

Liftcrane Boom

Extended Upper Point Capacities

MLC300 SERIES 1

Boom No. B45:505-500

**with 23.0 ft Extended Upper Boom Point
309,100 lb Fixed Position Counterweight
at 13.4 ft Position
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. 9644-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 (°) 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 309,100 lb Fixed Position Counterweight.

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
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	#
213.3	Raising Not Permitted
232.9	

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	#
213.3	#
232.9	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

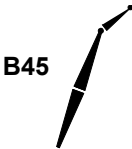
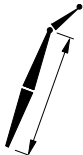
Over End or Side of Crawlers	
Boom Length (ft)	Block Weight (lb)
114.8	7,600
134.5	7,600
154.2	7,600
173.9	7,600
193.6	7,600
213.3	#
232.9	Raising Not Permitted

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	#
232.9	#

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

	Boom No. B45:505-500
	Fixed 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)

B45



309,100 lb

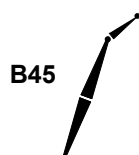


360°

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	170,900
60	72.0	131.4	150,700
65	69.7	129.1	134,200
70	67.3	126.5	120,500
75	64.9	123.7	109,000
80	62.4	120.5	99,100
85	59.8	117.0	90,500
90	57.1	113.2	83,000
95	54.4	109.0	76,400
100	51.5	104.4	70,500
105	48.5	99.2	65,200
110	45.3	93.5	60,400
115	41.8	87.0	56,100
120	38.1	79.6	52,100

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	196,100
55	76.4	154.4	170,500
60	74.4	152.6	150,200
65	72.4	150.6	133,600
70	70.4	148.4	119,900
75	68.4	146.0	108,300
80	66.3	143.4	98,400
85	64.2	140.5	89,800
90	62.0	137.4	82,300
95	59.8	134.0	75,700
100	57.5	130.3	69,800
105	55.1	126.3	64,500
110	52.6	121.9	59,800
115	50.1	117.1	55,500
120	47.4	111.8	51,600
125	44.6	106.1	48,000
130	41.6	99.7	44,600
135	38.4	92.5	41,600

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	195,700
55	78.0	175.0	170,000
60	76.2	173.4	149,500
65	74.5	171.7	132,900
70	72.8	169.8	119,100
75	71.0	167.7	107,400
80	69.2	165.4	97,500
85	67.4	162.9	88,900
90	65.5	160.3	81,400
95	63.6	157.4	74,700
100	61.7	154.3	68,800
105	59.7	150.9	63,600
110	57.7	147.3	58,800
115	55.6	143.4	54,500
120	53.5	139.2	50,600
125	51.3	134.7	47,000
130	49.0	129.8	43,700
135	46.6	124.5	40,700
140	44.1	118.7	37,900
145	41.5	112.4	35,200
150	38.7	105.4	32,800
155	35.6	97.5	30,500



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	214,200
50	80.7	196.6	195,200
55	79.2	195.4	169,300
60	77.7	194.0	148,800
65	76.1	192.4	132,100
70	74.6	190.7	118,200
75	73.0	188.9	106,500
80	71.4	186.9	96,500
85	69.8	184.7	87,900
90	68.2	182.4	80,300
95	66.6	179.9	73,700
100	64.9	177.2	67,700
105	63.2	174.3	62,500
110	61.5	171.2	57,700
115	59.7	167.9	53,400
120	57.9	164.3	49,500
125	56.0	160.6	45,900
130	54.2	156.5	42,600
135	52.2	152.2	39,600
140	50.2	147.5	36,800
145	48.1	142.5	34,200
150	46.0	137.2	31,700
155	43.7	131.4	29,500
160	41.3	125.1	27,400
165	38.8	118.2	25,400
170	36.2	110.6	23,500

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	213,700
48	82.1	217.2	207,000
49	81.9	217.0	200,700
50	81.6	216.8	194,600
55	80.2	215.6	168,600
60	78.8	214.4	148,000
65	77.5	213.0	131,200
70	76.1	211.5	117,200
75	74.7	209.8	105,500
80	73.2	208.0	95,400
85	71.8	206.1	86,700
90	70.4	204.0	79,200
95	68.9	201.7	72,500
100	67.4	199.4	66,500
105	65.9	196.8	61,200
110	64.4	194.1	56,500
115	62.8	191.2	52,100
120	61.3	188.1	48,200
125	59.7	184.8	44,600
130	58.0	181.3	41,300
135	56.4	177.6	38,300
140	54.7	173.7	35,500
145	52.9	169.5	32,900
150	51.2	165.1	30,500
155	49.3	160.3	28,200
160	47.4	155.3	26,100
165	45.4	149.9	24,100
170	43.4	144.1	22,300
175	41.3	137.8	20,500
180	39.0	131.0	18,900
185	36.6	123.6	17,300

213.3 ft			
ft	°	ft	lb
48	82.8	237.2	206,500
49	82.6	237.0	200,100
50	82.3	236.8	194,000
51	82.1	236.6	188,300
52	81.8	236.4	182,800
55	81.1	235.8	167,900
60	79.8	234.6	147,100
65	78.5	233.4	130,200
70	77.3	232.0	116,200
75	76.0	230.5	104,400
80	74.7	228.9	94,300
85	73.4	227.1	85,600
90	72.1	225.2	78,000
95	70.8	223.2	71,200
100	69.4	221.1	65,300
105	68.1	218.8	60,000
110	66.7	216.3	55,200
115	65.4	213.7	50,800
120	64.0	211.0	46,900
125	62.6	208.1	43,300
130	61.1	205.0	40,000
135	59.7	201.8	37,000
140	58.2	198.3	34,100
145	56.7	194.7	31,500
150	55.1	190.9	29,100
155	53.5	186.8	26,900
160	51.9	182.5	24,800
165	50.3	178.0	22,800
170	48.6	173.1	20,900
175	46.8	168.0	19,200
180	45.0	162.6	17,500
185	43.1	156.7	16,000
190	41.2	150.5	14,500
195	39.1	143.8	13,100
200	37.0	136.6	11,700

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309,100 lb



360°

232.9 ft			
ft	°	ft	lb
50	82.9	256.8	193,500
51	82.7	256.6	187,800
52	82.5	256.5	182,300
53	82.2	256.3	177,000
54	82.0	256.1	172,000
55	81.8	255.9	167,300
60	80.6	254.8	146,400
65	79.5	253.7	129,400
70	78.3	252.4	115,400
75	77.1	251.0	103,500
80	75.9	249.5	93,400
85	74.8	247.9	84,600
90	73.6	246.2	76,900
95	72.4	244.4	70,200
100	71.1	242.4	64,200
105	69.9	240.3	58,900
110	68.7	238.1	54,100
115	67.4	235.8	49,700
120	66.2	233.3	45,800
125	64.9	230.7	42,100
130	63.6	227.9	38,800
135	62.3	225.0	35,800
140	61.0	222.0	33,000
145	59.6	218.7	30,400
150	58.3	215.3	28,000
155	56.9	211.8	25,700
160	55.5	208.0	23,600
165	54.0	204.0	21,600
170	52.6	199.9	19,800
175	51.1	195.5	18,000
180	49.5	190.8	16,400
185	47.9	185.9	14,800
190	46.3	180.8	13,300
195	44.6	175.3	11,900
200	42.9	169.4	10,300