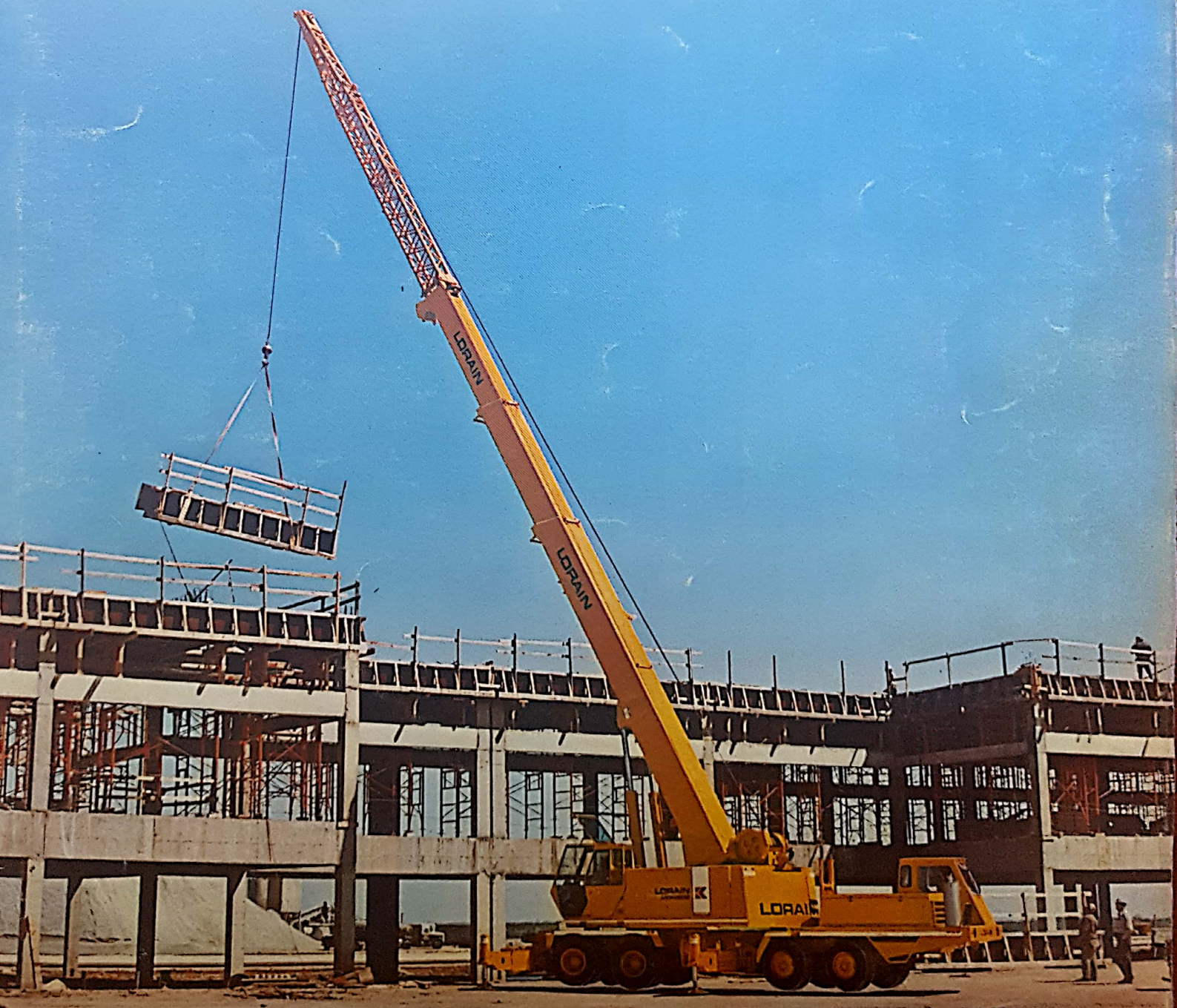




**LORAIN**  
AMCA  
INTERNATIONAL

# LORAIN® MCH 500

wheel-mounted  
hydraulic carrier crane  
50-ton (45.3 metric ton)  
capacity





## strong on performance

### lifts up to 33% more than its own weight

● Compare its load rating to gross vehicle weight. 75,200 lbs. of machine (34 110 kg) lifts maximum payload of 100,000 lbs. (45 359 kg) at 10 foot (3.0 m) radius. Almost 133% of its own weight.



● Moves about the jobsite on an 8 x 4 carrier that has 8 foot (2.4 m) overall width. Lorain-engineered and built as an integral part of the superstructure. Results in a perfect mating of mobility and liftability for most effective operation. 184 in. (4.7 m) wheelbase is standard.

● Burns fuel more efficiently since independent engines supply power for work and for driving carrier. Smaller-size diesel engine in superstructure is more than adequate for craning functions . . . develops 158 hp (117.9 kW) @ 2300 rpm. Ample power for riding provided by larger-sized diesel engine in crane carrier . . . develops 238 hp (177.5 kW) @ 2300 rpm.

## ready and set for work quickly...conveniently



Level the machine quickly, whatever the terrain conditions . . . however close the quarters. With hydraulically-actuated POWRSPAN® double beam, out-and-down outriggers. Powerful hydraulics move beams out and floats down.

Outriggers have a 20½ foot (6.2 m) spread when fully extended. Provide impressive lift capacities throughout entire working range. Especially at medium and long radii where lift capacity is so important.

Takes little time or effort to set them in position. For ground-level view of outrigger operation, controls are conveniently located on each side of carrier.

Quick, easy access to outrigger floats contributes greatly to fast set up. Lightweight enough for one man to handle, the floats are stored on rear outrigger box, near ground level.



# up to 165-½ feet (50.4m) of reach



It all begins with a 3-section full power basic boom . . .

Retracted Length	Extended Length
33 feet (10.1 m)	83 feet (25.3 m)

that can be combined with optional "Swing-On" lattice boom extension . . .

either 25 ft. (7.6 m) section

Basic Boom — Extended Length	83 ft. Reach (25.3 m)
Plus 25 ft. (7.6 m) Boom Extension	108 ft. Reach (32.9 m)

or 30 ft. (9.1 m) section, extendible to 60 ft. (18.3 m)

Basic Boom — Extended Length	83 ft. Reach (25.3 m)
Plus 30 ft. (9.1 m) Min. Boom Extension	113 ft. Reach (34.4 m)
That's Extendible to 60 ft. (18.3 m) Max.	143 ft. Reach (43.6 m)

and attains maximum peak height with the addition of an optional LORAIN jib attachment . . .

	165½ ft. Reach (50.4 m)	158 ft. Reach (48.2 m)
Max. Basic Boom	83 ft. (25.3 m)	83 ft. (25.3 m)
"Swing-On" Extension	30 to 60 ft. (9.1 to 18.3 m)	25 ft. (7.6 m)
Jib Options	22½ ft. A-frame type (6.9 m)	20 to 50 ft. lattice type (6.1 to 15.2 m)

## no dismantling necessary when moving to another job

The LORAIN MCH 500 moves from job-to-job with complete boom and jib assembly intact. Self-storing 4th boom section swings toward rear of crane, and is stowed laterally alongside main boom. Swing-away or underslung jib can be carried on machine, too. Folds forward and is tucked beneath the additional boom section.

## light but tough lattice boom extension

Weight aloft is reduced without sacrificing strength through unique LORAIN Square-Tubular-Chord boom design. Four main chords are formed of 2¾ in. (69.85 mm) square tubing that has a minimum yield strength of 130,000 psi (896 220 kPa). With reinforcement provided by one-piece continuous lengths of round tubular lacing that are welded to the flat inside faces of the main chords at common points in an integrated pattern. Both the main chords and lacing are fabricated from exclusive L/13 boom steel, an aircraft-type alloy specially formulated to LORAIN specifications to attain minimum weight, high strength characteristics.

## jib section is mated to "swing-on" boom extension

The type of jib that you can use is governed by the boom extension selected. Extendible 20 ft. (6.1 m) to 50 ft. (15.2 m) Square-Tubular-Chord lattice jib and 25 ft. (7.6 m) boom extension form one combination . . . an underslung 22½ ft. (6.9 m) A-Frame jib and 30 ft. (9.1 m) boom extension the other.



# carries an automatic self-proportioning main boom



Three-section main boom extends with full power from 33 ft. (10.1 m) to 83 ft. (25.3 m) length. Ideal strength-to-length ratio is continually maintained because the two ruggedly-built telescopic boom sections reach out, come back in simultaneously. Overlap proportionately to add extra beef at every boom length. To distribute boom loadings evenly and over a greater area, telescoping boom sections slide out-and-in on self-aligning bearing strips. Helps to avoid concentrated load situations.

## rugged, efficient main boom design

Tough, high alloy steel with a yield strength of 100,000 psi (689 400 kPa) is used throughout the telescoping main boom. Better resistance to vertical loads is achieved through strong rectangular box section construction with cold formed corrugated sideplates on base and full-powered boom sections. Eliminates side reinforcing . . . reduces weight.

## easier "ups and downs" create load line action that pays off



*To add to operator's peace-of-mind, auxiliary hydraulic hoist is mounted up front where it's clearly visible from the control cab. Enables operator to monitor cable spooling at all times.*

Flexibility to adapt load line action to any type of lifting situation is provided by main hydraulic hoist, designed in-house specifically for hydraulic crane applications. Has power-up and power-down capability for exceptional line control . . . 4-speed range in both directions for most efficient operation.

MAIN HOIST DATA	
Drum Dimensions	14 1/8 in. (371.5 mm) pitch diameter 16 in. (406 mm) length 23 in. (584 mm) flange diameter
Performance	Single line speed 530 fpm (161.5 m/min) w/3 wraps of cable on drum Single line pull 12,800 lbs. (5806 kg) maximum

Selective, unhampered, true, optional free-fall is a convenience you'll appreciate for high production jobs, such as pouring concrete. Means faster cycles, more output per shift, more profits. Saves fuel, too, because gravity does the work. Operator has foot brake control of free-fall action at all times.

## have more line at hand whenever you need it

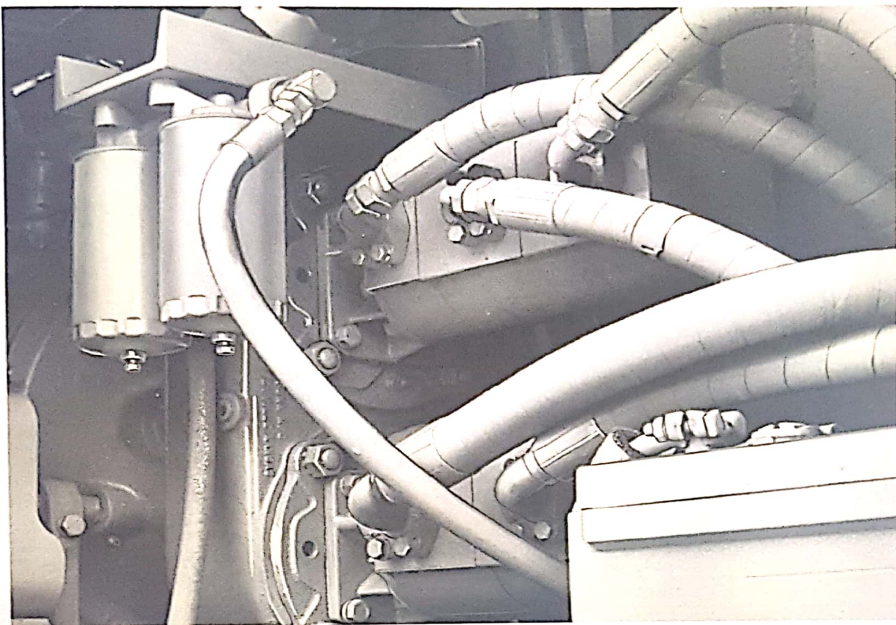


For applications requiring an extra load line, an optional equal-speed auxiliary hoist is available. LORAIN-designed and built, it is hydraulically driven . . . has power-up and power-down . . . is equipped with an integral automatic brake.

AUXILIARY HOIST DATA	
Drum Dimensions	14 1/8 in. (371.5 mm) pitch diameter 16 in. (406 mm) length 23 in. (584 mm) flange diameter
Performance	Max. line speed 420 fpm (128 m/min) Max. line pull 12,800 lbs. (5806 kg)



# more efficient response to power demands...5 completely independent hydraulic circuits



The MCH 500 hydraulic system supplies power to the lifting and cycling units with flow distributed through five completely independent circuits. Each key function — boom hoist, boom extension/retraction, swing, the main and auxiliary load hoists—is powered by its own gear-type pump. The result is high operational efficiency . . . greater production because all lifting and cycling functions can be used at the same time. Additional flexibility is attained by diverting power from unused independent functions to those being used. This provides high speed operation for boom extension and main load hoist functions. For more efficient use of time on the job, oversized metered control valves give smooth action, quick response—the kind of control an operator appreciates.

## smooth, steady swing action for sure positioning of boom

### 1. fully independent hydraulic swing system

Operates at speeds from 0 to 2.0 rpm . . . is driven by smooth-running hydraulic gear-type pump and motor. Responds with authority because machine is swinging with free drift capability. Lets operator make a pick and place it with precision because metered hydraulic control valves give fine, sensitive feel and touch. Accurate spotting of boom and/or load is assured by independent swing brake that locks superstructure in any selected position.

### 2. the finest turntable connection in crane service today

Superstructure connected to carrier by internal gear SHEAR-BALL® swing circle, the most imitated ball bearing turntable connection in the industry. Allows superstructure to revolve easily and smoothly, lessens “pendulum” action when swinging a load, distributes load forces evenly.

Substantially reduces maintenance and day-to-day servicing requirements because there are no adjustments to make and only periodic lubrication is required. Even this occasional lubrication is a snap since grease fittings are few and readily accessible.





# the operator will find this cab a great place to work



It's a comfort cab for the operator with its many built-in conveniences. Getting in and out of it is made easy by conveniently located grab rails and steps; there's a large door that slides to rear, too. To help reduce fatigue during work-filled days, there's a deluxe hi-back seat that adjusts to whatever working position is most comfort-

able. For ease of operation and best performance, control levers are formed grip type. To make every move smoother and less tiring, all control levers, foot pedals and gauges are arranged for utmost efficiency.

All-direction view of work area is afforded by safety glass windows to front, to sides, to rear. To allow load

to be kept in sight during hi-angle lifts, a slide-away roof skylight is also provided.

To isolate operator from annoying vibration, cab is turntable-mounted on rubber grommets. Inside noise level is greatly reduced by sound-absorbing foam padding within cab panels.

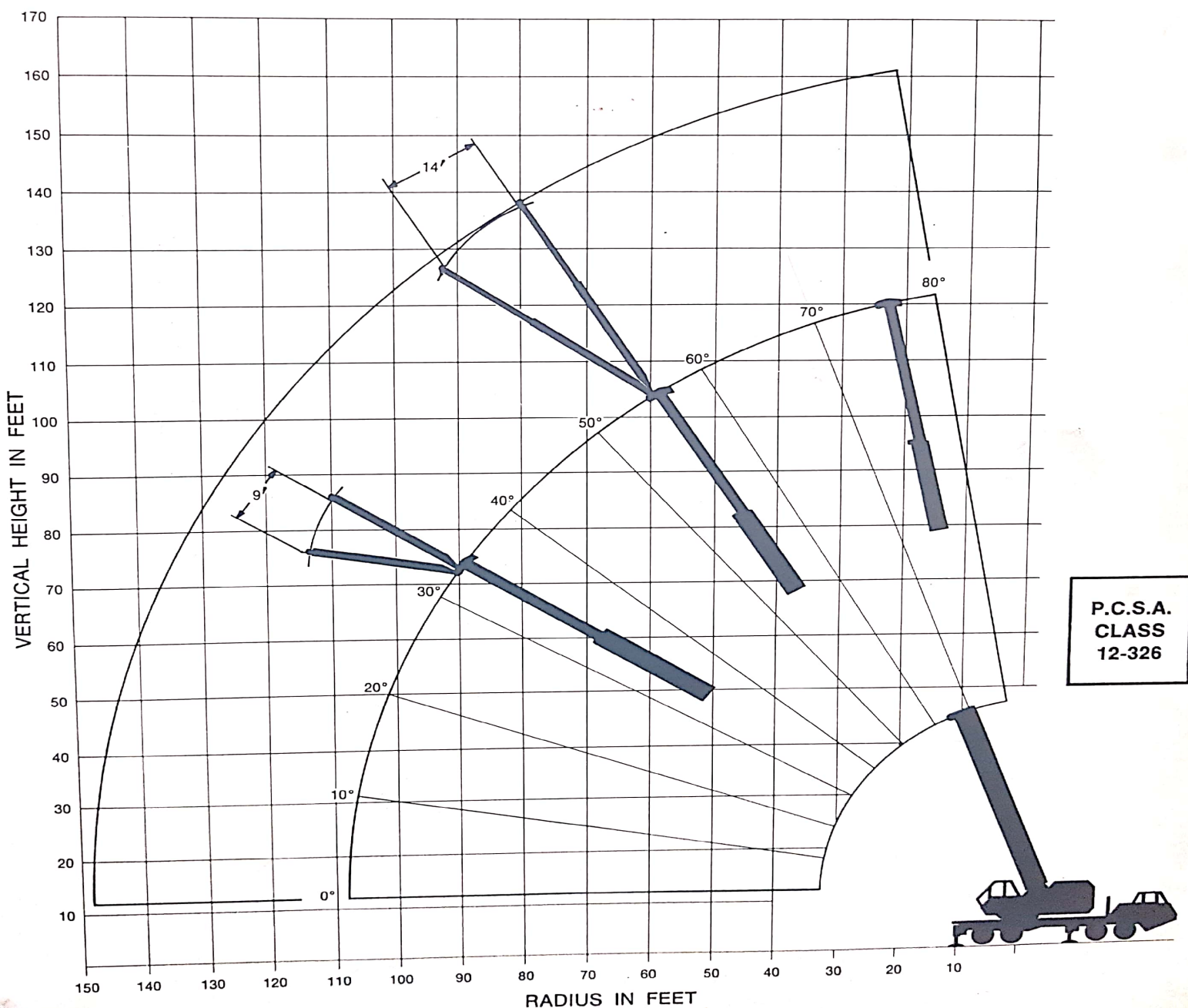
WE RESERVE THE RIGHT TO AMEND THESE SPECIFICATIONS AT ANY TIME WITHOUT NOTICE. THE ONLY WARRANTY APPLICABLE IS OUR STANDARD WRITTEN WARRANTY APPLICABLE TO THE PARTICULAR PRODUCT AND SALE. WE MAKE NO OTHER WARRANTY, EXPRESSED OR IMPLIED.



**LORAIN**  
AMCA  
INTERNATIONAL

**LORAIN**  
strong on performance  
**MC-75 H**

**FULL HYDRAULIC  
MOTO-CRANE  
LOAD RATINGS**



P.C.S.A.  
CLASS  
12-326

**WORKING RANGES**



## CRANE LOAD RATINGS - POUNDS

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers		Without Outriggers	
			Over Rear	Over Side	Over Rear	Over Side
36 Ft. Boom						
12	70.2	44.4	150000 *	150000 *	79200	45150 *
15	64.8	42.8	118300 *	118300 *	55300	35950 *
20	55.0	39.2	86800 *	86800 *	34700	24800 *
25	43.4	33.9	67400 *	67400 *	23700	17500 *
30	27.3	25.1	53400	54900	16900	11600
32	15.5	18.0	47500	48800	14800	9900
49 Ft. Boom						
15	72.0	57.2	100600 *	100600 *	55700	36100 *
20	65.5	54.8	87100 *	87100 *	35100	25100 *
25	58.6	51.7	67700 *	67700 *	24000	17900 *
30	51.0	47.6	53800	55200	17200	11900
35	42.4	42.1	40800	41500	12500	8000
40	31.6	34.3	32500	32800	9100	5200
45	12.2	18.6	25800	25700	6500	3100
62 Ft. Boom						
15	75.9	71.0	82000 *	82000 *	56100	36500 *
20	71.0	69.2	74500 *	74500 *	35400	25500 *
25	65.9	66.9	63000 *	63000 *	24400	17300 *
30	60.6	64.0	49000 *	49000 *	17500	12200
35	54.9	60.4	41200	41900	12800	8300
40	48.7	55.9	32600	32900	9400	5500
45	41.8	50.4	26100	26000	6800	3300
50	33.6	43.0	21400	21200	4800	
55	22.5	32.2	17700	17400	3100	
58	10.2	19.2	15900	15500	2300	
75 Ft. Boom						
15	78.4	84.5	76000 *	76000 *	56500	37000 *
20	74.4	83.0	65500 *	65500 *	35700	25800 *
25	70.4	81.2	56000 *	56000 *	24700	17600 *
30	66.2	78.9	47500 *	47500 *	17800	12500
35	61.8	76.1	39000 *	39000 *	13100	8600
40	57.2	72.8	32700	33000	9600	5700
45	52.4	68.9	26400	26400	7000	3600
50	47.2	64.3	21700	21500	5000	
55	41.4	58.6	18000	17700	3400	
60	34.8	51.6	15000	14700		
70	14.0	26.3	10600	10200		
71	8.9	19.8	10200	9800		
88 Ft. Boom						
20	76.8	96.6	60000 *	60000 *	36100	26200 *
25	73.4	95.0	53000 *	53000 *	25000	17900 *
30	69.9	93.1	43500 *	43500 *	18100	12800
35	66.3	90.9	37000 *	37000 *	13300	8900
40	62.7	88.2	33100	33400	9900	6000
45	58.8	85.2	26800	26700	7300	3900
50	54.8	81.6	22000	21800	5300	
55	50.6	77.5	18300	18000	3600	
60	46.1	72.6	15300	15000		
70	35.6	60.0	10900	10500		
80	20.6	39.3	7700	7200		
84	7.9	20.3	6600	6200		

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers		Without Outriggers	
			Over Rear	Over Side	Over Rear	Over Side
101 Ft. Boom						
20	78.5	110.0	48000 *	48000 *	36400	26600 *
25	75.6	108.7	44000 *	44000 *	25300	18200 *
30	72.6	107.1	39300 *	39300 *	18400	13100
35	69.6	105.1	33200 *	33200 *	13600	9100
40	66.5	102.9	27600 *	27600 *	10200	6300
45	63.3	100.3	24500 *	24500 *	7600	4100
50	60.0	97.4	20500 *	20500 *	5500	2400
55	56.6	94.1	18600	18300	3900	
60	53.0	90.3	15600	15300	2500	
70	45.3	81.0	11100	10700		
80	36.2	68.5	7900	7500		
90	24.1	49.7	5500	5100		
97	7.2	20.8	4100	3800		
112 Ft. Boom						
25	77.1	120.1	35000 *	35000 *	25000	18500 *
30	74.4	118.6	33000 *	33000 *	18600	13300
35	71.7	116.9	28000 *	28000 *	13900	9400
40	68.9	115.0	24000 *	24000 *	10400	6500
45	66.1	112.7	22300 *	22300 *	7800	4300
50	63.3	110.1	20500 *	20500 *	5700	2700
55	60.3	107.2	18900	18600	4100	
60	57.3	104.0	15900	15500	2700	
70	50.8	96.2	11400	11000		
80	43.6	86.3	8100	7800		
90	35.2	73.3	5700	5300		
100	24.2	54.3	3800	3500		
108	6.7	21.2	2600	2300		
24 Ft. Jib						
Main Boom Extended to 112 Ft.						
30	77.2	143.6	16000 *	16000 *	16000 *	14600
35	75.0	142.2	13700 *	13700 *	13700 *	10600
40	72.8	140.6	12000 *	12000 *	11600	7700
45	70.6	138.8	10700 *	10700 *	8900	5500
50	68.3	136.8	9600 *	9600 *	6900	3800
60	63.6	132.0	8000 *	8000 *	3800	
70	58.8	126.1	6800 *	6800 *		
80	53.6	119.0	5800 *	5800 *		
90	48.0	110.4	5100 *	5100 *		
100	41.9	99.9	4500 *	4500 *		
110	34.9	86.5	3400	3100		
120	26.2	68.5	2200	1900		
40 Ft. Jib						
Main Boom Extended to 112 Ft.						
35	76.6	158.8	7500 *	7500 *	7500 *	7500 *
40	74.7	157.4	6600 *	6600 *	6600 *	6600 *
45	72.7	155.8	5800 *	5800 *	5800 *	5800 *
50	70.7	154.0	5200 *	5200 *	5200 *	4300
60	66.6	149.8	4200 *	4200 *	4200 *	2400
70	62.4	144.8	3500 *	3500 *	2800	
80	58.0	138.7	3000 *	3000 *		
90	53.4	131.5	2600 *	2600 *		
100	48.4	123.0	2300 *	2300 *		
110	43.0	112.7	2000 *	2000 *		
120	37.0	100.2	1800 *	1800 *		
130	29.8	84.2	1600 *	1600 *		
140	20.5	61.5	1400 *			



## NOTES

- Crane load ratings in pounds as determined by boom length, radius or boom angle apply to the MC-75H Moto-Crane only as originally manufactured, equipped and mounted on a Lorain MC-75H carrier. **THEY ARE MAXIMUM LOAD RATINGS.**
- Operating radius is the horizontal distance from the axis of rotation before loading to the center of the vertical hoist line or tackle with load applied. Crane load ratings are for machines with 16,000 lbs. of counterweight and do not exceed 85% of tipping loads. Ratings identified with (\*) are based on the machine's structural competence and not on the machine stability. Weight of hooks, hook blocks, slings and all other load handling devices, except hoist rope shall be considered a part of the load. Crane load ratings with outriggers are based on outriggers fully extended and set to a distance of 11 ft. 0 inch from the longitudinal axis of the carrier to the outrigger float pivot connection and wheels within the boundary of the outriggers. Crane load ratings without outriggers depend on tire capacity and condition of tires inflated to 100 P.S.I.
- Crane load ratings are based on freely suspended loads with the machine leveled and standing on a firm, uniform supporting surface. Practical working loads depend on supporting surface, wind and other factors affecting stability, hazardous surroundings, experience of personnel and proper handling, all of which must be taken into account by the operator. Positioning or operation at radii and boom or jib lengths beyond the maximum and minimum shown, is not intended or approved. **FOR BOOM LENGTHS NOT SHOWN, USE LOAD RATINGS OF NEXT LONGER BOOM.**
- The operator and other personnel should fully read and acquaint themselves with Operator's Manual furnished by the manufacturer **BEFORE** operating this machine, and Rules for Safe Operation of equipment should be adhered to at all times.
- This crane and its load ratings are in accordance with Power Crane & Shovel Association Standard No. 2, SAE Crane Load Stability Test Code J-765a, and Safety Code for Crane, Derricks and Hoists, ANSI B30.15.
- Do not exceed "with outriggers over rear" load ratings when lifting over a rear corner.
- "Without outrigger" load ratings are for over rear and over side as indicated. If loads are to be rotated over corners of the vehicle the outriggers should be extended to reduce tire and axle loadings.
- When telescoping out with a load, do not exceed load ratings at longest boom length required.
- Maximum length of main telescoping boom ..... 112 ft.
- With outriggers set the maximum boom and jib can be raised over rear.
- CAUTION:** Use blocking under front tires or front part of carrier frame if boom and/or load is to be moved forward of front outriggers.
- The ability to telescope the load is limited by boom angle, hydraulic pressure and boom lubrication.
- Load ratings for the 36 ft. boom require the boom to be fully retracted.

Without Outrigger Over Rear Load Rating — Pick and Carry In Low-Low Speed Only			
Radius Feet	Boom Length Feet		
	36	49-75	88
12	52800		
15	45400	45000	
20	32000	30000	29000
25	20000	18500	18000
30	15000	14800	14000
35		10000	9500
40		8000	7500
45			5900
50			3900

100 P.S.I. tire pressure.

The above allowable loads can be carried on firm level ground over the rear with boom in line with centerline of carrier.

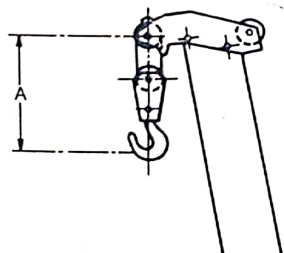
### JIB NOTES

- Jibs may be used straight or offset. The 24 ft. telescoping jib may be extended to 40 ft. The following data applies:

Boom Angle Degrees	24 Ft. Jib Load Ratings		40 Ft. Jib Load Ratings	
	No Offset (Lbs.)	9 Ft. Offset (Lbs.)	No Offset (Lbs.)	14 Ft. Offset (Lbs.)
76	16000			
75	13700	6200	7500	3700
70	11000	5600	5200	3300
65	8800	5000	4100	2900
60	7300	4600	3300	2600
55	6300	4200	2800	2400
50	5500	4000	2400	2200
45	4900	3800	2200	2100
40	4500	3600	2100	2000
35	4100	3500	2000	1900
30	3900	3400	1900	1800
25	3600		1700	

- Load ratings for jibs are the same as for the boom length which is equal to the length of main boom plus jib, but in no case may they exceed the ratings shown above.
- With jib installed, load ratings over main boom head must be reduced as follows:  
2500 lbs. for 24 ft. jib  
3000 lbs. for 40 ft. jib

### Hook Block Clearances



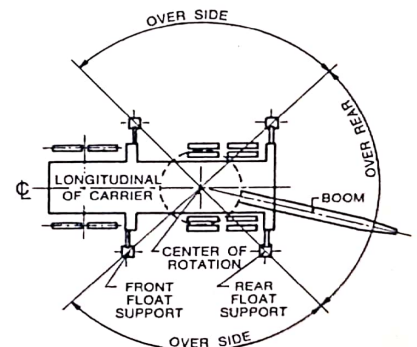
### Hoist Cable Reeving

Number of Parts of Hoist Lines	1	2	3	4	5	6	7	8	9	10	11	12
Main Hoist Max. Loads (Lbs.)	13500	27000	40500	54000	67500	81000	94500	108000	121500	135000	148500	150000
Use 3/4" dia. hoist cable (6x25, IWRC) of 25.6 Tons Breaking Strength												
Aux. Hoist Max. Loads (Lbs.)	10000	20000										
Use 3/4" dia. hoist cable (6x25, IWRC) of 17.9 Tons Breaking Strength												

Note: These loads are based on safe rope capacity. See load rating chart for rated loads.

Hook Block Tonnage	Number of Sheaves	Hook Block Weight	Dimension "A"
75 Tons	6	1800#	6'-0"
8 1/2 Tons	None	615#	4'-3"

### Crane Working Areas



Carrier With Outriggers