Series 1800

features

- 142 ft (43.28 m) Five-Section Boom
- 40 USt (36.29 t) Rating
- Self-lubricating “Easy Glide” Wear Pads
- Tailswing Counterweight

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*Product may be shown with optional equipment.
Why Buy a National Crane Series 1800?

- **40 USt (36.29 t) Rating** – The 1800 provides a 40 USt capacity, an 11% increase in capacity over the Series 1500.
- **142 ft (43.28 m) Five-section Boom** – 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 79 ft, 103 ft and 127 ft.
- **Overload Protection** – All National Crane boom trucks are equipped with overload protection:
  - Load Moment Indicator (LMI) standard on all Series 1800 machines.
  - LMI display and CPU are weatherproof.
  - LCD display is visible in full or low light.
  - All crane load lifting values are displayed simultaneously.
- **Stronger Torsion Box** – The stronger standard torsion box improves rigidity, reduces truck frame flex and reduces the need for counterweight.
- **Speedy-reeve Boom Tip and Sheave Blocks** – These standard features simplify rigging changes by decreasing the time needed to change line reeving.
- **Pre-painted Components** – Painting crane components before assembly reduces the possibility of rust, improves serviceability and enhances the appearance of the machine.
- **Self-lubricating “Easy Glide” Boom Wear Pads** – The standard self-lubricating boom pads reduce the conditions that cause boom chatter and vibration. The net result is smoother crane operation.
- **Deluxe Operator’s Cab** – Rigid galvanized steel structure, well insulated, with ample safety glass for operator visibility and comfort. Multi-position seat with arm rest controls, ventilation fans, diesel heater, wipers. Optional air conditioning is available.
- **Outrigger** – Outrigger span of 24.7 ft when fully extended; 17.5 ft at mid-span.
  - Ground-level outrigger controls on both sides.
  - In-cab outrigger controls for all functions.
  - Front bumper stabilizer for stable base over front.
- **Electronic versions of manuals available through Manitowoc Crane CARE.**
- **Improved Serviceability** –
  - Boom sections are supported by one hydraulic extend cylinder, minimizing maintenance.
  - Bearings on the boom extend and retract cables can be greased through access holes in the boom side plates.
  - Pre-paint reduces rust.
- **New State-of-the-art Control Valve** – Provides smoother operation. The new load-sensing, pressure-compensated design greatly enhances function meterability, eliminates parts, reduces repair costs and improves the machine’s serviceability.
- **National Crane is the Market Leader** – National Crane is number one in the production of commercial truck-mounted boom trucks, with more than 35,000 units sold. National Crane has the resources, programs and people to provide our customers with reliable products.
- **National Crane has the boom truck industry’s leading test program.** Every structural part of the crane is cycle tested, some up to 60,000 cycles at full capacity. In addition to cycle testing, each model is subjected to state-of-the-art strain gauge testing that measures metal deformation as small as one one-millionth of an inch. The net result is that weak areas are caught in test, not on job sites where costly downtime occurs.
- **Parts are available for all National Crane machines for the life of the crane.**
- **National Crane has a formalized quality program and is ISO 9001 approved.**

*Product may be shown with optional equipment.*
mounting configurations

The configurations are based on the Series 1800 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.

### Configuration 1: 79 ft (24.08 m), 103 ft (31.39 m) 127 ft (38.71 m) Boom with Tag Axle

- **Working area**: 360°
- **Gross Axle Weight Rating Front**: 20,000 lb (9,072 kg)
- **Gross Axle Weight Rating Rear**: 40,000 lb (18,144 kg)
- **Gross Vehicle Weight Rating**: 60,000 lb (27,216 kg)
- **Wheelbase**: 246 in (625 cm)
- **Cab to Axle/Trunnion (CA/CT)**: 168 in (427 cm)
- **Frame Section Module (SM)**, front axle to end of AF: 110,000 PSI (785 MPa)
- **Stability Weight, Front**: 9,475 lb (4,295 kg) minimum
- **Stability Weight, Rear**: 10,080 lb (4,549 kg) minimum
- **Estimated Average Final Weight**: 56,945 lb (25,830 kg)**

This configuration shows the 360° working area that is achieved with the front stabilizer (standard on the Series 1800). 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.

**Estimated final weight (wt) with 127 ft (38.71 m) boom, 400 lb (182 kg) 3 part block, steel decks, 2,300 lb (1,045 kg) swinging counterweight, 100 gal (379 L) fuel tank and two workers in cab.

### Configuration 2: 79 ft (24.08 m), 103 ft (31.39 m) 127 ft (38.71 m) Boom with Pusher Axle

- **Working area**: 360°
- **Gross Axle Weight Rating Front**: 20,000 lb (9,072 kg)
- **Gross Axle Weight Rating Rear**: 40,000 lb (18,144 kg)
- **Gross Vehicle Weight Rating**: 60,000 lb (27,216 kg)
- **Wheelbase**: 258 in (655 cm)
- **Cab to Axle/Trunnion (CA/CT)**: 180 in (457 cm)
- **Frame Section Module (SM)**, front axle to end of AF: 110,000 PSI (785 MPa)
- **Stability Weight, Front**: 9,475 lb (4,295 kg) minimum
- **Stability Weight, Rear**: 10,275 lb (4,661 kg) minimum
- **Estimated Average Final Weight**: 56,945 lb (25,830 kg)**

This configuration shows the 360° working area that is achieved with the front stabilizer (standard on the Series 1800). 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.

**Estimated final weight (wt) with 127 ft (38.71 m) boom, 400 lb (182 kg) 3 part block, steel decks, 2,300 lb (1,045 kg) swinging counterweight, 100 gal (379 L) fuel tank and two workers in cab.

### Configuration 3: 142 ft (43.29 m) Boom with Tag Axle

- **Working area**: 360°
- **Gross Axle Weight Rating Front**: 20,000 lb (9,072 kg)
- **Gross Axle Weight Rating Rear**: 40,000 lb (18,144 kg)
- **Gross Vehicle Weight Rating**: 60,000 lb (27,216 kg)
- **Wheelbase**: 258 in (655 cm)
- **Cab to Axle/Trunnion (CA/CT)**: 168 in (427 cm)
- **Frame Section Module (SM)**, front axle to end of AF: 110,000 PSI (785 MPa)
- **Stability Weight, Front**: 5,275 lb (2,393 kg) minimum
- **Stability Weight, Rear**: 10,575 lb (4,797 kg) minimum
- **Estimated Average Final Weight**: 58,000 lb (26,308 kg)**

This configuration shows the 360° working area that is achieved with the front stabilizer (standard on the Series 1800). 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.

**Estimated final weight (wt) with 142 ft (43.29 m) boom, 400 lb (182 kg) 3 part block, steel decks, 2,300 lb (1,045 kg) swinging counterweight, 100 gal (379 L) fuel tank and two workers in cab.

### MINIMUM TRUCK REQUIREMENTS

Many factors must be considered in the selection of proper truck for a 1800 series crane. Items which must be considered are:

1. **Axle Rating.** Axle ratings are determined by the axles, tires, 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 1800 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.

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. See “PTO Selection” pages. 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 and energize-to-run fuel solenoid for smooth crane operation; electronic fuel injection requires EET engine remote throttle.
- All mounting data is based on a National Series 1800 with an 85 percent stability factor (75% stability factor for New York City).
- 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.
specifications

Boom and Jib Combinations Data

Available in four basic models:

Model 1879 – Equipped with a 31-79 ft (9.45-24.08 m) three-section boom. There are no jib options for this boom model. Maximum tip height is 87 ft (26.52 m).

Model 18103 – Equipped with a 31-103 ft (9.45-31.39 m) four-section boom. This model can be equipped with a 31 ft (9.45 m) jib, offering a vertical reach of 142 ft (43.29 m) and a 31-55 ft (9.45-16.76 m) side-stowing foldaway jib, providing a vertical reach of 166 ft (50.60 m).

Model 18127 – Equipped with a 31-127 ft (9.45-38.71 m) five-section boom. This model can be equipped with a 31 ft (9.45 m) jib, offering a vertical reach of 166 ft (50.60 m) or a 31-55 ft (9.45-16.76 m) jib providing a vertical reach of 190 ft (57.91 m).

Model 18142 – Equipped with a 34-142 ft (10.36-43.29 m) five-section boom. This model can be equipped with a 26 ft (7.92 m) jib, offering a vertical reach of 176 ft (53.64 m).

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

1800 Winch Data

• 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.

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18000 Winch Data

LOADLINE DEDUCT

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<th>Winch</th>
<th>Full Drum Pull</th>
<th>Allowable Cable Pull</th>
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<tr>
<td>Standard planetary &amp; Auxiliary planetary</td>
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<td>11,280 lb (5117 kg)</td>
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<td></td>
<td>10,000 lb (4536 kg low speed)</td>
<td>11,280 lb (5117 kg)</td>
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LOADLINE DEDUCT

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<tr>
<th>Aux Boom Head</th>
<th>Downhaul Weight</th>
<th>5 USt</th>
<th>15 USt</th>
<th>25 USt</th>
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<td>100 lb</td>
<td>130 lb</td>
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<td>970 lb</td>
<td>100 lb</td>
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</table>
National Crane will send you a chart on request— or you may secure needed load rating information through your nearest National Crane dealer.

**Load Rating Chart: Series 1879 (24.08 m) Boom/Full-Span Outrigger 24.7 ft (7.6 m)**

**CAUTION:**
- Do not operate crane booms, jib extensions, any accessories or loads within 10 ft (3 m) of live power lines or other conductors of electricity.
- Jib and boom capacities shown are maximum for each section.
- Do not exceed capacities at reduced radii.
- Load ratings shown on the load rating charts are maximum allowable loads with the outriggers properly extended on a firm, level surface and the crane leveled and mounted on a factory recommended truck.
- Always level the crane with the level indicator located on the crane.
- The operator must reduce load to allow for factors such as wind, ground conditions, operating speeds and their effects on freely suspended loads.
- Overloading this crane may cause structural collapse or instability.
- Weights on any accessories attached to the boom or loadline must be deducted from the load chart capacities.
- Do not exceed jib capabilities at any reduced boom lengths.
- Do not deadhead lineblock against boom tip when extending boom or winching up.
- Keep at least three wraps of loadline on drum at all times.
- Use only specified cable with this machine.

<table>
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<tr>
<th>LOAD RADIUS (ft)</th>
<th>LOADED BOOM ANGLE</th>
<th>31 ft BOOM (lb)</th>
<th>LOADED BOOM ANGLE</th>
<th>47 ft BOOM (lb)</th>
<th>LOADED BOOM ANGLE</th>
<th>63 ft BOOM (lb)</th>
<th>LOADED BOOM ANGLE</th>
<th>79 ft BOOM (lb)</th>
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<td>10</td>
<td>3,800</td>
<td></td>
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</tbody>
</table>

**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.

**LOADLINE DEDUCT**
- Aux Boom Head: 100 lb (45 kg)
- Downhaul Weight: 180 lb (82 kg)
- 1 Sheave Block: 375 lb (170 kg)
- 2 Sheave Block: 640 lb (290 kg)
- 3 Sheave Block: 870 lb (395 kg)
- 4 Sheave Block: 970 lb (440 kg)

**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.
National Crane will send you a chart on request – or you may secure needed load rating information through your nearest National Crane dealer.

CAUTION:
• Do not operate crane booms, jib extensions, any accessories or loads within 10 ft (3m) of live power lines or other conductors of electricity.
• Jib and boom capacities shown are maximum for each section.
• Do not exceed capacities at reduced radii.
• Load ratings shown on the load rating charts are maximum allowable loads with the outriggers properly extended on a firm, level surface and the crane leveled and mounted on a factory recommended truck.
• Always level the crane with the level indicator located on the crane.
• The operator must reduce load to allow for factors such as wind, ground conditions, operating speeds and their effects on freely suspended loads.
• Overloading this crane may cause structural collapse or instability.
• Weights on any accessories attached to the boom or loadline must be deducted from the load chart capacities.
• Do not exceed jib capabilities at any reduced boom lengths.
• Do not deadhead lineblock against boom tip when extending boom or winching up.
• Keep at least three wraps of loadline on drum at all times.
• Use only specified cable with this machine.

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.

LOADLINE DEDUCT
Aux Boom Head 100 lb (45 kg)
Downhaul Weight 180 lb (82 kg)
15 US 1 Sheave Block 375 lb (170 kg)
25 US 2 Sheave Block 640 lb (290 kg)
35 US 3 Sheave Block 870 lb (395 kg)
40 US 4 Sheave Block 970 lb (440 kg)

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.
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- Do not exceed jib capabilities at any reduced boom lengths.
- Do not deadhead lineblock against boom tip when extending boom or winching up.
- Keep at least three wraps of loadline on drum at all times.
- Use only specified cable with this machine.

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**Load Rating Chart: Series 18103 (31.39 m) Boom with 31-55 ft (9.45-16.76 m) Jib/Full-Span Outrigger 24.7 ft (7.6 m)**

**NOTE:**
1. Operate with jib by radius when main boom is fully extended. It necessary increase boom angle to maintain loaded radius.
2. Operate with jib by boom angle when main boom is not fully extended. Do not exceed rated jib capacities at any reduced boom lengths.
3. Capacities do not exceed 85% stability.
4. Shaded areas are structurally limited capacities.

**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.

**Load Line Deduct**
- Aux Boom Head 100 lb (45 kg)
- 5 USt 1 Sheave Block 375 lb (170 kg)
- 15 USt 1 Sheave Block 1,900 lb (860 kg)
- 25 USt 2 Sheave Block 1,300 lb (590 kg)
- 35 USt 3 Sheave Block 1,000 lb (450 kg)
- 40 USt 4 Sheave Block 970 lb (440 kg)

**Rated Load Reductions with Jib**
- 31 ft - Reduce load 80 lb
- 55 ft - Reduce load 450 lb
- 79 ft - Reduce load 350 lb
- 103 ft - Reduce load 250 lb
Load Rating Chart: Series 18103 (31.39 m) Boom with 31-55 ft (9.45-16.76 m) Jib/Mid-Span Outrigger 17.5 ft (5.4 m)

National Crane will send you a chart on request – or you may secure needed load rating information through your nearest National Crane dealer.

CAUTION:
- Do not operate crane booms, jib extensions, any accessories or loads within 10 ft (3m) of live power lines or other conductors of electricity.
- Jib and boom capacities shown are maximum for each section.
- Do not exceed capacities at reduced radii.
- Load ratings shown on the load rating charts are maximum allowable loads with the outriggers properly extended on a firm, level surface and the crane leveled and mounted on a factory recommended truck.
- Always level the crane with the level indicator located on the crane.
- The operator must reduce load to allow for factors such as wind, ground conditions, operating speeds and their effects on freely suspended loads.
- Overloading this crane may cause structural collapse or instability.
- Weights on any accessories attached to the boom or loadline must be deducted from the load chart capacities.
- Do not exceed jib capabilities at any reduced boom lengths.
- Do not deadhead lineblock against boom tip when extending boom or winching up.
- Keep at least three wraps of loadline on drum at all times.
- Use only specified cable with this machine.

Load Rating Chart: Series 18103 (31.39 m) Boom with 31-55 ft (9.45-16.76 m) Jib/Mid-Span Outrigger 17.5 ft (5.4 m)

<table>
<thead>
<tr>
<th>LOAD RADIUS (ft)</th>
<th>LOAD RATED LOADS WITHOUT JIB</th>
<th>31 ft JIB RATED LOADS</th>
<th>55 ft JIB RATED LOADS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>31 ft BOOM RATED LOADS</td>
<td>31 ft BOOM RADIUS</td>
<td>55 ft BOOM RATED LOADS</td>
</tr>
<tr>
<td>7</td>
<td>73.9 ft 80,000</td>
<td>73.9 ft 79,000</td>
<td>25 lb 8,800</td>
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<tr>
<td>8</td>
<td>71.9 ft 74,000</td>
<td>71.9 ft 73,000</td>
<td>38 lb 6,000</td>
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<tr>
<td>10</td>
<td>67.7 ft 65,000</td>
<td>67.7 ft 65,000</td>
<td>48 lb 5,000</td>
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<tr>
<td>12</td>
<td>63.4 ft 57,000</td>
<td>63.4 ft 58,000</td>
<td>57 lb 3,000</td>
</tr>
<tr>
<td>15</td>
<td>56.7 ft 44,000</td>
<td>56.7 ft 49,000</td>
<td>67 lb 1,600</td>
</tr>
<tr>
<td>20</td>
<td>44 lb 26,000</td>
<td>44 lb 26,000</td>
<td>67 lb 1,600</td>
</tr>
<tr>
<td>25</td>
<td>27.4 ft 16,700</td>
<td>27.4 ft 17,500</td>
<td>76 lb 750</td>
</tr>
<tr>
<td>30</td>
<td>54.8 ft 12,300</td>
<td>54.8 ft 12,300</td>
<td>76 lb 750</td>
</tr>
<tr>
<td>35</td>
<td>46.5 ft 9,200</td>
<td>46.5 ft 9,200</td>
<td>85 lb 650</td>
</tr>
<tr>
<td>40</td>
<td>40.8 ft 7,000</td>
<td>40.8 ft 7,000</td>
<td>85 lb 650</td>
</tr>
<tr>
<td>45</td>
<td>31.6 ft 5,400</td>
<td>31.6 ft 5,400</td>
<td>85 lb 650</td>
</tr>
<tr>
<td>50</td>
<td>18.6 ft 3,150</td>
<td>18.6 ft 3,150</td>
<td>85 lb 650</td>
</tr>
<tr>
<td>55</td>
<td>44.2 ft 2,000</td>
<td>44.2 ft 2,000</td>
<td>85 lb 650</td>
</tr>
<tr>
<td>60</td>
<td>39.1 ft 1,550</td>
<td>39.1 ft 1,550</td>
<td>85 lb 650</td>
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<tr>
<td>65</td>
<td>32.7 ft 1,000</td>
<td>32.7 ft 1,000</td>
<td>85 lb 650</td>
</tr>
<tr>
<td>70</td>
<td>24.8 ft 690</td>
<td>24.8 ft 690</td>
<td>85 lb 650</td>
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<td>75</td>
<td>14.7 ft 424</td>
<td>14.7 ft 424</td>
<td>85 lb 650</td>
</tr>
<tr>
<td>80</td>
<td>13.2 ft 360</td>
<td>13.2 ft 360</td>
<td>85 lb 650</td>
</tr>
</tbody>
</table>

LOADLINE DEDUCT
- Aux Boom Head 100 lb (45 kg)
- Downhaul Weight 180 lb (82 kg)
- 1 Sheave Block 375 lb (170 kg)
- 2 Sheave Block 640 lb (290 kg)
- 3 Sheave Block 870 lb (395 kg)
- 4 Sheave Block 970 lb (440 kg)

RATED LOAD REDUCTIONS WITH JIB
- 31 ft JIB Reduce load 800 lb Reduce load 2,300 lb
- 55 ft JIB Reduce load 800 lb Reduce load 2,300 lb
- 79 ft JIB Reduce load 800 lb Reduce load 2,300 lb
- 103 ft JIB Reduce load 250 lb Reduce load 1,800 lb

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.
National Crane will send you a chart on request — or you may secure needed load rating information through your nearest National Crane dealer.

NOTE:
1. Operate with jib by radius when main boom is fully extended. If necessary increase boom angle to maintain loaded radius.
2. Operate with jib by boom angle when main boom is not fully extended. Do not exceed rated jib capacities at any reduced boom lengths.
3. Capacities do not exceed 85% stability.
4. Shaded areas are structurally limited capacities.

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.

LOADLINE DEDUCT
Aux Boom Head 100 lb (45 kg)
5 USI Downhaul Weight 130 lb (62 kg)
15 USI 1 Sheave Block 375 lb (170 kg)
25 USI 2 Sheave Block 640 lb (290 kg)
35 USI 3 Sheave Block 870 lb (395 kg)
40 USI 4 Sheave Block 970 lb (440 kg)

CAUTION:
- Do not operate crane booms, jib extensions, any accessories or loads within 10 ft (3m) of live power lines or other conductors of electricity.
- Jib and boom capacities shown are for maximum for each section.
- Do not exceed capacities at reduced radii.
- Load ratings shown on the load rating charts are maximum allowable loads with the outriggers properly extended on a firm, level surface and the crane leveled and mounted on a factory recommended truck.
- Always level the crane with the level indicator located on the crane.
- The operator must reduce load to allow for factors such as wind, ground conditions, operating speeds and their effects on freely suspended loads.
- Overloading this crane may cause structural collapse or instability.
- Weights on any accessories attached to the boom or loadline must be deducted from the load chart capacities.
- Do not exceed jib capabilities at any reduced boom lengths.
- Do not deadhead lineblock against boom tip when extending boom or winching up.
- Keep at least three wraps of loadline on drum at all times.
- Use only specified cable with this machine.

Load Rating Chart: Series 18127 (38.71 m) Boom with 31-55 ft (9.45-16.76 m) Jib/Full-Span Outrigger 24.7 ft (7.6 m)

Load Rating Chart: Series 18127 (38.71 m) Boom with 31-55 ft (9.45-16.76 m) Jib/Full-Span Outrigger 24.7 ft (7.6 m)
Load Rating Chart: Series 18127 (38.71 m) Boom with 31 ft (9.45 m) Jib/Mid-Span Outrigger 17.5 ft (5.4 m)

National Crane will send you a chart on request—or you may secure needed load rating information through your nearest National Crane dealer.

**CAUTION:**

- Do not operate crane booms, jib extensions, any accessories or loads within 10 ft (3m) of live power lines or other conductors of electricity.
- Jib and boom capacities shown are maximum for each section.
- Do not exceed capacities at reduced radii.
- Load ratings shown on the load rating charts are maximum allowable loads with the outriggers properly extended on a firm, level surface and the crane leveled and mounted on a factory recommended truck.
- Always level the crane with the level indicator located on the crane.
- The operator must reduce load to allow for factors such as wind, ground conditions, operating speeds and their effects on freely suspended loads.
- Overloading this crane may cause structural collapse or instability.
- Weight on any accessories attached to the boom or loadline must be deducted from the load chart capacities.
- Do not exceed jib capabilities at any reduced boom lengths.
- Do not deadhead lineblock against boom tip when extending boom or winching up.
- Keep at least three wraps of loadline on drum at all times.
- Use only specified cable with this machine.

**NOTE:**

1. Operate with jib by radius when main boom is fully extended. If necessary increase boom angle to maintain loaded radius.
2. Operate with jib by boom angle when main boom is not fully extended. Do not exceed rated jib capacities at any reduced boom lengths.
3. Capacities do not exceed 85% stability.
4. Shaded areas are structurally limited capacities.

**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.

<table>
<thead>
<tr>
<th>LOAD RADIUS (ft)</th>
<th>LOADED BOOM ANGLE</th>
<th>31 ft JIB (lb)</th>
<th>LOADED BOOM ANGLE</th>
<th>35 ft BOOM (lb)</th>
<th>LOADED BOOM ANGLE</th>
<th>79 ft BOOM (lb)</th>
<th>LOADED BOOM ANGLE</th>
<th>103 ft BOOM (lb)</th>
<th>LOADED BOOM ANGLE</th>
<th>127 ft BOOM (lb)</th>
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<tbody>
<tr>
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<td>73.8</td>
<td>38,000</td>
<td>79.8</td>
<td>29,000</td>
<td></td>
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<td></td>
</tr>
<tr>
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<td>27,700</td>
<td>67.8</td>
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<td>80</td>
<td>16,000</td>
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<td>80</td>
<td>10,000</td>
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<td>78</td>
<td>9,500</td>
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<td>8,700</td>
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<tr>
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<td>62.4</td>
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<tr>
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</tr>
</tbody>
</table>

**LOADLINE DEDUCT**

- As Boom Head: 100 lb (45 kg)
- Downhaul Weight: 180 lb (82 kg)
- 1 Sheave Block: 375 lb (170 kg)
- 2 Sheave Block: 640 lb (290 kg)
- 3 Sheave Block: 870 lb (395 kg)
- 4 Sheave Block: 970 lb (440 kg)

**1800**

**LOADLINE DEDUCT**

- As Boom Head: 100 lb (45 kg)
- Downhaul Weight: 180 lb (82 kg)
- 1 Sheave Block: 375 lb (170 kg)
- 2 Sheave Block: 640 lb (290 kg)
- 3 Sheave Block: 870 lb (395 kg)
- 4 Sheave Block: 970 lb (440 kg)

**31 ft JIB RATED LOADS**

<table>
<thead>
<tr>
<th>RADIUS FULLY EXTENDED (ft)</th>
<th>LOADED BOOM ANGLE</th>
<th>RATED LOADS ALL BOOM LENGTHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 ft</td>
<td>80</td>
<td>3,400</td>
</tr>
<tr>
<td>40 ft</td>
<td>75</td>
<td>2,200</td>
</tr>
<tr>
<td>50 ft</td>
<td>70</td>
<td>900</td>
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</tbody>
</table>

**RATED LOAD REDUCTIONS WITH JIB**

<table>
<thead>
<tr>
<th>31 ft JIB STOWED</th>
<th>31 ft JIB ERECTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>31 ft</td>
<td>Reduce load 800 lb</td>
</tr>
<tr>
<td>55 ft</td>
<td>Reduce load 450 lb</td>
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<td>79 ft</td>
<td>Reduce load 350 lb</td>
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<tr>
<td>103 ft</td>
<td>Reduce load 250 lb</td>
</tr>
<tr>
<td>127 ft</td>
<td>Reduce load 200 lb</td>
</tr>
</tbody>
</table>

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.
National Crane will send you a chart on request—or you may secure needed load rating information through your nearest National Crane dealer.

### Load Rating Chart: Series 18142 (43.29 m) Boom with 26 ft (7.9 m) Jib/Full-Span Outrigger 24.7 ft (7.6 m)

CAUTION:
- Do not operate crane booms, jib extensions, any accessories or loads within 10 ft (3m) of live power lines or other conductors of electricity.
- Jib and boom capacities shown are maximum for each section.
- Do not exceed capacities at reduced radii.
- Load ratings shown on the load rating charts are maximum allowable loads with the outriggers properly extended on a firm, level surface and the crane leveled and mounted on a factory recommended truck.
- Always level the crane with the level indicator located on the crane.
- The operator must reduce load to allow for factors such as wind, ground conditions, operating speeds and their effects on freely suspended loads.
- Overloading this crane may cause structural collapse or instability.
- Weights on any accessories attached to the boom or loadline must be deducted from the load chart capacities.
- Do not exceed jib capabilities at any reduced boom lengths.
- Do not deadhead lineblock against boom tip when extending boom or winching up.
- Keep at least three wraps of loadline on drum at all times.
- Use only specified cable with this machine.

#### Load Rating Chart: Series 18142 (43.29 m) Boom with 26 ft (7.9 m) Jib/Full-Span Outrigger 24.7 ft (7.6 m)

<table>
<thead>
<tr>
<th>LOAD REDUCTIONS WITH JIB</th>
<th>26 ft JIB RATED LOADS</th>
</tr>
</thead>
<tbody>
<tr>
<td>RATED LOAD REDUCTIONS WITH JIB</td>
<td>26 ft JIB RATED LOADS</td>
</tr>
<tr>
<td>BOOM LENGTH</td>
<td>26 ft JIB RATED LOADS</td>
</tr>
<tr>
<td>30 ft</td>
<td>Reduce load 150 lb</td>
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<tr>
<td>35 ft</td>
<td>Reduce load 150 lb</td>
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<tr>
<td>40 ft</td>
<td>Reduce load 200 lb</td>
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<td>Reduce load 525 lb</td>
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<tr>
<td>55 ft</td>
<td>Reduce load 850 lb</td>
</tr>
<tr>
<td>60 ft</td>
<td>Reduce load 1,000 lb</td>
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</tbody>
</table>

**Series 18142 With 26 ft Jib/Full-Span Outrigger 24.7 ft**

**NOTE:**
- 1. Operate with jib by radius when main boom is fully extended. If necessary increase boom angle to maintain loaded radius.
- 2. Operate with jib by boom angle when main boom is not fully extended. Do not exceed rated jib capacities at any reduced boom lengths.
- 3. Capacities do not exceed 85% stability.
- 4. Shaded areas are structurally limited capacities.

**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.

<table>
<thead>
<tr>
<th>LOADLINE DEDUCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aux Boom Head</td>
</tr>
<tr>
<td>5 USt Downhaul Weight</td>
</tr>
<tr>
<td>15 USt 1 Sheave Block</td>
</tr>
<tr>
<td>25 USt 2 Sheave Block</td>
</tr>
<tr>
<td>35 USt 3 Sheave Block</td>
</tr>
<tr>
<td>40 USt 4 Sheave Block</td>
</tr>
</tbody>
</table>

**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 Rating Chart: Series 18142 (43.29 m) Boom with 26 ft (7.9 m) Jib/Mid-Span Outrigger 17.5 ft (5.4 m)

National Crane will send you a chart on request – or you may secure needed load rating information through your nearest National Crane dealer.

**CAUTION:**
- Do not operate crane booms, jib extensions, any accessories or loads within 10 ft (3m) of live power lines or other conductors of electricity.
- Jib and boom capacities shown are maximum for each section.
- Do not exceed capacities at reduced radii.
- Load ratings shown on the load rating charts are maximum allowable loads with the outriggers properly extended on a firm, level surface and the crane leveled and mounted on a factory recommended truck.
- Always level the crane with the level indicator located on the crane.
- The operator must reduce load to allow for factors such as wind, ground conditions, operating speeds and their effects on freely suspended loads.
- Overloading this crane may cause structural collapse or instability.
- Weights on any accessories attached to the boom or loadline must be deducted from the load chart capacities.
- Do not exceed jib capacities at any reduced boom lengths.
- Do not deadhead lineblock against boom tip when extending boom or winching up.
- Keep at least three wraps of loadline on drum at all times.
- Use only specified cable with this machine.

**Series 18142**

**WITH 26 ft JIB/MID-SPAN OUTRIGGER 17.5 ft**

NOTE:
1. Operate with jib by radius when main boom is fully extended. If necessary increase boom angle to maintain loaded radius.
2. Operate with jib by boom angle when main boom is not fully extended. Do not exceed rated jib capacities at any reduced boom lengths.
3. Capacities do not exceed 85% stability.
4. Shaded areas are structurally limited capacities.

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.

**Loadline Deduct**
- Aux Boom Head 100 lb (45 kg)
- 5 USI Downhaul Weight 180 lb (82 kg)
- 15 USI 1 Sheave Block 375 lb (170 kg)
- 25 USI 2 Sheave Block 640 lb (290 kg)
- 35 USI 3 Sheave Block 870 lb (395 kg)
- 40 USI 4 Sheave Block 970 lb (440 kg)

**Rated Load Reductions with Jib**

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.
Radio Remote Controls – (Ground level or boom tip)
Eliminate the handling and maintenance concerns that accompany cabled remotes. Operate to a range of about 250 ft (76 m), varying with conditions.

One-Person Basket –
Strong but lightweight steel basket with 300 lb. (139 kg) capacity, gravity hung with swing lock and full body harness.

Heavy-duty Personnel Basket –
1,200 lb (544 kg) capacity steel basket with safety loops for four passengers. Gravity leveling 72 x 42 in (183 x 107cm) platform. Fast attachment and secure locking systems.

Air Conditioning for Crane Cab –
(Requires larger truck alternator) Provides excellent crane cab cooling to overcome the radiant heat from the sun reflection.

Auxiliary Winch 10,000 lb. Line Pull –
Second winch redundant to the main, planetary winch with boom tip “rooster sheave” to allow reeving of both winch lines.

Work Lights –
- Amber flashing beacon mounted on crane cab
- Capacity indicator light outside of cab for visual display of load on hook versus capacity
- Spotlight mounted on cab, manually adjusted from the crane cab
- Worklight on boom, switch and wiring in-cab to operate customer supplied worklight (without remote controls)
- Worklight in fixed position on crane cab with in cab power
- Worklight adjustable from crane with in-cab power

Winch Drum Rotation Indicator –
Winch drum rotation indicator on winch control lever.
Winch drum rotation indicator in cab (for use with standard and auxiliary winches).

Hour Meter –
Hour meter in truck cab to record crane operation hours.

Steel Tool Box Options
Spanish-Language Danger Decals,
Control Knobs, and Operators’ Manuals

- NB4R (R4 functions)
- B1-S
- 2B1-S (for dual locking baskets)
- BSA-1
- BSA-R1 (provides rotation)
- A/C
- 18AW
- ABR
- CIE
- MSL
- WLB
- WLF
- WLR
- WDRI-1
- WDRI-2
- HRM
- SDD
- SOM
Dimensions Specifications

<table>
<thead>
<tr>
<th>SERIES</th>
<th>RETRACTED LENGTH</th>
<th>EXTENDED LENGTH</th>
<th>WEIGHT</th>
<th>WEIGHT INCLUDES ALL ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1852</td>
<td>(8.67 m)</td>
<td>(28.47 m)</td>
<td>18,910</td>
<td>6,350 lb</td>
</tr>
<tr>
<td>1879</td>
<td>(9.45 m)</td>
<td>(28.47 m)</td>
<td>21,810</td>
<td>8,468 lb</td>
</tr>
<tr>
<td>1810</td>
<td>(9.45 m)</td>
<td>(31.40 m)</td>
<td>33,850</td>
<td>15,354 kg</td>
</tr>
<tr>
<td>1812</td>
<td>(9.45 m)</td>
<td>(38.72 m)</td>
<td>35,275</td>
<td>16,000 kg</td>
</tr>
<tr>
<td>1814</td>
<td>(10.36 m)</td>
<td>(43.28 m)</td>
<td>36,970</td>
<td>16,769 kg</td>
</tr>
</tbody>
</table>

*WEIGHT INCLUDES ALL ITEMS INCLUDING COMPLETE HOISTS, 2300 lb COUNTERWEIGHT, 375-lb BLOCK, DECKS AND SFO. BOOMS FULLY RETRACTED.
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This information is for reference use only. Operators manual should be consulted and adhered to.
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