



NATIONAL N-85

Truck-Mounted Articulating Cranes and Accessories

Maximum Capacity: 14,400 Pounds (6.54 Metric Tons)

Reach Above Truck Frame: 34 Feet (10.4 Meters)

Reach Below Truck Frame: 20 Feet (6.1 Meters)

Horizontal Reach: 28 Feet 6 Inches (8.7 Meters)



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









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.

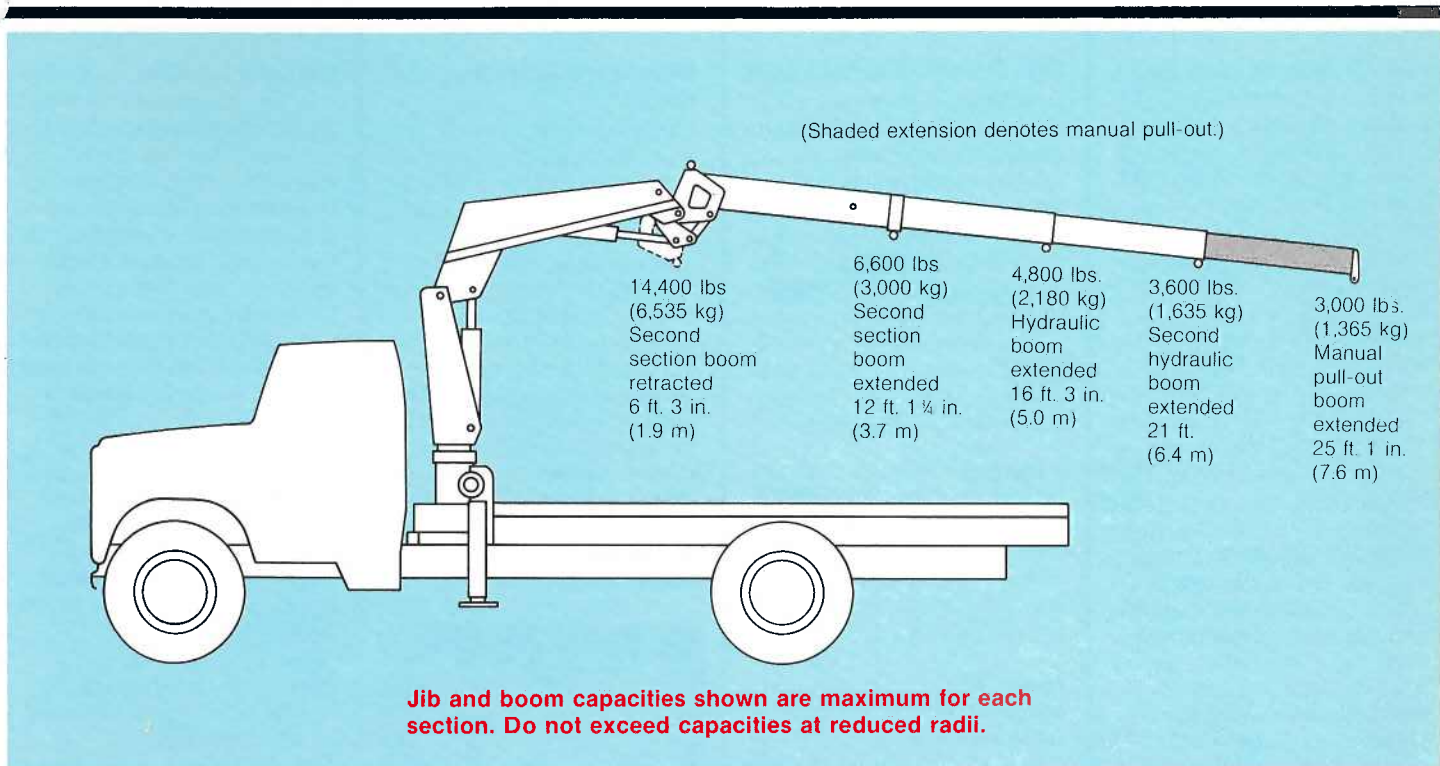
This procedure indicates where engineers are to place strain gauges, tiny chips printed with electronic circuitry which expand or

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.





H21 Hydraulic Extension Option (Model H21)

Add extra versatility to your N-85 by specifying the H21 option. It replaces the standard manual pull-out booms with the two all-hydraulic extensions and a manual pull-out extension.

The hydraulic extensions retract and extend under full load up to 21 feet (6.4 m). The manual pull-out extends the reach to 25 feet 1 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 30 feet (9.2 m)
- Below truck frame to 15 feet (4.6 m)
- Horizontal to 25 feet 1 inch (7.6 m)





**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 N4**Line Pull**

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

Speed

1st wrap 48 ft./min.
2nd wrap 54 ft./min.
3rd wrap 60 ft./min.

Cable

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

Winch

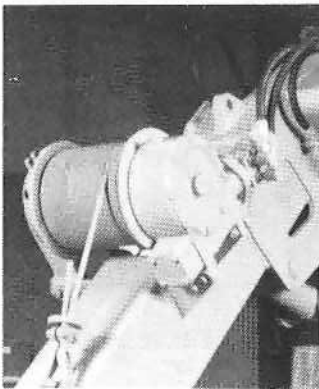
7½" dia. drum, 12" dia. flange, 10" wide with safety brake. OSHA required 18:1 ratio drum diameter to cable diameter.

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-85 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.

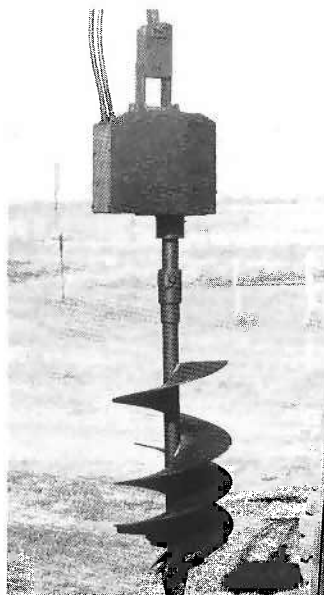
Reach 16' 3"
Reduction 4:1
RPM 70 rpm at 14 gpm
Pressure 2,850 psi
Pump 14 gpm required
Torque Output 1,450 ft./lbs.
Drive Weight 205 lbs.
Length 48" overall
Controls Requires AH1 hydraulic control valve option

Flightings and Weight:

Flightings	Length	Weight
9"	30" double flighting	.66 lbs.
12"	30" double flighting	.78 lbs.
15"	30" double flighting	.92 lbs.
18"	30" double flighting	1.23 lbs.
24"	30" double flighting for high performance auger only	152 lbs.
24"	9" long, 12" diameter bottom planter	146 lbs.
	18" long, 24" diameter top-flighting	
	42" overall length for high performance auger only	

Model AG**Model AGHP**

(high performance)

**Pallet Fork**

Turns your N-85 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 300 lbs.
HKF 350 lbs.
HKFR 435 lbs.

Model MKF

(Manual leveling, adjustable throat)

Model HKF

(Hydraulic leveling, adjustable throat)

Requires AH1

Model HKFR

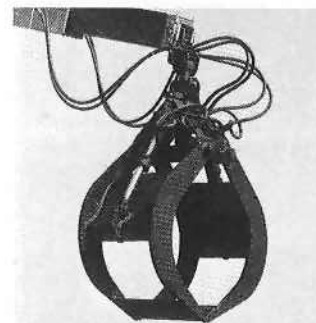
(Hydraulic leveling, adjustable throat with hydraulic rotator)

Requires AH2

**Clam Bucket and Grapples**

Turn your N-85 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	315°	315°	315°
Opening			
Max.	72"	66"	72"
Min.	30"	6"	
Weight	590 lbs.	510 lbs.	520 lbs.
Height			
Open	38"	41"	38"
Closed	58"	54½"	58"
Teeth			58"
Width			36"
20"			Front 12"
			Back 20"
			(2.3" wide teeth, 14" apart)

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





National N-85 Proposal

	Description	Price
Date: _____	Basic N-85 N-85/16 ☐	\$ _____
Prepared for: _____	N-85/29 ☐	\$ _____
_____	N-85/H21 ☐	\$ _____
Submitted by: _____	Options/Accessories:	
_____	1. Optional controls ☐ SC Seated Controls	\$ _____
_____	☐ MR4 Remote (not available with SC)	\$ _____
_____	☐ MR5 Remote (not available with SC)	\$ _____
_____	☐ MR6 Remote (not available with SC)	\$ _____
_____	2. Pilot Operated Holding Valves (not available with SC)	\$ _____
_____	3. Fiberglass Basket ☐ B1 Gravity	\$ _____
(Firm Name)	☐ B1-L Lock Type	\$ _____
_____	4. Auger AG85	Flighting: ☐ 9" ☐ 12" ☐ 15" ☐ 18" ☐ 24"
_____	☐ Standard	☐ 24" Tree Planter
_____	☐ High Performance	\$ _____
(Address)	5. Winch N4	\$ _____
_____	6. Pallet Fork ☐ MKF Manual Leveling	\$ _____
_____	☐ HFK Hydraulic Leveling	\$ _____
(City & State)	☐ MKFR Hydraulic Leveling with Hydraulic Rotator	\$ _____
_____	7. Grapples or Clam Bucket ☐ BTG Butt	\$ _____
(Zip)	☐ BPG Bypassing	\$ _____
_____	☐ GPC	\$ _____
(Phone)	8. Accessory Valves ☐ AH1 Single Control	\$ _____
_____	☐ AH2 Dual Control	\$ _____
Signed: _____	9. Other _____	\$ _____
_____	Mounting:	
_____	10. Installation ☐ Std. ☐ Spec.	\$ _____
	11. Frame reinforcing ☐ Weld ☐ Bolt-Extra	\$ _____
	12. Platform Bed _____ft. ☐ Wood ☐ Steel	\$ _____
	13. Weight in bed _____lbs. (if required)	\$ _____
	14. Chassis _____	\$ _____
	15. Rear Bumper Protection _____	\$ _____
	16. Back-up Alarm _____	\$ _____
	17. Freight _____	\$ _____
		\$ _____
	This quotation will remain firm for _____ days.	Sub Total
		\$ _____
		Total Price
	Accepted by: _____	
	(Name) _____ (Title) _____	
	(Firm Name) _____	Date: _____

