

Liftcrane Jib Capacities

Jib No. FJ10:687 on
 Boom No. B90:686-685-680-681-682
 with Mast No. M11:684
 440,900 lb VPC (Variable Position Counterweight)
 360 Degree Rating

MLC650 VPC-MAX SERIES 1



LIFTING CAPACITIES: Lifting capacities for various boom lengths, jib lengths, and jib 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 jib 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 jib point capacities cannot exceed those listed for main jib capacity.

Weight of all load blocks, hooks, weight ball, slings, hoist lines, etc., beneath jib point sheaves is considered part of load. Jib 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 Jib Rigging No. 80158563, Mast Rigging No. 84050187, Wire Rope Specifications chart No. A046-A, Counterweight Arrangements chart No. 9349-A, and Wind Conditions chart No. A045-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 Specification chart No. A044-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.



JIB POINT ELEVATION: Jib point elevation is vertical distance from ground level to centerline of jib 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 440,900 lb VPC.

Upper Jib Point Deduct

Deduct 3,000 lb from capacities when upper jib point is attached.

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Refer to Table 1 (raising over end or side of crawlers) and Table 2 (raising over end of blocked crawlers) for raising ability with the maximum weight of all load blocks, hooks, weight ball, slings, and hoist lines beneath jib 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 jib lengths shown with (a), upper jib point must be removed from jib top. 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 and jib length. Counterweight position selection may be changed with jib on ground or while jib is within operating range of capacity chart.

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

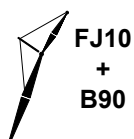
Table 1:

Over End or Side of Crawlers														
Boom Length (ft)	Counterweight Position (ft)													
	38.7							60.0						
	Jib Length (ft)													
	39.4	49.2	59.1	68.9	78.7	88.6	98.4	39.4	49.2	59.1	68.9	78.7	88.6	98.4
	Block Weight (lb)													
255.9	12,700	9,650	6,700	#	#	#	(a)	30,000	30,000	30,000	30,000	30,000	30,000	29,500
295.3	Raising Not Permitted							20,250	17,100	14,050	12,050	9,150	7,350	#
334.6								(a)	Raising Not Permitted					

Table 2:

Over End of Blocked Crawlers														
Boom Length (ft)	Counterweight Position (ft)													
	38.7							60.0						
	Jib Length (ft)													
	39.4	49.2	59.1	68.9	78.7	88.6	98.4	39.4	49.2	59.1	68.9	78.7	88.6	98.4
	Block Weight (lb)													
	255.9	24,650	21,200	17,850	15,650	12,550	10,550	7,650	30,000	30,000	30,000	30,000	30,000	30,000
295.3	Raising Not Permitted							30,000	27,550	24,200	21,950	18,750	16,700	13,700
334.6								9,750	6,950	#	#	#	(a)	
Warning: Crane must remain in-line with crawlers when raising over end of blocked crawlers until operating radius is within 360 degree chart. <i>Crane tipping or structural damage can occur.</i>														

Explanation of Symbols



Jib No. FJ10:687
+
Boom No. B90:686-685-680-681-682



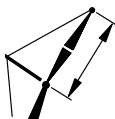
VPC (Variable Position Counterweight)



360 Degree Rating



Boom Length



Jib Length



Jib Offset Angle



Operating Radius
(see page 1)



Boom Angle
(see page 1)



Jib Point Elevation
(see page 1)



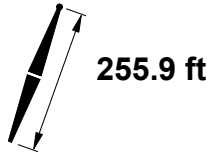
Counterweight Position
from Axis of Rotation



Lifting Capacities
(see page 1)

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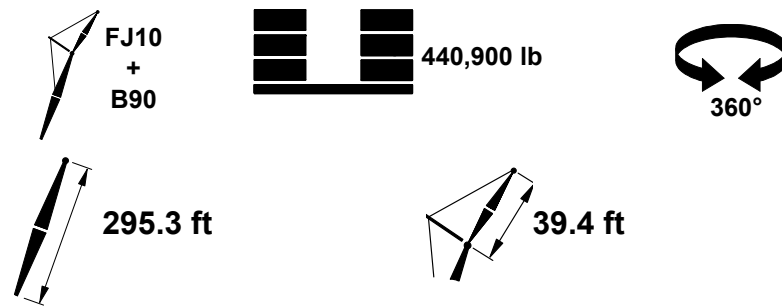
ASME B30.5



	10°				15°				20°				
ft	°	ft	lb	lb	°	ft	lb	lb	°	ft	lb	lb	ft
38	85.3	303.1	488,000	488,000									38
39	85.1	303.0	486,200	486,200									39
40	85.0	302.9	486,200	486,200									40
41	84.8	302.7	486,200	486,200	85.2	302.3	488,000	488,000					41
42	84.6	302.6	486,200	486,200	85.0	302.1	488,000	488,000					42
43	84.4	302.5	486,200	486,200	84.8	302.0	488,000	488,000	85.3	301.3	484,700	484,700	43
44	84.2	302.4	486,200	486,200	84.6	301.9	488,000	488,000	85.1	301.2	480,700	480,700	44
45	84.0	302.2	486,200	486,200	84.4	301.7	488,000	488,000	84.9	301.0	476,700	476,700	45
46	83.8	302.1	486,200	486,200	84.2	301.6	488,000	488,000	84.7	300.9	472,700	472,700	46
48	83.4	301.8	486,200	486,200	83.8	301.3	488,000	488,000	84.4	300.6	465,100	465,100	48
50	83.0	301.5	486,200	486,200	83.4	301.0	488,000	488,000	84.0	300.3	457,600	457,600	50
52	82.6	301.2	486,200	486,200	83.1	300.7	488,000	488,000	83.6	300.0	450,400	450,400	52
54	82.2	300.8	486,200	486,200	82.7	300.4	488,000	488,000	83.2	299.6	443,400	443,400	54
56	81.8	300.5	486,200	486,200	82.3	300.0	488,000	488,000	82.8	299.3	436,700	436,700	56
58	81.4	300.1	486,200	486,200	81.9	299.7	488,000	488,000	82.4	298.9	430,100	430,100	58
60	81.0	299.8	486,200	486,200	81.5	299.3	488,000	488,000	82.0	298.6	423,800	423,800	60
65	80.0	298.8	459,100	486,200	80.5	298.3	461,800	485,900	81.0	297.6	408,800	408,800	65
70	79.0	297.7	427,100	486,200	79.5	297.2	429,600	467,300	80.0	296.5	394,800	394,800	70
75	78.0	296.5	390,800	486,200	78.5	296.0	393,500	450,100	79.0	295.3	381,800	381,800	75
80	77.0	295.2	355,200	478,900	77.5	294.7	357,600	434,000	78.0	294.0	360,300	369,900	80
85	76.0	293.9	324,600	439,600	76.5	293.4	326,800	419,200	77.0	292.6	329,200	358,500	85
90	75.0	292.4	297,900	405,400	75.5	291.9	300,000	405,500	75.9	291.2	302,200	347,900	90
95	74.0	290.9	274,500	375,400	74.4	290.4	276,400	377,300	74.9	289.6	278,500	337,900	95
100	73.0	289.2	253,800	348,900	73.4	288.7	255,600	350,700	73.9	288.0	257,600	328,500	100
105	71.9	287.5	235,400	325,200	72.4	287.0	237,100	326,900	72.9	286.2	238,900	319,700	105
110	70.9	285.6	218,800	304,000	71.3	285.1	220,400	305,600	71.8	284.3	222,100	307,300	110
115	69.9	283.6	203,900	284,900	70.3	283.1	205,400	286,400	70.8	282.4	207,000	288,000	115
120	68.8	281.6	190,400	267,600	69.2	281.1	191,800	269,000	69.7	280.3	193,300	270,500	120
125	67.7	279.4	178,000	251,800	68.2	278.9	179,400	253,100	68.6	278.1	180,800	254,600	125
130	66.7	277.1	166,800	237,300	67.1	276.6	168,000	238,600	67.6	275.8	169,400	240,000	130
135	65.6	274.7	156,400	224,100	66.0	274.2	157,600	225,300	66.5	273.4	158,900	226,600	135
140	64.5	272.2	146,900	211,900	64.9	271.7	148,000	213,000	65.4	270.9	149,200	214,200	140
145	63.4	269.6	138,000	200,600	63.8	269.0	139,100	201,600	64.3	268.2	140,300	202,800	145
150	62.3	266.8	129,900	190,100	62.7	266.3	130,900	191,100	63.2	265.4	132,000	192,200	150
160	60.0	260.9	115,100	171,300	60.5	260.3	116,100	172,200	60.9	259.5	117,100	173,200	160
170	57.7	254.4	102,300	154,800	58.1	253.9	103,100	155,700	58.6	253.0	104,000	156,600	170
180	55.3	247.4	91,000	140,300	55.8	246.8	91,700	141,100	56.2	245.9	92,500	141,900	180
190	52.9	239.7	80,900	127,500	53.3	239.0	81,600	128,100	53.7	238.1	82,300	128,900	190
200	50.3	231.2	71,800	115,900	50.7	230.6	72,500	116,500	51.1	229.6	73,100	117,200	200
210	47.7	222.0	63,700	105,600	48.1	221.3	64,300	106,100	48.5	220.3	64,800	106,700	210
220	44.9	211.8	56,300	96,200	45.3	211.1	56,800	96,700	45.7	210.1	57,300	97,200	220
230	42.0	200.6	49,600	87,600	42.4	199.8	50,100	88,000	42.7	198.7	50,500	88,500	230
240	38.9	188.1	43,500	79,800	39.2	187.3	43,800	80,100	39.6	186.1	44,200	80,500	240
250	35.5	174.0	37,800	72,600	35.9	173.2	38,100	72,900	36.2	171.9	38,400	73,200	250

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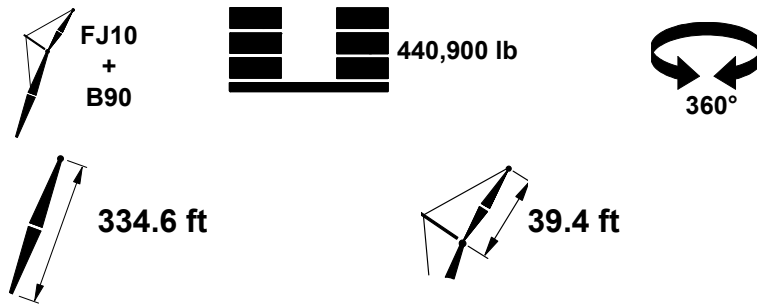
ASME B30.5



	10°				15°				20°				
ft	ft	ft	lb	lb	ft	ft	lb	lb	ft	ft	lb	lb	ft
43	85.2	342.0	488,000	488,000									43
44	85.0	341.9	488,000	488,000									44
45	84.8	341.7	488,000	488,000	85.2	341.2	488,000	488,000					45
46	84.7	341.6	488,000	488,000	85.1	341.1	488,000	488,000					46
47	84.5	341.5	488,000	488,000	84.9	340.9	488,000	488,000	85.3	340.2	461,700	461,700	47
48	84.3	341.4	488,000	488,000	84.7	340.8	488,000	488,000	85.2	340.1	458,500	458,500	48
49	84.1	341.2	488,000	488,000	84.5	340.7	488,000	488,000	85.0	339.9	455,400	455,400	49
50	84.0	341.1	488,000	488,000	84.4	340.5	488,000	488,000	84.8	339.8	452,300	452,300	50
52	83.6	340.8	488,000	488,000	84.0	340.3	488,000	488,000	84.5	339.5	446,300	446,300	52
54	83.3	340.5	488,000	488,000	83.7	340.0	488,000	488,000	84.1	339.2	440,300	440,300	54
56	82.9	340.2	488,000	488,000	83.3	339.7	488,000	488,000	83.8	338.9	434,500	434,500	56
58	82.6	339.9	486,300	488,000	83.0	339.4	488,000	488,000	83.4	338.6	428,900	428,900	58
60	82.2	339.6	471,700	488,000	82.6	339.0	474,700	488,000	83.1	338.3	423,500	423,500	60
65	81.4	338.7	437,800	488,000	81.8	338.2	440,700	476,900	82.2	337.4	410,400	410,400	65
70	80.5	337.8	407,400	488,000	80.9	337.2	410,100	461,000	81.3	336.4	398,000	398,000	70
75	79.6	336.7	379,900	488,000	80.0	336.2	382,500	446,000	80.4	335.4	385,300	386,900	75
80	78.7	335.6	351,500	463,400	79.1	335.1	354,200	432,100	79.6	334.3	357,100	376,000	80
85	77.9	334.4	320,500	435,500	78.2	333.9	323,000	419,000	78.7	333.1	325,700	365,800	85
90	77.0	333.1	293,500	401,000	77.4	332.6	295,900	403,300	77.8	331.8	298,400	356,100	90
95	76.1	331.8	269,900	370,800	76.5	331.2	272,100	372,900	76.9	330.4	274,400	347,000	95
100	75.2	330.3	249,000	344,000	75.6	329.8	251,000	346,100	76.0	329.0	253,200	338,400	100
105	74.3	328.8	230,300	320,200	74.7	328.2	232,200	322,100	75.1	327.5	234,300	324,100	105
110	73.4	327.2	213,600	298,800	73.8	326.6	215,400	300,600	74.2	325.8	217,300	302,500	110
115	72.5	325.5	198,600	279,600	72.9	324.9	200,200	281,200	73.3	324.1	202,000	283,100	115
120	71.6	323.7	184,900	262,100	72.0	323.1	186,500	263,700	72.4	322.3	188,200	265,400	120
125	70.7	321.8	172,400	246,200	71.0	321.3	173,900	247,700	71.4	320.4	175,600	249,300	125
130	69.7	319.9	161,100	231,600	70.1	319.3	162,500	233,100	70.5	318.5	164,000	234,600	130
135	68.8	317.8	150,600	218,300	69.2	317.2	152,000	219,600	69.6	316.4	153,400	221,100	135
140	67.9	315.6	141,000	206,000	68.2	315.0	142,300	207,300	68.6	314.2	143,600	208,600	140
150	66.0	311.0	123,800	184,000	66.3	310.4	125,000	185,200	66.7	309.6	126,200	186,500	150
160	64.1	306.0	109,000	165,100	64.4	305.4	110,000	166,100	64.8	304.5	111,200	167,300	160
170	62.1	300.5	96,000	148,500	62.5	299.9	97,000	149,500	62.8	299.0	98,000	150,500	170
180	60.1	294.6	84,600	134,000	60.5	294.0	85,500	134,800	60.8	293.1	86,400	135,800	180
190	58.1	288.2	74,400	121,000	58.4	287.6	75,200	121,800	58.8	286.7	76,100	122,700	190
200	56.0	281.3	65,300	109,400	56.3	280.6	66,100	110,200	56.7	279.7	66,900	110,900	200
210	53.8	273.8	57,200	99,000	54.2	273.1	57,800	99,700	54.5	272.2	58,500	100,400	210
220	51.6	265.7	49,800	89,600	52.0	265.0	50,400	90,200	52.3	264.0	51,000	90,800	220
230	49.4	257.0	43,000	81,000	49.7	256.2	43,600	81,600	50.0	255.2	44,200	82,100	230
240	47.0	247.4	36,900	73,200	47.3	246.7	37,400	73,700	47.6	245.6	37,900	74,200	240
250	44.5	237.1	31,200	66,000	44.8	236.3	31,700	66,400	45.1	235.2	32,100	66,900	250
260	41.9	225.8	24,800	59,300	42.2	225.0	25,400	59,700	42.5	223.8	25,900	60,100	260
270	39.2	213.4	19,000	53,200	39.5	212.5	19,400	53,500	39.8	211.3	19,900	53,900	270
280	36.3	199.6	13,500	47,500	36.6	198.7	13,900	47,800	36.8	197.3	14,300	48,100	280
285									35.3	189.8	11,600	45,300	285

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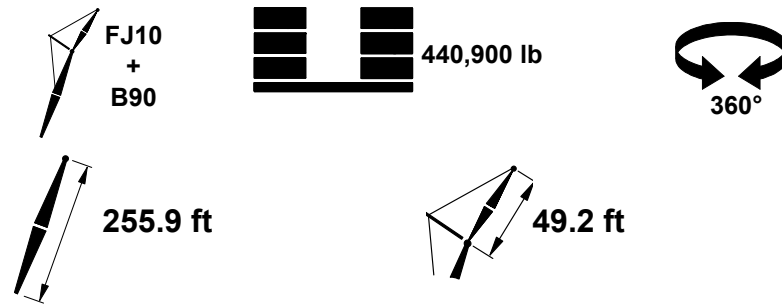
ASME B30.5



	10°				15°				20°				
	ft	°	ft	lb	lb	ft	lb	lb	ft	lb	lb	ft	
46	85.3	381.1	488,000	488,000									46
47	85.1	381.0	488,000	488,000									47
48	85.0	380.9	488,000	488,000									48
49	84.8	380.8	488,000	488,000	85.2	380.2	488,000	488,000					49
50	84.7	380.7	488,000	488,000	85.0	380.1	488,000	488,000					50
51	84.5	380.5	488,000	488,000	84.9	380.0	488,000	488,000	85.3	379.2	439,000	439,000	51
52	84.4	380.4	488,000	488,000	84.7	379.9	488,000	488,000	85.1	379.0	436,500	436,500	52
53	84.2	380.3	486,400	488,000	84.6	379.7	488,000	488,000	85.0	378.9	434,100	434,100	53
54	84.1	380.2	484,900	488,000	84.4	379.6	488,000	488,000	84.8	378.8	431,800	431,800	54
56	83.8	379.9	470,700	488,000	84.1	379.3	473,800	488,000	84.5	378.5	427,200	427,200	56
58	83.4	379.6	457,200	488,000	83.8	379.1	460,100	485,100	84.2	378.2	422,700	422,700	58
60	83.1	379.3	444,100	488,000	83.5	378.8	447,000	479,200	83.9	377.9	418,200	418,200	60
65	82.4	378.5	413,700	488,000	82.7	378.0	416,500	464,800	83.1	377.2	407,100	407,100	65
70	81.6	377.7	386,100	488,000	81.9	377.1	388,700	451,200	82.3	376.3	391,700	396,800	70
75	80.8	376.8	361,000	467,600	81.1	376.2	363,500	438,500	81.5	375.4	366,300	386,700	75
80	80.0	375.8	338,000	440,500	80.4	375.2	340,400	426,500	80.7	374.4	343,100	377,100	80
85	79.2	374.7	317,000	415,600	79.6	374.2	319,300	415,200	80.0	373.3	321,800	368,100	85
90	78.4	373.6	293,000	392,600	78.8	373.0	295,400	394,800	79.2	372.2	298,100	359,500	90
95	77.7	372.4	269,200	370,100	78.0	371.8	271,500	372,300	78.4	371.0	273,900	351,300	95
100	76.9	371.1	248,100	343,200	77.2	370.5	250,200	345,300	77.6	369.7	252,500	343,500	100
105	76.1	369.7	229,400	319,200	76.4	369.2	231,400	321,200	76.8	368.3	233,500	323,400	105
110	75.3	368.3	212,500	297,700	75.6	367.7	214,400	299,600	76.0	366.9	216,400	301,600	110
115	74.5	366.8	197,400	278,400	74.8	366.2	199,100	280,100	75.2	365.4	201,000	282,000	115
120	73.7	365.2	183,600	260,800	74.0	364.7	185,300	262,500	74.4	363.8	187,100	264,300	120
130	72.0	361.8	159,600	230,200	72.4	361.3	161,100	231,700	72.7	360.4	162,700	233,300	130
140	70.4	358.1	139,400	204,400	70.7	357.5	140,800	205,800	71.1	356.7	142,200	207,200	140
150	68.7	354.1	122,100	182,400	69.1	353.5	123,400	183,600	69.4	352.6	124,700	184,900	150
160	67.1	349.7	107,200	163,300	67.4	349.1	108,300	164,400	67.7	348.2	109,500	165,700	160
170	65.4	344.9	94,200	146,700	65.7	344.3	95,200	147,700	66.0	343.4	96,300	148,800	170
180	63.6	339.8	82,700	132,100	64.0	339.2	83,600	133,000	64.3	338.3	84,600	134,000	180
190	61.9	334.3	72,500	119,100	62.2	333.7	73,300	119,900	62.5	332.7	74,300	120,900	190
200	60.1	328.4	63,300	107,400	60.4	327.7	64,200	108,200	60.8	326.8	65,000	109,100	200
210	58.3	322.0	55,100	97,000	58.6	321.4	55,900	97,700	58.9	320.4	56,700	98,500	210
220	56.4	315.2	47,700	87,500	56.7	314.6	48,400	88,200	57.1	313.6	49,100	88,900	220
230	54.5	307.9	41,000	78,900	54.8	307.2	41,600	79,600	55.1	306.2	42,200	80,200	230
240	52.6	300.1	34,400	71,100	52.9	299.4	35,200	71,700	53.2	298.4	35,900	72,300	240
250	50.6	291.7	27,600	63,900	50.9	291.0	28,300	64,400	51.2	289.9	29,000	65,000	250
260	48.5	282.7	21,400	57,200	48.8	281.9	22,000	57,700	49.1	280.8	22,600	58,200	260
270	46.4	273.0	15,500	51,100	46.6	272.2	16,100	51,500	46.9	271.0	16,700	52,000	270
280	44.1	262.5	10,100	45,400	44.4	261.7	10,700	45,800	44.7	260.5	11,200	46,200	280
290	41.8	251.1		40,100	42.1	250.3		40,500	42.3	249.0		40,800	290
300	39.4	238.8		35,200	39.6	237.9		35,500	39.9	236.5		35,800	300
310	36.8	225.2		30,500	37.0	224.3		30,800	37.3	222.9		31,100	310
315	35.4	218.0		28,300	35.7	217.0		28,600	35.9	215.5		28,800	315

MLC650 VPC-MAX S-1

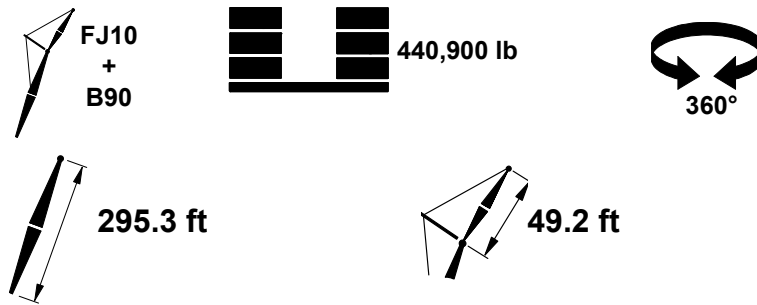
ASME B30.5



	10°				15°				20°				
ft	ft	ft	lb	lb	ft	ft	lb	lb	ft	ft	lb	lb	ft
41	85.4	312.4	488,000	488,000									41
42	85.2	312.3	488,000	488,000									42
43	85.0	312.2	488,000	488,000									43
44	84.8	312.0	488,000	488,000	85.4	311.4	488,000	488,000					44
45	84.6	311.9	488,000	488,000	85.2	311.3	488,000	488,000					45
46	84.4	311.8	488,000	488,000	85.0	311.2	484,700	484,700					46
47	84.2	311.6	488,000	488,000	84.8	311.0	480,300	480,300	85.4	310.1	411,800	411,800	47
48	84.0	311.5	488,000	488,000	84.6	310.9	475,900	475,900	85.2	310.0	408,700	408,700	48
49	83.9	311.4	488,000	488,000	84.4	310.7	471,700	471,700	85.0	309.9	405,500	405,500	49
50	83.7	311.2	488,000	488,000	84.2	310.6	467,500	467,500	84.8	309.7	402,500	402,500	50
52	83.3	310.9	488,000	488,000	83.8	310.3	459,300	459,300	84.5	309.4	396,500	396,500	52
54	82.9	310.6	488,000	488,000	83.5	310.0	451,500	451,500	84.1	309.1	390,700	390,700	54
56	82.5	310.3	488,000	488,000	83.1	309.6	443,900	443,900	83.7	308.7	385,000	385,000	56
58	82.1	309.9	488,000	488,000	82.7	309.3	436,500	436,500	83.3	308.4	379,500	379,500	58
60	81.8	309.5	488,000	488,000	82.3	308.9	429,400	429,400	82.9	308.0	374,200	374,200	60
65	80.8	308.6	458,300	471,200	81.3	308.0	412,700	412,700	82.0	307.1	361,600	361,600	65
70	79.8	307.5	426,700	451,000	80.4	306.9	397,100	397,100	81.0	306.0	349,800	349,800	70
75	78.9	306.4	394,100	432,300	79.4	305.8	382,800	382,800	80.0	304.9	338,800	338,800	75
80	77.9	305.2	358,300	415,100	78.4	304.5	361,300	369,500	79.0	303.6	328,500	328,500	80
85	76.9	303.9	327,500	399,300	77.5	303.2	330,300	357,000	78.1	302.3	318,700	318,700	85
90	76.0	302.4	300,700	384,600	76.5	301.8	303,300	345,400	77.1	300.9	306,100	309,700	90
95	75.0	300.9	277,200	371,000	75.5	300.3	279,600	334,600	76.1	299.4	282,200	301,200	95
100	74.0	299.4	256,400	351,400	74.5	298.7	258,600	324,400	75.1	297.8	261,000	293,100	100
105	73.0	297.7	237,800	327,700	73.5	297.0	239,900	314,900	74.1	296.1	242,200	285,400	105
110	72.0	295.9	221,200	306,400	72.5	295.2	223,200	305,900	73.1	294.3	225,300	278,300	110
115	71.0	294.0	206,200	287,200	71.5	293.3	208,100	289,100	72.1	292.4	210,100	271,400	115
120	70.0	292.0	192,600	269,800	70.5	291.3	194,400	271,600	71.1	290.4	196,300	264,700	120
125	68.9	289.9	180,200	254,000	69.5	289.2	181,900	255,600	70.0	288.3	183,700	257,400	125
130	67.9	287.7	168,900	239,500	68.4	287.0	170,500	241,100	69.0	286.1	172,200	242,700	130
135	66.9	285.4	158,500	226,200	67.4	284.7	160,000	227,700	68.0	283.8	161,600	229,300	135
140	65.8	283.0	148,900	213,900	66.4	282.3	150,300	215,300	66.9	281.3	151,900	216,800	140
145	64.8	280.4	140,000	202,600	65.3	279.8	141,400	203,900	65.9	278.8	142,800	205,400	145
150	63.7	277.8	131,800	192,100	64.2	277.1	133,100	193,300	64.8	276.1	134,500	194,700	150
160	61.6	272.1	117,000	173,200	62.1	271.4	118,200	174,300	62.6	270.4	119,400	175,600	160
170	59.3	265.9	104,100	156,700	59.8	265.2	105,200	157,700	60.4	264.2	106,300	158,800	170
180	57.1	259.2	92,700	142,100	57.6	258.5	93,700	143,100	58.1	257.4	94,700	144,100	180
190	54.7	251.9	82,600	129,200	55.2	251.1	83,500	130,100	55.7	250.0	84,400	131,000	190
200	52.3	243.9	73,500	117,600	52.8	243.1	74,300	118,400	53.3	241.9	75,100	119,200	200
210	49.8	235.2	65,400	107,200	50.3	234.3	66,100	107,900	50.8	233.1	66,800	108,700	210
220	47.2	225.6	58,000	97,800	47.7	224.8	58,600	98,400	48.2	223.5	59,300	99,100	220
230	44.5	215.2	51,200	89,200	44.9	214.3	51,800	89,800	45.4	212.9	52,400	90,400	230
240	41.6	203.6	45,000	81,300	42.1	202.7	45,500	81,800	42.5	201.3	46,100	82,400	240
250	38.6	190.8	39,400	74,100	39.0	189.7	39,800	74,600	39.4	188.3	40,200	75,000	250
260	35.3	176.3	34,100	67,400	35.7	175.2	34,500	67,800	36.0	173.6	34,800	68,200	260

MLC650 VPC-MAX S-1

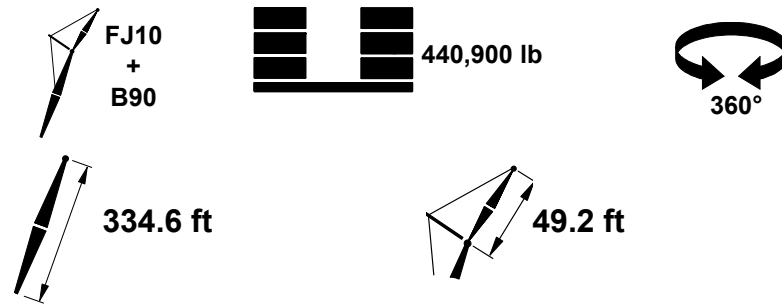
ASME B30.5



	10°				15°				20°				
ft	°	ft	lb	lb	°	ft	lb	lb	°	ft	lb	lb	ft
46	85.3	351.2	488,000	488,000									46
47	85.1	351.1	488,000	488,000									47
48	84.9	351.0	488,000	488,000	85.4	350.3	456,800	456,800					48
49	84.7	350.9	488,000	488,000	85.2	350.2	453,300	453,300					49
50	84.6	350.7	488,000	488,000	85.1	350.1	449,900	449,900					50
51	84.4	350.6	488,000	488,000	84.9	349.9	446,600	446,600	85.4	349.0	385,900	385,900	51
52	84.2	350.5	488,000	488,000	84.7	349.8	443,200	443,200	85.3	348.8	383,400	383,400	52
53	84.1	350.3	488,000	488,000	84.6	349.6	440,000	440,000	85.1	348.7	381,000	381,000	53
54	83.9	350.2	488,000	488,000	84.4	349.5	436,700	436,700	84.9	348.5	378,600	378,600	54
56	83.6	349.9	488,000	488,000	84.1	349.2	430,400	430,400	84.6	348.3	374,000	374,000	56
58	83.2	349.6	484,700	487,900	83.7	348.9	424,200	424,200	84.2	347.9	369,400	369,400	58
60	82.9	349.3	470,300	480,000	83.4	348.6	418,300	418,300	83.9	347.6	364,900	364,900	60
65	82.0	348.4	437,000	461,200	82.5	347.7	404,000	404,000	83.1	346.8	354,200	354,200	65
70	81.2	347.5	407,100	443,800	81.7	346.8	390,800	390,800	82.2	345.8	344,100	344,100	70
75	80.3	346.5	380,000	427,600	80.8	345.8	378,400	378,400	81.3	344.8	334,600	334,600	75
80	79.5	345.4	355,000	412,700	80.0	344.7	358,300	366,800	80.5	343.7	325,700	325,700	80
85	78.6	344.3	323,800	398,700	79.1	343.6	326,900	355,800	79.6	342.6	317,200	317,200	85
90	77.8	343.0	296,700	385,600	78.3	342.3	299,600	345,600	78.8	341.3	302,700	309,100	90
95	76.9	341.7	272,900	373,500	77.4	341.0	275,600	335,900	77.9	340.0	278,500	301,600	95
100	76.0	340.3	251,900	346,900	76.5	339.6	254,400	326,800	77.0	338.6	257,100	294,400	100
105	75.2	338.8	233,100	323,000	75.6	338.1	235,500	318,200	76.2	337.1	238,000	287,600	105
110	74.3	337.3	216,300	301,500	74.8	336.5	218,500	303,700	75.3	335.6	220,900	281,100	110
115	73.4	335.6	201,100	282,100	73.9	334.9	203,200	284,200	74.4	333.9	205,500	274,900	115
120	72.5	333.9	187,400	264,600	73.0	333.2	189,300	266,500	73.5	332.2	191,500	268,700	120
125	71.7	332.1	174,900	248,600	72.1	331.3	176,700	250,500	72.6	330.3	178,700	252,500	125
130	70.8	330.1	163,400	234,000	71.2	329.4	165,200	235,700	71.7	328.4	167,100	237,700	130
135	69.9	328.1	152,900	220,600	70.3	327.4	154,600	222,200	70.8	326.4	156,400	224,000	135
140	69.0	326.1	143,200	208,200	69.4	325.3	144,800	209,800	69.9	324.3	146,500	211,500	140
150	67.1	321.6	125,900	186,200	67.6	320.8	127,400	187,600	68.1	319.8	128,900	189,200	150
160	65.3	316.7	111,000	167,100	65.7	316.0	112,300	168,400	66.2	314.9	113,700	169,900	160
170	63.4	311.5	98,000	150,500	63.8	310.7	99,200	151,700	64.3	309.6	100,500	153,000	170
180	61.5	305.8	86,500	135,800	61.9	305.0	87,600	136,900	62.4	303.9	88,700	138,100	180
190	59.5	299.6	76,200	122,800	59.9	298.8	77,300	123,800	60.4	297.7	78,300	124,900	190
200	57.5	293.0	67,100	111,200	57.9	292.2	68,000	112,100	58.4	291.0	69,000	113,100	200
210	55.5	285.8	58,900	100,700	55.9	285.0	59,700	101,600	56.3	283.8	60,600	102,500	210
220	53.4	278.1	51,400	91,300	53.8	277.2	52,200	92,000	54.2	276.0	53,000	92,800	220
230	51.2	269.7	44,700	82,600	51.6	268.8	45,400	83,400	52.0	267.6	46,100	84,100	230
240	48.9	260.7	38,500	74,800	49.3	259.8	39,100	75,400	49.7	258.5	39,800	76,100	240
250	46.6	251.0	32,800	67,500	47.0	250.0	33,400	68,100	47.4	248.6	34,000	68,700	250
260	44.2	240.3	26,700	60,900	44.5	239.3	27,400	61,400	44.9	237.9	28,100	61,900	260
270	41.6	228.7	20,800	54,700	42.0	227.7	21,400	55,200	42.3	226.2	22,000	55,600	270
280	38.9	216.0	15,300	49,000	39.3	214.9	15,900	49,400	39.6	213.3	16,400	49,800	280
290	36.0	201.9	10,200	43,600	36.4	200.7	10,700	44,000	36.7	199.0	11,100	44,300	290
295									35.1	191.2		41,700	295

MLC650 VPC-MAX S-1

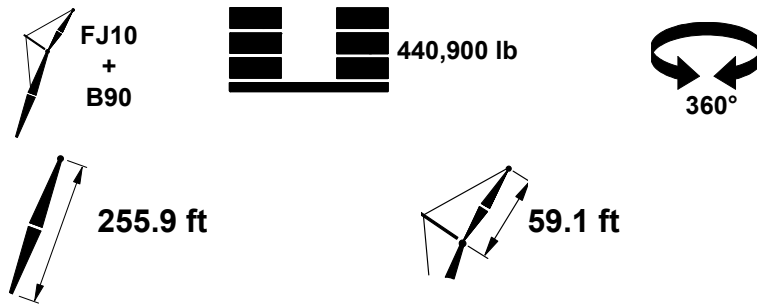
ASME B30.5



	10°				15°				20°				
ft	°	ft	lb	lb	°	ft	lb	lb	°	ft	lb	lb	ft
49	85.4	390.4	488,000	488,000									49
50	85.2	390.3	488,000	488,000									50
51	85.1	390.2	488,000	488,000									51
52	84.9	390.0	488,000	488,000	85.3	389.3	426,100	426,100					52
53	84.8	389.9	484,700	485,900	85.2	389.2	423,400	423,400					53
54	84.6	389.8	481,400	483,900	85.0	389.1	420,900	420,900					54
55	84.5	389.7	474,500	480,500	84.9	388.9	418,200	418,200	85.4	387.9	364,200	364,200	55
56	84.3	389.5	467,600	477,200	84.7	388.8	415,700	415,700	85.2	387.8	362,300	362,300	56
57	84.2	389.4	461,000	473,900	84.6	388.7	413,200	413,200	85.1	387.6	360,400	360,400	57
58	84.0	389.3	454,400	470,600	84.4	388.5	410,700	410,700	84.9	387.5	358,500	358,500	58
60	83.7	389.0	441,700	464,100	84.1	388.2	405,800	405,800	84.6	387.2	354,800	354,800	60
65	82.9	388.2	412,000	448,500	83.4	387.5	394,000	394,000	83.9	386.4	345,900	345,900	65
70	82.2	387.4	385,000	433,800	82.6	386.7	382,700	382,700	83.1	385.6	337,300	337,300	70
75	81.4	386.5	360,300	420,100	81.9	385.8	363,400	372,000	82.3	384.7	329,100	329,100	75
80	80.7	385.5	337,800	407,200	81.1	384.8	340,700	361,900	81.6	383.7	321,300	321,300	80
85	79.9	384.5	317,000	395,100	80.3	383.8	319,800	352,500	80.8	382.7	313,900	313,900	85
90	79.1	383.4	296,200	383,700	79.6	382.6	299,200	343,500	80.0	381.6	302,500	307,000	90
95	78.4	382.2	272,300	370,800	78.8	381.5	275,100	334,900	79.3	380.4	278,100	300,200	95
100	77.6	381.0	251,100	346,100	78.0	380.2	253,700	326,700	78.5	379.2	256,500	293,900	100
105	76.8	379.6	232,200	322,000	77.2	378.9	234,600	319,100	77.7	377.8	237,300	287,700	105
110	76.0	378.3	215,200	300,400	76.5	377.5	217,500	302,700	76.9	376.4	220,000	281,900	110
115	75.3	376.8	199,900	280,900	75.7	376.0	202,100	283,100	76.1	375.0	204,500	276,300	115
120	74.5	375.3	186,100	263,300	74.9	374.5	188,200	265,400	75.4	373.4	190,400	267,600	120
130	72.9	372.0	161,900	232,500	73.3	371.2	163,800	234,400	73.8	370.1	165,800	236,400	130
140	71.3	368.3	141,600	206,600	71.7	367.6	143,300	208,300	72.2	366.5	145,100	210,100	140
150	69.7	364.4	124,200	184,400	70.1	363.6	125,700	186,000	70.6	362.5	127,400	187,600	150
160	68.1	360.1	109,200	165,300	68.5	359.4	110,600	166,700	68.9	358.2	112,100	168,200	160
170	66.4	355.5	96,000	148,600	66.8	354.8	97,300	149,900	67.3	353.6	98,700	151,300	170
180	64.8	350.6	84,500	133,900	65.2	349.8	85,700	135,000	65.6	348.6	86,900	136,300	180
190	63.1	345.3	74,200	120,800	63.5	344.4	75,300	121,900	63.9	343.3	76,500	123,000	190
200	61.3	339.5	65,000	109,100	61.7	338.7	66,000	110,100	62.1	337.5	67,100	111,200	200
210	59.6	333.4	56,800	98,600	60.0	332.6	57,700	99,500	60.4	331.4	58,700	100,500	210
220	57.8	326.8	49,300	89,100	58.2	326.0	50,100	90,000	58.6	324.7	51,100	90,900	220
230	56.0	319.8	42,500	80,500	56.3	318.9	43,300	81,200	56.7	317.7	44,100	82,100	230
240	54.1	312.3	36,200	72,600	54.5	311.4	37,000	73,300	54.8	310.1	37,800	74,100	240
250	52.2	304.2	29,400	65,300	52.5	303.3	30,200	66,000	52.9	302.0	31,200	66,700	250
260	50.2	295.6	23,100	58,600	50.5	294.7	23,900	59,300	50.9	293.3	24,700	59,900	260
270	48.1	286.4	17,200	52,500	48.5	285.4	18,000	53,100	48.9	283.9	18,700	53,600	270
280	46.0	276.4	11,800	46,800	46.4	275.4	12,500	47,300	46.7	273.9	13,100	47,800	280
290	43.8	265.7		41,400	44.2	264.6		41,900	44.5	263.1		42,400	290
300	41.5	254.0		36,500	41.9	252.9		36,900	42.2	251.3		37,300	300
310	39.1	241.4		31,800	39.4	240.2		32,200	39.7	238.5		32,600	310
320	36.6	227.6		27,400	36.9	226.3		27,800	37.2	224.5		28,100	320
325	35.2	220.2		25,400	35.5	218.9		25,700	35.8	217.0		25,900	325

MLC650 VPC-MAX S-1

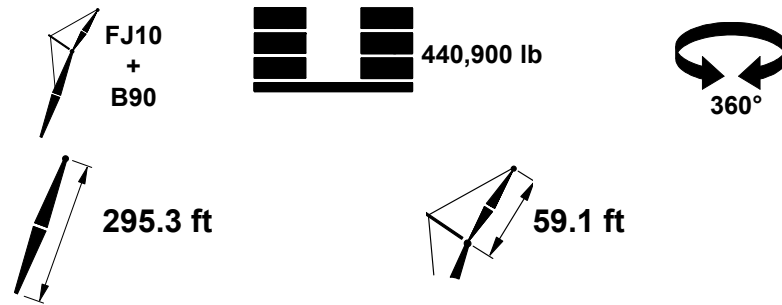
ASME B30.5



	10°				15°				20°				
	ft	°	ft	lb	lb	ft	lb	lb	ft	lb	lb	ft	
43	85.5	322.0	488,000	488,000									43
44	85.3	321.9	488,000	488,000									44
45	85.1	321.7	488,000	488,000									45
46	84.9	321.6	488,000	488,000									46
47	84.7	321.5	488,000	488,000	85.4	320.8	431,200	431,200					47
48	84.6	321.3	488,000	488,000	85.2	320.6	427,200	427,200					48
49	84.4	321.2	487,600	487,600	85.0	320.5	423,400	423,400					49
50	84.2	321.1	487,200	487,200	84.8	320.4	419,600	419,600					50
51	84.0	320.9	483,400	483,400	84.6	320.2	415,900	415,900	85.3	319.3	351,200	351,200	51
52	83.8	320.8	479,500	479,500	84.5	320.1	412,200	412,200	85.2	319.1	348,400	348,400	52
53	83.6	320.6	474,700	474,700	84.3	319.9	408,600	408,600	85.0	318.9	345,800	345,800	53
54	83.4	320.5	469,900	469,900	84.1	319.8	405,000	405,000	84.8	318.8	343,100	343,100	54
56	83.1	320.1	460,600	460,600	83.7	319.4	398,100	398,100	84.4	318.5	338,000	338,000	56
58	82.7	319.8	451,700	451,700	83.4	319.1	391,400	391,400	84.0	318.1	333,000	333,000	58
60	82.3	319.4	443,100	443,100	83.0	318.7	385,000	385,000	83.7	317.8	328,100	328,100	60
65	81.4	318.5	422,900	422,900	82.1	317.8	369,800	369,800	82.7	316.8	316,600	316,600	65
70	80.5	317.5	404,500	404,500	81.1	316.8	355,700	355,700	81.8	315.8	305,900	305,900	70
75	79.5	316.4	387,600	387,600	80.2	315.7	342,700	342,700	80.9	314.7	295,900	295,900	75
80	78.6	315.2	360,500	372,000	79.2	314.5	330,600	330,600	79.9	313.5	286,500	286,500	80
85	77.7	313.9	329,600	357,700	78.3	313.2	319,300	319,300	79.0	312.2	277,800	277,800	85
90	76.7	312.6	302,700	344,400	77.4	311.9	305,800	308,700	78.0	310.9	269,500	269,500	90
95	75.8	311.1	279,100	332,000	76.4	310.4	282,000	299,000	77.1	309.4	261,800	261,800	95
100	74.8	309.6	258,300	320,600	75.4	308.9	260,900	289,800	76.1	307.9	254,600	254,600	100
105	73.9	308.0	239,700	309,900	74.5	307.2	242,200	281,000	75.1	306.2	244,900	247,600	105
110	72.9	306.2	223,000	299,900	73.5	305.5	225,300	273,000	74.2	304.5	227,900	241,100	110
115	71.9	304.4	207,900	288,900	72.5	303.7	210,200	265,300	73.2	302.7	212,600	235,000	115
120	70.9	302.5	194,300	271,500	71.6	301.8	196,400	258,100	72.2	300.7	198,700	229,200	120
125	70.0	300.5	181,900	255,600	70.6	299.7	183,900	251,200	71.2	298.7	186,000	223,600	125
130	69.0	298.4	170,500	241,100	69.6	297.6	172,400	243,000	70.2	296.6	174,400	218,300	130
140	67.0	293.8	150,500	215,500	67.6	293.0	152,200	217,200	68.2	292.0	154,000	208,600	140
150	64.9	288.8	133,300	193,600	65.5	288.1	134,900	195,100	66.2	287.0	136,500	196,800	150
160	62.9	283.4	118,500	174,600	63.4	282.6	119,900	176,000	64.1	281.5	121,400	177,500	160
170	60.7	277.5	105,600	158,100	61.3	276.7	106,800	159,400	61.9	275.5	108,200	160,700	170
180	58.6	271.0	94,100	143,500	59.1	270.2	95,300	144,700	59.7	269.0	96,500	145,900	180
190	56.3	264.0	84,000	130,600	56.9	263.2	85,000	131,600	57.5	262.0	86,200	132,800	190
200	54.0	256.4	74,900	119,000	54.6	255.6	75,900	120,000	55.2	254.3	76,900	121,000	200
210	51.7	248.2	66,700	108,600	52.2	247.3	67,600	109,400	52.8	246.0	68,500	110,400	210
220	49.2	239.2	59,300	99,100	49.8	238.2	60,100	99,900	50.3	236.9	60,900	100,800	220
230	46.7	229.4	52,600	90,500	47.2	228.4	53,300	91,200	47.7	227.0	54,000	92,000	230
240	44.0	218.6	46,400	82,700	44.5	217.6	47,000	83,300	45.0	216.1	47,700	84,000	240
250	41.2	206.7	40,700	75,400	41.7	205.6	41,300	76,000	42.2	204.1	41,800	76,600	250
260	38.1	193.6	35,400	68,800	38.6	192.4	35,900	69,300	39.1	190.8	36,400	69,800	260
265	36.5	186.4	32,900	65,600	37.0	185.2	33,400	66,100	37.5	183.5	33,900	66,500	265
270					35.4	177.5	31,000	63,000	35.8	175.7	31,400	63,400	270

MLC650 VPC-MAX S-1

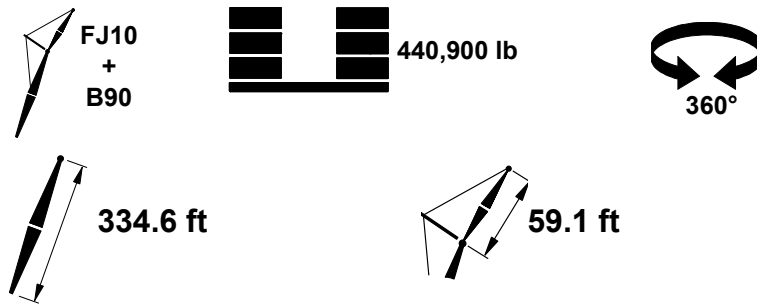
ASME B30.5



	10°				15°				20°				
ft	°	ft	lb	lb	°	ft	lb	lb	°	ft	lb	lb	ft
48	85.4	360.8	476,600	476,600									48
49	85.2	360.6	472,400	472,400									49
50	85.1	360.5	468,200	468,200									50
51	84.9	360.4	464,100	464,100	85.5	359.6	399,400	399,400					51
52	84.7	360.2	460,100	460,100	85.3	359.5	396,500	396,500					52
53	84.6	360.1	456,100	456,100	85.1	359.3	393,500	393,500					53
54	84.4	360.0	452,200	452,200	85.0	359.2	390,600	390,600					54
55	84.2	359.8	448,300	448,300	84.8	359.0	387,800	387,800	85.5	357.9	332,200	332,200	55
56	84.1	359.7	444,500	444,500	84.7	358.9	385,000	385,000	85.3	357.8	330,100	330,100	56
57	83.9	359.5	440,700	440,700	84.5	358.7	382,200	382,200	85.1	357.6	328,000	328,000	57
58	83.8	359.4	437,000	437,000	84.3	358.6	379,400	379,400	85.0	357.5	325,900	325,900	58
60	83.4	359.1	429,800	429,800	84.0	358.3	374,000	374,000	84.6	357.2	321,800	321,800	60
65	82.6	358.3	412,900	412,900	83.2	357.5	361,200	361,200	83.8	356.3	312,000	312,000	65
70	81.8	357.4	397,100	397,100	82.3	356.6	349,100	349,100	83.0	355.4	302,700	302,700	70
75	81.0	356.4	378,800	378,800	81.5	355.6	337,900	337,900	82.1	354.4	294,100	294,100	75
80	80.1	355.3	354,600	368,900	80.7	354.5	327,300	327,300	81.3	353.4	285,900	285,900	80
85	79.3	354.2	326,200	356,300	79.9	353.4	317,500	317,500	80.5	352.3	278,200	278,200	85
90	78.5	353.0	299,000	344,600	79.0	352.2	302,400	308,200	79.6	351.0	270,900	270,900	90
95	77.6	351.7	275,100	333,500	78.2	350.9	278,300	299,400	78.8	349.8	264,000	264,000	95
100	76.8	350.4	254,000	323,200	77.3	349.6	257,000	291,200	77.9	348.4	257,400	257,400	100
105	75.9	348.9	235,200	313,500	76.5	348.1	238,000	283,400	77.1	346.9	241,000	251,200	105
110	75.1	347.4	218,300	303,500	75.6	346.6	220,900	276,100	76.2	345.4	223,800	245,300	110
115	74.2	345.8	203,100	284,100	74.8	345.0	205,500	269,000	75.4	343.8	208,200	239,700	115
120	73.4	344.1	189,300	266,500	73.9	343.3	191,600	262,400	74.5	342.1	194,200	234,300	120
125	72.5	342.4	176,700	250,400	73.1	341.5	178,900	252,700	73.7	340.4	181,300	229,200	125
130	71.7	340.5	165,200	235,800	72.2	339.7	167,300	237,900	72.8	338.5	169,600	224,300	130
135	70.8	338.6	154,600	222,300	71.3	337.7	156,600	224,300	71.9	336.5	158,800	219,700	135
140	69.9	336.6	144,900	209,900	70.4	335.7	146,800	211,800	71.0	334.5	148,900	213,900	140
150	68.1	332.2	127,600	187,800	68.7	331.4	129,300	189,500	69.3	330.2	131,200	191,400	150
160	66.4	327.6	112,600	168,700	66.9	326.7	114,200	170,300	67.5	325.4	115,900	172,000	160
170	64.5	322.5	99,500	152,000	65.1	321.6	100,900	153,500	65.6	320.3	102,500	155,000	170
180	62.7	317.0	87,900	137,300	63.2	316.1	89,300	138,700	63.8	314.8	90,700	140,100	180
190	60.8	311.1	77,700	124,300	61.3	310.1	78,900	125,500	61.9	308.8	80,200	126,800	190
200	58.9	304.7	68,500	112,600	59.4	303.7	69,700	113,700	59.9	302.4	70,900	115,000	200
210	56.9	297.8	60,300	102,100	57.4	296.8	61,300	103,200	57.9	295.5	62,400	104,300	210
220	54.9	290.4	52,800	92,600	55.4	289.4	53,800	93,600	55.9	288.0	54,800	94,600	220
230	52.8	282.4	46,000	84,000	53.3	281.4	46,900	84,900	53.8	280.0	47,800	85,800	230
240	50.7	273.9	39,800	76,100	51.1	272.8	40,600	76,900	51.6	271.3	41,400	77,700	240
250	48.5	264.6	34,100	68,800	48.9	263.5	34,800	69,600	49.4	261.9	35,600	70,300	250
260	46.2	254.6	28,300	62,200	46.6	253.4	29,100	62,800	47.1	251.8	30,000	63,500	260
270	43.8	243.7	22,400	56,000	44.2	242.5	23,200	56,600	44.7	240.8	24,000	57,200	270
280	41.2	231.8	16,900	50,300	41.7	230.6	17,600	50,800	42.1	228.8	18,300	51,300	280
290	38.6	218.8	11,800	44,900	39.0	217.5	12,400	45,400	39.4	215.6	13,000	45,900	290
300	35.7	204.4		39,900	36.1	203.0		40,300	36.5	200.9		40,700	300

MLC650 VPC-MAX S-1

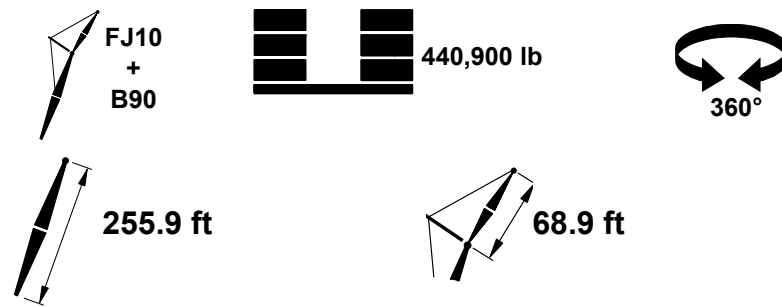
ASME B30.5

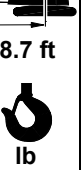
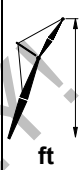
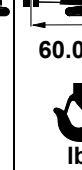


	10°				15°				20°				
	ft	°	ft	lb	lb	ft	lb	lb	ft	lb	lb	ft	
52	85.4	399.8	439,700	439,700									52
53	85.2	399.7	436,500	436,500									53
54	85.1	399.5	433,300	433,300									54
55	84.9	399.4	430,200	430,200	85.4	398.6	373,700	373,700					55
56	84.8	399.3	427,200	427,200	85.3	398.4	371,400	371,400					56
57	84.6	399.1	424,200	424,200	85.1	398.3	369,000	369,000					57
58	84.5	399.0	421,200	421,200	85.0	398.2	366,800	366,800					58
59	84.3	398.9	418,200	418,200	84.8	398.0	364,600	364,600	85.4	396.9	316,700	316,700	59
60	84.2	398.7	415,300	415,300	84.7	397.9	362,400	362,400	85.2	396.7	315,000	315,000	60
61	84.0	398.6	412,500	412,500	84.5	397.7	360,200	360,200	85.1	396.6	313,200	313,200	61
62	83.9	398.4	409,700	409,700	84.4	397.6	358,100	358,100	84.9	396.4	311,500	311,500	62
65	83.4	398.0	401,300	401,300	83.9	397.2	351,700	351,700	84.5	396.0	306,600	306,600	65
70	82.7	397.2	382,200	388,100	83.2	396.3	341,600	341,600	83.8	395.2	298,600	298,600	70
75	82.0	396.3	358,200	375,600	82.5	395.5	332,000	332,000	83.0	394.3	291,000	291,000	75
80	81.2	395.4	336,100	363,900	81.7	394.5	322,800	322,800	82.3	393.4	283,800	283,800	80
85	80.5	394.4	315,800	352,900	81.0	393.5	314,200	314,200	81.5	392.3	277,000	277,000	85
90	79.7	393.3	297,100	342,500	80.2	392.4	300,300	306,000	80.8	391.3	270,500	270,500	90
95	79.0	392.1	274,500	332,700	79.5	391.3	277,800	298,300	80.0	390.1	264,300	264,300	95
100	78.2	390.9	253,200	323,500	78.7	390.1	256,300	290,900	79.3	388.9	258,400	258,400	100
105	77.5	389.7	234,200	314,700	78.0	388.8	237,200	283,900	78.5	387.6	240,300	252,800	105
110	76.7	388.3	217,200	302,400	77.2	387.4	220,000	277,200	77.7	386.2	223,000	247,400	110
120	75.2	385.4	188,000	265,200	75.7	384.5	190,400	264,900	76.2	383.3	193,100	237,400	120
130	73.7	382.2	163,700	234,300	74.1	381.3	165,900	236,500	74.7	380.1	168,300	228,200	130
140	72.1	378.7	143,200	208,200	72.6	377.8	145,300	210,300	73.1	376.5	147,500	212,500	140
150	70.5	374.8	125,800	186,000	71.0	373.9	127,600	187,900	71.5	372.7	129,600	189,900	150
160	69.0	370.7	110,700	166,800	69.4	369.8	112,400	168,500	70.0	368.5	114,200	170,300	160
170	67.4	366.2	97,500	150,000	67.8	365.3	99,100	151,600	68.3	364.0	100,700	153,300	170
180	65.7	361.4	85,900	135,300	66.2	360.5	87,300	136,700	66.7	359.2	88,900	138,200	180
190	64.1	356.3	75,600	122,200	64.6	355.3	76,900	123,500	65.1	354.0	78,300	124,900	190
200	62.4	350.7	66,300	110,400	62.9	349.8	67,600	111,700	63.4	348.4	68,900	113,000	200
210	60.7	344.8	58,000	99,900	61.2	343.8	59,200	101,000	61.7	342.5	60,400	102,200	210
220	59.0	338.5	50,500	90,400	59.5	337.5	51,600	91,400	59.9	336.1	52,700	92,500	220
230	57.2	331.7	43,700	81,700	57.7	330.7	44,700	82,700	58.2	329.3	45,700	83,700	230
240	55.4	324.5	37,500	73,800	55.9	323.4	38,400	74,700	56.3	322.0	39,300	75,600	240
250	53.6	316.7	30,800	66,500	54.0	315.7	31,900	67,300	54.5	314.2	33,000	68,200	250
260	51.7	308.5	24,400	59,800	52.1	307.4	25,400	60,600	52.6	305.8	26,500	61,400	260
270	49.8	299.6	18,600	53,600	50.2	298.5	19,500	54,300	50.6	296.9	20,500	55,100	270
280	47.7	290.1	13,100	47,900	48.1	289.0	14,000	48,600	48.6	287.3	14,900	49,200	280
290	45.7	279.9		42,600	46.1	278.7		43,200	46.5	277.0		43,800	290
300	43.5	269.0		37,600	43.9	267.7		38,100	44.3	265.9		38,700	300
310	41.2	257.1		32,900	41.6	255.8		33,400	42.0	253.9		33,900	310
320	38.8	244.2		28,500	39.2	242.8		29,000	39.6	240.9		29,400	320
330	36.3	230.1		24,400	36.7	228.6		24,800	37.0	226.5		25,200	330
335					35.3	221.0		22,800	35.6	218.8		23,100	335

MLC650 VPC-MAX S-1

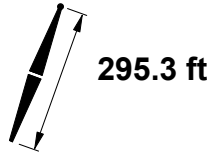
ASME B30.5



	10°				15°				20°				
													
ft	°	ft	lb	lb	°	ft	lb	lb	°	ft	lb	lb	ft
45	85.6	331.6	453,300	453,300									45
46	85.4	331.5	451,900	451,900									46
47	85.2	331.3	450,600	450,600									47
48	85.0	331.2	449,200	449,200									48
49	84.8	331.0	445,800	445,800	85.6	330.3	381,400	381,400					49
50	84.7	330.9	442,400	442,400	85.4	330.1	377,800	377,800					50
51	84.5	330.8	437,800	437,800	85.2	330.0	374,300	374,300					51
52	84.3	330.6	433,200	433,200	85.0	329.9	370,900	370,900					52
54	83.9	330.3	424,500	424,500	84.7	329.6	364,300	364,300	85.5	328.5	301,400	301,400	54
55	83.8	330.2	420,200	420,200	84.5	329.4	361,100	361,100	85.3	328.3	299,100	299,100	55
56	83.6	330.0	416,000	416,000	84.3	329.2	357,900	357,900	85.1	328.2	296,800	296,800	56
57	83.4	329.9	412,000	412,000	84.1	329.1	354,800	354,800	84.9	328.0	294,600	294,600	57
58	83.2	329.7	408,000	408,000	84.0	328.9	351,600	351,600	84.7	327.8	292,400	292,400	58
60	82.9	329.4	400,100	400,100	83.6	328.6	345,700	345,700	84.4	327.5	288,000	288,000	60
65	82.0	328.5	381,800	381,800	82.7	327.7	331,600	331,600	83.5	326.6	277,800	277,800	65
70	81.1	327.5	365,100	365,100	81.8	326.7	318,500	318,500	82.6	325.6	268,300	268,300	70
75	80.2	326.4	349,700	349,700	80.9	325.6	306,500	306,500	81.7	324.5	259,300	259,300	75
80	79.3	325.3	335,600	335,600	80.0	324.5	295,300	295,300	80.7	323.4	251,000	251,000	80
85	78.3	324.0	322,500	322,500	79.1	323.2	284,900	284,900	79.8	322.1	243,200	243,200	85
90	77.4	322.7	305,300	310,300	78.1	321.9	275,200	275,200	78.9	320.8	235,800	235,800	90
95	76.5	321.3	281,700	299,100	77.2	320.5	266,200	266,200	78.0	319.4	228,900	228,900	95
100	75.6	319.8	260,700	288,700	76.3	319.0	257,700	257,700	77.1	317.9	222,400	222,400	100
105	74.7	318.2	242,100	278,900	75.4	317.4	244,900	249,700	76.1	316.3	216,300	216,300	105
110	73.7	316.6	225,400	269,900	74.4	315.8	228,100	242,300	75.2	314.6	210,500	210,500	110
115	72.8	314.8	210,300	261,300	73.5	314.0	212,800	235,200	74.2	312.9	205,000	205,000	115
120	71.8	313.0	196,600	253,300	72.6	312.1	199,000	228,600	73.3	311.0	199,800	199,800	120
125	70.9	311.0	184,100	245,700	71.6	310.2	186,400	222,300	72.3	309.0	188,900	194,900	125
130	69.9	309.0	172,700	238,600	70.6	308.1	174,900	216,300	71.4	307.0	177,300	190,200	130
140	68.0	304.6	152,600	217,600	68.7	303.7	154,600	205,400	69.4	302.6	156,700	181,400	140
150	66.0	299.8	135,500	195,700	66.7	298.9	137,200	195,500	67.5	297.7	139,200	173,600	150
160	64.1	294.6	120,600	176,700	64.7	293.7	122,200	178,300	65.4	292.5	124,000	166,300	160
170	62.0	288.9	107,600	160,100	62.7	288.0	109,100	161,600	63.4	286.7	110,700	159,700	170
180	59.9	282.7	96,200	145,500	60.6	281.8	97,500	146,900	61.3	280.5	99,000	148,400	180
190	57.8	276.0	86,000	132,600	58.5	275.1	87,200	133,800	59.1	273.8	88,600	135,200	190
200	55.6	268.8	76,900	121,000	56.3	267.8	78,000	122,100	56.9	266.5	79,200	123,300	200
210	53.4	260.9	68,700	110,500	54.0	259.9	69,700	111,600	54.7	258.5	70,800	112,700	210
220	51.0	252.4	61,300	101,100	51.7	251.4	62,200	102,000	52.3	249.9	63,200	103,000	220
230	48.6	243.1	54,500	92,500	49.3	242.1	55,400	93,300	49.9	240.6	56,300	94,300	230
240	46.1	233.0	48,300	84,600	46.7	231.9	49,100	85,400	47.3	230.4	49,900	86,200	240
250	43.5	222.0	42,600	77,400	44.1	220.8	43,300	78,100	44.7	219.2	44,100	78,800	250
260	40.7	209.8	37,400	70,700	41.3	208.6	38,000	71,300	41.9	206.9	38,600	72,000	260
270	37.7	196.4	32,500	64,500	38.3	195.0	33,000	65,100	38.8	193.2	33,600	65,600	270
275	36.2	189.0	30,200	61,600	36.7	187.6	30,700	62,100	37.2	185.7	31,200	62,600	275
280									35.6	177.7	28,900	59,700	280

MLC650 VPC-MAX S-1

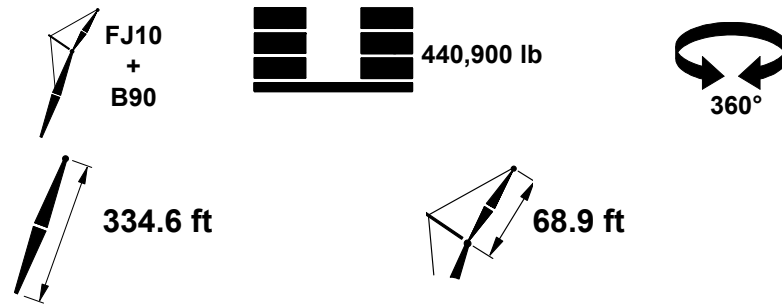
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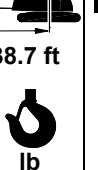
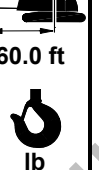
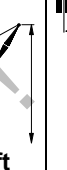
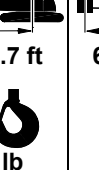
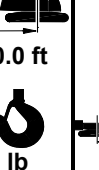


	10°				15°				20°				
	ft	°	ft	lb	lb	ft	lb	lb	ft	lb	lb	ft	
50	85.5	370.3	421,900	421,900									50
51	85.4	370.1	418,200	418,200									51
52	85.2	370.0	414,500	414,500									52
53	85.1	369.9	410,900	410,900									53
54	84.9	369.7	407,400	407,400	85.6	368.8	351,500	351,500					54
55	84.7	369.6	403,900	403,900	85.4	368.7	348,900	348,900					55
56	84.6	369.5	400,400	400,400	85.2	368.5	346,300	346,300					56
57	84.4	369.3	397,100	397,100	85.1	368.4	343,800	343,800					57
58	84.3	369.2	393,700	393,700	84.9	368.3	341,300	341,300	85.6	367.0	285,300	285,300	58
59	84.1	369.0	390,400	390,400	84.8	368.1	338,900	338,900	85.5	366.9	283,500	283,500	59
60	83.9	368.9	387,200	387,200	84.6	368.0	336,400	336,400	85.3	366.7	281,700	281,700	60
61	83.8	368.7	384,100	384,100	84.4	367.8	334,100	334,100	85.1	366.6	280,000	280,000	61
65	83.1	368.1	371,800	371,800	83.8	367.1	324,700	324,700	84.5	365.9	273,000	273,000	65
70	82.3	367.2	357,500	357,500	83.0	366.3	313,900	313,900	83.7	365.0	264,800	264,800	70
75	81.5	366.3	344,300	344,300	82.2	365.3	303,600	303,600	82.9	364.1	257,100	257,100	75
80	80.7	365.2	332,000	332,000	81.4	364.3	294,000	294,000	82.1	363.1	249,800	249,800	80
85	79.9	364.1	320,500	320,500	80.6	363.2	284,800	284,800	81.3	362.0	243,000	243,000	85
90	79.1	363.0	309,700	309,700	79.8	362.0	276,300	276,300	80.4	360.8	236,500	236,500	90
95	78.3	361.7	278,000	299,800	79.0	360.8	268,100	268,100	79.6	359.5	230,300	230,300	95
100	77.5	360.4	256,800	290,300	78.1	359.5	260,200	260,400	78.8	358.2	224,500	224,500	100
105	76.7	359.0	237,900	281,500	77.3	358.1	241,100	253,200	78.0	356.8	219,000	219,000	105
110	75.8	357.5	220,900	273,200	76.5	356.6	223,900	246,400	77.1	355.3	213,700	213,700	110
115	75.0	356.0	205,600	265,400	75.7	355.0	208,500	240,000	76.3	353.8	208,700	208,700	115
120	74.2	354.4	191,800	258,000	74.8	353.4	194,500	233,900	75.5	352.1	197,400	203,900	120
125	73.3	352.6	179,100	251,100	74.0	351.7	181,700	228,100	74.6	350.4	184,500	199,400	125
130	72.5	350.9	167,600	238,200	73.1	349.9	170,000	222,500	73.8	348.6	172,700	195,100	130
140	70.8	347.0	147,200	212,200	71.4	346.0	149,500	212,300	72.1	344.7	151,900	187,000	140
150	69.1	342.8	129,800	190,100	69.7	341.8	131,900	192,100	70.4	340.5	134,100	179,500	150
160	67.4	338.3	114,800	170,900	68.0	337.3	116,700	172,800	68.6	335.9	118,600	172,700	160
170	65.6	333.4	101,700	154,200	66.2	332.4	103,400	155,900	66.8	331.0	105,200	157,700	170
180	63.8	328.1	90,100	139,500	64.4	327.0	91,600	141,000	65.0	325.7	93,300	142,700	180
190	62.0	322.4	79,800	126,400	62.6	321.3	81,200	127,800	63.2	319.9	82,800	129,400	190
200	60.2	316.2	70,600	114,700	60.8	315.1	71,900	116,000	61.3	313.7	73,400	117,400	200
210	58.3	309.6	62,300	104,200	58.9	308.5	63,600	105,400	59.4	307.0	64,900	106,700	210
220	56.3	302.5	54,800	94,600	56.9	301.4	56,000	95,800	57.5	299.9	57,200	97,000	220
230	54.3	294.9	48,000	86,000	54.9	293.7	49,100	87,000	55.5	292.2	50,200	88,100	230
240	52.3	286.7	41,800	78,100	52.9	285.5	42,700	79,000	53.4	283.9	43,700	80,000	240
250	50.2	277.9	36,100	70,800	50.7	276.6	36,900	71,700	51.3	275.0	37,900	72,600	250
260	48.0	268.4	30,700	64,100	48.6	267.1	31,600	64,900	49.1	265.4	32,400	65,800	260
270	45.7	258.1	24,800	57,900	46.3	256.7	25,800	58,700	46.8	255.0	26,700	59,400	270
280	43.4	246.9	19,300	52,200	43.9	245.5	20,200	52,900	44.4	243.7	21,100	53,500	280
290	40.9	234.8	14,200	46,800	41.4	233.3	15,000	47,400	41.9	231.4	15,800	48,000	290
300	38.3	221.5		41,800	38.8	219.9	10,100	42,400	39.2	217.8	10,800	42,900	300
310	35.5	206.8		37,100	35.9	205.1		37,600	36.3	202.8		38,100	310

MLC650 VPC-MAX S-1

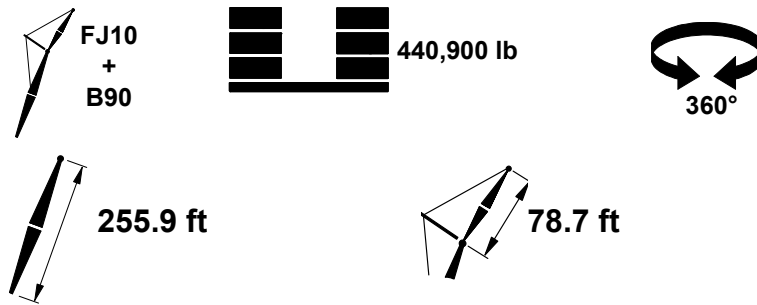
ASME B30.5



	10°				15°				20°				
													
	ft	°	ft	lb	lb	ft	°	ft	lb	lb	ft	°	ft
54	85.5	409.3	390,400	390,400									54
55	85.4	409.1	390,400	390,400									55
56	85.2	409.0	390,400	390,400									56
57	85.1	408.9	388,600	388,600									57
58	84.9	408.8	385,900	385,900	85.5	407.8	334,800	334,800					58
59	84.8	408.6	383,100	383,100	85.4	407.6	332,700	332,700					59
60	84.6	408.5	380,300	380,300	85.2	407.5	330,600	330,600					60
61	84.5	408.3	377,700	377,700	85.1	407.4	328,600	328,600					61
63	84.2	408.0	372,500	372,500	84.8	407.1	324,600	324,600	85.4	405.7	274,500	274,500	63
64	84.1	407.9	369,900	369,900	84.7	406.9	322,600	322,600	85.3	405.6	272,900	272,900	64
65	83.9	407.8	367,300	367,300	84.5	406.8	320,700	320,700	85.2	405.4	271,400	271,400	65
66	83.8	407.6	364,800	364,800	84.4	406.6	318,800	318,800	85.0	405.3	270,000	270,000	66
70	83.2	407.0	354,900	354,900	83.8	406.0	311,300	311,300	84.4	404.7	264,200	264,200	70
75	82.5	406.1	343,200	343,200	83.1	405.1	302,200	302,200	83.7	403.8	257,300	257,300	75
80	81.8	405.2	332,200	332,200	82.3	404.2	293,700	293,700	83.0	402.9	250,800	250,800	80
85	81.0	404.2	315,100	321,900	81.6	403.2	285,700	285,700	82.2	401.9	244,600	244,600	85
90	80.3	403.2	296,800	312,200	80.9	402.2	278,100	278,100	81.5	400.8	238,600	238,600	90
95	79.6	402.1	277,400	303,100	80.2	401.1	270,800	270,800	80.8	399.7	233,000	233,000	95
100	78.8	400.9	256,000	294,500	79.4	399.9	259,600	264,000	80.0	398.5	227,700	227,700	100
110	77.4	398.3	219,900	278,600	77.9	397.3	223,000	251,300	78.6	395.9	217,700	217,700	110
120	75.9	395.5	190,500	264,400	76.5	394.4	193,300	239,800	77.1	393.1	196,400	208,500	120
130	74.4	392.3	166,100	236,700	75.0	391.3	168,700	229,400	75.6	389.9	171,500	200,200	130
140	72.9	388.9	145,600	210,600	73.5	387.9	147,900	212,900	74.0	386.5	150,500	192,500	140
150	71.4	385.2	128,000	188,300	71.9	384.2	130,200	190,400	72.5	382.8	132,500	185,400	150
160	69.8	381.2	112,900	169,000	70.4	380.1	114,800	171,000	71.0	378.7	117,000	173,100	160
170	68.3	376.8	99,600	152,200	68.8	375.8	101,400	154,000	69.4	374.3	103,400	155,900	170
180	66.7	372.2	88,000	137,400	67.3	371.1	89,600	139,000	67.8	369.6	91,400	140,800	180
190	65.1	367.2	77,600	124,200	65.7	366.1	79,200	125,700	66.2	364.6	80,800	127,400	190
200	63.5	361.8	68,400	112,400	64.0	360.7	69,800	113,900	64.6	359.2	71,300	115,400	200
210	61.8	356.1	60,000	101,900	62.4	354.9	61,400	103,200	62.9	353.4	62,800	104,600	210
220	60.2	349.9	52,500	92,300	60.7	348.8	53,700	93,500	61.2	347.2	55,000	94,900	220
230	58.5	343.4	45,600	83,600	59.0	342.2	46,800	84,800	59.5	340.6	48,000	86,000	230
240	56.7	336.4	39,400	75,700	57.3	335.2	40,400	76,700	57.8	333.6	41,600	77,900	240
250	55.0	329.0	33,100	68,400	55.5	327.8	34,400	69,400	56.0	326.1	35,700	70,400	250
260	53.1	321.0	26,800	61,700	53.6	319.8	27,900	62,600	54.2	318.1	29,200	63,600	260
270	51.3	312.6	20,900	55,500	51.8	311.3	22,000	56,300	52.3	309.5	23,100	57,200	270
280	49.3	303.5	15,400	49,700	49.8	302.2	16,400	50,500	50.3	300.4	17,500	51,300	280
290	47.4	293.8	10,300	44,400	47.8	292.4	11,300	45,100	48.3	290.5	12,200	45,900	290
300	45.3	283.4		39,400	45.8	281.9		40,100	46.2	280.0		40,700	300
310	43.2	272.2		34,700	43.6	270.7		35,300	44.1	268.6		35,900	310
320	40.9	260.1		30,300	41.4	258.5		30,900	41.8	256.4		31,400	320
330	38.6	246.9		26,200	39.0	245.2		26,700	39.4	243.0		27,200	330
340	36.1	232.5		22,200	36.5	230.8		22,700	36.9	228.4		23,200	340
345									35.5	220.5		21,000	345

MLC650 VPC-MAX S-1

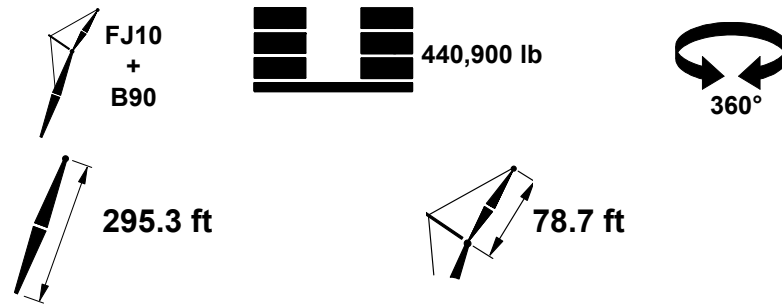
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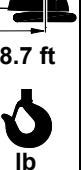
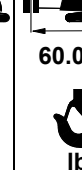


	10°				15°				20°				
	ft	o	ft	lb	lb	ft	lb	lb	ft	lb	lb	ft	
50	84.9	341.0	417,300	417,300									50
51	84.7	340.8	416,000	416,000									51
52	84.5	340.7	414,700	414,700									52
53	84.4	340.5	412,600	412,600									53
54	84.2	340.4	408,300	408,300									54
55	84.0	340.2	404,000	404,000	84.8	339.5	337,200	337,200					55
56	83.8	340.1	399,800	399,800	84.6	339.3	334,100	334,100					56
57	83.7	339.9	395,700	395,700	84.5	339.2	331,000	331,000					57
58	83.5	339.8	391,600	391,600	84.3	339.0	328,000	328,000					58
60	83.1	339.4	383,800	383,800	83.9	338.7	322,100	322,100	84.8	337.6	266,700	266,700	60
61	83.0	339.3	380,100	380,100	83.8	338.5	319,300	319,300	84.6	337.4	264,600	264,600	61
62	82.8	339.1	376,400	376,400	83.6	338.3	316,600	316,600	84.5	337.2	262,600	262,600	62
63	82.6	338.9	372,700	372,700	83.4	338.2	313,800	313,800	84.3	337.1	260,600	260,600	63
65	82.3	338.6	365,400	365,400	83.1	337.8	308,300	308,300	83.9	336.7	256,700	256,700	65
70	81.4	337.6	348,600	348,600	82.2	336.9	295,600	295,600	83.1	335.7	247,500	247,500	70
75	80.5	336.6	333,200	333,200	81.3	335.8	283,800	283,800	82.2	334.7	238,800	238,800	75
80	79.6	335.5	319,100	319,100	80.4	334.7	272,900	272,900	81.3	333.6	230,800	230,800	80
85	78.8	334.3	306,000	306,000	79.6	333.5	262,900	262,900	80.4	332.4	223,200	223,200	85
90	77.9	333.0	293,800	293,800	78.7	332.2	253,400	253,400	79.5	331.1	216,200	216,200	90
95	77.0	331.6	282,300	282,300	77.8	330.9	244,700	244,700	78.6	329.7	209,500	209,500	95
100	76.1	330.2	261,300	271,900	76.9	329.4	236,500	236,500	77.7	328.3	203,300	203,300	100
105	75.2	328.7	242,700	262,100	76.0	327.9	228,900	228,900	76.8	326.7	197,400	197,400	105
110	74.3	327.1	226,000	253,000	75.1	326.3	221,700	221,700	75.9	325.1	191,800	191,800	110
115	73.4	325.4	210,900	244,400	74.2	324.6	213,800	215,000	75.0	323.4	186,600	186,600	115
120	72.5	323.6	197,200	236,400	73.3	322.8	200,000	208,700	74.1	321.6	181,600	181,600	120
125	71.6	321.7	184,800	229,000	72.3	320.9	187,400	202,600	73.2	319.7	176,900	176,900	125
130	70.6	319.7	173,400	221,900	71.4	318.9	175,900	196,900	72.2	317.7	172,500	172,500	130
135	69.7	317.7	162,900	215,300	70.5	316.8	165,300	191,600	71.3	315.7	167,800	168,200	135
140	68.8	315.5	153,300	209,000	69.5	314.7	155,500	186,500	70.4	313.5	158,000	164,100	140
150	66.9	310.9	136,100	196,300	67.6	310.0	138,200	177,100	68.5	308.8	140,400	156,600	150
160	65.0	305.8	121,300	177,400	65.7	305.0	123,100	168,600	66.5	303.8	125,200	149,800	160
170	63.0	300.4	108,300	160,800	63.8	299.5	110,000	160,800	64.5	298.3	111,900	143,500	170
180	61.0	294.5	96,900	146,200	61.8	293.6	98,400	147,800	62.5	292.3	100,100	137,700	180
190	59.0	288.0	86,700	133,300	59.7	287.2	88,200	134,700	60.5	285.8	89,700	132,400	190
200	56.9	281.1	77,600	121,700	57.6	280.2	78,900	123,000	58.4	278.9	80,400	124,500	200
210	54.7	273.6	69,400	111,300	55.5	272.7	70,700	112,500	56.2	271.3	72,000	113,800	210
220	52.5	265.5	62,000	101,800	53.2	264.6	63,100	103,000	54.0	263.1	64,300	104,200	220
230	50.3	256.8	55,300	93,300	51.0	255.8	56,300	94,300	51.7	254.3	57,400	95,400	230
240	47.9	247.3	49,100	85,400	48.6	246.2	50,000	86,300	49.3	244.7	51,000	87,300	240
250	45.4	236.9	43,400	78,200	46.1	235.8	44,300	79,100	46.8	234.2	45,200	79,900	250
260	42.8	225.6	38,200	71,600	43.5	224.4	39,000	72,300	44.2	222.7	39,800	73,100	260
270	40.1	213.2	33,300	65,400	40.7	211.9	34,000	66,100	41.4	210.1	34,800	66,800	270
280	37.2	199.4	28,800	59,700	37.8	198.1	29,400	60,300	38.4	196.1	30,100	60,900	280
285	35.6	191.9	26,700	57,000	36.2	190.5	27,300	57,500	36.8	188.5	27,800	58,100	285

MLC650 VPC-MAX S-1

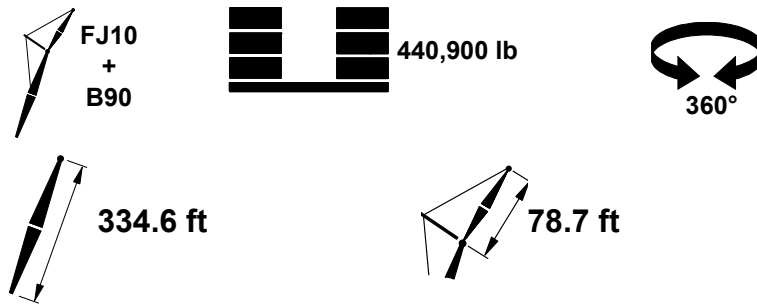
ASME B30.5



	10°				15°				20°				
													
	ft	°	ft	lb	lb	ft	°	ft	lb	lb	ft	°	ft
56	84.9		379.5	390,400	390,400								56
57	84.7		379.3	387,000	387,000								57
58	84.6		379.2	383,500	383,500								58
59	84.4		379.0	380,000	380,000								59
60	84.2		378.9	376,700	376,700	84.9	378.0	318,400	318,400				60
61	84.1		378.7	373,500	373,500	84.8	377.9	316,000	316,000				61
62	83.9		378.6	370,300	370,300	84.6	377.7	313,500	313,500				62
63	83.8		378.4	367,100	367,100	84.5	377.6	311,100	311,100				63
65	83.5		378.1	360,700	360,700	84.2	377.2	306,400	306,400	84.9	376.0	254,900	65
66	83.3		377.9	357,800	357,800	84.0	377.1	304,100	304,100	84.8	375.8	253,200	66
67	83.1		377.8	354,900	354,900	83.8	376.9	301,800	301,800	84.6	375.6	251,600	67
68	83.0		377.6	351,900	351,900	83.7	376.7	299,600	299,600	84.5	375.5	250,000	68
70	82.7		377.3	346,100	346,100	83.4	376.4	295,100	295,100	84.1	375.1	246,800	70
75	81.9		376.3	332,400	332,400	82.6	375.5	284,700	284,700	83.4	374.2	239,200	75
80	81.1		375.3	319,900	319,900	81.8	374.5	275,000	275,000	82.6	373.2	232,000	80
85	80.3		374.3	308,100	308,100	81.0	373.4	265,800	265,800	81.8	372.1	225,200	85
90	79.6		373.1	297,200	297,200	80.2	372.3	257,300	257,300	81.0	371.0	218,800	90
95	78.8		371.9	278,700	287,000	79.4	371.1	249,300	249,300	80.2	369.8	212,800	95
100	78.0		370.7	257,500	277,600	78.6	369.8	241,700	241,700	79.4	368.5	207,100	100
105	77.2		369.3	238,600	268,600	77.8	368.4	234,600	234,600	78.6	367.1	201,600	105
110	76.4		367.9	221,600	260,200	77.0	367.0	225,100	227,900	77.8	365.7	196,500	110
115	75.6		366.4	206,400	252,400	76.2	365.5	209,600	221,600	77.0	364.2	191,600	115
120	74.8		364.8	192,500	245,000	75.4	363.9	195,600	215,600	76.2	362.6	187,000	120
130	73.1		361.4	168,300	231,300	73.8	360.5	171,100	204,600	74.5	359.1	174,200	130
140	71.5		357.7	148,000	213,000	72.2	356.7	150,500	194,600	72.9	355.4	153,300	140
150	69.8		353.6	130,600	190,800	70.5	352.7	132,900	185,500	71.2	351.3	135,400	150
160	68.2		349.2	115,500	171,700	68.8	348.3	117,700	173,800	69.5	346.9	120,000	160
170	66.5		344.5	102,400	154,900	67.1	343.5	104,400	156,900	67.8	342.1	106,500	170
180	64.7		339.3	90,800	140,200	65.4	338.4	92,600	142,000	66.1	336.9	94,600	180
190	63.0		333.8	80,500	127,100	63.6	332.8	82,200	128,800	64.3	331.4	84,000	190
200	61.2		327.9	71,400	115,400	61.8	326.9	72,900	117,000	62.5	325.4	74,500	200
210	59.4		321.5	63,100	104,900	60.0	320.5	64,500	106,300	60.7	319.0	66,000	210
220	57.5		314.7	55,600	95,400	58.1	313.7	56,900	96,700	58.8	312.1	58,300	220
230	55.6		307.4	48,800	86,800	56.2	306.3	50,000	88,000	56.9	304.7	51,300	230
240	53.6		299.6	42,600	78,900	54.2	298.4	43,700	80,000	54.9	296.8	44,900	240
250	51.6		291.1	36,800	71,600	52.2	290.0	37,900	72,700	52.9	288.3	39,000	250
260	49.6		282.1	31,600	64,900	50.1	280.9	32,500	65,900	50.8	279.2	33,600	260
270	47.4		272.4	25,700	58,800	48.0	271.1	26,900	59,600	48.6	269.3	28,100	270
280	45.2		261.9	20,300	53,000	45.8	260.6	21,300	53,800	46.3	258.7	22,400	280
290	42.9		250.5	15,200	47,700	43.4	249.1	16,100	48,400	44.0	247.2	17,100	290
300	40.4		238.1	10,400	42,700	40.9	236.7	11,300	43,400	41.5	234.6	12,100	300
310	37.8		224.5		38,000	38.3	223.0		38,600	38.9	220.8		310
315	36.5		217.2		35,800	37.0	215.7		36,400	37.5	213.4		315
320						35.5	207.9		34,200	36.0	205.5		320

MLC650 VPC-MAX S-1

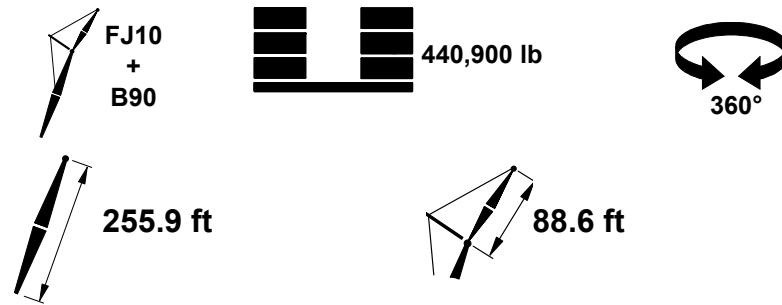
ASME B30.5

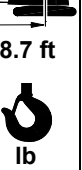
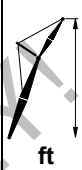
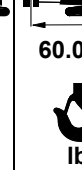


	10°				15°				20°				
	ft	°	ft	lb	lb	ft	lb	lb	ft	lb	lb	ft	
60	84.9	418.5	362,200	362,200									60
61	84.8	418.3	359,500	359,500									61
62	84.6	418.2	356,900	356,900									62
63	84.5	418.1	354,200	354,200									63
65	84.2	417.8	349,100	349,100	84.9	416.8	299,500	299,500					65
66	84.1	417.6	346,700	346,700	84.7	416.6	297,600	297,600					66
67	83.9	417.5	344,300	344,300	84.6	416.5	295,600	295,600					67
68	83.8	417.3	341,800	341,800	84.4	416.3	293,700	293,700					68
70	83.5	417.0	336,900	336,900	84.2	416.0	289,900	289,900	84.9	414.6	242,500	242,500	70
71	83.4	416.8	334,600	334,600	84.0	415.8	288,100	288,100	84.7	414.4	241,100	241,100	71
72	83.2	416.7	332,300	332,300	83.9	415.7	286,300	286,300	84.6	414.2	239,800	239,800	72
73	83.1	416.5	330,000	330,000	83.7	415.5	284,500	284,500	84.5	414.1	238,500	238,500	73
75	82.8	416.2	325,300	325,300	83.5	415.2	280,900	280,900	84.2	413.7	235,900	235,900	75
80	82.1	415.3	314,500	314,500	82.7	414.3	272,300	272,300	83.5	412.8	229,600	229,600	80
85	81.4	414.3	304,300	304,300	82.0	413.3	264,300	264,300	82.8	411.9	223,600	223,600	85
90	80.7	413.3	294,500	294,700	81.3	412.3	256,600	256,600	82.0	410.8	217,900	217,900	90
95	80.0	412.2	277,800	285,700	80.6	411.2	249,400	249,400	81.3	409.7	212,500	212,500	95
100	79.3	411.1	256,700	277,200	79.9	410.0	242,700	242,700	80.6	408.6	207,400	207,400	100
110	77.8	408.6	220,600	261,600	78.5	407.5	224,200	230,100	79.2	406.1	197,800	197,800	110
120	76.4	405.8	191,200	247,700	77.0	404.8	194,400	218,700	77.7	403.3	189,100	189,100	120
130	74.9	402.7	166,800	235,100	75.6	401.7	169,700	208,500	76.2	400.2	172,900	181,200	130
140	73.5	399.4	146,200	211,200	74.1	398.4	148,900	199,200	74.8	396.9	151,800	173,900	140
150	72.0	395.8	128,700	188,900	72.6	394.7	131,200	190,600	73.3	393.2	133,800	167,200	150
160	70.5	391.9	113,500	169,700	71.1	390.8	115,800	171,900	71.8	389.3	118,200	160,900	160
170	69.0	387.7	100,300	152,800	69.6	386.6	102,400	154,900	70.3	385.0	104,600	155,200	170
180	67.4	383.1	88,600	138,000	68.1	382.1	90,600	139,900	68.7	380.5	92,600	142,000	180
190	65.9	378.3	78,300	124,900	66.5	377.2	80,100	126,600	67.2	375.6	82,000	128,600	190
200	64.3	373.1	69,000	113,100	64.9	372.0	70,700	114,800	65.6	370.3	72,500	116,500	200
210	62.7	367.5	60,700	102,500	63.3	366.4	62,200	104,100	64.0	364.7	63,900	105,700	210
220	61.1	361.6	53,100	93,000	61.7	360.4	54,600	94,400	62.4	358.8	56,100	95,900	220
230	59.5	355.3	46,300	84,300	60.1	354.1	47,600	85,600	60.7	352.4	49,100	87,000	230
240	57.8	348.6	40,000	76,300	58.4	347.4	41,300	77,600	59.0	345.6	42,600	78,900	240
250	56.1	341.4	33,800	69,000	56.7	340.2	35,300	70,200	57.3	338.4	36,700	71,400	250
260	54.3	333.7	27,500	62,300	54.9	332.5	28,900	63,400	55.5	330.7	30,400	64,600	260
270	52.5	325.6	21,600	56,100	53.1	324.3	22,900	57,200	53.7	322.5	24,300	58,200	270
280	50.7	316.9	16,200	50,400	51.3	315.6	17,400	51,300	51.8	313.7	18,700	52,300	280
290	48.8	307.7	11,100	45,100	49.4	306.3	12,200	45,900	49.9	304.3	13,400	46,800	290
300	46.8	297.7		40,100	47.4	296.3		40,900	47.9	294.3		41,700	300
310	44.8	287.1		35,400	45.3	285.6		36,200	45.9	283.5		36,900	310
320	42.7	275.7		31,000	43.2	274.1		31,700	43.7	271.9		32,400	320
330	40.5	263.3		26,900	41.0	261.7		27,500	41.5	259.4		28,200	330
340	38.2	250.0		23,100	38.7	248.3		23,600	39.1	245.8		24,200	340
350	35.7	235.3		18,600	36.2	233.5		19,200	36.6	230.9		19,900	350
355									35.3	222.9		17,600	355

MLC650 VPC-MAX S-1

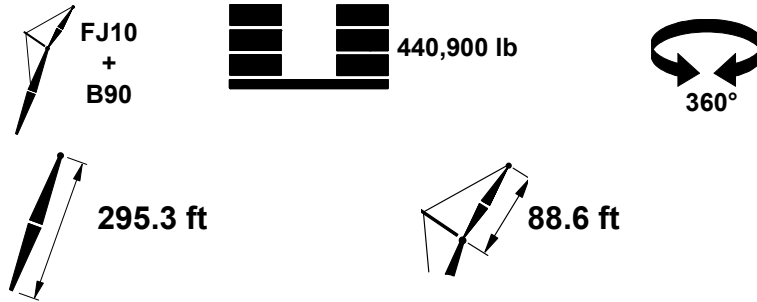
ASME B30.5



	10°				15°				20°				
													
	ft	°	ft	lb	lb	ft	°	ft	lb	lb	ft	°	ft
51	85.0	350.8	383,600	383,600									51
52	84.8	350.7	382,400	382,400									52
53	84.6	350.5	381,200	381,200									53
54	84.4	350.4	380,100	380,100									54
56	84.1	350.1	377,700	377,700									56
57	83.9	350.0	373,800	373,800	84.8	349.2	309,300	309,300					57
58	83.8	349.8	369,900	369,900	84.6	349.0	306,400	306,400					58
59	83.6	349.6	365,900	365,900	84.5	348.9	303,500	303,500					59
60	83.4	349.5	362,000	362,000	84.3	348.7	300,700	300,700					60
62	83.1	349.1	354,600	354,600	84.0	348.4	295,300	295,300	85.0	347.2	244,000	244,000	62
63	82.9	349.0	350,900	350,900	83.8	348.2	292,700	292,700	84.8	347.0	242,000	242,000	63
64	82.8	348.8	347,200	347,200	83.6	348.0	290,000	290,000	84.6	346.9	240,200	240,200	64
65	82.6	348.6	343,500	343,500	83.5	347.9	287,300	287,300	84.4	346.7	238,300	238,300	65
70	81.7	347.7	326,800	326,800	82.6	346.9	275,100	275,100	83.6	345.7	229,400	229,400	70
75	80.9	346.7	311,500	311,500	81.8	345.9	263,800	263,800	82.7	344.7	221,200	221,200	75
80	80.0	345.6	297,600	297,600	80.9	344.9	253,400	253,400	81.9	343.7	213,400	213,400	80
85	79.2	344.5	284,700	284,700	80.0	343.7	243,800	243,800	81.0	342.5	206,300	206,300	85
90	78.3	343.2	273,000	273,000	79.2	342.5	234,700	234,700	80.2	341.2	199,500	199,500	90
95	77.5	341.9	262,100	262,100	78.3	341.1	226,400	226,400	79.3	339.9	193,200	193,200	95
100	76.6	340.5	252,000	252,000	77.5	339.7	218,600	218,600	78.4	338.5	187,200	187,200	100
105	75.7	339.0	242,700	242,700	76.6	338.2	211,300	211,300	77.5	337.0	181,600	181,600	105
110	74.9	337.5	227,400	234,000	75.7	336.7	204,500	204,500	76.7	335.5	176,400	176,400	110
115	74.0	335.8	212,300	225,800	74.8	335.0	198,100	198,100	75.8	333.8	171,400	171,400	115
120	73.1	334.1	198,600	218,300	73.9	333.3	192,000	192,000	74.9	332.1	166,700	166,700	120
125	72.2	332.3	186,200	211,200	73.1	331.5	186,400	186,400	74.0	330.2	162,300	162,300	125
130	71.3	330.4	174,800	204,500	72.2	329.6	177,500	181,000	73.1	328.3	158,000	158,000	130
135	70.4	328.4	164,300	198,100	71.3	327.6	166,900	175,900	72.2	326.3	153,900	153,900	135
140	69.5	326.3	154,700	192,200	70.4	325.5	157,200	171,000	71.3	324.2	150,100	150,100	140
150	67.7	321.8	137,500	181,300	68.5	321.0	139,800	162,200	69.5	319.7	142,300	143,000	150
160	65.8	317.0	122,700	171,400	66.7	316.1	124,800	154,100	67.6	314.8	127,000	136,500	160
170	64.0	311.7	109,700	162,200	64.8	310.9	111,600	146,800	65.7	309.5	113,700	130,600	170
180	62.0	306.0	98,300	147,700	62.9	305.1	100,000	140,000	63.8	303.8	102,000	125,100	180
190	60.1	299.9	88,100	134,700	60.9	299.0	89,800	133,900	61.8	297.6	91,500	120,100	190
200	58.1	293.2	79,000	123,100	58.9	292.3	80,600	124,600	59.8	290.9	82,200	115,500	200
210	56.0	286.1	70,900	112,700	56.8	285.1	72,300	114,100	57.7	283.7	73,800	111,200	210
220	53.9	278.4	63,500	103,300	54.7	277.4	64,800	104,600	55.6	275.9	66,100	105,900	220
230	51.8	270.0	56,700	94,700	52.5	269.0	57,900	95,900	53.4	267.5	59,200	97,200	230
240	49.5	261.0	50,600	86,900	50.3	260.0	51,700	88,000	51.1	258.4	52,800	89,100	240
250	47.2	251.3	44,900	79,700	47.9	250.2	45,900	80,700	48.8	248.5	47,000	81,700	250
260	44.7	240.7	39,700	73,100	45.5	239.5	40,600	74,000	46.3	237.8	41,600	74,900	260
270	42.2	229.1	34,900	66,900	42.9	227.9	35,700	67,700	43.7	226.0	36,600	68,600	270
280	39.5	216.4	30,400	61,200	40.2	215.1	31,100	62,000	41.0	213.1	31,900	62,700	280
290	36.6	202.3	26,200	55,900	37.3	201.0	26,800	56,600	38.1	198.8	27,500	57,200	290
295					35.8	193.3	24,800	54,000	36.5	191.1	25,400	54,600	295

MLC650 VPC-MAX S-1

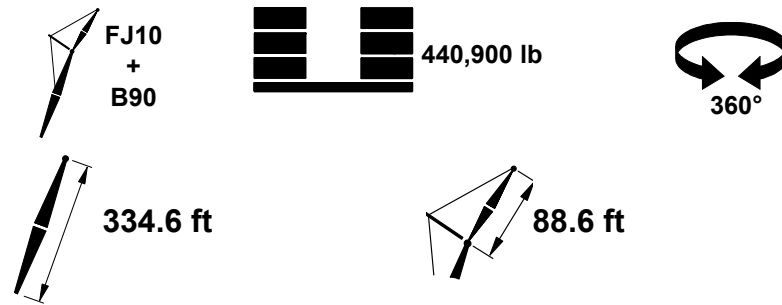
ASME B30.5



	10°				15°				20°				
	ft	°	ft	lb	lb	ft	lb	lb	ft	lb	lb	ft	
57	85.0	389.3	364,600	364,600									57
58	84.8	389.2	362,900	362,900									58
59	84.7	389.0	359,700	359,700									59
60	84.5	388.9	356,300	356,300									60
62	84.2	388.6	349,800	349,800	85.0	387.7	291,100	291,100					62
63	84.1	388.4	346,600	346,600	84.8	387.5	288,900	288,900					63
64	83.9	388.3	343,400	343,400	84.7	387.4	286,600	286,600					64
65	83.8	388.1	340,200	340,200	84.5	387.2	284,300	284,300					65
68	83.3	387.6	331,300	331,300	84.1	386.7	277,900	277,900	84.9	385.4	230,900	230,900	68
69	83.2	387.5	328,400	328,400	83.9	386.5	275,800	275,800	84.8	385.2	229,500	229,500	69
70	83.0	387.3	325,400	325,400	83.8	386.4	273,600	273,600	84.6	385.0	227,900	227,900	70
71	82.8	387.1	322,700	322,700	83.6	386.2	271,600	271,600	84.5	384.9	226,400	226,400	71
75	82.2	386.4	311,800	311,800	83.0	385.5	263,600	263,600	83.9	384.1	220,700	220,700	75
80	81.5	385.4	299,300	299,300	82.3	384.5	254,300	254,300	83.1	383.2	213,800	213,800	80
85	80.7	384.4	287,800	287,800	81.5	383.5	245,600	245,600	82.3	382.1	207,300	207,300	85
90	80.0	383.3	276,900	276,900	80.7	382.4	237,400	237,400	81.6	381.0	201,300	201,300	90
95	79.2	382.1	267,000	267,000	79.9	381.2	229,800	229,800	80.8	379.8	195,600	195,600	95
100	78.4	380.9	257,600	257,600	79.2	379.9	222,700	222,700	80.0	378.6	190,200	190,200	100
105	77.6	379.6	240,100	248,900	78.4	378.6	215,900	215,900	79.2	377.3	185,000	185,000	105
110	76.9	378.2	223,200	240,700	77.6	377.2	209,600	209,600	78.4	375.9	180,100	180,100	110
115	76.1	376.7	207,900	233,100	76.8	375.8	203,600	203,600	77.7	374.4	175,500	175,500	115
120	75.3	375.2	194,000	225,900	76.1	374.2	197,500	197,900	76.9	372.8	171,100	171,100	120
130	73.7	371.9	169,800	212,700	74.5	370.9	173,000	187,400	75.3	369.5	163,000	163,000	130
140	72.1	368.3	149,500	200,900	72.9	367.3	152,300	178,000	73.7	365.9	155,400	155,600	140
150	70.5	364.3	132,100	190,300	71.3	363.3	134,700	169,500	72.1	361.9	137,500	148,800	150
160	68.9	360.1	117,000	173,100	69.6	359.1	119,400	161,700	70.4	357.6	122,000	142,600	160
170	67.2	355.5	103,900	156,400	68.0	354.4	106,100	154,600	68.8	353.0	108,500	136,900	170
180	65.6	350.5	92,300	141,700	66.3	349.5	94,300	143,700	67.1	348.0	96,500	131,600	180
190	63.9	345.2	82,000	128,600	64.6	344.1	83,900	130,500	65.4	342.6	85,900	126,700	190
200	62.1	339.5	72,800	116,900	62.9	338.4	74,600	118,700	63.6	336.9	76,500	120,500	200
210	60.4	333.3	64,600	106,400	61.1	332.2	66,200	108,000	61.9	330.7	67,900	109,800	210
220	58.6	326.8	57,100	96,900	59.3	325.6	58,600	98,400	60.1	324.0	60,200	100,000	220
230	56.8	319.7	50,300	88,200	57.5	318.6	51,700	89,600	58.2	317.0	53,200	91,100	230
240	54.9	312.2	44,100	80,400	55.6	311.0	45,300	81,600	56.3	309.4	46,700	83,000	240
250	53.0	304.2	38,300	73,100	53.7	303.0	39,500	74,300	54.4	301.2	40,800	75,600	250
260	51.0	295.5	33,100	66,400	51.7	294.3	34,200	67,500	52.4	292.5	35,400	68,700	260
270	49.0	286.3	27,600	60,300	49.6	285.0	28,900	61,300	50.3	283.1	30,300	62,400	270
280	46.8	276.3	22,200	54,500	47.5	275.0	23,400	55,500	48.2	273.1	24,700	56,500	280
290	44.6	265.6	17,100	49,200	45.3	264.2	18,200	50,100	46.0	262.2	19,400	51,000	290
300	42.3	253.9	12,300	44,200	43.0	252.5	13,400	45,000	43.6	250.4	14,400	45,900	300
310	39.9	241.3		39,600	40.6	239.8		40,300	41.2	237.6		41,000	310
320	37.4	227.5		35,200	38.0	225.8		35,900	38.6	223.5		36,500	320
325	36.0	220.0		33,100	36.6	218.4		33,700	37.2	215.9		34,300	325
330									35.8	207.9		32,200	330

MLC650 VPC-MAX S-1

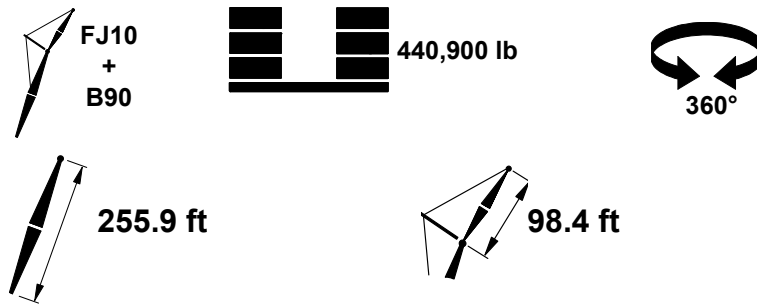
ASME B30.5



	10°				15°				20°				
	ft	°	ft	lb	lb	ft	°	ft	lb	lb	ft	°	ft
62	84.9	428.1	336,800	336,800									62
63	84.8	428.0	334,200	334,200									63
64	84.7	427.8	331,700	331,700									64
65	84.5	427.7	329,200	329,200									65
67	84.3	427.4	324,500	324,500	85.0	426.3	273,700	273,700					67
68	84.1	427.2	322,100	322,100	84.8	426.2	271,900	271,900					68
69	84.0	427.1	319,800	319,800	84.7	426.0	270,100	270,100					69
70	83.8	426.9	317,400	317,400	84.6	425.9	268,300	268,300					70
73	83.4	426.5	310,700	310,700	84.2	425.4	263,100	263,100	84.9	423.9	219,700	219,700	73
74	83.3	426.3	308,500	308,500	84.0	425.2	261,400	261,400	84.8	423.7	218,400	218,400	74
75	83.2	426.1	306,300	306,300	83.9	425.1	259,700	259,700	84.7	423.6	217,200	217,200	75
76	83.0	426.0	304,200	304,200	83.7	424.9	258,000	258,000	84.5	423.4	216,000	216,000	76
80	82.5	425.3	295,800	295,800	83.2	424.2	251,500	251,500	84.0	422.7	211,200	211,200	80
85	81.8	424.3	285,900	285,900	82.5	423.3	243,800	243,800	83.3	421.7	205,600	205,600	85
90	81.1	423.3	276,500	276,500	81.8	422.3	236,600	236,600	82.6	420.7	200,200	200,200	90
95	80.4	422.3	267,400	267,400	81.1	421.2	229,800	229,800	81.9	419.7	195,100	195,100	95
100	79.7	421.1	258,300	259,000	80.4	420.1	223,300	223,300	81.2	418.5	190,200	190,200	100
110	78.3	418.7	222,100	243,500	79.0	417.6	211,400	211,400	79.8	416.1	181,200	181,200	110
120	76.9	416.0	192,700	229,700	77.6	414.9	196,300	200,600	78.4	413.4	172,900	172,900	120
130	75.5	413.0	168,300	217,400	76.2	411.9	171,600	190,900	76.9	410.4	165,400	165,400	130
140	74.0	409.8	147,700	206,300	74.7	408.7	150,700	182,100	75.5	407.1	154,000	158,500	140
150	72.6	406.3	130,200	190,400	73.3	405.2	132,900	174,000	74.0	403.6	135,900	152,200	150
160	71.2	402.5	115,000	171,100	71.8	401.3	117,500	166,600	72.6	399.7	120,300	146,300	160
170	69.7	398.4	101,700	154,300	70.4	397.2	104,100	156,600	71.1	395.6	106,600	140,900	170
180	68.2	394.0	90,100	139,400	68.9	392.8	92,200	141,600	69.6	391.2	94,600	135,800	180
190	66.7	389.2	79,700	126,300	67.4	388.1	81,700	128,300	68.1	386.4	83,900	130,500	190
200	65.2	384.2	70,400	114,500	65.8	383.0	72,300	116,400	66.6	381.3	74,300	118,400	200
210	63.6	378.8	62,100	103,900	64.3	377.6	63,800	105,700	65.0	375.9	65,700	107,600	210
220	62.1	373.1	54,600	94,400	62.7	371.8	56,200	96,000	63.4	370.1	57,900	97,700	220
230	60.5	367.0	47,700	85,700	61.1	365.7	49,200	87,200	61.8	364.0	50,800	88,800	230
240	58.9	360.4	41,400	77,700	59.5	359.2	42,900	79,200	60.2	357.4	44,400	80,700	240
250	57.2	353.5	35,500	70,500	57.8	352.2	37,000	71,800	58.5	350.4	38,400	73,200	250
260	55.5	346.2	29,200	63,800	56.1	344.8	30,800	65,000	56.8	343.0	32,500	66,300	260
270	53.8	338.3	23,400	57,600	54.4	337.0	24,900	58,700	55.1	335.1	26,500	60,000	270
280	52.0	330.0	17,900	51,800	52.6	328.6	19,300	52,900	53.3	326.7	20,800	54,000	280
290	50.2	321.1	12,900	46,500	50.8	319.7	14,200	47,500	51.4	317.7	15,500	48,600	290
300	48.3	311.6		41,500	48.9	310.2		42,400	49.6	308.1	10,600	43,400	300
310	46.4	301.5		36,900	47.0	300.0		37,700	47.6	297.9		38,600	310
320	44.4	290.7		32,500	45.0	289.1		33,300	45.6	286.9		34,100	320
330	42.3	279.0		28,400	42.9	277.4		29,100	43.5	275.0		29,900	330
340	40.1	266.5		24,500	40.7	264.7		25,200	41.2	262.3		25,900	340
350	37.8	252.8		20,400	38.4	251.0		21,200	38.9	248.4		22,000	350
355	36.6	245.6		18,300	37.2	243.7		19,000	37.7	241.0		19,700	355
360					35.9	236.0		16,900	36.4	233.2		17,600	360

MLC650 VPC-MAX S-1

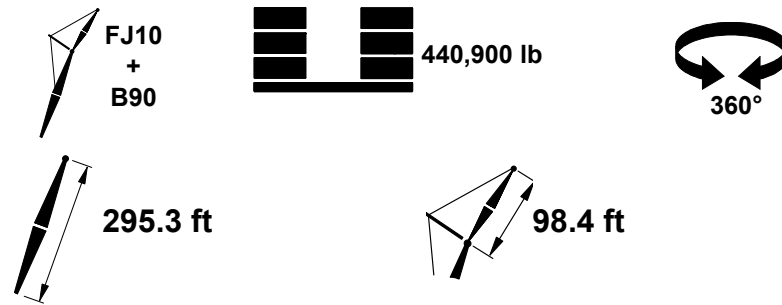
ASME B30.5



	10°				15°				20°				
	ft	o	ft	lb	lb	ft	lb	lb	ft	lb	lb	ft	
51	85.0	360.9	364,600	364,600									51
52	84.8	360.8	363,500	363,500									52
53	84.6	360.7	362,300	362,300									53
54	84.5	360.5	361,200	361,200									54
56	84.1	360.3	358,800	358,800									56
57	84.0	360.1	357,700	357,700	84.9	359.4	306,700	306,700					57
58	83.8	360.0	356,500	356,500	84.8	359.2	303,500	303,500					58
59	83.6	359.8	355,400	355,400	84.6	359.1	300,400	300,400					59
60	83.5	359.6	354,300	354,300	84.4	358.9	297,400	297,400					60
63	83.0	359.1	347,200	347,200	83.9	358.4	288,900	288,900	85.0	357.3	236,300	236,300	63
64	82.8	359.0	344,800	344,800	83.8	358.3	286,000	286,000	84.8	357.2	234,300	234,300	64
65	82.7	358.8	342,400	342,400	83.6	358.1	283,100	283,100	84.7	357.0	232,400	232,400	65
66	82.5	358.6	338,800	338,800	83.4	357.9	280,500	280,500	84.5	356.8	230,500	230,500	66
70	81.8	357.9	324,300	324,300	82.8	357.2	270,200	270,200	83.8	356.1	223,100	223,100	70
75	81.0	357.0	308,000	308,000	82.0	356.2	258,300	258,300	83.0	355.1	214,500	214,500	75
80	80.2	355.9	293,100	293,100	81.1	355.2	247,300	247,300	82.2	354.1	206,500	206,500	80
85	79.4	354.8	279,500	279,500	80.3	354.1	237,200	237,200	81.3	352.9	199,100	199,100	85
90	78.5	353.6	267,100	267,100	79.5	352.9	227,800	227,800	80.5	351.7	192,100	192,100	90
95	77.7	352.3	255,700	255,700	78.6	351.6	219,200	219,200	79.7	350.4	185,600	185,600	95
100	76.8	351.0	245,100	245,100	77.8	350.2	211,000	211,000	78.8	349.1	179,500	179,500	100
105	76.0	349.5	235,400	235,400	76.9	348.8	203,600	203,600	78.0	347.6	173,800	173,800	105
110	75.2	348.0	226,300	226,300	76.1	347.3	196,500	196,500	77.1	346.1	168,400	168,400	110
115	74.3	346.4	211,900	211,900	75.2	345.7	190,000	190,000	76.3	344.5	163,300	163,300	115
120	73.5	344.7	198,300	210,200	74.4	344.0	183,800	183,800	75.4	342.8	158,600	158,600	120
125	72.6	343.0	185,900	202,800	73.5	342.2	178,000	178,000	74.5	341.0	154,000	154,000	125
130	71.7	341.1	174,500	196,000	72.7	340.4	172,500	172,500	73.7	339.2	149,800	149,800	130
140	70.0	337.2	154,500	183,500	70.9	336.4	157,300	162,500	71.9	335.2	141,800	141,800	140
150	68.2	332.9	137,400	172,400	69.1	332.1	139,900	153,500	70.1	330.9	134,600	134,600	150
160	66.4	328.2	122,600	162,500	67.4	327.4	124,900	145,400	68.3	326.2	127,500	128,100	160
170	64.6	323.1	109,700	153,600	65.5	322.3	111,800	138,100	66.5	321.1	114,200	122,200	170
180	62.8	317.6	98,300	145,600	63.7	316.8	100,300	131,400	64.7	315.5	102,400	116,700	180
190	60.9	311.7	88,200	134,800	61.8	310.9	90,000	125,200	62.8	309.6	92,000	111,800	190
200	59.0	305.3	79,200	123,200	59.9	304.5	80,900	119,700	60.8	303.2	82,700	107,200	200
210	57.0	298.5	71,000	112,900	57.9	297.6	72,600	114,400	58.8	296.3	74,300	102,900	210
220	55.0	291.1	63,700	103,500	55.9	290.2	65,100	104,900	56.8	288.8	66,700	98,900	220
230	52.9	283.2	57,000	94,900	53.8	282.2	58,300	96,300	54.7	280.8	59,800	95,300	230
240	50.8	274.6	50,800	87,100	51.7	273.7	52,100	88,400	52.6	272.2	53,400	89,700	240
250	48.6	265.4	45,200	80,000	49.4	264.4	46,400	81,100	50.3	262.8	47,600	82,400	250
260	46.3	255.4	40,000	73,400	47.1	254.3	41,100	74,500	48.0	252.8	42,200	75,600	260
270	43.9	244.5	35,300	67,300	44.7	243.5	36,200	68,300	45.6	241.8	37,200	69,300	270
280	41.4	232.7	30,800	61,600	42.2	231.6	31,700	62,500	43.1	229.8	32,600	63,400	280
290	38.8	219.7	26,600	56,400	39.6	218.5	27,400	57,200	40.4	216.7	28,300	58,000	290
300	35.9	205.4	22,400	51,500	36.7	204.1	23,300	52,200	37.5	202.1	24,200	52,900	300
305									36.0	194.2	21,900	50,500	305

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	10°				15°				20°				
	ft	°	ft	lb	lb	ft	°	ft	lb	lb	ft	°	ft
57	85.0	399.5	345,600	345,600									57
58	84.9	399.4	344,700	344,700									58
59	84.7	399.2	343,800	343,800									59
60	84.6	399.1	342,900	342,900									60
63	84.1	398.6	337,000	337,000	85.0	397.8	280,400	280,400					63
64	84.0	398.5	335,100	335,100	84.8	397.6	278,100	278,100					64
65	83.8	398.4	333,100	333,100	84.7	397.5	275,800	275,800					65
66	83.7	398.2	330,000	330,000	84.5	397.3	273,500	273,500					66
69	83.2	397.7	320,700	320,700	84.1	396.8	266,900	266,900	85.0	395.5	220,200	220,200	69
70	83.1	397.5	317,600	317,600	83.9	396.7	264,700	264,700	84.9	395.3	218,600	218,600	70
71	82.9	397.4	314,800	314,800	83.8	396.5	262,600	262,600	84.7	395.2	217,100	217,100	71
72	82.8	397.2	312,000	312,000	83.6	396.3	260,600	260,600	84.6	395.0	215,700	215,700	72
75	82.3	396.7	303,500	303,500	83.2	395.8	254,400	254,400	84.1	394.5	211,300	211,300	75
80	81.6	395.7	290,500	290,500	82.4	394.8	244,800	244,800	83.4	393.5	204,300	204,300	80
85	80.9	394.7	278,500	278,500	81.7	393.8	235,900	235,900	82.6	392.5	197,800	197,800	85
90	80.1	393.7	267,400	267,400	81.0	392.8	227,600	227,600	81.9	391.4	191,600	191,600	90
95	79.4	392.5	257,100	257,100	80.2	391.6	219,900	219,900	81.1	390.3	185,800	185,800	95
100	78.6	391.3	247,600	247,600	79.4	390.4	212,600	212,600	80.4	389.1	180,300	180,300	100
105	77.9	390.0	238,700	238,700	78.7	389.1	205,800	205,800	79.6	387.8	175,200	175,200	105
110	77.1	388.7	228,800	228,800	77.9	387.8	199,400	199,400	78.8	386.4	170,300	170,300	110
115	76.3	387.2	207,500	222,700	77.2	386.3	193,300	193,300	78.1	385.0	165,700	165,700	115
120	75.6	385.7	193,700	215,400	76.4	384.8	187,700	187,700	77.3	383.5	161,300	161,300	120
130	74.1	382.5	169,600	202,100	74.9	381.6	173,000	177,100	75.8	380.2	153,200	153,200	130
140	72.5	379.0	149,300	190,200	73.3	378.1	152,400	167,700	74.2	376.7	145,800	145,800	140
150	70.9	375.2	131,900	179,600	71.8	374.3	134,800	159,200	72.6	372.9	138,000	139,100	150
160	69.4	371.1	117,000	170,100	70.2	370.1	119,600	151,500	71.1	368.7	122,500	132,900	160
170	67.8	366.6	103,900	156,400	68.6	365.7	106,300	144,400	69.5	364.2	109,000	127,300	170
180	66.1	361.8	92,300	141,700	67.0	360.8	94,600	138,000	67.8	359.4	97,100	122,100	180
190	64.5	356.7	82,100	128,700	65.3	355.7	84,200	130,800	66.2	354.2	86,500	117,300	190
200	62.8	351.1	72,900	117,000	63.6	350.1	74,900	119,000	64.5	348.6	77,000	112,800	200
210	61.1	345.2	64,700	106,500	61.9	344.2	66,500	108,400	62.8	342.7	68,500	108,700	210
220	59.4	338.9	57,300	97,100	60.2	337.8	58,900	98,800	61.0	336.3	60,800	100,600	220
230	57.7	332.1	50,500	88,500	58.4	331.1	52,100	90,000	59.3	329.5	53,800	91,700	230
240	55.9	324.9	44,300	80,600	56.6	323.8	45,800	82,100	57.5	322.2	47,300	83,600	240
250	54.0	317.2	38,600	73,400	54.8	316.1	40,000	74,700	55.6	314.4	41,400	76,200	250
260	52.1	308.9	33,400	66,700	52.9	307.8	34,700	68,000	53.7	306.1	36,000	69,400	260
270	50.2	300.1	27,900	60,600	50.9	298.9	29,400	61,800	51.7	297.1	31,000	63,000	270
280	48.2	290.6	22,500	54,900	48.9	289.4	23,900	56,000	49.7	287.6	25,400	57,200	280
290	46.1	280.4	17,500	49,600	46.8	279.2	18,800	50,600	47.6	277.3	20,200	51,700	290
300	43.9	269.5	12,800	44,700	44.6	268.2	14,000	45,600	45.4	266.2	15,200	46,600	300
310	41.7	257.7		40,000	42.4	256.3		40,900	43.1	254.2	10,600	41,800	310
320	39.3	244.8		35,700	40.0	243.3		36,500	40.7	241.1		37,300	320
330	36.8	230.7		31,600	37.4	229.2		32,300	38.1	226.8		33,000	330
335					36.1	221.6		30,300	36.8	219.1		31,000	335