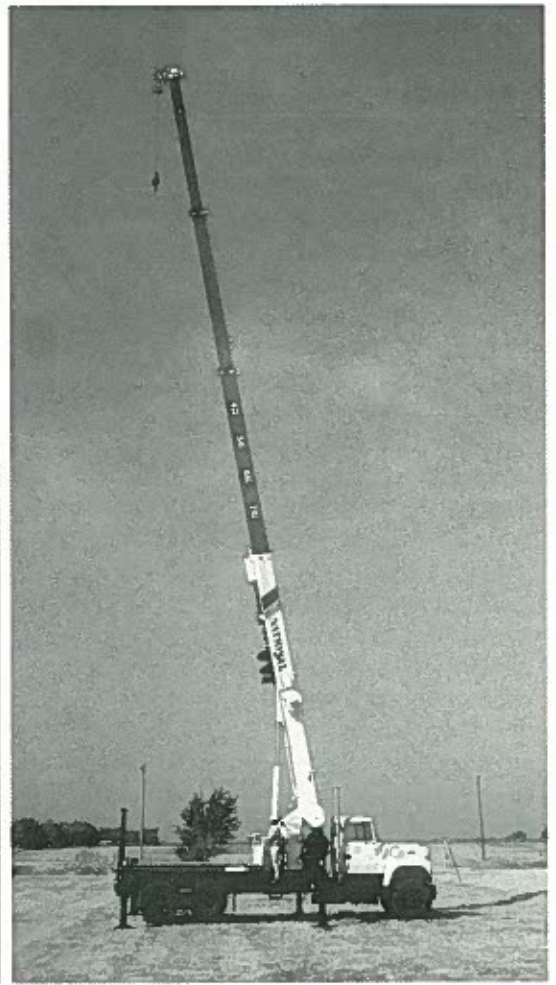
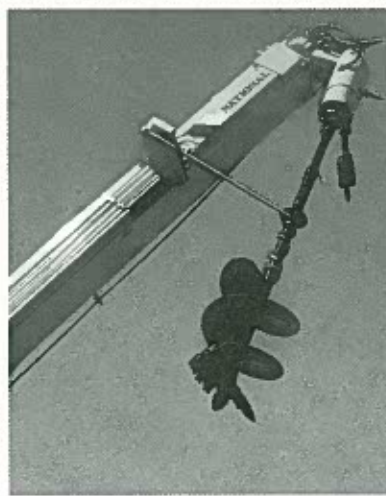


Series 990 Auger-Equipped Telescoping Crane

From National Crane Corporation



America's Truck-Mounted Hydraulic Crane Leader

New . . . from National Crane!

Series 990 Crane with Auger

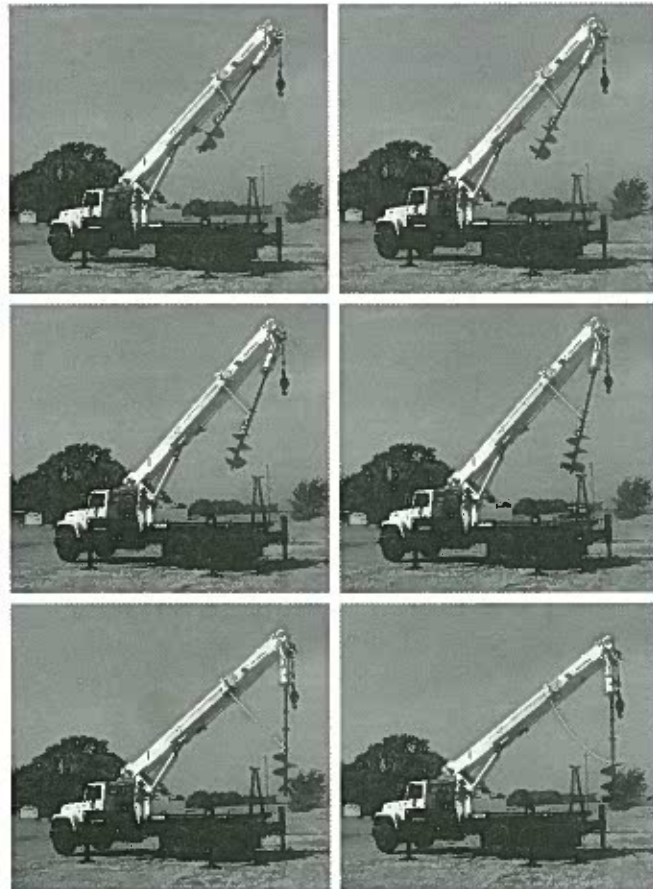
National Crane's all new 990 auger-equipped hydraulic-powered telescoping crane is the practical answer to utility and other companies with heavy material handling and digging requirements.

This unit has a rated lifting capacity of 23 tons, a vertical reach of 98 feet, and will dig a 36-inch diameter hole up to 40 feet away from the crane's center line of rotation. It all comes in a single cost-efficient package, eliminating your need for extra equipment and the manpower needed to operate it.

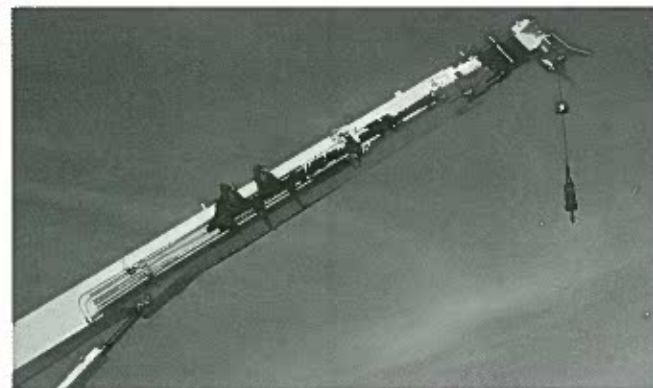
The auger system consists of a hydraulically shifted two-speed digger drive which drives the auger flighting. It includes an auger stow bracket and lock mechanism with a wind-up rope used to stow the auger on the side of the boom. It includes an auger mount assembly and a boom transfer mechanism.

The auger deploys easily from the stow position as the wind-up rope unwinds through the operation of the auger drive (the boom must be fully retracted during this operation). The auger drive mounting bracket rotates downward from its stowed horizontal position to its vertical digging position. The

The auger deploys smoothly from the stow position as the wind-up rope unwinds throughout the procedure (as shown in the sequence of photos below). The stowing of the auger and flighting after the digging operation is completed is also achieved by use of the wind-up rope.



The photo below shows the Series 990 auger in its stowed position.



downward movement of the auger drive mounting bracket causes the auger drive to be mechanically locked to the end of the boom section near the sheave case.

The auger drive flighting may be extended out as far as 40 feet from the center line of rotation. This permits exceptional flexibility in positioning the auger for digging at sites where the crane and truck cannot be set up near the precise digging location.

When equipped with an auger, the 990 booms extend up to 42 feet. When the auger is deployed, an electrical switch activates a pressure relief circuit that limits extension pressure. The carriage for the auger drive hydraulic hoses has stops which halt boom extension when the 42-foot boom travel limit is reached during the auger operation.

The auger drive has a maximum torque output of 15,000 ft-lbs and features two speeds with 23 RPM maximum on the low side and up to 62 RPM on the high side. The hex shaft size is a standard 2 5/8 inches in diameter. The maximum recommended digging depth is 16 feet.

When the digging operation is completed, the boom is retracted and the auger and flighting

are stowed by using the wind-up rope. The auger flighting pushes up on the plunger of a by-pass valve as the auger comes into the stowed position. This provides "over-wind" protection, averting damage to the crane's components. The auger stow bracket lock is air-activated, using the air supply from the truck chassis air system.

While the 990 auger-equipped telescoping crane is distinguished by its auger-related characteristics, it is also ideal for the general purpose lifting and handling of materials and equipment. The unit is available with a number of time-saving options:

- Hydraulic tilting pole claw designed to grip and steady poles, enhancing the pole setting operation
- Personnel baskets
- Hydraulic tool circuits
- Remote controls

The Series 900 crane features proportional telescoping boom design, providing more efficient boom weight distribution, resulting in higher capacities -- particularly in normal working radii.

The unit is equipped with two sets of hydraulic out-and-down cross-frame outriggers. These are an integral part of the 18-foot subbase and reduce truck frame twist during crane and auger operations. Reduced

stress to the truck frame increases the overall chassis life.

The outriggers stow within a legal 8-foot width and extend out hydraulically to an 18-foot span, affording solid stability for the crane while it is being operated. The vertical cylinders travel downward 24 inches and are hydraulically powered to level a fully loaded truck. The legs stay locked in place, up or down, by pilot operated check valves. This is important both when the crane is in operation and when it is in transit to the next job site.

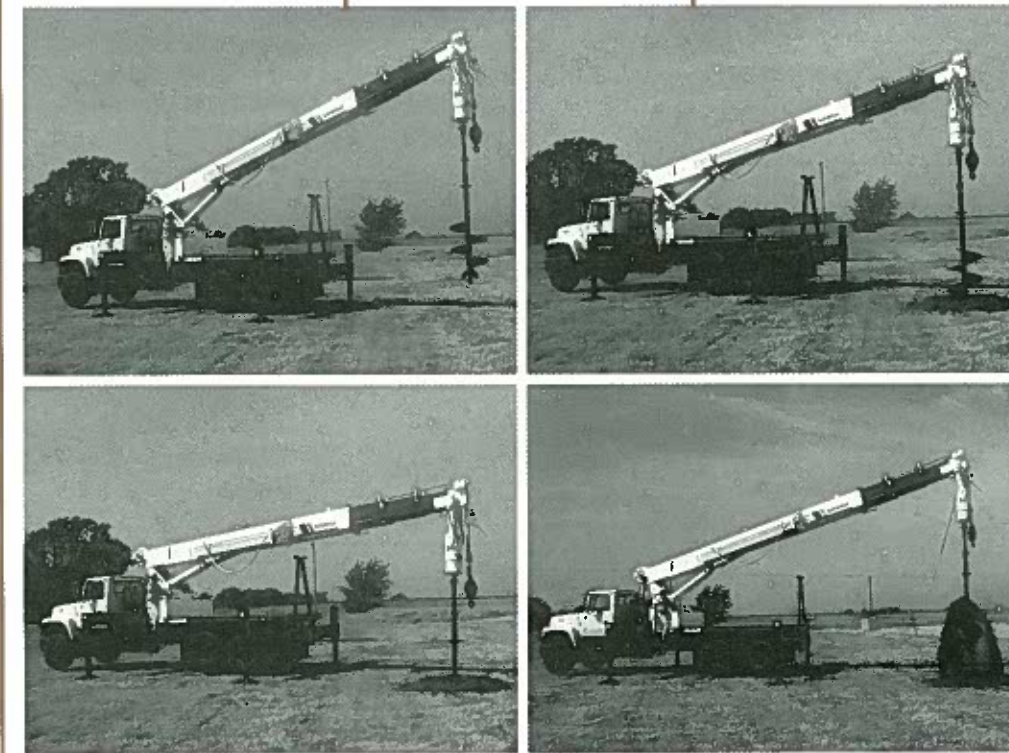
All crane controls -- including those for the

auger -- are located at the 990's dual side operator control stations. Controls at each station have identical functional controls in an SAE recommended orientation (the operator works the controls with the same hand at each station). Control knobs are identified by function.

This crane provides positive planetary turret rotation, a high-performance planetary winch, and anti-two-block protection.

While these photos show the 990 auger-equipped crane mounted on a standard commercial 6x4 truck chassis, it can be mounted on one with a 6x6 rear wheel drive. The crane is designed with a short main frame to allow for mounting on a 6x6 chassis yet maintain a legal road travel height (the unit's overall height is 12 feet 6 inches when mounted on a truck with a 48-inch frame height). The 6x6 chassis enhances maneuverability in rough or adverse terrain.

The photos at the left show the National 990 auger-equipped crane engaged in a hole-digging operation. This digging capability coupled with the Series 990's heavy-duty capacity and lofty reach, make it a remarkably versatile machine.



Technical Data (for unit pictured in this brochure)

Capacity and Reach

Maximum lifting capacity.....	46,000 lbs. at 5'
	27,000 lbs. at 10'
	5,700 lbs. at 40'

Boom Length	
Retracted.....	27'
Extended.....	90' proportional extension
Vertical Reach.....	98'
Horizontal Reach.....	85'

Winch

Type.....	Braden PD12C boom-mounted high-performance planetary gear reduction
Bare drum pull.....	10,000 lbs.
Powered by.....	High-efficiency piston motor
Cable.....	320' of 9/16" spin-resistant cable
Cable breaking strength.....	19.25-ton
Maximum single line pull.....	7,700 lbs.
Line speed.....	164 fpm

Outriggers

Type.....	Hydraulic out-and-down (two sets integral with sub frame)
Extended span.....	18'
Retracted span.....	8'
Vertical travel.....	24'
Ground penetration.....	6"
Length of sub frame.....	18'

Auger (two-speed)

Drive rating (Eskridge).....	~15,000 ft. lbs.
Digging depth.....	16' depth
Digging radius.....	40' radius (maximum)
RPM.....	23 low speed; 62 high speed
Pressure.....	2,800
Drive weight.....	500 lb.
Stowable fighting up to and including.....	36" diameter
Limit stop on travel carriage.....	42' boom length maximum
Stow overwind protection.....	Oil bypass valve
Stow lock.....	Air operated
Hex shaft size.....	2 5/8"

Remote Controls

Type.....	Fully proportional
Crane function operated.....	Tilt, turn, and telescope
Function speeds.....	To 60% of normal operating speed
Control device.....	Hand held pendant with cord

Ground Level Tool Circuit

GPM.....	23
Pressure.....	2,950 psi

Hydraulic System

Type pump.....	Tandem vane (Vickers)
Flow/psi.....	Winch circuit - 34 gpm at 3,050 Crane functions - 23 gpm at 2,950 psi
Reservoir.....	80-gallon
Filter.....	10 micron in return line
Valve.....	Gresen V20 main; Gresen V45 winch

Dimensions/Weights

Overall height (on 42" truck frame height).....	12' with short crane frame
Overall length.....	39'2"
Overall width.....	96"
Crane weight with 12' steel bed (without truck and front stabilizer).....	26,000 lbs.

Truck Specifications

GAWR front axle.....	16,000 lbs.
GAWR rear tandem axle.....	38,000 lbs.
Rear tandem axle and suspension.....	40,000 lbs.
Wheel base.....	246"
Cab to trunnion.....	168"
Frame.....	26.0 in. ³ SM, 110,000 psi

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. Weights of any accessories attached to the boom or loadline must be deducted from the load chart capacities.



11200 North 148th Street
Waverly, NE 68462
Telephone: (402) 786-6300
FAX: (402) 786-6363

National reserves the right to change designs, prices, and specifications at any time without notice.
Printed in U.S.A. • Form No. 990AE1291-2M

