National Crane 500E2 Series

Product Guide

Features

• 16.3 t (18 USt) rating
• 21.6 m (71 ft) three-section boom
• Self-lubricating Easy Glide wear pads
• Internal anti-two block
**Features**

**National Crane Series 500E2**
- 16,3 t (18 USt) maximum capacity
- 36,9 m (121 ft) maximum vertical reach
- 24,7 m (81 ft) maximum vertical hydraulic reach

**Outriggers**
The Series 500E2 comes equipped “A” frame boxed slide outriggers with swivel pads and ASH type stabilizers. An optional single front outrigger is also available.
- Front outriggers: 6,19 m (20.25 ft) span
- Rear stabilizers: 3 m (10 ft) span

**Three-section boom**
With a capacity of 16,3 t (18 USt) the Series 500E2 is equipped with a three-section 21,6 m (71 ft) boom. The long boom allows the operator to perform more lifts without the use of a jib, reducing setup time and improving efficiency.

**Easy Glide boom wear pads**
Easy Glide boom wear pads reduce the conditions that cause boom chatter and vibration. The net result is smoother crane operation.

**Improved serviceability**
- Bearings on the boom extension and retract cables can be greased through access holes in the boom side plates
- Removable winch allows the internal telescoping cylinder to be removed quickly, without dismantling the boom
- Internal anti-two-block wire routing eliminates external reel and wire to protect crane components
- The boom sheave case is open, allowing access to replace the internal anti-two-block wire and to observe internal boom components
- Internal boom parts have been reduced, decreasing service time when rebuilding the machine
Features

Best in class performance and serviceability

- The steel torsion box and flatbed further reduce frame flex
- Speedy-reeve boom tip and sheave blocks simplify rigging changes by decreasing the time needed to change line reeving
- Crane components painted before assembly reduce the chance of rust, improve serviceability and enhance the appearance of the crane
- A control knob located on the swing motor brake release valve can be easily adjusted to the crane operator’s swing speed preference
- Rear stabilizers include an independent stabilizer control and bolt/clamp on mounting
- Engine start/stop switches
- Outriggers are equipped with a motion alarm and an outrigger monitoring system
- Emergency stop overrides located at control station
- Hydraulic reservoir capacity of 66 gal

* Product may be shown with optional equipment.
Mounting configurations

The configurations are based on the Series 500E2 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 with Torsion Box – 180˚ Full Capacity Work Area
Working area: ......................................................... 180˚
Gross Axle Weight Rating Front: 5443 kg (12,000 lb)
Gross Axle Weight Rating Rear: 9525 kg (21,000 lb)
Gross Vehicle Weight Rating: 14 968 kg (33,000 lb)
Wheelbase: ...................................................... 602 cm (237 in)
Cab to Axle/trunnion (CA/CT): ........ 427 cm (168 in)
Frame Section Modulus (SM) under crane:
758 MPa (110,000 PSI) ......................... 261 cm³ (15.9 in³)
Frame Section Modulus (SM) over rear stabilizers:
758 MPa (110,000 PSI) ....................... 213 cm³ (13 in³)
Stability Weight, Front: 3130 kg (6900 lb) minimum*
Stability Weight, Rear: 2767 kg (6100 lb) minimum*
Estimated Average Final Weight: 13 608 kg (30,000 lb)

Configuration 2 with Torsion Box – 360˚ Full Capacity Work Area
(Extended front frame rails required for SFO installation.)
Working area: ......................................................... 360˚
Gross Axle Weight Rating Front: 5443 kg (12,000 lb)
Gross Axle Weight Rating Rear: 9525 kg (21,000 lb)
Gross Vehicle Weight Rating: 14 968 kg (33,000 lb)
Wheelbase: ...................................................... 602 cm (237 in)
Cab to Axle/trunnion (CA/CT): ........ 427 cm (168 in)
Frame Section Modulus (SM) under crane:
758 MPa (110,000 PSI) ......................... 261 cm³ (15.9 in³)
Frame Section Modulus (SM) over rear stabilizers:
758 MPa (110,000 PSI) ....................... 213 cm³ (13 in³)
Stability Weight, Front: 3130 kg (6900 lb) minimum*
Stability Weight, Rear: 2767 kg (6100 lb) minimum*
Estimated Average Final Weight: 13 608 kg (30,000 lb)

Configuration 3 with Torsion Box – 180˚ Full Capacity Work Area
Working area: ......................................................... 180˚
Gross Axle Weight Rating Front: 5443 kg (12,000 lb)
Gross Axle Weight Rating Rear: 9525 kg (21,000 lb)
Gross Vehicle Weight Rating: 14 968 kg (33,000 lb)
Wheelbase: ...................................................... 566 cm (223 in)
Cab to Axle/trunnion (CA/CT): ........ 391 cm (154 in)
Frame Section Modulus (SM) under crane:
758 MPa (110,000 PSI) ......................... 261 cm³ (15.9 in³)
Frame Section Modulus (SM) over rear stabilizers:
758 MPa (110,000 PSI) ....................... 213 cm³ (13 in³)
Stability Weight, Front: 3084 kg (6800 lb) minimum*
Stability Weight, Rear: 2494 kg (5500 lb) minimum*
Estimated Average Final Weight: 13 040 kg (28,750 lb)

Notes:
• Gross Vehicle Weight rating (GVWR) is dependent on all components of the vehicle (axles, tires, springs, frame, etc.) meeting manufacturers’ recommendations: always specify GVWR when purchasing trucks
• Diesel engines require a variable speed governor for smooth crane operation; electronic fuel injection requires EET engine remote throttle
• All mounting data is based on a National Series 500E2 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
• Transmission neutral safety interlock switch is required

*Estimated axle scale rates prior to installation of crane, stabilizers and subbase for 85% stability.
Specifications

Boom and jib combinations data

Model 571E2 – Equipped with a 8.23 m - 21.65 m (27 ft - 71 ft) three-section boom. This model can be equipped with a 7.01 m - 12.50 m (23 ft - 41 ft) two-section jib. Maximum tip height with 12.50 m (41 ft) jib is 36.9 m (121 ft).

8.23 m - 21.65 m (27 ft - 71 ft) three-section boom. 5FJ41M 7.01 m -12.50 m (23 ft - 41 ft) two-section jib

Note: Maximum tip is measured with outriggers/stabilizers fully extended.
### 500E2 winch data

- All winch pulls and speeds are shown on the fourth layer.
- Winch line pulls would increase on the first and second layers.
- Winch line pulls may be limited by the winch capacity or the ANSI 5 to 1 cable safety factor, shown below this chart.
- Hook blocks are rated at maximum capacity for the block. Do not exceed rated cable pull with any block.

#### Winch data

<table>
<thead>
<tr>
<th>Winch</th>
<th>Cable supplied</th>
<th>Average breaking strength</th>
<th>Max pull 1 part line</th>
<th>Max pull 2 part line</th>
<th>Max pull 3 part line</th>
<th>Max pull 4 part line</th>
<th>Max pull 5 part line</th>
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<tr>
<td>Standard planetary</td>
<td>9/16 in diameter rotation resistant</td>
<td>17 463 kg (38,500 lb)</td>
<td>3492,66 kg (7700 lb)</td>
<td>6985,32 kg (15,400 lb)</td>
<td>10 477,98 kg (23,100 lb)</td>
<td>13 970,65 kg (30,800 lb)</td>
<td>14 514,96 kg (36,000 lb)</td>
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#### Layer data

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<tr>
<th>Layer</th>
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<th>Winch speed</th>
<th>BOS winch speed</th>
<th>Rope capacity</th>
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**Note:** All ratings based on 128,7 LPM at 22,75 MPa (34 GPM at 3300 psi)

Burst of Speed maximum pull = 1361 kg (3000 lb)

### Loadline deduct

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<th>Block type</th>
<th>Rating</th>
<th>Weight</th>
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<td>Downhaul weight</td>
<td>3,49 t (3.85 USt)</td>
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<td>1-sheave block</td>
<td>10,48 t (11.55 USt)</td>
<td>91 kg (200 lb)</td>
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<td>2-sheave block</td>
<td>17,46 t (19.25 USt)</td>
<td>161 kg (355 lb)</td>
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Dimensions

<table>
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<tr>
<th>Series</th>
<th>Retracted length</th>
<th>Extended length</th>
<th>G (wet)</th>
<th>Dry/Wt</th>
<th>With oil/Wt</th>
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<tbody>
<tr>
<td>571E2</td>
<td>8.4 m (27 ft 6 in)</td>
<td>21.64 m (71 ft)</td>
<td>1.91 mm (75 in)</td>
<td>6677 kg (14,721 lb)**</td>
<td>6947 kg (15,316 lb)*</td>
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<tr>
<td>571E2</td>
<td>8.4 m (27 ft 6 in)</td>
<td>21.64 m (71 ft)</td>
<td>1.98 mm (78 in)</td>
<td>7190 kg (15,851 lb)**</td>
<td>7460 kg (16,446 lb)**</td>
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</table>

* Includes standard 6.1 m (20 ft) subbase  
** Includes 6.1 m (20 ft) integral bed/T-Box

Dimensions are in mm (in) unless otherwise specified.
National Crane will send you a chart on request – or you may secure needed load rating information through your nearest National Crane dealer.

Series 571E2: 21,65 m (71 ft) boom, outriggers fully extended

CAUTION:
- Do not operate crane booms, jib extensions, any accessories or loads within 3 m (10 ft) 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.

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**Load chart**

<table>
<thead>
<tr>
<th>LOAD RADIUS (FEET)</th>
<th>LOADED BOOM ANGLE</th>
<th>LOADED 27 FT BOOM</th>
<th>LOADED 35 FT BOOM</th>
<th>LOADED 44 FT BOOM</th>
<th>LOADED 53 FT BOOM</th>
<th>LOADED 62 FT BOOM</th>
<th>LOADED 71 FT BOOM</th>
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</table>

NOTE:
1. Capacities do not exceed 85% stability.
2. Shaded areas are structurally limited capacities.
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<th>LOAD RADIUS (FEET)</th>
<th>LOADED BOOM ANGLE</th>
<th>27 FT BOOM</th>
<th>LOADED BOOM ANGLE</th>
<th>A</th>
<th>35 FT BOOM</th>
<th>LOADED BOOM ANGLE</th>
<th>B</th>
<th>44 FT BOOM</th>
<th>LOADED BOOM ANGLE</th>
<th>C</th>
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**NOTE:**
1. Capacities do not exceed 85% stability.
2. Shaded areas are structurally limited capacities.

**Series 571E2: 21,65 m (71 ft) boom with 12,50 m (41 ft) jib, outriggers fully extended**

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

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

• RB4R (R4 functions)

Heavy-duty Personnel Basket —
544 kg (1200 lb) capacity steel basket with safety loops for two passengers. Gravity leveling 183 cm x 107 cm (72 in x 42 in) platform. Fast attachment and secure locking systems. Load chart must show 1043 kg (2300 lb) minimum to operate this accessory.

• BSA-1
• BSA-R1 (provides rotation)

Duty Cycle Package —
Burst-of-speed winch control option, with dual standup control and hydraulic oil cooler, self-contained radiator system with electric fan.

• DCPKG

Single Front Outrigger —
Center mount front stabilizer with 25 in vertical stroke.

• SFO

Bulkhead —
Steel 30 in solid wall bulkhead.

• BHSD

Spanish-Language Danger Decals, Control Knobs, and Operators’ Manuals —

• SDD
• SOM
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