

National Crane 600E2 Series

Product Guide



Features

- 27,4 m (90 ft) four-section boom
- 18,1 t (20 USt) rating
- Self-lubricating Easy Glide wear pads
- Internal anti-two block



Features



National Crane Series 600E2

- 16,3 t (18 USt) maximum capacity
- 36,9 m (121 ft) maximum vertical reach
- 24,7 m (81 ft) maximum vertical hydraulic reach



Four-section boom

At 90 ft, the Series 600E2 four-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 and vibration. The net result is smoother crane operation.



Outriggers

The Series 600E2 comes equipped with A-frame outriggers and ASH rear stabilizers. An optional single front stabilizer is available for 360° stability. Rear stabilizers include an independent stabilizer control and bolt/clamp-on mounting. Outriggers are equipped with a motion alarm and an outrigger monitoring system.

Front:

6,73 m (22.08 ft) span

Rear:

3 m (10 ft) span

Features



* Product may be shown with optional equipment.

Best in class performance and serviceability

- The steel torsion box and flatbed further reduce frame flex
- 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
- A control knob located on the swing motor brake release valve can be easily adjusted to the crane operator's swing speed preference
- Engine start/stop switches
- Emergency stop overrides located at control station
- Hydraulic reservoir capacity of 66 gal

Serviceability

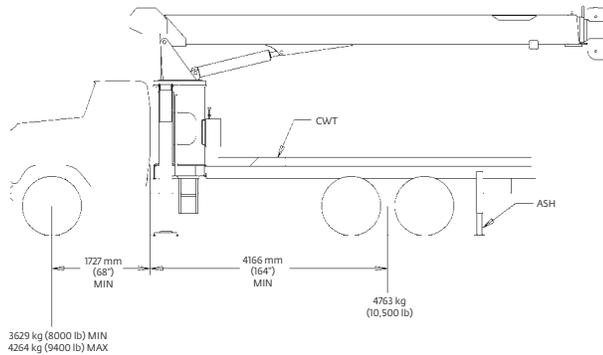
- Bearings on the boom and retract cables can be greased through access holes in the boom side plates.
- Removable winch allows the internal telescoping cylinder to be removed quickly, without dismantling the boom
- Internal anti-two-block wire routing eliminates external reel and wire to protect crane components
- The boom sheave case is open, allowing access to replace the internal anti-two-block wire and to observe internal boom components
- Internal boom parts have been reduced, decreasing service time when rebuilding the machine

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Mounting configurations

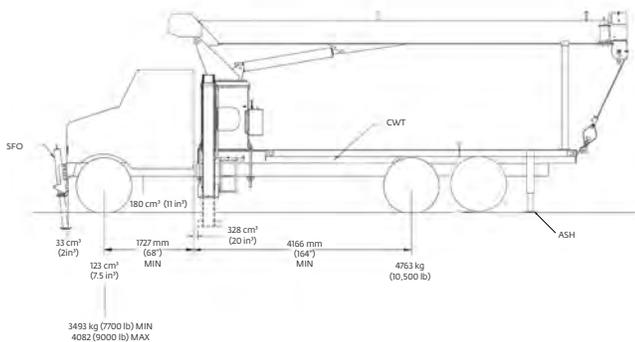
The configurations are based on the Series 600E2 with an 85% stability factor. The complete unit must be installed in accordance with factory requirements and a test performed to determine actual stability and counterweight requirements since individual truck chassis vary.



Configuration 1 with Torsion Box – 180° Full Capacity Work Area

Working area.....	180°
Gross Axle Weight Rating Front.....	6350 kg (14,000 lb)
Gross Axle Weight Rating Rear.....	15 442 kg (34,000 lb)
Gross Vehicle Weight Rating.....	21 773 kg (48,000 lb)
Wheelbase.....	589 cm (232 in)
Cab to Axle/trunnion (CA/CT).....	417 cm (164 in)
Frame Section Modulus (SM) under crane: (758 MPa 110,000 PSI).....	261 cm ³ (15.9 in ³)
Frame Section Modulus (SM) over rear stabilizers: (758 MPa 110,000 PSI).....	213 cm ³ (13 in ³)
Stability Weight, Front.....	3629 kg (8000 lb) minimum*
Stability Weight, Rear.....	4763 kg (10,500 lb) minimum*
Estimated Average Final Weight.....	13 608 kg (30,000 lb)

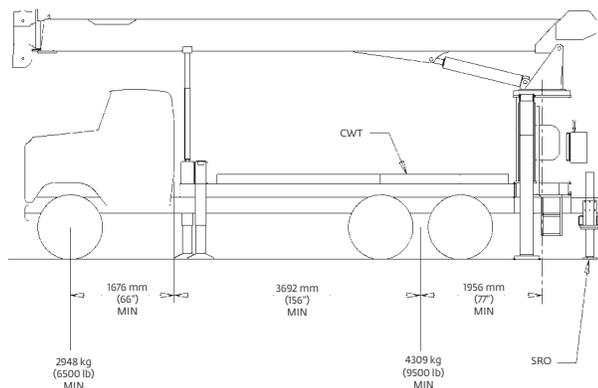
Requires front SFO stabilizer to give machine full capacity 360° around the truck. Truck must meet the minimum requirements above. Front stabilizer gives the machine a solid base, helping the operator control loads precisely. Extended front frame rails required for SFO installation.



Configuration 2 with Torsion Box – 360° Full Capacity Work Area

Working area.....	360°
Gross Axle Weight Rating Front.....	6350 kg (14,000 lb)
Gross Axle Weight Rating Rear.....	15 442 kg (34,000 lb)
Gross Vehicle Weight Rating.....	21 773 kg (48,000 lb)
Wheelbase.....	589 cm (232 in)
Cab to Axle/trunnion (CA/CT).....	417 cm (164 in)
Frame Section Modulus (SM) under crane: (758 MPa 110,000 PSI).....	328 cm ³ (20 in ³)
Frame Section Modulus (SM) over rear stabilizers: (758 MPa 110,000 PSI).....	213 cm ³ (13 in ³)
Stability Weight, Front.....	3130 kg (7700 lb) minimum*
Stability Weight, Rear.....	3175 kg (10,500 lb) minimum*
Estimated Average Final Weight.....	13 879 kg (30,600 lb)

Allows the installation of the Model 600E2 on a chassis. In most cases, the chassis will not require reinforcing, and the amount of counterweight required is minimized, increasing payload capacities. Extended front frame rails required for SFO installation.



Configuration 3 with Torsion Box – Rear Mount

Working area.....	360°
Gross Axle Weight Rating Front.....	5443 kg (12,000 lb)
Gross Axle Weight Rating Rear.....	15 442 kg (34,000 lb)
Gross Vehicle Weight Rating.....	20 865 kg (46,000 lb)
Wheelbase.....	564 cm (222 in)
Cab to Axle/trunnion (CA/CT).....	396 cm (156 in)
Frame Section Modulus (SM) under crane: (758 MPa 110,000 PSI).....	261 cm ³ (15.9 in ³)
Frame Section Modulus (SM) over rear stabilizers: (758 MPa 110,000 PSI).....	213 cm ³ (15.9 in ³)
Stability Weight, Front.....	3629 kg (6500 lb) minimum*
Stability Weight, Rear.....	4763 kg (9500 lb) minimum*
Estimated Average Final Weight.....	13 040 kg (28,750 lb)

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 600E2 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 per SAE J765; contact the factory for details
- Transmission neutral safety interlock switch is required with optional remote control

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

Specifications

Boom and jib combinations data

Available in five basic models:

Model 638E2 – Equipped with a 4,88 m - 11,58 m (16 ft - 38 ft) three-section boom. Maximum tip height is 14,63 m (48 ft) (no jib option available).

4,88 m - 11,58 m (16 ft - 38 ft) three-section boom



Model 649E2 – Equipped with a 4,88 m - 15 m (16 ft - 49 ft) four-section boom. Maximum tip height is 17,98 m (59 ft).

4,88 m - 15 m (16 ft - 49 ft) four-section boom

6FJ29M 4,6 m - 7,6 m (15 ft - 25 ft) two-section jib



Model 660E2 – Equipped with a 7,12 m - 18,3 m (24 ft - 60 ft) three-section boom. Maximum tip height is 21,3 m (70 ft) (no jib option available).

7,2 m - 18,3 m (24 ft - 60 ft) three-section boom



Model 671E2 – Equipped with a 8,23 m - 21,64 m (27 ft - 71 ft) three-section boom. This model can be equipped with a 7,62 m - 13,72 m (25 ft - 45 ft) two-section jib. Maximum tip height with 13,72 m (45 ft) jib is 38,25 m (125 ft).

8,23 m - 21,64 m (27 ft - 71 ft) three-section boom

6FJ45M 7,62 m - 13,72 m (25 ft - 45 ft) two-section jib



Model 690E2 – 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 - 13,72 m (25 ft - 45 ft) two section jib. Maximum tip height with 13,72 m (45 ft) jib is 43,95 m (144 ft).

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

6FJ45M 7,62 m - 13,72 m (25 ft - 45 ft) two-section jib

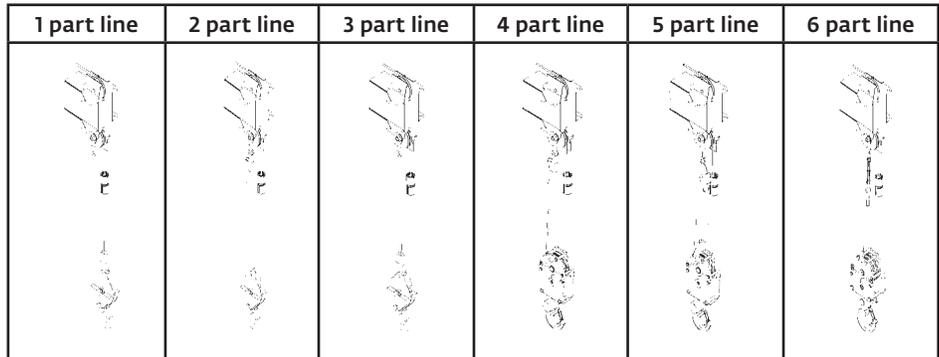


Note: Maximum tip is measured with outriggers/stabilizers fully extended.

Specifications

600E2 winch data

- All winch pulls and speeds are shown on the fourth layer.
- Winch line pulls would increase on the first and second layers.
- Winch line pulls may be limited by the winch capacity or the ANSI 5 to 1 cable safety factor, shown below this chart.
- Hook blocks are rated at maximum capacity for the block. **Do not exceed rated cable pull with any block.**



Winch	Cable supplied	Average breaking strength	Max pull	Max pull	Max pull	Max pull	Max pull	Max pull
Standard planetary winch	9/16 in diameter rotation resistant	17 463 kg (38,500 lb)	3492,66 kg (7700 lb)	6985,32 kg (15,400 lb)	10 477,98 kg (23,100 lb)	13 970,65 kg (30,800 lb)	14 514,96 kg (38,500 lb)	14 514,96 kg (40,000 lb)

Layer	Winch pull		Winch speed		BOS winch speed		Rope capacity	
	kg	lb	mpm	fpm	mpm	fpm	m	ft
1	4708	10,380	48	157	68	222	19	64
2	4246	9360	53	175	75	246	41	136
3	3865	8520	59	192	83	271	65	215
4	3547	7820	64	209	90	294	91	301
5	3279	7230	69	257	97	318	120	394

Note: All ratings based on 128,7 LPM at 22,75 MPa (34 GPM at 3300 psi)
Burst of Speed maximum pull = 1361 kg (3000 lb)

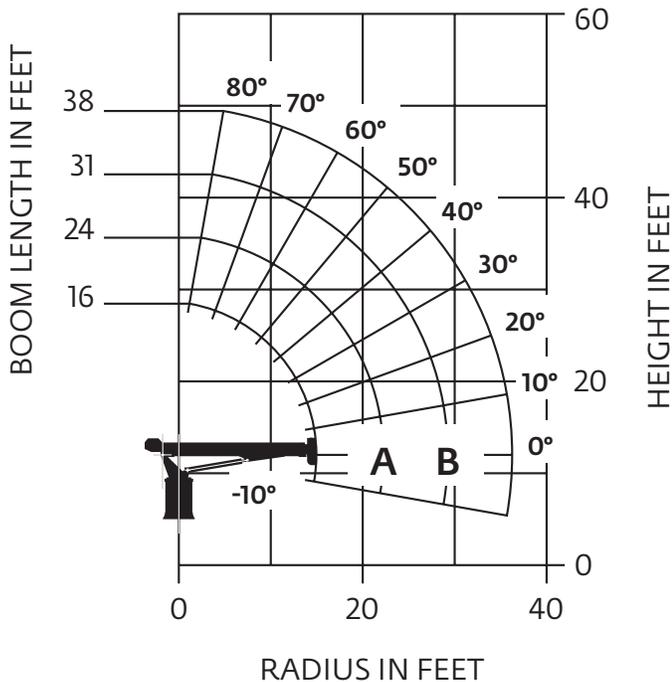
Winch	Bare drum pull	Allowable cable pull
With standard rotation resistant rope	4627 kg (10,200 lb)	3493 kg (7700 lb)

Block type	Loadline deduct	
	Rating	Weight
Downhaul weight	3,49 t (3.85 USt)	68 kg (150 lb)
1-sheave block	10,48 t (11.55 USt)	91 kg (200 lb)
2-sheave block	17,46 t (19.25 USt)	161 kg (355 lb)

Capacities

Series 638E2: 11,58 m (38 ft) boom

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 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.

Load chart

LOADED RADIUS (ft)	LOADED BOOM ANGLE (deg)	16 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	A 24 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	B 31 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	38 ft BOOM (lb)
5	67	40,000						
6	63	36,150						
8	55.5	30,250	68	28,550	74	27,500	77	25,750
10	45.5	25,600	62.5	24,300	69	23,450	73	22,200
12	34	21,900	56.5	20,900	65	20,150	70.5	19,200
14	15	16,750	50	18,150	60.5	17,800	66.5	17,050
16			43	16,200	56	15,800	64.5	15,200
18			34.5	14,200	51.5	14,150	59.5	13,750
20			26.5	12,200	47	12,900	57	12,500
25					31.5	10,150	46	9950
30							35.5	8350
35							18.5	6200
	0	10,850	0	7050	0	5100	0	3850

NOTE:

1. All capacities are in pounds, angles in degrees, radius in feet.
2. Loaded boom angles are given as reference only.
3. Shaded areas are structurally limited capacities.

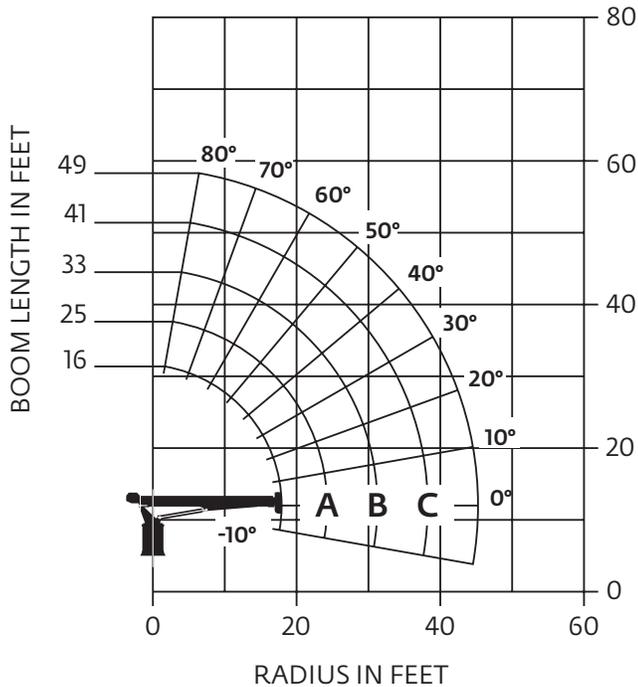
THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE.

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

Capacities

Series 649E2: 15 m (49 ft) boom

National Crane will send you a chart on request – or you may secure needed load rating information through your nearest National Crane dealer.



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- 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.

Load chart

LOADED RADIUS (ft)	LOADED BOOM ANGLE (deg)	16 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	A 25 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	B 33 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	C 41 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	49 ft BOOM (lb)
5	67	40,000	76	38,100						
8	54	29,600	68	27,400	74	26,200	77.5	25,300		
10	44	24,700	63	23,200	70.5	22,200	74.5	21,300	77.5	19,500
12	31.5	20,400	57.5	20,200	66.5	19,250	71.5	18,450	75	17,500
14	8.5	13,750	51.5	17,750	62.5	17,000	68.5	16,300	72.5	15,000
16			45	15,750	58.5	15,200	65.5	14,550	70	13,750
20			29	12,100	49.5	12,500	59	12,050	65	11,750
25					36	9850	50	9800	58	9600
30					16.5	6950	40	8050	50.5	8050
35							27.5	6450	43	6800
40									33	5650
45									18.5	4300
	0	10,950	0	6350	0	4350	0	3200	0	2600

NOTE:

1. All capacities are in pounds, angles in degrees, radius in feet.
2. Loaded boom angles are given as reference only.
3. Shaded areas are structurally limited capacities.

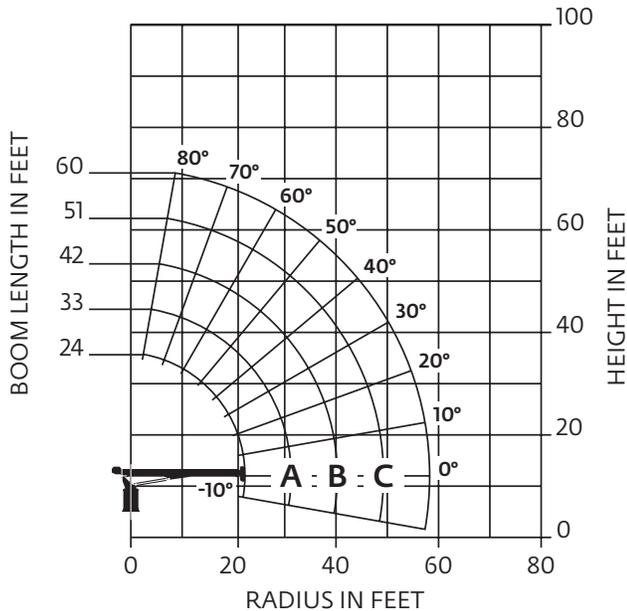
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Capacities

Series 660E2: 18,3 m (60 ft) boom

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 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.

Load chart

LOADED RADIUS (ft)	LOADED BOOM ANGLE (deg)	24 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	A 33 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	B 42 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	C 51 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	60 ft BOOM (lb)
5	75.5	40,000								
8	67.5	27,200	74	25,800	77.5	25,000				
10	62	22,800	70	21,600	75	20,700	78	20,400		
12	56	19,650	67	18,700	72	17,800	75.5	17,400	78.5	17,150
14	49.5	17,150	62.5	16,400	69	15,750	73	15,250	76.5	14,950
16	43	15,150	58.5	14,600	66	14,050	71	13,600	74.5	13,200
20	24.5	11,150	49.5	11,950	60	11,550	66	11,200	70.5	10,850
25			37.5	9400	51.5	9350	59.5	9100	65.5	8800
30			18	6600	42	7700	53	7600	60	7400
35					30.5	6100	45.5	6400	54.5	6200
40							36.5	5350	48	5400
45							25	4250	41	4550
50									33	3900
55									21.5	3000
	0	6150	0	3950	0	2700	0	1950	0	1300

NOTE:

1. All capacities are in pounds, angles in degrees, radius in feet.
2. Loaded boom angles are given as reference only.
3. Shaded areas are structurally limited capacities.

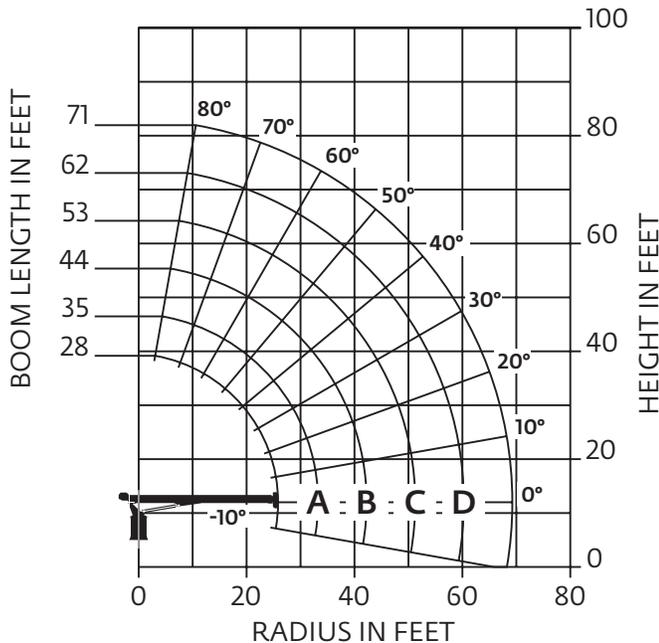
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Capacities

Series 671E2: 21,64 m (71 ft) boom

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 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.

Load chart

LOADED RADIUS (ft)	LOADED BOOM ANGLE (deg)	28 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	A 35 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	B 44 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	C 53 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	D 62 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	71 ft BOOM (lb)
5	77	40,000										
8	70.5	26,150	75	25,200	78.5	24,600						
10	65.5	21,600	71.5	21,450	76	20,800	79	20,400				
12	61	18,500	68	18,400	73	17,800	76.5	17,450	79	16,800		
14	56	16,600	64.5	16,000	70.5	15,850	74.5	15,300	77	14,650		
16	50.5	14,900	60.5	14,200	67.5	14,000	72	13,550	75	13,000	77.5	12,650
20	38	11,900	52.5	11,600	61.5	11,350	67	11,000	71	10,600	74	10,300
25	15.5	8250	40.5	9400	53.5	9100	61	8800	66	8550	69.5	8300
30			26	7100	45.5	7500	55	7300	61	7100	65.5	6850
35					35	6200	48.0	6150	55.5	6000	61	5950
40					20	4500	40.0	5200	49.5	5100	56	5050
45							29.5	4350	43	4350	51	4400
50							14.0	2800	35	3700	45.5	3800
55									25.5	3000	39	3250
60									5.5	1800	31.5	2750
65											22	2150
	0	4800	0	3600	0	2250	0	1500	0	950	0	550

NOTE:

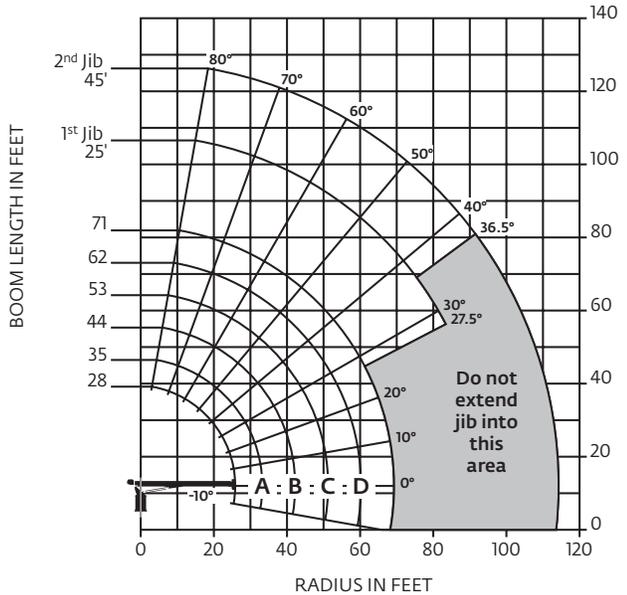
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2. Loaded boom angles are given as reference only.
3. Shaded areas are structurally limited capacities.

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

Capacities

Series 671E2: 21,64 m (71 ft) boom with 13,72 m (45 ft) jib

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 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.

Load chart

LOADED RADIUS (ft)	LOADED BOOM ANGLE (deg)	28 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	A 35 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	B 44 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	C 53 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	D 62 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	71 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	25 ft JIB (lb)	LOADED BOOM ANGLE (deg)	45 ft JIB (lb)	
5	77	40,000															
8	70.5	25,550	75	24,750	78.5	24,250											
10	65.5	21,000	71.5	21,000	76	20,450	79	20,100									
12	61	17,900	68	17,950	73	17,450	76.5	17,150	79	16,550							
14	56	16,000	64.5	15,550	70.5	15,500	74.5	15,000	77	14,400	79	12,450					
16	50.5	14,300	60.5	13,700	67.5	13,650	72	13,250	75	12,750	77.5	12,450					
20	38	11,300	52.5	11,100	61.5	10,950	67	10,700	71	10,350	74	10,050					
25	19.5	7650	40.5	8900	53.5	8700	61	8500	66	8300	69.5	8050	75.5	4400			
30			26	6600	45.5	7100	55	7000	61	6850	65.5	6600	72.5	3900	76.5	2600	
35					35	5800	48.0	5850	55.5	5750	61	5700	69	3200	74	2450	
40					20	4100	40.0	4900	49.5	4850	56	4800	66	2750	72	2300	
45								29.5	4050	43	4050	51	4150	62.5	69	2100	
50								14.0	2450	35	3400	45.5	3550	59.5	2000	66.5	1900
55									25.5	2700	39	3000	55.5	1750	64	1700	
60									10	1500	31.5	2500	52	1500	61	1500	
65											22	1900	48	1300	58.5	1350	
70													43.5	1100	55	1200	
75													39	900	52	1050	
80													33.5	700	48.5	900	
85													27.5	600	45	800	
90															41	700	
95															36.5	600	
	0	4200	0	3100	0	1850	0	1150	0	650							

NOTE:

1. All capacities are in pounds, angles in degrees, radius in feet.
2. Loaded boom angles are given as reference only.
3. Shaded areas are structurally limited capacities.

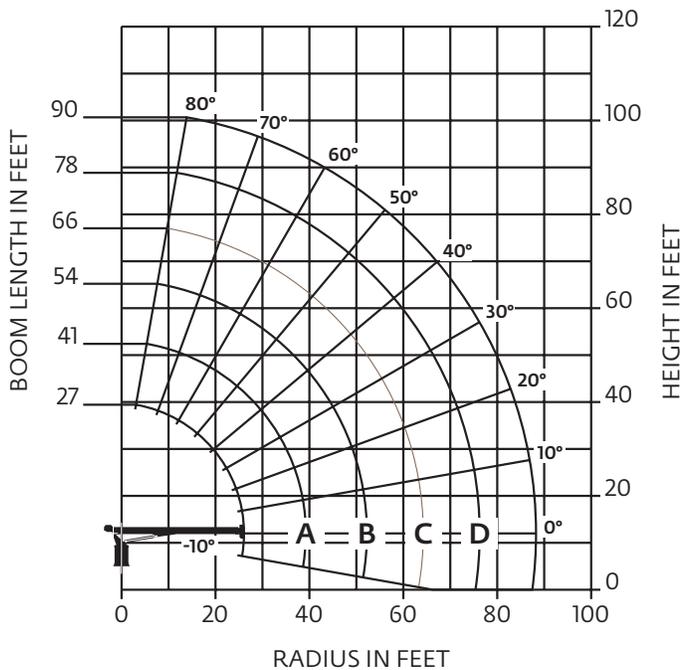
THIS CHART IS ONLY A GUIDE AND SHOULD NOT BE USED TO OPERATE THE CRANE.

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

Capacities

Series 690E2: 27,43 m (90 ft) boom

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 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.

Load chart

LOADED RADIUS (ft)	LOADED BOOM ANGLE (deg)	27 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	A 41 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	B 54 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	C 66 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	D 78 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	90 ft BOOM (lb)
5	77	40,000										
8	70	25,750										
10	66	21,400	74	20,950								
12	61.5	18,450	71	17,750	76	17,000						
14	57	16,400	68	15,250	74	15,000	77.5	14,450				
16	51	14,750	65.5	13,300	71.5	13,200	75.5	12,600				
20	40	11,250	58.5	10,800	67.5	10,500	72	9950	76	9700	77.5	7850
25	19	7500	50	9050	61.5	8150	67	7900	71.5	7750	74.5	7550
30			40	7550	55	6750	62.5	6450	68	6250	71.5	6150
35			26.5	5250	48	5700	58	5450	63.5	5200	68	5050
40					40	4600	52	4550	59.5	4400	64.5	4200
45					32	3850	46.5	3850	54.5	3700	61	3550
50					16.5	2450	39.5	3150	50	3150	57	3000
55							31	2550	44.5	2650	53.0	2550
60							21.5	1800	39.5	2250	48.5	2150
65									32.5	1750	44	1850
70									24	1250	39	1500
75									11	450	33	1150
80											26.5	800
	0	4150	0	1950	0	850						

NOTE:

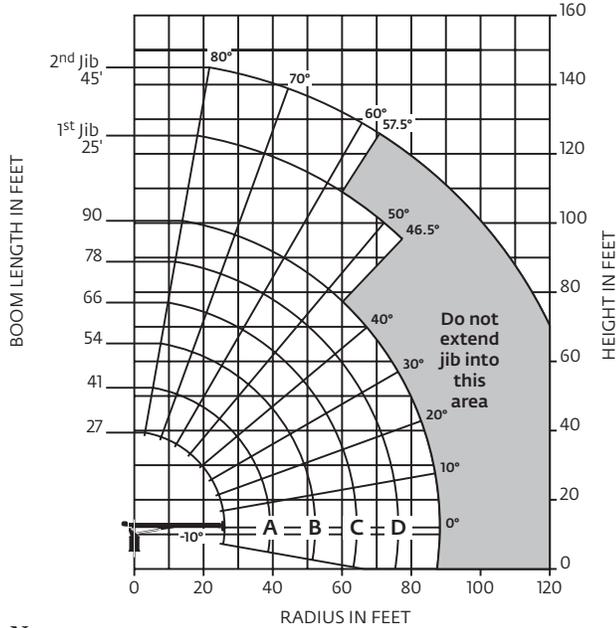
1. All capacities are in pounds, angles in degrees, radius in feet.
2. Loaded boom angles are given as reference only.
3. Shaded areas are structurally limited capacities.

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

Capacities

Series 690E2: 27,43 m (90 ft) boom with 13,72 m (45 ft) jib

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 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.

Load chart

LOADED RADIUS (ft)	LOADED BOOM ANGLE (deg)	27 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	A 41 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	B 54 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	C 66 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	D 78 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	90 ft BOOM (lb)	LOADED BOOM ANGLE (deg)	25 ft JIB (lb)	LOADED BOOM ANGLE (deg)	45 ft JIB (lb)
5	77	40,000														
8	70	25,200														
10	66	20,800	74	20,550												
12	61.5	17,850	71	17,350	76	16,700										
14	57	15,800	68	14,850	74	14,700	77.5	14,250								
16	51	14,150	65.5	12,900	71.5	12,900	75.5	12,350								
20	40	10,650	58.5	10,400	67.5	10,200	72	9700	76	9500	77.5	7700				
25	19	6900	50	8650	61.5	7850	67	7650	71.5	7550	74.5	7400	78	2800		
30			40	7150	55	6450	62.5	6200	68	6050	71.5	6000	75.5	2500	78.5	1700
35			26.5	4850	48	5400	58	5200	63.5	5000	68	4850	73	2200	76.5	1500
40					40	4300	52	4300	59.5	4200	64.5	4000	70	1900	74	1300
45					32	3550	46.5	3600	54.5	3500	61	3350	67.5	1600	72	1100
50					16.5	2150	39.5	2900	50	2950	57	2800	65.5	1400	70	1000
55							31	2300	44.5	2450	53	2350	62.5	1200	67.5	900
60							21.5	1550	39.5	2050	48.5	1950	59.5	1000	65.5	800
65									32.5	1550	44	1650	56.5	800	63	700
70									24	1050	39	1300	53.5	700	60.5	600
75											33	950	50	600	58	500
80											26.5	600	47	500		
	0	3550	0	1550	0	550										

NOTE:

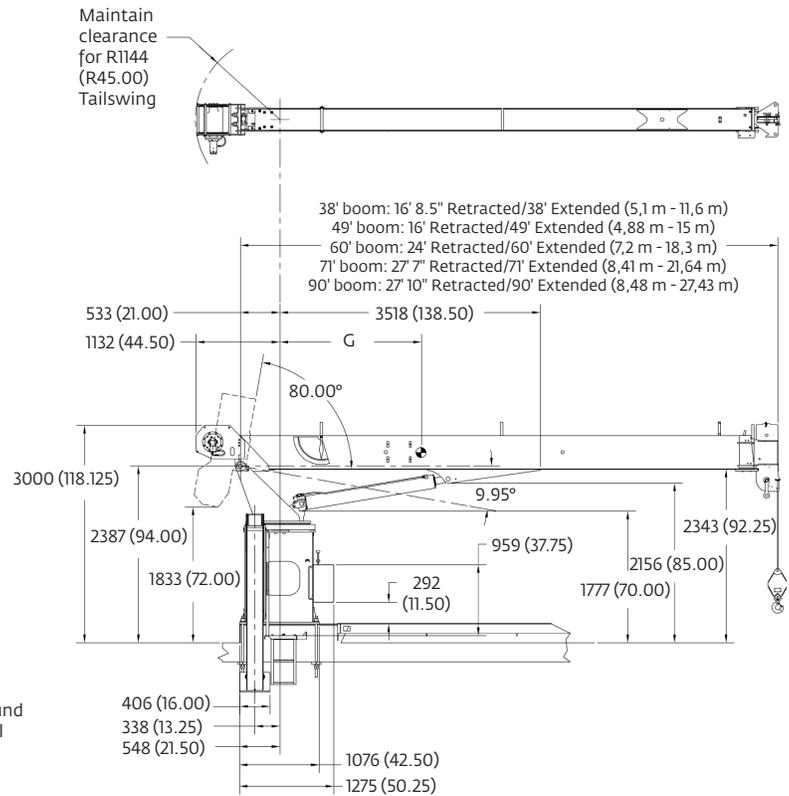
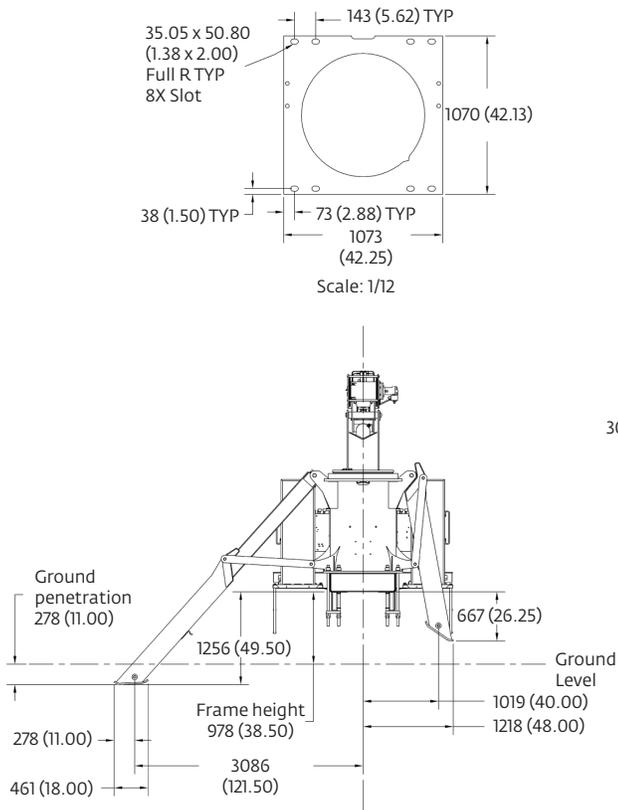
1. All capacities are in pounds, angles in degrees, radius in feet.
2. Loaded boom angles are given as reference only.
3. Shaded areas are structurally limited capacities.

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

Dimensions are in mm (in) unless otherwise specified.



Weight includes all items except Ash 363 kg (830 lb) and bed.

Series	Retracted length	Extended length	Subbase	G (wet)	Dry/Wt	With oil/wt
638E2	16 ft 7 in	38 ft 3 in	18 ft	1,23 m (48.3 in)	6192 kg (13,651 lb)	6462 kg (14,246 lb)
649E2	16 ft	49 ft	18 ft	1,28 m (50.7 in)	6481 kg (14,289 lb)	6751 kg (14,884 lb)
660E2	24 ft	60 ft	18 ft	1,52 m (59.9 in)	6748kg (14,876 lb)	7018 kg (15,471 lb)
671E2	27 ft 7 in	71 ft	20 ft	1,90 m (74.7 in)	7181 kg (15,831 lb)	7451 kg (16,426 lb)
690E2	27 ft 10 in	90 ft	20 ft	1,98 m (78.1 in)	7700 kg (16,976 lb)	7970 kg (17,571 lb)

Subbase	Weight	C.G. length
Standard 18 ft	1229 kg (2710 lb)	2,87 m (113 ft)
Standard 20 ft	1345 kg (2965 lb)	2,87 m (113 ft)
Standard 22 ft	1444 kg (3184 lb)	3,18 m (125 ft)

Subbase C.G. are located from center of rotation

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

Series 600E2 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.

- **RB4R**

Heavy-duty Personnel Basket –

1200 lb (544 kg) 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)**

Duty Cycle Package –

Burst-of-Speed winch control option, with dual stand up control and hydraulic oil cooler, self-contained radiator system with electric fan.

- **DCPKG**

Continuous Rotation–

Allows rotation of turret/boom without rotation stop.

- **CR**

Single Front Outrigger –

Center mount front stabilizer for 360° stability with a 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

Manitowoc Cranes

Regional headquarters

Americas

Manitowoc, Wisconsin, USA
Tel: +1 920 684 4410

Shady Grove, Pennsylvania, USA
Tel: +1 717 597 8121

Europe, Middle East, Africa

Dardilly, France - TOWERS
Tel: +33 (0)4 72 18 20 20

Wilhelmshaven, Germany - MOBILE
Tel: +49 (0) 4421 294 0

China

Shanghai, China
Tel: +86 21 6457 0066

Middle East and
Greater Asia-Pacific
Singapore
Tel: +65 6264 1188

Dubai, UAE
Tel: +9714 8862677



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