

# National N-35 Articulating Crane

From  
America's  
Truck-Mounted  
Hydraulic  
Crane Leader



NATIONAL  
CRANE  
A Grove  
Worldwide  
Company

- *Crane Rating:*  
35,150 ft•lb (4.86 t•m)
- *Maximum Capacity:*  
2.92 tons (2.64 t)
- *Reach Above Frame:*  
30 ft 8 in (9.3 m)
- *Horizontal Reach:*  
25 ft 3 in (7.7 m)
- *Reach Below Frame:*  
18 ft 1 in (5.5 m)

### Only a National works this hard.

*An investment in a National crane is an investment that keeps working for you day after day, year after year.*

#### Quality.

National cranes have always been designed and built for daily hard use, simplified service and limited downtime. Talented engineers use cutting edge technology to design machines that will set standards for lifting and materials handling. Trained craftsmen use the finest materials and components to turn great ideas into solid, hard working reality. Factory prototypes meet the toughest testing requirements, including the industry's most unforgiving life cycle tests. Meanwhile, every National gets continuous quality checks throughout the manufacturing process and a rigid final inspection.

#### Performance.

Your crane is the ultimate in quality engineering from the industry leader: Long reaches. Heavy capacities. Fast set-up. Easy operation. Smooth movement. More models. Versatile accessories. Innovative design. Premium components. Durable construction. Comprehensive support. Add it all up—whether telescoping or articulating, you'll find your National crane is not only a pleasure to operate, but a reliable investment in bottom line performance.

#### Value.

In short, *these are great cranes*. National has been manufacturing them since 1963, and nine out of ten are still on the job the world over. When you invest in a National, you're getting the finest factory and dealer support available. The National warranty provides protection against defects in materials and workmanship for a full year from the date that the customer takes delivery. Authorized dealers stock spare parts to service the Nationals in their area, while the factory's back up parts program can ship most rush orders within 24 hours. It's no surprise that these cranes enjoy the highest resale values in the industry—everybody knows you can't afford to be without a National.



**35,150-ft•lb (4.86-t•m)  
crane rating**

**2.92-ton (2.64-t) maximum  
lifting capacity**

**30-ft 8-in (9.3-m) reach  
above truck frame**

**25-ft 3-in (7.7-m)  
horizontal reach**

**18-ft 1-in (5.5-m) reach  
below truck frame**

**21-ft 3-in (6.5-m) total  
hydraulic extension**

**33-ft 10-in (10.3-m)  
maximum vertical reach**

- The first National crane that can be mounted on lighter weight “super duty” trucks—the same National quality and power with new versatility and a smaller truck investment
- Two-stage proportional boom design extends each section in equivalent lengths during the telescoping process
- Four-bar link on outer boom facilitates close in lifting to allow load placement next to mast
- Strong boom sections manufactured from low alloy, high strength steel
- Easy three-point mounting minimizes crane and truck frame stress
- Rugged, field proven rack-and-pinion rotation system
- Long-wearing *Easy Glide* wear pads enhance smooth boom performance
- Counterbalance valves on lift, fold and extend cylinders lock all cylinders in place, slowly lowering load if overload occurs



- Identical crane function controls located on both sides of crane—same controls, same hand positioning
- Extra-fine metering and low spool forces for smooth, precise fingertip control
- O-ring face seal fittings help eliminate leakage

- Extra-wide 12-ft (3.7-m) outriggers; outrigger pads are 7x10 in (18x25 cm)
- Enclosed outrigger cylinders with pilot operated check valves that automatically lock all cylinders in place
- Options and accessories enhance overall versatility

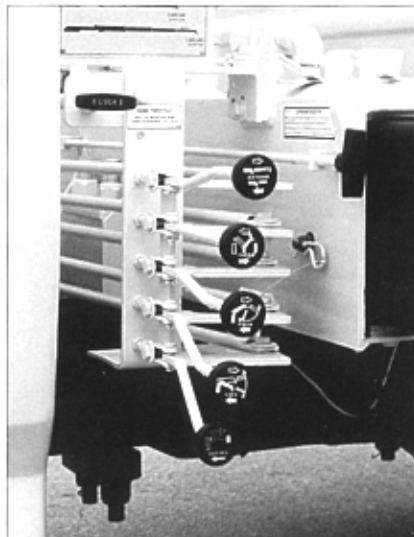
## The basic N-35

- Mounts on light ("super duty") truck chassis
- 35,150-ft•lb (4.86-t•m) crane rating
- 2.92-ton (2.64-t) maximum capacity
- Two hydraulic outriggers with manual extension to 12 ft (3.7 m)
- 360-degree rotation
- Five spool control valves
- Counterbalance valves on lift, fold and extend; automatic check valves on outriggers
- Dual controls
- Manual truck throttle
- Hydraulic reservoir
- Hydraulic pump and easy mounting group
- Crane hook



## CAUTION

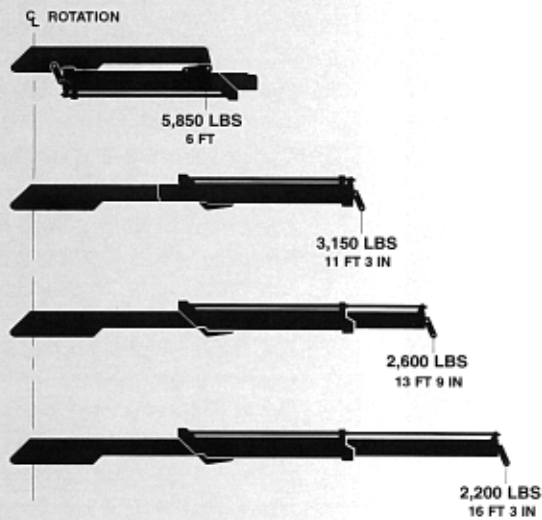
- Do not operate crane booms, jib extensions, any accessories or loads within 10 ft (3 m) of live power lines or other conductors of electricity
- Jib and boom capacities shown are maximum for each section
- Do not exceed capacities at reduced radii



# National N-35 Crane Specifications

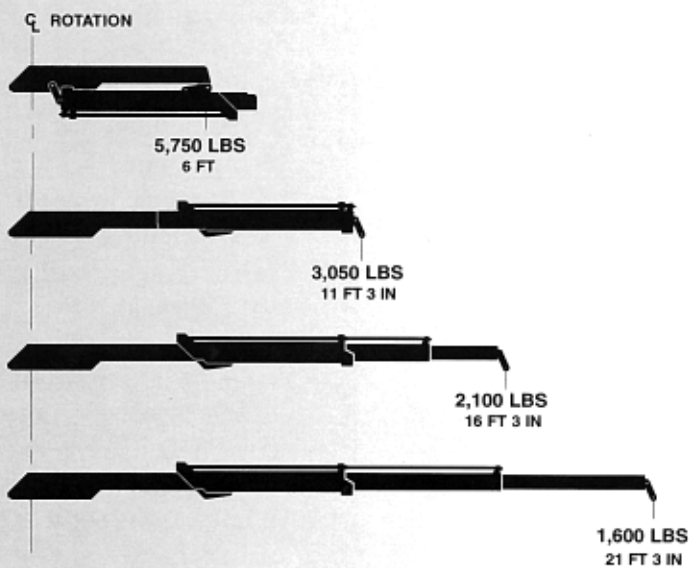
## Model 16

- Mast, inner boom, outer boom and one hydraulic extension to 16 ft 3 in (5.0 m)
- 22-ft (6.7-m) reach above truck frame
- 10-ft 3-in (3.1-m) reach below frame
- 25-ft 2-in (7.7-m) maximum vertical reach (when mounted on a 38 in/97 cm high truck frame)



## Model 21

- Mast, inner boom, outer boom and two hydraulic extensions to 21 ft 3 in (6.5 m)
- 26-ft 10-in (8.2-m) reach above truck frame
- 15-ft 3-in (4.6-m) reach below frame
- 30-ft (9.1-m) maximum vertical reach (when mounted on a 38 in/97 cm high truck frame)

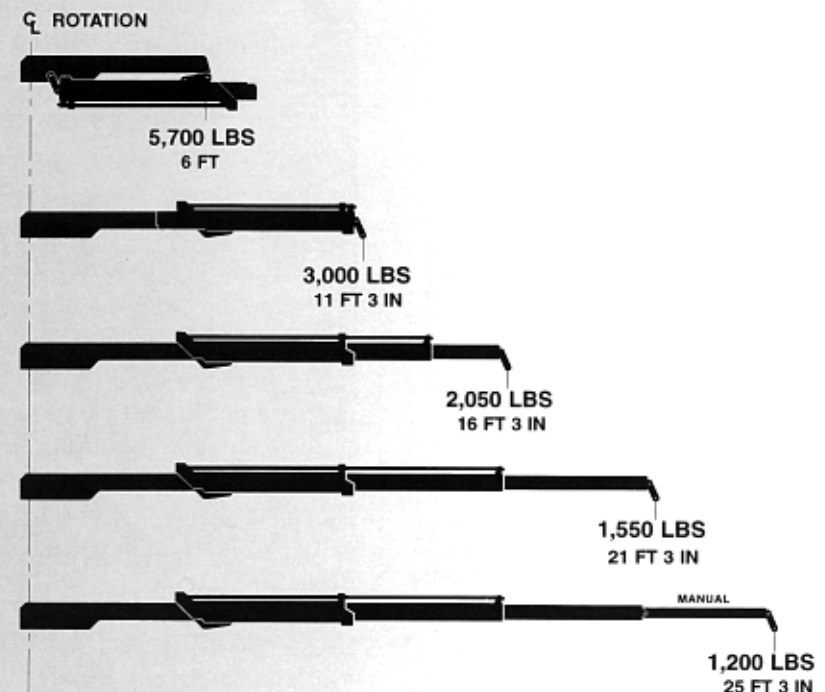


## Model 21/25

- Model 21 boom configuration, but with one manual pull-out extension to 25 ft 3 in (7.7 m)
- 30-ft 8-in (9.3-m) reach above truck frame
- 18-ft 1-in (5.5-m) reach below frame
- 33-ft 10-in (10.3-m) maximum vertical reach (when mounted on a 38 in/97 cm high truck frame)

All lifting capacities shown are maximum allowable loads, including the weight of any attached accessories.

*Note: Contact the factory for continuous duty cycle applications.*

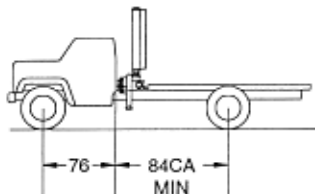


# National N-35 Mounting Specifications



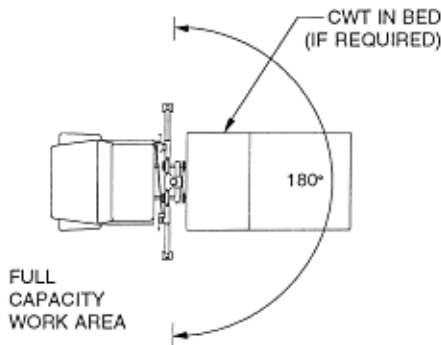
## Notes:

- Truck used for mounting must meet these minimum requirements for capacity loads
- Available chassis: Ford F450 Super Duty, Chevrolet 3500 HD, GMC 3500 HD
- Always specify Gross Axle Weight Rating (GAWR) when purchasing trucks
- Rotate loads slowly and smoothly for maximum control
- Use caution rotating from front to rear (360-degree operation only)—vehicle level changes as springs compress
- Under-minimum front or rear axle chassis weights may require counterweight to keep unit stable
- Diesel engines, longer wheelbase or service bodies may increase minimum axle requirements—contact factory for information
- Diesel engines require variable speed governor
- Truck weight and rear axle chassis weight includes bed



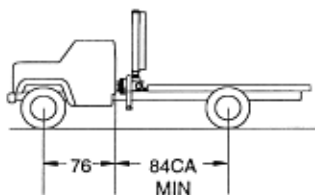
3,500 LBS MIN  
4,000 LBS MAX

2,100 LBS MIN



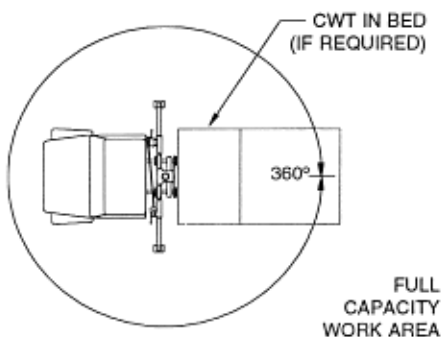
## Behind Cab Center Mount/180-Degree Stable/Super Duty

- Minimum wheelbase: 160 in (406 cm)
- Cab to rear axle (CA): 84 in (213 cm)
- Recommended front axle rating: 5,000 lb (2268 kg) GAWRF
- Recommended rear axle rating: 11,000 (4990 kg) GAWRR
- Recommended vehicle rating: 15,000 lb (6804 kg) GVWR
- Working area: Rear 180 degrees only
- Truck weight: 5,600 lb (2540 kg) min.
- Chassis weight front axle: 3,500 lb (1588 kg) min.; 4,000 lb (1814 kg) max.
- Chassis weight rear axle: 2,100 lb (953 kg) min.
- Frame 36,000 psi (248 MPa) steel and 316,440 RBM: 8.79-in<sup>3</sup> (144.0-cm<sup>3</sup>) section modulus
- Frame height: 32 in (81 cm) or less preferred
- Power take-off: 70 to 85 percent of engine speed; minimum 12 hp (9.0 kW) at maximum operating speed and pressure



3,500 LBS MIN  
4,000 LBS MAX

3,300 LBS MIN



## Behind Cab Center Mount/360-Degree Stable/Super Duty

- Minimum wheelbase: 160 in (406 cm)
- Cab to rear axle (CA): 84 in (213 cm)
- Recommended front axle rating: 5,000 lb (2268 kg) GAWRF
- Recommended rear axle rating: 11,000 (4990 kg) GAWRR
- Recommended vehicle rating: 15,000 lb (6804 kg) GVWR
- Working area: 360 degrees around the vehicle
- Truck weight: 6,800 lb (3084 kg) min.
- Chassis weight front axle: 3,500 lb (1588 kg) min.; 4,000 lb (1814 kg) max.
- Chassis weight rear axle: 3,300 lb (1497 kg) min.
- Frame 36,000 psi (248 MPa) steel and 316,440 RBM: 8.79-in<sup>3</sup> (144.0-cm<sup>3</sup>) section modulus
- Frame height: 32 in (81 cm) or less preferred
- Power take-off: 70 to 85 percent of engine speed; minimum 12 hp (9.0 kW) at maximum operating speed and pressure

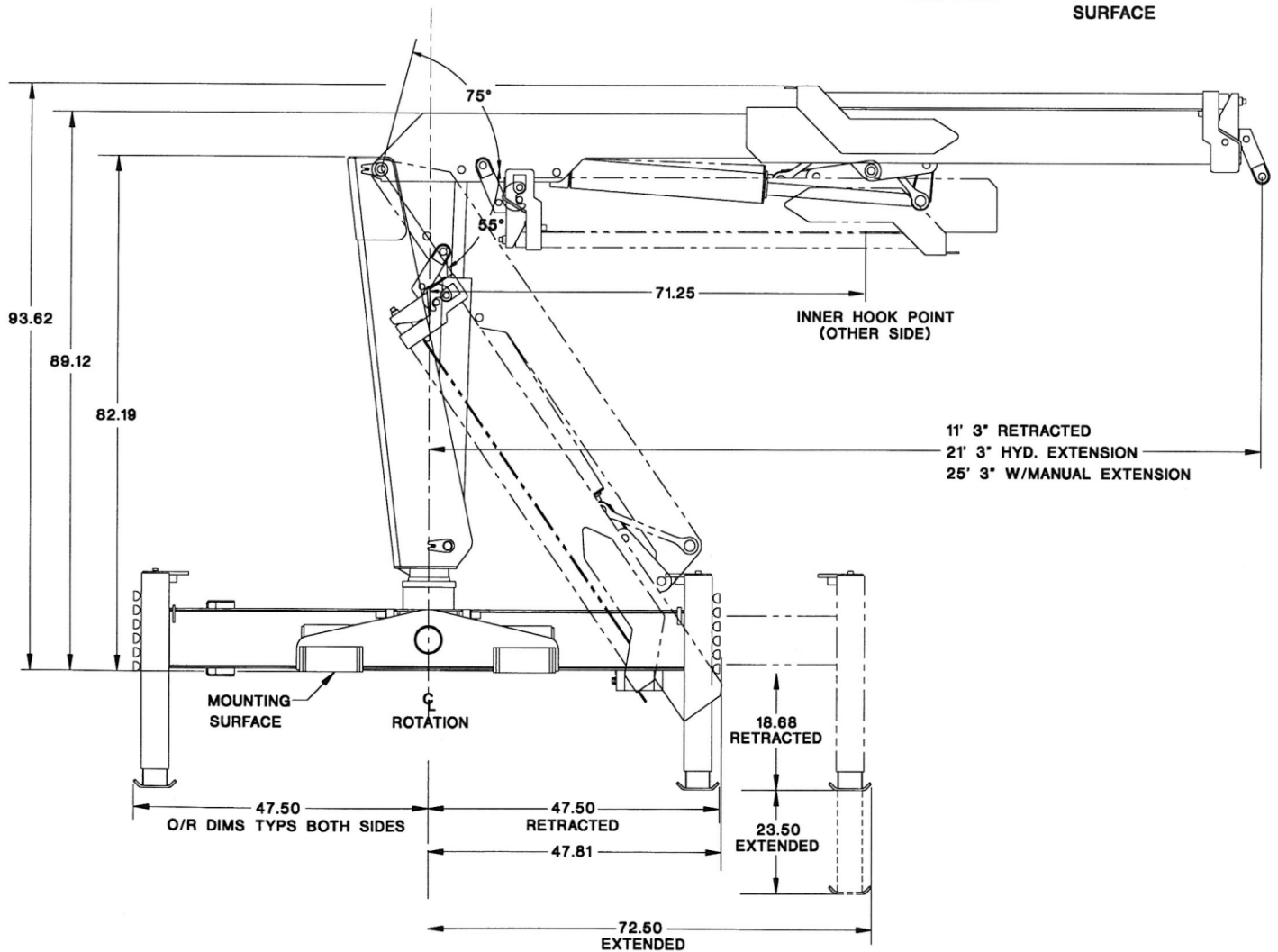
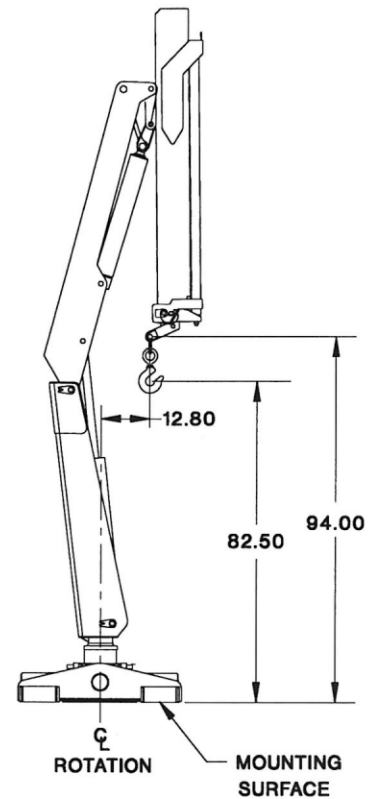
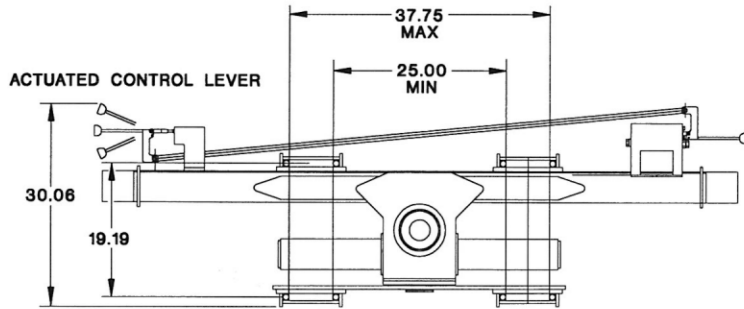
# National N-35 Dimensional Specifications

Rotation: 360 degree  
(non-continuous)

Maximum Load Moment:  
39,494 ft•lb (5.46 t•m)

Maximum Thrust Load:  
7,850 lb (3561 kg) at mounting  
surface

Maximum Rotational Moment:  
6,031 ft•lb (0.83 t•m)



Every National is part of a complete lifting system, meaning you can equip your crane to do more than just lift and handle materials. These accessories allow one truck-mounted crane to perform jobs that typically require a fleet of specialized equipment. Your crane will do more work faster, and you'll use less equipment and manpower.

Contact National Crane or your National dealer to learn more about hard working National crane accessories.



**Note:**

*Weights of all accessories attached to the boom or loadline of the crane must be deducted from the effective lifting capacity. Some accessories cannot be used in combination with other accessories. Consult your dealer for specific accessory availability.*

**Remote Controls**

A one-hand remote control, ideal for use where precise control and total load visibility are required.

- **Model MR4**
- **Model MR5** (requires one accessory valve section)
- **Model MR6** (requires two accessory valve sections)

**Radio Remote Controls**

Radio remotes eliminate the handling and maintenance concerns that accompany cabled remotes. These units operate to a range of approximately 400 ft (12.2 m), varying with conditions.

- **Model MR4R**
- **Model MR5** (requires one accessory valve section)
- **Model MR6** (requires two accessory valve sections)

**Winch**

A heavy-duty winch that features easy single-pin attachment at the boom-tip sheave head. Hydraulic control valve and hoses to the winch are included.

- **Model N6**

**Hydraulic-Powered Horizontal Outrigger Extension**

A 12 ft (3.7 m) span allows for fast, convenient crane setup.

- **Model HO**

**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)

**One-Person Basket**

A strong, lightweight fiberglass basket with 300-lb (136-kg) capacity. The basket is gravity hung with a swing lock and easy on-off body harness with lanyard.

- **Model B1-LY** (with lock)

**Hydraulic Auger**

An auger that provides digging depths to 4 ft 5 in (1.6 m) and flightings up to 18 in (46 cm). Requires AH1

- **Model AG35**
- **Model AGHP** (high-speed)

**Hydraulic Reel**

A reel providing hydraulic quick coupler accessory lines at the end of the second hydraulic section.

- **Model RAH2** (one or two functions for grapple or clam)

**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)



**NATIONAL CRANE**

A Grove Worldwide Company

Your National Dealer:

**General Offices:**

11200 North 148th Street  
Waverly, NE 68462 U.S.A.  
Phone: (402) 786-6300 FAX: (402) 786-6363

National Crane reserves the right to change designs, prices and specifications at any time without notice.