GROVE®

RATED LIFTING C

ON OUTRIGGERS FULLY EXTENDED - 360°

Radius in Feet	Main Boom Length in Feet								
	33	38	44	50	56	62	68	74	80
10	70,000 (64.5)	52,000 (68)	51,000 (71)						
12	52,500 (60.5)	52,000 (64.5)	51,000 (68.5)	44,900 (71.5)	40,500 (73.5)				
15	42,000 (54)	42,000 (59.5)	42,000 (64)	40,200 (67.5)	36,000 (70.5)	31,000 (72.5)	26,000 (74.5)		
20	30,000 (42.5)	30,000 (50)	30,000 (56.5)	30,000 (61)	30,000 (64.5)	24,500 (67.5)	23,000 (70)	21,500 (72)	20,000 (73.5)
25	22,700 (26.5)	22,700 (39)	22,700 (48)	22,700 (54.5)	22,700 (59)	20,800 (62.5)	19,750 (65.5)	18,200 (67.5)	17,700 (69.5)
30		17,000 (24.5)	17,000 (38.5)	17,000 (47)	17,000 (52.5)	17,000 (57)	16,650 (60.5)	15,800 (63.5)	14,950 (65.5)
35	See Warning Note 16		12,540 (26)	12,540 (38)	12,540 (46)	12,540 (51)	12,540 (55.5)	12,540 (59)	12,540 (61.5)
40				9,900 (27.5)	9,900 (38)	9,900 (45)	9,900 (50)	9,900 (54)	9,900 (57.5)
45					8,100 (28.5)	8,100 (37.5)	8,100 (44)	8,100 (49)	8,100 (53)
50					6,700 (13)	6,700 (29)	6,700 (37.5)	6,700 (43.5)	6,700 (48)
55						5,600 (16.5)	5,600 (29.5)	5,600 (37.5)	5,600 (43)
60							4,700 (19)	4,700 (30.5)	4,700 (37.5)
65								3,950 (21)	3,950 (30.5)
70									3,230 (22.5)
74									2,760 (11)
Minimum boom angle (deg.) for indicated length (no load)									0
Maximum boom length (ft.)at 0 deg. boom angle (no load)									80

NOTE: Boom angles are in degrees.

A6-829-007575 & -007587

ON RUBBER CAPACITIES

Radius in Feet	Stationary Capacity Boom Centered Over Front	Stationary Capacity Defined Arc (2) Over Front	Stationary Capacity 360° Arc	Pick & Carry Cap. Up to 2.5 MPH Boom Centered (6) Over Front
10	48,230 (a)	37,400 (a)	23,000 (b)	37,600 (a)
12	41,850 (b)	31,300 (a)	18,000 (c)	32,500 (a)
15	35,680 (b)	25,600 (b)	12,640 (d)	27,500 (a)
20	22,550 (c)	19,500 (e)	6,220 (e)	20,250 (a)
25	14,850 (e)	14,850 (e)	3,680 (h)	14,850 (b)
30	10,470 (f)	10,470 (f)	2,330 (i)	10,470 (b)
35	8,020 (f)	8,020 (f)	1,430 (i)	8,020 (c)
40	6,290 (f)	6,290 (f)		6,290 (d)
45	5,030 (i)	5,030 (i)		5,030 (f)
50	4,070 (i)	4,070 (i)		4,070 (f)
55	3,320 (i)	3,320 (i)		3,320 (f)
60	2,720 (i)	2,720 (i)		2,720 (g)
65	2,220 (i)	2,220 (i)		2,220 (h)
70	1,760 (i)	1,760 (i)		1,760 (i)
74	1,450 (i)	1,450 (i)		1,450 (i)

A6-829-007609A

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RT635

35 TON CAPACITY
33 ft. - 80 ft. BOOM

(FULL POWER)
PCSA CLASS 10-99
85% OF TIPPING - ON OUTRIGGERS
75% OF TIPPING - ON RUBBER

G CAPACITIES IN POUNDS

ON OUTRIGGERS FULLY EXTENDED - OVER FRONT

Radius in Feet	Main Boom Length in Feet								
	33	38	44	50	56	62	68	74	80
10	70,000 (64.5)	52,000 (68)	51,000 (71)						
12	52,500 (60.5)	52,000 (64.5)	51,000 (68.5)	44,900 (71.5)	40,500 (73.5)				
15	42,000 (54)	42,000 (59.5)	42,000 (64)	40,200 (67.5)	36,000 (70.5)	31,000 (72.5)	26,000 (74.5)		
20	30,000 (42.5)	30,000 (50)	30,000 (56.5)	30,000 (61)	30,000 (64.5)	24,500 (67.5)	23,000 (70)	21,500 (72)	20,000 (73.5)
25	22,700 (26.5)	22,700 (39)	22,700 (48)	22,700 (54.5)	22,700 (59)	20,800 (62.5)	19,750 (65.5)	18,200 (67.5)	17,700 (69.5)
30		17,800 (24.5)	17,800 (38.5)	17,800 (47)	17,800 (52.5)	17,400 (57)	16,650 (60.5)	15,800 (63.5)	14,950 (65.5)
35	See Warning Note 16		14,900 (26)	14,900 (38)	14,900 (46)	14,900 (51)	14,200 (55.5)	13,700 (59)	12,900 (61.5)
40				12,600 (27.5)	12,600 (38)	12,600 (45)	12,600 (50)	12,000 (54)	11,400 (57.5)
45					10,500 (28.5)	10,500 (37.5)	10,500 (44)	10,500 (49)	10,100 (53)
50					9,320 (13)	9,320 (29)	9,320 (37.5)	9,320 (43.5)	9,050 (48)
55						8,120 (16.5)	8,120 (29.5)	8,120 (37.5)	8,120 (43)
60							7,120 (19)	7,120 (30.5)	7,120 (37.5)
65								6,260 (21)	6,260 (30.5)
70									5,530 (22.5)
74									4,800 (11)
Minimum boom angle (deg.) for indicated length (no load)									0
Maximum boom length (ft.) at 0 deg. boom angle (no load)									80

NOTE: Boom angles are in degrees.

A6-829-007573 & -007587

NOTES FOR ON RUBBER CAPACITIES

Maximum Permissible Boom Length:

(a) 32 ft.
(b) 38 ft.
(c) 44 ft.
(d) 50 ft.
(e) 56 ft.
(f) 62 ft.
(g) 68 ft.
(h) 74 ft.
(i) 80 ft.

		Main Boom 80 ft.
Front (No Load)	Min. boom angle (deg.) for indicated length	0
	Max. boom length (ft.) at 0 deg. boom angle	80
360° (No Load)	Min. boom angle (deg.) for indicated length	49
	Max. boom length (ft.) at 0 deg. boom angle	48.5

1. Capacities do not exceed 75% of tipping loads as determined by test in accordance with SAE J-765.
2. Defined Arc - Over front includes ±6° on either side of longitudinal centerline of machine.
3. Capacities are applicable only with machine on firm level surface.
4. 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).
5. All rubber lifting depends on proper tire inflation, capacity and condition. Capacities must be reduced for lower tire inflation pressures. Damaged tires are hazardous to safe operation of crane.
6. 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 speeds.
7. On rubber lifting with boom extension or jib is not permitted.
8. Creep - not over 200 ft. (61 m) of movement in any 30 minute period and not exceed 1 mph (1.6 kph).
9. Capacities are applicable to machines equipped with the following tires:

Size	Static & Creep Cold Inflation Pressure	2.5 MPH (4.0 KPH) Cold Inflation Pressure
16.00x25 (28 PR)	100 PSI	100 PSI
18.00x25 (24 PR)	100 PSI	80 PSI
23 5x25 (24 PR)	75 PSI	60 PSI
Michelin 23.5x25XRA*	75 PSI	65 PSI

GROVE®

FULL HYDRAULIC

SELF-PROPELLED CRANE

NOTES FOR LIFTING CAPACITIES

GENERAL:

1. Rated loads as shown on capacity chart pertain to this crane as originally manufactured and equipped. Modifications to the crane or use of optional equipment other than that specified can result in a reduction of capacity. Use only the jib or boom extension supplied with this crane, do not substitute jibs or boom extensions without the written approval of Grove Mfg. Co.
2. Construction equipment can be hazardous if improperly operated or maintained. Operation and maintenance shall be in compliance with the information in the Operator's and Safety Handbooks, Service and Parts Manuals supplied with this crane. If these manuals are missing, order replacements from the manufacturer.
3. The operator and other personnel associated with this crane shall fully acquaint themselves with the latest applicable American National Standards Institute (ANSI) Safety Standards for cranes.

SETUP:

1. The crane shall be leveled on a firm supporting surface. Depending on the nature of the supporting surface, it may be necessary to have structural supports of sufficient strength under the outrigger floats or tires to spread the load to a larger bearing surface.
2. For outrigger operation, outriggers shall be fully extended with tires raised free of crane weight before operating the boom or lifting loads.
3. When equipped with front jack cylinder, the front jack cylinder shall be set in accordance with the written procedure.
4. When equipped with extendable counterweight, the counterweight shall be fully extended before operation.
5. Tires shall be inflated to the recommended pressure before lifting on rubber.
6. With certain boom and hoist tackle combinations, maximum capacities may not be obtainable with standard cable lengths.
7. Rotation resistant wire rope is best suited for single line lifting operations. Consult the wire rope manufacturer for specific recommendations concerning multiple part reeving.
8. Do not transport crane with boom extension or jib erected.

OPERATION:

1. Rated loads at rated radius shall not be exceeded. Do not tip the machine to determine allowable loads. For clamshell operation, weight of load must not exceed 80% of rated lifting capacities.
2. All rated loads have been tested to and meet minimum requirements of SAE J1063 OCT80 - Cantilevered Boom Crane Structures - Method of Test, and do not exceed 85% of the tipping load as determined by SAE J765 OCT80 Crane Stability Test Code.
3. Rated loads include the weight of hook block, slings and auxiliary lifting devices and their combined weights shall be subtracted from the listed ratings to obtain the net load which may be lifted.
4. Load ratings are based on freely suspended loads. No attempt shall be made to move a load horizontally on the ground in any direction.
5. Rated loads do not account for wind on lifted load or boom. It is recommended when wind velocity is above 20 MPH (32 km/h), rated loads and boom lengths be appropriately reduced.
6. Rated loads are for lift crane service only.
7. Do not operate at a radius or boom length where capacities are not listed. At these positions, the crane may overturn without any load on the hook.
8. The maximum load which can be telescoped is not definable because of variations in loadings and crane maintenance, but it is safe to attempt retraction and extension within the limits of the capacity chart.
9. When either boom length or radius or both are between values listed, the smallest load shown at either the next larger radius or boom length shall be used.
10. For safe operation, the user shall make due allowances for his particular job conditions, such as: soft or uneven ground, out of level conditions, high winds, side loads, pendulum action, jerking or sudden stopping of loads, hazardous conditions, experience of personnel, two machine lifts, traveling with loads, electric wires, etc. Side pull on boom or jib is extremely dangerous.
11. Power telescoping boom sections must be extended equally at all times.
12. Handling of personnel from the boom is not authorized except with equipment furnished and installed by Grove Manufacturing Company.
13. Keep load handling devices a minimum of 18 inches (45.7 cm) below boom head at all times.
14. The boom angle before loading should be greater than the loaded boom angle to account for deflection.
15. Capacities appearing above the bold line are based on structural strength and tipping should not be relied upon as a capacity limitation.
16. Capacities for the 33 ft. (10.1 m) boom length shall be lifted with boom fully retracted. If boom is not fully retracted, capacities shall not exceed those shown for the 38 ft. (11.6 m) boom length.

DEFINITIONS:

1. Operating Radius: Horizontal distance from a projection of the axis of rotation to the supporting surface before loading to the center of the vertical hoist line or tackle with load applied.
2. Loaded Boom Angle (Shown in parenthesis on main boom capacity chart): is the angle between the boom base section and the horizontal, after lifting the rated load at the rated radius with the rated boom length.
3. Working Area: Areas measured in a circular arc about the center line of rotation as shown on the working area diagram.
4. Freely Suspended Load: Load hanging free with no direct external force applied except by the lift cable.
5. Side Load: Horizontal force applied to the lifted load either on the ground or in the air.

RT635

35 TON CAPACITY
33 ft. - 80 ft. BOOM

(FULL POWER)
PCSA CLASS 10-99
85% OF TIPPING - ON OUTRIGGERS
75% OF TIPPING - ON RUBBER

EXT. CAPACITIES IN POUNDS
30' FIXED EXTENSION
ON OUTRIGGERS - 360°

Main Boom Angle	0° OFFSET		15° OFFSET		30° OFFSET	
	Rad. Ref.ft.	Cap. lbs.	Rad. Ref. ft.	Cap. lbs.	Rad. Ref. ft.	Cap. lbs.
75°	26.7	10,350	32.8	7,660	38.8	5,310
70	35.7	8,790	41.6	6,530	47.2	4,850
65	44.4	7,080	49.9	5,550	55.2	4,470
60	52.7	5,890	57.8	4,810	62.7	4,170
55	60.7	4,930	65.3	4,230	69.7	3,810
50	68.1	4,070	72.2	3,470	76.1	3,000
45	75.0	3,150	78.6	2,730	81.9	2,380
40	81.2	2,470	84.3	2,170	87.1	1,920
35	86.9	1,950	89.3	1,740	91.6	1,560

A6-829-007597B

NOTES FOR 30' FIXED EXTENSION

1. All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads, in accordance with SAE J-765a.
2. 30 ft. (9.3 m) fixed length boom extension length may be used for double or single line lifting service.
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 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. Capacities listed are with fully extended outriggers only.
5. Warning for 30 ft. (9.3 m) Boom Extension: For main boom length greater than 74 ft. (22.6 m) with 30 ft. (9.3 m) fixed length boom extension in working position, the boom angle must not be less than 20° 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 74 ft. (22.6 m). This warning applies for boom extension erection purposes also.

30 ft. - 54 ft. TELE. BOOM EXTENSION

Main Boom Angle	30 ft. LENGTH						42 ft. LENGTH						54 ft. LENGTH					
	0° OFFSET		15° OFFSET		30° OFFSET		0° OFFSET		15° OFFSET		30° OFFSET		0° 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.
75°	26.7	10,000	32.8	7,300	38.8	4,950	30.9	7,700	39.3	5,090	48.2	3,750	35.1	6,150	46.0	3,750	57.2	2,690
70	35.7	8,430	41.6	6,170	47.2	4,490	40.8	6,950	48.8	4,610	57.1	3,460	46.0	5,340	56.4	3,300	66.7	2,480
65	44.4	6,720	49.9	5,190	55.2	4,110	50.3	5,280	58.1	3,900	65.6	3,230	56.5	4,380	66.3	2,970	75.6	2,320
60	52.7	5,530	57.8	4,450	62.7	3,810	59.5	4,350	66.7	3,360	73.6	2,890	66.5	3,470	75.7	2,620	83.9	2,190
55	60.7	4,570	65.3	3,870	69.7	3,320	68.3	3,660	74.9	2,940	80.9	2,510	76.1	2,920	84.6	2,290	91.6	1,870
50	68.1	3,550	72.2	2,970	76.1	2,500	76.4	3,030	82.5	2,350	87.7	1,840	85.0	2,430	92.7	1,780	98.6	1,370
45	75.0	2,630	78.6	2,220	81.9	1,880	84.0	2,190	89.4	1,690	93.7	1,340	93.3	1,740	100.2	1,270		
40	81.2	1,950	84.3	1,650	87.1	1,410	90.9	1,560	95.7	1,190								
35	86.9	1,420	89.3	1,220	91.6	1,050												

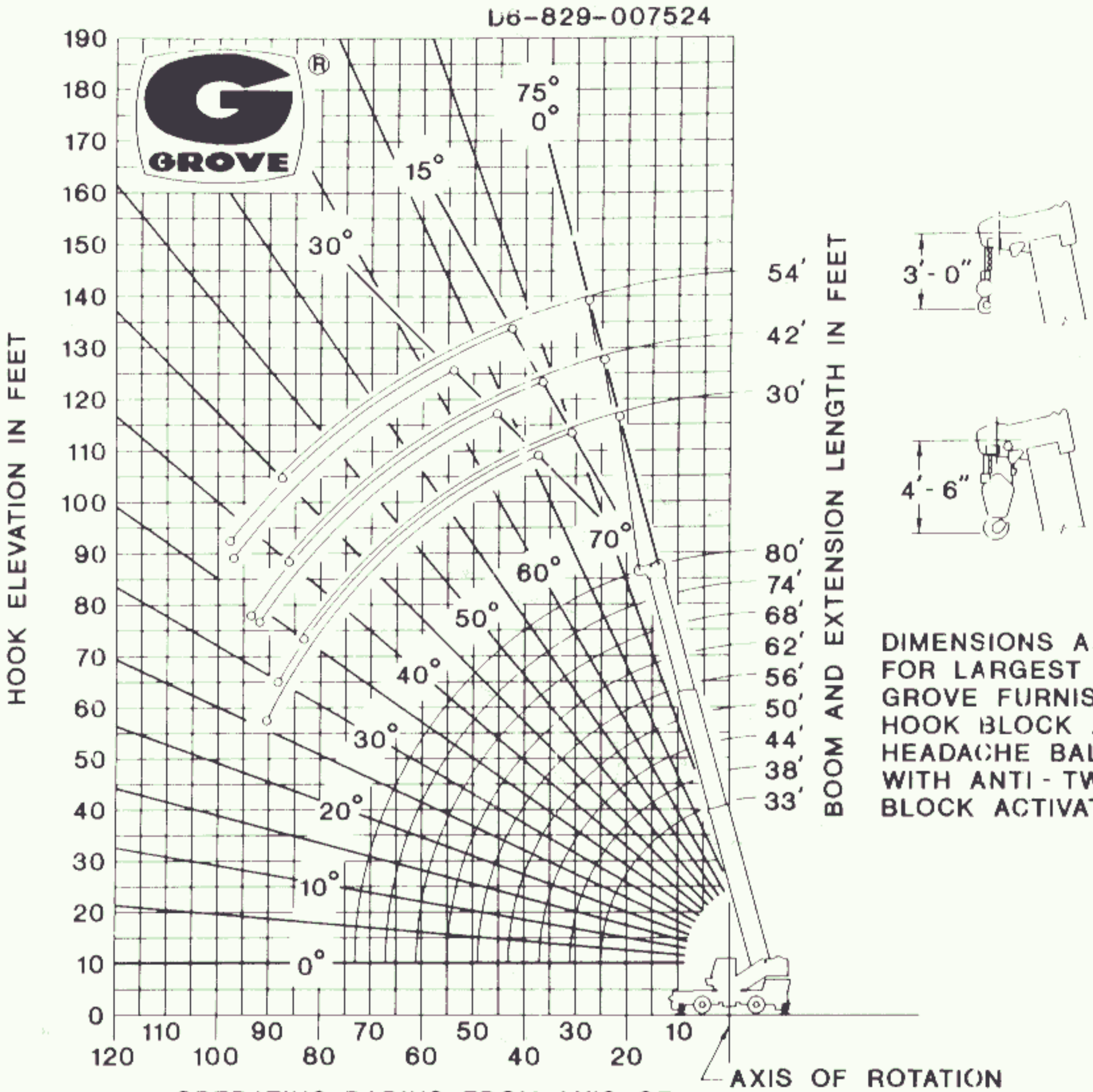
A6-829-007589C

NOTES WITH TELESCOPIC BOOM EXTENSION

1. All capacities above the bold line are based on structural strength of boom extension and do not exceed 85% of tipping loads, in accordance with SAE J-765a.
2. 30 ft. (9.3 m), 42 ft. (12.8 m) & 54 ft. (16.4 m) boom extension lengths may be used for double or single line lifting service.
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 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. Capacities listed are with fully extended outriggers only.
5. *Warning for 30 ft. (9.3 m) Boom Extension: For main boom length greater than 68 ft. (20.7 m) with 30 ft. (9.3 m) tele. boom extension in working position, the boom angle must not be less than 33° 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 68 ft. (20.7 m).
   *Warning for 42 ft. (12.8 m) Boom Extension: For main boom length greater than 62 ft. (18.9 m) with 42 ft. (12.8 m) tele. boom extension in working position, the boom angle must not be less than 38° 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 62 ft. (18.9 m).
   *Warning for 54 ft. (16.4 m) Boom Extension: For main boom length greater than 56 ft. (17.1 m) with 54 ft. (16.4 m) tele. boom extension in working position, the boom angle must not be less than 43° 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 56 ft. (17.1 m).
   *This warning applies for boom extension erection purposes also.

GROVE® RT635

RANGE DIAGRAM



WEIGHT REDUCTION FOR LOAD HANDLING DEVICES

30 ft. BOOM EXTENSION	
†Stowed	- 573 lbs.
†Erected	- 3,243 lbs.
30 ft. - 54 ft. Tele. Boom Extension with 33 ft. - 80 ft. Boom	
†Stowed	- 834 lbs.
†Erected (retracted)	- 4,973 lbs.
†Erected (extended)	- 6,650 lbs.

†Reduction of Main Boom Capacities.

HOOKBLOCK:	
35 Ton, 4 Sheave	600 lbs.
12 Ton, 1 Sheave	360 lbs.
Auxiliary Boom Head	110 lbs.
5 Ton Headache Ball	172 lbs.
7 1/2 Ton Headache Ball	338 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.