



# NATIONAL N-135

## Truck-Mounted Articulating Cranes and Accessories

Maximum Capacity: 19,000 Pounds (10.5 Metric Tons)

Reach Above Truck Frame: 49 Feet (14.9 Meters)

Reach Below Truck Frame: 32 (9.8 Meters)

Horizontal Reach: 41 Feet (12.5 Meters)



**America's Truck-Mounted  
Hydraulic Crane Leader**





## National Warranty, Parts and Service

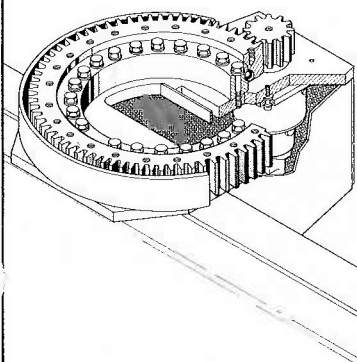


### Easy operation

The N-135 provides dual, waist-level controls with identical operation of normal crane functions. The operator can work the controls from either side of the crane and keep the boom and load in full view at all times. The control knobs are illustrated with function symbols and operate smooth, fine-metering, five-spool control valves for pinpoint accuracy. The boom can be worked and rotated simultaneously. You won't find a crane that's easier to operate. Additional valves banks can be added easily for operating any of our many hydraulic accessories.

### Efficient shear ball bearing rotation

The N-135 is the first National articulating crane to utilize a highly efficient, low-maintenance shear ball bearing rotation system powered by a high-torque, low-speed motor through a double-reduction planetary gearbox. The system, field-proven in our telescoping line, provides smooth, precise planetary control. When unpowered, the swing is locked in place by a spring-applied, hydraulically-released brake.



### American-made

All National cranes are manufactured in America. Parts are readily available and service is easily obtained, should you need it.

### The National Testing Program

National Crane established its original product durability standards by carefully evaluating the performance of competitive machines. Taking the best performances from these tests, National engineers set their own standards **more than 50% higher!** This is the same testing standard each National must pass today.

Before a new model is released for production manufacturing it is subjected to state-of-the-art testing. For example, a plastic-based "brittle lacquer" coating is applied to the crane. After loading, test engineers inspect the coating for cracks. The special lacquer has virtually no elastic qualities, so stretching or deformation of the metal shows up in "fractures" of the coating, perpendicular to the direction of stretching.

This procedure indicates where engineers are to place strain gauges, tiny chips printed with electronic circuitry which expand or contract with changes in the metal. Minute changes in electrical resistance are measured by a computerized strain gauge monitor and printed out for engineering studies. Strain gauges measure metal deformation as small as one-millionth of an inch.

After strain gauge testing, the prototype of each new model undergoes life-cycle testing. The crane is operated at full-load through a full life-cycle under close scrutiny. Outriggers, frames, and other components are loaded and rotated through a complete

### The National Warranty

National's warranty covers your crane against defects in materials or workmanship for **six full months** from the date of shipment, subject to the conditions of the warranty.

When you select a National crane, you're getting more than just a crane. You're getting a nationwide dealer warranty service network, strong warranty protection and our special concern for every product we make.

Read our warranty. Then, don't settle for less. For complete information, write National Warranty Service, Waverly, NE 68462.

### The National Parts System

Authorized National Crane dealers maintain a parts supply to support the National cranes in each dealer's area. If a dealer cannot immediately supply a needed part, the factory maintains a back-up parts supply that provides

24-hour parts shipping in 85% of all breakdown rush orders. National's responsiveness to dealer requests means that your crane will be back on the job fast. National maintains a highly trained Service and Parts staff to answer dealer service questions and expedite parts shipping.

### The National Service Center

National maintains a well-equipped service center where we do all our factory crane mounting. The central location of our Service Center makes it easy to return cranes for special modifications or extreme repairs. Most National dealers can perform all but the most unusual modifications or most serious repairs.

Should you need to return your crane to us for modification, warranty repair or other service, we will give it priority care and see it's returned as soon as possible.



range of motion for the prescribed number of cycles.

All components used on National cranes are subject to a multi-level inspection program during manufacture and assembly. National's attention to testing ensures that each crane delivered to the field is ready for on-the-job action.

### Caution

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







## National N-135 Mounting Specifications

### Mounting

It is essential that the truck used for mounting this crane meet the minimum requirements (shown at right) for capacity loads.

### Minimum Truck Specifications

#### 180° Working Area

This vehicle will permit lifting capacity loads in all areas around the rear of the vehicle in a 180° arc from outrigger to outrigger. No load should be lifted over the front of the vehicle unless extra stabilizing provisions are made, such as the addition of front stabilizers and/or extra weight in the truck bed.

#### 360° Working Area

This vehicle will permit lifting capacity loads in all areas around the vehicle in a 360° arc. Caution should be employed when rotating from the rear to front as the vehicle springs will compress and cause a change in the level of the vehicle. Always rotate loads slowly and smoothly to maximize control.

Minimum Wheelbase	222 inches	204 inches
Rear of Cab to Rear Axle	144 inches	126 inches
Recommended Axle Rating (Front)*	12,000 pounds GAWR*	12,000 pounds GAWR*
Recommended Axle Rating (Rear)	18,000 pounds GAWR	34,000 pounds GAWR
Working Area	180°	360°
Truck Weight	11,900 pounds (3)	15,600 pounds (3)
Chassis Weight Front Axle*	6,900 pounds minimum* 7,900 pounds maximum	6,900 pounds minimum* 7,900 pounds maximum
Chassis Weight Rear Axle	5,000 pounds minimum (3)	8,700 pounds minimum (3)
Frame	26-inch <sup>3</sup> section modulus with 50,000 PSI yield steel = 1,300,000 in-lb rbm 15.9-inch <sup>3</sup> section modulus with 100,000 PSI yield steel = 1,590,000 in-lb rbm	
Frame Height	42 inches or less preferred	
Power Take-Off	70-80 percent of engine speed. Minimum horsepower 30 at 1,400 rpm	

### NOTES:

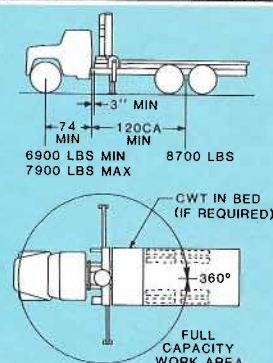
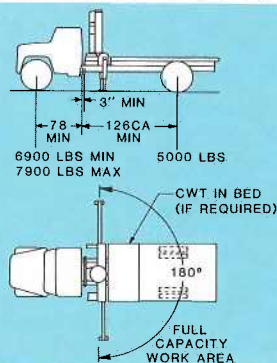
(1) GAWR means Gross Axle Weight Rating and is dependent on all components of the vehicle such as axles, tires, wheels, springs, brakes, steering and frame strength meeting manufacturer's recommendations.

**Always specify GAWR when purchasing trucks.**

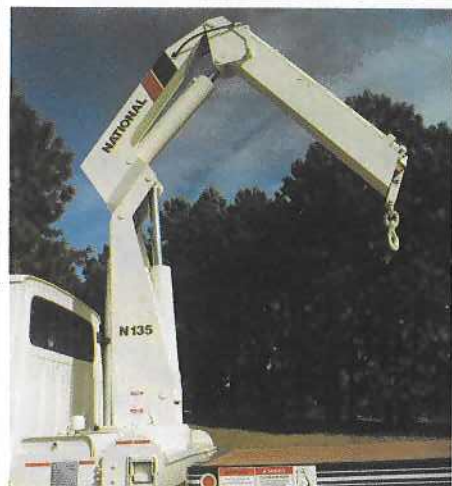
(2) Minimum axle requirements may increase with use of diesel engines, longer wheelbase or service bodies. Contact factory for further information.

(3) Chassis weight includes bed.

(4) Diesel engines require variable speed governor.



\*If front axle chassis weight is less than 6,900 pounds, counterweight may be required to lift rated capacity loads to keep unit stable.





**Pallet Fork**

Turns your N-135 into a versatile, payload-packing fork lift. Great for delivering palletized materials where you want them. 4,400 pounds (1,996 kg) capacity with adjustable throat and teeth. Handles most loads with ease. Available with hydraulic leveling or with a manual slide collar for leveling. For extra versatility, specify a National Hydraulic Rotator.

**Capacity** ..... 4,400 lbs.

**Throat Opening** ..... 41" to 65"  
(adjustable)

**Tooth Length** ..... 38½"

**Tooth Width** ..... 33.5" to 57"  
(outside to outside) min. max.

**Weight**

MKF ..... 350 lbs.

HKF ..... 350 lbs.

HKFR ..... 450 lbs.

**Model MKF**

(Manual leveling, adjustable throat)

**Model HKF**

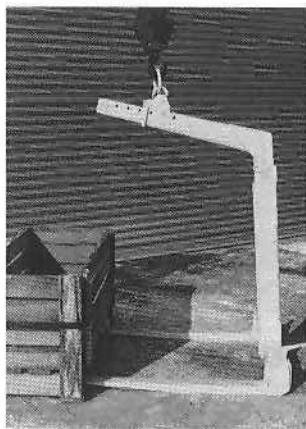
(Hydraulic leveling, adjustable throat)

Requires AH-1

**Model HKFR**

(Hydraulic leveling, adjustable throat with hydraulic rotator)

Requires AH2

**Winch**

This extra-capacity, heavy-duty winch handles up to 4,400 pounds with a single part block and 8,800 pounds with a two-part block. Easy single-pin attachment of boom-tip sheave head. Includes winch control and the anti-two-block feature to prevent cable damage when winching up or extending the

boom without paying out the winch cable. The winch option reduces the capacities by approximately 200 pounds and eliminates the hook point on the outer section boom.

**Model N5****Line Pull**

1st wrap ..... 5,300 lbs.

2nd wrap ..... 4,800 lbs.

3rd wrap ..... 4,400 lbs.

**Speed**

1st wrap ..... 75 ft./min.

2nd wrap ..... 84 ft./min.

3rd wrap ..... 93 ft./min.

**Cable**

90 ft. of 7/16" rotation resistant cable.

**Winch**

7½" dia. drum, 11.62" dia. flange, 6.38" wide with safety brake. OSHA required 18:1 ratio drum diameter to cable diameter.

**Sheaves**

Run on roller bearings with OSHA required 18:1 ratio sheave diameter to cable diameter.

**Controls**

Includes hydraulic control valve and hoses to winch.

**One Person Basket**

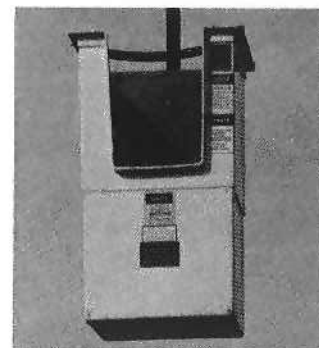
This strong, lightweight fiberglass basket with 300-pound capacity puts personnel where you want them for the occasional tough maintenance and installation jobs. Easy on-off. Safety belts included. Gravity or lock-type leveling.

**Capacity** ..... 300 lbs.

**Weight** ..... 150 lbs.

**Dimensions** ..... 22" x 22" x 42"

**Construction** ..... Fiberglass

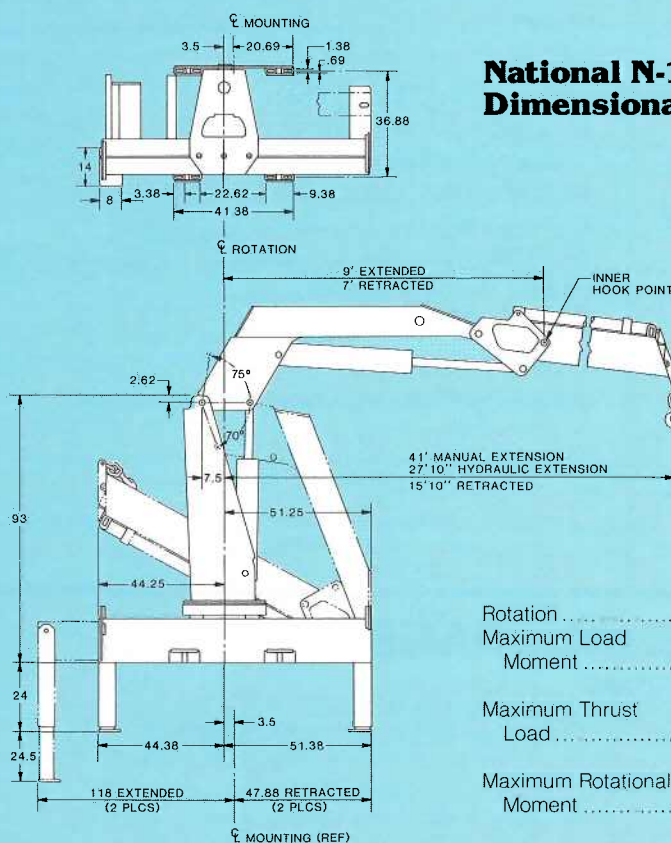
**2 Models**

B1, gravity hung without lock  
B1-L, gravity hung with swing lock

*Includes safety belt and lanyard. Cannot be used simultaneously with winch.*

**Model B1****Model B1-L**

(with lock)

**National N-135  
Dimensional Specifications**

Rotation	..... 410° noncontinuous
Maximum Load	
Moment	..... 161,000 foot/pounds at mounting surface
Maximum Thrust	
Load	..... 25,000 pounds at mounting surface
Maximum Rotational	
Moment	..... 14,750 foot/pounds

