

Liftcrane Boom Capacities

Boom No. B10:680

661,300 lb VPC (Variable Position Counterweight)

Rating Over End of Blocked Crawlers

No Travel - Limited Swing

MLC650 SERIES 2



LIFTING CAPACITIES: Lifting capacities for various boom lengths and operating radii are for freely suspended loads and may be based on percent of static tipping over end of machine with crawlers blocked or strength of structural components. Capacities must be reduced by applicable deducts.

Upper boom point capacity for liftcrane service with single part whip line from Drum 3 is 30,000 lb or 60,000 lb with two part whip line. When Drum 1 or Drum 2 is used, capacity with single part whip line is 48,800 lb, or 73,500 lb with two part whip line. In all cases, upper boom point capacities cannot exceed those listed for main boom capacity.

Weight of all load blocks, hooks, weight ball, slings, hoist lines, etc., beneath boom and jib point sheaves is considered part of load. Boom is not to be lowered beyond radii where combined weights are greater than rated capacity. Where no capacity is shown, operation is not intended or approved.

BOOM BACKWARD STABILITY: Capacities indicated by (b) require 12,000 lb minimum weight suspended beneath boom point and (c) require 24,000 lb minimum weight. **Caution: Do not operate in areas indicated by (b) or (c) without required minimum weight. Boom may not lower and boom hoist wire rope may go slack causing wire rope damage or failure.**

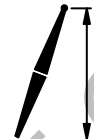
OPERATING CONDITIONS: Machine to operate on a firm, level, and uniformly supporting surface. Drive and idler tumblers must be properly blocked so that centerline of tumblers become tipping fulcrum. Swing is limited to that sector shown on Operating Range Diagram **No. 9347-A**. Refer to Boom Rigging **No. 81018141**, Wire Rope Specifications chart **No. 9359-A**, Counterweight Arrangements chart **No. 9349-A**, and Wind Conditions chart **No. 9358-A**. Crane operator judgment must be used to allow for dynamic load effects of swinging, hoisting or lowering, wind conditions, as well as adverse operating conditions and physical machine depreciation. Refer to the Operator Manual for operating guidelines.



OPERATING RADIUS: Operating radius is horizontal distance from axis of rotation to center of vertical hoist line or load block.



BOOM ANGLE: Boom angle in degrees (°) is angle between horizontal and centerline of boom butt and inserts, and is an indication of operating radius. In all cases, operating radius shall govern capacity.



BOOM POINT ELEVATION: Boom point elevation is vertical distance from ground level to centerline of boom point shaft.

MACHINE EQUIPMENT: Machine equipped with 36 ft 6 in. crawlers, 60 in. or 80 in. treads, 36 ft 1 in. live mast, 30 part boom hoist reeving, boom support straps, and 661,300 lb VPC.

Consult chart **No. 9489-A** when Jib No. 148 is attached.

Luffing Jib Backstay Deduct	
Boom Length (ft)	Deduct (lb)
105.0	3,500
124.7	5,000
144.4	6,000
164.0	7,500
183.7	8,500
203.4	10,000
223.1	10,000
242.8	10,000
262.5	11,000
282.2	12,500
Deduct the appropriate value from capacities when luffing jib backstays are stored on boom.	

Deduct From Capacities When Jib No. 148 Is Attached	
Jib Length (ft)	Deduct (lb)
39.4	18,800
59.1	23,500
78.7	29,400
98.4	35,300
118.1	42,500
137.8	48,100
Weight of jib and 6,500 lb suspended beneath jib point have been included in determination of deduct.	

Refer to Table 1 (with luffing jib backstays stored) and Table 2 (without luffing jib backstays stored) for raising ability with the maximum weight of all load blocks, hooks, weight ball, slings, and hoist lines beneath boom point sheaves. For block weights shown with #, load blocks, hooks, weight ball, and slings must remain on ground until combined weights are within rated capacity of chart. For boom lengths shown with (a), upper boom point must be removed and boom top equipped with a maximum of eight (8) sheaves in lower boom point. Raising is not permitted in shaded areas of table.

Combined weight beneath boom point sheaves must not exceed block weight shown.

Table 1: With Luffing Jib Backstays

Over End of Blocked Crawlers	
Boom Length (ft)	Block Weight (lb)
105.0	46,500
124.7	46,500
144.4	46,500
164.0	46,500
183.7	46,500
203.4	46,500
223.1	22,600
242.8	22,600
262.5	16,200
282.2	#
301.8	Raising Not Permitted
321.5	
341.2	

Table 2: Without Luffing Jib Backstays

Over End of Blocked Crawlers	
Boom Length (ft)	Block Weight (lb)
105.0	46,500
124.7	46,500
144.4	46,500
164.0	46,500
183.7	46,500
203.4	46,500
223.1	46,500
242.8	22,600
262.5	22,600
282.2	16,200
301.8	#
321.5	#
(a) 341.2	#

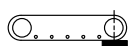
Explanation of Symbols



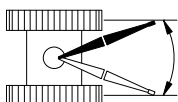
Boom No. B10:680



VPC (Variable Position Counterweight)



Blocked Crawler



Limited Swing



Boom Length



Operating Radius
(see page 1)



Boom Angle
(see page 1)



Boom Point Elevation
(see page 1)

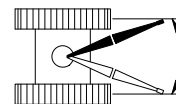
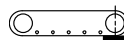


Lifting Capacities
(see page 1)

B10



661,300 lb



105.0 ft			
ft	°	ft	lb
19	84.9	114.4	1,433,000 c
20	84.3	114.2	1,245,800 c
22	83.2	113.9	1,154,500 c
24	82.1	113.6	1,075,400 b
26	81.0	113.2	1,006,300 b
28	79.9	112.8	945,300 b
30	78.8	112.3	891,200 b
32	77.6	111.8	842,800
34	76.5	111.2	799,200
36	75.4	110.6	759,900
38	74.2	110.0	724,100
40	73.1	109.3	691,500
45	70.2	107.4	621,300
50	67.2	105.2	563,600
55	64.1	102.7	515,600
60	61.0	99.8	474,800
65	57.7	96.5	439,900
70	54.3	92.8	403,200
75	50.8	88.6	367,600
80	47.0	83.8	337,600
85	43.0	78.4	311,900
90	38.6	72.0	289,800
95	33.6	64.5	270,400
100	27.8	55.2	253,300
105	20.4	42.5	238,200

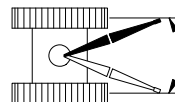
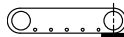
124.7 ft			
ft	°	ft	lb
22	84.3	133.8	1,134,400 c
24	83.4	133.5	1,058,600 b
26	82.4	133.2	992,000 b
28	81.5	132.8	933,100
30	80.6	132.4	880,700
32	79.6	132.0	833,600
34	78.7	131.6	791,300
36	77.7	131.1	752,900
38	76.8	130.5	718,000
40	75.8	130.0	686,100
45	73.4	128.4	617,200
50	71.0	126.6	560,600
55	68.5	124.5	513,300
60	66.0	122.2	473,100
65	63.4	119.6	438,500
70	60.7	116.7	408,300
75	58.0	113.5	372,300
80	55.2	109.9	342,000
85	52.3	106.0	316,100
90	49.2	101.5	293,700
95	46.0	96.6	274,200
100	42.5	91.1	257,000
105	38.9	84.8	241,700
110	34.8	77.6	228,000
115	30.3	69.1	215,700
120	24.9	58.6	204,600
125	18.0	44.4	194,500

144.4 ft			
ft	°	ft	lb
24	84.3	153.4	1,038,500 b
26	83.5	153.1	974,700
28	82.7	152.8	918,100
30	81.9	152.5	867,500
32	81.1	152.1	822,000
34	80.3	151.7	780,900
36	79.4	151.3	743,700
38	78.6	150.8	709,700
40	77.8	150.3	678,600
45	75.8	149.0	611,300
50	73.7	147.5	555,700
55	71.6	145.7	509,200
60	69.5	143.8	469,600
65	67.3	141.6	435,500
70	65.1	139.2	405,900
75	62.9	136.6	375,000
80	60.6	133.7	344,500
85	58.2	130.5	318,400
90	55.8	127.0	295,800
95	53.3	123.2	276,100
100	50.7	119.0	258,800
105	48.0	114.4	243,300
110	45.2	109.4	229,600
115	42.2	103.8	217,200
120	39.1	97.6	206,000
125	35.7	90.6	195,900
130	31.9	82.6	186,600
135	27.7	73.2	178,100
140	22.7	61.6	170,100
145	16.1	45.7	160,100

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661,300 lb



164.0 ft			
ft	°	ft	lb
24	85.0	173.2	1,017,400
26	84.3	173.0	956,800
28	83.6	172.7	902,600
30	82.9	172.4	854,100
32	82.2	172.1	810,400
34	81.4	171.7	770,700
36	80.7	171.4	734,700
38	80.0	171.0	701,700
40	79.3	170.6	671,500
45	77.5	169.4	605,900
50	75.7	168.0	551,600
55	73.9	166.5	505,900
60	72.0	164.8	467,000
65	70.2	163.0	433,400
70	68.3	160.9	404,200
75	66.4	158.6	378,500
80	64.4	156.2	348,300
85	62.4	153.5	321,900
90	60.4	150.6	299,200
95	58.4	147.4	279,300
100	56.3	144.0	261,700
105	54.1	140.3	246,200
110	51.8	136.3	232,300
115	49.5	132.0	219,800
120	47.1	127.3	208,500
125	44.6	122.2	198,300
130	42.0	116.6	188,900
135	39.2	110.4	179,500
140	36.3	103.5	169,300
145	33.1	95.8	159,800
150	29.5	87.1	151,000
155	25.6	76.8	142,700
160	20.8	64.1	135,000

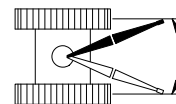
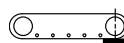
183.7 ft			
ft	°	ft	lb
26	84.9	192.8	938,900
28	84.3	192.6	887,200
30	83.6	192.3	840,700
32	83.0	192.0	798,700
34	82.4	191.7	760,400
36	81.7	191.4	725,600
38	81.1	191.0	693,600
40	80.5	190.6	664,300
45	78.9	189.6	600,400
50	77.3	188.4	547,300
55	75.7	187.1	502,500
60	74.0	185.6	464,200
65	72.4	183.9	431,200
70	70.7	182.1	402,400
75	69.1	180.2	377,000
80	67.4	178.0	352,200
85	65.6	175.7	325,600
90	63.9	173.2	302,600
95	62.1	170.5	282,500
100	60.3	167.5	264,800
105	58.5	164.4	249,000
110	56.6	161.1	235,000
115	54.7	157.5	222,400
120	52.7	153.6	211,000
125	50.7	149.4	200,400
130	48.6	145.0	188,300
135	46.4	140.1	177,300
140	44.2	134.9	167,100
145	41.8	129.3	157,700
150	39.4	123.1	148,900
155	36.7	116.4	140,800
160	34.0	109.0	133,200
165	30.9	100.7	126,100
170	27.6	91.2	119,400
175	23.8	80.1	113,000
180	19.2	66.4	105,500

203.4 ft			
ft	°	ft	lb
28	84.8	212.4	868,500
30	84.3	212.1	824,500
32	83.7	211.9	784,400
34	83.1	211.6	747,900
36	82.5	211.3	714,500
38	82.0	211.0	683,800
40	81.4	210.7	655,500
45	80.0	209.7	593,700
50	78.5	208.6	542,100
55	77.1	207.4	498,400
60	75.6	206.1	461,000
65	74.2	204.6	428,600
70	72.7	203.0	400,200
75	71.2	201.3	375,200
80	69.7	199.4	353,000
85	68.2	197.3	329,100
90	66.6	195.1	305,800
95	65.1	192.7	285,500
100	63.5	190.1	267,700
105	61.9	187.4	251,800
110	60.2	184.5	237,600
115	58.6	181.4	224,900
120	56.9	178.1	211,100
125	55.2	174.5	197,900
130	53.4	170.8	185,800
135	51.6	166.7	174,800
140	49.7	162.4	164,600
145	47.8	157.9	155,200
150	45.9	153.0	146,500
155	43.8	147.7	138,400
160	41.7	142.0	130,800
165	39.5	135.9	123,700
170	37.1	129.3	117,100
175	34.6	122.0	110,900
180	32.0	114.0	105,000
185	29.1	105.1	99,400
190	25.9	94.9	94,200
195	22.3	83.0	87,200
200	17.9	68.3	79,500

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661,300 lb



223.1 ft			
ft	°	ft	lb
30	84.8	232.0	803,000
32	84.2	231.7	765,300
34	83.7	231.5	730,800
36	83.2	231.2	699,100
38	82.7	230.9	669,900
40	82.2	230.6	642,900
45	80.9	229.8	583,500
50	79.6	228.8	533,700
55	78.2	227.7	491,400
60	76.9	226.5	454,900
65	75.6	225.1	423,300
70	74.3	223.7	395,500
75	72.9	222.1	371,000
80	71.6	220.4	349,200
85	70.2	218.5	329,400
90	68.8	216.5	306,100
95	67.4	214.4	285,700
100	66.0	212.1	267,800
105	64.6	209.7	251,800
110	63.1	207.1	237,600
115	61.7	204.4	224,800
120	60.2	201.5	211,000
125	58.7	198.4	197,800
130	57.1	195.1	185,700
135	55.6	191.6	174,700
140	54.0	187.9	164,500
145	52.3	184.0	155,100
150	50.7	179.8	146,400
155	49.0	175.4	138,300
160	47.2	170.7	130,700
165	45.4	165.8	123,700
170	43.5	160.5	117,100
175	41.6	154.8	110,900
180	39.5	148.7	105,100
185	37.4	142.1	99,600
190	35.2	135.0	94,400
195	32.8	127.2	89,400
200	30.3	118.7	84,800
205	27.5	109.2	79,900
210	24.5	98.4	73,800
215	21.0	85.7	67,500
220	16.7	70.0	61,000

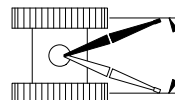
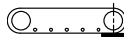
242.8 ft			
ft	°	ft	lb
32	84.7	251.5	747,600
34	84.2	251.3	715,100
36	83.8	251.1	685,100
38	83.3	250.8	657,400
40	82.8	250.5	631,700
45	81.6	249.7	574,900
50	80.4	248.8	526,900
55	79.2	247.8	485,900
60	78.0	246.7	450,500
65	76.8	245.5	419,600
70	75.6	244.2	392,500
75	74.3	242.7	368,500
80	73.1	241.2	347,100
85	71.9	239.5	327,900
90	70.6	237.7	309,100
95	69.3	235.8	288,600
100	68.1	233.7	270,400
105	66.8	231.5	254,400
110	65.5	229.2	238,800
115	64.2	226.7	222,600
120	62.8	224.1	208,100
125	61.5	221.3	194,800
130	60.1	218.4	182,700
135	58.7	215.3	171,600
140	57.3	212.1	161,400
145	55.9	208.6	152,000
150	54.4	205.0	143,300
155	52.9	201.2	135,200
160	51.4	197.1	127,700
165	49.9	192.9	120,600
170	48.3	188.4	114,000
175	46.7	183.6	107,800
180	45.0	178.6	102,000
185	43.3	173.2	96,500
190	41.5	167.5	91,400
195	39.6	161.4	86,500
200	37.7	154.9	81,800
205	35.6	147.9	77,400
210	33.5	140.4	72,200
215	31.2	132.1	66,900
220	28.8	123.1	61,600
225	26.1	113.0	56,400
230	23.2	101.5	51,200
235	19.8	88.1	45,800
240	15.7	71.4	40,100

262.5 ft			
ft	°	ft	lb
34	84.7	271.1	702,900
36	84.2	270.9	674,200
38	83.8	270.6	647,600
40	83.4	270.4	622,800
45	82.2	269.7	567,900
50	81.1	268.8	521,300
55	80.0	267.9	481,400
60	78.9	266.9	446,800
65	77.8	265.8	416,600
70	76.7	264.6	390,000
75	75.5	263.2	366,400
80	74.4	261.8	345,300
85	73.3	260.2	326,400
90	72.1	258.6	309,300
95	71.0	256.8	290,700
100	69.8	254.9	272,500
105	68.6	252.9	255,300
110	67.4	250.8	237,300
115	66.2	248.6	221,200
120	65.0	246.2	206,600
125	63.8	243.7	193,300
130	62.6	241.1	181,200
135	61.3	238.3	170,100
140	60.1	235.4	159,900
145	58.8	232.3	150,500
150	57.5	229.0	141,800
155	56.2	225.7	133,700
160	54.8	222.1	126,100
165	53.5	218.3	119,100
170	52.1	214.4	112,500
175	50.7	210.2	106,300
180	49.2	205.9	100,500
185	47.7	201.3	95,000
190	46.2	196.5	89,800
195	44.6	191.4	84,900
200	43.0	186.0	80,300
205	41.4	180.3	75,900
210	39.7	174.2	71,800
215	37.9	167.7	66,900
220	36.0	160.8	62,100
225	34.1	153.4	57,400
230	32.0	145.4	52,800
235	29.8	136.8	48,300
240	27.5	127.2	43,800
245	24.9	116.6	39,300
250	22.1	104.5	34,800
255	18.8	90.3	30,200

B10



661,300 lb



282.2 ft			
ft	°	ft	lb
36	84.6	290.7	604,200
38	84.2	290.5	602,400
40	83.8	290.2	600,500
45	82.8	289.6	559,000
50	81.8	288.8	514,200
55	80.7	287.9	475,600
60	79.7	287.0	442,100
65	78.7	286.0	412,700
70	77.6	284.8	386,700
75	76.6	283.6	363,600
80	75.5	282.3	342,900
85	74.5	280.8	324,300
90	73.4	279.3	307,500
95	72.3	277.7	292,200
100	71.3	275.9	272,300
105	70.2	274.1	252,100
110	69.1	272.1	234,100
115	68.0	270.1	217,900
120	66.9	267.9	203,300
125	65.8	265.6	190,000
130	64.7	263.2	177,900
135	63.5	260.7	166,700
140	62.4	258.0	156,500
145	61.2	255.2	147,100
150	60.0	252.3	138,300
155	58.8	249.2	130,200
160	57.6	246.0	122,700
165	56.4	242.7	115,600
170	55.2	239.1	109,000
175	53.9	235.5	102,800
180	52.6	231.6	97,000
185	51.3	227.5	91,500
190	50.0	223.3	86,400
195	48.6	218.9	81,500
200	47.2	214.2	76,800
205	45.8	209.3	72,500
210	44.4	204.1	68,000
215	42.9	198.7	63,200
220	41.3	193.0	58,600
225	39.7	186.9	54,100
230	38.1	180.5	49,800
235	36.4	173.7	45,600
240	34.6	166.4	41,500
245	32.7	158.7	37,500
250	30.7	150.2	33,500
255	28.6	141.1	29,700
260	26.3	131.1	25,800
265	23.8	119.9	21,900
270	21.0	107.2	18,000

301.8 ft			
ft	°	ft	lb
36	85.0	310.5	518,100
38	84.6	310.3	516,300
40	84.2	310.1	514,700
45	83.3	309.4	510,500
50	82.3	308.7	506,500
55	81.3	307.9	469,300
60	80.4	307.0	436,900
65	79.4	306.1	408,300
70	78.4	305.0	383,000
75	77.5	303.9	360,500
80	76.5	302.6	340,300
85	75.5	301.3	322,000
90	74.5	299.9	305,500
95	73.5	298.4	288,600
100	72.5	296.8	270,700
105	71.5	295.0	250,500
110	70.5	293.2	232,500
115	69.5	291.3	216,300
120	68.5	289.3	201,600
125	67.5	287.2	188,300
130	66.4	285.0	176,100
135	65.4	282.7	165,000
140	64.3	280.2	154,700
145	63.3	277.7	145,300
150	62.2	275.0	136,500
155	61.1	272.2	128,400
160	60.0	269.3	120,800
165	58.9	266.2	113,800
170	57.7	263.0	107,200
175	56.6	259.7	101,000
180	55.5	256.2	95,100
185	54.3	252.6	89,700
190	53.1	248.8	84,500
195	51.9	244.8	79,600
200	50.6	240.7	75,000
205	49.4	236.3	70,600
210	48.1	231.8	65,800
215	46.8	227.1	61,100
220	45.5	222.1	56,600
225	44.1	216.9	52,300
230	42.7	211.5	48,100
235	41.2	205.7	44,100
240	39.8	199.7	40,200
245	38.2	193.3	36,400
250	36.6	186.6	32,700
255	35.0	179.4	29,100
260	33.2	171.8	25,600
265	31.4	163.6	22,100
270	29.5	154.8	18,700

321.5 ft			
ft	°	ft	lb
38	84.9	330.1	444,600
40	84.6	329.9	443,100
45	83.7	329.3	439,500
50	82.8	328.6	435,800
55	81.9	327.9	432,300
60	81.0	327.0	428,900
65	80.1	326.1	405,700
70	79.2	325.1	381,100
75	78.3	324.1	359,200
80	77.3	322.9	339,400
85	76.4	321.7	321,600
90	75.5	320.3	300,700
95	74.6	318.9	281,400
100	73.6	317.4	263,700
105	72.7	315.8	247,400
110	71.8	314.1	229,300
115	70.8	312.4	213,000
120	69.9	310.5	198,300
125	68.9	308.5	185,000
130	68.0	306.5	172,800
135	67.0	304.3	161,600
140	66.0	302.1	151,300
145	65.0	299.7	141,800
150	64.0	297.2	133,100
155	63.0	294.6	124,900
160	62.0	292.0	117,300
165	61.0	289.1	110,200
170	60.0	286.2	103,600
175	58.9	283.2	97,400
180	57.9	280.0	91,600
185	56.8	276.7	85,900
190	55.7	273.2	80,200
195	54.6	269.6	74,800
200	53.5	265.9	69,600
205	52.4	262.0	64,600
210	51.2	258.0	59,900
215	50.1	253.7	55,300
220	48.9	249.3	51,000
225	47.7	244.7	46,800
230	46.4	239.9	42,700
235	45.2	234.9	38,900
240	43.9	229.7	35,100
245	42.6	224.2	31,500
250	41.2	218.5	28,000
255	39.8	212.5	24,500
260	38.4	206.1	21,200
265	36.9	199.4	18,000

MLC650 S-2

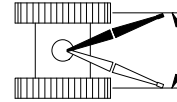
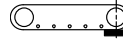
ASME B30.5



B10



661,300 lb



 341.2 ft			
ft	°	ft	lb
40	84.9	349.7	384,500
45	84.0	349.1	381,200
50	83.2	348.5	378,000
55	82.4	347.8	374,900
60	81.5	347.0	371,900
65	80.7	346.1	368,800
70	79.8	345.2	365,700
75	78.9	344.2	355,300
80	78.1	343.1	336,100
85	77.2	341.9	315,500
90	76.4	340.7	294,800
95	75.5	339.4	275,800
100	74.6	338.0	258,400
105	73.7	336.5	242,400
110	72.9	334.9	227,400
115	72.0	333.2	211,100
120	71.1	331.5	196,400
125	70.2	329.7	183,000
130	69.3	327.7	170,800
135	68.4	325.7	159,600
140	67.5	323.6	149,300
145	66.6	321.4	139,800
150	65.6	319.1	131,000
155	64.7	316.7	122,900
160	63.8	314.2	115,300
165	62.8	311.6	108,200
170	61.9	308.9	101,600
175	60.9	306.1	95,300
180	59.9	303.2	89,300
185	58.9	300.1	83,300
190	58.0	297.0	77,600
195	56.9	293.7	72,200
200	55.9	290.3	67,000
205	54.9	286.7	62,100
210	53.9	283.0	57,400
215	52.8	279.2	52,900
220	51.7	275.2	48,600
225	50.6	271.1	44,500
230	49.5	266.8	40,500
235	48.4	262.3	36,700
240	47.3	257.6	33,000
245	46.1	252.8	29,400
250	44.9	247.7	26,000
255	43.7	242.5	22,700
260	42.4	237.0	19,500