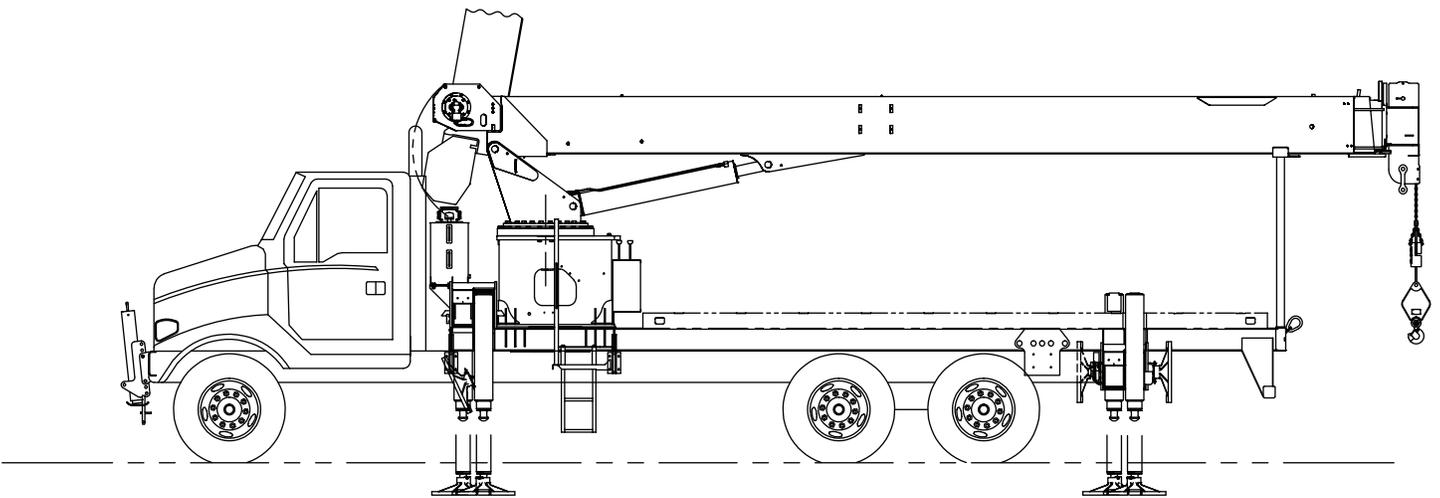


National Crane Series 800H

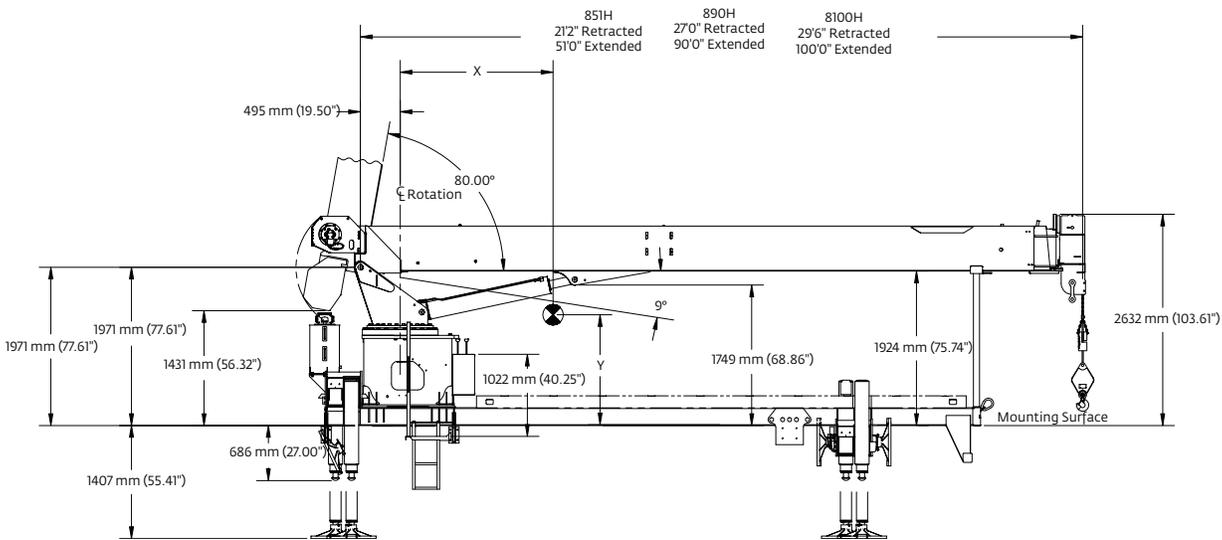
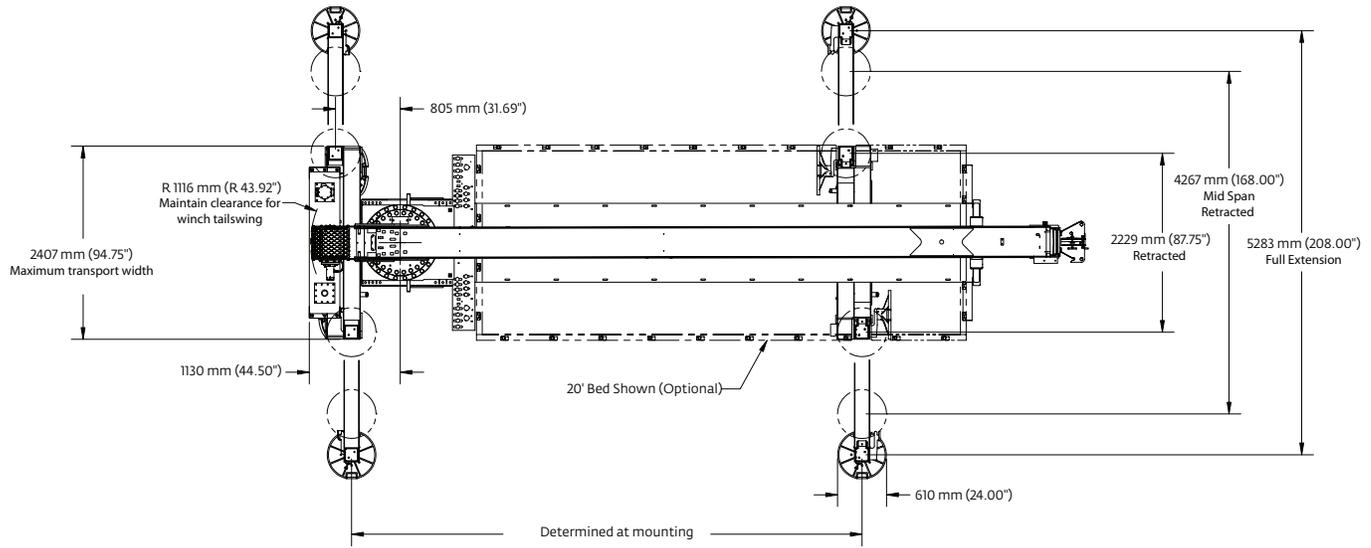
Data Sheet



Features

- 30,48 m (100 ft) four-section boom
- 20,86 t (23 USt) rating
- Self-lubricating Easy Glide wear pads

Dimensions



Boom Model	C.G.		Dry weight	With oil weight*
	X	Y		
851H	165 cm (65")	137 cm (54")	5543 kg (12,220 lb)	5860 kg (12,920 lb)
890H	230 cm (91")	152 cm (60")	6793 kg (14,910 lb)	7080 kg (15,610 lb)
8100H	255 cm 101")	155 cm (61")	7092 kg (15,635 lb)	7409 kg (16,335 lb)

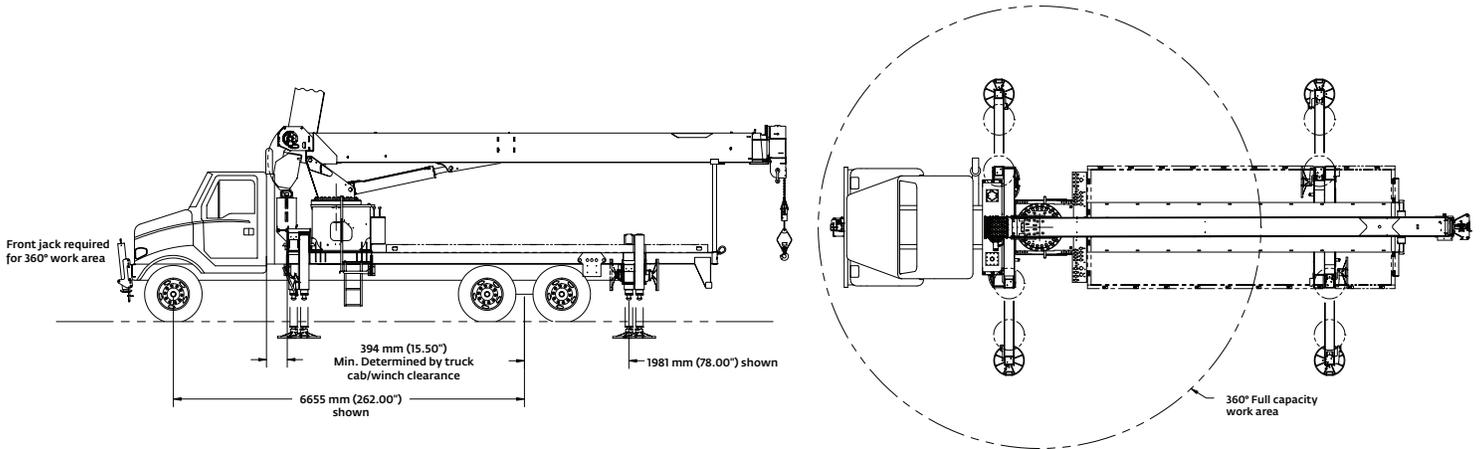
Subbase	C.G.	Weight
22 ft	216 cm (85 in)	2944 kg (6490 lb)
Rear stabilizers with box		816 kg (1800 lb)

*Above weights do not include: boom, subbase, front or rear stabilizers, rear stabilizer box, jibs, bed, reservoir, SFO, PTO, pump, boom rest, toolboxes, rear bumper.

C.G. are located from the centerline of rotation.

Subbase calculation includes front stabilizers

Mounting configurations



The configurations are based on the Series 800H 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. Trucks with a frame height in excess of 107 cm (42 in) after mounting will have a final mounted unit height more than 411,5 cm (13 ft 6 in). Chassis that do not meet these minimum stability weights may require counterweight.

800H Behind Cab Mount-180° Full Capacity Work Area

Working area	180°
Front Axle Weight Rating	8165 kg (18,000 lb)
Rear Axle Weight Rating	15 422 kg (34,000 lb)
Gross Vehicle Weight Rating	23 587 kg (52,000 lb)
Wheelbase	650 cm (256 in)
Cab to Axle/trunnion (CA/CT)	488 cm (192 in)
Frame Section Modulus (SM) under crane: 758 MPa (110,000 PSI)	426 cm ³ (26 in ³)
Frame Section Modulus (SM) over rear stabilizers: 758 MPa (110,000 PSI) ..	4082 cm ³ (13.3 in ³)
Minimum Truck Weight, Front	4990 kg (11,000 lb) minimum*
Minimum Truck Weight, Rear	4082 kg (9000 lb) minimum*

*Weights are for bare truck. Final crane stability weight must include crane, stabilizers 22 ft subbase and 22 ft wood bed or be counterweighted accordingly.

800H Behind Cab Mount-360° Full Capacity Work Area

Working area	360°
Front Axle Weight Rating	8165 kg (18,000 lb)
Rear Axle Weight Rating	15 422 kg (34,000 lb)
Gross Vehicle Weight Rating	23 587 kg (52,000 lb)
Wheelbase	650 cm (256 in)
Cab to Axle/trunnion (CA/CT)	488 cm (192 in)
Frame Section Modulus (SM) under crane: 758 MPa (110,000 PSI)	426 cm ³ (26 in ³)
Frame Section Modulus (SM) over rear stabilizers: 758 MPa (110,000 PSI) ...	218 cm ³ (13.3 in ³)
Frame Section Modulus (SM) from the rear front spring hanger forward to the front bumper or SFO attachment point: 758 MPa (110,000 PSI)	218 cm ³ (13.3 in ³)
Minimum Truck Weight, Front	4990 kg (11,000 lb) minimum*
Minimum Truck Weight, Rear	4082 kg (9000 lb) minimum*

*Weights are for bare truck. Final crane stability weight must include crane, stabilizers 22 ft subbase and 22 ft wood bed or be counterweighted accordingly.

**Extended front frame rails with a minimum section modulus of 13.3 in³ must be used with an SFO.

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

**If the distance from the front bumper (SFO) to center of rotation exceeds 366 cm (144 in), the 12,19 m (40 ft) overall truck length restriction will be exceeded. Overall length restrictions vary from state to state. In some states it is legal to be more than 12,18 m (40 ft) in length, and some states allow overlength permits.

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 injection requires EET engine remote throttle

- All mounting data is based on a National Series 800H with an 85 percent 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

800H boom and jib combinations

Available in three basic models.

Model 851H – Equipped with a 6,4 m - 15,5 m (21 ft - 51 ft) three-section boom. Maximum tip height is 18,9 m (62 ft).



Model 890H – Equipped with a 8,23 m - 27,43 m (27 ft - 90 ft) four-section boom. This model can be equipped with a 7,62 m - 13,41 m (25 ft - 44 ft) two-section jib. Maximum tip height with 13,41 m (44 ft) jib is 43,58 m (143 ft).

(8.23-27.43 m 27'-90') four-section boom.



8,23 m - 27,43 m (27 ft - 90 ft) four-section boom.

8FJ44M 7,62 m - 13,41 m (25 ft - 44 ft) two-section jib



Model 8100H – Equipped with a 8,99 m - 30,48 m (29 ft 6 in - 100 ft) four-section boom. This model can be equipped with a 7,62 m - 13,41 m (25 ft - 44 ft) two-section jib. Maximum tip height with 13,41 m (44 ft) jib is 46,32 m (152 ft).

(8.99-30.48 m 29'6" - 100') four-section boom.



8,99 m - 30,48 m (29 ft 6 in - 100 ft) four-section boom.

8FJ44M 7,62 m - 13,41 m (25 ft - 44 ft) two-section jib



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

Specifications

800H winch data

- 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 and third layers
- Winch line pulls may be limited by the winch capacity or the ANSI 5 to 1 cable safety factor
- Hook blocks are rated at maximum capacity for the block. **Do not exceed rated cable pull with any block.**

1 part line	2 part line	3 part line	4 part line	5 part line	6 part line
					

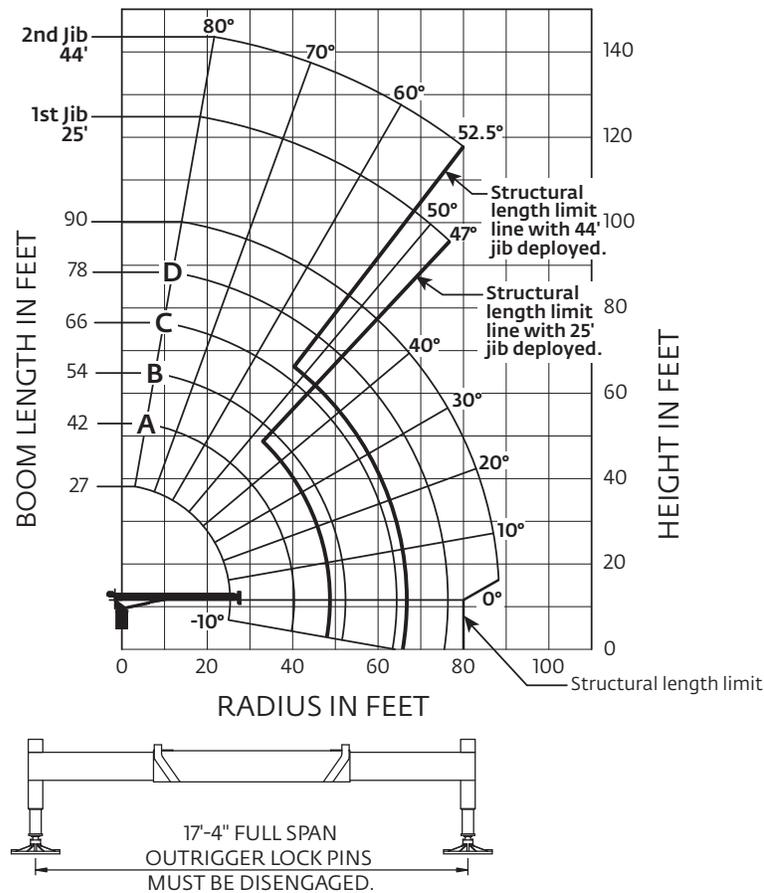
Winch	Cable supplied	Average breaking strength	Lift and speed	Lift and speed	Lift and speed	Lift and speed	Lift and speed	Lift and speed
Standard planetary winch	9/16" diameter rotation resistant	17 463 kg (38,600 lb)	3492 kg (7700 lb) 45 m/min (147 fpm)	6985 kg (15,400 lb) 22 m/min (73 fpm)	10 477 kg (23,100 lb) 15 m/min (49 fpm)	13 970 kg (30,800 lb) 11 m/min (38 fpm)	17 163 kg (38,500 lb) 9 m/min (29 fpm)	20 865 kg (46,000 lb) 8 m/min (25 fpm)
With "Burst-of-Speed"	9/16" diameter rotation resistant	17 463 kg (38,600 lb)	1360 kg (3000 lb) 62 m/min (206 fpm)	2721 kg (6000 lb) 31 m/min (103 fpm)	4082 kg (9000 lb) 20 m/min (68 fpm)	5443 kg (12,000 lb) 15 m/min (51 fpm)	6803 kg (15,000 lb) 12 m/min (41 fpm)	8164 kg (18,000 lb) 10 m/min (34 fpm)

Winch	Bare drum pull	Allowable cable pull
Standard rotation resistant rope	4627 kg (10,200 lb)	3493 kg (7700 lb)

Loadline deduct		
Block type	Rating	Weight
Downhaul weight	3,49 t (3.85 USt)	68 kg (150 lb)
1-sheave block	10,48 t (11.55 USt)	138 kg (305 lb)
2-sheave block	17,46 t (19,25 USt)	161 kg (355 lb)
3-sheave block	27,21 t (30.00 USt)	261 kg (575 lb)

Working range

890H: Full span outriggers (17 ft 4 in)



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 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 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.

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.

Load chart

890H: Full span outriggers (17 ft 4 in)

LOADED RADIUS (ft)	LOADED BOOM ANGLE (deg)	27' BOOM (lb)	LOADED BOOM ANGLE (deg)	A 42' BOOM (lb)	LOADED BOOM ANGLE (deg)	B 54' BOOM (lb)	LOADED BOOM ANGLE (deg)	C 66' BOOM (lb)	LOADED BOOM ANGLE (deg)	D 78' BOOM (lb)	LOADED BOOM ANGLE (deg)	90' BOOM (lb)
5	77	46,000										
8	70	33,100										
10	65	27,500	75.5	23,900	79	22,300						
12	60	23,600	72.5	20,900	77	19,100						
14	54.5	20,700	69.5	18,300	75	16,800	78	15,400				
16	49	18,300	66.5	16,300	72.5	14,800	76	13,600	79	12,600		
20	36	14,500	60	13,200	68	12,200	72.5	11,250	76	10,300	78	10,000
25			51.5	10,700	62	9900	68	9150	72	8450	74.5	8100
30			42	8800	55.5	8350	63.5	7450	68	6800	71.5	6500
35			31	7050	49	6900	58	6400	64	5850	68	5550
40					41	5850	53	5500	60	5250	64.5	4750
45					32	4900	47	4750	55	4400	61	4150
50					18.5	3700	40.5	4050	50.5	3850	57	3600
55							32.5	3350	45.5	3300	53	3150
60							22.5	2700	39.5	2900	49	2750
65									33	2450	44	2400
70									25	1950	39	2050
75									12	1150	33.5	1700
80											26.5	1350
85											17	850
	0	7400	0	3500	0	2000	0	950				

25'-44' JIB FULL SPAN RATED LOADS

25'-44' JIB MID SPAN RATED LOADS

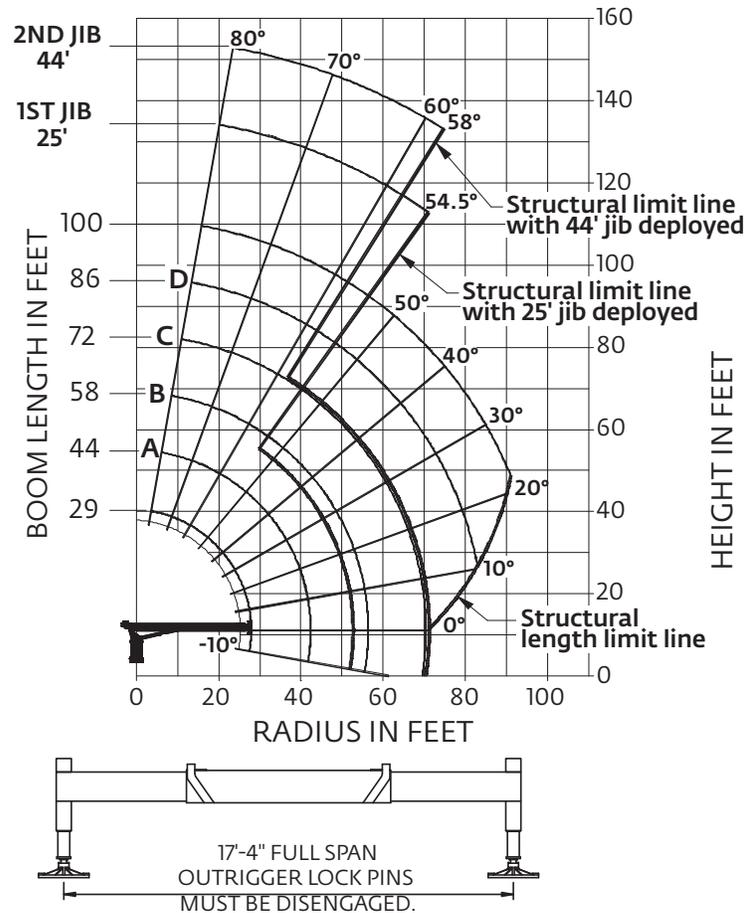
LOADED RADIUS (ft)	LOADED BOOM ANGLE (deg)	25' JIB (lb)	LOADED BOOM ANGLE (deg)	44' JIB (lb)	LOADED RADIUS (ft)	LOADED BOOM ANGLE (deg)	25' JIB (lb)	LOADED BOOM ANGLE (deg)	44' JIB (lb)
30	76.5	4800	79	3100	30	76.5	2800	79	3100
35	74	4300	77	2900	35	74	2500	77	2900
40	71.5	3650	75	2700	40	71.5	2200	75	2700
45	68.5	3000	73	2500	45	68.5	1900	73	2500
50	66	2450	71	2300	50	66	1600	71	2300
55	63	2000	69	2100	55	63	1400	69	2050
60	60	1600	66	1800	60	60	1000	66	1500
65	57	1300	63.5	1500	65	57	650	63.5	1150
70	54	1000	61	1250	70			61	800
75	50.5	750	58.5	1050	75			58.5	550
80	47	500	55.5	850					
85			52.5	650					

Note: 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.

Working range

8100H: Full span outriggers (17 ft 4 in)



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 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 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.

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.

Load chart

8100H: Full span outriggers (17 ft 4 in)

LOADED RADIUS (ft)	LOADED BOOM ANGLE (deg)	29' BOOM (lb)	LOADED BOOM ANGLE (deg)	A 44' BOOM (lb)	LOADED BOOM ANGLE (deg)	B 58' BOOM (lb)	LOADED BOOM ANGLE (deg)	C 72' BOOM (lb)	LOADED BOOM ANGLE (deg)	D 86' BOOM (lb)	LOADED BOOM ANGLE (deg)	100' BOOM (lb)
5	79	46,000										
8	72.5	30,700	79	27,900								
10	68	25,500	76	23,200								
12	63.5	21,800	73.5	19,700	78	18,050						
14	59	19,000	70.5	17,200	76	15,750	79.5	14,350				
16	54	16,700	68	15,200	74	13,850	77.5	12,650				
20	43	13,400	61	12,200	69.5	11,250	74.5	10,350	77.5	9550	80	7450
25	25	9700	54	9700	64	8950	70	8250	74	7650	77	7100
30			45	7900	58.5	7350	66	6650	70.5	6150	74	5850
35			35	6300	53	6100	61.5	5600	67	5200	71	4900
40			20	4600	46	5100	56.5	4750	63	4400	67.5	4250
45					38	4250	51.5	4050	59.5	3800	64.5	3650
50					28.5	3400	46	3450	55	3250	61	3150
55					14	2200	40	2900	51	2800	57.5	2650
60							33	2350	46.5	2400	54	2300
65							24	1800	41	2000	50	1850
70							6.5	700	35.5	1600	46	1650
75									29	1250	42	1350
80									20	800	37	1050
85											32	800
90											25	500
	0	5100	0	2300	0	950						

25'-44' JIB FULL SPAN RATED LOADS					25'-44' JIB MID SPAN RATED LOADS				
LOADED RADIUS (ft)	LOADED BOOM ANGLE (deg)	25' JIB (lb)	LOADED BOOM ANGLE (deg)	44' JIB (lb)	LOADED RADIUS (ft)	LOADED BOOM ANGLE (deg)	25' JIB (lb)	LOADED BOOM ANGLE (deg)	44' JIB (lb)
30	78	3900	80	2750	30	78	3900	80	2750
35	75.5	3400	78	2500	35	75.5	3400	78	2500
40	73	2800	76	2250	40	73	2800	76	2250
45	70.5	2350	74	2000	45	70.5	2350	74	2000
50	68	1850	72	1850	50	68	1850	72	1850
55	65	1500	70	1600	55	65	1500	70	1600
60	62.5	1300	67.5	1350	60	62.5	1100	67.5	1350
65	60	1100	65	1050	65	60	700	65	1050
70	57	750	63	950	70			63	900
75	54.5	600	60.5	800	75			60.5	550
80			58	600					

Note: 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.

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 –

544 kg (1200 lb) capacity steel basket with safety loops for two passengers. Gravity leveling 183 cm x 107 cm (72 in x 42 in) platform. Fast attachment and secure locking systems. Load chart must show 1043 kg (2300 lb) minimum to operate this accessory.

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

Hydraulic Oil Cooler –

Automatic, self-contained radiator system with electric fans cools oil under continuous operation.

- OC

Single Front Outrigger –

Center mount front stabilizer with 25 in vertical stroke.

- SFO

Bulkhead Options –

Steel 30 in solid wall bulkhead.

- BHSI
- BHSD

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

- SDD
- SOM



Notes

Notes

Constant improvement and engineering progress make it necessary that we reserve the right to make specification, equipment and price changes without notice. Illustrations shown may include optional equipment and accessories, and may not include all standard equipment.



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