

NATIONAL N-55

Truck-Mounted Articulating Cranes and Accessories

**Maximum Capacity: 9,000 Pounds (4.1 Metric Tons)
Reach Above Truck Frame: 34 Feet (10.4 Meters)
Reach Below Truck Frame: 19 Feet 8 Inches (6 Meters)
Horizontal Reach: 28 Feet 10 Inches (8.8 Meters)**



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

NATIONAL N-55

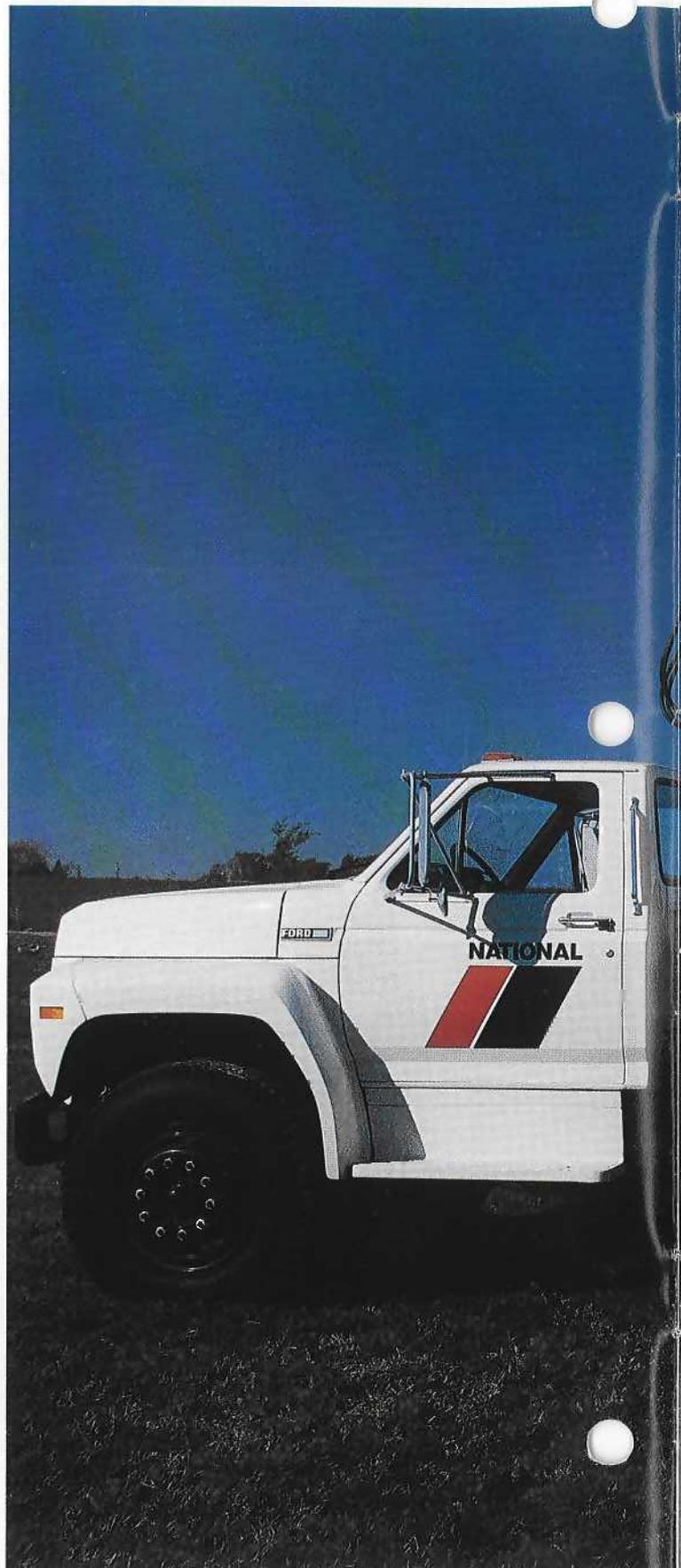
National is America's leading manufacturer of commercial truck-mounted telescoping and articulating cranes. We build cranes for a wide range of jobs. Nobody builds them better. Nationals are tough, durable, and dependable. They are designed for ease of operation.

With a National, you are assured of a well-engineered, well-manufactured, and fully tested machine designed for your applications. At National, we put quality first. Our commitment to product quality is our pledge to provide our customers with reliable products designed to provide years of service.

The National N-55 is a compact but tough articulating crane that can replace many pieces of general lifting, loading and construction equipment. Coupled with our full line of accessories, the N-55 performs many functions quickly and easily. Yet it still gives you a payload-carrying truck. When not in use, the N-55 stows neatly behind the cab.

Get a National N-55 for your materials-handling and other lifting jobs. It's the tough compact with surprising capacity.

- 9,000-pound (4.1 MT) capacity
- 34-foot (10.4m) vertical reach
- 28-foot 10-inch (8.8m) horizontal reach
- 19-foot 8-inch (6m) reach below truck frame
- Extra-tough frame, mast and boom
- Full-length boom stiffening plate
- 37° J.I.C. flare fittings
- Low spool force, fine metering valves
- Strong boom sections manufactured from low-alloy high-strength steel
- Large cylinders
- Greaseless pins at pivots
- N-55/H21 with two hydraulic extensions to 20 feet 11 inches with one easy-to-handle pullout jib to 25 feet 1 inch (7.6m)
- Dual waist-level controls
- Extra-stable outrigger
- Rack-and-pinion rotation for precision and durability
- Mounts on standard, single-axle trucks



NATIONAL CRANE CORPORATION
To provide our customers with products where Quality and Reliability are integral with design and manufacturing.
COMMITMENT TO QUALITY



National N-55 Articulating Cranes

Built strong

The N-55 is designed for tough, materials handling jobs, so we manufacture it from extra-tough, low-alloy steel. Boom sections are built stronger, with a full length stiffening plate to support the increased capacity.

National's attention to engineering means there's more to increased capacity than increased pressure. We engineered the cylinders and valves and added an extra-strong outer boom cylinder to give more muscle to our compact design.

The N-55's heavy-duty wire-braided hydraulic hoses run inside structural members where possible, protecting them from bumps, cuts and abrasions. Outrigger and jib cylinders are enclosed to protect them from harsh weather conditions and on-the-job damage.

N-55 prototypes have been completely stress-tested and run through thousands of brutal work cycles to make sure the crane will work for you year after year. Every N-55 undergoes hundreds of quality control inspections, including ultrasonic testing of boom weld penetration.

Rack and pinion rotation

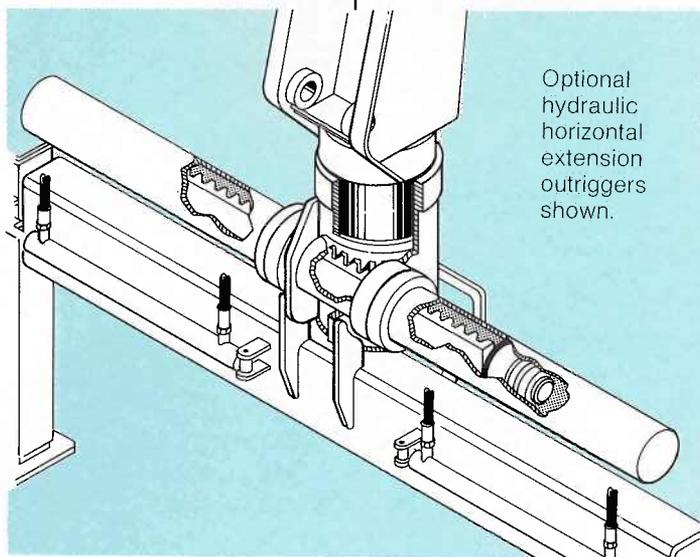
All National Articulating Cranes give you the precision and control of rack and pinion rotation. Our rack and pinion system is simple, reliable and because it has few parts, easy to maintain. Service is easy. Rack and pinion rotation also reduces the bulk of the crane frame above the truck, lowering the center of gravity for greater stability.

Extra-stable outriggers

Our outriggers have 25½ inches (65 cm) of vertical travel for better ground penetration while maintaining excellent ground balance and have extra-large feet for greater stability on soft or uneven ground.

They extend 12 feet (3.6 m) for increased stability under full-load operation. The vertical cylinders are fully enclosed for greater protection and longer life. They are equipped with double-acting pilot check valves that automatically lock the outrigger when stowed so that they will not leak down in transit.

Optional hydraulic horizontal extension outriggers can be specified for the N-55.

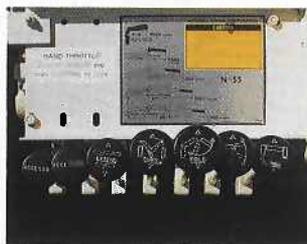


Easier operation

Dual waist-level control stations with higher pressure/lower spool force valves are standard on the N-55. These fine metering valves make operation easier, control more precise. With dual controls the operator can work the machine from the side with great visibility.

Control knobs are clearly marked with function symbols. The boom can be worked and rotated simultaneously.

Additional valve banks can be easily added to the N-55 to operate accessories from the National Lifting System.



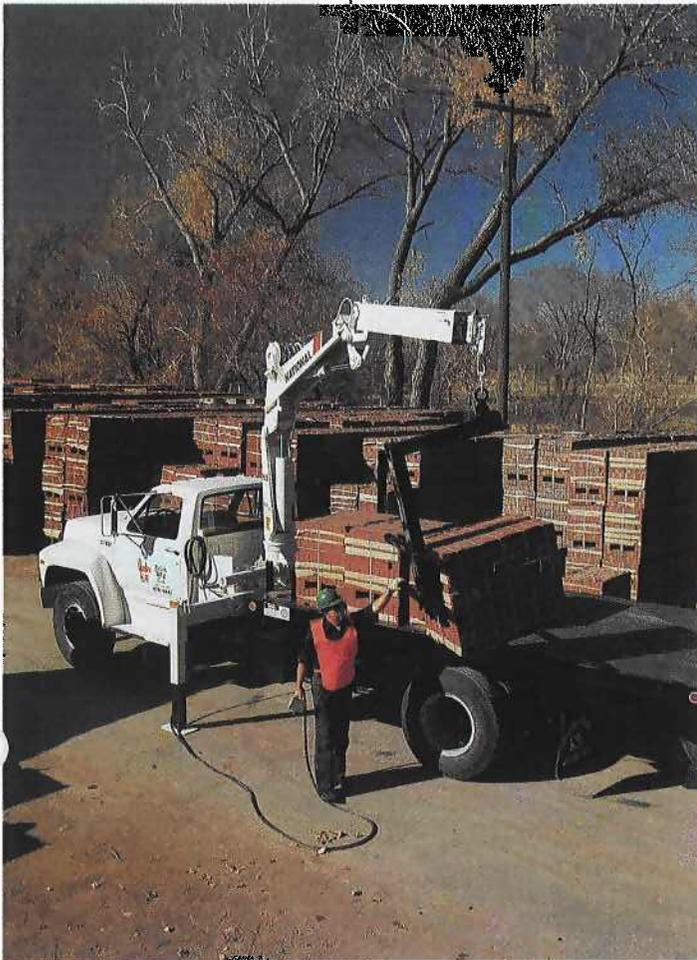
Heavy-duty hydraulics

All N-55 couplings and fittings are high quality with 37° J.I.C. flare fittings used wherever possible to help prevent leaks and make maintenance easier.

All cylinders are double-acting for smooth positive control. A high capacity, heavy-duty pump is standard. Our specially-designed oil tank is detachable for quick, easy maintenance.

American-made

All National cranes are built in America from American-made components. When you choose National, you know parts and service will be readily available.



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.

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 program 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 boom. After loading the boom, 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. These strain gauges measure current fluctuations as small as one-millionth of an ohm—which measures 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 range of motion for the prescribed number of cycles.

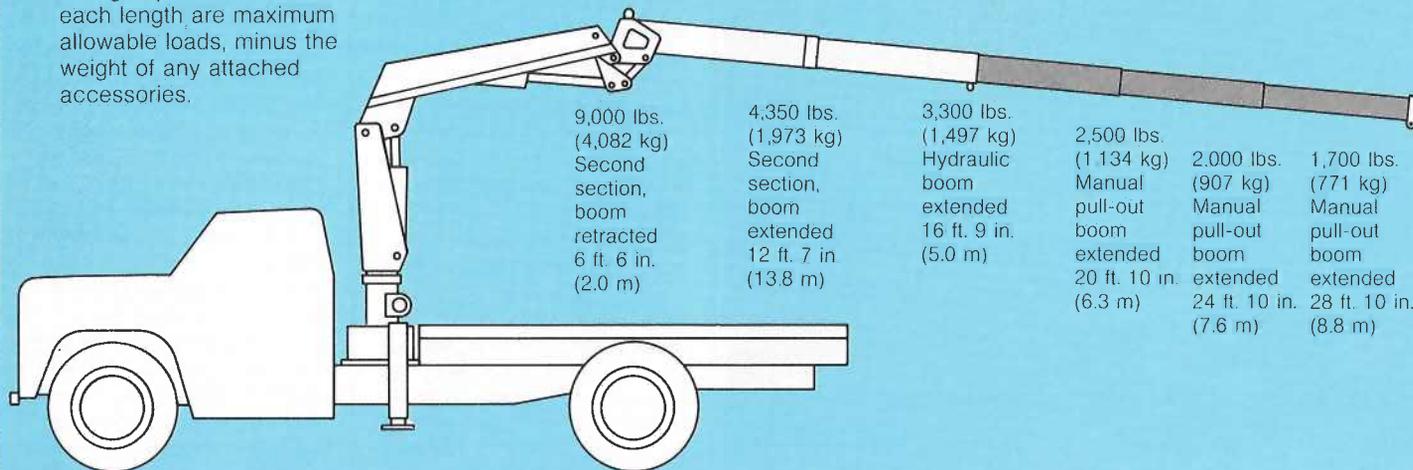
More than 400 individual quality control inspections are made on each National crane during manufacture and assembly. National attention to testing ensures that each crane delivered to the field is as close to perfect as state-of-the-art technology permits.

National N-55 Articulating Cranes

N-55 Lift and Reach Capabilities

Lifting capacities shown at each length are maximum allowable loads, minus the weight of any attached accessories.

Foot/pound rating at 6 ft. 6 in.: 58,500
(Shaded extensions denote Model 29)



Jib and boom capacities shown are maximum for each section. Do not exceed capacities at reduced radii.

The Basic Unit (Model 16)*

- Hydraulic reservoir
- Two hydraulic outriggers with manual extension to 12' (3.7 m) span
- Frame, inner boom, outer boom with one hydraulic extension to 16' 7" (5.2 m)
- 390° rotation
- Five spool control valves
- Safety relief valves on inner boom to help protect against overload
- Outer boom cylinders have excess flow check valves to help prevent load drop in case of line failure; plus automatic check valves on outriggers
- Dual controls
- Manual truck throttle
- Crane hook
- Hydraulic pump and easy mounting group

*Model 29 is the same as the basic unit but with manual pull-out booms providing a reach of 28' 10".

Technical Data

Working Pressure	2,850 psi
Pump Capacity (gear-type pump)	9 gallons/min. 34 liters/min.
Reservoir Oil Capacity	17 gallons 38 liters
Outrigger Span	12' 3.6 m
Outrigger Vertical Travel	25½" 65 cm
Stowed Height (above truck frame)	6' 8" 2.0 m
Weight (N-55/16)	3,250 lbs. 1,474 kg
Rotation (non-continuous)	390° 390°
Filter	10 micron replaceable (spin-on type filter)
Mounting space required	24" 61 cm

Maximum reach (Model 29)

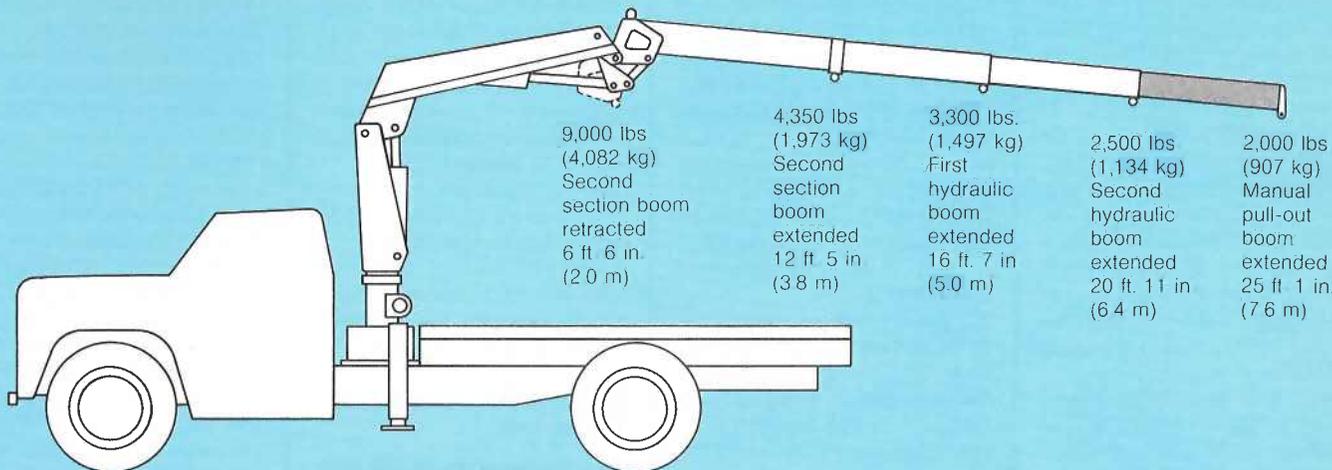
- Above truck frame to 34 feet (10.4 m)
- Below truck frame to 19 feet 8 inches (6 m)
- Horizontal to 28 feet 10 inches (8.8 m)

Special Safety Features

- Special overload relief valves
- Dual hydraulic controls
- Double-acting cylinders
- Flow restrictors to keep loads from lowering too fast and help prevent shock loading
- Excess flow check valves to help prevent load drop due to line failure
- Pilot operated outrigger check valves (standard)

Do not operate cranes or accessories within 10 feet of live power lines.

(Shaded extensions denote manual pull-out.)



Jib and boom capacities shown are maximum for each section. Do not exceed capacities at reduced radii.

H21 Hydraulic Extension Option (Model H21)

Add extra versatility to your N-55 by specifying the H21 option. It replaces the standard manual pull-out booms with two fully-hydraulic extensions and a manual pull-out extension.

The hydraulic extensions retract and extend under full load up to 20 feet 11 inches (6.38 m). The manual pull-out extends the reach to 25 feet one inch (7.6 m). Held in or out with a single pin, the manual pull-out is quick to rig, easy to use.

Maximum reach

- Above truck frame to 32 feet (9.7 m)
- Below truck frame to 16 feet (4.9 m)
- Horizontal to 25 feet 1 inch (7.6 m)



National N-55 Options and Accessories

Every National N-55 is more than just a crane. It's part of a complete lifting system.

The National Lifting System equips your crane to do more than just lift or handle materials. The accessories shown here enable one truck-mounted N-55 to perform jobs that typically require a whole fleet of specialized, expensive vehicles. With a National, you can do more, faster, with less equipment and less manpower. That's money in your pocket.

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.

Seated Controls

Make work faster and easier for your operators with National seated controls. Located at the top of the mast for full vision of crane and load. Reduces operator fatigue, maximizes work output. Includes six valves for fold, lift, turn, extend and two accessory functions. Control knobs illustrate functions. Replaces dual side controls. Not available with remote controls or holding valve option.

Model SC



One Person Basket

Strong, lightweight fiberglass basket with 300-pound capacity puts personnel where you want them for tough maintenance and installation jobs. Easy on-off safety belts included. Gravity or lock-type.

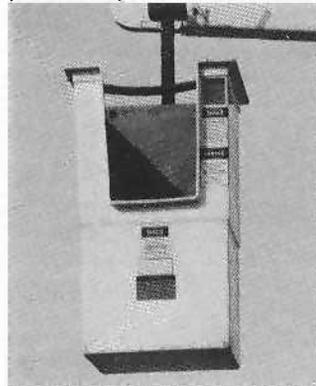
Capacity 300 lbs.
Weight 150 lbs.
Dimensions 22" x 22" x 42"
Construction Fiberglass

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)



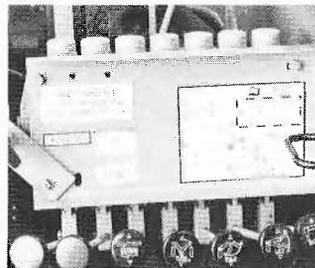
Caution

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.

Accessory Control Valves

These additional control valves are required for the operation of hydraulic accessories. Comes complete with controls for both sides of your machine, hoses, quick couplers and piping to the end of the second boom section. Available in two models: AH1 single function for rotator or auger and AH2 (pictured) with two functions for grapple or clam bucket. Mount easily on existing control panel.

Model AH1
Model AH2



Pilot Operated Holding Valves

Available in lieu of excess flow check valves. Locks oil in cylinder until hydraulic pressure pilots open holding valve allowing downward movement of the boom. Standard overload relief protection does not function with this option.

Remote Control

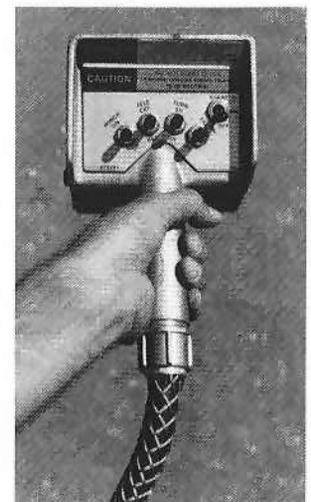
The latest edition of our one-hand remote control. Ideal for use where precise control and total load visibility are required. Fine metering and instant response enables operators to position loads easily.

Now, it's more reliable than ever with solid state circuitry and fewer parts than previous systems we have offered. Other improvements include higher operating speeds and modular design. Works with standard dual controls. MR4 for lift, turn, fold and extend. MR5 is the same as MR4, plus one accessory. MR6 is the same as MR4, plus two accessories.

Priority control valve operated by a trigger on the remote control unit, regulates oil flow and gives you fingertip speed control over all crane functions.

National remote control is the easy, lightweight way to add extra versatility to your N-55

Model MR4
Model MR5
(Requires one accessory)
Model MR6
(Requires two accessories)



Winch

Optional National winch increases the versatility of your crane. Extra-capacity, heavy-duty winch handles up to 4,100 pounds (1,860 kg). Easy single-pin attachment of boom-tip sheave head. Includes winch control.

Model N3

Line Pull

1st wrap 4,100 lbs.
2nd wrap 3,700 lbs.
3rd wrap 3,400 lbs.

Speed

1st wrap 34 ft./min.
2nd wrap 38 ft./min.
3rd wrap 42 ft./min.

Cable

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

Winch

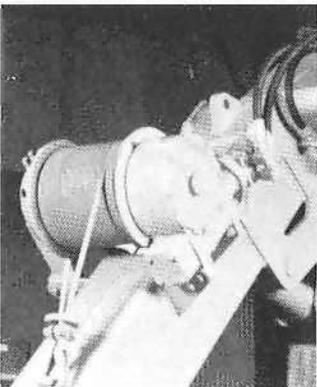
7½" dia. drum, 12" dia. flange, 10" wide with safety brake. OSHA required 18:1 ratio drum diameter to cable diameter.

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.



Hydraulic Auger

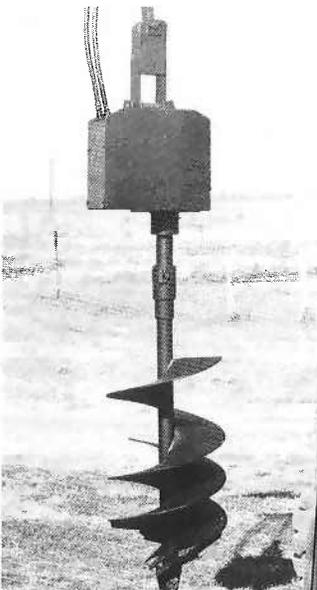
This popular N-55 accessory gives you digging depths to 4½ feet (1.8 m) and flightings up to 18 inches (46 cm). Attaches easily, works fast and disconnects quickly. Requires 14 gpm (53 L/min) pump and AH1 Accessory Control Valve group. Optional extension will provide a digging depth to 6½ feet (2.4 m). Contact factory for details.

Reach 16' 3"
Reduction 4:1
RPM 70 rpm at 14 gpm
Pressure 2,850 psi
Pump 14 gpm required
Torque Output 1,450 ft./lbs.
Drive Weight 205 lbs.
Length 48" overall
Controls Requires AH1 hydraulic control valve option

Flightings and Weight:

Flightings	Length	Weight
9" .....	.30" double	.66 lbs.
12" .....	.30" double	.78 lbs.
15" .....	.30" double	.92 lbs.
18" .....	.30" double	123 lbs.
24" .....	.30" double	152 lbs.
24" .....	.9" long, 12" diameter bottom	
	flighting	
	18" long, 24" diameter top	
	flighting	
	42" overall length for high performance auger only	146 lbs.

Model AG
Model AGHP
(high performance)



Pallet Fork

Turns your N-55 into a versatile, payload-packing pallet 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 38"
Tooth Width 33.5" to 57" (outside to outside) min. max.
Weight
MKF 300 lbs.
HKF 350 lbs.
HKFR 435 lbs.

Model MKF

(Manual leveling, adjustable throat)

Model HKF

(Hydraulic leveling, adjustable throat)

Requires AH1

Model HKFR

(Hydraulic leveling, adjustable throat with hydraulic rotator)
Requires AH2

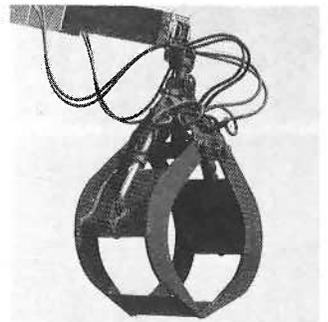


Clam Bucket and Grapples

Turn your N-55 into more than a crane with National clam bucket or grapple attachments. The clam bucket can be used to load or move loose materials in 1/3 cubic yard (.25 m³) bites. The grapples, available in butt or bypassing type, will get a grasp on difficult handling jobs. Butt type handles up to 1/3 cord, bypassing will pick up 36-inch (91 cm) log or pipe. One person can install and remove bucket or grapples easily. Both come with hydraulic rotator and quick-connect fittings. Require AH-2 accessory control valves.

	Butt Type	By-passing	Clam
Capacity	1/3 cord	36" log or pipe	1/3 yd.
Rotation Opening	315"	315"	315"
Max.	72"	66"	72"
Min.	30"	6"	
Weight	590 lbs.	510 lbs.	520 lbs.
Height			
Open	38"	41"	38"
Closed	58"	54"	58"
Width	20"	20"	36"
Teeth	Front 12"	Back 20"	(2. 3" wide teeth, 14" apart)

Clam Bucket
Model GPC
Butt Grapple
Model BTG
Bypassing Grapple
Model BPG



National N-55 Mounting Specifications

Mounting

It is essential that the truck on which this crane is mounted meet these minimum requirements for capacity loads.

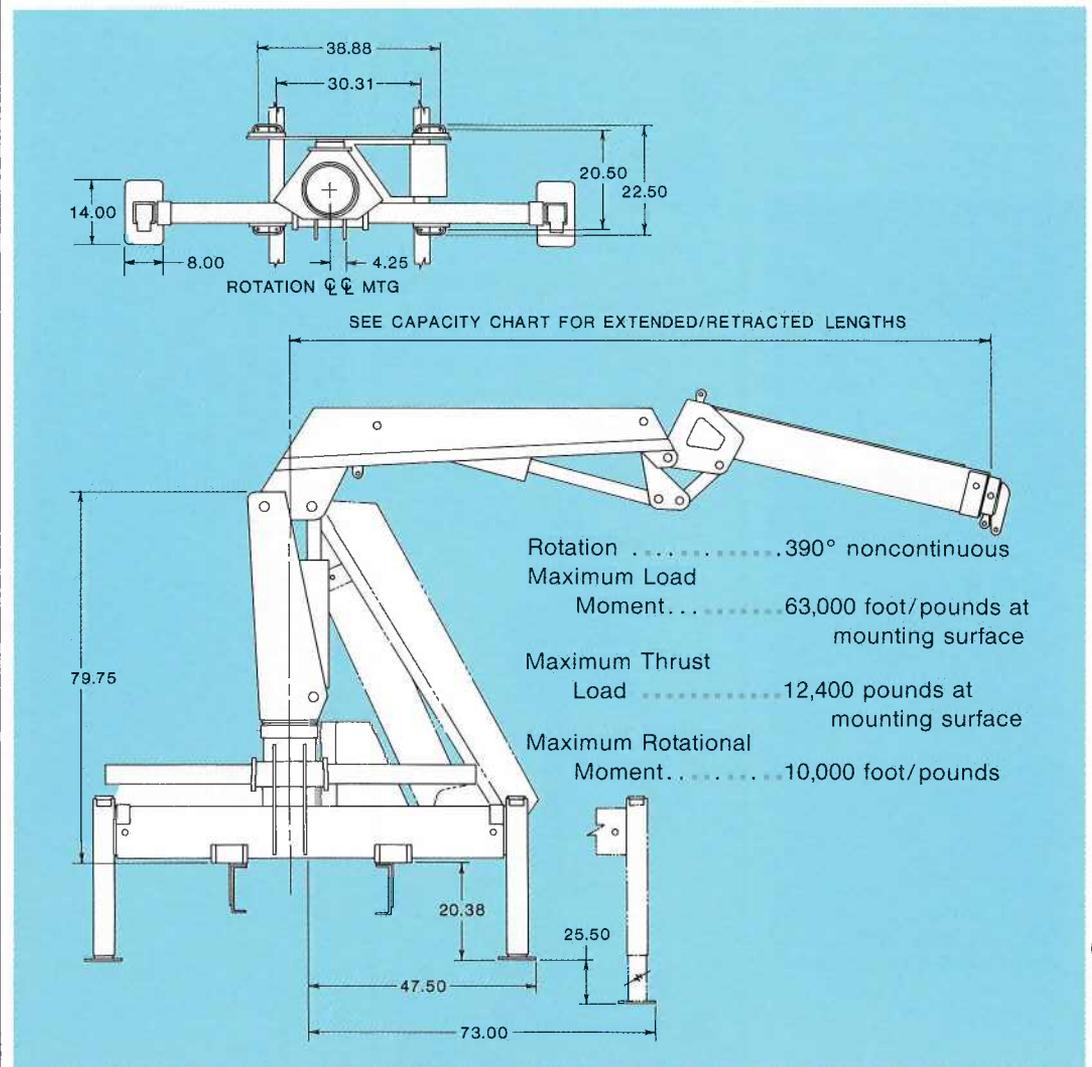
This vehicle will permit lifting capacity loads in all areas 360° around the vehicle.

GAWR means Gross Axle Weight Rating and is dependent on all components of the vehicle such as axles, tires, springs, frame, etc., meeting manufacturers' recommendations. Always specify GAWR when purchasing trucks.

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

Minimum Truck Specifications

- Truck Weight 8,900 pounds (4,037 kg) before installation
Front Axle: 4,560 pounds (2,068 kg) before crane installation
Rear Axle: 4,340 pounds (1,969 kg) before crane installation
- Rear of Cab to Front Axle 66 inches (168 cm)
- Rear of Cab to Rear Axle 84 inches (214 cm)
- Axle Ratings Front: 7,000 pounds (3,175 kg) GAWR
Rear: 14,000 pounds (6,350 kg) GAWR
(Specify GAWR when ordering chassis)
- Minimum Wheelbase 150 inches (385 cm)
- Frame Minimum RBM of 680,000 inch/pounds (76,825 joules) with a minimum Section Modulus of 12 in.³ (196 cm³)
Frame on most chassis with "L" type reinforcements will meet this strength requirement.
- Frame Height 42 inches (107 cm) or less is preferred
- Power Take Off 60-75 percent of engine speed. Minimum H.P. 18 at 1,200 rpm



National N-55 Proposal

	Description	Price
Date: _____	Basic N-55 N-55/16 <input type="checkbox"/>	\$ _____
Prepared for: _____	N-55/29 <input type="checkbox"/>	\$ _____
_____	N-55/21 <input type="checkbox"/>	\$ _____
Submitted by: _____	Options/Accessories:	
_____	1. Hydraulic Horizontal-Extending Outriggers H055	\$ _____
_____	2. Optional controls <input type="checkbox"/> SC Seated Controls	\$ _____
(Firm Name) _____	<input type="checkbox"/> MR4 Remote (not available with SC)	\$ _____
_____	<input type="checkbox"/> MR5 Remote (not available with SC)	\$ _____
(Address) _____	<input type="checkbox"/> MR6 Remote (not available with SC)	\$ _____
_____	3. Fiberglass Basket <input type="checkbox"/> B1 Gravity	\$ _____
(City & State) _____	<input type="checkbox"/> B1-L Lock Type	\$ _____
(Zip) _____	4. Auger AG55 Flighting: <input type="checkbox"/> 9" <input type="checkbox"/> 12" <input type="checkbox"/> 15" <input type="checkbox"/> 18" <input type="checkbox"/> 24"	\$ _____
(Phone) _____	<input type="checkbox"/> Standard <input type="checkbox"/> 18" Tree Planter	\$ _____
Signed: _____	5. Winch N3	\$ _____
_____	6. Pallet Fork <input type="checkbox"/> MKF Manual Leveling	\$ _____
_____	<input type="checkbox"/> HKF Hydraulic Leveling	\$ _____
_____	<input type="checkbox"/> HKFR Hydraulic Leveling with Hydraulic Rotator	\$ _____
_____	7. Grapples or Clam Bucket <input type="checkbox"/> BTG Butt	\$ _____
_____	<input type="checkbox"/> BPG Bypassing	\$ _____
_____	<input type="checkbox"/> GPC	\$ _____
_____	8. Accessory Valves <input type="checkbox"/> AH1 Single Control	\$ _____
_____	<input type="checkbox"/> AH2 Dual Control	\$ _____
_____	9. Pilot Operated Holding Valves (not available with SC)	\$ _____
_____	10. Other _____	\$ _____
_____	Mounting:	
_____	11. Installation <input type="checkbox"/> Std. <input type="checkbox"/> Spec.	\$ _____
_____	12. Frame reinforcing <input type="checkbox"/> Weld <input type="checkbox"/> Bolt-Extra	\$ _____
_____	13. Platform Bed _____ ft. <input type="checkbox"/> Wood <input type="checkbox"/> Steel	\$ _____
_____	14. Weight in bed _____ lbs. (if required)	\$ _____
_____	15. Chassis _____	\$ _____
_____	16. Rear Bumper Protection _____	\$ _____
_____	17. Back-up Alarm _____	\$ _____
_____	18. Freight _____	\$ _____
_____	This quotation will remain firm for _____ days.	\$ _____
_____	Accepted by: _____	Sub Total
(Name) _____	(Title) _____	\$ _____
(Firm Name) _____	Date: _____	Total Price

National Warranty, Parts and Service

The National Warranty

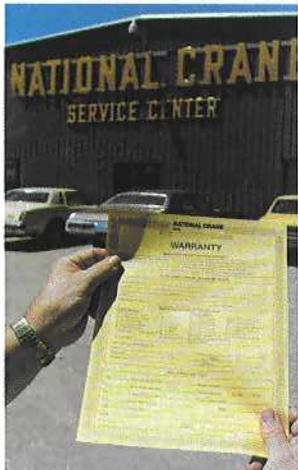
No product is better than its warranty. And no warranty is better than the company behind it.

We didn't get to be America's leading manufacturer of telescoping and articulating cranes by building less than the best. Or backing them with less than a comprehensive warranty.

Our warranty covers your crane against defects in materials or workmanship for 6 full months from the date of shipment, subject to the conditions of the warranty.

When you select a National 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 can normally provide the part to the dealer within 48 hours on request. 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 fully equipped crane and truck 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 that it is returned as soon as possible.



General Offices

11200 North 148th Street/Waverly, NE 68462/402/786-2240
Telex: 438061

Your National Dealer: