

IND1012



GROVE
CRANE

A GROVE WORLDWIDE COMPANY

IND1012

Material Handling Hydraulic Crane



Superstructure specifications

Boom	14 ft. - 30 ft. (4.3m - 9.1m) three section full power boom, telescoping sections slide on adjustable and replaceable Nylatron wear pads. Maximum Tip Height: 36 ft. (10.9m).
*Optional Booms	18 ft. - 42 ft. (5.5m - 12.8m) three section full power boom. Maximum Tip Height: 48 ft. (14.6m). 24 ft. - 60 ft. (7.3m - 18.3m) 3 section full power boom. Maximum Tip Height: 66 ft. (20.1m).
*Optional Jib (30', 42', 60' Boom)	20 ft. (6.0m) non-stowable jib by special order only, offsettable at 0° or 30°. Maximum Tip Height: 83 ft. (25.3m).
Boom Nose	Three steel sheaves with heavy duty tapered needle bearings and removable pin-type rope guards.
Boom Elevation	Two double acting hydraulic cylinders with integral holding valve provides elevation from 0° to 70°.
Load Moment & Anti-Two Block System	Standard load moment and anti-two block system with audio-visual warning and control lever lockout. The system provides a high-visibility readout that displays boom length, boom angle, radius, tip height, relative load moment, maximum permissible load, actual load and warning of impending two-block condition.
swing	Ball bearing swing circle with 270° rotation. Grove planetary drive with automatic type multi-disc swing brake. *Optional 140° rotation with non-supply of rear outriggers. *Optional 360° rotation.

HYDRAULIC SYSTEM

Pumps	Two main gear pumps. Combined capacity 54.4 GPM (206 LPM) driven by carrier engine through P.T.O.
Valves	Precision four way double acting control valves, four individual valve sections for multiple crane functions.
Filter	Return line type, full flow with bypass protection, 10 micron rated replaceable cartridge.
Reservoir	60 gallons (227 L) with spin-on breather.

HOIST SPECIFICATIONS

Hydraulic, Braden Model PD12C, power up and down equal speed.

Hoist Braden PD12C		
Maximum single line speed	Bottom layer	138 FPM (42.1m/min)
	Intermediate layer	168 FPM (51.2m/min)
	Top layer	198 FPM (60.4m/min)
Maximum single line pull	Bottom layer	10,030 lbs. (4550 kg)
	Intermediate layer	8,240 lbs. (3738 kg)
	Top layer	6,980 lbs. (3166 kg)
Maximum permissible single line pull	7,400 lbs. (3356 kg)	
5:1 strength factor	with 9/16 in. (14mm) 18x19 class	
Maximum rope stowage	398 ft. (121m) 9/16 in. (14mm)	
	Note: 300 ft. (91m) length of 9/16 in. (14mm) wire rope supplied with basic standard unit.	

*Denotes optional equipment

Carrier specifications

Frame	High strength steel, all welded reinforced construction.
Counterweight	Integral with frame.
Outriggers	Hydraulic cantilever arm type at all four corners with integral check valves on each extension cylinder. Integral arc steel outrigger float pads - 10 in. x 12 in. (254mmx305mm). Maximum outrigger pad load 55,565 lbs. (25204 kg).
Outrigger Controls	Individual controlled from the operator cab, activation requires two hand operation to prevent accidental retraction.
Engine	GM4-53N diesel, 127 hp (95 kw) @ 2,400 RPM. Maximum torque 270 ft. lbs. (373 kg/m) @ 2,400 RPM.
Optional Engine	Caterpillar 3208 diesel, 150 hp (110 kw) @ 2,800 RPM. Maximum torque 329 ft. lbs. (574 kg/m) @ 1,300 RPM.
Fuel Tank Capacity	43 gallons (163 L)
Electrical system	One 12 volt, 975 CCA @ 0°F.
Drive	4 x 2
Steering	Rear: Full hydraulic power controlled by steering wheel.
Transmission	Fully automatic transmission with torque converter, 4 speeds forward and 1 reverse.
Optional Transmission	Powershift transmission with torque converter drive, 4 speeds forward and reverse.
Axles	Front: Double reduction drive axle (rigid mounted in the chassis). Rear: Wide track steer axle oscillates up to 10 in. (254mm).
Oscillation Lockouts	(On rear axle, controlled from operator cab.
Tires	Front: (4) 12x20-16PR (tube type - MHS-II-3). Rear: (2) 12x20-16PR (tube type - SRF).
Brakes	Service - air on front axle. Drum and shoe type. Spring applied parking brake on front wheels.
Lights	Full lighting package, including turn indicators, head, tail, brake and hazard warning lights.

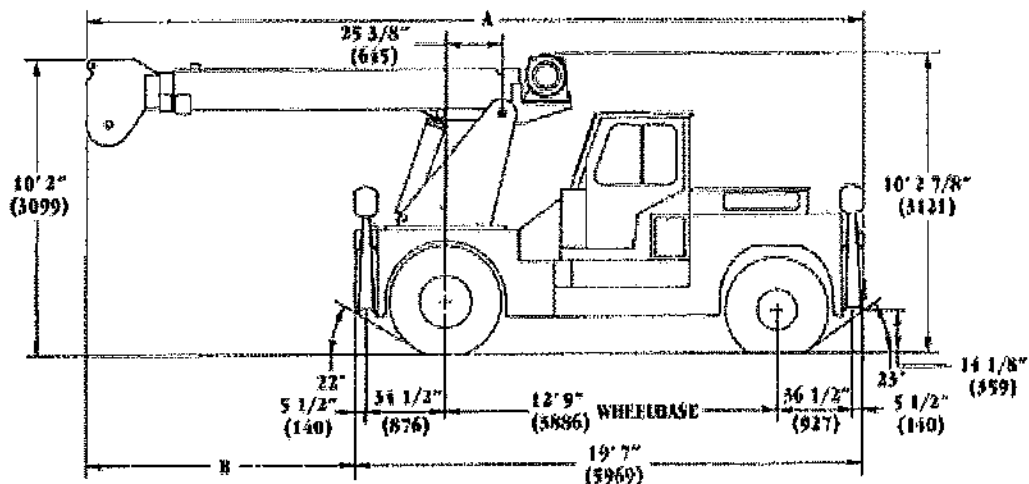
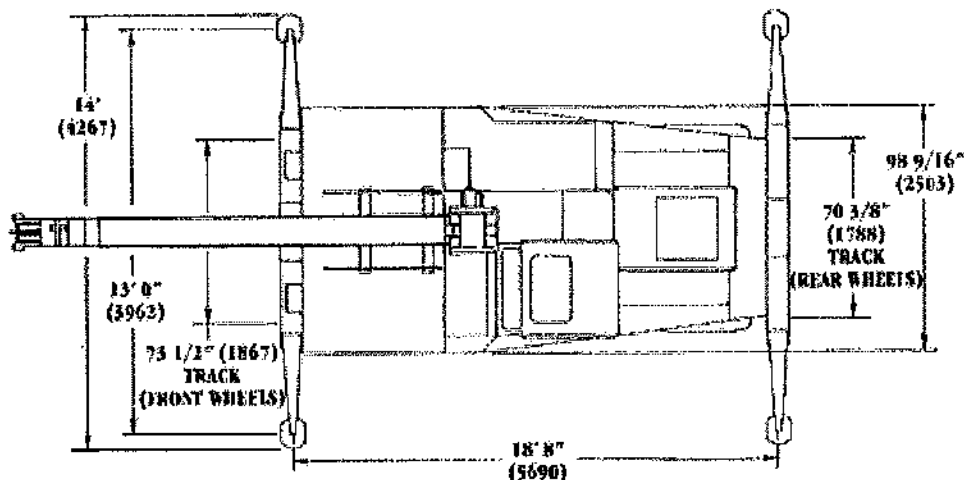
Cab	Standard frame mounted fully enclosed cab, full vision, all steel fabricated with tinted safety glass throughout, skylight, right and left doors, sliding left and right side windows, electric windshield wiper and circulating air fan, includes all crane function and driving controls, engine monitoring instrumentation, fire extinguisher and deluxe vinyl seat with seat belt.
Maximum Speed	15.5 MPH (24.9 kph).
Maximum Gradeability	48% (Theoretical based on 56,100 lbs. [25,447 kg] GVW).
BASIC STANDARD MACHINE	
Gross Vehicle Weight & Axle Loads	Front: 31,000 lbs. (14062 kg) Rear: 25,100 lbs. (11385 kg) G.V.W.: 56,100 lbs. (25447 kg)
Miscellaneous Standard Equipment	Fenders and decking, back-up alarm, light package, lifting lugs.
Optional Equipment	* No spin front axle * Front/rear pintle hook * High water temp./low oil pressure AV warning system * Handblocks * Tool kit * Low profile boom nose * Cold start aid * Spare tire assembly * 360° flashing light * Engine block heater * Tow winch, 9,000 lbs. (4082 kg) line pull * Spark arrester muffler * Hot water heater

*Denotes optional equipment

Dimensions

IND 1012

BOOM	A	B
14' - 30' 3 SEC.	28' 5 1/4" (8668)	8' 10 1/2" (2699)
18' - 42' 3 SEC.	32' 5 1/4" (9887)	12' 10 1/4" (3918)
24' - 60' 3 SEC.	38' 5 1/4" (11716)	18' 10 1/4" (5747)
TURNING RADIUS-16'7" (5055)		



GROVE
worldwide

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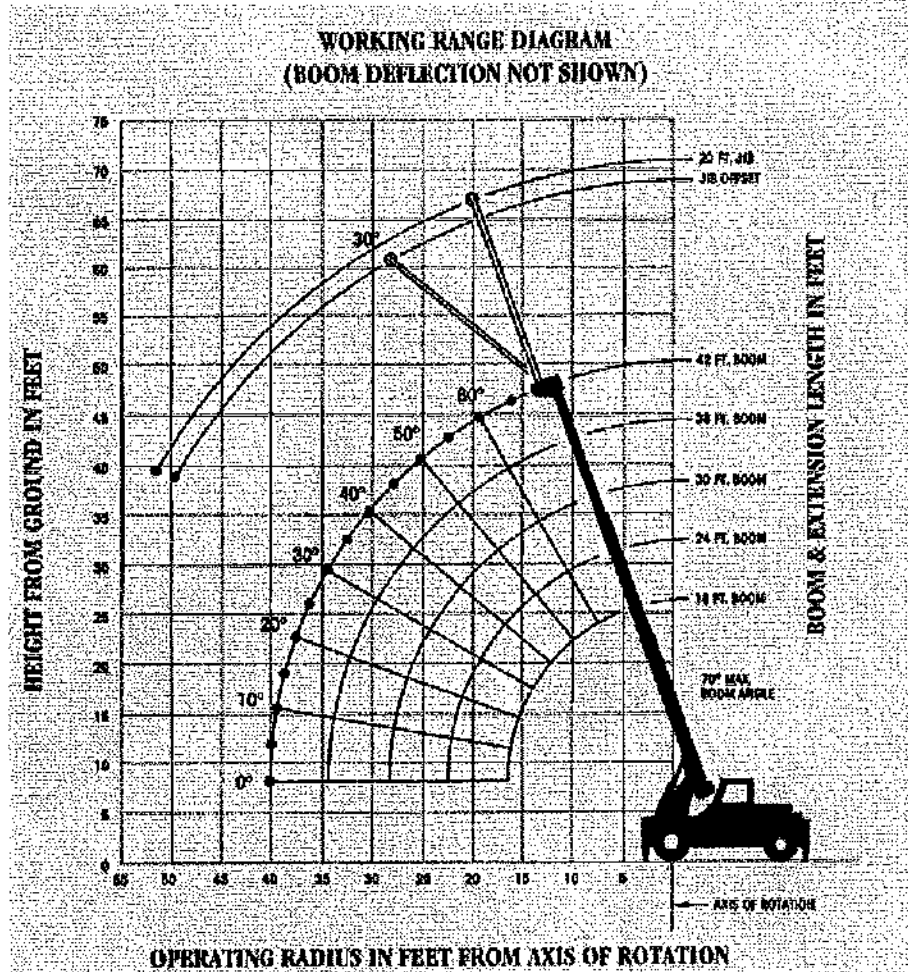
**GROVE®
CRANE**

A GROVE WORLDWIDE COMPANY

IND1012

Material handling hydraulic crane

Domestic 85%

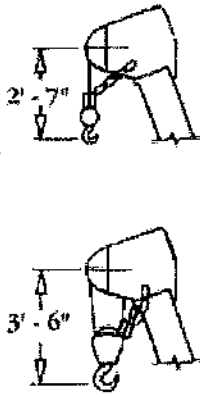


**1012 INDUSTRIAL 18 - 42 FT. BOOM
75% LIFTING CAPACITIES ON RUBBER
85% LIFTING CAPACITIES ON OUTRIGGERS**

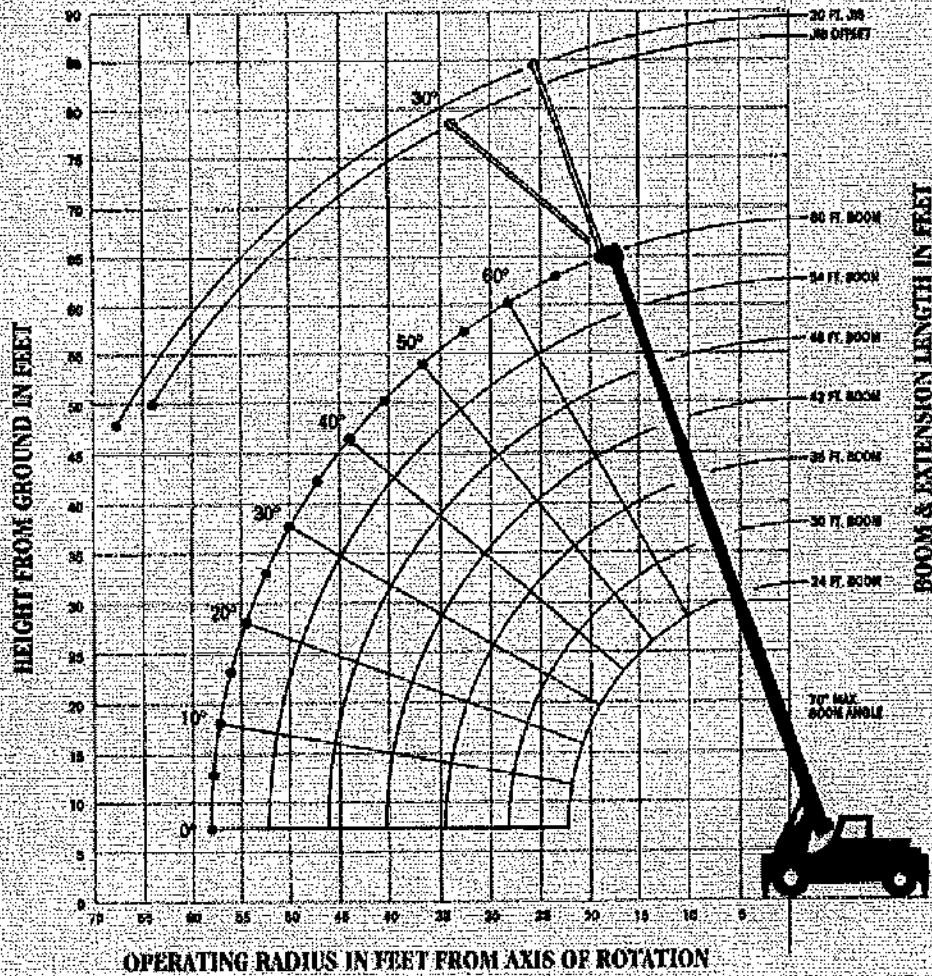
Radius in Feet	#01	#05**	#05
	On Outriggers (See Note 1)	On Rubber (3) (4)	
		Front	Side 70° (2)
6	35,000	30,000	22,700
8	32,400	24,500	16,400
10	30,000	18,800	11,200
12	27,500	15,850	8,820
15	23,750	11,900	6,610
20	17,500	8,020	4,140
25	12,000	5,020	2,730
30	9,000	3,350	1,730
35	6,800	2,470	1,140
40	5,300	2,020	

†LMI operating code. Refer to LMI manual for operating instructions.
**Select LMI operating code #06 for pick & carry operations.

**WORKING RANGE DIAGRAM
(ROOM DEFLECTION NOT SHOWN)**



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



20 FT. JIB CAPACITIES

MINIMUM BOOM ANGLE	#61	#63
	NO OFFSET	MAX. OFFSET (30°)
75°	6,200	2,600
70°	5,000	2,400
65°	4,300	2,300
60°	3,700	2,150
55°	3,300	2,100
50°	2,600	1,650
45°	2,400	1,500
40°	2,200	1,460
30°	1,900	1,200

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

A6-829-0001268

**1012 INDUSTRIAL 24 - 60 FT. BOOM
75% LIFTING CAPACITIES ON RUBBER
85% LIFTING CAPACITIES ON OUTRIGGERS**

Radius in Feet	#01	#05**	#05
	On Outriggers (See Note 1)	On Rubber (3) (4)	
		Front	Side 70° (2)
6	35,000	30,000	22,700
8	32,400	24,500	16,400
10	30,000	18,800	11,200
12	27,500	15,850	8,820
15	23,750	11,900	6,610
20	17,500	8,020	4,140
25	12,000	5,020	2,730
30	9,000	3,350	1,730
35	6,800	2,470	1,010
40	5,300	2,020	
45	4,200	1,670	
50	3,200	1,230	
55	2,500	880	
59	1,700		

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

**Select LMI operating code #06 for pick & carry operations.

A6-829-0090908

NOTES FOR LIFTING CAPACITIES

WARNING: THIS CHART IS ONLY A GUIDE. The notes below are for illustration only and should not be relied upon to operate the crane. The individual crane's load chart, operating instructions and other instruction plates must be read and understood prior to operating the crane.

- Capacities applicable through 270° of swing only, front and rear outriggers required. (See working area diagram.)
- Rear axle lockouts must be set to maintain published capacities.
- Rated capacities are based on a static lift on level ground.
- For pick-and-carry loads, suitable reductions to front static capacities must be made to allow for terrain. Loads must be carried directly over the front of machine with shortest practical boom length. SPEED MUST NOT EXCEED 2.5 MPH.
- The weights of all load-handling devices are considered part of the load lifted and suitable allowances for them should be made.
- 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.
- 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.
- Capacities appearing above the bold line are based on structural strength and tipping should not be relied upon as a capacity limitation.
- 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.
- 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.
- For outrigger operation, ALL outriggers shall be fully extended with tires raised free of ground before raising the boom or lifting loads.
- Unless otherwise stated, capacities are with powered boom sections equally extended.

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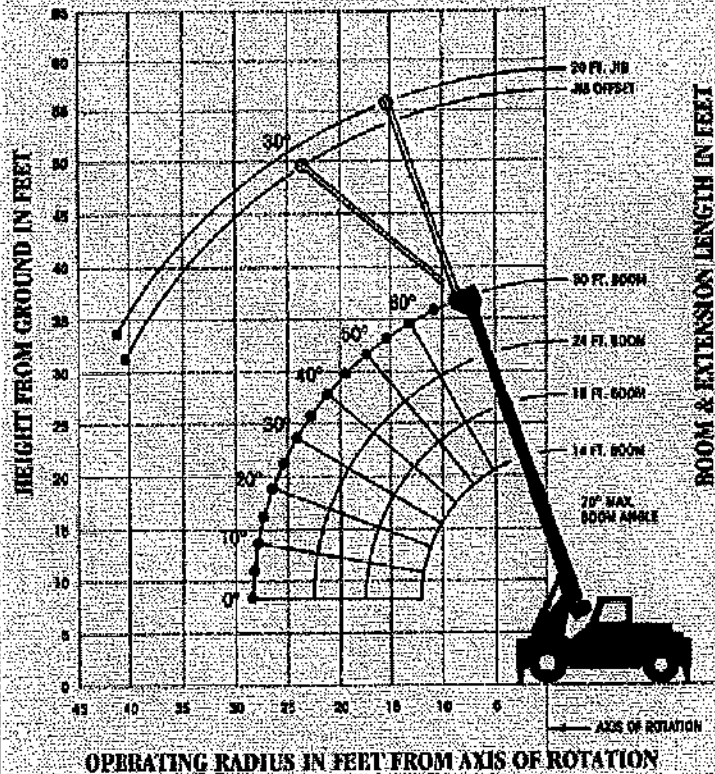


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WORKING RANGE DIAGRAM (BOOM DEFLECTION NOT SHOWN)



1012 INDUSTRIAL 14 - 30 FT. BOOM 75% LIFTING CAPACITIES ON RUBBER 85% LIFTING CAPACITIES ON OUTRIGGERS

Radius in Feet	#01 On Outriggers (See Note 1)	#05** On Rubber (3) (4)	
		Front	Side 70° (2)
6	35,000	30,000	22,700
8	32,400	24,500	16,400
10	30,000	18,800	11,200
12	27,500	15,850	8,820
15	23,750	11,900	6,610
20	17,500	8,020	4,140
25	12,000	5,020	2,730
28	9,600	3,520	1,850

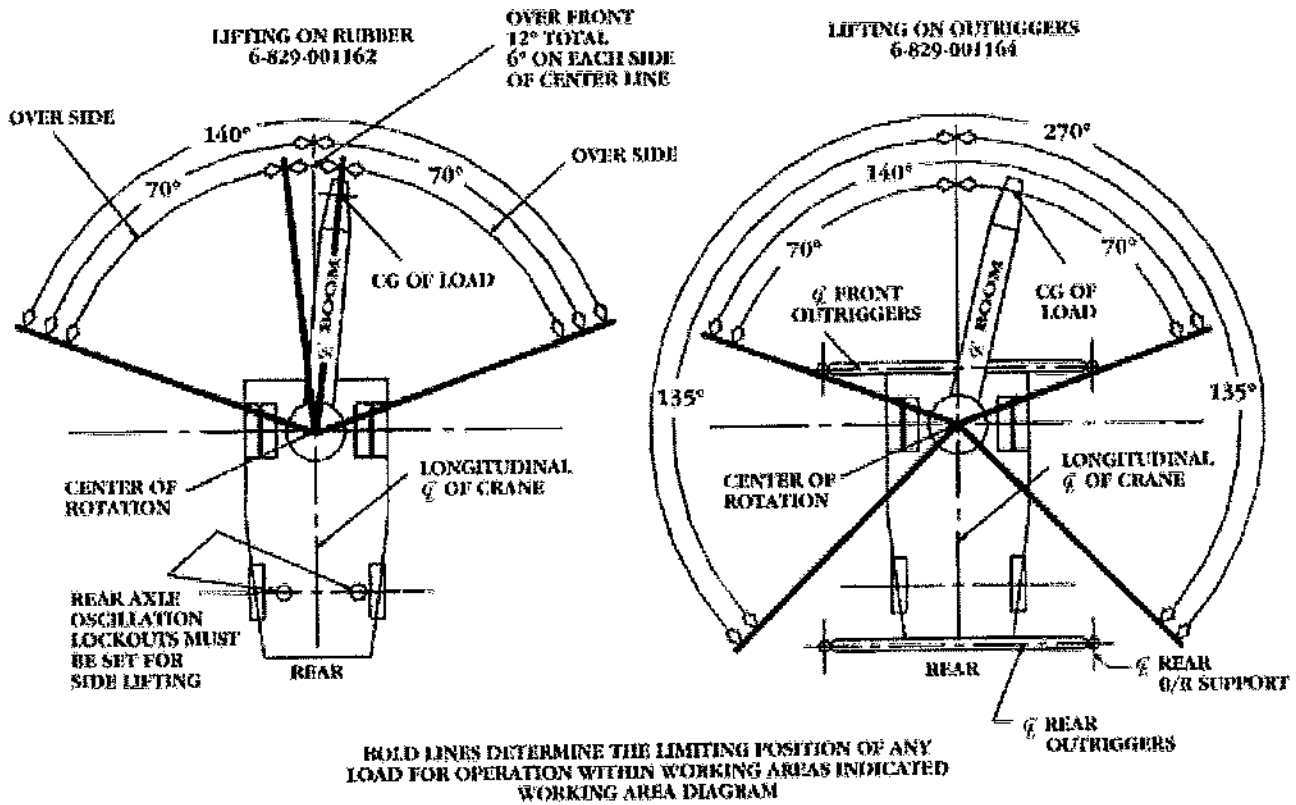
#01 lifting code. Refer to LMI manual for operating instructions.
 **Select LMI operating code #05 for pick & carry operations.

AG-829-0089-688

WEIGHT REDUCTIONS FOR LOAD HANDLING DEVICES

20 ft. JIB	
Erected -	810 lbs.
HOOBLOCK AND HEADACHE BALL:	
20 Ton, 3 Sheave	400 lbs.
5 Ton Headache Ball	172 lbs.

WORKING AREA DIAGRAM



GROVE

MODEL 1012D
17.5-Ton
YARD CRANE

RATED LIFTING CAPACITIES

Radius From \odot of Rotation	19-43' BOOM		
	Front Outriggers	Without Outriggers **	
	140° Swing *	Front	Side (70°)
6 ft.	35000	30000	22700
10	30000	18800	12400
14	25000	14000	8400
18	20000	10500	5000
22	15100	7700	3800
26	11100	5200	2860
28	10100	4400	2400
30	9000	3800	1970
34	7250	2900	1400
38	5875	2600	1140
42	5000	2400	960

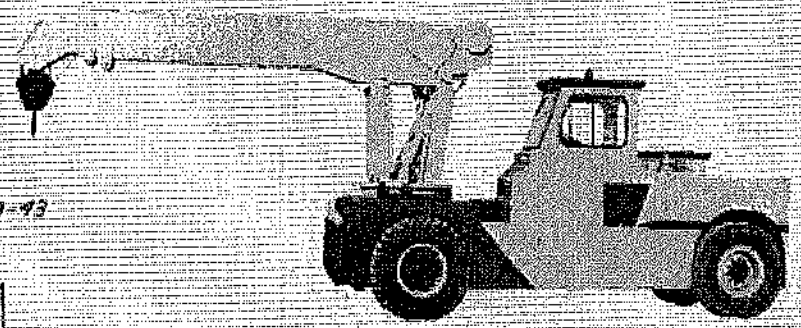
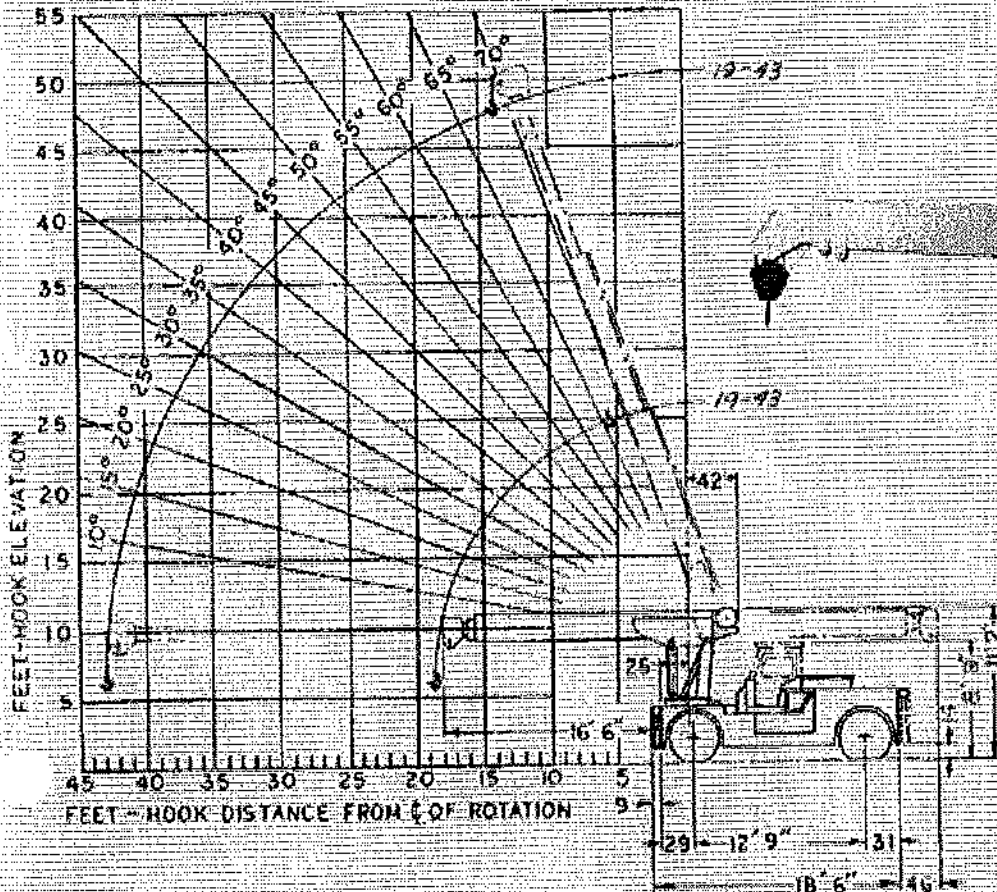
NOTES

1. Rated lifting capacities, with or without outriggers, are the maximum loads covered by the manufacturer's warranty with the machine standing on a firm, level and uniform supporting surface. Capacities do not exceed 85% of tipping.
2. For certain conditions, capacities are controlled by machinery strength. In these cases, machine tipping must not be relied upon as the capacity limitation.
3. For clamshell and magnet operation, weight of bucket and load should not exceed 90% of lifting capacities.
4. The weights of all load-handling devices are considered part of the load lifted and suitable allowances for them should be made.

* 5. To maintain capacities from 141° through 360° swing, Rear Outriggers are required.

** 6. Rear axle lockouts must be set to maintain published capacities.

ALL BOOM LENGTHS ARE CALCULATED FROM \odot OF ROTATION TO \odot OF HOOK



DISTRIBUTED BY

GROVE Hydraulic CRANES

SPECIFICATIONS Model 1012D - YARD CRANE

SUPERSTRUCTURE

BOOM — Full power telescope

19-48', 8-section, 24' telescopes, with boom-mounted hoist winch.

BOOM ELEVATION — 0° through 70°; independent control; TWIN double-acting hydraulic cylinders.

HOIST WINCH (MAIN) — Boom mounted, model 40SEGR; power up and down; hydraulic motor driven planetary gear with integral automatic brake; drum - 9" diameter; drum capacity - 300' (1/4"); single line pull - 3000# maximum; single line speed (no load) - 175 fpm maximum.

CABLE — 1/4" x 200'; no hook block; **ROOM HEAD** - three sheave

SWING — 140° rotation; ball-bearing swing circle, actuated by TWIN hydraulic cylinders with cushion valve; speed 3.0 RPM.

* 1. 270° rotation; ball bearing swing circle, external ring gear and pinion with worm drive reduction unit powered by hydraulic motor; swing speed 3.0 RPM.

* 2. 360° continuous rotation, specifications same as #1; with rotary coupling.

CHASSIS

FRAME — Ruggedly-designed one-piece weldment with steel I-beam main frame, cross members, counterweight, enclosed with heavy gauge protective steel shell, engine hood and sides.

OUTRIGGERS — Front only — hydraulic, individually and independently controlled from operator's position; safety check valves.

* REAR OUTRIGGERS

ENGINE	GAS	* GAS	* DIESEL
MAKE	Ford 500	Ford 361	GM 4-43 4-Valve
TYPE	6 Cyl. O. H. V.	8 Cyl. O. H. V.	4 Cyl. O. H. V.
BORE AND STROKE	4.00" x 3.98"	4.05" x 3.50"	3.875" x 4.50"
GROSS B. H. P.	149 @ 2800 RPM	168 @ 2800 RPM	180 @ 2800 RPM
GROSS TORQUE	284 @ 2000 RPM	330 @ 2000 RPM	271 @ 1500 RPM
GOVERNOR (Mechanical)	2800 RPM	2800 RPM	2800 RPM
ELECTRIC SYSTEM	12 Volt	12 Volt	12 Volt HD Battery

TRANSMISSION AND TORQUE CONVERTER — 4 speed forward and reverse transmission. Torque converter with dry disc type spring-loaded clutch.

* **AUTOMATIC TRANSMISSION AND TORQUE CONVERTER** — Power shift, constant mesh; 4 speed forward and reverse, with torque converter. Full-flow oil cooler with external heat exchanger and dash-mounted oil temperature gauge.

DRIVE SHAFT — Heavy duty industrial type with double universal needle bearing joints.

PARKING BRAKE — Hand lever control, mechanical, mounted on transmission drive line. Micro brake lock on service brakes.

DRIVING AXLE, FRONT — Planetary, full floating axle shafts, spiral bevel differential, with 16 1/2" x 6" air brakes.

STEERING AXLE, REAR — Wide track. Axle oscillation 0° to 10° with two (2) positive hydraulic ram oscillation lockouts, controlled from operator's position.

TURNING RADIUS — 17' 6"

TIRES — FRONT (4) 12.00 x 20-16 ply non-directional

REAR (2) 12.00 x 20-16 ply highway tread

* **FRONT ONLY** (4) 12.00 x 20 - 16 ply rock service universal

WIDTH (overall) with standard tires — 8'3"

ROAD SPEED	STANDARD TRANSMISSION AND ENGINE, @ 2400 RPM	DRAWBAR PULL	GRADEABILITY (No Load/Paved Surface)
1st Gear	2.13 MPH	28,400#	57.5 %
2nd Gear	4.41 MPH	18,500#	27.0 %
3rd Gear	8.10 MPH	6,490#	14.0 %
4th Gear	15.60 MPH	3,850#	7.75%

CONTROLS — 4-way hydraulic valves, anti-cavitating, with main by-pass relief valve and independent circuit relief valves.

PUMP — Hydraulic, two pump system, gear type; 60 GPM combined capacity.

* **LIGHTS** — Two (2) recessed front head lamps; two (2) recessed rear combination tail and white back-up or work lights; horn.

* **CAB** — All steel, fully enclosed; skylight; safety glass windows; weather stripped; electric windshield wiper; left and right hand doors; hot water heater.

* **PINTLE HOOK** — Front and/or rear.

* **TOWING WINCH** — Hydraulic, model 40SCR, planetary gear, 11000# capacity, 8 1/2" drum diameter, high speed payout, cable capacity — 300' of 1/2" diameter; (no cable); front or rear mounted.

WEIGHT — 50,000# approximate.

* **DENOTES OPTIONAL EQUIPMENT**

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GROVE MANUFACTURING COMPANY
 SHADY GROVE, PENNSYLVANIA