



Manitowoc Cranes, Inc.
Manitowoc, Wisconsin 54220 U.S.A.



Liftcrane Boom Capacities

4600 SERIES 4 RINGER SERIES 3

Boom No. 65
60 ft RINGER Attachment On
Blocking Or Pedestals
123,000 lb Crane Counterweight
978,700 lb Auxiliary Counterweight
Barge Mount - 0 Degree thru 2 Degree Machine List
No Travel - 360 Degree Rating

LIFTING CAPACITIES: Lifting capacities are for a RINGER when operating on a barge. Machine shall be positively secured to prevent shifting. Lifting capacities for various boom lengths and operating radii are for freely suspended loads and do not exceed 75% of a static tipping load. Capacities based on structural competence are denoted by an asterisk (*).

Upper boom point capacities for liftcrane service with single part whip line are 44,000 lbs for 1-1/4 in. wire rope, 45,000 lbs for 1-3/8 in. wire rope and 50,000 lbs for 1-1/2 in. or 1-5/8 in. wire rope. Capacities for two part line are 88,000 lbs for 1-1/4 in. wire rope, 90,000 lbs for 1-3/8 in. wire rope and 100,000 lbs for 1-1/2 in. or 1-5/8 in. wire rope. In all cases, upper boom point capacities cannot exceed those listed for the main boom capacity.

Weight of all load blocks, hooks, weight ball, slings, hoist lines, etc., beneath boom point sheaves, is considered part of main boom 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 uniformly supporting surface with roller path properly supported and machine list not to exceed degrees noted with exception of 0 degree machine list which must not exceed

1-1/4 in. in 60 ft. Refer to boom rigging **No. 66184** and Wire Rope Specification chart **No. 7307-A** or **No. 7357-A**. Crane operator judgment must be used to allow for dynamic load effects of swinging, hoisting or lowering, wind conditions, as well as adverse operating conditions and physical machine depreciation.

OPERATING RADIUS: Operating radius is horizontal distance from axis of rotation at barge deck to center of vertical hoist line or load block. Boom angle 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 barge deck to centerline of boom point shaft.

MACHINE EQUIPMENT: Machine equipped with 60 ft RINGER attachment, 30 ft 5 in. crawlers, 60 in. treads, 33 ft retractable gantry, 130 ft mast, 18 part boom hoist reeving, eight 1-3/8 in. boom pendants, 123,000 lbs crane counterweight. (120,000 lbs with counterweight assembly **No. 49667**) and 978,700 lbs auxiliary counterweight.

Maximum Boom Lengths Lifted Unassisted	
List	Boom Length
0 Degree	280 Ft.
1 Degree	280 Ft.
2 Degree	280 Ft.
Load block, hook and weight ball on barge deck at start.	

Jib must be removed before use of this chart.

Warning: Check amount of auxiliary counterweight on machine before use of this chart.

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Oper. Radius Feet	Boom Angle Deg.	Boom Point Elev. Feet	0 Degree List Boom Capacity Pounds	1 Degree List Boom Capacity Pounds	2 Degree List Boom Capacity Pounds	Oper. Radius Feet
140.0 ft Boom						
55	80.1	145.5	1,500,000 *	594,200 *		55
60	78.0	144.4	1,500,000 *	542,200 *	521,200 *	60
65	75.9	143.2	1,500,000 *	498,300 *	478,000 *	65
70	73.8	141.8	1,500,000 *	460,600 *	441,000 *	70
75	71.6	140.1	1,333,200	427,900 *	408,900 *	75
80	69.5	138.3	1,198,700	399,300 *	380,900 *	80
85	67.2	136.2	1,084,800 *	374,100 *	356,100 *	85
90	65.0	133.9	982,200 *	351,700 *	334,100 *	90
95	62.7	131.4	895,100 *	331,600 *	314,400 *	95
100	60.3	128.6	820,300 *	313,600 *	296,700 *	100
105	57.9	125.5	753,100 *	297,200 *	280,600 *	105
110	55.5	122.1	693,200 *	282,400 *	266,000 *	110
115	52.9	118.4	640,000 *	268,800 *	252,700 *	115
120	50.3	114.3	592,500 *	256,400 *	240,500 *	120
125	47.5	109.8	549,700 *	244,900 *	229,300 *	125
130	44.7	104.9	510,900 *	234,400 *	218,900 *	130
135	41.6	99.4	475,300 *	224,600 *	209,300 *	135
140	38.4	93.2	442,400 *	215,500 *	200,300 *	140
145	34.9	86.3	411,600 *	207,000 *	192,000 *	145
150	31.0	78.4	382,600 *	199,100 *	184,300 *	150
155	26.7	69.0	354,500 *	191,700 *	177,000 *	155
160	21.5	57.3	326,500 *	184,800 *	170,200 *	160

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180.0 ft Boom						
60	80.7	185.2	1,500,000 *	535,300 *		60
65	79.1	184.3	1,500,000 *	491,500 *	468,900 *	65
70	77.5	183.2	1,492,700	454,000 *	432,000 *	70
75	75.8	181.9	1,325,700	421,400 *	400,100 *	75
80	74.2	180.6	1,191,200	392,900 *	372,200 *	80
85	72.5	179.0	1,080,500	367,800 *	347,500 *	85
90	70.8	177.3	988,000	345,500 *	325,600 *	90
95	69.1	175.4	909,300	325,500 *	306,000 *	95
100	67.4	173.3	841,700	307,500 *	288,400 *	100
105	65.7	171.1	783,000	291,200 *	272,400 *	105
110	63.9	168.7	731,400	276,400 *	257,900 *	110
115	62.1	166.1	685,900	262,900 *	244,700 *	115
120	60.3	163.2	645,300	250,500 *	232,500 *	120
125	58.4	160.2	608,900	239,100 *	221,300 *	125
130	56.5	156.9	576,200	228,600 *	211,000 *	130
135	54.6	153.4	546,500	218,900 *	201,500 *	135
140	52.6	149.6	513,600 *	209,800 *	192,600 *	140
145	50.5	145.6	483,200 *	201,400 *	184,300 *	145
150	48.4	141.2	455,300 *	193,500 *	176,600 *	150
155	46.2	136.5	429,600 *	186,200 *	169,400 *	155
160	43.9	131.4	405,700 *	179,300 *	162,600 *	160
165	41.6	125.8	382,300 *	172,800 *	156,300 *	165
170	39.1	119.8	359,400 *	166,700 *	150,300 *	170
175	36.4	113.2	337,900 *	160,900 *	144,600 *	175
180	33.6	105.9	317,400 *	155,500 *	139,300 *	180
185	30.6	97.7	297,900 *	150,400 *	134,300 *	185
190	27.2	88.4	278,900 *	145,500 *	129,500 *	190
195	23.4	77.5	260,100 *	140,900 *	124,900 *	195
200	18.8	64.2	241,000 *	136,400 *	120,600 *	200

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Oper. Radius Feet	Boom Angle Deg.	Boom Point Elev. Feet	0 Degree List Boom Capacity Pounds	1 Degree List Boom Capacity Pounds	2 Degree List Boom Capacity Pounds	Oper. Radius Feet
200.0 ft Boom						
60	81.7	205.5	1,301,700 *			60
65	80.2	204.7	1,301,700 *	488,900 *		65
70	78.7	203.7	1,281,600 *	451,400 *	428,500 *	70
75	77.3	202.6	1,248,100 *	418,900 *	396,600 *	75
80	75.8	201.3	1,188,400	390,400 *	368,800 *	80
85	74.3	199.9	1,077,800	365,400 *	344,200 *	85
90	72.8	198.4	985,200	343,100 *	322,300 *	90
95	71.3	196.7	906,500	323,100 *	302,800 *	95
100	69.8	194.9	838,900	305,100 *	285,200 *	100
105	68.2	192.9	780,200	288,900 *	269,300 *	105
110	66.7	190.8	728,600	274,100 *	254,800 *	110
115	65.1	188.5	683,100	260,600 *	241,600 *	115
120	63.5	186.0	642,500	248,300 *	229,400 *	120
125	61.9	183.4	606,100	236,900 *	218,300 *	125
130	60.2	180.6	573,300	226,400 *	208,000 *	130
135	58.6	177.5	543,600	216,700 *	198,500 *	135
140	56.9	174.3	516,600	207,600 *	189,600 *	140
145	55.1	170.9	491,900	199,200 *	181,400 *	145
150	53.3	167.2	469,200	191,400 *	173,700 *	150
155	51.5	163.2	448,300	184,000 *	166,500 *	155
160	49.7	159.1	425,400 *	177,100 *	159,700 *	160
165	47.7	154.6	402,600 *	170,700 *	153,400 *	165
170	45.7	149.8	381,400 *	164,600 *	147,400 *	170
175	43.7	144.6	361,600 *	158,800 *	141,800 *	175
180	41.6	139.1	343,000 *	153,400 *	136,500 *	180
185	39.3	133.1	325,500 *	148,300 *	131,400 *	185
190	37.0	126.6	308,100 *	143,400 *	126,700 *	190
195	34.5	119.5	290,600 *	138,800 *	122,200 *	195
200	31.8	111.7	273,700 *	134,400 *	117,900 *	200
205	28.9	102.9	257,500 *	130,300 *	113,800 *	205
210	25.8	93.0	241,600 *	126,300 *	109,900 *	210
215	22.1	81.4	225,800 *	122,500 *	106,100 *	215
220	17.8	67.3	209,500 *	118,900 *	102,600 *	220

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Oper. Radius Feet	Boom Angle Deg.	Boom Point Elev. Feet	0 Degree List Boom Capacity Pounds	1 Degree List Boom Capacity Pounds	2 Degree List Boom Capacity Pounds	Oper. Radius Feet
220.0 ft Boom						
65	81.1	225.0	1,138,000 *			65
70	79.8	224.1	1,110,500 *	449,000 *	425,200 *	70
75	78.5	223.1	1,083,900 *	416,500 *	393,400 *	75
80	77.1	221.9	1,058,300 *	388,100 *	365,600 *	80
85	75.8	220.7	1,033,500 *	363,100 *	341,100 *	85
90	74.4	219.3	982,600	340,800 *	319,300 *	90
95	73.1	217.8	904,000	320,900 *	299,800 *	95
100	71.7	216.1	836,300	303,000 *	282,200 *	100
105	70.3	214.4	777,600	286,700 *	266,300 *	105
110	68.9	212.5	726,100	272,000 *	251,900 *	110
115	67.5	210.4	680,500	258,500 *	238,700 *	115
120	66.1	208.2	639,900	246,200 *	226,600 *	120
125	64.6	205.9	603,500	234,800 *	215,500 *	125
130	63.2	203.4	570,800	224,300 *	205,200 *	130
135	61.7	200.7	541,100	214,600 *	195,700 *	135
140	60.2	197.9	514,000	205,600 *	186,900 *	140
145	58.7	194.9	489,300	197,200 *	178,600 *	145
150	57.2	191.7	466,700	189,400 *	171,000 *	150
155	55.6	188.3	445,800	182,100 *	163,800 *	155
160	54.0	184.7	426,500	175,200 *	157,100 *	160
165	52.3	180.9	408,600	168,700 *	150,700 *	165
170	50.7	176.8	392,000	162,600 *	144,800 *	170
175	48.9	172.5	376,500	156,900 *	139,200 *	175
180	47.2	167.9	358,500 *	151,500 *	133,900 *	180
185	45.4	163.1	340,700 *	146,400 *	128,800 *	185
190	43.5	157.9	324,000 *	141,500 *	124,100 *	190
195	41.5	152.3	308,300 *	136,900 *	119,600 *	195
200	39.5	146.3	293,400 *	132,600 *	115,300 *	200
205	37.4	139.9	279,200 *	128,400 *	111,200 *	205
210	35.2	133.0	265,700 *	124,400 *	107,300 *	210
215	32.8	125.4	251,800 *	120,700 *	103,600 *	215
220	30.3	117.1	237,700 *	117,000 *	100,100 *	220
225	27.5	107.8	223,900 *	113,600 *	96,700 *	225
230	24.5	97.4	210,400 *	110,300 *	93,500 *	230
235	21.1	85.2	196,900 *	107,100 *	90,400 *	235
240	17.0	70.2	182,800 *	104,100 *	87,400 *	240

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Oper. Radius Feet	Boom Angle Deg.	Boom Point Elev. Feet	0 Degree List Boom Capacity Pounds	1 Degree List Boom Capacity Pounds	2 Degree List Boom Capacity Pounds	Oper. Radius Feet
240.0 ft Boom						
65	81.9	245.2	1,009,900 *			65
70	80.6	244.4	992,400 *			70
75	79.4	243.5	975,000 *	414,200 *		75
80	78.2	242.4	957,700 *	385,900 *	362,500 *	80
85	77.0	241.3	940,700 *	360,900 *	338,100 *	85
90	75.8	240.0	924,000 *	338,600 *	316,300 *	90
95	74.5	238.7	901,500	318,700 *	296,800 *	95
100	73.3	237.2	833,800	300,800 *	279,300 *	100
105	72.0	235.6	775,100	284,600 *	263,500 *	105
110	70.8	233.8	723,500	269,900 *	249,000 *	110
115	69.5	232.0	678,000	256,500 *	235,900 *	115
120	68.2	230.0	637,400	244,100 *	223,800 *	120
125	66.9	227.9	601,000	232,800 *	212,700 *	125
130	65.6	225.6	568,200	222,300 *	202,500 *	130
135	64.3	223.2	538,500	212,600 *	193,000 *	135
140	62.9	220.7	511,500	203,600 *	184,200 *	140
145	61.6	218.0	486,800	195,300 *	176,000 *	145
150	60.2	215.2	464,100	187,400 *	168,300 *	150
155	58.8	212.2	443,200	180,100 *	161,200 *	155
160	57.4	209.0	424,000	173,300 *	154,400 *	160
165	56.0	205.7	406,100	166,800 *	148,100 *	165
170	54.5	202.1	389,500	160,700 *	142,200 *	170
175	53.0	198.4	374,000	155,000 *	136,600 *	175
180	51.5	194.5	359,500	149,600 *	131,300 *	180
185	49.9	190.3	346,000	144,500 *	126,300 *	185
190	48.3	185.9	333,300	139,700 *	121,600 *	190
195	46.7	181.3	320,000 *	135,100 *	117,100 *	195
200	45.0	176.3	305,000 *	130,700 *	112,800 *	200
205	43.3	171.1	290,700 *	126,600 *	108,700 *	205
210	41.5	165.5	277,200 *	122,600 *	104,800 *	210
215	39.7	159.6	264,400 *	118,800 *	101,100 *	215
220	37.7	153.2	252,200 *	115,200 *	97,600 *	220
225	35.7	146.4	240,500 *	111,800 *	94,200 *	225
230	33.6	139.1	229,300 *	108,500 *	91,000 *	230
235	31.4	131.1	218,300 *	105,300 *	87,900 *	235
240	28.9	122.3	206,300 *	102,300 *	85,000 *	240
245	26.3	112.5	194,600 *	99,400 *	82,100 *	245
250	23.4	101.5	182,900 *	96,600 *	79,400 *	250
255	20.1	88.7	171,200 *	93,900 *	76,800 *	255
260	16.2	73.1	158,900 *	91,400 *	74,200 *	260

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Oper. Radius Feet	Boom Angle Deg.	Boom Point Elev. Feet	0 Degree List Boom Capacity Pounds	1 Degree List Boom Capacity Pounds	2 Degree List Boom Capacity Pounds	Oper. Radius Feet
260.0 ft Boom						
70	81.4	264.7	862,800 *			70
75	80.3	263.8	848,600 *	411,800 *		75
80	79.1	262.9	834,500 *	383,500 *	359,400 *	80
85	78.0	261.8	820,400 *	358,600 *	334,900 *	85
90	76.9	260.7	806,400 *	336,400 *	313,200 *	90
95	75.7	259.4	792,700 *	316,500 *	293,800 *	95
100	74.6	258.0	779,100 *	298,600 *	276,300 *	100
105	73.4	256.6	765,600 *	282,500 *	260,500 *	105
110	72.3	255.0	720,900	267,800 *	246,100 *	110
115	71.1	253.3	675,300	254,300 *	233,000 *	115
120	70.0	251.5	634,700	242,000 *	220,900 *	120
125	68.8	249.6	598,400	230,700 *	209,900 *	125
130	67.6	247.5	565,600	220,300 *	199,600 *	130
135	66.4	245.3	535,900	210,600 *	190,200 *	135
140	65.2	243.0	508,900	201,600 *	181,400 *	140
145	63.9	240.6	484,200	193,200 *	173,200 *	145
150	62.7	238.1	461,500	185,400 *	165,600 *	150
155	61.5	235.4	440,600	178,100 *	158,400 *	155
160	60.2	232.5	421,300	171,300 *	151,700 *	160
165	58.9	229.5	403,400	164,800 *	145,400 *	165
170	57.6	226.4	386,800	158,800 *	139,500 *	170
175	56.3	223.1	371,300	153,100 *	133,900 *	175
180	54.9	219.6	356,900	147,700 *	128,600 *	180
185	53.6	215.9	343,400	142,600 *	123,600 *	185
190	52.2	212.1	330,700	137,700 *	118,900 *	190
195	50.8	208.0	318,700	133,100 *	114,400 *	195
200	49.3	203.8	307,500	128,800 *	110,200 *	200
205	47.8	199.3	296,900	124,600 *	106,100 *	205
210	46.3	194.6	286,900	120,700 *	102,200 *	210
215	44.8	189.6	274,400 *	116,900 *	98,500 *	215
220	43.2	184.3	262,100 *	113,300 *	95,000 *	220
225	41.5	178.8	250,300 *	109,900 *	91,700 *	225
230	39.8	172.8	239,200 *	106,600 *	88,500 *	230
235	38.0	166.6	228,500 *	103,500 *	85,400 *	235
240	36.2	159.8	218,300 *	100,400 *	82,400 *	240
245	34.3	152.6	208,400 *	97,600 *	79,600 *	245
250	32.2	144.9	198,900 *	94,800 *	76,900 *	250
255	30.1	136.5	189,700 *	92,100 *	74,300 *	255
260	27.8	127.3	179,900 *	89,500 *	71,700 *	260
265	25.3	117.0	169,700 *	87,100 *	69,300 *	265
270	22.5	105.5	159,600 *	84,700 *	67,000 *	270
275	19.3	92.1	149,300 *	82,400 *	64,700 *	275
280	15.6	75.8	138,400 *	80,200 *	62,500 *	280

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280.0 ft Boom						
70	82.0	284.9	759,800 *			70
75	81.0	284.1	748,200 *	409,500 *		75
80	79.9	283.2	736,500 *	381,300 *	356,200 *	80
85	78.9	282.3	724,700 *	356,300 *	331,900 *	85
90	77.8	281.2	713,000 *	334,200 *	310,200 *	90
95	76.8	280.0	701,300 *	314,300 *	290,800 *	95
100	75.7	278.8	689,700 *	296,500 *	273,300 *	100
105	74.7	277.4	678,200 *	280,300 *	257,600 *	105
110	73.6	276.0	666,800 *	265,600 *	243,200 *	110
115	72.5	274.4	655,500 *	252,200 *	230,100 *	115
120	71.4	272.7	632,000 *	239,900 *	218,100 *	120
125	70.4	271.0	595,600 *	228,600 *	207,000 *	125
130	69.3	269.1	562,900 *	218,200 *	196,800 *	130
135	68.2	267.1	533,200 *	208,500 *	187,400 *	135
140	67.1	265.0	506,100 *	199,600 *	178,600 *	140
145	65.9	262.8	481,400 *	191,200 *	170,400 *	145
150	64.8	260.4	458,700 *	183,400 *	162,800 *	150
155	63.7	258.0	437,900 *	176,100 *	155,700 *	155
160	62.5	255.4	418,600 *	169,300 *	149,000 *	160
165	61.4	252.7	400,700 *	162,800 *	142,700 *	165
170	60.2	249.8	384,100 *	156,800 *	136,800 *	170
175	59.0	246.8	368,600 *	151,100 *	131,200 *	175
180	57.8	243.7	354,200 *	145,700 *	125,900 *	180
185	56.6	240.4	340,600 *	140,600 *	121,000 *	185
190	55.3	237.0	327,900 *	135,800 *	116,200 *	190
195	54.1	233.4	316,000 *	131,200 *	111,800 *	195
200	52.8	229.6	304,800 *	126,800 *	107,500 *	200
205	51.5	225.7	294,200 *	122,700 *	103,500 *	205
210	50.1	221.6	284,200 *	118,800 *	99,600 *	210
215	48.8	217.2	274,700 *	115,000 *	95,900 *	215
220	47.4	212.7	265,700 *	111,400 *	92,400 *	220
225	46.0	207.9	257,200 *	108,000 *	89,100 *	225
230	44.5	202.9	247,200 *	104,700 *	85,900 *	230
235	43.0	197.6	236,500 *	101,600 *	82,800 *	235
240	41.5	192.0	226,200 *	98,600 *	79,800 *	240
245	39.9	186.1	216,400 *	95,700 *	77,000 *	245
250	38.3	179.9	206,900 *	92,900 *	74,300 *	250
255	36.6	173.2	197,900 *	90,200 *	71,700 *	255
260	34.8	166.2	189,200 *	87,700 *	69,200 *	260
265	33.0	158.6	180,800 *	85,200 *	66,800 *	265
270	31.0	150.5	172,600 *	82,800 *	64,400 *	270
275	28.9	141.7	164,700 *	80,500 *	62,200 *	275
280	26.7	132.0	156,700 *	78,300 *	60,000 *	280
285	24.3	121.3	147,700 *	76,200 *	57,900 *	285
290	21.6	109.3	138,800 *	74,100 *	55,900 *	290
295	18.6	95.4	129,600 *	72,100 *	54,000 *	295