Grove Manitowoc National Crane Potain

GUAY

National Crane Series NBT40

Product Guide



Features

- 36,3 t (40 USt) rating
- 43,3 m (142 ft) five-section boom
- Self-lubricating Easy Glide wear pads
- 862 kg (1900 lb) tailswing counterweight

Features



National Crane Series NBT40

- 36,3 t (40 USt) maximum capacity
- 45,72 m (150 ft) maximum tip height (main boom)
- 57,91 m (190 ft) maximum tip height (boom with jib)

Five-section boom

At 43,29 m (142 ft), the NBT40 five-section boom is the longest in its size range. The long boom allows the operator to perform more lifts without the use of a jib, reducing setup time and improving efficiency. Also available are optional boom lengths of 31,39 m (103 ft) and 38,71 m (127 ft).



Outriggers

Outrigger span of 7,52 m (24.7 ft) when fully extended; 5,33 m (17.5 ft) at mid-span.

Equipped with both ground level and in-cab outrigger controls, the NBT40 outriggers allow quick and easy crane set-up and can be positioned at 0%, 50% and 100%.

Overload protection

All National Crane boom trucks are equipped with overload protection. A Load Moment Indicator (LMI) is standard on all NBT40 machines. The LCD display is visible in full or low light and displays all crane load lifting values simultaneously. Includes Work Area Definition System (WADS).



Deluxe operator's cab

Rigid galvanealed steel structure, well insulated, with tinted safety glass for operator visibility and comfort. Multi-position seat with arm rest mounted single axis controls, ventilation fans, diesel heater, dual cab mounted worklights and wipers. Optional air conditioning is available.

Features

National Crane is proud to introduce the Series NBT40

- The stronger standard torsion box improves rigidity, reduces truck frame flex and reduces the need for counterweight
- Easy Glide boom wear pads reduce the conditions that cause boom chatter and vibration. The net result is smoother crane operation
- Speedy-reeve boom tip and sheave blocks simplify rigging changes by decreasing the time needed to change line reeving
- Painting crane components before assembly reduces the possibility of rust, improves serviceability and enhances the appearance of the machine
- State of the art control valve provides smoother operation. The new design eliminates parts, reducing repair costs and improving the machine's serviceability
- Bearings on the boom and retract cables can be greased through access holes in the boom side plates
- Boom sections are supported by one hydraulic extend cylinder, minimizing maintenance
- Two-speed grooved drum hoist with cable packer, electronic drum rotation indicator (DRI), last layer indicator (LLI), and third wrap indicator



Contents

Specifications	5
Mounting configurations	7
Dimensions	9
Working range - 103 ft boom	10
Load charts - 103 ft boom	11
Working range - 127 ft boom	15
Load charts - 127 ft boom	16
Working range - 142 ft boom	18
Load charts - 142 ft boom	19
Accessories	23

Specifications

Boom and jib combinations data

Available in three basic models:

NBT40 - 103: Equipped with a 9,45 m - 31,39 m (31 ft - 103 ft) four-section boom. This model can be equipped with a 9,45 m (31 ft) jib, offering a vertical reach of 43,29 m (142 ft) or a 9,45 m - 16,76 m (31 ft- 55 ft) side-stowing foldaway jib, providing a vertical reach of 50,60 m (166 ft).

9,45 m - 31,39 m (31 ft - 103 ft) four-section hydraulic boom **18FJ31OS** 9,45 m (31 ft) single-section offsettable manual jib



9,45 m - 31,39 m (31 ft - 103 ft) four-section hydraulic boom **18FJ55M** 9,45 m - 16,76 m (31 ft - 55 ft) two-section manual jib



NBT40-127: Equipped with a 9,45 m - 38,71 m (31 ft - 127 ft) five-section boom. This model can be equipped with a 9,45 m - 16,76 m (31 ft - 55 ft) fold-away jib providing a vertical reach of 57,91 m (190 ft).

9,45 m - 38,71 m (31 ft - 127 ft) five-section hydraulic boom **18FJ55M** 9,45 m - 16,76 m (31 ft - 55 ft) two-section manual jib



NBT40 - 142: Equipped with a 10,36 m - 43,29 m (34 ft - 142 ft) five-section boom. This model can be equipped with a 7,92 m (26 ft) foldaway jib, offering a vertical reach of 53,64 m (176 ft) or a 9,45 m - 16,76 m (31 ft - 55 ft) side-stowing foldaway jib, providing a vertical reach of 62,48 m (205 ft).

10,36 m - 43,29 m (34 ft - 142 ft) five-section hydraulic boom **18FJ26** 7,92 m (26 ft) single-section manual jib



10,36 m - 43,29 m (34 ft - 142 ft) five-section hydraulic boom **8FJ55M** 9,45 m - 16,76 m (31 ft - 55 ft) two-section manual jib

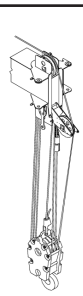


Note: Maximum tip is measured with outriggers/stabilizers fully extended.

Specifications

NBT40 winch data

- 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.

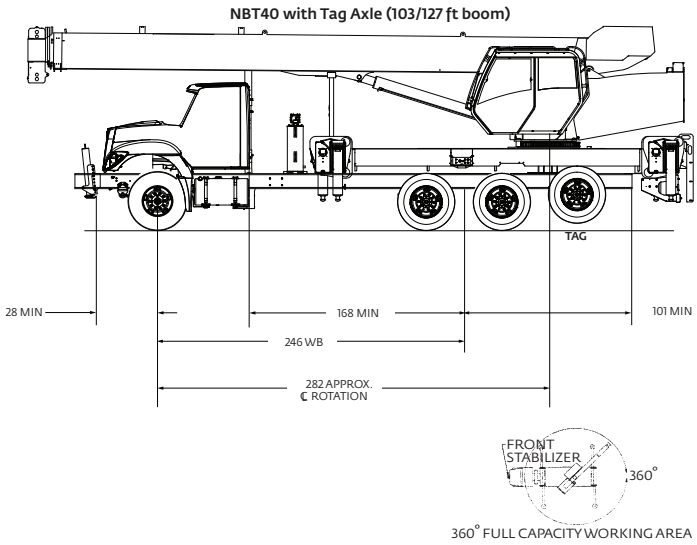
			1 part line	2 part line	3 part line	4 part line	5 part line	6 part line	7 part line	8 part line
										
Standard planetary winch	**Cable supplied**	**Average breaking strength**	**Max. pull**	**Max. pull**	**Max. pull**	**Max. pull**	**Max. pull**	**Max. pull**	**Max. pull**	**Max. pull**
Low speed	5/8" diameter rotation resistant IWRC	25 583 kg (56,400 lb)	5103 kg (11,250 lb) 62 m/min (205 fpm)	10 206 kg (22,500 lb) 31 m/min (103 fpm)	15 309 kg (33,750 lb) 21 m/min (68 fpm)	20 412 kg (45,000 lb) 16 m/min (51 fpm)	25 515 kg (56,250 lb) 13 m/min (41 fpm)	30 618 kg (67,500 lb) 10 m/min (34 fpm)	35 721 kg (78,750 lb) 9 m/min (29 fpm)	40 824 kg (90,000 lb) 8 m/min (26 fpm)
High speed	5/8" diameter rotation resistant IWRC	25 583 kg (56,400 lb)	2268 kg (5000 lb) 125 m/min (410 fpm)	4536 kg (10,000 lb) 62 m/min (205 fpm)	6804 kg (15,000 lb) 42 m/min (137 fpm)	9072 kg (20,000 lb) 31 m/min (103 fpm)	11 340 kg (25,000 lb) 25 m/min (82 fpm)	13 608 kg (30,000 lb) 21 m/min (68 fpm)	15 876 kg (35,000 lb) 18 m/min (59 fpm)	18 144 kg (40,000 lb) 16 m/min (51 fpm)

Winch	Fourth layer pull	Allowable cable pull
Standard planetary and auxiliary planetary	2268 kg (5000 lb) high speed 5103 kg (11,250 lb) low speed	5117 kg (11,280 lb) 5117 kg (11,280 lb)

Block type	Rating	Weight
Aux boom head		45 kg (100 lb)
Downhaul weight	4,53 USt (7 USt)	78 kg (172 lb)
1-sheave block	13,60 t (20 USt)	149 kg (329 lb)
2-sheave block	22,67 t (30 USt)	290 kg (640 lb)
3-sheave block	31,74 t (40 USt)	272 kg (600 lb)
4-sheave block	32,65 t (50 USt)	361 kg (796 lb)

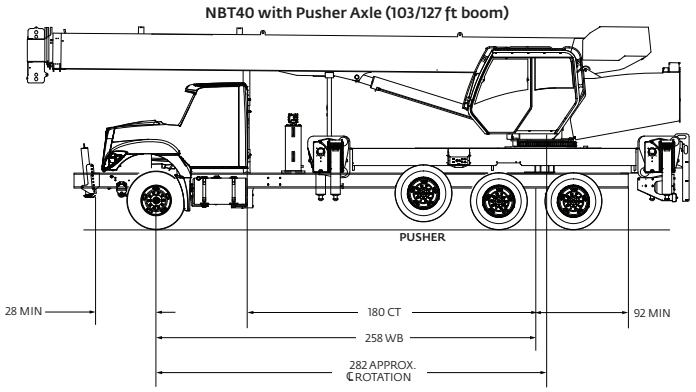
Mounting configurations

The configurations are based on the NBT40 with an 85% stability factor. The complete unit must be installed in accordance with factory requirements and a test performed to determine actual stability and counterweight requirements since individual truck chassis vary.



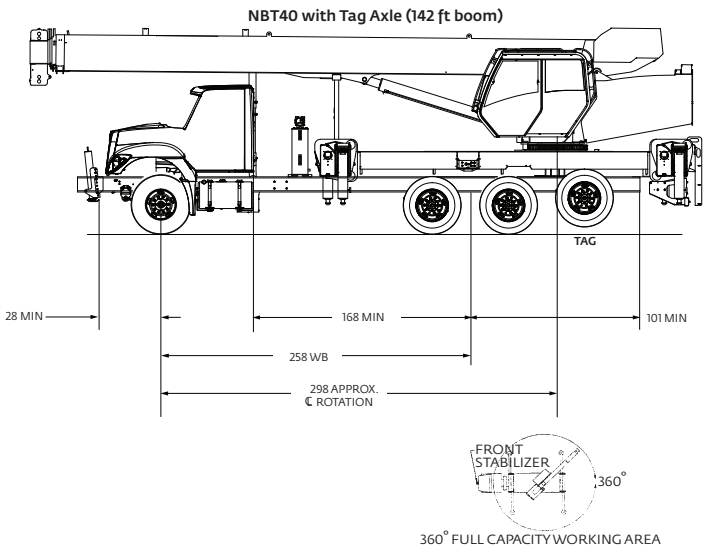
360° FULL CAPACITY WORKING AREA

Configuration 1: 31,39 m (103 ft) or 38,71 m (127 ft) Boom with Tag Axle (Extended front frame rails required for SFO installation.)
Working area: 360˚
Gross Axle Weight Rating Front: 9072 kg (20,000 lb)
Gross Axle Weight Rating Rear: 18 144 kg (40,000 lb)
Tag Axle Weight Rating: 5987 kg (13,200 lb)
Wheelbase: 625 cm (246 in)
Cab to Axle/trunnion (CA/CT): 427 cm (168 in)
Frame Section Modulus (SM), front axle to end of AF: 785 MPa (110,000 PSI): 426 cm³ (30.0 in³)
Stability Weight, Front: 4286 kg (9450 lb) minimum*
Stability Weight, Rear: 4899 kg (10,800 lb) minimum*
This configuration shows the 360° working area that is achieved with the front stabilizer (standard on the NBT40). The front stabilizer is essential when extending the boom and lifting loads over the front of the truck.
*Estimated axle scale weights prior to installation of crane, stabilizers and subbase for 85% stability.



360° FULL CAPACITY WORKING AREA

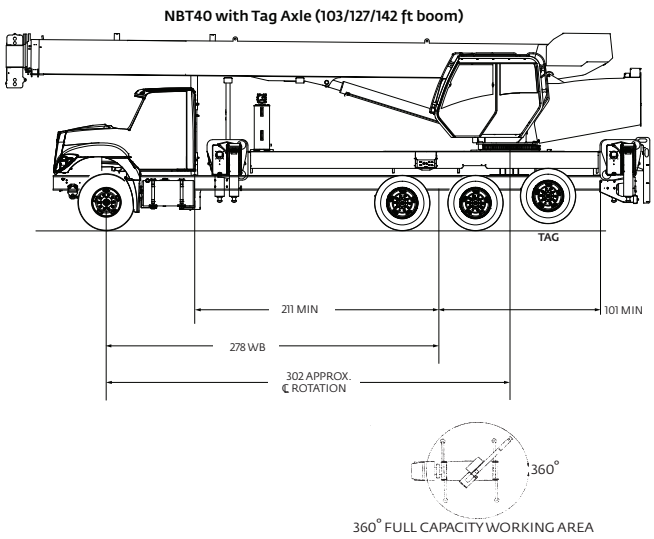
Configuration 2: 31,39 m (103 ft) or 38,71 m (127 ft) Boom with Pusher Axle (Extended front frame rails required for SFO installation.)
Working area: 360˚
Gross Axle Weight Rating Front: 9072 kg (20,000 lb)
Gross Axle Weight Rating Rear: 18 144 kg (40,000 lb)
Pusher Axle Weight Rating: 5987 kg (13,200 lb)
Wheelbase: 655 cm (258 in)
Cab to Axle/trunnion (CA/CT): 457 cm (180 in)
Frame Section Modulus (SM), front axle to end of AF: 785 MPa (110,000 PSI): 426 cm³ (30.0 in³)
Stability Weight, Front: 4525 kg (9975 lb) minimum*
Stability Weight, Rear: 4661 kg (10,275 lb) minimum*
This configuration shows the 360° working area that is achieved with the front stabilizer (standard on the NBT40). The front stabilizer is essential when extending the boom and lifting loads over the front of the truck.
*Estimated axle scale weights prior to installation of crane, stabilizers and subbase for 85% stability.



360° FULL CAPACITY WORKING AREA

Configuration 3: 43,29 m (142 ft) Boom with Tag Axle (Extended front frame rails required for SFO installation.)
Working area: 360˚
Gross Axle Weight Rating Front: 9072 kg (20,000 lb)
Gross Axle Weight Rating Rear: 18 144 kg (40,000 lb)
Tag Axle Weight Rating: 5987 kg (13,200 lb)
Wheelbase: 655 cm (258 in)
Cab to Axle/trunnion (CA/CT): 427 cm (168 in)
Frame Section Modulus (SM), front axle to end of AF: 785 MPa (110,000 PSI): 426 cm³ (30.0 in³)
Stability Weight, Front: 4207 kg (9275 lb) minimum*
Stability Weight, Rear: 4797 kg (10,575 lb) minimum*
This configuration shows the 360° working area that is achieved with the front stabilizer (standard on the NBT40). The front stabilizer is essential when extending the boom and lifting loads over the front of the truck.
*Estimated axle scale weights prior to installation of crane, stabilizers and subbase for 85% stability.

Mounting configurations



Configuration 4: Extended T-box 31,39 m (103 ft), 38,71 m (127 ft) Boom, or 43,29 m (142 ft) Boom with Tag Axle
Working area: 360˚
Gross Axle Weight Rating Front: 9072 kg (20,000 lb)
Gross Axle Weight Rating Rear: 18 144 kg (40,000 lb)
Tag Axle Weight Rating: 5987 kg (13,200 lb)
Wheelbase: 686 cm (270 in)
Cab to Axle/trunnion (CA/CT): 516 cm (203 in)
Frame Section Modulus (SM), front axle to end of AF: 785 MPa (110,000 PSI): 426 cm^3 (30.0 in^3)
Stability Weight, Front: 4309 kg (9500 lb) maximum*
Stability Weight, Rear: 5103 kg (11,250 lb) minimum*
*Estimated axle scale weights prior to installation of crane, stabilizers and subbase for 85% stability.

Other configurations are available, please consult the factory for more information.

Mimimum truck requirements

Many factors must be considered in the selection of proper truck for an NBT40 crane. Items which must be considered are:

1. Axle Rating. Axle ratings are determined by the axles, tires, rims, springs, brakes, steering and frame strength of the truck. If any one of these components is below the required rating, the gross axle rating is reduced to its weakest component value.

2. Wheelbase (WB), Cab-to-Trunnion (CT) and Bare Chassis Weight. The wheelbase, CT and chassis weights shown are required so the basic NBT40 can be legally driven in most states and meet stability requirements. The dimensions given assume the sub-base is installed properly behind the truck cab. If exhaust stacks, transmission protrusions, etc., do not allow a close installation to the cab, the WB and CT dimensions must be increased. Refer to the Mounting Configuration pages for additional information.

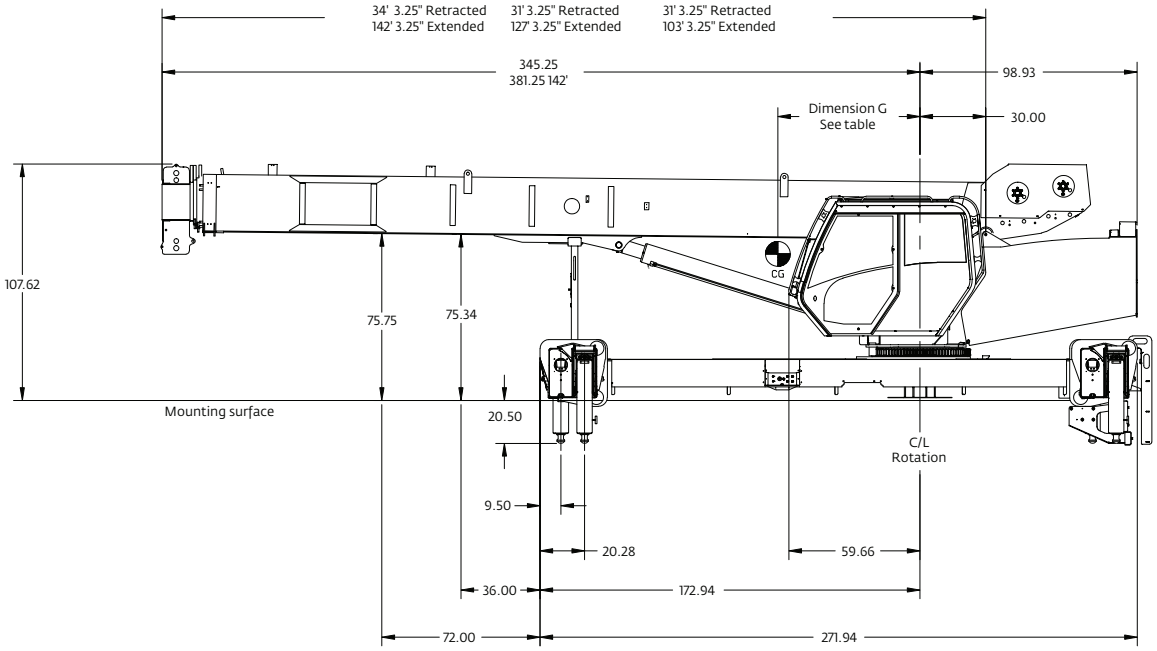
3. Truck Frame. Try to select a truck frame that will minimize or eliminate frame reinforcement or extension of the after frame (AF). Many frames are available that have the necessary after frame (AF) section modulus (SM) and resistance to bending moment (RBM) so that reinforcing is not required. The front hydraulic jack is used for a 360˚ working range around the truck. The frame under the cab through the front suspension must have the minimum S.M. and RBM because reinforcing through the front suspension is often difficult because of engine, radiator mounts and steering mechanics. See "Truck Requirements" and "Frame Strength" pages for the necessary section modulus and resistance to bending moment values. Integral extended front frame rails are required for front center stabilizer installation.

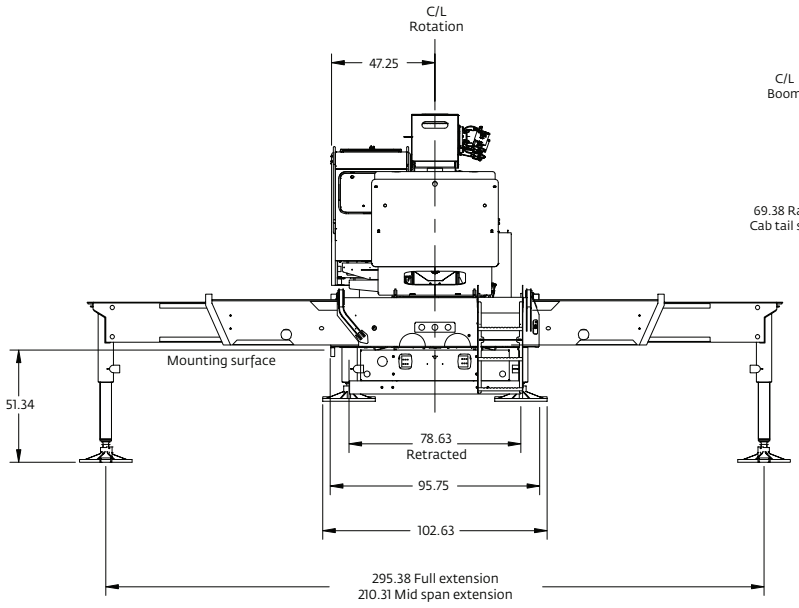
4. Additional Equipment. In addition to the axle ratings, wheelbase, cab-to-axle requirements and frame, it is recommended that the truck is equipped with electronic engine control, increased cooling and a transmission with a PTO opening available with an extra heavy duty PTO. A conventional cab truck should be used for standard crane mounts.

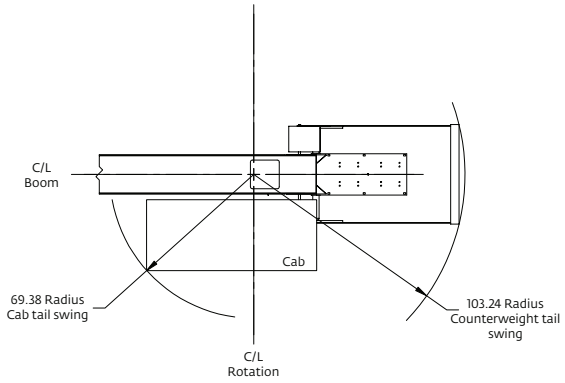
5. Neutral Start Switch. The chassis must be equipped with a switch that prevents operation of the engine starter when the transmission is in gear.

Notes:
• Gross Vehicle Weight Rating (GVWR) is dependent on all components of the vehicle (axles, tires, springs, frame, etc.) meeting manufacturers' recommendations; always specify GVWR when purchasing trucks
• Diesel engines require a variable speed governor for smooth crane operation; electronic fuel injection requires EET engine remote throttle
• All mounting data is based on a National Crane NBT40 with an 85% stability factor
• The complete unit must be installed in accordance with factory requirements, and a test performed to determine actual stability and counterweight requirements per SAE J765; contact the factory for details

Dimensions







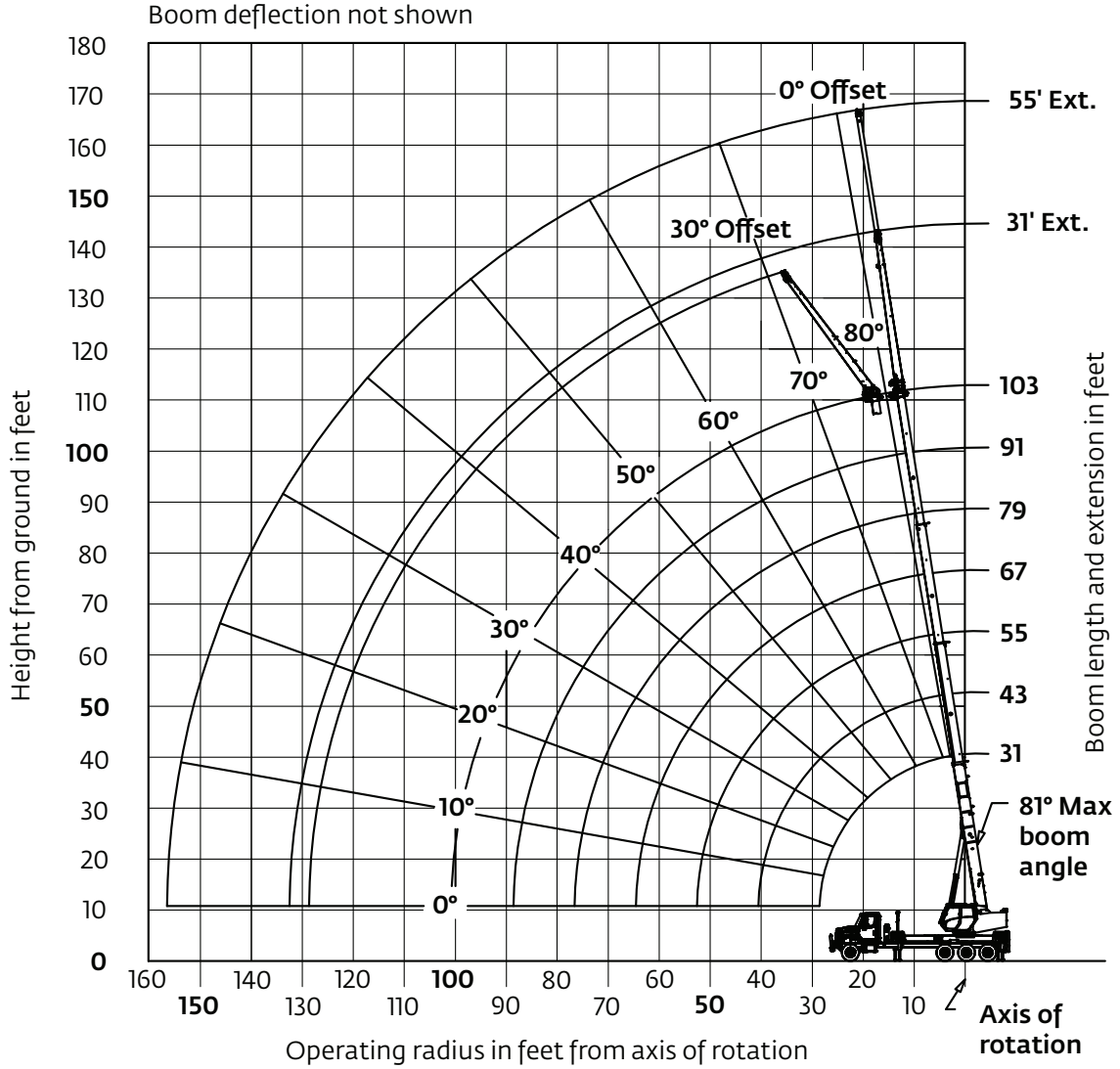
Dimensions are in inches unless otherwise specified

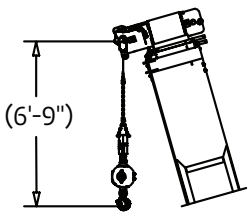
Series	G	Weight with oil
40103	66.5"	36,109 lb
40127	70"	37,419 lb
40142	78"	38,714 lb

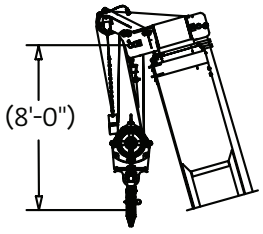
No jib, no auxiliary hoist, with 2/3 hookblock.

Working range

103 ft main boom, full span outrigger, with jib







Dimensions are for largest furnished hookblock and 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.

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE.
The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

Load chart

103 ft main boom, full span outrigger, 360°, without stowed jib

Radius in feet	#01						
	Main boom length in feet						
	31	43-A	55-B	67-C	79-D	91-E	103
7	80,000 (73.6)						
8	78,000 (71.6)	51,000 (76.9)					
10	67,700 (67.6)	50,000 (74.1)	50,000 (78)				
12	57,000 (63.4)	48,000 (71.2)	46,000 (75.8)	37,000 (78.7)			
15	44,200 (56.9)	44,500 (66.8)	39,000 (72.5)	36,000 (76.1)	33,000 (78.7)		
20	32,000 (44.5)	32,400 (59.1)	32,550 (66.8)	32,750 (71.6)	29,000 (75.1)	18,500 (77.3)	18,500 (79.4)
25	24,450 (28)	24,900 (50.6)	25,100 (60.8)	25,200 (66.9)	25,400 (71.3)	18,000 (74.2)	17,500 (76.8)
30		19,050 (40.9)	19,300 (54.4)	19,500 (62)	19,650 (67.2)	17,500 (71)	16,500 (74)
35		14,700 (28.6)	14,950 (47.4)	15,100 (56.8)	15,250 (63)	15,350 (67.6)	15,000 (71.1)
40			11,900 (39.5)	12,050 (51.3)	12,200 (58.6)	12,300 (63.9)	12,400 (68.1)
45			9750 (31)	9950 (46)	10,050 (54.5)	10,150 (60.5)	10,250 (65.1)
50			8000 (17.4)	8200 (39.4)	8300 (49.7)	8400 (56.6)	8500 (61.7)
55				6800 (31.7)	6950 (44.6)	7000 (52.6)	7100 (58.3)
60				5700 (21.6)	5800 (38.9)	5900 (48.3)	5950 (54.8)
65					4850 (32.3)	4950 (43.7)	5000 (51.1)
70					4100 (24.2)	4150 (38.6)	4250 (47.2)
75					3400 (11.2)	3500 (32.9)	3550 (43.1)
80						2900 (26.1)	2950 (38.5)
85						2400 (16.7)	2450 (33.5)
90							2000 (27.6)
95							1600 (20)
100							1250 (4.7)
Minimum boom angle (°) for indicated length (no load)							0
Maximum boom length (ft) at 0° boom angle (no load)							103

NOTE: Loads displayed in pounds. ( ) Boom angles are in degrees.
#LMI operating code. Refer to LMI manual for operating instructions.

Lifting capacities at zero degree boom angle							
Boom angle	Main boom length in feet						
	31	43-A	55-B	67-C	79-D	91-E	103
0°	20,350 (28.5)	11,700 (40.5)	7300 (52.5)	4850 (64.5)	3250 (76.5)	2100 (88.5)	1250 (100.5)

NOTE: ( ) Reference radii in feet. 80026961

Rated Load Reductions from main boom capacity when lifting over main boom nose with :							
tele. erected (retracted)	2300	2150	2000	1950	1900	1850	1800
31' off. erected at 0° offset	1800	1700	1550	1500	1450	1450	1400

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE.
The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

Load chart

103 ft main boom, full span outrigger, 360°, with stowed jib

Radius in feet	#02						
	Main boom length in feet						
	31	43-A	55-B	67-C	79-D	91-E	103
7	79,200 (73.6)						
8	77,200 (71.6)	50,350 (76.9)					
10	66,900 (67.6)	49,350 (74.1)	49,550 (78)				
12	56,200 (63.4)	47,350 (71.2)	45,550 (75.8)	36,600 (78.7)			
15	43,400 (56.9)	43,850 (66.8)	38,550 (72.5)	35,600 (76.1)	32,650 (78.7)		
20	31,200 (44.5)	31,750 (59.1)	32,100 (66.8)	32,350 (71.6)	28,650 (75.1)	18,200 (77.3)	18,250 (79.4)
25	23,650 (28)	24,250 (50.6)	24,650 (60.8)	24,800 (66.9)	25,050 (71.3)	17,700 (74.2)	17,250 (76.8)
30		18,400 (40.9)	18,850 (54.4)	19,100 (62)	19,300 (67.2)	17,200 (71)	16,250 (74)
35		14,050 (28.6)	14,500 (47.4)	14,700 (56.8)	14,900 (63)	15,050 (67.6)	14,750 (71.1)
40			11,450 (39.5)	11,650 (51.3)	11,850 (58.6)	12,000 (63.9)	12,150 (68.1)
45			9300 (31)	9550 (46)	9700 (54.5)	9850 (60.5)	10,000 (65.1)
50			7550 (17.4)	7800 (39.4)	7950 (49.7)	8100 (56.6)	8250 (61.7)
55				6400 (31.7)	6600 (44.6)	6700 (52.6)	6850 (58.3)
60				5300 (21.6)	5450 (38.9)	5600 (48.3)	5700 (54.8)
65					4500 (32.3)	4650 (43.7)	4750 (51.1)
70					3750 (24.2)	3850 (38.6)	4000 (47.2)
75					3050 (11.2)	3200 (32.9)	3300 (43.1)
80						2600 (26.1)	2700 (38.5)
85						2100 (16.7)	2200 (33.5)
90							1750 (27.6)
95							1350 (20)
100							1000 (4.7)
Minimum boom angle (°) for indicated length (no load)							0
Maximum boom length (ft) at 0° boom angle (no load)							103

NOTE: Loads displayed in pounds. ( ) Boom angles are in degrees.
#LMI operating code. Refer to LMI manual for operating instructions.

Lifting capacities at zero degree boom angle							
Boom angle	Main boom length in feet						
	31	43-A	55-B	67-C	79-D	91-E	103
0°	19,550 (28.5)	11,050 (40.5)	6850 (52.5)	4450 (64.5)	2900 (76.5)	1800 (88.5)	1000 (100.5)

NOTE: ( ) Reference radii in feet. 80027066

Rated Load Reductions from main boom capacity when lifting over main boom nose with :							
tele. erected (retracted)	2300	2150	2000	1950	1900	1850	1800
31' off. erected at 0° offset	1800	1700	1550	1500	1450	1450	1400

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE.
The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

Load chart

103 ft main boom, full span outrigger, 360°, with fixed jib

Radius in feet	0° OFFSET
	#06
25	8800 (80)
38	8000 (75)
49	6500 (70)
60	5100 (65)
70	4100 (60)
79	3300 (55)
88	2600 (50)
96	1900 (45)
103	1350 (40)
110	950 (35)
115	650 (30)
Min. boom angle for indicated length (no load)	19.5°
Max. boom length at 0° boom angle (no load)	91 ft

Radius in feet	30° OFFSET
	#09
39	6400 (80)
50	5700 (75)
60	5000 (70)
70	4200 (65)
79	3600 (60)
87	3000 (55)
95	2300 (50)
102	1700 (45)
108	1400 (40)
113	1100 (35)
118	900 (30)
122	650 (25)
124	600 (21)
Min. boom angle for indicated length (no load)	20°
Max. boom length at 0° boom angle (no load)	91 ft

80027069

NOTE: Loads displayed in pounds.
( ) Boom angles are in degrees.
#LMI operating code. Refer to LMI manual for operating instructions.

Boom extension capacity notes:

1. All capacities above the bold line are based on structural strength of boom extension.
2. 31 ft extension length may be used for single line lifting service.
3. 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 angle.
   Warning: Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
4. Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
5. Capacities listed are with outriggers properly extended and vertical jacks set.
6. When lifting over the main boom nose with 31 ft extension erected, the outriggers must be fully extended or 50% (17.5 ft) spread.

Load chart

103 ft main boom, full span outrigger, 360°, with telescopic jib

Radius in feet	31 ft LENGTH
	#03
25	8800 (80)
38	8000 (75)
49	6500 (70)
60	5100 (65)
70	4100 (60)
79	3200 (55)
88	2300 (50)
96	1650 (45)
103	1150 (40)
110	750 (35)
115	500 (30)
Min. boom angle for indicated length (no load)	34.1°
Max. boom length at 0° boom angle (no load)	79 ft

Radius in feet	55 ft LENGTH
	#04
29	4000 (80)
45	3700 (75)
59	3300 (70)
73	3000 (65)
85	2600 (60)
96	2100 (55)
103	1700 (50)
115	1250 (45)
123	850 (40)
130	550 (35)
Min. boom angle for indicated length (no load)	35.5°
Max. boom length at 0° boom angle (no load)	79 ft

80027072

NOTE: Loads displayed in pounds.
( ) Boom angles are in degrees.
#LMI operating code. Refer to LMI manual for operating instructions.

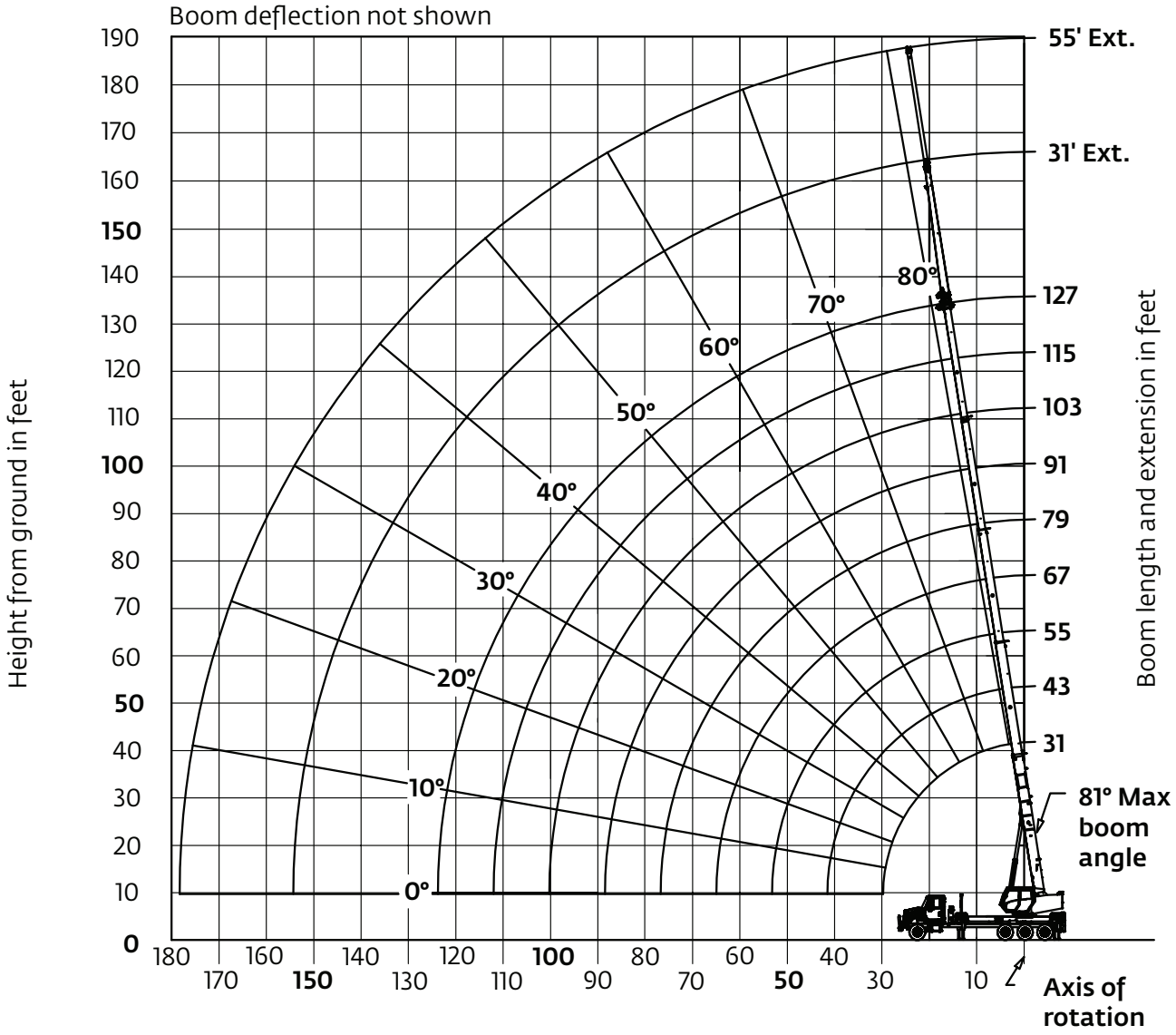
Boom extension capacity notes:

1. All capacities above the bold line are based on structural strength of boom extension.
2. 31 ft and 55 ft extension lengths may be used for single line lifting service.
3. 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 angle. **Warning:** Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
4. Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
5. Capacities listed are with outriggers properly extended and vertical jacks set.
6. When lifting over the main boom nose with 31 ft or 55 ft extension erected, the outriggers must be fully extended or 50% (17.5 ft) spread.

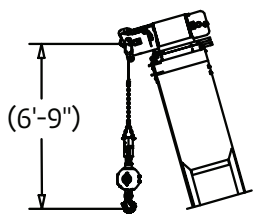
THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE.
The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

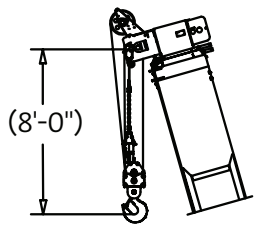
Working range

127 ft main boom, full span outrigger, with jib



Operating radius in feet from axis of rotation





Dimensions are for largest furnished hookblock and 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.

Load chart

127 ft main boom, full span outrigger, 360°, without stowed jib

Radius in feet	#01								
	Main boom length in feet								
	31	43-A	55-B	67-C	79-D	91-E	103-F	115-G	127
7	80,000 (73.6)								
8	75,000 (71.6)								
10	67,300 (67.6)	41,000 (71.4)							
12	56,000 (63.4)	41,000 (67)	40,500 (75.8)	40,300 (78.8)					
15	43,750 (56.8)	39,000 (59.4)	40,500 (72.6)	37,300 (76.2)	28,700 (78.6)	21,850 (80.4)			
20	31,500 (44.4)	32,000 (51.0)	32,200 (66.9)	32,600 (71.7)	25,100 (74.9)	19,400 (77.2)	16,300 (79.2)	12,850 (80.7)	
25	23,950 (27.8)	24,500 (41.4)	24,600 (61)	25,100 (67)	22,200 (71.1)	17,250 (74)	14,950 (76.5)	12,600 (78.4)	10,000 (79.9)
30		19,300 (29.4)	19,750 (54.6)	20,000 (62.1)	20,150 (67.2)	15,650 (70.8)	13,700 (73.7)	11,800 (76)	9900 (77.9)
35		14,850 (28.6)	15,250 (47.7)	15,500 (57)	15,700 (63.1)	14,450 (67.4)	12,650 (70.8)	10,950 (73.7)	9500 (75.8)
40			12,150 (40)	12,400 (51.6)	12,550 (58.7)	12,700 (63.9)	11,600 (67.9)	10,300 (71.2)	9000 (73.6)
45			10,100 (31.5)	10,200 (46.2)	10,400 (54.6)	10,500 (60.5)	10,650 (65.1)	9600 (68.6)	8600 (71.3)
50			8500 (18.5)	8400 (39.7)	8800 (49.9)	8700 (56.6)	8850 (61.8)	9000 (65.9)	8100 (69)
55				6950 (32.1)	7500 (44.8)	7250 (52.6)	7500 (58.4)	7500 (63)	7650 (66.6)
60				5800 (22.3)	6400 (39.1)	6100 (48.3)	6500 (54.9)	6350 (59.9)	6450 (63.9)
65					5400 (32.6)	5150 (43.8)	5600 (51.2)	5350 (56.8)	5450 (61.2)
70					4600 (24.7)	4350 (38.8)	4,700 (47.3)	4550 (53.5)	4650 (58.3)
75					3850 (12.3)	3650 (33.1)	3950 (43.2)	3850 (50.2)	3900 (55.4)
80						3050 (26.4)	3350 (38.7)	3250 (46.6)	3400 (52.3)
85						2550 (17.3)	2800 (33.7)	2700 (42.8)	2850 (49.2)
90							2300 (27.9)	2250 (38.7)	2350 (45.9)
95							1850 (20.5)	1850 (34.2)	1900 (42.3)
100							1500 (7)	1450 (29)	1550 (38.5)
105								1150 (22.8)	1200 (34.4)
110								850 (13.7)	900 (29.7)
115									650 (24.2)
Minimum boom angle (°) for indicated length (no load)								0	24
Maximum boom length (ft.) at 0° boom angle (no load)								115	

NOTE: Loads displayed in pounds. ( ) Boom angles are in degrees.
#LMI operating code. Refer to LMI manual for operating instructions.

Lifting capacities at zero degree boom angle									
Boom angle	Main Boom length in feet								
	31	43-A	55-B	67-C	79-D	91-E	103-F	115-G	
0°	20,200 (28.5)	11,650 (40.5)	7700 (52.5)	4900 (64.5)	3600 (76.5)	2200 (88.5)	1450 (100.5)	700 (112.5)	

NOTE: ( ) Reference radii in feet. 80027108

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

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE.
The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

Load chart

127 ft main boom, full span outrigger, 360°, with stowed jib

Radius in feet	#02								
	Main boom length in feet								
	31	43-A	55-B	67-C	79-D	91-E	103-F	115-G	127
7	79,200 (73.6)								
8	74,200 (71.6)								
10	66,500 (67.6)	40,350 (71.4)							
12	55,200 (63.4)	40,350 (67)	40,050 (75.8)	39,900 (78.8)					
15	42,950 (56.8)	38,350 (59.4)	40,050 (72.6)	36,900 (76.2)	28,350 (78.6)	21,550 (80.4)			
20	30,700 (44.4)	31,350 (51.0)	31,750 (66.9)	32,200 (71.7)	24,750 (74.9)	19,100 (77.2)	16,050 (79.2)	12,600 (80.7)	
25	23,150 (27.8)	23,850 (41.4)	24,150 (61)	24,700 (67)	21,850 (71.1)	16,950 (74)	14,700 (76.5)	12,350 (78.4)	9800 (79.9)
30		18,650 (29.4)	19,300 (54.6)	19,600 (62.1)	19,800 (67.2)	15,350 (70.8)	13,450 (73.7)	11,550 (76)	9700 (77.9)
35		14,200 (28.6)	14,800 (47.7)	15,100 (57)	15,350 (63.1)	14,150 (67.4)	12,400 (70.8)	10,700 (73.7)	9300 (75.8)
40			11,700 (40)	12,000 (51.6)	12,200 (58.7)	12,400 (63.9)	11,350 (67.9)	10,050 (71.2)	8800 (73.6)
45			9650 (31.5)	9800 (46.2)	10,050 (54.6)	10,200 (60.5)	10,400 (65.1)	9350 (68.6)	8400 (71.3)
50			8050 (18.5)	8000 (39.7)	8450 (49.9)	8400 (56.6)	8600 (61.8)	8750 (65.9)	7900 (69)
55				6550 (32.1)	7150 (44.8)	6950 (52.6)	7250 (58.4)	7250 (63)	7450 (66.6)
60				5400 (22.3)	6050 (39.1)	5800 (48.3)	6250 (54.9)	6100 (59.9)	6250 (63.9)
65					5050 (32.6)	4850 (43.8)	5350 (51.2)	5100 (56.8)	5250 (61.2)
70					4250 (24.7)	4050 (38.8)	4450 (47.3)	4300 (53.5)	4450 (58.3)
75					3500 (12.3)	3350 (33.1)	3700 (43.2)	3600 (50.2)	3700 (55.4)
80						2750 (26.4)	3100 (38.7)	3000 (46.6)	3200 (52.3)
85						2250 (17.3)	2550 (33.7)	2450 (42.8)	2650 (49.2)
90							2050 (27.9)	2000 (38.7)	2150 (45.9)
95							1600 (20.5)	1600 (34.2)	1700 (42.3)
100							1250 (7)	1200 (29)	1350 (38.5)
105								900 (22.8)	1000 (34.4)
110								600 (13.7)	700 (29.7)
Minimum boom angle (°) for indicated length (no load)								0	24
Maximum boom length (ft) at 0° boom angle (no load)								115	

NOTE: Loads displayed in pounds.( ) Boom angles are in degrees.
#LMI operating code. Refer to LMI manual for operating instructions.

Lifting capacities at zero degree boom angle									
Boom angle	Main boom length in feet								
	31	43-A	55-B	67-C	79-D	91-E	103-F		
0°	19,400 (28.5)	11,000 (40.5)	7250 (52.5)	4500 (64.5)	3200 (76.5)	1850 (88.5)	1150 (100.5)		

NOTE: ( ) Reference radii in feet.

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

80027111

Radius in feet	31 ft LENGTH
	#03
30	3400 (80)
46	3200 (75)
60	2700 (70)
73	2100 (65)
85	1700 (60)
96	1200 (55)
106	650 (50)
Min. boom angle for indicated length (no load)	35.5°
Max. boom length at 0° boom angle (no load)	79 ft

Radius in feet	55 ft LENGTH
	#04
36	2200 (80)
54	2200 (75)
70	1600 (70)
85	1000 (65)
Min. boom angle for indicated length (no load)	47°
Max. boom length at 0° boom angle (no load)	79 ft

80027114

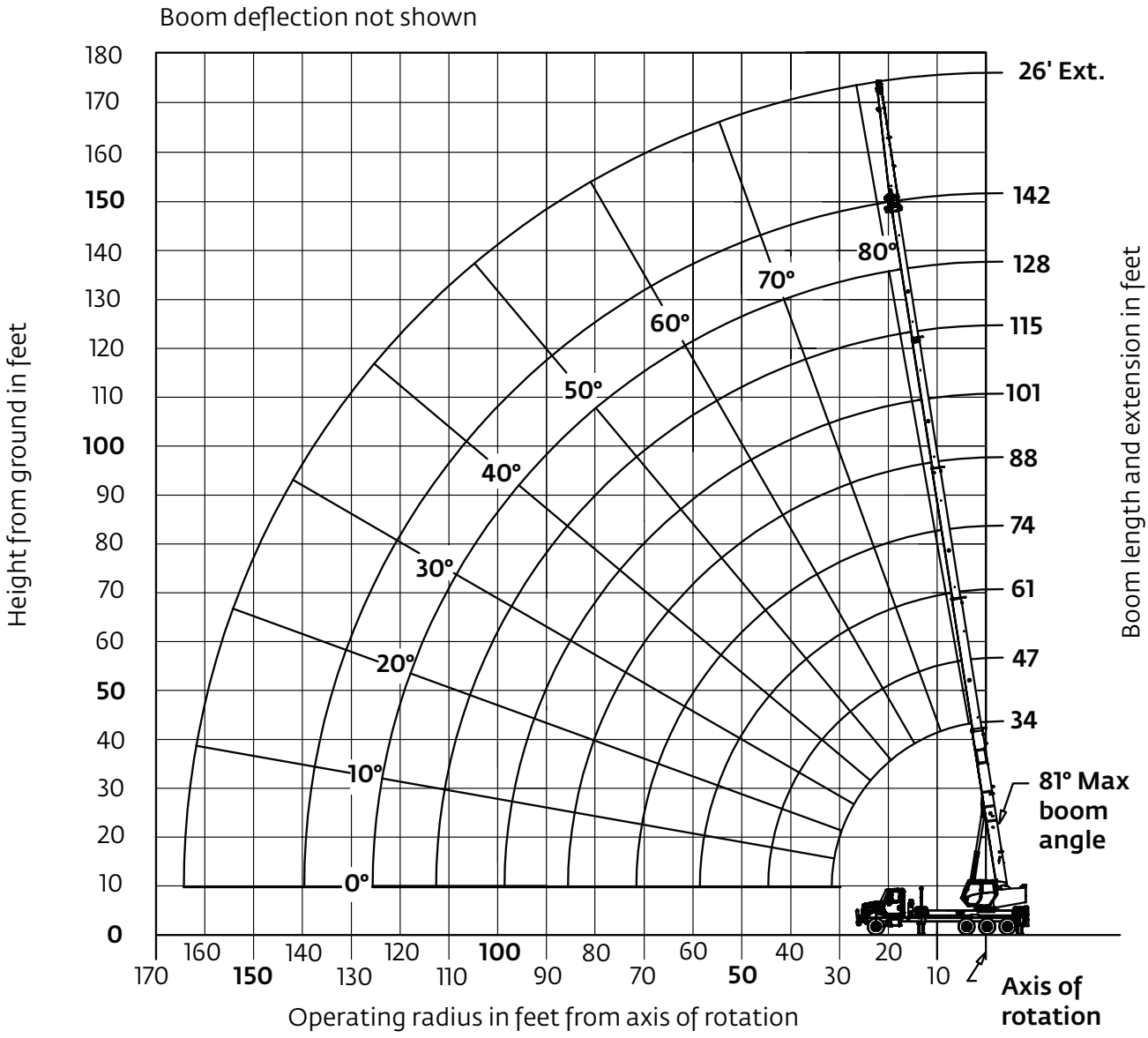
NOTE: Loads displayed in pounds.
( ) Boom angles are in degrees.
#LMI operating code. Refer to LMI manual for operating instructions.

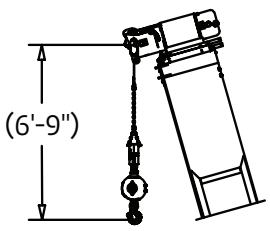
Boom extension capacity notes:

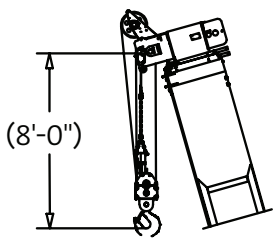
1. All capacities above the bold line are based on structural strength of boom extension.
2. 31 ft and 55 ft extension lengths may be used for single line lifting service.
3. Radii listed are for a fully extended boom with the boom extension erected. For main boom lengths less than fully extended, the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

Working range

142 ft main boom, full span outrigger, with jib







Dimensions are for largest furnished hookblock and 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.

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE.
The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

Load chart

142 ft main boom, full span outrigger 360°, without stowed jib

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)	8000 (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)	9550 (75.8)	7600 (77.7)
40		12,200 (25.2)	12,650 (46.6)	12,900 (56)	13,100 (62.6)	12,200 (67.1)	10,400 (71)	9050 (73.7)	7450 (75.9)
45			10,300 (40.1)	10,550 (51.5)	10,750 (59.1)	10,900 (64.2)	9750 (68.4)	8550 (71.4)	7200 (74)
50			8400 (31.8)	8650 (46.2)	8800 (55)	9000 (60.8)	9100 (65.7)	8050 (69.1)	6,800 (72)
55			6850 (20.6)	7150 (40.3)	7300 (50.8)	7450 (57.3)	7600 (62.8)	7600 (66.7)	6550 (70)
60				5900 (33.6)	6050 (46.3)	6200 (53.7)	6350 (59.7)	6500 (64.1)	6200 (67.9)
65				4850 (25.4)	5050 (41.4)	5200 (49.9)	5300 (56.6)	5450 (61.4)	5550 (65.6)
70				4000 (12.6)	4200 (35.9)	4300 (45.9)	4450 (53.3)	4550 (58.6)	4650 (63.1)
75					3450 (29.6)	3550 (41.6)	3700 (49.9)	3800 (55.7)	3900 (60.6)
80					2800 (21.6)	2900 (36.9)	3000 (46.4)	3100 (52.7)	3250 (58)
85					2300 (7.2)	2300 (31.5)	2400 (42.6)	2500 (49.6)	2600 (55.3)
90						1850 (25.1)	1500 (38.5)	2000 (46.3)	2050 (52.6)
95						1450 (16.5)	1100 (34)	1500 (42.8)	1600 (49.7)
100							750 (28.8)	1100 (39.2)	1200 (46.7)
105							650 (22.6)	800 (35.1)	800 (43.6)
110									650 (41.6)
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.
#LMI operating code. Refer to LMI 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)	9,950 (44.5)	5,900 (58.5)	3,800 (71.5)	2,200 (85.5)	1,100 (98.5)			

NOTE: ( ) Reference radii in feet. 80027132A

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

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE.
The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

Load chart

142 ft main boom, full span outrigger, 360° with stowed jib

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	79,475 (74.9)								
8	74,475 (73.1)								
10	65,975 (69.4)	39,600 (75.6)							
12	54,475 (65.7)	39,600 (73.1)	39,700 (77.4)						
15	42,475 (59.7)	39,600 (69.2)	37,700 (74.5)	33,750 (77.7)					
20	30,225 (48.9)	31,000 (62.3)	31,500 (69.5)	29,750 (73.7)	22,850 (76.7)	17,200 (78.8)			
25	22,725 (35.7)	23,450 (55)	23,950 (64.2)	24,250 (69.5)	20,500 (73.4)	15,550 (75.9)	12,850 (78.3)		
30	17,475 (13.5)	18,400 (46.9)	18,900 (58.8)	19,200 (65.2)	18,550 (70)	14,100 (73.1)	12,000 (75.8)	9900 (78)	7875 (79.5)
35		14,750 (37.5)	15,250 (52.9)	15,550 (60.7)	15,800 (66.4)	13,000 (70.1)	11,000 (73.5)	9400 (75.8)	7475 (77.7)
40		11,800 (25.2)	12,350 (46.6)	12,650 (56)	12,900 (62.6)	12,000 (67.1)	10,250 (71)	8900 (73.7)	7325 (75.9)
45			10,000 (40.1)	10,300 (51.5)	10,550 (59.1)	10,700 (64.2)	9600 (68.4)	8400 (71.4)	7075 (74)
50			8100 (31.8)	8400 (46.2)	8600 (55)	8800 (60.8)	8950 (65.7)	7900 (69.1)	6675 (72)
55			6550 (20.6)	6900 (40.3)	7100 (50.8)	7250 (57.3)	7450 (62.8)	7450 (66.7)	6425 (70)
60				5650 (33.6)	5850 (46.3)	6000 (53.7)	6200 (59.7)	6350 (64.1)	6075 (67.9)
65				4600 (25.4)	4850 (41.4)	5000 (49.9)	5150 (56.6)	5300 (61.4)	5425 (65.6)
70				3750 (12.6)	4000 (35.9)	4100 (45.9)	4300 (53.3)	4400 (58.6)	4525 (63.1)
75					3250 (29.6)	3350 (41.6)	3550 (49.9)	3650 (55.7)	3775 (60.6)
80					2600 (21.6)	2700 (36.9)	2850 (46.4)	2950 (52.7)	3125 (58)
85					2100 (7.2)	2100 (31.5)	2250 (42.6)	2350 (49.6)	2475 (55.3)
90						1650 (25.1)	1350 (38.5)	1850 (46.3)	1925 (52.6)
95						1250 (16.5)	950 (34)	1350 (42.8)	1475 (49.7)
100							600 (28.8)	950 (39.2)	1075 (46.7)
105							500 (22.6)	650 (35.1)	675 (43.6)
110									525 (41.6)
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: Loads displayed in pounds.( ) Boom angles are in degrees.
#LMI operating code. Refer to LMI 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°	16,825 (31.5)	9550 (44.5)	5600 (58.5)	3550 (71.5)	2000 (85.5)	900 (98.5)			

NOTE: ( ) Reference radii in feet. 80027135

Radius in feet	#03
33	4000 (80)
50	3800 (75)
65	3200 (70)
78	2450 (65)
90	1800 (60)
101	1250 (55)
112	650 (50)
Min. boom angle for indicated length (no load)	48°
Max. boom length at 0° boom angle (no load)	88 ft

80027138

NOTE: Loads displayed in pounds.
( ) Boom angles are in degrees.
#LMI operating code. Refer to LMI manual for operating instructions.

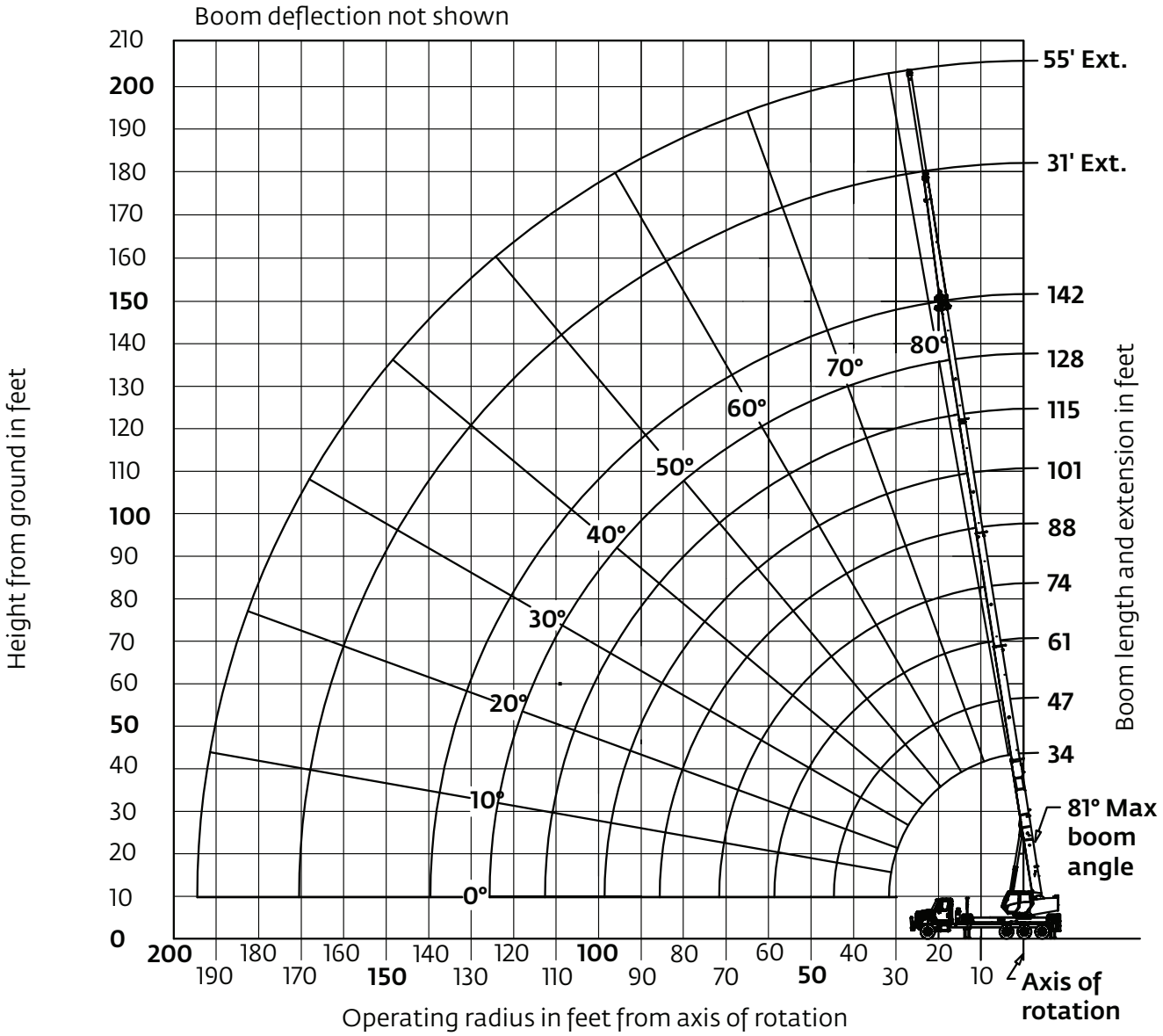
Boom extension capacity notes:

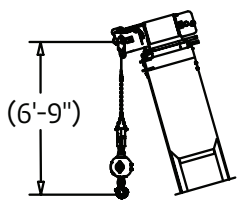
1. All capacities above the bold line are based on structural strength of boom extension.
2. 26 ft extension length may be used for single line lifting service.
3. Radii listed are for a fully extended boom with the boom extension erected. For main boom lengths less than fully extended, the rated loads are determined by boom angle. For boom angles not shown, use the rating of the next lower angle.
   Warning: Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
4. Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
5. Capacities listed are with outriggers properly extended and vertical jacks set.
6. When lifting over the main boom nose with 26 ft extension erected, the outriggers must be fully extended or 50% (17.5 ft) spread.

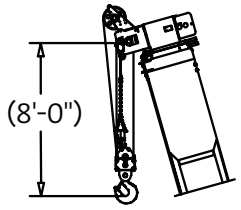
THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE.
The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

Working range

142 ft main boom, full span outrigger, with 55 ft jib







Dimensions are for largest furnished hookblock and 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.

Load chart

142 ft main boom, full span outrigger, 360°, with 55 ft jib

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)	9840 (78)	7800 (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)	9300 (75.8)	7400 (77.7)
40		11,550 (25.2)	12,200 (46.6)	12,500 (56)	12,700 (62.6)	11,850 (67.1)	10,100 (71)	8800 (73.7)	7250 (75.9)
45			9850 (40.1)	10,150 (51.5)	10,350 (59.1)	10,550 (64.2)	9450 (68.4)	8300 (71.4)	7000 (74)
50			7950 (31.8)	8250 (46.2)	8400 (55)	8650 (60.8)	8800 (65.7)	7800 (69.1)	6600 (72)
55			6400 (20.6)	6750 (40.3)	6900 (50.8)	7100 (57.3)	7300 (62.8)	7350 (66.7)	6350 (70)
60				5500 (33.6)	5650 (46.3)	5850 (53.7)	6050 (59.7)	6250 (64.1)	6000 (67.9)
65				4450 (25.4)	4650 (41.4)	4850 (49.9)	5000 (56.6)	5200 (61.4)	5350 (65.6)
70				3600 (12.6)	3800 (35.9)	3950 (45.9)	4150 (53.3)	4300 (58.6)	4450 (63.1)
75					3050 (29.6)	3200 (41.6)	3400 (49.9)	3550 (55.7)	3,700 (60.6)
80					2400 (21.6)	2550 (36.9)	2700 (46.4)	2850 (52.7)	3050 (58)
85					1900 (7.2)	1950 (31.5)	2100 (42.6)	2250 (49.6)	2400 (55.3)
90						1500 (25.1)	1200 (38.5)	1750 (46.3)	1850 (52.6)
95						1100 (16.5)	800 (34)	1250 (42.8)	1400 (49.7)
100							450 (28.8)	850 (39.2)	1000 (46.7)
105							350 (22.6)	550 (35.1)	600 (43.6)
110									450 (41.6)
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: Loads displayed in pounds. ( ) Boom angles are in degrees.
#LMI operating code. Refer to LMI 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)	9300 (44.5)	5450 (58.5)	3400 (71.5)	1800 (85.5)	750 (98.5)			

NOTE: ( ) Reference radii in feet.

80030720

Radius in feet	31 ft LENGTH
	#03
33	3400 (80)
50	3200 (75)
65	1200 (70)
Min. boom angle for indicated length (no load)	55°
Max. boom length at 0° boom angle (no load)	61 ft

Radius in feet	55 ft LENGTH
	#04
40	2200 (80)
59	2200 (75)
76	800 (70)
Min. boom angle for indicated length (no load)	60°
Max. boom length at 0° boom angle (no load)	61 ft

80030717

NOTE: Loads displayed in pounds.
( ) Boom angles are in degrees.
#LMI operating code. Refer to LMI manual for operating instructions.

Boom extension capacity notes:

1. All capacities above the bold line are based on structural strength of boom extension.
2. 31 ft and 55 ft extension lengths may be used for single line lifting service.
3. 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 angle.
   Warning: Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
4. Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
5. Capacities listed are with outriggers properly extended and vertical jacks set.
6. When lifting over the main boom nose with 31 ft or 55 ft extension erected, the outriggers must be fully extended or 50% (17.5 ft) spread.

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE.
The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

Accessories

Radio Remote Controls – (Ground level or boom tip) Eliminate the handling and maintenance concerns that accompany cabled remotes. Operate to a range of about 76 m (250 ft), varying with conditions.	**• NB4R (R4 functions)**
Heavy-duty Personnel Basket – 544 kg (1200 lb) capacity steel basket with safety loops for two passengers. Gravity leveling 183 cm x 107cm (72 in x 42 in) platform. Fast attachment and secure locking systems.	**• BSA-1** **• BSA-R1 (provides rotation)** **• BSAY-1** **• BSAY-2**
Air Conditioning for Crane Cab – Provides excellent crane cab cooling to overcome the radiant heat from the sun reflection.	**• A/C**
Auxiliary Winch 15,000 lb Line Pull – Second winch redundant to the main, planetary winch with boom tip "rooster sheave" to allow reeving of both winch lines.	**• NBT40AW**
Spanish-Language Danger Decals, and Function Decals	**• SDD**
Spanish-Language Control Knobs, and Operators' Manuals	**• SOM**

NATIONAL CRANE
by Manitowoc

LOAD CHARTS
NBT40

85% STABILITY
ON OUTRIGGERS

297678
SERIAL NUMBER

TABLE OF CONTENTS

GENERAL NOTES 4-5

LINE PULLS & REEVING INFO / HOIST PERFORMANCE 6

RANGE DIAGRAM w/ EXTENSION 7

WEIGHT REDUCTIONS / LIFTING AREA DIAGRAM 8

ON OUTRIGGERS FULLY EXTENDED

MAIN BOOM 360° WITHOUT EXTENSION 9

MAIN BOOM 360° WITH EXTENSION STOWED 10

TELE EXTENSION 11

ON OUTRIGGERS 50% EXTENDED

MAIN BOOM 360° WITHOUT EXTENSION 12

MAIN BOOM 360° WITH EXTENSION STOWED 13

TELE EXTENSION 14

ON OUTRIGGERS 0% EXTENDED

MAIN BOOM 360° WITHOUT EXTENSION 15

MAIN BOOM 360° WITH EXTENSION STOWED 16

NOTES FOR LIFTING CAPACITIES

GENERAL:

1. Rated loads as shown on lift chart pertain to this machine as originally manufactured and equipped. Modifications to the machine 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 machine shall be in compliance with the information in the Operator's and Safety Handbook, Service Manual and Parts Manual supplied with this machine. If these manuals are missing, order replacements from the manufacturer through the distributor.
3. The operator and other personnel associated with machine shall fully acquaint themselves with the latest American National Safety Standards (ASME/ANSI) for cranes.

SETUP:

1. The machine 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 or tires to spread the load to a larger bearing surface.
2. For outrigger operation, all outriggers shall be properly extended with tires raised free of crane weight before operating the boom or lifting loads.
3. When machine is equipped with center front stabilizer, the front stabilizer shall be set in accordance with instructions in Operator's and Safety Handbook.
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 or jib erected unless otherwise noted. Refer to Operator's and Safety Handbook for job-site travel information.
7. Inspect vehicle and crane including crane operation prior to use each day.
8. Always level the crane 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 machines 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 machine 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. When handling personnel, the requirements of the applicable national, state, and local regulations and safety codes must be met.
12. The boom angle before loading should be greater than the loaded boom angle to account for deflection.
13. Capacities appearing above the bold line are based on structural strength and tipping should not be relied upon as a capacity limitation.
14. When operating the machine 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 machine.
15. Do not lift loads when boom is fully lowered. The Load Moment Indicator (LMI) senses pressure and will not provide warnings or lockout. The crane can become overloaded if lift cylinder(s) is fully retracted.
16. Use LMI/angle indicator as reference only.
17. Do not exceed extension capacities at any reduced boom length.
18. Capacities for the 31 ft. boom length shall be lifted with boom fully retracted. If boom is not fully retracted, capacities shall not exceed those shown for the 43 ft. boom length.
19. Always pay out load line before extending boom to avoid damaging loadline or crane structure or tripping anti-two-block system.
20. The maximum outrigger pad load is 57,200 lb. (for a GVW of 19,760 lb - minimum chassis requirement).
21. 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.
22. Do not operate the boom over personnel or allow them to walk or stand beneath the boom or load.
23. Do not allow personnel on carrier deck or crane frame area when rotating crane.
24. 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.
25. Do not allow personnel to ride on hook, hook block, 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.
26. If using an offsettable extension, do not use personnel basket with extension deployed at 30 degree offset.
27. Operate controls slowly and smoothly to avoid damage to crane or personnel.
28. Boom must be in carrying rack and outriggers fully retracted for travel.
29. 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 or less.

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 stability limit radius 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 extension deployed, cannot be extended because of structural limitations.

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.

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

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

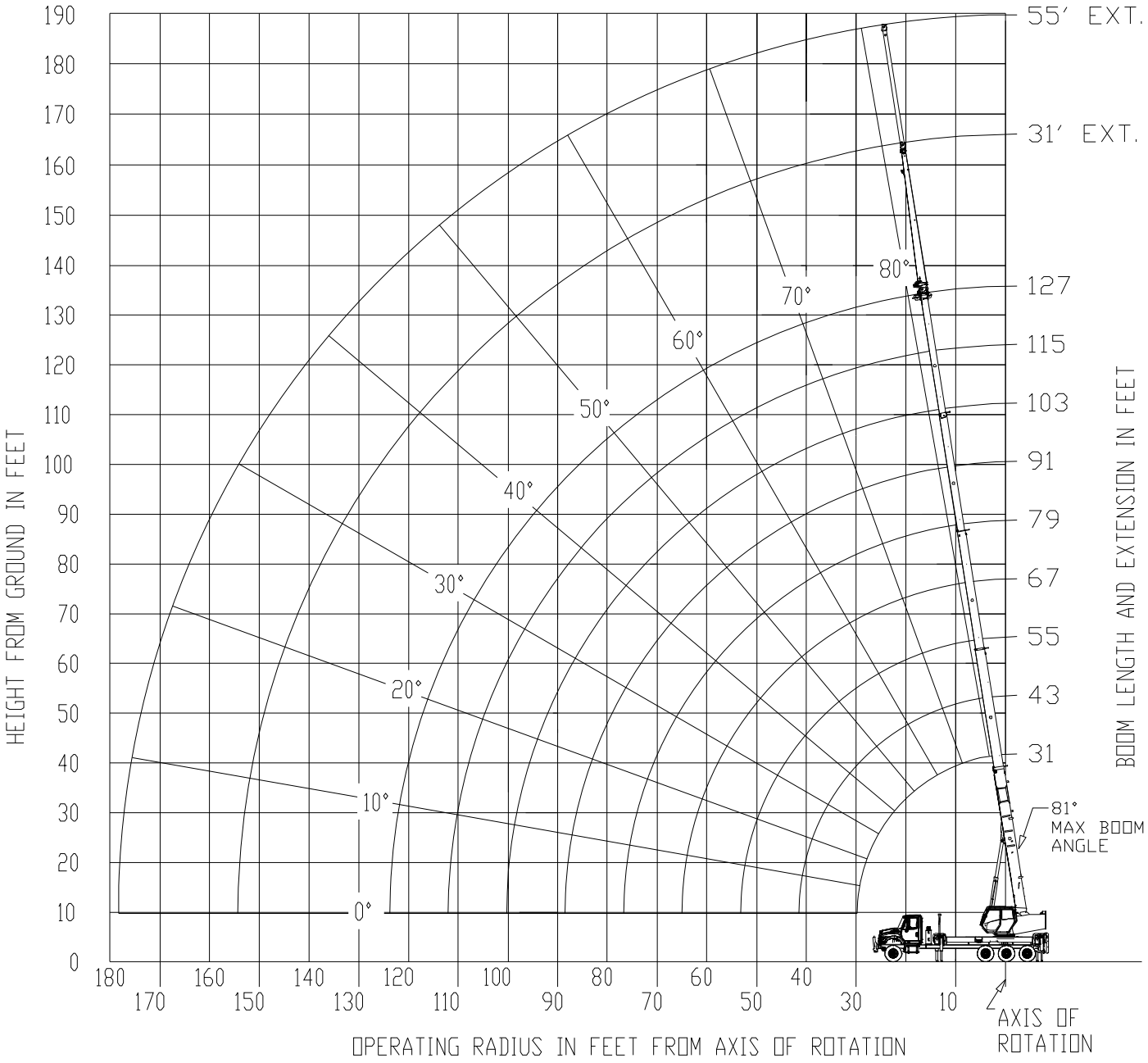
HOIST PERFORMANCE

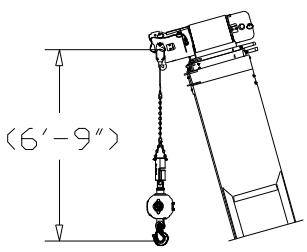
Wire Rope Layer	Hoist Line Pulls Two Speed Hoist		Drum Rope Capacity (ft.)	
	Low	High		
	Available lb*	Available lb*	Layer	Total
1	15,000	7,516	82	82
2	13,529	6,765	92	174
3	12,299	6,150	101	275
4	11,275	5,637	110	385
5	10,407	5,204	119	504

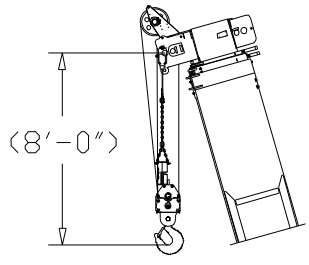
*Max. lifting capacity: 35x7 class = 11,250 lb

GEOMETRIC RANGE DIAGRAM

(BOOM DEFLECTION NOT SHOWN) 80025664

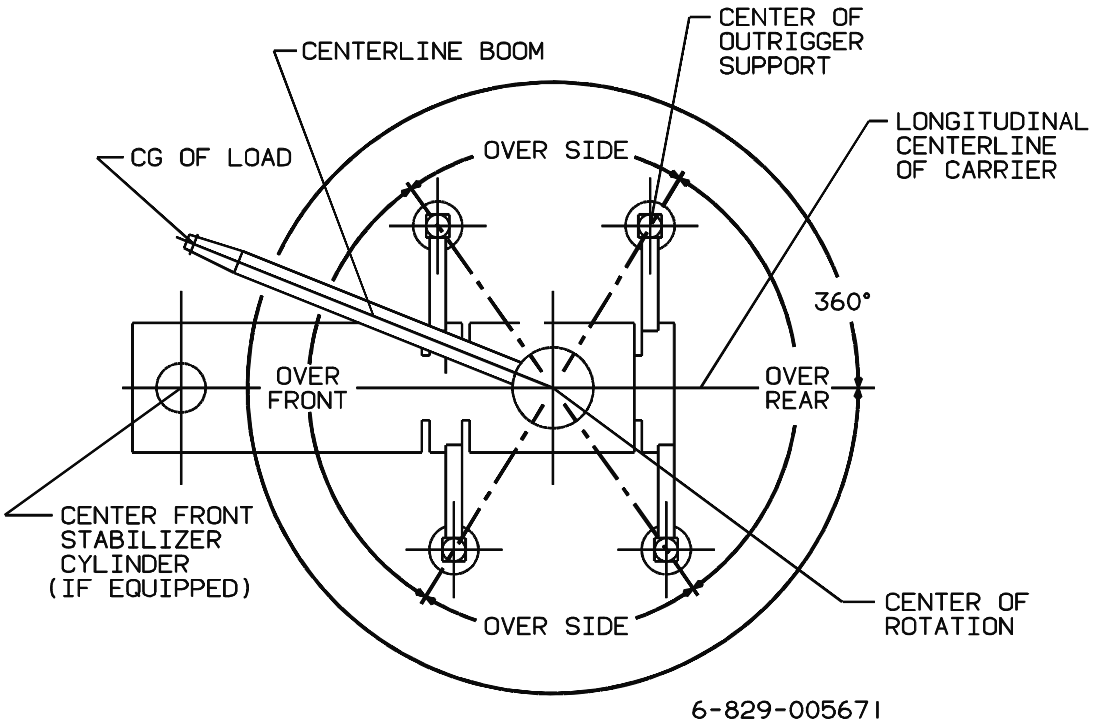






DIMENSIONS ARE FOR LARGEST FURNISHED HOOK BLOCK & HEADACHE BALL, WITH ANTI-TWO BLOCK ACTIVATED.

*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

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	171 lb+

+Refer to rating plate for actual weight.

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.

LMI operating codes for use with Man Basket:

#11 - Man Basket on main boom

#12 - Man Basket on 31 ft. tele extension

#13 - Man Basket on 55 ft. tele extension

RATED LIFTING CAPACITIES IN POUNDS WITHOUT STOWED EXTENSION
31 FT. - 127 FT. BOOM

ON OUTRIGGERS FULLY EXTENDED - 360°

Radius in Feet	#01								
	Main Boom Length in Feet								
	31	43-A	55-B	67-C	79-D	91-E	103-F	115-G	127
7	80,000 (73.6)								
8	75,000 (71.6)								
10	67,300 (67.6)	41,000 (71.4)							
12	56,000 (63.4)	41,000 (67)	40,500 (75.8)	40,300 (78.8)					
15	43,750 (56.8)	39,000 (59.4)	40,500 (72.6)	37,300 (76.2)	28,700 (78.6)	21,850 (80.4)			
20	31,500 (44.4)	32,000 (51.0)	32,200 (66.9)	32,600 (71.7)	25,100 (74.9)	19,400 (77.2)	16,300 (79.2)	12,850 (80.7)	
25	23,950 (27.8)	24,500 (41.4)	24,600 (61)	25,100 (67)	22,200 (71.1)	17,250 (74)	14,950 (76.5)	12,600 (78.4)	10,000 (79.9)
30		19,300 (29.4)	19,750 (54.6)	20,000 (62.1)	20,150 (67.2)	15,650 (70.8)	13,700 (73.7)	11,800 (76)	9,900 (77.9)
35		14,850 (28.6)	15,250 (47.7)	15,500 (57)	15,700 (63.1)	14,450 (67.4)	12,650 (70.8)	10,950 (73.7)	9,500 (75.8)
40			12,150 (40)	12,400 (51.6)	12,550 (58.7)	12,700 (63.9)	11,600 (67.9)	10,300 (71.2)	9,000 (73.6)
45			10,100 (31.5)	10,200 (46.2)	10,400 (54.6)	10,500 (60.5)	10,650 (65.1)	9,600 (68.6)	8,600 (71.3)
50			8,500 (18.5)	8,400 (39.7)	8,800 (49.9)	8,700 (56.6)	8,850 (61.8)	9,000 (65.9)	8,100 (69)
55				6,950 (32.1)	7,500 (44.8)	7,250 (52.6)	7,500 (58.4)	7,500 (63)	7,650 (66.6)
60				5,800 (22.3)	6,400 (39.1)	6,100 (48.3)	6,500 (54.9)	6,350 (59.9)	6,450 (63.9)
65					5,400 (32.6)	5,150 (43.8)	5,600 (51.2)	5,350 (56.8)	5,450 (61.2)
70					4,600 (24.7)	4,350 (38.8)	4,700 (47.3)	4,550 (53.5)	4,650 (58.3)
75					3,850 (12.3)	3,650 (33.1)	3,950 (43.2)	3,850 (50.2)	3,900 (55.4)
80						3,050 (26.4)	3,350 (38.7)	3,250 (46.6)	3,400 (52.3)
85						2,550 (17.3)	2,800 (33.7)	2,700 (42.8)	2,850 (49.2)
90							2,300 (27.9)	2,250 (38.7)	2,350 (45.9)
95							1,850 (20.5)	1,850 (34.2)	1,900 (42.3)
100							1,500 (7)	1,450 (29)	1,550 (38.5)
105								1,150 (22.8)	1,200 (34.4)
110								850 (13.7)	900 (29.7)
115									650 (24.2)
Minimum boom angle (°) for indicated length (no load)								0	24
Maximum boom length (ft.) at 0° boom angle (no load)								115	

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

Lifting Capacities at Zero Degree Boom Angle									
Boom Angle	Main Boom Length in Feet								
	31	43-A	55-B	67-C	79-D	91-E	103-F	115-G	
0°	20,200 (28.5)	11,650 (40.5)	7,700 (52.5)	4,900 (64.5)	3,600 (76.5)	2,200 (88.5)	1,450 (100.5)	700 (112.5)	

NOTE: ( ) Reference radii in feet. 80027108

Rated Load Reductions from main boom capacity when lifting over main boom nose with ext. erected (retracted):									
(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
31 FT. - 127 FT. BOOM

ON OUTRIGGERS FULLY EXTENDED - 360°

Radius in Feet	#02								
	Main Boom Length in Feet								
	31	43-A	55-B	67-C	79-D	91-E	103-F	115-G	127
7	79,200 (73.6)								
8	74,200 (71.6)								
10	66,500 (67.6)	40,350 (71.4)							
12	55,200 (63.4)	40,350 (67)	40,050 (75.8)	39,900 (78.8)					
15	42,950 (56.8)	38,350 (59.4)	40,050 (72.6)	36,900 (76.2)	28,350 (78.6)	21,550 (80.4)			
20	30,700 (44.4)	31,350 (51.0)	31,750 (66.9)	32,200 (71.7)	24,750 (74.9)	19,100 (77.2)	16,050 (79.2)	12,600 (80.7)	
25	23,150 (27.8)	23,850 (41.4)	24,150 (61)	24,700 (67)	21,850 (71.1)	16,950 (74)	14,700 (76.5)	12,350 (78.4)	9,800 (79.9)
30		18,650 (29.4)	19,300 (54.6)	19,600 (62.1)	19,800 (67.2)	15,350 (70.8)	13,450 (73.7)	11,550 (76)	9,700 (77.9)
35		14,200 (28.6)	14,800 (47.7)	15,100 (57)	15,350 (63.1)	14,150 (67.4)	12,400 (70.8)	10,700 (73.7)	9,300 (75.8)
40			11,700 (40)	12,000 (51.6)	12,200 (58.7)	12,400 (63.9)	11,350 (67.9)	10,050 (71.2)	8,800 (73.6)
45			9,650 (31.5)	9,800 (46.2)	10,050 (54.6)	10,200 (60.5)	10,400 (65.1)	9,350 (68.6)	8,400 (71.3)
50			8,050 (18.5)	8,000 (39.7)	8,450 (49.9)	8,400 (56.6)	8,600 (61.8)	8,750 (65.9)	7,900 (69)
55				6,550 (32.1)	7,150 (44.8)	6,950 (52.6)	7,250 (58.4)	7,250 (63)	7,450 (66.6)
60				5,400 (22.3)	6,050 (39.1)	5,800 (48.3)	6,250 (54.9)	6,100 (59.9)	6,250 (63.9)
65					5,050 (32.6)	4,850 (43.8)	5,350 (51.2)	5,100 (56.8)	5,250 (61.2)
70					4,250 (24.7)	4,050 (38.8)	4,450 (47.3)	4,300 (53.5)	4,450 (58.3)
75					3,500 (12.3)	3,350 (33.1)	3,700 (43.2)	3,600 (50.2)	3,700 (55.4)
80						2,750 (26.4)	3,100 (38.7)	3,000 (46.6)	3,200 (52.3)
85						2,250 (17.3)	2,550 (33.7)	2,450 (42.8)	2,650 (49.2)
90							2,050 (27.9)	2,000 (38.7)	2,150 (45.9)
95							1,600 (20.5)	1,600 (34.2)	1,700 (42.3)
100							1,250 (7)	1,200 (29)	1,350 (38.5)
105								900 (22.8)	1,000 (34.4)
110								600 (13.7)	700 (29.7)
Minimum boom angle (°) for indicated length (no load)								0	24
Maximum boom length (ft.) at 0° boom angle (no load)								115	

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

Lifting Capacities at Zero Degree Boom Angle									
Boom Angle	Main Boom Length in Feet								
	31	43-A	55-B	67-C	79-D	91-E	103-F		
0°	19,400 (28.5)	11,000 (40.5)	7,250 (52.5)	4,500 (64.5)	3,200 (76.5)	1,850 (88.5)	1,150 (100.5)		

NOTE: ( ) Reference radii in feet. 80027111

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

31 FT. - 55 FT. TELE BOOM EXTENSION
ON OUTRIGGERS FULLY EXTENDED - 360°

Radius in Feet	31 ft. LENGTH
	#03
30	3,400 (80)
46	3,200 (75)
60	2,700 (70)
73	2,100 (65)
85	1,700 (60)
96	1,200 (55)
106	650 (50)
Min. boom angle for indicated length (no load)	35.5°
Max. boom length at 0° boom angle (no load)	79 ft.

Radius in Feet	55 ft. LENGTH
	#04
36	2,200 (80)
54	2,200 (75)
70	1,600 (70)
85	1,000 (65)
Min. boom angle for indicated length (no load)	47°
Max. boom length at 0° boom angle (no load)	79 ft.

80027114

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

BOOM EXTENSION CAPACITY NOTES:

1. All capacities above the bold line are based on structural strength of boom extension.
2. 31 ft. and 55 ft. extension lengths may be used for single line lifting service.
3. 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 machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
4. Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
5. Capacities listed are with outriggers properly extended and vertical jacks set.
6. 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
31 FT. - 127 FT. BOOM

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

Radius in Feet	#21								
	Main Boom Length in Feet								
	31	43-A	55-B	67-C	79-D	91-E	103-F	115-G	127
7	80,000 (73.6)								
8	75,000 (71.6)								
10	67,300 (67.6)	41,000 (74.2)							
12	56,000 (63.4)	41,000 (71.4)	40,500 (75.8)	40,300 (78.8)					
15	43,750 (56.8)	39,000 (67)	40,500 (72.6)	37,300 (76.2)	28,700 (78.6)	21,850 (80.4)			
20	31,500 (44.4)	32,000 (59.4)	32,000 (66.9)	31,900 (71.7)	25,100 (74.9)	19,400 (77.2)	16,300 (79.2)	12,850 (80.7)	
25	15,300 (27.8)	16,200 (51)	16,650 (60.9)	17,000 (66.9)	22,100 (71.1)	17,250 (74)	14,950 (76.5)	12,600 (78.4)	10,000 (79.9)
30		11,050 (41.4)	11,450 (54.6)	11,750 (62)	11,950 (67)	12,050 (70.8)	13,700 (73.7)	11,800 (76)	9,900 (77.9)
35		7,950 (30.7)	8,350 (48.3)	8,450 (57.3)	8,650 (62.8)	8,800 (67.2)	9,000 (70.7)	10,950 (73.7)	9,500 (75.8)
40			6,150 (40.7)	6,400 (51.9)	6,600 (58.9)	6,700 (63.8)	6,900 (67.8)	7,050 (71)	9,000 (73.6)
45			4,550 (31.5)	4,800 (46.1)	4,950 (54.4)	5,100 (60.1)	5,200 (64.5)	5,350 (68.1)	5,500 (71)
50			3,300 (18.4)	3,550 (39.6)	3,700 (49.6)	3,850 (56.3)	3,950 (61.2)	4,050 (65.1)	4,200 (68.4)
55				2,800 (32)	3,050 (44.5)	3,100 (52.2)	3,150 (57.8)	3,150 (62.2)	3,200 (65.7)
60				2,000 (22.2)	2,250 (38.9)	2,300 (47.9)	2,350 (54.3)	2,350 (59.1)	2,400 (62.9)
65					1,600 (32.4)	1,650 (43.4)	1,700 (50.6)	1,700 (56)	1,750 (60.1)
70					1,050 (24.4)	1,100 (38.4)	1,150 (46.7)	1,150 (52.7)	1,200 (57.3)
75							550 (42.6)	600 (49.3)	650 (54.4)
Minimum boom angle (°) for indicated length (no load)					0	26	38	42	48.2
Maximum boom length (ft.) at 0° boom angle (no load)					79				

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

Lifting Capacities at Zero Degree Boom Angle									
Boom Angle	Main Boom Length in Feet								
	31	43-A	55-B	67-C					
0°	11,650 (28.5)	5,650 (40.5)	2,700 (52.5)	1,200 (64.5)					

NOTE: ( ) Reference radii in feet. 80027109

Rated Load Reductions from main boom capacity when lifting over main boom nose with ext. erected (retracted):									
(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
31 FT. - 127 FT. BOOM

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

Radius in Feet	#22								
	Main Boom Length in Feet								
	31	43-A	55-B	67-C	79-D	91-E	103-F	115-G	127
7	79,200 (73.6)								
8	74,200 (71.6)								
10	66,500 (67.6)	40,350 (74.2)							
12	55,200 (63.4)	40,350 (71.4)	40,050 (75.8)	39,900 (78.8)					
15	42,950 (56.8)	38,350 (67)	40,050 (72.6)	36,900 (76.2)	28,350 (78.6)	21,550 (80.4)			
20	30,700 (44.4)	31,350 (59.4)	31,550 (66.9)	31,500 (71.7)	24,750 (74.9)	19,100 (77.2)	16,050 (79.2)	12,600 (80.7)	
25	14,500 (27.8)	15,550 (51)	16,200 (60.9)	16,600 (66.9)	21,750 (71.1)	16,950 (74)	14,700 (76.5)	12,350 (78.4)	9,800 (79.9)
30		10,400 (41.4)	11,000 (54.6)	11,350 (62)	11,600 (67)	11,750 (70.8)	13,450 (73.7)	11,550 (76)	9,700 (77.9)
35		7,300 (30.7)	7,900 (48.3)	8,050 (57.3)	8,300 (62.8)	8,500 (67.2)	8,750 (70.7)	10,700 (73.7)	9,300 (75.8)
40			5,700 (40.7)	6,000 (51.9)	6,250 (58.9)	6,400 (63.8)	6,650 (67.8)	6,800 (71)	8,800 (73.6)
45			4,100 (31.5)	4,400 (46.1)	4,600 (54.4)	4,800 (60.1)	4,950 (64.5)	5,100 (68.1)	5,300 (71)
50			2,850 (18.4)	3,150 (39.6)	3,350 (49.6)	3,550 (56.3)	3,700 (61.2)	3,800 (65.1)	4,000 (68.4)
55				2,400 (32)	2,700 (44.5)	2,800 (52.2)	2,900 (57.8)	2,900 (62.2)	3,000 (65.7)
60				1,600 (22.2)	1,900 (38.9)	2,000 (47.9)	2,100 (54.3)	2,100 (59.1)	2,200 (62.9)
65					1,250 (32.4)	1,350 (43.4)	1,450 (50.6)	1,450 (56)	1,550 (60.1)
70					800 (24.4)	800 (38.4)	900 (46.7)	900 (52.7)	1,000 (57.3)
Minimum boom angle (°) for indicated length (no load)					0	26	38	42	48.2
Maximum boom length (ft.) at 0° boom angle (no load)					79				

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

Lifting Capacities at Zero Degree Boom Angle									
Boom Angle	Main Boom Length in Feet								
	31	43-A	55-B	67-C					
0°	10,850 (28.5)	5,000 (40.5)	2,250 (52.5)	800 (64.5)					

NOTE: ( ) Reference radii in feet. 80027112

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

31 FT. - 55 FT. TELE BOOM EXTENSION

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

Radius in Feet	31 ft. LENGTH
	#23
30	3,400 (80)
46	3,200 (75)
58	900 (70)
Min. boom angle for indicated length (no load)	58.5°
Max. boom length at 0° boom angle (no load)	55 ft.

80027115

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

BOOM EXTENSION CAPACITY NOTES:

1. All capacities above the bold line are based on structural strength of boom extension.
2. 31 ft. extension length may be used for single line lifting service. (WARNING: Lifting with 55 ft. extension length is not permitted on partial outrigger spread.)
3. 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 machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
4. Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
5. Capacities listed are with outriggers properly extended and vertical jacks set only
6. 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
31 FT. - 127 FT. BOOM

ON OUTRIGGERS 0% EXTENDED (6.5 ft. spread) - 360°

Radius in Feet	#31								
	Main Boom Length in Feet								
	31	43-A	55-B	67-C	79-D	91-E	103-F	115-G	127
7	35,350 (73.5)								
8	26,700 (71.6)								
10	17,050 (67.5)	17,750 (74.1)							
12	11,750 (63.3)	12,450 (71.3)	12,850 (75.6)	13,150 (78.4)					
15	7,450 (57.8)	8,100 (67.6)	8,450 (72.8)	8,450 (76.1)	8,600 (78.1)	8,800 (79.9)			
20	3,400 (45.6)	4,000 (60)	4,350 (67.1)	4,550 (71.5)	4,700 (74.6)	4,800 (76.9)	4,950 (78.7)	5,100 (80.2)	
25	1,100 (29.7)	1,800 (51.7)	2,100 (61.2)	2,300 (66.8)	2,450 (70.7)	2,550 (73.5)	2,650 (75.7)	2,750 (77.5)	2,800 (79)
30				900 (62)	1,000 (66.7)	1,100 (70.1)	1,200 (72.7)	1,250 (74.8)	1,350 (76.5)
Minimum boom angle (°) for indicated length (no load)		42.3	48.1	56.9	62.6	66.6	69.6	72	73.9
Maximum boom length (ft.) at 0° boom angle (no load)		31							

NOTE: ( ) Boom angles are in degrees. 80027110

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

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

RATED LIFTING CAPACITIES IN POUNDS WITH STOWED EXTENSION
31 FT. - 127 FT. BOOM

ON OUTRIGGERS 0% EXTENDED (6.5 ft. spread) - 360°

Radius in Feet	#32								
	Main Boom Length in Feet								
	31	43-A	55-B	67-C	79-D	91-E	103-F	115-G	127
7	34,550 (73.5)								
8	25,900 (71.6)								
10	16,250 (67.5)	17,100 (74.1)							
12	10,950 (63.3)	11,800 (71.3)	12,400 (75.6)	12,750 (78.4)					
15	6,650 (57.8)	7,450 (67.6)	8,000 (72.8)	8,050 (76.1)	8,250 (78.1)	8,500 (79.9)			
20	2,600 (45.6)	3,350 (60)	3,900 (67.1)	4,150 (71.5)	4,350 (74.6)	4,500 (76.9)	4,700 (78.7)	4,850 (80.2)	
25		1,150 (51.7)	1,650 (61.2)	1,900 (66.8)	2,100 (70.7)	2,250 (73.5)	2,400 (75.7)	2,500 (77.5)	2,600 (79)
30				500 (62)	650 (66.7)	800 (70.1)	950 (72.7)	1,000 (74.8)	1,150 (76.5)
Minimum boom angle (°) for indicated length (no load)		42.3	48.1	56.9	62.6	66.6	69.6	72	73.9
Maximum boom length (ft.) at 0° boom angle (no load)	31								

NOTE: ( ) Boom angles are in degrees.

80027113

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

Regional headquarters

Manitowoc - Americas
Manitowoc, Wisconsin, USA
Tel: +1 920 684 6621
Fax: +1 920 683 6277

Shady Grove, Pennsylvania, USA
Tel: +1 717 597 8121
Fax: +1 717 597 4062

Manitowoc - Europe, Middle East, Africa
Ecully, France
Tel: +33 (0)4 72 18 20 20
Fax: +33 (0)4 72 18 20 00

Manitowoc - Asia Pacific
Shanghai, China
Tel: +86 21 6457 0066
Fax: +86 21 6457 4955

Regional offices

Americas
Brazil
Alphaville
Mexico
Monterrey
Chile
Santiago

Europe, Middle East, Africa
Czech Republic
Netvorice
France
Baudemont
Cergy
Decines
Germany
Langenfeld
Hungary
Budapest
Italy
Lainate
Netherlands
Breda
Poland
Warsaw
Portugal
Baltar
Russia
Moscow
U.A.E.
Dubai
U.K.
Buckingham

Asia - Pacific
Australia
Brisbane
Melbourne
Sydney
China
Beijing
Chengdu
Guangzhou
India
Delhi
Hyderabad
Pune
Korea
Seoul
Philippines
Makati City
Singapore

Factories

Brazil
Alphaville
China
TaiAn
Zhangjiagang
France
Charlieu
La Clayette
Moulins
Germany
Wilhelmshaven
India
Pune
Italy
Niella Tanaro
Portugal
Baltar
Fânzeres
Slovakia
Saris
USA
Manitowoc
Port Washington
Shady Grove

This document is non-contractual. Constant improvement and engineering progress make it necessary that we reserve the right to make specification, equipment, and price changes without notice. Illustrations shown may include optional equipment and accessories and may not include all standard equipment.

©2010 Manitowoc
Printed in USA
Form No. NBT40 PG
Part No. 10-004/0810/2M