

# Load Rating Chart

***Model 28102S***

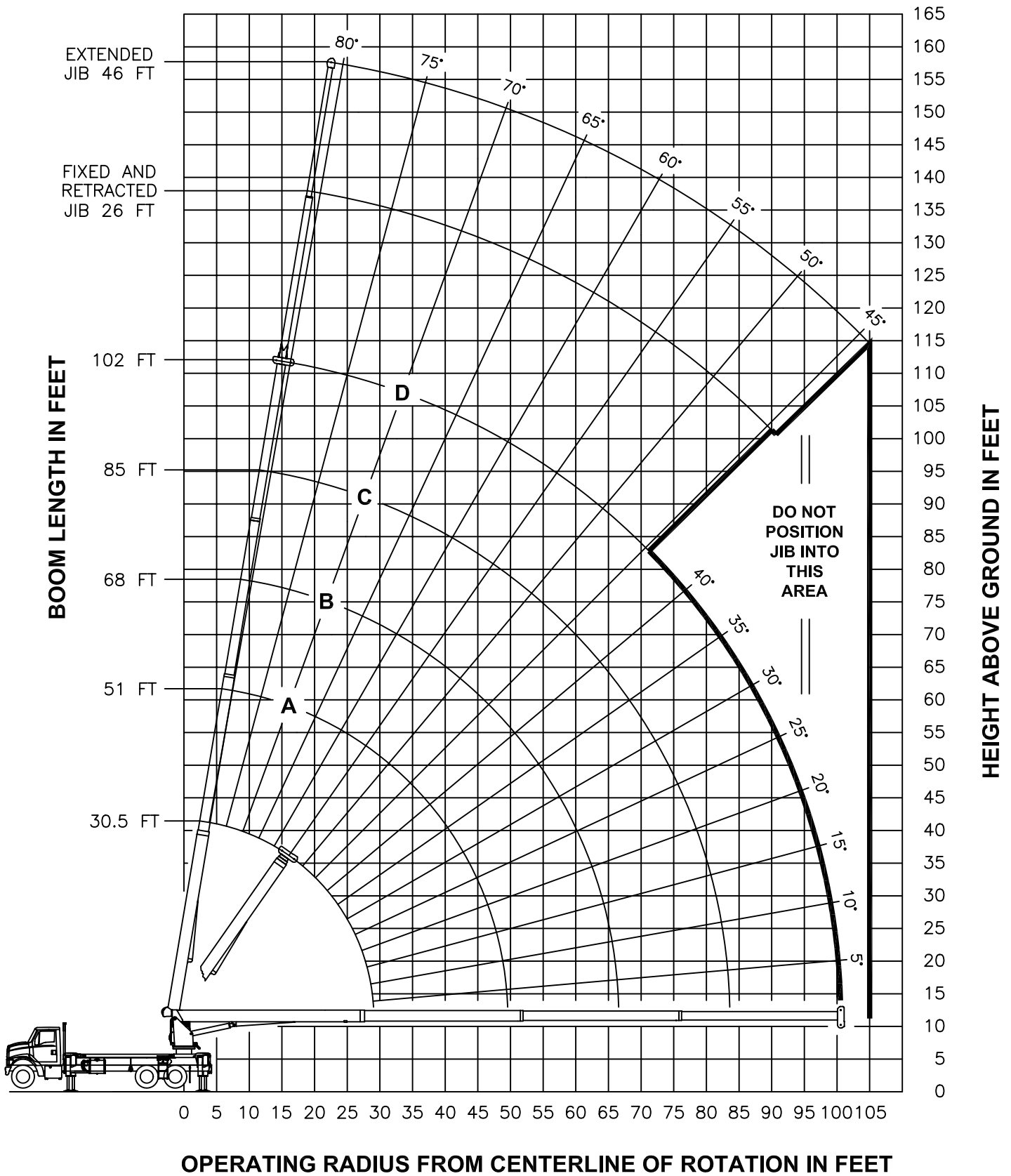


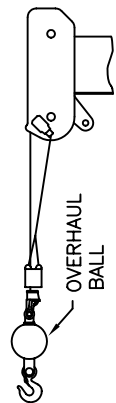
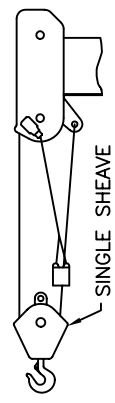

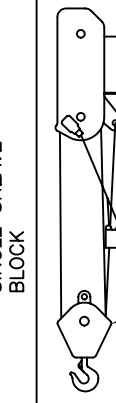


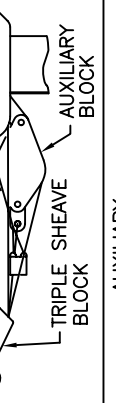
© Manitex 2003

---

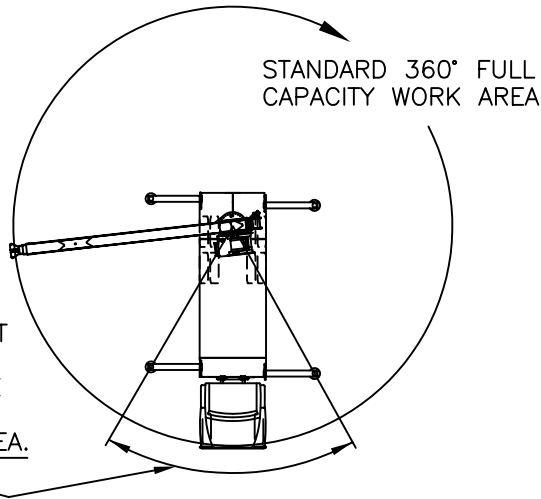
**NOTE:** Additional copies of this Load Rating Chart can be purchased from your Manitex Distributor. When ordering, use the part number shown in the bottom left corner of this page.

# 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	
							<p>ANTI-TWO-BLOCK SYSTEM MUST BE IN GOOD OPERATING CONDITION BEFORE OPERATING CRANE.</p> <p>REFER TO THE OWNER'S MANUAL.</p> <p>KEEP AT LEAST 3 WRAPS OF LOAD LINE ON THE DRUM AT ALL TIMES.</p>
8500 LBS	17000 LBS	25500 LBS	34000 LBS	42500 LBS	51000 LBS	56000 LBS	9/16" 6X25 IWRC (3.5:1 SF) - 29750 LBS MIN BREAKING STRENGTH
7400 LBS	14800 LBS	22200 LBS	29600 LBS	37000 LBS	44400 LBS	51800 LBS	9/16" ROT RESISTANT (5.0:1 SF) - 37000 LBS MIN BREAKING STRENGTH

### AREA OF OPERATION

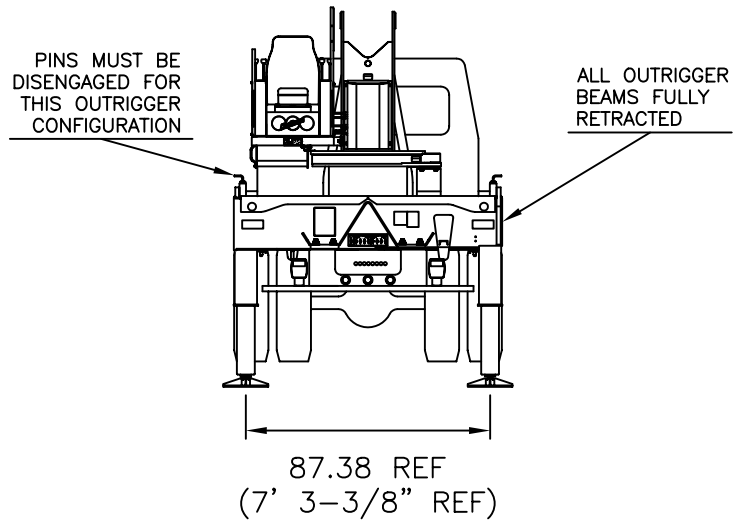


**WARNING:**  
 THE FRONT TIRES MUST BE IN CONTACT WITH THE GROUND, AND THE MACHINE LEVEL, WHEN OPERATING IN THIS AREA.

### 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**

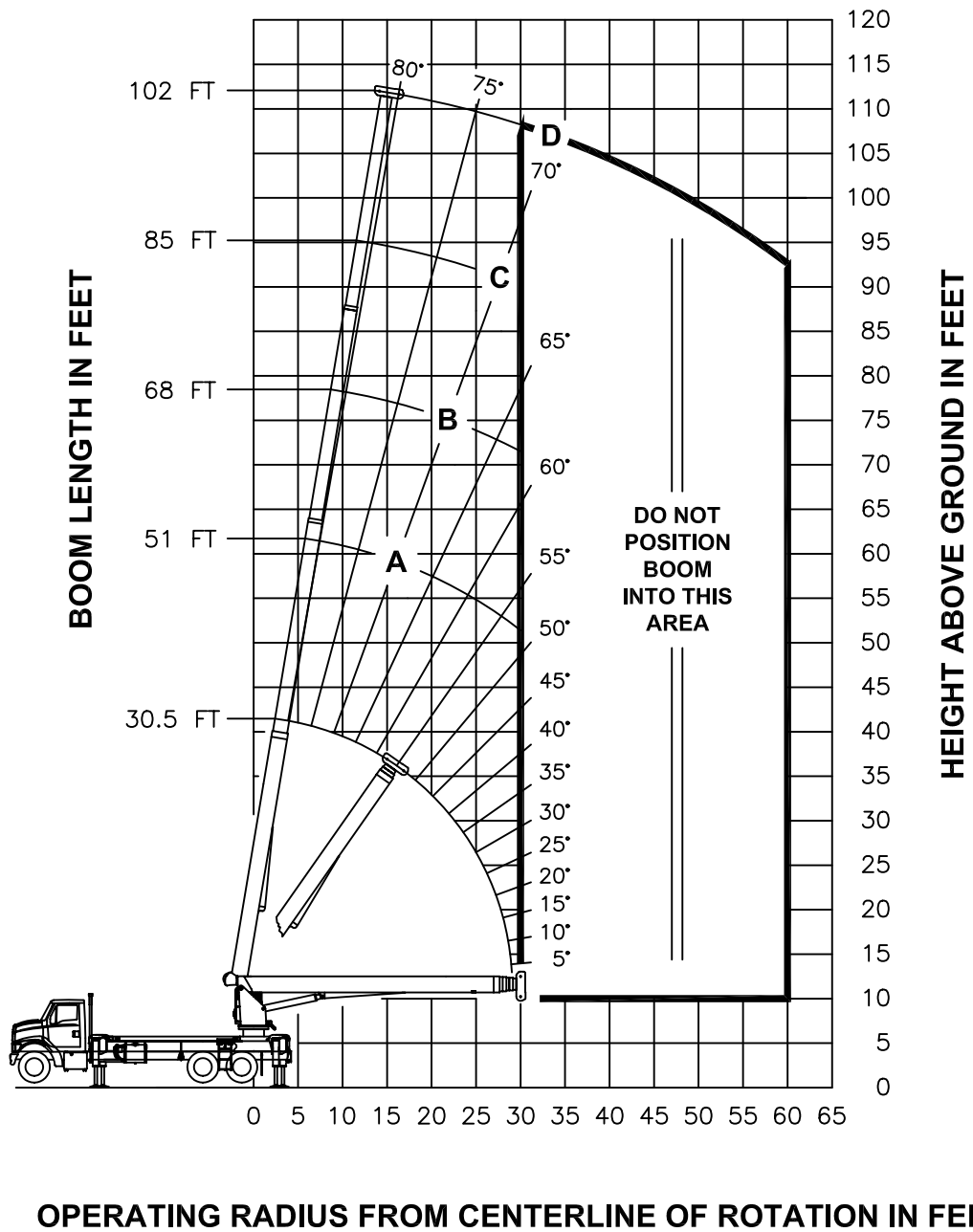


**- FULLY RETRACTED OUTRIGGER CONFIGURATION -**

MAIN BOOM LOAD RATINGS IN LBS											
LMI CODE #13											
OPERATING RADIUS FT	LOADED BOOM ANGLE		BOOM LENGTH AND MARKER								
	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

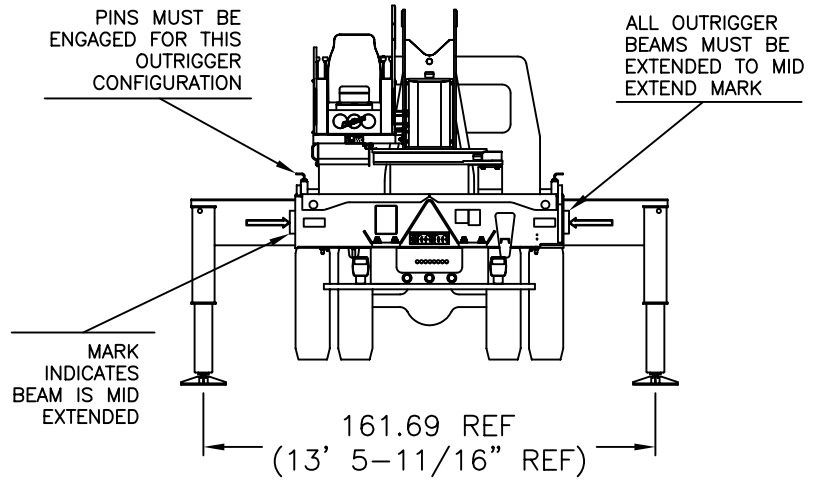
**NO JIBS ARE TO  
BE ERECTED IN  
THIS  
OUTRIGGER  
CONFIGURATION**

## RANGE DIAGRAM - FULLY RETRACTED OUTRIGGER CONFIGURATION -



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

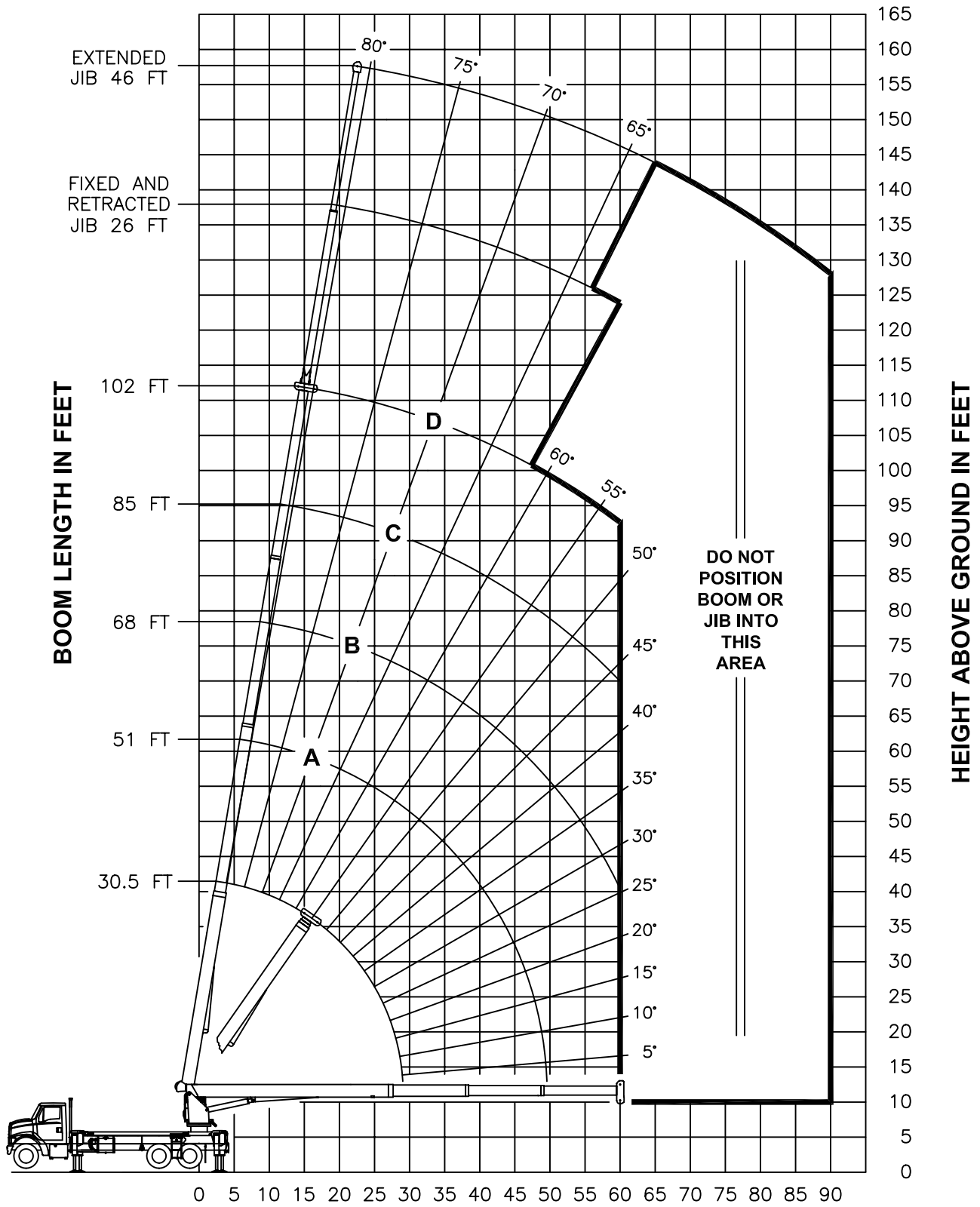
**USE THIS CHART ONLY WHEN ALL OUTRIGGERS ARE IN THE INTERMEDIATE POSITION**



**- 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		
											BOOM ANGLE	JIB LENGTH FOR ALL BOOM LENGTHS SEE WARNING NOTE 4	BOOM ANGLE	JIB LENGTH FOR ALL BOOM LENGTHS SEE WARNING NOTE 4	BOOM ANGLE	JIB LENGTH FOR ALL BOOM LENGTHS SEE WARNING NOTE 4	
	A	B	C	D													
	30.5 FT	51 FT	68 FT	85 FT	102 FT												
5	80	56000															
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					

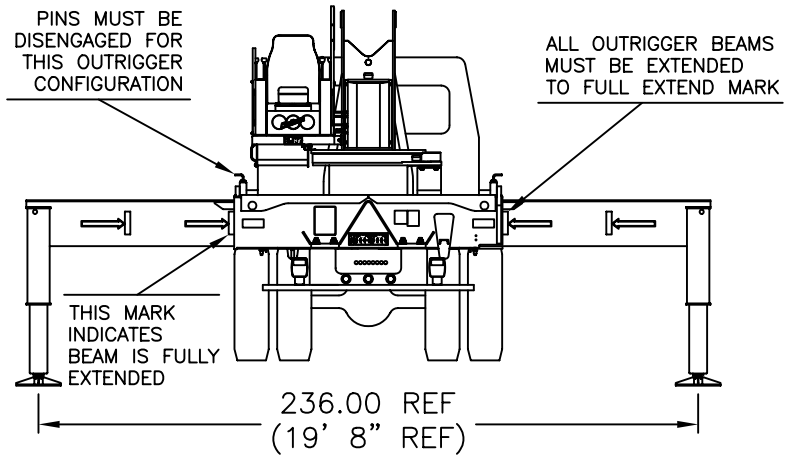
# RANGE DIAGRAM - INTERMEDIATE OUTRIGGER CONFIGURATION - (MID EXTEND)



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

## **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.