



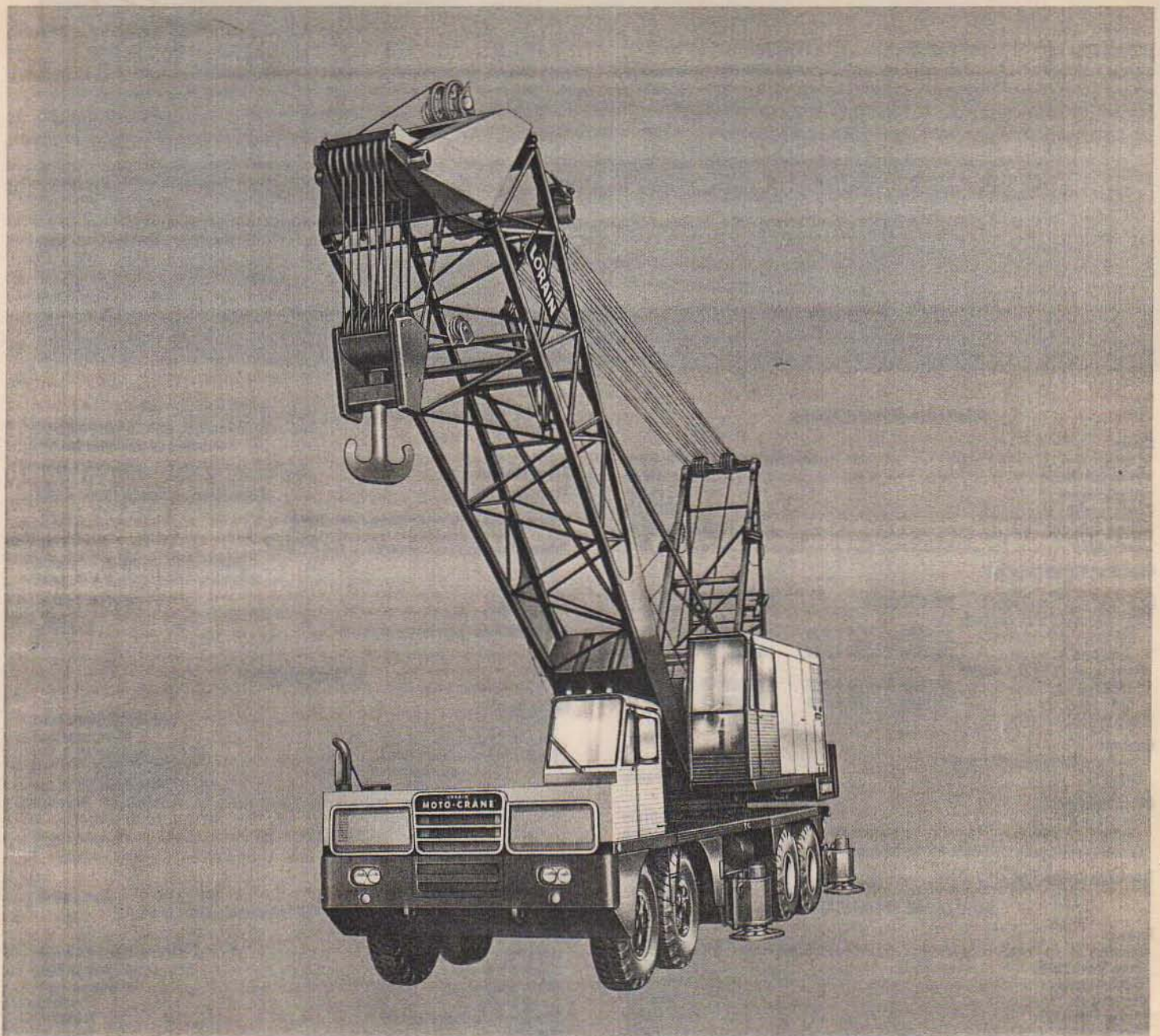
VALUE IS OUR FIRST SPECIFICATION

LORAIN® MC-7120

MOTO-CRANE®

SPECIFICATIONS

8X4



TANDEM DRUM DESIGN for outstanding cable capacity.

ALL-GEAR DRIVE . . . sealed and lubricated by forced, filtered oil.

HYDRAULIC SWING . . . independent precision control.

ONE-PIECE TURNABLE BED AND SIDE FRAMES . . . maximum strength, perfect shaft alignment.

VERY LOW WEIGHT for its rating, for better roadability.

NEW LORAIN DESIGNED SUPER-STRUCTURE.

LORAIN—DESIGNED AND BUILT CARRIER . . . 8 x 4, box frame chassis, planetary axles.

OFFSET BOOM PEAK . . . Open throat. Maximum under-the-load clearance. No spreader bars needed.

HAMMERHEAD BOOM PEAK . . . for short boom, maximum lifts.

LONG TAPERED BOOM PEAK . . . available for maximum reaches, capacities.

POWER LOAD LOWERING . . . available on both hoist drums.

EXCLUSIVE SQUARE TUBULAR-CHORD BOOM . . . round tubular lacing . . . aircraft-type alloy steel . . . long-lived, light weight, sturdy.

POWERSPAN OUTRIGGERS . . . set in seconds, precise leveling, plus straight down motion.

EXCLUSIVE SHEAR-BALL® TURNABLE CONNECTION . . . 10-year written warranty.

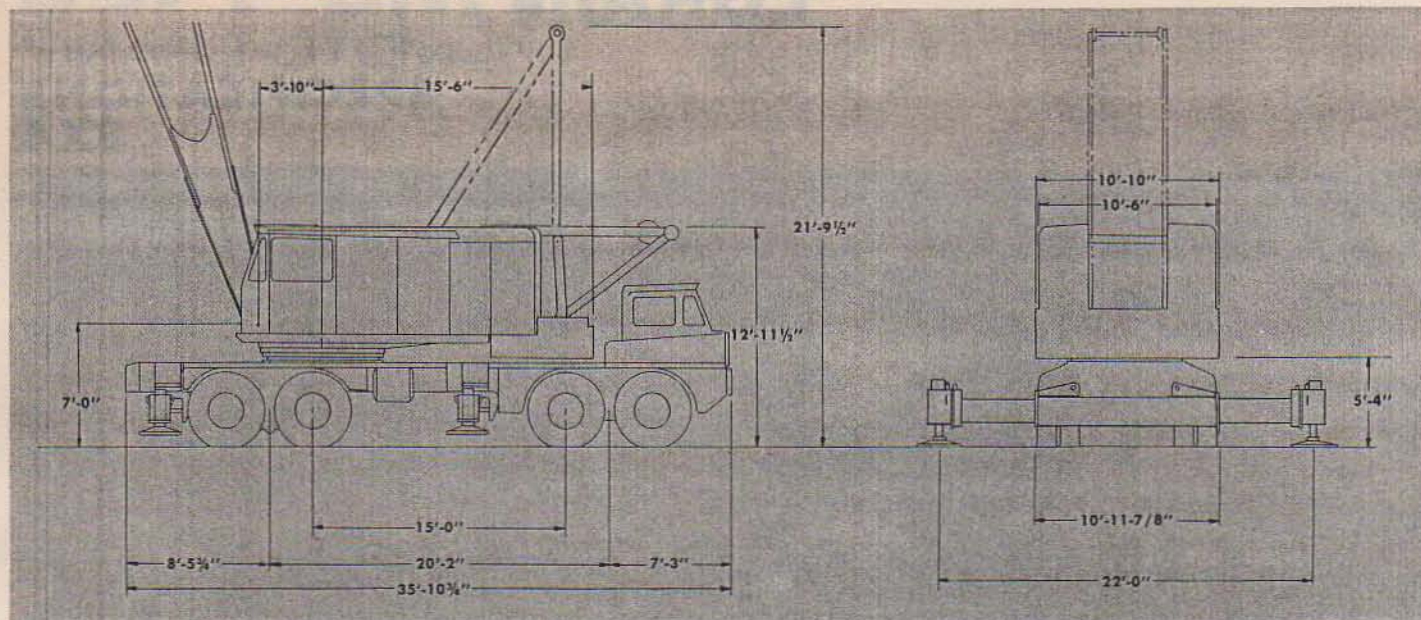
BIG, DUAL DRUM BOOM HOIST . . . metered air controls.

RETARDER . . . for precision work . . . standard.

TORQUE CONVERTER . . . standard.



DIMENSIONS AND SPECIFICATIONS...8X4...D-17A BOOM



TURNTABLE SPECIFICATIONS

Power	
Diesel	Cummins N-743-C-1-TC, 6 cyl.
Bore and Stroke	5 1/2 in. x 6 in.
Displacement	743 cu. in.
Horsepower	210 H.P.
Power Take-Off	Torque Converter
Fuel Tank	75 gals.

Operating Characteristics

Line Pulls and Line Speeds:	Hand Throttle	Foot Throttle
Rear Drum 31" P.D. Lagging		
1st Layer	22,660# @ 210 F.P.M.	17,830# @ 310 F.P.M.
3rd Layer	20,360# @ 234 F.P.M.	16,000# @ 345 F.P.M.
Front Drum 25" P.D. Lagging		
1st Layer	27,550# @ 169 F.P.M.	21,680# @ 250 F.P.M.
3rd Layer	24,150# @ 193 F.P.M.	19,000# @ 280 F.P.M.
Swing Speed		0-4 R.P.M.

Controls

Hoist and Derricking Clutches	Metered Air
Swing	Independent Hydraulic

Other Equipment

Boom Hoist	Dual Drum
Gantry	Power Operated Back Hitch
Counterweight (with Hydraulic Kit for Removal)	22,000 lbs.

Turntable Connection	Internal Gear Shear-Ball®
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MOTO-CRANE SPECIFICATIONS

Power	
Diesel	Cummins, NTC-335, 6 cyl.
Bore and Stroke	5 1/2 in. x 6 in.
Displacement	855 cu. in.
Horsepower	335 H.P.
Power Take-Off	Plate Clutch
Fuel Tank	120 gals.

Transmissions

Main	11 Speeds
Auxiliary	3 Speeds
Speeds Forward	33
Speeds Reverse	6

Speeds:	Low-low	0.7 M.P.H.	High-high	38.0 M.P.H.
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Outriggers	POWRSPAN, Hydraulically Operated, Complete with Floats.
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Rear Bogie

Axles (Planetary)	Double Reduction Gear Drive
First reduction through hypoid gears; final reduction through planetary wheel	

hubs; high-traction differentials. Interaxle differentials with lockout.

Mounting Two axles in tandem, with "through-drive", mounted on equalizer beams.

Front Tandem Two non-driving axles on equalizer beams

Steering Centralized, Hydraulic Power Assist

Turning Radius (to Front Corner of Vehicle) 60 ft.

Brakes (Spring-set for Emergency and Parking) Air

Rear 4 Brakes; 20 1/4 in. dia. x 7 in. wide

Front 4 Brakes; 17 1/4 in. dia. x 4 in. wide

Tires (Tube) 14:00 x 24, 18 P.R.

Guide Rails for undecking turntable Available

BOOM EQUIPMENT

Crane Boom	
Design	Square-Tubular-Chord
Type of Connection	Pin-Connected
Basic Length—Offset Boom	40 ft; 25 ft. base 15 ft. top
Hammerhead Boom	28 ft; 25-ft. base, 3 ft. top
Long Tapered Boom	60 ft; 25-ft. base, 35 ft. top
Number of Hoist Line Sheaves at Boom Head on Anti-Friction Bearings	
Offset Boom	6
Hammerhead Boom	6
Long Tapered Boom	5

Jib

Two-Piece* Pin-Connected Type 30 ft.

*Extendible with 10-ft. & 20-ft. Center Sections to 60 ft.

Lifting Crane Component

Lagging	31 in. and 25 in. P.D. Full Width
Floating Harness	16 Parts of Line
Boom Stops	Telescopic Type
Swing Brake	Standard
Harness Extending Cylinder	Standard
Retarder	Standard
Power Load Lowering Both Hoist Drums	Available
Third Drum	Available
High Speed Hoist	Available

APPROXIMATE SHIPPING WEIGHTS*

Standard Equipped Machines with Basic Boom

Lifting Crane (Offset Boom) 147,405 lbs.

*Total weight of unit may be reduced 22,000 lbs. by taking off removable counterweight for road travel—(hydraulic removal kit included). Additional reductions may be made by removal of outrigger boxes and beams and undecking turntable.

We reserve the right to amend these specifications at any time without notice. The only warranty applicable is our standard written warranty. We Make No Other Warranty, Expressed Or Implied.



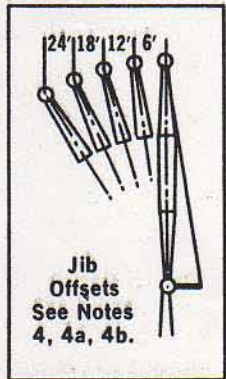
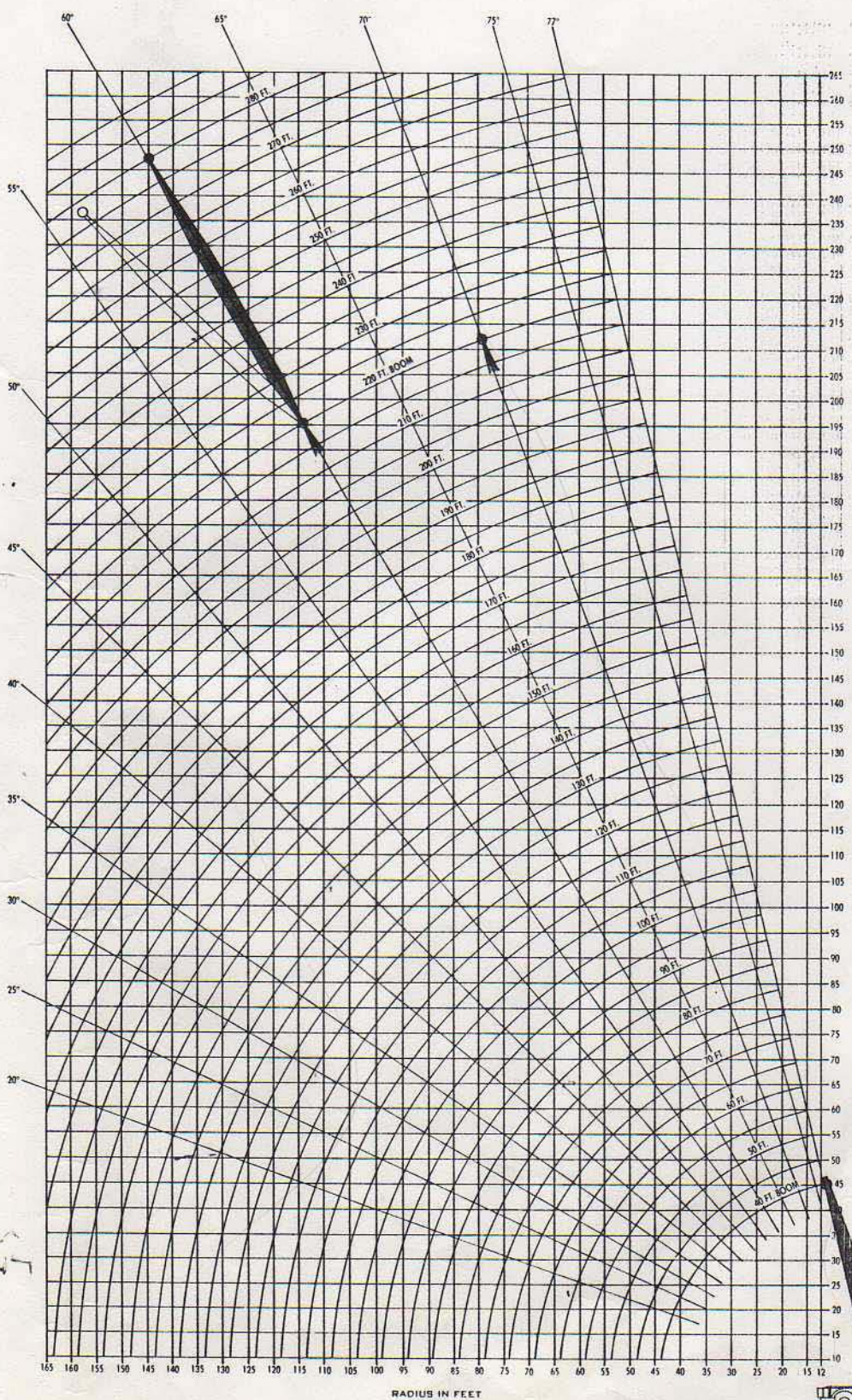
Koehring
Lorain Division
 Lorain, Ohio 44055



VALUE IS OUR FIRST SPECIFICATION

LORAIN® MC-7120

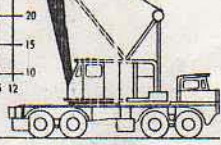
MOTO-CRANE®
LIFTING CAPACITIES
AND WORKING RANGES



**D-17A BOOM
WORKING
RANGES
MC-7120
8X4**

P.C.S.A. 12-548

**OFFSET BOOM
PEAK**





MC-7120 WITH D-17A OI CRANE LIFTING CA

Boom Length	Rad.	Boom Angle	With Outriggers		Without Outriggers	
			Over Rear	Over Side	Over Rear	Over Side
40 Ft.	12	78.2	240000	240000	110200	112300
	15	73.7	183500	183500	81300	80400
	20	66.1	150000	150000	56100	54000
	25	58.0	111800	119000	42500	40300
	30	49.1	83500	87600	34000	31900
	40	25.2	49800	49800	23900	22100
50 Ft.	15	77.0	169300	169300	81100	80100
	20	71.1	149700	149700	55900	53800
	25	64.9	111600	119900	42300	40100
	30	58.4	83400	87500	33700	31700
	40	43.6	54800	56200	23600	21900
	50	22.5	39100	39100	17900	16400
60 Ft.	15	79.2	157700	157700	80800	79900
	20	74.3	142500	142500	55700	53600
	25	69.3	111500	119800	42000	39900
	30	64.1	83200	87300	33500	31500
	40	52.9	54600	56000	23400	21700
	50	39.6	40200	40700	17700	16200
70 Ft.	20	76.6	132700	132700	55400	53400
	25	72.3	111300	119700	41800	39600
	30	68.0	83000	87200	33300	31200
	40	58.8	54400	55800	23200	21500
	50	48.7	40000	40500	17400	16000
	60	36.6	31300	31500	13700	12400
80 Ft.	20	78.3	123600	123600	55200	53100
	25	74.6	111200	113100	41600	39400
	30	70.9	82900	87000	33100	31000
	40	63.1	54200	55600	23000	21200
	50	54.7	39800	40400	17200	15700
	60	45.4	31100	31300	13500	12200
90 Ft.	20	79.6	119000	119000	55000	52900
	25	76.3	105300	105300	41400	39200
	30	73.0	82700	86900	32900	30800
	40	66.3	54100	55500	22800	21000
	50	59.1	39600	40200	17000	15500
	60	51.3	30900	31100	13300	12000
100 Ft.	20	77.7	101200	101200	41100	39000
	25	74.8	82600	86800	32600	30600
	30	68.7	53900	55300	22500	20800
	40	62.5	39400	40000	16800	15300
	50	55.8	30700	30900	13000	11800
	60	48.5	24900	24900	10400	9300
110 Ft.	25	78.9	93300	93300	40900	38800
	30	76.2	82400	86600	32400	30400
	40	70.8	53700	55100	22300	20600
	50	65.1	39200	39800	16600	15100
	60	59.2	30500	30700	12800	11600
	70	53.0	24700	24700	10200	9100
120 Ft.	20	77.4	81300	81300	32200	30200
	25	72.4	53500	55000	22100	20400
	30	67.3	39000	39600	16300	14900
	40	62.0	30300	30600	12600	11300
	50	56.5	24500	24500	10000	8900
	60	50.5	20300	20300	8000	7100
130 Ft.	20	77.7	14700	14600	5400	4600
	25	72.7	12800	12700	4400	3700
	30	67.7	9600	9600	3400	3000
	40	62.7	7200	7200	2600	2300
	50	57.7	5800	5800	2100	1900
	60	52.7	4400	4400	1600	1400

Boom Length	Rad.	Boom Angle	With Outriggers		Without Outriggers	
			Over Rear	Over Side	Over Rear	Over Side
130 Ft.	30	78.3	77600	77600	32000	29900
	40	73.8	53300	54800	21900	20200
	50	69.1	38900	39500	16100	14700
	60	64.4	30100	30400	12400	11100
	70	59.4	24300	24400	9800	8700
	80	54.1	20100	20100	7800	6900
	90	48.4	17000	16900	6300	5500
	100	42.2	14500	14400	5200	4400
	110	35.2	12600	12500	4200	3500
	120	26.6	11000	10900	3400	
	130	13.9	9600	9500		
140 Ft.	30	79.2	72500	72500	31700	29700
	40	75.0	53200	54600	21700	20000
	50	70.7	38700	39300	15900	14400
	60	66.3	29900	30200	12200	10900
	70	61.7	24100	24200	9500	8400
	80	57.0	19900	19900	7600	6600
	90	52.0	16800	16700	6100	5200
	100	46.6	14300	14200	4900	4100
	110	40.6	12400	12300	4000	3300
	120	33.9	10800	10600	3200	
	130	25.6	9400	9300		
	140	13.4	8300	8200		
150 Ft.	35	78.0	63900	63900	25700	23800
	40	76.0	53000	54500	21400	19700
	50	72.0	38500	39100	15700	14200
	60	68.0	29700	30000	11900	10700
	70	63.8	23900	24000	9300	8200
	80	59.4	19700	19700	7400	6400
	90	54.9	16600	16500	5900	5000
	100	50.1	14100	14000	4700	3900
	110	44.9	12200	12100	3800	3000
	120	39.2	10600	10400	3000	
	130	32.7	9200	9100		
	140	24.7	8100	8000		
	150	12.9	7100	7000		
160 Ft.	35	78.7	58900	58900	25500	23600
	40	76.9	52800	54300	21200	19500
	50	73.2	38300	38900	15500	14000
	60	69.4	29500	29800	11700	10500
	70	65.5	23700	23800	9100	8000
	80	61.5	19500	19500	7200	6200
	90	57.4	16400	16300	5700	4800
	100	53.0	13900	13800	4500	3700
	110	48.4	12000	11900	3500	
	120	43.4	10400	10200		
	130	37.9	9000	8900		
	140	31.6	7900	7800		
	150	23.9	6900	6800		
	160	12.5	6100	6000		
170 Ft.	35	79.4	55400	55400	25200	23400
	40	77.7	52600	53000	21000	19300
	50	74.2	38100	38700	15200	13800
	60	70.7	29400	29600	11500	10300
	70	67.0	23500	23600	8900	7800
	80	63.3	19300	19300	7000	6000
	90	59.5	16200	16100	5500	4600
	100	55.5	13700	13600	4300	3500
	110	51.3	11800	11700	3300	
	120	46.8	10200	10000		
	130	42.0	8800	8700		
	140	36.7	7700	7600		
	150	30.7	6700	6600		
	160	23.2	5900	5700		
180 Ft.	40	78.4	44000	44000	20800	19100
	50	75.1	37600	37600	15000	13600
	60	71.8	29200	29400	11300	10100
	70	68.4	23300	23400	8700	7600
	80	64.9	19100	19100	6800	5800
	90	61.3	16000	15900	5300	4400
	100	57.7	13500	13500	4100	3300
	110	53.8	11600	11500	3100	
	120	49.8	10000	9900		
	130	45.4	8600	8500		
	140	40.8	7500	7400		
	150	35.7	6500	6400		
	160	29.8	5700	5600		
	180	11.8	4300	4200		



FFSET PEAK BOOM 8X4

PACITIES POUNDS

Boom Length	Rad.	Boom Angle	With Outriggers		Without Outriggers	
			Over Rear	Over Side	Over Rear	Over Side
190 Ft.	40	79.0	41200	41200	20600	18900
	50	75.9	35100	35100	14800	13400
	60	72.8	29000	29300	11100	9900
	70	69.6	23100	23200	8500	7400
	80	66.3	18900	18900	6500	5600
	90	63.0	15800	15700	5100	4200
	100	59.5	13300	13300	3900	3100
	110	56.0	11400	11300		
	120	52.3	9800	9700		
	130	48.3	8400	8300		
	140	44.2	7300	7200		
	150	39.7	6300	6200		
	160	34.7	5500	5400		
	180	21.9	4100	4000		
200 Ft.	40	79.5	38400	38400	20400	18700
	50	76.6	32600	32600	14600	13200
	60	73.6	28000	28000	10900	9600
	70	70.6	22900	23000	8300	7200
	80	67.6	18700	18700	6300	5400
	90	64.4	15600	15500	4800	4000
	100	61.2	13100	13100	3700	
	110	57.9	11200	11100		
	120	54.4	9600	9500		
	130	50.8	8200	8100		
	140	47.0	7100	7000		
	150	43.0	6100	6000		
	160	38.6	5300	5100		
	180	28.2	3900	3800		
210 Ft.	45	78.6	32800	32800	16900	15400
	50	77.2	30200	30200	14400	13000
	60	74.4	25800	25800	10700	9400
	70	71.6	22200	22200	8000	7000
	80	68.7	18500	18500	6100	5100
	90	65.7	15400	15300	4600	3800
	100	62.7	12900	12900	3400	
	110	59.6	11000	10900		
	120	56.4	9400	9200		
	130	53.0	8000	7900		
	140	49.5	6900	6800		
	150	45.8	5900	5800		
	160	41.9	5100	4900		
	180	32.9	3700	3600		
220 Ft.	45	79.2	30000	30000	16700	15200
	50	77.8	27900	27900	14200	12700
	60	75.2	23700	23700	10400	9200
	70	72.4	20300	20300	7800	6700
	80	69.7	17700	17700	5900	4900
	90	66.9	15200	15100	4400	3500
	100	64.0	12700	12700	3200	
	110	61.1	10800	10700		
	120	58.1	9100	9000		
	130	55.0	7800	7700		
	140	51.7	6700	6600		
	150	48.3	5700	5600		
	160	44.7	4800	4700		
	180	36.7	3500	3300		
CAPACITIES BELOW INCLUDE JIB (See Note 4A)						
230 Ft.	45	79.6	30000	30000	10500	15000
	50	78.4	25700	25700	13900	12500
	60	75.8	21700	21700	10200	9000
	70	73.2	18600	18600	7600	6500
	80	70.6	16200	16200	5700	4700
	90	67.9	14200	14200	4200	3300
	100	65.2	12500	12400	3000	
	110	62.5	10600	10500		
	120	59.6	8900	8800		
	130	56.7	7600	7500		
	140	53.6	6500	6300		
	150	50.5	5500	5400		
	160	47.2	4600	4500		
	180	40.0	3200	3100		

Boom Length	Rad.	Boom Angle	With Outriggers		Without Outriggers	
			Over Rear	Over Side	Over Rear	Over Side
240 Ft.	50	78.9	21300	21300	13700	12300
	60	76.4	18800	18800	10000	8800
	70	73.9	17000	17000	7400	6300
	80	71.4	14900	14900	5500	4500
	90	68.9	12900	12900	4000	3100
	100	66.3	11200	11200		
	110	63.7	9400	9400		
	120	61.0	8200	8200		
	130	58.2	7100	7100		
	140	55.4	6100	6100		
	150	52.4	5000	5000		
	160	49.4	4200	4200		
250 Ft.	50	79.3	18500	18500	13500	12100
	60	77.0	16400	16400	9800	8600
	70	74.6	14800	14800	7200	6100
	80	72.2	13400	13400	5200	4300
	90	69.8	11700	11700	3700	
	100	67.3	10100	10100		
	110	64.8	8600	8600		
	120	62.3	7100	7100		
	130	59.6	6100	6100		
	140	56.9	5100	5100		
	150	54.2	4200	4200		
260 Ft.	50	79.7	16100	16100	13300	11900
	60	77.5	14400	14400	9600	8300
	70	75.2	13000	13000	6900	5900
	80	72.9	11600	11600	5000	4100
	90	70.6	10500	10500	3500	
	100	68.2	8900	8900		
	110	65.8	7500	7500		
	120	63.4	6100	6100		
	130	60.9	5100	5100		
	140	58.4	4200	4200		
270 Ft.	55	79.0	13400	13400	11000	9700
	60	77.9	12600	12600	9300	8100
	70	75.8	10000	10000	6700	5700
	80	73.6	10000	10000	4800	3900
	90	71.3	9000	9000	3300	
	100	69.1	7800	7800		
	110	66.8	6500	6500		
	120	64.5	5300	5300		
	130	62.1	4200	4200		
280 Ft.	55	79.4	12000	12000	10800	9500
	60	78.4	11100	11100	9100	7900
	70	76.3	8000	8000	6500	5500
	80	74.2	8000	8000	4600	3600
	90	72.0	7700	7700	3100	
	100	69.9	6700	6700		
	110	67.7	5500	5500		
	120	65.4	4400	4400		
	130	63.2	3300	3300		

18-15



NOTES

1. The rated loads as determined by boom length, radius and weight of load in pounds pertain to this machine as originally manufactured and equipped, and as mounted on a Lorain manufactured MC-7120 8 x 4 Carrier. **THEY ARE MAXIMUM** lifting capacities. The rated loads are in accordance with standards of Power Crane & Shovel Association as issued by the U.S. Department of Commerce Commercial Standard CS90-58 and the SAE Crane Load Stability Test Code J765.

- 1a. **DO NOT TIP** the machine to determine the allowable loads. Rated loads should not be exceeded. Rated loads are based on 85% of stability except where identified with bold face type in which case they are based on machinery and structural strength.

- 1b. All rated loads are based on the machine being on a firm, level and uniform supporting surface. Before lifting at, or near, rated loads, the machine should be leveled with a commercial level in two directions. **FOR SAFE WORKING LOADS THE USER** is expected to make due allowances for his particular job conditions such as: Soft or uneven ground, out of level conditions, side loads, pendulum action, jerking or sudden stopping of loads, hazardous conditions, experience of personnel, etc. Side pull on boom or jib is extremely dangerous. **CAUTION:** The operator and other personnel should fully read and acquaint themselves with Operator Manual furnished by the manufacturer **BEFORE** operating this machine, and Rules for Safe Operation of equipment should be adhered to at all times. Operators and supervisors should also acquaint themselves with Standard Safety Codes for Cranes, Derricks and Hoists, ASA-B 30.2—1943 (R-1952).

- 1c. Do not exceed the "over-the-rear" capacities when lifting over a corner.

- 1d. Use blocking under front tires or front part of carrier frame if boom and/or load is to be moved forward of front outrigger.

- 1e. All lifting must be done with gantry erected. When working conditions will not permit erected gantry, consult Lorain for proper capacity chart.

- 1f. Boom over 170 ft. long requires mast in addition to erected gantry. Mast with erected gantry may also be used with boom lengths of 170 ft. and under.

- 1g. Intermediate suspension required for booms 220 ft. and over.

The total weight of bucket plus load must not exceed 80% of the rated "without outriggers" lifting capacities up to a maximum of 15000 lbs. for dragline service and 18000 lbs. for clamshell service.

- 1i. More than one part hoist line must be used on any boom when lifting radius is less than 20 ft.

2. Load handling devices are part of the load. For jibs, see Notes 4, 4a and 4b.

3. Maximum length of main boom 220 Ft.

4. Jibs may be used straight or goosenecked. 30 ft. jib is of two-piece design and may be extended to 60 ft. length with center sections. The following data applies.

Lgth.	Radius	Max. Lgth. of Boom Including Jib	Maximum Lifting Capacity (Lbs.) Offset From Extended Centerline of Boom					Weight Of Jib And Backstays
			0 Ft.	6 Ft.	12 Ft.	18 Ft.	24 Ft.	
30 Ft.	Up thru 60' Over 60'	250 Ft.	30000 20000	25000 17000	22000 15000			1700 lbs.
40 Ft.	Up thru 60' Over 60'	260 Ft.	21000 14000	18000 12000	16000 11000	10000 8000		2100 lbs.
50 Ft.	Up thru 60' Over 60'	270 Ft.	15000 10000	13000 9000	12000 8000	9000 7000	8000 6000	2350 lbs.
60 Ft.	Up thru 60' Over 60'	280 Ft.	12000 8000	11000 7500	10000 7000	8000 6000	7000 5000	2550 lbs.

- 4a. Capacities 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 capacities shown above.

- 4b. With jib installed, lifting capacities over the main boom head must be reduced as follows:

1800 lbs. for 30 ft. jib
2400 lbs. for 40 ft. jib
2750 lbs. for 50 ft. jib
3000 lbs. for 60 ft. jib

5. With gantry erected (21 ft. 9½ in. overall height), the following maximum lengths may be carried* over back without outriggers:

160 ft. boom without jib
140 ft. boom and 30 ft. jib
120 ft. boom and 50 ft. jib
110 ft. boom and 60 ft. jib

*For straight back and forward movement, remove 10 ft. of boom from that specified for conditions which require maneuverability.

- 5a. With gantry lowered or gantry lowered and mast pinned to the base section (12 ft. 11½ in. overall height), the following maximum boom lengths may be carried over the back without outriggers:

110 ft. boom without jib
80 ft. boom and 30 ft. jib
70 ft. boom and 60 ft. jib

6. With outriggers set and mast and gantry erected, the following maximum boom lengths may be raised unassisted, from the horizontal over the rear:

220 ft. boom without jib
200 ft. boom and 30 ft. jib
190 ft. boom and 60 ft. jib

- 6a. For boom and jib combinations longer than shown in Note 6, and up to 220 ft. boom and 60 ft. jib, rear aux. outriggers are required.

- 6b. When working with boom lengths that require auxiliary outriggers for erection, do not exceed the radii as shown on crane lifting capacity chart.

- 6c. The rear hinged auxiliary outrigger beams are to be used only when raising or lowering long booms. They are never to be used or placed under load during hoisting operations.

7. Minimum number of parts of hoist line to be determined by dividing the load to be lifted by 20000 lbs. for ¾ in. hoist cable with breaking strength of 39.8 tons.

8. To handle rated lifting capacities, mast, gantry and floating harness required with 1½" swaged pendants with breaking strength of 96 tons and 16 parts of ¾" derricking cable with breaking strength of 19.6 tons.



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