

# GROVE®

## FULL HYDRAULIC CARRIER-MOUNTED CRANE

# TM650

### JIB CAPACITIES WITH 35 ft. - 119 ft. BOOM OUTRIGGERS FULLY EXTENDED

Radius in Feet	46 ft. JIB CAPACITIES				60 ft. JIB CAPACITIES				74 ft. JIB CAPACITIES				88 ft. JIB CAPACITIES			
	No Offset		7½° Offset		No Offset		7½° Offset		No Offset		7½° Offset		No Offset		7½° Offset	
	Boom Angle		Boom Angle		Boom Angle		Boom Angle		Boom Angle		Boom Angle		Boom Angle		Boom Angle	
25	80°	19,000														
30	78	17,800	80°	15,400	80°	15,000			80°	10,000						
35	75.5	16,400	78	14,200	77.5	13,150	80°	11,000	78.5	9,400						
40	73	14,900	75.5	13,000	75	11,900	78	9,910	77	8,900	80°	9,000	80°	8,000		
45	71	13,800	73.5	11,800	73	10,650	76	8,850	75	8,200	78.5	8,000	78	7,300	80°	6,400
50	68.5	12,350	71	10,600	71	9,700	74	8,050	73.5	7,700	76.5	7,200	76.5	6,800	79.5	6,050
55	66	10,900	68.5	9,500	69	8,800	72	7,350	72	7,250	74.5	6,500	75	6,300	78	5,350
60	64	9,800	66	8,300	67	8,000	70	6,700	70	6,650	73	5,900	73	5,700	76	4,600
65	61.5	8,400	63.5	7,300	65	7,200	68	6,050	68	6,100	71	5,300	71.5	5,250	74.5	4,150
70	59	7,200	61	6,400	63	6,550	65.5	5,400	66	5,550	69	4,700	69.5	4,700	72.5	3,700
75	56	6,000	58.5	5,500	61	5,900	63	4,750	64	5,050	67	4,100	68	4,300	71	3,350
80	53.5	5,100	56	4,700	59	5,300	61	4,150	62	4,600	65	3,650	66	3,800	69	2,950
85	50.5	4,200	53	3,900	56.5	4,700	58.5	3,540	60	4,150	62.5	3,100	64	3,400	67	2,600
90	47.5	3,500	50	3,250	54.5	4,150	56	2,950	58	3,800	60.5	2,650	62	3,000	65.5	2,300
95	44.5	2,900	47	2,550	52	3,600	53	2,380	56	3,400	58	2,200	60	2,700	63.5	2,000
100	41	2,300	43.5	1,950	49	3,050	51	1,850	53.5	2,950	56	1,750	58	2,350	61.5	1,650
105	37.5	1,750	40	1,400	46	2,560	48.5	1,400	51	2,550	53.5	1,350	56	2,050	59.5	1,350
110	33.5	1,300	36.5	995	43	2,110	46	995	48.5	2,100	51	995	54	1,800	57	995
115	29	800			40	1,700			46	1,650			52	1,500		
120					36	1,300			43	1,280			49.5	1,250		

A6-829-001388

-001394

-001200A

-001202A

-001390

-001396

-001392

-001398

### JIB CAPACITY NOTES

- Radius in Feet applies to jib capacities with boom fully extended.
- All jib capacities are based on structural strength and do not exceed 85% of tipping loads with counterweight fully extended in accordance with SAE J-765.
- For 7½° Offset, jibs must be used for single line lifting crane service only.
- Rated load is based on main boom angle regardless of main boom length.
- Maximum length of main boom for purposes of erecting jib below 10° elevation is:

46 ft. Jib	-	76 ft.
60 ft. Jib	-	71 ft.
74 ft. Jib	-	66 ft.
88 ft. Jib	-	60 ft.

**WARNING:** Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with every jib occurs rapidly and without advance warning.

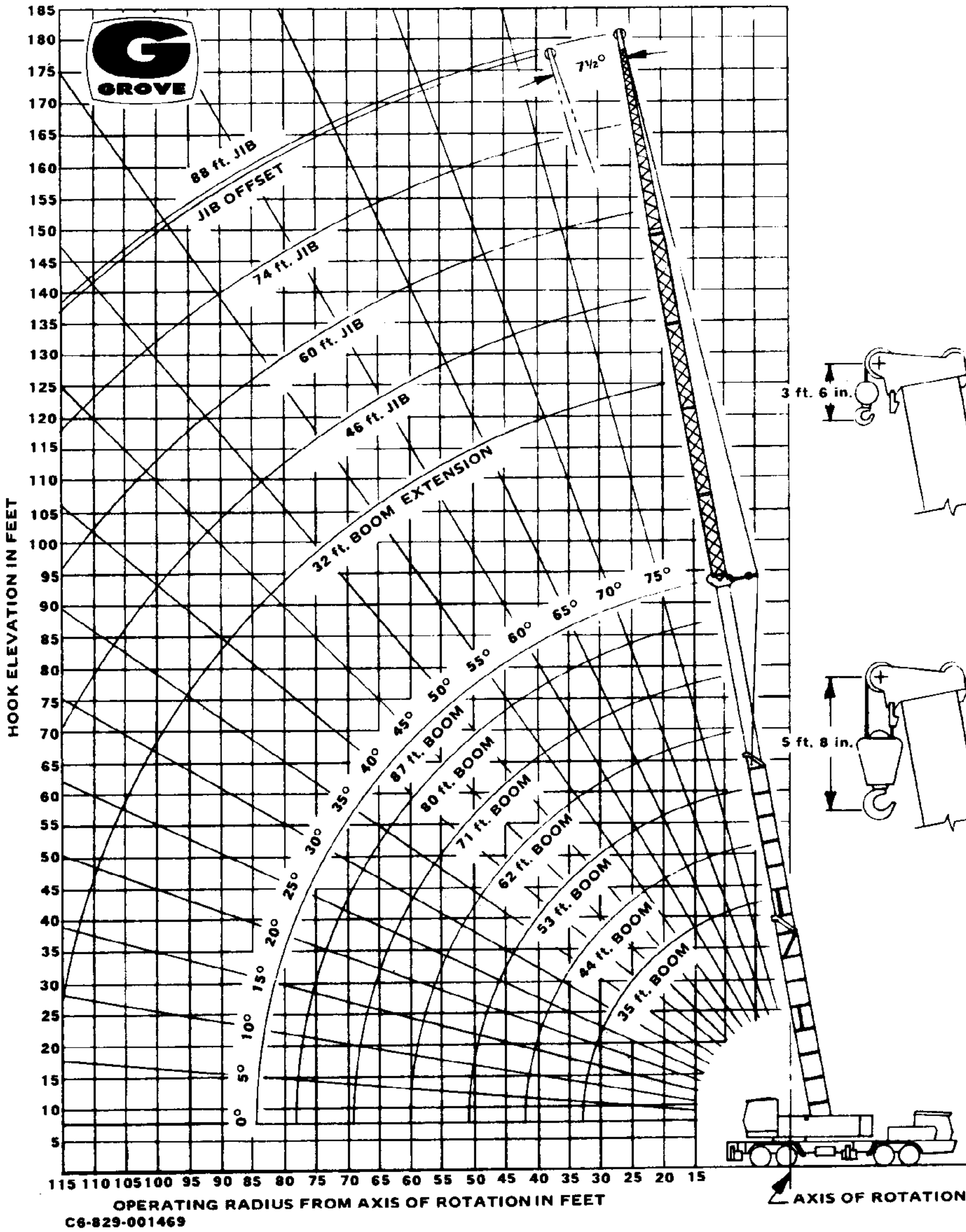
**60 ft. JIB WARNING:** For main boom length greater than 71 ft. with 60 ft. jib in working position, the boom angle must not be less than 10° (12° for 7½° Offset) since loss of stability will occur causing a tipping condition.

**74 ft. JIB WARNING:** For main boom length greater than 66 ft. with 74 ft. jib in working position, the boom angle must not be less than 23° (25° for 7½° Offset) since loss of stability will occur causing a tipping condition.

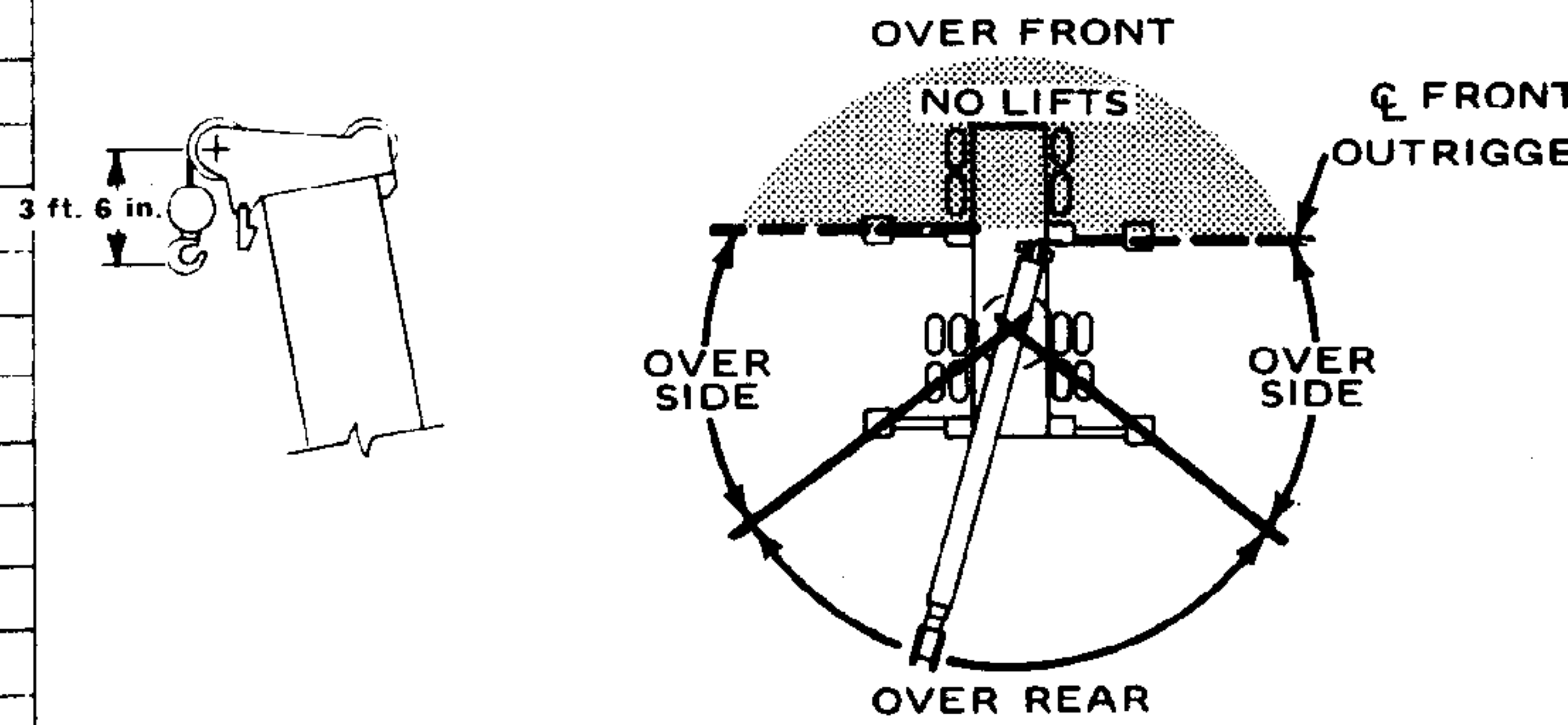
**88 ft. JIB WARNING:** For main boom length greater than 60 ft. with 88 ft. jib in working position, the boom angle must not be less than 32° (34° for 7½° Offset) since loss of stability will occur causing a tipping condition.



## RANGE DIAGRAM



## LIFTING AREAS ON OUTRIGGERS



— From Centerline of Rotation Through Centerline of Outrigger Pad.

**NOTE:** Boom crossing heavy dashed line (Centerline of Front Outriggers) is considered Over-the-Front.

**WARNING:** No Over-the-Front Lifting Recommended.



**GROVE MANUFACTURING COMPANY**

A DIVISION OF WALTER KIDDE & COMPANY, INC.

SHADY GROVE • PENNSYLVANIA 17256

MEMBER: POWER CRANE & SHOVEL ASSOCIATION

Form 8351074-1M

Printed in U.S.A.

Distributed by:



# GROVE®

## FULL HYDRAULIC CARRIER-MOUNTED CRANE

# TM650

## 65 TON CAP.

PCSA CLASS 12-265

**RATED LIFTING CAPACITIES IN POUNDS**  
**35 ft. - 119 ft. BOOM**  
**OVER SIDE AND REAR**  
**WITH FULLY EXTENDED OUTRIGGERS**

Radius in Feet	Trapezoidal Boom Length in Feet					87 + 32 Ext.
	*35	48	61	74	87	119
12	130,000	97,000	81,200			
15	110,000	88,000	74,000	62,000	50,000	
20	84,000	74,000	63,200	52,500	42,500	30,000
25	63,500	63,500	54,000	45,000	37,000	27,700
30	43,900	43,900	43,900	39,000	32,300	25,250
35		33,100	33,100	33,100	28,200	22,600
40		26,500	26,500	26,500	24,500	19,900
45			21,500	21,500	21,500	17,100
50			17,450	17,450	17,450	15,000
55			14,500	14,500	14,500	13,500
60				12,450	12,450	12,500
65				10,500	10,500	11,600
70				9,000	9,000	10,500
75					7,500	9,500
80					6,400	8,100
85						7,050
90						6,120
95						5,300
100						4,640
105						4,000
110						3,450
115						2,825
120						

**32 ft. Ext. Capacities	
BOOM ANGLE	
80.0°	30,000
78.3°	27,700
76.0°	25,250
73.5°	22,600
71.0°	19,900
68.5°	17,100
65.5°	15,000
63.0°	13,500
60.0°	12,500
57.0°	11,600
53.0°	10,500
50.0°	9,700
46.0°	8,900
42.0°	8,250
38.0°	7,750
34.0°	7,300
30.0°	6,900
25.0°	6,500
18.0°	6,200
5.0°	5,800

**TRAPEZOIDAL BOOM and 32 FT. EXT. NOTES**

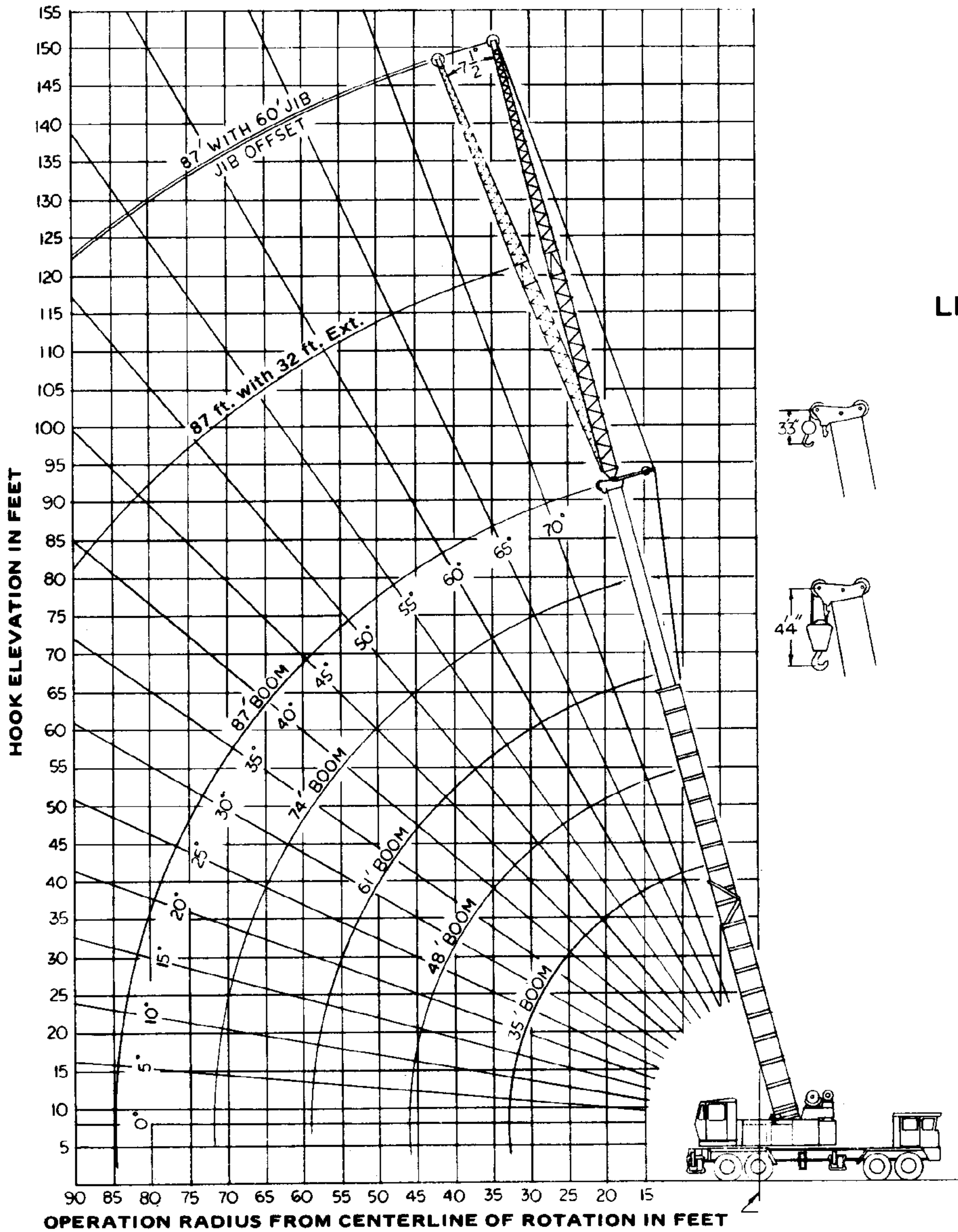
Capacities appearing in shaded area are based upon structural strength and tipping should not be relied upon as a capacity limitation. Capacities do not exceed 85% of tipping loads with counterweight fully extended as determined by test in accordance with SAE Recommended Practice - Crane Load Stability Test Code - SAE J-765. \*Capacities in shaded area for 35 ft. boom length shall be lifted with boom fully retracted. If boom is not fully retracted, capacities shall not exceed those shown for 48 ft. boom length. \*\*These capacities are based on structural strength of 32 ft. ext. at listed boom angle regardless of boom length. When lifting with 32 ft. ext. and LESS THAN a fully extended trapezoidal boom, the loads lifted MUST NOT EXCEED the 32 ft. ext. structural capacity at the lifted boom angle OR the largest stability capacity listed for the actual working radius, whichever is less.

**NOTES TO LIFTING CAPACITIES**

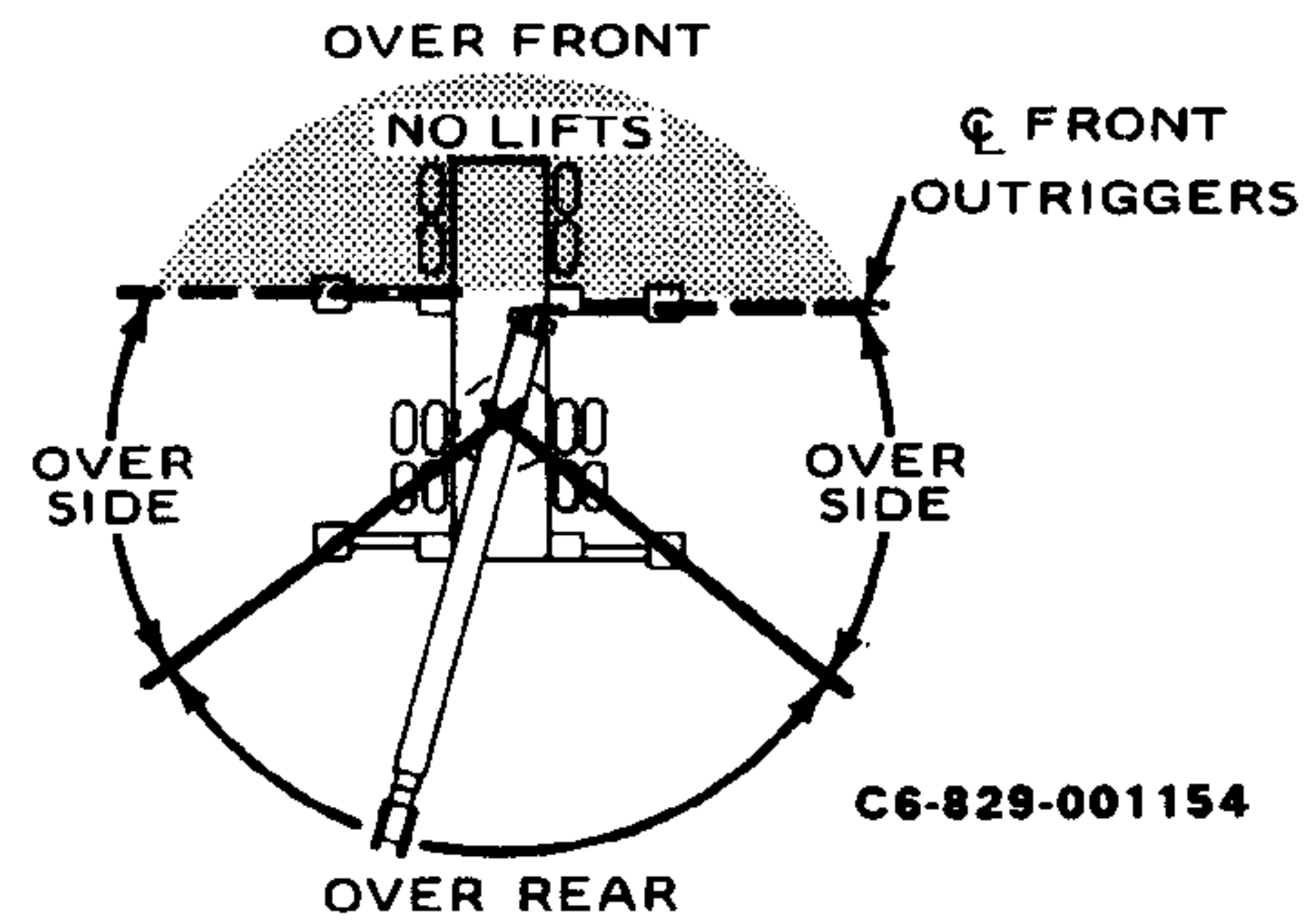
- Rated lifting capacities are based on freely suspended loads. They are the maximum covered by the manufacturer's warranty with the machine leveled and standing on a firm supporting surface. Ratings with outriggers are based on outriggers being extended to their maximum positions.
- Practical working loads for each particular job shall be established by the user depending on operating conditions; including the supporting surface, wind and other factors affecting stability, hazardous surroundings, experience of personnel, handling of load, etc. Operating radius is the horizontal distance from the axis of rotation to the centerline of the hoist line or tackle with loads applied.
- "On Rubber" lifting (if permitted) depends on proper tire inflation, capacity, and condition. "On Rubber" loads may be transported at a maximum vehicle speed of 2.5 mi/hr. (4 km/hr.), if specified as 2.5 MPH loads, on a smooth and level surface only.
- Jibs may be used for single line lifting crane service only. Jib capacities are based on structural strength of jib or main boom. Jib loads must not exceed main boom lifting capacities for the actual operating radius.
- Operation is not intended or approved for any conditions outside of those shown hereon. Handling of personnel from the boom is not authorized except with equipment furnished and installed by Grove Manufacturing Company.
- For clamshell or concrete bucket operation, weight of bucket and load must not exceed 90% of rated lifting capacities.
- Power-telescoping boom sections must be extended equally at all times. Long cantilever booms can create a tipping condition when in extended and lowered position.
- The maximum load which may be telescoped is limited by hydraulic pressure, boom angle, boom lubrication, etc. It is safe to attempt to telescope any load within the limits of rated lifting capacity chart.
- With certain boom and hoist tackle combinations, maximum capacities may not be obtainable with standard rope lengths.
- With certain boom and load combinations, raising of load with boom lift cylinders may not be possible. Operational safety is not affected by this condition.
- Keep load handling devices a minimum of 12 inches (30 CM) below boom head when lowering or extending boom.
- For multiple part reeving, use one part of line for each 13,000 lbs. of load.
- All load handling devices and/or boom attachments are considered part of the load and suitable allowances must be made.



## RANGE DIAGRAM



## LIFTING AREAS ON OUTRIGGERS



— From Centerline of Rotation Through Centerline of Outrigger Pad.

**NOTE:** Boom crossing heavy dashed line (Centerline of Front Outriggers) is considered Over-the-Front.

**WARNING:** No Over-the-Front Lifting Recommended.



**GROVE MANUFACTURING COMPANY**

A DIVISION OF WALTER KIDDE & COMPANY, INC.

SHADY GROVE • PENNSYLVANIA 17256

MEMBER: POWER CRANE & SHOVEL ASSOCIATION

Form 6671074-1M

Printed in U.S.A.

Distributed by: