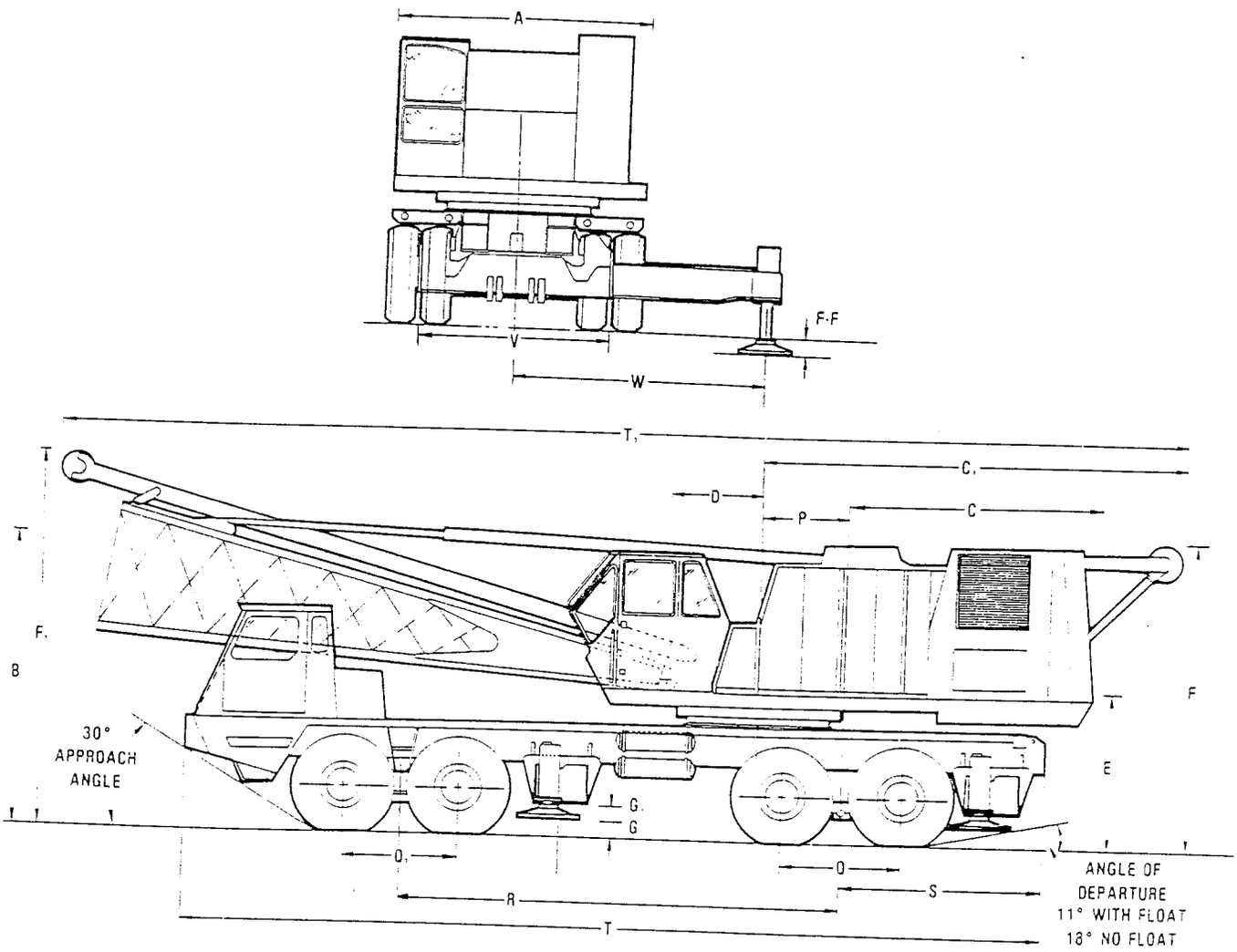
KOEHRING®

LORAIN® MC 1400

Moto-Crane® general specifications

140 ton (127 metric ton) capacity

general dimensions



	A	B	C	C,	D	E	F	F,	G WITH FLOAT	G, W/O FLOAT	P
FEET	10.86	9.87	14.54	18.03	3.98	6.86	13.16	15.50	0.77	1.27	3.67
MILIMETERS	3314.7	3006.9	4432.3	5496.1	1213.1	2095.5	4010.2	4978.4	235.0	387.4	1117.6

	O	O,	R	S	T	T,	V	W	F-F
FEET	5.00	5.00	19.17	8.50	37.00	48.50	8.33	11.00	0.56
MILIMETERS	1524.0	1524.0	5842.0	2590.8	11277.6	14782.8	2540.0	3352.8	171.45

CARRIER ENGINE DATA —

ENGINE MFR MODEL	CUMMINS NTC-290	OPTIONAL GENERAL MOTORS 6V92TA
ENGINE TYPE	DIESEL — 4 CYCLE	DIESEL — 2 CYCLE
NO. OF CYLINDERS — BORE & STROKE	6—5.50" x 6" (140 mm x 152 mm)	6—4.84" x 5" (123 mm x 127 mm)
DISPLACEMENT — CU. IN.	855 (14 litre)	552 (9.05 litre)
MFR. RATING — GROSS HP & RPM	290 (216 kW) @ 2100	335 (250kW) @ 2100
LORAIN NET HP & FULL LOAD RPM	261 (194 kW) @ 2100	301 (224 kW) @ 2100
MAX. TORQUE — LB. FT.	930 (1261 N·m) @ 1300 RPM	957 (1298 N·m) @ 1400 RPM
CLUTCH — MODEL SIZE & TYPE	LIPE 14—2-LP 14" (356 mm) DBL. PLATE	LIPE 14—2-LP 14" (356 mm) DBL. PLATE
BATTERY — SAE NO.	20T8A (2)	20T8A (2)
VOLTAGE	12V	12V
CHARGING SYSTEM	12V	12V
STARTING SYSTEM	12V	12V
ENGINE COOLANT REQ'D — GAL.	18 (68 litre)	17 (64 litre)
CRANKCASE CAPACITY — GAL.	11.5 (43.5 litre)	6.25 (23.65 litre)
FUEL TANK CAPACITY — GAL.	60 (227 litre)	60 (227 litre)
ROAD SPEED — MAX. MPH HI-HI MIN. MPH LO-LO	40 (64 km/h) 0.6 (.96 km/h)	40 (64 km/h) 0.6 (.96 km/h)
GRADEABILITY — TOP SPEED LOW SPEED	0.78% 47%	0.8% 51%

AXLE ASSEMBLIES —

	FRONT AXLE	REAR AXLE
TRACK	100" (2540 mm)	100" (2540 mm)
AXLE CENTERS	60" (1524 mm)	60" (1524 mm)

BRAKE DATA —

	SIZE	LINING
FRONT AXLE	17-1/4" x 4" (438 mm x 102 mm)	700"² 4516 cm²
REAR AXLE	20-1/4" x 7" (514 mm x 178 mm)	1312"² 8465 cm²

WHEELS & TIRES —

Front — 4 singles 14:00 x 24, 20 ply nondirectional tread mounted on 24 x 10:00 steel rims.

Rear — 4 duals 14:00 x 24, 20 ply nondirectional tread mounted on 24 x 10:00 steel rims.

POWER TRANSMISSION —

Ten speed heavy duty main transmission with 10 speeds forward and 3 reverse. Gear selection is accomplished by one lever mounted with an air operated range selector valve and manual deep reduction selector on the dash.

Main Transmission — Eaton Model RTO-958LL provides 10 forward speeds and 3 reverse.

TRANSMISSION RATIOS:

Low-Low	—	13.10	4th	—	2.37
Low	—	8.77	5th	—	1.83
1st	—	5.85	6th	—	1.34
2nd	—	4.29	7th	—	1.00
3rd	—	3.20	8th	—	0.74

HIGH REVERSE — 2.86
LOW REVERSE — 9.17
LOW LOW REVERSE — 13.69

STEERING —

Ross cam and lever type 32.5:1 ratio with Garrison hydraulic power assist. Turning radius to front of vehicle 67' (20 m).

UPPER ENGINE DATA —

ENGINE MFR MODEL	CUMMINS N-855C-220	GENERAL MOTORS GM 8-71N
ENGINE TYPE	DIESEL — 4 CYCLE	DIESEL — 2 CYCLE
NO. OF CYLINDERS — BORE & STROKE	6—5.50″ x 6″ (140 mm x 152 mm)	6—4.25″ x 5″ (108 mm x 127 mm)
DISPLACEMENT — CU. IN.	855 (14 litre)	425.6 (7 litre)
MFR. RATING — GROSS HP & RPM	220 (164 kW) @ 2100	227 (169kW) @ 2100
LORAIN NET HP & FULL LOAD RPM	210 (157 kW) @ 2100	210 (157 kW) @ 2100
NET FULL LOAD TORQUE @ OUTPUT SHAFT	625 (847 N·m) @ 1260 RPM	625 (847 N·m) @ 1260 RPM
POWER TAKEOFF	TORQUE CONVERTER	TORQUE CONVERTER
CLUTCH — MAKE & SIZE TYPE	ALLISON 15″ SINGLE PLATE INDUSTRIAL CLUTCH	ALLISON 15″ SINGLE PLATE INDUSTRIAL CLUTCH
COMPRESSOR — MAKE DISPLACEMENT COOLING	CUMMINS — MIDLAND 30 CFM WATER	BENDIX — WESTINGHOUSE 24 CFM WATER
BATTERY — SAE NO. VOLTAGE	20T8A (2) 12V	20T8A (2) 12V
CHARGING SYSTEM	12V	12V
STARTING SYSTEM	12V	12V
ENGINE CRANKCASE CAP. — GAL.	9.9 (38 litre)	7 (30 litre)
ENGINE COOLANT REQ'D — GAL.	14 (53 litre)	14 (53 litre)
FUEL TANK CAPACITY — GAL.	75 (317 litre)	75 (317 litre)
ALTITUDE DERATION	ABOVE 1000′ (305 m)	ABOVE 1000′ (305 m)

CLUTCH DATA —

	SIZE	OPERATION
FRONT DRUM CLUTCH	36″ x 4-3/4″ (914 mm x 121 mm)	METERED AIR
REAR DRUM CLUTCH	36″ x 4-3/4″ (914 mm x 121 mm)	METERED AIR
THIRD DRUM CLUTCH	25″ x 3″ (635 mm x 76 mm)	METERED AIR
NOTE ALL ABOVE CLUTCHES ARE INTERNAL EXPANDING BAND TYPE.		
POWER LOAD LOWERING CLUTCH (OPTIONAL)	24″ x 5-1/2″ (610 mm x 140 mm)	METERED AIR INTERNAL EXPANDING SHOE TYPE

BRAKE DATA —

	SIZE	OPERATION
FRONT DRUM CLUTCH	40″ x 6″ (1016 mm x 152 mm)	MECHANICAL
REAR DRUM CLUTCH	40″ x 6″ (1016 mm x 152 mm)	MECHANICAL
BOOM HOIST BRAKE	38″ diameter Caliper Disc	SPRING SET HYDR. RELEASED
THIRD DRUM BRAKE	28″ x 4″ (711 mm x 102 mm)	MECHANICAL
NOTE ALL ABOVE BRAKES ARE EXTERNAL CONTRACTING BAND TYPE.		
SWING BRAKE	9600 in-lb. rated multi-disc (wet)	SPRING SET HYDR. RELEASED

SINGLE LINE ROPE PULL AND SPEED —

	HAND THROTTLE		FOOT THROTTLE	
	LBS. (kg)	FPM (m/min)	LBS. (kg)	FPM (m/min)
REAR DRUM: 25" (635 mm) P.D. LAGGING				
1ST LAYER	30,300 (13 744 kg)	157 (48 m/min)	22,130 (10 038 kg)	248 (76 m/min)
3RD LAYER	26,600 (12 066 kg)	179 (55 m/min)	19,400 (8800 kg)	283 (86 m/min
62,630 LBS. (28 409 kg) @ CONVERTER STALL (1st Layer)				
FRONT DRUM: 25" (635 mm) P.D. LAGGING				
1ST LAYER	29,700 (13 472 kg)	157 (48 m/min)	21,680 (9834 kg)	248 (76 m/min
3RD LAYER	26,050 (11 816 kg)	179 (55 m/min)	19,000 (8618 kg)	283 (86 m/min
62,370 LBS. (28 291 kg) @ CONVERTER STALL (1st Layer)				

hydraulics

HYDRAULIC PUMP DATA —

Boom Hoist — 152 gpm total (76 gpm/section) tandem at 2300 rpm and 2500 psi.

Swing, Gantry Raising & Ctwt Removal — 60 gpm at 2100 rpm and 2500 psi.

Pilot Pump for Controls — 15 gpm total (12 gpm + 3 gpm) tandem at 2100 rpm with 400 psi for controls and 1200 psi for boom hoist brake.

HYDRAULIC MOTOR DATA —

Boom Hoist —
High Speed — 3850 rpm no load and 3150 in-lb. max torque.
Low Speed — 2900 rpm no load and 4200 in-lb. max torque.

Swing —
High Speed — 2290 rpm no load and 2100 in-lb. max torque.
Low Speed — 1250 rpm no load and 3900 in-lb. max torque.

boom details

BASE BOOM —

40′ (12.19 m) Consists of 25′ (7.62 m) base section and 15′ (4.57 m) offset peak section pin connected together.

MAXIMUM MAIN BOOM —

230′ (70.10 m) Consists of 40′ (12.19 m) base boom, two 10′ (3.04 m) insert sections, one 20′ (6.09 m) insert section, and five 30′ (9.14 m) insert sections.

Note: 40′ (12.19 m) insert section also available for other boom lengths desired up to 230′ (70.10 m) maximum.

JIB —

30′ (9.14 m) Two piece, pin connected with 12′ (3.65 m) mast.

MAXIMUM JIB BOOM —

60′ (18.28 m) Consists of 30′ (9.14 m) base jib, one 10′ (3.04 m) jib insert and one 20′ (6.09 m) jib insert.

optional crane equipment

- Rear auxiliary outriggers
- Front bumper counterweight
- Tower attachment
- Jib attachment
- pll rear drum
- 3rd drum attachment
- 140 ton (127 mt) hook block
- 25 ton (22.7 mt) hook block
- 8.5 ton (7.7 mt) hook & ball
- Floodlighting equipment

load distribution

	Gross Weight	Turntable Facing Front		Turntable Facing Rear	
		Front	Rear	Front	Rear
Basic Crane	81014	14887	66127	38336	42678
Less:					
a. Counterweights (Maximum, Standard and Bumper)					
b. Front & Rear Outrigger Boxes and Beams					
c. Mast, Harness & Boom Hoist Derricking					
d. Hoist Cables (Front & Rear Drum)					
e. Complete Offset Boom Including Stops					
Add: Mast, Harness and 16 Parts Derricking	+ 3272	+ 3706	− 434	− 2454	+ 5726
Add: 3rd Drum	+ 1585	+ 315	+ 1270	+ 291	+ 1294
Add: Hoist Cable to Rear Drum	+ 1321	− 71	+ 1392	+ 576	+ 745
Add: Hoist Cable to Front Drum	+ 1321	+ 120	+ 1201	+ 385	+ 963
Add: P.L.L. Rear Drum	+ 550	− 29	+ 579	+ 240	+ 310
Add: D-17A Boom Base & Stops	+ 4615	+ 3735	+ 880	− 2435	+ 7050
Add: D-17A Offset Boom Peak	+ 3153	+ 6012	− 2859	− 4811	+ 7964
Add: 140 Ton Hook Block to Peak	+ 3320	+ 8253	− 4933	− 6983	+10303
Add: 8-1/2 Ton Hook Ball to Peak	+ 620	+ 1541	− 921	− 1304	+ 1924
Add: GM 6-71N Engine to Superstructure	− 740	+ 248	− 988	− 531	− 209
Add: 15000 Lbs. — Standard Counterweight	+15612*	− 6099	+21711	+12086	+ 3526
Add: 51000 Lbs. — Maximum Counterweight	+51113*	−24398	+75511	+43422	+ 7691
Add: 10000 Lbs. — Front Bumper Counterweight	+10000	+15167	− 5167	+15167	− 5167
Add: GM 6V-92TAC to Carrier	− 700	− 989	+ 289	− 989	+ 289
Add: Front Outriggers	+ 8850	+ 5612	+ 3238	+ 5612	+ 3238
Add: Rear Outriggers	+ 8850	− 2645	+11495	− 2645	+11495

* Counterweight Includes Hardware

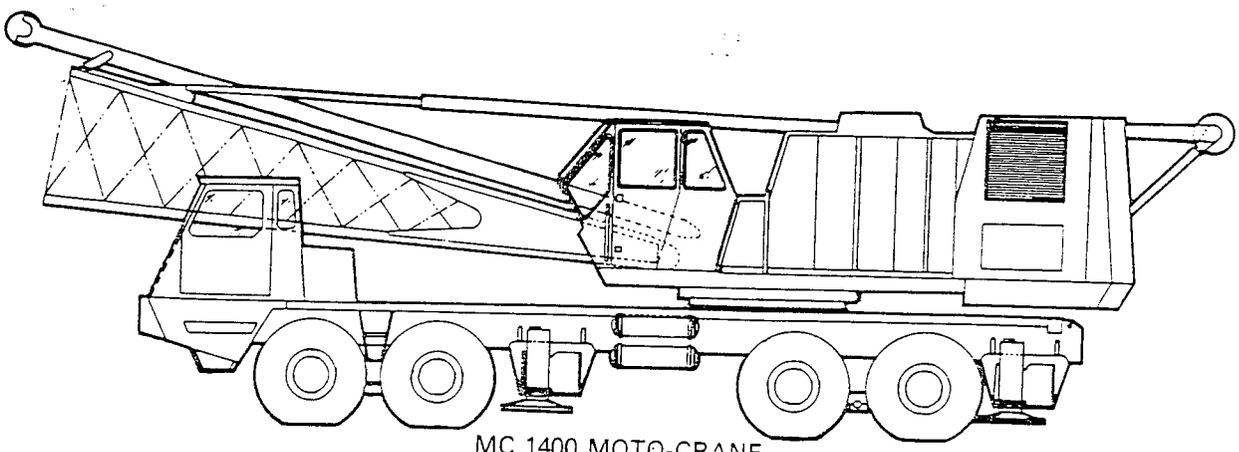
These weights may vary for different machines due to manufacturing tolerances.

traveling weights

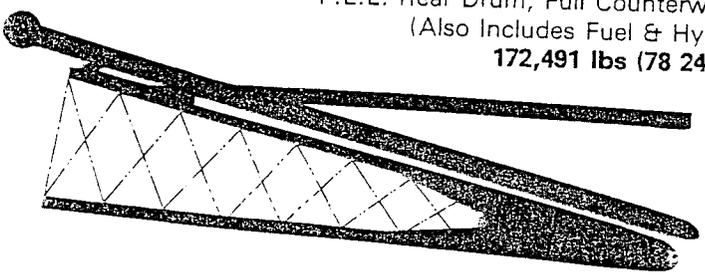
GROSS WEIGHT	TURNTABLE FACING FRONT		CTWT	REAR OUTRGR BOX	FRONT OUTRGR BOX	BOOM PEAK	BOOM BASE*	TURNTABLE FACING REAR	
	FRONT	REAR						FRONT	REAR
81014	14887	66127	0	0	0	0	0	38336	42678
87192(D)	18837	68355	0	0	0	0	0	36749	50443
91807	22572	69235	0	0	0	0	X	34314	57493
94960	28584	66376	0	0	0	X	X	29503	65457
103810	34196	69614	0	0	X	X	X	35115	68695
112652	31551	81101	0	X	X	X	X	32211	80441
163765	NOT RECOMMENDED		X(A)	X	X	X	X	75633(2)	88132
128264	25452	102812(1)	X(B)	X	X	X	X	44297	83967
109499	25539	83960	0	X	X	0	X	37022	72477
104884	21804	83080	0	X	X	0	0	39457	65427
173765	22320	151445(2)	X(C)	X	X	X	X	NOT RECOMMENDED	

X — Installed on machine
0 — Removed from machine
* — Boom base includes Boom Stops
(A) — Maximum Counterweight (51000 lbs.)
(B) — Standard Counterweight (15000 lbs.)
(C) — Maximum Counterweight (51000 lbs.) and 10000 lbs. Bumper Counterweight
(D) — Includes: Mast, Derricking, Harness, Third Drum, and Rear Drum Hoist Cable
(1) — Limit Speed to 30 mph maximum
(2) — Limit Speed to 5 mph maximum

component weights

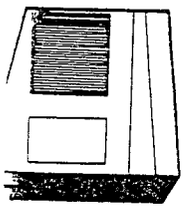


MC 1400 MOTO-CRANE
Complete W/ Mast, Derricking, Harness, Third Drum,
P.L.L. Rear Drum, Full Counterweight and Outriggers
(Also Includes Fuel & Hydraulic Fluid)
172,491 lbs (78 242 kg)

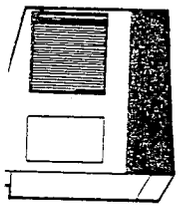


BASE BOOM ASSEMBLY
W/ Mast, Harness & 16 Parts Derricking
7,887 lbs (3578 kg)

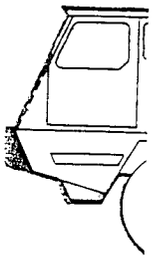
BASIC SUPERSTRUCTURE
47,341 lbs (21 474 kg)



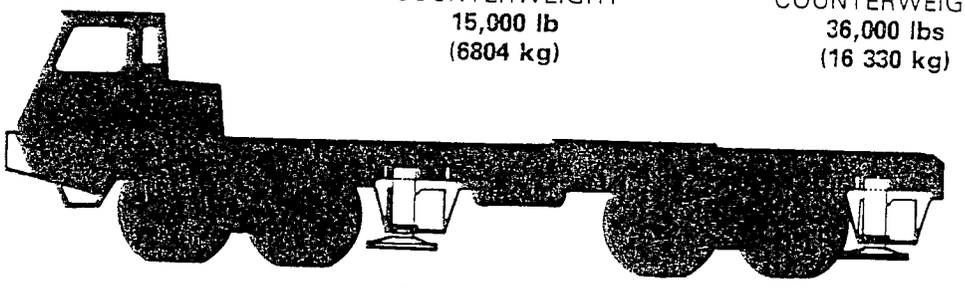
STANDARD
COUNTERWEIGHT
15,000 lb
(6804 kg)



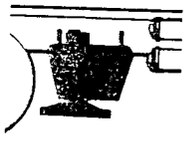
AUXILIARY
COUNTERWEIGHT
36,000 lbs
(16 330 kg)



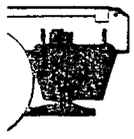
BUMPER
COUNTERWEIGHT
10,000 lbs
(4536 kg)



BASIC CARRIER
38,563 lbs (17 492 kg)



FRONT OUTRIGGER
BOX & BEAM
8,850 lbs
(4014 kg)



REAR OUTRIGGER
BOX & BEAM
8,850 lbs
(4014 kg)

LORAIN
MC 1400

KOEHRING
CRANE AND EXCAVATOR GROUP

SIMS CRANE SERVICE, INC.
P.O. BOX 11825

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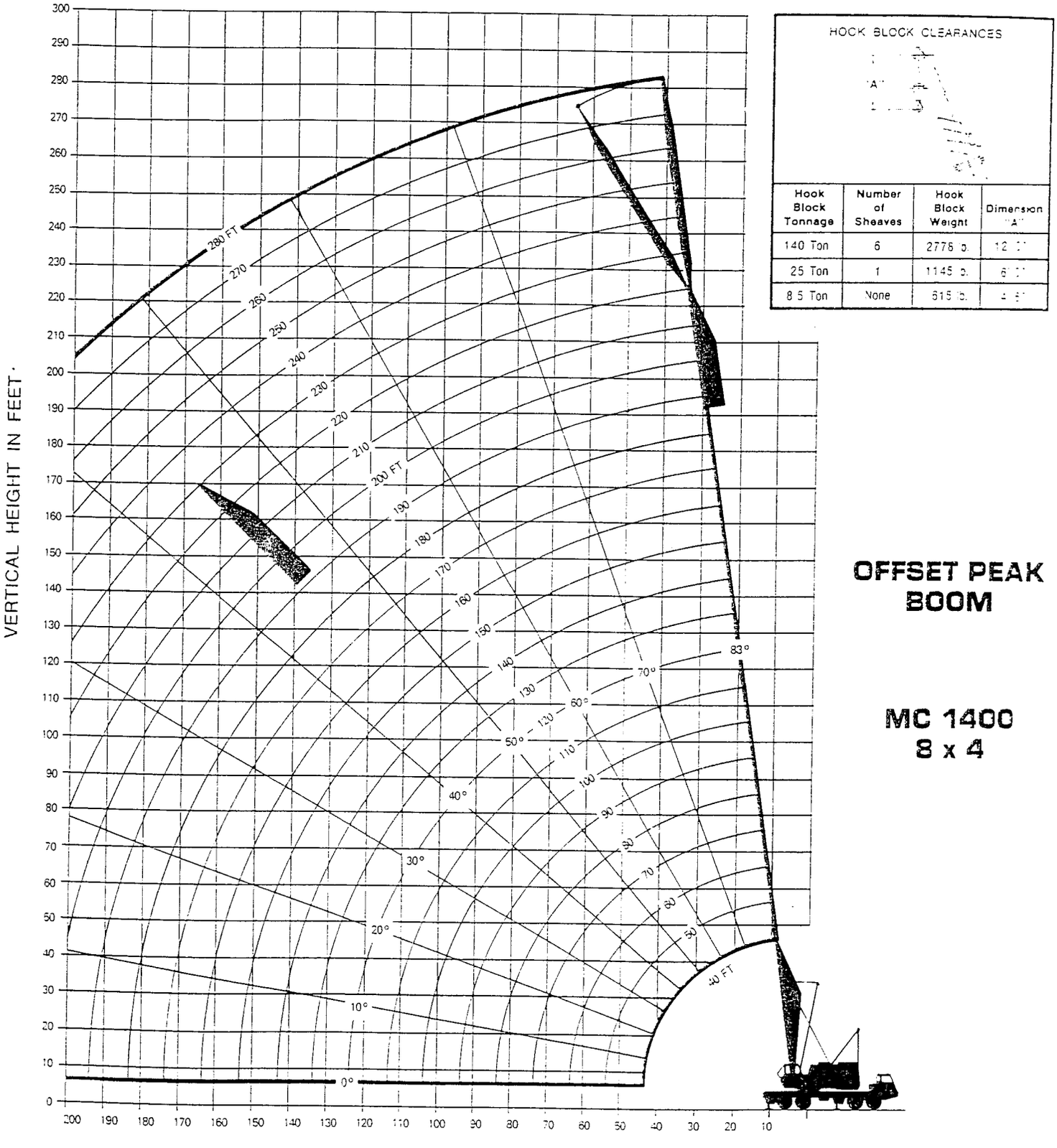
LORAIN strong on performance
MC 1400 | MOTO-CRANE®
LOAD RATINGS



HOOK BLOCK CLEARANCES

Hook Block Tonnage	Number of Sheaves	Hook Block Weight	Dimension "A"
140 Ton	6	2776 lb.	12'-1"
25 Ton	1	1145 lb.	6'-1"
8.5 Ton	None	615 lb.	4'-9"

OFFSET PEAK BOOM

MC 1400
8 x 4

WORKING RANGES

CRANE LOAD RATINGS — POUNDS

MAXIMUM COUNTERWEIGHT (51,000 LBS.)
WITH BUMPER COUNTERWEIGHT (10,000 LBS.)
(PCSA CLASS 12-741)

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers	
			Over Rear	Over Side
40 Ft. Boom				
12	81.1	46.1	280000*	280000*
15	76.6	45.4	183500*	183500*
20	69.0	43.6	150000*	150000*
25	61.0	41.0	129000*	129000*
30	52.1	37.3	107800*	107800*
35	41.8	32.2	92400*	90600
40	28.5	24.4	80100	74400
50 Ft. Boom				
15	79.4	55.7	169300*	169300*
20	73.4	54.3	149700*	149700*
25	67.3	52.3	124000*	124000*
30	60.8	49.6	107400*	107400*
35	53.8	46.1	92000*	90300
40	46.1	41.6	79700	74100
45	37.0	35.5	67900	62800
50	25.2	26.5	59000	54300
60 Ft. Boom				
15	81.2	65.9	144900*	144900*
20	76.3	64.7	130800*	130800*
25	71.3	63.1	119700*	119700*
30	66.1	61.0	107000*	107000*
35	60.6	58.3	91700*	90000
40	54.9	54.9	79400	73900
45	48.6	50.7	67600	62500
50	41.7	45.4	58700	54000
55	33.5	38.5	51800	47400
60	22.8	28.4	46200	42300
70 Ft. Boom				
15	82.4	76.0	138400*	138400*
20	78.3	75.0	125400*	125400*
25	74.0	73.7	115000*	115000*
30	69.7	71.9	106400*	106400*
35	65.2	69.7	91300*	89800
40	60.5	66.9	79200	73600
45	55.6	63.6	67300	62200
50	50.4	59.7	58400	53700
55	44.7	54.8	51500	47100
60	38.4	48.9	45900	42000
70	21.0	30.2	34400	34200
80 Ft. Boom				
20	79.8	85.3	119800*	119800*
25	76.1	84.1	110100*	110100*
30	72.3	82.5	102000*	102000*
35	68.5	80.6	91000*	89500
40	64.6	78.3	78900	73300
45	60.5	75.6	67000	61900
50	56.2	72.3	58100	53400
55	51.7	68.5	51200	46900
60	46.9	64.0	45700	41700
70	35.7	52.1	37400	33900
80	19.5	31.9	31500	28400

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers	
			Over Rear	Over Side
90 Ft. Boom				
20	80.9	95.5	114200*	114200*
25	77.7	94.4	105100*	105100*
30	74.4	93.1	97500*	97500*
35	71.0	91.4	90600*	89300
40	67.6	89.4	78600	73000
45	64.1	87.0	66800	61700
50	60.4	84.2	57800	53100
55	56.6	81.0	50900	46600
60	52.7	77.3	45400	41400
70	44.0	68.1	37100	33600
80	33.5	55.1	31100	28100
90	18.3	33.4	26700	24000
100 Ft. Boom				
20	81.8	105.6	107900*	107900*
25	78.9	104.7	100200*	100200*
30	76.0	103.4	93000*	93000*
35	73.0	102.0	86900*	86900*
40	69.9	100.2	78300	72700
45	66.8	98.1	66500	61400
50	63.7	95.7	57500	52900
55	60.4	92.9	50600	46300
60	57.0	89.7	45100	41200
70	49.7	82.0	36800	33300
80	41.6	71.9	30800	27800
90	31.7	57.9	26400	23700
100	17.3	34.9	23000	20600
110 Ft. Boom				
20	82.6	115.7	101500*	101500*
25	79.9	114.9	94900*	94900*
30	77.3	113.8	88300*	88300*
35	74.6	112.4	82900*	82900*
40	71.8	110.8	77900*	72500
45	69.1	109.0	66200	61100
50	66.2	106.8	57300	52600
55	63.3	104.3	50300	46000
60	60.3	101.6	44900	40900
70	54.1	94.9	36500	33100
80	47.2	86.4	30500	27500
90	39.5	75.5	26100	23400
100	30.2	60.6	22700	20300
110	16.4	36.3	20000	17700
120 Ft. Boom				
25	80.8	125.0	89300*	89300*
30	78.4	124.0	83300*	83300*
35	75.9	122.8	77400*	77400*
40	73.4	121.4	74300*	72200
45	70.9	119.7	65900	60900
50	68.3	117.7	57000	52300
55	65.7	115.5	50000	45700
60	63.0	113.0	44600	40600
70	57.5	107.1	36200	32800
80	51.6	99.7	30300	27200
90	45.1	90.6	25800	23100
100	37.7	78.9	22400	20000
110	28.8	63.1	19700	17400
120	15.7	37.6	17400	15400

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers	
			Over Rear	Over Side
130 Ft. Boom				
25	81.5	135.2	83600*	83600*
30	79.3	134.3	78400*	78400*
35	77.0	133.1	73100*	73100*
40	74.7	131.8	68500*	68500*
45	72.4	130.2	63300*	60600
50	70.1	128.5	56700	52100
55	67.7	126.5	49700	45600
60	65.3	124.2	44300	40300
70	60.3	118.9	35900	32500
80	55.0	112.3	30000	27000
90	49.4	104.4	25500	22900
100	43.2	94.5	22200	19700
110	36.2	82.1	19400	17200
120	27.6	65.5	17100	15100
130	15.0	38.8	15200	13400
140 Ft. Boom				
25	82.1	145.3	78000*	78000*
30	80.0	144.4	73300*	73300*
35	77.9	143.4	68700*	68700*
40	75.8	142.2	63100*	63100*
45	73.7	140.7	58200*	58200*
50	71.6	139.1	53900*	51800
55	69.4	137.3	49400	45300
60	67.2	135.2	44000	40100
70	62.6	130.3	35700	32200
80	57.9	124.5	29700	26700
90	52.8	117.3	25200	22700
100	47.5	108.8	21900	19400
110	41.5	98.3	19100	16900
120	34.8	85.3	16800	14800
130	26.6	67.9	14900	13100
140	14.5	40.1	13400	11600
150 Ft. Boom				
25	82.6	155.4	72400*	72400*
30	80.7	154.6	68300*	68300*
35	78.8	153.6	63700*	63700*
40	76.8	152.5	58300*	58300*
45	74.8	151.2	53700*	53700*
50	72.8	149.7	49600*	49600*
55	70.8	147.9	46000*	45100
60	68.8	146.0	42900*	39800
70	64.6	141.6	35400	32000
80	60.3	136.2	29400	26400
90	55.7	129.8	24900	22400
100	50.9	122.1	21600	19200
110	45.7	113.0	18800	16600
120	40.0	102.0	16500	14500
130	33.6	88.3	14600	12800
140	25.6	70.1	13100	11300
150	13.9	41.2	11500*	10100

CRANE LOAD RATINGS — POUNDS

MAXIMUM COUNTERWEIGHT (51,000 LBS.)
WITH BUMPER COUNTERWEIGHT (10,000 LBS.)
(PCSA CLASS 12-741)

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers: Over Rear	With Outriggers: Over Side
160 Ft. Boom				
30	81.3	164.8	63300*	63300*
35	79.5	163.8	59100*	59100*
40	77.6	162.8	54000*	54000*
45	75.8	161.5	49600*	49600*
50	73.9	160.1	45800*	45800*
55	72.1	158.5	42400*	42400*
60	70.2	156.8	39400*	39400*
70	66.3	152.6	34300*	31700
80	62.3	147.7	29100	26100
90	58.1	141.8	24600	22100
100	53.8	134.9	21300	18900
110	49.2	126.7	18500	16300
120	44.2	117.1	16300	14200
130	38.7	105.5	14400	12500
140	32.4	91.1	12800	11000
150	24.8	72.3	11300*	9800
160	13.5	42.4	9800*	8700
170 Ft. Boom				
30	81.8	174.9	58200*	58200*
35	80.1	174.0	55000*	55000*
40	78.4	173.0	50200*	50200*
45	76.7	171.9	46000*	46000*
50	74.9	170.5	42300*	42300*
55	73.2	169.0	39100*	39100
60	71.4	167.4	36200*	36200*
70	67.8	163.5	31400*	31400*
80	64.1	158.9	27400*	25800
90	60.2	153.5	24100*	21900
100	56.2	147.2	21000	18600
110	52.0	139.8	18300	16100
120	47.6	131.1	16000	14000
130	42.8	121.0	14100	12200
140	37.5	108.9	12500	10700
150	31.4	93.9	11000*	9500
160	24.0	74.4	9600*	8400
180 Ft. Boom				
30	82.3	185.0	53100*	53100*
35	80.7	184.2	50700*	50700*
40	79.0	183.2	46600*	46600*
45	77.4	182.1	42600*	42600*
50	75.8	180.9	39100*	39100*
55	74.1	179.5	36100*	36100*
60	72.5	177.9	33400*	33400*
70	69.1	174.3	28700*	28700*
80	65.6	170.0	25000*	25000*
90	62.0	165.0	21900*	21600
100	58.3	159.1	19400*	18400
110	54.5	152.4	17500*	15800
120	50.5	144.5	15700	13700
130	46.2	135.4	13800	11900
140	41.5	124.8	12100*	10500
150	36.4	112.1	10500*	9200
160	30.5	96.7	9200*	8100
180	12.7	44.6	6700*	6400

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers: Over Rear	With Outriggers: Over Side
190 Ft. Boom				
30	82.7	195.1	48000*	48000*
35	81.2	194.3	46000*	46000*
40	79.6	193.4	43400*	43400*
45	78.1	192.4	39600*	39600*
50	76.5	191.2	36200*	36200*
55	75.0	189.9	33300*	33300*
60	73.4	188.4	30700*	30700*
70	70.2	185.0	26300*	26300*
80	67.0	181.0	22700*	22700*
90	63.6	176.3	19800*	19800*
100	60.2	170.8	17800*	17800*
110	56.6	164.6	16000*	15500
120	52.9	157.3	14400*	13400
130	49.0	149.1	12900*	11700
140	44.8	139.5	11600*	10200
150	40.3	128.5	10200*	8900
160	35.4	115.3	8800*	7800
180	22.7	78.4	6500*	6100
200 Ft. Boom				
30	83.0	205.2	42900*	42900*
35	81.6	204.5	41400*	41400*
40	80.1	203.6	39800*	39800*
45	78.7	202.6	36700*	36700*
50	77.2	201.5	33500*	33500*
55	75.7	200.3	30700*	30700*
60	74.3	198.9	28300*	28300*
70	71.3	195.7	24100*	24100*
80	68.2	191.9	20700*	20700*
90	65.1	187.4	18300*	18300*
100	61.8	182.3	16300*	16300*
110	58.5	176.5	14500*	14500*
120	55.1	169.8	13000*	13000*
130	51.5	162.2	11600*	11400
140	47.7	153.5	10400*	9900
150	43.6	143.6	9300*	8600
160	39.3	132.0	8200*	7600
180	28.9	101.9	6200*	5800
200	12.0	46.6	4100*	4100*
210 Ft. Boom				
35	82.0	214.6	36600*	36600*
40	80.6	213.8	35500*	35500*
45	79.2	212.8	34100*	34100*
50	77.8	211.8	31000*	31000*
55	76.4	210.6	28400*	28400*
60	75.0	209.3	26000*	26000*
70	72.2	206.2	22000*	22000*
80	69.3	202.6	19000*	19000*
90	66.3	198.5	16800*	16800*
100	63.3	193.6	14900*	14900*
110	60.2	188.2	13200*	13200*
120	57.0	181.9	11700*	11700*
130	53.6	174.9	10400*	10400*
140	50.1	166.9	9200*	9200*
150	46.4	157.8	8100*	8100*
160	42.5	147.4	7100*	7100*
180	33.6	121.4	5400*	5400*
200	21.5	82.2	3900*	3900*

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers: Over Rear	With Outriggers: Over Side
220 Ft. Boom				
35	82.4	224.7	31900*	31900*
40	81.1	223.9	31100*	31100*
45	79.7	223.0	30400*	30400*
50	78.4	222.0	28700*	28700*
55	77.1	220.9	26100*	26100*
60	75.7	219.6	23900*	23900*
70	73.0	216.7	20000*	20000*
80	70.3	213.3	17600*	17600*
90	67.5	209.4	15400*	15400*
100	64.6	204.8	13600*	13600*
110	61.7	199.7	11900*	11900*
120	58.7	193.8	10500*	10500*
130	55.5	187.2	9200*	9200*
140	52.3	179.8	8000*	8000*
150	48.9	171.4	7000*	7000*
160	45.3	162.0	6000*	6000*
180	37.3	138.9	4400*	4400*
200	27.5	106.8	3000*	3000*
220	11.4	48.6	1800*	1800*
230 Ft. Boom				
35	82.7	234.8	27100*	27100*
40	81.4	234.0	26700*	26700*
45	80.2	233.2	26300*	26300*
50	78.9	232.2	25900*	25900*
55	77.6	231.2	24000*	24000*
60	76.4	230.0	21900*	21900*
70	73.8	227.2	18600*	18600*
80	71.2	224.0	16200*	16200*
90	68.5	220.2	14100*	14100*
100	65.8	215.9	12300*	12300*
110	63.0	211.0	10700*	10700*
120	60.2	205.5	9300*	9300*
130	57.2	199.3	8100*	8100*
140	54.2	192.4	7000*	7000*
150	51.0	184.6	6000*	6000*
160	47.7	175.9	5000*	5000*
180	40.5	154.9	3400*	3400*
200	32.0	127.2	2100*	2100*

Following Load Ratings Include Jib

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers: Over Rear	With Outriggers: Over Side
240 Ft. Boom				
35	83.0	244.9	30000*	30000*
40	81.8	244.2	30000*	30000*
45	80.6	243.4	30000*	30000*
50	79.4	242.4	28800*	28800*
55	78.2	241.4	26700*	26700*
60	76.9	240.3	24600*	24600*
70	74.5	237.6	20000*	20000*
80	72.0	234.5	18300*	18300*
90	69.4	230.9	16300*	16300*
100	66.9	226.8	14400*	14400*
110	64.2	222.2	12800*	12800*
120	61.5	217.0	11300*	11300*
130	58.8	211.1	10000*	10000*
140	55.9	204.6	8800*	8800*
150	53.0	197.4	7700*	7700*
160	49.9	189.3	6700*	6700*
180	43.3	170.0	4900*	4900*
200	35.7	145.4	3400*	3400*
220	26.3	111.5	2100*	2100*
240	10.9	50.4	1000*	1000*

CRANE LOAD RATINGS — POUNDS

MAXIMUM COUNTERWEIGHT (51,000 LBS.)
WITH BUMPER COUNTERWEIGHT (10,000 LBS.)
(PCSA CLASS 12-741)

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers	
			Over Rear	Over Side
250 Ft. Boom				
40	82.1	254.3	29900*	29900*
45	81.0	253.5	27700*	27700*
50	79.8	252.6	25700*	25700*
55	78.6	251.6	23900*	23900*
60	77.5	250.5	22300*	22300*
70	75.1	248.0	19100*	19100*
80	72.7	245.0	16800*	16800*
90	70.3	241.6	14800*	14800*
100	67.8	237.7	13000*	13000*
110	65.3	233.3	11500*	11500*
120	62.8	228.3	10000*	10000*
130	60.2	222.8	8800*	8800*
140	57.5	216.6	7600*	7600*
150	54.7	209.8	6500*	6500*
160	51.8	202.2	5600*	5600*
180	45.7	184.4	3900*	3900*
200	38.8	162.1	2400*	2400*
220	30.6	132.7	1200*	1200*
260 Ft. Boom				
40	82.4	264.4	21000*	21000*
45	81.3	263.6	21000*	21000*
50	80.2	262.8	21000*	21000*
55	79.1	261.8	21000*	21000*
60	78.0	260.8	20000*	20000*
70	75.7	258.4	14000*	14000*
80	73.4	255.5	14000*	14000*
90	71.1	252.2	14000*	14000*
100	68.7	248.5	12700*	12700*
110	66.3	244.3	11200*	11200*
120	63.9	239.6	9800*	9800*
130	61.4	234.3	8500*	8500*
140	58.9	228.5	7400*	7400*
150	56.2	222.0	6300*	6300*
160	53.5	214.9	5400*	5400*
180	47.8	198.2	3700*	3700*
200	41.5	177.7	2200*	2200*
220	34.2	151.6	1000*	1000*

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers	
			Over Rear	Over Side
270 Ft. Boom				
40	82.7	274.5	15000*	15000*
45	81.6	273.7	15000*	15000*
50	80.6	272.9	15000*	15000*
55	79.5	272.0	15000*	15000*
60	78.4	271.0	15000*	15000*
70	76.2	268.7	10000*	10000*
80	74.0	266.0	10000*	10000*
90	71.8	262.8	10000*	10000*
100	69.6	259.2	10000*	10000*
110	67.3	255.2	10000*	10000*
120	64.9	250.7	9700*	9700*
130	62.6	245.7	8400*	8400*
140	60.1	240.1	7300*	7300*
150	57.6	234.0	6300*	6300*
160	55.1	227.2	5300*	5300*
180	49.7	211.6	3700*	3700*
200	43.8	192.6	2200*	2200*
220	37.3	168.9	1000*	1000*
280 Ft. Boom				
40	83.0	284.6	12000*	12000*
45	81.9	283.9	12000*	12000*
50	80.9	283.1	12000*	12000*
55	79.9	282.2	12000*	12000*
60	78.8	281.2	12000*	12000*
70	76.7	279.0	8000*	8000*
80	74.6	276.4	8000*	8000*
90	72.5	273.3	8000*	8000*
100	70.3	269.9	8000*	8000*
110	68.1	266.0	8000*	8000*
120	65.9	261.7	8000*	8000*
130	63.6	256.9	7900*	7900*
140	61.3	251.6	7100*	7100*
150	58.9	245.8	6300*	6300*
160	56.5	239.4	5300*	5300*
180	51.4	224.6	3700*	3700*
200	45.9	206.8	2300*	2300*
220	39.9	185.0	1000*	1000*

CRANE LOAD RATINGS — POUNDS

MAXIMUM COUNTERWEIGHT (51,000 LBS.)

(PCSA RATING 12-697)

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers	
			Over Rear	Over Side
40 Ft. Boom				
12	81.1	46.1	280000*	280000*
15	76.6	45.4	183500*	183500*
20	69.0	43.6	150000*	150000*
25	61.0	41.0	129000*	129000*
30	52.1	37.3	106600	107800*
35	41.8	32.2	84600	86700
40	28.5	24.4	70000	71200
50 Ft. Boom				
15	79.4	55.7	169300*	169300*
20	73.4	54.3	149700*	149700*
25	67.3	52.3	124000*	124000*
30	60.8	49.6	106300	107400*
35	53.8	46.1	84400	86400
40	46.1	41.6	69700	70900
45	37.0	35.5	59300	60000
50	25.2	26.5	51500	51900
60 Ft. Boom				
15	81.2	65.9	144900*	144900*
20	76.3	64.7	130800*	130800*
25	71.3	63.1	119700*	119700*
30	66.1	61.0	106000	107000*
35	60.6	58.3	84100	86100
40	54.9	54.9	69400	70600
45	48.6	50.7	59000	59700
50	41.7	45.4	51200	51600
55	33.5	38.5	45100	45400
60	22.8	28.4	40300	40400
70 Ft. Boom				
15	82.4	76.0	138400*	138400*
20	78.3	75.0	125400*	125400*
25	74.0	73.7	115000*	115000*
30	69.7	71.9	105700	106400*
35	65.2	69.7	83800	85900
40	60.5	66.9	69100	70300
45	55.6	63.6	58700	59500
50	50.4	59.7	50900	51300
55	44.7	54.8	44800	45100
60	38.4	48.9	40000	40100
70	21.0	30.2	32700	32600
80 Ft. Boom				
20	79.8	85.3	119800*	119800*
25	76.1	84.1	110100*	110100*
30	72.3	82.5	102000*	102000*
35	68.5	80.6	83500	85600
40	64.6	78.3	68800	70100
45	60.5	75.6	58400	59200
50	56.2	72.3	50600	51000
55	51.7	68.5	44600	44800
60	46.9	64.0	39700	39800
70	35.7	52.1	32400	32300
80	19.5	31.9	27200	27100

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers	
			Over Rear	Over Side
90 Ft. Boom				
20	80.9	95.5	114200*	114200*
25	77.7	94.4	105100*	105100*
30	74.4	93.1	97500*	97500*
35	71.0	91.4	83200	85400
40	67.6	89.4	68700	69800
45	64.1	87.0	58200	58900
50	60.4	84.2	50300	50800
55	56.6	81.0	44300	44500
60	52.7	77.3	39400	39500
70	44.0	68.1	32100	32000
80	33.5	55.1	26800	26800
90	18.3	33.4	23000	22900
100 Ft. Boom				
20	81.8	105.6	107900*	107900*
25	78.9	104.7	100200*	100200*
30	76.0	103.4	93000*	93000*
35	73.0	102.0	83000	85100
40	69.9	100.2	68400	69500
45	66.8	98.1	57900	58600
50	63.7	95.7	50000	50500
55	60.4	92.9	44000	44300
60	57.0	89.7	39100	39300
70	49.7	82.0	31800	31800
80	41.6	71.9	26500	26500
90	31.7	57.9	22700	22600
100	17.3	34.9	19700	19500
110 Ft. Boom				
20	82.6	115.7	101500*	101500*
25	79.9	114.9	94900*	94900*
30	77.3	113.8	88300*	88300*
35	74.6	112.4	82700	82900*
40	71.8	110.8	68100	69200
45	69.1	109.0	57600	58400
50	66.2	106.8	49700	50200
55	63.3	104.3	43700	44000
60	60.3	101.6	38800	39000
70	54.1	94.9	31500	31500
80	47.2	86.4	26200	26200
90	39.5	75.5	22400	22300
100	30.2	60.6	19400	19200
110	16.4	36.3	16900	16800
120 Ft. Boom				
25	80.8	125.0	89300*	89300*
30	78.4	124.0	83300*	83300*
35	75.9	122.8	77400*	77400*
40	73.4	121.4	67900	69000
45	70.9	119.7	57300	58100
50	68.3	117.7	49500	49900
55	65.7	115.5	43500	43700
60	63.0	113.0	38600	38700
70	57.5	107.1	31200	31200
80	51.6	99.7	26000	25900
90	45.1	90.6	22100	22000
100	37.7	78.9	19100	18900
110	28.8	63.1	16600	16500
120	15.7	37.6	14700	14500

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers	
			Over Rear	Over Side
130 Ft. Boom				
25	81.5	135.2	83600*	83600*
30	79.3	134.3	78400*	78400*
35	77.0	133.1	73100*	73100*
40	74.7	131.8	67600	68500*
45	72.4	130.2	57100	57600
50	70.1	128.5	49200	49700
55	67.7	126.5	43200	43500
60	65.3	124.2	38300	38400
70	60.3	118.9	30900	30900
80	55.0	112.3	25700	25600
90	49.4	104.4	21900	21800
100	43.2	94.5	18800	18700
110	36.2	82.1	16400	16200
120	27.6	65.5	14400	14200
130	15.0	38.8	12700	12600
140 Ft. Boom				
25	82.1	145.3	78000*	78000*
30	80.0	144.4	73300*	73300*
35	77.9	143.4	68700*	68700*
40	75.8	142.2	63100*	63100*
45	73.7	140.7	56800	57600
50	71.6	139.1	48900	49400
55	69.4	137.3	42900	43200
60	67.2	135.2	38000	38200
70	62.6	130.3	30600	30700
80	57.9	124.5	25400	25300
90	52.8	117.3	21600	21500
100	47.5	108.8	18500	18400
110	41.5	98.3	16100	15900
120	34.8	85.3	14100	13900
130	26.6	67.9	12400	12300
140	14.5	40.1	11000	10900
150 Ft. Boom				
25	82.6	155.4	72400*	72400*
30	80.7	154.6	68300*	68300*
35	78.8	153.6	63700*	63700*
40	76.8	152.5	58300*	58300*
45	74.8	151.2	53700*	53700*
50	72.8	149.7	48600	49100
55	70.8	147.9	42500	42900
60	68.8	146.0	37700	37900
70	64.6	141.6	30400	30400
80	60.3	136.2	25100	25000
90	55.7	129.8	21300	21200
100	50.9	122.1	18300	18100
110	45.7	113.0	15800	15700
120	40.0	102.0	13800	13700
130	33.6	88.3	12100	12000
140	25.6	70.1	10700	10600
150	13.9	41.2	9600	9400

CRANE LOAD RATINGS — POUNDS

MAXIMUM COUNTERWEIGHT (51,000 LBS.)

(PCSA RATING 12-697)

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers: Over Rear	With Outriggers: Over Side
160 Ft. Boom				
30	81.3	164.8	63300*	63300*
35	79.5	163.8	59100*	59100*
40	77.6	162.8	54000*	54000*
45	75.8	161.5	49600*	49600*
50	73.9	160.1	45800*	45800*
55	72.1	158.5	42400*	42400*
60	70.2	156.8	37500	37600
70	66.3	152.6	30100	30100
80	62.3	147.7	24800	24800
90	58.1	141.8	21000	20900
100	53.8	134.9	18000	17800
110	49.2	126.7	15500	15400
120	44.2	117.1	13500	13400
130	38.7	105.5	11900	11700
140	32.4	91.1	10500	10300
150	24.8	72.3	9300	9100
160	13.5	42.4	8200	8100
170 Ft. Boom				
30	81.8	174.9	58200*	58200*
35	80.1	174.0	55000*	55000*
40	78.4	173.0	50200*	50200*
45	76.7	171.9	46000*	46000*
50	74.9	170.5	42300*	42300*
55	73.2	169.0	39100*	39100
60	71.4	167.4	36200*	36200*
70	67.8	163.5	29800	29800
80	64.1	158.9	24500	24500
90	60.2	153.5	20800	20700
100	56.2	147.2	17700	17600
110	52.0	139.8	15200	15100
120	47.6	131.1	13200	13100
130	42.8	121.0	11600	11400
140	37.5	108.9	10200	10000
150	31.4	93.9	9000	8800
160	24.0	74.4	7900	7800
180 Ft. Boom				
30	82.3	185.0	53100*	53100*
35	80.7	184.2	50700*	50700*
40	79.0	183.2	46600*	46600*
45	77.4	182.1	42600*	42600*
50	75.8	180.9	39100*	39100*
55	74.1	179.5	36100*	36100*
60	72.5	177.9	33400*	33400*
70	69.1	174.3	28700*	28700*
80	65.6	170.0	24200	24200
90	62.0	165.0	20500	20400
100	58.3	159.1	17400	17300
110	54.5	152.4	15000	14800
120	50.5	144.5	13000	12800
130	46.2	135.4	11300	11100
140	41.5	124.8	9900	9700
150	36.4	112.1	8700	8500
160	30.5	96.7	7600	7500
180	12.7	44.6	6000	5800

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers: Over Rear	With Outriggers: Over Side
190 Ft. Boom				
30	82.7	195.1	48000*	48000*
35	81.2	194.3	46000*	46000*
40	79.6	193.4	43400*	43400*
45	78.1	192.4	39600*	39600*
50	76.5	191.2	36200*	36200*
55	75.0	189.9	33300*	33300*
60	73.4	188.4	30700*	30700*
70	70.2	185.0	26300*	26300*
80	67.0	181.0	22700*	22700*
90	63.6	176.3	19800*	19800*
100	60.2	170.8	17100	17000
110	56.6	164.6	14700	14600
120	52.9	157.3	12700	12500
130	49.0	149.1	11000	10900
140	44.8	139.5	9600	9500
150	40.3	128.5	8400	8300
160	35.4	115.3	7300	7200
180	22.7	78.4	5700	5500
200 Ft. Boom				
30	83.0	205.2	42900*	42900*
35	81.6	204.5	41400*	41400*
40	80.1	203.6	39800*	39800*
45	78.7	202.6	36700*	36700*
50	77.2	201.5	33500*	33500*
55	75.7	200.3	30700*	30700*
60	74.3	198.9	28300*	28300*
70	71.3	195.7	24100*	24100*
80	68.2	191.9	20700*	20700*
90	65.1	187.4	18300*	18300*
100	61.8	182.3	16300*	16300*
110	58.5	176.5	14400	14300
120	55.1	169.8	12400	12300
130	51.5	162.2	10700	10600
140	47.7	153.5	9300	9200
150	43.6	143.6	8100	8000
160	39.3	132.0	7100	6900
180	28.9	101.9	5400	5200
200	12.0	46.6	4000	3900
210 Ft. Boom				
35	82.0	214.6	36600*	36600*
40	80.6	213.8	35500*	35500*
45	79.2	212.8	34100*	34100*
50	77.8	211.8	31000*	31000*
55	76.4	210.6	28400*	28400*
60	75.0	209.3	26000*	26000*
70	72.2	206.9	22000*	22000*
80	69.3	202.6	19000*	19000*
90	66.3	198.5	16800*	16800*
100	63.3	193.6	14900*	14900*
110	60.2	188.2	13200*	13200*
120	57.0	181.9	11700*	11700*
130	53.6	174.9	10400*	10300
140	50.1	166.9	9000	8900
150	46.4	157.8	7800	7700
160	42.5	147.4	6800	6600
180	33.6	121.4	5100	4900
200	21.5	82.2	3700	3600

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers: Over Rear	With Outriggers: Over Side
220 Ft. Boom				
35	82.4	224.7	31900*	31900*
40	81.1	223.9	31100*	31100*
45	79.7	223.0	30400*	30400*
50	78.4	222.0	28700*	28700*
55	77.1	220.9	26100*	26100*
60	75.7	219.6	23900*	23900*
70	73.0	216.7	20000*	20000*
80	70.3	213.3	17600*	17600*
90	67.5	209.4	15400*	15400*
100	64.6	204.8	13600*	13600*
110	61.7	199.7	11900*	11900*
120	58.7	193.8	10500*	10500*
130	55.5	187.2	9200*	9200*
140	52.3	179.8	8000*	8000*
150	48.9	171.4	7000*	7000*
160	45.3	162.0	6000*	6000*
180	37.3	138.9	4400*	4400*
200	27.5	106.8	3000*	3000*
220	11.4	48.6	1800*	1800*
230 Ft. Boom				
35	82.7	234.8	27100*	27100*
40	81.4	234.0	26700*	26700*
45	80.2	233.2	26300*	26300*
50	78.9	232.2	25900*	25900*
55	77.6	231.2	24000*	24000*
60	76.4	230.0	21900*	21900*
70	73.8	227.2	18600*	18600*
80	71.2	224.0	16200*	16200*
90	68.5	220.2	14100*	14100*
100	65.8	215.9	12300*	12300*
110	63.0	211.0	10700*	10700*
120	60.2	205.5	9300*	9300*
130	57.2	199.3	8100*	8100*
140	54.2	192.4	7000*	7000*
150	51.0	184.6	6000*	6000*
160	47.7	175.9	5000*	5000*
180	40.5	154.9	3400*	3400*
200	32.0	127.2	2100*	2100*
Following Load Ratings Include Jib				
240 Ft. Boom				
35	83.0	244.9	30000*	30000*
40	81.8	244.2	30000*	30000*
45	80.6	243.4	30000*	30000*
50	79.4	242.4	28800*	28800*
55	78.2	241.4	26700*	26700*
60	76.9	240.3	24600*	24600*
70	74.5	237.6	20000*	20000*
80	72.0	234.5	18300*	18300*
90	69.4	230.9	16300*	16300*
100	66.9	226.8	14400*	14400*
110	64.2	222.2	12800*	12800*
120	61.5	217.0	11300*	11300*
130	58.8	211.1	10000*	9900
140	55.9	204.6	8600	8500
150	53.0	197.4	7400	7200
160	49.9	189.3	6300	6200
180	43.3	170.0	4600	4500
200	35.7	145.4	3200	3100
220	26.3	111.5	2100*	2100*
240	10.9	50.4	1000*	1000*

CRANE LOAD RATINGS — POUNDS

MAXIMUM COUNTERWEIGHT (51,000 LBS.)

(PCSA RATING 12-697)

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers	
			Over Rear	Over Side
250 Ft. Boom				
40	82.1	254.3	29900*	29900*
45	81.0	253.5	27700*	27700*
50	79.8	252.6	25700*	25700*
55	78.6	251.6	23900*	23900*
60	77.5	250.5	22300*	22300*
70	75.1	248.0	19100*	19100*
80	72.7	245.0	16800*	16800*
90	70.3	241.6	14800*	14800*
100	67.8	237.7	13000*	13000*
110	65.3	233.3	11500*	11500*
120	62.8	228.3	10000*	10000*
130	60.2	222.8	8800*	8800*
140	57.5	216.6	7600*	7600*
150	54.7	209.8	6500*	6500*
160	51.8	202.2	5600*	5600*
180	45.7	184.4	3900*	3900*
200	38.8	162.1	2400*	2400*
220	30.6	132.7	1200*	1200*
260 Ft. Boom				
40	82.4	264.4	21000*	21000*
45	81.3	263.6	21000*	21000*
50	80.2	262.8	21000*	21000*
55	79.1	261.8	21000*	21000*
60	78.0	260.8	20000*	20000*
70	75.7	258.4	14000*	14000*
80	73.4	255.5	14000*	14000*
90	71.1	252.2	14000*	14000*
100	68.7	248.5	12700*	12700*
110	66.3	244.3	11200*	11200*
120	63.9	239.6	9800*	9800*
130	61.4	234.3	8500*	8500*
140	58.9	228.5	7400*	7400*
150	56.2	222.0	6300*	6300*
160	53.5	214.9	5400*	5400*
180	47.8	198.2	3700*	3700*
200	41.5	177.7	2200*	2200*
220	34.2	151.6	1000*	1000*

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers	
			Over Rear	Over Side
270 Ft. Boom				
40	82.7	274.5	15000*	15000*
45	81.6	273.7	15000*	15000*
50	80.6	272.9	15000*	15000*
55	79.5	272.0	15000*	15000*
60	78.4	271.0	15000*	15000*
70	76.2	268.7	10000*	10000*
80	74.0	266.0	10000*	10000*
90	71.8	262.8	10000*	10000*
100	69.6	259.2	10000*	10000*
110	67.3	255.2	10000*	10000*
120	64.9	250.7	9700*	9700*
130	62.6	245.7	8400*	8400*
140	60.1	240.1	7300*	7300*
150	57.6	234.0	6300*	6300*
160	55.1	227.2	5300*	5300*
180	49.7	211.6	3700*	3700*
200	43.8	192.6	2200*	2200*
220	37.3	168.9	1000*	1000*
280 Ft. Boom				
40	83.0	284.6	12000*	12000*
45	81.9	283.9	12000*	12000*
50	80.9	283.1	12000*	12000*
55	79.9	282.2	12000*	12000*
60	78.8	281.2	12000*	12000*
70	76.7	279.0	8000*	8000*
80	74.6	276.4	8000*	8000*
90	72.5	273.3	8000*	8000*
100	70.3	269.9	8000*	8000*
110	68.1	266.0	8000*	8000*
120	65.9	261.7	8000*	8000*
130	63.6	256.9	7900*	7900*
140	61.3	251.6	7100*	7100*
150	58.9	245.8	6300*	6300*
160	56.5	239.4	5300*	5300*
180	51.4	224.6	3700*	3700*
200	45.9	206.8	2300*	2300*
220	39.9	185.0	1000*	1000*

CRANE LOAD RATINGS — POUNDS

STANDARD COUNTERWEIGHT (15,000 LBS.)

(PCSA RATING 12-450)

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers		Without Outriggers	
			Over Rear	Over Side	Over Rear	Over Side
40 Ft. Boom						
12	81.1	46.1	225400*	225400*	77700*	50100*
15	76.6	45.4	183200*	183200*	69700*	42000*
20	69.0	43.6	139200*	139200*	48000	32900*
25	61.0	41.0	95000	97000	36000	26800*
30	52.1	37.3	70400	70700	28500	22500*
35	41.8	32.2	55800	55300	23500	19200*
40	28.5	24.4	46000	45300	19900	16700*
50 Ft. Boom						
15	79.4	55.7	169300*	169300*	69200*	41600*
20	73.4	54.3	138900*	138900*	47700	32500*
25	67.3	52.3	94700	96800	35700	26400*
30	60.8	49.6	70200	70400	28200	22100*
35	53.8	46.1	55500	55100	23200	18800*
40	46.1	41.6	45700	45000	19600	16300*
45	37.0	35.5	38700	37900	16800	14100
50	25.2	26.5	33400	32600	14600	12200
60 Ft. Boom						
15	81.2	65.9	144900*	144900*	68700*	41200*
20	76.3	64.7	130800*	130800*	47400	32100*
25	71.3	63.1	94500	96600	35400	26000*
30	66.1	61.0	69900	70200	27900	21700*
35	60.6	58.3	55200	54800	22900	18400*
40	54.9	54.9	45400	44800	19300	15900*
45	48.6	50.7	38400	37600	16500	13800
50	41.7	45.4	33100	32300	14300	11900
55	33.5	38.5	29100	28200	12500	10400
60	22.8	28.4	25800	25000	11100	9100
70 Ft. Boom						
15	82.4	76.0	138400*	138400*	68200	40700*
20	78.3	75.0	125400*	125400*	47100	31700*
25	74.0	73.7	94200	96400	35100	25600*
30	69.7	71.9	69700	69900	27600	21300*
35	65.2	69.7	55000	54600	22600	18100*
40	60.5	66.9	45200	44500	19000	15500*
45	55.6	63.6	38100	37400	16200	13500
50	50.4	59.7	32900	32100	14000	11600
55	44.7	54.8	28800	28000	12200	10100
60	38.4	48.9	25500	24700	10800	8800
70	21.0	30.2	20600	19900	8600	6900
80 Ft. Boom						
20	79.8	85.3	119800*	119800*	46800	31300*
25	76.1	84.1	94000	96100	34800	25200*
30	72.3	82.5	69400	69700	27300	20900*
35	68.5	80.6	54700	54300	22300	17700*
40	64.6	78.3	44900	44300	18700	15200*
45	60.5	75.6	37900	37100	15900	13200
50	56.2	72.3	32600	31800	13700	11300
55	51.7	68.5	28500	27700	12000	9800
60	46.9	64.0	25200	24400	10500	8500
70	35.7	52.1	20400	19600	8300	6600
80	19.5	31.9	16900	16200	6700	5200

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers		Without Outriggers	
			Over Rear	Over Side	Over Rear	Over Side
90 Ft. Boom						
20	80.9	95.5	114200*	114200*	46500	30800*
25	77.7	94.4	93700	95900	34400	24800*
30	74.4	93.1	69100	69500	27000	20500*
35	71.0	91.4	54400	54100	22000	17300*
40	67.6	89.4	44700	44000	18400	14800*
45	64.1	87.0	37600	36900	15600	12800*
50	60.4	84.2	32300	31500	13400	11000
55	56.6	81.0	28200	27400	11700	9500
60	52.7	77.3	24900	24100	10200	8200
70	44.0	68.1	20100	19400	8000	6300
80	33.5	55.1	16600	15900	6300	4800
90	18.3	33.4	13900	13300	5100	3800
100 Ft. Boom						
20	81.8	105.6	107900*	107900*	46100	30400*
25	78.9	104.7	93500	95700	34100	24400*
30	76.0	103.4	68900	69200	26700	20100*
35	73.0	102.0	54200	53800	21800	16900*
40	69.9	100.2	44400	43800	18100	14400*
45	66.8	98.1	37300	36600	15300	12400*
50	63.7	95.7	32100	31300	13100	10700
55	60.4	92.9	27900	27100	11400	9200
60	57.0	89.7	24600	23900	9900	7900
70	49.7	82.0	19800	19100	7700	6000
80	41.6	71.9	16300	15600	6100	4600
90	31.7	57.9	13700	13000	4800	3500
100	17.3	34.9	11600	11100	3800	2600
110 Ft. Boom						
20	82.6	115.7	101500*	101500*	45800	30000*
25	79.9	114.9	93200	94900*	33800	24100*
30	77.3	113.8	68600	69000	26400	19700*
35	74.6	112.4	53900	53600	21500	16500*
40	71.8	110.8	44200	43500	17800	14000*
45	69.1	109.0	37100	36300	15000	12000*
50	66.2	106.8	31800	31000	12800	10400
55	63.3	104.3	27700	26900	11100	8900
60	60.3	101.6	24400	23600	9600	7600
70	54.1	94.9	19500	18800	7400	5700
80	47.2	86.4	16000	15300	5800	4300
90	39.5	75.5	13400	12800	4500	3200
100	30.2	60.6	11300	10800	3500	2300
110	16.4	36.3	9700	9200	2700	1600
120 Ft. Boom						
25	80.8	125.0	89300*	89300*	33500	23600*
30	78.4	124.0	68500	68700	26100	19300*
35	75.9	122.8	53700	53300	21200	16100*
40	73.4	121.4	43900	43300	17500	13700*
45	70.9	119.7	36800	36100	14700	11700*
50	68.3	117.7	31500	30700	12500	10000*
55	65.7	115.5	27400	26600	10800	8600
60	63.0	113.0	24100	23300	9300	7300
70	57.5	107.1	19300	18600	7100	5400
80	51.6	99.7	15700	15100	5500	4000
90	45.1	90.6	13100	12500	4200	2900
100	37.7	78.9	11100	10500	3200	2000
110	28.8	63.1	9400	8900	2400	1300
120	15.7	37.6	8100	7600	1800	

CRANE LOAD RATINGS — POUNDS

STANDARD COUNTERWEIGHT (15,000 LBS.)

(PCSA RATING 12-450)

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers		Without Outriggers	
			Over Rear	Over Side	Over Rear	Over Side
130 Ft. Boom						
25	81.5	135.2	83600*	83600*	33200	23200*
30	79.3	134.3	68300	68500	25800	19000*
35	77.0	133.1	53400	53100	20900	15800*
40	74.7	131.8	43600	43000	17200	13300*
45	72.4	130.2	36600	35800	14400	11300*
50	70.1	128.5	31300	30500	12200	9700*
55	67.7	126.5	27100	26300	10500	8300
60	65.3	124.2	23800	23100	9000	7000
70	60.3	118.9	19000	18300	6800	5100
80	55.0	112.3	15500	14800	5200	3700
90	49.4	104.4	12800	12200	3900	2600
100	43.2	94.5	10800	10200	2900	1700
110	36.2	82.1	9100	8600	2100	1000
120	27.6	65.5	7800	7300	1500	
130	15.0	38.8	6700	6200		
140 Ft. Boom						
25	82.1	145.3	78000*	78000*	32900	22800*
30	80.0	144.4	68000	68400	25700	18600*
35	77.9	143.4	53100	52800	20600	15400*
40	75.8	142.2	43400	42800	16900	12900*
45	73.7	140.7	36300	35600	14100	10900*
50	71.6	139.1	31000	30200	11900	9300*
55	69.4	137.3	26900	26100	10200	8000*
60	67.2	135.2	23500	22800	8800	6800
70	62.6	130.3	18700	18000	6500	4800
80	57.9	124.5	15200	14500	4900	3400
90	52.8	117.3	12600	11900	3600	2300
100	47.5	108.8	10500	9900	2600	1400
110	41.5	98.3	8900	8300	1800	
120	34.8	85.3	7500	7000	1200	
130	26.6	67.9	6400	5900		
140	14.5	40.1	5500	5100		
150 Ft. Boom						
25	82.6	155.4	72400*	72400*	32600	22300*
30	80.7	154.6	67800	68200	25400	18100*
35	78.8	153.6	52900	52600	20300	14900*
40	76.8	152.5	43100	42500	16600	12400*
45	74.8	151.2	36000	35300	13800	10400*
50	72.8	149.7	30700	30000	11700	8800*
55	70.8	147.9	26600	25800	9900	7500*
60	68.8	146.0	23300	22700	8500	6400*
70	64.6	141.6	18500	17800	6200	4500
80	60.3	136.2	14900	14300	4600	3100
90	55.7	129.8	12300	11700	3300	2000
100	50.9	122.1	10200	9700	2300	1100
110	45.7	113.0	8600	8000	1500	
120	40.0	102.0	7200	6700		
130	33.6	88.3	6100	5700		
140	25.6	70.1	5200	4800		
150	13.9	41.2	4400	4000		

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers		Without Outriggers	
			Over Rear	Over Side	Over Rear	Over Side
160 Ft. Boom						
30	81.3	164.8	63300*	63300*	25100	17800*
35	79.5	163.8	52600	52300	20000	14600*
40	77.6	162.8	42900	42300	16300	12200*
45	75.8	161.5	35800	35100	13500	10200*
50	73.9	160.1	30400	29700	11400	8600*
55	72.1	158.5	26300	25600	9600	7200*
60	70.2	156.8	23000	22400	8200	6200
70	66.3	152.6	18200	17500	5900	4200
80	62.3	147.7	14700	14000	4300	2800
90	58.1	141.8	12000	11400	3000	1700
100	53.8	134.9	9900	9400	2000	
110	49.2	126.7	8300	7800	1200	
120	44.2	117.1	6900	6500		
130	38.7	105.5	5800	5400		
140	32.4	91.1	4900	4500		
150	24.8	72.3	4100	3700		
160	13.5	42.4	3400	3000		
170 Ft. Boom						
30	81.8	174.9	58200*	58200*	24800	17400*
35	80.1	174.0	52400	52100	19700	14200*
40	78.4	173.0	42600	42100	16000	11800*
45	76.7	171.9	35500	34800	13300	9800*
50	74.9	170.5	30200	29400	11100	8200*
55	73.2	169.0	26000	25300	9300	7000*
60	71.4	167.4	22700	22200	7900	5700*
70	67.8	163.5	17900	17200	5600	3900
80	64.1	158.9	14400	13700	4000	2500
90	60.2	153.5	11700	11100	2700	1400
100	56.2	147.2	9700	9100	1700	
110	52.0	139.8	8000	7500		
120	47.6	131.1	6700	6200		
130	42.8	121.0	5500	5100		
140	37.5	108.9	4600	4200		
150	31.4	93.9	3800	3400		
160	24.0	74.4	3100	2700		
180 Ft. Boom						
30	82.3	185.0	53100*	53100*	24500	17000*
35	80.7	184.2	50700*	50700*	19400	13900*
40	79.0	183.2	42400	41800	15700	11400*
45	77.4	182.1	35300	34600	13000	9400*
50	75.8	180.9	29900	29200	10800	7800*
55	74.1	179.5	25800	25000	9000	6600*
60	72.5	177.9	22700	21900	7600	5300*
70	69.1	174.3	17700	17000	5400	3600*
80	65.6	170.0	14100	13500	3700	2200
90	62.0	165.0	11500	10900	2400	1100
100	58.3	159.1	9400	8800	1400	
110	54.5	152.4	7700	7200		
120	50.5	144.5	6400	5900		
130	46.2	135.4	5300	4800		
140	41.5	124.8	4300	3900		
150	36.4	112.1	3500	3100		
160	30.5	96.7	2800	2400		
180	12.7	44.6	1700	1400		

CRANE LOAD RATINGS — POUNDS

STANDARD COUNTERWEIGHT (15,000 LBS.)

(PCSA RATING 12-450)

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers		Without Outriggers	
			Over Rear	Over Side	Over Rear	Over Side
190 Ft. Boom						
30	82.7	195.1	48000*	48000*	24200	16600*
35	81.2	194.3	46000*	46000*	19100	13500*
40	79.6	193.4	42100	41600	15500	11000*
45	78.1	192.4	35000	34300	12700	9100*
50	76.5	191.2	29700	28900	10500	7500*
55	75.0	189.9	25500	24800	8700	6100*
60	73.4	188.4	22400	21700	7300	5000*
70	70.2	185.0	17400	16700	5100	3200*
80	67.0	181.0	13900	13200	3400	1900
90	63.6	176.3	11200	10600	2200	
100	60.2	170.8	9100	8600	1200	
110	56.6	164.6	7500	6900		
120	52.9	157.3	6100	5600		
130	49.0	149.1	5000	4500		
140	44.8	139.5	4000	3600		
150	40.3	128.5	3200	2800		
160	35.4	115.3	2500	2200		
180	22.7	78.4	1400	1100		
200 Ft. Boom						
30	83.0	205.2	42900*	42900*	23900	16200*
35	81.6	204.5	41400*	41400*	18800	13100*
40	80.1	203.6	39800*	39800*	15200	10600*
45	78.7	202.6	34700	34100	12400	8700*
50	77.2	201.5	29400	28700	10200	7100*
55	75.7	200.3	25200	24500	8400	5700*
60	74.3	198.9	22100	21400	7000	4600*
70	71.3	195.7	17100	16500	4800	2900*
80	68.2	191.9	13600	12900	3100	1400
90	65.1	187.4	10900	10300	1900	
100	61.8	182.3	8800	8300		
110	58.5	176.5	7200	6700		
120	55.1	169.8	5800	5400		
130	51.5	162.2	4700	4300		
140	47.7	153.5	3800	3300		
150	43.6	143.6	2900	2500		
160	39.3	132.0	2200	1900		
180	28.9	101.9	1100			
210 Ft. Boom						
35	82.0	214.6	36600*	36600*	18500	12700*
40	80.6	213.8	35500*	35500*	14900	10200*
45	79.2	212.8	34100*	33800	12100	8300*
50	77.8	211.8	29100	28400	9900	6700*
55	76.4	210.6	25000	24200	8200	5300*
60	75.0	209.3	21900	21200	6700	4300*
70	72.2	206.2	16900	16200	4500	2800
80	69.3	202.6	13300	12700	2800	1400
90	66.3	198.5	10600	10100	1600	
100	63.3	193.6	8600	8000		
110	60.2	188.2	6900	6400		
20	57.0	181.9	5500	5100		
130	53.6	174.9	4400	4000		
140	50.1	166.9	3500	3100		
150	46.4	157.8	2700	2300		
160	42.5	147.4	2000	1600		

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers		Without Outriggers	
			Over Rear	Over Side	Over Rear	Over Side
220 Ft. Boom						
35	82.4	224.7	31900*	31900*	18200	12300*
40	81.1	223.9	31100*	31100*	14600	9800*
45	79.7	223.0	30400*	30400*	11800	7900*
50	78.4	222.0	28700*	28100	9600	6300*
55	77.1	220.9	24700	24000	7900	4900*
60	75.7	219.6	21600	20900	6400	3900*
70	73.0	216.7	16600	15900	4200	2500
80	70.3	213.3	13000	12400	2500	1100
90	67.5	209.4	10400	9800	1300	
100	64.6	204.8	8300	7800		
110	61.7	199.7	6600	6100		
120	58.7	193.8	5300	4800		
130	55.5	187.2	4100	3700		
140	52.3	179.8	3200	2800		
150	48.9	171.4	2400	2000		
160	45.3	162.0	1700	1300		
230 Ft. Boom						
35	82.7	234.8	27100*	27100*	18300	11100*
40	81.4	234.0	26700*	26700*	14700	9400*
45	80.2	233.2	26300*	26300*	11900	7500*
50	78.9	232.2	25900*	25900*	9700	5900*
55	77.6	231.2	24000*	24000*	8000	4500*
60	76.4	230.0	21700	21000	6500	3500*
70	73.8	227.2	16700	16100	4300	2600
80	71.2	224.0	13200	12500	2600	1200
90	68.5	220.2	10500	9900	1400	
100	65.8	215.9	8400	7900		
110	63.0	211.0	6700	6200		
120	60.2	205.5	5400	4900		
130	57.2	199.3	4200	3800		
140	54.2	192.4	3300	2900		
150	51.0	184.6	2500	2100		
160	47.7	175.9	1800	1400		
Following Load Ratings Include Jib						
240 Ft. Boom						
35	83.0	244.9	30000*	30000*	18000	10800*
40	81.8	244.2	30000*	30000*	14400	9100*
45	80.6	243.4	30000*	30000*	11600	7100*
50	79.4	242.4	28800*	28100	9400	5600*
55	78.2	241.4	24600	23900	7700	4100*
60	76.9	240.3	21500	20800	6200	3500*
70	74.5	237.6	16500	15800	4000	1700*
80	72.0	234.5	12900	12300	2300	
90	69.4	230.9	10200	9700	1100	
100	66.9	226.8	8100	7600		
110	64.2	222.2	6500	6000		
120	61.5	217.0	5100	4700		
130	58.8	211.1	4000	3500		
140	55.9	204.6	3000	2600		
150	53.0	197.4	2200	1800		
160	49.9	189.3	1500	1100		

CRANE LOAD RATINGS — POUNDS

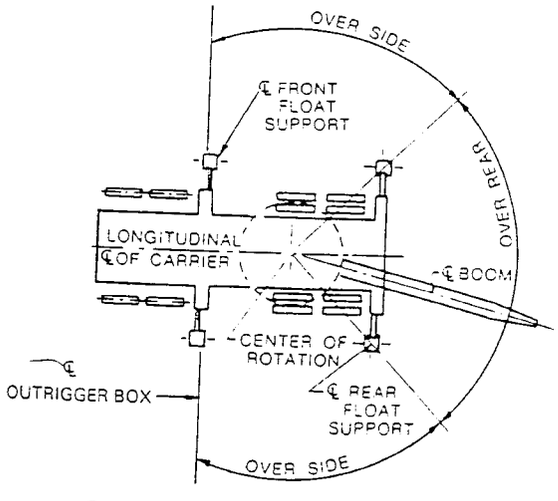
STANDARD COUNTERWEIGHT (15,000 LBS.)

(PCSA RATING 12-450)

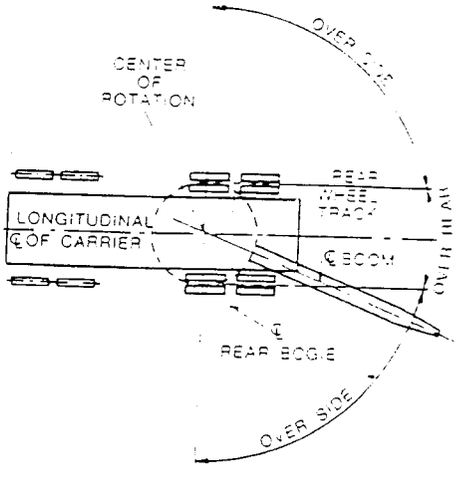
Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers		Without Outriggers	
			Over Rear	Over Side	Over Rear	Over Side
250 Ft. Boom						
40	82.1	254.3	29900*	29900*	14100	8800*
45	81.0	253.5	27700*	27700*	11300	6800*
50	79.8	252.6	25700*	25700*	9100	5300*
55	78.6	251.6	23900*	23600	7400	3800*
60	77.5	250.5	21200	20600	5900	3100*
70	75.1	248.0	16200	15600	3700	1500*
80	72.7	245.0	12600	12000	2000	
90	70.3	241.6	9900	9400		
100	67.8	237.7	7900	7300		
110	65.3	233.3	6200	5700		
120	62.8	228.3	4800	4400		
130	60.2	222.8	3700	3300		
140	57.5	216.6	2700	2300		
150	54.7	209.8	1900	1500		
160	51.8	202.2	1200			
260 Ft. Boom						
40	82.4	264.4	21000*	21000*	13900	8500*
45	81.3	263.6	21000*	21000*	11100	6500*
50	80.2	262.8	21000*	21000*	9000	5000*
55	79.1	261.8	21000*	21000*	7200	3500*
60	78.0	260.8	20000*	20000*	5800	3000*
70	75.7	258.4	14000*	14000*	3500	
80	73.4	255.5	12500	11900	1900	
90	71.1	252.2	9800	9300		
100	68.7	248.5	7700	7200		
110	66.3	244.3	6100	5600		
120	63.9	239.6	4700	4200		
130	61.4	234.3	3600	3100		
140	58.9	228.5	2600	2200		
150	56.2	222.0	1800	1400		
160	53.5	214.9	1100			

Boom Radius Feet	Boom Angle Degrees	Boom Peak Height Feet	With Outriggers		Without Outriggers	
			Over Rear	Over Side	Over Rear	Over Side
270 Ft. Boom						
40	82.7	274.5	15000*	15000*	14000	8200*
45	81.6	273.7	15000*	15000*	11200	6100*
50	80.6	272.9	15000*	15000*	9000	4600*
55	79.5	272.0	15000*	15000*	7300	4200*
60	78.4	271.0	15000*	15000*	5800	2900*
70	76.2	268.7	10000*	10000*	3600	
80	74.0	266.0	10000*	10000*	2000	
90	71.8	262.8	9900	9400		
100	69.6	259.2	7800	7300		
110	67.3	255.2	6200	5700		
120	64.9	250.7	4800	4300		
130	62.6	245.7	3600	3200		
140	60.1	240.1	2700	2300		
150	57.6	234.0	1900	1500		
160	55.1	227.2	1100			
280 Ft. Boom						
40	83.0	284.6	12000*	12000*	12000	7800*
45	81.9	283.9	12000*	12000*	11300	5700*
50	80.9	283.1	12000*	12000*	9100	4200*
55	79.9	282.2	12000*	12000*	7400	4000*
60	78.8	281.2	12000*	12000*	6000	2800*
70	76.7	279.0	8000*	8000*	3700	
80	74.6	276.4	8000*	8000*	2100	
90	72.5	273.3	8000*	8000*		
100	70.3	269.9	8000*	7400		
110	68.1	266.0	6300	5800		
120	65.9	261.7	4900	4500		
130	63.6	256.9	3800	3400		
140	61.3	251.6	2800	2400		
150	58.9	245.8	2000	1600		
160	56.5	239.4	1300			

CRANE WORKING AREAS



Carrier With Outriggers



Carrier Without Outriggers

GENERAL NOTES

1. Crane load ratings in pounds as determined by boom length, radius or boom angle apply to the MC-1400 Moto-Crane only as originally manufactured, equipped and mounted on a Lorain MC-1400 carrier. **THEY ARE MAXIMUM CRANE 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 do not exceed 85% of tipping loads, and are for machines with 15,000 lbs. of standard counterweight, 51,000 lbs. of maximum counter weight, or 51,000 lbs. of maximum counterweight plus 10,000 lbs. of bumper counterweight. Ratings identified with asterisk (*) are based on the machine's structural competence and not on the machine stability. Weights of hooks, hook blocks, slings and all other handling devices, except hoist rope shall be considered a part of the load. Crane load ratings with outriggers are based on outrigger fully extended and set to a distance of 11 ft. - 0 in. 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.

3. 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.

4. **BEFORE** operating this machine, the operator and other personnel should thoroughly read and understand the Operator's Manual and C.I.M.A. Crane User's Safety Manual furnished by the manufacturer.

5. This crane and its load ratings are in accordance with Power Crane and Shovel Association Standards No. 1, SAE Crane Load Stability Test Code J-765a, SAE Method of Test for Crane Structure J-987 and Safety Code for Cranes, Derricks and Hoists, ANSI B30.5-1968.

6. All lifting must be done with mast and gantry in raised position.

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

   Use blocking under front tires or front part of carrier frame if boom and load is to be moved forward of front outriggers.

9. "Without Outriggers" crane load ratings are for over rear and over side as indicated. If loads are to be rotated over the corners of the vehicle, the outriggers should be extended to reduce tire and axle loadings.

10. The crane, equipped with maximum counterweight, is suitable for lifting crane service only. **OUTRIGGERS MUST BE FULLY EXTENDED.** Do not swing over the side with the outriggers raised or retracted.

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

12. Intermediate suspension required for booms 220 ft. and over.

13. Maximum length of boom (without jib) 230 ft.

14. The lengths listed below may be carried over the rear under the following conditions, straight back or forward movement, outriggers cleared of the ground, gantry erected (22 ft. - 0 in. overall height). For conditions requiring maneuverability reduce boom length by 10 ft.

Std. Counterweight (15,000 lbs)	Max. Counterweight (51,000 lbs)
110 ft. boom without jib	150 ft. boom without jib
100 ft. boom and 30 ft. jib	130 ft. boom and 30 ft. jib
90 ft. boom and 60 ft. jib	120 ft. boom and 60 ft. jib
Speed restricted to 5 MPH max.	Speed restricted to low-low gear. 3 MPH maximum

Maximum Counterweight (51,000 lbs) Bumper Counterweight (10,000 lbs)
160 ft. boom without jib
130 ft. boom and 30 ft. jib
120 ft. boom and 60 ft. jib
Speed restricted to low-low gear, 3 MPH maximum

15. With gantry in lowered position or gantry lowered and mast pinned to the base section (16' - 6"), the following maximum boom lengths may be carried over the rear without outriggers (Standard Counterweight or Maximum Counterweight):

    110 ft. boom without jib
    80 ft. boom and 30 ft. jib
    70 ft. boom and 60 ft. jib
    Speed restricted to low-low gear, 3 MPH maximum

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

Std. Counterweight (15,000 lbs)	Max. Counterweight (51,000 lbs)
170 ft. boom without jib	210 ft. boom without jib
150 ft. boom and 30 ft. jib	190 ft. boom and 30 ft. jib
140 ft. boom and 60 ft. jib	180 ft. boom and 60 ft. jib

Maximum Counterweight (51,000 lbs) Bumper Counterweight (10,000 lbs)
230 ft. boom without jib
210 ft. boom and 30 ft. jib
200 ft. boom and 60 ft. jib

17. For boom and jib combinations longer than that shown in Note 16 and up to 220 ft. boom and 60 ft. jib rear auxiliary outriggers are required.

18. When working with boom lengths that required auxiliary outriggers for erection, do not exceed the radii as shown on crane load rating chart.

19. 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.

20. Hoist Cable Reeving:

Number of Parts of Hoist Lines	2	3	4	5	6	7	8	9	10	11	12
Maximum Loads (Lbs)	22000	44000	66000	88000	110000	132000	154000	176000	198000	220000	242000	280000* 250000

Use 7/8" dia. hoist (12 parts 6 x 25 IWRC) of 39.8 tons breaking strength

*Note: 12 parts of 7/8" diameter hoist cable (6 x 25, IWRC, Super Tensile Monitor AAA) with 43.5 tons breaking strength is required for the 280,000 lbs. maximum load rating.

21. Crane load ratings are based on the use of

    1 3/8" dia. swaged pendants (6 x 19, IWRC) of 96 tons breaking strength and 16 parts of 3/4" dia. derricking cable (6 x 30G, IWRC) of 28.2 tons breaking strength.

22. Load blocks having various rated load capacities can be used on this crane. Check the rated load capacity of the load block on this crane to be certain its load rating is equal to or greater than the weight of the load, as defined by the load charts, before lifting.

NOTES FOR JIB APPLICATION

1. Jibs may be used straight or offset. 30 ft. jib is of two-piece design and may be extended to 60 ft. with center sections. The following data apply:

Jib Lgth	Radius	Max Lgth Of Boom Incl Jib	Maximum Lifting Capacity (Lbs) Offset From Ext'd C/L Of Boom 0 Ft	6 Ft	12 Ft	18 Ft	24 Ft	Weight Of Jib And Backstays
30 Ft	Up thru 60' Over 60'	250 Ft	30000 20000	25000 17000	22000 15000			1920 Lbs
40 Ft	Up thru 60' Over 60'	260 Ft	21000 14000	18000 12000	16000 11000	10000 8000		2320 Lbs
50 Ft	Up thru 60' Over 60'	270 Ft	15000 10000	13000 9000	12000 8000	9000 7000	8000 6000	2570 Lbs
60 Ft	Up thru 60' Over 60'	280 Ft	12000 8000	11000 7500	10000 7000	8000 6000	7000 5000	2770 Lbs

2. 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 capacities shown above.

3. With jib installed, load ratings over main boom head must be reduced as follows: 2020 lbs. for 30 ft. jib, 2970 lbs. for 50 ft. jib, 2630 lbs. for 40 ft. jib, 3220 lbs. for 60 ft. jib

L3326A

KOEHRING.
LORAIN DIVISION
CHATTANOOGA, TENNESSEE 37405

TOWER LOAD RATINGS-POUNDS

152 FT. TOWER (effective)
145 FT. TOWER (pin to pin)

Radius in Ft.	BOOM LENGTH—Ft. Over Rear and Side						
	50	70	90	100	120	130	150
30	40000	40000	36700	33200	30200	27400	22800
35	36700	36700	33200	30200	27400	24200	19200
40	33200	33200	30200	27400	24200	22800	16800
45	30200	30200	27400	24200	22800	19200	16000
50	27400	27400	24200	22800	19200	16800	13300
55	23500	24200	22800	19200	16800	16000	11800
60		22800	19200	16800	16000	13300	11400
70		19200	16800	16000	13300	11800	10300
75		15800	16000	13300	11800	11400	10000
80			13300	11800	11400	10300	9000
90			10500	11000	10300	10000	8500
95				8200	10000	9000	8200
100					8700	8200	7600
105					6700	7700	7300
110						6300	6300
120							5300
125							
130							
135							
140							
150							
155							

122 FT. TOWER (effective)
115 FT. TOWER (pin to pin)

Radius in Ft.	BOOM LENGTH—Ft. Over Rear and Side				
	50	70	90	100	120
30	44000	44000	37800	34000	31300
35	37800	37800	34000	31300	29000
40	34000	34000	31300	29000	26200
45	31300	31300	29000	26200	24800
50	29000	29000	26200	24800	21300
55	25000	26200	24800	21300	19000
60		24800	21300	19000	18000
70		21300	19000	18000	15000
75		18000	18000	15000	13200
80			15000	13200	12400
90			12000	12400	10800
95				10400	10300
00					9200
05					8000
10					
20					
25					

FT. TOWER (effective)
FT. TOWER (pin to pin)

lius Ft.	BOOM LENGTH Ft. Over Rear and Side		
	50	70	90
0	52000	52000	43500
5	43500	43500	36500
0	36500	36500	32000
5	32000	32000	29400
	29400	29400	26300
	25000	26300	25000
		25000	21400
		21400	19300
		18000	18400
			15200
			12000

KOEHRING®
LORAIN DIVISION
CHATTANOOGA, TENNESSEE 37405

GENERAL NOTES

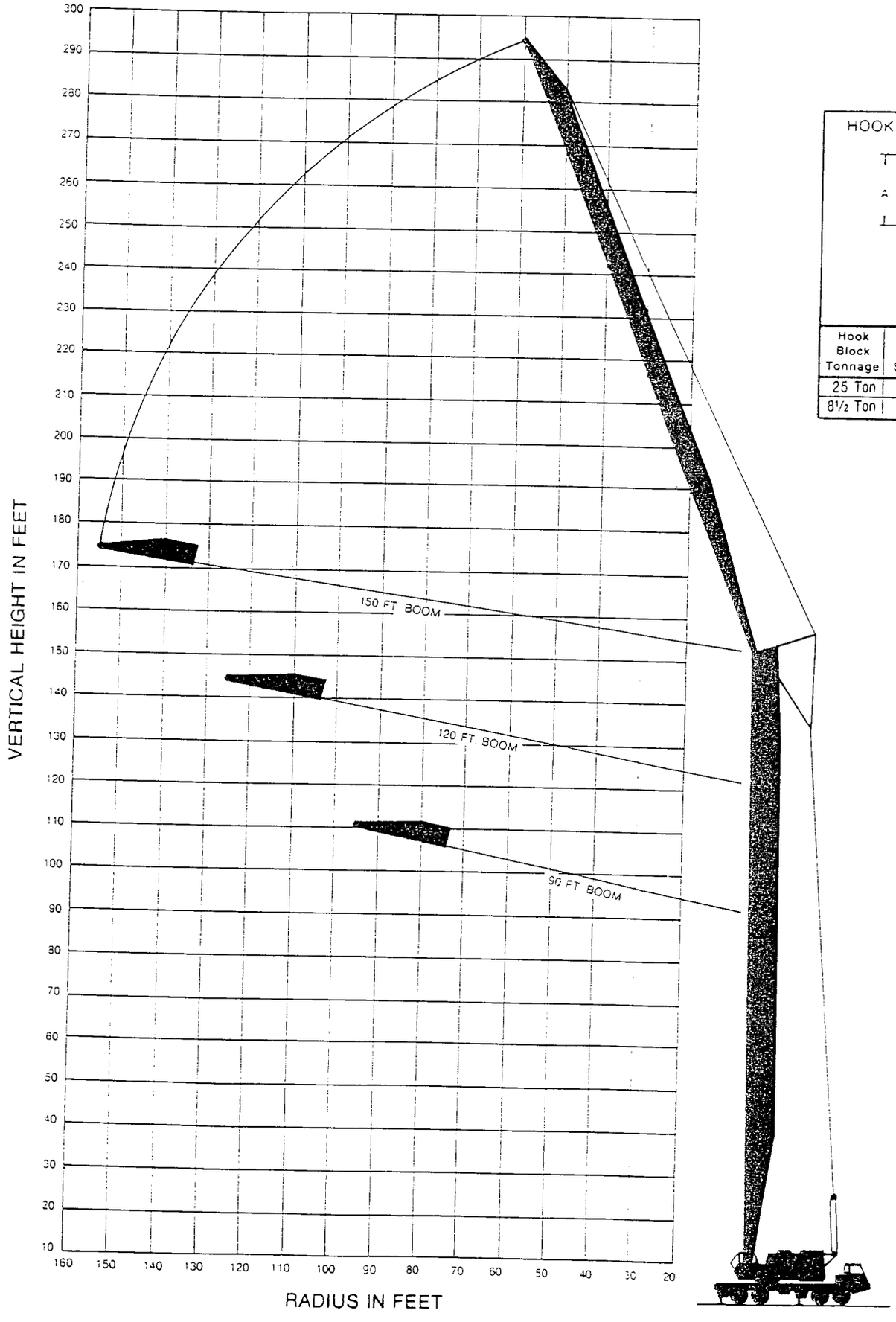
1. Load ratings in pounds as determined by boom length, radius or boom angle apply to the MC 1400 Moto-Tower only as originally manufactured, equipped and mounted on an 8 x 4 Lorain MC 1400 carrier. **THEY ARE MAXIMUM CRANE LOAD RATINGS.**
2. Operating radius is the horizontal distance from the axis of rotation before loading, to the center of the vertical hoist line or tackle with load applied. Load ratings are for machines with 15,000 lbs. of counterweight and 10,000 lbs. of front bumper counterweight and do not exceed 75% of tipping loads. All rated loads are based on the machine's structural competence and not on the machine stability. Weights of hooks, hook blocks, slings and all other handling devices, except hoist rope shall be considered a part of the load. Load ratings with outriggers are based on outrigger fully extended and set to a distance of 11' 0" from the longitudinal axis of the carrier to the outrigger float pivot connection and wheels within the boundary of the outriggers.
3. 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 lengths beyond the maximum and minimum shown, is not intended or approved.
4. **BEFORE** operating this machine, the operator and other personnel should thoroughly read and understand the Operator's Manual and C.I.M.A. Crane User's Safety Manual furnished by the manufacturer.
5. This crane and its load ratings are in accordance with Power Crane and Shovel Association Standards No. 1 and Safety Code for Cranes, Derricks and Hoists, ANSI B30.5-1968.
6. For applications other than lift crane, consult the factory.
7. Rated loads apply only when tower is erected and pinned, gantry lowered, outriggers fully extended and set to a distance at 11' 0" from the longitudinal axis of the carrier to the outrigger float pivot connection.
8. Use blocking under front tires or front part of carrier frame if boom and/or load is to be moved forward of front outriggers.
9. For all load ratings above the horizontal line, the handling devices must weigh at least 3000 lbs. to prevent boom from coming back against boom stops as load is released.
10. With outriggers retracted to clear the ground, the maximum tower and boom may be traveled over rear with tower erected and with boom lowered against tower. Low-low speed to be used, not to exceed 3 M.P.H.. Smooth level surface is required for travel.
11. With outriggers set, the following maximum length of tower and boom may be raised over the rear unassisted. Gantry must be erected.

	Rear Auxiliary Outriggers
92 ft. Tower and 70 ft. Boom or 90 ft. Boom less 15 ft. Peak	No
122 ft. Tower and 100 ft. Boom or 120 ft. Boom less 15 ft. Peak	Yes
152 ft. Tower and 130 ft. Boom or 150 ft. Boom less 15 ft. Peak.	Yes

12. All tower combinations can be operated with published ratings in wind speeds up to 20 M.P.H., if wind speed is measured at a 20 ft. elevation above ground level.
All towers can remain erected in wind speeds up to 50 M.P.H., if the boom is lowered against the tower, measured at a 20 ft. elevation above ground level. All tower combinations must be lowered to ground level if wind speeds at a 20 ft. elevation exceed 50 M.P.H., unless the tower can be secured by guy cables, with the boom lowered against the tower.
13. Minimum number of parts of hoist line required is determined by dividing the load to be lifted by 21,000 lbs. for 7/8 in. hoist cable with breaking strength of 39.8 tons.
14. To handle rated loads:
single 1 3/8" swaged pendants with a breaking strength of 96 tons required between boom peak and the upper mast,
single 1 3/8" swaged pendants with breaking strength of 96 tons required between masts,
double 1 1/8" swaged pendants with breaking strength of 65 tons required between lower mast and floating harness,
16 parts of 3/4" derricking cable with breaking strength of 28.2 tons.
15. With gantry lowered (12' 11-1/2" overall height) and superstructure counterweight removed, the 30 ft. tower base may be carried over the rear at highway speeds. With superstructure counterweight in place, reduce speed to 5 M.P.H. All travel is limited by local roadability requirements.
16. Do not apply any load to hoist cable until tower is erected and boom elevated to approved operating ranges.
17. Load blocks having various rated load capacities can be used on this crane. Check the rated load capacity of the load block on this crane to be certain its load rating is equal to or greater than the weight of the load, as defined by the load charts, before lifting.

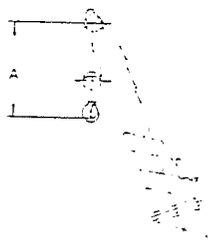
LORAIN
strong on performance

MC 1400 | MOTO-TOWER® LOAD RATINGS



WORKING RANGES

HOOK BLOCK CLEARANCES



Hook Block Tonnage	Number Of Sheaves	Hook Block Weight	Dimension A
25 Ton	1	1145 lb	6'-0"
8½ Ton	None	615 lb	4'-6"

MC 1400
8 x 4

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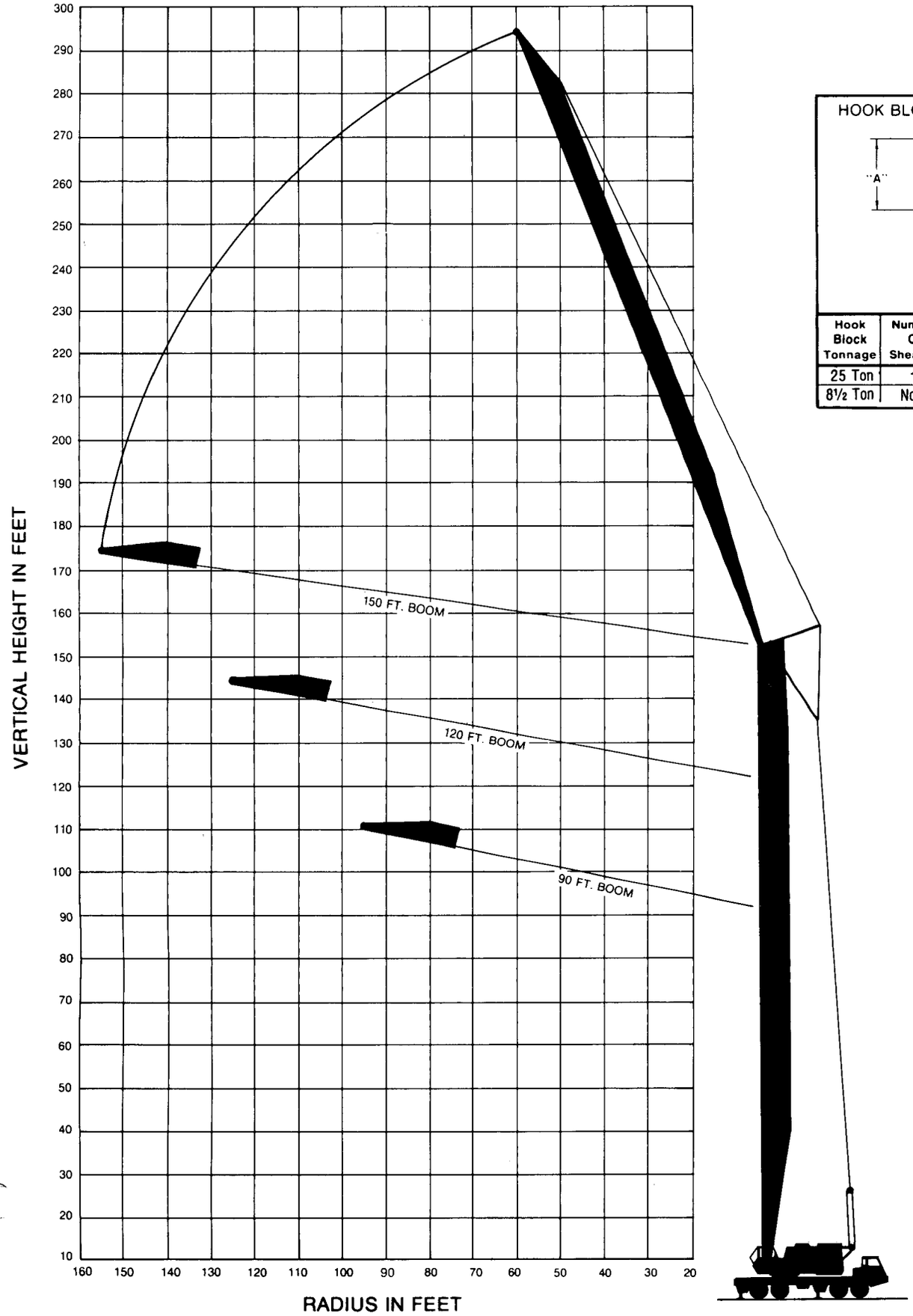
strong on performance

MC 1400 | MOTO-TOWER®

LOAD RATINGS



WORKING RANGES

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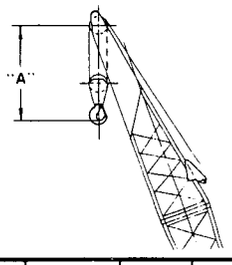

Hook Block Tonnage	Number Of Sheaves	Hook Block Weight	Dimension "A"
25 Ton	1	1145 lb	6'-0"
8½ Ton	None	615 lb	4'-6"

MC 1400
8 x 4

TOWER LOAD RATINGS-POUNDS

152 FT. TOWER (effective)
145 FT. TOWER (pin to pin)

Radius	BOOM LENGTH—Ft. Over Rear and Side						
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40	33200	33200	33200	33200			
45	30200	30200	30200	30200	30200		
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70		19200	19200	19200	19200	19200	19200
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80			16000	16000	16000	16000	16000
90			13300	13300	13300	13300	13300
95			10500	11800	11800	11800	11800
100				11000	11400	11400	11400
105				8200	10300	10300	10300
110					10000	10000	10000
120					8700	9000	9000
125					6700	8200	8500
130						7700	8200
135						6300	7600
140							7300
150							6300
155							5300

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60		24800	24800	24800	24800
70		21300	21300	21300	21300
75		18000	19000	19000	19000
80			18000	18000	18000
90			15000	15000	15000
95			12000	13200	13200
100				12400	12400
105				10400	10800
110					10300
120					9200
125					8000

92 FT. TOWER (effective)
85 FT. TOWER (pin to pin)

Radius in Ft.	BOOM LENGTH Ft. Over Rear and Side		
	50	70	90
30	52000	52000	
35	43500	43500	43500
40	36500	36500	36500
45	32000	32000	32000
50	29400	29400	29400
55	25000	26300	26300
60		25000	25000
70		21400	21400
75		18000	19300
80			18400
90			15200
95			12000

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