



# GROVE®

**FULL-HYDRAULIC  
CARRIER-MOUNTED  
CRANE**

**MODEL  
TM250**

**6x4 CARRIER**



## *Specifications*

- ★ 50,000 Lbs. Capacity  
at 12 ft. Radius
- ★ 32-80 ft. 3-section Full-  
Power Telescoping Boom
- ★ 29-92 ft. 4-section Tele-  
scoping Boom Available
- ★ TWIN Boom Elevation  
Cylinders (0° to 75°)
- ★ 360° Continuous Rotation  
with Glide Swing & Brake
- ★ Removable Outriggers and  
Counterweight

**GROVE MANUFACTURING COMPANY**

A Division of Walter Kidde & Co., Inc.

SHADY GROVE

PENNSYLVANIA





## 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 concrete bucket operation, weight of bucket and load should not exceed 90% of outrigger 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. Jib extensions are to be used for lifting crane service only.
6. With jib installed, lifting capacities over main boomhead must be reduced as follows:
 

Jib Length	Reduced Capacity
24 ft.	800 lbs.
7. The maximum boom length, including jib extension, may be raised from horizontal over the rear with outriggers set.
8. Long cantilever booms can create a tipping condition when in extended and lowered positions. Boom should be retracted to conform with load capacities indicated on chart.
9. Single line capacity 7000#. For larger capacities use multiple part reeving (one additional line for each 7000# of capacity.)
10. Each power-telescoping boom section should be extended equally at all times. Do not operate one fully extended and another fully retracted.

## SUPERSTRUCTURE SPECIFICATIONS MODEL TM250

**BOOM** — Three-Section Full Power Telescope.

\*Four-Section Power Telescope with manually actuated, power-extended fourth section.  
Integral Safety Holding Valves on each Telescoping Cylinder.

**BOOM HEAD** — Four Sheave.

Boom Retracted	Boom Extended	Number of Boom Sections	Total Length of Telescope	Hook Height @ 75°	
				Retracted	Extended
32'	80'	3	48'	36'	82'
*29'	92'	4	63'	34'	94'

\*JIB EXTENSION — 24' "Stowaway" type with self-equalizing suspension, maximum offset 26°.

**BOOM ELEVATION** — Twin double-acting hydraulic cylinders with integral safety holding valves. 0° to 75° boom elevation. Full power up and down. Combination control lever provided for hand or foot operation.

**HOIST** — (Main) Boom mounted; Model 4065 HECR, full hydraulic power up and down, planetary gear reduction with integral automatic brake.

**DRUM** — 14.5" diameter, 16" long, 22.3" diameter flange.

**CABLE** — 570 ft. of 5/8 in. maximum cable.

**SINGLE LINE PULL** — 7,400 lbs. maximum. **SINGLE LINE SPEED** — 350 FPM maximum.

\*HOIST — (Main) Controlled Free Fall with \*optional Emergency Load Release; Model 4065, full hydraulic power up and down, planetary gear reduction with integral automatic brake, separate multi-disc brake, oil cooled. (Performance same as standard Model 4065, with additional Controlled Free Fall feature).



**SUPERSTRUCTURE (Continued)**

**\*HOIST** — (Auxiliary) Boom mounted; (less cable) Model 40 SECR full hydraulic power up and down. Planetary gear reduction with automatic brake.

**DRUM** — 9" diameter, 8" long, 17½" diameter flange.

**CABLE** — 400' of ½" cable.

**SINGLE LINE PULL** — 8,100 lbs. maximum. **SINGLE LINE SPEED** — 200 FPM maximum.

**\*HOIST** — (Auxiliary) Model 40 SCR. High speed power down; line speed down. 900 FPM Maximum.

**CABLE SPECIFICATIONS** — ⅝" diameter; 18 x 7 no-spin; improved plow steel; fiber center; 400' furnished with main hoist.

**SWING** — 360° continuous rotation, ball bearing swing circle, glide swing, foot actuated swing brake and hand operated parking brake; external pinion; bull gear integral with the swing circle bearing; swing speed 2.5 RPM; combination control lever provided for hand or foot operation.

**HYDRAULIC SYSTEM —**

**PUMP** — Three-section gear type driven from superstructure engine. 118 GPM capacity.

**HYDRAULIC POWER DISTRIBUTION** — (Main hoist — auxiliary hoist) (lift boost — fly telescope — outriggers — swing) (hoist boost — lift — accessory — mid-telescope)

**CONTROL VALVES** — Four-way double-acting type with integral load check, main and circuit relief valves, three banks permitting multiple control of crane functions.

**RESERVOIR** — 140 gallon, all steel welded construction with integral baffles and top clean-out hole.

**FILTER** — Return line type; full flow with by-pass protection; replaceable cartridge.

**OIL COOLER** — Oil to air.

**CAB** — All steel, fully enclosed, removable front and rear laminated safety glass windows with hinged skylight for additional ventilation; full length control levers with combination hand and foot control for swing and boom elevation; fully adjustable operator's seat, full engine instruments, heater.

**\*COUNTERWEIGHT** — Turntable mounted; Removable.

**ENGINE SPECIFICATIONS:**

	<b>GAS</b>	<b>*GAS</b>	<b>*DIESEL</b>	<b>*DIESEL</b>
<b>MAKE</b>	Ford 361	Ford 391	GM 4-53N	Cummins V352
<b>TYPE</b>	8 Cylinder O. H. V.	V-8 O. H. V.	4 Cylinder O. H. V.	V-6
<b>BORE &amp; STROKE</b>	4.05" x 3.50"	4.05" x 3.79"	3.875" x 4.50"	4.625" x 3.50"
<b>MAXIMUM BHP</b>	168 @ 2800 RPM	193 @ 2000 RPM	140 @ 2800 RPM	135 @ 3000 RPM
<b>MAXIMUM TORQUE</b>	330 lbs. ft. @ 2000 RPM	372 lbs. ft. @ 2000 RPM	295 lbs. ft. @ 1500 RPM	264 lbs. ft. @ 1800 RPM
<b>GOVERNED RPM</b>	2800 RPM	2800 RPM	2800 RPM	3000 RPM
<b>ELECTRICAL SYSTEM</b>	12 Volt	12 Volt	12 Volt HD Battery	12 Volt

**OUTRIGGER CONTROL** — Remote operation from superstructure cab; each outrigger independently controlled; in-out-up-down.

**FUEL CAPACITY** — 50 Gallons.

**\*DENOTES OPTIONAL EQUIPMENT.**

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TM250

**CARRIER SPECIFICATIONS MODEL 6x4 25GF****WHEELBASE** — 208".**FRAME** — High strength alloy steel, reinforced top and bottom. Total depth 18.5". All welded construction.**OUTRIGGERS** — Removable, hydraulic double-box type with totally enclosed box type vertical jacks, steel floats. Beams extend to 16' centerline to centerline, retract to 8' overall width. Full hydraulic in, out (up, and down). Outrigger controls from crane operator's position on superstructure. Integral safety check valves and mechanical pin-locks for vertical jack cylinders.**STEERING GEAR** — Ross TE-71 cam and lever, roller-mounted with hydraulic power assist.**ENGINE** — International Harvester RD-501 (Gasoline), 6-Cylinder, Bore and Stroke — 4½" x 5¼". Displacement — 501 cu. in. Horsepower — 214.8 @ 3000 RPM. Torque — 451 pound feet @ 1600 RPM. Governed at 2600 RPM (Full load).**\*ENGINE** — General Motors diesel Model 4-71N.

General Motors diesel Model 6-71N.

Cummins Diesel C-180.

**FUEL CAPACITY** — 60 gallons. — (48 Imperial gallons.)**CLUTCH** — 14" Ferramic, single plate, dry disc type. Lining area — 218 sq. in.**TRANSMISSION** — Main: Fuller 5 speed forward, 1 reverse.

Aux.: Fuller 3 speed.

**UNIVERSAL JOINTS** — Needle Bearing type.**AXLES** — Front — One FWD I Beam type.

Rear — Two Timken, hypoid single reduction with inter-axle differential.

**SUSPENSION** — Front — Alloy steel, semi-elliptic with overloads.

Rear — Tandem axle walking beams, rubber end bushings and steel saddles.

**PERFORMANCE DATA** — Using standard tires, transmission, axles, and engine at governed speed.

Gear	HIGH RANGE		INTERMEDIATE		LOW RANGE	
	Speed (MPH)	% Gradeability	Speed (MPH)	% Gradeability	Speed (MPH)	% Gradeability
5th	51.8	.5	39.0	1.2	19.6	3.8
4th	37.6	1.3	28.2	2.2	14.2	5.8
3rd	23.5	3.7	17.7	5.5	8.9	12.4
2nd	12.0	7.4	9.0	10.3	4.5	22.0
1st	6.4	14.7	4.8	20.0	2.4	41.3
Rev.	6.4	14.7	4.8	20.2	2.4	41.5

**BRAKES** — Service — Full air on six wheels with 12 CFM piston compressor.

Size — Front, 17¼" x 4"; Rear 16½" x 7". Total lining area — 1172 sq. in.

Parking — Failsafe spring chambers on one rear axle with cab control valve.

**WHEELS** — 22.5" steel disc — front. 20" 10 hole steel disc — Rear.**TIRES** — Front — Two 18.00 x 22.5 — 16-ply highway tread singles front.

Rear — Eight 11.00 x 20 — 12 ply non directional mud and snow.

**CAB** — All steel, one-man-beside-the-engine style. Safety glass windshield and windows, ventilators, two rear view mirrors, bostrom seat, full engine instruments, speedometer, low air pressure warning and air gauge, heater and defroster.**ELECTRICAL SYSTEM** — 12-volt starting and lighting system. 37 AMP alternator, 90 AH battery, instrument panel light, sealed beam tilt-ray headlights, tail and stop lights, clearance lights, windshield wiper, horn, turn signals, cab light and reflectors.**MISCELLANEOUS EQUIPMENT** — Wheel nut wrench, channel type front bumper, two front towing loops, read fenders.**\*DENOTES OPTIONAL EQUIPMENT.**

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TM250

**TM250 HOOK ELEVATION CHART**

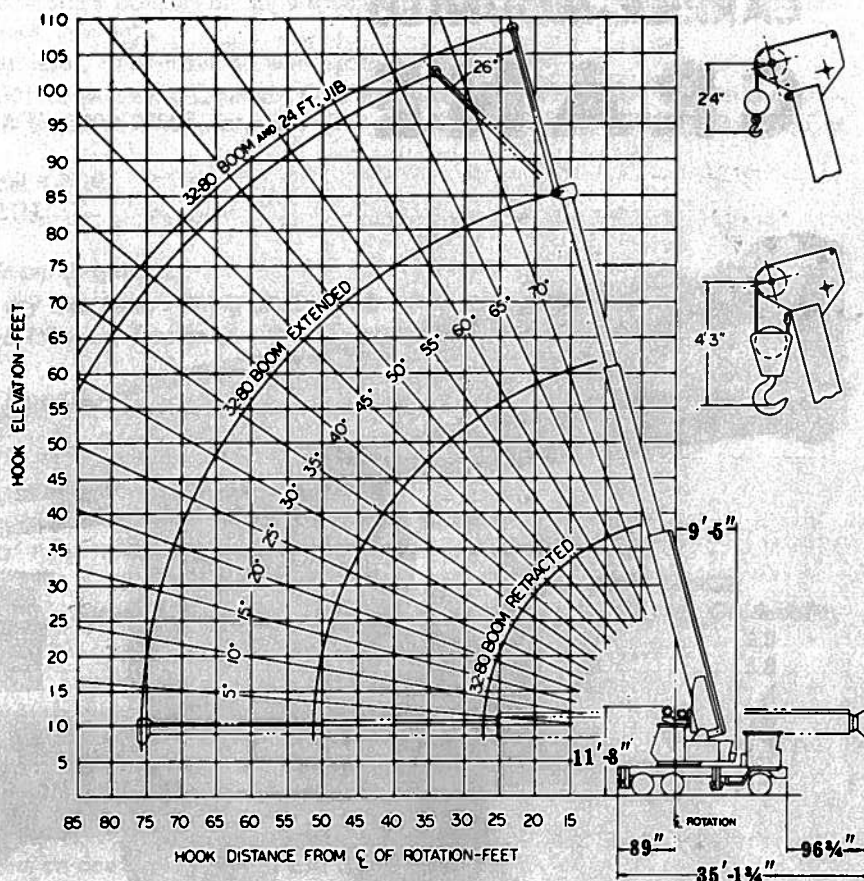
(Elevation Figures Shown in Feet)

**WITH 32'-80' BOOM****JIB CAPACITIES  
WITH 32'-80' BOOM**

(24-Foot Jib; Boom Fully Extended)

Min. Boom Angle	No Offset	26° Offset
75°	6000#	2700#
70	4750	2550
65	4000	2375
60	3500	2300
55	3150	2200
50	2900	2170
45	2650	2125
40	2550	2085
35	2475	2040
30	2400	2000
26	2300	1950

**NOTE:** All jib capacities are based on structural strength of the jib or main boom. Actual loads must not exceed capacities given in main boom capacity chart for the same working radius less the allowance for jib weight.

**RATED LIFTING CAPACITIES WITH 32'-80' BOOM****OVER THE SIDE  
WITH OUTRIGGERS****OVER THE REAR  
WITH OUTRIGGERS**

Working Radius in Feet	BOOM LENGTH IN FEET									Working Radius in Feet	BOOM LENGTH IN FEET								
	32	38	44	50	56	62	68	74	80		32	38	44	50	56	62	68	74	80
12	50,000	47,000	44,000	41,000	38,000					12	50,000	47,000	44,000	41,000	38,000				
15	42,000	40,500	39,000	36,000	33,000	27,000	25,000			15	42,000	40,500	39,000	36,000	33,000	27,000	25,000		
20	31,500	31,250	31,000	29,500	28,000	25,500	23,000	21,000	20,000	20	31,600	31,300	31,000	29,500	28,000	25,500	23,000	21,000	20,000
25	20,500	21,000	21,400	21,400	21,500	21,500	21,500	20,750	18,000	25	20,500	21,000	21,500	21,500	21,500	21,500	21,500	20,750	18,000
30	15,200	15,400	15,600	15,650	15,700	16,000	16,300	16,400	16,500	30	15,400	15,600	15,900	16,000	16,100	16,300	16,500	16,500	16,500
35			11,800	11,850	11,900	12,000	12,100	12,150	12,200	35			12,300	12,400	12,500	12,600	12,700	12,750	12,800
40			9,200	9,250	9,300	9,400	9,500	9,600	9,700	40			9,500	9,600	9,700	9,750	9,800	10,100	10,400
50					6,100	6,100	6,100	6,150	6,200	50					6,400	6,450	6,500	6,600	6,700
60							4,000	4,050	4,100	60							4,400	4,450	4,500
70								2,600	2,700	70								2,900	3,000
75									2,200	75									2,400

Capacities appearing in the shaded area are based upon structural strength when lifting over the side. All capacities over the rear are based on structural strength and machine stability should not be relied upon as the capacity limitation.

REFER TO NOTES, TOP OF PAGE 4