



National N-65A Articulating Crane

From
America's
Truck-Mounted
Hydraulic
Crane Leader



- **Crane Rating:**
65,217 lb (9,011 m)
- **Maximum Capacity:**
5.25 ton (4,76 t)
- **Maximum Vertical Reach:**
46 ft (14.02 m)
- **Horizontal Reach:**
38 ft 5 in (11.71 m)
- **Reach Below Truck Frame:**
30 ft 8 in (9.35 m)
- **Total Hydraulic Extension:**
32 ft 5 in (8.28 m)

**NATIONAL
CRANE**
A Grove
Worldwide
Company

*Maximum vertical reach is from
ground level, reached on a 34 in
(864 mm) high truck frame



National Articulating Cranes

The National Advantage

When you invest in a National articulating crane, you are assured of these competitive advantages:

Quality

National cranes are designed for durability, performance, and ease of service. National's cutting-edge technologies set the industry standard for the manufacture of lifting and materials handling equipment. An experienced workforce turns innovative designs into quality-crafted cranes. Factory prototypes are subjected to some of the toughest testing requirements in the industry. Each National crane is checked throughout the manufacturing and assembly process, then given a detailed final inspection before it is released from the factory.

Performance

Each user-friendly National gives you what you expect in a crane. Long reach. High capacity. Fast set-up. Easy operation. Smooth movement. Versatile accessories. Premium components. Add it all up—you'll find that a National is not only a pleasure to operate, but a reliable investment in bottom line performance.

Value

National has manufactured cranes since 1963. Nine out of ten are still on the job. With a National you get field-proven reliability plus the best factory/dealer support in the industry. National's warranty provides protection against defects in materials and workmanship for a full year from the date the customer takes delivery. Dealers maintain extensive parts stocking programs. Should a dealer be unable to supply a part you need, National's back-up program is committed to providing original equipment replacement parts on a breakdown rush basis, holding your downtime to a minimum. These advantages enhance a National crane's resale value, consistently the highest in the industry.

National Crane is ISO 9001 Certified



Industry Leading Test Program

All National articulating cranes comply with ASME/ANSI (B30.22), and applicable portions of AWS and OSHA standards.

Each prototype model must pass the stringent test requirements of SAE J1063 and SAE J765-1980 Crane Load Stability Test Code.

National's test program subjects all prototype cranes to state-of-the-art computer-aided finite element analysis and strain gauge testing, a procedure that measures metal deformation as small as one one-millionth of an inch. These and the tests noted below verify the structural integrity of National cranes.

Prototype cranes undergo life-cycle tests (National's are the toughest in the industry). They receive more punishment than most cranes encounter in a lifetime of on-the-job use. Every structural part of the crane is cycle tested. Some components are operated through 60,000 cycles at full capacity load. Testing requires thousands of working hours and takes months to complete.



National N-65A Articulating Crane

65,217-ft•lb (9.01-t•m)

Crane Rating

5.25-ton (4.76-t) maximum lifting capacity

38-ft 5-in (11.71-m) horizontal reach

30-ft 8-in (9.35-m) reach below truck frame

32-ft 5-in (8.28-m) total hydraulic extension

46 ft (14.02-m) maximum vertical reach

** Maximum vertical reach is from ground level with the crane mounted on a typical 38-in (965 mm) high truck frame.*

Note: Maximum vertical reach will vary depending on truck frame, tires, load, etc.

Strong booms and jibs

- A proportional boom offers synchronous extension and retraction; sections telescope simultaneously in equivalent proportions rather than in sequential stages
- Proportional boom design enhances boom weight distribution, maximizes operational efficiency, and allows higher capacities, particularly in normal working radii
- Ultra-strong boom sections are manufactured from low-alloy, high-strength steel
- Long-wearing *Easy Glide* wear pads enhance smooth boom performance

Durable cylinders

- Cylinder shafts are hard chrome-plated and high pressure tubing is used wherever possible to reduce hose wear
- All cylinders are double acting for smooth, positive control

Clean design

- Wherever possible, heavy-duty wire-braided hoses are routed inside the mast and boom for

protection from bumps, twists, cuts and abrasions, and to enhance appearance

Swivel hook

- Boom/jib nose is equipped with a swivel hook and safety latch (rated for maximum crane capacity) designed to accept all boom tip options by a simple pin-on procedure

Counterbalance valves

- Pilot operated counterbalance valves on lift, fold and extend cylinders lock cylinders in place in the event of hose failure or until they are powered to move—preventing inadvertent cylinder movement

Efficient rotation

- The rack-and-pinion rotation system provides smooth precision and control
- An efficient design with few working parts offers reliable operation and simplified maintenance
- Rack-and-pinion rotation reduces the bulk of the crane frame above the truck, providing greater stability by lowering the center of gravity

High performance hydraulics

- Couplings and fittings are of highest quality; hydraulic hoses, tubes and fittings have a 4:1 minimum safety factor on burst
- O-ring face seal fittings help eliminate leakage
- A high capacity, high pressure gear pump produces full system pressure—even at truck engine idle speed—and maintains high efficiency throughout its life
- A two-bolt flange can be integrally mounted to most PTO's to simplify mounting
- An easy-maintenance, detachable oil tank comes with oil level sight gage, breather, magnetic plug and 10-micron external return line filter integrally mounted to the crane frame
- Special design reduces mounting time and space requirements

Hydraulic overload protection

- Hydraulic overload protection is standard

Chrome-plated pins

- Large-diameter chrome-plated pins with encapsulated composite bearings provide long life and reduced maintenance

User-friendly operation

- Identical crane function controls are on both sides of crane for same controls/same hand operation
- The operator can keep boom and load in full view at all times from either station
- Boom can be worked and rotated simultaneously
- Extra-fine metering and low spool forces for smooth, precise fingertip control
- Controls are illustrated with decal plate showing crane functions
- Additional valve sections for operating hydraulic accessories can easily be added

Solid stability

- Wide 15-ft (4.57-m) hydraulic outriggers provide solid stability—even on uneven ground
- 25.5-in (648-mm) hydraulic outrigger legs set up quickly and easily from either side of the crane
- Standard outrigger pads are 9 inches (229 mm) round
- Outrigger cylinders with pilot operated check valves lock automatically when stowed so they will not leak down in transit
- Legs and beams are removable for shipment and storage

Simplified mounting

- Easy three-point clamp-on mounting minimizes crane and truck-frame stress
- Mounts on standard, single-axle trucks

Personnel basket

- Optional personnel basket available

A wide choice of accessories (see page 8)



National N-65A Crane Specifications

Technical Data

Working pressure.....	3,850 psi.....	265 bar
Pump capacity (gear-type pump).....	9 gal/min.....	34.06 L/min
Reservoir oil capacity.....	10.5 gal.....	39.7 L
Outrigger span.....	15 ft.....	4.57 m
Outrigger vertical travel.....	25.5 in.....	647.70 mm
Stowed height (above truck frame).....	7 ft 6 in.....	2.29 m
Model N-65A/20 weight* with no oil.....	3,060 lb.....	1388 kg
Filter.....	10-micron replaceable (spin-on type)	
Rotation (non-continuous).....	390 degree	
Mounting space required*.....	29 in.....	736.60 mm
Swing speed.....	360 degrees in 20 sec**	
Boom hydraulic extension speed.....	15 sec for Model H32**	
Boom hydraulic retraction speed.....	11 sec for Model H32**	

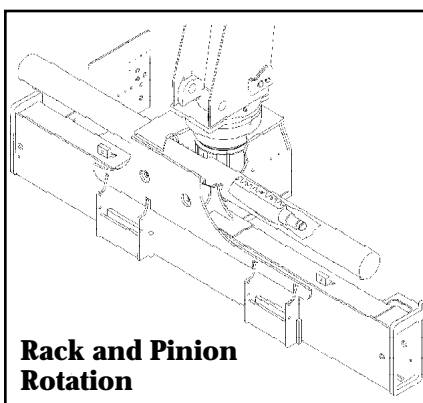
Note: Contact the factory for continuous duty cycle applications

**Crane options will increase crane weight and mounting space*

***Approximate*

Caution

- Do not operate the crane (truck, boom/jib, accessories or loads) within 10 ft (3 m) of live power lines or any other source or conductor of electricity
- Boom/jib capacities indicated are maximums for each section



**Rack and Pinion
Rotation**





National N-65A Crane Specifications

The basic N-65A/20

- 69,000-ft•lb (9.52-t•m) crane rating
- 5.45-ton (4.94-t) maximum lifting capacity
- Frame, inner boom, outer boom with one hydraulic extension to 20 ft 2 in (6.15 m)
- Two out-and-down hydraulic outriggers extending to 15 feet (5.2 m)
- 390-degree rotation

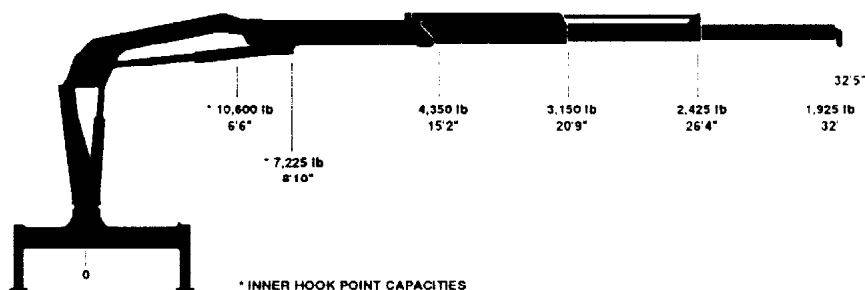
- Counterbalance valves on lift, fold, and extend; automatic check valves on outriggers
- Six section control valve
- Dual controls
- Manual cabled engine speed control
- Hydraulic reservoir
- Hydraulic pump and easy mounting group
- Crane hook with safety latch

Maximum reach with N65A/32-38

- From ground level to 40 ft 8 in (12.40 m) hydraulically; 46 ft (14.02 m) with manual extension
- Below truck frame to 24 ft 8 in (7.52 m) hydraulically; 30 ft 8 in (9.35 m) with manual extension
- Horizontal to 32 ft 5 in (9.88 m) hydraulically; 38 ft 5 in (11.71 m) with manual extension

Note: All capacities shown are maximum allowable loads, including the weight of any accessories

NATIONAL CRANE CORPORATION SERIES N65A/32

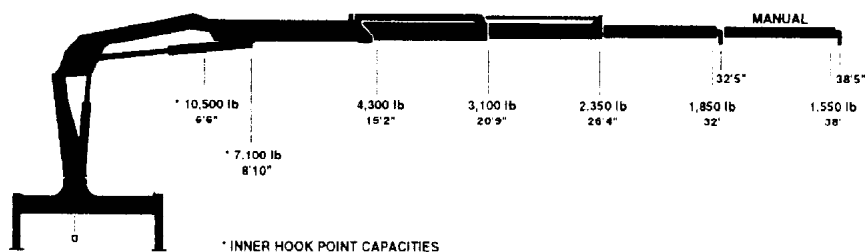


Caution: Do not operate crane booms, jib extensions, any accessories, or loads within 10 feet (3m) of live power lines or other conductors of electricity.

Jib and boom capacities shown are maximum for each section.

Do not exceed capacities at reduced radii.

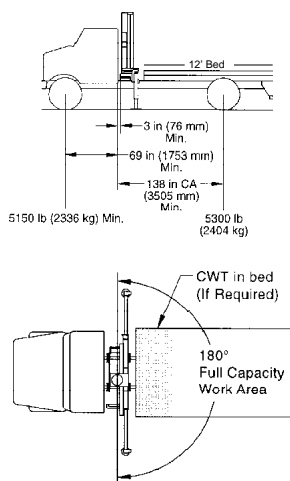
NATIONAL CRANE CORPORATION SERIES N65A/32-38



Note: Booms must be folded slightly to lift the rated load.

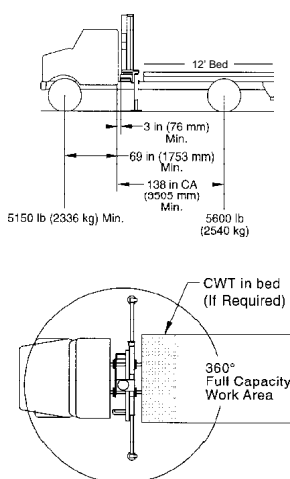


National N-65A Mounting Specifications



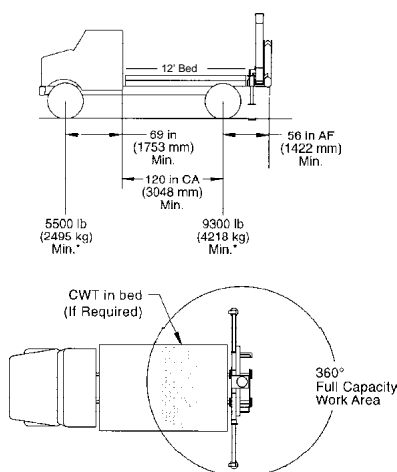
Behind Cab Mount/180-Degree Stability ⁽¹⁾

- Minimum wheelbase: 207 in (5.26 m)
- Rear of cab to rear axle: 138 in (3.51 m)
- Minimum front axle rating: 8,500 lb (3856 kg) GAWRF
- Minimum rear axle rating: 15,000 lb (6804 kg) GAWRR
- Minimum vehicle rating: 23,500 lb (10 659 kg) GVWR
- Working area: 180 degrees
- Truck weight: 10,450 lb (4740 kg) minimum^{(5)*}
- Chassis weight front axle: 5,150 lb (2336 kg) min.^{(5)*}
- Chassis weight rear axle: 5,300 lb (2404 kg) minimum^{(5)*}
- Frame 50,000 psi (345 MPa) steel: 15.9-in³ (261-cm³) section modulus
- Frame 110,000 psi (759 MPa) steel: 9-inch³ (147-cm³) section modulus
- Frame height: 38 in (96.5 cm) or less preferred
- Power take-off: 100 to 120 percent of engine speed; minimum 24-hp (18 kW) at 1,500 pump rpm



Behind Cab Mount/360-Degree Stability

- Minimum wheelbase: 207 in (5.26 m)
- Rear of cab to rear axle: 138 in (3.51 m)
- Minimum front axle rating: 8,500 lb (3856 kg) GAWRF
- Minimum rear axle rating: 15,000 lb (6804 kg) GAWRR
- Minimum vehicle rating: 23,500 lb (10 659 kg) GVWR
- Working area: 360 degrees
- Truck weight: 10,750 lb (4876 kg) minimum^{(5)*}
- Chassis weight front axle: 5,150 lb (2336 kg) min.^{(5)*}
- Chassis weight rear axle: 5,600 lb (2540 kg) min.^{(5)*}
- Frame 50,000 psi (345 MPa) steel: 15.9-inch³ (261-cm³) section modulus
- Frame 110,000 psi (759 MPa) steel: 9-inch³ (147-cm³) section modulus
- Frame height: 38 in (96.5 cm) or less preferred
- Power take-off: 100 to 120 percent of engine speed; minimum 24-hp (18 kW) at 1,500 pump rpm



Rear Mount/360-Degree Stability

- Minimum wheelbase: 189 in (4.80 m)
- Rear of cab to rear axle: 120 in (3.05 cm)
- Minimum front axle rating: 10,000 lb (4536 kg) GAWRF
- Minimum rear axle rating: 17,500 lb (7938 kg) GAWRR
- Minimum vehicle rating: 27,500 lb (12 474 kg) GVWR
- Working area: 360 degrees
- Truck weight: 14,800 lb (6713 kg) minimum^{(5)*}
- Chassis weight front axle: 5,500 lb (2495 kg) minimum^{(5)*}
- Chassis weight rear axle: 9,300 lb (4218 kg) minimum^{(5)*}
- Frame 110,000 psi (759 MPa) steel: 14-inch³ (229-cm³) section modulus
- Frame height: 38 in (96.5 cm) or less preferred
- Power take-off: 100 to 120 percent of engine speed; minimum 24-hp (18 kW) at 1,500 pump rpm

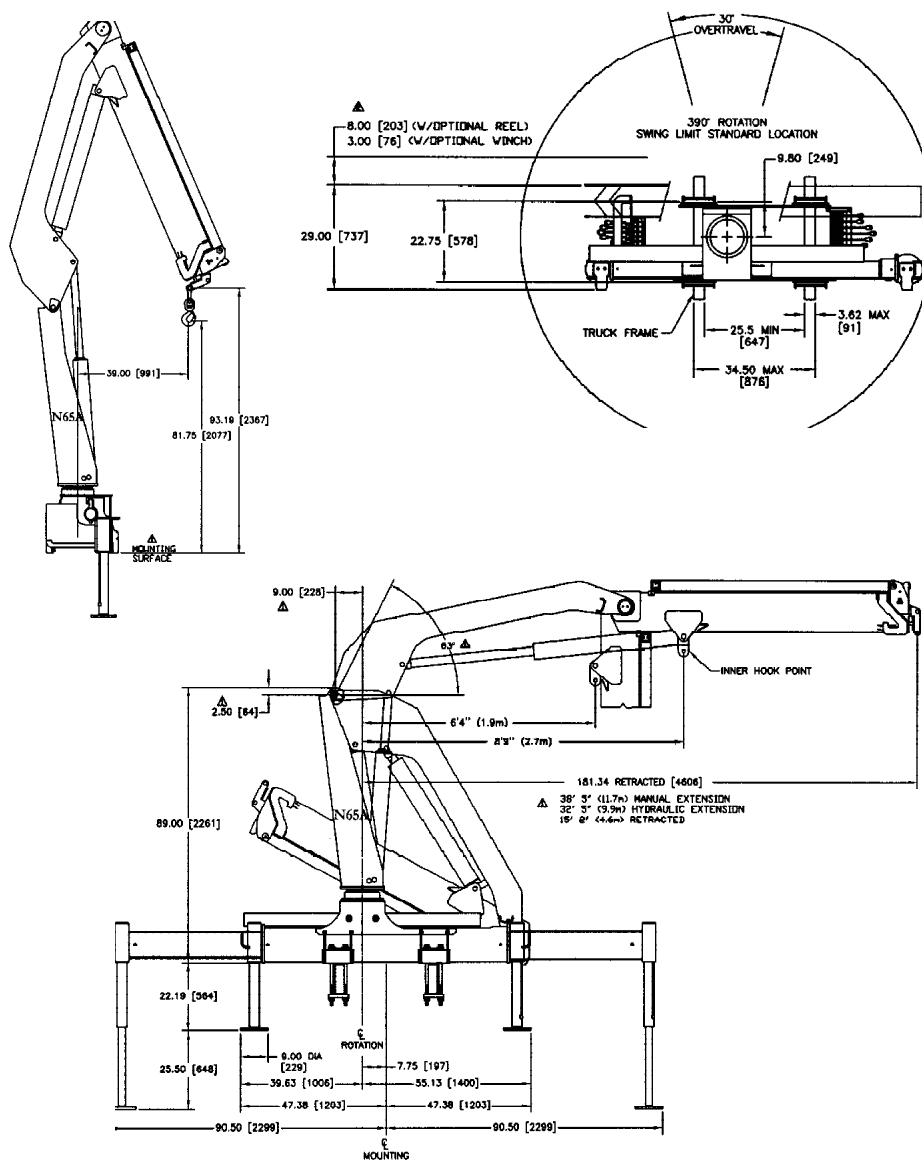


National N-65A Dimensional Specifications

These notes pertain to the minimum mounting specifications shown on preceding page. A truck used for mounting must meet the minimum requirements for capacity loads.

1. No load should be lifted over the front of the vehicle without extra stabilizing provisions, such as adding front stabilizers and/or extra truck bed weight.
2. GVWR (Gross Vehicle Weight Rating) is dependent on all components of the vehicle (axles, tires, wheels, springs, brakes, steering and frame strength) meeting manufacturer's recommendations. **Always specify GAWR/GVWR when purchasing trucks.**
3. Minimum axle requirements may increase with engine size, longer wheelbase or service bodies. Contact the factory for further information.
4. Use caution when rotating boom from areas supported by outriggers to areas supported by springs—vehicle level changes as springs compress; rotate loads slowly and smoothly for maximum control.
5. Chassis weight may include bed, PTO, pump, rear bumper, or any other permanently attached items (other than the crane itself).
6. Diesel engines require variable speed governor.

**Under minimum front or rear axle chassis weights may require counterweight for stability*



Rotation: 390 degree
(non-continuous)

Maximum Load Moment:
79,450 ft•lb (10.98 t•m)
at mounting surface

Maximum Thrust Load:
14,140 lbs. (6.41 t)
at mounting surface

Maximum Rotational Moment:
6,070 ft•lb (.84 t•m)

*Note: All measurements are in Inches (mm)
unless otherwise noted.*



National N-65A Accessories

Do more work faster, with less equipment and manpower. The accessories shown here can help your versatile National Articulating Crane perform an array of jobs that would otherwise call for a fleet of specialized equipment. Contact National Crane or your National dealer to learn more about investing in the versatility of hard-working accessories.



Note:

Weights of all accessories attached to the boom or loadline of the crane must be deducted from the effective lifting capacity. Additional accessories not listed may be available. Some accessories cannot be used in combination with other accessories. Contact your dealer or the factory for accessory capabilities, availability, and pricing.

Remote Controls

A one-hand remote control, ideal for precise control and total load visibility. Diesel engines require electric shut-off. All engines also require neutral safety switch.

- **Model MR4**
- **Model MR5** (requires AH1)
- **Model MR6** (requires AH2)

Radio Remote Controls

Eliminate handling and maintenance concerns that accompany cabled remotes. Operate to a range of approximately 400 ft (122 m), varying with conditions.

- **Model MR4R**
- **Model MR5R** (requires one accessory valve section)
- **Model MR6R** (requires two accessory valve sections)

Winch

A heavy-duty, easy single pin attachment at boom-tip sheave head. Includes winch control and anti-two-block system.

- **Model N1**

Pallet Fork

A fork with 4,400-lb (1996 kg) capacity, plus adjustable throat and teeth.

- **Model MKF** (manual leveling adjustable throat)
- **Model HKF** (hydraulic leveling adjustable throat requiring AH1 or RAH1)
- **Model HKFR** (hydraulic leveling adjustable throat with hydraulic rotator requiring AH2 or RAH2)

Grapple

Grapples available in butt or bypass type. With a hydraulic rotator and quick connect fittings.

- **Model BTG** (requires AH2)
- **Model BPG** (requires AH2)

Clam Bucket

The clam bucket can be used to load or move materials in 1/3 yard³ (.25 m³) bites.

- **Model GPC** (requires AH2)

One-Person Basket

Gravity hung steel with 300-lb (136-kg) capacity.

- **Model B1-LY** (with swing lock, body harness and lanyard)

Hydraulic Auger

Provides digging depths up to 4-feet 5-in (1.8 m) and flightings to 18 in (46 cm).

- **Model AG50** (requires AH1)

High Performance Hydraulic Auger

Contact factory for details.

- **Model AGHP** (high-speed)

Accessory Control Valves

These valves allow operation of hydraulic accessories, mounting easily on the control panel.

- **Model AH1** (single function for rotator or auger)
- **Model AH2** (two functions for grapple or clam)

Hydraulic Reels

Provides hydraulic accessory lines at the end of the second hydraulic section.

- **Model RAH1** (one function for rotator)
- **Model RAH2** (two functions for grapple or clam with rotator)

Hydraulic Powered Horizontal Outrigger Extension

- **Model HO-15**

Intermediate Crane Hook Link

- **Model IL**



NATIONAL CRANE
A Grove Worldwide Company

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