



**NBT40-1  
LOAD CHARTS &  
REACH DIAGRAM**

**Crane Load Chart complies with  
ASME B30.5 / CSA Z150**

**Aerial Work Platform Reach Diagram complies with  
ANSI/SAIA A92.2 / CSA C225**

**SERIAL NUMBER**



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## NOTES FOR LIFTING CAPACITIES

### GENERAL:

1. Rated loads as shown on lift chart pertain to this equipment as originally manufactured. Modifications to the equipment or use of optional equipment other than that specified can result in a reduction of capacity.
2. Construction equipment can be hazardous if improperly operated or maintained. Operation and maintenance of this equipment shall be in compliance with the information in the Operator's Manual, Service Manual, and Parts Manual supplied. If these manuals are missing, order replacements from the manufacturer through the distributor.
3. The operator and other personnel associated with this equipment shall fully acquaint themselves with the latest American National Safety Standards (ASME/ANSI) for lifting devices.

### SETUP:

1. The equipment shall be level and on a firm supporting surface. Depending on the nature of the supporting surface, it may be necessary to have structural supports under the outrigger floats to spread the load to a larger bearing surface.
2. For outrigger operation, all outriggers shall be properly extended with tires raised free of equipment weight before operating the boom or lifting loads.
3. When the equipment is equipped with center front stabilizer, the front stabilizer shall be set in accordance with instructions in Operator's Manual.
4. When equipped with removable and/or extendible counterweight, the proper counterweight shall be installed and fully extended before and during operation.
5. With certain boom and hoist tackle combinations, maximum capacities may not be obtainable with standard cable lengths.
6. Unless approved by the crane manufacturer, do not travel with boom extension, jib or platform erected unless otherwise noted. Refer to Operator's Manual for job-site travel information.
7. Inspect vehicle and lifting devices, including operation prior to use each day.
8. Always level the equipment with the level indicator located at each outrigger control station.

### OPERATION:

1. Rated loads at rated radius shall not be exceeded. Do not attempt to tip the machine to determine allowable loads. For clamshell, grapple, magnet or concrete bucket operation, weight of component and load must not exceed 80% of rated lifting capacities.
2. All rated loads have been tested to and meet the requirements of SAE J1063 - Cantilevered Boom Crane Structures - Method of Test, and do not exceed 85% of the tipping load on outriggers fully extended, and SAE J1289 - Mobile Crane Stability Ratings [1.25P < (T-0.1A)] on outriggers 50% and 0% extended (fully retracted) as determined by SAE J765 - Crane Stability Test Code.
3. Rated loads include the weight of hookblock, slings and auxiliary lifting devices and their weights shall be subtracted from the listed rating to obtain the net load to be lifted. When more than the minimum required parts of line needed to pick the load are used, the additional rope weight as measured from the lower sheaves of the main boom nose shall be considered part of the load to be lifted. When both the hook block and headache ball are reeved, the lifting device that is NOT in use, including the line as measured from the lower sheave(s) of the nose supporting the unused device shall be considered part of the load.
4. Load ratings are based on freely suspended loads. No attempt shall be made to move a load horizontally on the ground in any direction.
5. The maximum in-service wind speed is 20 m.p.h. on the boom capacities and 15 m.p.h. on the jib capacities. It is recommended when wind velocity is above 20 m.p.h., rated loads and boom lengths shall be appropriately reduced. For equipment not in-service, the main boom should be retracted and lowered with the swing brake set in wind velocities over 30 m.p.h.
6. Rated loads are for lift crane service only.
7. Do not operate at a radius or boom length where capacities are not listed. At these positions, the equipment may overturn without any load on the hook.
8. The maximum load which can be telescoped is not definable because of variations in loadings and crane maintenance, but it is safe to attempt retraction and extension of the boom within the limits of the capacity chart.
9. When the boom length or lift radius or both are between values listed, the smallest load shown at either the next larger radius or next longer or shorter boom length shall be used.
10. For safe operation, the user shall make due allowances for his particular job conditions, such as: soft or uneven ground, out of level conditions, high winds, side loads, pendulum action, jerking or sudden stopping of loads, experience of personnel, two machine (tandem) lifts, traveling with loads, electric wires, obstacles, hazardous conditions, etc. Side pull on boom or jib is extremely dangerous.

## NOTES FOR LIFTING CAPACITIES (cont'd.)

### OPERATION (cont'd.):

11. The boom angle before loading should be greater than the loaded boom angle to account for deflection.
12. When operating in the "On Outriggers 50% Extended (17.5' spread)" mode, the outrigger beam pins must be engaged. When operating in the "On Outriggers 0% Extended (6.5' spread)" mode, the outrigger beams must be fully retracted. Failure to follow these precautions could result in structural damage or loss of stability of the equipment.
13. Do not lift loads when boom is fully lowered. The Rated Capacity Limiter (RCL) senses pressure and will not provide warnings or lockout. The crane can become overloaded if lift cylinder(s) is fully retracted.
14. Use RCL/angle indicator as reference only.
15. Capacities for the 34 ft. boom length shall be lifted with boom fully retracted. If boom is not fully retracted, capacities shall not exceed those shown for the 47 ft. boom length.
16. Always pay out load line before extending boom to avoid damaging loadline, equipment structure, or tripping anti-two-block system.
17. The maximum outrigger pad load is 57,200 lb (minimum chassis requirement).
18. Loads lifted must be within safe winch capacity. Multiple part rope reeving must be used on loads exceeding winch single part rated pull. Auxiliary boom head rated for single part use except multi-reeve group used for nominal rated load. Extensions are rated for single part use only.
19. Do not operate the boom over personnel or allow them to walk or stand beneath the boom or load.
20. Do not allow personnel on carrier deck or crane frame area when rotating crane.
21. Rated loads must be reduced when lifting at the boom tip with jib stowed or erected. Refer to the chart labeled "Rated Load Reductions with Extension" for the reduction at each boom length.
22. Do not allow personnel to ride on hook, hook block, or load.
23. Operate controls slowly and smoothly to avoid damage to equipment or personnel.
24. Boom must be in boom rest and outriggers fully retracted for travel.
25. 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. One foot of clearance is required for every additional 30,000 volts.

### DEFINITIONS:

1. Operating Radius: Horizontal distance from a projection of the axis of rotation to the supporting surface before loading to the center of the vertical hoist line or tackle with load applied.
2. Loaded Boom Angle (Shown in Parenthesis on Main Boom Capacity Chart): is the angle between the boom base section and the horizontal, after lifting the rated load at the rated radius with the rated boom length.
3. Working Area: Areas measured in a circular arc about 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 lift cable.
5. Side Load: Horizontal force applied to the lifted load either on the ground or in the air.
6. No load stability limit: The radius beyond which it is not permitted to position the boom plus block configuration because equipment can overturn without any load on the hook.
7. Structural length limit: The limit where the boom, or the boom with extension deployed, cannot be extended because of structural limitations.

## CAPACITY REDUCTIONS FOR SYNTHETIC ROPE USE:

If only synthetic rope is installed on the hoist(s), the following capacity reductions apply:

	Main boom charts	Extension charts
Outriggers fully extended	140 lb	0 lb
Outriggers 50% extended	270 lb	0 lb
Outriggers 0% extended	450 lb	N/A

If synthetic rope is installed on either the main or aux hoist, and wire rope is installed on the other hoist, no capacity reductions are required.

## LINE PULLS AND REEVING INFORMATION

HOISTS	CABLE SPECS.	PERMISSIBLE LINE PULLS	NOMINAL CABLE LENGTH
Main & Aux	5/8" (16 mm) 35x7 Class EEIPS, WSC Min. breaking strength 56,400 lb	11,250 lb*	450 ft.
Main & Aux	18 mm Synthetic K-100 Hoist Rope (ISO) Min. breaking strength 63,700 lb	12,740 lb*	463 ft.

The approximate weight of 5/8" wire rope is 1.0 lb/ft.

The approximate weight of 18 mm synthetic rope is 0.16 lb/ft.

\* With certain boom and hoist tackle combinations, the allowable line pull may be limited by hoist performance. Refer to Hoist Performance table for lift planning to ensure adequate hoist performance on drum rope layer required.

Parts of line	1	2	3	4	5	6	7	8
Max. boom length (ft.) at max. elevation with stated rigging and load block at ground level	182	142	103	81	66	55	47	40
Low speed lift (lb)	11250	22500	33750	45000	56250	67500	78750	80000
High speed lift (lb)	5000	10000	15000	20000	25000	30000	35000	40000

## HOIST PERFORMANCE

Wire Rope Layer	Hoist Line Pulls		Drum Rope Capacity (ft.)	
	Two Speed Hoist			
	Low	High	Layer	Total
	Available lb*	Available lb*		
1	15,000	7,516	82	82
2	13,529	6,765	92	174
3	12,299	6,150	101	275
4	11,275	5,637	110	385
5	10,407	5,204	119	504

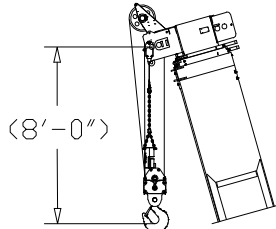
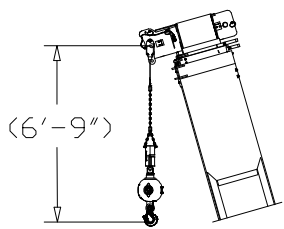
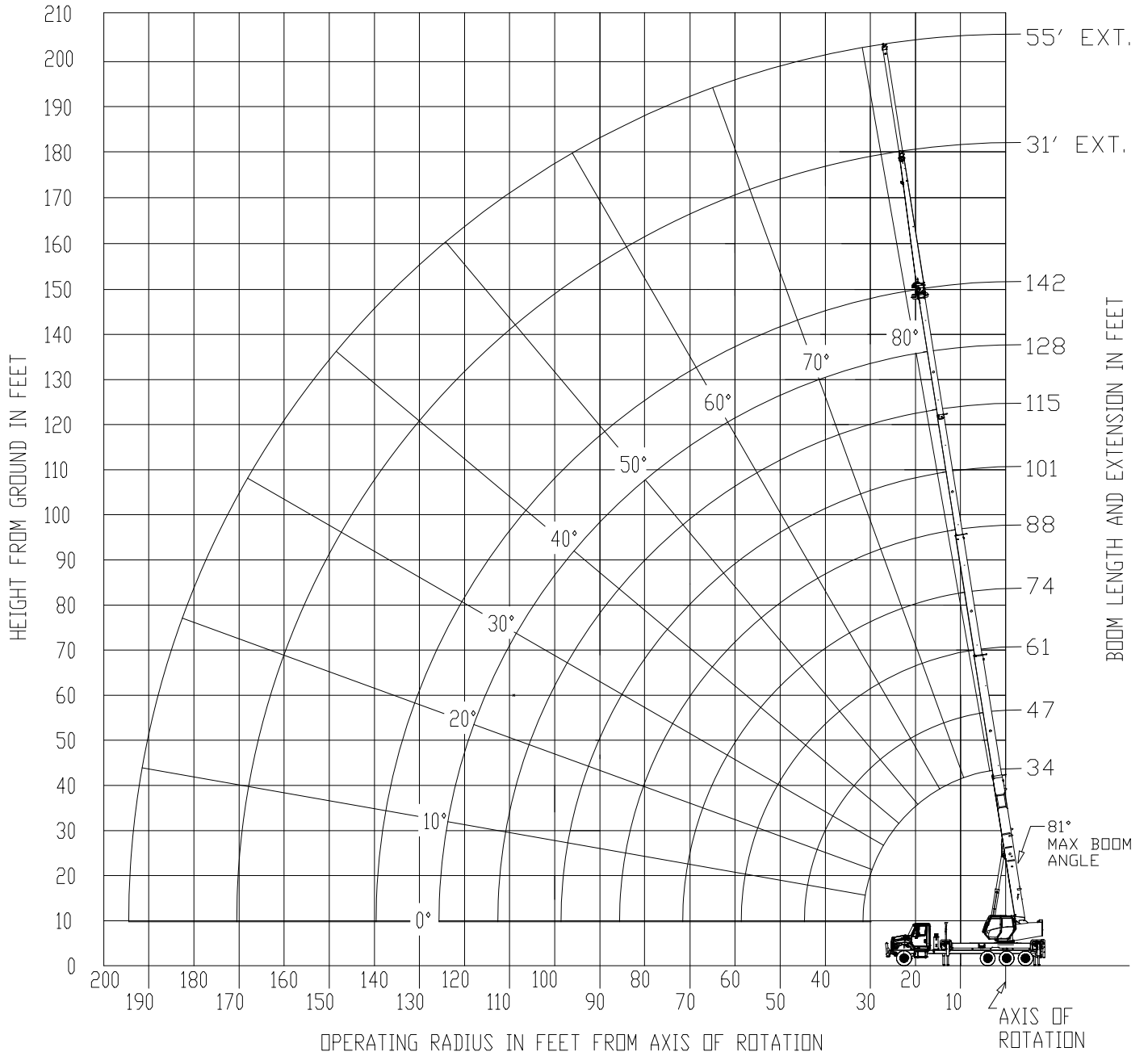
\* Refer to Line Pulls and Reeving Information table for max. lifting capacity of wire rope.

Synthetic rope layer height may vary and may reduce available line pull per layer.

# GEOMETRIC RANGE DIAGRAM

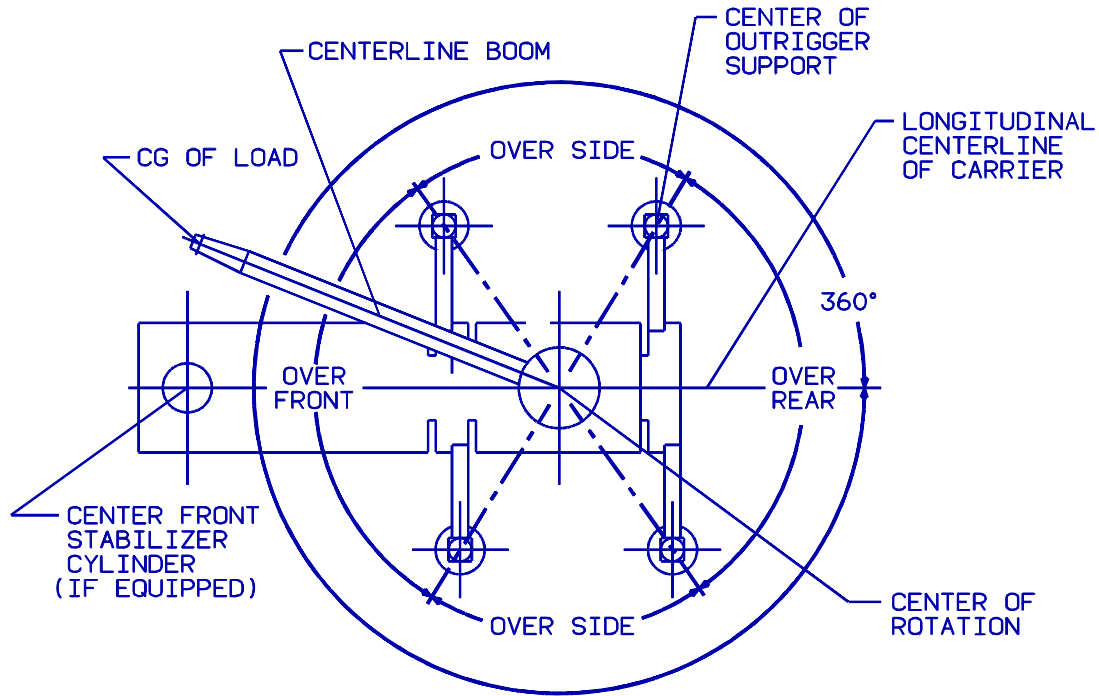
(BOOM DEFLECTION NOT SHOWN)

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DIMENSIONS ARE FOR LARGEST FURNISHED HOOK BLOCK & HEADACHE BALL, WITH ANTI-TWO BLOCK ACTIVATED.

\*DRAWING IS TO SHOW THE PHYSICAL REACH OF THE MACHINE. ALWAYS REFER TO LOAD CHART TO SEE WHAT PORTIONS OF THIS RANGE ARE STRUCTURALLY AND STABILITY LIMITED.



BOLD LINES DETERMINE THE LIMITING POSITION OF ANY LOAD FOR OPERATION WITHIN WORKING AREAS INDICATED  
 WORKING AREA DIAGRAM

## WEIGHT REDUCTIONS FOR LOAD HANDLING DEVICES

AERIAL WORK PLATFORM *	1000 lb
AUXILIARY BOOM NOSE	71 lb
HOOKBLOCKS and HEADACHE BALLS:	
50 ton, 4 sheave	800 lb+
40 ton, 3 sheave	600 lb+
30 ton, 2 sheave	500 lb+
20 ton, 1 sheave	400 lb+
7 ton overhaul ball	250 lb+

+Refer to rating plate for actual weight.

\* Note: Lifting over the extension nose with the work platform attached is not possible.

When lifting over boom extension, deduct total weight of all load handling devices reeved over main boom nose directly from boom extension capacity.

**NOTE:** All load handling devices and boom attachments are considered part of the load and suitable allowances **MUST BE MADE** for their combined weights. Weights are for National Crane furnished equipment.



**RATED LIFTING CAPACITIES IN POUNDS WITHOUT STOWED EXTENSION  
34 FT. - 142 FT. BOOM**

**ON OUTRIGGERS FULLY EXTENDED - 360°**

Radius in Feet	#01								
	Main Boom Length in Feet								
	34	47-A	61-B	74-C	88-D	101-E	115-F	128-G	142
7	80,000 (74.9)								
8	75,000 (73.1)								
10	66,500 (69.4)	40,000 (75.6)							
12	55,000 (65.7)	40,000 (73.1)	40,000 (77.4)						
15	43,000 (59.7)	40,000 (69.2)	38,000 (74.5)	34,000 (77.7)					
20	30,750 (48.9)	31,400 (62.3)	31,800 (69.5)	30,000 (73.7)	23,050 (76.7)	17,400 (78.8)			
25	23,250 (35.7)	23,850 (55)	24,250 (64.2)	24,500 (69.5)	20,700 (73.4)	15,750 (75.9)	13,000 (78.3)		
30	18,000 (13.5)	18,800 (46.9)	19,200 (58.8)	19,450 (65.2)	18,750 (70)	14,300 (73.1)	12,150 (75.8)	10,050 (78)	8,000 (79.5)
35		15,150 (37.5)	15,550 (52.9)	15,800 (60.7)	16,000 (66.4)	13,200 (70.1)	11,150 (73.5)	9,550 (75.8)	7,600 (77.7)
40		12,050 (25.2)	12,550 (46.6)	12,800 (56)	13,000 (62.6)	12,200 (67.1)	10,400 (71)	9,050 (73.7)	7,450 (75.9)
45			10,200 (40.1)	10,450 (51.5)	10,650 (59.1)	10,800 (64.2)	9,750 (68.4)	8,550 (71.4)	7,200 (74)
50			8,250 (31.8)	8,550 (46.2)	8,700 (55)	8,900 (60.8)	9,000 (65.7)	8,050 (69.1)	6,800 (72)
55			6,700 (20.6)	7,050 (40.3)	7,200 (50.8)	7,350 (57.3)	7,500 (62.8)	7,600 (66.7)	6,550 (70)
60				5,750 (33.6)	5,950 (46.3)	6,100 (53.7)	6,250 (59.7)	6,400 (64.1)	6,200 (67.9)
65				4,700 (25.4)	4,950 (41.4)	5,100 (49.9)	5,200 (56.6)	5,350 (61.4)	5,450 (65.6)
70				3,850 (12.6)	4,050 (35.9)	4,200 (45.9)	4,350 (53.3)	4,450 (58.6)	4,550 (63.1)
75						3,300 (29.6)	3,450 (41.6)	3,600 (49.9)	3,800 (60.6)
80						2,650 (21.6)	2,800 (36.9)	2,900 (46.4)	3,150 (58)
85						2,050 (7.2)	2,150 (31.5)	2,300 (42.6)	2,500 (55.3)
90							1,550 (25.1)	1,650 (38.5)	1,800 (46.3)
95							1,150 (16.5)	1,250 (34)	1,400 (42.8)
100							800 (28.8)	950 (39.2)	1,050 (46.7)
105							500 (22.6)	600 (35.1)	700 (43.6)
Minimum boom angle (°) for indicated length (no load)						0	21	32.5	40.5
Maximum boom length (ft.) at 0° boom angle (no load)						101			

NOTE: ( ) Boom angles are in degrees.

#RCL operating code. Refer to RCL manual for operating instructions.

Lifting Capacities at Zero Degree Boom Angle									
Boom Angle	Main Boom Length in Feet								
	34	47-A	61-B	74-C	88-D	101-E			
0°	17,350 (31.5)	9,800 (44.5)	5,750 (58.5)	3,600 (71.5)	2,000 (85.5)	900 (98.5)			

NOTE: ( ) Reference radii in feet.

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Rated Load Reductions from main boom capacity when lifting over main boom nose with extension erected (retracted):									
(in lb)	2300	2150	2000	1950	1900	1850	1800	1750	1700

**RATED LIFTING CAPACITIES IN POUNDS WITH STOWED EXTENSION  
34 FT. - 142 FT. BOOM  
ON OUTRIGGERS FULLY EXTENDED - 360°**

Radius in Feet	#02								
	Main Boom Length in Feet								
	34	47-A	61-B	74-C	88-D	101-E	115-F	128-G	142
7	79,200 (74.9)								
8	74,200 (73.1)								
10	65,700 (69.4)	39,350 (75.6)							
12	54,200 (65.7)	39,350 (73.1)	39,550 (77.4)						
15	42,200 (59.7)	39,350 (69.2)	37,550 (74.5)	33,600 (77.7)					
20	29,950 (48.9)	30,750 (62.3)	31,350 (69.5)	29,600 (73.7)	22,650 (76.7)	17,050 (78.8)			
25	22,450 (35.7)	23,200 (55)	23,800 (64.2)	24,100 (69.5)	20,300 (73.4)	15,400 (75.9)	12,700 (78.3)		
30	17,200 (13.5)	18,150 (46.9)	18,750 (58.8)	19,050 (65.2)	18,350 (70)	13,950 (73.1)	11,850 (75.8)	9,800 (78)	7,800 (79.5)
35		14,500 (37.5)	15,100 (52.9)	15,400 (60.7)	15,600 (66.4)	12,850 (70.1)	10,850 (73.5)	9,300 (75.8)	7,400 (77.7)
40		11,400 (25.2)	12,100 (46.6)	12,400 (56)	12,600 (62.6)	11,850 (67.1)	10,100 (71)	8,800 (73.7)	7,250 (75.9)
45			9,750 (40.1)	10,050 (51.5)	10,250 (59.1)	10,450 (64.2)	9,450 (68.4)	8,300 (71.4)	7,000 (74)
50			7,800 (31.8)	8,050 (46.2)	8,300 (55)	8,550 (60.8)	8,700 (65.7)	7,800 (69.1)	6,600 (72)
55			6,250 (20.6)	6,500 (40.3)	6,800 (50.8)	7,000 (57.3)	7,200 (62.8)	7,350 (66.7)	6,350 (70)
60				5,350 (33.6)	5,550 (46.3)	5,750 (53.7)	5,950 (59.7)	6,150 (64.1)	6,000 (67.9)
65				4,300 (25.4)	4,500 (41.4)	4,700 (49.9)	4,900 (56.6)	5,100 (61.4)	5,250 (65.6)
70				3,450 (12.6)	3,600 (35.9)	3,850 (45.9)	4,000 (53.3)	4,200 (58.6)	4,350 (63.1)
75					2,950 (29.6)	3,100 (41.6)	3,250 (49.9)	3,450 (55.7)	3,600 (60.6)
80					2,250 (21.6)	2,450 (36.9)	2,600 (46.4)	2,750 (52.7)	2,900 (58)
85						1,800 (31.5)	2,000 (42.6)	2,150 (49.6)	2,300 (55.3)
90						1,200 (25.1)	1,350 (38.5)	1,550 (46.3)	1,750 (52.6)
95						850 (16.5)	950 (34.0)	1,150 (42.8)	1,300 (49.7)
100							500 (28.8)	700 (39.2)	850 (46.7)
105									500 (43.6)
Minimum boom angle (°) for indicated length (no load)						0	22.5	35	43.4
Maximum boom length (ft.) at 0° boom angle (no load)						101			

NOTE: ( ) Boom angles are in degrees.  
#RCL operating code. Refer to RCL manual for operating instructions.

Lifting Capacities at Zero Degree Boom Angle									
Boom Angle	Main Boom Length in Feet								
	34	47-A	61-B	74-C	88-D	101-E			
0°	16,550 (31.5)	9,150 (44.5)	5,300 (58.5)	3,250 (71.5)	1,650 (85.5)	600 (98.5)			

NOTE: ( ) Reference radii in feet.

80096913

## 31 FT. - 55 FT. TELE BOOM EXTENSION

### ON OUTRIGGERS FULLY EXTENDED - 360°

Radius in Feet	31 ft. LENGTH
	#03
33	3,400 (80)
50	3,200 (75)
63	1,100 (70)
Min. boom angle for indicated length (no load)	63°
Max. boom length at 0° boom angle (no load)	61 ft.

Radius in Feet	55 ft. LENGTH
	#04
40	2,200 (80)
59	2,200 (75)
74	700 (70)
Min. boom angle for indicated length (no load)	66°
Max. boom length at 0° boom angle (no load)	61 ft.

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NOTE: ( ) Boom angles are in degrees.  
#RCL operating code. Refer to RCL manual for  
operating instructions.

#### BOOM EXTENSION CAPACITY NOTES:

1. 31 ft. and 55 ft. extension lengths may be used for single line lifting service.
2. Radii listed are for a fully extended boom with the boom extension erected. For main boom lengths less than fully extended, the rated loads are determined by boom angle. For boom angles not shown, use the rating of the next lower boom angle.  
  
**WARNING:** Operation of this equipment with heavier loads than the capacities listed is strictly prohibited. Tipping with boom extension occurs rapidly and without advance warning.
3. Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
4. Capacities listed are with outriggers properly extended and vertical jacks set.
5. When lifting over the main boom nose with 31 ft. or 55 ft. extension erected, the outriggers must be fully extended or 50% extended (17.5' spread).

**RATED LIFTING CAPACITIES IN POUNDS WITHOUT STOWED EXTENSION**  
**34 FT. - 142 FT. BOOM**  
**ON OUTRIGGERS 50% EXTENDED (17.5 ft. spread) - 360°**

Radius in Feet	#21								
	Main Boom Length in Feet								
	34	47-A	61-B	74-C	88-D	101-E	115-F	128-G	142
7	80,000 (74.9)								
8	75,000 (73.1)								
10	66,500 (69.4)	40,000 (75.6)							
12	55,000 (65.7)	40,000 (73.1)	40,000 (77.4)						
15	43,000 (59.7)	40,000 (69.2)	38,000 (74.5)	34,000 (77.7)					
20	25,350 (48.9)	26,300 (62.3)	26,900 (69.5)	27,350 (73.7)	23,050 (76.7)	17,400 (78.8)			
25	15,350 (35.7)	16,250 (55)	16,850 (64.2)	17,150 (69.4)	17,400 (73.4)	15,750 (75.9)	13,000 (78.3)		
30	9,900 (13.7)	10,900 (46.9)	11,350 (58.7)	11,650 (65)	11,900 (69.8)	12,150 (73.5)	12,150 (75.8)	10,050 (78)	8,000 (79.5)
35		7,700 (38.4)	8,150 (53.4)	8,250 (60.9)	8,450 (60.9)	8,650 (70)	8,900 (73.5)	9,150 (75.8)	7,600 (77.7)
40		5,350 (26.5)	5,850 (47.1)	6,100 (56.3)	6,300 (56.3)	6,450 (67)	6,650 (70.8)	6,850 (73.7)	7,100 (75.9)
45			4,150 (40)	4,400 (51.3)	4,600 (51.3)	4,700 (63.7)	4,900 (67.9)	5,050 (71.1)	5,250 (74)
50			2,850 (31.7)	3,100 (46)	3,300 (46)	3,400 (60.3)	3,550 (64.9)	3,700 (68.4)	3,800 (71.6)
55			1,850 (20.5)	2,100 (40.1)	2,300 (40.1)	2,400 (56.8)	2,500 (61.9)	2,650 (65.7)	2,750 (69.1)
60				1,300 (33.4)	1,450 (33.4)	1,550 (53.2)	1,700 (58.9)	1,800 (63)	1,900 (66.7)
65				650 (25.2)	800 (25.2)	900 (49.4)	1,000 (55.8)	1,100 (60.3)	1,150 (64.2)
70								500 (57.4)	550 (61.7)
Minimum boom angle (°) for indicated length (no load)				0	29.3	41	49	51.6	56.6
Maximum boom length (ft.) at 0° boom angle (no load)				74					

NOTE: ( ) Boom angles are in degrees.

#RCL operating code. Refer to RCL manual for operating instructions.

<b>Lifting Capacities at Zero Degree Boom Angle</b>									
Boom Angle	Main Boom Length in Feet								
	34	47-A	61-B						
0°	9,050 (31.5)	3,750 (44.5)	1,200 (58.5)						

NOTE: ( ) Reference radii in feet.

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<b>Rated Load Reductions from main boom capacity when lifting over main boom nose with extension erected (retracted):</b>									
(in lb)	2,300	2,150	2,000	1,950	1,900	1,850	1,800	1,750	1,700

**RATED LIFTING CAPACITIES IN POUNDS WITH STOWED EXTENSION  
34 FT. - 142 FT. BOOM**

**ON OUTRIGGERS 50% EXTENDED (17.5 ft. spread) - 360°**

Radius in Feet	#22								
	Main Boom Length in Feet								
	34	47-A	61-B	74-C	88-D	101-E	115-F	128-G	142
7	79,200 (74.9)								
8	74,200 (73.1)								
10	65,700 (69.4)	39,350 (75.6)							
12	54,200 (65.7)	39,350 (73.1)	39,550 (77.4)						
15	42,200 (59.8)	39,350 (69.2)	37,550 (74.5)	33,600 (77.7)					
20	24,500 (48.9)	25,650 (62.3)	26,450 (69.5)	26,950 (73.7)	22,650 (76.7)	17,050 (78.8)			
25	14,550 (35.7)	15,600 (55)	16,400 (64.2)	16,750 (69.4)	17,000 (73.4)	15,400 (75.9)	12,700 (78.3)		
30	9,100 (13.5)	10,250 (46.9)	10,900 (58.7)	11,250 (65)	11,500 (69.8)	11,800 (73.5)	11,850 (75.8)	9,800 (78)	7,800 (79.5)
35		7,050 (38.4)	7,700 (53.4)	7,850 (60.9)	8,050 (60.9)	8,300 (70)	8,600 (73.5)	8,900 (75.8)	7,400 (77.7)
40		4,700 (26.5)	5,400 (47.1)	5,700 (56.3)	5,900 (56.3)	6,100 (67)	6,350 (70.8)	6,600 (73.7)	6,900 (75.9)
45			3,700 (40)	4,000 (51.3)	4,200 (51.3)	4,350 (63.7)	4,600 (67.9)	4,800 (71.1)	5,050 (74)
50			2,400 (31.7)	2,700 (46)	2,900 (46)	3,050 (60.3)	3,250 (64.9)	3,450 (68.4)	3,600 (71.6)
55			1,400 (20.5)	1,700 (40.1)	1,900 (40.1)	2,050 (56.8)	2,200 (61.9)	2,400 (65.7)	2,550 (69.1)
60				900 (33.4)	1,050 (33.4)	1,200 (53.2)	1,400 (58.9)	1,550 (63)	1,700 (66.7)
65					400 (25.2)	550 (49.4)	700 (55.8)	850 (60.3)	950 (64.2)
Minimum boom angle (°) for indicated length (no load)				0	29.3	41	49	51.6	56.6
Maximum boom length (ft.) at 0° boom angle (no load)				74					

NOTE: ( ) Boom angles are in degrees.

#RCL operating code. Refer to RCL manual for operating instructions.

Lifting Capacities at Zero Degree Boom Angle									
Boom Angle	Main Boom Length in Feet								
	34	47-A	61-B						
0°	8,250 (31.5)	3,500 (44.5)	1,150 (58.5)						

NOTE: ( ) Reference radii in feet.

80096915

RATED LIFTING CAPACITIES IN POUNDS WITHOUT STOWED EXTENSION  
34 FT. - 142 FT. BOOM  
ON OUTRIGGERS 0% EXTENDED (6.5 ft. spread) - 360°


Radius in Feet	#31								
	Main Boom Length in Feet								
	34	47-A	61-B	74-C	88-D	101-E	115-F	128-G	142
7	36,500 (75)								
8	27,350 (73.2)								
10	17,250 (69.6)	18,050 (75.5)							
12	11,750 (65.8)	12,450 (72.9)	12,900 (77.1)						
15	7,250 (60.9)	7,900 (69.6)	8,200 (74.6)	8,250 (77.1)					
20	2,950 (50.4)	3,600 (62.8)	3,950 (69.6)	4,150 (73.4)	4,350 (76.3)	4,500 (78.3)			
25	600 (37.7)	1,250 (55.5)	1,600 (64.4)	1,800 (69.2)	1,950 (72.8)	2,050 (75.3)	2,200 (77.4)		
30						550 (72.2)	650 (74.7)	700 (76.5)	800 (78.2)
Minimum boom angle (°) for indicated length (no load)	37.5	50	60	65	69.5	71	73	74.5	76
Maximum boom length (ft.) at 0° boom angle (no load)	N/A*								

NOTE: ( ) Boom angles are in degrees.

80096916

#RCL operating code. Refer to RCL manual for operating instructions.

(NOTE: Lifting over main boom nose with the 31-55' tele extension erected with outriggers in the fully retracted position is prohibited.)

\*  **DANGER: Tipping Hazard** - Before swinging boom, raise boom to "Minimum Boom Angle (°) for indicated length (no load)". See load chart above. Failure to raise boom to "Minimum Boom Angle (°) for indicated length (no load)" before swinging will result in the crane tipping over leading to potential death, serious injury, or damage to the crane and property. DO NOT swing the boom until the boom is raised to the "Minimum Boom Angle (°) for indicated length (no load)" for the length of boom.

When raising the boom from the boom rest: **1)** Set the outrigger jacks and level the crane **2)** Engage the swing brake **3)** Raise the boom from the boom rest **4)** Once the "Minimum Boom Angle (°) for indicated length (no load)" for the length of the boom has been reached, the swing brake may be released and lifting operations may begin.


**RATED LIFTING CAPACITIES IN POUNDS WITH STOWED EXTENSION**  
**34 FT. - 142 FT. BOOM**  
**ON OUTRIGGERS 0% EXTENDED (6.5 ft. spread) - 360°**

Radius in Feet	#32								
	Main Boom Length in Feet								
	34	47-A	61-B	74-C	88-D	101-E	115-F	128-G	142
7	35,700 (75)								
8	26,550 (73.2)								
10	16,450 (69.6)	17,400 (75.5)							
12	10,950 (65.8)	11,800 (72.9)	12,450 (77.1)						
15	6,450 (60.9)	7,250 (69.6)	7,750 (74.6)	7,850 (77.1)					
20	2,150 (50.4)	2,950 (62.8)	3,500 (69.6)	3,750 (73.4)	3,900 (76.3)	4,150 (78.3)			
25		600 (55.5)	1,150 (64.4)	1,400 (69.2)	1,550 (72.8)	1,700 (75.3)	1,900 (77.4)		
30								450 (76.5)	600 (78.2)
Minimum boom angle (°) for indicated length (no load)	37.5	50	60	65	69.5	71	73	74.5	76
Maximum boom length (ft.) at 0° boom angle (no load)	N/A*								

NOTE: ( ) Boom angles are in degrees.

80096917

#RCL operating code. Refer to RCL manual for operating instructions.

\*  **DANGER: Tipping Hazard** - Before swinging boom, raise boom to "Minimum Boom Angle (°) for indicated length (no load)". See load chart above. Failure to raise boom to "Minimum Boom Angle (°) for indicated length (no load)" before swinging will result in the crane tipping over leading to potential death, serious injury, or damage to the crane and property. DO NOT swing the boom until the boom is raised to the "Minimum Boom Angle (°) for indicated length (no load)" for the length of boom.

When raising the boom from the boom rest: **1)** Set the outrigger jacks and level the crane **2)** Engage the swing brake **3)** Raise the boom from the boom rest **4)** Once the "Minimum Boom Angle (°) for indicated length (no load)" for the length of the boom has been reached, the swing brake may be released and lifting operations may begin.

# NOTES FOR AERIAL WORK PLATFORM OPERATION

## GENERAL:

Before using the controls, the operator must be familiar with the warning and safety instructions of the equipment, aerial work platform, and proper work practices.

1. Personnel in the platform must adhere to the instructions, warnings, cautions and dangers described on the decals located on the equipment and platform.
2. This equipment and platform are NON-INSULATED.
3. Fall protection devices must be worn by each occupant in the platform.
4. Each fall protection lanyard must be individually attached to a designated anchor point. Attach only one lanyard per anchor point.
5. Additional safety equipment such as hard hat, eye protection and foot protection shall be worn in accordance to company and job site regulations.
6. Do not exceed the allowable platform capacity and reach.
7. All boom movements must be performed slowly and deliberately. Abrupt controls operation will result in abrupt movements.
8. When handling personnel, the requirements of the applicable national, state, and local regulations and safety codes must be met.
9. Handling of personnel is only permitted with full extension of all outrigger beams. Use only National Crane approved boom attached platforms.
10. If using an offsettable extension, do not use platform with extension deployed at 30 degree offset.
11. The maximum in-service wind speed is 20 m.p.h. on the boom capacities and 15 m.p.h. on the jib capacities.
12. The maximum outrigger pad load is 42,000 lb (for minimum chassis requirement).

## SETUP:

1. The equipment shall be level and on a firm supporting surface. Depending on the nature of the supporting surface, it may be necessary to have structural supports under the outrigger floats to spread the load to a larger bearing surface.
2. For outrigger operation, all outriggers shall be properly extended with tires raised free of machine weight before operating the boom or personnel platform.
3. When equipment is equipped with center front stabilizer, the front stabilizer shall be set in accordance with instructions in Operator's Manual.
4. Always level the equipment with the level indicator located at each outrigger control station.
5. When equipped with removable and/or extendible counterweight, the proper counterweight shall be installed and fully extended before and during operation.
6. Unless approved by the manufacturer, do not travel with boom extension, jib or platform erected unless otherwise noted. Refer to Operator's Manual for job-site travel information.
7. Inspect vehicle mounted aerial work platform prior to use each day.

## OPERATIONAL PROCEDURE:

The following procedure should be used to begin operation of this aerial work platform:

### Setup:

1. Position equipment at jobsite, set park brake, shift transmission to neutral, and turn OFF truck engine.
2. Start engine from lower control station (operators cab).
3. Set outriggers and level the equipment. Boom functions will operate only when leveled as per Operator's Manual.
4. Configure the RCL for crane operation, turn ON lower control power switch and set the platform on the ground.
5. Turn OFF the lower control power switch, Turn ON the remotes power switch to begin reconfiguration to aerial lift operation.

### Reconfiguration for Aerial Lift:

1. Turn ON remote control transmitter by twisting the Emergency STOP knob clockwise and following the onscreen instructions to restart the truck engine.
2. Using the remote control transmitter, stow the hoist rope & ATB weight.
3. Attach the aerial lift platform per Operator's Manual.
4. Attach the remote control transmitter to the platform control station and connect the footswitch to the Anti-Two-Block connector at boom or jib nose.
5. Configure the RCL for the aerial lift configuration matching setup.
6. Perform pre-start inspection and test of the aerial lift platform controls.

### During Operation:

1. Enter personnel platform and attach safety harness per Operator's Manual.
2. Verify that the float selector is in the raised/up position and the brake selector is in the clockwise (CW) position. This allows the platform to rotate freely as it is raised to the working position.
3. Depress the footswitch. Slowly move joystick, in the desired function direction, until the desired speed is obtained.
4. Immediately after the platform is raised to the working position, lock the brake by following the platform brake instructions. This prevents free-swing during operation.

### Ending Operation:

1. When operation is complete, return the aerial lift platform to ground level.
2. Remove the remote control from the platform controls station.
3. Detach safety harness and exit personnel platform per Operator's Manual.

### Reconfiguration for Crane:

1. Configure the RCL for crane mode to stow the aerial lift platform.
2. Using remote control, detach the aerial platform per platform mounting instructions.
3. Stow jib, unstow loadline(s) and reeve hookblock(s) and ATB weight(s) as needed.
4. Stow aerial lift platform and place boom in boomrest.
5. Turn remotes power switch OFF and then press remotes Emergency STOP switch to turn OFF transmitter.
6. Stow outriggers using ground control stations.
7. See Operator's Manual for securing instructions.

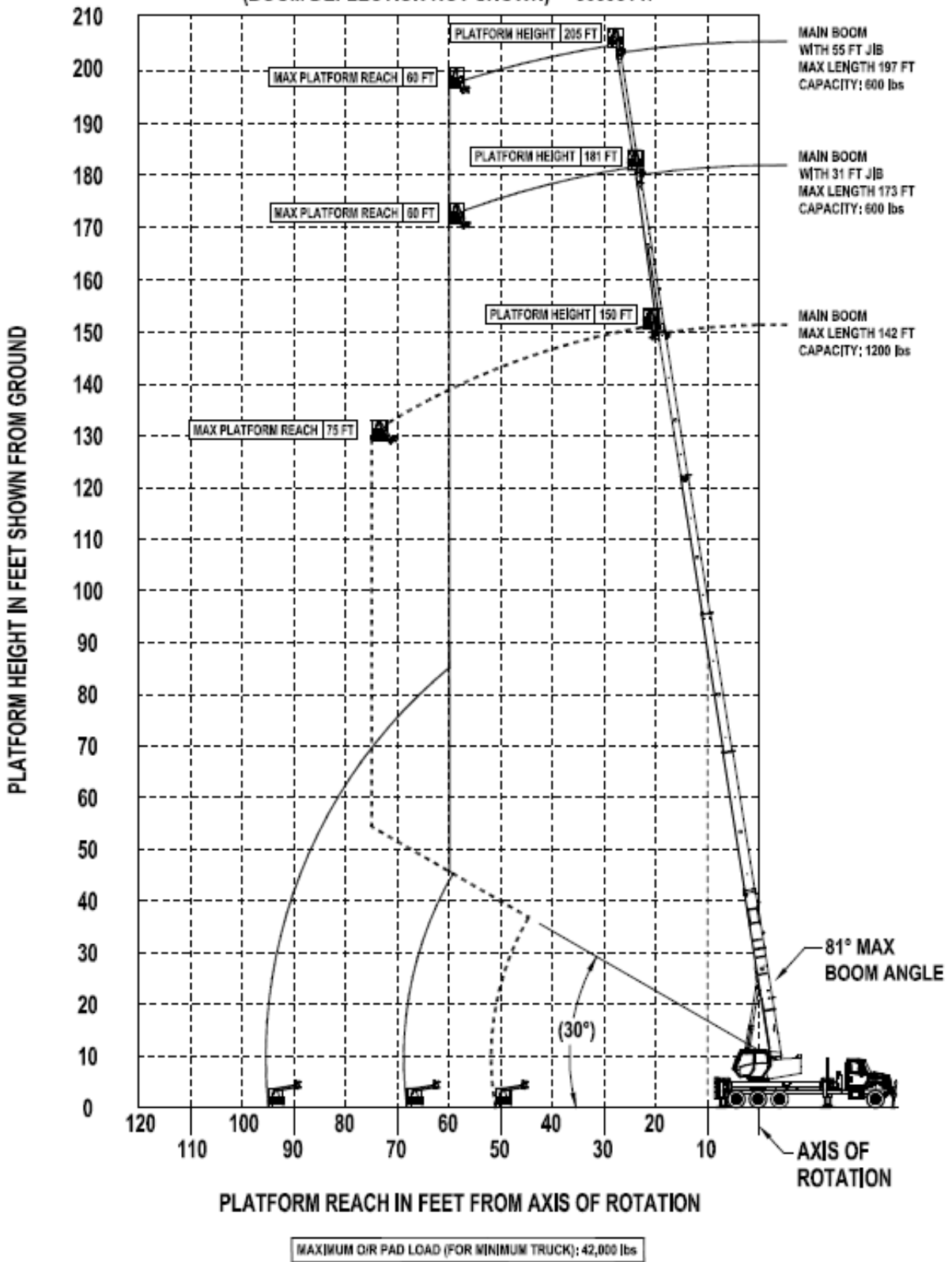
## DEFINITIONS:

1. Platform Capacity: The component of rated load capacity consisting of the weight of personnel and all items carried on or in the platform, including the liner.
2. Platform Height: The distance measured at maximum elevation from the bottom of the platform to the ground.
3. Platform Reach: The distance measured horizontally from the centerline of the pedestal (rotation) to the outer edge (rail) of the platform.
4. Working Area: Areas measured in a circular arc about the center line of rotation as shown on the working area diagram.



NBT40-142

AERIAL WORK PLATFORM REACH DIAGRAM - FULL SPAN OUTRIGGERS - 360°  
(BOOM DEFLECTION NOT SHOWN) 80093147



RCL operating codes :

#11 - Platform on main boom, no stowed extension

#13 - Platform on 31 ft. tele extension

#12 - Platform on main boom, extension stowed

#14 - Platform on 55 ft. tele extension