

**NATIONAL CRANE<sup>®</sup>**

# 1400A

## Product Guide

*ASME B30.5 Imperial 85%, Metric 85%*



33 USt  
(29,9t)



127 ft  
(38,7 m)



30 ft  
(9,1 m)



172 ft  
(52,4 m)



# NATIONAL CRANE 1400A

## FEATURES

The Series 1400A offers best-in-class boom length. A new hydraulic system uses pressure-compensated control valves with a load-sensing variable displacement piston pump for smoother operation and reduced maintenance. The Vision Cab™ provides enhanced visibility and includes ergonomic single joystick controls, ventilation fans and a diesel heater for cold weather comfort.



## More Reach = More Jobs

At 127 ft (38,72 m), the Series 1400A's 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. Also available is the four-section 110 ft (33,5 m) boom length option.

## Outriggers

Out and down style outriggers with multiple stages at both the front and rear with individual control of each horizontal beam extension and vertical jack cylinder. Ground level control stations located at the left and right side for control as well as optional in-cab controls. Single front stabilizer (SFO) comes with first-up feature.



## Deluxe Operator's Cab

The 1400A Series' Vision Cab™ features rigid powder coated steel construction that's well insulated with ample safety glass for operator visibility and comfort. The multi-position seat with arm rest single axis controls, ventilation fans, diesel heater, and wipers complete the cab. Optional air conditioning is available. Optional open-seat control station in lieu of enclosed cab is available.



## Rated Capacity Limiter (RCL)

Color, graphical display capacity limiter and ATB system with audio visual warning and crane function lockout. The polarized graphical display screen for real-time display of boom angle, length, radius, tip height, maximum permissible load, load indication, and warning of impending overload or ATB condition. Work area definition system (WADS) provides operator definable non-lockout warning limits for crane operations, and CANbus sensors and hard-wired ATB circuit routed internally to the boom.

# The world's most advanced crane service and support network

## WORLDWIDE SUPPORT NETWORK

Manitowoc's customer service extends beyond any borders. Our locations span the globe, covering five continents. No matter where the job takes you, you have a business partner nearby.



## PARTS

Locating the correct part quickly is vital to managing your operations. With Manitowoc Customer Support, the parts you need are just a phone call or click away.

## LIFT SOLUTIONS

The Manitowoc Crane Lift Solutions Team is dedicated to helping customers with unique and customized applications for their Manitowoc cranes, regardless of product line.

## TRAINING

Manitowoc Training Centers offer courses for operators and technicians across the globe to provide in-depth instruction on crane operation, maintenance, and troubleshooting procedures.

## EnCORE

Manitowoc's EnCORE program maximizes your investment by rebuilding or repairing your crane to extend its life significantly. EnCORE also includes remanufactured parts.



# MANITOWOC FINANCE

Manitowoc Finance gets you in the field with the right equipment by giving you access to flexible, affordable financing. With Manitowoc Finance, equipment can be acquired with virtually no cash outlay, and unlike traditional lending, our financial products don't affect bank lines of credit. Your capital resources remain intact for times when you need ready access to cash.

Competitive rates with flexible financing options and payment schedules put you in control.

**Did you know?** Manitowoc Finance can finance **used** Manitowoc cranes. You can also **trade-in** your used fleet for upgrade and get financed by Manitowoc Finance.



NATIONAL CRANE

431

**⚠ DANGER**  
TO AVOID DEATH OR SERIOUS  
INJURY:  
NEVER operate equipment on uneven ground  
or on slopes unless the manufacturer's  
instructions are followed. Always use proper  
tie-down technique to secure loads. Always  
use proper tie-down technique to secure loads.  
Always use proper tie-down technique to secure loads.



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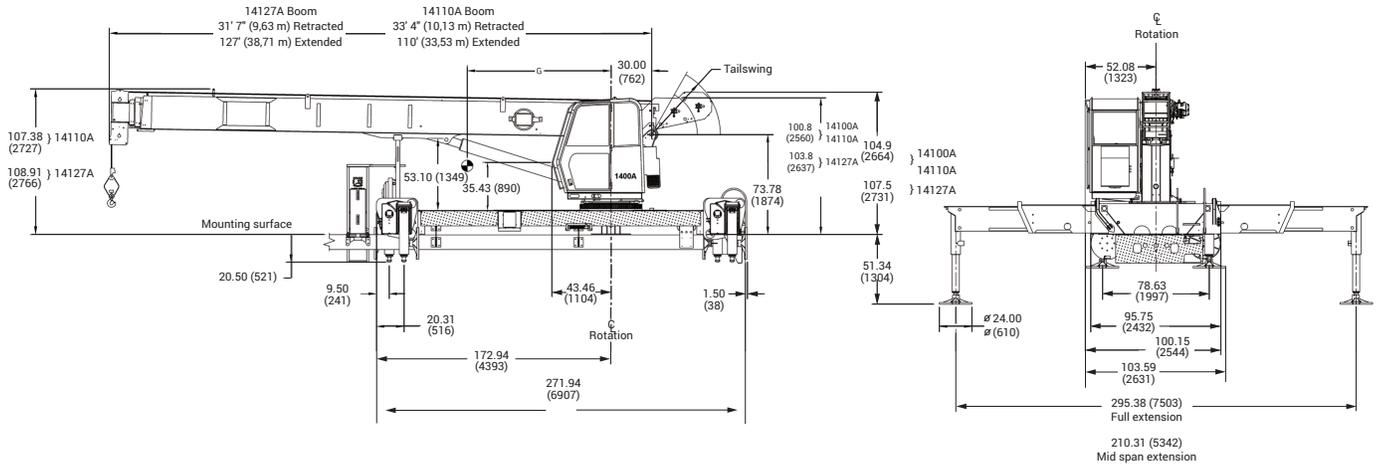
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Specifications

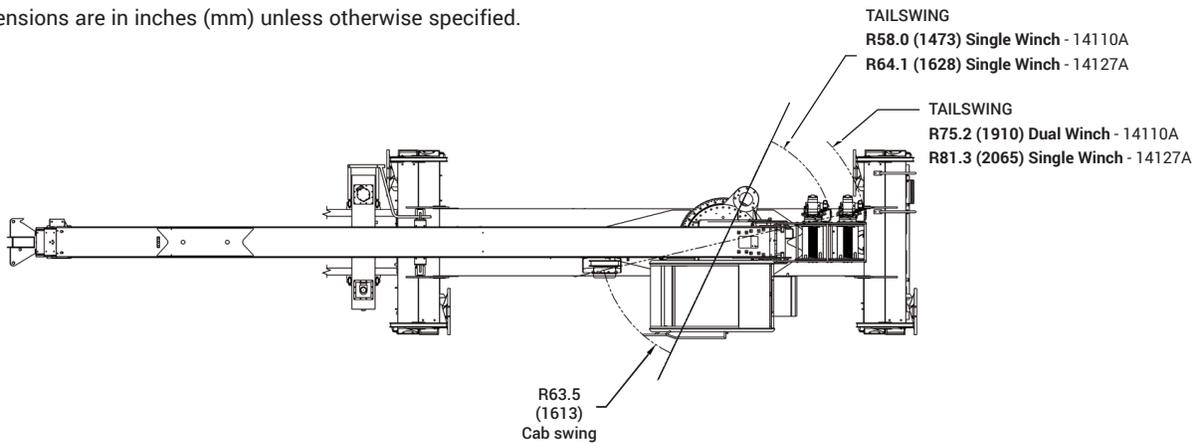
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Accessories

# DIMENSIONS



Dimensions are in inches (mm) unless otherwise specified.

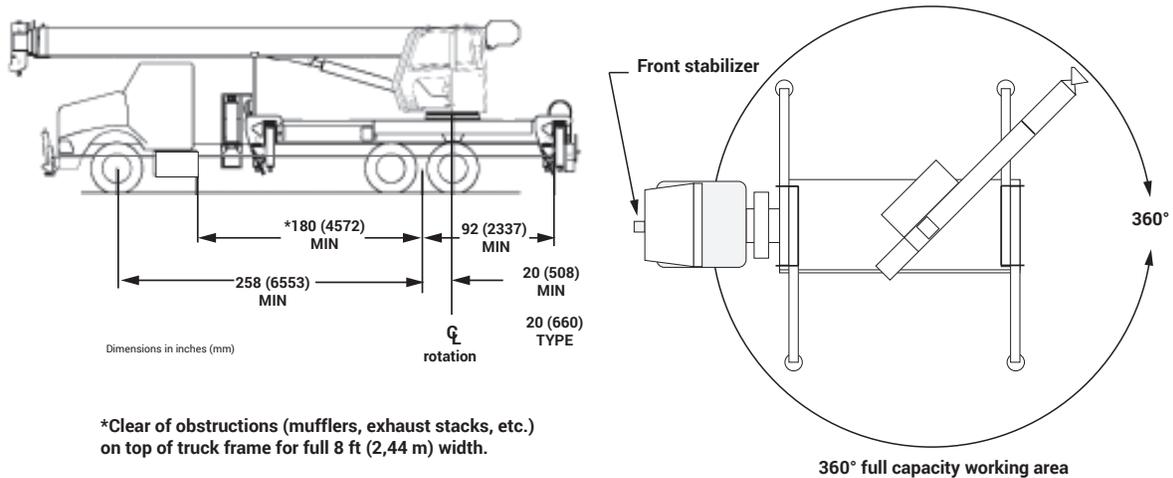


G center of gravity from centerline		
Series	G	w/oil weight*
14110A	2083 mm (82 in)	13 868kg (30,510 lb)
14127A	2159 mm (85 ft)	14 718 kg (32,380 lb)

\*Weight includes all items including complete HO outriggers, 82 kg (180 lb) downhaul weight, reservoir, decks, ladders and SFO. Booms fully retracted. Pump, and PTO not included.

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

# MOUNTING CONFIGURATION



The mounting configuration shown is based on the Series 1400A 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. The front bumper stabilizer (SFO) is required for all installations. 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 .....	20,000 lb (9072 kg)*
Gross Axle Weight Rating Rear.....	34,000 lb (15 422 kg)*
Gross Vehicle Weight Rating .....	54,000 lb (24 494 kg)*
Wheelbase.....	Minimum 258 in (655 cm)
Cab to Axle/trunnion (CA/CT).....	Minimum 180 in (457 cm)
After Frame (AF).....	92 in (234 cm) minimum
Frame Section Modulus (SM), front axle to end of afterframe, with 758 MPa (110,000 PSI) .....	30 in <sup>3</sup> (492 cm <sup>3</sup> )
Stability Weight, Front.....	9000 lb (4082 kg) minimum**
Stability Weight, Rear.....	8000 lb (3629 kg) minimum**
Estimated Average Final Weight .....	51,880 lb (23 585 kg)***

The diagram shows the 360° working area that can be achieved with the front stabilizer (standard on the Series 1400A). The front stabilizer is required when extending the boom and lifting loads forward of the outriggers. A minimum of 10-in<sup>3</sup> (164 cm<sup>3</sup>) section modulus at 110,000 psi (759 MPa) 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 30 ft (9,15 m) jib option. Additional options or heavier bare chassis weights will require additional axles or a GVWR in excess of 54,000 lb (24 494 kg); 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, 100 gal (379 L) fuel tank and two workers, 300 lb (136 kg) in cab.

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

## Notes:

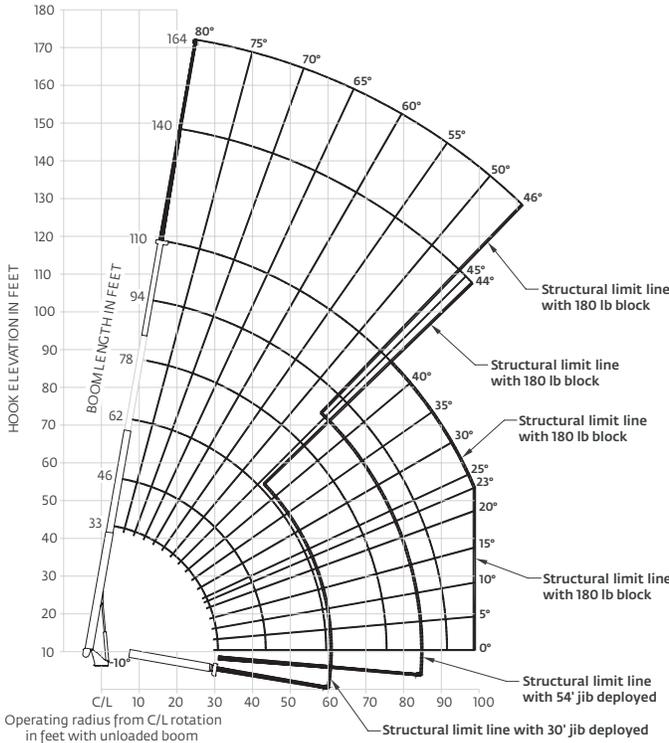
- Gross Vehicle Weight Rating (GVWR) is dependent on all components of the vehicle (axles, tires, springs, frame, etc.) meeting manufacturers' recommendations; always specify GVWR when purchasing trucks.
- Diesel engines require a variable speed governor for smooth crane operation. Electronic fuel-injected engines are required.

- All mounting data is based on a National Crane Series 1400A 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.

# CAPACITIES

## 110 ft boom with 30 ft - 54 ft jib, full-span outrigger

Other Series 1400A 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 3 m (10 ft) 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

### 33 ft - 110 ft BOOM RATED LOADS WITHOUT JIB

LOAD RADIUS (ft)	LOADED BOOM ANGLE	33 ft BOOM (lb)	LOADED BOOM ANGLE	A 46 ft BOOM (lb)	LOADED BOOM ANGLE	B 62 ft BOOM (lb)	LOADED BOOM ANGLE	C 78 ft BOOM (lb)	LOADED BOOM ANGLE	D 94 ft BOOM (lb)	LOADED BOOM ANGLE	110 ft BOOM (lb)	
6	76.7	66,000											
8	72.8	51,700											
10	68.9	42,200	76	37,000									
12	64.9	38,400	73.4	33,400	78.2	26,900							
15	58.6	32,200	69.3	28,000	75.6	24,900	79.4	22,800					
20	48.5	23,900	62.2	21,650	70.2	19,300	74.8	17,900	78.2	14,100			
25	33.3	17,600	54.4	17,800	64.9	16,050	71	14,550	75.1	12,400	77.4	9200	
30			46.2	15,100	59.8	13,600	67	12,300	71.9	11,200	75.1	8700	
35			36.3	12,750	54	12,050	63	10,600	68.5	9750	72.5	8000	
40			22.9	10,100	47.8	10,450	58.7	9300	65.5	8550	69.6	7200	
45					41.6	8750	54.5	7800	61.9	7350	67	6400	
50					33.9	7200	49.7	6900	58.2	6250	63.9	5700	
55						23.6	5600	44.5	6000	54.4	5500	60.8	4700
60								38.6	4900	50.5	4800	57.6	4000
65								31.9	4000	46.3	4200	54.4	3400
70								23.3	3250	41.7	3450	51	2700
75								8.7	2500	36.6	2750	47.4	2300
80										30.7	2250	43.6	1800
85										23.5	1750	39.3	1200
90										12.5	1250	34.7	1000
95												29.6	800
100												23.3	600
	0	12,000	0	7500	0	4500	0	2100	0	1000			

30 ft - 54 ft JIB RATED LOADS				
LOAD RADIUS (ft)	LOADED BOOM ANGLE	30 ft JIB (lb)	LOADED BOOM ANGLE	54 ft JIB (lb)
30	79.1	5050		
35	77.4	5000	79.5	2650
40	75.6	4950	78.1	2600
45	74.7	4700	77.6	2500
50	71.6	4300	75	2400
55	69.5	4000	73.2	2300
60	67.3	3700	71.4	2200
65	65.1	3400	69.6	2100
70	62.9	3150	67.8	2000
75	60.5	2850	66	1850
80	58	2500	64.1	1750
85	55.5	2000	62.2	1600
90	52.8	1600	60.2	1500
95	50	1200	58	1400
100	47.1	850	55.8	1300
105	43.9	500	53.6	1200
110			51.2	1000
115			48.7	750
120			46.1	500

\*Shaded areas are structurally limited capacities.

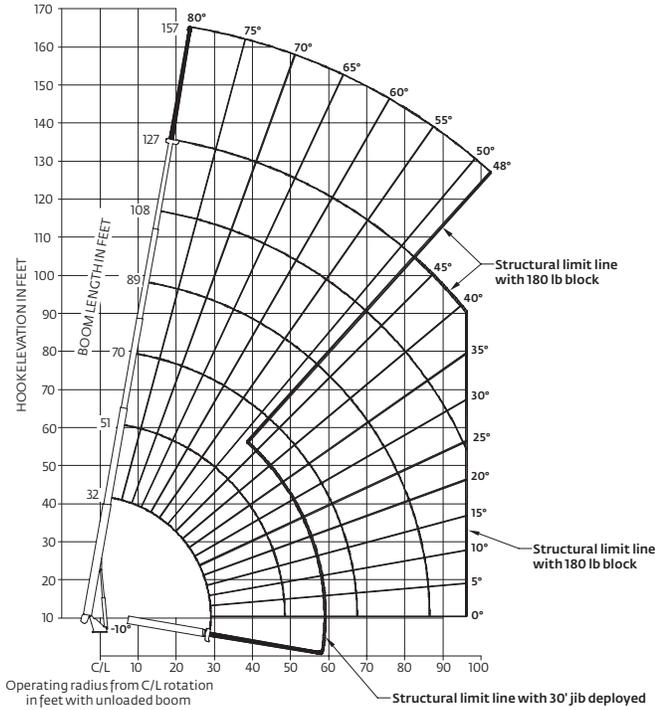
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The individual crane's load chart, operating instructions and other instructional plates must be read and understood prior to operating the crane

# CAPACITIES

## 127 ft boom with 30 ft jib, full-span outrigger

Other Series 1400A 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 3 m (10 ft) 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

### 32 ft - 127 ft BOOM RATED LOADS WITHOUT JIB

LOAD RADIUS (ft)	LOADED BOOM ANGLE	32 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	76.5	66,000											
8	72.3	48,050											
10	68.2	41,250	77.6	33,000									
12	64	36,300	75.6	30,050									
15	57.4	30,700	71.7	26,200	77.5	22,800							
20	45.2	24,550	65.5	20,750	73.3	19,200	77.7	16,800					
25	29.2	19,900	59	17,050	68.9	15,600	74.5	14,400	78	12,400			
30			51.9	14,600	64.3	13,100	71	12,050	75.3	10,700	77.9	8000	
35			44	12,550	59.5	10,900	67.4	9900	72.7	9200	75.9	7700	
40			34.6	10,100	54.5	9400	64.1	8500	69.9	8000	73.7	7300	
45			23.4	8050	49.6	8250	60.4	7400	66.9	6900	71.4	6500	
50					43.7	7050	56.4	6350	63.8	5650	68.8	5650	
55					36.9	5900	52.3	5700	60.7	4950	66.2	4700	
60					28.9	4800	48	5100	57.4	4350	63.3	3600	
65						17.5	3850	43.1	4200	54.1	3900	3200	
70								37.8	3400	50.6	3450	58	2800
75								31.7	2700	46.8	2850	55.2	2500
80								24.2	2150	42.8	2300	52.3	2200
85								12.8	1600	38.4	1800	49.3	1950
90										33.4	1350	46	1500
95										27.7	950	42.4	1100
100										20.6	600	38.7	750
0		12,800	0	5400	0	2600	0	1100					

30 ft JIB RATED LOADS		
LOAD RADIUS (ft)	LOADED BOOM ANGLE	30 ft JIB (lb)
35	78.6	3850
40	77.1	3700
45	75.4	3550
50	73.8	3400
55	72.1	3250
60	70.3	3100
65	68.5	2950
70	66.5	2700
75	64.5	2550
80	62.4	2300
85	60.2	2100
90	58	1850
95	55.6	1650
100	53.2	1300
105	50.6	950
110	47.8	650

\*Shaded areas are structurally limited capacities.

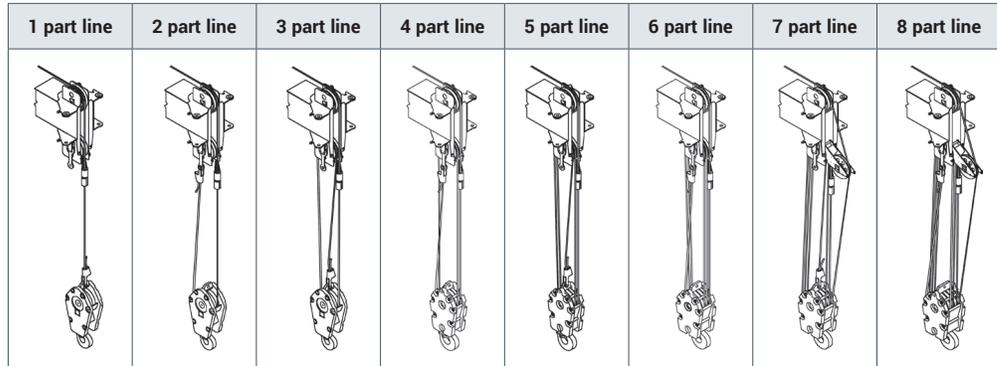
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# SPECIFICATIONS

## 1400A 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



Winch	Cable supplied	Average breaking strength	1 part line Lift / Speed	2 part line Lift / Speed	3 part line Lift / Speed	4 part line Lift / Speed	5 part line Lift / Speed	6 part line Lift / Speed	7 part line Lift / Speed	8 part line Lift / Speed
Low speed	5/8" diameter rotation resistant	45,400 lb (20 593 kg)	9000 lb (4082 kg)	18,000 lb (8165 kg)	27,000 lb (12 247 kg)	36,000 lb (16 329 kg)	45,000 lb (20 412 kg)	54,000 lb (24 494 kg)	63,000 lb (28 576 kg)	66,000 lb (29 937 kg)
			170 fpm (52 m/min)	85 fpm (26 m/min)	57 fpm (17 m/min)	43 fpm (13 m/min)	34 fpm (10 m/min)	28 fpm (9 m/min)	24 fpm (7 m/min)	21 fpm (6 m/min)
High speed	5/8" diameter rotation resistant	45,400 lb (20 593 kg)	4400 lb (1996 kg)	8800 lb (3992 kg)	13,200 lb (5987 kg)	17,600 lb (7983 kg)	22,000 lb (9979 kg)	26,400 lb (11 975 kg)	30,800 lb (13 971 kg)	35,200 lb (15 967 kg)
			340 fpm (104 m/min)	170 fpm (52 m/min)	113 fpm (34 m/min)	85 fpm (26 m/min)	68 fpm (21 m/min)	57 fpm (17 m/min)	49 fpm (15 m/min)	43 fpm (13 m/min)

Winch	Full drum pull	Allowable cable pull
Standard planetary	4400 lb (996 kg) high speed	9080 lb (4119 kg)
	9000 lb (4082 kg) low speed	

Load line deduct		
Block type	Rating	Weight
Aux boom head		100 lb (45 kg)
Downhaul weight	8 USt (7,26 t)	240 lb (109 kg)
1-sheave block	15 USt (13,60 t)	375 lb (170 kg)
2-sheave block	25 USt (22,67 t)	640 lb (290 kg)
3-sheave block	35 USt (31,74 t)	870 lb (395 kg)
4-sheave block	36 USt (32,65 t)	970 lb (440 kg)

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# SPECIFICATIONS

## Boom and Jib Combinations

**Model 14110A** – Equipped with a 33 ft 4 in - 110 ft (10,16 m - 33,53 m) four-section boom. This model can be equipped with a 30 ft (9,15 m) single section jib or a 30 ft - 54 ft (9,15 m - 16,46 m) two-section jib. Maximum tip height with 30 ft (9,15 m) jib is 147 ft (44,82 m), while maximum tip height with 54 ft (16,46 m) jib is 171 ft (52,13 m).

33 ft 4 in - 110 ft (10,16 m - 33,53 m) four-section boom

14FJ30M 30 ft (9,15 m) single-section jib



33 ft 4 in - 110 ft (10,16 m - 33,53 m) four-section boom

14FJ54M 30 ft - 54 ft (9,15 m - 16,46 m) two-section jib



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

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.

# ACCESSORIES

## Radio Remote Controls

Eliminate the handling and maintenance concerns that accompany cabled remotes. Operate to a range of about 250 ft (76 m), 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-1
- BSAY-2

## Air Conditioning

Back of cab mounted, self contained modular unit with in cab cool air outlets. Requires 130+ amp chassis alternator.

- AC

**Outrigger Controls** at operator's seat in addition to ground controls.

- ICORC

## Open Seat Controls

Open seat controls with railing in lieu of cab.

- SSC

## Auxiliary Winch

9000 lb line pull with 375 ft of 5/8 in diameter rotation-resistant wire rope.

- WOAW

**Foreign-Language** Danger Decals, Control Knobs, and Operators' Manuals

- SDD
- SOM

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Part No. 1400A/2M/0325

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