



NATIONAL CRANE

Series 1300A

Hydraulic Crane 30 Ton

Load Ratings

! DANGER

**AN UNTRAINED OPERATOR
SUBJECTS HIMSELF AND
OTHERS TO**

DEATH OR SERIOUS INJURY

**YOU MUST NOT OPERATE
THIS CRANE UNLESS**

- You have been trained in the safe operation of this crane.
- You read, understand and follow the safety and operating recommendations contained in the crane manufacturer's manuals, your employers work rules and applicable government regulations.
- You are sure that all safety signs, guards and other safety features are in place and in proper condition.

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DANGER

GENERAL

1. This equipment can be hazardous if improperly maintained or operated. Read and comply with the Operator's Manual supplied with this machine for information on safety, operation and maintenance before operating this machine. If these manuals are missing, order replacements from National Crane through the distributor.
2. Rated loads shown on the capacity chart pertain to this machine as originally manufactured and equipped. Modifications to the machine or use of equipment that is not factory specified or approved can be hazardous. Refer to capacity deduction chart for weights which must be deducted from rated loads when accessories are attached to boom or loadline.

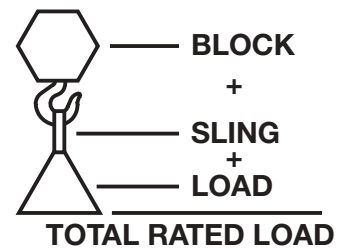
SET-UP

1. Inspect vehicle and crane including crane operation prior to use each day.
2. Load ratings shown on the appropriate charts are maximum allowable loads with the crane mounted on a factory approved truck and all outriggers at either full span, at mid span range, or retracted and set on a firm level surface so the crane is level and the tires are suspended. This machine is not rated for use without outriggers. All outriggers must extended equally - Mid span must be pinned.
3. Depending on the nature of the supporting surface, structural supports under the outrigger floats may be necessary to spread the load to a larger bearing surface.
4. Always level the crane with the level indicator, located at each outrigger control station.

OPERATION

1. Operation of this equipment in excess of maximum load rating and disregard of instructions is hazardous. Always refer to the capacity chart for load and area limits before operating the crane. Rated loads at rated radius shall not be exceeded. Overloading this crane may cause structural collapse or instability.
2. Use the LMI / angle indicator as a reference only. When lifting maximum loads, measure radius and be certain of load weight.
3. Full extended outrigger rated loads do not exceed 85% of the tipping load as determined by SAE Crane Stability Test Code J765a when mounted on a factory recommended truck. Mid span and retracted outrigger stability loads are determined per SAE J1289 APR81. Structurally limited ratings on the capacity chart are shaded. Stability limited loads are not shaded. Machine will not always tip before structural damage occurs.

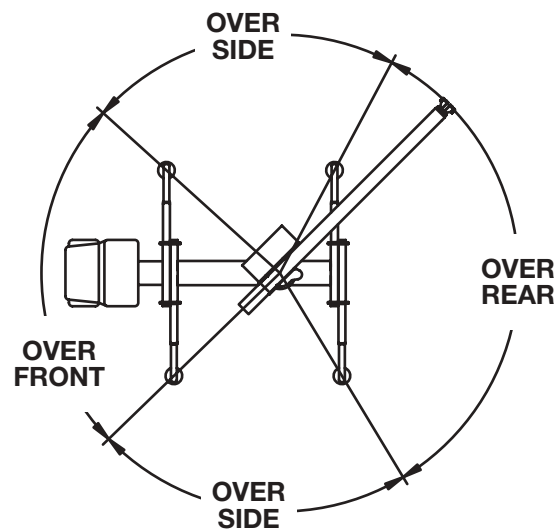
4. Rated loads include the weight of the hook block, slings, and other lifting devices. Their weights must be subtracted from the listed rated load to determine the net load that can be lifted.
5. Rated loads must be reduced when lifting at the boom tip with a jib stowed. Refer to the chart labeled "Rated Load Reductions With Jib (lb)" for the reduction at each boom length.
6. Rated loads are based on freely suspended loads. Always position the boom tip directly over the load before lifting. No attempts shall be made to push down with the boom or move the load sideways in any direction by pulling or dragging the load.
7. The user shall operate at reduced ratings to allow for adverse job conditions such as soft or uneven ground, high winds or erratic operation which produce swinging (side) loads, experience of personnel, two machine lifts, or other hazardous conditions for safe operation.
8. Rated loads account for wind to 20 mph on the boom capacities and to 15 mph on jib capacities. Above these wind velocities, loads, and/or boom lengths must be appropriately reduced for safe operation.
9. Do not operate at any radii beyond stability limit line on range chart. At these positions, the machine can overturn without any load on the hook.
10. When the boom length or radius or both are between points listed on capacity chart, the smallest load shown at either the next larger radius or boom length shall be used.
11. Do not exceed jib capacities at any reduced boom length.
12. It is safe to telescope or retract any load listed if rating is not exceeded. Boom must be fully retracted against boom stops at all times when lifting minimum boom length capacity loads.
13. Always pay out loadline before extending boom to avoid damaging loadline or crane structure.
14. Loads lifted must be within safe winch capacity as well as safe crane capacity. Multiple part rope reeving must be used on loads exceeding winch single part rated pull. Jibs are rated for single part use only.
15. Do not operate the boom over personnel or allow them to walk or stand beneath the boom or load.
16. Do not allow personnel on carrier deck, or crane frame area when rotating crane.
17. Do not allow personnel to ride on hook, hookblock, load or any device attached to the loadline. Handling of personnel is only permitted with full extension of all outrigger beams. Use only National Crane approved baskets.



18. Operate controls slowly and smoothly to avoid damage to crane or personnel.
19. Boom must be in carrying rack and outriggers fully retracted for travel.
20. Maintain a clearance of at least 10 feet between any part of the crane, loadline or load and any electrical line carrying up to 50,000 volts. 1 foot additional clearance is required for every additional 30,000 volts or less.

DEFINITIONS

1. **Load radius**—Horizontal distance from the centerline of rotation before loading to the center of the vertical loadline or block with load applied.
2. **Loaded boom angle**—Loaded boom angle is the angle between the first section boom and the horizontal, after lifting the rated load at the rated radius. The boom angle before loading should be greater to account for deflections. The loaded boom angle combined with the boom length give only an approximation of the operating radius.
3. **Working area**—Area measured in a circular arc above the center line of rotation as shown on the Working Area Diagram.
4. **Freely suspended load**—Load hanging free with no direct external force applied except by the loadline.
5. **Side load**—Horizontal side force applied to the lifted load either on the ground or in the air.
6. **No load stability limit**—The stability limit radius shown on the range diagrams is the radius beyond which it is not permitted to position the boom plus block configuration because machine can overturn without any load on the hook.
7. **Structural length limit**—An area where the boom or the boom with jib deployed cannot be extended because of structural limitations.
8. **PCSA**—Power Crane and Shovel Association.

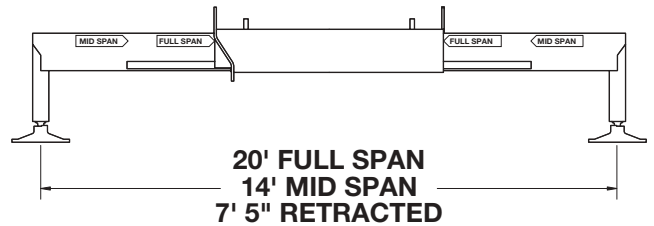


WORK AREA DIAGRAM

INFORMATIONAL DATA

OUTRIGGERS

1. Outrigger spread from center to center of the outrigger floats retracted is 7' 5", at mid span is 14' and at full span is 20'.
2. No outrigger pad load exceeds 55,000 lb maximum at full span, 61,500 lb maximum at mid span, or 54,000 lb maximum at retracted.



WEIGHT REDUCTIONS FOR LOAD HANDLING DEVICES (See load chart for jib deductions)

Hookblocks are rated at maximum capacity for the block. Do not exceed rated cable pull with any block.

5 t	Downhaul weight	150 lb
12 t	1 sheave block	305 lb
19 t	2 sheave block	350 lb
30 t	3 sheave block	575 lb

NOTICE			1 Part Line	2 Part Line	3 Part Line	4 Part Line	5 Part Line	6 Part Line	7 Part Line
<ul style="list-style-type: none"> • Do not deadhead line block against boom tip when extending boom. • Keep at least 3 wraps of loadline on drum at all times. • Use only 9/16" diameter rotation resistant cable with 38,500 lb breaking strength on this machine. • Maximum capacity with "burst of speed" is 3,000 lb. 									
Maximum Boom Length at Maximum Elevation with Rigging Shown with Load Block at Ground Level			144 ft Boom & Jib	100 ft	75 ft	60 ft	50 ft	43 ft	36 ft
Winch	Cable Supplied	Average Breaking Strength	Lift and Speed	Lift and Speed	Lift and Speed	Lift and Speed	Lift and Speed	Lift and Speed	Lift and Speed
Standard Planetary Winch	9/16" diameter rotation resistant	38,500 lb	7,700 lb 164 fpm	15,400 lb 82 fpm	23,100 lb 55 fpm	30,800 lb 41 fpm	38,500 lb 33 fpm	46,200 lb 27 fpm	53,900 lb 23 fpm
"Burst of Speed"	9/16" diameter rotation resistant	38,500 lb	3,000 lb 265 fpm	6,000 lb 132 fpm	9,000 lb 88 fpm	12,000 lb 66 fpm	15,000 lb 53 fpm	18,000 lb 44 fpm	21,000 lb 38 fpm

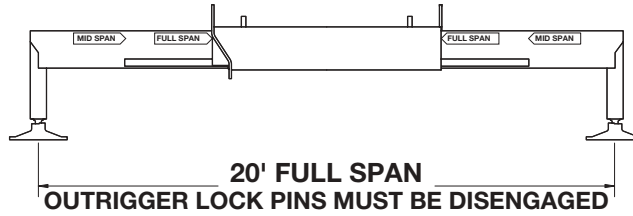
All winch pulls and speeds are shown on the fourth layer. Winch line pulls would increase on the first, second and third layers. Winch line speed would decrease on the first, second and third layers. Winch line pulls may be limited by the winch capacity or the ANSI 5 to 1 cable safety factor. These are shown below:

Winch
Standard planetary

4th Layer Drum Pull
7,700 lb (low speed)
(3,000 lb "burst of speed")

Allowable Cable Pull
7,700 lb

13100A
100 ft BOOM
25 – 44 ft JIB



FULL SPAN
OUTRIGGER

29 ft – 100 ft BOOM RATED LOADS WITHOUT JIB

LOADED RADIUS (ft)	LOADED BOOM ANGLE (deg)	29 ft BOOM (ft)	LOADED BOOM ANGLE (deg)	A 44 ft BOOM (ft)	LOADED BOOM ANGLE (deg)	B 58 ft BOOM (ft)	LOADED BOOM ANGLE (deg)	C 72 ft BOOM (ft)	LOADED BOOM ANGLE (deg)	D 86 ft BOOM (ft)	LOADED BOOM ANGLE (deg)	100 ft BOOM (ft)
5	79.5	* 60,000										
8	73	44,000	79	29,100								
10	68.5	36,900	76.5	29,000								
12	65	31,900	74	28,600	78.5	28,600						
15	57	26,400	69.5	24,600	75.5	23,500	79.5	22,900				
20	46	20,100	62.5	19,000	70.5	18,050	75.5	17,450	78.5	16,300	80	10,650
25	29	14,800	55	15,350	65	14,600	71	14,050	75.5	13,700	77.5	10,450
30			46.5	12,300	59	12,150	66.5	11,700	71.5	11,350	75	10,000
35			36	9,700	53	10,000	62	9,900	68	9,600	72	9,400
40			22	7,700	46	8,050	57.5	8,300	64	8,250	69	8,050
45					38.5	6,500	52.5	6,700	60	6,900	66	7,000
50					29	5,200	47	5,450	56	5,600	62	5,750
55					15	4,200	40.5	4,400	52	4,600	59	4,700
60							33.5	3,600	47.5	3,800	55.5	3,900
65							24.5	2,950	42	3,100	51.5	3,250
70							10	2,100	36.5	2,550	47.5	2,700
75									29.5	2,100	43	2,200
80									21	1,650	38.5	1,800
85											33	1,450
90											26.5	1,100
95											17.5	750
100												
	0	7,900	0	4,100	0	2,250	0	1,100				

25 – 44 ft JIB RATED LOADS

LOADED RADIUS (ft)	LOADED BOOM ANGLE (deg)	25 ft JIB (ft)	LOADED BOOM ANGLE (deg)	44 ft JIB (ft)
30	78	5,100		
35	76	5,100	78	2,800
40	75	4,950	76	2,650
45	71	4,450	74	2,600
50	69	4,150	72	2,500
55	67	3,850	70.5	2,500
60	64	3,550	68.5	2,350
65	62	3,200	66.5	2,250
70	59	2,500	64.5	2,150
75	56	2,100	62	2,050
80	52.5	1,650	59.5	1,950
85	49.5	1,250	57.5	1,650
90	45	900	55	1,400
95	42	550	52.5	1,100
100			48.5	850
105			45.5	600
110				

RATED LOAD REDUCTIONS WITH JIB

BOOM LENGTH (ft)	25 – 44 ft JIB STOWED
29	Reduce load 800 lb
44	Reduce load 600 lb
58	Reduce load 450 lb
72	Reduce load 350 lb
86	Reduce load 300 lb
100	Reduce load 250 lb

Note:

1. All capacities are in pounds, angles in degrees, and radii in feet.
2. Loaded boom angles are given as reference only.
3. Shaded areas are structurally limited capacities.
4. Handling of personnel is only permitted with full span extension of all outrigger beams.
- *5. See owners manuals. The 60,000 lb load requires optional 9/16" diameter 6x25 IWRC cable.

13100A

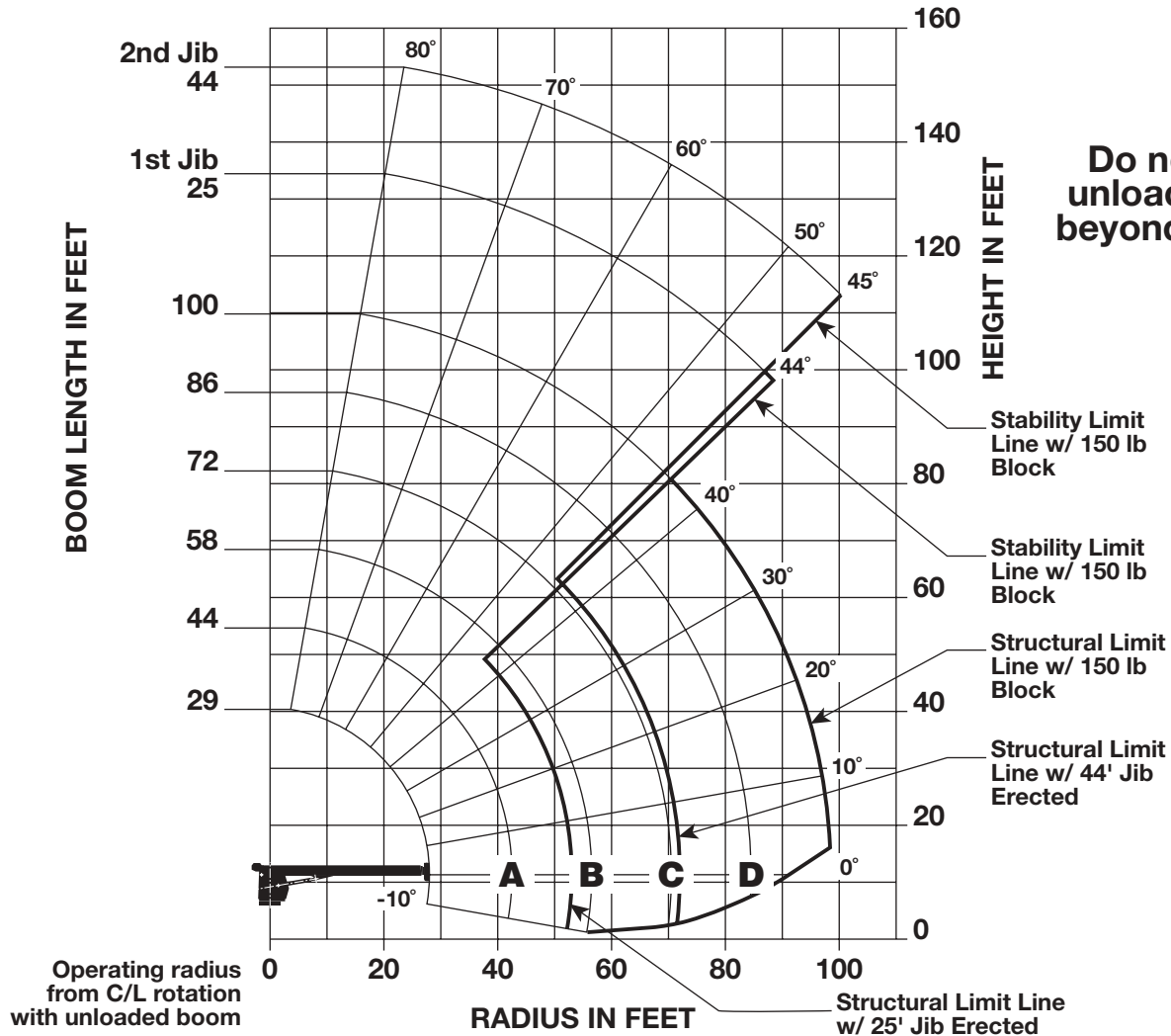
FULL SPAN OUTRIGGER 20 ft

100 ft BOOM

25 – 44 ft JIB

LMI OPERATING CODE
OPERATING MODE

01	Main Boom – No Jib Stowed
02	Main Boom – Jib Stowed
03	25 ft Tele Jib
04	44 ft Tele Jib
11	Man Basket On Main Boom
12	Man Basket on 25 ft Tele Jib
13	Man Basket on 44 ft Tele Jib



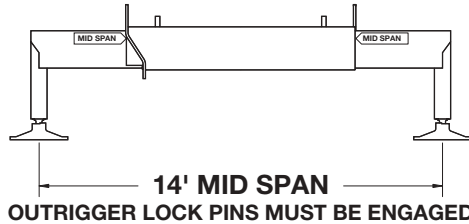
SET-UP

1. Fully extend and set outriggers to full span location, level crane and set optional front stabilizer, if equipped.

OPERATION

1. The 29 ft boom length capacities are based on boom fully retracted. If not fully retracted, do not exceed 44 ft boom length capacities.
2. Do not extend unloaded boom or jib beyond stability limit line on range chart as loss of stability may occur.
3. Load blocks and slings are considered to be a part of the load.
4. Operate with jib by radius when main boom is fully extended and by boom angle when main boom is partially extended. Do not exceed jib capacities at any partially extended boom length.
5. All jib loads must be lifted with single part reeving.

**13100A
100 ft BOOM
25 – 44 ft JIB**



**MID SPAN
OUTRIGGER**

29 ft – 100 ft BOOM RATED LOADS WITHOUT JIB

LOADED RADIUS (ft)	LOADED BOOM ANGLE (deg)	29 ft BOOM (ft)	LOADED BOOM ANGLE (deg)	A 44 ft BOOM (ft)	LOADED BOOM ANGLE (deg)	B 58 ft BOOM (ft)	LOADED BOOM ANGLE (deg)	C 72 ft BOOM (ft)	LOADED BOOM ANGLE (deg)	D 86 ft BOOM (ft)	LOADED BOOM ANGLE (deg)	100 ft BOOM (ft)
5	79	*60,000										
8	72.5	41,600	79	29,100								
10	68.5	35,100	76.5	29,000								
12	65	30,500	73.5	28,600	78.5	27,000						
15	57.5	23,950	69.5	24,600	75.5	22,100	79	21,500				
20	45	13,000	62	13,900	70	14,450	75	14,950	78	14,950	80	10,650
25	28	8,100	55	8,900	64	9,400	70	9,750	74	10,200	77.5	10,200
30			46.5	6,050	58.5	6,500	66	6,750	70.5	7,050	74.5	7,200
35			36	4,150	53	4,600	61	4,950	67	5,150	71	5,300
40			22.0	2,850	45.5	3,300	56.5	3,600	63	3,850	67.5	4,000
45					38	2,350	51	2,600	59	2,900	64	3,000
50					29	1,600	46	1,850	55	2,050	61	2,200
55					14.5	1,000	41	1,250	51	1,450	57	1,600
60							33	800	46.5	900	54.5	1,000
65											51	650
70												
	0	5,400	0	2,350	0	900						

25 – 44 ft JIB RATED LOADS

LOADED RADIUS (ft)	LOADED BOOM ANGLE (deg)	25 ft JIB (ft)	LOADED BOOM ANGLE (deg)	44 ft JIB (ft)
30	77.5	5,100		
35	75.5	5,100	79.5	2,800
40	73.5	3,750	78	2,650
45	70.5	2,700	75.5	2,600
50	66	1,250	74	2,400
55	63	700	70	1,900
60			67.5	1,400
65			65	900
70			62.5	550

RATED LOAD REDUCTIONS WITH JIB

BOOM LENGTH (ft)	25 – 44 ft JIB STOWED
29	Reduce load 800 lb
44	Reduce load 600 lb
58	Reduce load 450 lb
72	Reduce load 350 lb
86	Reduce load 300 lb
100	Reduce load 250 lb

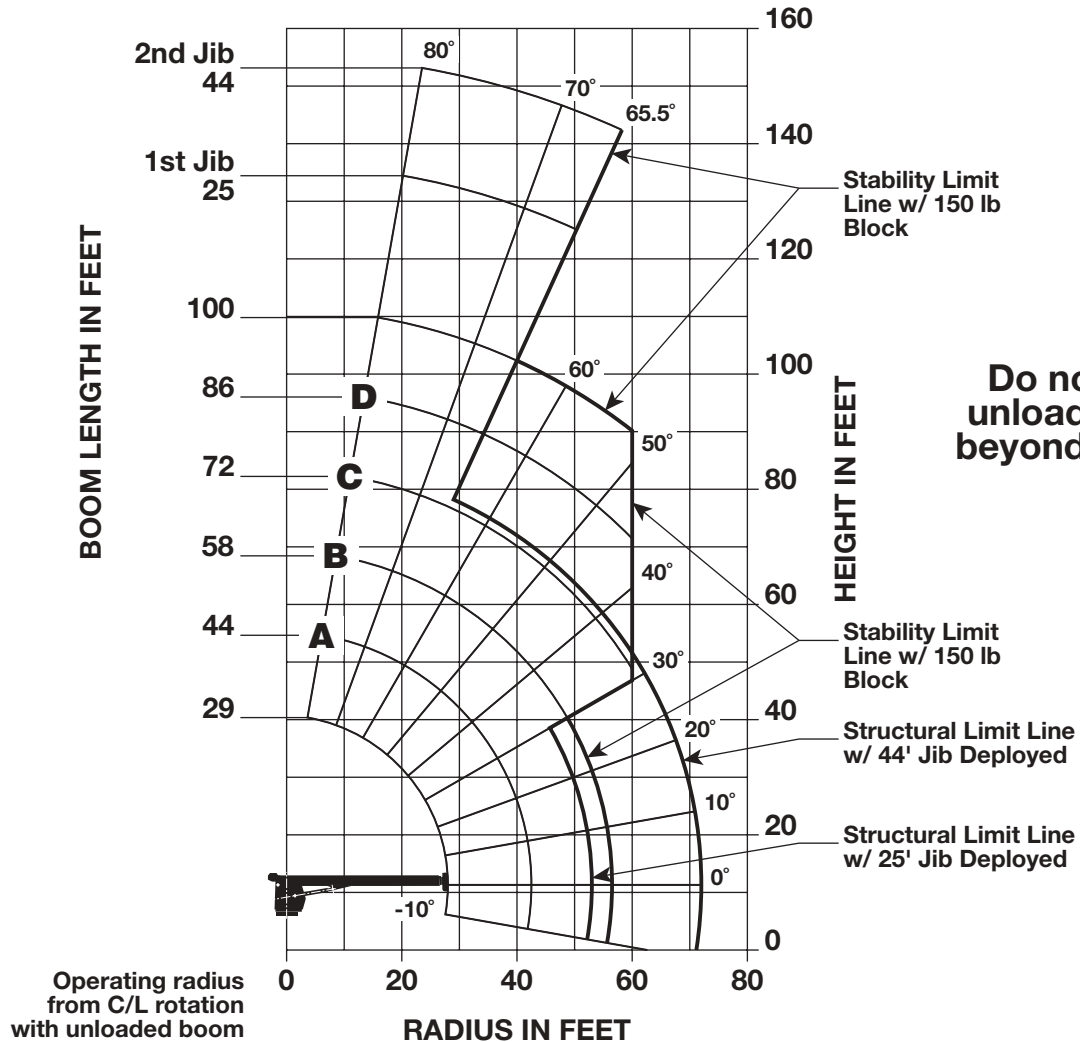
Note:

1. All capacities are in pounds, angles in degrees, and radii in feet.
2. Loaded boom angles are given as reference only.
3. Shaded areas are structurally limited capacities.
4. Handling of personnel is only permitted with full span extension of all outrigger beams.
- *5. See owners manuals. The 60,000 lb load requires optional 9/16" diameter 6x25 IWRC cable.

13100A
MID SPAN OUTRIGGER 14 ft
100 ft BOOM
25 – 44 ft JIB

LMI OPERATING CODE**OPERATING MODE**

21	Main Boom – No Jib Stowed
22	Main Boom – Jib Stowed
23	25 ft Tele Jib
24	44 ft Tele Jib



**Do not move
unloaded boom
beyond limit line.**

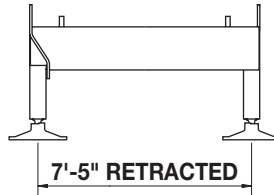
SET-UP

- Engage mid span outrigger lock pins, extend and set outriggers to mid span location, level crane and set optional front stabilizer, if equipped.

OPERATION

- The 29 ft boom length capacities are based on boom fully retracted. If not fully retracted, do not exceed 44 ft boom length capacities.
- Do not extend unloaded boom or jib beyond stability limit line on range chart as loss of stability may occur.
- Load blocks and slings are considered to be a part of the load.
- Operate with jib by radius when main boom is fully extended and by boom angle when main boom is partially extended. Do not exceed jib capacities at any partially extended boom length.
- All jib loads must be lifted with single part reeving.

**13100A
100 ft BOOM
NO JIB**



**RETRACTED
OUTRIGGER**

OUTRIGGER LOCK PINS MUST BE DISENGAGED

29 ft – 100 ft BOOM RATED LOADS WITHOUT JIB

LOADED RADIUS (ft)	LOADED BOOM ANGLE (deg)	29 ft BOOM (ft)	LOADED BOOM ANGLE (deg)	A 44 ft BOOM (ft)	LOADED BOOM ANGLE (deg)	B 58 ft BOOM (ft)	LOADED BOOM ANGLE (deg)	C 72 ft BOOM (ft)	LOADED BOOM ANGLE (deg)	D 86 ft BOOM (ft)	LOADED BOOM ANGLE (deg)	100 ft BOOM (ft)
5	79	* 60,000										
8	72.5	26,350	79	24,000								
10	68.5	15,600	76.5	16,850								
12	64	11,200	73.5	11,900	78	11,000						
15	57	7,200	69	7,600	75	8,000	78	8,000				
20	44	3,900	62	4,300	70	4,600	74	4,800	77	4,200	79.5	4,200
25	27.5	2,100	54	2,400	64	2,700	70	2,750	71	2,400	76.5	3,000
30			45.5	1,250	58.5	1,500	65	1,450	70.5	1,650	73	1,700
35							60.5	800	66	850	70	850

RATED LOAD REDUCTIONS WITH JIB

Note:

1. All capacities are in pounds, angles in degrees, and radii in feet.
2. Loaded boom angles are given as reference only.
3. Shaded areas are structurally limited capacities.
4. Handling of personnel is only permitted with full span extension of all outrigger beams.
- *5. See owners manuals. The 60,000 lb load requires optional 9/16" diameter 6x25 IWRC cable.

BOOM LENGTH (ft)	25 – 44 ft JIB STOWED
29	Reduce load 800 lb
44	Reduce load 600 lb
58	Reduce load 450 lb
72	Reduce load 350 lb
86	Reduce load 300 lb
100	Reduce load 250 lb

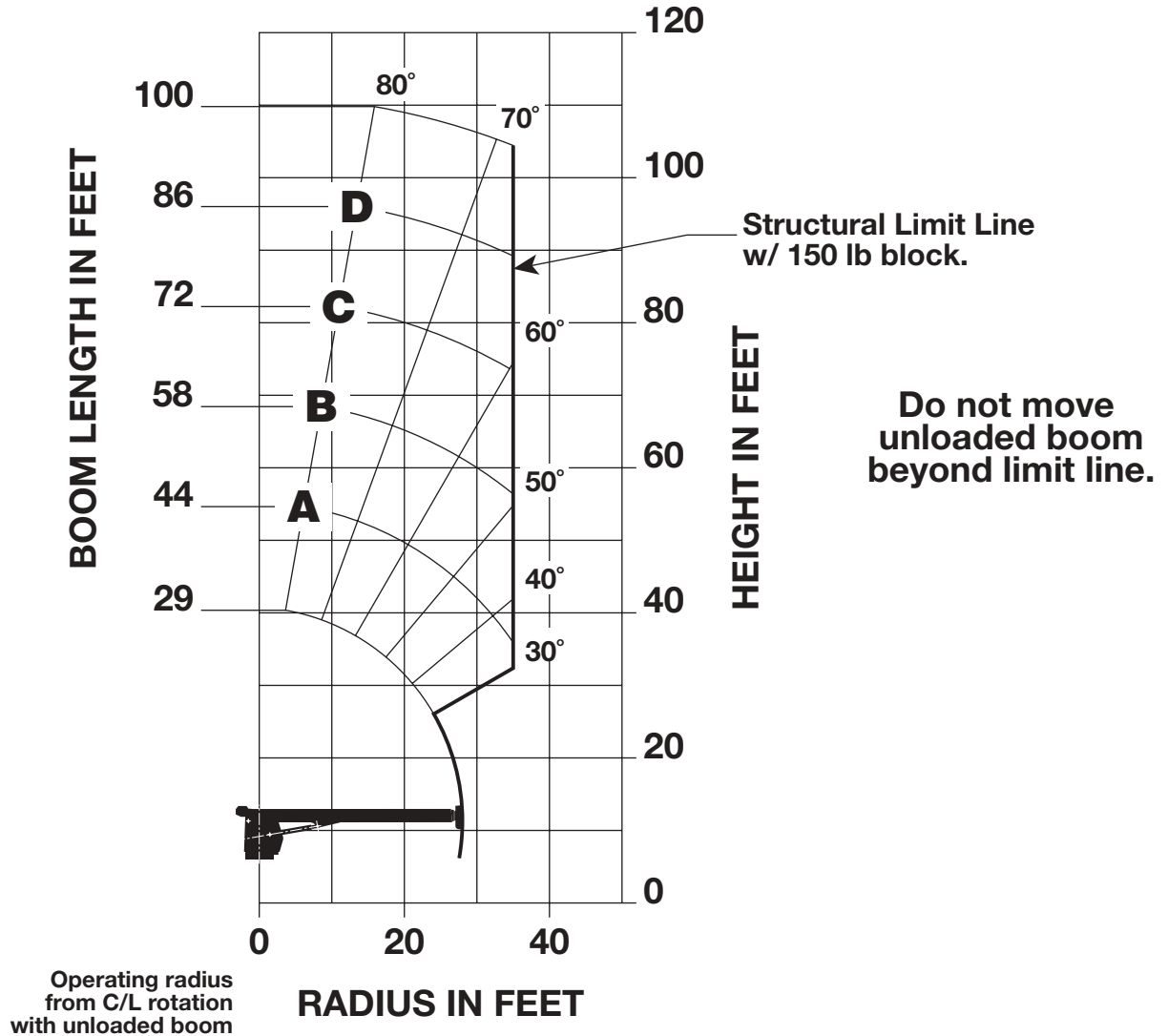
13100A
RETRACTED OUTRIGGER 7 ft 5 in
100 ft BOOM
NO JIB

LMI OPERATING CODE

OPERATING MODE

31 Main Boom – No Jib Stowed

32 Main Boom – Jib Stowed

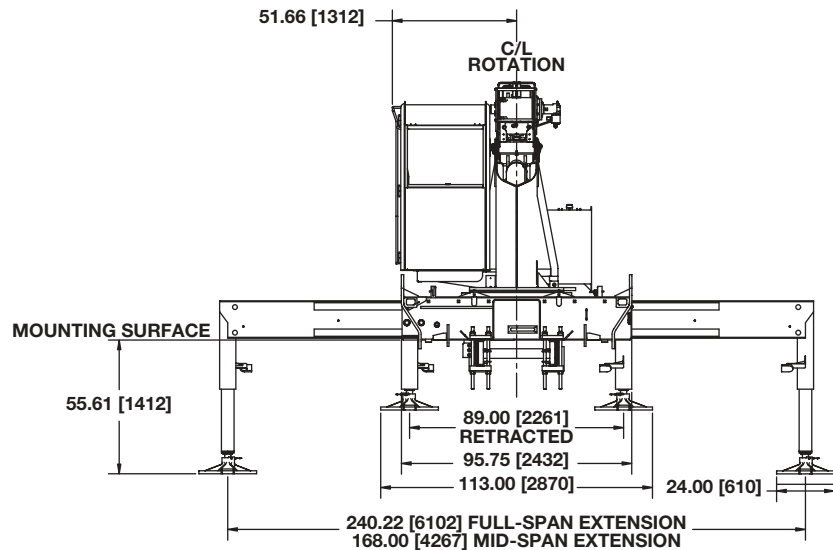
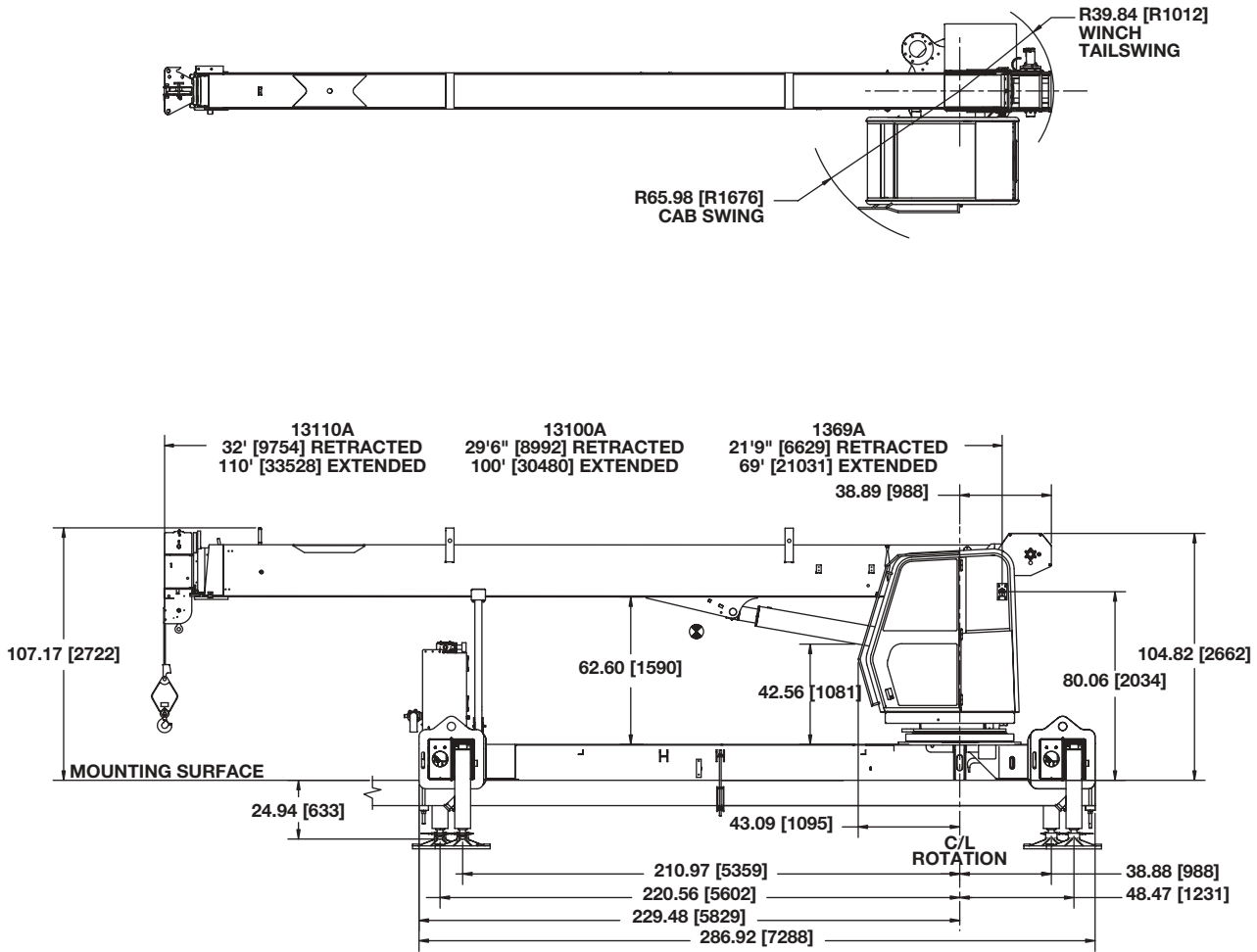
**SET-UP**

1. Set outriggers to retracted location, level crane and set optional front stabilizer, if equipped.

OPERATION

1. The 29 ft boom length capacities are based on boom fully retracted. If not fully retracted, do not exceed 44 ft boom length capacities.
2. Do not extend unloaded boom beyond stability limit line on range chart as loss of stability may occur.
3. Load blocks and slings are considered to be a part of the load.
4. Jib cannot be erected when using retracted outriggers.

DIMENSIONAL SPECIFICATIONS



Notes:

1. Dimensions are in inches [mm] unless otherwise specified.