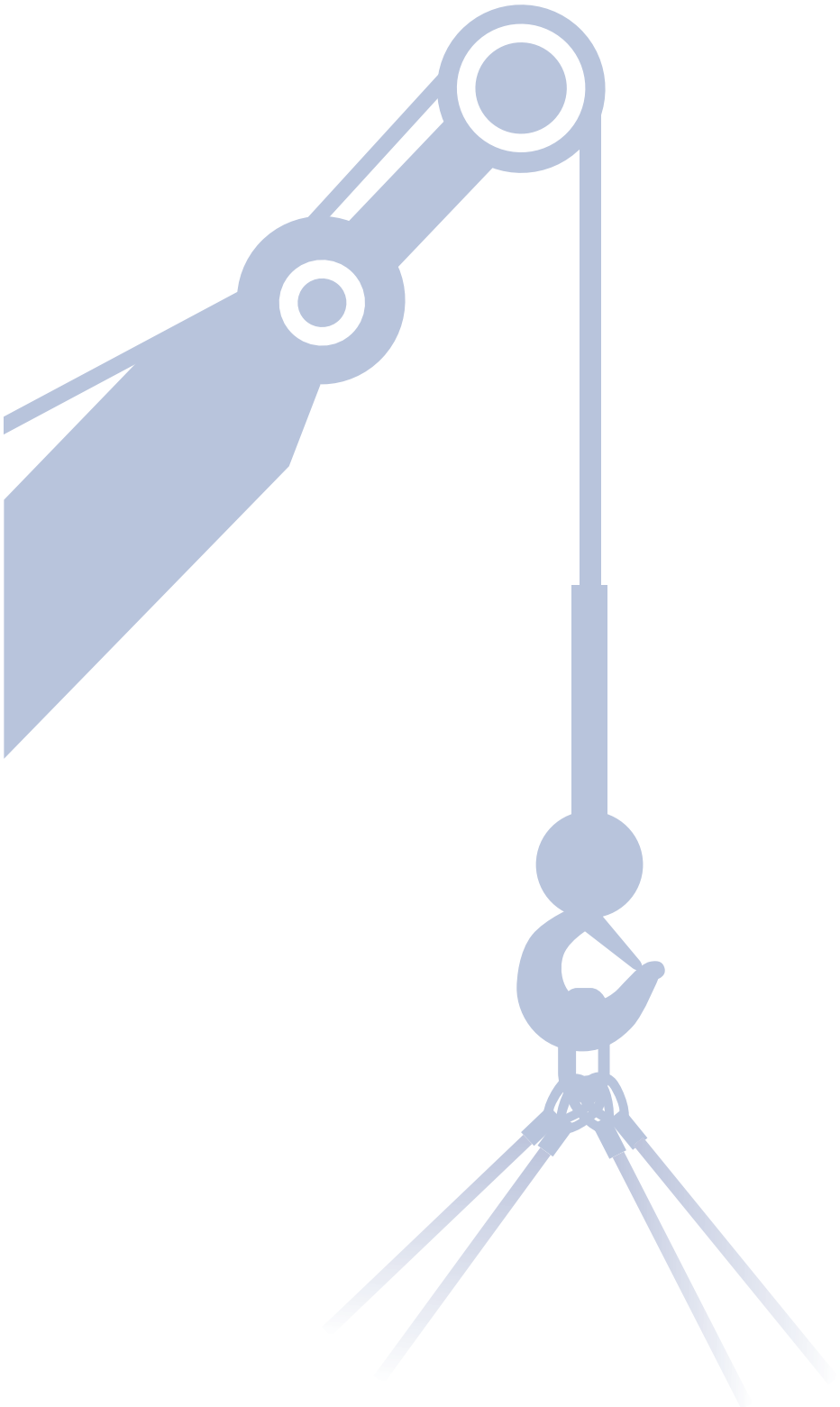
LOAD CHARTS

for Use With

WRITTEN EXAMINATIONS



Grove RT58B

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These pages are reproduced for illustration only and not as a substitute for reviewing the entire manual for a particular crane.

Make sure that you are fully trained on, and review the entire manual for, every crane you operate.

This load chart has been adapted from the original manufacturer's load chart for use in the NCCER Advanced Rigger Certification Examination. It is not to be used for calculating loads, planning lifts, or for any other purpose.

LOAD CHARTS
RT58B

85% STABILITY
ON OUTRIGGERS

75% STABILITY
ON RUBBER

_____

SERIAL NUMBER

NOTES FOR LIFTING CAPACITIES

GENERAL:

1. 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.
2. 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 and Safety Handbook, Service Manual and Parts Manual supplied with this machine. If these manuals are missing, order replacements from the manufacturer through the distributor.
3. The operator and other personnel associated with machine shall fully acquaint themselves with the latest American National Safety Standards (ASME/ANSI) for cranes.

SETUP:

1. The machine shall be level and 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.
2. For outrigger operation, all outriggers shall be properly extended with tires raised free of crane weight before operating the boom or lifting loads.
3. When machine is equipped with center front stabilizer, the front stabilizer shall be set in accordance with instructions in Operator's & Safety Handbook.
4. When equipped with removable and/or extendible counterweight, the proper counterweight shall be installed and fully extended before and during 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. Unless approved by the crane manufacturer, do not travel with boom extension or jib erected. Refer to the Operator's and Safety Handbook for job-site travel information.

OPERATION:

1. Rated loads at rated radius shall not be exceeded. Do not attempt to 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.
2. All rated loads have been tested to and meet the requirements of SAE J1063 – Cantilevered Boom Crane Structures – Method of Test, and do not exceed 85% of the tipping load on outriggers as determined by SAE J765 Crane Stability Test Code.
3. 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 parts of line needed to pick the load are used, the additional rope weight as measured from the lower sheaves of the main boom nose shall be considered part of the load to be lifted. When both the hook block and headache ball are reeved, the lifting device that is NOT in use, including the line as measured from the lower sheave(s) of the nose supporting the unused device shall be considered part of the load.
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. The maximum in-service wind speed is 20 m.p.h. It is recommended when wind velocity is above 20 m.p.h., rated loads and boom lengths shall be appropriately reduced. For machines not in-service, the main boom should be retracted and lowered with the swing brake set in wind velocities over 30 m.p.h.
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 machine 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 of the boom within the limits of the capacity chart.
9. When the boom length or lift 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.
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. If machine is equipped with individually controlled powered boom sections, the boom sections must be extended equally at all times.
12. Never handle personnel with this machine unless the requirements of the applicable national, state, and local regulations and safety codes are met.
13. Keep load handling devices a minimum of 42 inches 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 25 ft. boom length shall be lifted with boom fully retracted. If boom is not fully retracted, capacities shall not exceed those shown for the 30 ft. boom length.
17. Lifting loads at close radii directly over the operator's compartment is not recommended.
18. Do not lift loads when boom is fully lowered. The Load Moment Indicator (LMI) senses pressure and will not provide warnings or lockout. The crane can become overloaded if lift cylinder(s) is fully retracted.
19. The maximum outrigger pad load is 36,787 lb.

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.

RATED LIFTING CAPACITIES IN POUNDS
25 FT. – 60 FT. BOOM

ON OUTRIGGERS FULLY EXTENDED - 360°

Radius in Feet	#0001 or #01						
	Main Boom Length in Feet						
	25	30	36	42	48	54	60
12	30,000 (54.5)	30,000 (62)	30,000 (67.5)	30,000 (71)	30,000 (74)		
15	28,000 (45)	28,000 (55)	28,000 (62)	28,000 (66.5)	28,000 (70)	27,600 (73)	25,000 (75.5)
20	19,600 (23.5)	19,600 (41.5)	19,600 (52)	19,600 (59)	19,600 (63.5)	19,600 (67.5)	19,600 (70.5)
25		13,300 (23)	13,300 (41)	13,300 (50.5)	13,300 (56.5)	13,300 (61.5)	13,300 (65)
30	See Note 16		9,730 (25.5)	9,730 (40.5)	9,730 (49)	9,730 (55)	9,730 (59.5)
35				7,440 (27.5)	7,440 (40)	7,440 (48)	7,440 (53.5)
40					5,880 (28.5)	5,880 (40)	5,880 (47)
45						4,820 (30)	4,820 (39.5)
50						4,000 (13.5)	4,000 (30)
55							3,350 (16.5)
Minimum boom angle (degrees) for indicated length (no load)							0
Maximum boom length (ft.) at 0 degree boom angle (no load)							60

Note: () Boom angles are in degrees. A6-829-003395 & -003404E

#LMI operating code. Two or four digit code depends on LMI system. Refer to LMI manual for operating instructions.

RATED LIFTING CAPACITIES IN POUNDS
25 FT. – 60 FT. BOOM

ON OUTRIGGERS FULLY EXTENDED – OVER FRONT

Radius in Feet	#0001 or #01						
	Main Boom Length in Feet						
	25	30	36	42	48	54	60
12	30,000 (54.5)	30,000 (62)	30,000 (67.5)	30,000 (71)	30,000 (74)		
15	28,000 (45)	28,000 (55)	28,000 (62)	28,000 (66.5)	28,000 (70)	27,600 (73)	25,000 (75.5)
20	22,200 (23.5)	22,200 (41.5)	22,200 (52)	22,200 (59)	22,200 (63.5)	21,900 (67.5)	21,500 (70.5)
25		17,400 (23)	17,400 (41)	17,400 (50.5)	17,400 (56.5)	17,400 (61.5)	17,400 (65)
30	See Note 16		14,100 (25.5)	14,100 (40.5)	14,100 (49)	14,100 (55)	14,100 (59.5)
35				11,320 (27.5)	11,320 (40)	11,320 (48)	11,320 (53.5)
40					9,010 (28.5)	9,010 (40)	9,010 (47)
45						7,470 (30)	7,470 (39.5)
50						6,200 (13.5)	6,200 (30)
55							5,100 (16.5)
Minimum boom angle (degrees) for indicated length (no load)							0
Maximum boom length (ft.) at 0 degree boom angle (no load)							60

Note: () Boom angles are in degrees. A6-829-003393 & -003404E

#LMI operating code. Two or four digit code depends on LMI system. Refer to LMI manual for operating instructions.

20 FT. A-FRAME JIB
ON OUTRIGGERS - 360°

Main Boom Angle (deg.)	#0061 or #61	#0062 or #62	#0063 or #63
	0° OFFSET	15° OFFSET	30° OFFSET
75	9,500 (21.5)	6,100 (25.8)	4,200 (28.9)
70	8,400 (27.8)	5,450 (31.9)	3,870 (34.8)
65	7,140 (33.9)	4,850 (37.8)	3,660 (40.5)
60	5,440 (39.7)	4,400 (43.4)	3,500 (45.9)
55	4,210 (45.3)	3,770 (48.6)	3,330 (50.8)
50	3,410 (50.5)	3,200 (53.6)	3,200 (55.4)
45	2,810 (55.2)	2,730 (58.1)	2,700 (59.6)
40	2,440 (59.6)	2,360 (62.1)	2,360 (63.2)
35	2,150 (63.5)	2,040 (65.6)	2,040 (66.4)
30	1,890 (66.9)	1,810 (68.6)	1,810 (69.1)

A6-829-003405C

NOTE: () Reference radii in feet.

1. All capacities are in pounds. 20 ft. jib may be used for double line lifting service. Capacities are based on structural strength of 20 ft. jib at a given main boom angle regardless of main boom length.
2. WARNING: Operation of this machine with heavier loads than the capacities listed is strictly prohibited. Machine tipping with jib occurs rapidly and without advance warning.
3. Capacities listed are with fully extended outriggers only.
4. WARNING: Lifting on rubber with jib is prohibited.
5. Reference radii listed are for fully extended main boom only.
6. No load stability on outriggers with 20 ft. jib installed:

a. Min. boom angle for 60 ft. main boom = 0°

b. Max. main boom length at 0° boom angle = 60’

WEIGHT REDUCTIONS FOR
LOAD HANDLING DEVICES

20 ft. A-FRAME JIB with 25 ft. – 60 ft. BOOM	
* Stowed -	248 lbs.
* Erected -	1,375 lbs.

* Reduction of main boom capacities

AUXILIARY BOOM HEAD	100 lbs.
HOOKBLOCKS and HEADACHE BALLS:	
12 Ton, 1 Sheave	268 lbs. +
15 Ton, 2 Sheave	290 lbs. +
22 Ton, 3 Sheave	455 lbs. +
7 1/2 Ton Headache Ball	338 lbs. +
5 Ton Headache Ball	172 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
Main & Aux. Model 15	5/8” (16 mm) 18x19 Class or 35x7 Rotation Resistant Min. Breaking Str. 45,400 lbs.	8,496 lbs.
Main & Aux. Model 15	5/8” (16mm) 6x37 class EIPS, IWRC Min. Breaking Str. 41,200 lbs.	8,496 lbs.

The approximate weight of 5/8” wire rope is 1.0 lb./ft.

ON RUBBER CAPACITIES WITH 17.5 x 25 TIRES STATIONARY CAPACITIES - 360°

Radius in Feet	#9005 or #05					
	Main Boom Length in Feet					
	25	30	36	42	48	54
10	16,280 (60)					
12	13,000 (54.5)	10,000 (62)	10,000 (67.5)	10,000 (71)	10,000 (74)	
15	9,000 (45)	7,600 (55)	7,600 (62)	7,600 (66.5)	7,600 (70)	
20	5,290 (23.5)	5,000 (41.5)	5,000 (52)	5,000 (59)	5,000 (63.5)	5,000 (67.5)
25		3,440 (23)	3,440 (41)	3,440 (50.5)	3,440 (56.5)	3,440 (61.5)
30			2,440 (25.5)	2,440 (40.5)	2,440 (49)	2,440 (55)
35				1,780 (27.5)	1,700 (40)	1,700 (48)
40					1,220 (28.5)	1,100 (40)
45						820 (30)

A6-829-009191A

STATIONARY CAPACITIES - DEFINED ARC OVER FRONT (See note 3)

Radius in Feet	#9005 or #05						
	Main Boom Length in Feet						
	25	30	36	42	48	54	60
10	24,100 (60)						
12	22,060 (54.5)	16,000 (62)	16,000 (67.5)	16,000 (71)	10,000 (74)		
15	17,380 (45)	13,000 (55)	13,000 (62)	13,000 (66.5)	10,000 (70)		
20	11,340 (23.5)	9,600 (41.5)	9,600 (52)	9,600 (59)	9,600 (63.5)	9,600 (67.5)	
25		7,650 (23)	7,650 (41)	7,500 (50.5)	7,500 (56.5)	7,500 (61.5)	
30			5,660 (25.5)	5,660 (40.5)	5,660 (49)	5,660 (55)	5,660 (59.5)
35				4,340 (27.5)	4,340 (40)	4,340 (48)	4,340 (53.5)
40					3,410 (28.5)	3,410 (40)	3,410 (47)
45						2,750 (30)	2,750 (39.5)
50						2,180 (13.5)	2,150 (30)
55							1,600 (16.5)

NOTE: () Boom angles are in degrees. A6-829-009166A

#LMI operating codes. Two or four digit code depends on LMI system. Refer to LMI manual for operating instructions.

ON RUBBER CAPACITIES WITH 17.5 x 25 TIRES (cont'd.)

PICK & CARRY CAPACITIES – UP TO 2.5 MPH BOOM CENTERED OVER FRONT (See note 7)

Radius in Feet	#9006 or #06						
	Main Boom Length in Feet						
	25	30	36	42	48	54	60
10	24,750 (60)						
12	21,030 (54.5)	13,700 (62)	13,700 (67.5)				
15	16,830 (45)	11,100 (55)	11,100 (62)	11,100 (66.5)	11,100 (70)		
20	11,340 (23.5)	8,670 (41.5)	8,670 (52)	8,300 (59)	8,300 (63.5)		
25		7,650 (23)	7,650 (41)	6,400 (50.5)	6,400 (56.5)	6,400 (61.5)	
30			5,410 (25.5)	5,000 (40.5)	5,000 (49)	5,000 (55)	5,000 (59.5)
35				4,340 (27.5)	4,000 (40)	4,000 (48)	4,000 (53.5)
40					3,410 (28.5)	3,100 (40)	3,100 (47)
45						2,750 (30)	2,500 (39.5)
50						2,180 (13.5)	2,000 (30)
55							1,600 (16.5)

NOTE: () Boom angles are in degrees. A6-829-009192A

#LMI operating codes. Two or four digit code depends on LMI system. Refer to LMI manual for operating instructions.

1. Capacities are in pounds and do not exceed 75% of tipping loads as determined by test in accordance with SAE J765.
2. Capacities are applicable to machines equipped with 17.5 x 25 (20 ply) bias ply tires, at 95 psi cold inflation pressure (85 psi for 2.5 mph pick & carry capacities).
3. Defined Arc – Over front includes 6° on either side of longitudinal centerline of machine.
4. Capacities appearing above the bold line are based on structural strength and tipping should not be relied upon as a capacity limitation.
5. Capacities are applicable only with machine on firm level surface.
6. On rubber lifting with jib not permitted.
7. For pick and 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.
8. Axle lockouts must be functioning when lifting on rubber.
9. 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.
10. Lifting loads at close radii directly over the operator's compartment is not recommended.
11. Creep – not over 200 ft. of movement in any 30 minute period and not exceeding 1 mph.

	No Load Stability Data	Main Boom 60 ft.	Main Boom & 20' Jib
Front (No Load)	Minimum boom angle (deg.) for indicated length	0	0
	Maximum boom length (ft.) at 0 deg. boom angle	60	80
360 Deg. (No Load)	Minimum boom angle (deg.) for indicated length	10	42
	Maximum boom length (ft.) at 0 deg. boom angle	54	70

ZERO DEGREE BOOM ANGLE CHARTS

ON OUTRIGGERS FULLY EXTENDED – 360 DEGREES

Boom Angle	Main Boom Length in Feet						
	25	30	36	42	48	54	60
0°	15,150 (21.8)	11,550 (27)	8,250 (33)	6,140 (39)	4,820 (45)	3,850 (51)	2,970 (56.6)

ON RUBBER 17.5 x 25 TIRES

Stationary Capacity Defined Arc Over Front							
Boom Angle	Main Boom Length in Feet						
	25	30	36	42	48	54	60
0°	9,880 (21.8)	6,680 (27)	4,820 (33)	3,570 (39)	2,750 (45)	2,060 (51)	1,480 (56.6)

Stationary Capacity 360° Arc				
Boom Angle	Main Boom Length in Feet			
	25	30	36	42
0°	4,560 (21.8)	2,950 (27)	2,030 (33)	1,320 (39)

Pick & Carry Capacities Up to 2.5 MPH Boom Centered Over Front							
Boom Angle	Main Boom Length in Feet						
	25	30	36	42	48	54	60
0°	9,880 (21.8)	5,990 (27)	4,750 (33)	3,570 (39)	2,750 (45)	2,060 (51)	1,480 (56.6)

A6-829-010016

Note: () Reference radii in feet.

RT58B – S/N

TIRE INFLATION – PSI (BAR)					
SIZE (FRONT & REAR)	LOAD RANGE	TRA CODE	LIFTING SERVICE		TRAVEL
			CREEP & STATIC	2.5 MPH (4.0 km/h)	
14.00 X 24	20 PLY	E-3	115 (7.9)	110 (7.6)	110 (7.6)
17.5 X 25	20 PLY	L-2	95 (6.5)	85 (5.9)	55 (3.8)
20.5 X 25	20 PLY	E-3	80 (5.5)	65 (4.5)	50 (3.4)
17.5R25 MICHELIN	**	-----	95 (6.5)	95 (6.5)	95 (6.5)

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