

**National Series 400
Proposal**

Date: _____
 Prepared for: _____

 Submitted by: _____

 (Firm Name)

 (Address)

 (City & State)

 (Zip)

 (Phone)
 Signed: _____

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

Your National Dealer

Description	Price
1. Series _____	\$ _____
2. Duct if torsion box not required	(_____)
3. Boom _____	_____
4. Jib _____	_____
5. Rear Stabilizers <input type="checkbox"/> ASH <input type="checkbox"/> RSH 18"	_____
6. Front Stabilizers <input type="checkbox"/> Std <input type="checkbox"/> Tilt <input type="checkbox"/> Single	_____
7. Line Block <input type="checkbox"/> 2 Part <input type="checkbox"/> 2 & 3 Part	_____
Accessories	
8. PD-12 Planetary Winch	_____
9. _____	_____
10. _____	_____
11. _____	_____
Mounting	
12. Installation: Behind Cab	_____
13. Installation: Rear Mounting (add to installation charge above)	_____
<input type="checkbox"/> ASH Behind Cab Stabilizers	_____
<input type="checkbox"/> Air Throttle	_____
<input type="checkbox"/> Rear Mounting Group	_____
<input type="checkbox"/> HO Outriggers	_____
14. Frame Reinforcement: <input type="checkbox"/> Weld <input type="checkbox"/> Bolt-Extra	_____
15. Platform Body _____ ft. <input type="checkbox"/> Wood <input type="checkbox"/> Steel	_____
16. Weight in bed _____ lbs. (if required)	_____
17. Boom rest: <input type="checkbox"/> Parallel <input type="checkbox"/> Low <input type="checkbox"/> Other	_____
18. Mount Stabilizers (Rear) _____	_____
19. Mount Stabilizers (Front) _____	_____
20. Chassis _____	_____
21. Rear Bumper Underride Protection <input type="checkbox"/> Ordered <input type="checkbox"/> Not Ordered	_____
22. Freight _____	_____

This quotation will remain firm for _____ days.

Accepted by: _____ \$ _____
 (Name) TOTAL PRICE
 _____ (Date)
 (Firm Name)

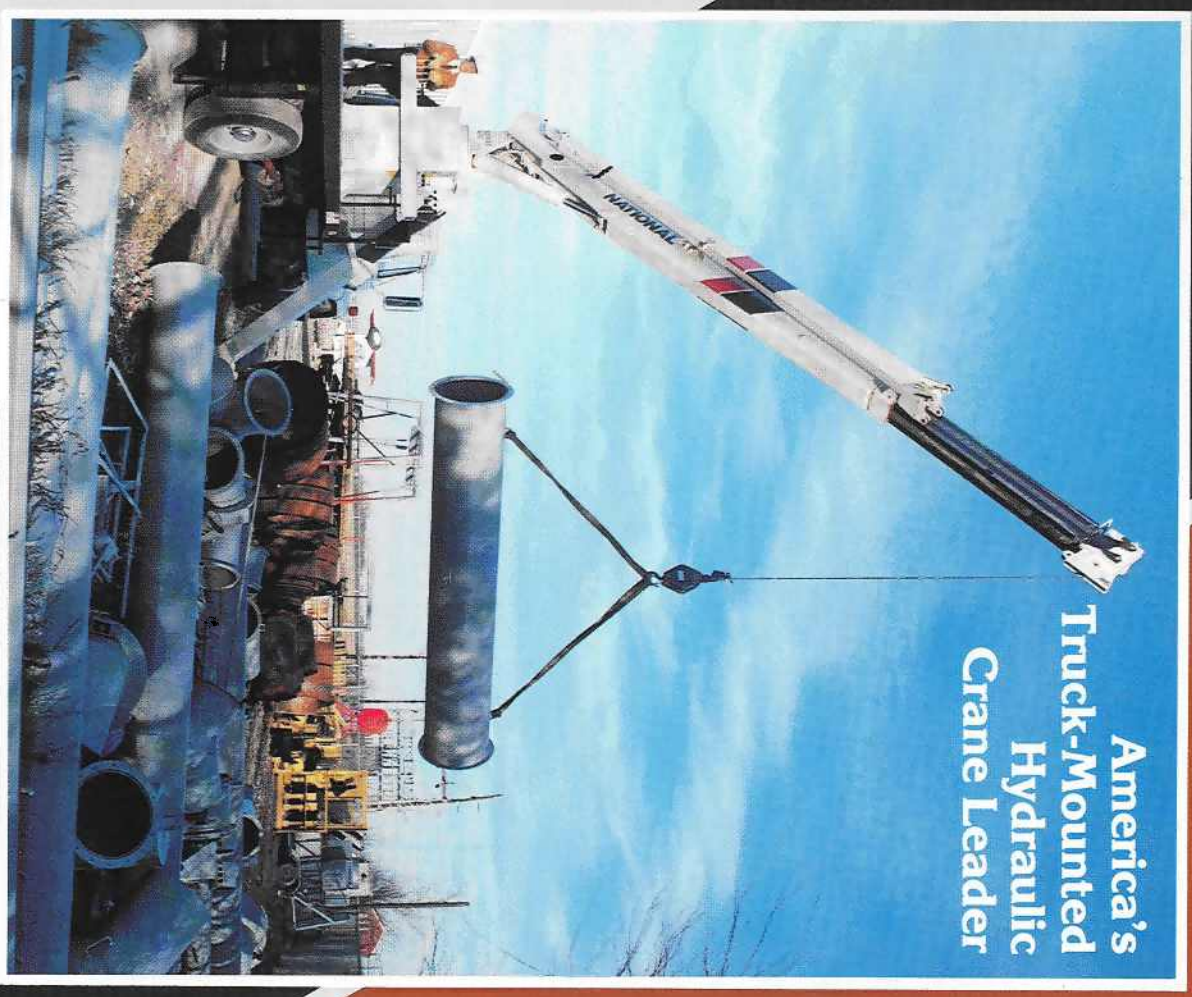


NATIONAL CRANE
 Subsidiary of Kidde, Inc.
General Offices: 11200 North 148th Street/Waverly, NE 68462
 402/786-2240
 Tele: 438061

NATIONAL SERIES 400

Truck-Mounted Telescoping Cranes and Accessories

Maximum Vertical Reach: 93 Feet (28.3 Meters)
 Maximum Capacity: 16,000 Pounds (7.3 Metric Tons)



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

NATIONAL SERIES 400

A Tough and Dependable Medium Duty Telescoping Crane from National

National is America's leading manufacturer of commercial truck-mounted telescoping and articulating cranes. We build cranes for a wide range of jobs. And 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.

Our Series 400 telescoping crane gives you everything you want and need in a tough, compact, 8-ton-capacity crane. Consider these features:

- 8-ton (7.3MT) rated capacity
- Reaches up to 93 feet (28.3m) high
- Increased capacity
- Stronger booms that lift more
- New, improved locks on boom sequential extension
- Lighter unit weight allows more payload capacity
- Wide 15-foot (4.57m) outrigger span for greater stability
- Extra large wear pads in boom last longer and are easier to replace
- Dual controls in SAE recommended orientation, each with foot throttle
- Standard high-performance planetary winch with rotation resistant cable
- Standard anti two block feature to prevent cable damage when winching up or extending the boom without paying out the winch cable

- Planetary rotation gear box with a hydraulic release brake and a slip-through feature that helps protect the rotation system against damage from accidental side loading
- Outrigger location (behind operator) allows occasional 360° working area without front stabilizers when mounted on recommended truck
- Larger outrigger pads provide greater stability in soft footing
- Mounts on standard, single rear axle trucks with the versatility of three mounting configurations
- New boom pivot and hoist cylinder bearings provide longer life and lower maintenance
- New standard tandem pump system isolates winch from other crane functions to provide better overall performance
- Horn and stop switches located at control stations
- Complete accessory line adds to versatility

National's anti two block system is standard on all National telescoping cranes (as of June 1, 1986). Photos in this brochure taken prior to that date may not show the crane equipped with the current standard anti two block protection system.



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



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.

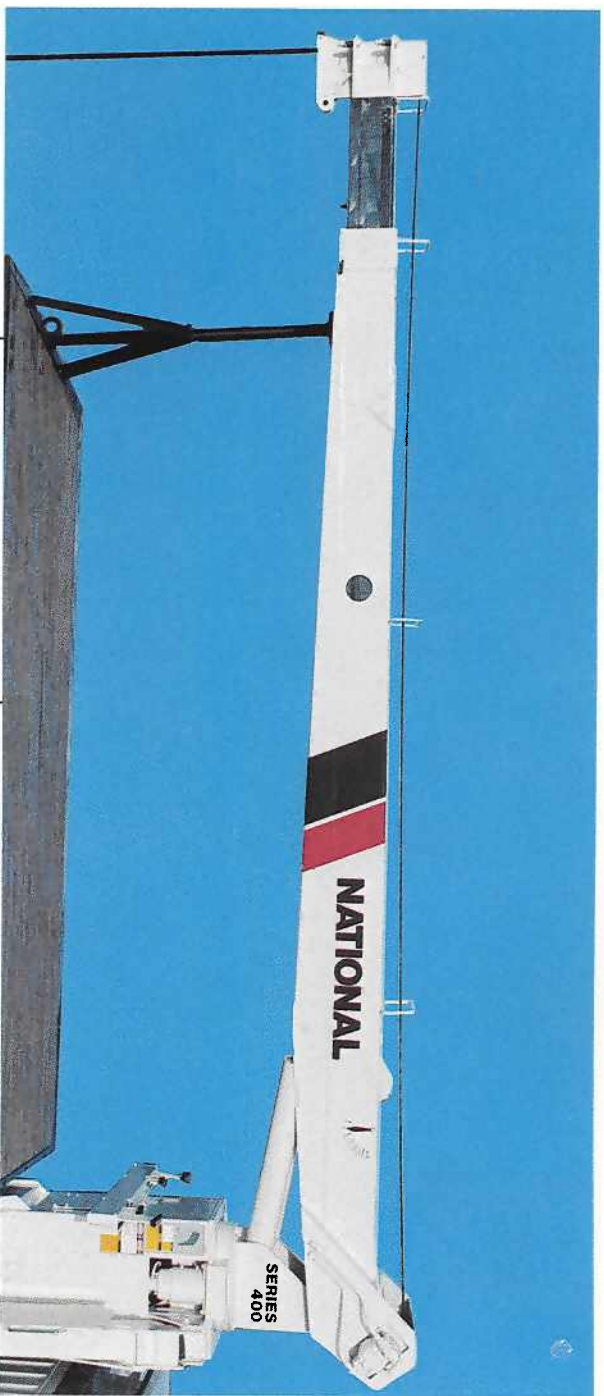
This procedure indicates where engineers are to place strain gauges, tiny chips printed with electronic circuitry which expand or

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.

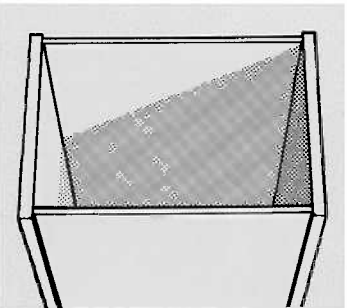
Outriggers, frames, and other components are loaded and rotated through a complete range of motion for the prescribed number of cycles. More than 400 individual quality control inspections are made on each National crane during manufacture and assembly. National attention to testing ensures that each crane delivered to the field is as close to perfect as state-of-the-art technology permits.

National Series 400



Stronger, Lighter Booms

Through computer aided design, National has removed weight from the Series 400 boom sections, yet has increased the crane's capacity. Extra strength and lighter boom weight mean greater capacity for you. That's why we fabricate our telescoping boom sections from four high-strength steel members welded with perpendicular corners. This box-section construction lets us use thicker top and bottom plates for extra strength. The use of thinner side plates means increased capacity through lower boom weight. Only strong, low alloy steel is used in National booms. It is welded with advanced, automatic, low-hydrogen techniques for extra strong seams. Corner seams are ultrasonically tested for proper penetration. The National Series 400 is equipped on all sides with extra large nylon wear pads impregnated with lubricants which provide a smooth, long-life operation. The wear resistance of the material used in the Series 400 pads is unexcelled by competitive models.



Sequential Extension

National introduced sequential, full-load extension to the industry. Our boom sections interlock for sequential extension. The larger, stronger boom sections extend first for greater strength. National's patented locks are mechanical, not hydraulic. They provide reliability with no excessive noise or wasted hydraulic power. They are just one more example of how National know-how and attention to quality pays off in performance for you.

High Performance Planetary Winch

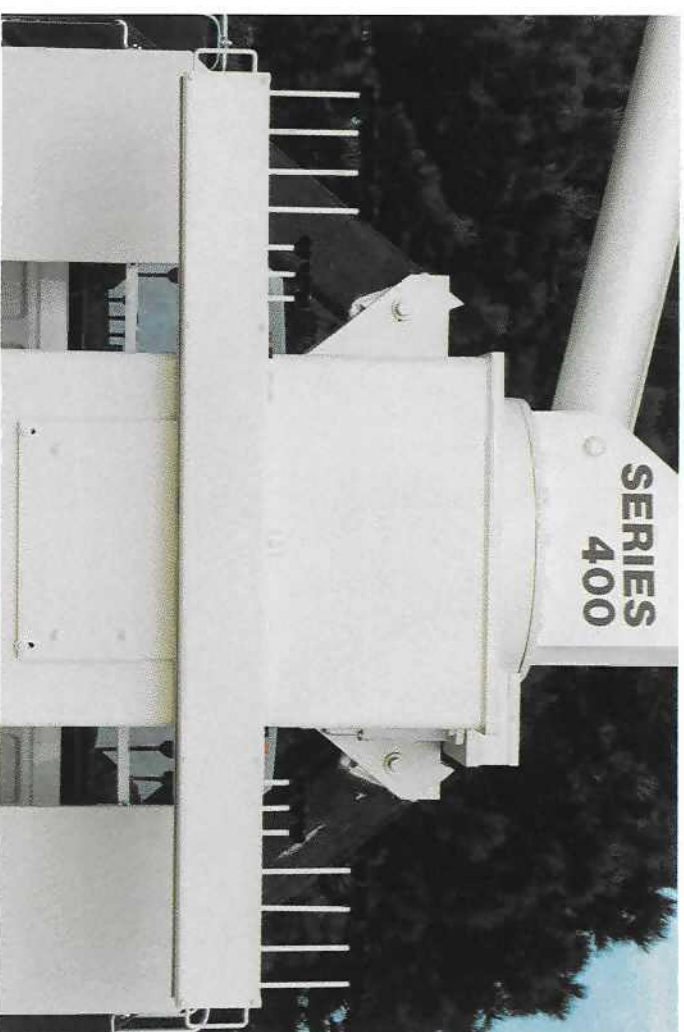
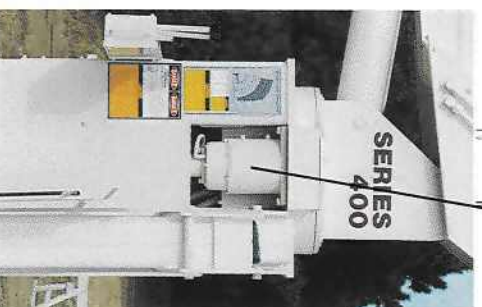
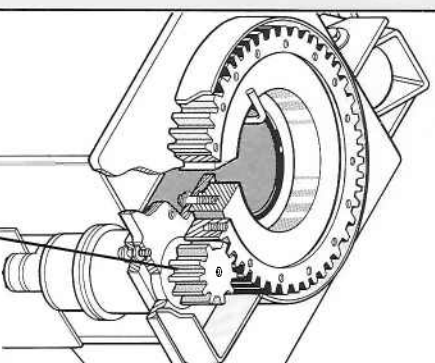
A high-performance planetary winch is standard on the 400. This high-efficiency winch coupled with a high-efficiency motor and a counterbalance valve provides extremely smooth loadline control and quiet operation. It allows extended duty without excessive power loss.



Do not operate crane or accessories within 10 feet (3m) of live power lines.

Positive Planetary Turret Rotation

The planetary rotation gearbox with a hydraulic release brake allows the gearbox to backdrive whenever excessive side load is applied to the boom, reducing shock loads on the upper and lower crane structure and gearbox. The turret drive is designed with extra heavy bearings below the drive pinion. The gearbox and rotation bearing mounting surface are precision machined after welding. This ensures constant tooth alignment for smooth rotation and low wear, even under maximum loads. The entire turret glides smoothly on a low inertia ball bearing race. Rotation is 375° noncontinuous.



Dual Controls

Dual controls are standard on the Series 400. The extra fine metering and low spool forces give you smoother, more precise control. Crane controls are identical on each side with SAE recommended orientation of functions. That means you always work the same control with the same hand. Dual stations provide more efficient operations and greater load visibility. Each station is equipped with kill and audible warning switches. A system pressure gauge is standard. Foot throttles allow identical foot operation of engine speed from either side.



Easy Service, Low Downtime

We designed the Series 400 with boom access holes for serviceability. The Series 400 frame allows easy access to control valves and plumbing for minor adjustments and fitting tightening. The complete console is easily removable for major repair



