


Liftcrane Boom

Extended Upper Point Capacities

MLC300 SERIES 1

Boom No. B45:505-500
with 23.0 ft Extended Upper Boom Point
298,100 lb VPC (Variable Position Counterweight)
360 Degree Rating


 **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 or strength of structural components. Capacities must be reduced by applicable deducts.


Upper boom point (upper sheave) capacity for liftcrane service with single part whip line from Drum 6 is 30,000 lb. When Drum 2 or Drum 3 is used, capacity with single part whip line is 36,700 lb. In all cases, upper boom point capacities cannot exceed those listed for extended upper boom point (lower sheave) capacity.

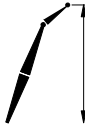
Weight of all load blocks, hooks, weight ball, slings, hoist lines, etc., beneath sheaves is considered part of load. Boom is not to be lowered beyond radii where combined weights are greater than rated capacity. Where no capacity is shown, operation is not intended or approved.

OPERATING CONDITIONS: Machine to operate on a firm, level, and uniformly supporting surface. Refer to Boom Rigging **No. 84049567**, Wire Rope Specifications chart **No. 9647-A**, Counterweight Arrangements chart **No. 9345-A**, and Wind Conditions chart **No. 9646-A**. Crane operator judgment must be used to allow for dynamic load effects of swinging, hoisting or lowering, travel, wind conditions, as well as adverse operating conditions and physical machine depreciation. Refer to the Operator Manual for operating guidelines.

MACHINE TRAVEL: Machine to travel on a firm, level, and uniformly supporting surface. Boom must be within boom angle range shown in capacity chart. Refer to Maximum Allowable Travel Specifications chart **No. 9645-A**.

 **EXTENDED UPPER BOOM POINT OPERATING RADIUS:** Extended upper boom point operating radius is horizontal distance from axis of rotation to center of vertical hoist line or load block.

 **BOOM ANGLE:** Boom angle in degrees ($^{\circ}$) 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.

 **EXTENDED UPPER BOOM POINT ELEVATION:** Extended upper boom point elevation is vertical distance from ground level to centerline of extended upper boom point shaft.

MACHINE EQUIPMENT: Machine equipped with 31 ft 10 in. crawlers, 48 in. or 60 in. treads, 30 ft live mast, 24 part boom hoist reeving, boom support straps, and 298,100 lb VPC.

Luffing Jib Backstay Deduct	
Boom Length (ft)	Deduct (lb)
114.8	3,100
134.5	3,700
154.2	4,300
173.9	4,800
193.6	5,400
213.3	6,000
232.9	6,600
252.6	7,100
Deduct the appropriate value from capacities when luffing jib backstays are stored on boom.	

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 extended upper boom point (lower or upper 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. Raising is not permitted in shaded areas of table.

Combined weight beneath extended upper boom point (lower or upper sheaves) must not exceed block weight shown.

Table 1a: With Luffing Jib Backstays

Over End or Side of Crawlers	
Boom Length (ft)	Block Weight (lb)
114.8	7,600
134.5	7,600
154.2	7,600
173.9	7,600
193.6	7,600
213.3	7,600
232.9	#
252.6	Raising Not Permitted
272.3	

Table 1b: With Luffing Jib Backstays

Over End of Blocked Crawlers	
Boom Length (ft)	Block Weight (lb)
114.8	7,600
134.5	7,600
154.2	7,600
173.9	7,600
193.6	7,600
213.3	7,600
232.9	#
252.6	#
272.3	Raising Not Permitted

Warning: Crane must remain in-line with crawlers when raising over end of blocked crawlers until operating radius is within 360 degree chart. Crane tipping or structural damage can occur.

Table 2a: Without Luffing Jib Backstays

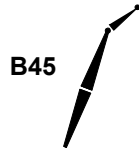
Over End or Side of Crawlers	
Boom Length (ft)	Block Weight (lb)
114.8	7,600
134.5	7,600
154.2	7,600
173.9	7,600
193.6	7,600
213.3	7,600
232.9	#
252.6	Raising Not Permitted
272.3	


Table 2b: Without Luffing Jib Backstays


Over End of Blocked Crawlers	
Boom Length (ft)	Block Weight (lb)
114.8	7,600
134.5	7,600
154.2	7,600
173.9	7,600
193.6	7,600
213.3	7,600
232.9	#
252.6	#
272.3	#

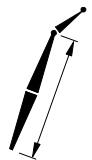
Warning: Crane must remain in-line with crawlers when raising over end of blocked crawlers until operating radius is within 360 degree chart. *Crane tipping or structural damage can occur.*

Explanation of Symbols

 B45 Boom No. B45:505-500


 VPC (Variable Position Counterweight)


 360 Degree Rating

 Boom Length

 Extended Upper Boom Point Operating Radius
(see page 1)

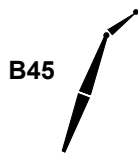
 Boom Angle
(see page 1)

 Extended Upper Boom Point Elevation
(see page 1)

 Lifting Capacities
(see page 1)

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ASME B30.5



114.8 ft

ft	°	ft	lb
36	82.7	139.5	191,100
37	82.2	139.2	190,300
38	81.8	139.0	189,500
39	81.4	138.7	188,800
40	80.9	138.5	188,000
45	78.7	137.1	184,500
50	76.5	135.4	181,200
55	74.3	133.5	178,200
60	72.0	131.4	163,100
65	69.7	129.1	147,400
70	67.3	126.5	134,300
75	64.9	123.7	123,300
80	62.4	120.5	114,000
85	59.8	117.0	105,900
90	57.1	113.2	98,800
95	54.4	109.0	92,500
100	51.5	104.4	87,000
105	48.5	99.2	82,100
110	45.3	93.5	77,600
115	41.8	87.0	73,000
120	38.1	79.6	68,300

134.5 ft

ft	°	ft	lb
38	82.9	159.1	207,500
39	82.5	158.9	207,100
40	82.1	158.7	206,600
41	81.7	158.4	206,200
42	81.3	158.2	205,700
45	80.2	157.4	204,500
50	78.3	156.0	202,500
55	76.4	154.4	184,500
60	74.4	152.6	165,000
65	72.4	150.6	149,100
70	70.4	148.4	136,000
75	68.4	146.0	124,900
80	66.3	143.4	115,400
85	64.2	140.5	107,300
90	62.0	137.4	100,100
95	59.8	134.0	93,800
100	57.5	130.3	88,300
105	55.1	126.3	83,300
110	52.6	121.9	77,600
115	50.1	117.1	72,400
120	47.4	111.8	67,700
125	44.6	106.1	63,400
130	41.6	99.7	59,400
135	38.4	92.5	55,700

154.2 ft

ft	°	ft	lb
41	82.7	178.5	220,500
42	82.3	178.3	220,500
43	82.0	178.1	220,500
44	81.7	177.9	220,500
45	81.3	177.7	220,500
50	79.7	176.4	211,300
55	78.0	175.0	186,500
60	76.2	173.4	166,900
65	74.5	171.7	150,900
70	72.8	169.8	137,600
75	71.0	167.7	126,400
80	69.2	165.4	116,800
85	67.4	162.9	108,600
90	65.5	160.3	101,400
95	63.6	157.4	95,100
100	61.7	154.3	88,600
105	59.7	150.9	82,300
110	57.7	147.3	76,600
115	55.6	143.4	71,400
120	53.5	139.2	66,700
125	51.3	134.7	62,400
130	49.0	129.8	58,500
135	46.6	124.5	54,900
140	44.1	118.7	51,500
145	41.5	112.4	48,400
150	38.7	105.4	45,400
155	35.6	97.5	42,700

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173.9 ft

ft	°	ft	lb
43	82.8	198.2	220,500
44	82.5	198.0	220,500
45	82.2	197.8	220,500
46	81.9	197.5	220,500
47	81.6	197.3	220,500
50	80.7	196.6	213,500
55	79.2	195.4	188,500
60	77.7	194.0	168,600
65	76.1	192.4	152,500
70	74.6	190.7	139,100
75	73.0	188.9	127,800
80	71.4	186.9	118,100
85	69.8	184.7	109,800
90	68.2	182.4	102,500
95	66.6	179.9	94,600
100	64.9	177.2	87,500
105	63.2	174.3	81,200
110	61.5	171.2	75,500
115	59.7	167.9	70,300
120	57.9	164.3	65,600
125	56.0	160.6	61,300
130	54.2	156.5	57,400
135	52.2	152.2	53,800
140	50.2	147.5	50,400
145	48.1	142.5	47,300
150	46.0	137.2	44,400
155	43.7	131.4	41,700
160	41.3	125.1	39,100
165	38.8	118.2	36,800
170	36.2	110.6	34,500

193.6 ft

ft	°	ft	lb
45	83.0	217.8	220,500
46	82.7	217.6	220,500
47	82.4	217.4	220,500
48	82.1	217.2	220,500
49	81.9	217.0	220,500
50	81.6	216.8	215,600
55	80.2	215.6	190,400
60	78.8	214.4	170,300
65	77.5	213.0	154,000
70	76.1	211.5	140,500
75	74.7	209.8	129,100
80	73.2	208.0	119,400
85	71.8	206.1	110,600
90	70.4	204.0	101,500
95	68.9	201.7	93,500
100	67.4	199.4	86,300
105	65.9	196.8	80,000
110	64.4	194.1	74,200
115	62.8	191.2	69,100
120	61.3	188.1	64,400
125	59.7	184.8	60,100
130	58.0	181.3	56,100
135	56.4	177.6	52,500
140	54.7	173.7	49,100
145	52.9	169.5	46,000
150	51.2	165.1	43,100
155	49.3	160.3	40,400
160	47.4	155.3	37,900
165	45.4	149.9	35,600
170	43.4	144.1	33,300
175	41.3	137.8	31,200
180	39.0	131.0	29,200
185	36.6	123.6	27,400

213.3 ft

ft	°	ft	lb
48	82.8	237.2	220,500
49	82.6	237.0	220,500
50	82.3	236.8	217,700
51	82.1	236.6	212,100
52	81.8	236.4	206,700
55	81.1	235.8	192,200
60	79.8	234.6	172,000
65	78.5	233.4	155,500
70	77.3	232.0	141,900
75	76.0	230.5	130,400
80	74.7	228.9	119,900
85	73.4	227.1	109,400
90	72.1	225.2	100,300
95	70.8	223.2	92,200
100	69.4	221.1	85,100
105	68.1	218.8	78,700
110	66.7	216.3	72,900
115	65.4	213.7	67,800
120	64.0	211.0	63,000
125	62.6	208.1	58,700
130	61.1	205.0	54,800
135	59.7	201.8	51,100
140	58.2	198.3	47,800
145	56.7	194.7	44,700
150	55.1	190.9	41,800
155	53.5	186.8	39,100
160	51.9	182.5	36,600
165	50.3	178.0	34,200
170	48.6	173.1	32,000
175	46.8	168.0	29,900
180	45.0	162.6	27,900
185	43.1	156.7	26,100
190	41.2	150.5	24,300
195	39.1	143.8	22,600
200	37.0	136.6	21,000

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232.9 ft			
ft	°	ft	lb
50	82.9	256.8	218,400
51	82.7	256.6	212,800
52	82.5	256.5	207,400
53	82.2	256.3	202,300
54	82.0	256.1	197,400
55	81.8	255.9	192,800
60	80.6	254.8	172,400
65	79.5	253.7	155,800
70	78.3	252.4	142,100
75	77.1	251.0	130,500
80	75.9	249.5	118,900
85	74.8	247.9	108,400
90	73.6	246.2	99,300
95	72.4	244.4	91,200
100	71.1	242.4	84,000
105	69.9	240.3	77,600
110	68.7	238.1	71,800
115	67.4	235.8	66,600
120	66.2	233.3	61,900
125	64.9	230.7	57,600
130	63.6	227.9	53,600
135	62.3	225.0	50,000
140	61.0	222.0	46,600
145	59.6	218.7	43,500
150	58.3	215.3	40,600
155	56.9	211.8	37,900
160	55.5	208.0	35,400
165	54.0	204.0	33,000
170	52.6	199.9	30,800
175	51.1	195.5	28,700
180	49.5	190.8	26,800
185	47.9	185.9	24,900
190	46.3	180.8	23,100
195	44.6	175.3	21,500
200	42.9	169.4	19,900
205	41.1	163.2	18,400
210	39.2	156.6	16,900
215	37.3	149.5	15,600
220	35.2	141.8	14,300

252.6 ft			
ft	°	ft	lb
53	82.8	276.3	204,300
54	82.6	276.1	199,300
55	82.4	275.9	194,700
56	82.2	275.7	190,200
57	81.9	275.5	185,900
60	81.3	274.9	174,100
65	80.2	273.8	157,400
70	79.2	272.7	143,500
75	78.1	271.4	129,900
80	77.0	270.0	117,700
85	75.9	268.5	107,200
90	74.8	267.0	98,000
95	73.7	265.3	89,800
100	72.6	263.5	82,600
105	71.5	261.6	76,200
110	70.3	259.5	70,400
115	69.2	257.4	65,200
120	68.0	255.1	60,400
125	66.9	252.8	56,100
130	65.7	250.3	52,100
135	64.5	247.6	48,500
140	63.3	244.8	45,100
145	62.1	241.9	42,000
150	60.9	238.9	39,100
155	59.6	235.7	36,400
160	58.4	232.3	33,900
165	57.1	228.8	31,500
170	55.8	225.1	29,300
175	54.5	221.2	27,200
180	53.1	217.2	25,200
185	51.7	212.9	23,400
190	50.3	208.4	21,600
195	48.9	203.7	20,000
200	47.4	198.7	18,400
205	45.9	193.5	16,900
210	44.3	188.0	15,400
215	42.7	182.2	14,100
220	41.0	176.0	12,800
225	39.3	169.4	11,500
230	37.5	162.4	10,300

272.3 ft			
ft	°	ft	lb
55	82.9	295.9	196,200
56	82.7	295.7	191,700
57	82.5	295.5	187,400
58	82.3	295.3	183,200
59	82.1	295.2	179,300
60	81.9	295.0	175,500
65	80.9	294.0	158,600
70	79.9	292.9	143,900
75	78.9	291.7	129,500
80	77.9	290.4	117,300
85	76.9	289.0	106,700
90	75.9	287.6	97,400
95	74.8	286.0	89,300
100	73.8	284.3	82,000
105	72.8	282.6	75,600
110	71.7	280.7	69,800
115	70.7	278.7	64,500
120	69.6	276.7	59,800
125	68.5	274.5	55,400
130	67.5	272.2	51,400
135	66.4	269.8	47,800
140	65.3	267.2	44,400
145	64.2	264.6	41,200
150	63.1	261.8	38,300
155	61.9	258.9	35,600
160	60.8	255.8	33,100
165	59.6	252.6	30,700
170	58.4	249.3	28,500
175	57.3	245.8	26,400
180	56.0	242.2	24,400
185	54.8	238.4	22,600
190	53.6	234.4	20,800
195	52.3	230.2	19,200
200	51.0	225.9	17,600
205	49.7	221.3	16,100
210	48.3	216.5	14,700
215	46.9	211.5	13,300
220	45.5	206.2	12,000
225	44.1	200.7	10,800