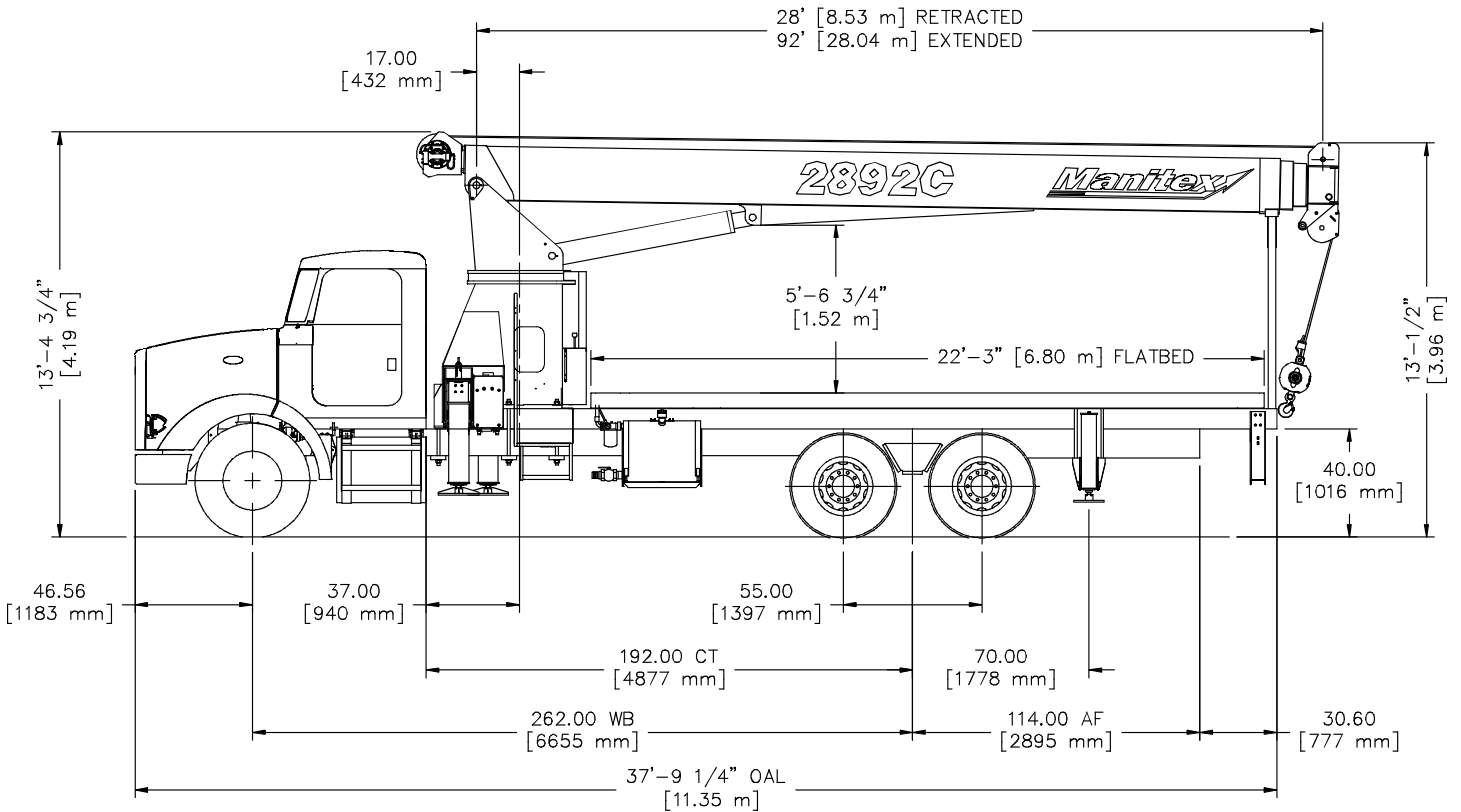
Wheel Base (WB)	249 in. (6,3mm)
Cab to Tandem (CT)	180 in. (4,5 mm)
After Frame (AF)	102 in. (2,6 mm)
Nominal frame width	34 in. (.86 mm)
Frame Section Modulus at 180/360° area of operation*	28 in. <sup>3</sup> (491.6 cm <sup>3</sup> ) 110,000 psi (758,422 kPa)

\* 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.

# 2892C OUT & DOWN OUTRIGGERS

## 2892C Model Dimensions



### CRANE WEIGHT

Total Crane Out & Down outriggers	21,625 lb (9,902 kg)
Flatbed 20'	1,720 lb (780 kg)
Flatbed 22'	1,890 lb (857 kg)
Tele Jib	1,220 lb (553 kg)
Fixed Jib	832 lb (377 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)	262 in. (6,6mm)
Cab to Tandem (CT)	192 in. (4,8 mm)
After Frame (AF)	114 in. (2,8 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.

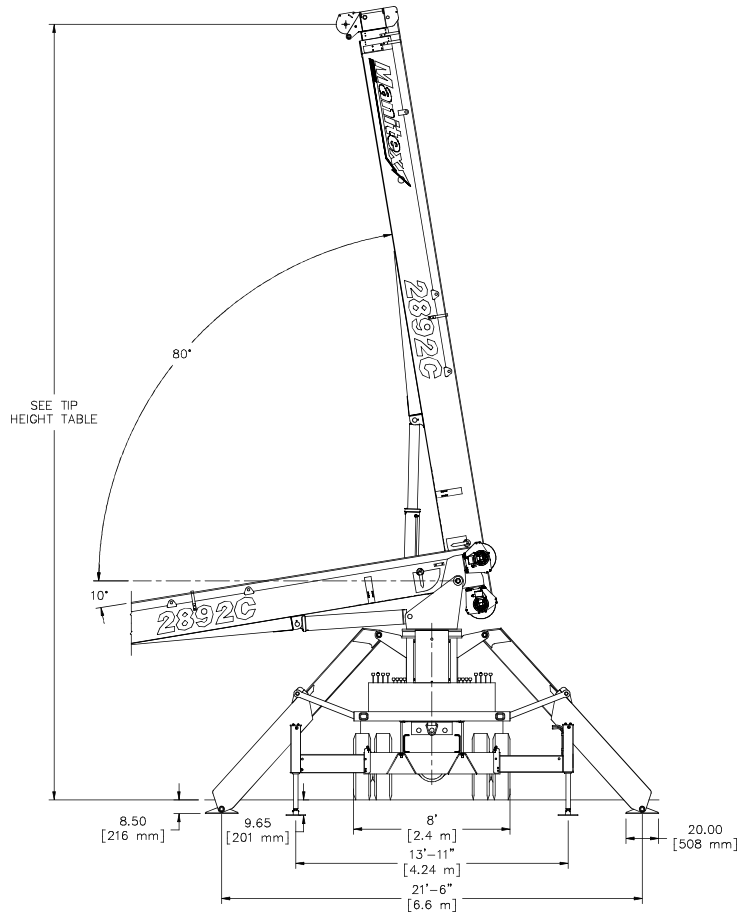
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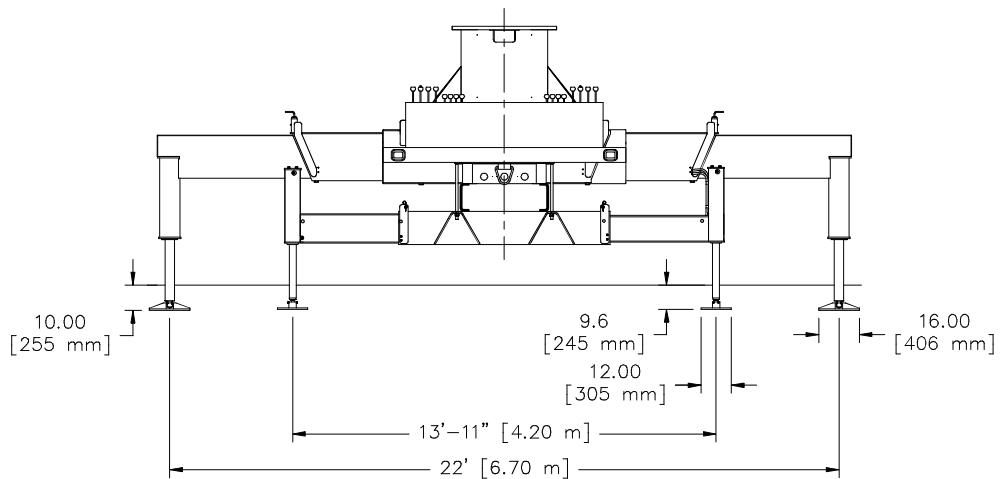


# 2892C OUTRIGGER REAR

## 2892C Rear Dimensions for A-Frame Outriggers



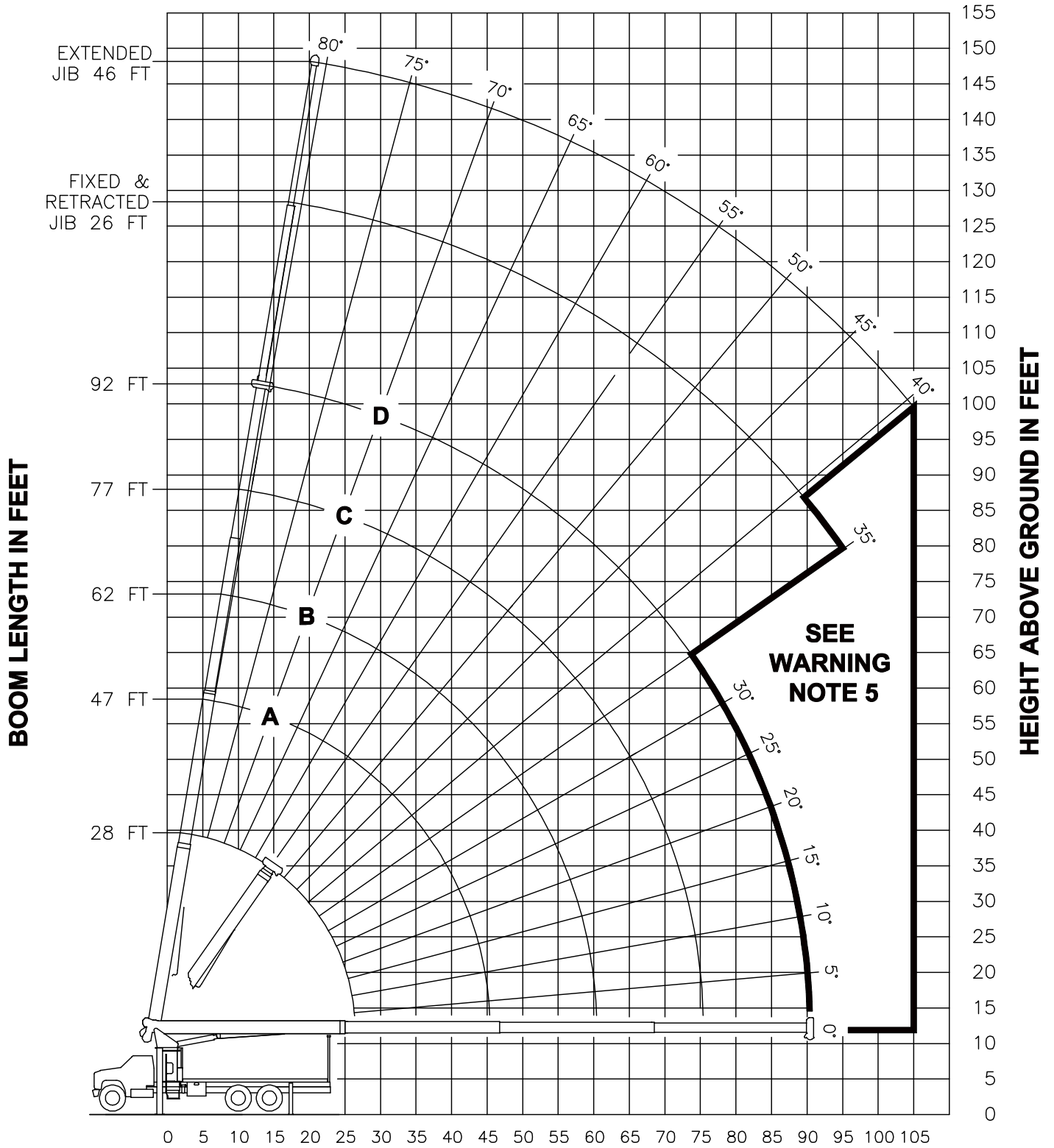
## 2892C Rear Dimensions for Out & Down Outriggers



# 2892C 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.





# 2892C LOAD CHART: Main Boom

A-Frame Outriggers: Lifting Capacities  
4-section Boom 28 ft. - 92 ft.



Outriggers  
22 ft. (100%)



Stabilizers  
13 ft. 11 in. (100%)

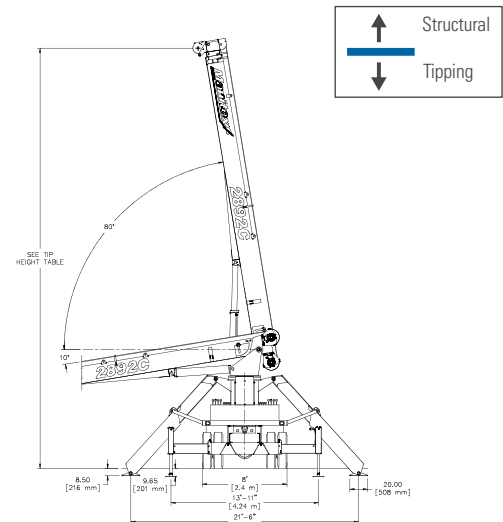


180° Non-continuous

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

**DEDUCTIONS FROM MAIN BOOM CAPACITIES FOR STOWED JIB - FJ = Fixed Jib TJ = Telescopic Jib**

<b>FJ</b>	460 lbs.	270 lbs.	210 lbs.	170 lbs.	140 lbs.
<b>TJ</b>	690 lbs.	410 lbs.	310 lbs.	250 lbs.	210 lbs.



**NOTES:**

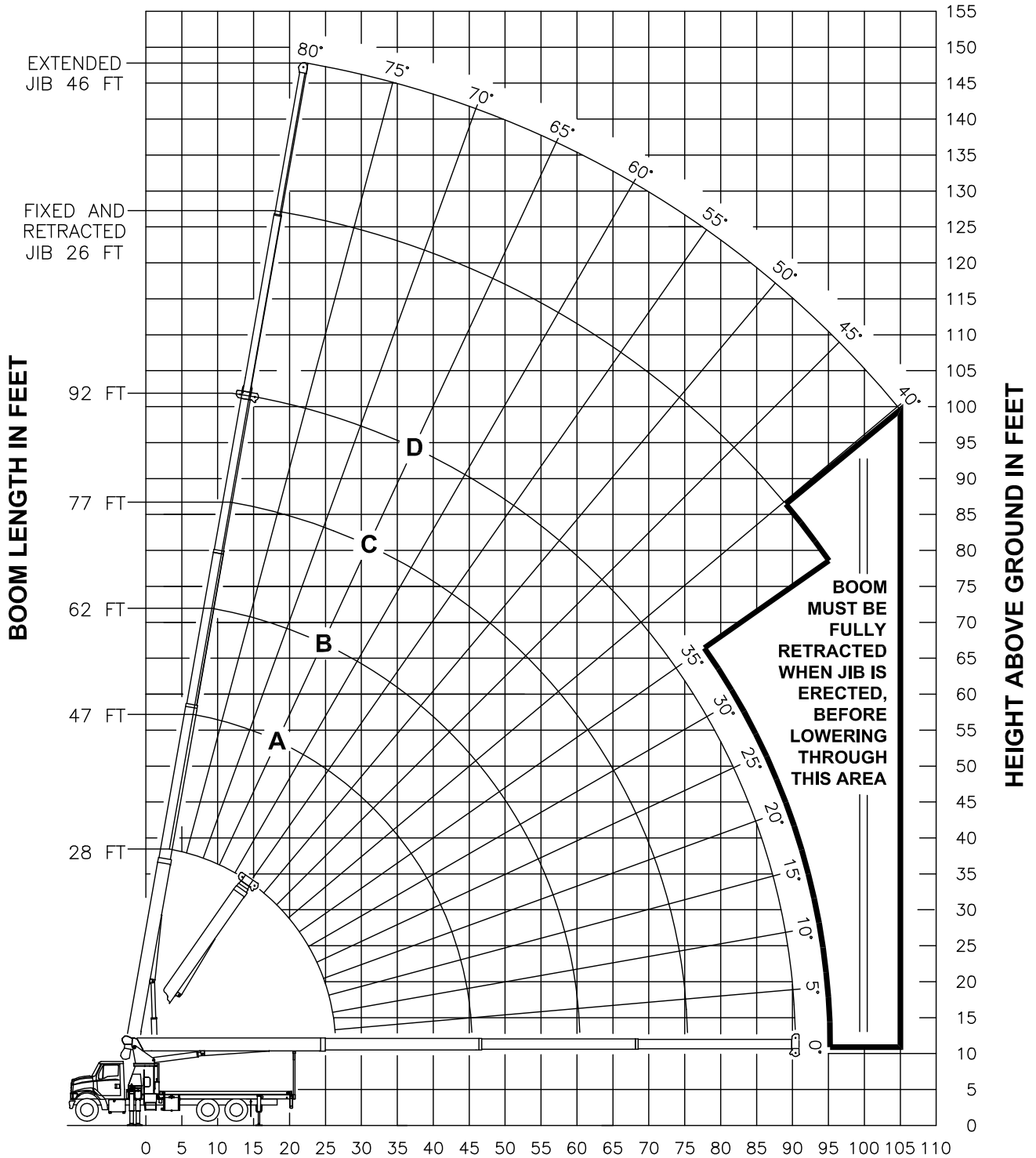
- All loads rated at 180° pick
- Loads above heavy line are based on structural rating
- All "on outriggers" loads are based on 85% tipping
- Loads based on crane on fully extended outriggers and stabilizers
- Loads below heavy line are based on tipping rating

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

# 2892C BOOM DIAGRAM

Out & Down Outriggers

## RANGE DIAGRAM - FULL SPREAD CONFIGURATION -



OPERATING RADIUS FROM CENTERLINE OF ROTATION IN FEET

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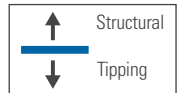


# 2892C LOAD CHART: Main Boom

Out & Down Outriggers Lifting Capacities  
4-section Boom 28 ft. - 92 ft.

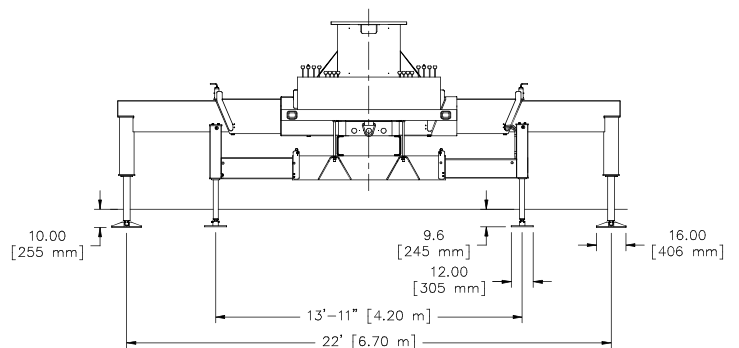
Outriggers 22 ft. (100%) Stabilizers 13 ft. 11 in. (100%) 180° Non-continuous

MAIN BOOM LMI CODE 1											JIB LOAD CAPACITIES					
28 ft.		47 ft. (A)		62 ft. (B)		77 ft. (C)		92 ft. (D)		26 ft. Fixed Jib		26 ft. Tele. Jib		46 ft. Tele. Jib		
∠°	Loaded Boom Angle (deg)	Load Capacity (lbs.)	Loaded Boom Angle (deg)	Load Capacity (lbs.)	Loaded Boom Angle (deg)	Load Capacity (lbs.)	Loaded Boom Angle (deg)	Load Capacity (lbs.)	Loaded Boom Angle (deg)	Load Capacity (lbs.)	Loaded Boom Angle (deg)	Load Capacity (lbs.) Code 2	Loaded Boom Angle (deg)	Load Capacity (lbs.) Code 3	Loaded Boom Angle (deg)	Load Capacity (lbs.) Code 4
5	79	56,000														
8	73	40,670														
10	69	34,520	78	22,500												
12	64	30,130	76	22,500	80	22,500										
15	57	25,430	72	22,310	77	20,960	80	15,920								
20	43	20,130	65	17,540	72	16,290	77	13,540	79	10,700						
25	22	15,630	58	14,500	67	13,340	73	11,710	76	9,290	79	5,600	79	5,400		
30			50	12,120	62	11,290	69	10,160	73	8,330	77	5,300	77	5,100	79	3,400
35			41	9,040	57	9,200	65	8,830	70	7,320	75	4,960	75	4,700	77	3,300
40			30	6,990	51	7,150	60	7,240	67	6,460	72	4,490	72	4,230	76	3,200
45			11	5,510	44	5,700	56	5,780	63	5,730	70	4,080	70	3,820	74	3,040
50					36	4,600	51	4,690	59	4,740	67	3,710	67	3,440	72	2,800
55					27	3,750	46	3,840	55	3,890	65	3,380	65	3,100	69	2,630
60					10	3,050	40	3,160	51	3,210	62	3,080	62	2,810	67	2,480
65							33	2,610	47	2,660	59	2,790	59	2,500	65	2,310
70							24	2,140	42	2,200	56	2,320	56	2,030	63	2,110
75							9	1,730	37	1,800	53	1,930	53	1,640	60	1,940
80									31	1,470	50	1,590	50	1,300	58	1,760
85									23	1,170	46	1,300	46	1,010	55	1,460
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100															46	770
105															43	580
110																
DEDUCTIONS FROM MAIN BOOM CAPACITIES FOR STOWED JIB - FJ = Fixed Jib TJ = Telescopic Jib																
FJ	460 lbs.	270 lbs.	210 lbs.	170 lbs.	140 lbs.											
TJ	690 lbs.	410 lbs.	310 lbs.	250 lbs.	210 lbs.											



**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

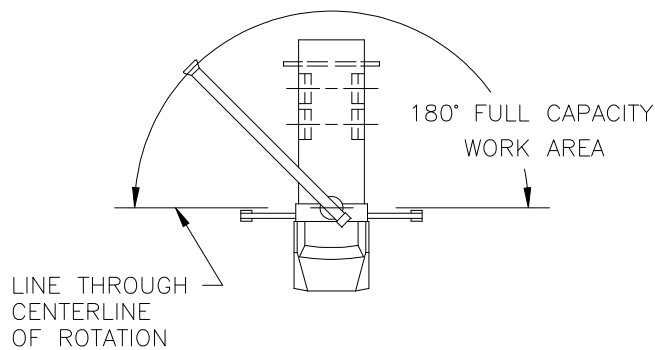


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# AREA OF OPERATION

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 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	7 PART LINE	
8500 LBS	17000 LBS	25500 LBS	34000 LBS	42500 LBS	51000 LBS	56000 LBS	
7700 LBS	15400 LBS	23100 LBS	30800 LBS	38500 LBS	46200 LBS	53900 LBS	

ANTI-TWO-BLOCK SYSTEM MUST BE IN GOOD OPERATING CONDITION BEFORE OPERATING CRANE.

REFER TO THE OWNER'S MANUAL.

KEEP AT LEAST 3 WRAPS OF LOAD LINE ON THE DRUM AT ALL TIMES.

9/16" 6X25 IWRC (3.5:1 SF) – 29750 LBS MIN BREAKING STRENGTH

9/16" ROT RESISTANT (5.0:1 SF) – 38500 LBS MIN BREAKING STRENGTH

# 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 tele. jib - Retracted	Fully Extended
#8	Personnel lifting platform on tele. 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.

# TECHNICAL DESCRIPTIONS

## Boom



Boom length: Proportional boom

- 4-Section Telescopic Boom 92' (28 m)
- 3-Sheave Quick Reeve Boom Point



2892C:

- Boom max. tip height 102 ft. 3 in. (31 m)
- Boom min. tip height 39 ft. 2 in. (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)



Stabilizer Out-Down, center to center

- Out & down 13 ft. 11 in. (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: 9/16 in.  
(14.3 mm) EIPS IWRC Wire rope.



Line length: 300 ft. (91.44 m)



Main winch: Bent axis 2-speed hydraulic motor (activated electrically)



Hook & ball: 5 T (4.5 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)

## Operator aids



External Wired LMI with crane function cut-offs for overload protection  
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

## Options

### Flatbeds

- 22 ft. (6.7 m) Wood Bed
- 22 ft. (6.7 m) Steel Bed
- 22 ft. (6.7 m) Heavy Hauler 3/16 in. Steel
- 20 ft. (6 m) Wood Bed
- 20 ft. (6 m) Steel Bed

## Options

### Jib

2892C:

- 1 section fixed jib 26 ft. (7.9 m)
- 2 section telescopic jib 26 ft. – 46 ft. (7.9 m – 14 m)

### Max. Tip Height with Extension



2892C:

- Max. tip height with extension: 148 ft. 2 in. (45.2 m)
- Max. tip height with extension retracted: 128 ft. 6 in. (39.2 m)

### Hoist, Rope and Hook



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

### Hydraulics



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

### 2-Person Baskets



2-person man basket - steel

- Non-rotating (600 lbs. cap.) - Steel
- 2 Person Gravity Level with Hydraulic Brake Steel (1200 lbs. cap.)
- 2 Person Quick Attached Aluminum Rotating Basket (1200 lbs. cap.) Main boom

### Operator Aids



- 4-Function radio remote crane control system
- Hycas System available with overload protection on jib radio only.

### Tool Box & Bulkhead

24 in. L x 18 in. W x 18 in. H - Steel  
(610 mm L x 457 mm W x 457 mm H)

48 in. L x 24 in. W x 24 in. H - Aluminum  
(1219 mm L x 610 mm W x 610 mm H)

Bulkhead: 24 in. (610 mm)

**Manitex**



# CM280

**28-ton (25.5 mt) TELESCOPIC CRANE**  
**CM280 SERIES PRODUCT GUIDE**

**UPTIME**

UPTIME is the Manitex commitment to complete support of thousands of units working every day.

**MANITEX**

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Georgetown, Texas 78626

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