GUAY

GROVE RT65S

SELF-PROPELLED

HYDRAULIC CRANE with TRAPEZOIDAL BOOM

35 TON CAPACITY

30-TONS METRIC

THE GROVE® TRAPEZOIDAL† BOOM

A LONG REACH BOOM OF SUPERIOR STRENGTH AND CAPACITY

The Grove Trapezoidal Boom, a major engineering accomplishment in telescoping hydraulic boom design, represents the optimum strength-to-weight ratio for hydraulic crane operation. Compared to conventional booms, the Trapezoidal boom provides greater reach and tons greater capacity at full boom and at any working radii. The superior strength and rigidity are directly attributable to the trapezoidal design and the use of very high strength steels. This permits a deeper, wider and lighter boom with greater resistance to lateral and vertical deflection.

"SWINGAWAY" LATTICE BOOM EXTENSION

The "Swingaway" lattice boom extension for the RT65S stows laterally along-side the boom base section and swings quickly into working position.

† Patented Grove Feature

IF IT'S TRAPEZOIDAL ...IT'S A GROVE

SPECIFICATIONS

BOOM – 33 ft. – 112 ft. (10.06m x 34.14m), 4-section boom; 2 full power trapezoidal sections to 80 ft. (24.38m) plus a 32 ft. (9.75m) "Swingaway" lattice extension. Integral check valves on each telescoping cylinder. *34 ft. – 136 ft. (10.36m x 41.45m), 5-section boom; 2 full power and 1 power pinned trapezoidal sections to 104 ft. (31.70m) plus a 32 ft. (9.75m) "Swingaway" lattice extension. Integral check valves on each telescoping cylinder.

BOOM NOSE – Three sheaves mounted on heavy duty tapered roller bearings. Removable pin type rope guards allow easy reeving. Rope dead ends on each side of the boom nose.

BOOM ELEVATION – Dual double-acting hydraulic cylinders with integral holding valves; elevation from −4° to 76°. Combination controls provided for hand or foot operation.

LOAD MOMENT AND ANTI-TWO BLOCK SYSTEM *(KRUGER) – Audio-visual warning in combination with Grove control lever lockout of: hoist up, boom telescope out, and boom down functions.

SWING – Ball bearing swing circle, 360° continuous rotation, Grove Planetary "Glide Swing" with foot operated disc swing brake, hand operated positive plunger type turntable lock. Swing speed 2.6 RPM. (Non-free swing optional).

CAB – Turntable-mounted on vibration and sound-absorbing rubber grommets, full vision, all steel, fully enclosed, acoustically treated, laminated safety glass windows throughout, removable windshield with storage provision, hinged tinted skylight, sliding left side door, sliding right side and rear vent windows. Full length control levers, fully adjustable operator's seat. Full engine instruments and controls. Combination hand and foot throttle. All crane superstructure and outrigger controls, sight leveling bubble, electronic boom angle indicator, propane heater, forced hot air defroster, electric windshield wiper, dome light, dash light, air horn, front cab mounted work lights, door and window locks, 2¾ lb. (1.25kg) dry type fire extinguisher.

CAB INSTRUMENTATION – Engine oil pressure gauge, engine water temperature gauge, voltmeter, electric fuel gauge, electric tachometer, air pressure gauge, transmission and torque converter oil temperature gauge.

OUTRIGGERS – Hydraulic double-box integral with main frame; telescoping beams, vertical jacks with integral check valves and mechanical spin locks on each vertical jack to secure outrigger jacks at any level. Beams extend to 21 ft. (6.40m) centerline to centerline, retract to 9 ft. 5 in. (2.87m). Independent or simultaneous control in-out-up-and-down. Outrigger controls in operator's cab. Sequence control arrangement eliminates accidental actuation. 24 in. dia. (610mm) aluminum floats with storage racks.

MAIN FRAME – All welded construction with full depth longitudinals braced by cross-members. Frame reinforced at critical points to insure a rigid turntable mounting. Front and rear lifting, towing, and tie down lugs are integral with the main frame.

TRANSMISSION AND TORQUE CONVERTER – Engine mounted converter, 1.82:1 stall ration with PTO for hydraulic pumps. Remote mounted full powershift transmission with rear axle disconnect.

SPEEDS – 6 forward and 6 reverse.

AXLES – Front: Planetary drive with dual steering cylinders mounted rigid to frame.
Rear: Planetary drive with dual steering cylinders mounted to allow 0 in. to 10 in. (254mm) oscillation.

OSCILLATION LOCKOUTS – Automatic hydraulic on rear axle. Allows oscillation only with boom over front.

SERVICE BRAKES – Full air on all four wheels. Size: 20 in. x 5 in. (508mm x 127mm) with 36 sq. in. (232cm²) chambers.

PARKING BRAKES – Front and rear axles equipped with "Fail Safe" spring set emergency and parking chambers.

STEERING – Front: Power assist hydraulic control.
Rear: Full hydraulic, tiller bar control. Independent front and rear steer control allows maximum "On the Move" maneuverability.

TIRES – 21:00 x 25 – 24 ply earth-mover type, tubeless.
*26.5 x 25 – 26 ply wide base; earth-mover type, tubeless.
*29.5 x 25 – 22 ply wide base; earth-mover type, tubeless.

HYDRAULIC SYSTEM:

RESERVOIR – 133 gallon (503 liter) capacity, all steel welded construction with integral baffles, clean-out access and exterior oil sight level.

FILTER – Full flow return line replaceable cartridge with by-pass protection and filter by-pass indicator. 25 Micron rating.

PUMPS – 4 main gear pumps, 146 GPM capacity (553 lpm). Power steering pump 18.7 GPM capacity (71 lpm). Pump disconnect lever operated from carrier deck.

CONTROL VALVES – Precision four-way double-acting with integral load check, main and circuit relief valves. Four individual valve banks permitting simultaneous independent control of four crane functions. Maximum operation pressure 2500 PSI (175.8kg/cm²).

AIR COOLER – Full flow, fin and tube, oil to air.

POWER DISTRIBUTION – (main hoist) (Boom elevation, mid telescope, main hoist boost, *auxiliary hoist) (Fly telescope, rear steer, boom elevation boost) (Swing).

MISCELLANEOUS STANDARD EQUIPMENT – Complete light package, tool box and storagewell, fenders, hook-block tie down, ether injection cold starting aid, chassis mounted rear view mirror.

*Denotes optional equipment

HOIST SPECIFICATIONS

DESCRIPTION: Series parallel circuitry and two motors provide both high line pull and speed ranges. Power up and down, equal speed, planetary reduction with integral automatic brake.			**DESCRIPTION:** Power up and down, equal speed, planetary reduction with integral automatic brake.	
HOIST DATA	**MAIN HOIST Grove Model 32S-1716A**		***AUXILIARY HOIST Grove Model 15S-16A**	***AUXILIARY HOIST (FREE FALL) Model 40 SGECR**
Drum Dimensions	16 in. dia. (406mm) 16 in. length (406mm) 24 in. dia. flange (610mm)		12 in. dia. (305mm) 16 in. length (406mm) 17.5 in. dia. flange (445mm)	9 in. dia. (229mm) 13 in. length (330mm) 17.5 in. dia. flange (445mm)
Performance: **Max. Single Line Speed** **Max. Single Line Pull**	**Hi-Speed Range** 525 FPM (160m/min) 8,400 lbs. (3810kg)	**Lo-Speed Range** 265 FPM (80.8m/min) 16,800 lbs. (7620kg)	200 FPM (61m/min) 9165 lbs. (4157kg)	290 FPM (88.4m/min) 9,145 lbs. (4148kg)
Drum Rope Storage Capacity	▲650 ft. of ¾ in. dia. rope (198.1m of 19mm)		720 ft. of ½ in. dia. rope (219.5m of 13mm) 480 ft. of ⅝ in. dia. rope (146.3m of 16mm)	675 ft. of ½ in. dia. rope (205.7m of 13mm)
Permissible Single Line Rope Pull	¾ in. (19mm) 6x41 class - 14,605 lbs. (6625kg) ¾ in. (19mm) 19x7 class - 13,700 lbs. (6214kg)		½ in. (13mm) 19x7 class - 6,150 lbs. (2790kg) ½ in. (13mm) 6x37 class - 7,200 lbs. (3266kg) ⅝ in.(16mm)19x7or 6x41 class- 7,680 lbs. (3484kg)	½ in. (13mm) 19x7 class - 6,150 lbs. (2790kg) ½ In. (13mm) 6x37 class - 7,200 lbs. (3266kg)

*Denotes Optional Equipment ▲6th layer of rope not recommended for hoisting operations

SPECIFICATIONS

MAKE & MODEL	Detroit Diesel 6V-53N	*Cummins Diesel V555-C200	Caterpillar 3160 Diesel
TYPE	6 Cylinder O H V	8 Cylinder O H V	8 Cylinder O H V
BORE & STROKE	3 875 in x 4 50 in	4 625 in x 4 125 in	4 5 in x 5 0 in
DISPLACEMENT	318 cu in	555 cu in	636 cu in
HORSEPOWER (NET)	173 @ 2500 RPM	176 @ 2600 RPM	174 @ 2600 RPM
GOVERNED RPM	2500	2600	2600
TORQUE (NET)	396 lbs ft @ 1500 RPM	391 lbs ft @ 1800 RPM	449 lbs ft @ 1280 RPM
ELECTRICAL SYSTEM	12-Volt, Negative Ground	12-Volt Negative Ground	12 Volt Negative Ground
COMBUSTION SYSTEM	2 Cycle with blower Naturally Aspirated	4 Cycle Naturally Aspirated	4 Cycle Naturally Aspirated
COOLING SYSTEM	Liquid	Liquid	Liquid
FUEL CAPACITY	60 Gallon	60 Gallon	60 Gallon
ALTERNATOR	60 Amp 12-volt	58 Amp 12-volt	55 Amp 12-volt
BATTERY	(2) 204 A H 12-volt	(2) 204 A H 12-volt	(2) 204 A H 12-volt
AIR CLEANER	Dry Type	Dry Type	Dry Type
AIR COMPRESSOR	7 25 CFM	13 2 CFM	12 CFM
HOURMETER	Yes	Yes	Yes

*Denotes Optional Equipment

SPEED AND GRADEABILITY

Forward Drive	Transmission Range	Gear Shift	Maximum Speed (MPH)	Gradeability At Stall (%)	Tractive Effort At Stall (lbs)
4 Wheel Drive	Low	1st	2 1	68 4	45 033
4 Wheel Drive	Low	2nd	3 9	30 2	23 791
4 Wheel Drive	Low	3rd	10 0	9 3	8 706
2 Wheel Drive	High	1st	4 8	23 2	18 907
2 Wheel Drive	High	2nd	8 8	11 1	10 003
2 Wheel Drive	High	3rd	21 8	2 8	3 658

NOTE: Performance based on 72 000 lb GVW and standard SAE engine rating conditions using standard tires transmissions and axles Performance data may vary plus or minus 10% due to variations in engine performance and vehicle weights

WORKING WEIGHTS

Standard Machine With	Total Weight (lbs)	Axle Weight Distribution Front	Rear
34-116 Boom	71 565	38 010	33 555
35-142 Boom	73 890	41 902	31 988

DIMENSIONS

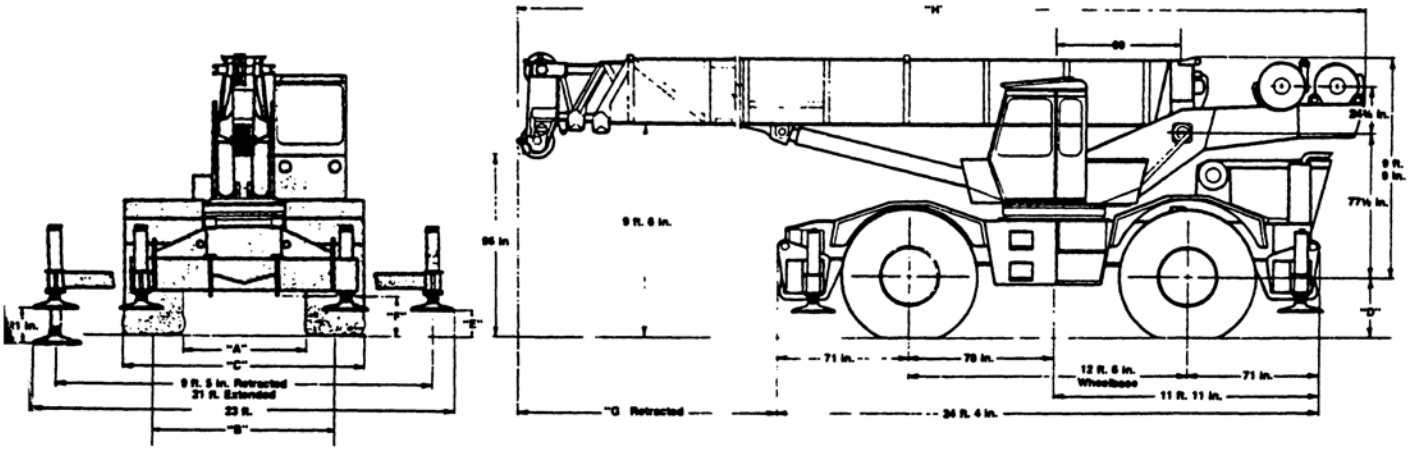
TAIL SWING - 14 ft
TURNING RADIUS - 23 ft 4 in
OVERALL HEIGHT WITH STANDARD TIRES 12 6"

TIRE SIZE	"A"	"B"	"C"	"D"	"E"	"F"
29 5 x 25	66 in	98½ in	10 ft 11 in	33 in	14¼ in	21 in
26 5 x 25	67 in	97½ in	10 ft 8 in	31 in	12¼ in	19 in

FENDER WIDTH - 10 ft 11 in

BOOM LENGTH	"G"	"H"
• 34 ft - 84 ft	16 ft 11 in	43 ft 2¼ in
• 35 ft - 110 ft	18 ft 1 in	44 ft 4 in

• 32 ft Extension Stowed

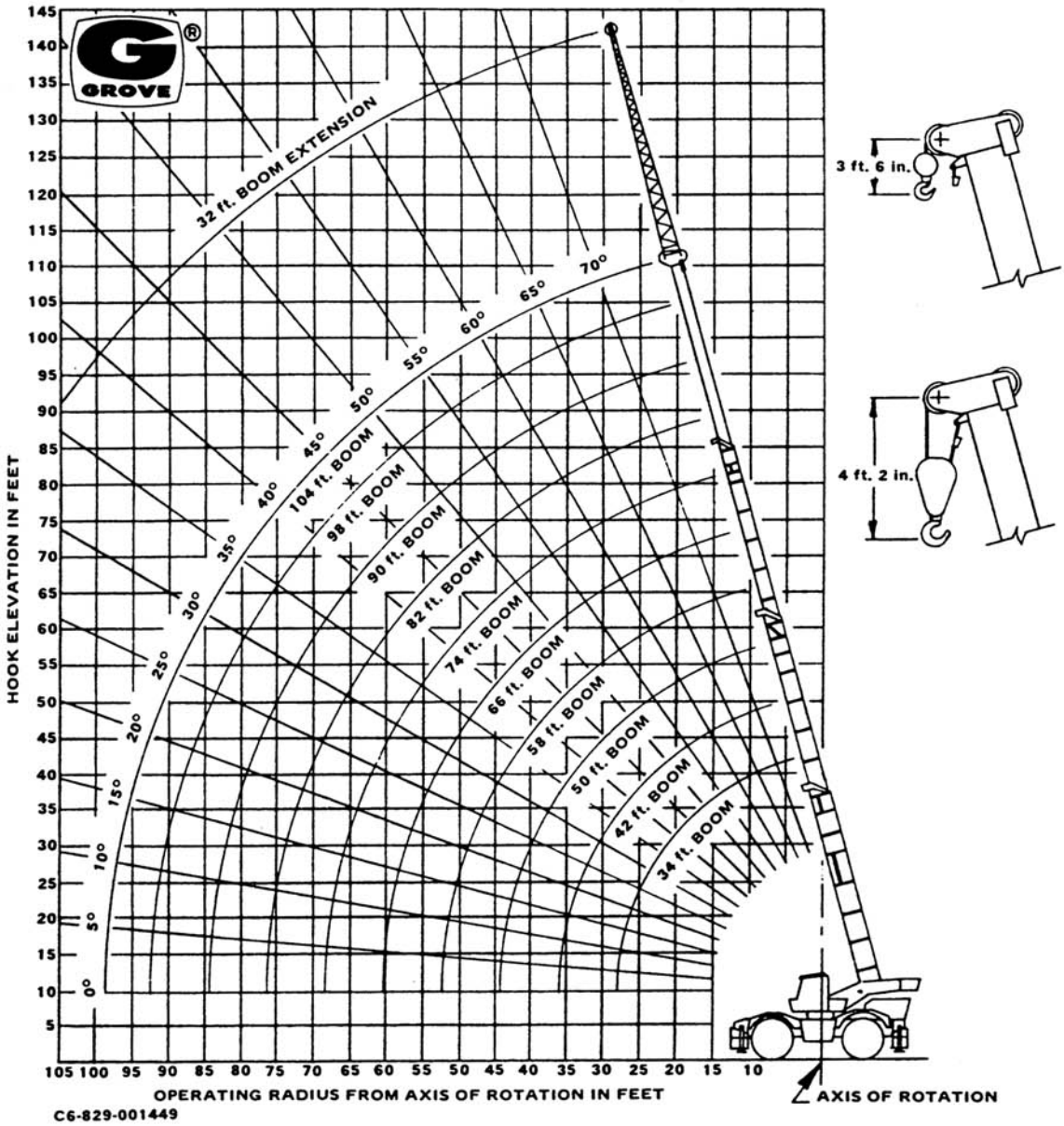


Constant improvement and engineering progress make it necessary that we reserve the right to make specification equipment and price changes without notice

GROVE®

RT65S

RANGE DIAGRAM



1. 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.
2. 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.
3. Operating radius is the horizontal distance from the axis of rotation to the centerline of the hoist line or tackle with loads applied.
4. "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.) on a smooth and level surface only.
5. 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.
6. For clamshell or concrete bucket operation, weight of bucket and load must not exceed 90% of rated lifting capacities.
7. 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.
8. 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.
9. With certain boom and hoist tackle combinations, maximum capacities may not be obtainable with standard rope lengths.
10. 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.
11. Keep load handling devices a minimum of 12 inches (30 CM) below boom head when lowering or extending boom.
12. For multiple part reeving, use one part of line for each 11,700 lbs. of load.
13. All load handling devices and/or boom attachments are considered part of the load and suitable allowances must be made.

GROVE®

FULL HYDRAULIC

SELF-PROPELLED CRANE

RT65S

35 TON CAP.

PCSA CLASS 10-147

RATED LIFTING CAPACITIES IN POUNDS

34 ft. - 136 ft. BOOM

ON OUTRIGGERS FULLY EXTENDED - 360°

Radius in Feet	Trapezoidal Boom Length in Feet Power Pinned Fly Retracted									Power Pin.Sec. & 81 ft.	32 ft. Ext. & 104 ft.
	34	38	44	50	56	62	68	74	81	*104	*136
10	70,000	68,000	63,700	58,000	48,500						
12	62,000	61,000	57,500	52,300	48,500	43,900					
15	53,000	52,200	50,200	45,400	42,000	39,500	36,500	35,000			
20	41,800	41,700	41,000	37,000	34,100	31,900	30,200	28,600	27,200		
25	30,600	30,000	30,000	29,600	28,400	26,500	25,000	23,600	22,400	19,500	
30		24,500	24,500	24,500	24,300	22,500	21,100	19,900	19,100	16,400	
35			19,120	19,120	19,120	19,120	18,100	17,000	16,000	14,000	9,600
40				14,650	14,650	14,650	14,650	14,650	13,800	12,100	7,700
45					11,480	11,480	11,480	11,480	11,480	10,500	6,870
50						9,200	9,200	9,200	9,200	9,270	6,220
55							7,330	7,330	7,330	8,180	5,650
60							5,870	5,870	5,870	7,250	5,110
65								4,560	4,560	6,340	4,700
70									3,380	5,280	4,320
75										4,380	4,000
80										3,620	3,690
85										2,950	3,390
90										2,370	3,090
95										1,860	2,650
100											2,150
105											1,700
110											1,290

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ON OUTRIGGERS FULLY EXTENDED - OVER FRONT

Radius in Feet	Trapezoidal Boom Length in Feet Power Pinned Fly Retracted									Power Pin.Sec. & 81 ft.	32 ft. Ext. & 104 ft.
	34	38	44	50	56	62	68	74	81	*104	*136
10	70,000	68,000	63,700	58,000	48,500						
12	62,000	61,000	57,500	52,300	48,500	43,900					
15	53,000	52,200	50,200	45,400	42,000	39,500	36,500	35,000			
20	41,800	41,700	41,000	37,000	34,100	31,900	30,200	28,600	27,200		
25	30,600	30,000	30,000	29,600	28,400	26,500	25,000	23,600	22,400	19,500	
30		24,500	24,500	24,500	24,300	22,500	21,100	19,900	19,100	16,400	
35			21,200	21,200	21,000	19,400	18,100	17,000	16,000	14,000	9,600
40				17,350	17,350	17,000	15,800	14,800	13,800	12,100	7,700
45					13,760	13,760	13,760	12,900	12,000	10,500	6,870
50						11,240	11,240	11,240	10,600	9,270	6,220
55							9,200	9,200	9,200	8,180	5,650
60							7,520	7,520	7,520	7,250	5,110
65								6,090	6,090	6,450	4,700
70									5,110	5,750	4,320
75										5,140	4,000
80										4,600	3,690
85										3,980	3,390
90										3,310	3,090
95										2,730	2,810
100											2,500
105											2,210
110											1,940
115											1,700
120											1,380
125											1,070

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Capacities appearing in the shaded area are based on structural strength and tipping should not be relied upon as a capacity limitation.
*Boom must be fully extended when lifting with extended power pinned section or with 32 ft. extension.
Capacities do not exceed 85% of tipping loads as determined by test in accordance with SAE recommended practice - crane load stability test code SAE J-765.
Do not exceed any rated load when lifting regardless of whether it is based on structural strength or stability.

ON RUBBER CAPACITIES

Radius in Feet	Stationary Capacity	2.5 MPH Capacity	Stationary Capacity
	Defined Arc (1)Over Front	Boom Centered (2) Over Front	360° Arc
10	44,800 (a)	36,210 (a)	36,000 (a)
12	39,130 (a)	31,420 (a)	28,300 (b)
15	31,250 (a)	25,950 (a)	20,500 (c)
20	25,000 (b)	19,650 (b)	11,500 (c)
25	19,180 (c)	15,270 (c)	7,810 (c)
30	13,720 (c)	12,190 (c)	5,000 (c)
35	10,070 (c)	9,690 (c)	3,140 (c)
40	7,310 (c)	6,920 (c)	1,600 (c)
45	5,590 (c)	5,110 (c)	

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(a) 34 ft. Maximum Permissible Boom Length.
(b) 44 ft. Maximum Permissible Boom Length.
(c) 56 ft. Maximum Permissible Boom Length.

(1) (Defined Arc) - Left front track CL to right front track CL.
(2) Mechanical swing lock pin must be engaged.
Chart based on 21.00x25 (24 ply)/26.5x25 (26 ply)/29.5x25 (22 ply) Tires and 70/65/50 PSI cold inflation pressures. Loads must be reduced for lower inflation pressures.
Capacities appearing above the bold line are based on structural strength and tipping should not be relied upon as a capacity limitation.
Capacities do not exceed 85% of tipping loads in accordance with SAE J-765.
Capacities are applicable with the machine on a firm level surface only.
32 ft. boom ext. and extended power pinned section not permitted for on rubber lifts.

WEIGHT REDUCTION FOR LOAD HANDLING DEVICES

32 ft. BOOM EXTENSION WITH 34 - 104 ft. BOOM	
*STOWED -	346 lbs.
*ERECTED -	3,630 lbs.

HOOK BLOCK	
40 Ton, 3 Sheave	640 lbs.
15 Ton, 1 Sheave	310 lbs.
Auxiliary Boom Head	190 lbs.
5 Ton, Headache Ball	150 lbs.
7½ Ton, Headache Ball	300 lbs.
10 Ton, Headache Ball	500 lbs.

*Reduction of main boom capacities.

FEATURES

TWO SPEED HOIST† . . . a Grove innovation which permits both high line pull and high line speed without changes in lagging or gearing. At the flick of the electropneumatic speedshift, the operator can change from maximum single line pull of 16,800 lbs. (7620kg) to top single line speed of 525 fpm (160.02m/min).

EXCLUSIVE GROVE SCREW-LOCK† permits the outrigger jacks to be locked in any position. Long thrust vertical jacks assure quick easy leveling on rough terrain. Jacks are fitted with integral check valves. Outriggers are of the double-box beam type and provide a spread of 21 feet (6.40m). Light weight aluminum floats are stored in compartments on each side of the chassis.

CAB PROVIDES HIGH VISIBILITY AND CONVENIENCE . . . The turntable mounted cab faces the operator towards the load at all times and controls are conveniently arranged to assure maximum ease in performing all crane functions. When the skylight is raised and the windshield removed, there is no overhead cross-member to interfere with the operator's view of the load.

EASIER REEVING . . . removable pin-type rope guards and negative boom angle permit quick and easy ground level reeving and work on hook block.

OTHER FEATURES

ALL-WELDED FRAME of box-beam construction with full depth longitudinals, braced by cross-members and with integral outrigger boxes assures a strong rigid lifting platform.

THE LOAD MOMENT AND ANTI-TWO BLOCK SYSTEM (optional) measures critical operational factors relative to rated capacity and gives the operator a continuous visual display of conditions for the load.

An easy-to-read gauge indicates the approach of an overload or two-block condition and should overload or two-block occur, an audio-visual warning alerts the operator; the Grove "control lever lockout system" returns the control levers to neutral and permits the use of only those crane functions that will correct the condition.

TOOL STORAGE is provided in a large storage compartment located forward on the chassis.

† The Trapezoidal Boom, Two Speed Hoist, and Vertical Jack Lock are patented Grove features.

Pick-and-carry capabilities of the RT65S are excellent. Also, notice the great visibility afforded the operator with the skylight raised and the windshield removed. "Swingaway" lattice extension is shown in stowed position.

GROVE

HYDRAULIC CRANES

GROVE MANUFACTURING COMPANY
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