

Liftcrane Boom Capacities

Boom No. B65:685-680

with Mast No. M11:684

881,800 lb VPC (Variable Position Counterweight)

360 Degree Rating

**MLC650
VPC-MAX
SERIES 3**

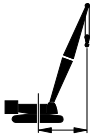
 **LIFTING CAPACITIES:** Lifting capacities for various boom lengths and operating radii are for freely suspended loads and may be based on percent of static tipping or strength of structural components. Capacities must be reduced by applicable deducts.

Upper boom point 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 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.

OPERATING CONDITIONS: Machine to operate on a firm, level, and uniformly supporting surface. Refer to Boom Rigging **No. 84038307**, Mast Rigging **No. 84050187**, Wire Rope Specifications chart **No. 9594-A**, Counterweight Arrangements chart **No. 9349-A**, and Wind Conditions chart **No. 9593-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. 9592-A**.

 **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 VPC-MAX, 36 ft 6 in. crawlers, 60 in. or 80 in. treads, 36 ft 1 in. live mast, 118.1 ft mast, 16 part boom hoist reeving, boom support straps, and 881,800 lb VPC.

Luffing Jib Backstay Deduct	
Boom Length (ft)	Deduct (lb)
183.7	8,500
203.4	10,000
223.1	10,000
242.8	10,000
262.5	11,000
282.2	12,500
301.8	13,500
321.5	14,800
341.2	16,000
360.9	17,300
380.6	17,300
Deduct the appropriate value from capacities when luffing jib backstays are stored on boom.	

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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. Raising is not permitted in shaded areas of table.

Select counterweight position from Tables 1 or 2 that will allow raising and lowering of boom length. Counterweight position selection may be changed with boom on ground or while boom is within operating range of capacity chart.

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

Table 1: With Luffing Jib Backstays

Over End or Side of Crawlers		
Boom Length (ft)	38.7 ft Counterweight Position	60.0 ft Counterweight Position
	Block Weight (lb)	
183.7 - 262.5	46,500	46,500
282.2	22,600	46,500
301.8 - 341.2	#	46,500
360.9 - 380.6	#	22,600
400.3	Raising Not Permitted	
419.9		
439.6		
459.3		
479.0		

Table 2: Without Luffing Jib Backstays

Over End or Side of Crawlers		
Boom Length (ft)	38.7 ft Counterweight Position	60.0 ft Counterweight Position
	Block Weight (lb)	
183.7 - 282.2	46,500	46,500
301.8	22,600	46,500
321.5 - 360.9	16,200	46,500
380.6	#	46,500
400.3	Raising Not Permitted	#
419.9		#
439.6		#
459.3		#
479.0		#

Explanation of Symbols



Boom No. B65:685-680



VPC (Variable Position Counterweight)



360 Degree Rating



Boom Length



Operating Radius
(see page 1)



Boom Angle
(see page 1)



Boom Point Elevation
(see page 1)



Counterweight Position
from Axis of Rotation



Lifting Capacities
(see page 1)

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881,800 lb



360°

183.7 ft				
ft	°	ft	38.7 ft lb	60.0 ft lb
32	83.0	192.0	1,322,700	1,322,700
34	82.4	191.7	1,287,200	1,287,200
36	81.7	191.4	1,255,900	1,255,900
38	81.1	191.0	1,226,100	1,226,100
40	80.5	190.6	1,158,200	1,226,100
45	78.9	189.6	1,001,000	1,226,100
50	77.3	188.4	878,800	1,226,100
55	75.7	187.1	780,900	1,188,400
60	74.0	185.6	700,900	1,086,700
65	72.4	183.9	634,200	1,000,100
70	70.7	182.1	577,800	925,500
75	69.1	180.2	529,400	860,600
80	67.4	178.0	487,500	803,600
85	65.6	175.7	450,800	753,100
90	63.9	173.2	418,400	708,100
95	62.1	170.5	389,600	664,400
100	60.3	167.5	363,800	622,400
105	58.5	164.4	340,500	584,900
110	56.6	161.1	319,500	551,200
115	54.7	157.5	300,300	520,900
120	52.7	153.6	282,800	493,300
125	50.7	149.4	266,800	468,200
130	48.6	145.0	252,000	445,200
135	46.4	140.1	238,300	424,100
140	44.2	134.9	225,600	404,600
145	41.8	129.3	213,800	386,500
150	39.4	123.1	202,800	369,800
160	34.0	109.0	182,800	339,700
170	27.6	91.2	164,900	313,400
180	19.2	66.4	148,800	290,100

203.4 ft				
ft	°	ft	38.7 ft lb	60.0 ft lb
36	82.5	211.3	1,200,200	1,200,200
38	82.0	211.0	1,172,700	1,172,700
40	81.4	210.7	1,146,400	1,146,400
45	80.0	209.7	1,001,600	1,146,400
50	78.5	208.6	878,800	1,146,400
55	77.1	207.4	780,500	1,146,400
60	75.6	206.1	700,000	1,083,300
65	74.2	204.6	633,000	996,700
70	72.7	203.0	576,300	922,100
75	71.2	201.3	527,700	857,200
80	69.7	199.4	485,600	800,200
85	68.2	197.3	448,700	749,700
90	66.6	195.1	416,100	704,700
95	65.1	192.7	387,200	661,200
100	63.5	190.1	361,300	619,200
105	61.9	187.4	338,000	581,800
110	60.2	184.5	316,900	548,200
115	58.6	181.4	297,700	517,800
120	56.9	178.1	280,100	490,300
125	55.2	174.5	264,000	465,100
130	53.4	170.8	249,200	442,200
135	51.6	166.7	235,500	421,000
140	49.7	162.4	222,800	401,600
145	47.8	157.9	211,000	383,600
150	45.9	153.0	200,000	366,800
160	41.7	142.0	180,000	336,800
170	37.1	129.3	162,300	310,500
180	32.0	114.0	146,600	287,300
190	25.9	94.9	132,300	266,600
200	17.9	68.3	119,200	248,100

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881,800 lb



223.1 ft				
ft	°	ft	lb	lb
38	82.7	230.9	1,126,800	1,126,800
40	82.2	230.6	1,102,000	1,102,000
45	80.9	229.8	998,000	1,102,000
50	79.6	228.8	874,600	1,102,000
55	78.2	227.7	775,800	1,102,000
60	76.9	226.5	695,100	1,069,900
65	75.6	225.1	627,700	990,200
70	74.3	223.7	570,800	915,600
75	72.9	222.1	522,000	850,700
80	71.6	220.4	479,700	793,700
85	70.2	218.5	442,600	743,200
90	68.8	216.5	410,000	698,100
95	67.4	214.4	380,900	655,300
100	66.0	212.1	354,900	613,400
105	64.6	209.7	331,500	575,900
110	63.1	207.1	310,300	542,300
115	61.7	204.4	291,000	512,000
120	60.2	201.5	273,400	484,500
125	58.7	198.4	257,300	459,400
130	57.1	195.1	242,400	436,400
135	55.6	191.6	228,700	415,300
140	54.0	187.9	215,900	395,800
145	52.3	184.0	204,100	377,800
150	50.7	179.8	193,100	361,100
160	47.2	170.7	173,100	331,000
170	43.5	160.5	155,500	304,700
180	39.5	148.7	139,800	281,600
190	35.2	135.0	125,800	261,000
200	30.3	118.7	113,000	242,500
210	24.5	98.4	101,300	225,800
220	16.7	70.0	90,400	210,700

242.8 ft				
ft	°	ft	lb	lb
40	82.8	250.5	1,055,400	1,055,400
45	81.6	249.7	997,400	1,007,000
50	80.4	248.8	873,500	1,007,000
55	79.2	247.8	774,400	1,007,000
60	78.0	246.7	693,300	1,007,000
65	76.8	245.5	625,700	976,700
70	75.6	244.2	568,600	910,300
75	74.3	242.7	519,600	847,100
80	73.1	241.2	477,100	790,000
85	71.9	239.5	440,000	739,500
90	70.6	237.7	407,200	694,500
95	69.3	235.8	378,000	652,000
100	68.1	233.7	351,900	610,100
105	66.8	231.5	328,500	572,700
110	65.5	229.2	307,200	539,100
115	64.2	226.7	287,900	508,800
120	62.8	224.1	270,200	481,300
125	61.5	221.3	254,000	456,200
130	60.1	218.4	239,100	433,200
135	58.7	215.3	225,400	412,100
140	57.3	212.1	212,600	392,700
145	55.9	208.6	200,700	374,700
150	54.4	205.0	189,700	358,000
160	51.4	197.1	169,700	327,900
170	48.3	188.4	152,100	301,700
180	45.0	178.6	136,400	278,500
190	41.5	167.5	122,400	257,900
200	37.7	154.9	109,800	239,500
210	33.5	140.4	98,300	222,900
220	28.8	123.1	87,800	207,800
230	23.2	101.5	78,000	194,100
240	15.7	71.4	68,700	181,500

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881,800 lb



360°

262.5 ft				
ft	°	ft	38.7 ft lb	60.0 ft lb
45	82.3	269.7	961,100	961,100
50	81.1	268.8	872,900	961,100
55	80.0	267.9	773,500	961,100
60	78.9	266.9	692,100	953,200
65	77.8	265.8	624,400	942,800
70	76.7	264.6	567,000	896,600
75	75.6	263.2	517,900	839,100
80	74.4	261.8	475,300	787,100
85	73.3	260.2	438,000	736,600
90	72.1	258.6	405,100	691,600
95	71.0	256.8	375,900	649,200
100	69.8	254.9	349,700	607,400
105	68.6	252.9	326,200	570,000
110	67.4	250.8	304,900	536,500
115	66.2	248.6	285,500	506,200
120	65.0	246.2	267,800	478,700
125	63.8	243.7	251,600	453,700
130	62.6	241.1	236,600	430,700
135	61.3	238.3	222,800	409,600
140	60.1	235.4	210,000	390,200
145	58.8	232.3	198,200	372,200
150	57.5	229.0	187,100	355,500
160	54.8	222.1	167,100	325,500
170	52.1	214.4	149,500	299,200
180	49.2	205.9	133,800	276,100
190	46.2	196.5	119,800	255,500
200	43.0	186.0	107,200	237,100
210	39.7	174.2	95,800	220,500
220	36.0	160.8	85,300	205,500
230	32.0	145.4	75,800	191,900
240	27.5	127.2	66,900	179,300
250	22.1	104.5	58,600	167,800

282.2 ft				
ft	°	ft	38.7 ft lb	60.0 ft lb
45	82.8	289.6	871,800	871,800
50	81.8	288.8	831,600	831,600
55	80.7	287.9	794,400	794,400
60	79.7	287.0	724,100	794,400
65	78.7	286.0	653,200	794,400
70	77.6	284.8	593,200	794,400
75	76.6	283.6	541,800	794,400
80	75.5	282.3	497,300	774,700
85	74.5	280.8	458,300	729,500
90	73.4	279.3	423,900	687,700
95	72.3	277.7	393,400	645,500
100	71.3	275.9	366,000	603,800
105	70.2	274.1	341,400	566,500
110	69.1	272.1	319,100	533,000
115	68.0	270.1	298,900	502,700
120	66.9	267.9	280,400	475,200
125	65.8	265.6	263,400	450,200
130	64.7	263.2	247,800	427,300
135	63.5	260.7	233,400	406,200
140	62.4	258.0	220,100	386,800
145	61.2	255.2	207,700	368,800
150	60.0	252.3	196,100	352,100
160	57.6	246.0	175,200	322,100
170	55.2	239.1	156,800	295,900
180	52.6	231.6	140,500	272,700
190	50.0	223.3	125,900	252,200
200	47.2	214.2	112,800	233,800
210	44.4	204.1	100,900	217,200
220	41.3	193.0	90,100	202,200
230	38.1	180.5	80,200	188,600
240	34.6	166.4	71,000	176,100
250	30.7	150.2	62,600	164,700
260	26.3	131.1	54,700	154,100
270	21.1	107.2	47,300	144,300

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881,800 lb



301.8 ft				
ft	°	ft	lb	lb
50	82.3	308.7	796,500	796,500
55	81.4	307.9	761,800	761,800
60	80.4	307.0	719,100	743,400
65	79.4	306.1	648,000	743,400
70	78.5	305.0	587,800	743,400
75	77.5	303.9	536,300	743,400
80	76.5	302.6	491,600	743,400
85	75.5	301.3	452,600	715,600
90	74.5	299.9	418,100	675,500
95	73.5	298.4	387,400	638,900
100	72.5	296.8	360,000	598,400
105	71.5	295.0	335,300	561,100
110	70.5	293.2	313,000	527,600
115	69.5	291.3	292,700	497,400
120	68.5	289.3	274,200	470,000
125	67.5	287.2	257,200	444,900
130	66.4	285.0	241,500	422,000
135	65.4	282.7	227,100	401,000
140	64.3	280.2	213,700	381,500
145	63.3	277.7	201,300	363,600
150	62.2	275.0	189,700	346,900
160	60.0	269.3	168,800	316,900
170	57.8	263.0	150,400	290,700
180	55.5	256.2	134,000	267,600
190	53.1	248.8	119,400	247,000
200	50.6	240.7	106,300	228,600
210	48.1	231.8	94,400	212,100
220	45.5	222.1	83,600	197,100
230	42.7	211.5	73,700	183,500
240	39.8	199.7	64,700	171,000
250	36.6	186.6	56,300	159,600
260	33.2	171.8	48,500	149,100
270	29.5	154.8	41,200	139,300
280	25.2	134.7	34,400	130,200
290	20.1	109.7	27,900	121,800

321.5 ft				
ft	°	ft	lb	lb
50	82.8	328.6	701,000	701,000
55	81.9	327.9	701,000	701,000
60	81.0	327.0	699,000	699,000
65	80.1	326.1	644,900	699,000
70	79.2	325.1	584,600	699,000
75	78.3	324.1	533,000	699,000
80	77.3	322.9	488,200	699,000
85	76.4	321.7	449,000	691,400
90	75.5	320.3	414,400	663,500
95	74.6	318.9	383,700	627,800
100	73.6	317.4	356,200	594,700
105	72.7	315.8	331,500	557,400
110	71.8	314.1	309,100	524,000
115	70.8	312.4	288,800	493,800
120	69.9	310.5	270,200	466,400
125	68.9	308.5	253,200	441,400
130	68.0	306.5	237,500	418,500
135	67.0	304.3	223,000	397,400
140	66.0	302.1	209,600	378,000
145	65.0	299.7	197,100	360,000
150	64.0	297.2	185,500	343,400
160	62.0	292.0	164,600	313,400
170	60.0	286.2	146,100	287,200
180	57.9	280.0	129,800	264,100
190	55.7	273.2	115,200	243,500
200	53.5	265.9	102,000	225,200
210	51.2	258.0	90,200	208,600
220	48.9	249.3	79,400	193,700
230	46.4	239.9	69,500	180,000
240	43.9	229.7	60,400	167,600
250	41.2	218.5	52,100	156,200
260	38.4	206.1	44,400	145,700
270	35.3	192.4	37,200	135,900
280	32.0	176.9	30,400	126,900
290	28.4	159.1	24,100	118,500
300	24.3	138.2	18,100	110,600
310	19.3	112.1		103,300

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ASME B30.5



B65



881,800 lb



360°

341.2 ft				
ft	°	ft	38.7 ft lb	60.0 ft lb
55	82.4	347.8	617,500	617,500
60	81.5	347.0	617,500	617,500
65	80.7	346.1	608,000	608,000
70	79.8	345.2	584,300	584,300
75	78.9	344.2	555,800	572,000
80	78.1	343.1	509,100	572,000
85	77.2	341.9	468,300	572,000
90	76.4	340.7	432,200	572,000
95	75.5	339.4	400,200	572,000
100	74.6	338.0	371,500	572,000
105	73.7	336.5	345,700	553,100
110	72.9	334.9	322,400	519,700
115	72.0	333.2	301,100	489,600
120	71.1	331.5	281,800	462,100
125	70.2	329.7	264,000	437,200
130	69.3	327.7	247,600	414,300
135	68.4	325.7	232,600	393,200
140	67.5	323.6	218,600	373,800
145	66.6	321.4	205,600	355,900
150	65.6	319.1	193,500	339,200
160	63.8	314.2	171,700	309,300
170	61.9	308.9	152,400	283,100
180	59.9	303.2	135,400	260,000
190	58.0	297.0	120,200	239,500
200	55.9	290.3	106,500	221,100
210	53.9	283.0	94,200	204,600
220	51.7	275.2	82,900	189,600
230	49.5	266.8	72,700	176,000
240	47.3	257.6	63,300	163,600
250	44.9	247.7	54,600	152,200
260	42.4	237.0	46,600	141,700
270	39.8	225.2	39,200	132,000
280	37.1	212.3	32,200	123,000
290	34.1	197.9	25,700	114,600
300	31.0	181.7	19,600	106,800
310	27.4	163.3		99,400
320	23.4	141.4		92,500
330	18.5	114.2		86,000

360.9 ft				
ft	°	ft	38.7 ft lb	60.0 ft lb
55	82.8	367.7	539,000	539,000
60	82.0	366.9	539,000	539,000
65	81.2	366.1	539,000	539,000
70	80.4	365.2	539,000	539,000
75	79.6	364.3	539,000	539,000
80	78.7	363.3	505,400	539,000
85	77.9	362.2	464,400	539,000
90	77.1	361.0	428,300	539,000
95	76.3	359.7	396,200	539,000
100	75.5	358.4	367,400	539,000
105	74.7	357.0	341,600	533,900
110	73.8	355.5	318,200	509,700
115	73.0	354.0	296,900	485,800
120	72.2	352.3	277,500	458,400
125	71.3	350.6	259,700	433,400
130	70.5	348.8	243,300	410,600
135	69.6	346.9	228,200	389,500
140	68.8	344.9	214,200	370,200
145	67.9	342.9	201,200	352,200
150	67.1	340.7	189,100	335,600
160	65.3	336.2	167,200	305,600
170	63.5	331.2	148,000	279,400
180	61.7	325.9	130,900	256,300
190	59.9	320.1	115,700	235,800
200	58.0	313.9	102,000	217,500
210	56.1	307.3	89,600	201,000
220	54.2	300.1	78,400	186,000
230	52.2	292.4	68,100	172,400
240	50.1	284.2	58,700	160,000
250	48.0	275.2	50,100	148,600
260	45.8	265.6	42,100	138,100
270	43.5	255.3	34,700	128,400
280	41.1	244.0	27,800	119,400
290	38.6	231.7	21,300	111,000
300	35.9	218.2		103,200
310	33.1	203.2		95,900
320	30.0	186.4		89,100
330	26.5	167.2		82,600
340	22.6	144.5		71,700
350	17.8	116.2		56,400

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B65



881,800 lb



360°

380.6 ft				
ft	°	ft	lb	lb
60	82.4	386.8	470,300	470,300
65	81.6	386.1	470,300	470,300
70	80.9	385.2	470,300	470,300
75	80.1	384.3	470,300	470,300
80	79.3	383.4	470,300	470,300
85	78.6	382.3	463,700	470,300
90	77.8	381.2	427,500	470,300
95	77.0	380.0	395,300	470,300
100	76.3	378.8	366,500	470,300
105	75.5	377.5	340,500	470,300
110	74.7	376.1	317,000	470,300
115	73.9	374.6	295,600	470,300
120	73.1	373.0	276,100	451,800
125	72.3	371.4	258,200	431,900
130	71.5	369.7	241,700	409,000
135	70.7	367.9	226,500	388,000
140	69.9	366.1	212,500	368,500
145	69.1	364.1	199,400	350,600
150	68.3	362.1	187,200	333,900
160	66.7	357.8	165,300	304,000
170	65.0	353.2	145,900	277,800
180	63.3	348.2	128,800	254,600
190	61.6	342.8	113,500	234,100
200	59.9	337.1	99,800	215,700
210	58.1	330.9	87,400	199,200
220	56.3	324.3	76,200	184,300
230	54.5	317.2	65,900	170,700
240	52.6	309.6	56,500	158,200
250	50.6	301.5	47,900	146,800
260	48.6	292.8	39,900	136,400
270	46.6	283.4	32,500	126,700
280	44.4	273.3	25,600	117,700
290	42.2	262.5	19,100	109,300
300	39.9	250.7		101,600
310	37.4	237.9		94,300
320	34.8	223.8		87,500
330	32.1	208.3		81,000
340	29.0	190.9		75,000
350	25.7	171.0		69,300
360	21.8	147.5		63,900
370	17.2	118.1		58,700

400.3 ft				
ft	°	ft	lb	lb
60	82.8	406.7	413,100	413,100
65	82.0	406.0	413,100	413,100
70	81.3	405.2	413,100	413,100
75	80.6	404.3	413,100	413,100
80	79.9	403.4	413,100	413,100
85	79.1	402.4	413,100	413,100
90	78.4	401.4	413,100	413,100
95	77.7	400.3	391,100	413,100
100	76.9	399.1	362,200	413,100
105	76.2	397.8	336,200	413,100
110	75.5	396.5	312,700	402,400
115	74.7	395.1	291,300	390,800
120	74.0	393.6	271,800	385,900
125	73.2	392.1	253,900	381,300
130	72.5	390.5	237,500	376,900
135	71.7	388.8	222,300	372,900
140	71.0	387.1	208,200	364,900
145	70.2	385.2	195,100	346,900
150	69.4	383.3	182,900	330,300
160	67.9	379.3	160,800	300,300
170	66.3	374.9	141,500	274,100
180	64.7	370.2	124,300	251,000
190	63.1	365.2	109,000	230,400
200	61.5	359.8	95,200	212,100
210	59.9	354.0	82,800	195,500
220	58.2	347.9	71,600	180,600
230	56.5	341.3	61,300	167,000
240	54.7	334.3	51,800	154,600
250	52.9	326.8	43,200	143,200
260	51.1	318.8	35,200	132,700
270	49.2	310.2	27,800	123,000
280	47.3	301.1	20,900	114,000
290	45.3	291.3		105,700
300	43.2	280.8		97,900
310	41.0	269.5		90,600
320	38.8	257.2		83,800
330	36.4	243.9		77,400
340	33.9	229.3		71,400
350	31.1	213.2		65,700
360	28.2	195.2		60,300
370	24.9	174.6		55,200
380	21.1	150.3		36,200

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B65



881,800 lb



360°

419.9 ft				
ft	°	ft	38.7 ft lb	60.0 ft lb
65	82.4	425.9	363,400	363,400
70	81.7	425.1	363,400	363,400
75	81.0	424.3	363,400	363,400
80	80.4	423.4	363,400	363,400
85	79.7	422.5	363,400	363,400
90	79.0	421.5	363,400	363,400
95	78.3	420.4	363,400	363,400
100	77.6	419.3	360,000	363,300
105	76.9	418.1	333,900	363,100
110	76.2	416.9	310,300	362,900
115	75.5	415.5	288,900	362,700
120	74.7	414.1	269,300	362,400
125	74.0	412.7	251,300	362,100
130	73.3	411.2	234,800	361,800
135	72.6	409.6	219,600	361,500
140	71.9	407.9	205,500	356,800
145	71.2	406.2	192,400	343,800
150	70.4	404.4	180,200	328,000
160	69.0	400.5	158,200	298,000
170	67.5	396.4	138,800	271,900
180	66.0	392.0	121,600	248,800
190	64.5	387.3	106,300	228,300
200	63.0	382.2	92,600	209,900
210	61.4	376.8	80,200	193,400
220	59.8	371.0	68,900	178,500
230	58.2	364.8	58,600	164,900
240	56.6	358.3	49,200	152,500
250	55.0	351.3	40,600	141,100
260	53.3	343.9	32,600	130,600
270	51.5	336.0	25,200	120,900
280	49.7	327.6	18,300	112,000
290	47.9	318.7		103,600
300	46.0	309.1		95,900
310	44.1	298.9		88,600
320	42.0	288.0		81,800
330	39.9	276.2		75,500
340	37.7	263.5		69,400
350	35.4	249.7		63,800
360	32.9	234.6		58,400
370	30.3	218.0		53,400
380	27.4	199.3		48,500
390	24.2	178.0		43,900
400	20.5	152.9		33,200

439.6 ft				
ft	°	ft	38.7 ft lb	60.0 ft lb
65	82.8	445.8	320,500	320,500
70	82.1	445.0	320,500	320,500
75	81.4	444.3	320,500	320,500
80	80.8	443.4	320,500	320,500
85	80.1	442.5	320,500	320,500
90	79.5	441.6	320,500	320,500
95	78.8	440.6	320,500	320,500
100	78.1	439.5	320,500	320,500
105	77.5	438.4	320,300	320,300
110	76.8	437.2	304,600	320,300
115	76.1	435.9	283,200	320,100
120	75.4	434.6	263,600	319,900
125	74.8	433.2	245,700	319,700
130	74.1	431.7	229,200	319,400
135	73.4	430.2	214,000	319,100
140	72.7	428.6	199,900	318,800
145	72.0	427.0	186,800	318,500
150	71.4	425.3	174,600	318,100
160	70.0	421.6	152,600	293,800
170	68.6	417.7	133,300	267,600
180	67.2	413.5	116,100	244,600
190	65.7	409.1	100,900	224,100
200	64.3	404.3	87,100	205,800
210	62.8	399.2	74,700	189,300
220	61.3	393.7	63,500	174,300
230	59.8	387.9	53,200	160,800
240	58.3	381.8	43,800	148,400
250	56.7	375.3	35,200	137,000
260	55.2	368.4	27,200	126,500
270	53.5	361.0	19,900	116,900
280	51.9	353.3		107,900
290	50.2	345.0		99,600
300	48.5	336.2		91,900
310	46.7	326.9		84,600
320	44.8	316.9		77,800
330	42.9	306.3		71,500
340	41.0	295.0		65,500
350	38.9	282.8		59,800
360	36.8	269.6		54,500
370	34.5	255.3		49,500
380	32.1	239.7		44,700
390	29.5	222.5		40,100
400	26.7	203.3		35,300
410	23.5	181.3		30,400
420	19.9	155.4		25,600
430	15.4	122.8		20,200

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881,800 lb



360°

459.3 ft				
ft	°	ft	lb	lb
70	82.4	464.9	280,300	280,300
75	81.8	464.2	280,300	280,300
80	81.2	463.4	280,200	280,200
85	80.6	462.5	280,100	280,100
90	79.9	461.6	280,000	280,000
95	79.3	460.7	279,900	279,900
100	78.6	459.6	279,700	279,700
105	78.0	458.5	279,500	279,500
110	77.4	457.4	279,300	279,300
115	76.7	456.2	279,000	279,000
120	76.1	454.9	265,000	278,800
125	75.4	453.6	247,000	278,600
130	74.8	452.2	230,500	278,300
135	74.1	450.8	215,200	278,000
140	73.5	449.3	201,100	277,700
145	72.8	447.7	188,000	277,400
150	72.2	446.1	175,800	277,000
160	70.9	442.6	153,700	276,400
170	69.5	438.9	134,300	268,200
180	68.2	434.9	117,200	245,100
190	66.8	430.7	101,900	224,600
200	65.5	426.1	88,100	206,300
210	64.1	421.3	75,700	189,800
220	62.7	416.1	64,400	174,900
230	61.3	410.7	54,200	161,300
240	59.8	404.9	44,800	148,900
250	58.4	398.8	36,100	137,600
260	56.9	392.3	28,100	127,100
270	55.4	385.4	20,800	117,500
280	53.8	378.1		108,500
290	52.2	370.5		100,200
300	50.6	362.3		92,500
310	49.0	353.7		85,200
320	47.3	344.5		78,500
330	45.5	334.8		72,100
340	43.8	324.5		66,100
350	41.9	313.5		60,500
360	40.0	301.7		55,200
370	38.0	289.1		50,100
380	35.9	275.5		45,400
390	33.6	260.8		40,800
400	31.3	244.7		36,100
410	28.7	226.9		31,200
420	26.0	207.1		26,500
430	22.9	184.5		21,900
440	19.3	157.8		17,500

479.0 ft				
ft	°	ft	lb	lb
70	82.8	484.8	264,900	264,900
75	82.2	484.1	264,800	264,800
80	81.6	483.3	264,700	264,700
85	80.9	482.5	264,600	264,600
90	80.3	481.6	264,500	264,500
95	79.7	480.7	264,200	264,200
100	79.1	479.7	264,000	264,000
105	78.5	478.7	263,800	263,800
110	77.9	477.6	263,600	263,600
115	77.3	476.4	263,300	263,300
120	76.7	475.2	259,500	262,900
125	76.1	474.0	241,500	262,600
130	75.4	472.6	225,000	262,300
135	74.8	471.3	209,700	262,000
140	74.2	469.8	195,600	261,900
145	73.6	468.3	182,500	261,600
150	72.9	466.8	170,300	261,200
160	71.7	463.5	148,300	260,500
170	70.4	459.9	128,900	259,800
180	69.1	456.1	111,700	241,000
190	67.8	452.1	96,400	220,500
200	66.5	447.8	82,700	202,200
210	65.2	443.2	70,300	185,700
220	63.9	438.3	59,000	170,800
230	62.5	433.1	48,800	157,200
240	61.2	427.6	39,400	144,800
250	59.8	421.9	30,700	133,500
260	58.4	415.7	22,800	123,100
270	57.0	409.3		113,400
280	55.5	402.4		104,500
290	54.1	395.2		96,200
300	52.5	387.6		88,400
310	51.0	379.6		81,200
320	49.4	371.1		74,400
330	47.8	362.1		68,100
340	46.2	352.6		62,100
350	44.5	342.5		56,500
360	42.7	331.8		51,200
370	40.9	320.4		46,200
380	39.0	308.3		41,200
390	37.1	295.2		35,800
400	35.0	281.2		30,700
410	32.8	266.0		25,800
420	30.5	249.5		21,200