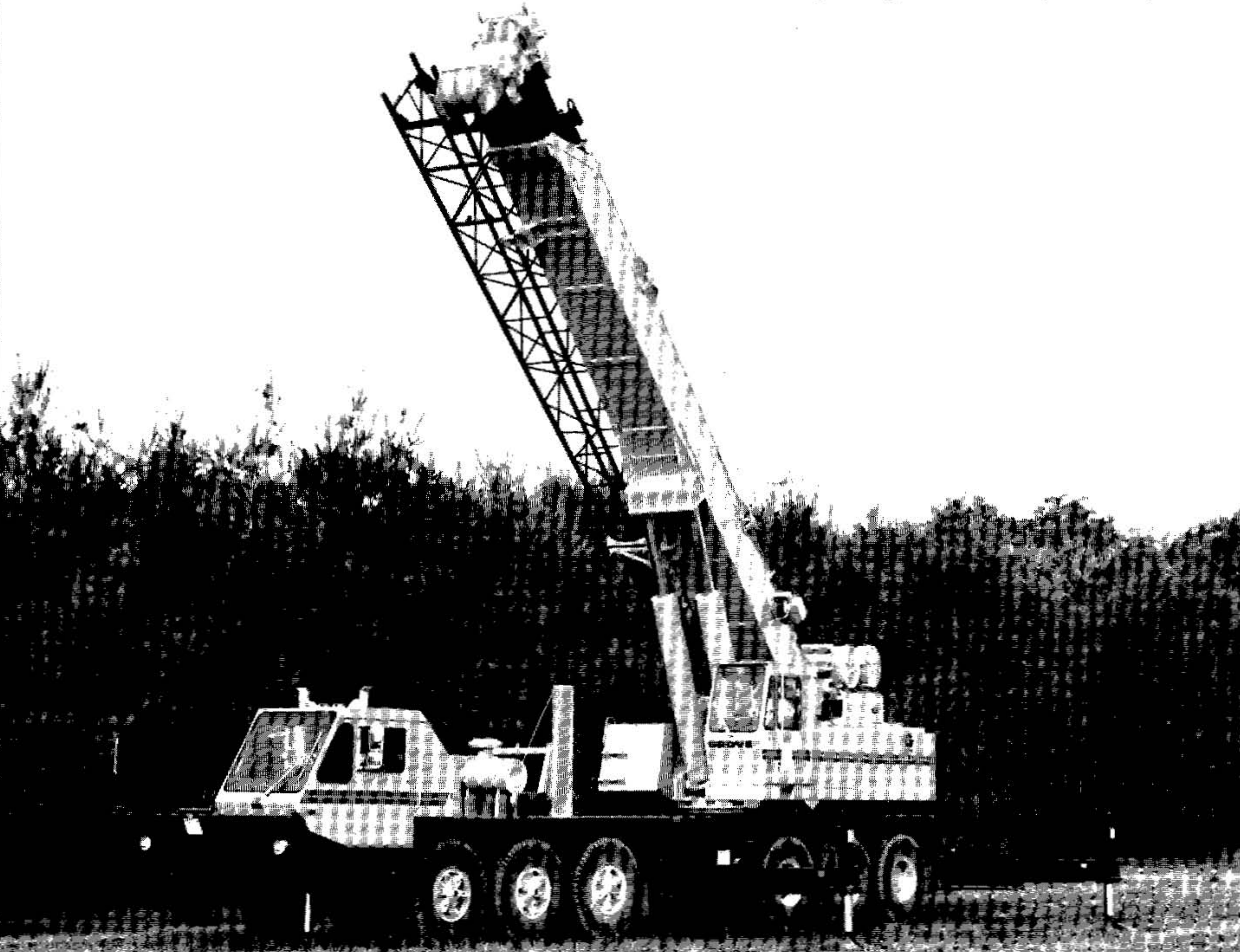




TM890

Truck mounted hydraulic crane/12x6 Carrier

- Capacity 90 tons (81,650 kg)
- Maximum on-board boom and jib length 172 ft. (52.4m)
- Optional 33 ft.-58 ft. (10m-17.7m)
Telescopic Swingaway offsets to 30°
- Maximum tip height 207 ft. (63.1m)



Superstructure specifications

Boom	36 ft. to 114 ft. (11.0m - 34.7m) four section Trapezoidal† power pin or optional full power boom. Each full power boom section has individually controlled telescope sections supported on graphite impregnated nylatron wear pads. Maximum tip height: 124 ft. (37.8m).
Swingaway Extension	33 ft. (10.1m) lattice swingaway boom extension stows alongside base boom section when not in use, offsettable at 2°, 15° or 30°. Maximum tip height: 157 ft. (47.9m).
Optional Telescopic Swingaway	33 ft. to 48 ft. to 58 ft. (10.1m-14.6m-17.7m) telescopic lattice swingaway extension with offset links offsettable at 2°, 15° or 30°. Stows alongside base boom when not in use. Maximum tip height: 178 ft. (54.3m).
Optional Jib Extension	14 ft. (4.3m) lattice sections combine with a 32 ft. (9.8m) tip section to make jib lengths of 46 ft. (14.0m), 60 ft. (18.3m), 74 ft. (22.6m) or 88 ft. (26.8m). Maximum tip height: 206 ft. (62.8m).
Boom Nose	Seven sheaves mounted on heavy duty tapered roller bearings with removable pin-type rope guards. *Optional removable auxiliary boom nose with removable pin type rope guard.
Boom Elevation	Two double acting hydraulic cylinders with integral holding valve provides elevation from -4° to 80°.
LMI and Anti-Two Block	Audio visual (light/buzzer) warning system and control lever lockout with electronic display of: boom angle, length, radius, boom tip height, relative load moment, rated load and actual load indication.
Cab	Full vision, all steel fabricated with acoustical lining and tinted safety glass throughout. Dash panel incorporates gauges for all engine functions. Other standard features include: hinged skylight, sliding left side door and sliding right side window, electric windshield wash-wipe, circulating air fan, heater, swing horn, fire extinguisher, seat belt. *Optional items: electric skylight wiper and air conditioning (Spec. Order).
Swing	Ball bearing swing circle with 360° continuous rotation. Grove planetary "glide swing" with foot actuated disc brake, spring applied hydraulically released park brake and 360° position positive turntable lock. Combination controls provided for hand or foot operation. Swing speed 1.8 RPM.
Counterweight	Hydraulically extendable counterweight. Power installation and removal system. Weight varies depending on hoist configuration.

Engine Detroit 8.2L eight cylinder turbo-charged water cooled diesel, 200 bhp (149 kw) (Gross) @ 2800 RPM. Maximum net torque: 408 ft. lbs. (56.4 kg/m) @ 1700 RPM.

Optional Engine Cummins V-555 eight cylinder water cooled diesel. 215 bhp (160 kw) (Gross) @ 3000 RPM. Maximum net torque: 412 ft. lbs. (57 kg/m) @ 1800 RPM.

HYDRAULIC SYSTEM

Pumps Five main gear pumps powered by superstructure engine. Manual pump disconnect. Combined capacity 289 GPM (1094 LPM).

Valves Precision four way double acting control valves, five individual valve banks permit simultaneous control of multiple crane functions.

Filter Full flow return line type with by-pass protection and filter by-pass indicator, replaceable cartridge, 7/17/22 filtration Beta rating.

Reservoir 305 gallons (1155 l) with spin-on breather filter, external sight gauge, clean out access.

Oil Cooler Full flow, fin and tube, oil to air.

HOIST SPECIFICATIONS

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 and electronic hoist drum rotation indicator.

		Main Hoist H030B-26	
		High Range	Low Range
Maximum single line speed	Bottom layer	437 FPM (133m/min)	219 FPM (67m/min)
	Intermediate layer	508 FPM (155m/min)	254 FPM (77m/min)
	Top layer	579 FPM (176m/min)	290 FPM (88m/min)
Maximum single line pull	Bottom layer	8,161 lbs. (3702 kg)	16,322 lbs. (7404 kg)
	Intermediate layer	7,028 lbs. (3188 kg)	14,056 lbs. (6376 kg)
	Top layer	6,172 lbs. (2800 kg)	12,344 lbs. (5599 kg)
Maximum permissible line pull w/5:1 F.O.S.		14,720 lbs. (6677 kg) w/Casar rope	
Maximum rope stowage		832 ft. (254m) 3/4" (19mm)	
		Note: 702 ft. (214m) of wire rope supplied with standard unit.	

12x6 Carrier

* Auxiliary Hoist H030B-26(H)

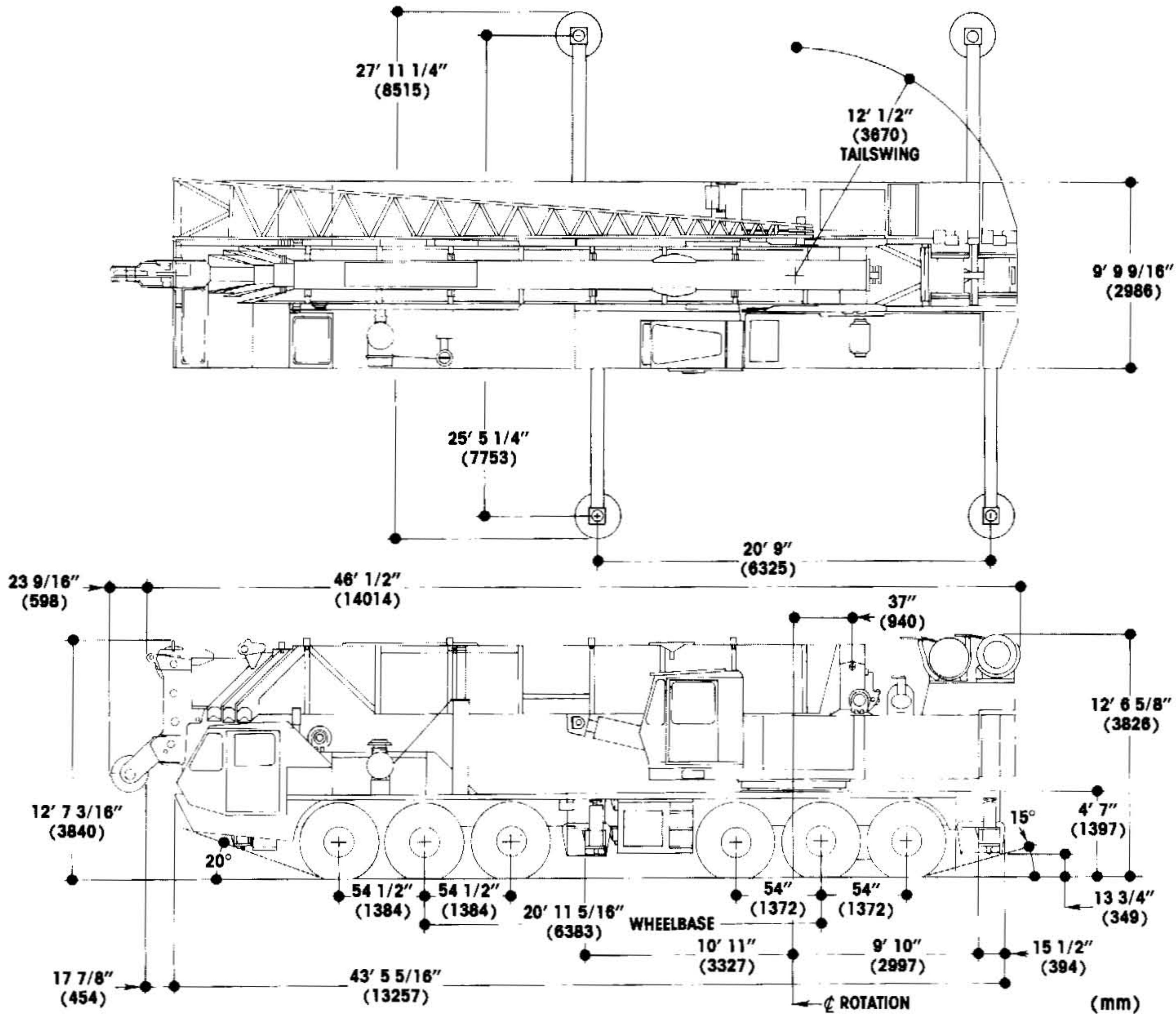
		High Range	Low Range
Maximum single line speed	Bottom layer	393 FPM (120m/min)	197 FPM (60m/min)
	Intermediate layer	456 FPM (139m/min)	228 FPM (69m/min)
	Top layer	520 FPM (158m/min)	260 FPM (79m/min)
Maximum single line pull	Bottom layer	7,345 lbs. (3332 kg)	14,690 lbs. (6663 kg)
	Intermediate layer	6,325 lbs. (2869 kg)	12,650 lbs. (5738 kg)
	Top layer	5,555 lbs. (2520 kg)	11,110 lbs. (5039 kg)
Maximum permissible line pull w/5:1 F.O.S.		12,920 lbs. (5861 kg) w/Dyform 18 rope	

Maximum rope stowage Same as Main Hoist

Carrier specifications (12x6)

Frame	High strength alloy steel all welded box-type construction with integral outrigger housings and front/rear lifting, towing and tie down lugs.
Outrigger System	Hydraulic double stage, double box telescopic beam and jack outriggers with integral holding valves. All steel fabricated quick release type outrigger floats 30 1/2" (775mm) diameter. Standard fifth front stabilizer for 360° duties.
Outrigger Controls	Located in superstructure cab and on both sides of the carrier frame. Push button controls requiring two-handed operation for safety. Crane level indicator (sight bubble) adjacent to each set of controls.
Engine	GM8V-71TA eight cylinder, turbo-charged water cooled diesel with Jacobs engine brake. 568 cu. in. (9.3 l) 370 bhp (276 kw) (Gross) @ 2100 RPM. Maximum net torque 983 ft. lbs. (136 kg/m) @ 1200 RPM.
Optional Engine	Cummins NTC350 six cylinder turbo-charged and after-cooled diesel with Jacobs engine brake. 855 cu. in. (14.0 l) 350 bhp (261 kw) (Gross) @ 2100 RPM. Maximum net torque 1120 ft. lbs. (155 kg/m) @ 1300 RPM.
Optional Engine	Caterpillar 3406TA with brake saver. Turbo-charged water cooled diesel with brake saver. 325 bhp (242 kw) @ (Gross) @ 2100 RPM. Maximum net torque: 1015 ft. lbs. (140 kg/m) @ 1200 RPM.

Fuel Tank Capacity	(1) 100 gallon (379 l)
Electrical System	Four 12 volt - maintenance free batteries, 24 volt starting.
Drive	12 x 6.
Steering	Front axle steering, cam and lever type with hydraulic assist.
Transmission	Fuller Roadranger (RT0011613), 13 speeds forward, 2 reverse.
Axles	Front: (3) Rockwell tubular steering FL951 100 in. (2540mm) track. Rear: (3) Rockwell EPRC 1356 planetary drive, 85 in. (2159mm) track with dash mounted inter-axle differential control.
Suspension	Front axles (3) spring mounted. Rear axles (3) solid mounted with equalizing beam and solid steel saddles.
Tires	14.00Rx20 (G-20X) Michelin radial tube type, highway tread front and rear.
Brakes	Full air on all wheels. Air dryer provided to preclude moisture accumulation. Spring set emergency brake on both rear axles with emergency release.
Lights	Full lighting including head, tail, braking, reversing, fog, directional and hazard warning lights.
Cab	All steel fabricated with acoustical lining and tinted safety glass throughout. Deluxe fabric covered fully adjustable seat. Complete driving controls and engine instrumentation including tachometer, speedometer, voltmeter, water temp. oil pressure, fuel level, air pressure gauge with A/V warning. Other standard items include hot water heater/defroster, electric windshield wash/wipe, fire extinguisher, seat belt and door and window locks.
Maximum Speed	45 mph (72.4 km/hr).
Gross Vehicle Weight & Axle Loads	BASIC STANDARD MACHINE Front Tridem: 38,750 lbs. (17,577 kgs) Rear Tridem: 96,120 lbs. (43,600 kgs) G.V.W.: 134,870 lbs. (61,177 kgs)
Equipment	Dual rear view mirrors, hookblock tiedown sling, electronic back-up alarm, light package, hour-meter and ether injection starting aid (less canister).
Optional Equipment	Immersion engine block heater, engine low oil pressure/high water temperature, audio visual warning and tire inflation kit.



Distributed By:

† Patented Grove feature or patent pending
 * Denotes optional equipment.

Constant improvement and engineering progress makes it necessary that we reserve the right to make specification, equipment, and price changes without notice. Illustration shown may include optional equipment and accessories and may not include a standard equipment.

GROVE MANUFACTURING COMPANY

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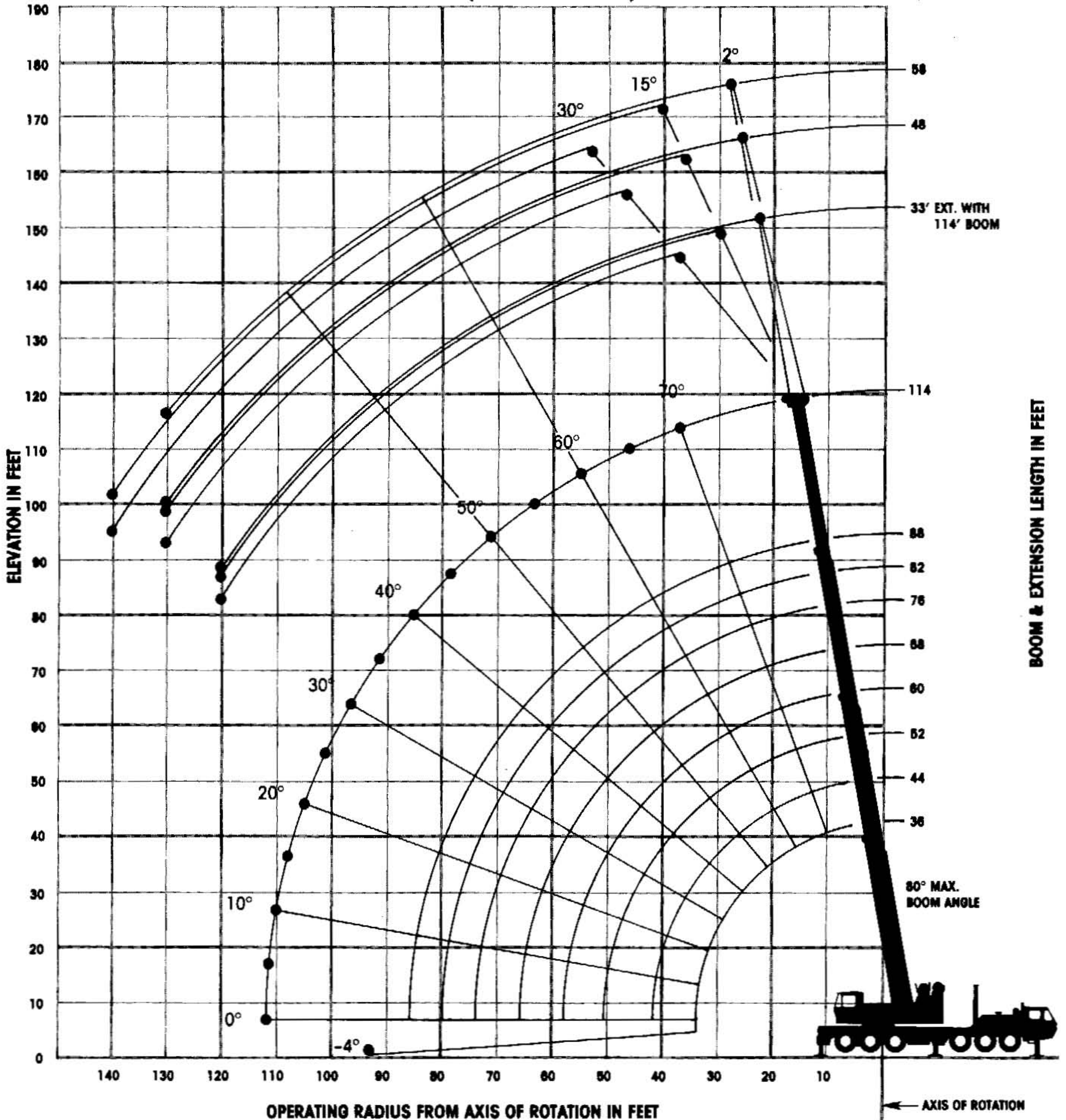
(717) 597-8121 ■ telex: 842308



TM890

85% Domestic/36 ft.-114 ft. Full Power Boom/12x6 Carrier

RANGE DIAGRAM (UNLADEN BOOM)



**ON OUTRIGGERS FULLY EXTENDED - 360°
FULL POWER BOOM**

Radius in Feet	Main Boom Length in Feet						
	36	49	62	75	88	101	114
10	180,000 (69)						
12	160,000 (65.5)	103,000 (72.5)	83,000 (76)	78,000 (78.5)			
15	120,000 (60)	100,000 (68.5)	81,000 (73.5)	76,500 (76.5)	63,000 (79)		
20	93,000 (50.5)	90,000 (62)	79,000 (68.5)	68,000 (72.5)	59,400 (76)	54,000 (77.5)	50,000 (80)
25	72,500 (39)	72,500 (55.5)	70,700 (63.5)	64,000 (68)	54,000 (72.5)	52,200 (74.5)	43,200 (78)
30	58,000 (23.5)	58,000 (48)	58,000 (58)	50,000 (64)	44,100 (69)	43,200 (71.5)	36,000 (75)
35		46,240 (39)	44,100 (52.5)	40,700 (59.5)	36,000 (65)	34,000 (68.5)	32,400 (72.5)
40		36,530 (28.5)	36,530 (46)	35,000 (55)	30,000 (61.5)	29,000 (65.5)	27,000 (69.5)
45		28,870 (11.5)	28,870 (39.5)	28,870 (50.5)	28,500 (57.5)	27,100 (62.5)	25,000 (67)
50			23,380 (31.5)	23,380 (45)	23,380 (53.5)	23,380 (59)	21,000 (64)
60				16,330 (33)	16,330 (44.5)	16,330 (52.5)	16,330 (58)
70				11,980 (13)	11,980 (34.5)	11,980 (45)	11,980 (51.5)
80					8,870 (19.5)	8,870 (36)	8,870 (44.5)
90						6,640 (24)	6,640 (36)
100							4,880 (26)
110							3,660 (8)
Minimum boom angle (deg.) at indicated boom length (no load)							0
Maximum boom length (ft.) at 0 deg. boom angle (no load)							114

Note: Boom angles are in degrees.

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CAPACITIES FOR 33 FT. - 58 FT. TELE. EXTENSION (ON OUTRIGGERS - 360°)

Radius in Feet	33 ft. EXTENSION						48 ft. EXTENSION						58 ft. EXTENSION					
	2° OFFSET		15° OFFSET		30° OFFSET		2° OFFSET		15° OFFSET		30° OFFSET		2° OFFSET		15° OFFSET		30° OFFSET	
	Boom Angle Ref.	Cap. lbs.	Boom Angle Ref.	Cap. lbs.	Boom Angle Ref.	Cap. lbs.	Boom Angle Ref.	Cap. lbs.	Boom Angle Ref.	Cap. lbs.	Boom Angle Ref.	Cap. lbs.	Boom Angle Ref.	Cap. lbs.	Boom Angle Ref.	Cap. lbs.	Boom Angle Ref.	Cap. lbs.
30	80.0	*29,600																
35	77.0	25,600	80.0	*19,200			80.0	*14,400					80.0	*9,200				
40	75.0	23,250	77.5	16,800	80.0	*13,800	77.0	13,700	80.0	*12,300			77.5	8,940				
45	73.0	21,150	75.5	15,150	78.0	12,900	75.0	13,200	78.5	11,750			76.0	8,770				
50	71.0	19,200	73.0	13,650	76.0	12,050	73.0	12,450	77.0	11,050	80.0	*8,600	74.0	8,590	80.0	*7,900		
60	66.5	15,650	69.0	11,150	71.5	10,100	69.5	10,600	73.0	9,590	76.5	8,200	70.5	8,170	75.0	7,590	80.0	*6,600
70	62.0	12,550	64.5	9,250	67.0	8,570	65.5	8,680	69.0	7,980	72.5	7,280	67.0	7,490	71.5	7,060	75.5	6,020
80	57.5	9,940	59.5	7,730	62.0	7,160	61.5	7,140	64.5	6,550	68.0	6,130	63.5	6,480	67.5	6,070	71.5	5,590
90	52.5	7,140	54.5	6,420	57.0	6,040	57.0	5,940	60.5	5,540	63.5	5,150	59.5	5,350	63.5	5,020	67.5	4,840
100	47.0	4,970	49.5	4,970	51.5	4,970	52.5	4,980	56.0	4,690	59.0	4,410	55.5	4,560	59.5	4,260	63.0	4,050
110	41.0	3,240	43.5	3,240	45.0	3,240	48.0	3,930	51.0	3,910	53.5	3,830	51.5	3,820	55.0	3,570	58.5	3,470
120	34.5	1,830	36.5	1,830	38.0	1,830	42.5	3,090	45.5	2,970	48.0	3,080	47.0	2,940	50.5	3,010	53.5	2,920
130							37.0	1,960	39.5	1,960	41.5	1,960	42.0	1,860	45.0	2,300	48.0	2,360
140															39.5	1,300	42.0	1,520

*This capacity is based upon the maximum boom angle.

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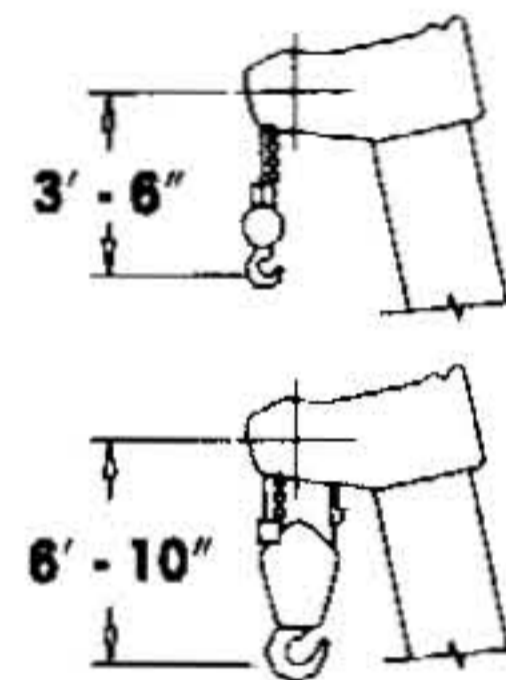
NOTES FOR LIFTING CAPACITIES

1. 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 (75% of the tipping load on rubber) as determined by SAE J765 OCT80 Crane Stability Test Code.
2. This chart is intended as a guide only. The individual crane's load chart operating instructions and other instruction plates give details of the conditions under which the crane may be operated safely. ALL OF THESE INSTRUCTIONS MUST BE READ AND UNDERSTOOD PRIOR TO OPERATING THE CRANE.
3. Capacities given do not include the weight of hookblocks, slings, auxiliary lifting equipment and load handling devices. Their weights MUST be added to the load to be lifted. When more than minimum required reeving is used, the additional rope weight shall be considered part of the load.
4. Capacities appearing above the bold line are based on structural strength and tipping should not be relied upon as a capacity limitation.
5. All capacities are for crane on firm, level surface. It may be necessary to have structural supports under the outrigger floats or tires to spread the load to a larger bearing surface.
6. When 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.
7. For outrigger operation, ALL outriggers shall be fully extended with tires raised free of ground before raising the boom or lifting loads.
8. Tires shall be inflated to the recommended pressure before lifting on rubber.
9. Unless otherwise stated, capacities are with powered boom sections equally extended.
10. When a load indicator is fitted certain capacities may be modified to compensate for indicator characteristics.

33 FT. FIXED LENGTH EXTENSION (ON OUTRIGGERS - 360°)

Radius in Feet	2° OFFSET		15° OFFSET		30° OFFSET	
	Boom Angle (deg.)	Cap. lbs.	Boom Angle (deg.)	Cap. lbs.	Boom Angle (deg.)	Cap. lbs.
30	80	*29,600				
35	77	26,100	80	*19,700		
40	75	23,750	77.5	17,300	80	*14,300
45	73	21,650	75.5	15,650	78	13,400
50	71	19,700	73	14,150	76	12,550
60	66.5	16,150	69	11,650	71.5	10,600
70	62	13,050	64.5	9,790	67	9,110
80	57.5	10,700	59.5	8,270	62	7,700
90	52.5	7,920	54.5	6,960	57	6,580
100	47	5,750	49.5	5,410	51.5	5,745
110	41	4,020	43.5	4,020	45	4,020
120	34.5	2,610	36.5	2,610	38	2,610

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

WEIGHT REDUCTIONS FOR LOAD HANDLING DEVICES

33 FT. FIXED EXTENSION	
†Stowed -	630 lbs.
†Erected -	6,105 lbs.
33-58 FT. TELE. BOOM EXTENSION	
†Stowed -	868 lbs.
†Erected (ret.) -	9,095 lbs.
†Erected (ext.) -	12,518 lbs.

†Reduction of main boom capacities.

HOOKBLOCKS:	
90 Ton, 6 Sheave	2,030 lbs.
15 Ton, 1 Sheave	650 lbs.
Auxiliary Boom Head	230 lbs.
5 Ton Headache Ball	150 lbs.
7 1/2 Ton Headache Ball	300 lbs.
10 Ton Headache Ball	500 lbs.

Constant improvement and engineering progress makes it necessary that we reserve the right to make specification, equipment, and price changes without notice. Illustrations shown may include optional equipment and accessories and may not include all standard equipment.

GROVE MANUFACTURING COMPANY

Shady Grove, Pennsylvania 17256-0021

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