

## NBT40-2 Series

### NBT40-2/NBT45-2

#### Preliminary Product Guide

ASME B30.5 & CSA Z150 • Imperial 85%



### Features

- NBT40-2: 36,3 t (40 USt) rating  
NBT45-2: 40,8 t (45 USt) rating
- Multiple boom length options 38,7 m - 43,3 m  
(127 ft - 142 ft)
- Premium hydraulic tilting cab (0° to 20°) with heated operator seat and adjustable joystick controls
- Easy, fast setup with front bumper mounted controls and optional wireless outrigger remote
- Operator focused features to monitor truck and crane vital information from in crane cab
- Available with a number of productivity increasing options

# NATIONAL CRANE NBT40-2 SERIES

Building on a proven legacy, the NBT40-2 Series modernizes the 40 and 45 US ton National Crane boom trucks with more lifting capacity and operator centric features!

## Features

### > Five-section boom

Both 40 and 45 USt configurations offer the 38,71 m (127 ft) and 43,29 m (142 ft) five-section boom options. Each boom has an optimized design for minimized overall length and weight while delivering a strong load chart available to the operator. This combination of reliable strength and reach is perfect for any job.

### > Operator-focused design comes standard

The NBT40-2 Series is designed specifically with the operator in mind, featuring a 0-20° tilting cab, graphical RCL with integrated control system, standard AM/FM/Bluetooth radio and front outrigger and hoist controls. Electronic joystick controls are available in single and dual axis with easily adjustable speeds for any operator preference.

### > On-board technology simplifies operations

A color, graphical RCL simplifies setup and operation. Included are many crane settings and electronic joystick function speed customizations – right at the operator's fingertips. Monitor both the truck and crane vitals with an on-board diagnostics system minimizing the need for a laptop to service. Examine hydraulic system pressure and temperature from the in-cab crane control display.

### > Fast and easy setup for maximum efficiency

The NBT40-2 series has a simplified setup to save time at the jobsite. Outriggers can be set and hookblocks unstowed without the need to walk between truck and crane cabs using ground level controls. Further simplify by upgrading to the optional wireless outrigger and rigging remote or full crane wireless remote. All machines are equipped standard with lighter polymeric outrigger floats for quick, easy setup reducing fatigue when setting up multiple jobs per day.

### > Options for increased productivity

- NBT45-2 offers an optional 6,000 lb (2722 kg) counterweight package for even more lifting capacity.
- NTC Performance Package - Four (100%/75%/50%/0% span) position outriggers, wireless windspeed indication, two camera system and wireless outrigger controls
- Platform hydraulic tool circuit with pressure intensifier manifold
- 15,000 lb (6803 kg) line pull auxiliary hoist
- Wireless wind speed indicator with readout integrated in operator console display
- Full crane function wireless remote control (swing/lift/tele/hoists)
- Wireless outrigger controls with magnetic base

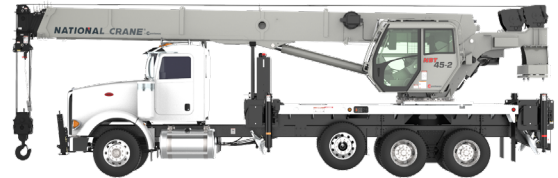


**NTC** Performance Package

# Jobsite benefits

## Performance you can rely on

- Fast and easy setup with multiple ways to set up the outriggers from ground level, without the need to climb in the crane cab
- NTC Performance package available for ultimate job site versatility and visibility
- Lighter polymeric outrigger floats are easier and lighter to handle than traditional floats and are theft deterrent by having no scrap value
- Hydraulic tilting cab with heated seat and high output A/C and heater to make the operator more comfortable and productive in all weather conditions
- Utilization enhancing options such as the telescoping jib, personnel platforms and wireless radio remotes for optimum versatility
- Crane control display with real time truck and crane error code monitoring; less need for a laptop with troubleshooting ability right at the operator's fingertips



**Manitowoc Crane Care when you need it.**  
The assurance of the world's most advanced crane service and support to get you back to work fast.



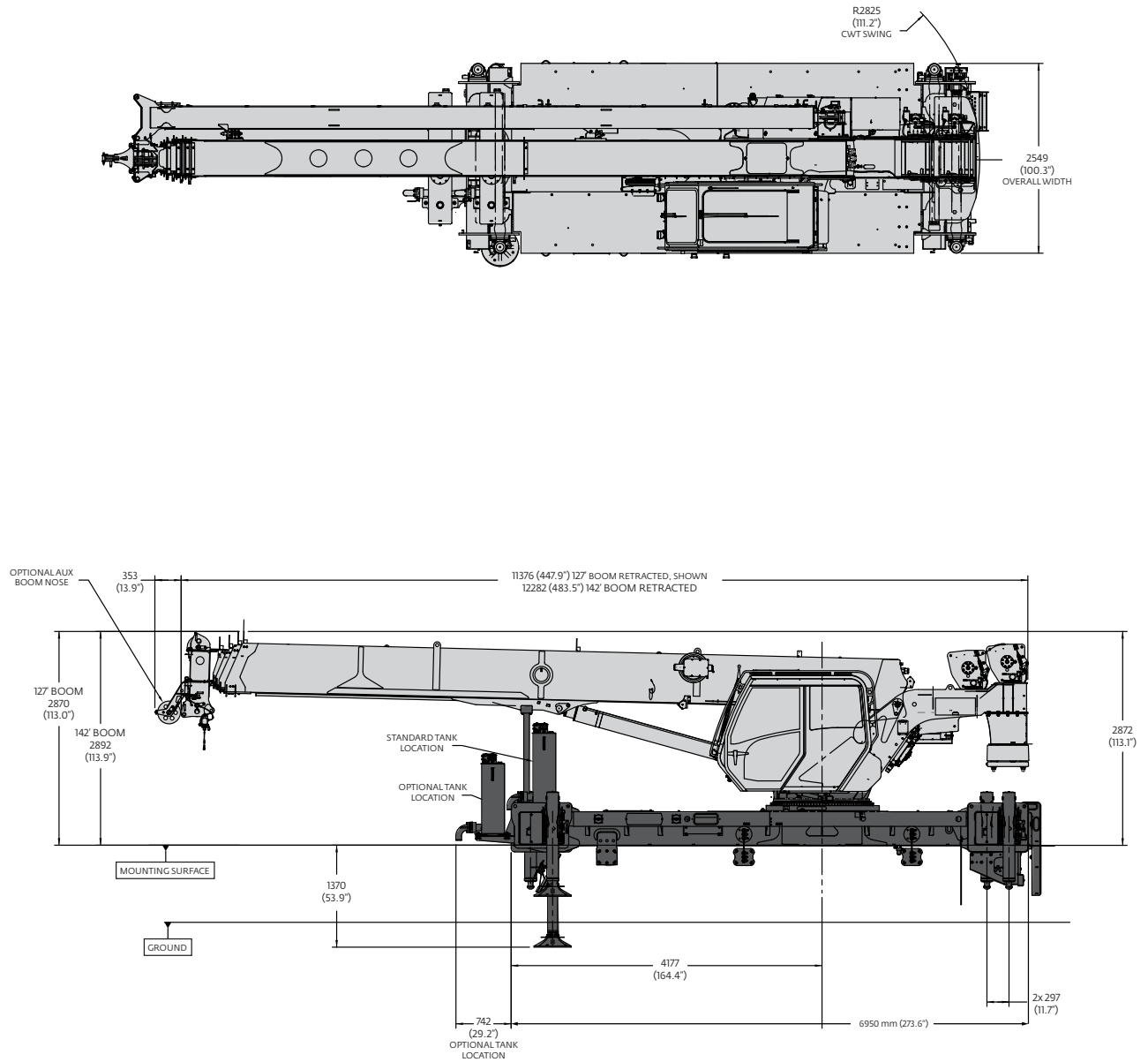
**Manitowoc Finance helps you get right to work generating profits for your business.**  
Financial tools that help you capitalize on opportunity with solutions that fit your needs.

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# Dimensions and weights

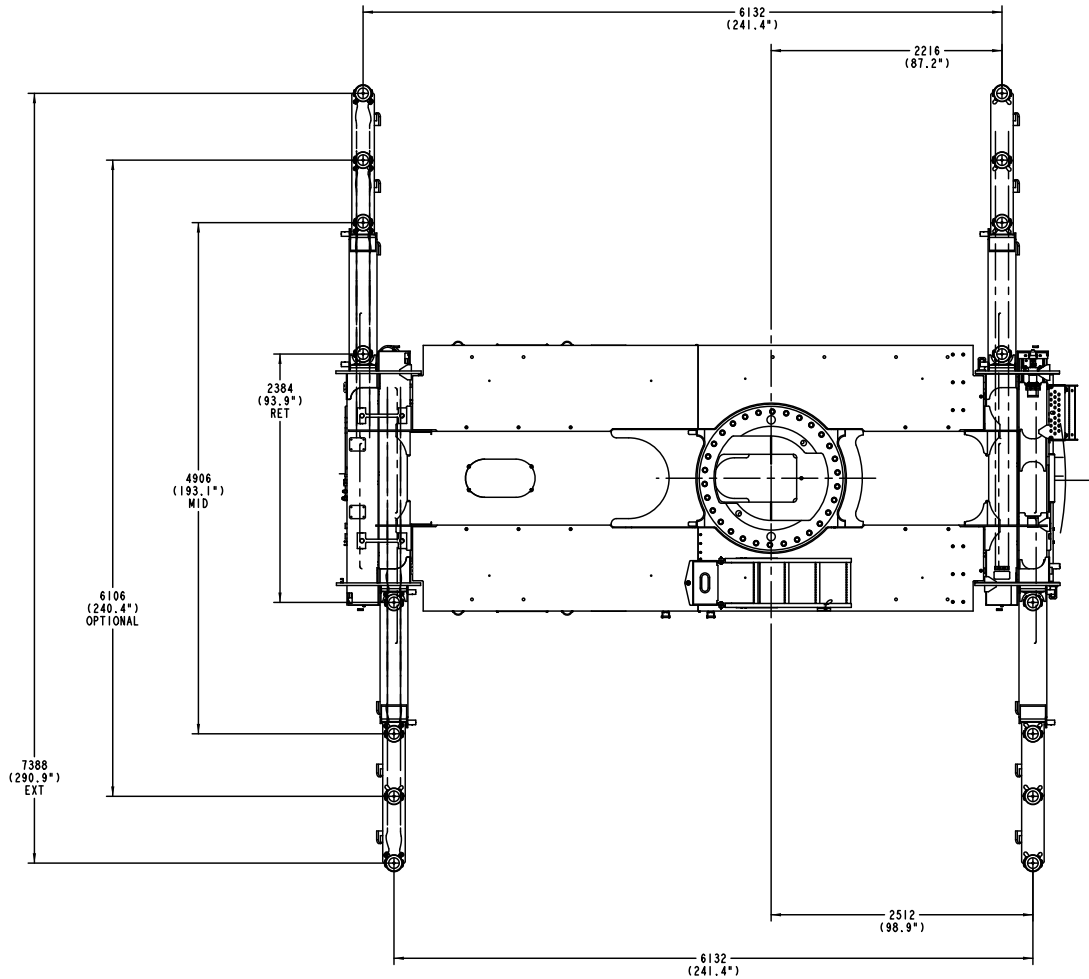
## Standard torsion box



Dimensions are in mm (inches) unless otherwise specified.

# Dimensions and weights

## Standard torsion box



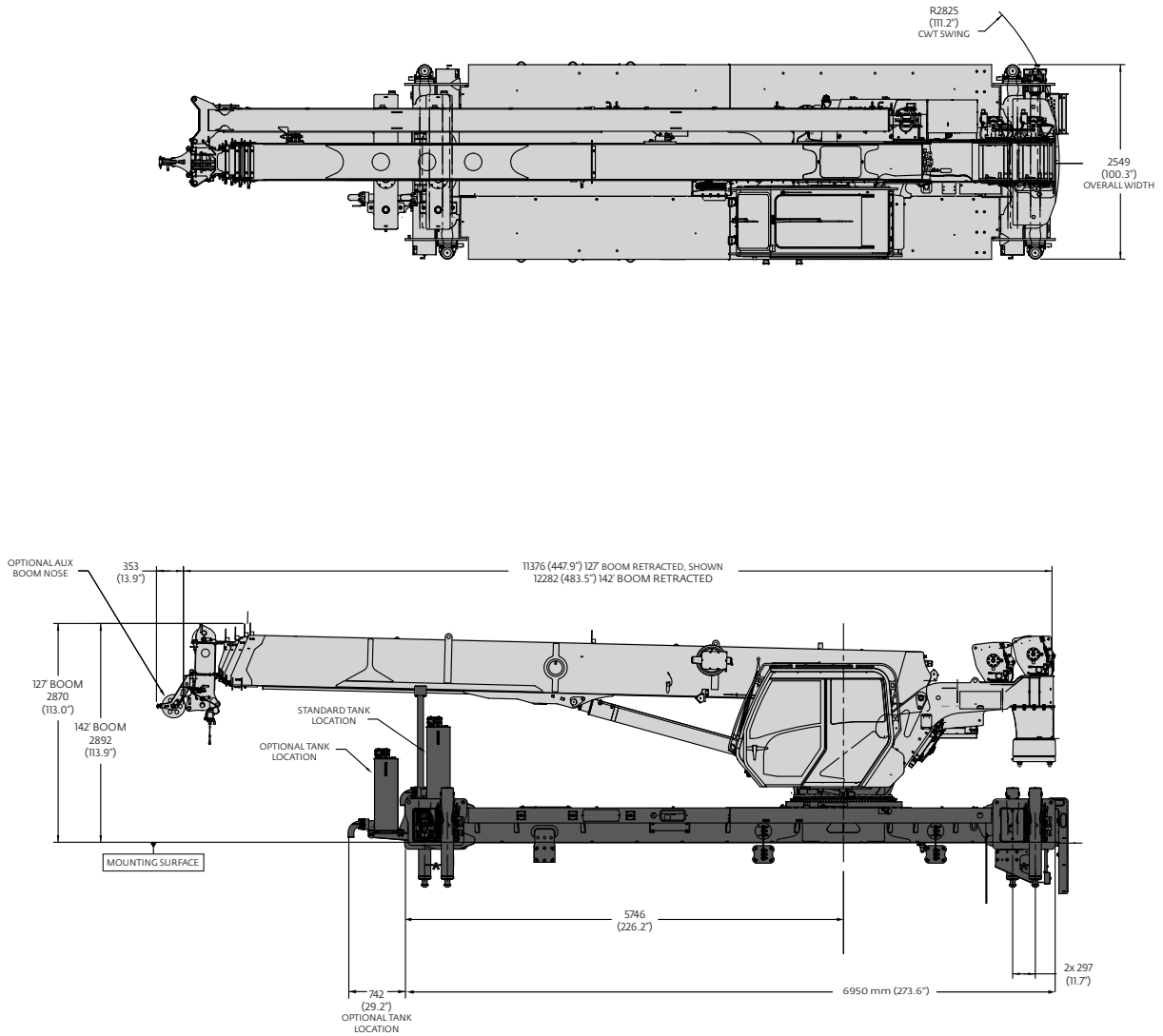
Dimensions are in mm (inches) unless otherwise specified.

Standard		
Series	Weight	CG
NBT/NTC40142-2	37620 lbs (17064 kg)	72.1 in (1832 mm)
NBT/NTC45142-2	40774 lbs (18495 kg)	58.9 in (1497 mm)

Weight includes base machine, 2/3 part line block, polymeric floats, wire rope, PTO, hydraulic reservoir and oil. SFO, jib and auxiliary hoist not included.

# Dimensions and weights

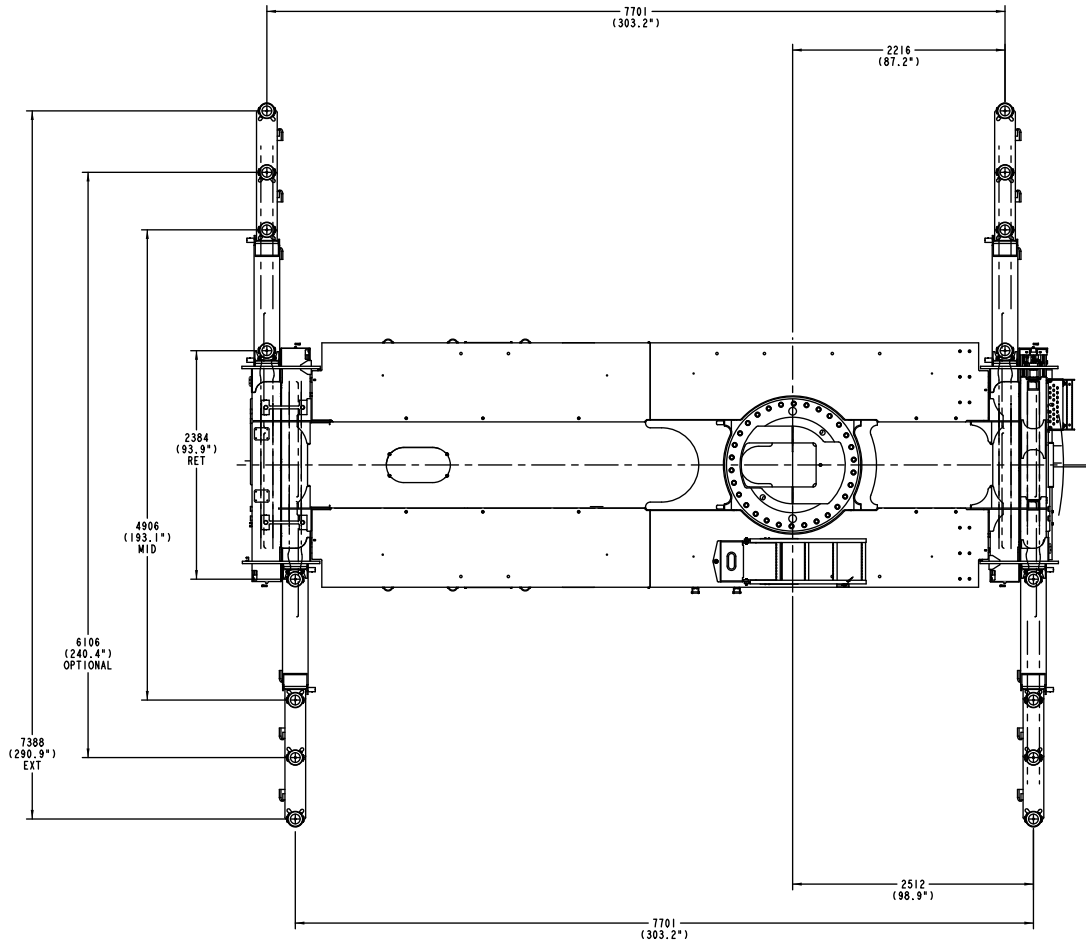
## Extended torsion box



Dimensions are in mm (inches) unless otherwise specified.

# Dimensions and weights

## Extended torsion box



Dimensions are in mm (inches) unless otherwise specified.

Extended		
Series	Weight	CG
NBT/NTC40142-2	38288 lbs (17365 kg)	79.1 in (2008 mm)
NBT/NTC45142-2	41438 lbs (18796 kg)	65.6 in (1666 mm)

Weight includes base machine, 2/3 part line block, polymeric floats, wire rope, PTO, hydraulic reservoir and oil. SFO, jib and auxiliary hoist not included.



# Recommended truck specifications

The configurations are based on the NBT40-2 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.

## NBT40142-2 Recommended Minimum Truck Specification:

**Working area:** 360°

**Gross Axle Weight Rating Front:** 9072 kg (20,000 lb)

**Gross Axle Weight Rating Pusher:** 6124 kg (13,500 lb)

**Gross Axle Weight Rating Rear:** 20,865 kg (46,000 lb)

**Wheelbase:** 685 cm (270 in)

**Cab to Axle/Trunnion (CA/CT):** 495 cm (195 in)

**Frame Strength:** 7885 MPa (110,000 PSI)

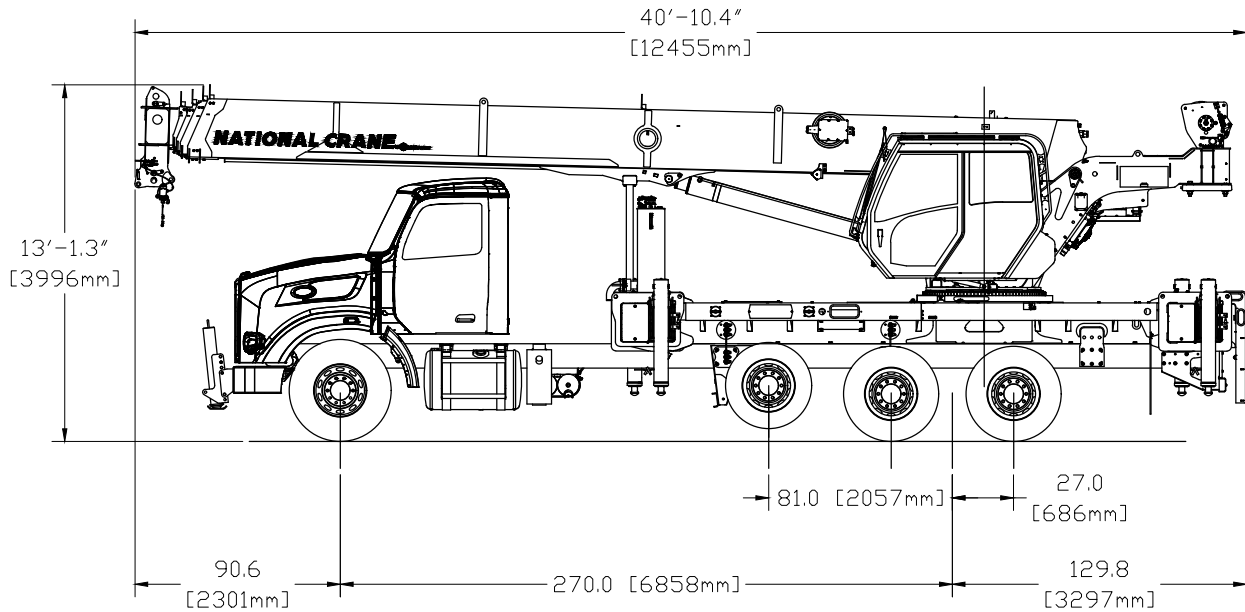
**Frame Section Modulus (SM) Front Axle to End of Frame:** 442 cm<sup>3</sup> (27 in<sup>3</sup>)

**Stability Weight Front:** 4853 kg (10,700 lb)

**Stability Weight Rear:** 4173 kg (9,200 lb)

This configuration shows the 360° working area that is achieved with the front stabilizer (standard on NBT40-2). Extended front frame rails required for SFO installation unless application without extended rails has been approved by National Crane.

*Note: Estimated axle scale weights prior to installation of crane assembly for 85% stability.*



*Other configurations are available, please consult the factory for more information.  
Please refer to page 11 of this product guide for important notes regarding the recommended truck specifications.*

# Recommended truck specifications

The configurations are based on the NBT40-2 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.

## NBT45142-2 Recommended Minimum Truck Specification:

**Working area:** 360°

**Gross Axle Weight Rating Front:** 9072 kg (20,000 lb)

**Gross Axle Weight Rating Pusher:** 6124 kg (13,500 lb)

**Gross Axle Weight Rating Rear:** 20,865 kg (46,000 lb)

**Wheelbase:** 685 cm (270 in)

**Cab to Axle/Trunnion (CA/CT):** 495 cm (195 in)

**Frame Strength:** 7885 MPa (110,000 PSI)

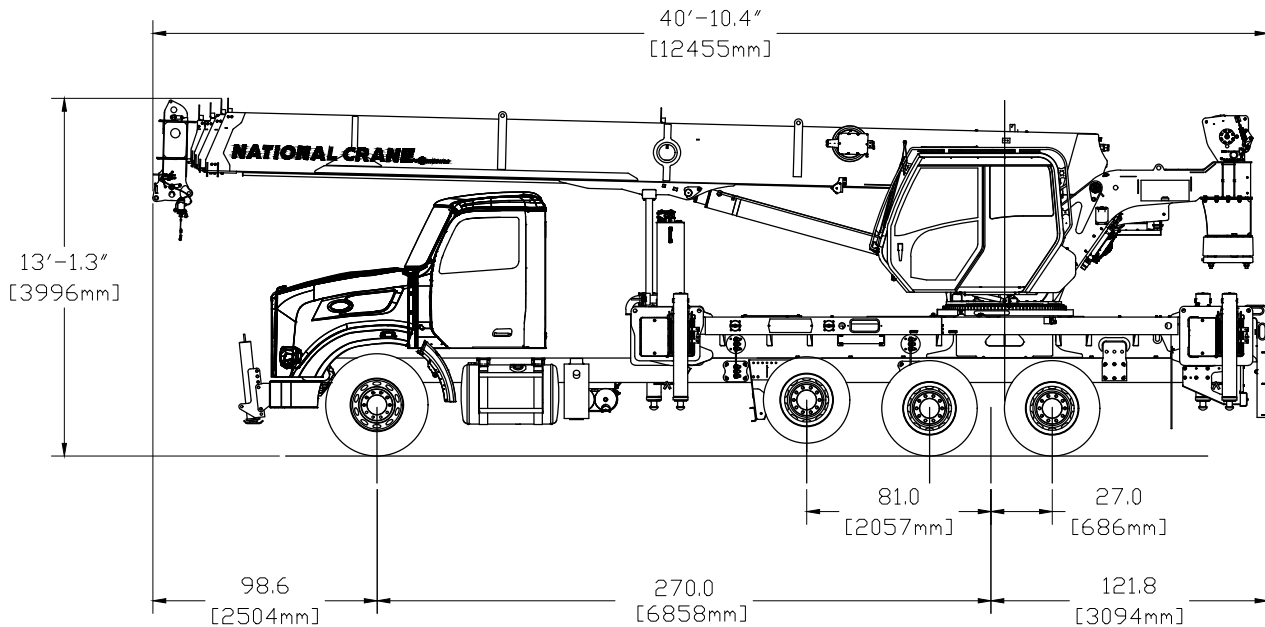
**Frame Section Modulus (SM) Front Axle to End of Frame:** 442 cm<sup>3</sup> (27 in<sup>3</sup>)

**Stability Weight Front:** 4853 kg (10,700 lb)

**Stability Weight Rear:** 4173 kg (9,200 lb)

This configuration shows the 360° working area that is achieved with the front stabilizer (standard on NBT45-2). Extended front frame rails required for SFO installation unless application without extended rails has been approved by National Crane.

*Note: Estimated axle scale weights prior to installation of crane assembly for 85% stability.*



*Other configurations are available, please consult the factory for more information.  
Please refer to page 11 of this product guide for important notes regarding the recommended truck specifications.*

## Notes: Recommended truck specifications

Many factors must be considered in the selection of proper truck for an NBT40-2 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 NBT40-1 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 NBT40-2 Series 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

# Working range

## NBT40-2 and NBT45-2 (142)



43,3 m  
(142 ft)



9,45 m - 16,76 m  
(31 ft - 55 ft)

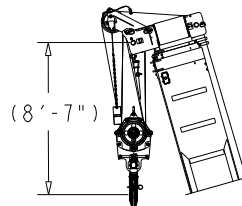
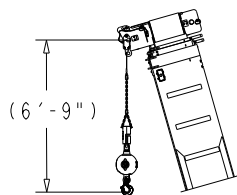
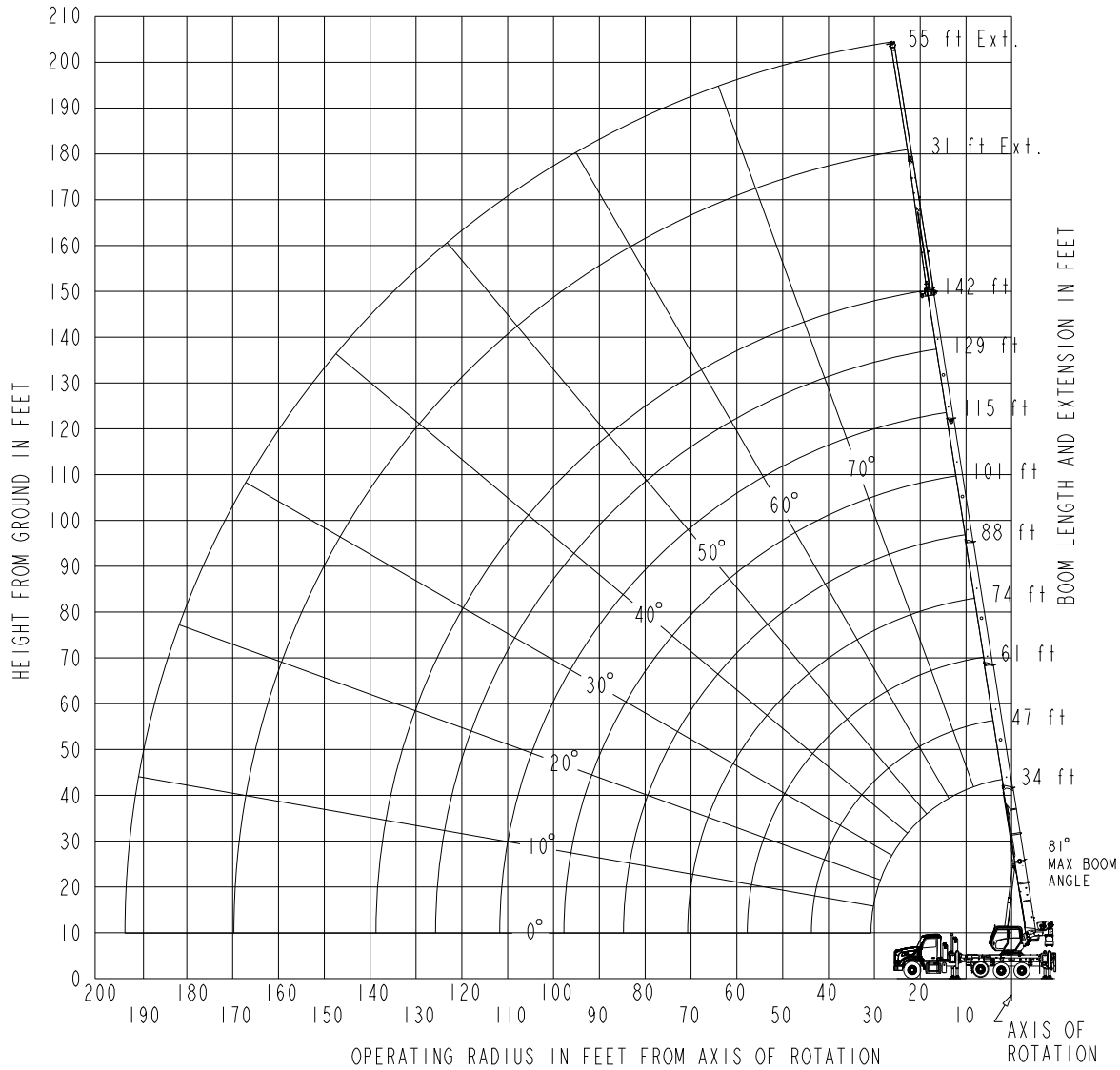


7,52 m  
(24.7 ft)



360°

BOOM DEFLECTION NOT SHOWN



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

*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

## NBT40142-2



10 m – 43,3 m (34 ft – 142 ft)



363 kg (800 lb)



100%



360°



Pounds

Radius in Feet	Main Boom Length in Feet								
	34	47-A	61-B	74-C	88-D	101-E	115-F	129-G	142
6	80,000 (76.1)	41,400 (80.3)	—	—	—	—	—	—	—
8	78,850 (72.7)	41,400 (77.9)	—	—	—	—	—	—	—
10	70,950 (69.1)	41,400 (75.4)	41,400 (79.4)	—	—	—	—	—	—
12	62,700 (65.4)	41,400 (72.9)	39,600 (77.5)	—	—	—	—	—	—
15	51,450 (59.6)	41,400 (69.1)	37,050 (74.7)	32,550 (78.1)	—	—	—	—	—
20	35,650 (48.8)	36,650 (62.5)	33,450 (69.8)	28,400 (74.2)	25,000 (77.2)	19,350 (79.3)	—	—	—
25	26,350 (35.4)	27,400 (55)	27,950 (64.7)	25,200 (70.2)	22,200 (73.9)	17,550 (76.6)	15,350 (78.7)	—	—
30	20,100 (11.5)	21,300 (46.6)	21,850 (59.4)	22,200 (66)	19,950 (70.6)	16,000 (73.8)	13,950 (76.3)	11,500 (78.3)	—
35	—	16,650 (36.7)	17,250 (53.6)	17,400 (61.7)	17,550 (67.3)	14,300 (71)	12,600 (73.8)	11,150 (76.2)	8,320 (77.9)
40	—	12,950 (22.8)	13,550 (47)	13,800 (57)	13,950 (63.8)	12,900 (68.1)	11,400 (71.4)	10,150 (74.1)	8,320 (75.9)
45	—	—	10,900 (39.5)	11,200 (52)	11,300 (59.9)	11,350 (65.1)	10,350 (68.8)	9,300 (71.9)	8,320 (74)
50	—	—	8,840 (30.1)	9,160 (46.4)	9,240 (56)	9,440 (61.8)	9,480 (66.2)	8,510 (69.7)	7,740 (72)
55	—	—	7,120 (16.4)	7,500 (40.1)	7,450 (51.6)	7,760 (58.3)	7,830 (63.6)	7,810 (67.4)	7,130 (70)
60	—	—	—	6,080 (32.6)	6,020 (46.9)	6,360 (54.7)	6,430 (60.6)	6,510 (65.1)	6,490 (68)
65	—	—	—	4,890 (23)	4,870 (41.7)	5,230 (50.8)	5,300 (57.6)	5,380 (62.5)	5,360 (65.9)
70	—	—	—	3,880 (5.3)	3,910 (35.8)	4,290 (46.6)	4,360 (54.4)	4,440 (59.8)	4,420 (63.8)
75	—	—	—	—	3,080 (28.3)	3,500 (42.1)	3,560 (50.9)	3,650 (57)	3,630 (61.4)
80	—	—	—	—	2,370 (18.8)	2,820 (37.2)	2,880 (47.1)	2,970 (54.1)	2,960 (58.9)
85	—	—	—	—	—	2,220 (30.8)	2,290 (43.1)	2,390 (51)	2,380 (56.4)
90	—	—	—	—	—	1,690 (23.2)	1,770 (38.8)	1,860 (47.6)	1,870 (53.7)
95	—	—	—	—	—	1,220 (12.7)	1,300 (33.4)	1,380 (44.1)	1,430 (50.7)
100	—	—	—	—	—	—	880 (27.3)	970 (40.3)	1,040 (47.6)
105	—	—	—	—	—	—	510 (19.9)	600 (35.8)	680 (44.3)
<b>Min. boom angle for indicated length (no load)</b>							18.9°	34.8°	43.3°
<b>Max. boom length at 0° boom angle (no load)</b>							100.6 ft		

NOTE: ( ) Boom angles are in degrees.

Boom Angle	Main Boom Length in Feet								
	34	47	61	74	88	101	115	129	142
0°	14,150 (30.5)	8,720 (43.2)	5,360 (57.2)	3,390 (70.2)	1,840 (84.2)	940 (97.2)	—	—	—

NOTE: ( ) Reference radii in feet.

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The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

# Load chart

**NBT40142-2**



9,45 m (31 ft)



363 kg (800 lb)



100%



360°



Pounds

Radius in Feet	Main Boom Length in Feet		
	115	129	142
30	6,910 (79.5)	5,310 (80.9)	—
35	6,810 (77.7)	5,310 (79.3)	4,110 (80.6)
40	6,510 (75.8)	5,310 (77.6)"	4,110 (79)
45	5,910 (73.9)	5,310 (75.9)	4,110 (77.5)
50	5,380 (72)	5,190 (74.2)	4,110 (75.9)
55	4,930 (70)	4,770 (72.4)	4,110 (74.3)
60	4,520 (68)	4,390 (70.6)	4,030 (72.7)
65	4,170 (66)	4,060 (68.8)	3,820 (71.1)
70	3,860 (63.9)	3,760 (67)	3,550 (69.4)
75	3,490 (61.8)	3,400 (65.1)	3,270 (67.7)
80	2,820 (59.6)	2,730 (63.2)	2,600 (66)
85	2,240 (57)	2,150 (61.3)	2,020 (64.2)
90	1,730 (54.4)	1,640 (59.1)	1,510 (62.5)
95	1,280 (51.6)	1,200 (56.7)	1,070 (60.6)
100	890 (48.7)	800 (54.3)	680 (58.4)
105	540 (45.7)	—	—
<b>Min. boom angle for indicated length (no load)</b>	44.7°	53.3°	57.4°
<b>Max. boom length at 0° boom angle (no load)</b>	46.6 ft	46.6 ft	46.6 ft

**Boom extension capacity notes:**

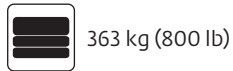
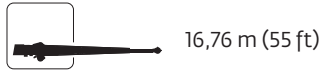
- 31 ft and 55 ft extension lengths may be used for single line lifting service.
- Radii listed are for a fully extended boom with the boom extension erected. For main boom lengths less than fully extended, the rated loads are determined by boom angle. For boom angles not shown, use the rating of the 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.
- Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
- Capacities listed are with outriggers properly extended and vertical jacks set.
- 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.

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*The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.*

# Load chart

## NBT40142-2



Pounds

Radius in Feet	Main Boom Length in Feet		
	115	129	142
35	3,720 (80.3)	—	—
40	3,390 (78.7)	3,240 (80.1)	—
45	3,090 (77.2)	3,170 (78.7)	2,590 (80)
50	2,820 (75.6)	2,940 (77.2)	2,590 (78.6)
55	2,590 (73.9)	2,710 (75.7)	2,590 (77.3)
60	2,400 (72.3)	2,510 (74.3)	2,580 (76)
65	2,220 (70.6)	2,330 (72.8)	2,410 (74.6)
70	2,070 (69)	2,180 (71.2)	2,260 (73.2)
75	1,930 (67.3)	2,040 (69.7)	2,120 (71.8)
80	1,810 (65.5)	1,910 (68.1)	1,990 (70.4)
85	1,700 (63.7)	1,800 (66.5)	1,880 (69)
90	1,600 (61.9)	1,700 (64.9)	1,780 (67.5)
95	1,510 (59.9)	1,610 (63.2)	1,680 (66)
100	1,430 (57.7)	1,530 (61.5)	1,380 (64.5)
105	1,330 (55.4)	1,190 (59.6)	1,030 (62.9)
110	1,010 (53)	870 (57.5)	710 (61.3)
115	720 (50.5)	580 (55.3)	—
<b>Min. boom angle for indicated length (no load)</b>	49.5°	54.3°	60.3°
<b>Max. boom length at 0° boom angle (no load)</b>	46.6 ft	46.6 ft	46.6 ft

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The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.*

# Load chart

**NBT45142-2**



10 m – 43 m (34 ft – 142 ft)



1 814 kg (4,000 lb)



100%



360°



Pounds

Radius in Feet	Main Boom Length in Feet								
	34	47-A	61-B	74-C	88-D	101-E	115-F	129-G	142
6	90,000 (76.1)	41,400 (80.3)	—	—	—	—	—	—	—
8	78,850 (72.7)	41,400 (77.9)	—	—	—	—	—	—	—
10	71,400 (69.1)	41,400 (75.4)	41,400 (79.4)	—	—	—	—	—	—
12	62,700 (65.4)	41,400 (72.9)	39,600 (77.5)	—	—	—	—	—	—
15	52,750 (59.6)	41,400 (69.1)	37,050 (74.7)	32,550 (78.1)	—	—	—	—	—
20	37,150 (48.8)	38,150 (62.5)	33,450 (69.8)	28,400 (74.2)	25,000 (77.2)	19,350 (79.3)	—	—	—
25	27,550 (35.4)	28,550 (55)	29,150 (64.7)	25,200 (70.2)	22,200 (73.9)	17,550 (76.6)	15,350 (78.7)	—	—
30	20,700 (11.5)	22,250 (46.6)	22,850 (59.4)	22,650 (66)	19,950 (70.6)	16,000 (73.8)	13,950 (76.3)	11,500 (78.3)	—
35	—	17,800 (36.7)	18,400 (53.6)	18,700 (61.7)	18,100 (67.3)	14,300 (71)	12,600 (73.8)	11,150 (76.2)	8,320 (77.9)
40	—	14,400 (22.8)	15,050 (47)	15,400 (57)	15,650 (63.8)	12,900 (68.1)	11,400 (71.4)	10,150 (74.1)	8,320 (75.9)
45	—	—	12,500 (39.5)	12,850 (52)	13,100 (59.9)	11,700 (65.1)	10,350 (68.8)	9,300 (71.9)	8,320 (74)
50	—	—	10,400 (30.1)	10,700 (46.4)	10,650 (56)	10,600 (61.8)	9,480 (66.2)	8,510 (69.7)	7,740 (72)
55	—	—	8,430 (16.4)	8,760 (40.1)	8,710 (51.6)	9,320 (58.3)	8,680 (63.6)	7,810 (67.4)	7,130 (70)
60	—	—	—	7,200 (32.6)	7,150 (46.9)	7,670 (54.7)	7,580 (60.6)	7,190 (65.1)	6,570 (68)
65	—	—	—	5,910 (23)	5,890 (41.7)	6,350 (50.8)	6,330 (57.6)	6,590 (62.5)	6,060 (65.9)
70	—	—	—	4,830 (5.3)	4,850 (35.8)	5,270 (46.6)	5,290 (54.4)	5,540 (59.8)	5,460 (63.8)
75	—	—	—	—	3,940 (28.3)	4,370 (42.1)	4,420 (50.9)	4,610 (57)	4,600 (61.4)
80	—	—	—	—	3,170 (18.8)	3,610 (37.2)	3,670 (47.1)	3,820 (54.1)	3,860 (58.9)
85	—	—	—	—	—	2,960 (30.8)	3,030 (43.1)	3,140 (51)	3,230 (56.4)
90	—	—	—	—	—	2,400 (23.2)	2,460 (38.8)	2,550 (47.6)	2,670 (53.7)
95	—	—	—	—	—	1,900 (12.7)	1,950 (33.4)	2,040 (44.1)	2,180 (50.7)
100	—	—	—	—	—	—	1,500 (27.3)	1,580 (40.3)	1,740 (47.6)
105	—	—	—	—	—	—	1,090 (19.9)	1,180 (35.8)	1,350 (44.3)
110	—	—	—	—	—	—	720 (9)	820 (30.6)	990 (40.8)
115	—	—	—	—	—	—	—	—	670 (36.8)
<b>Min. boom angle for indicated length (no load)</b>							8°	29.6°	35.8°
<b>Max. boom length at 0° boom angle (no load)</b>								100.6 ft	

NOTE: ( ) Boom angles are in degrees.

Boom Angle	Main Boom Length in Feet								
	34	47	61	74	88	101	115	129	142
0°	14,150 (30.5)	8,720 (43.2)	5,360 (57.2)	3,390 (70.2)	1,950 (84.2)	940 (97.2)	—	—	—

NOTE: ( ) Reference radii in feet.

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE.

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# Load chart

**NBT45142-2**



9,45 m (31 ft)



1 814 kg (4,000 lb)



100%



360°



Pounds

Radius in Feet	Main Boom Length in Feet		
	115	129	142
30	6,910 (79.5)	5,310 (80.9)	—
35	6,810 (77.7)	5,310 (79.3)	4,110 (80.6)
40	6,510 (75.8)	5,310 (77.6)	4,110 (79)
45	5,910 (73.9)	5,310 (75.9)	4,110 (77.5)
50	5,380 (72)	5,190 (74.2)	4,110 (75.9)
55	4,930 (70)	4,770 (72.4)	4,110 (74.3)
60	4,520 (68)	4,390 (70.6)	4,030 (72.7)
65	4,170 (66)	4,060 (68.8)	3,820 (71.1)
70	3,860 (63.9)	3,760 (67)	3,550 (69.4)
75	3,580 (61.8)	3,490 (65.1)	3,310 (67.7)
80	3,330 (59.6)	3,240 (63.2)	3,090 (66)
85	2,980 (57)	2,890 (61.3)	2,760 (64.2)
90	2,430 (54.4)	2,330 (59.1)	2,210 (62.5)
95	1,940 (51.6)	1,850 (56.7)	1,720 (60.6)
100	1,510 (48.7)	1,420 (54.3)	1,290 (58.4)
105	1,120 (45.7)	1,030 (51.7)	910 (56.2)
110	780 (42.5)	690 (49.1)	570 (53.9)
<b>Min. boom angle for indicated length (no load)</b>	41.5°	48.1°	52.9°
<b>Max. boom length at 0° boom angle (no load)</b>	46.6 ft	46.6 ft	46.6 ft

**Boom extension capacity notes:**

- 31 ft and 55 ft extension lengths may be used for single line lifting service.
- 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.
- Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
- Capacities listed are with outriggers properly extended and vertical jacks set.
- 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.

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# Load chart

**NBT45142-2**



16,76 m (55 ft)



1 814 kg (4,000 lb)



100%



360°



Pounds

Radius in Feet	Main Boom Length in Feet		
	115	129	142
35	3,720 (80.3)	—	—
40	3,390 (78.7)	3,240 (80.1)	—
45	3,090 (77.2)	3,170 (78.7)	2,590 (80)
50	2,820 (75.6)	2,940 (77.2)	2,590 (78.6)
55	2,590 (73.9)	2,710 (75.7)	2,590 (77.3)
60	2,400 (72.3)	2,510 (74.3)	2,580 (76)
65	2,220 (70.6)	2,330 (72.8)	2,410 (74.6)
70	2,070 (69)	2,180 (71.2)	2,260 (73.2)
75	1,930 (67.3)	2,040 (69.7)	2,120 (71.8)
80	1,810 (65.5)	1,910 (68.1)	1,990 (70.4)
85	1,700 (63.7)	1,800 (66.5)	1,880 (69)
90	1,600 (61.9)	1,700 (64.9)	1,780 (67.5)
95	1,510 (59.9)	1,610 (63.2)	1,680 (66)
100	1,430 (57.7)	1,530 (61.5)	1,600 (64.5)
105	1,350 (55.4)	1,450 (59.6)	1,520 (62.9)
110	1,290 (53)	1,380 (57.5)	1,260 (61.3)
115	1,220 (50.5)	1,100 (55.3)	940 (59.3)
120	960 (48)	820 (53.1)	660 (57.3)
125	690 (45.3)	560 (50.8)	—
<b>Min. boom angle for indicated length (no load)</b>	44.3°	49.8°	56.3°
<b>Max. boom length at 0° boom angle (no load)</b>	46.6 ft	46.6 ft	46.6 ft

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# Load chart

**NBT45142-2**



10 m – 43 m (34 ft – 142 ft)



2 722 kg (6,000 lb)



100%



360°



Pounds

Radius in Feet	Main Boom Length in Feet								
	34	47-A	61-B	74-C	88-D	101-E	115-F	129-G	142
6	90,000 (76.1)	41,400 (80.3)	—	—	—	—	—	—	—
8	78,850 (72.7)	41,400 (77.9)	—	—	—	—	—	—	—
10	71,600 (69.1)	41,400 (75.4)	41,400 (79.4)	—	—	—	—	—	—
12	62,700 (65.4)	41,400 (72.9)	39,600 (77.5)	—	—	—	—	—	—
15	52,750 (59.6)	41,400 (69.1)	37,050 (74.7)	32,550 (78.1)	—	—	—	—	—
20	38,150 (48.8)	39,150 (62.5)	33,450 (69.8)	28,400 (74.2)	25,000 (77.2)	19,350 (79.3)	—	—	—
25	28,350 (35.4)	29,350 (55)	29,950 (64.7)	25,200 (70.2)	22,200 (73.9)	17,550 (76.6)	15,350 (78.7)	—	—
30	20,700 (11.5)	22,950 (46.6)	23,500 (59.4)	22,650 (66)	19,950 (70.6)	16,000 (73.8)	13,950 (76.3)	11,500 (78.3)	—
35	—	18,350 (36.7)	18,950 (53.6)	19,300 (61.7)	18,100 (67.3)	14,300 (71)	12,600 (73.8)	11,150 (76.2)	8,320 (77.9)
40	—	14,900 (22.8)	15,550 (47)	15,900 (57)	16,150 (63.8)	12,900 (68.1)	11,400 (71.4)	10,150 (74.1)	8,320 (75.9)
45	—	—	12,900 (39.5)	13,250 (52)	13,550 (59.9)	11,700 (65.1)	10,350 (68.8)	9,300 (71.9)	8,320 (74)
50	—	—	10,800 (30.1)	11,150 (46.4)	11,450 (56)	10,600 (61.8)	9,480 (66.2)	8,510 (69.7)	7,740 (72)
55	—	—	9,080 (16.4)	9,480 (40.1)	9,540 (51.6)	9,690 (58.3)	8,680 (63.6)	7,810 (67.4)	7,130 (70)
60	—	—	—	7,950 (32.6)	7,900 (46.9)	8,420 (54.7)	7,920 (60.6)	7,190 (65.1)	6,570 (68)
65	—	—	—	6,580 (23)	6,570 (41.7)	7,030 (50.8)	7,010 (57.6)	6,590 (62.5)	6,060 (65.9)
70	—	—	—	4,830 (5.3)	5,470 (35.8)	5,890 (46.6)	5,910 (54.4)	6,040 (59.8)	5,570 (63.8)
75	—	—	—	—	4,510 (28.3)	4,940 (42.1)	4,990 (50.9)	5,170 (57)	5,110 (61.4)
80	—	—	—	—	3,690 (18.8)	4,140 (37.2)	4,200 (47.1)	4,340 (54.1)	4,390 (58.9)
85	—	—	—	—	—	3,450 (30.8)	3,520 (43.1)	3,630 (51)	3,720 (56.4)
90	—	—	—	—	—	2,860 (23.2)	2,920 (38.8)	3,010 (47.6)	3,130 (53.7)
95	—	—	—	—	—	2,330 (12.7)	2,380 (33.4)	2,470 (44.1)	2,610 (50.7)
100	—	—	—	—	—	—	1,900 (27.3)	1,990 (40.3)	2,150 (47.6)
105	—	—	—	—	—	—	1,480 (19.9)	1,560 (35.8)	1,740 (44.3)
110	—	—	—	—	—	—	1,090 (9)	1,180 (30.6)	1,360 (40.8)
115	—	—	—	—	—	—	—	840 (24.6)	1,020 (36.8)
120	—	—	—	—	—	—	—	520 (17.2)	700 (32.1)
<b>Min. boom angle for indicated length (no load)</b>							8°	16.2°	31.1°
<b>Max. boom length at 0° boom angle (no load)</b>							100.6 ft		

NOTE: ( ) Boom angles are in degrees.

Boom Angle	Main Boom Length in Feet								
	34	47	61	74	88	101	115	129	142
0°	14,150 (30.5)	8,720 (43.2)	5,360 (57.2)	3,390 (70.2)	1,950 (84.2)	940 (97.2)	—	—	—

NOTE: ( ) Reference radii in feet.

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# Load chart

## NBT45142-2



9,45 m (31 ft)



2 722 kg (6,000 lb)



100%



360°



Pounds

Radius in Feet	Main Boom Length in Feet		
	115	129	142
30	6,910 (79.5)	5,310 (80.9)	—
35	6,810 (77.7)	5,310 (79.3)	4,110 (80.6)
40	6,510 (75.8)	5,310 (77.6)	4,110 (79)
45	5,910 (73.9)	5,310 (75.9)	4,110 (77.5)
50	5,380 (72)	5,190 (74.2)	4,110 (75.9)
55	4,930 (70)	4,770 (72.4)	4,110 (74.3)
60	4,520 (68)	4,390 (70.6)	4,030 (72.7)
65	4,170 (66)	4,060 (68.8)	3,820 (71.1)
70	3,860 (63.9)	3,760 (67)	3,550 (69.4)
75	3,580 (61.8)	3,490 (65.1)	3,310 (67.7)
80	3,330 (59.6)	3,240 (63.2)	3,090 (66)
85	3,100 (57)	3,030 (61.3)	2,870 (64.2)
90	2,880 (54.4)	2,790 (59.1)	2,580 (62.5)
95	2,370 (51.6)	2,280 (56.7)	2,150 (60.6)
100	1,910 (48.7)	1,820 (54.3)	1,700 (58.4)
105	1,510 (45.7)	1,420 (51.7)	1,290 (56.2)
110	1,140 (42.5)	1,050 (49.1)	930 (53.9)
115	820 (39.1)	730 (46.4)	600 (51.5)
120	520 (34.9)	—	—
<b>Min. boom angle for indicated length (no load)</b>	33.9°	45.4°	50.5°
<b>Max. boom length at 0° boom angle (no load)</b>	46.6 ft	46.6 ft	46.6 ft

### Boom extension capacity notes:

- 31 ft and 55 ft extension lengths may be used for single line lifting service.
- 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.
- Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
- Capacities listed are with outriggers properly extended and vertical jacks set.
- 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.

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# Load chart

## NBT45142-2



16,76 m (55 ft)



2 722 kg (6,000 lb)



100%



360°



Pounds

Radius in Feet	Main Boom Length in Feet		
	115	129	142
35	3,720 (80.3)	—	—
40	3,390 (78.7)	3,240 (80.1)	—
45	3,090 (77.2)	3,170 (78.7)	2,590 (80)
50	2,820 (75.6)	2,940 (77.2)	2,590 (78.6)
55	2,590 (73.9)	2,710 (75.7)	2,590 (77.3)
60	2,400 (72.3)	2,510 (74.3)	2,580 (76)
65	2,220 (70.6)	2,330 (72.8)	2,410 (74.6)
70	2,070 (69)	2,180 (71.2)	2,260 (73.2)
75	1,930 (67.3)	2,040 (69.7)	2,120 (71.8)
80	1,810 (65.5)	1,910 (68.1)	1,990 (70.4)
85	1,700 (63.7)	1,800 (66.5)	1,880 (69)
90	1,600 (61.9)	1,700 (64.9)	1,780 (67.5)
95	1,510 (59.9)	1,610 (63.2)	1,680 (66)
100	1,430 (57.7)	1,530 (61.5)	1,600 (64.5)
105	1,350 (55.4)	1,450 (59.6)	1,520 (62.9)
110	1,290 (53)	1,380 (57.5)	1,450 (61.3)
115	1,220 (50.5)	1,310 (55.3)	1,290 (59.3)
120	1,160 (48)	1,150 (53.1)	990 (57.3)
125	1,010 (45.3)	870 (50.8)	710 (55.2)
130	760 (42.5)	620 (48.4)	—
135	530 (39.6)	—	—
<b>Min. boom angle for indicated length (no load)</b>	38.6°	47.4°	54.2°
<b>Max. boom length at 0° boom angle (no load)</b>	46.6 ft	46.6 ft	46.6 ft

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# Specifications

## Super Structure

### Boom

Two boom length options:

- 9,45 m- 38,71 m (31 ft – 127 ft), five-section with a maximum tip height of 41,1 m (135 ft). Available on NBT40-2, NBT45-2
- 10,36 m- 43,29 m (34 ft – 142 ft), five-section with a maximum tip height of 45,7 m (150 ft). Available on NBT40-2, NBT45-2

Includes proportional extension via multi-stage hydraulic cylinder and cable operation, four-plate, high-strength steel construction, three-sheave, quick reeve boom nose and Easy-glide wear pads.

### Boom elevation

One (1) double-acting, hydraulic cylinder with integral holding valve with integral pressure transducers provides elevation from -10° to 81°.

### Rated Capacity Limiter (RCL) and anti-two block (ATB) systems

Graphical display capacity limiter and ATB system with audio visual warning and crane function lockout. The graphical display is a 178 mm (7 in) color and polarized screen for real-time display of boom angle, length, radius, tip height, maximum permissible load, load indication, and warning of impending overload or ATB condition. Work area definition system (WADS) provides operator definable non-lockout warning limits for crane operations, and CANbus sensors and hard-wired ATB circuit routed internally to the boom. Outrigger monitoring system (OMS) to sense the configuration of the outriggers and aid the operator in selecting an appropriate setup. Onboard setup and diagnostics for RCL sensors allow for improved service and an event recorder to protect your investment.

### Operator cab and controls

Cab structure: rigid galvanealed steel structure, well insulated, offering optimum operator visibility and comfort. Equipped with tilting cab feature from horizontal to +20°, tinted safety glass, fixed front window with windshield wiper and washer, sliding skylight window with windshield wiper, sliding left side glass door, sliding right side window for ventilation w/ safety grille, tilting rear window for ventilation, four-way adjustable, cushioned/heated seat and armrests with seat belt, diesel-fired warm-water heater with air ducts at operators feet, left and right side of cab and front dash — standard, hydraulic-powered air conditioner — standard, AM/FM/Bluetooth radio and speakers, circulation fan, bubble level, adjustable sun visor, dome light, cup holder, fire extinguisher, load chart binder with tear-proof paper load charts and operator manual.

Armrest control functions are arranged per ASME B30.5: Two dual axis (single axis optional) electric joystick controllers for swing, boom telescope, main hoist, auxiliary hoist (optional), boom lift, warning horn button, swing park brake switch, hoist rotation indicator, tilt cab up/down, heated seat control, main hoist high/low speed switch, and aux hoist high/low speed switch (optional).

Outrigger controls: front console-mounted electronic keypad allowing the operator to activate all horizontal beams and vertical jacks. Pre-selection capabilities to easily activate more than one function for ease of setup.

Optional wireless radio remote for outrigger control along with main and auxiliary hoist jog functionality available. Remote equipped magnetic base for quick, easy storage on any metal surface.

Foot controls include: engine throttle (electronic), dynamic swing brake (electronic) and boom telescope (electronic if equipped with auxiliary hoist option.)

Front console controls and indicators for RCL display, outriggers, engine ignition key, emergency stop switch, and RCL override keyswitch (momentary). Accessory charging options include both USB and 12 VDC power outlets.

Overhead console includes controls and indicators for: heater, A/C and fan speed, windshield wiper and washer, skylight wiper, cab-mounted work lights, crane function power, radio remote power, and air recirculation control.

### Hydraulic system

Efficient closed-center, load-sense hydraulics system featuring flow-sharing technology allowing for smooth multifunction operation of all crane functions. One (1) SAE-C mounted, 130cc axial piston pump for all functions and optimized system performance. Shaft input of 2200 rpm, generating 288 lpm (76 gpm) max flow at 310 bar (4500 psi) max operating pressure. 143 gal (541 L) hydraulic reservoir with SAE o-ring connections and integrated butterfly shut-off valve for easy maintenance. SAE o-ring hydraulic fittings and hoses throughout. Boom lift, boom telescope, main and aux hoist(s), and vertical outrigger jacks are all equipped with counterbalance valves for controlled movement and load holding. Hydraulic system includes a standard pressure transducer that provides real-time hydraulic system pressure and temperature monitoring on the crane cab display for informational and troubleshooting benefits.

Hydraulic oil cooler: standard electric fan, plate and fin style oil cooler mounted to the back of the superstructure to remove heat from the hydraulic oil under heavy operating conditions.

## Slewing

Continuous 360° rotation using (1) low speed high torque motor with a manually adjustable swing adjustment valve integrated to the hydraulic motor control manifold mounted to a planetary reduction gear. A proportional electronic brake pedal located in the operator cab allows for the dynamic application of the multi-disk swing brake circuit. A separate spring-applied, hydraulic-released brake for disabling rotation can be activated from the left hand seat armrest. Free-swing functionality is disabled when using the optional crane radio remote control. Maximum rotation speed of 2 RPM.

## Electrical system

Automotive grade, fully wire harnessed 12VDC electrical system using state of the art sealed connectors and control modules. CANbus system for crane control, crane RCL and J1939 truck monitoring. All CANbus networks are able to be accessed from a junction box near the crane cab for ease of troubleshooting. Full truck integration includes CANbus integration with J1939 protocol for engine throttle control and engine status vitals and warnings. Dual-tone backup and outrigger motion alarm located at rear of machine. LED marker and triple ID lights.

## Lower

## Outriggers

Out and down style outriggers at both the front and rear with individual control of each horizontal beam extension and vertical jack cylinder. Ground level control stations located at the left and right side for control of all vertical jacks and only the horizontal beams for each station. Operator cab features an electronic keypad mounted on the front console to control all outrigger functions.

100% span: 7,41 m (24.3 ft)

75% span: 6,1 m (20 ft)

50% span: 4.91 m (16.1 ft)

0% span: 2.4 m (7.9 ft)

*Note: 75% span available ONLY with the NTC Performance Package.*

Outrigger monitoring system for horizontal beam extension is standard. Inverted cylinder rods for vertical outrigger jack cylinders for best protection of chromed rod. Optional single front outrigger (SFO) required for stability on certain mounting configurations.

## Chassis Mounting

Torsion resistant, high-strength steel sub frame attached using high-strength steel mounting brackets that are welded to the sub-frame and bolted to the truck chassis using Huck® bolts to ensure a secure and maintenance-free connection. Rear bumper under ride protection standard on factory-mounted cranes. Fixed boom rest mounted to front outrigger box and fabricated from structural steel.

# Specifications

## Optional items

- **NTC performance package (NTC40-2/NTC45-2)**
  - > Four-position outriggers
  - > Wireless windspeed sensor package
  - > Hoist and rear-view camera system
  - > Wireless outrigger remote control with magnetic base
  - > NTC model designation decals and materials
- **Personnel handling platforms**
  - > (2) person steel, non-insulated, platform options
  - > Rapid Attach Platform system available in both the rotating (R-RAP2) and yoke-style (Y-RAP2) options
  - > Capacities up to 544,3 kg (1200 lb) on main boom
  - > Platform test weight sets available for each
  - > Compliant to ASME B30.23 and CSA Z150 requirements
- **Wireless windspeed sensor**
  - > Real-time feedback of current speed in the operator's cab
  - > Display on in-dash RCL display and on optional wireless radio remote
- **Camera package**
  - > Camera package offering visibility of the rear quadrant of the machine including counterweight area and view of the hoist(s)
  - > Video camera at hoist location on "break-away" stowable arm
  - > Rearview video camera on rear of turntable providing a 170-degree view angle enabling operator to see outriggers fully deployed for enhanced jobsite visibility
- **Wireless outrigger remote control**
  - > (14) button remote control for outrigger setup, both horizontal and vertical outrigger movement
  - > Remote allows for single operator set SFO at front bumper and use main and auxiliary hoist jog function
  - > Remote includes start/horn function
  - > Magnetic base for stowing remote on any metallic surface
- **Hydraulic tool circuit for personnel handling platform**
  - > Hydraulic accessory manifold: provides hydraulic oil to the hose reel of 124 bar (1800 PSI) pressure at 22,7 lpm (6 gpm)
  - > Boom mounted hydraulic hose reel: twin-line, spring-tensioned hose reel allowing oil to flow to the platform when attached to either the main boom or the jib. All hoses equipped with quick-disconnects and the hoses can be easily stowed to the main boom when not in use
  - > Pressure intensifier manifold in platform: Hydraulic power on demand for platform tools. Manifold can provide hydraulic oil up to 689,5 bar (10,000 PSI) at 0,95 lpm (0.25 gpm)
- **Operator aids**
  - > 5-function wireless radio remote control of approximately 75 m (250 ft) (NB5R)
  - > Metric capacity charts
  - > Spanish, Brazilian Portuguese, French documentation and decals
- **Telescopic Jib**
  - > 9,4 m – 16,7 m (31 ft - 55 ft) telescoping boom extension (side fold for stowing), includes 7,3 m (24 ft) manual pull out section
  - > Max tip height with 38,7 m (127 ft) boom is 57,6 m (189 ft)
  - > Max tip height with 43,3 m (142 ft) boom is 62,2 m (204 ft)
  - > RCL calibration for future jib option
- **Auxiliary hoist**
  - > A second boom-mounted hoist located in front of the standard main hoist
  - > Standard with rotation resistant wire rope and round, top-swivel downhaul weight
- **Extended torsion box**
  - > Lower torsion resistant sub-frame extension of 1,3 m (52 in)
  - > Equipped to provide a more optimized truck layout for some truck configurations
  - > Hydraulic reservoir is relocated to behind the boom rest (closer to the crane cab)
  - > Possibility of no SFO requirement on some truck layout configurations
- **Hook blocks**
  - > Single sheave, 18,1 t (20 USt) quick-reeve hook block for 2-3 part reeving. [186 kg (410 lb)]
  - > Double sheave, 22,7 t (25 USt) quick-reeve hook block for 4-5 part reeving [290 kg (639 lb)]
  - > Triple sheave, 36,3 t (40 USt) quick-reeve hook block for 6-7 part reeving including auxiliary sheave case assembly [272 kg (600 lb)]
  - > Quad sheave, 45,4 t (50 USt) quick-reeve hook block for 8 part reeving including auxiliary sheave case assembly [361 kg (796 lb)]
- **Single front outrigger (SFO)**
  - > 63,5 m (25 in) vertical stroke
  - > Required for stable operation with some mounting configurations
- **Aluminum outrigger floats**
  - > 610 mm (24 in) aluminum floats in lieu of the standard 500 mm (19.7 in) polymeric floats
  - > Outrigger controls located at the mounted location for quick, easy operation



# Specifications



## Main and (optional) auxiliary hoist(s)

Two-speed displacement, bent-axis piston motor driving a planetary gearset and a grooved drum with cable tensioner/follower and drum rotation indicator and last layer and minimum wrap indicators.

Parts of Line	1 part line	2 part line	3 part line	4 part line	5 part line	6 part line	7 part line	8 part line
Max boom length (ft) at max elevations with stated rigging and load block and ground level	206 (includes 45 ft ext.)	142	103	81	66	55	47	40
Low speed lift (lb)	11,250	22,500	33,750	45,000	56,250	67,500	78,750	90,000
High speed lift (lb)	5000	10,000	15,000	20,000	25,000	30,000	35,000	40,000

Line Pulls and Reeving Information			
Hoists	Cable specs.	Permissible line pulls	Nominal cable length
Main and Auxiliary	16 mm (5/8 in) Dyform 34 LR Rotation Resistant (non-rotating) Min. Breaking Strength 56,420 lb	11,280 lb*	450 ft

The approximate weight of 5/8 in wire rope is 1.0 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.

Hoist Performance				
Wire rope layer	Hoist line pulls		Drum capacity (ft)	
	Two speed hoist		Layer	Total
	Low	High		
	Available lb	Available lb		
1	17,250	7040	78	78
2	15,450	6310	87	165
3	14,000	5720	96	261
4	12,790	5220	105	366
5	11,780	4810	114	480

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

Weight Reductions for Load Handling Devices	
Auxiliary boom nose	30 kg (66 lbs)
<b>Hook blocks and headache balls</b>	
50 USt, 4-sheave (12 in sheave)	361 kg (796 lb)+
40 USt, 3-sheave (12 in sheave)	272.2 kg (600 lb)+
25 USt, 2-sheave (12 in sheave)	290 kg (640 lb)+
20 USt, 1-sheave (12 in sheave)	149 kg (329 lb)+
7 USt overhaul ball	113 kg (250 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 Manitowoc furnished equipment.

# Symbols glossary



Axles



Drive



Heavy duty jib



Radius



Boom



Electrical system



Hoist



Rotation



Boom elevation



Engine



Hookblock



Speed



Boom extension



Extension



Hydraulic system



Steering



Boom length



Frame



Insert



Suspension



Boom nose



Fuel tank capacity



Lights



Swing



Brakes



Gear



Oil



Tires



Operators station



Grade



Outrigger controls



Transmission



Counterweight



Height (no max)



Outriggers



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