National Series 1300 Telescoping Crane

From America's Truck-Mounted Hydraulic Crane Leader

- *Maximum Capacity: 60,000 lb (27.22 t)*
- *Hydraulic Reach: 114 ft (34.75 m)*
- *Maximum Vertical Hydraulic Reach*: 161 ft (49.10 m)*

NATIONAL CRANE
A Grove Worldwide Company

** From ground level with the crane mounted on a 42-in (1067-mm) high truck frame.*

The National Advantage

When you invest in a National telescoping crane, you are assured of these competitive advantages.

Quality

National cranes are designed for durability, performance, and ease of service. National's cutting edge technologies set the industry standard for the manufacture of lifting and materials-handling equipment. An experienced workforce turns innovative designs into quality-crafted cranes. Factory prototypes are subjected to the toughest testing requirements in the industry. Each National crane is checked throughout the manufacturing and assembly processes, then given a detailed final inspection before it is released from the factory.

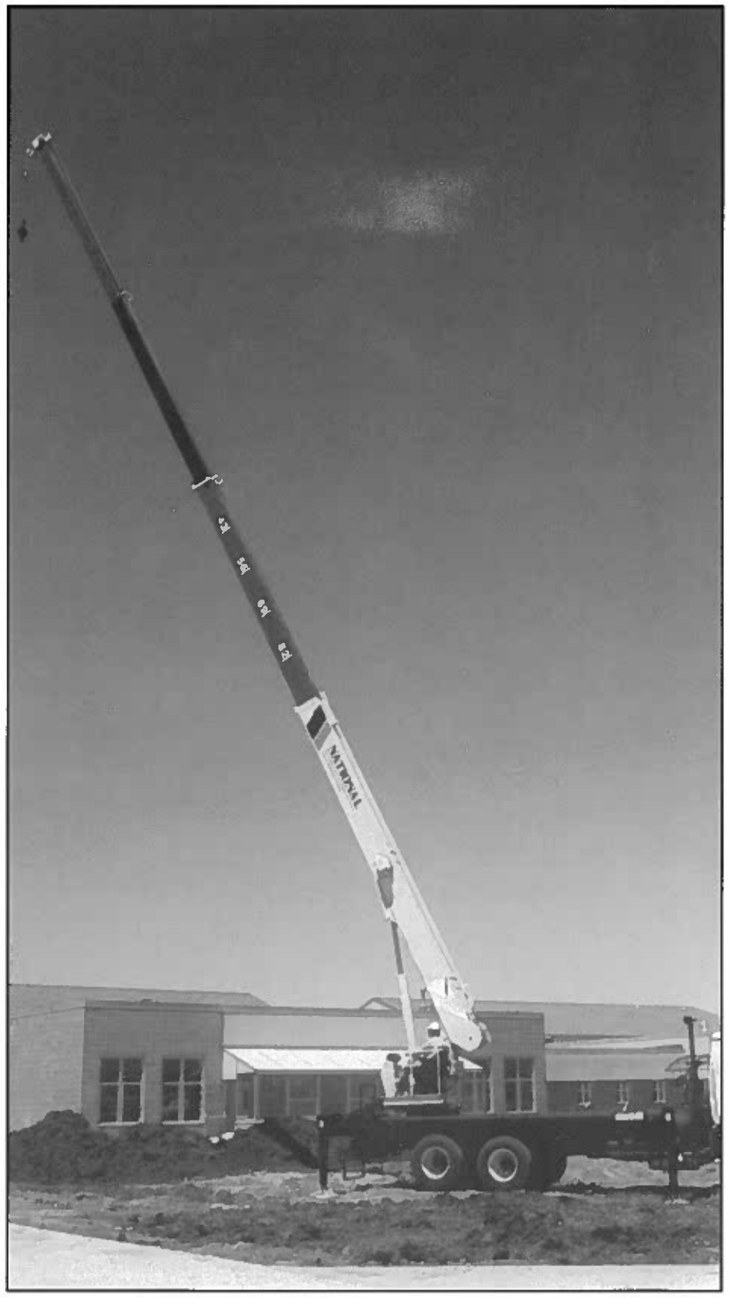
Performance

Each user-friendly National gives you what you expect in a crane. Long reach. High capacity. Fast set-up. Easy operation. Smooth movement. Versatile accessories. Premium components. Add it all up—you'll find that a National is not only a pleasure to operate, but a reliable investment in bottom line performance.

Value

National has manufactured cranes since 1963 (nine out of ten are still on the job!). With a National you get field-proven reliability plus the best factory/dealer support in the industry. The National warranty provides protection against defects in materials and workmanship for a full year from the date the customer takes delivery. Dealers maintain extensive parts stocking programs. Should a dealer be unable to supply a part you need, National's back-up program is committed to providing equipment replacement parts on a breakdown rush basis, holding your downtime to a minimum. These advantages enhance a National crane's resale value, consistently the highest in the industry.

National Crane is ISO 9001 certified



- **30-ton (27.22-t) maximum capacity**
- **161-ft (49.10-m) maximum vertical reach***
- **114-ft (34.75-m) maximum vertical hydraulic reach***
- **Rotating turret controls**
- **Load moment indicator (LMI)**
- **Proportional boom extension**
- **High performance planetary winch**
- **Heavy-duty triple pump hydraulics**

**Maximum vertical reach is ground-level to boom tip height at maximum extension and angle with outriggers fully extended. Note: maximum vertical reach will vary depending on truck frame, tires, load, etc.*

Boom Construction

- Computer aided design maximizes boom weight efficiency and lifting capacity
- High-strength, low-alloy steel
- Box-section design pairs thicker top and bottom boom plates with thinner side plates for greater strength and increased capacity through less weight
- Automatic, low-hydrogen welds ensure fatigue-resistant seams
- Ultrasonic testing verifies proper weld penetration

Proportional Boom Extension

- The four section all-hydraulic proportional boom, pioneered by National, sets up fast, provides extra-long hydraulic reach, with heavy-duty lifting power
- Dual high-load-carrying cables cycle the fourth stage boom—all other sections are supported by a single two-stage hydraulic extend cylinder
- Redundant cable sets are used for durability and reliability
- Easy access to internal bearings simplifies maintenance procedures and saves valuable time
- With proportional (cable crowd) boom design, each boom extends and retracts proportionally. This design provides more efficient boom weight distribution, maximizing boom operational efficiency and allowing higher capacities, particularly in normal working radii
- Minimum boom overlap gets the most reach with minimum retracted length; the design reduces boom overhang when the boom is stowed, enhancing truck maneuverability
- There are no hydraulic fittings, tubes, or hoses inside the booms. Since the system uses only one extend cylinder, hydraulic maintenance is minimized

Direct mount holding valves

- All load-bearing cylinders are equipped with a direct mount holding valve for protection in the event of hose failure
- The quiet, smooth and stable boom cylinder holding valve ensures precise load placement with the boom

National cylinders

- Because National controls the manufacture of its lift, telescope, outrigger, and stabilizer cylinders and the packing used as seals, standardization is ensured and seal replacements fit properly

Easy Glide boom wear pads/Polymer Paint

- Exclusive *Easy Glide* wear pads used in conjunction with National's specially formulated *Polymer Paint** provides ultra-smooth extension and retraction with minimal lubrication

**Patent pending*

Stronger sheaves

- Iron (not plastic) sheaves resist flange chipping and cable core damage

Multi-part reeving

- Two lower sheaves allow optional four-part reeving without adding equipment at the boom tip
- Multiple load blocks offer increased winch capacities (See *Winch Data* on page 8)

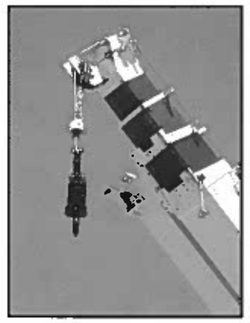
High performance planetary winch

- The standard high-performance gear drive winch increases efficiency, requires less horsepower and generates less heat
- Premium, high-efficiency orbit (geroller) motor used with high performance winch, provides smooth, precise control, up or down, even under maximum load
- Anti-friction roller bearings have replaced bronze bushings and spring-loaded lip seals have replaced O-rings to reduce leaks and maximize winch efficiency
- Standard *Burst-of-Speed* circuitry for faster winch payout and pickup of unloaded cable —this feature increases line speed up to 60% over normal
- Standard brake and counterbalance valves provide fine control
- Winch cover allows view of cable on drum
- Standard die-drawn $^{9}/_{16}$-in (14-mm) rotation resistant cable mini-

mizes spinning and twisting; lifting is more precise and no time is wasted untangling the line (die drawn cable has a longer usable life span)

Anti-two block (ATB)/ Load moment indicator (LMI) systems

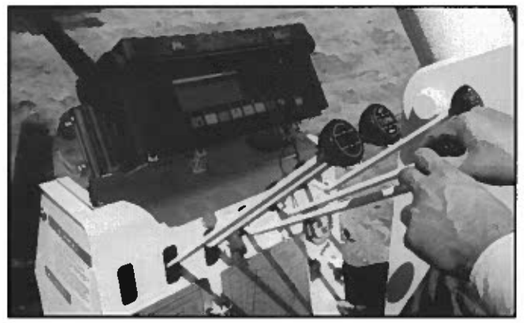
- These standard features work together, comprising a dual-purpose protection system
- ATB sensor shuts down functions that can cause two-blocking, preventing wire-rope damage (crimping, etc.) from attachment contact with the underside of the boom or sheave case
- The PAT DS 150 LMI is an operational aid that offers a console display of the boom length and angle, load on hook and available load capacity that can be lifted
- This feature provides the operator with a continuous reading of the crane's capacity as it moves through the motions required to make a lift
- An "Info Run" feature directs the operator to the console controls/functions and reminds him to perform basic machine set-up checks
- A keyed override is provided for system operations in the event of emergency boom position
- The system automatically adjusts when overloads are relieved to allow for the use of all functions
- When a load capacity is approached, a caution light is illuminated on the console; when a



capacity is reached, a red warning light and horn are activated and the LMI halts crane movement to prevent overload (it allows only the use of functions that will relieve the overload condition—i.e., boom up, winch down, telescope in)

Planetary turret rotation

- Planetary rotation with positive hydraulic release brake and slip-through allows the gearbox to backdrive when excessive side load is applied to the boom, reducing shock load damage to the gearbox and crane structure
- The turret drive is designed with extra-heavy bearings above the drive pinion; the turntable bearing full-circle bolt pattern extends the bearing life due to uniform loads on the bearing
- Turret glides smoothly on a low-inertia ball bearing race
- After welding, gearbox and rotation bearing mounting surfaces are precision-machined for consistent tooth alignment, smooth rotation and low wear, even under maximum loads



- Rotation is 375-degree non-continuous. Continuous rotation is available as an option. Optional planetary glide swing feature allows the turret/boom to coast to a stop

Heavy-duty hydraulics

- A high-pressure/speed, balanced replaceable vane triple pump provides three hydraulic circuits for independent operation of the winch, swing, and crane functions
- The smooth, fast, simultaneous hydraulics system increases productivity on high-cycle jobs while facilitating ease of operation
- The vane pump is more efficient and less costly to repair than

gear pumps
- Control valve spools are hard chrome-plated for corrosion resistance and all spools are selected and hone-fitted for minimum internal leakage and maximum load-holding ability
- Extra-capacity 100-gallon (378.54-L) oil reservoir has sight gauge, breather, suction strainer, clean-out and magnetic plug to reduce heat build-up and keep oil clean for longer life
- Reservoir is located externally for easy maintenance

Contact the factory for continuous duty cycle operations

Precise, "operator friendly" controls

- Control rods supported by nylon bearings (not push-pull cables) enhance smooth operation of the crane and reduce lubrication requirements
- Easy access to conveniently positioned control valves for maintenance
- Extra-fine metering, low spool forces and adjustable levers provide smooth, precise fingertip control of all crane functions (the operator can winch a capacity

load up or down in small increments of distance)
- National's control valves are custom manufactured to maximize the efficiency of each crane function
- The main control valve and the lift cylinder holding valve are designed to complement one another, minimizing boom bounce and hydraulic noise
- The pressure gauge on the console permits the operator to monitor the hydraulic system pressure to ensure maximum performance
- Labeled knobs simplify function identification

Rotating Turret Controls

- The Series 1300 is equipped with a rotating seated control console. An enclosed cab is optional
- The Series 1300 features 375° noncontinuous rotation as standard
- Adjustable deluxe seat
- Individual direct-link control levers (no push-pull cables) on console for winch, telescope, boom and rotation functions
- Air foot throttle and manual hand throttle
- Horn signal button
- Engine start/stop switch
- Two-speed winch control
- Full-display LMI system

Solid, reliable stability

- Two sets of integrally mounted cross-frame H-style outriggers with 20' (6.05 m) span provide stability, even on rough or uneven ground
- 18- by 18-inch (45.7- by 45.7-cm) steel outrigger floats are standard. 24" diameter aluminum pads are optional. Pads can be carried pinned to outrigger legs in less than 8 ft (2.44 m) travel width
- Outrigger controls located on top of rear HO outrigger, featuring an operator platform to allow the operator an overhead view of all four outriggers during setup
- Level bubble and engine throttle control located at outrigger control station.
- Individual control levers for independent operation of all out-&-down outrigger functions
- Integral design with torsion-resisting subbase to reduce twist
- Hoses are routed along the beam to prevent hose damage during operation of the crane

Full and Mid-Span Load Charts

- Mid-span outrigger spread - 14 ft (4.27 m) on center - provides a reduced load chart for working and setup in tight areas. Standard full-span outrigger spread is 20 ft (6.10 m)
- Reduced-span manual locks standard on outriggers
- LMI setting for mid-span operation

Lower truck requirements

- The Series 1300 is engineered to lower your truck requirements; the wide outrigger span, both front and rear, and unitized mount take the stress (not the truck)
- That means that the Series 1300 can mount on trucks with lower axle ratings and still meet DOT and stability standards with ease; it all adds up to lower maintenance, lower costs, and longer truck life for you
- The Series 1300 with subbase mounts on most standard, heavy-duty commercial trucks without requiring counterweight in most cases

Unitized mounting

- Includes a one-piece, 14.62" deep subbase that extends along the frame and supports the crane and bed; it reduces counterweighting and increases stiffness and stability
- No reinforcing required on trucks with 15.9-inch^3 section modulus frames of 110,000 psi minimum yield steel

Easy service, low downtime

- Boom pivot and lift cylinder bearings provide longer life and lower maintenance
- O-ring face seal fittings are used on all high pressure circuits to minimize fluid leakage
- All pins are chromed to inhibit rust and allow easy removal

Series 1300 Crane Boom and Jib Combinations

The Series 1300 is available in three basic models:

Model 1369
Equipped with a 27- 69-ft (8.23-21.03-m) three-section boom. This model can be equipped with a 27- 48-ft (8.23 - 14.63-m) manual pull-out jib.

Model 1395
Equipped with a 28-95 ft (8.53 - 28.96 m) four-section boom.This model can be equipped with a 27-48 ft (8.23-14.63 m) manual pull-out jib or a 25-44 ft (7.62-13.41 m) manual pull-out jib (designed to accommodate personnel baskets).

Model 13105
Equipped with a 31-105 foot (9.35-32 m) four-section boom. This model can be equipped with a 27- 48 ft (8.23-14.63 m) manual pull-out jib or a 25-44 ft (7.62-13.41 m) manual pull-out jib (designed to accommodate personnel baskets).

15-ft angling jib

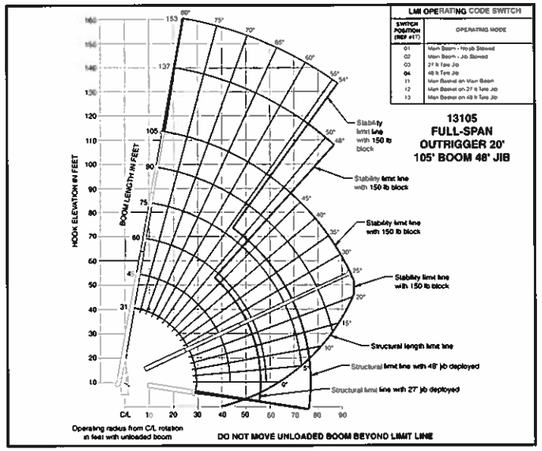
A 15-ft side fold for stowing angling jib is available on 1395 and 13105 models. It provides angles of 0°, 10°, 20°, and 30°. Jib sheavehead equipped with jib ears and accommodates personnel baskets and the self-leveling rotating platform.

Boom and Jib Combinations	
Model 1369	27- 69 ft (8.23-21.03 m) three-section boom
	27- 69 ft (8.23-21.03 m) three-section boom **13FJ48M** 27-48 ft (8.23-14.63 m) pull-out jib
Model 1395	28-95 ft (8.53-28.96 m) four-section boom
	28-95 ft (8.53-28.96 m) four-section boom **13FJ44M** 25-44 ft (7.62-13.41 m) pull-out jib
	28-95 ft (8.53-28.96 m) four-section boom **13FJ48M** 27-48 ft (8.23-14.63 m) pull-out jib
Model 13105	31-105 ft (9.35-32 m) four-section boom
	31-105 ft (9.35-32 m) four-section boom **13FJ44M** 25-44-ft (7.62-13.41 m) pull-out jib
	31-105 ft (9.35-32 m) four-section boom **13FJ48M** 27-48 ft (8.23-14.63 m) pull-out jib

Series 1300 Sample Load Rating Chart

Load Rating Chart: Model 13105 with 48-ft jib

Note: Series 1300 Load Rating Charts are available for all Model 1369, 1395 and 13105 cranes. National will send you a chart by FAX or mail on request – or you may secure needed load rating information through your nearest National dealer.



NOTE:
1. Operate with jib by radius, when main boom is fully extended. If necessary increase boom angle to maintain loaded radius.
2. Operate with jib by boom angle when main boom is not fully extended. Do not exceed rated jib capacities at any reduced boom lengths.
3. Capacities do not exceed 85% stability.
4. Shaded areas are structurally limited capacities.

Notes:
- Load ratings shown are maximum allowable loads under optimal conditions
- Rated loads do not exceed 85% of the tipping load

CAUTION
- **This chart shows maximum allowable loads with the crane properly leveled and mounted on a factory-recommended truck, and the outriggers properly extended on a firm, level surface**
- **Always level the crane with the level indicator located on the crane**
- **The operator must reduce loads to allow for factors such as wind, ground conditions, operating speeds and the effects of freely suspended loads**
- **Weights of any accessories attached to the boom or loadline must be deducted from the load capacity charts**
- **Crane overload may cause instability or structural collapse**

LMI OPERATING CODE SWITCH

Switch Position	Operating Mode
01	Main Boom - No Jib Stowed
02	Main Boom - Jib Stowed
03	27 Ft. Telescoping Jib
04	48 Ft. Telescoping Jib
11	Man Basket on Main Boom
12	Man Basket on 27 Ft. Telescoping Jib
13	Man Basket on 48 Ft. Telescoping Jib

LOAD RATINGS (structural strength ratings shown in bold)

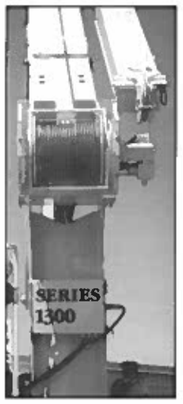
Load Radius (Feet)	Loaded Boom Angle	31 Ft. Boom (Lbs.)	Loaded Boom Angle	45 Ft. Boom (Lbs.)	Loaded Boom Angle	60 Ft. Boom (Lbs.)	Loaded Boom Angle	75 Ft. Boom (Lbs.)	Loaded Boom Angle	90 Ft. Boom (Lbs.)	Loaded Boom Angle	105 Ft. Boom (Lbs.)
5	79.4	60,000*										
8	73.1	38,400										
10	68.9	31,800	79.3	30,000								
12	64.6	27,300	76.8	29,100	78.8	22,300						
14	60.2	23,700	74	24,800	76.8	19,500	80	15,400				
16	55.6	21,000	71.2	21,700	74.8	17,300	78.5	15,000	78.4	10,300		
20	45.5	16,700	68.4	19,200	70.7	14,100	75.4	12,600	75.1	9,000	80.2	7,700
25	29.1	12,200	62.6	15,600	65.4	11,300	71.3	10,200	71.8	7,800	77.8	7,300
30			54.8	12,500	59.8	9,400	67.1	8,500	68.6	6,500	75	6,500
35			46.3	10,200	53.9	7,950	63.1	7,050	65	5,550	72.2	5,700
40			36.1	8,200	48	6,800	58.6	6,100	61.3	4,800	69.3	5,000
45			23.5	6,100	40.8	5,550	53.8	5,250	57.5	4,200	66.2	4,300
50					32.2	4,550	48.7	4,550	53.5	3,700	63.1	3,800
55					20.6	3,300	43	3,900	49.2	3,200	60	3,400
60							36.7	3,250	44.6	2,750	56.6	2,950
65							29.1	2,650	39.4	2,200	53.2	2,650
70							18.7	1,800	33.6	1,800	49.5	2,300
75									26.8	1,400	45.5	1,850
80									17.2	800	41.2	1,450
85											36.5	1,150
90											31.2	850
95											24.8	800
	0	5,200	0	2,400	0	900						

*60,000 lb load requires optional 9/16" diameter 6 x 25 IWRC cable

Load Radius (Feet)	Loaded Boom Angle	27 Ft. Jib (Lbs.)	Loaded Boom Angle	48 Ft. Jib (Lbs.)
30	78.6	4,200		
35	76.5	3,800	78.8	2,400
40	74.4	3,400	77.1	2,250
45	72.1	2,900	75.4	2,150
50	69.8	2,500	73.6	2,000
55	67.4	2,100	71.7	1,800
60	65	1,800	69.7	1,650
65	62.5	1,500	67.7	1,450
70	60	1,300	65.6	1,300
75	57.4	1,100	63.4	1,100
80	54.7	900	61.2	900
85	51.8	700	59	800
90	48.8	500	56.7	700
95			54.2	550

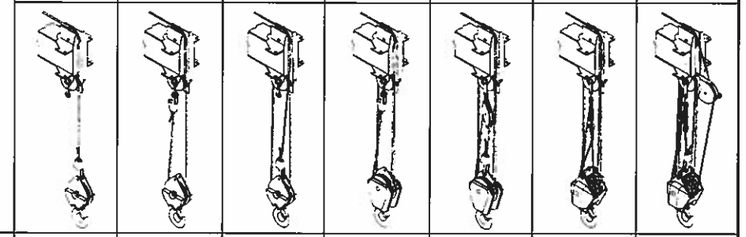
LOADLINE EQUIPMENT DEDUCT
Downhaul Weight = 150
One Sheave Block = 200
Two Sheave Block = 355
Three Sheave Block = 575

National Series 1300 Winch Data



Caution

- **Do not operate crane booms, jib extensions, any accessories or loads within 10 ft (3m) of live power lines or other conductors of electricity**
- Jib and boom capacities shown are maximum for each section
- Do not exceed capacities at reduced radii
- Load ratings shown on the load rating charts are maximum allowable loads with the outriggers properly extended on a firm, level surface and the crane leveled and mounted on a factory-recommended truck
- Always level the crane with the level indicator located on the crane
- The operator must reduce loads to allow for factors such as wind, ground conditions, operating speeds and the effect of freely suspended loads
- Overloading this crane may cause structural collapse or instability
- Weights of any accessories attached to the boom or loadline must be deducted from the load chart capacities
- Do not exceed jib capacities at any reduced boom lengths
- Do not deadhead lineblock against boom tip when extending boom
- Keep at least three wraps of loadline on drum at all times
- Use only specified cable with this machine
- Maximum capacity with Burst-of-Speed is 3,000 lb on single part line

National Series 1300 Winch Data			1 Part Line	2 Part Line	3 Part Line	4 Part Line	5 Part Line	6 Part Line	7 Part Line
• All winch pulls and speeds in this chart are shown on the fourth layer • Winch line pulls would increase on the first, second and third layers • Winch line speed would decrease on the first, second, third and fourth layers • Winch line pulls may be limited by the winch capacity or the ANSI 5 to 1 cable safety factor, shown below this chart									
Maximum boom length at maximum elevation with rigging shown with load block at ground level			105' & Jib	97'	79'	54'	43'	36'	31'
Winch	**Cable Supplied**	**Average Breaking Strength**	**Lift and Speed**	**Lift and Speed**	**Lift and Speed**	**Lift and Speed**	**Lift and Speed**	**Lift and Speed**	**Lift and Speed**
Standard Planetary Winch Low Speed	9/16" diameter rotation resistant 18 x 19 IWRC	38,500 lb	7,700 lb 164 fpm	15,400 lb 82 fpm	23,100 lb 55 fpm	30,800 lb 41 fpm	38,500 lb 33 fpm	46,200 lb 27 fpm	53,900 lb 23 fpm
Standard Planetary Winch High Speed	9/16" diameter rotation resistant 18 x 19 IWRC	38,500 lb	3,000 lb 265 fpm	6,000 lb 132 fpm	9,000 lb 88 fpm	12,000 lb 66 fpm	15,000 lb 53 fpm	18,000 lb 44 fpm	21,000 lb 38 fpm

Winch	Full Drum Pull	Allowable Cable Pull
Standard Planetary	3,000 lb (high speed) 7,700 lb (low speed)	7,700 lb

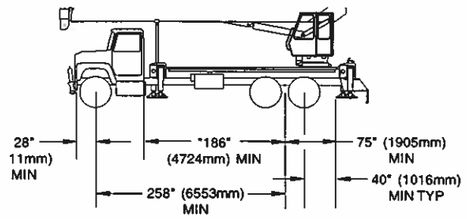
Hook blocks are rated at maximum capacity for the block. Do not exceed rated cable pull with any block.

Block Type	*Rating*	*Weight*
Downhaul Weight	3.85 Ton	150 lb
1 Sheave Block	11.55 Ton	200 lb
2 Sheave Block	19.25 Ton	355 lb
3 Sheave Block	30.00 Ton	575 lb

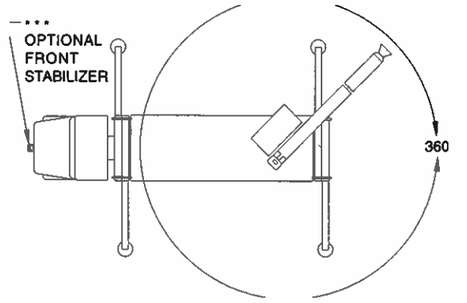
National Series 1300 Mounting Specifications

The mounting configuration shown is based on an 85% stability factor. The complete unit must be installed on the truck in accordance with factory requirements, and a test performed to determine actual stability and counterweight requirements, since individual truck chassis vary. If bare truck weights are not met, counterweight will be required.

Working area ..... 360°
Gross Axle Weight Rating (GAWR), front ..... 18,000 lb (8165 kg)
Gross Axle Weight Rating (GAWR), rear ..... 32,000 lb (14 515 kg)
Gross Vehicle Weight Rating ..... 50,000 lb (22 680 kg)
Wheelbase (WB) ..... 258 in (6553 mm)
Cab to Axle/Trunnion (CT) ..... 186 in (4724 mm)
After Frame (AF) ..... 75 in (1905 mm) minimum
Frame Section Modulus (SM), front axle to end of afterframe:
110 psi (759 MPa) ..... 15.9 in³ (261 cm³)
Estimated bare chassis weight required for stability prior to installation of crane or accessories:
Front ..... 9,000 lb (4082 kg)
Rear ..... 8,500 lb (3856 kg) *
Rear (with standard bed) ..... 10,000 lb (4536 kg) *
Front Axle Maximum Weight** ..... 10,500 lb (4763 kg)



*CLEAR OF OBSTRUCTIONS (MUFFLERS, EXHAUST STACKS, ETC.) ON TOP OF TRUCK FRAME FOR FULL 8 FOOT (2.4m) WIDTH.



* *10,000 lb (4563 kg) is required at the rear axle for 360° stability. This weight includes the weight of the standard steel bed. If customer supplied flatbed, the chassis base weight must be 8,500 lb or counterweight will be needed to achieve stability.*

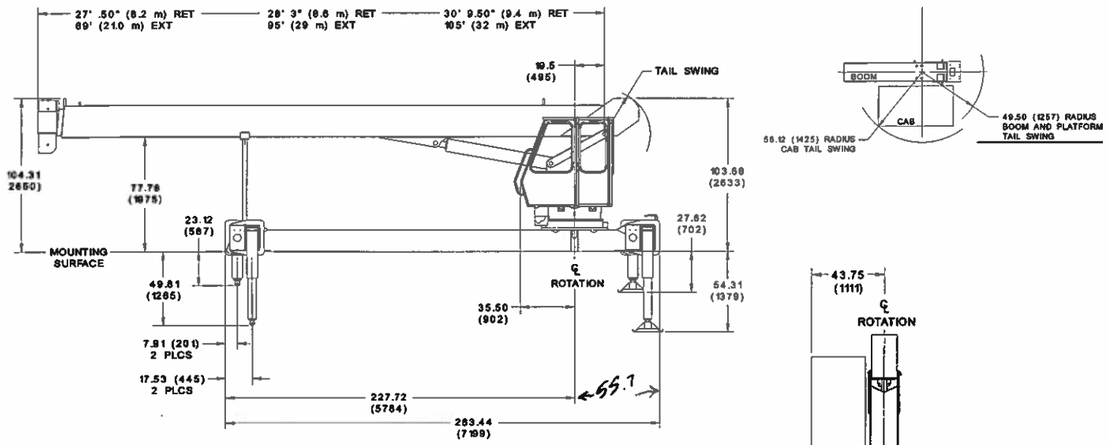
** *Weight in excess of 10,500 lb (4763 kg) on the front axle will require the addition of a front stabilizer or additional rear axle stability weight for over-front stability. One half of the front axle weight in excess of the maximum, added as counterweight to the rear axle, will maintain stability. Example: an 11,000 lb (4990 kg) Bare Front Axle will maintain stability if the rear axle bare is 8,750 lb (3969 kg) and 10,250 lb (4649 kg) with the additional standard bed weight.*

*** *A single front stabilizer is not necessary for 360° stability without counterweight if mounting dimensions are maintained, minimum rear axle weight is met and maximum front axle weight is not exceeded.*

Notes:

- Gross Axle Weight Rating (GAWR) is dependent on all components of the vehicle (axles, tires, springs, frame, etc.) meeting manufacturer's recommendations; **always specify GAWR when purchasing trucks.**
- Minimal axle requirements may increase with use of longer wheelbase, service bodies, diesel engines or front stabilizers.
- Diesel engines require a variable speed governor and energize-to-run fuel solenoid for smooth crane operation.
- Requires chassis with transmission neutral safety switch.
- If continuous rotation option is ordered, chassis must be equipped with air dryer.

General and Dimensional Specifications



1300 Model	Retracted Length	Extended Length	Center of Gravity (G)	Weight with Oil
1369	27.0 ft (8.23 m)	69.0 ft (21.03 m)	90 in (228.60 cm)	21,410 lb (9711.41 kg)
1395	28.0 ft (8.53 m)	95.0 ft (28.95 m)	98 in (248.92 cm)	23,100 lb (10477.98 kg)
13105	30.8 ft (9.39 m)	105 ft (32.00 m)	103 in (261.62 cm)	24,000 lb (10886.22 kg)

General construction

Low-alloy, high-tensile and other steel including T-1, Ex-Ten, Stress Proof and High-Yield are combined with special low-hydrogen welding techniques wherever advantageous. Standard paint: *National Ivory.*

Frame

Box construction for maximum strength and rigidity.

Turret

Fabricated rigid structure, well braced for stability. Bored and machined after welding to ensure proper alignment.

Subbase/frame

Unitized box construction, designed to increase torsional stiffness and reduce truck frame requirements. Standard subbase is designed to fit on a standard 34-inch (863.60-mm) wide truck frame and will accommodate a 20-foot (6.10-m) stringerless bed. Total depth of subbase is 14.62 in (371.35 mm).

Rotation

375°, rotational force of 450,000 in-lb (5.19 t-m). Powered by a hydraulic orbit motor and planetary gearbox driving a pinion. Turret rotates on a ball bearing race. Spring-applied, hydraulic release brake provides positive no-drift lateral positioning.

Outriggers

Two sets of cross-frame H-style outriggers with 20' (6.05 m) span provide stability, even on rough or uneven ground.

18- by 18-inch (45.7- by 45.7-cm) steel outrigger pads are standard. 24" diameter aluminum pads are optional. Pads can be carried pinned to outrigger legs in less than 8 ft (2.44 m) width

Lift cylinder

Double-acting hydraulic cylinder raises/lowers boom. Butt-mounted safety holding valve keeps boom in place if hose fails. Field-tested bearings in lift cylinder and boom pivot combine with micro-honed pins for long life, less maintenance.

Boom

Box construction sections telescope proportionally under rated loads using a double-acting hydraulic cylinder with proportioning cables. Nylon boom wear pads impregnated with molybdenum disulfide for smooth, durable operation and extension of maximum loads at greater radii. Heavy-duty pivot bearings, easy-service boom cylinder and valves.

Winch

Hydraulic geroller motor with planetary gear reduction brake and counterbalance valve for "power down" load lowering. 10,000-lb. (4536 kg) bare drum single line pull available with 325 feet (98 m) of rotation resistant 9/16-inch (14-mm) diameter, 38,500-lb. (17.46-Mt) breaking strength loadline. *Burst-of-Speed* controls payout and pickup of unloaded cable at 60 percent over normal speeds.

Pump

High pressure/high speed, vane-type three-section pump provides 34 gpm (129 L/min) to winch, 22 gpm (83.28 L/min) to crane and 12 gpm (45.42 L/min) to swing for smooth, fast, simultaneous, and independent operation.

Oil tank

100-gallon (378.54-L) supply tank equipped with breather, clean-out, suction strainers and magnetic plug.

Cylinders

Nitrile double-lip shaft packing. High yield, stress relief chrome-plated shafts. Polyurethane U-cups, glass reinforced nylon bearing piston sets. Microhoned tubing cylinder barrels with butt-mounted safety holding valves.

Valves

Four-way, spring-centered, spool-type with low spool force and extra-fine metering notches. Independent relief valves protect hydraulic circuit from overload (crane functions set at 3,350 psi/ 231 bar, rotation system at 2,950 psi/ 203 bar and winch system at 3,350 psi/231 bar).

Hose

High-pressure, wire-braid reinforced, with 4 to 1 minimum safety factor.

Operating speeds

Winch third wrap: 150 fpm (46 m/min). Boom up and down: 23-27 seconds. Boom out: 28-90 feet (8.2-27.4 m), 80 seconds. Boom in: 90-28 feet (27.4-8.2m), 77 seconds. Turn: 42 seconds for 360°. Using remote control, speeds reduced by 40 percent for smooth operation (speeds assume no load). **All stated speeds approximate.*

National Series 1300 Accessories

Accessories for an array of jobs add to the versatility of a National crane. Some of the popular options that are part of the National lifting system are shown here. On request, National Crane will provide detailed accessories information by FAX or mail—or you may obtain this information from your National dealer.

Weights for 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 and/or jibs. Consult your National dealer for specific availability and requirements.

Personnel basket/platform operation limits vary based on crane configuration and basket type. Refer to owners manual for details and operation restrictions.

Optional Stabilizers

All-hydraulic vertical and horizontal motion; fully enclosed cylinders.

- **Model SFO** single front outrigger (extended frame chassis)
- **Model SFO(A)** single front outrigger (standard frames)

Note: Front outriggers are not designed to lift the vehicle, but will provide stability after it has been leveled

Cabled Remote Controls A one-hand remote control is ideal where precise control and total load visibility are required	• ***Model R3*** (lift, turn, telescope) • ***Model R4*** (adds winch control) • ***Model R4B*** (adds basket control)
Radio Remote Controls Eliminate the handling and maintenance concerns that accompany cabled remotes. Operate to a range of about 400 feet (12.2 m), varying with conditions	• ***Model R3R*** (R3 functions) • ***Model R4BR*** (R4B functions)
One-Person Basket Strong but lightweight steel basket with 300-lb. (139-kg) capacity, gravity hung with swing lock and full body harness	• ***Model B1-S*** • ***Model 2B1-S*** (for dual locking baskets)
Heavy-duty Personnel Basket 1,200-lb. (544-kg) capacity steel basket with safety loops for four passengers. Gravity leveling 72- x 42-inch (183- x 107-cm) platform. Fast attachment and secure locking systems. Load chart must	show 2,300 lb. (1 043 kg) minimum to operate this accessory • ***Model BSA-1*** • ***Model BSA-R1 (provides rotation)***
Personnel Platform High strength 72- x 36-inch (183- x 91-cm) steel platform, hydraulically self-leveling and protected by safety valves. Safety belts and fold down sides. Load chart must show (for SLP) 2,000 lb. (907 kg)	and (for SLPR) 2,200 lb. (998 kg) minimums to operate • ***Model SLP*** • ***Model SLPR*** (360° rotation)
Pallet Fork Manual leveling fork with adjustable throat and teeth, 4,400-lb. (1996-kg) capacity	• ***Model MKF***
Loose Material Clam Moves up to 2/3 yard³ (.50 m³) material. Bucket hooks easily to loadline and includes manual control hose reel	• ***Model LMC***
Pole Grab Pole grab with hydraulic hose reel tilts, opens, and closes hydraulically for large pole alignment. Weight 650-lb. (295-kg)	• ***Model PG***
Hydraulic Oil Cooler Automatic, self-contained radiator system with electric fans cools oil under continuous operation	• ***Model OC***
Continuous Rotation Allows rotation of turret/boom without stop	• ***Model CR***
Glide Swing Allows the turret/boom to coast to a stop. Available only with continuous rotation option	• ***Model GS***
Deluxe Operator's Cab Rigid aluminized steel structure, well insulated with safety glass. Sliding door travels freely on ball-bearing rollers. Sliding side, back and top windows	allow for ventilation. Self-parking front and top windshield wipers with washers • ***Model OCB***
Cab Heater Propane heater with ducted heat to windows or cab floor	• ***Model CH***
One-option Control-accessory (Valve and control lever only)	• ***Model OC-1***
Two-option Control-accessory (Valves and control levers only)	• ***Model OC-2***
Aluminum Float Pads 24"-diameter aluminum pads. Can be carried pinned to outrigger legs	• ***Model AFP***

Note: Boom and jib options are shown on page 6.

National Series 1300 Telescoping Cranes

NATIONAL CRANE
A Grove Worldwide Company

General Offices: 11200 North 148th Street • Waverly, NE 68462 U.S.A.
Phone: (402) 786-6300 • FAX: (402) 786-6363
E-mail: sales@nationalcrane.com
Internet: http://www.nationalcrane.com

Printed in U.S.A. • Form No. S1300/0999/5M/JN