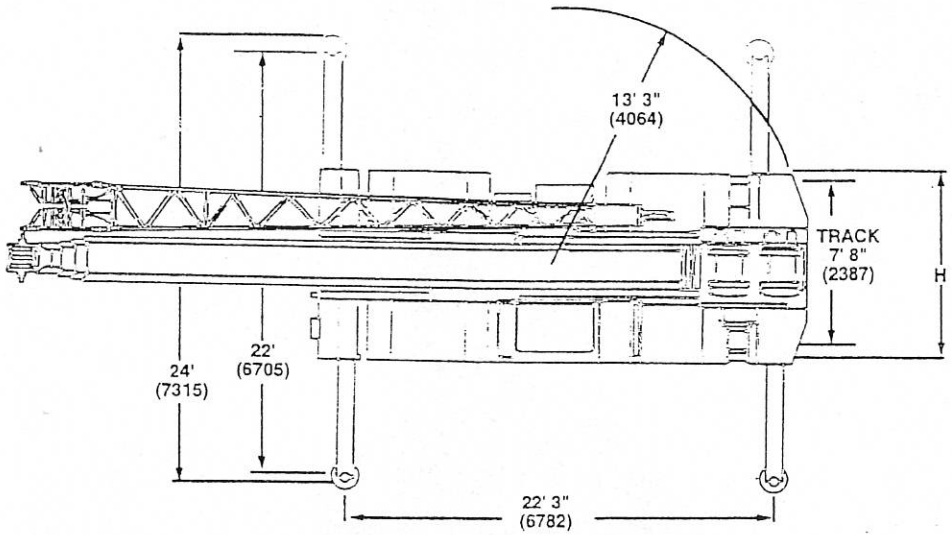
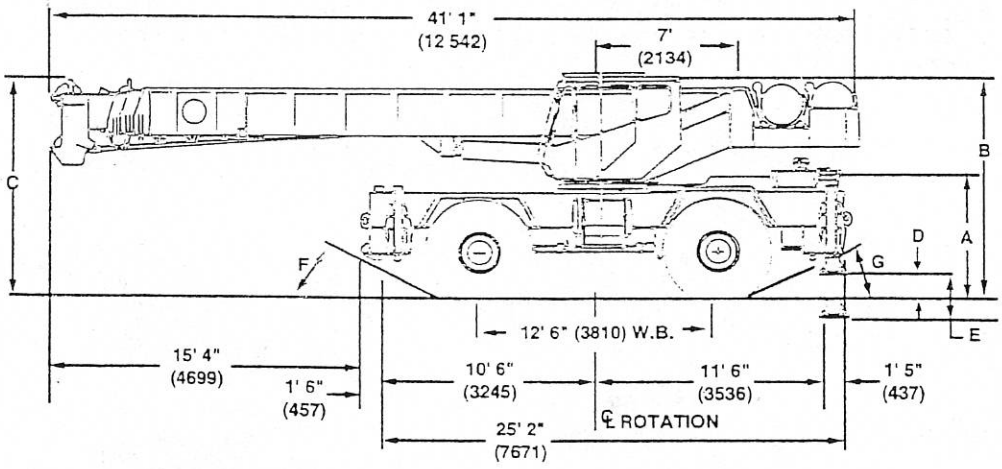
Dimensions



	Tire Size	
	23.5 x 25	26.5 x 25
A	5' 4" (1631)	5' 5" (1661)
B	12' 1" (3687)	12' 2" (3715)
C	10' 11" (3323)	11' 0" (3353)
D	1' 9-3/4" (553)	1' 4-1/4" (413)
E	21" (533)	25" (635)
F	24-1/2°	20°
G	22°	19°
H	9' 10" (2997)	10' 9" (3277)



Turning Radius . . . . . 20' (6096 mm) (23.5 Tires)

Front Axle Load . . . . . 32,258 lbs. (14 632 kg)

Rear Axle Load . . . . . 30,893 lbs. (14 013 kg)

Gross Vehicle Weight . . . . . 63,151 lbs. (28 645 kg)

Carrier specifications

Chassis
Box section frame fabricated from high-strength, low alloy steel. Integral outrigger housings and front/rear towing and tie down lugs.

Outriggers System
Four hydraulic telescoping single-stage double box beam outriggers with inverted jacks and integral holding valves. Three position setting. All steel fabricated quick release type outrigger floats, 24 in. (610 mm) in diameter.
Maximum outrigger pad load: 47,604 lbs. (21 593 kg).

Outrigger Controls
Controls and crane level indicator located in cab.

Engine
~~Cummins 6BT5.9 diesel, six cylinders, turbocharged, 152 bhp (116 kW) (Gross) @ 2,500 RPM.~~
~~Maximum torque: 400 ft. lbs. (542 N.m) @ 1,600 RPM.~~

*Optional Engine
Caterpillar 3116T diesel, six cylinders, turbocharged, 160 bhp (119 kW) (Gross) @ 2,500 RPM.
Maximum torque: 441 ft. lbs. (598 N.m) @ 1,650 RPM.

Fuel Tank Capacity
60 gallons (227 L).

Transmission
Full powershift with 6 forward and 3 reverse speeds. Rear axle disconnect for 4 x 2 travel.

Electrical System
Two 12 V maintenance free batteries.
12 V starting and lighting.

Drive
4 x 4.

Steering
Full independent power steering.
Front: Full hydraulic steering wheel controlled.
Rear: Full hydraulic hand lever controlled.
Provides infinite variations of 4 main steering modes: front only, rear only, crab and coordinated. Rear steer indicating gauge.

Axles
Front: Drive/steer with differential and planetary reduction hubs rigid mounted to frame. *Optional no-spin differential.
Rear: Drive/steer with differential and planetary reduction hubs pivot mounted to frame.

Oscillation Lockouts
Automatic full hydraulic lockouts on rear axle permit oscillation only with boom centered over the front.

Brakes
Full hydraulic split circuit disc-type brakes operating on all wheels. Spring-applied hydraulically released front axle-mounted parking brake.

Tires
~~23.5R25 radial earthmover type, tubeless.~~
*26.5 x 25 - 26 PR bias, earthmover type, tubeless.

Lights
Full lighting package including turn indicators, head, tail, brake and hazard warning lights.

Maximum Speed
24 MPH (39 kph).

Gradeability (Theoretical)
74% (Based on 63,151 lbs. [28 645 kg] GVW), 23.5R25 tires, pumps disengaged, 105 ft. (32.0 m) boom and 29 - 51 ft. (8.8 - 15.5 m) swingaway.

Miscellaneous Standard Equipment
Full width steel fenders, dual rear view mirrors, hook-block tiedown, electronic back-up alarm, light package, front stowage well, tachometer, cold start aid (less canister), rear wheel position indicator, hydraulic oil heater, hoist mirrors, engine distress A/V warning system. Auxiliary hoist control valve arrangement (less hoist), 360° positive swing lock.

Optional Equipment
*Auxiliary hoist
*Boom mounted worklights
*360° flashing light
*Cab spotlight
*Engine block heater
*Hookblocks (quick reeve type)
*Tow winch - front mounted-maximum pull 15,000 lbs. (6804 kg); maximum speed 92 ft./min. (28 m/min)
~~*Spare wheel assembly~~
~~*Tool kit~~
*Pintle hook front/rear
~~*High Speed Glide System~~
*Air conditioning
~~*Dual axis joystick~~ controller
~~*LMI light bar~~ (internal or external)
~~*Emergency steer~~ pump
*Auxiliary hydraulic oil cooler

Superstructure specifications

Boom
34 ft. to 105 ft. (10.4 m to 32.0 m) four-section full power boom.
Maximum tip height: 112 ft. (34.0 m).

Fixed Lattice Extension
29 ft. (8.8 m) lattice swingaway extension. Offsettable at 0° and 30°. Stows alongside base boom section.
Maximum tip height: 141 ft. (43.0 m).

*Optional Telescopic Swingaway Extension
29 ft. - 51 ft. (8.8 m - 15.5 m) telescoping lattice swingaway extension. Offsettable at 0° or 30°. Stows alongside base boom section.
Maximum tip height: 162 ft. (49.3).

Boom Nose
Three steel sheaves mounted on heavy duty tapered roller bearings with removable pin-type rope guards. Quick reeve type boom nose. *Optional removable auxiliary boom nose with removable pin type rope guard.

Boom Elevation
One double acting hydraulic cylinder with integral holding valve provides elevation from -3° to +78°.

Load Moment & Anti-Two Block System
Standard load moment and anti-two block system with audio-visual warning and control lever lock-out. These systems provide electronic display of boom angle, length, radius, tip height, relative load moment, maximum permissible load, load indication and warning of impending two-block condition.

Cab
Full vision all steel fabricated with acoustical lining and tinted safety glass throughout. Deluxe seat incorporates armrest mounted hydraulic single-axis controllers. Dash panel incorporates gauges for engine functions. Other standard features include: hydraulic oil heater, telescoping tilt wheel, sliding side and rear windows, opening skylight, skylight sunscreen, electric windshield wash/wipe, electric skylight wiper, fire extinguisher, seat belt and ashtray.

Swing
Planetary swing with foot applied multi-disc wet brake. Spring applied, hydraulically released swing brake and plunger-type, 1 position, mechanical house lock, operated from cab. 360° mechanical swing lock.
Maximum speed: 2.5 RPM.

Counterweight
5,787 lbs. (2624 kg) integral with superstructure.
1,900 lbs. (861 kg) slab in place of auxiliary hoist.

HYDRAULIC SYSTEM
Four main gear pumps with a combined capacity of 119 GPM (451 LPM). Pump disconnect with engine jogging switch.

Three individual valve banks.

Return line type filter with full flow by-pass protection and service indicator. Replaceable cartridge with micron filtration rating of 5/12/16.

103 gallon (390 L) reservoir.

Remote-mounted oil cooler with thermostatically controlled electric motor driven fan.

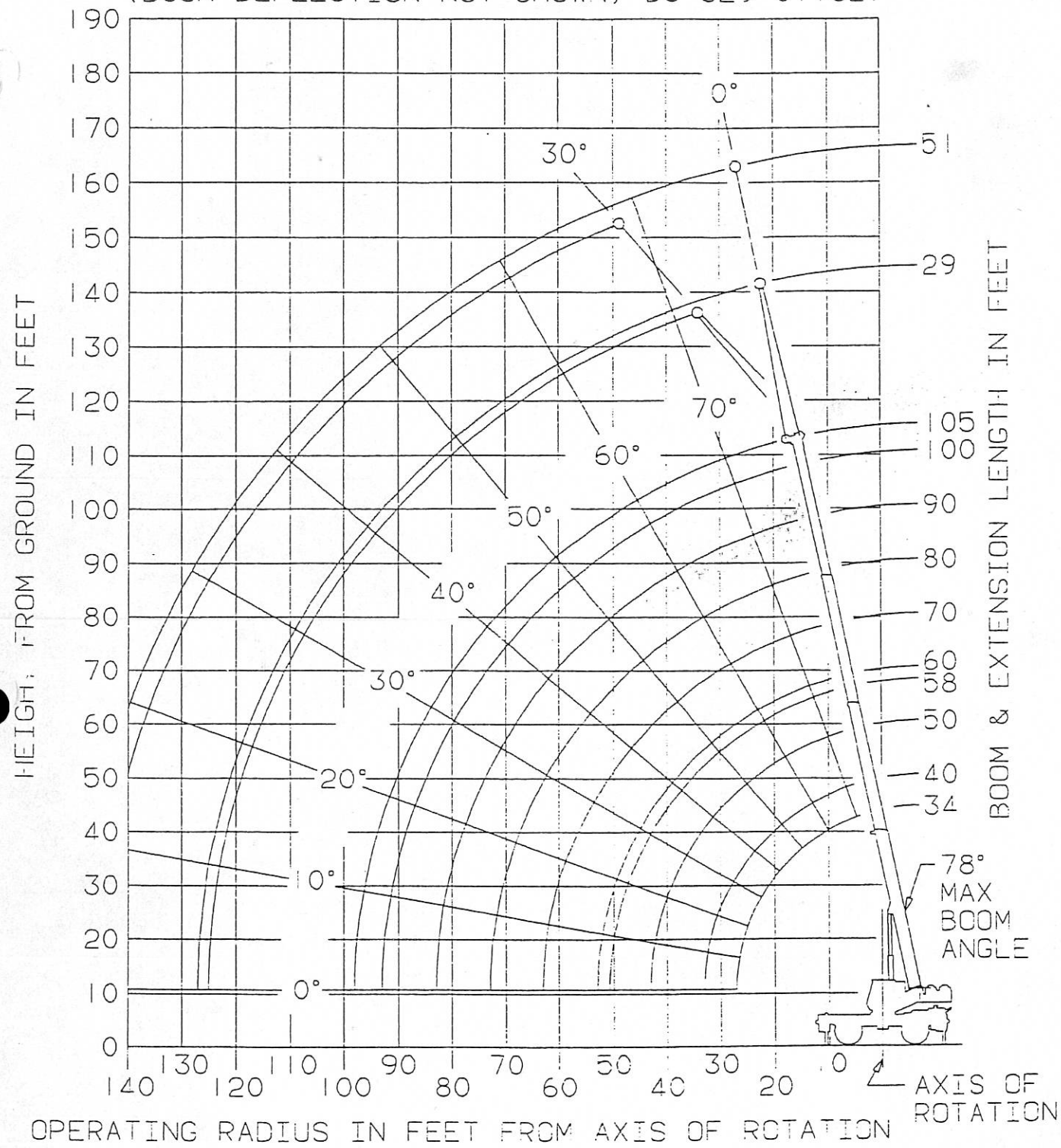
System pressure test ports with quick release type fittings for each circuit.

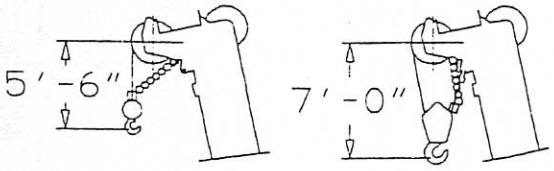
HOIST SPECIFICATIONS
Main and *Auxiliary Hoists
Planetary reduction with automatic spring applied multi-disc brake. Grooved drum. Electronic hoist drum rotation indicator. hoist drum cable followers and wire rope

	High	Low
Maximum Single Line Pull:	8,254 lbs. (3744 kg)	16,508 lbs. (7488 kg)
Maximum Single Line Speed:	580 FPM (177 m/min)	306 FPM (93 m/min)
Maximum Permissible Line Pull:	12,920 lbs. (5860 kg)	
Rope Diameter:	3/4" (19 mm)	
Rope Length:	450 ft. (137 m)	
Maximum Rope Stowage:	690 ft. (210 m)	

Denotes optional equipment

WORKING RANGE DIAGRAM
(BOOM DEFLECTION NOT SHOWN) D6-829-011327





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

RATED LIFTING CAPACITIES IN POUNDS
34 FT. - 105 FT. BOOM
ON OUTRIGGERS FULLY EXTENDED - 360 °

Radius in Feet	#0001									
	Main Boom Length in Feet									
	34	40	50	*58	60	70	80	90	100	105
10	70,000 (66)	66,900 (70)	58,650 (74.5)	44,600 (76.5)	29,300 (77)					
12	68,050 (62)	64,100 (67)	55,000 (72)	44,600 (74.5)	29,300 (75)	29,300 (78)				
15	59,150 (55.5)	57,650 (62)	48,000 (68.5)	41,500 (71.5)	29,300 (72.5)	29,300 (75.5)				
20	45,900 (43.5)	45,450 (52.5)	38,500 (61.5)	35,900 (66)	29,300 (67.5)	29,300 (72)	29,300 (75)	27,000 (77)		
25	35,550 (26.5)	35,250 (42)	32,400 (54.5)	30,500 (60.5)	29,300 (62.5)	27,950 (67.5)	26,350 (71)	23,250 (74)	18,550 (75.5)	@15,850 (76.5)
30		27,150 (27.5)	26,500 (46.5)	25,550 (54)	25,300 (56.5)	24,000 (62.5)	22,950 (67)	20,300 (70.5)	16,500 (72.5)	15,850 (74)
35			19,550 (37.5)	19,150 (47.5)	19,350 (50)	20,250 (57.5)	20,000 (63)	17,950 (67)	14,800 (69.5)	14,350 (71)
40			15,000 (24.5)	14,650 (39.5)	14,850 (43)	15,650 (52.5)	16,450 (58.5)	16,000 (63)	13,400 (66.5)	12,850 (68)
45	See Warning			11,500 (30)	11,650 (34.5)	12,400 (46.5)	13,100 (54)	13,450 (59)	12,500 (63)	11,550 (64.5)
50	Note 16			9,180 (13.5)	9,330 (23)	10,000 (40)	10,650 (49)	10,950 (55)	11,300 (59.5)	10,400 (61.5)
55						8,170 (32)	8,770 (43.5)	9,080 (51)	9,390 (56)	9,450 (58)
60						6,710 (21.5)	7,250 (37.5)	7,560 (46)	7,870 (52)	8,020 (54.5)
65							6,020 (30.5)	6,320 (41)	6,630 (48)	6,790 (51)
70							4,990 (20.5)	5,300 (35)	5,610 (43.5)	5,760 (47)
75								4,450 (28.5)	4,750 (38.5)	4,890 (42.5)
80								3,740 (18.5)	4,020 (33.5)	4,150 (38)
85									3,390 (26.5)	3,510 (32.5)
90									2,830 (18)	2,950 (26)
95										2,460 (17.5)
Minimum boom angle (deg.) for indicated length										0
Maximum boom length (ft.) at 0 deg. boom angle (no load)										105

Note: ( ) Boom angles are in degrees.

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*58 ft. boom length is with inner-mid extended and outer-mid & fly retracted.

#LMI operating code. Refer to LMI manual for instructions.

@Capacity also applicable at maximum boom angle.

29 FT. BOOM EXTENSION

ON O/R FULLY EXTENDED - 360 °

Radius in Feet	29 ft. LENGTH	
	#0051	#0053
	0° OFFSET	30° OFFSET
30	9,360 (77.5)	
35	8,960 (75.5)	
40	8,610 (73)	*5,360 (78)
45	7,860 (71)	5,160 (75.5)
50	7,210 (68.5)	4,960 (73.5)
55	6,610 (66)	4,760 (71)
60	5,960 (64)	4,710 (68.5)
65	5,360 (61.5)	4,660 (66)
70	4,810 (58.5)	4,610 (63.5)
75	4,360 (56)	4,560 (60.5)
80	3,910 (53.5)	4,160 (58)
85	3,510 (50.5)	3,660 (55)
90	3,160 (47.5)	3,260 (52)
95	2,860 (44.5)	2,860 (48.5)
100	2,430 (41)	2,430 (45)
105	2,020 (37.5)	2,020 (41.5)
110	1,670 (33)	1,670 (37)

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Note: ( ) Boom angles are in degrees.

*This capacity is based upon maximum boom angle.

#LMI operating code. Refer to LMI manual for instructions.

1. All capacities above the bold line are based on structural strength of boom extension.
2. 29 ft. boom extension length may be used for single line lifting service only.
3. Radii listed are for a fully extended boom with the boom extension erected. For main boom lengths less than fully extended, the rated loads are determined by boom angle. Use only the column which corresponds to the boom extension length and offset for which the machine is configured. For boom angles not shown, use the rating of the next lower boom angle. 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. Boom angle is the angle above or below horizontal of the longitudinal axis of the boom base section after lifting rated load.
5. Capacities listed are with outriggers fully extended and vertical jacks set only.
6. 29 FT. OFFSET TABLE BOOM EXTENSION WARNING: For main boom length greater than 100 ft. with 29 ft. 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 100 ft. This warning also applies for boom extension erection purposes.

LINE PULLS AND REEVING INFORMATION

HOISTS	CABLE SPECS.	PERMISSIBLE LINE PULLS
Main & Aux. Model 30	3/4" (19 mm) 18x19 Class or 35x7 Rotation Resistant Min. Breaking Str. 64,600 lbs.	12,920 lbs.
Main & Aux. Model 30	3/4" (19 mm) 6x37 Class EIPS IWRC Special Flexible Min. Breaking Str. 58,800 lbs.	12,920 lbs.

WEIGHT REDUCTIONS FOR LOAD HANDLING DEVICES

29 FT. BOOM EXTENSION	
*Stowed -	421 lbs.
*Erected -	2,875 lbs.

29 FT. - 51 FT. BOOM EXTENSION	
*Stowed -	641 lbs.
*Erected (Retracted) -	4,378 lbs.
*Erected (Extended) -	6,628 lbs.

*Reduction of main boom capacities

AUXILIARY BOOM HEAD	143 lbs.
HOOKBLOCKS and HEADACHE BALLS:	
35 Ton, 3 Sheave	872 lbs.+
35 Ton, 3 Sheave (w/cheekplates)	1,065 lbs.+
15 Ton, 1 Sheave	380 lbs.+
10 Ton Headache Ball	560 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.

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 Standards Institute (ANSI) Safety Standards for cranes.

SETUP:

1. 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.
2. For outrigger operation, outriggers shall be properly extended with tires raised free of crane weight before operating the boom or lifting loads.
3. If machine is equipped with front jack cylinder, the front jack cylinder shall be set in accordance with 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. Do not travel with crane boom extension or jib erected unless otherwise noted. Refer to "Operator's and Safety Handbook".

OPERATION:

1. 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.
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 on outriggers fully extended and 50% extended, and 75% of the tipping load on outriggers 0% extended (fully retracted) as determined by SAE J765 OCT80 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 hoist reeving is used, the additional rope weight shall be considered part of the load to be handled.
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 m.p.h. (32km/h), rated loads and boom lengths shall 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 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 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 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 without written approval from Grove North America.
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 34 ft. (10.4 m) boom length shall be lifted with boom fully retracted. If boom is not fully retracted, capacities shall not exceed those shown for the 40 ft. (12.2 m) boom length.
17. When operating the machine in the "On Outriggers 50% Extended (15' 9" spread)" mode, the outrigger beam pins must be engaged. When operating in the "On Outriggers 0% Extended (9' 3.5" spread)" mode, the outrigger beams must be fully retracted. Failure to follow these precautions could result in structural damage or loss of stability of the machine.
18. The maximum outrigger pad load is 59,270 pounds (26,884 kg).

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..

ZERO DEGREE BOOM ANGLE CHARTS

ON OUTRIGGERS - 360 DEGREES

Boom Angle	Main Boom Length in Feet									
	34	40	50	*58	60	70	80	90	100	105
0°	16,350 (27.1)	12,700 (33)	8,390 (43)	6,030 (50.8)	5,710 (53)	4,380 (63)	3,370 (73)	2,590 (83)	1,960 (93)	1,700 (98)

ON RUBBER 26.5 x 25 (26 PR) TIRES

Stationary Capacity Defined Arc Over Front (See Note 3)

Boom Angle	Main Boom Length in Feet					
	34	40	50	*58	60	70
0°	14,100 (27.1)	9,410 (33)	4,870 (43)	2,760 (50.8)	2,470 (53)	1,460 (63)

Stationary Capacity 360° Arc

Boom Angle	Main Boom Length in Feet		
	34	40	50
0°	7,200 (27.1)	4,240 (33)	1,250 (43)

Pick & Carry Capacities Up to 2.5 MPH
Boom Centered Over Front (See Note 7)

Boom Angle	Main Boom Length in Feet					
	34	40	50	*58	60	70
0°	14,100 (27.1)	9,410 (33)	4,870 (43)	2,760 (50.8)	2,470 (53)	1,460 (63)

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Note:( ) Reference radii in feet.

*58 ft. boom length is with inner-mid extended and outer-mid & fly retracted.

Refer to in-cab load chart for notes.