



MODEL 2535 25-35 TON

CAPACITY

INDUSTRIAL YARD CRANE

- LOW PROFILE . . . under 11' 10' high, the Grove Model 2535 is ideal for close quarter operation in-plant or outside storage yard.
- SHORT TURNING RADIUS . . . 26' 2". Much less than other similarly rated machines.
- POWER TELESCOPING TRAPEZOIDAL* BOOMS . . .
 2 boom lengths available 30' and 60' providing up to 58' of horizontal reach and a maximum vertical reach of 61' 8". With jib the vertical reach is 81' 5".
- PICK & CARRY CAPACITY . . . 50,000 lbs. over the front.
- OPERATOR SAFETY . . . operator's cab on left side away from swinging loads . . . high enough so operator can see over right side and rear.
- CARRY DECK . . . Front, side and rear carry deck area . . .
 a total of 130 sq. ft. for carrying material from job-to-job.
 Easily accessible, with steps to carry deck and cab.

'Patented Grove feature







SUPERSTRUCTURE SPECIFICATIONS

STANDARD EQUIPMENT

BOOM - 14 ft. - 30 ft., 3 section, trapezoidal full power telescoping.

BOOM HEAD - Four sheave, root diameter 13% in. with removable pintype rope guards.

BOOM ELEVATION – Twin double action cylinders (power up/power down) 12 in. diameter; integral holding valves; boom angle range 0° to 70°. Removable pivot bearings.

BOOM SPEEDS - Out - 23 seconds; in - 59 seconds; up - 20 seconds; down - 45 seconds.

WINCH – Braden Model CH12.5, power up and down, equal speed in both directions, planetary drive with integral automatic brake. Drum 12¾ in. diameter, 18³/16 in. wide, 25 in. flange diameter.

 SINGLE LINE SPEEDS –
 FULL LOAD
 NO LOAD

 Bare Drum
 220 FPM
 225 FPM

 Mean Drum
 275 FPM
 288 FPM

 Full Drum
 360 FPM
 393 FPM

SINGLE LINE PULL -

Bare Drum - 12,000 lbs. Mean Drum - 9,400 lbs. Full Drum - 6,900 lbs.

DRUM CAPACITY - 1,250 ft. of % in. wire rope.

WIRE ROPE - 350 ft. of 6x37G EIPS, IWRC construction.

SWING – 360° rotation, ball bearing swing circle, hydraulic motor powered; with automatic swing brake and positive dog-type swing lock; speed 3.5 r.p.m. maximum.

HYDRAULIC SYSTEM -Pump, main, 3 section, gear-type.

1st section 63.5 g.p.m. for main winch boost, lift, auxiliary winch. 2nd section 37.0 g.p.m. for mid telescope, outriggers, main winch. 3rd section 25.0 g.p.m. for swing, fly telescope.

Total g.p.m. 125.5 @ 2400 r.p.m., 500 p.s.i. System pressure 2500 maximum p.s.i.

Pump, steering; 1 section, gear-type.

Capacity 18.7 g.p.m. @ 2400 r.p.m., 500 p.s.i.

HYDRAULIC OIL RESERVOIR – 125 gallons. In-tank, full flow, return line filter with indicator; 25 micron. Sight level oil gauge.

CONTROL VALVES – Four way, double acting, spool-type valves with full metering characteristics. Integral main by-pass valve for system relief. Individual by-pass valves for circuit relief.

OPERATING PRESSURE - 2500 p.s.i., crane function, 1800 p.s.i. steering.

OPTIONAL EQUIPMENT

BOOMS - 24 ft. - 60 ft., 3 section, full power boom. 20 ft. jib on 24-60 ft. boom.

HOOK BLOCK – 35 ton, 4 sheave, with ball bearing swivel hook; 5 ton, overhaul ball with swivel hook.

AUXILIARY WINCH – Braden Model PD10-77, power up and down, equal speed in both directions, planetary drive with integral automatic brake. Drum 9½ in. diameter, 12¾ in. wide, 16 in. flange diameter.

 SINGLE LINE SPEEDS –
 FULL LOAD
 NO LOAD

 Bare Drum
 155 FPM
 165 FPM

 Mean Drum
 195 FPM
 205 FPM

 Full Drum
 235 FPM
 250 FPM

SINGLE LINE PULL -

Bare Drum - 10,550 lbs. Mean Drum - 8,580 lbs. Full Drum - 6,600 lbs.

CHASSIS SPECIFICATIONS

STANDARD

STANDARD EQUIPMENT

FRAME – High strength steel; all welded reinforced construction.

ENGINE DATA

S

HOME DAIA	STANDAND
MAKE	Cummins V-555
TYPE	4 cycle Diesel
CYLINDERS	
BORE & STROKE	
DISPLACEMENT	
NET H.P	
NET TORQUE	
GOVERNED R.P.M.	
COOLING SYSTEM	
FUEL CAPACITY	
	(12 hours @ 50% duty cycle)
ELECTRICAL SYSTEM	
	58 amp
	275 amp hr. service
	amp, 150 plate batteries (parallel)

ENGINE ACCESS - Sliding cover for quick access.

BRAKES – Service – Four wheel, air operated, drum-type. Front axle 20¼ in. x 7 in.; rear axle 20¼ in. x 5 in. Air brake is "maxi-type", fail safe, requires air to release, also has integral manual release.

Parking - Both axles equipped with 36 sq. in. spring applied, "failsafe" safety brake chambers.

TIRES - Front: 16:00x25 - 28 ply non-directional (Duals)
Rear: 16:00x25 - 28 ply non-directional (Singles)

CHASSIS CONTROLS – All basic controls with engine instruments, including hourmeter and electric fuel gauge.

CAB – Steel construction, shock mounted and insulated, fully enclosed; weatherstripped, saftey glass windows, windshield, skylight, left door, electric windshield wiper, cab heater and sliding cab door.

WEIGHT - Basic machine: 64,100 lbs. (25,750 lbs. front) (38,350 lbs. rear) 24-60 ft. boom Add 3,300 lbs. 6,900 front

-3,600 rear

Front outriggers Add 900 lbs. Front & rear outriggers Add 1,165 lbs. PERFORMANCE - Standard engine and transmission (empty vehicle)

Axle Ratio - 19.03; converter stall ratio 2.4

Range	Ratio	(mph)	Pull (lbs.)	Gradeability %
1	5.18	4.3	29,400*	46.1
2	2.45	8.7	13,200	19.1
3	.90	21.2	4,000	5.6

*Wheels slip at 25,700 lbs.

Speed, drawbar pull and gradeability measured on concrete. (Based on .6 coefficient of friction.)

TRANSMISSION – Power shift with torque converter; 3 speeds forward and 3 speeds reverse.

DRIVE SHAFT - Heavy duty, industrial type with double universal joints.

AXLES – Front drive axle – hypoid differential; double reduction – planetary final drive; full floating axle; limited slip differential. Rear steer axle – wide track; axle oscillation 0 to 6 in.

OSCILLATION LOCKOUTS - Automatic on rear axle.

STEERING - Hydraulic full power on rear wheels. Failsafe feature when power source is lost.

OPTIONAL EQUIPMENT

LIGHTS - Head, tail, back-up, stop, four-way flashers, turn signals.

ANTI-TWO BLOCK - Automatic lockout or audio/visual.

OUTRIGGERS – Hydraulic, beam & jack, with integral safety holding valve. Individually controlled from operator's position. Activation requires two functions to prevent accidental retraction.

RATED LIFTING CAPACITIES IN POUNDS

14 ft. - 30 ft. BOOM ON OUTRIGGERS FULLY EXTENDED - 360°

RADIUS	BOOM LENGTH IN FEET					
IN FEET	*14	18	22	26	30	
10	70,000	60,000	54,000	47,900	43,100	
12	60,000	60,000	48,900	42,300	37,900	
15		48,500	44,900	36,000	32,300	
20			25,500	25,500	25,500	
25		S. Sales		the state of	18,000	
28	4				14,500	

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ON OUTRIGGERS FULLY EXTENDED - OVER FRONT

RADIUS	BOOM LENGTH IN FEET					
FEET	*14	18	22	26	30	
10	70,000	60,000	54,000	47,900	43,100	
12	60,000	60,000	48,900	42,300	37,900	
15		53,500	44,900	36,000	32,300	
20			34,400	28,900	25,800	
25		William			21,600	
28					18,900	

A6-829-001876

Capacities appearing above bold line are based on structural strength and tipping should not be relied upon as a capacity limitation.

*Capacities for 14 ft. boom length shall be lifted with boom fully retracted. If boom is not fully retracted, capacities shall not exceed those shown for 18 ft. boom length.

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.

Front and rear outriggers required for 360° on outriggers lifts. Rear outriggers not required for over front on outriggers lifts.

ON RUBBER CAPACITIES

	STATIONARY	2.5 MPH CAPACITY	STATIONARY
RADIUS IN FEET	DEFINED ARC (1) OVER FRONT	BOOM CENTERED (2) OVER FRONT	(3) 360° ARC
10	50,000 (a)	50,000 (a)	21,000
12	44,000 (a)	40,000 (a)	17,000
15	32,300	30,600	12,300
20	22,000	20,800	8,400
25	16,900	15,100	6,400
28	15,200	12,700	5,000

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Defined Arc - Left front track CL to right front track CL.

(2) Mechanical swing lock must be engaged.

(3) 360° capacities are also applicable to any lifting done outside the on outriggers - over front working area when using front outriggers and rear axle in combination as the supporting points.

Chart based on 16.00x25 (28 ply) tires & 100 PSI cold inflation pressure.

Loads must be reduced for lower inflation pressures.

Capacities appearing above 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 as determined by test in accordance with SAE J-765.

Capacities are applicable with machine on a firm level surface only.

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

24 ft. - 60 ft. BOOM ON OUTRIGGERS FULLY EXTENDED - 360°

RADIUS	BOOM LENGTH IN FEET						
FEET	*24	30	36	42	48	54	60
10	70,000	60,000					
12	60,000	53,000	51,600	Jan Branch			
15	44,300	44,100	42,900	39,700			
20	26,800	26,800	26,800	26,800	26,800	25,700	25,000
25	del of	18,200	18,200	18,200	18,200	18,200	18,200
30		March 1	13,300	13,300	13,300	13,300	13,300
35	No.	1		10,200	10,200	10,200	10,200
40				8,000	8,000	8,000	8,000
45					6,400	6,400	6,400
50			TOWN			5,200	5,200
55							4,200
58							3,700

A6-829-001843

ON OUTRIGGERS FULLY EXTENDED - OVER FRONT

RADIUS	BOOM LENGTH IN FEET						
FEET	*24	30	36	42	48	54	60
10	70,000	60,000					
12	60,000	53,000	51,600				
15	50,000	44,100	42,900	39,700			
20	38,000	34,400	33,400	30,800	28,400	25,700	25,000
25		28,200	27,300	25,000	23,300	21,000	20,400
30			22,600	20,900	19,700	17,600	17,100
35			- 1111	17,800	17,000	15,200	14,600
40		Jan Carl		14,500	14,500	13,300	12,700
45					12,000	11,800	11,200
50						10,100	10,000
55				= am	-		8,500
58				in some			7,700

A6-829-001837

Capacities appearing above bold line are based on structural strength and tipping should not

be relied upon as a capacity limitation.
*Capacities for 24 ft. boom length shall be lifted with boom fully retracted. If boom is not fully retracted, capacities shall not exceed those shown for 30 ft. boom length.

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. Front and rear outriggers required for 360° on outriggers lifts.

Rear outriggers not required for over front on outriggers lifts.

ON RUBBER CAPACITIES

RADIUS	STATIONARY CAPACITY	2.5 MPH CAPACITY	STATIONARY
FEET	DEFINED ARC (1) OVER FRONT	BOOM CENTERED (2) OVER FRONT	360° ARC (3)
10	*45,200	50,000 (a)	21,250
12	**39,400	40,000 (a)	16,500
15	33,000	30,600 (a)	11,900
20	21,800	20,800 (a)	7,500
25	16,200	15,100 (b)	4,950
30	12,500	11,500 (c)	3,250
35	9,900	9,100 (d)	2,050
40	8,000	7,300 (d)	1,200
45	6,600		500
50	5,450		
55	4,550		
58	4,050	Pinota III	2151-00

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Maximum Permissible Boom Length:

(a) 24 ft. (b) 30 ft.

(c) 36 ft. (d) 42 ft.

Permissible Stationary Capacity with Boom Centered Over Front: *50,000 lbs. *40,000 lbs.

(1) Defined Arc - Left front track CL to right front track CL.

Mechanical swing lock must be engaged

(3) 360° capacities are also applicable to any lifting done outside the on outriggers - over front working area when using front outriggers and rear axle in combination as the supporting points. Chart based on 16.00x25 (28 ply) tires & 100 PSI cold inflation pressure. Loads must be reduced for lower inflation pressures.

Capacities appearing above 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 as determined by test in accordance with

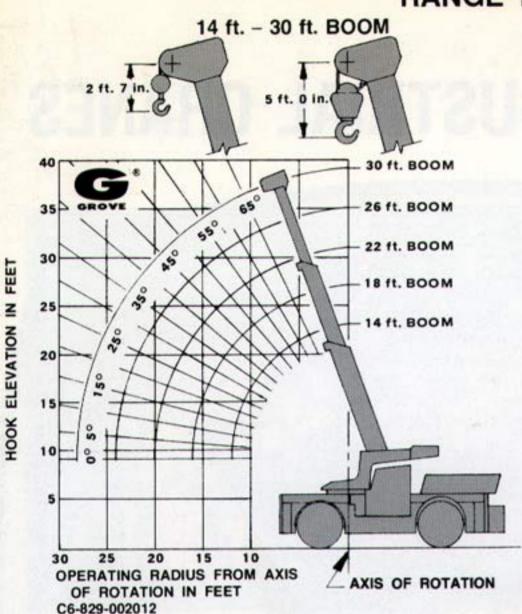
SAE J-765. Capacities are applicable with machine on a firm level surface only. Jib not permitted for on rubber lifts.

RANGE DIAGRAMS

FEET

HOOK ELEVATION IN

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JIB CAPACITIES IN POUNDS 20 ft. JIB with 24-60 ft. BOOM

ON OUTRIGGERS FULLY EXTENDED - 360°

BOOM	JIB OFFSET				
ANGLE	0°	15°	30°		
70°	9,000	6,000	4,400		
65°	7,750	5,600	4,150		
60°	6,900	5,200	3,950		
55°	6,300	4,950	3,800		
50°	5,800	4,700	3,700		
45°	4,820	4,310	3,600		
40°	4,080	3,700	3,520		
35°	3,520	3,240	3,130		
30°	3,090	2,890			
25°	2,760	2,620			

A6-829-001851

Capacities appearing above bold line are based on structural strength of 20 ft. jib at given boom angle regardless of boom

Capacities do not exceed 85% of tipping loads as determined by test in accordance with SAE J-765 with a 60 ft. boom length. Front and rear outriggers required for 360° on outriggers lifts.

ON OUTRIGGERS FULLY EXTENDED - OVER FRONT

BOOM	JIB OFFSET			
ANGLE	0°	15°	30°	
70°	9,000	6,000	4,400	
65°	7,750	5,600	4,150	
60°	6,900	5,200	3,950	
55°	6,300	4,950	3,800	
50°	5,800	4,700	3,700	
45°	5,450	4,550	3,600	
40°	5,200	4,400	3,550	
35°	5,000	4,300	3,550	
30°	4,850	4,250	-	
25°	4,700	4,200		
20°	4,600	4,150		
15°	4,550	1		
10°	4,550			
5°	4,500	David	In the second	

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Capacities are based on structural strength of 20 ft. jib at given boom angle regardless of boom length.

Capacities do not exceed 85% of tipping loads as determined by test in accordance with SAE J-765.

Rear outriggers not required for over front on outriggers lifts.

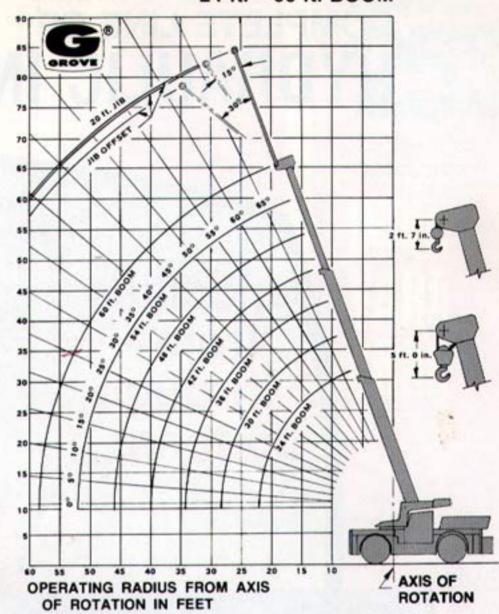
OPTIONAL EQUIPMENT (cont'd.)

MAKE
TYPE
CYLINDERS
BORE & STROKE
DISPLACEMENT
NET HP
NET TORQUE
GOVERNED RPM
COOLING SYSTEM
ELECTRICAL SYSTEM
ALTERNATOR
BATTERY

6-V53N Detroit Diesel
2 cycle diesel
6
3.875 x 4.50 in.
318 cu. in.
173 @ 2500 r.p.m.
396 lbs. ft. @ 1500 r.p.m.
2500
Liquid, 42 qt. capacity
12-volt
60 amp
275 amp hr. service from
two 204 amp, 150 plate
batteries (parallel)

Caterpillar 3208
4 cycle diesel
8
4.5 x 5 in.
636 cu. in.
178 @ 2600 r.p.m.
468 lbs. ft. @ 1200 r.p.m.
2600
Liquid, 54 qt. capacity
12-volt
55 amp
275 amp hr. service from
two 204 amp, 150 plate
batteries (parallel)

24 ft. - 60 ft. BOOM



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.) on a smooth and level surface

 Jibs may be used for lifting crane service only. Jib capacities are based on structural strength of jib or main boom and on main boom angle regardless of boom length.

 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.

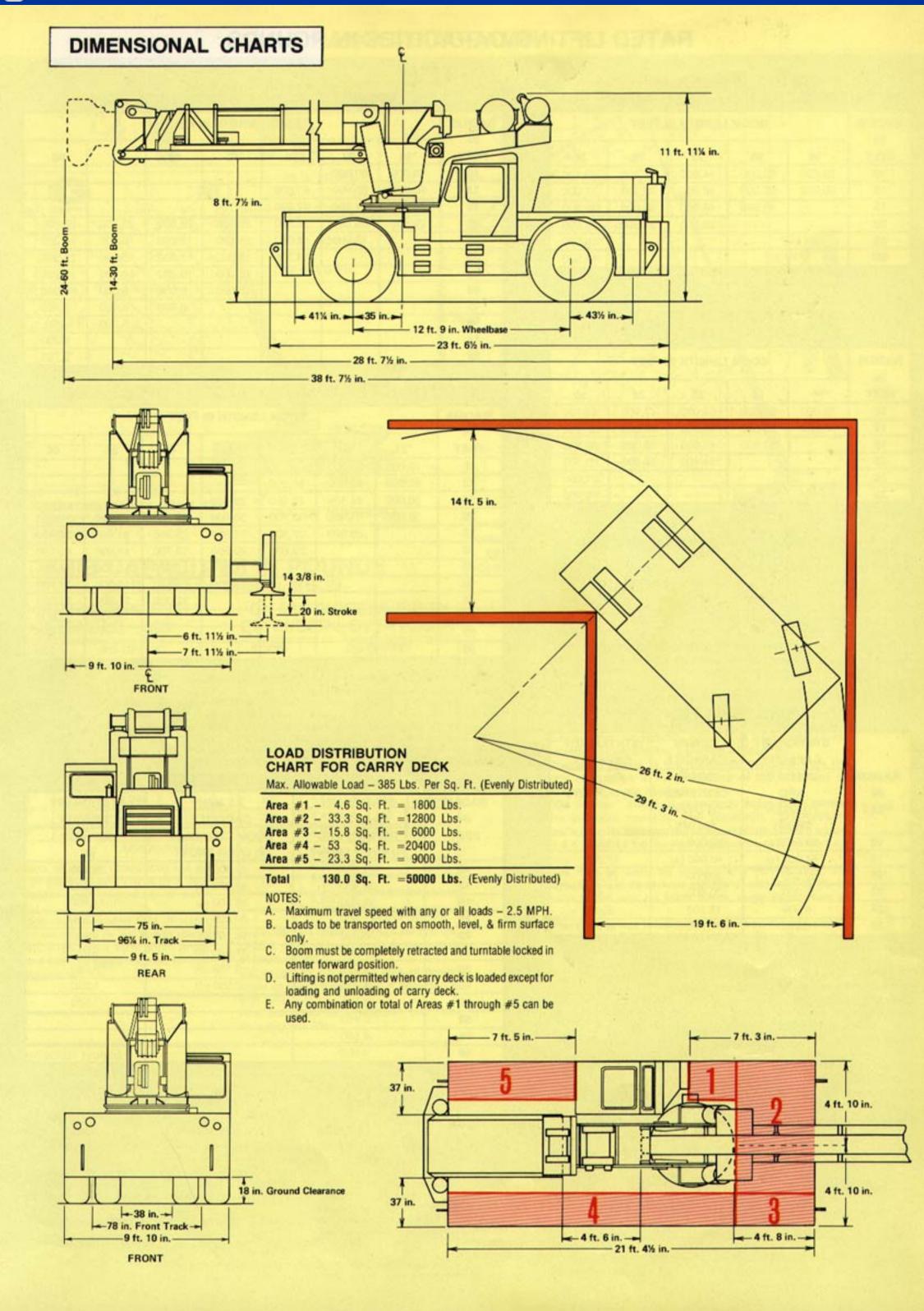
 With certain boom and hoist tackle combinations, maximum capacities may not be obtainable with standard cable lengths.

11. 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.

 If actual boom length is between rated lengths shown, use lifting capacity for the next longer rated length.





THE WORLD'S MOST COMPLETE LINE OF HYDRAULIC INDUSTRIAL CRANES

Capacities from 2 through 35 tons.











INDUSTRIAL CRANES

Your Grove Distributor

GROVE MANUFACTURING COMPANY DWISON OF WALTER RODE & COMPANY INC. SHADY GROVE, PA. 17256 U.S.A.

Form No. 946375-15M

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