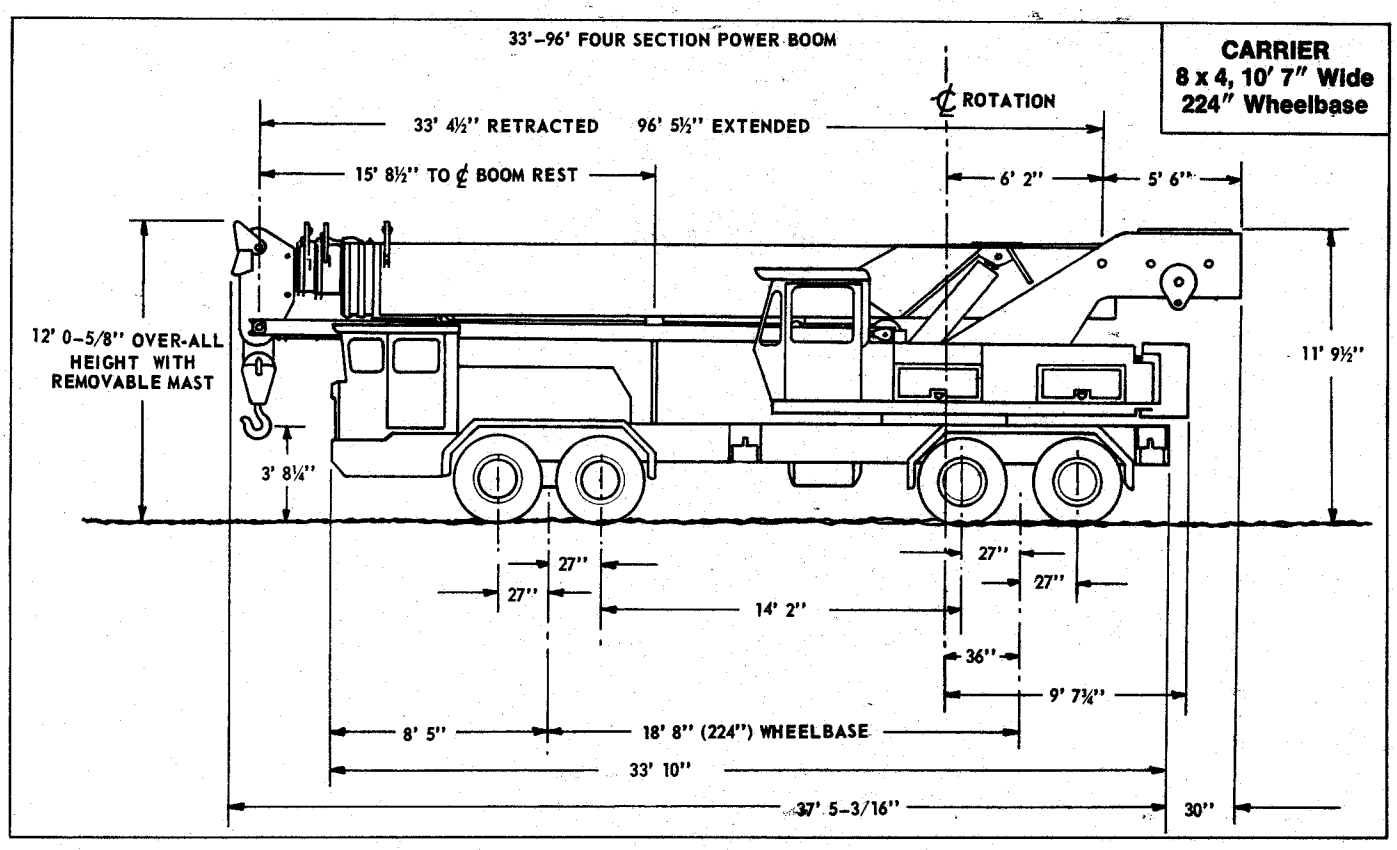
Link-Belt

HT-450

45-TON CARRIER MOUNTED HYDRAULIC CRANE

GENERAL INFORMATION ONLY



GENERAL DIMENSIONS

Over-all width, outriggers retracted	10' 7"
Over-all width, outriggers extended	18' 0"
Vehicle clearance circle — outside front bumper	119' 3"
Turning radius — C/L of outer front tire	56' 0"
Tailswing — across corners	11' 8½"
Minimum ground clearance	7½"

Four Section Power Boom Horizontal over Front End of Carrier①	Machine Over-all Length	Approx. Working Weight
Machine with std. 33'-96' power boom retracted	39' 11 3/16"	86,730#
.... with 33'-96' p. b. & opt. 21' section retracted	40' 7 3/16"	88,730#
.... with 33'-96' p. b. & opt. 21' section extended	124' 6 3/16"	88,730#
.... with 33'-96' p. b. & opt. 21' section retracted and opt. 25' jib in stowed position	40' 7 3/16"	89,850#
.... with 33'-96' p. b. & opt. 21' section extended and opt. 25' jib extended in operating position	149' 3"	89,850#

(p. b. — power boom)
① Includes 45-ton hook block.

Printed in U.S.A.

AXLE LOADS — (Approximate pounds)

224″ Wheelbase Carrier (10′ 7″ Wide) 6,050# Ctwt. on Upper	Total Weight	Upper Facing Front		Upper Facing Rear	
		Front	Rear	Front	Rear
Machine equipped as follows:					
33′-96′ power boom	86,230	31,160	55,070	24,050	62,180
33′-96′ p. b. w/21′ manual extension ①	88,230	32,950	55,280	22,870	65,360
33′-96′ p. b. w/25′ jib ②	87,350	32,150	55,200	23,230	64,120
33′-96′ p. b. w/21′ manual extension & 25′ jib ③	89,350	33,940	55,410	22,050	67,300
Ctwt. stowed midship of carrier:					
33′-96′ power boom	86,230	37,010	49,220	24,080	62,150
33′-96′ p. b. w/21′ manual extension ①	88,230	38,800	49,430	22,900	65,330
33′-96′ p. b. w/25′ jib ②	87,350	38,000	49,350	23,260	64,090
33′-96′ p. b. w/21′ manual extension & 25′ jib ③	89,350	39,790	49,560	22,080	67,270
Ctwt. removed from machine:					
33′-96′ power boom	80,180	33,100	47,080	20,170	60,010
33′-96′ p. b. w/21′ manual extension ①	82,180	34,890	47,290	18,990	63,190
33′-96′ p. b. w/25′ jib ②	81,300	34,090	47,210	19,350	61,950
33′-96′ p. b. w/21′ manual extension & 25′ jib ③	83,300	35,880	47,420	18,170	65,130
Adjust weights for these items:					
Front outrigger ass'y. removed	− 3,800	− 2,280	− 1,520	− 2,280	− 1,520
Rear outrigger ass'y. removed	− 3,800	+ 1,100	− 4,900	+ 1,100	− 4,900
45-ton hook block at boompoint ①	+ 500	+ 827	− 327	− 666	+ 1,166
45-ton hook block tied off at bumper ①	+ 500	+ 745	− 245	− 648	+ 1,148
Wire rope on auxiliary wire rope drum	+ 310	− 120	+ 430	+ 220	+ 90
Optional equipment (heater, etc.)	+ 50	+ 20	+ 30	− 5	+ 55

(p. b. — power boom)
① Based on 21′ manual extension retracted.
② Based on 25′ jib in stowed position.
③ Based on 21′ manual extension retracted and 25′ jib in stowed position.

GENERAL INFORMATION ONLY

GENERAL SPECIFICATIONS

CARRIER—

CARRIER — 8 x 4 drive, 10′ 7″ wide (rear), C.C.C.

FRAME — All welded construction, fabricated box section. Inner race of turntable bearing welded to carrier frame; formed channel bumper.

AXLES —
Front — Tandem; Shuler, tubular axles, 100″ track.
Rear — Tandem; Clark BD50-60 planetary, 94½″ track, total reduction 10.145.

BRAKES — Service, 8-wheel air. Front — 17¼″ x 4″. Rear — 16½″ x 7″. Effective lining area — front, 536 sq. in.; rear, 920 sq. in.; total, 1,456 sq. in.
Compressor — Air, 12 cu. ft. Bendix-Westinghouse, gear driven, cooled and lubricated from carrier engine.

SUSPENSION —
Front Axles — Solid equalizer beams, no springs.
Rear Axles — Bronze bushed bogie (C.C.C.) with torque rods, no springs.

INTER-AXLE DIFFERENTIAL — Not available.

EMERGENCY AND PARKING BRAKES — Air; Maxi type 36 with heavy duty springs.

WHEELS — Cast spoke, front; planetary hubs, rear.

TIRES AND RIMS —
Front — Four 16:50 x 22.5-H (16-ply) highway tread; 20 x 12.25 rims.
Rear — Eight 12:00 x 20-H (16-ply) military non-directional tread; 20 x 8.50 rims.

STEERING — Ross #TE-71 power hydraulic, 21″ dia. wheel.

OUTRIGGERS — Welded box construction, pin-connected to carrier frame front and rear. Full width, dual sliding beams supported on rollers in each box. Hydraulic beam and jack cylinder controls located at crane operator's position in upper cab. Check valve in each jack cylinder. Hydraulic power supplied by carrier engine driven pump.
Floats — 30″ square base aluminum.

ENGINE — Diesel.

	GM6-71N
Cylinders — Cycle	6 — 2
Bore — Stroke	4¼″ — 5″
Displacement	426 cu. in.
Max. brake h.p.	245 @ 2,300 r.p.m.
Peak torque	649 ft. lbs. @ 1,400 r.p.m.
Crankcase capacity	20 qts.
Air compressor	12 c.f.m.
Air cleaner	Dry type

CLUTCH — Spicer 14″ dia., 2-plate, dry disc.

UNIVERSALS — Mechanics needle bearing.

TRANSMISSIONS — Total 26 speeds forward, 4 reverse.
Main — Fuller RT009513 double overdrive; 13 speeds forward, 2 reverse.
Auxiliary — Fuller #2A-92, 2-speed.

SPEEDS — (M.P.H.) Based on GM6-71N diesel engine; full load speed — 2,300 r.p.m.

MAIN TRANSMISSION FULLER #RT009513			AUX. TRANSMISSION FULLER #2A92	
			1.00:1.00	2.298:1.00
HIGH	8th Overdrive	0.61	45.7	19.9
	8th direct	0.73	38.2	16.6
	7th Overdrive	0.84	33.2	14.4
	7th Direct	1.00	27.9	12.1
	6th Overdrive	1.16	24.0	10.4
	6th Direct	1.38	20.2	8.8
	5th Overdrive	1.56	16.9	7.3
	5th Direct	1.97	14.2	6.2
	Reverse	3.42	4.97**	2.16**
LOW	4th	2.70	10.3	4.5
	3rd	3.69	7.6	3.3
	2nd	5.10	5.5	2.4
	1st	7.28	3.8	1.7
	Low	12.10	1.40**	.61**
	Reverse	12.66	1.35**	.59**

**Speed based on peak torque @ 1,400 r.p.m.

Creep Speeds — (Based on peak torque r.p.m.) Low, low — .61 m.p.h. Low, reverse — .59 m.p.h.

ELECTRICAL SYSTEM — One 12-volt battery and 12-volt alternator. Four sealed beam headlights, directional signals, stop and tail lights, 4-point emergency flasher lights, clearance lights, and back-up lights.

CAB — One-man, offset, fully enclosed. Instrument panel with speedometer, odometer, tachometer, ammeter, low air pressure warning buzzer, throttle control, and push-button starting switch. Gauges for oil and air pressure, fuel, and engine temperature. Safety switch to prevent starting carrier engine if main transmission is not in neutral. Bostrom "T-bar" seat, seat belt, fire extinguisher, electric horn, heater, fan-type defroster, air windshield wiper, windshield washer, cigar lighter, ashtray, rolled and pleated upholstery, floor carpet, and foot accelerator pedal.

STANDARD AUXILIARY EQUIPMENT — Bubble-type levels on carrier, bus-type rear view mirrors, front tow loops, rear fenders, reverse alarm, step and hand grab rail, access ladder to carrier deck, and skid-resistant finish on carrier deck.

Fuel Tank — 60 gallon capacity.

Hydraulic Oil Reservoir — 160 gallon capacity; for crane upper and carrier control systems.

UPPER

UPPER REVOLVING FRAME — All-welded, stress relieved, jig line bored. Boomfoot pinned in line bores.

Hydraulic System — Consists of 2-speed wire rope hoist hydraulic motor, hydraulic cylinders, 2 double spool main control valves, tandem gear swing motor, 2-speed planetary speed reducer, variable volume hydraulic piston pump, single tandem gear pump, oil cooler, electric solenoid and holding valve.

Oil Capacity — 285 gallons; for boomhoist, swing, and load handling circuits.

Pump — Single Tandem Gear. Powered by drive shaft from front of carrier engine — 146 g.p.m. @ 2,250 p.s.i. 98 g.p.m. segment for boomhoist and wire rope hoist; 48 g.p.m. segment for boom extend/retract and swing control.

Pump — Variable Volume Piston. Driven by drive shaft from front of carrier engine, 9.5 g.p.m. @ 2,100 r.p.m. Furnishes power for outrigger beam and jack cylinder controls, hydraulic counterweight lowering and 2-shoe clutch control, and shifting wire rope hoist motor.

Oil Cooler — Mounted in front of carrier engine to maintain proper oil temperature in system.

Holding Valves — Provide automatic locking feature to hold boomhoist, load, and extended boom sections against gravity when desired. Also allows controlled lowering of boom and overhauling loads and controlled retraction of extended boom sections.

Turntable Bearing With Integral Swing Gear — Ball bearing type; inner race with integral 135-tooth swing gear machined into it, mounts on carrier. Outer race bolted to upper revolving frame. Bearing has its own seal to retain lubricant and exclude dirt. Nominal pitch diameter of bearing, 59″.

Counterweight — 6,050 lbs. cast iron, mounted in position at rear of upper frame — removable. Counterweight storage mounting bracket provided on carrier deck forward of upper revolving frame in event such storage is needed to meet axle load requirements. Hydraulic counterweight lowering device standard equipment.

BOOM SUPPORT — All-welded, stress relieved and jig line bored.

SWING SYSTEM — 360° rotation, right or left. Single section, hydraulic, gear-type swing motor; flange-mounted to FMC speed reducer.

Speed Reducer — FMC, 3 shaft, spur gear, double reduction. Anti-friction bearings throughout.

Swing Pinion — Machine-cut teeth, heat treated.

Swing Brake — Two shoe external contracting, manually controlled.

Swing Lock — Pawl-type, manually controlled; locks into teeth of ring (swing) gear.

Swing Speed — 2.4 r.p.m.

ATTACHMENT

BOOM — Fabricated, box type; HRS alloy, quenched and tempered steel. Four-section power boom with three double-acting (extend/retract) telescoping cylinders, boom rest, and boom angle indicator. Boom sections identified as follows: base section; boom lower section — #3; boom center section — #2; and boom tip section — #1.

Optional Boom Section — 21′ long; section pins to, and is powered by, the #1 (tip) power boom section.

Boom Head Machinery — Gooseneck design to accommodate high boom angles without fouling wire rope load lines. Equipped with two deflector sheaves and three load sheaves — all 14⅝″ pitch dia., mounted on anti-friction bearings. Designed for use with one through six parts of line.

Boom Hoist Cylinders — Two double-acting hydraulic cylinders with integral check valves; check valves prevent boom creeping down under load. Self-aligning steel bushings in each cylinder end. Cylinder bore — 11″ dia.; rod dia., 6″; stroke, 60⅜″.

Boom Speeds — Boom hoist to 75°, 30.0 seconds. Boom extend — 36 f.p.m.; retract — 34 f.p.m.

Boom Angle Indicator — Electric. Boom angle pendulum sensor mounts on boom; read-out control panel mounted in crane cab. Sensor and control panel both mounted in waterproof cases. Control panel equipped with buzzer and hooded red warning light, hooded panel light (with on-off switch) for night or dark day operation, and red test button. When used in conjunction with machine's crane lifting charts, operator can set rated load and radius points (by calibrated knobs on control panel) for given load to be handled.

Hoist Rope Guide Rollers — Three furnished; one at top end of boom base section and one at top end of boom sections #3 and #2.

Hook Block — Optional.

BOOM TELESCOPE SYSTEM — FMC exclusive design. Four section power hydraulic boom telescopes via three double-acting cylinders — mounted one above the other within the boom. The lower cylinder **rod end** is pinned to the top end of the #3 section. The center cylinder **rod end** is pinned to the lower end of the #3 section, and its **cylinder** is pinned to the lower end of #2 section. The top cylinder **rod end** is pinned to the lower end of #2 section, and its **cylinder** is pinned to the lower end of the #1 (tip) section. The rods remain stationary, the cylinders extend and retract the power boom sections — eliminates need for long hoses and hose reels. System allows the #1 (tip) section to completely extend before the #2 section starts to extend, and the #2 section completely extends before the #3 section starts to extend. This is accomplished by means of locking pawls which unlatch at the end of the boom tip

section stroke and at the end of the #2 boom section stroke. As the pawls unlatch, each successive power boom section then extends completely. When retracting the boom, mechanically activated check/sequencing valves hold each power boom section in such a manner that sections retract in reverse order. Design maintains the boom center of gravity close to the centerline of rotation for optimum stability.

JIB — Fabricated, channel lattice construction, 25′ long; self-storing underneath boom. Equipped with single sheave, 11″ pitch dia., mounted on anti-friction bearings. Weighted ball optional.

LOAD HANDLING SYSTEM — Dual wire rope drums. Two-mode load hoisting/lowering design concept permits matching mode of operation with specific job requirements. A two-directional hydraulic motor furnishes power to the wire rope drums through a speed reducer, reduction shaft with drive pinion, and spur gears for each drum. Drums also equipped with 2-shoe internal expanding Speed-o-Matic power hydraulic clutches and mechanical, foot pedal operated, external contracting band brakes.

Using the hydraulic motor to power the wire rope drums directly, operator first engages the 2-shoe power hydraulic clutch for the respective drum (main load or jib load) being used. Load is then raised or lowered by engaging the hoist control lever while simultaneously releasing the foot controlled drum brake. A holding valve located in the hydraulic circuit between the hydraulic motor and the hoist control valve automatically permits controlled lowering of overhauling loads.

Where job requirement calls for more precise control, operator may choose to hoist or lower loads with the 2-shoe power hydraulic clutches. He first engages the hoist control lever to use the 2-directional hydraulic motor power to power the rope drum gear train. Then, by engaging the 2-shoe clutch to power the respective drum being used — while disengaging the drum brake — load is raised or lowered precisely.

Free-fall load lowering may be employed by releasing the 2-shoe clutch and controlling speed of load descent with foot-controlled drum brake.

In addition, to increase load hoisting or lowering line speeds, a "high-speed" solenoid button is provided on the swing control lever. Solenoid directs oil internally within the motor to the high-speed segment and provides 100% increase in hoist rope speeds and 50% decrease in hoist rope pulls.

Hoist Motor — Hydraulic gear type.

Speed Reducer — FMC spur gear reducer, anti-friction bearings throughout; splined on reduction shaft. Reduction shaft mounted on anti-friction bearings.

Drive Pinion — Machine-cut teeth, heat treated, splined on reduction shaft, enclosed and running in oil.

Drum Gears — Machine-cut teeth, heat treated, enclosed and running in oil; gears mounted on shaft on anti-friction bearings.

Clutch Drums — Splined on extended drum gear hub.

Drum Clutches — Two-shoe internal expanding, Speed-o-Matic power hydraulic; 17 1/4″ x 5″. Clutch spider splined on shaft.

Drum Brakes — Mechanical, external contracting band, 3 3/4″ x 28 5/8″, foot pedal controlled. Brake drums splined on wire rope drum shafts.

Wire Rope Drums — Dual, 14 1/8″ pitch dia., 12 3/4″ wide, splined on shafts.

Front — Capacity 567′; 3/4″ dia. wire rope.

Rear — Capacity 567′; 3/4″ dia. wire rope.

Drum Rotation Indicators — Standard for front and rear drums. Dial indicators, mounted on right front control panel, are actuated by flexible shaft drives attached to end of each drum shaft.

Wire Rope — Type "N", 6 x 25 (6 x 19 class) filler wire, extra improved plow steel, preformed, independent wire rope center, right lay, regular lay. (Standard with basic machine — main load hoist rope only.)

LINE SPEED AND PULL — Available line pull, not based on wire rope strength.

FRONT and REAR DRUMS		Operator Control — Using Hoist Lever For Hyd. Motor Power Only		Operator Control — Using 2-Shoe Clutches and Hyd. Motor Power	
		Line Speed	Line Pull ①	Line Speed	Line Pull ①
1st layer wire rope	Low Speed	148 f.p.m.	15,260#	148 f.p.m.	20,600#
	High Speed	296 f.p.m.	7,630#	296 f.p.m.	8,800#
7th layer wire rope	Low Speed	242 f.p.m.	9,320#	242 f.p.m.	12,590#
	High Speed	484 f.p.m.	4,660#	484 f.p.m.	5,390#

Note: Line speed and pull based on single drum. Line speeds are based on 1,000 r.p.m. (low) or 2,000 r.p.m. (high) wire rope hoist motor speed.
① Maximum permissible line pull — 16,800# with 3/4″ Type "N" wire rope.

HT-450 MAXIMUM LIFTING CRANE CAPACITIES — Pounds

PCSA Class 10-177

Refer to ALL notes top of page 7.

Based on machine equipped with GM6-71N diesel engine, 16:50 x 22.5-H (16-ply) rating front tires — 12:00 x 20-H (16-ply) rating dual rear tires, and 6,050# counterweight.

BASIC 33' - 96' POWER BOOM

Load Radius	Boom Length (Feet)	Boom Angle (Degree)	ON OUTRIGGERS Rear	ON OUTRIGGERS Side	ON TIRES (Static ⑥)	
10'	33.5	66.9	90,000*	90,000*		
	40	72.1	87,100*	87,100*		
11'	33.5	64.9	85,500*	85,500*	45,900*	34,000*
	40	70.6	82,700*	82,700*	45,900*	34,000*
12'	33.5	62.8	80,300*	80,300*	44,100*	31,300*
	40	69.0	78,700*	78,700*	44,100*	31,300*
	50	73.9	57,900*	57,900*	44,100*	31,300*
13'	33.5	60.9	74,400*	74,400*	42,500*	
	40	67.3	74,400*	74,400*		
	50	72.6	55,500*	55,500*		
	54.5	74.3	49,700*	49,700*	42,500*	26,600*
14'	33.5	58.8	69,200*	69,200*	41,000*	26,700*
	40	65.7	69,200*	69,200*	41,000*	26,700*
	50	71.4	53,300*	53,300*	41,000*	26,700*
	54.5	73.2	47,700*	47,700*	41,000*	26,700*
15'	33.5	56.6	64,600*	64,600*		24,800*
	40	64.0	64,600*	64,600*		
	50	70.1	51,100*	51,100*	38,700	24,800*
	54.5	72.0	45,600*	45,600*	38,700	24,800*
	57	74.0	45,600*	45,600*	38,700	24,800*
20'	33.5	44.5	47,900*	47,900*		17,400
	40	55.1	47,900*	47,900*	24,800	17,400
	50	63.6	42,100*	42,100*	24,800	17,400
	54.5	66.2	37,200*	37,200*	24,800	17,400
	60	69.7	37,200*	37,200*	24,800	17,400
	70	73.3	35,400*	35,400*	24,800	17,400
	73	74.1	33,000*	33,000*	24,800	17,400
25'	33.5	27.5	37,200*	37,200*	17,300	11,300
	40	44.8	37,200*	37,200*	17,300	11,300
	50	56.6	35,600*	35,600*	17,300	11,300
	54.5	60.0	31,200*	31,200*	17,300	11,300
	60	64.3	31,200*	31,200*	17,300	11,300
	70	68.8	28,900*	28,900*	17,300	11,300
	75.5	70.7	26,800*	26,800*	17,300	11,300
	80	73.0	26,800*	26,800*	17,300	11,300
30'	40	31.4	29,900*	28,200	13,500	8,500
	50	48.8	29,900*	28,200	13,500	8,500
	54.5	53.3	26,700*	26,700*	13,500	8,500
	60	58.5	26,700*	26,700*	13,500	8,500
	70	64.1	24,200*	24,200*	13,500	8,500
	75.5	66.4	22,300*	22,300*	13,500	8,500
	80	69.0	22,300*	22,300*	13,500	8,500
	90	72.0	21,900*	21,900*	13,400	8,400
	96.5	73.6	17,900*	17,900*	13,000	8,000
35'	50	39.8	25,000*	22,400	11,100	6,900
	54.5	45.8	23,200*	22,400	11,100	6,900
	60	52.3	23,200*	22,400	11,100	6,900
	70	59.2	20,600*	20,600*	11,100	6,900
	75.5	62.0	18,900*	18,900*	11,000	6,800
	80	65.0	18,900*	18,900*	10,700	6,400
	90	68.5	18,300*	18,300*	10,100	5,800
	96.5	70.3	14,600*	14,600*	9,800	5,500
40'	50	27.9	20,600*	17,700	8,700	5,000
	54.5	37.0	20,600*	17,700	8,700	5,000
	60	45.3	20,600*	17,700	8,700	5,000
	70	54.0	17,800*	17,700*	8,700	5,000
	75.5	57.3	16,200*	16,200*	8,600	4,900
	80	60.7	16,200*	16,200*	8,300	4,600
	90	64.8	15,500*	15,500*	7,700	4,000
	96.5	67.0	12,000*	12,000*	7,400	3,600
45'	54.5	25.1	17,600*	14,600	7,100	3,800
	60	37.1	17,500*	14,500	7,000	3,700
	70	48.3	15,500*	14,300	6,800	3,500
	75.5	52.4	14,000*	14,000*	6,800	3,500
	80	56.2	14,000*	13,800	6,400	3,100
	90	61.1	13,300*	13,200	5,500	—
	96.5	63.6	9,900*	9,900*	5,500	—
50'	60	26.3	14,800*	11,900	5,500	—
	70	41.9	13,600*	11,700	5,400	—
	75.5	47.0	12,300*	11,600	5,300	—
	80	51.3	12,300*	11,300	5,000	—
	90	57.1	11,500*	10,600	4,400	—
	96.5	60.0	8,200*	8,200*	4,100	—

33' - 96' POWER BOOM WITH OPTIONAL 21' SECTION RETRACTED

Load Radius	Boom Length (Feet)	Boom Angle (Degree)	ON OUTRIGGERS Rear	ON OUTRIGGERS Side	ON TIRES (Static ⑥)	
10'	34.2	67.4	88,600*	88,600*		
	40	72.1	86,000*	86,000*		
11'	34.2	65.5	84,200*	84,200*		
	40	70.6	81,500*	81,500*		
12'	34.2	63.5	79,700*	79,700*		
	40	69.0	77,600*	77,600*		
	50	73.9	64,900*	64,900*		
13'	34.2	61.6	73,700*	73,700*		
	40	67.3	73,700*	73,700*		
	50	72.6	61,800*	61,800*		
	54	74.1	51,100*	51,100*		
14'	34.2	59.5	68,500*	68,500*		
	40	65.7	68,500*	68,500*		
	50	71.4	59,200*	59,200*		
	55.2	73.4	48,800*	48,800*		
15'	34.2	57.4	63,900*	63,900*		
	40	64.0	63,900*	63,900*		
	50	70.1	56,400*	56,400*		
	55.2	72.2	46,600*	46,600*		
	57	74.0	46,600*	46,600*		
20'	34.2	45.7	47,100*	47,100*	24,500	
	40	55.1	47,100*	47,100*		
	50	63.6	45,600*	45,600*		16,700*
	55.2	66.5	37,400*	37,400*	24,500	16,700*
	60	69.7	37,400*	37,400*		
	70	73.3	34,400*	34,400*		
	73	74.1	31,700*	31,700*		
25'	34.2	30.1	36,400*	36,400*	16,800	10,900
	40	44.8	36,400*	36,400*	16,800	10,900
	50	56.6	36,400*	36,400*	16,800	10,900
	55.2	60.4	31,000*	31,000*	16,800	10,900
	60	64.3	31,000*	31,000*	16,800	10,900
	70	68.8	28,000*	28,000*		
	76.2	70.9	25,500*	25,500*	16,800	10,900
	80	73.0	25,500*	25,500*		
30'	40	31.4	28,900*	27,600		
	50	48.8	28,900*	27,600		
	55.2	53.9	26,200*	26,200*		
	60	58.5	26,200*	26,200*		
	70	64.1	23,200*	23,200*		
	76.2	66.7	21,000*	21,000*		
	80	69.0	21,000*	21,000*		
	90	72.0	20,700*	20,700*		
	97.2	73.7	16,600*	16,600*		
35'	50	39.8	23,800*	21,600		
	55.2	46.6	22,600*	21,600		
	60	52.4	22,600*	21,600		
	70	59.2	19,600*	19,600*		
	76.2	62.3	17,600*	17,600*		
	80	65.0	17,600*	17,600*		
	90	68.5	17,100*	17,100*		
	97.2	70.5	13,200*	13,200*		
40'	50	27.9	19,400*	16,800		
	55.2	38.1	19,400*	16,800		
	60	45.3	19,400*	16,800		
	70	54.0	16,800*	16,700		
	76.2	57.7	14,900*	14,900*		
	80	60.7	14,900*	14,900*		
	90	64.8	14,400*	14,400*		
	97.2	67.2	10,600*	10,600*		
45'	55.2	26.9	16,300*	13,700		
	60	37.1	16,200*	13,500		
	70	48.3	14,500*	13,200		
	76.2	52.8	12,800*	12,800*		
	80	56.2	12,800*	12,700		
	90	61.1	12,200*	12,000		
	97.2	63.8	8,600*	8,600*		
50'	60	26.3	13,500*	10,900		
	70	41.9	12,600*	10,600		
	76.2	47.5	11,100*	10,500		
	80	51.3	11,100*	10,200		
	90	57.1	10,400*	9,400		
	97.2	60.3	6,900*	6,900*		

(continued on page 6)

BASIC 33' - 96' POWER BOOM

Load Radius	Boom Length (Feet)	Boom Angle (Degree)	ON OUTRIGGERS Rear	ON OUTRIGGERS Side
55'	70	34.4	12,100*	9,700
	75.5	40.9	10,800*	9,600
	80	46.1	10,800*	9,300
	90	52.9	10,000*	8,600
	96.5	56.3	6,800*	6,800*
60'	70	24.4	10,700*	8,100
	75.5	33.9	9,600*	8,000
	80	40.2	9,600*	7,700
	90	48.4	8,800*	7,000
	96.5	52.3	5,700*	5,700*
65'	75.5	24.6	8,500*	6,700
	80	33.2	8,500*	6,300
	90	43.5	7,700*	5,700
	96.5	48.1	4,800*	4,800*
70'	80	23.8	7,500*	5,200
	90	37.9	6,800*	4,600
	96.5	43.5	4,000*	4,000*
75'	90	31.3	5,800*	3,700
	96.5	38.3	3,300*	3,300*
80'	90	22.6	4,800*	2,900
	96.5	32.4	2,800*	2,600
85'	96.5	24.7	2,300*	—

33' - 96' POWER BOOM WITH OPTIONAL 21' SECTION RETRACTED

Load Radius	Boom Length (Feet)	Boom Angle (Degree)	ON OUTRIGGERS Rear	ON OUTRIGGERS Side
55'	70	34.4	11,100*	8,600
	76.2	41.6	9,600*	8,400
	80	46.1	9,600*	8,100
	90	52.9	8,900*	7,400
	97.2	56.6	5,600*	5,600*
60'	70	24.9	9,300*	6,900
	76.2	34.2	8,400*	6,800
	80	40.5	8,400*	6,500
	90	48.4	7,700*	5,800
	97.2	52.7	4,500*	4,500*
65'	76.2	25.9	7,400*	5,500
	80	33.2	7,300*	5,200
	90	43.5	6,600*	4,500
	97.2	48.5	3,600*	3,600*
70'	80	23.8	6,100*	4,000
	90	37.9	5,400*	3,400
	97.2	44.0	2,900*	2,900*
75'	90	31.3	4,300*	2,400
	97.2	38.9	2,200*	2,100
80'	90	22.6	3,300*	—

33' - 96' POWER BOOM WITH OPTIONAL 21' SECTION EXTENDED

Load Radius	Boom Length (Feet)	Boom Angle (Degree)	ON OUTRIGGERS Rear	ON OUTRIGGERS Side
13'	54	74.1	42,400	42,400
14'	55.2	73.4	40,700*	40,700*
15'	55.2	72.3	38,900*	38,900*
	57	74.0	38,900*	38,900*
20'	55.2	66.5	31,700*	31,700*
	60	69.8	31,700*	31,700*
	70	73.3	28,100*	28,100*
	73	74.1	26,000*	26,000*
25'	55.2	60.4	26,500*	26,500*
	60	64.3	26,500*	26,500*
	70	68.8	23,200*	23,200*
	76.2	70.9	21,200*	21,200*
	80	73.0	21,200*	21,200*
30'	55.2	53.9	22,700*	22,700*
	60	58.5	22,700*	22,700*
	70	64.1	19,400*	19,400*
	76.2	66.7	17,700*	17,700*
	80	69.0	17,700*	17,700*
	90	72.0	17,700*	17,700*
	97.2	73.7	17,700*	17,700*
35'	55.2	46.6	19,700*	19,700*
	60	52.3	19,700*	19,700*
	70	59.2	16,600*	16,600*
	76.2	62.3	15,000*	15,000*
	80	65.0	15,000*	15,000*
	90	69.5	15,000*	15,000*
	97.2	70.5	14,800*	14,800*
	100	72.3	14,800*	14,800*
	109	74.2	14,800*	14,800*
40'	55.2	38.1	17,300*	17,300*
	60	45.3	17,300*	17,300*
	70	54.0	14,300*	14,300*
	76.2	57.7	12,900*	12,900*
	80	60.7	12,900*	12,900*
	90	64.8	12,900*	12,900*
	97.2	67.2	12,500*	12,500*
	100	69.0	12,500*	12,500*
	110	71.6	12,500*	12,500*
	118.2	73.3	10,700*	10,700*
45'	55.2	26.9	15,400*	15,100
	60	37.1	15,400*	15,100
	70	48.2	12,500*	12,500*
	76.2	52.8	11,200*	11,200*
	80	56.2	11,200*	11,200*
	90	61.1	11,200*	11,200*
	97.2	63.8	10,600*	10,600*
	100	65.8	10,600*	10,600*
	110	68.7	10,600*	10,600*
	118.2	70.6	8,800*	8,800*
50'	60	26.3	14,800*	12,600
	70	41.9	11,100*	11,100*
	76.2	47.5	9,800*	9,800*
	80	51.3	9,800*	9,800*
	90	57.1	9,800*	9,800*
	97.2	60.3	9,200*	9,200*
	100	62.4	9,200*	9,200*
	110	65.7	9,200*	9,200*
	118.2	67.9	7,200*	7,200*
55'	70	34.4	9,800*	9,800*
	76.2	41.6	8,700*	8,700*
	80	46.1	8,700*	8,700*
	90	52.9	8,700*	8,700*
	97.2	56.6	7,900*	7,900*
	100	58.8	7,900*	7,900*
	110	62.6	7,900*	7,900*
	118.2	65.1	5,900*	5,900*
60'	70	24.4	8,800*	8,800*
	76.2	34.7	7,700*	7,700*
	80	40.2	7,700*	7,700*
	90	48.4	7,700*	7,700*
	97.2	52.7	6,900*	6,900*
	100	55.1	6,900*	6,900*
	110	59.4	6,900*	6,900*
	118.2	62.2	4,900*	4,900*
65'	76.2	25.9	6,900*	6,900*
	80	33.2	6,900*	6,900*
	90	43.5	6,900*	6,900*
	97.2	48.5	6,000*	6,000*
	100	51.2	6,000*	6,000*
	110	56.1	6,000*	6,000*
	118.2	60.3	4,000*	4,000*
70'	80	23.8	6,500*	6,400
	90	37.9	6,100*	6,000
	97.2	44.0	5,300*	5,300*
	100	46.9	5,300*	5,300*
	110	52.6	5,200*	4,900
	118.2	56.2	3,300*	3,300*
75'	90	31.3	5,400*	5,000
	97.2	38.9	4,600*	4,600*
	100	42.3	4,600*	4,600*
	110	48.8	4,500*	3,900
	118.2	52.9	2,700*	2,700*
80'	90	22.6	4,800*	4,200
	97.2	33.1	4,100*	4,000
	100	37.1	4,100*	3,700
	110	44.8	4,000*	3,100
	118.2	49.5	2,100*	2,100*
85'	97.2	25.8	3,600*	3,200
	100	30.8	3,600*	3,000
	110	40.4	3,400*	2,400

Ⓐ Static capacities are defined as loads handled without machine travel or with travel at creeping speeds only.

NOTES — Lifting Crane Capacities

1. Capacities shown are in pounds and, unless indicated by an asterisk (*), do not exceed 85% of minimum tipping loads — with machine standing level on firm supporting surface under ideal job conditions. Deductions from the lifting crane capacities must be made for weight of hook block, hook, sling, spreader bar, or other suspended gear.
   a. Asterisk indicates capacities are based on factors other than those which would cause a tipping condition.
2. Capacities are based on freely suspended loads and make no allowance for such factors as the effect of wind, supporting surface conditions, inflation of tires, and operating speeds. Operator must reduce load ratings accordingly in order to take such conditions into account.
3. The least stable **rated** working area on outriggers and on tires is over the side. The least stable working area on outriggers is over the front but working in this area is not recommended unless capacities are published on this chart.
4. For lifting 90,000#, 6 parts of 3/4" Type "N" wire rope are required.
5. For capacities of intermediate boom lengths not shown, use the capacity for the next shorter or longer boom length — whichever is the lesser capacity.
6. Operating machine at radii, or with boom lengths at or beyond where capacity chart shows no capacity, is not recommended — machine can overturn without any load on hook.
7. The maximum load with which boom can be extended or retracted is not definable. When extending a boom with load on hook, care must be taken to avoid moving load to radii where it becomes an overload — machine may overturn if this occurs.
8. When handling load off main boom, deduct 1,500# from crane capacities if jib is mounted on boom in working position. Deduct 750# if jib is mounted in stowed position on boom.
9. Boom angles take into account boom deflection under rated loads at listed load radii.
10. Capacities apply only to machine as originally manufactured and normally equipped by FMC Corporation, Crane & Excavator Division.

HT-450 MAXIMUM JIB CAPACITIES — 25' JIB

Refer to ALL notes below.

MAXIMUM ALLOWABLE RADIUS IN FEET	MINIMUM PERMISSIBLE BOOM ANGLE	LOAD WITH NO OFFSET	LOAD WITH 10° OFFSET
20	75°	11,000	—
25	75°	8,800	7,200
30	72.5°	8,100	6,700
35	70°	7,400	6,200
40	67.5°	5,500	5,500
45	65°	5,200	5,100
50	62.5°	4,900	4,700
55	60°	4,600	4,300
60	55°	3,100	3,000
65	50°	2,500	2,400
70	45°	2,400	2,300
75	40°	2,100	2,000
80	35°	1,500	1,500
85	30°	1,100	1,100

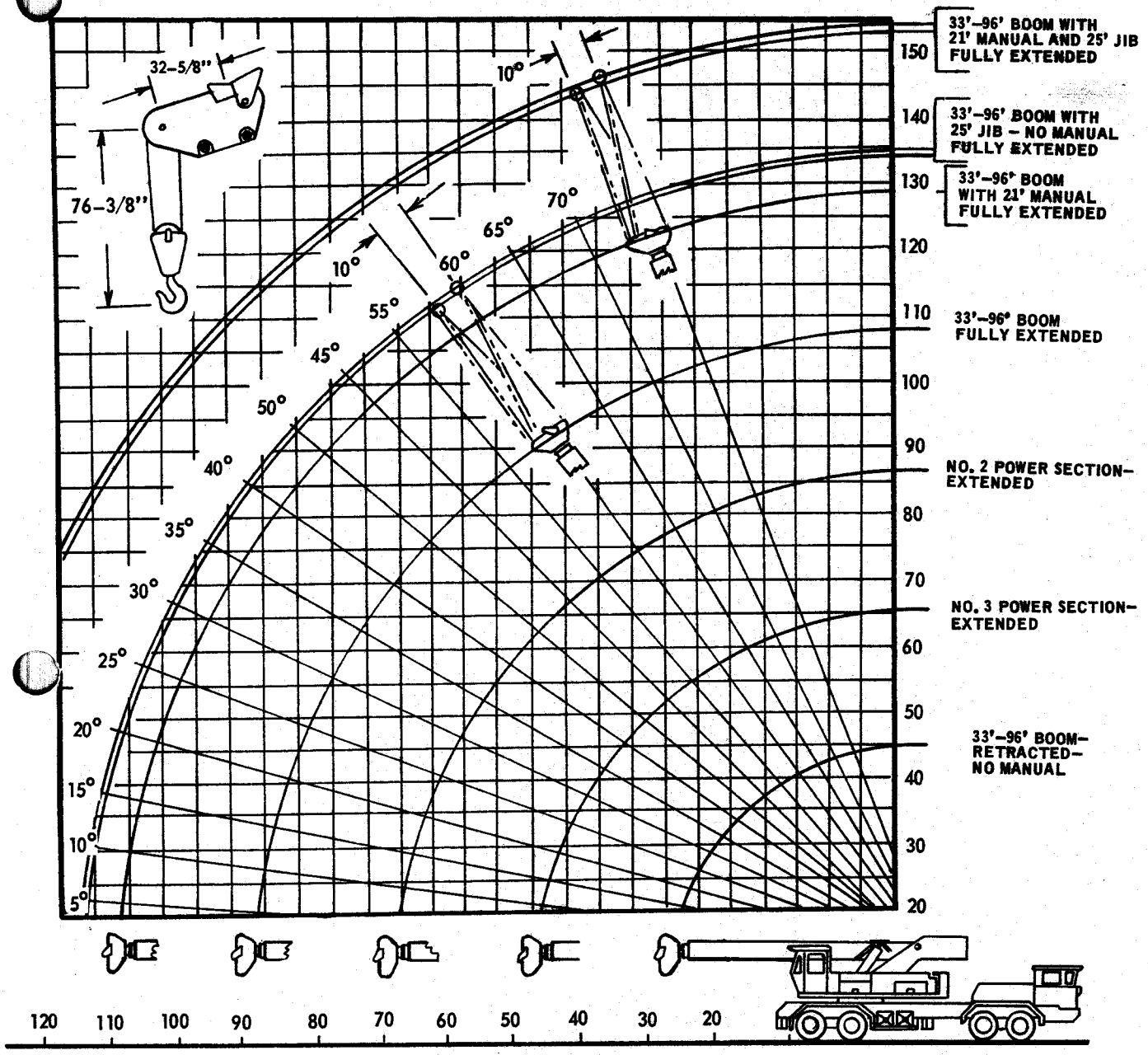
NOTES — Jib Lifting Capacities

1. Capacities shown are in pounds — with machine standing level on firm supporting surface under ideal job conditions.
2. Jib stops must be in operating position when using jib.
3. Jib offset from boom must not exceed 10°.
4. To determine the permissible maximum operating radius for a given load on the jib, use the following procedure:
   a. Determining total load — load plus hook block, hook with weighted ball, sling, spreader bar, or any other load handling gear.
   b. Check above jib capacity chart to determine allowable operating radius and minimum permissible boom angle at which this total load can be handled.

   NOTE — The boom/jib combination may be positioned at a boom angle greater than that found in step "b" above, but it **must not** be positioned at a boom angle less than that found in step "b" above — when handling the total load determined by step "a" above.
   c. Total load handled on jib must also not exceed the maximum capacity of the total machine. To determine the total machine maximum capacity when handling load on jib, refer to the appropriate column of the machine's maximum allowable lifting crane capacity chart. At the load radius found in "b" above, select the capacity listed for the maximum boom length. Reduce this capacity by 1,500# to compensate for the jib weight. If this value is equal to or greater than the total load determined in "a" above, load is within machine's rated capacity. If the value found is less than total load determined in "a" above, load or radius must be reduced to avoid exceeding machine's rated capacity.
5. Boom angles take into account boom deflection under rated loads at listed load radii.
6. Capacities apply only to machine as originally manufactured and normally equipped by FMC Corporation, Crane & Excavator Division.

HT-450 WORKING RANGES –

Boom and jib geometry shown for an UNLOADED condition with machine standing level on firm supporting surface. Boom deflection and subsequent radius and boom angle change must be accounted for when applying load to hook.



NOTE — Vertical heights are measured from ground line.

33' - 96' POWER BOOM		
BOOM CONDITIONS	**BOOM RETRACTED**	**BOOM EXTENDED**
Horizontal boom range from centerline of rotation without optional 21' section	27'-2 1/2"	90'-3 1/2"
Horizontal boom range from centerline of rotation with optional 21' section	27'-10 1/2"	111'-9 1/2"

FMC Corporation
Crane and Excavator Division
Cedar Rapids Iowa 52406
Plants In: Ontario, Canada • Milan, Italy • Queretaro, Mexico