

National Crane Series 1400H

Product Guide



Features

- 29,9 t (33 USt) rating
- 38,72 m (127 ft) five-section boom
- Self-lubricating Easy Glide wear pads
- Internal anti-two-block



Features

National Crane 1400H

- 29,9 t (33 USt) maximum capacity
- 50,3 m (165 ft) maximum vertical reach*
- 41,15 m (135 ft) maximum vertical hydraulic reach

*Maximum vertical reach is ground-level to boom tip height at maximum extension and angle with outriggers/stabilizers full extended.

Five-section boom

At 38,72 m (127 ft), the Series 1400H five-section boom is the longest in its size range. The long boom allows the operator to perform more lifts without the use of a jib, reducing setup time and improving efficiency.



Easy Glide boom wear pads

Easy Glide boom wear pads reduce the conditions that cause boom chatter resulting in smoother crane operation.

Overload protection

All National Crane boom trucks are equipped with overload protection. A Load Moment Indicator (LMI) is standard on all Series 1400H machines. The LMI display console is weatherproof. The LCD display is visible in full or low light and displays all crane load lifting values simultaneously.



Outriggers

Mainframe outriggers are crossframe H-style, with 7,47 m (24 ft 6 in) span, with a mid-span setting of 5,64 m (18 ft 6 in). Rear stabilizers are H-style with 5,64 m (18 ft 6 in) span. Removable ball and socket aluminum outrigger pads are included on mainframe outriggers.

Best in class performance and serviceability

- The stronger standard torsion box improves rigidity, reduces truck frame flex and reduces the need for counterweight
- Speedy-reeve boom tip and sheave blocks simplify rigging changes by decreasing the time needed to change line reeving
- Crane components painted before assembly reduce the chance of rust, improve serviceability and enhance the appearance of the crane
- Internal anti-two block wiring standard on the 1400H routes the wiring through the inside of the boom eliminating the possibility of snagging the wire on obstructions
- Bearings on the boom and retract cables can be greased through access holes in the boom side plates and number of internal boom parts has been reduced improving serviceability
- The Series 1400H is supplied with 375° non-continuous rotation standard
- Adjustable swing speed comes standard on the 1400H. A control knob located on the swing motor brake release valve can be easily adjusted to the crane operator's swing speed preference
- Radiator mounted on truck frame with electric fan is standard



Contents

Features	2
Mounting configurations	5
Specifications	6
Capacities	8
Dimensions	14
Accessories	15

Mounting configuration

The mounting configuration shown is based on the Series 1400H with an 85% stability factor. The complete unit must be installed 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. Chassis must be equipped with a front frame extension suitable for SFO addition. Contact factory for complete chassis specifications.

Working area	360°
Gross Axle Weight Rating Front.....	9072 kg (20,000 lb)*
Gross Axle Weight Rating Rear.....	18 144 kg (40,000 lb)*
Gross Vehicle Weight Rating.....	27 216 kg (60,000 lb)*
Wheelbase.....	Minimum 681 cm (268 in)
Cab to Axle/trunnion (CA/CT).....	Minimum 518 cm (204 in)
After Frame (AF).....	305 cm (120 in) minimum
Frame Section Modulus (SM), front axle to end of afterframe, with (758 MPa 110,000 PSI).....	492 cm ³ (30 in ³)
Stability Weight, Front	4196 kg (9250 lb) minimum**
Stability Weight, Rear.....	3674 kg (8100 lb) minimum**
Estimated Average Final Weight	23 360 kg (51,500 lb)**

The diagram shows the 360° working area that can be achieved with the front stabilizer (optional on the Series 1400H). The front stabilizer is required when extending the boom and lifting loads forward of the outriggers. A minimum of 164 cm³ (10 in³) section modulus at 759 MPa (110,000 psi) is required from the rear of the front spring hanger forward to the front stabilizer. Integral front frame extension required.

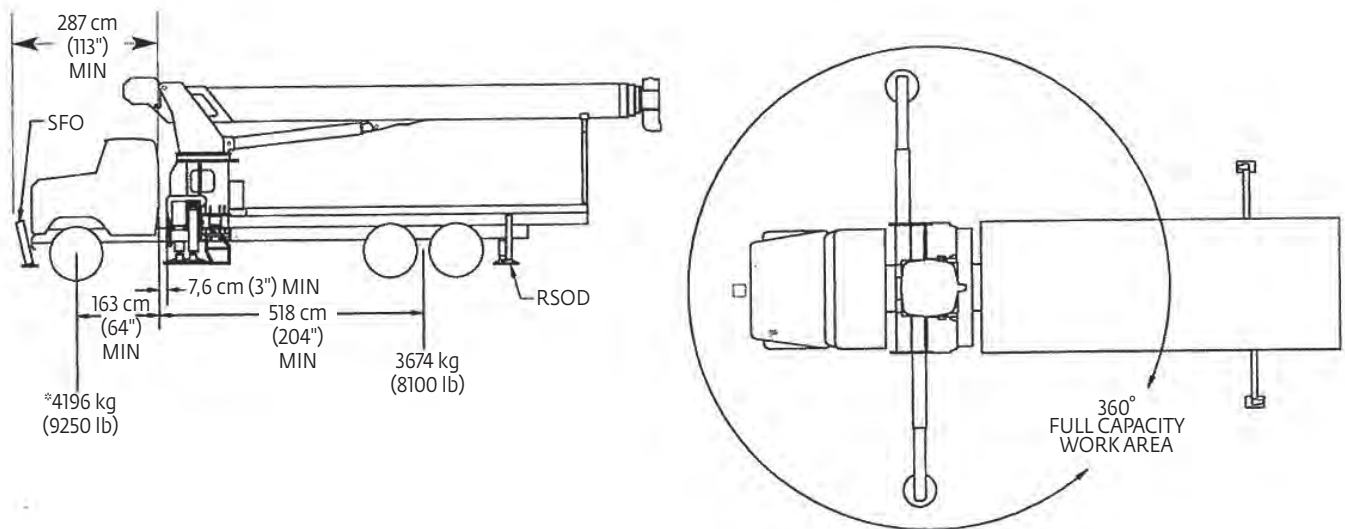
* Required to mount basic crane with 9,15 m (30 ft) jib option. Additional options or heavier bare chassis weights will require additional axles or a GVWR in excess of 27 216 kg (60,000 lb); in some states, special permits for overload are required.

** Estimated axle scale weights prior to installation of crane, stabilizers and subbase for 85% stability.

*** Includes basic crane without jib, 379 L (100 gal) fuel tank, 22 ft wood flatbed, hydraulic pump and PTO, rear bumper, rear stabilizer, boom rest, and two workers, 136 kg (300 lb) in cab.

Note: Chassis will require integral extended front frame rails for SFO addition.

Truck requirements



Notes:

- Gross Vehicle Weight Rating (GVWR) is dependent on all components of the vehicle (axles, tires, springs, frame, etc.) meeting manufacturers' recommendations; always specify GVWR when purchasing trucks.
- Diesel engines require a variable speed governor and energize-to-run fuel solenoid for smooth crane operation. Electronic fuel-injected engines are required.
- All mounting data is based on a National Series 1400H with the standard subbase and an 85% stability factor.
- The complete unit must be installed in accordance with factory requirements, and a test performed to determine actual stability and counterweight requirements per SAE J765; contact the factory for details.
- Transmission neutral safety interlock switch is required.

Specifications

Boom and jib combinations data

Model 14127H — Equipped with a 9,63 m - 38,72 m (31 ft 7 in - 127 ft) five-section boom. This model can be equipped with a 9,15 m (30 ft) single-section jib. Maximum tip height with 9,15 m (30 ft) jib is 50,00 m (164 ft).









9,63 m - 38,72 m (31 ft 7 in - 127 ft) five-section boom **14FJ30M** 9,15 m (30 ft) single-section jib

Note: Maximum tip is measured with outriggers/stabilizers fully extended.

Specifications

1400H winch data

- Do not deadhead line block against boom tip when extending boom
- Keep at least 3 wraps of loadline on drum at all times.
- Use only 5/8 in diameter rotation-resistant cable with 45,400 lb breaking strength on this machine.
- **MAXIMUM BOOM LENGTH AT MAXIMUM ELEVATION WITH RIGGING SHOWN WITH LOAD BLOCK AT GROUND LEVEL**

1 part line	2 part line	3 part line	4 part line	5 part line	6 part line	7 part line	8 part line
							
127 ft boom with 54 ft jib	110 ft	83 ft	64 ft	52 ft	43 ft	36 ft	31 ft

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	Lift and speed
Low speed	5/8" diameter rotation resistant	20 593 kg (45,400 lb)	4082 kg (9000 lb) 52 m/min (170 fpm)	8165 kg (18,000 lb) 26 m/min (85 fpm)	12 247 kg (27,000 lb) 17 m/min (57 fpm)	16 329 kg (36,000 lb) 13 m/min (43 fpm)	20 412 kg (45,000 lb) 10 m/min (34 fpm)	24 494 kg (54,000 lb) 9 m/min (28 fpm)	28 576 kg (63,000 lb) 7 m/min (24 fpm)	29 937 kg (66,000 lb) 6 m/min (21 fpm)
High speed	5/8" diameter rotation resistant	20 593 kg (45,400 lb)	1996 kg (4400 lb) 104 m/min (340 fpm)	3992 kg (8800 lb) 52 m/min (170 fpm)	5987 kg (13,200 lb) 34 m/min (113 fpm)	7983 kg (17,600 lb) 26 m/min (85 fpm)	9979 kg (22,000 lb) 21 m/min (68 fpm)	11 975 kg (26,400 lb) 17 m/min (57 fpm)	13 971 kg (30,800 lb) 15 m/min (49 fpm)	15 967 kg (35,200 lb) 13 m/min (43 fpm)

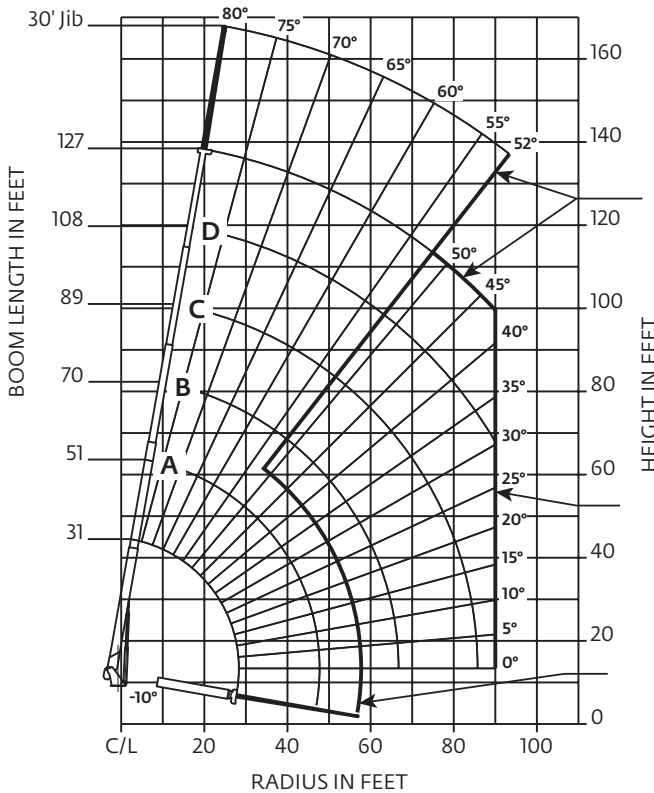
Winch	Full drum pull
Standard planetary	1996 kg (4400 lb) high speed 4082 kg (9000 lb) low speed

Loadline deduct		
Block type	Rating	Weight
Downhaul weight	4,53 t (5 USt)	82 kg (180 lb)
1-sheave block	13,60 t (15 USt)	170 kg (375 lb)
2-sheave block	22,67 t (25 USt)	290 kg (640 lb)
3-sheave block	31,74 t (35 USt)	395 kg (870 lb)
4-sheave block	32,65 t (36 USt)	440 kg (970 lb)

Capacities

**Series 14127H: 38,7 m (127 ft) boom with 9,1 m - 16,45 m (30 ft - 54 ft) jib/full-span outrigger
7,5 m (24 ft 6 in)**

Other Series 1400H Load Rating Charts are available. National Crane will send you a chart on request – or you may secure needed load rating information through your nearest National Crane dealer.



CAUTION:

- Do not operate crane booms, jib extensions, any accessories or loads within 10 ft (3 m) 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 appropriate charts are maximum allowable loads with the crane mounted on a factory-approved truck and all outriggers at either full span or at mid span range and set on a firm level surface so that the crane is level and all tires are suspended.
- Always level the crane with the level indicator located on the crane.
- The operator must reduce load to allow for factors such as wind, ground conditions, operating speeds and their effects on freely suspended loads.
- Overloading this crane may cause structural collapse or instability.
- Weights on any accessories attached to the boom or loadline must be deducted from the load chart capacities.
- Do not exceed jib capabilities at any reduced boom lengths.
- Do not deadhead lineblock against boom tip when extending boom or winching up.
- Keep at least three wraps of loadline on drum at all times.
- Use only specified cable with this machine.

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.

Load chart

LOAD RADIUS (ft)	LOADED BOOM ANGLE	31 ft BOOM (lb)	LOADED BOOM ANGLE	A 51 ft BOOM (lb)	LOADED BOOM ANGLE	B 70 ft BOOM (lb)	LOADED BOOM ANGLE	C 89 ft BOOM (lb)	LOADED BOOM ANGLE	D 108 ft BOOM (lb)	LOADED BOOM ANGLE	127 ft BOOM (lb)
6	79.9	66,000										
8	76	47,550										
10	71.9	40,750	79.7	32,700								
12	67.7	35,800	77.4	29,750								
15	61.1	30,200	72.8	25,900	78.1	22,550						
20	49.5	23,950	67.7	20,450	74.8	18,950	78.8	16,600				
25	33.1	17,700	61.2	16,750	70.4	15,350	74.7	14,200	78.1	12,250	80.3	8200
30			54.1	14,000	65.9	12,850	72.2	11,850	76.1	10,550	78.5	7900
35			46.2	10,550	61.1	10,650	68.6	9700	73.6	9050	76.4	7600
40			36.5	8100	55.2	8350	64.3	8300	69.8	7850	73.8	7200
45			25.7	6250	50.9	6500	61.5	6700	67.8	6750	71.5	6400
50					45	5100	57.4	5300	64.6	5400	69.5	5500
55					38.3	4000	53.2	4200	61.4	4300	66.8	4400
60					29.8	3150	48.1	3300	57.4	3400	63.6	3500
65					19.1	2400	44	2600	54.6	2700	61.3	2800
70							38.7	2000	51.1	2100	58.4	2150
75							32.6	1450	47.3	1550	55.5	1650
80							24.5	1000	43.2	1100	52.2	1200
85							14	650	38.9	750	49.4	800
90											45.6	500
	0	12,150	0	4800	0	2000	0	500				
	ADD TO CAPACITIES WHEN NO JIB STOWED (lb)	500		300		250		200		150		100

LOAD RADIUS (ft)	LOADED BOOM ANGLE	30 ft JIB (lb)
30	79.9	3900
35	79.1	3850
40	77.5	3700
45	75.9	3550
50	74.2	3400
55	72.5	3250
60	70.7	3100
65	68.9	2950
70	66.4	2600
75	64.4	2050
80	62.1	1600
85	59.7	1200
90	57.3	850
95	54.8	550

*Shaded areas are structurally limited capacities.

THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE.

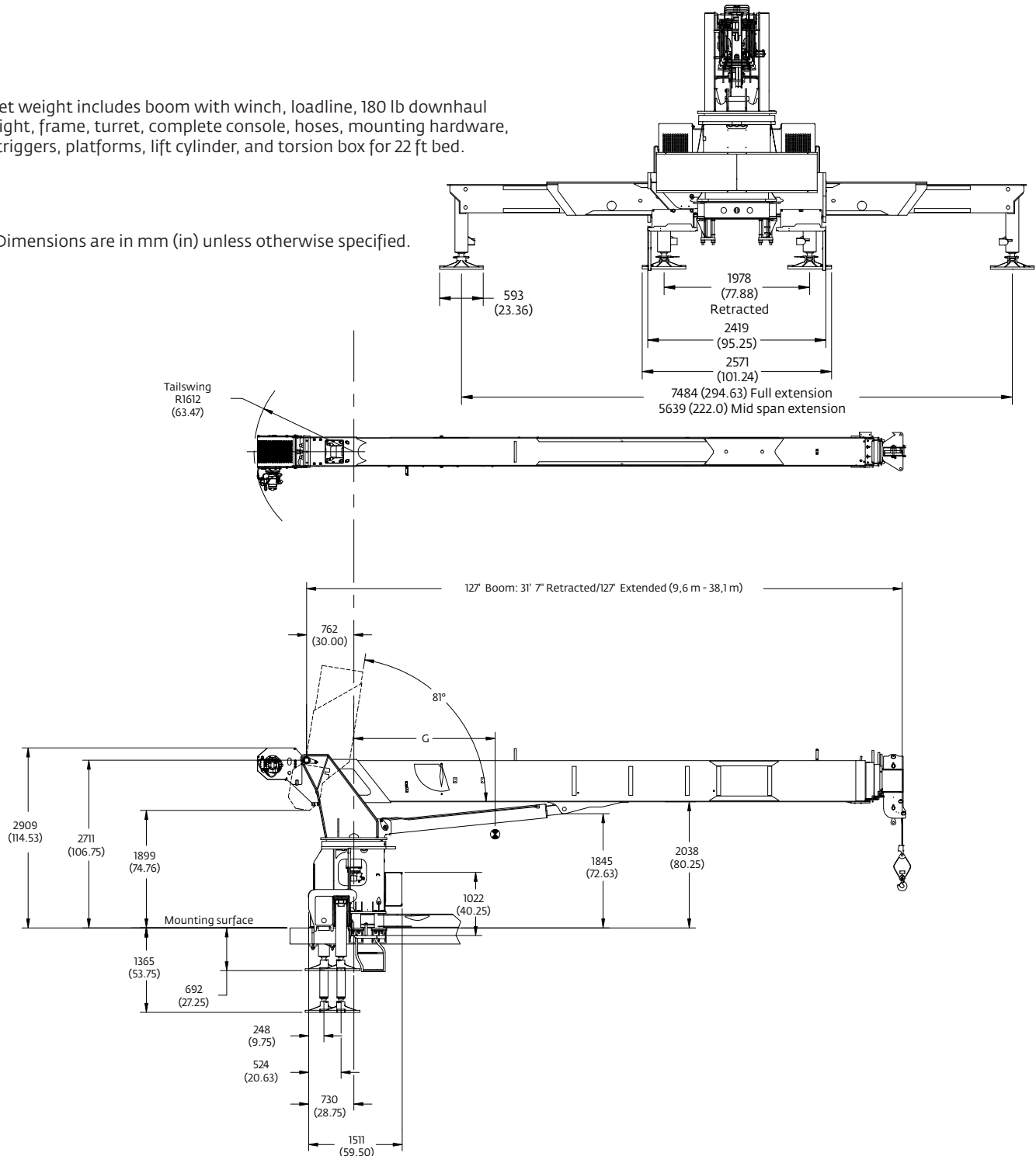
The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane.

Dimensions

	Retracted	Extended	G	wet/wt*
Series	Length	Length	cm (in)	kg (lb)
14127H	31 ft 7 in	127 ft	230 (90.4)	12 869 (28,371)

*Wet weight includes boom with winch, loadline, 180 lb downhaul weight, frame, turret, complete console, hoses, mounting hardware, outriggers, platforms, lift cylinder, and torsion box for 22 ft bed.

Dimensions are in mm (in) unless otherwise specified.



Accessories

Radio Remote Controls –

Eliminate the handling and maintenance concerns that accompany cabled remotes. Operate to a range of about 76 m (250 ft), varying with conditions.

- NB4R

Heavy-duty Personnel Basket –

One and two-person baskets for main boom and jib are available.

- BSA-1
- BSA-R1 (provides rotation)
- BSAY-2

Spanish-Language Danger Decals, Control Knobs, and Operators' Manuals

- SDD
- SOM