



# series 2802

## BOOM TRUCKS

### features

- 28 Ton (24,4 mton) Capacity
- 4-Section 102' (31,0 m) Proportional Boom
- 4-Section 92' (28.0 m) Proportional Boom
- 2-Section 26' (7,9 m) to 46' (14,0 m) Telescopic Jib
- 157' (47,85 m) Maximum Tip Height with Telescopic Jib
- 111' (33,83 m) Maximum Main Boom Tip Height
- 19' 8", (6 m) Out-and-Down Outriggers at Full Extension
- Intermediate and Fully Extended Outrigger Charts are Standard
- 2-Speed Planetary Hoist with Grooved Drum and Negative Draft Flange
- Load Moment Indicator with Digital Display, CAN Bus, Overload Shutdown and Internal Boom Length Cable
- Radio ATB
- Rugged, Weatherproof Electrical System with Circuit Status LEDs
- Removable Boom Rest
- System Pressure Gauge
- Continuous Rotation
- Clamp-On Mounting
- Aeroquip STC (Snap to Connect) Hydraulic Fittings
- Manitex UPTIME Comprehensive Support



# product guide

# series 2802

## GENERAL SPECIFICATIONS

### BOOM

**Booms** – Inverted T-cross section, 4-section telescoping type, extended and retracted proportionally by a double-acting hydraulic cylinder and cable-crowd system. Easily replaceable and adjustable high-density nylon slide pads. **28102S** – 4-Section 28' 0" (8,5 m) to 92' 0" (28,0 m). 2-Section 26' (7,9 m) to 46' (14,0 m) jib.

**Quick Reeve Boom Point** – Three high-density nylon load sheaves mounted on heavy-duty roller bearings. Two removable pin-type rope guards.

**Boom Elevation** – Double-acting hydraulic cylinder. Working range from 9° below horizontal to 80° above.

**Load Hook** – 5-ton (4,5 mton) capacity hook with heavy-duty swivel and weight is provided for single-line operation.

### HOIST

**Hoist** – Maximum theoretical line speed 247 fpm (75,3 mpm). Maximum theoretical bottom-layer line pull 11,500 lb (5 227 kg). Two-speed planetary reducer. Spring applied, pressure-released internal brake.

**Wire Rope** – 335' (102,1 m) of 9/16" (14,3 mm) diameter 6 X 25 EIPS IWRC.

### SWING SYSTEM

Continuous rotation is standard. Externally mounted, double-reduction planetary driven by hydraulic motor. Maximum swing speed 1.5 rpm. Spring-applied hydraulically-released parking brake. Ball-bearing swing circle with external gear.

### OUTRIGGERS

Fully extended, intermediate extension and fully retracted positions. Out-and-down type with double-acting hydraulic cylinders operated independently for precise leveling. Bubble level located near outrigger controls.

### MOUNTING

**Mounting** – Lower frame is mounted to chassis by threaded rods and clamp plates. No welding to truck chassis is required. 12" (305 mm) diameter.

**Rear Underride Protection** – Supplied on factory mounted cranes. Fabricated structure mounted under rear of carrier. Complies with Bureau of Motor Carrier Safety Standard 393.86.

**Lower Frame** – Torsion resistant, rigid 4-plate design with integrated outrigger and pedestal.

**Boom Rest** – Heavy-duty fabrication. Easily removed to simplify loading and unloading truck deck.

### CONTROL SYSTEM

Single operator platform and seat mounted to turret. Four single-axis crane controls, bubble level and system pressure gauge arranged to ANSI B30.5 standards. The operator station includes engine start/stop, air foot throttle, signal horn, load moment indicator console, boom-angle indicator, load chart and range diagram. Optional pilot operated controls not available on units configured with radio remote controls.

### HYDRAULICS

**Hydraulic System** – A 3-section vane pump direct-mounted to power take-off on truck transmission provides 32 gpm to the hoist, 21 gpm to the boom hoist and telescope circuit, and 8 gpm (80 lpm) to the swing and outrigger circuit. 70-gallon (265-liter) baffled reservoir with strainer and 25-micron filter in the return lines. Ball-type shutoff valve and strainer are provided in suction line. All fittings are ORS type and SAE. Aeroquip STC (Snap-to-Connect) on all hoses up to 1" virtually eliminates leaks.

**Hydraulic Cylinders** – All load-holding cylinders are equipped with integral holding valves.

### WARNING SYSTEMS

**Load Moment Indicator (LMI)** – CAN bus system maximizes expansion capabilities. Senses boom hoist cylinder pressure, boom length and boom angle. Audio-visual warning indicated overload conditions and overload shutoff feature prevents continuing overload. Operator can access all load conditions via display at the operator station. Internal boom length cable.

**Radio Anti-Two-Block System** – Audible warning and shutoff functions prevent hook from contacting boom point.

**Back-Up Alarm** – Electronic audible motion alarm activated when truck transmission is in reverse gear.

### GENERAL

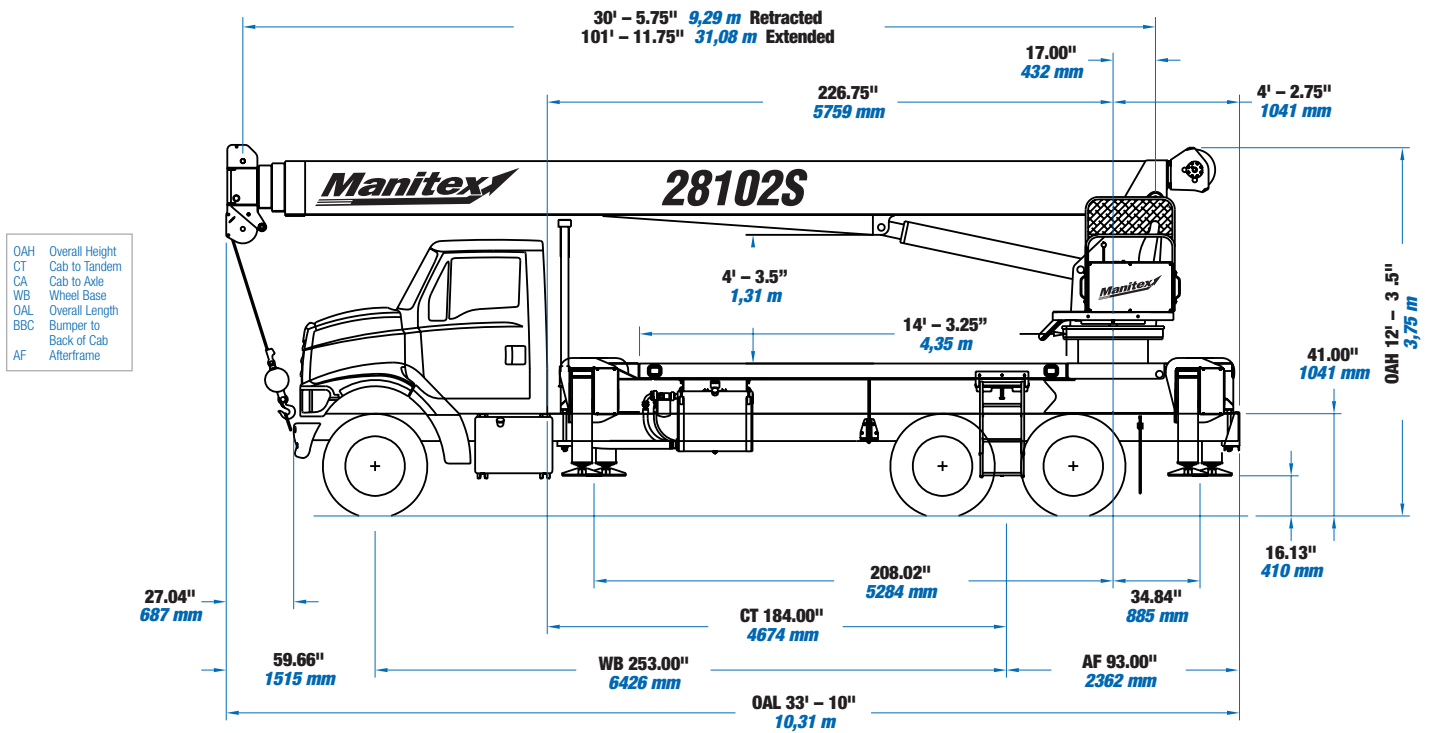
**Electrical** – State-of-the-art, weather-resistant components throughout. Hermetically sealed power in relays. Enclosure includes power in relays and circuit status LEDs. Designed to withstand high pressure washing and varying climates.

**Design/Welding** – Design conforms to ANSI B30.5. Welding conforms to AWS D1.1. Tested to SAE 1063 and SAE 765.

**Manuals** – Operator, service and parts manuals depict correct crane operation, maintenance procedures and parts listing.

**Warranty** – 12-month warranty covers parts and labor resulting from defects in material and workmanship.

\* In order to ensure continuous improvement, specifications may change without notice.

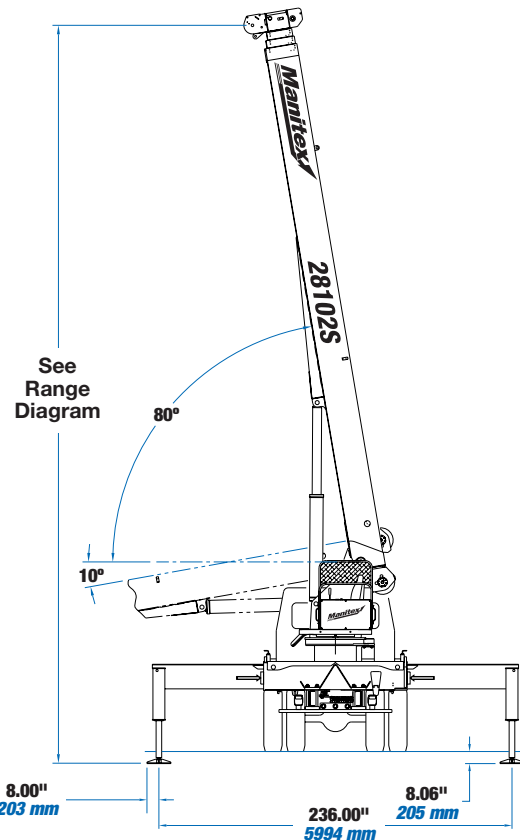


CHASSIS DATA	28102S/2892S
Wheelbase (WB)	253" <b>6 426 mm</b>
Cab to Tandem (CT)	184" <b>4 674 mm</b>
After Frame (AF)	93" <b>2 362 mm</b>
Frame Section Modulus at 180° Area of Operation	20.0 in <sup>3</sup> 110,000 psi <b>758 422 kPa</b>
Frame Section Modulus at 360° of Operation	20.0 in <sup>3</sup> 110,000 psi <b>758 422 kPa</b>
Front Axle Gross Weight Rating	18,000 lb <b>8 182 kg</b>
Rear Axle Gross Weight Rating	34,000 lb <b>15 455 kg</b>
Minimum Truck Axle Weight - Front**	8,400 lb <b>3 810 kg</b>
Minimum Truck Axle Weight - Back**	8,300 lb <b>3 773 kg</b>
Nominal Frame Width	34" <b>864 mm</b>

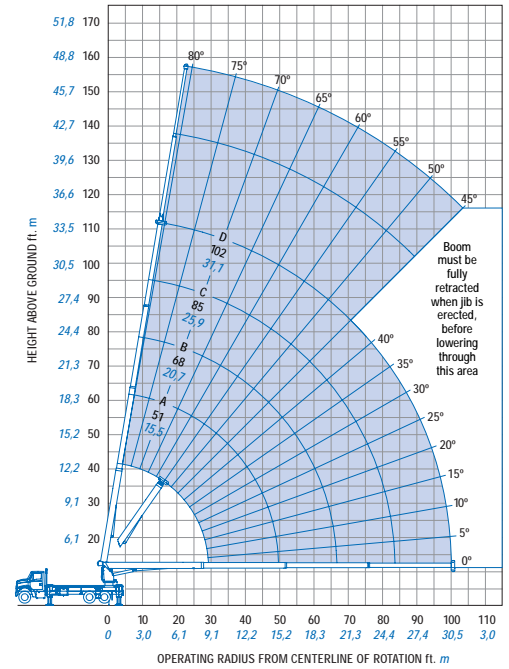
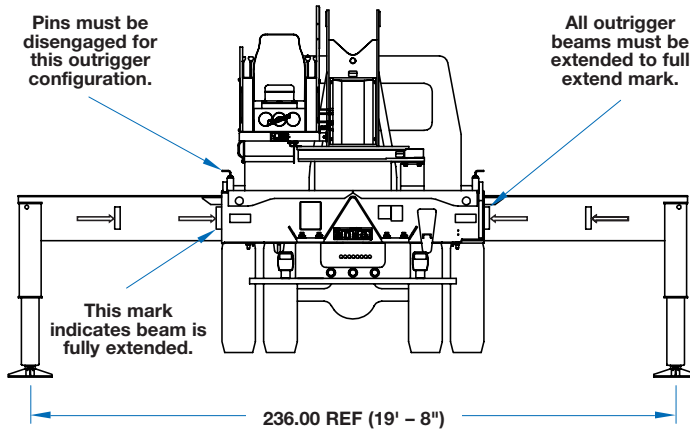
\*Frame section modulus at 360° area of operation requires front bumper stabilizer.  
 \*\*Minimum chassis weight is required to meet 85% stability requirements.  
 Chassis data is general – not for engineering. Some dimensions depend on truck selection.

MAXIMUM TIP HEIGHT	28102S	2892S
Configuration	Boom 102' <b>31,1 m</b>	Boom 92' <b>28 m</b>
Extended Boom	111' 9" <b>34,1 m</b>	101' 9" <b>31 m</b>
Fixed or Retracted Jib	138' <b>42,1 m</b>	128' <b>39 m</b>
Extended Jib	157' 9" <b>48.1 m</b>	147' 9" <b>45 m</b>

WEIGHTS	28102S	2892S
Cab Alone	575 lb <b>261 kg</b>	575 lb <b>261 kg</b>
Crane (Without Cab)	23,100 lb <b>10 478 kg</b>	22,392 lb <b>10 157 kg</b>
14' (4,27 m) Flat Bed	1,260 lb <b>573 kg</b>	1,260 lb <b>572 kg</b>
26' (7,92 m) Fixed Length Jib	832 lb <b>378 kg</b>	832 lb <b>377 kg</b>
26' (7,92 m) to 46' (14,02 m) Telescopic Jib	1,226 lb <b>557 kg</b>	1,226 lb <b>557 kg</b>



USE THIS CHART ONLY WHEN  
OUTRIGGERS AND STABILIZERS ARE  
FULLY EXTENDED.

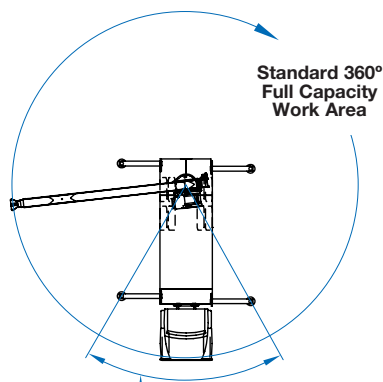


## FULLY EXTENDED OUTRIGGER SPREAD: MODEL 28102S

MAIN BOOM LOAD RATINGS											JIB LOAD RATINGS					
Operating Radius	Boom Length		A		B		C		D		Fixed Jib		Telescopic Jib			
	30.5 Feet 9,29 Meters		51 Feet 15,54 Meters		68 Feet 20,72 Meters		85 Feet 25,90 Meters		102 Feet 31,08 Meters		26 Feet 7,92 Meters		26 Feet 7,92 Meters		46 Feet 14,02 Meters	
Feet Meters	lb. kg.		lb. kg.		lb. kg.		lb. kg.		lb. kg.		lb. kg.		lb. kg.		lb. kg.	
5 1,52	80° 56,000 25 454															
8 2,43	75° 39,690 18 040															
10 4,04	71° 33,510 15 231	79 22,500 10 227														
12 3,65	67° 29,120 13 236	77 22,500 10 227														
15 4,57	60° 23,260 10 572	73 21,710 9 868	79 20,590 9 359													
20 6,09	48° 16,530 7 513	67 16,910 7 686	74 15,830 7 195	78 14,420 6 544	81 10,500 4 772											
25 7,62	33° 12,410 5 640	61 12,870 5 850	70 12,840 5 836	75 12,180 5 536	78 9,650 4 386	81 5,300 2 409	81 5,100 2 318									
30 9,14		54 10,110 4 595	65 10,260 4 663	72 10,140 4 609	76 8,670 3 940	79 5,300 2 409	79 5,100 2 318	81 3,050 1 386								
35 10,66		47 8,130 3 695	60 8,280 3 763	68 8,360 3 800	73 7,670 3 486	77 4,990 2 268	77 4,730 2 150	79 4,000 1 386								
40 12,19		38 6,630 3 013	55 6,790 3 086	64 6,870 3 122	70 6,490 2 950	75 4,580 2 081	75 4,310 1 959	77 3,050 1 386								
45 13,71		27 5,450 2 477	50 5,610 2 550	60 5,690 2 709	66 5,590 2 540	72 4,190 1 904	72 3,910 1 777	76 3,050 1 386								
50 15,24			43 4,670 2 122	56 4,750 2 159	63 4,800 2 181	70 3,830 1 740	70 3,550 1 613	74 2,910 1 322								
55 16,76			36 3,820 2 122	51 3,920 2 781	60 3,980 1 809	68 3,480 1 581	68 3,110 1 413	72 2,740 1 245								
60 18,28			28 3,110 1 413	47 3,220 1 463	56 3,280 1 409	65 3,020 1 372	65 2,670 1 213	70 2,590 1 177								
65 19,81			15 2,520 1 145	41 2,640 1 200	53 2,700 1 227	63 2,630 1 195	63 2,280 1 036	68 2,410 1 095								
70 21,33				36 2,150 977	49 2,220 1 009	60 2,310 1 050	60 1,950 886	66 2,130 968								
75 22,86				29 1,740 790	45 1,810 822	57 1,910 868	57 1,620 736	63 1,880 854								
80 24,38				19 1,390 631	40 1,460 663	54 1,560 709	54 1,270 577	61 1,610 731								
85 25,90					36 1,150 522	51 1,250 568	51 960 436	59 1,400 636								
90 27,43					29 880 400	48 990 450	48 990 313	56 1,150 522								
95 28,96					22 640 290	45 750 340		54 910 413								
100 30,48								51 700 318								
105 32,00								48 510 231								
	490 222	290 131	220 100	180 81	150 68	Deductions: Stowed Fixed Jib										
	900 331	440 200	330 150	260 180	220 100	Deductions: Stowed Telescopic Jib										

Meets ANSI B30.5 Requirements - Do not operate crane or accessories within 10' (3,05m) of live power lines.  
NOTICE: This chart is for reference only and must not be used for lifting purposes. Consult factory for other boom options.

## AREA OF OPERATION



### WARNING

The front tires must be in contact with the ground and the machine level when operating in this area.

## DEDUCTIONS

Auxiliary Block	50 lb 22.72 kg
Auxiliary Block	50 lb 22.72 kg
Load Block	See block manufacturer nameplate
Overhaul Ball	See overhaul ball manufacturer nameplate
Hose Reel	140 lb 63.64 kg
Swing Around Jib* (Stowed)	See load rating chart

## WEIGHTS

1 Part Line	2 Part Line	3 Part Line	4 Part Line	5 Part Line	6 Part Line	7 Part Line	WARNING
							<p>Anti-two-block system must be in good operating condition before operating crane. Refer to the owner's manual. Keep at least three wraps of load line on the drum at all times.</p> <p>.5625" rot resistant (5.0:1 SF) - 37000 lb. min. breaking strength</p> <p>.5625" 6 x 25 IWRC (3.5:1 SF) - 29750 lb. min. breaking strength</p>
8,500 lb 3 864 kg	17,000 lb 7 727 kg	25,500 lb 11 591 kg	34,000 lb 15 455 kg	42,500 lb 19 318 kg	51,000 lb 23 182 kg	56,000 lb 25 455 kg	
7,400 lb 3 364 kg	14,800 lb 6 727 kg	22,200 lb 10 091 kg	29,600 lb 13 455 kg	37,000 lb 16 818 kg	44,400 lb 20 182 kg	51,800 lb 23 545 kg	

## BOOM AND JIB COMBINATIONS

28102S	102'	4 Section	Boom	26' - 46' 2 - Section Jib
2892S	92'	4 Section	Boom	26' - 46' 2 - Section Jib

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



- Includes 24-7-365 parts shipments.
- Utilizes the efficiency of UPNet online parts order system.
- Relies on Manitex's UPTrak support tracking system for performance analysis and resource allocation.
- Features REMan, Manitex's cost effective rebuild/exchange program.
- Provides expert service technicians for troubleshooting and site visits.
- Mandates training; at our facility and yours. It includes coordinated support from all component suppliers.
- Involves every Manitex team member in the support of every Manitex customer.

**What does UPTime mean to Manitex customers?**

**UPTime** means reliability.

**UPTime** means utilization.

**UPTime** means profitability.



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# Load Rating Chart

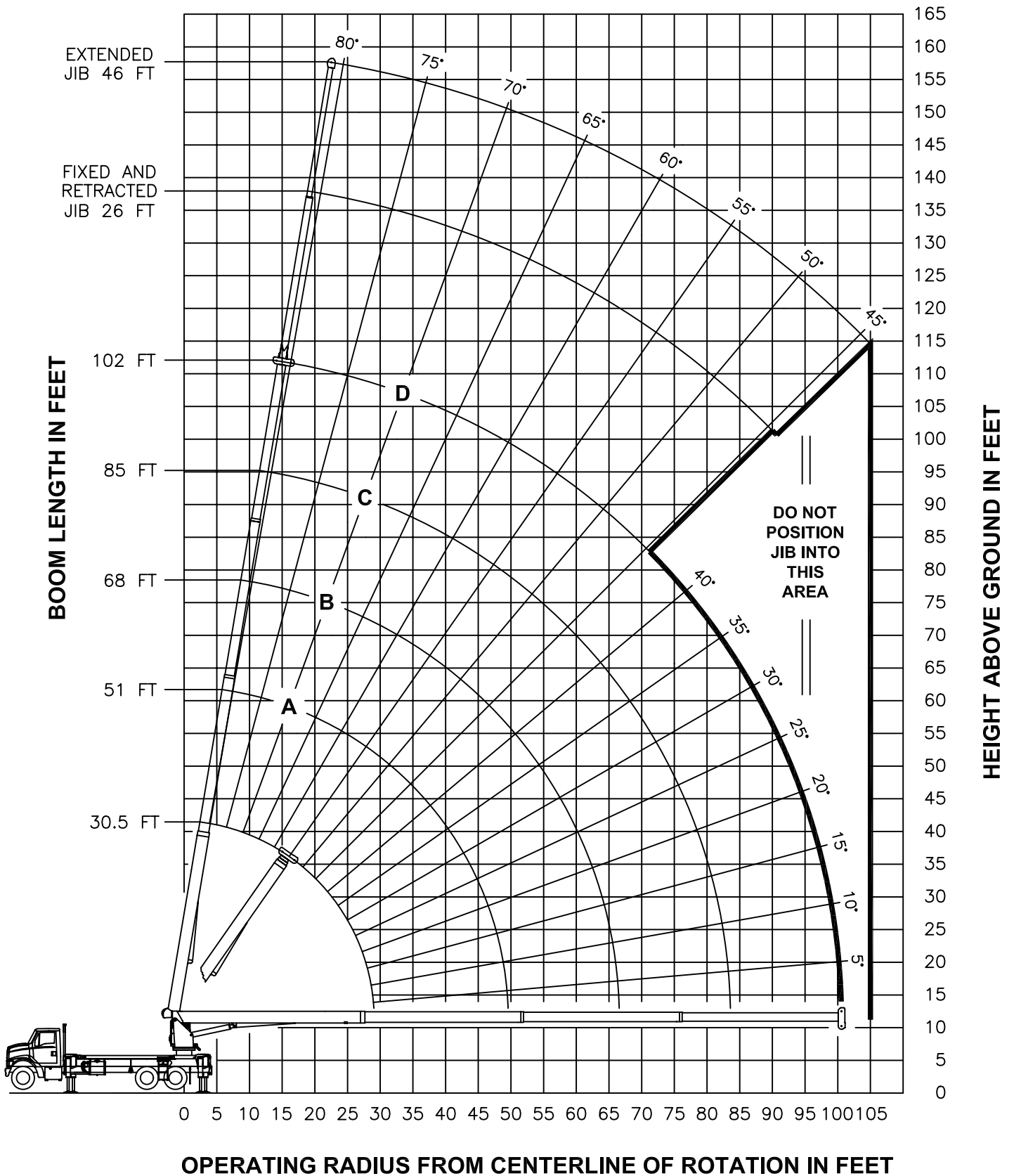
***Model 28102S***




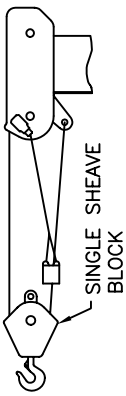
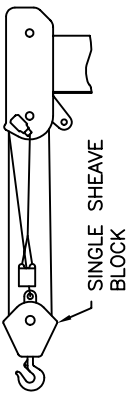
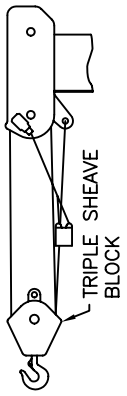

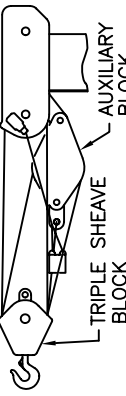
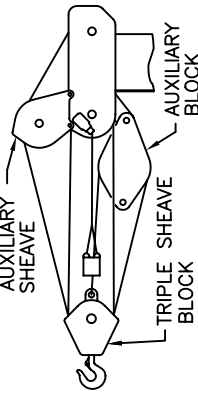
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**NOTE:** Additional copies of this Load Rating Chart can be purchased from your Manitex Distributor. When ordering, use the part number shown in the bottom left corner of this page.

# RANGE DIAGRAM - FULLY EXTENDED OUTRIGGER CONFIGURATION -



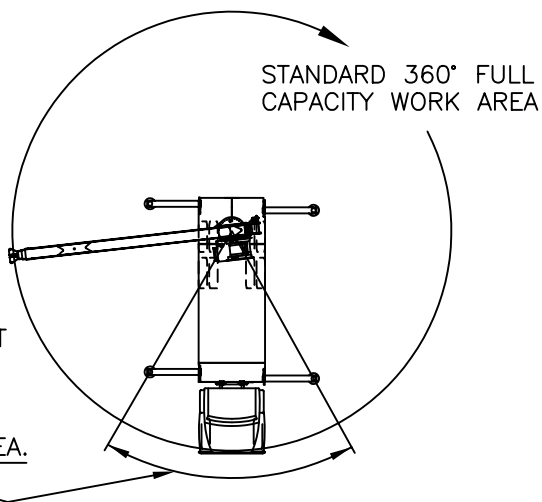


ALLOWABLE LINE PULL							<b>WARNING</b>
1 PART LINE	2 PART LINE	3 PART LINE	4 PART LINE	5 PART LINE	6 PART LINE	7 PART LINE	
							
8500 LBS	17000 LBS	25500 LBS	34000 LBS	42500 LBS	51000 LBS	56000 LBS	
7400 LBS	14800 LBS	22200 LBS	29600 LBS	37000 LBS	44400 LBS	51800 LBS	
							ANTI-TWO-BLOCK SYSTEM 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) – 37000 LBS MIN BREAKING STRENGTH

## AREA OF OPERATION

### WARNING:

THE FRONT TIRES MUST BE IN CONTACT WITH THE GROUND, AND THE MACHINE LEVEL, WHEN OPERATING IN THIS AREA.



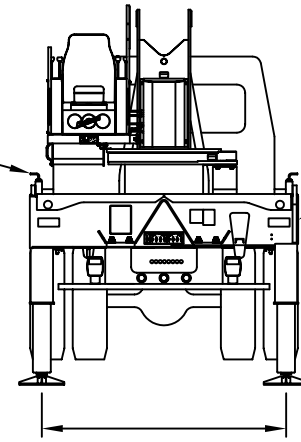
## DEDUCTIONS FROM RATED LOADS FOR LOAD HANDLING DEVICES SUPPLIED BY MANITOWOC BOOM TRUCKS, INC.

AUXILIARY BLOCK	—	—	—	—	—	—	—	—	—	—	—	50 LBS
AUXILIARY SHEAVE	—	—	—	—	—	—	—	—	—	—	—	50 LBS
OVERHAUL BALL	—	—	—	—	—	—	—	—	—	—	—	SEE OVERHAUL BALL MANUFACTURER NAMEPLATE
LOAD BLOCK	—	—	—	—	—	—	—	—	—	—	—	SEE BLOCK MANUFACTURER NAMEPLATE
HOSE REEL	—	—	—	—	—	—	—	—	—	—	—	140 LBS
SWING AROUND JIB	—	—	—	—	—	—	—	—	—	—	—	SEE LOAD CHART

**USE THIS CHART  
ONLY WHEN ALL  
OUTRIGGERS ARE  
FULLY RETRACTED**

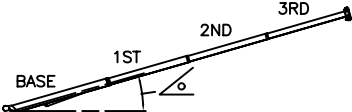





PINS MUST BE  
DISENGAGED FOR  
THIS OUTRIGGER  
CONFIGURATION

ALL OUTRIGGER  
BEAMS FULLY  
RETRACTED



87.38 REF  
(7' 3-3/8" REF)

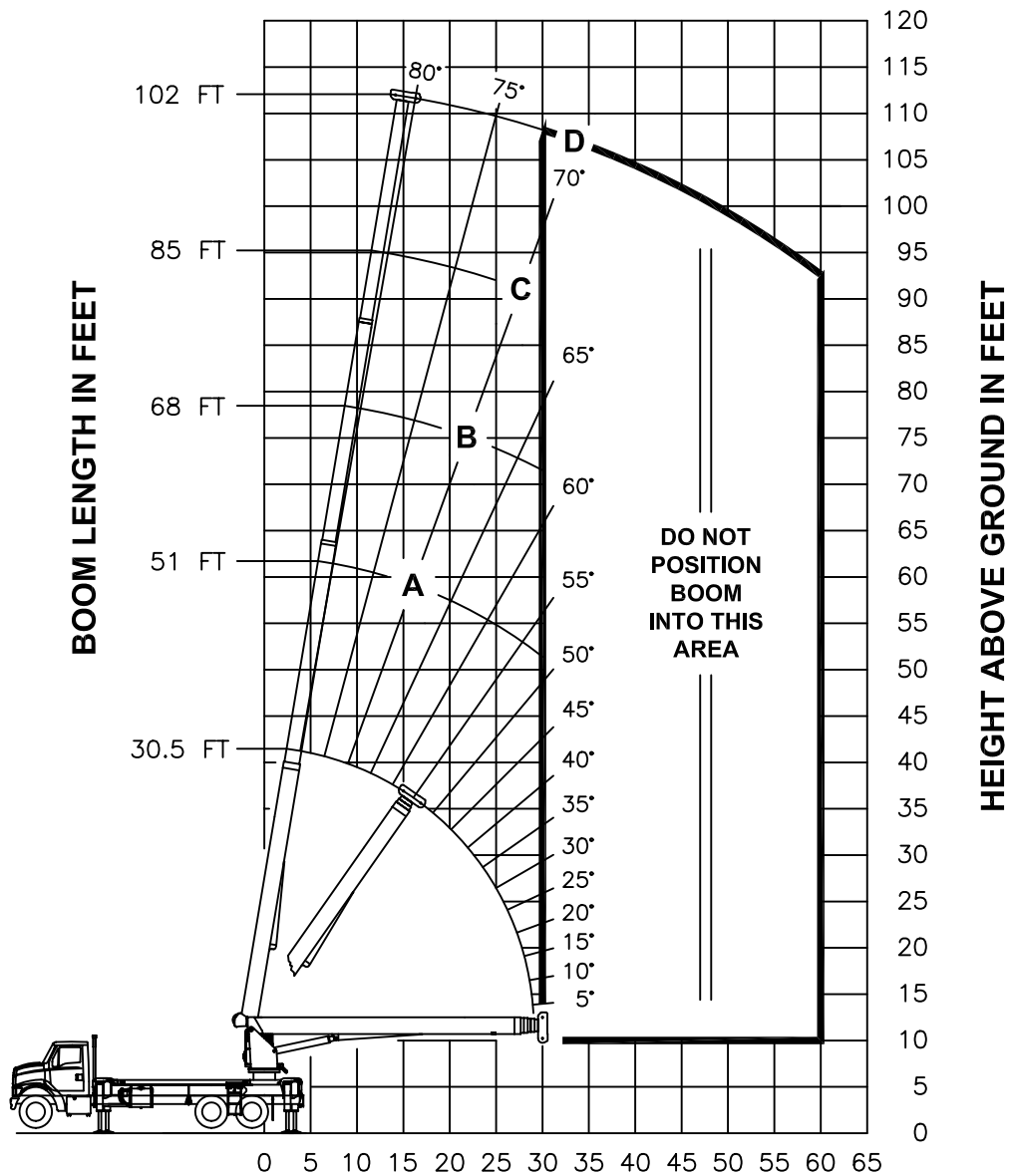
## - FULLY RETRACTED OUTRIGGER CONFIGURATION -

MAIN BOOM LOAD RATINGS IN LBS										
LMI CODE #13										
OPERATING RADIUS FT	LOADED BOOM ANGLE BOOM LENGTH AND MARKER									
			A		B		C		D	
		30.5 FT		51 FT		68 FT		85 FT		102 FT
5	80	56000								
8	75	23010								
10	71	14590	79	15150						
12	67	10190	77	10700						
15	60	6490	73	6970	79	7140				
20	48	3330	67	3790	74	3950	78	4040	81	4090
25	33	1620	61	2090	70	2250	75	2330	78	2380
30			54	1040	65	1190	72	1270	76	1320
	490 LBS	290 LBS	220 LBS	180 LBS	150 LBS	DEDUCTIONS FOR STOWED FIXED JIB				
	730 LBS	440 LBS	330 LBS	260 LBS	220 LBS	DEDUCTIONS FOR STOWED TELESCOPIC JIB				

NO JIBS ARE TO  
BE ERECTED IN  
THIS  
OUTRIGGER  
CONFIGURATION

NO JIBS ARE TO  
BE ERECTED IN  
THIS  
OUTRIGGER  
CONFIGURATION

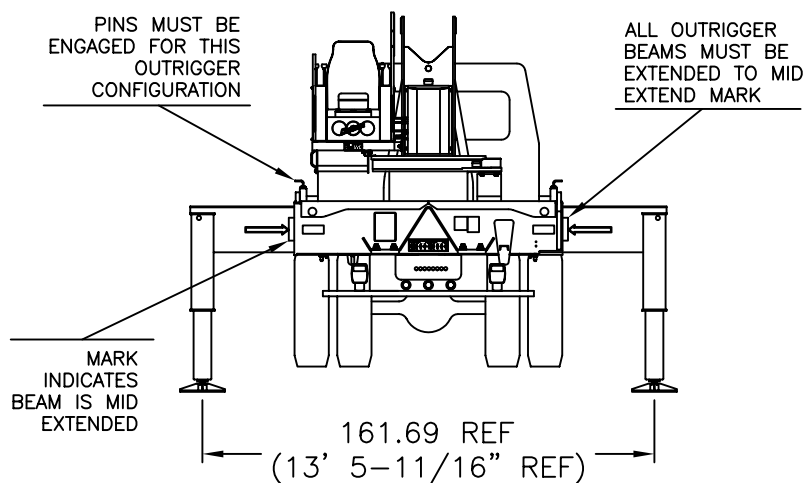
# **RANGE DIAGRAM** **- FULLY RETRACTED OUTRIGGER CONFIGURATION -**



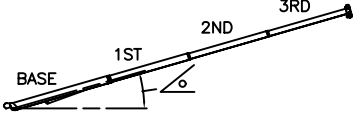
**OPERATING RADIUS FROM CENTERLINE OF ROTATION IN FEET**

**NOTE :** LIFTING PERSONNEL WITH CRANE IN THIS OUTRIGGER CONFIGURATION IS STRICTLY PROHIBITED. USE ONLY FULLY EXTENDED OUTRIGGER CONFIGURATION WHEN LIFTING PERSONNEL.

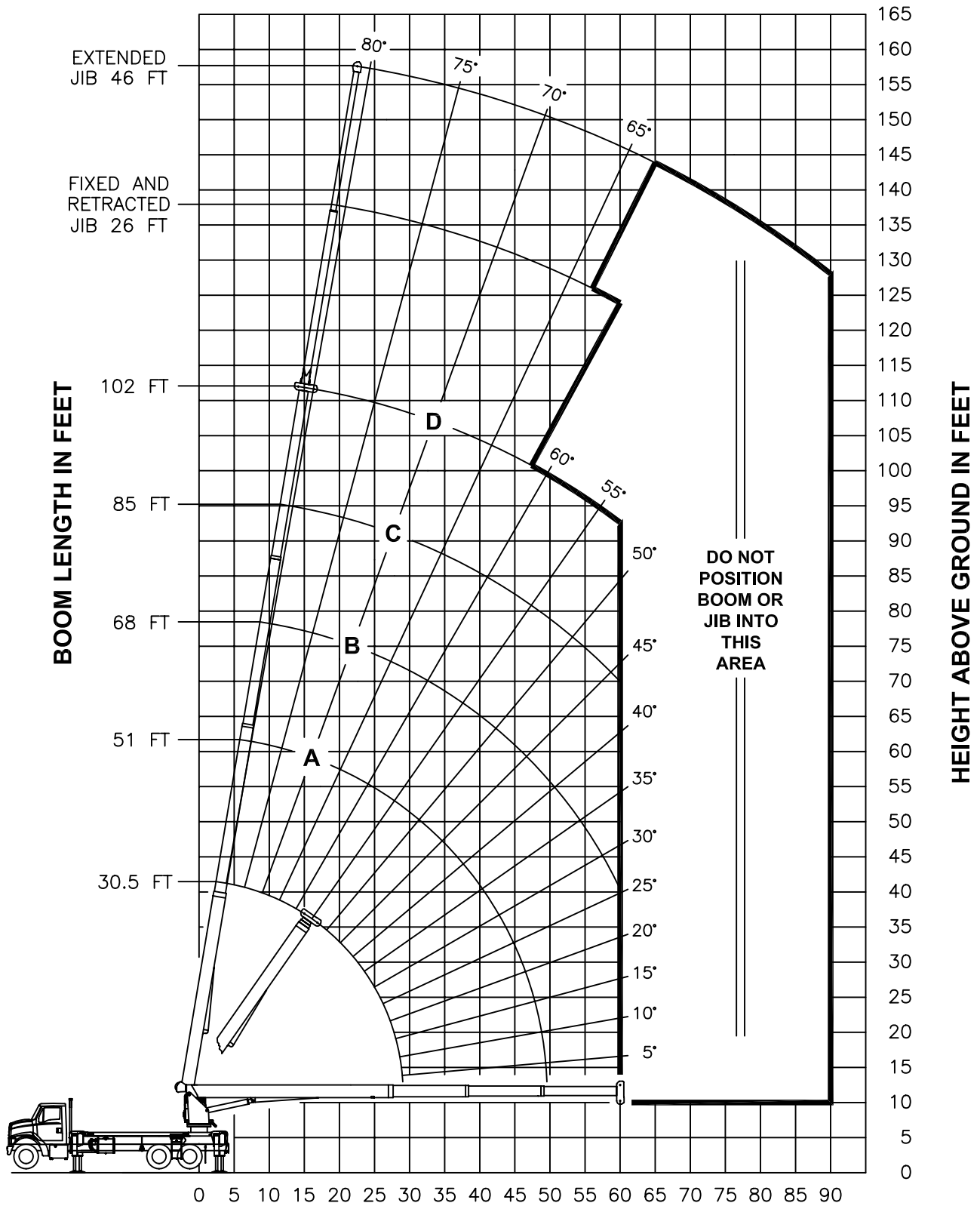
**USE THIS CHART ONLY WHEN  
ALL OUTRIGGERS ARE IN THE  
INTERMEDIATE POSITION**



## - INTERMEDIATE OUTRIGGER CONFIGURATION - (MID EXTEND)

MAIN BOOM LOAD RATINGS IN LBS										JIB LOAD RATINGS IN LBS							
LMI CODE #9										FIXED JIB		TELESCOPIC JIB					
OPERATING RADIUS FT	LOADED BOOM ANGLE BOOM LENGTH AND MARKER										OPERATING RADIUS FT	LMI CODE #10		LMI CODE #11		LMI CODE #12	
			A		B		C		D								
	°	30.5 FT	°	51 FT	°	68 FT	°	85 FT	°	102 FT		LOADED BOOM ANG	JIB LENGTH FOR ALL BOOM LENGTHS SEE WARNING NOTE 4	LOADED BOOM ANG	JIB LENGTH FOR ALL BOOM LENGTHS SEE WARNING NOTE 4	LOADED BOOM ANG	JIB LENGTH FOR ALL BOOM LENGTHS SEE WARNING NOTE 4
	5	80	56000										°	26 FT	°	26 FT	°
8	75	39690															
10	71	33510	79	22500							10						
12	67	29120	77	22500							12						
15	60	21230	73	21710	79	20590					15						
20	48	11770	67	12340	74	12540	78	12660	81	10500	20						
25	33	7460	61	8020	70	8200	75	8300	78	8370	25	81	5300	81	5100		
30			54	5550	65	5720	72	5820	76	5880	30	79	5300	79	5100	81	3050
35			47	3950	60	4120	68	4210	73	4270	35	77	4360	77	4050	79	3050
40			38	2820	55	3000	64	3090	70	3150	40	75	3230	75	2920	77	3050
45			27	1980	50	2160	60	2260	66	2310	45	72	2390	72	2080	76	2590
50					43	1520	56	1620	63	1670	50	70	1750	70	1440	74	1930
55					36	1010	51	1110	60	1170	55	68	1240	68	930	72	1410
60					28	600	47	700	56	750	60	65	820	65	510	70	990
65											65					68	640
		490 LBS		290 LBS		220 LBS		180 LBS		150 LBS	DEDUCTIONS FOR STOWED FIXED JIB						
		730 LBS		440 LBS		330 LBS		260 LBS		220 LBS	DEDUCTIONS FOR STOWED TELESCOPIC JIB						

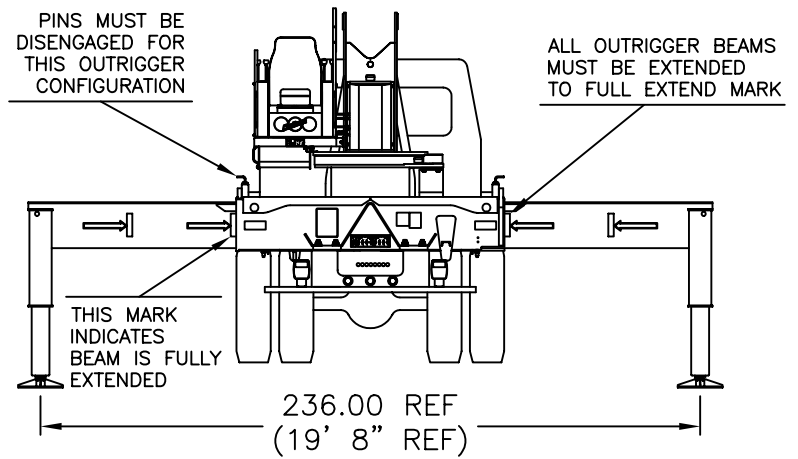
# **RANGE DIAGRAM** **- INTERMEDIATE OUTRIGGER CONFIGURATION -** **(MID EXTEND)**



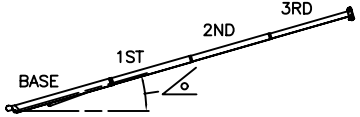
**OPERATING RADIUS FROM CENTERLINE OF ROTATION IN FEET**

**NOTE : LIFTING PERSONNEL WITH CRANE IN THIS OUTRIGGER CONFIGURATION IS STRICTLY PROHIBITED. USE ONLY FULLY EXTENDED OUTRIGGER CONFIGURATION WHEN LIFTING PERSONNEL.**

**USE THIS CHART ONLY  
WHEN ALL OUTRIGGERS  
ARE FULLY EXTENDED**



## - FULLY EXTENDED OUTRIGGER CONFIGURATION -

MAIN BOOM LOAD RATINGS IN LBS											JIB LOAD RATINGS IN LBS						
LMI CODE #1											OPERATING RADIUS FT	FIXED JIB		TELESCOPIC JIB			
<div><div>LOADED BOOM ANGLE BOOM LENGTH AND MARKER</div><div></div></div>												LMI CODE #2		LMI CODE #3		LMI CODE #4	
												BOOM LOADING ANG	JIB LENGTH FOR ALL BOOM LENGTHS SEE WARNING NOTE 4	BOOM LOADING ANG	JIB LENGTH FOR ALL BOOM LENGTHS SEE WARNING NOTE 4	BOOM LOADING ANG	JIB LENGTH FOR ALL BOOM LENGTHS SEE WARNING NOTE 4
OPERATING RADIUS FT			A		B		C		D								
	°	30.5 FT	°	51 FT	°	68 FT	°	85 FT	°	102 FT		°	26 FT	°	26 FT	°	46 FT
5	80	56000									10						
8	75	39690									12						
10	71	33510	79	22500							15						
12	67	29120	77	22500							20						
15	60	23260	73	21710	79	20590					25	81	5300	81	5100		
20	48	16530	67	16910	74	15830	78	14420	81	10500	30	79	5300	79	5100	81	3050
25	33	12410	61	12870	70	12840	75	12180	78	9650	35	77	4990	77	4730	79	3050
30			54	10110	65	10260	72	10140	76	8670	40	75	4580	75	4310	77	3050
35			47	8130	60	8280	68	8360	73	7670	45	72	4190	72	3910	76	3050
40			38	6630	55	6790	64	6870	70	6490	50	70	3830	70	3550	74	2910
45			27	5450	50	5610	60	5690	66	5590	55	68	3480	68	3110	72	2740
50					43	4670	56	4750	63	4800	60	65	3020	65	2670	70	2590
55					36	3820	51	3920	60	3980	65	63	2630	63	2280	68	2410
60					28	3110	47	3220	56	3280	70	60	2310	60	1950	66	2130
65					15	2520	41	2640	53	2700	75	57	1910	57	1620	63	1880
70							36	2150	49	2220	80	54	1560	54	1270	61	1610
75							29	1740	45	1810	85	51	1250	51	960	59	1400
80							19	1390	40	1460	90	48	990	48	690	56	1150
85									36	1150	95	45	750			54	910
90									29	880	100					51	700
95									22	640	105					48	510
100																	
105																	
	490 LBS		290 LBS		220 LBS		180 LBS		150 LBS		DEDUCTIONS FOR STOWED FIXED JIB						
	730 LBS		440 LBS		330 LBS		260 LBS		220 LBS		DEDUCTIONS FOR STOWED TELESCOPIC JIB						

## LMI OPERATING CODES

SETTING	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 THIS CRANE.
2. POSITIONING OR OPERATION OF CRANE BEYOND AREAS SHOWN ON THIS CHART 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.


## **WARNING (CONTINUED)**

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 TELESKOPED 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.

## **INFORMATION**

1. DEDUCTIONS MUST BE MADE FROM RATED LOADS FOR STOWED JIB, OPTIONAL ATTACHMENTS, HOOKS, AND LOADBLOCKS (SEE DEDUCTION CHART). WEIGHTS OF SLINGS AND ALL OTHER LOAD HANDLING DEVICES SHALL BE CONSIDERED A PART OF THE LOAD.
2. LOAD RATINGS ABOVE THE HEAVY LINE ARE STRUCTURALLY LIMITED CAPACITIES. LOAD RATINGS BELOW THE HEAVY LINE ARE STABILITY LIMITED CAPACITIES AND DO NOT EXCEED 85% OF TIPPING.

## **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 HEADED BY , IS THE INCLUDED ANGLE BETWEEN THE HORIZONTAL AND LONGITUDINAL AXES OF THE BOOM BASE AFTER LIFTING RATED LOAD AT RATED RADIUS.