



**Mobile Crane Operator Certification**

**Telescoping Boom Cranes Over 75 Tons**

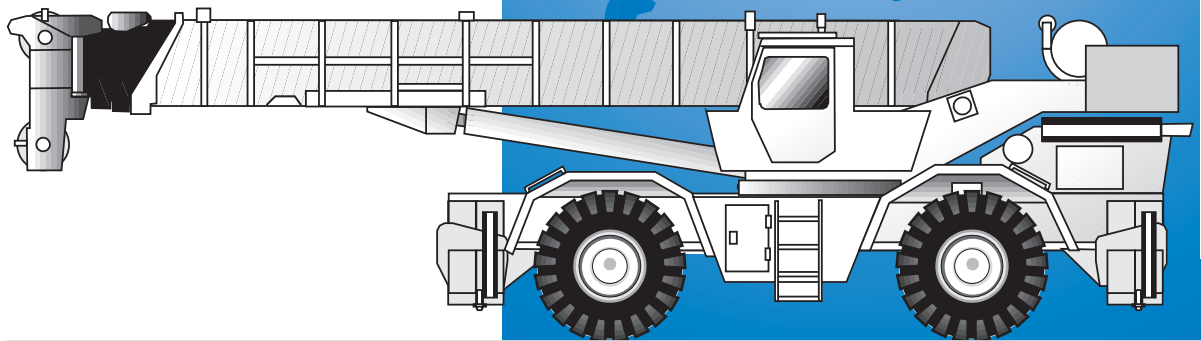
**Load Chart Handout**

for

**Grove RT 890**



# RT890



## Rough Terrain Hydraulic Crane



**FULL POWER**  
36 - 114 ft.  
(11.0 - 34.7 m)



13,200 lbs. (5988 kg)  
\*11,250 lbs. (5103 kg)



100%  
26' 6" (8.9 m)  
Spread



360°



(Feet)	36	42	51	60	69	78	87	96	105	114
10	*180,000 (67)	106,700 (70.5)	101,600 (74)	100,000 (77)	96,700 (79)					
12	120,000 (63)	106,700 (67.5)	101,600 (71.5)	96,500 (75)	87,850 (77)	84,700 (79)				
15	103,450 (57.5)	103,450 (63)	95,300 (68)	84,900 (72)	79,200 (74.5)	77,550 (77)	64,500 (79)			
20	80,650 (47)	80,650 (54.5)	80,650 (61.5)	70,550 (66.5)	64,350 (70)	63,800 (73)	55,000 (75.5)	51,900 (77)	48,450 (78.5)	38,750 (80)
25	62,200 (34)	62,200 (45.5)	62,200 (55)	60,150 (61)	54,000 (65.5)	49,700 (69)	45,600 (72)	43,600 (74)	41,300 (76)	34,000 (77)
30		48,450 (34)	48,450 (47.5)	48,450 (55.5)	46,650 (61)	42,750 (65)	39,150 (68.5)	38,400 (71)	35,350 (73)	30,300 (74.5)
35		39,500 (16.5)	39,500 (39)	39,500 (49.5)	39,500 (56)	37,300 (61)	34,050 (64.5)	32,700 (67.5)	30,700 (70)	27,250 (72)
40			33,050 (28.5)	33,050 (42.5)	33,050 (50.5)	32,900 (56.5)	29,550 (61)	28,850 (64.5)	27,000 (67)	24,750 (69)
45				26,350 (34.5)	26,350 (45)	26,350 (51.5)	26,350 (57)	25,650 (61)	23,900 (64)	22,650 (66.5)
50				21,400 (24)	21,400 (38.5)	21,400 (46.5)	21,400 (52.5)	21,400 (57.5)	21,350 (61)	20,800 (63.5)
60					14,900 (20)	14,900 (35)	14,900 (43.5)	14,900 (49.5)	14,900 (54)	14,900 (57.5)
70							10,950 (32)	10,950 (40.5)	10,950 (46.5)	10,950 (51)
80							7,620 (12.5)	7,620 (29.5)	7,620 (38)	7,620 (44)
90									5,150 (27)	5,150 (35.5)
100										3,240 (24.5)

Minimum boom angle (deg.) for indicated length (no load)

0

Maximum boom length (ft.) at 0 deg. boom angle (no load)

114

NOTE: ( ) Boom angles are in degrees.

\*13 parts of line required to lift this capacity (using aux. boom nose).

A6-829-012385A

Boom Angle	36	42	51	60	69	78	87	96
0°	24,650 (30.2)	19,400 (36.3)	13,950 (45.3)	10,100 (54.3)	7,300 (63.3)	5,120 (72.3)	3,390 (81.3)	1,970 (90.3)

NOTE: ( ) Reference radii in feet.

A6-829-009488

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RT890



**FULL POWER**  
36 - 114 ft.  
(11.0 - 34.7 m)



13,200 lbs. (5988 kg)  
\*11,250 lbs. (5103 kg)



100%  
26' 6" (8.9 m)  
Spread



Over Front



(Feet)	36	42	51	60	69	78	87	96	105	114
10	*180,000 (67)	106,700 (70.5)	101,600 (74)	100,000 (77)	96,700 (79)					
12	120,000 (63)	106,700 (67.5)	101,600 (71.5)	96,500 (75)	87,850 (77)	84,700 (79)				
15	103,450 (57.5)	103,450 (63)	95,300 (68)	84,900 (72)	79,200 (74.5)	77,550 (77)	64,500 (79)			
20	80,650 (47)	80,650 (54.5)	80,650 (61.5)	70,550 (66.5)	64,350 (70)	63,800 (73)	55,000 (75.5)	51,900 (77)	48,450 (78.5)	38,750 (80)
25	62,200 (34)	62,200 (45.5)	62,200 (55)	60,150 (61)	54,000 (65.5)	49,700 (69)	45,600 (72)	43,600 (74)	41,300 (76)	34,000 (77)
30		48,450 (34)	48,450 (47.5)	48,450 (55.5)	46,650 (61)	42,750 (65)	39,150 (68.5)	38,400 (71)	35,350 (73)	30,300 (74.5)
35		39,500 (16.5)	39,500 (39)	39,500 (49.5)	39,500 (56)	37,300 (61)	34,050 (64.5)	32,700 (67.5)	30,700 (70)	27,250 (72)
40			34,400 (28.5)	34,400 (42.5)	34,400 (50.5)	32,900 (56.5)	29,550 (61)	28,850 (64.5)	27,000 (67)	24,750 (69)
45				29,250 (34.5)	29,250 (45)	29,250 (51.5)	26,550 (57)	25,650 (61)	23,900 (64)	22,650 (66.5)
50				25,750 (24)	25,750 (38.5)	25,750 (46.5)	23,750 (52.5)	22,700 (57.5)	21,350 (61)	20,800 (63.5)
60					18,900 (20)	18,900 (35)	18,900 (43.5)	18,400 (49.5)	17,850 (54)	17,450 (57.5)
70							13,800 (32)	13,800 (40.5)	13,800 (46.5)	13,800 (51)
80							10,100 (12.5)	10,100 (29.5)	10,100 (38)	10,100 (44)
90									7,290 (27)	7,290 (35.5)
100										5,070 (24.5)
Minimum boom angle (deg.) for indicated length (no load)										0
Maximum boom length (ft.) at 0 deg. boom angle (no load)									114	

NOTE: ( ) Boom angles are in degrees.  
\*13 parts of line required to lift this capacity (using aux. boom nose).

A6-829-012386A

Boom Angle	36	42	51	60	69	78	87	96
0°	24,650 (30.2)	19,400 (36.3)	13,950 (45.3)	10,100 (54.3)	7,300 (63.3)	5,120 (72.3)	3,390 (81.3)	1,970 (90.3)

NOTE: ( ) Reference radii in feet.

A6-829-009488

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RT890



**FULL POWER**  
36 - 114 ft.  
(11.0 - 34.7 m)



13,200 lbs.  
(5988 kg)



50%  
17' 6-1/2" (5.35 m)  
Spread



360°



(Feet)	36	42	51	60	69	78	87	96	105	114
10	125,000 (67)	106,700 (70.5)	101,600 (74)	100,000 (77)	96,700 (79)					
12	111,000 (63)	106,700 (67.5)	101,600 (71.5)	96,500 (75)	87,850 (77)	84,700 (79)				
15	94,450 (57.5)	94,650 (63)	94,850 (68)	84,900 (72)	79,200 (74.5)	77,550 (77)	64,500 (79)			
20	72,700 (47)	72,300 (54.5)	69,200 (61.5)	67,050 (66.5)	64,350 (70)	62,350 (73)	55,000 (75.5)	51,900 (77)	48,450 (78.5)	38,750 (80)
25	48,450 (34)	48,450 (45.5)	47,900 (55)	46,900 (61)	45,600 (65.5)	44,250 (69)	43,100 (72)	41,950 (74)	40,800 (76)	34,000 (77)
30		34,450 (34)	34,450 (47.5)	34,450 (55.5)	34,050 (61)	33,200 (65)	32,500 (68.5)	31,700 (71)	30,950 (73)	30,250 (74.5)
35		25,750 (16.5)	25,750 (39)	25,750 (49.5)	25,750 (56)	25,700 (61)	25,250 (64.5)	24,700 (67.5)	24,150 (70)	23,700 (72)
40			19,850 (28.5)	19,850 (42.5)	19,850 (50.5)	19,850 (56.5)	19,850 (61)	19,600 (64.5)	19,200 (67)	18,850 (69)
45				15,550 (34.5)	15,550 (45)	15,550 (51.5)	15,550 (57)	15,550 (61)	15,400 (64)	15,150 (66.5)
50				12,300 (24)	12,300 (38.5)	12,300 (46.5)	12,300 (52.5)	12,300 (57.5)	12,300 (61)	12,200 (63.5)
60					8,030 (20)	8,030 (35)	8,030 (43.5)	8,030 (49.5)	8,010 (54)	7,860 (57.5)
70							5,070 (32)	4,990 (40.5)	4,890 (46.5)	4,790 (51)
80							2,680 (12.5)	2,640 (29.5)	2,580 (38)	2,500 (44)
Minimum boom angle (deg.) for indicated length (no load)							0	28.5	37	43
Maximum boom length (ft.) at 0 deg. boom angle (no load)								87		

NOTE: ( ) Boom angles are in degrees.

Boom Angle	36	42	51	60	69	78	87
0°	24,650 (30.2)	19,400 (36.3)	13,950 (45.3)	10,100 (54.3)	6,710 (63.3)	4,260 (72.3)	2,420 (81.3)

NOTE: ( ) Reference radii in feet.

A6-829-014558

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RT890



**POWER PINNED and FULL POWER**  
36 - 114 ft.  
(11.0 - 34.7 m)



33 - 58 ft.  
(10.0 - 17.7 m)



14,000 lbs. (6350 kg) **POWER PINNED**  
13,200 lbs. (5988 kg) **FULL POWER**



100%  
26' 6" (8.9 m)  
Spread



360°



(Feet)	33 ft. LENGTH			48 ft. LENGTH			58 ft. LENGTH		
	2° OFFSET	15° OFFSET	30° OFFSET	2° OFFSET	15° OFFSET	30° OFFSET	2° OFFSET	15° OFFSET	30° OFFSET
25	22,500 (80)			*15,500 (80)					
30	19,700 (78)	*15,150 (80)		14,850 (79.5)			*10,300 (80)		
35	17,400 (76)	13,650 (78)	*10,950 (80)	13,150 (77.5)	*10,000 (80)		9,890 (79)		
40	15,700 (74)	12,200 (76)	10,550 (79.5)	11,600 (75.5)	9,635 (79.5)		9,370 (77)	*7,780 (80)	
45	14,500 (71.5)	10,950 (74)	9,620 (77)	10,350 (74)	8,780 (77.5)	*7,140 (80)	8,860 (75)	7,540 (79.5)	
50	13,400 (69.5)	9,930 (72)	8,780 (75)	9,310 (72)	7,980 (75.5)	6,910 (79.5)	8,080 (73.5)	6,920 (77.5)	
55	12,200 (67.5)	9,050 (69.5)	8,060 (72.5)	8,430 (70)	7,290 (73.5)	6,390 (77.5)	7,320 (71.5)	6,330 (76)	5,530 (80)
60	11,050 (65)	8,270 (67.5)	7,430 (70.5)	7,650 (68)	6,690 (71.5)	5,910 (75.5)	6,640 (70)	5,820 (74)	5,110 (78)
65	10,100 (63)	7,570 (65)	6,870 (68)	6,970 (66)	6,160 (69.5)	5,480 (73)	6,070 (68)	5,370 (72)	4,750 (76)
70	9,240 (60.5)	6,940 (63)	6,350 (65.5)	6,360 (64)	5,680 (67.5)	5,110 (71)	5,570 (66)	4,970 (70)	4,420 (74)
75	8,380 (58)	6,380 (60.5)	5,880 (63)	5,820 (62)	5,250 (65.5)	4,760 (69)	5,130 (64)	4,610 (68.5)	4,130 (72)
80	7,570 (55.5)	5,890 (58)	5,460 (60.5)	5,340 (59.5)	4,860 (63.5)	4,430 (67)	4,730 (62.5)	4,280 (66.5)	3,860 (70)
85	6,860 (53)	5,440 (55.5)	5,070 (58)	4,910 (57.5)	4,500 (61)	4,130 (64.5)	4,360 (60.5)	3,970 (64.5)	3,610 (68)
90	5,760 (50.5)	5,030 (53)	4,710 (55)	4,530 (55.5)	4,170 (59)	3,860 (62)	4,030 (58.5)	3,700 (62.5)	3,370 (66)
95	4,690 (48)	4,650 (50)	4,380 (52.5)	4,180 (53)	3,880 (56.5)	3,600 (60)	3,730 (56)	3,440 (60)	3,160 (63.5)
100	3,740 (45)	3,740 (47.5)	3,740 (49.5)	3,860 (50.5)	3,600 (54.5)	3,370 (57.5)	3,450 (54)	3,200 (58)	2,960 (61)
105	2,900 (42)	2,900 (44.5)	2,900 (46)	3,560 (48.5)	3,350 (52)	3,160 (55)	3,200 (52)	2,980 (56)	2,780 (59)
110	2,130 (39)	2,130 (41)	2,130 (42.5)	3,290 (45.5)	3,120 (49.5)	2,950 (52)	2,970 (49.5)	2,770 (53.5)	2,600 (56.5)
115	1,450 (35.5)	1,450 (37.5)	1,450 (39)	2,690 (43)	2,690 (46.5)	2,690 (49.5)	2,760 (47.5)	2,580 (51)	2,440 (54)
120				2,040 (40)	2,040 (44)	2,040 (46.5)	2,560 (45)	2,410 (48.5)	2,280 (51.5)
125				1,450 (37)	1,450 (40.5)	1,450 (43)	2,240 (42.5)	2,240 (46)	2,140 (49)
130							1,690 (39.5)	1,690 (43.5)	1,690 (46)
135							1,190 (37)	1,190 (40.5)	1,190 (42.5)

NOTE: ( ) Boom angles are in degrees.  
\*This capacity is based on maximum boom angle.

A6-829-012491A

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RT890



**FULL POWER**  
36 - 114 ft.  
(11.0 - 34.7 m)



13,200 lbs.  
(5988 kg)



Stationary



360°

33.25 x 29 Tires



(Feet)



Pounds

(Feet)	36	42	51	60	69
10	56,000 (67)				
12	48,000 (63)				
15	38,400 (57.5)				
20	23,250 (47)	21,250 (54.5)			
25	15,550 (34)	15,550 (45.5)	15,550 (55)		
30		10,900 (34)	10,000 (47.5)		
35		7,610 (16.5)	7,610 (39)	6,050 (49.5)	
40			5,300 (28.5)	5,300 (42.5)	4,120 (50.5)
45				3,570 (34.5)	2,510 (45)
50				2,210 (24)	2,210 (38.5)

NOTE: ( ) Boom angles are in degrees.

A6-829-009721B

Boom Angle	36	42	51	60
0°	10,750 (30.2)	6,940 (36.3)	3,490 (45.3)	1,266 (54.3)

NOTE: ( ) Reference radii in feet.

A6-829-009493A

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RT890



**FULL POWER**  
36 - 114 ft.  
(11.0 - 34.7 m)



13,200 lbs.  
(5988 kg)



Stationary



Defined Arc  
Over Front  
±6°

33.25 x 29 Tires



(Feet)	36	42	51	60	69	78	87	96
10	88,000 (67)							
12	77,500 (63)							
15	64,300 (57.5)							
20	49,400 (47)	38,250 (54.5)						
25	37,850 (34)	37,850 (45.5)	30,000 (55)					
30		27,500 (34)	23,800 (47.5)					
35		20,650 (16.5)	20,650 (39)	19,350 (49.5)				
40			15,950 (28.5)	15,950 (42.5)	15,900 (50.5)	15,900 (56.5)		
45				12,500 (34.5)	12,500 (45)	12,500 (51.5)		
50				9,920 (24)	9,920 (38.5)	9,920 (46.5)		
60					6,210 (20)	6,210 (35)	6,210 (43.5)	
70							3,700 (32)	3,700 (40.5)
80							1,890 (12.5)	1,890 (29.5)

NOTE: ( ) Reference radii in feet.

A6-829-009720A

Boom Angle	36	42	51	60	69	78	87
0°	24,650 (30.2)	19,300 (36.3)	12,350 (45.3)	8,150 (54.3)	5,290 (63.3)	3,250 (72.3)	1,690 (81.3)

NOTE: ( ) Boom angles are in degrees.

A6-829-009493A

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RT890





**FULL POWER**  
36 - 114 ft.  
(11.0 - 34.7 m)



13,200 lbs.  
(5988 kg)



Pick & Carry  
Up to 2.5 MPH



Boom Centered  
Over Front

33.25 x 29 Tires



(Feet)	36	42	51	60	69	78	87	96
10	87,000 (67)							
12	76,000 (63)							
15	63,500 (57.5)							
20	49,400 (47)	35,850 (54.5)						
25	37,850 (34)	27,800 (45.5)	27,800 (55)					
30		27,500 (34)	22,300 (47.5)					
35		17,750 (16.5)	17,750 (39)	17,750 (49.5)				
40			14,450 (28.5)	14,450 (42.5)	14,450 (50.5)			
45				11,800 (34.5)	11,800 (45)			
50				9,670 (24)	9,670 (38.5)			
60					6,210 (20)	6,210 (35)	6,210 (43.5)	
70							3,700 (32)	3,700 (40.5)
80							1,890 (12.5)	1,890 (29.5)

NOTE: ( ) Boom angles are in degrees.

A6-829-009722A

Boom Angle	36	42	51	60	69	78	87
0°	24,650 (30.2)	16,850 (36.3)	11,700 (45.3)	8,110 (54.3)	5,290 (63.3)	3,250 (72.3)	1,690 (81.3)

NOTE: ( ) Boom angles are in degrees.

A6-829-009493A

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RT890

TIRE INFLATION - PSI (BAR)					
SIZE (FRONT & REAR)	LOAD RANGE	TRA CODE	LIFTING SERVICE		TRAVEL *20 MPH
			CREEP & STATIC	2.5 MPH (4.0 KPH)	
33.25 x 29	32 PR	E-3	65 (4.5)	65 (4.5)	65 (4.5)

\*NOTE:  
FOR RUNS LONGER THAN 3 TO 5 MILES:  
1. STOP FOR 30 MINUTE COOLING PERIOD AFTER TWO HOURS OF SUSTAINED DRIVING.  
2. ONE HOUR MINIMUM STOP SHOULD BE OBSERVED AFTER EACH FOUR HOURS OF OPERATION.

### WEIGHT REDUCTIONS FOR LOAD HANDLING DEVICES

33 FT. - 58 FT. BOOM EXTENSION	
*Stowed -	1,084 lbs.
*Erected (Retracted) -	9,322 lbs.
*Erected (Extended) -	12,860 lbs.

\*Reduction of main boom capacities

HOIST ROPE WEIGHT	1 lb. per ft.
AUXILIARY BOOM HEAD	312 lbs.
HOOKBLOCKS and HEADACHE BALLS:	
90 Ton, 7 Sheave	2,060 lbs.+
15 Ton, 1 Sheave	662 lbs.+
7 1/2 Ton Headache Ball	338 lbs.+
10 Ton Headache Ball	560 lbs.+

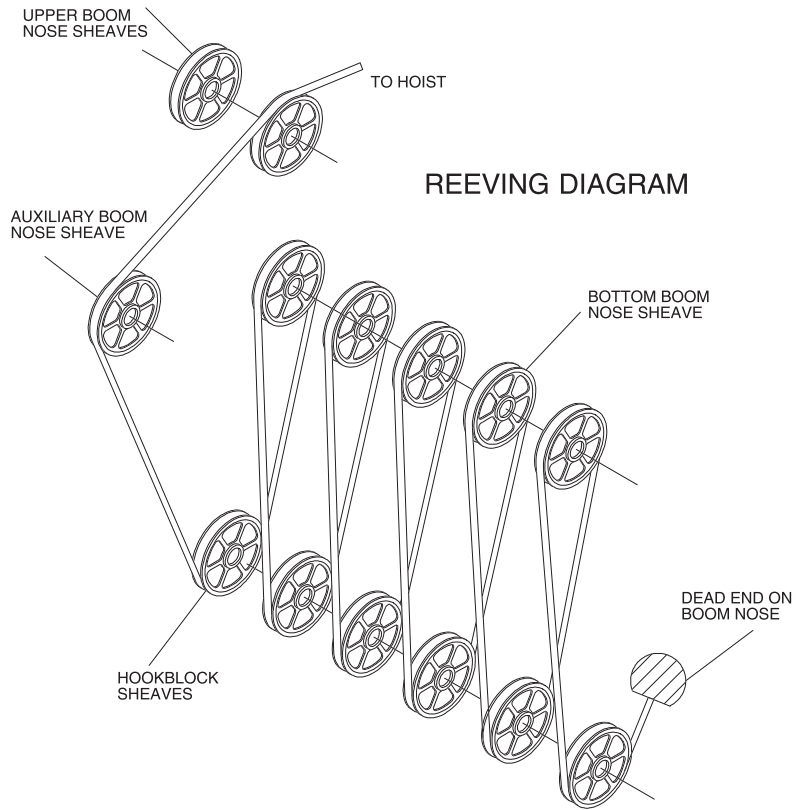
+Refer to rating plate for actual weight.

When lifting over swingaway and/or jib combinations, deduct total weight of all load handling devices reeved over main boom nose directly from swingaway or jib capacity.

NOTE: All load handling devices and boom attachments are considered part of the load and suitable allowances MUST BE MADE for their combined weights. Weights are for Grove furnished equipment.

## LINE PULLS AND REEVING INFORMATION

HOISTS	CABLE SPECS.	PERMISSIBLE LINE PULLS	NOMINAL CABLE LENGTH
Main & Aux. Model 30	3/4" (19 mm) 18x19 Class or 35x7 Rotation Resistant Min. Breaking Str. 64,600 lbs.	12,920 lbs.	750' Main 650' Aux.



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**RT890**

# Rated lifting capacities

## IMPORTANT NOTES:

**WARNING: THIS CHART IS ONLY A GUIDE.**  
 The notes below are for illustration only and should not be relied upon to operate the crane. The individual crane's load chart, operating instructions and other instruction plates must be read and understood prior to operating the crane.

1. All rated loads meet ANSI/ASME B30.5, Mobile and Locomotive Cranes. Testing and development were performed to SAEJ1063, Cantilevered Boom Crane Structures - Method of Test, and SAEJ765 Crane Stability Test Code.
2. Rated loads include the weight of hookblock, slings and auxiliary lifting devices and their weights shall be subtracted from the listed rating to obtain the net load to be lifted. When more than the minimum required hoist reeving is used, the additional rope weight shall be considered part of the load to be handled.
3. Defined Arc  $\pm 6^\circ$  on either side of longitudinal centerline of machine.
4. Capacities appearing above the bold line are based on structural strength. Tipping should not be relied upon as a capacity indication.
5. The machine shall be leveled on a firm supporting surface. Depending on the nature of the supporting surface, it may be necessary to have structural supports under the outrigger floats or tires to spread the load to a larger bearing surface.
6. When either boom length or radius or both are between values listed, the smallest load shown at either the next larger radius or next longer or shorter boom length shall be used.
7. Tires shall be inflated to the recommended pressure before lifting on rubber.
8. For outrigger operation, outriggers shall be properly extended with tires raised free of crane weight before operating the boom or lifting loads.

RT890

## Symbols Glossary

	Frame		Steering
	Outriggers		Transmission
	Outrigger Controls		Axles
	Engine		Brakes
	Fuel Tank Capacity		Tires
	Electrical System		Suspension
	Drive		Rotation
	Lights		Boom Elevation
	Cab		Swing
	Boom		Counterweight
	Fixed Swingaway		Oil
	Tele-Swingaway		Hydraulic System
	Jib		Hoist
	Boom Nose		Radius
	Boom Extension		Boom Length
	Speed		Hookblock
	Grade		Gear
	Lattice Extension		Luffing Jib