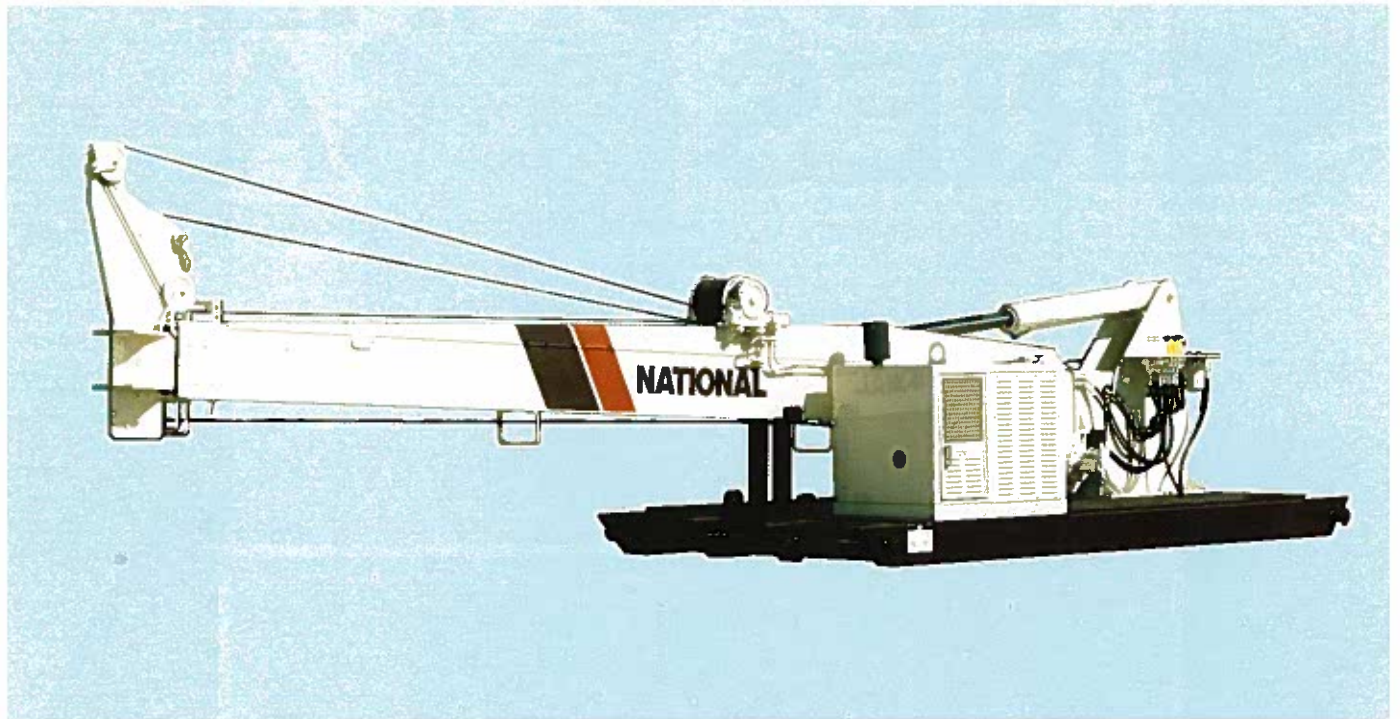


NATIONAL SERIES 666A



National began manufacturing cranes for the Well Service market in 1977 and since that time has continually improved its products to meet the needs of the industry. Now, the Series 666A Skid adds a new dimension to wireline service particularly for offshore well installations.

At National, we strive to design and manufacture products that will best meet the needs of the customers we

Serve. As a National owner, you are assured of receiving a well-engineered, well-manufactured and fully tested machine. Our commitment to quality is our pledge to provide our customers with reliable products designed for years of service.

We are pleased to be a part of the Well Service Industry and look forward to providing hard-working products for this expanding market.



National Series 666A Skid Wireline Support Unit

• Mobility

The skid mount design facilitates transportation between well sites by workboat or truck and is then anchored at each site.

• Setup Time

Uncomplicated single lever control of each function (lift, telescope and winch systems) provides simplified boom set-up and boom stowing.



• Full Hydraulic Boom

The 3-section fully hydraulic boom telescopes sequentially to its full 66 ft. extension.

• Four Plate Boom Design

Boxed construction utilizing heavier top and bottom plates for extra strength and minimum boom deflection.

• Auxiliary Winch

Heavy duty 1,500 lb. (bare drum single pull) winch is located under the boom (when in working position) in front of the operator for easy visibility.

• Wireline Sheave Case

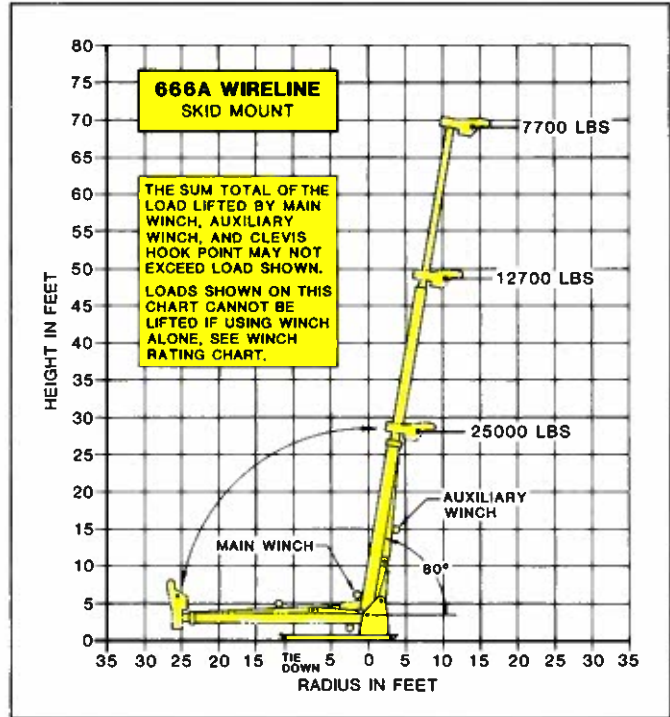
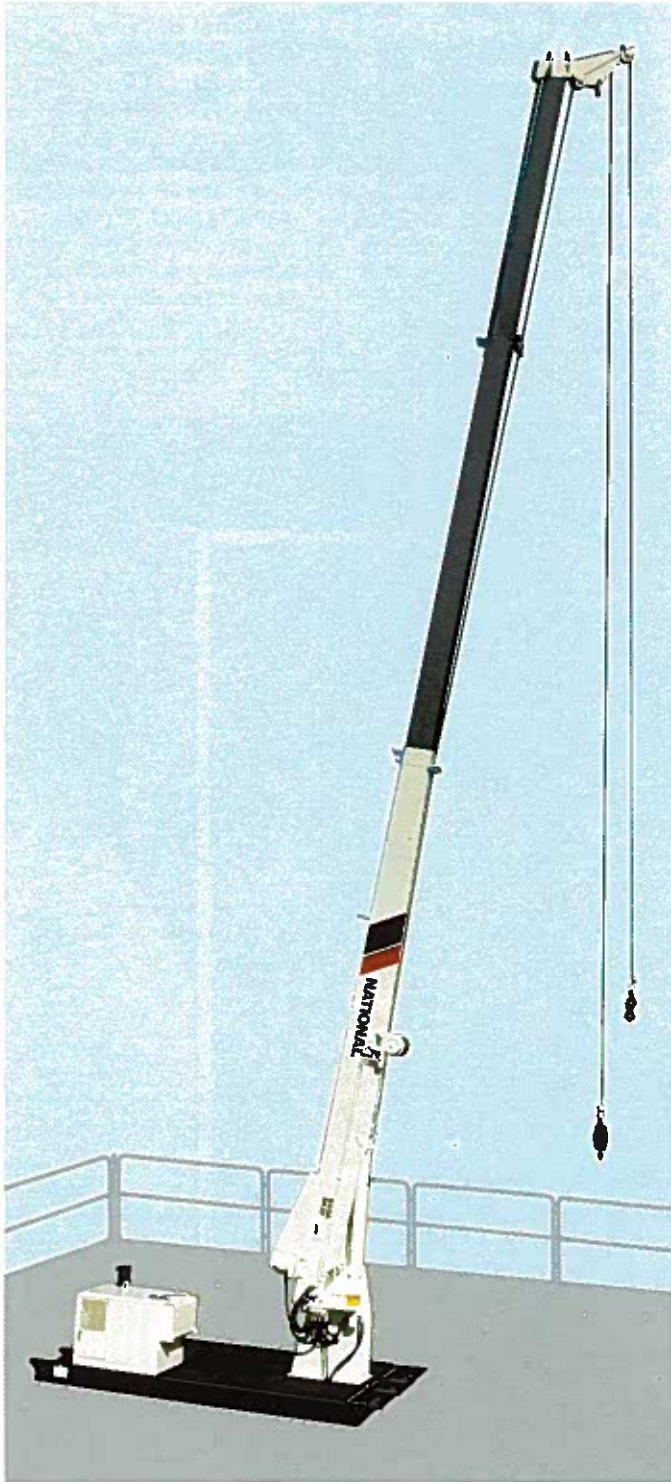
Designed specifically for wireline use. Sheave case is an integral part of final stage boom. No special pinning required.

• Holding Valves

All holding valves are mounted directly to the cylinder for added safety in the event of hose failure.

National Series 666A Skid Wireline Support Unit

Boom Data

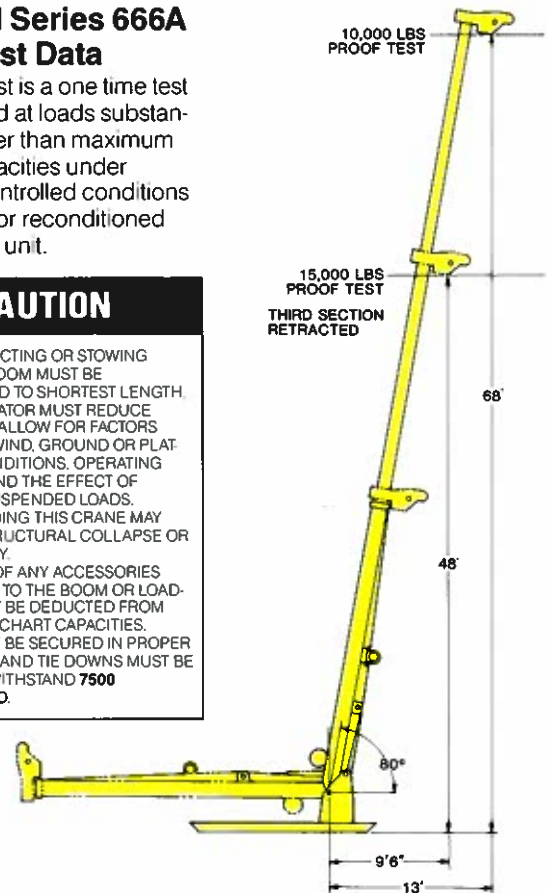


National Series 666A Proof Test Data

* A proof test is a one time test conducted at loads substantially higher than maximum rated capacities under closely controlled conditions on a new or reconditioned "like-new" unit.



CAUTION

1. WHEN ERECTING OR STOWING BOOM - BOOM MUST BE RETRACTED TO SHORTEST LENGTH.
2. THE OPERATOR MUST REDUCE LOADS TO ALLOW FOR FACTORS SUCH AS WIND, GROUND OR PLATFORM CONDITIONS, OPERATING SPEEDS AND THE EFFECT OF FREELY SUSPENDED LOADS.
3. OVERLOADING THIS CRANE MAY CAUSE STRUCTURAL COLLAPSE OR INSTABILITY.
4. WEIGHTS OF ANY ACCESSORIES ATTACHED TO THE BOOM OR LOADLINE MUST BE DEDUCTED FROM THE LOAD CHART CAPACITIES.
5. SKID MUST BE SECURED IN PROPER LOCATION AND TIE DOWNS MUST BE ABLE TO WITHSTAND **7500 LBS. LOAD.**



National Series 666A Winch Data

National Series 666A Specifications

Main Winch		Auxiliary Winch	
CAUTION			CAUTION
DO NOT DEADHEAD LINE BLOCK AGAINST BOOM TIP WHEN EXTENDING BOOM		DO NOT DEADHEAD LINE BLOCK AGAINST BOOM TIP WHEN EXTENDING BOOM	
KEEP AT LEAST 3 WRAPS OF LOAD LINE ON DRUM AT ALL TIMES		KEEP AT LEAST 3 WRAPS OF LOAD LINE ON DRUM AT ALL TIMES	
USE ONLY 1 1/2" DIAMETER ROTATION RESISTANT CABLE 27,500 LBS. BREAKING STRENGTH.		USE ONLY 3/8" DIAMETER ROTATION RESISTANT CABLE 15,600 LBS. BREAKING STRENGTH	
Pull 4,400 lbs.		Pull 1,500 lbs.	
Speed (with no load)		Speed (with no load)	
Up 65 FPM @ 9 gpm		Up 37 FPM @ 9 gpm	
Down 61 FPM @ 9 gpm		Down 36 FPM @ 9 gpm	

Skid Dimensions

16' Long
8' Wide
10" Tall

Machine Dimensions

Overall Length 30'9"
Overall Height 7'7"
Overall Width 8'0"
Boom Tip Height (Fully Extended) 68'10 1/2"
Boom Tip Height (3rd Sect. Ret'd) 48'8 1/4"

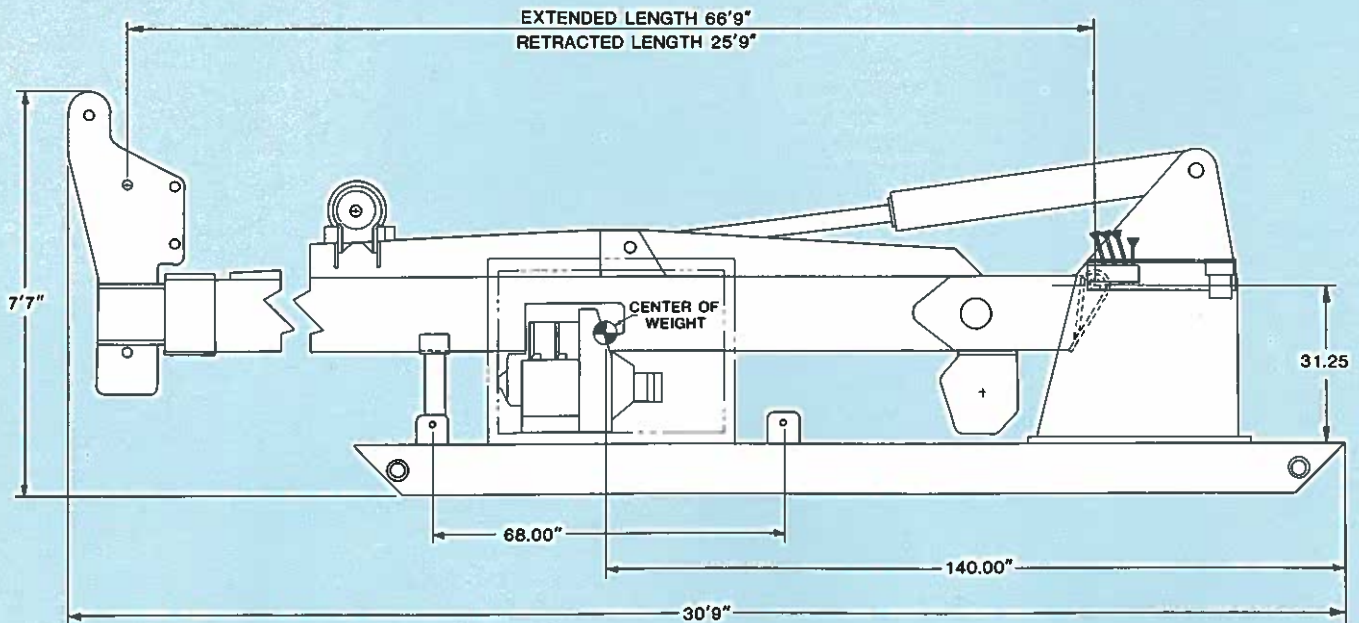
Weights

Boom	5100#
Hoist Cylinder	450#
Turret	1250#
Skid	2700#
Engine Assembly	1300#
Total	10800#

All winch pulls and speeds are shown on the second layer. Winch pulls would increase on the first layer. Winch line speeds would decrease on the first layer. Winch line pulls may be limited by the winch capacity or the OSHA 5 to 1 safety factor. These are shown below:

Winch	Winch Limited	Cable Limited
Standard Planetary	4,400 pounds	5,500 pounds

National Crane features rotation resistant wire rope as standard on all models.



National Series 666A Skid Wireline Service Unit

General Construction

Low-alloy, high-tensile, and other steel including T-1, Ex-Ten, Stressproof and Hi-Yield are combined with special low-hydrogen welding techniques wherever advantageous. Standard color: painted National Ivory.

Frame

Box construction for maximum strength and rigidity. Well braced for stability. Line-bored and machined after welding to ensure proper alignment.

Skid Base

Rectangular tube construction with rigid 8-bolt frame mounting. Skid base is 16 feet long by 8 feet wide. Total depth of skid base is 10 inches. Open serrated metal grid on skid base provides operator with slip-resistant rigid walkway while minimizing dirt build-up.



Lift

Double-acting hydraulic cylinder raises and lowers boom to and from 80° fixed position. Butt-mounted safety holding valves prevent boom falling in event of hose failure. Heavy-duty, filament wound, epoxy encapsulated, pivot bearings are self-lubricating.

Boom

Boxed construction: telescopes hydraulically in sequence under rated load on nylon plates impregnated with molybdenum disulfide for smooth, long-life operation. Boom cylinder and valves are easily serviced. Heavy-duty, long-life pivot bearings.

Retracted boom length, 26' 2". Boom horizontally extended, 67' 2". One lever operation from retract to full extension with no power assist booms.

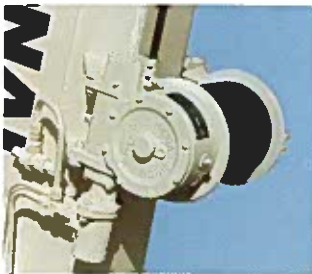
Boom Mounted Main Winch

Hydraulic gear motor with planetary gear reduction, break, and counter-balance valve for "power down" load lowering. 4,400-pound bare drum, single line pull available with 190 feet of 1/2" diameter, 13.75-ton breaking strength loadline.



Boom Mounted Auxiliary Winch

Tulsa Model 8 worm gear winch driven by a Charlynn orbit motor. Under-boom mount provides visibility of both winch and loadline. Winch provides a maximum 1,500-pound line pull and 37 fpm full drum line speed. Includes 210 feet of 3/8 rotation resistant wire rope with 7.8-ton breaking strength.



Pumps

One Commercial P31, 1/2" gear pump operating winch at 9 gpm provides smooth, fast operation.

Cylinders

Shaft packing: Polyurethane cup type. Shafts: Hi-Yield stress relieved, chrome plated. Piston sets: Polurethane U-cups with glass-reinforced nylon bearings. Cylinder barrels: Micro-honed tubing and safety check valves.

Hose

All high-pressure hose is wire braid reinforced, having a minimum safety factor of 4 to 1.

Valves

Four-way spring-centered, spool type with low spool force and extra-fine metering notches. Independent relief valve protects hydraulic circuit against overload. Relief valves set at 2,500 PSI. Valves located for improved accessibility and easier service.

Set-up Time

Time required to lift boom into 80° fixed position, extend boom and run winch line to the ground is 5 to 7 minutes.

Hydraulic Reservoir and Filters

16.5 gallon supply tank features clean-out cover and breather which also serves as dipstick. 100% full filtration at full flow with a 10-micron return line filter located at the main frame side.

Anti Two Block

The 666A Skid Wireline is equipped with a standard anti two block attachment. Two blocking occurs when the winch cable and attachments contact the underside of the boom sheave case, whether by winching up or extending the boom without paying out the winch cable. When this happens, the cable can be damaged by crimping or over-tensioning. The anti two block attachment prevents cable damage by sensing the position of the winch cable and attachments with respect

to the sheave case and shutting down the functions that can cause two blocking.

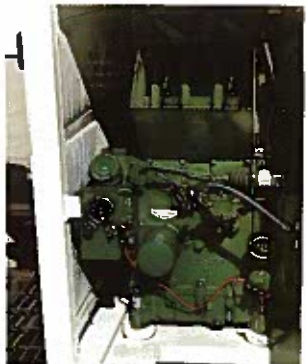
Special Sheave Case

Designed for wireline use, the sheave case is integral with the third stage boom. The off-set attachment point is capable of accepting up to a 24" diameter upper sheave. Includes sheaves for both main and auxiliary crane hoists, spring loaded cable keepers on auxiliary wheels for easy rigging.



Power Source

Lister 2-cylinder diesel engine provides 22 bhp at full throttle and is air-cooled. Twelve volt power source is included; engine can also be started by means of a detachable handle. Engine mounted on rubber isolators for vibration resistance. Mounted on removable base with quick-coupled hydraulic connections for easy serviceability. Engine case is sound-proofed for less operating noise. Bore: 3.75 in. Stroke: 3.50 in. Cylinder displacement: 77.2 cubic in.



National Warranty, Parts and Service

The National Warranty

Our 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 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.

National Service

Most National Crane dealers can perform all but the most unusual modifications or most serious repairs.

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



NATIONAL CRANE

Subsidiary of Kidde, Inc.

General Offices:

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

Service Center:

701 N.W. 27th Street/Lincoln, NE 68528
402/474-2666