load chart (2280x3251x2 bmp)

RT990

90 TON CAPACITY
36 ft. - 114 ft. BOOM
(FULL POWER)
PCSA CLASS 10-402
85% OF TIPPING - ON OUTRIGGERS
75% OF TIPPING - ON RUBBER

LIFTING CAPACITIES FOR 33' FIXED OFFSET EXTENSION

Main Boom Angle	2° OFFSET		15° OFFSET		30° OFFSET	
	Rad. Ref. ft.	Cap. lbs.	Rad. Ref. ft.	Cap. lbs.	Rad. Ref. ft.	Cap. lbs.
80°	27.3	25,000	33.2	17,150	39.9	12,550
75	39.2	20,100	45.0	13,300	51.2	10,350
70	50.9	17,200	56.4	10,750	62.2	8,760
65	62.2	13,300	67.5	8,970	72.7	7,560
60	73.0	10,650	78.0	7,640	82.7	6,630
55	83.2	8,830	87.9	6,630	92.0	5,890
50	92.9	7,480	97.1	5,850	100.6	5,310
45	101.8	6,440	105.6	5,220	108.3	4,850
40	109.9	5,160	113.2	4,600	115.2	4,280
35	117.2	4,010	120.0	3,600	121.3	3,420

A6-829-007752

NOTES FOR LIFTING WITH THE 33' FIXED OFFSET EXTENSION OR 33'-58' TELE. BOOM EXTENSION

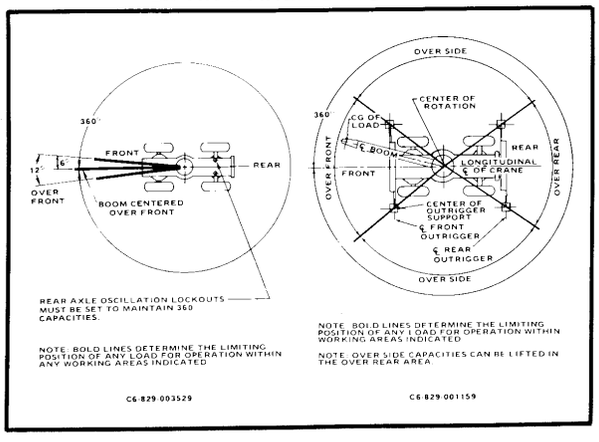
1. All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping load, in accordance with SAE J-765a.
2. 33 ft. (10.0 m), 48 ft. (14.6 m) & 58 ft. (17.7 m) boom extension lengths may be used for double line lifting service only.
3. Rated load is based on loaded main boom angle with reference to horizontal, regardless of main boom length. (Ref. radius is for fully extended boom and power pinned fly extended 114 ft. (34.6 m) boom length only).
   WARNING: Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with boom extension occurs rapidly and without advance warning.
4. WARNING: The Krueger L.M.I. will not compensate for reeving/rigging accessories on the main boom nose or auxiliary boom nose when programmed to monitor the boom extension. Remove all reeving/rigging accessories from main boom when using boom extension.
5. Capacities listed are with fully extended outriggers only.
6. BOOM EXTENSION WARNING: For main boom length greater than 96 ft. (29.3 m) with 33 ft. (10.0 m) fixed length boom extension or 33 ft. - 58 ft. (10.0 m - 17.7 m) tele. boom extension in working position, the boom angle must not be less than 30° since loss of stability will occur causing a tipping condition. The boom angle is not restricted for main boom length equal to or less than 96 ft. (29.3 m). This warning also applies for boom extension erection purposes.

LIFTING CAPACITIES FOR THE 33'-58' TELE. BOOM EXTENSION

Main Boom Angle	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	
	Rad. Ref. ft.	Cap. lbs.	Rad. Ref. ft.	Cap. lbs.	Rad. Ref. ft.	Cap. lbs.	Rad. Ref. ft.	Cap. lbs.	Rad. Ref. ft.	Cap. lbs.	Rad. Ref. ft.	Cap. lbs.	Rad. Ref. ft.	Cap. lbs.	Rad. Ref. ft.	Cap. lbs.	Rad. Ref. ft.	Cap. lbs.
80°	27.3	24,500	33.2	16,600	39.9	12,000	31.5	16,900	40.7	11,000	50.1	7,890	33.6	11,000	46.1	8,580	57.7	6,140
75	39.2	19,550	45.0	12,750	51.2	9,820	44.7	12,400	53.6	8,670	62.4	6,550	47.7	9,770	59.7	6,820	70.4	5,140
70	50.9	16,650	56.4	10,200	62.2	8,220	57.6	9,460	66.0	7,030	74.2	5,550	61.6	7,530	72.8	5,570	82.7	4,370
65	62.2	12,750	67.5	8,430	72.7	7,020	70.0	7,510	77.9	5,830	85.5	4,770	74.9	6,020	85.5	4,640	94.3	3,770
60	73.0	10,100	78.0	7,100	82.7	6,090	81.9	6,130	89.2	4,930	96.1	4,160	87.7	4,930	97.5	3,930	105.2	3,290
55	83.2	8,290	87.9	6,090	92.0	5,350	93.2	5,120	99.9	4,240	106.0	3,670	99.8	4,120	108.7	3,380	115,4	2,910
50	92.9	6,940	97.1	5,310	100.6	4,770	103.7	4,360	109.8	3,700	115.0	3,280	111.2	3,500	119.2	2,950	124.6	2,610
45	101.8	5,880	105.6	4,680	108.3	4,310	113.6	3,770	118.8	3,270	123.2	2,980	121.7	3,030	128.6	2,610	132.8	2,370
40	109.8	4,380	113.2	3,840	115.2	3,520	122.5	3,310	126.9	2,930	130.3	2,730	131.3	2,650	137.1	2,340	140.1	2,180
35	117.2	3,230	120.0	2,830	121.3	2,650	130.4	2,790	134.1	2,370	136.4	2,120	140.0	2,330	144.6	1,860	146.2	1,700

A6-829-007744

LIFTING AREA DIAGRAM



load chart p2 (1496x3235x2 bmp)

ON OUTRIGGERS FULLY EXTENDED - 360°

Radius in Feet	Main Boom Length in Feet									
	36	42	51	60	69	78	87	96	105	114
10	180,000 (67)	121,500 (70.5)	114,000 (74)	107,500 (77)	103,000 (79)					
12	158,000 (63)	120,000 (67.5)	110,000 (71.5)	101,500 (75)	99,300 (77.5)	93,650 (79.5)				
15	136,000 (57.5)	115,000 (63)	102,000 (68)	92,100 (72)	90,250 (75)	84,500 (77)	73,350 (79)			
20	103,500 (47)	99,800 (54.5)	90,050 (61.5)	78,650 (67)	76,850 (70.5)	70,500 (73)	62,750 (75.5)	60,000 (77.5)	56,100 (79)	43,850 (80)
25	82,600 (34)	80,100 (45.5)	73,850 (55)	68,900 (61.5)	66,250 (66)	60,150 (69.5)	54,250 (72)	52,250 (74.5)	48,650 (76)	40,950 (77.5)
30		65,650 (34)	61,400 (47.5)	57,650 (55.5)	55,400 (61)	52,400 (65)	46,900 (68.5)	44,900 (71)	42,900 (73)	35,100 (75)
35	See Warning Note 16	51,250 (16.5)	51,250 (38.5)	49,700 (49.5)	46,600 (56)	44,950 (61)	41,150 (65)	39,200 (68)	37,300 (70)	30,400 (72)
40			40,250 (28.5)	40,250 (42.5)	40,250 (51)	38,550 (56.5)	36,550 (61)	34,650 (64.5)	32,800 (67)	26,650 (69.5)
45				32,600 (34.5)	32,600 (45)	32,600 (52)	32,400 (57)	30,950 (61)	29,150 (64)	23,600 (66.5)
50				26,950 (24)	26,950 (38.5)	26,950 (47)	26,950 (53)	26,950 (57.5)	26,150 (61)	21,350 (63.5)
60					19,200 (20)	19,200 (35)	19,200 (43.5)	19,200 (49.5)	19,200 (54.5)	17,300 (57.5)
70						14,100 (16.5)	14,100 (32)	14,100 (41)	14,100 (47)	14,100 (51.5)
80							10,550 (12.5)	10,550 (29.5)	10,550 (38.5)	10,550 (44)
90									7,890 (27.5)	7,890 (35.5)
100										5,830 (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.

A6-829-007736 & -007780

ON RUBBER CAPACITIES

Radius in Feet	Stationary Capacity Defined Arc (3) Over Front	Stationary Capacity 360° Arc	Pick & Carry Cap. Up to 2.5 MPH Boom Centered (7) Over Front
10	105,000 (a)	81,000 (a)	93,200 (a)
12	100,000 (a)	68,000 (a)	82,300 (a)
15	87,950 (a)	49,750 (a)	69,650 (a)
20	65,550 (a)	30,600 (a)	54,850 (a)
25	51,100 (b)	20,900 (b)	44,700 (a)
30	37,450 (b)	15,050 (c)	37,300 (b)
35	28,500 (b)	10,950 (d)	28,500 (b)
40	22,350 (c)	8,020 (e)	22,350 (c)
45	17,900 (d)	5,820 (e)	16,700 (d)
50	14,550 (d)	4,100 (f)	14,050 (d)
60	9,780 (e)	1,590 (g)	9,780 (e)
70	6,550 (f)		6,550 (f)
80	4,230 (g)		4,230 (g)
90	2,480 (h)		
100	1,110 (i)		

A6-829-007766

Maxir
Bo
(a) 36
(b) 42
(c) 51
(d) 60
(e) 69

1. Capa
2. Capa infla
3. (Def
4. Capa upor
5. Capa
6. On r
7. For engaclose
8. Axle func lock
9. All t tire oper
10. Cree kph)

load chart p3 (1704x3251x2 bmp)

RT990

90 TON CAPACITY
36 ft. - 114 ft. BOOM
(FULL POWER)
PCSA CLASS 10-402
85% OF TIPPING - ON OUTRIGGERS
75% OF TIPPING - ON RUBBER

RATED LIFTING CAPACITIES IN POUNDS

ON OUTRIGGERS FULLY EXTENDED - OVER FRONT

Radius in Feet	Main Boom Length in Feet									
	36	42	51	60	69	78	87	96	105	114
10	180,000 (67)	121,500 (70.5)	114,000 (74)	107,500 (77)	103,000 (79)					
12	158,000 (63)	120,000 (67.5)	110,000 (71.5)	101,500 (75)	99,300 (77.5)	93,550 (79.5)				
15	136,000 (57.5)	115,000 (63)	102,000 (68)	92,100 (72)	90,250 (75)	84,500 (77)	73,350 (79)			
20	103,500 (47)	99,800 (54.5)	90,050 (61.5)	78,650 (67)	76,850 (70.5)	70,500 (73)	62,750 (75.5)	60,000 (77.5)	56,100 (79)	43,850 (80)
25	82,600 (34)	80,100 (45.5)	73,850 (55)	68,900 (61.5)	66,250 (66)	60,150 (69.5)	54,250 (72)	52,250 (74.5)	48,650 (76)	40,950 (77.5)
30		65,650 (34)	61,400 (47.5)	57,650 (55.5)	55,400 (61)	52,400 (65)	46,900 (68.5)	44,900 (71)	42,900 (73)	35,100 (75)
35	See Warning Note 16	53,200 (16.5)	53,200 (38.5)	49,700 (49.5)	46,600 (56)	44,350 (61)	41,150 (65)	39,200 (68)	37,300 (70)	30,400 (72)
40			46,750 (28.5)	43,300 (42.5)	40,300 (51)	38,550 (56.5)	36,550 (61)	34,650 (64.5)	32,800 (67)	26,650 (69.5)
45				39,600 (34.5)	35,800 (45)	33,750 (52)	32,400 (57)	30,950 (61)	29,150 (64)	23,600 (66.5)
50				34,750 (24)	32,750 (38.5)	30,150 (47)	28,650 (53)	27,600 (57.5)	26,150 (61)	21,350 (63.5)
60					25,950 (20)	25,850 (35)	23,500 (43.5)	22,100 (49.5)	21,200 (54.5)	17,300 (57.5)
70						19,400 (16.5)	19,400 (32)	18,750 (41)	17,500 (47)	14,150 (51.5)
80							14,850 (12.5)	14,850 (29.5)	14,850 (38.5)	11,700 (44)
90									11,500 (27.5)	9,810 (35.5)
100										8,230 (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.

A6-829-007729 & -007780

NOTES FOR RUBBER CAPACITIES

Maximum Permissible Boom Length:
a) 36 ft. (f) 78 ft.
b) 42 ft. (g) 87 ft.
c) 51 ft. (h) 96 ft.
d) 60 ft. (i) 114 ft.
e) 69 ft.

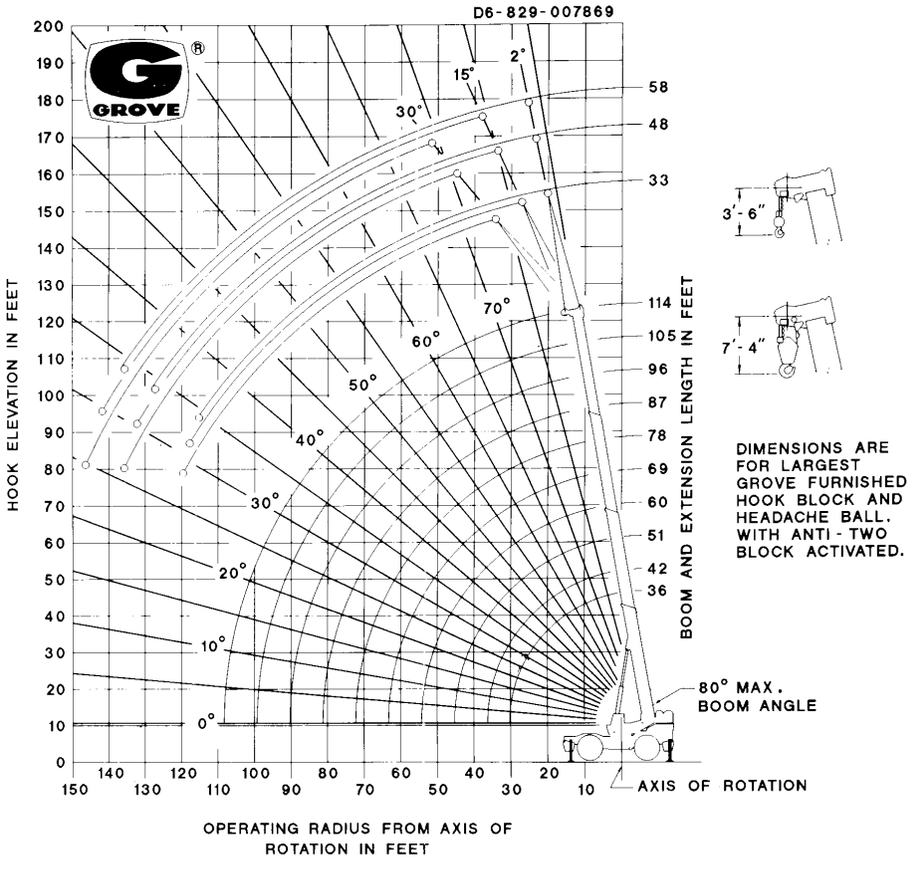
		Main Boom 114 ft.
Front (No Load)	Min. boom angle (deg.) for indicated length	15
	Max. boom length (ft) at 0 deg. boom angle	105
360° (No Load)	Min. boom angle (deg.) for indicated length	52
	Max. boom length (ft) at 0 deg. boom angle	69

Capacities do not exceed 75% of tipping loads as determined by test in accordance with SAE J-765.
Capacities are applicable to machines equipped with 33.25x35 (32 PR) bias ply tires, at 80 PSI cold inflation pressure.
(Defined Arc) - Over front includes +6° on either side of longitudinal centerline of machine.
Capacities appearing above bold line are based on structural strength and tipping should not be relied upon as a capacity limitation.
Capacities are applicable only with machine on a firm level surface.
On rubber lifting with boom extensions or jibs not permitted.
For pick & carry operation, boom must be centered over front of machine, mechanical swing lock engaged and load restrained from swinging. When handling loads in the structural range with capacities close to maximum ratings, travel should be reduced to creep speed.
Axle lockouts must be functioning before lifting on rubber. (Check automatic lockout system for proper functioning: refer to "Operation and Maintenance Manual" for description of a proper functioning axle lockout system).
All lifting depends on proper tire inflation, capacity and condition. Capacities must be reduced for lower tire inflation pressures. See lifting capacity chart for tire used. Damaged tires are hazardous to safe operation of crane.
Creep - not over 200 ft. (61 m) of movement in any 30 minute period and not exceeding 1 mph (1.6 kph).

load chart p4 (2272x2789x2 bmp)

GROVE® RT990

RANGE DIAGRAM



DIMENSIONS ARE FOR LARGEST GROVE FURNISHED HOOK BLOCK AND HEADACHE BALL. WITH ANTI-TWO BLOCK ACTIVATED.

WEIGHT REDUCTION FOR LOAD HANDLING DEVICES

33 ft. Fixed Offset Extension		
†Stowed	-	787 lbs.
†Erected	-	6,267 lbs.
33 ft. - 58 ft. Tele. Boom Extension		
†Stowed	-	1,087 lbs.
†Erected (Retracted)	-	9,322 lbs.
†Erected (Extended)	-	12,860 lbs.

†Reduction of Main Boom Capacities.

HOOKBLOCK	
90 Ton, 6 Sheave	2,028 lbs.
15 Ton, 1 Sheave	650 lbs.
10 Ton Headache Ball	500 lbs.
7-1/2 Ton Headache Ball	300 lbs.
Auxiliary Boom Head	220 lbs.

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.