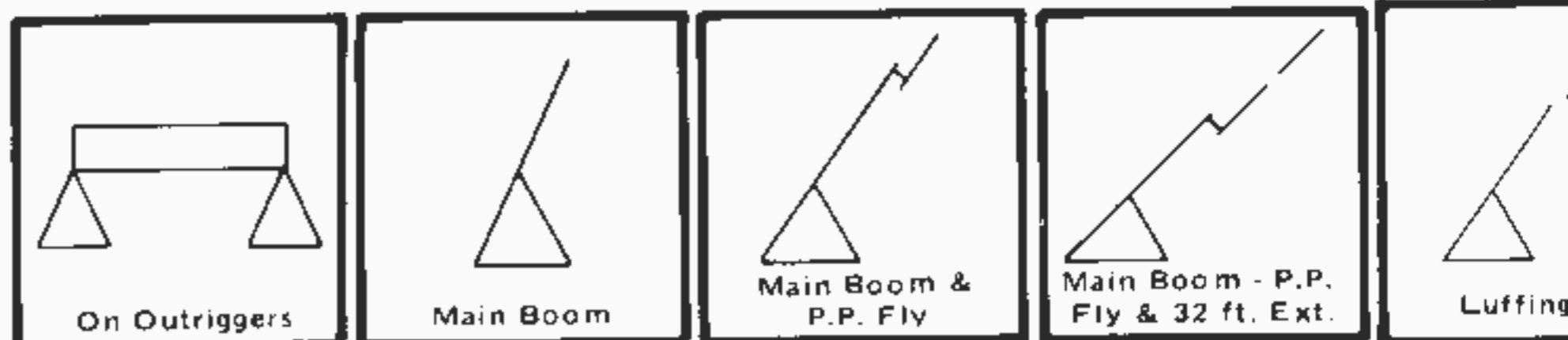




46 ft. - 205 ft. BOOM

POWER PINNED FLY
PCSA CLASS 12-705

KRUGER LMI SYMBOLS



RATED LIFTING CAPACITIES IN POUNDS

OUTRIGGERS FULLY EXTENDED - 360°

Radius in Feet	Main Boom Length in Feet (Power Pinned Fly Retracted)										Power Pin. Fly & 141 ft.	32ft. Ext. & 173 ft. (2° Offset)	
	46	58	70	82	94	106	118	130	141	173			205
12	280,000 (71.6)	143,500 (75.7)	142,000 (78.6)									See Warning Note 18	See Warning Note 19
15	235,000 (67.4)	143,500 (72.5)	141,500 (76.1)	130,000 (78.4)									
20	173,600 (60.1)	143,500 (67.1)	123,500 (71.7)	112,000 (74.8)	102,000 (77.1)	90,300 (79.2)							
25	135,600 (52.0)	131,500 (61.4)	110,500 (67.2)	98,650 (71.0)	89,250 (73.9)	78,550 (76.3)	73,700 (78.1)	69,300 (79.8)					
30	106,000 (42.6)	106,000 (55.3)	98,000 (62.6)	88,350 (67.2)	78,750 (70.6)	69,250 (73.5)	65,100 (75.6)	61,000 (77.5)	60,000 (79.2)				
35	84,700 (30.4)	84,700 (48.6)	84,700 (57.7)	80,150 (63.2)	69,000 (67.3)	60,750 (70.5)	57,150 (73.0)	54,000 (75.3)	52,150 (77.1)				
40		70,500 (41.0)	70,500 (52.4)	70,500 (59.1)	61,300 (63.9)	54,000 (67.5)	50,600 (70.4)	48,300 (72.9)	45,850 (75.0)	38,000 (78.7)			
45		58,850 (31.7)	58,850 (46.7)	58,850 (54.7)	55,000 (60.3)	48,500 (64.4)	45,200 (67.7)	43,050 (70.6)	40,400 (72.8)	35,750 (77.0)	21,500 (79.3)		
50		49,550 (17.2)	49,550 (40.2)	49,550 (50.1)	48,750 (56.6)	43,050 (61.3)	40,700 (64.9)	38,250 (68.1)	35,750 (70.6)	32,100 (75.2)	19,900 (77.9)		
60			32,600 (22.2)	32,600 (39.4)	32,600 (48.5)	32,600 (54.6)	32,600 (59.2)	30,750 (63.2)	28,500 (66.2)	26,350 (71.7)	16,850 (74.9)		
70				23,070 (24.6)	23,070 (39.1)	23,070 (47.2)	23,070 (53.0)	23,070 (57.9)	23,070 (61.5)	22,000 (68.1)	14,600 (71.9)		
80					16,700 (26.6)	16,700 (38.6)	16,700 (46.3)	16,700 (52.3)	16,700 (56.5)	18,500 (64.3)	12,850 (68.8)		
90	See Warning Note 16					11,810 (27.6)	11,810 (38.5)	11,810 (46.1)	11,810 (51.2)	15,250 (60.4)	11,450 (65.6)		
100							8,140 (28.8)	8,140 (39.0)	8,140 (45.4)	11,700 (56.3)	10,050 (62.4)		
110							4,790 (12.1)	4,790 (30.3)	4,790 (38.8)	8,430 (52.0)	8,200 (59.0)		
120								2,510 (17.2)	2,510 (30.8)	5,530 (47.3)	6,620 (55.5)		
130										3,560 (42.2)	5,260 (51.8)		
140										1,900 (36.5)	3,300 (47.9)		
150											1,800 (43.7)		
Minimum Boom Angle for Indicated Boom Length (No Load)										15°	31°	39°	
Maximum Boom Length (feet) at 0° Boom Angle (No Load)										136	158	181	

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WARNING NOTES

GENERAL:

- Rated loads as shown on lift chart pertain to this machine as originally manufactured and equipped. Modifications to the machine or use of optional equipment other than that specified can result in a reduction of capacity.
- Construction equipment can be hazardous if improperly operated or maintained. Operation and maintenance of this machine shall be in compliance with the information in the operator's, parts, and safety manuals supplied with this machine. If these manuals are missing, order replacements from the manufacturer through the distributor.
- The operator and other personnel associated with this machine shall fully acquaint themselves with the latest applicable American National Standards Institute (ANSI) Safety Standards for cranes.

SETUP:

- 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.
- For outrigger operation, outriggers shall be fully extended with tires raised free of crane weight before operating the boom or lifting loads.
- If machine is equipped with front jack cylinder, the front jack cylinder shall be set in accordance with written procedure.
- If machine is equipped with extendable counterweight, the counterweight shall be fully extended before operation.
- Tires shall be inflated to the recommended pressure before lifting on rubber.
- With certain boom and hoist tackle combinations, maximum capacities may not be obtainable with standard cable lengths.

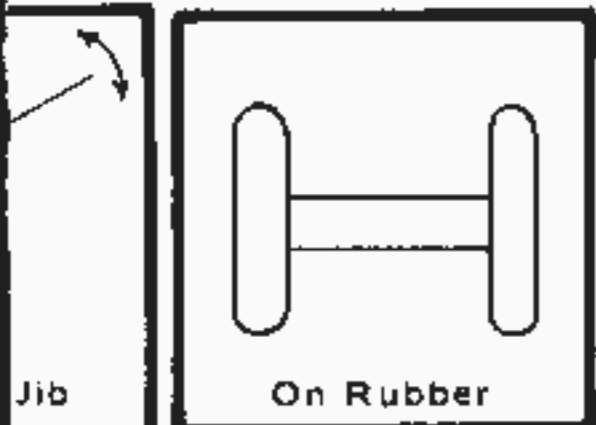
OPERATION:

- Rated loads at rated radius shall not be exceeded. Do not tip the machine to determine allowable loads. For clamshell or concrete bucket operation, weight of bucket and load must not exceed 80% of rated lifting capacities.
- Rated loads do not exceed 85% of the tipping load as determined by SAE Crane Stability Test Code J-765a.
- Rated loads include the weight of hook block, slings and auxiliary lifting devices and their weights shall be subtracted from the listed ratings to obtain the net load to be lifted.
- Load ratings are based on freely suspended loads. No attempt shall be made to move a load horizontally on the ground in any direction.
- 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 shall be appropriately reduced.
- Rated loads are for lift crane service only.
- Do not operate at a radius or boom length where capacities are not listed. At these positions, the machine may overturn without any load on the hook.

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GROVE®

FULL HYDRAULIC CARRIER-MOUNTED CRANE



LOADS ON OUTRIGGERS

OUTRIGGERS FULLY EXTENDED - OVER REAR

Radius in Feet	Main Boom Length in Feet (Power Pinned Fly Retracted)									Power Pin. Fly & 141 ft.	32 ft. Ext. & 173 ft. (2° Offset)	
	46	58	70	82	94	106	118	130	141			
12	280,000 (71.6)	143,500 (75.7)	142,000 (78.6)								See Warning Note 18	See Warning Note 19
15	235,000 (67.4)	143,500 (72.5)	141,500 (76.1)	130,000 (78.4)								
20	173,600 (60.1)	143,500 (67.1)	123,500 (71.7)	112,000 (74.8)	102,000 (77.1)	90,300 (79.2)						
25	135,600 (52.0)	131,500 (61.4)	110,500 (67.2)	98,650 (71.0)	89,250 (73.9)	78,550 (76.3)	73,700 (78.1)	69,300 (79.8)				
30	106,000 (42.6)	106,000 (55.3)	98,000 (62.6)	88,350 (67.2)	78,750 (70.6)	69,250 (73.5)	65,100 (75.6)	61,000 (77.5)	60,000 (79.2)			
35	84,700 (30.4)	84,700 (48.6)	84,700 (57.7)	80,150 (63.2)	69,000 (67.3)	60,750 (70.5)	57,150 (73.0)	54,000 (75.3)	52,150 (77.1)			
40		70,500 (41.0)	70,500 (52.4)	70,500 (59.1)	61,300 (63.9)	54,000 (67.5)	50,600 (70.4)	48,300 (72.9)	45,850 (75.0)	38,000 (78.7)		
45		58,850 (31.7)	58,850 (46.7)	58,850 (54.7)	55,000 (60.3)	48,500 (64.4)	45,200 (67.7)	43,050 (70.6)	40,400 (72.8)	35,750 (77.0)	21,500 (79.3)	
50		49,550 (17.2)	49,550 (40.2)	49,550 (50.1)	48,750 (56.6)	43,050 (61.3)	40,700 (64.9)	38,250 (68.1)	35,750 (70.6)	32,100 (75.2)	19,900 (77.9)	
60			34,340 (22.2)	34,340 (39.4)	34,340 (48.5)	34,300 (54.6)	33,600 (59.2)	30,750 (63.2)	28,500 (66.2)	26,350 (71.7)	16,850 (74.9)	
70				25,270 (24.6)	25,270 (39.1)	25,270 (47.2)	25,270 (53.0)	24,750 (57.9)	23,100 (61.5)	22,000 (68.1)	14,600 (71.9)	
80					18,570 (26.6)	18,570 (38.6)	18,570 (46.3)	18,570 (52.3)	18,570 (56.5)	18,500 (64.3)	12,850 (68.8)	
90						13,480 (27.6)	13,480 (38.5)	13,480 (46.1)	13,480 (51.2)	15,250 (60.4)	11,450 (65.6)	
100	See Warning Note 16						9,460 (28.8)	9,460 (39.0)	9,460 (45.4)	12,600 (56.3)	10,050 (62.4)	
110							6,560 (12.1)	6,560 (30.3)	6,560 (38.8)	10,400 (52.0)	8,200 (59.0)	
120								4,200 (17.2)	4,200 (30.8)	7,450 (47.3)	6,620 (55.5)	
130									2,340 (19.3)	5,240 (42.2)	5,260 (51.8)	
140										3,420 (36.5)	4,100 (47.9)	
150										1,870 (29.6)	3,080 (43.7)	
160											2,180 (39.1)	
170											1,130 (34.0)	
Minimum Boom Angle for Indicated Boom Length (No Load)									1°	22°	32°	
Maximum Boom Length (feet) at 0° Boom Angle (No Load)									141	170	192	

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NOTES

Maximum load which can be telescoped is not definable because of variations in loadings and crane maintenance, but it is to attempt retraction and extension within the limits of the capacity chart.
 If 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.
 In 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.
 For telescoping boom sections must be extended equally at all times.
 Climbing of personnel from the boom is not authorized except with equipment furnished and installed by Grove Manufacturing Company.
 Keep load handling devices a minimum of 12 inches (30 cm) below boom head when lowering or extending boom.
 Indicated boom angles give an approximation of the operating radius at specified boom lengths. The boom angle before loading should be greater to account for deflection.
 Capacities appearing above bold line are based on structural strength and tipping should not be relied upon as a capacity limitation.
 Capacities for the 45 ft. (13.7m) boom length shall be lifted with boom fully retracted. If boom is not fully retracted, capacities shall not exceed those shown for the 58 ft. (17.7m) boom length.
 Booms less than 40 feet or 12 meters not recommended when lifting over front of machine.
 For boom lengths less than 172 ft. (52.6m) with 32 ft. (9.8m) boom extension erected, the rated loads are determined by boom angle only, in the column headed by 172 ft. (52.6m). For this load column, the 32 ft. (9.8m) boom extension operational mode shall be selected on the Krueger L.M.I.
WARNING: The Krueger L.M.I. calibration will apply for fully extended main boom only.
DEFINITIONS:
 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 trolley with load applied.
 Indicated 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.
 Working Area: Areas measured in a circular arc about the center line of rotation as shown on the working area diagram.
 Fully Suspended Load: Load hanging free with no direct external force applied except by the lift cable.
 Side Load: Horizontal force applied to the lifted load either on the ground or in the air.

TM1400

140 TON CAPACITY 46 ft. - 205 ft. BOOM (POWER PINNED FLY)

88 ft. POWER-LUFFING JIB CAPACITIES

Loaded Jib Angle	46 ft.		60 ft.		74 ft.		88 ft.	
	Ref. Radius		Ref. Radius		Ref. Radius		Ref. Radius	
70°	46.4	11,700	51.0	8,460	56.2	6,350	61.1	4,730
65	50.1	10,700	56.0	7,580	62.2	5,500	68.1	3,900
60	53.8	9,900	60.7	6,850	67.9	4,800	74.9	3,210
55	57.2	9,210	65.3	6,230	73.3	4,210	81.3	2,640
50	60.5	8,640	69.5	5,710	78.4	3,710	87.4	2,160
45	63.5	8,140	73.5	5,260	83.1	3,280	93.0	1,740

A6-829-003012D

JIB WARNING NOTES

1. All capacities are based on structural strength of jib at given jib angle with reference to ground and do not exceed 85% of tipping loads with counterweight fully extended as determined by test in accordance with SAE J-765.
2. Capacities for 46 ft., 60 ft., 74 ft., & 88 ft. jibs are for two part line lifting crane service only, with Krueger dynamometer installed at dead end.
3. Rated load is based on loaded jib angle with reference to ground, regardless of main boom length. (Reference radius in feet is for fully extended boom with power pinned fly extended, 173.38 ft. boom length, only. The Krueger L.M.I. system will give an accurate radius indication for this condition only.)
4. **WARNING:** Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with every jib configuration occurs rapidly and without advance warning.
5. Power pinned fly must be fully extended and pinned for luffing jib operation. Boom length must be set prior to and maintained while lifting or luffing any load. Do not attempt to change boom length while lifting with luffing jib since jib angle changes with boom length. To extend boom, mechanical lockout bar in cab must be engaged. To retract boom, mechanical lockout bar in cab must be disengaged. Every time bar is reengaged, lockout system must be reset before lifting.
6. Lifting with other than fully elevated main boom (80° boom angle) is strictly prohibited. (Check and maintain proper lifting configuration at all times, keep lift cylinders fully extended.)
7. Do not attempt to lift any load with main hoist (luffing line) that cannot be lifted with auxiliary hoist (lifting line).
WARNING: The Krueger L.M.I. system will not provide protection against this condition.
8. With 46 ft., 60 ft., 74 ft. & 88 ft. jibs in working position, the jib angle with reference to ground must not be less than 45° nor greater than 70°. Exceeding these limits can cause an unsafe condition. The Krueger L.M.I. system will lockout main hoist down at 35° and main hoist up at 70°.
9. Insure that all safety devices for luffing jibs are properly engaged before lifting a load.
10. Main hoist must be used to luff jib.
11. Capacities listed are with outriggers fully extended and front jack cylinder extended according to proper procedure.

JIB ERECTION NOTES:

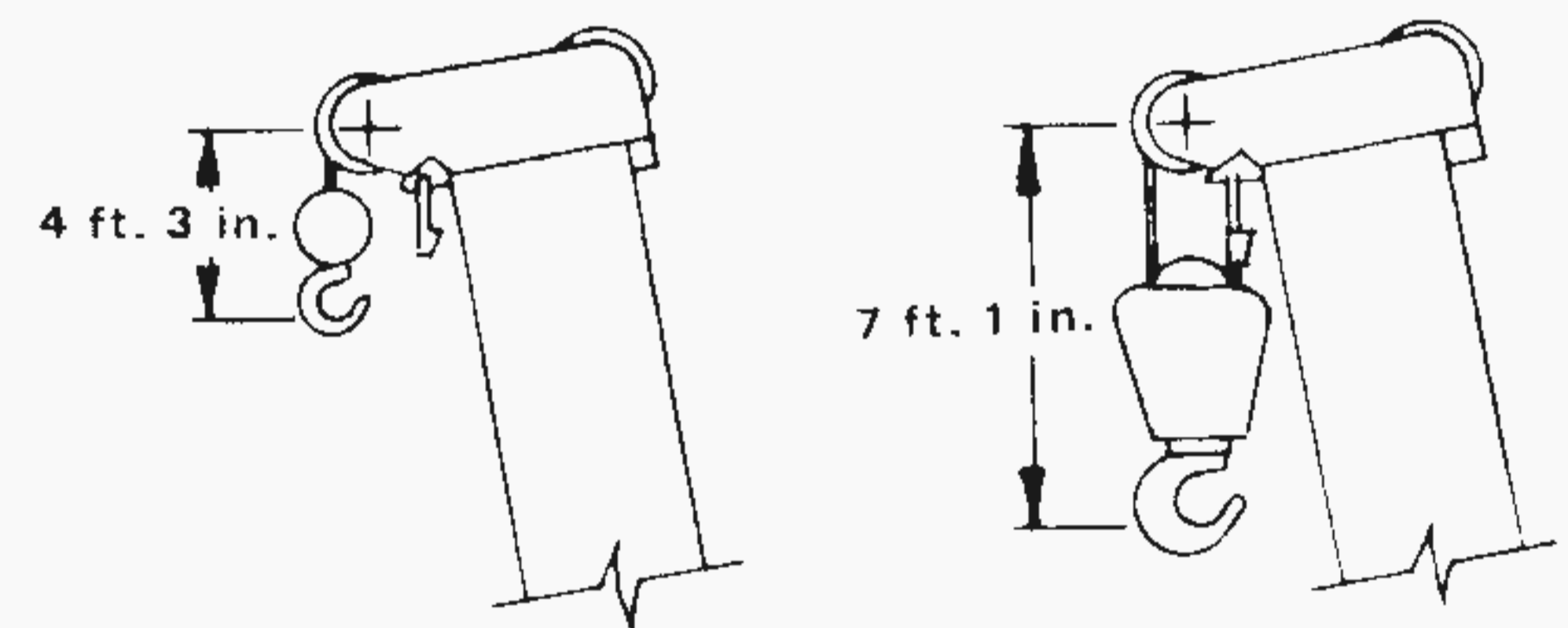
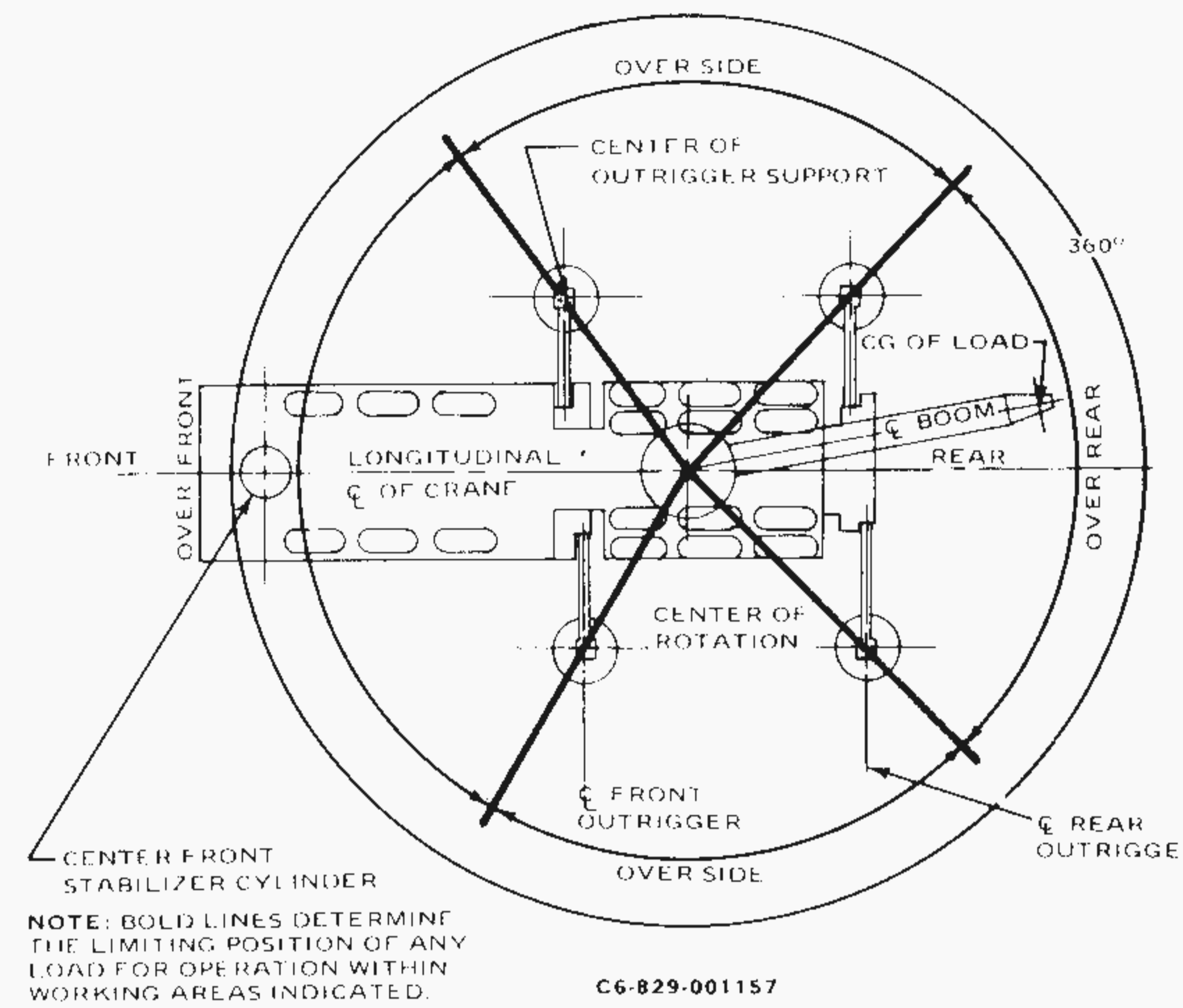
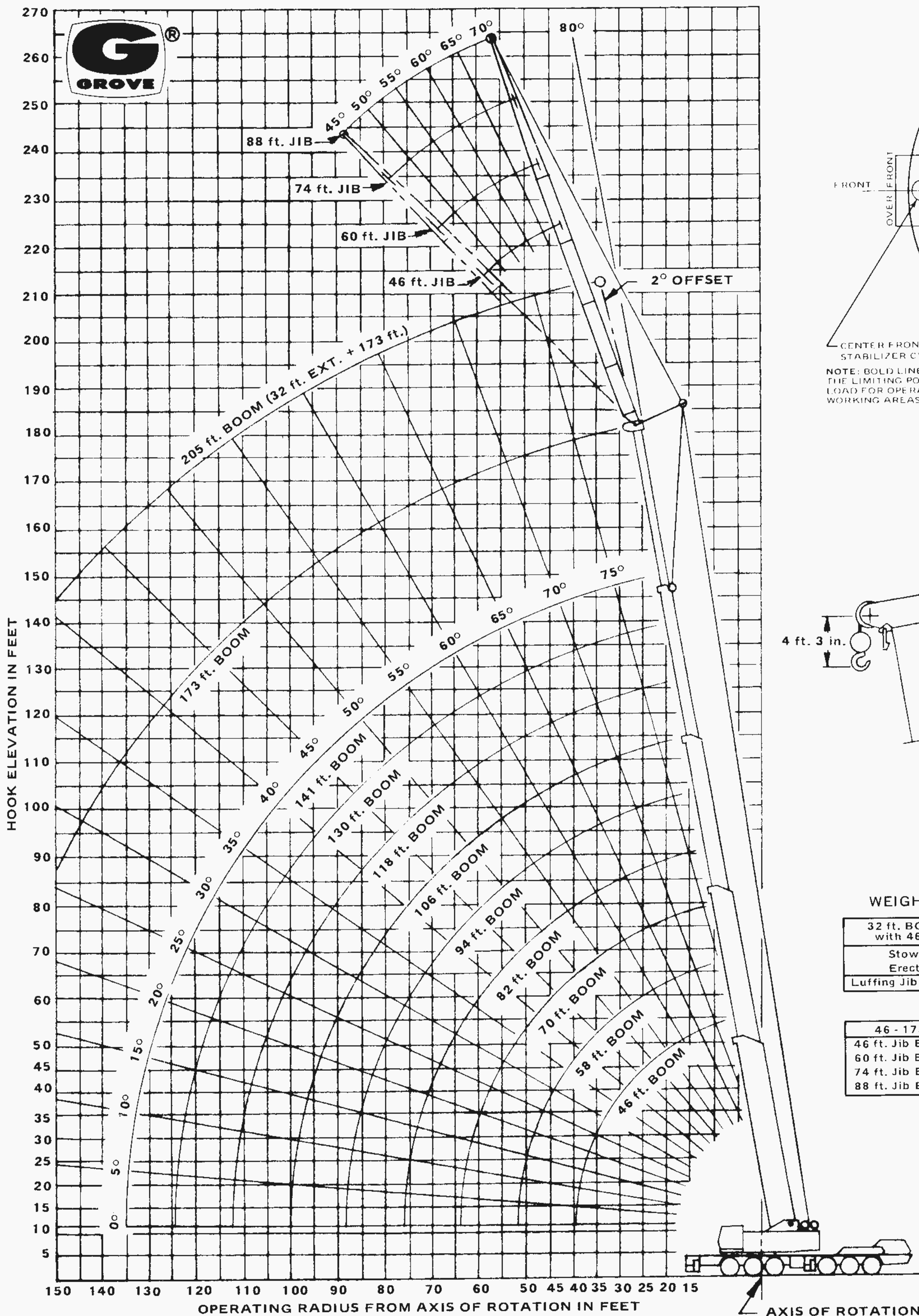
- A. For main boom angle less than 80° (fully elevated), the maximum total length of boom including power pinned fly, for the purpose of erecting or dismantling the luffing jib over side or rear is:

46 ft. Jib - 129 ft.
60 ft. Jib - 122 ft.
74 ft. Jib - 115 ft.
88 ft. Jib - 107 ft.

WARNING: Extending or retracting the main boom equipped with luffing jib at boom lengths greater than the above specified lengths without fully elevating the boom (80° boom angle) is strictly prohibited. Do not attempt to erect jibs over front of machine unless main boom is fully retracted, power pinned fly extended.

HOOK ELEVATION DIAGRAM UNLADEN BOOM

LIFTING AREA DIAGRAM



WEIGHT REDUCTION FOR LOAD HANDLING DEVICES

32 ft. BOOM EXTENSION with 46 - 173 ft. BOOM
Stowed - 650 lbs.
Erected - 2,425 lbs.
Luffing Jib Accessories - 560 lbs.

46 - 173 ft. BOOM with
46 ft. Jib Erected - 9,127 lbs.
60 ft. Jib Erected - 13,942 lbs.
74 ft. Jib Erected - 19,671 lbs.
88 ft. Jib Erected - 26,279 lbs.

HOOB BLOCKS	
140 Ton, 7 Sheave	3,440 lbs.
30 Ton, 1 Sheave	1,020 lbs.
Auxiliary Boom Head	250 lbs.
10 Ton Headache Ball	500 lbs.
15 Ton Headache Ball	750 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.

C7-376-000626 Rev. 1



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KIDDE

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