



# BOOM TRUCK 40 TONS

NATIONAL SERIES 1800

**BOOM LENGTHS:**  
31FT TO 127FT

**JIB LENGTHS:**  
31FT TO 55FT

**JIB OFFSETS:**  
0



# NOTES:



# NATIONAL CRANE

## Series 1800

## Hydraulic Crane 40 Ton

## Load Ratings

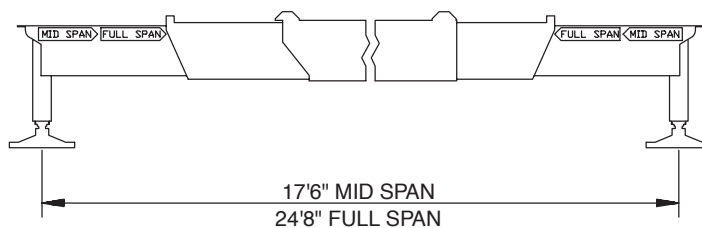


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# INFORMATIONAL DATA

## OUTRIGGERS

1. Outrigger spread from center to center of the outrigger floats at mid span is 17'6" and at full span is 24'8"
2. No outrigger pad load exceeds 63,000 pounds maximum at full span or 74,000 pounds maximum at mid span.



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

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

	Aux Boom Head	100 lb
	Downhaul Weight	180 lb
5 Ton	1 Sheave Block	375 lb
15 Ton	2 Sheave Block	640 lb
25 Ton	3 Sheave Block	870 lb
35 Ton	4 Sheave Block	970 lb
40 Ton		

NOTICE			1 Part Line	2 Part Line	3 Part Line	4 Part Line	5 Part Line	6 Part Line	7 Part Line	8 Part Line
<ul style="list-style-type: none"> <li>• Do not deadhead line block against boom tip when extending boom.</li> <li>• Keep at least 3 wraps of loadline on drum at all times.</li> <li>• Use only 5/8" diameter rotation resistant cable with 56,400 pounds breaking strength on this machine.</li> </ul>										
			158' BOOM & JIB	114'	83'	64'	52'	43'	36'	31'
Winch	Cable Supplied	Average Breaking Strength	Lift and Speed	Lift and Speed	Lift and Speed	Lift and Speed	Lift and Speed	Lift and Speed	Lift and Speed	Lift and Speed
Standard Planetary Winch Low Speed	5/8" diameter rotation resistant IWRC	56,400 lb	10,000 lb 205 fpm	20,000 lb 103 fpm	30,000 lb 68 fpm	40,000 lb 51 fpm	50,000 lb 41 fpm	60,000 lb 34 fpm	70,000 lb 29 fpm	80,000 lb 26 fpm
Standard Planetary Winch High Speed	5/8" diameter rotation resistant IWRC	56,400 lb	5,000 lb 410 fpm	10,000 lb 205 fpm	15,000 lb 137 fpm	20,000 lb 103 fpm	25,000 lb 82 fpm	30,000 lb 68 fpm	35,000 lb 59 fpm	40,000 lb 51 fpm

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

**Winch**  
Standard planetary  
& Auxiliary planetary

**Full Drum Pull**  
5,000 pounds (high speed)  
10,000 pounds (low speed)

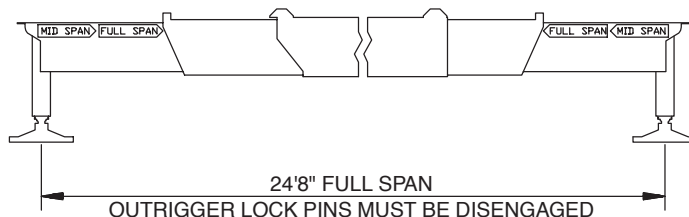
**Allowable Cable Pull**  
11,280 pounds



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# FULL-SPAN OUTRIGGER

**18127  
127' BOOM  
31'-55' JIB**



## 31 TO 127 FOOT BOOM RATED LOADS WITHOUT JIB

LOAD RADIUS (FEET)	LOADED BOOM ANGLE	31 FT BOOM (lb)	LOADED BOOM ANGLE	55 FT BOOM (lb)	LOADED BOOM ANGLE	79 FT BOOM (lb)	LOADED BOOM ANGLE	103 FT BOOM (lb)	LOADED BOOM ANGLE	127 FT BOOM (lb)
7	74.5	80,000								
8	72.4	74,000								
10	68.2	64,000								
12	63.8	56,000	76.9	40,000						
15	56.9	43,000	73.8	38,000	79.8	29,000				
20	44.2	30,000	68.1	31,000	76.2	25,000	80	16,000		
25	27.4	22,500	62	23,400	72.5	21,500	77.2	14,500	80	10,000
30			55.5	18,300	68.5	18,700	74.4	13,000	78	9,500
35			48.6	14,800	64.3	15,100	71.5	11,500	75.9	9,000
40			40.7	12,100	59.9	12,500	68.6	10,500	73.6	8,100
45			31.3	10,100	55.3	10,400	65.9	9,500	71.2	7,200
50			19.4	8,500	50.9	8,800	62.7	8,500	68.8	6,500
55					45.8	7,500	59.3	7,500	66.3	5,800
60					40.1	6,400	55.7	6,500	63.7	5,300
65					33.6	5,400	52	5,600	61.1	4,800
70					25.6	4,600	48.1	4,700	58.4	4,300
75					13.5	3,850	43.9	3,950	55.6	3,900
80							39.3	3,350	52.6	3,400
85							34.3	2,800	49.4	2,850
90							28.4	2,300	46	2,350
95							21	1,850	42.5	1,900
100							8.2	1,500	38.8	1,550
105									34.6	1,200
110									30	900
115									24.6	650
	0	19,000	0	7,700	0	3,600	0	1,450		

### 31' JIB RATED LOADS

RADIUS FULLY EXTENDED	LOADED BOOM ANGLE	RATED LOADS ALL BOOM LENGTHS
30	80	3,400
46	75	3,200
60	70	2,700
73	65	2,100
85	60	1,700
96	55	1,200
106	50	650

### 55' JIB RATED LOADS

RADIUS FULLY EXTENDED	LOADED BOOM ANGLE	RATED LOADS ALL BOOM LENGTHS
36	80	2,200
54	75	2,200
70	70	1,600
85	65	1,000

### RATED LOAD REDUCTIONS WITH JIB

BOOM LENGTH	31' JIB STOWED	31' - 55' JIB ERECTED AT 31' LENGTH
31'	Reduce load 800 lb	Reduce load 2,300 lb
55'	Reduce load 450 lb	Reduce load 2,000 lb
79'	Reduce load 350 lb	Reduce load 1,900 lb
103'	Reduce load 250 lb	Reduce load 1,800 lb
127'	Reduce load 200 lb	Reduce load 1,700 lb

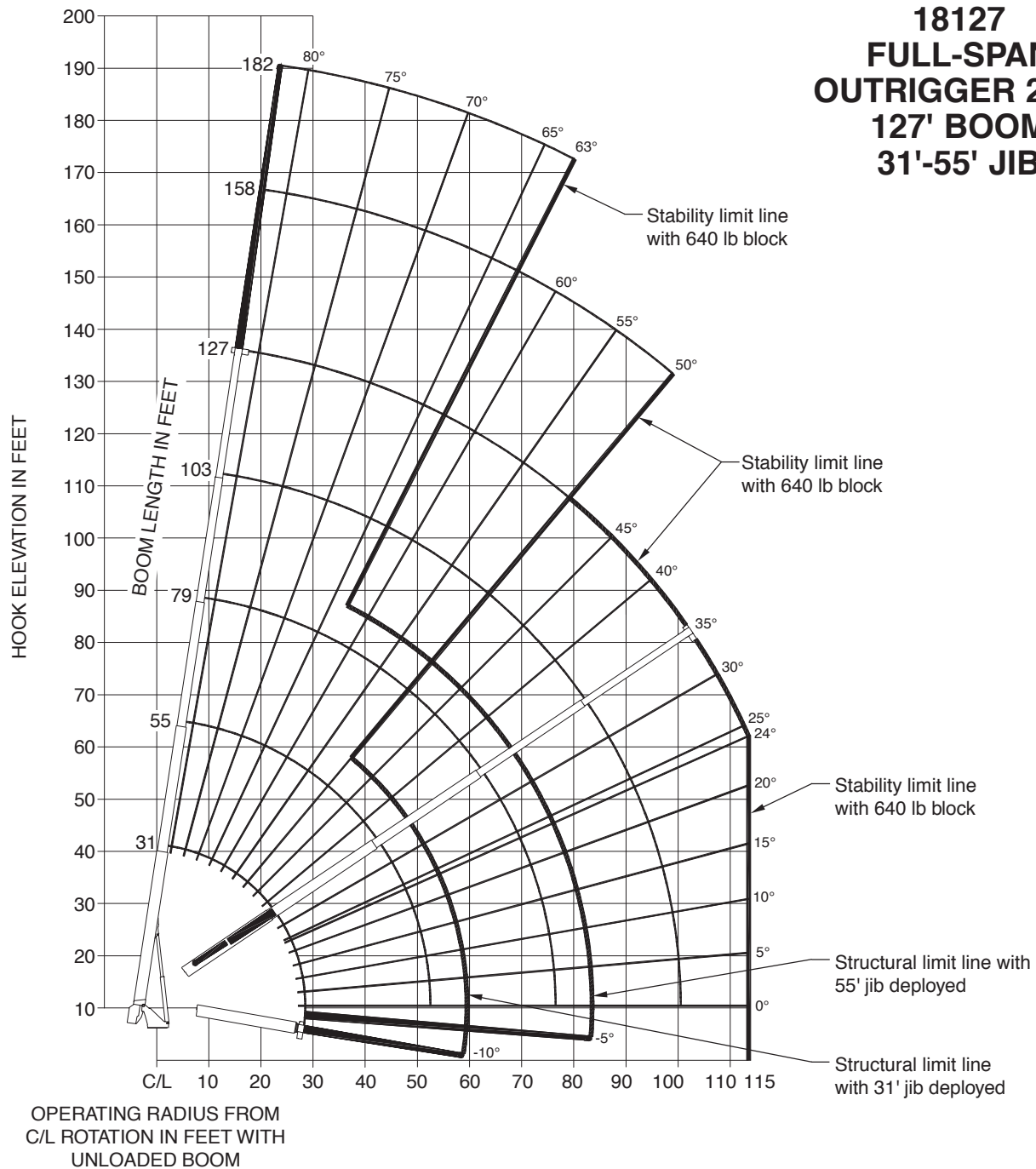
### NOTE

1. All capacities are in pounds, angles in degrees, radius in feet.
2. Loaded boom angles are given as reference only.
3. Shaded areas are structurally limited capacities.



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**18127  
FULL-SPAN  
OUTRIGGER 24'8"  
127' BOOM  
31'-55' JIB**



## SET-UP

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

## OPERATION

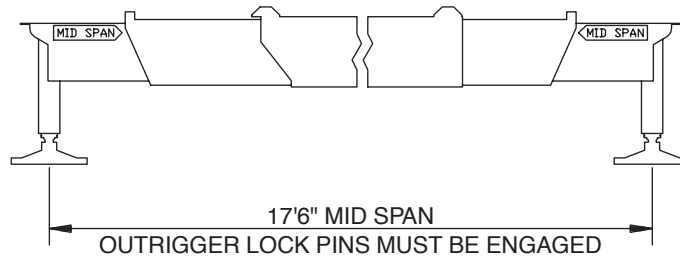
1. The 31 ft. boom length capacities are based on boom fully retracted. If not fully retracted, do not exceed 55 ft. boom length capacities.
2. Do not extend unloaded boom or jib beyond stability limit line on range chart as loss of stability may occur.
3. Load blocks and slings are considered to be a part of the load.
4. Operate with jib by radius when main boom is fully extended and by boom angle when main boom is partially extended. Do not exceed jib capacities at any partially extended boom length.
5. All jib loads must be lifted with single part reeving.



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# MID-SPAN OUTRIGGER

**18127  
127' BOOM  
31' JIB**



## 31 TO 127 FOOT BOOM RATED LOADS WITHOUT JIB

LOAD RADIUS (FEET)	LOADED BOOM ANGLE	31 FT BOOM (lb)	LOADED BOOM ANGLE	55 FT BOOM (lb)	LOADED BOOM ANGLE	79 FT BOOM (lb)	LOADED BOOM ANGLE	103 FT BOOM (lb)	LOADED BOOM ANGLE	127 FT BOOM (lb)
7	74.5	80,000								
8	72.4	74,000								
10	68.2	64,000								
12	63.9	56,000	76.9	40,000						
15	57	43,000	73.8	38,000	79.8	29,000				
20	44.2	27,700	67.8	27,000	76.2	25,000	80	16,000		
25	27.4	17,500	61.6	17,200	71.9	17,600	77.2	14,500	80	10,000
30			55	12,000	67.7	12,300	74.3	12,400	78	9,500
35			48.7	8,700	63.7	9,100	71.3	9,200	75.9	9,000
40			41	6,500	59.4	6,900	68	7,000	73.2	7,100
45			31.8	4,900	54.8	5,200	64.7	5,300	70.5	5,400
50			18.7	3,700	50	4,000	61.3	4,100	67.8	4,150
55					44.8	3,050	57.9	3,150	65.1	3,200
60					39.1	2,250	54.4	2,350	62.4	2,400
65					32.7	1,600	50.7	1,700	59.7	1,750
70					24.6	1,050	46.8	1,150	56.9	1,200
	0	12,400	0	3,150						

### 31' JIB RATED LOADS

RADIUS FULLY EXTENDED	LOADED BOOM ANGLE	RATED LOADS ALL BOOM LENGTHS
30	80	3,400
46	75	3,200
58	70	900

### RATED LOAD REDUCTIONS WITH JIB

BOOM LENGTH	31' JIB STOWED	31' JIB ERECTED
31'	Reduce load 800 lb	Reduce load 2,300 lb
55'	Reduce load 450 lb	Reduce load 2,000 lb
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