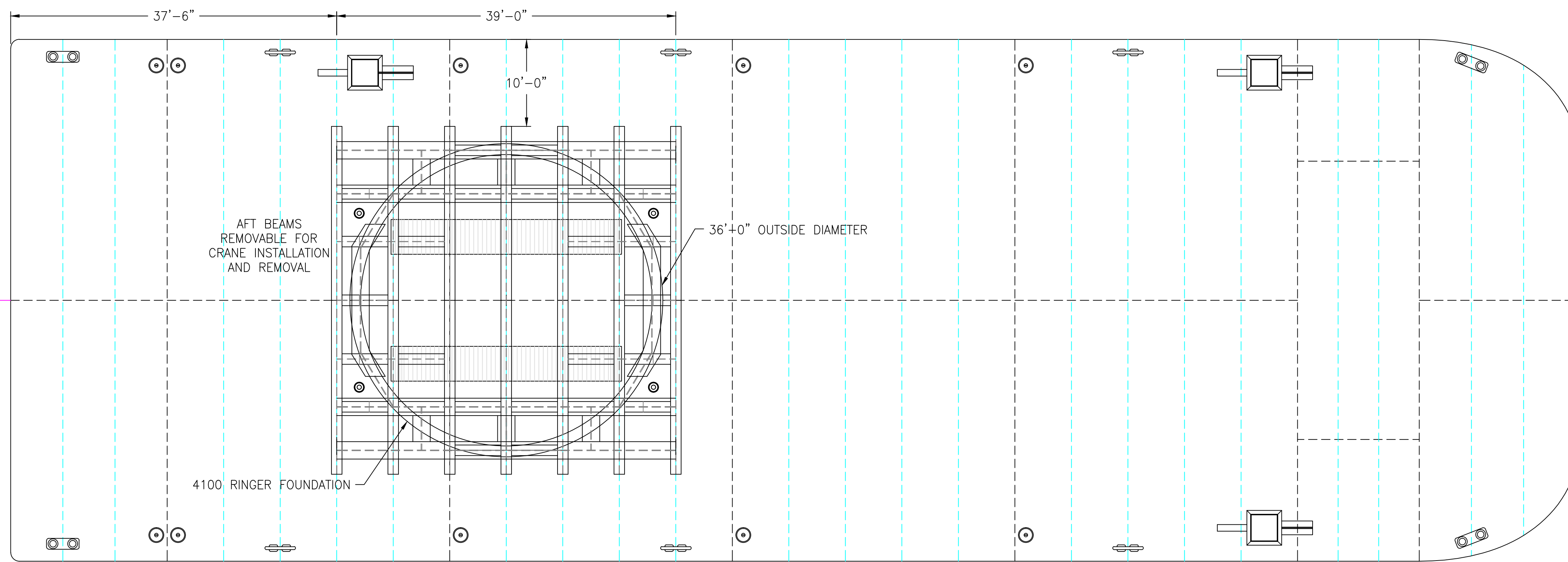


RANDY R - DECK BARGE
 PROFILE VIEW
 SCALE: 1/8" = 1'-0"



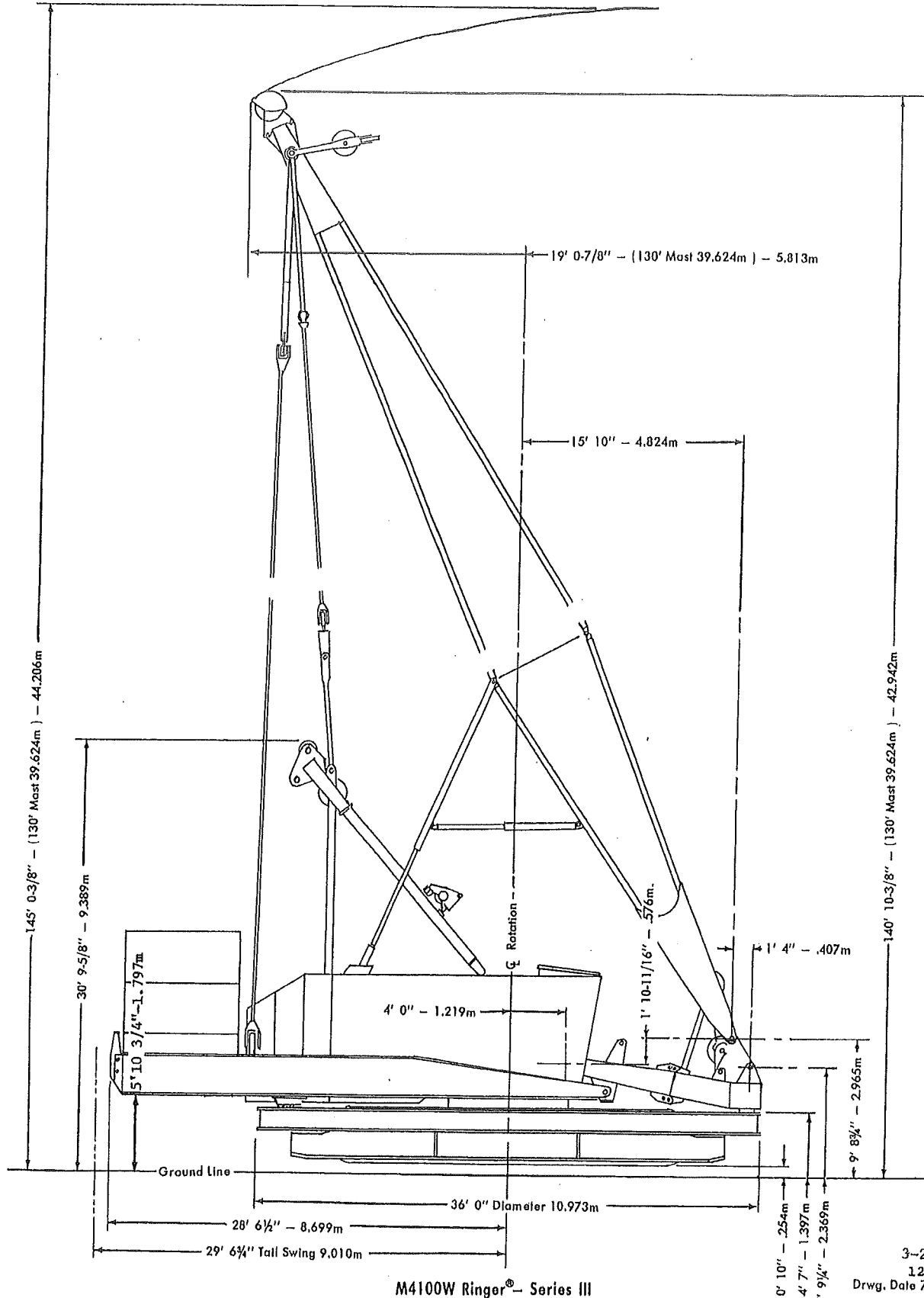
RANDY R - DECK BARGE
 PLAN VIEW
 SCALE: 1/8" = 1'-0"

1	- ADDED FORWARD SPUD WELL	08/17/18
ALT	REVISION	DATE:
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FARRELL & NORTON NAVAL ARCHITECTS <small>NAVAL ARCHITECTS AND MARINE ENGINEERS</small>		
PO BOX 66 (207) 563-3210 (THOMAS)		NEWCASTLE, ME 04553 (617) 308-1074 (GARRETT)
CRANE FOUNDATION GENERAL ARRANGMENT		
PROJECT: STERLING RANDY R BARGE		
DRAWN BY: TMF	DATE: 08/02/2018	
APPROVED BY: GJN	SCALE: 1/8" = 1'	
DWG #: B-560-002		ALT: 1

MANITOWOC ENGINEERING CO.

A Division of The Manitowoc Company, Inc.

Manitowoc, Wisconsin



M4100W Ringer® - Series III

See Reverse Side

0' 10" - .254m
 4' 7" - 1.397m
 7' 9 1/4" - 2.369m

3-20-80
 12-4-72
 Drwg. Date 7-20-71

OUTLINE DIMENSIONS

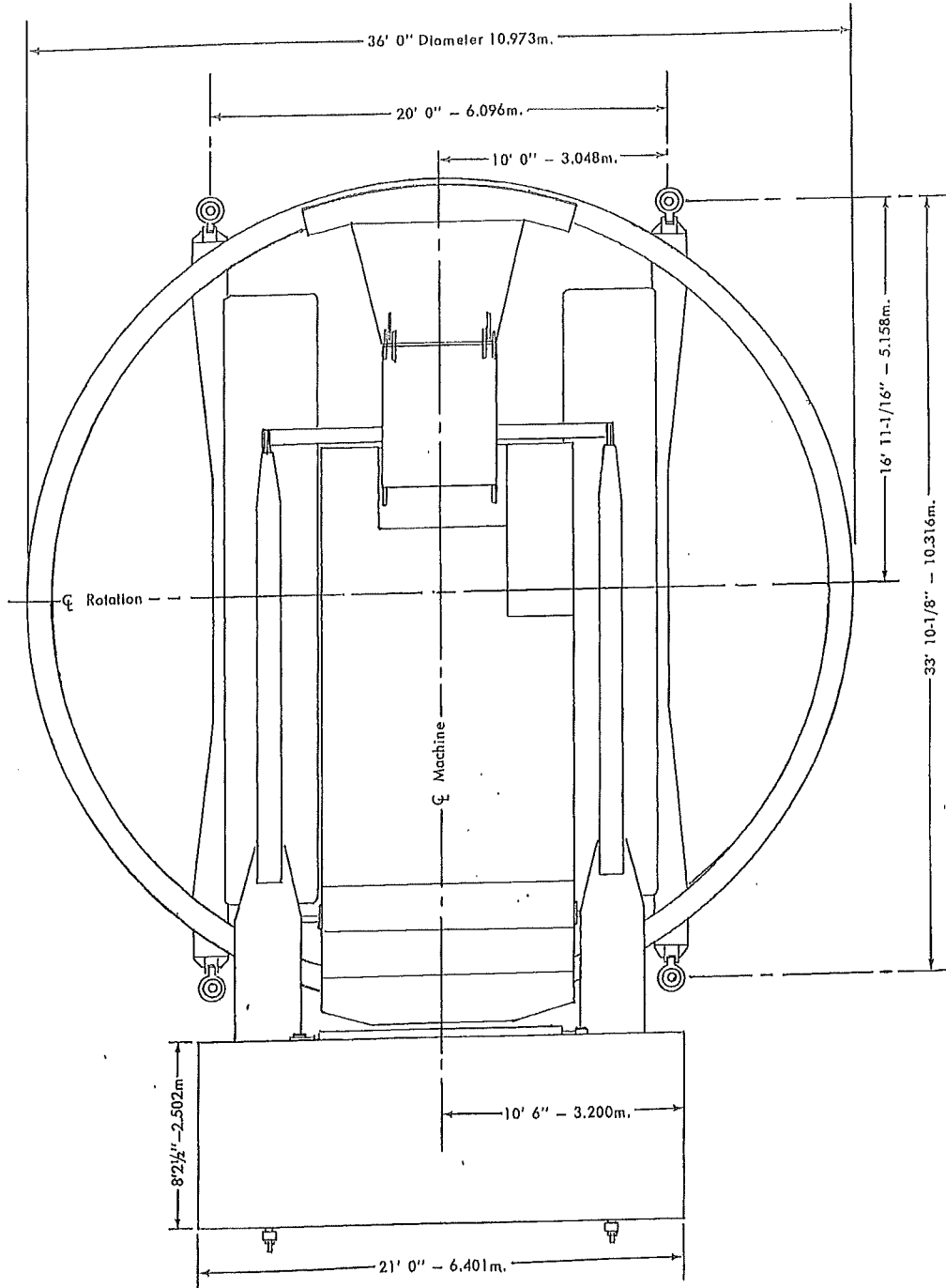
181553-1

181553-1

MANITOWOC ENGINEERING CO.

A Division of The Manitowoc Company, Inc.

Manitowoc, Wisconsin



181553-2

M4100W Ringer® - Series III

12-4-72
Drwg. Date 7-20-71

181553-2



Liftcrane Boom Capacities

4100W

4100W SERIES 1
RINGER SERIES 3

Boom No. 27A-27 With Open Throat Top
36 Ft. RINGER Attachment On Blocking
122,400 Lb. Crane Counterweight
275,000 Lb. Auxiliary Counterweight
Barge Mount - 1/2 Degree thru 2 Degree Machine List
85% Tipping - 360 Degree Rating

LIFTING CAPACITIES: Lifting capacities are for a crawler machine 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 85% of a static tipping load. Capacities based on structural competence are denoted by an asterisk (*).

Upper boom point capacity for liftcrane service with single part whip line or combination of two single part lines is 28,300 Lbs. In all cases, upper boom point capacities cannot exceed those listed for main boom capacity.

Weight of all load blocks, hooks, weight ball, slings, hoist lines, etc., beneath boom point sheaves, is considered part of 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 with roller path properly supported and machine list not to exceed degrees noted. Refer to boom rigging No. 65163 and Wire Rope Specification chart No. 6144. 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. Refer to operators manual for operating guidelines.

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 36 Ft. RINGER attachment on blocking, 26 Ft. 6 in. extendible crawlers, 48 in. treads, 17 Ft. retractable gantry, 130 Ft. mast, 8 part boom hoist reeving, four 1-3/8 in. boom pendants, 14 in. diameter x 16 in. width boom hoist drums, 122,400 Lb. crane counterweight and 275,000 Lb. auxiliary counterweight.

Maximum Boom Lengths Lifted Unassisted	
List	Boom Length
1/2 Degree	280 Ft.
1 Degree	260 Ft.
2 Degree	240 Ft.
Load block, hook and weight ball on barge deck at start. Jib is not to be used on machine while operating on a barge.	



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85% Tipping - 360 Degree Rating

4100W SERIES 1
RINGER SERIES 3

Oper. Radius Feet	Boom Angle Deg.	Boom Point Elev. Feet	1/2 Degree List Boom Capacity Pounds	1 Degree List Boom Capacity Pounds	2 Degree List Boom Capacity Pounds	Oper. Radius Feet
140 Ft. Boom						
38	81.4	146.2	518,900 *			38
40	80.6	145.9	518,900 *	414,400 *		40
45	78.5	145.0	518,900 *	414,400 *	293,400 *	45
50	76.4	143.9	505,600 *	414,400 *	293,400 *	50
55	74.3	142.6	460,400	414,400 *	293,400 *	55
60	72.2	141.1	406,200	393,200	291,400 *	60
65	70.0	139.3	363,000	352,400	267,500 *	65
70	67.8	137.4	327,700	319,000	247,000 *	70
75	65.6	135.3	298,400	291,100	229,300 *	75
80	63.3	132.9	273,700	267,400	213,700 *	80
85	61.0	130.2	252,500	247,100	200,000 *	85
90	58.7	127.3	234,100	229,500	187,900 *	90
95	56.2	124.1	218,100	214,000	177,000 *	95
100	53.7	120.6	203,900 *	200,400	167,200 *	100
105	51.1	116.8	189,600 *	188,300	158,300 *	105
110	48.5	112.6	176,800 *	176,800 *	150,200 *	110
115	45.7	107.9	165,200 *	165,200 *	142,800 *	115
120	42.7	102.8	153,600 *	153,600 *	136,100 *	120
125	39.6	97.1	142,500 *	142,500 *	129,900 *	125
130	36.3	90.6	132,100 *	132,100 *	124,100 *	130
135	32.7	83.4	122,200 *	122,200 *	118,800 *	135
140	28.7	74.9	112,600 *	112,600 *	112,600 *	140
160 Ft. Boom						
45	80.0	165.3	491,200 *	395,000 *	281,800 *	45
50	78.2	164.4	477,500 *	395,000 *	281,800 *	50
55	76.3	163.2	455,200 *	395,000 *	281,800 *	55
60	74.5	161.9	402,700	388,100	281,800 *	60
65	72.6	160.4	359,800	347,900	265,500 *	65
70	70.7	158.8	324,800	314,900	245,100 *	70
75	68.8	156.9	295,600	287,300	227,300 *	75
80	66.9	154.9	271,000	263,900	211,800 *	80
85	64.9	152.7	249,900	243,800	198,100 *	85
90	62.9	150.2	231,700	226,400	186,000 *	90
95	60.9	147.6	215,700	211,100	175,100 *	95
100	58.8	144.6	201,700	197,600	165,300 *	100
105	56.7	141.5	189,200	185,500	156,400 *	105
110	54.5	138.1	178,000	174,700	148,400 *	110
115	52.3	134.4	167,900	165,000	141,000 *	115
120	50.0	130.3	158,900	156,200	134,300 *	120
125	47.6	126.0	150,600	148,300	128,100 *	125
130	45.2	121.2	142,700 *	141,000	122,300 *	130
135	42.6	116.0	134,300 *	134,300 *	117,000 *	135
140	39.9	110.3	126,600 *	126,600 *	112,100 *	140
145	37.0	104.0	119,400 *	119,400 *	107,500 *	145
150	33.9	97.0	112,400 *	112,400 *	103,200 *	150
155	30.5	89.0	104,700 *	104,700 *	99,200 *	155
160	26.8	79.9	97,000 *	97,000 *	95,500 *	160



Liftcrane Boom Capacities

4100W

Boom No. 27A-27 With Open Throat Top
36 Ft. RINGER Attachment On Blocking
122,400 Lb. Crane Counterweight
275,000 Lb. Auxiliary Counterweight
Barge Mount - 1/2 Degree thru 2 Degree Machine List
85% Tipping - 360 Degree Rating

4100W SERIES 1
RINGER SERIES 3

Oper. Radius Feet	Boom Angle Deg.	Boom Point Elev. Feet	1/2 Degree List Boom Capacity Pounds	1 Degree List Boom Capacity Pounds	2 Degree List Boom Capacity Pounds	Oper. Radius Feet
180 Ft. Boom						
45	81.1	185.6	456,000 *			45
50	79.5	184.7	451,600 *	373,300 *	269,700 *	50
55	77.9	183.7	431,100 *	373,300 *	269,700 *	55
60	76.2	182.6	398,500	365,500 *	269,700 *	60
65	74.6	181.3	356,000	342,900	262,800 *	65
70	72.9	179.8	321,200	310,300	242,400 *	70
75	71.3	178.2	292,200	283,000	224,700 *	75
80	69.6	176.4	267,800	259,900	209,200 *	80
85	67.9	174.5	246,800	240,000	195,500 *	85
90	66.1	172.4	228,600	222,700	183,400 *	90
95	64.4	170.1	212,700	207,500	172,500 *	95
100	62.6	167.6	198,700	194,100	162,700 *	100
105	60.8	164.9	186,300	182,200	153,900 *	105
110	59.0	162.0	175,100	171,500	145,800 *	110
115	57.1	158.9	165,100	161,800	138,500 *	115
120	55.2	155.5	156,100	153,100	131,800 *	120
125	53.2	151.9	147,800	145,100	125,600 *	125
130	51.2	148.0	140,300	137,900	119,900 *	130
135	49.1	143.8	133,400	131,200	114,600 *	135
140	47.0	139.3	127,100	125,100	109,700 *	140
145	44.8	134.5	121,300	119,400	105,100 *	145
150	42.4	129.2	115,900	114,200	100,800 *	150
155	40.0	123.5	110,200 *	109,300	96,800 *	155
160	37.5	117.3	104,300 *	104,300 *	93,100 *	160
165	34.8	110.5	98,700 *	98,700 *	89,600 *	165
170	31.9	102.9	93,400 *	93,400 *	86,200 *	170
175	28.7	94.3	88,300 *	88,300 *	83,100 *	175
180	25.2	84.5	82,600 *	82,600 *	80,200 *	180



Liftcrane Boom Capacities

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Barge Mount - 1/2 Degree thru 2 Degree Machine List
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4100W SERIES 1
RINGER SERIES 3

Oper. Radius Feet	Boom Angle Deg.	Boom Point Elev. Feet	1/2 Degree List Boom Capacity Pounds	1 Degree List Boom Capacity Pounds	2 Degree List Boom Capacity Pounds	Oper. Radius Feet
200 Ft. Boom						
50	80.6	205.1	426,300 *	350,400 *		50
55	79.1	204.1	410,100 *	350,400 *	257,800 *	55
60	77.6	203.1	392,800 *	345,000 *	257,800 *	60
65	76.2	202.0	353,000	332,700 *	254,600 *	65
70	74.7	200.7	318,400	306,500	240,500 *	70
75	73.2	199.2	289,700	279,600	222,800 *	75
80	71.7	197.6	265,300	256,700	207,400 *	80
85	70.2	195.9	244,500	237,000	193,700 *	85
90	68.6	194.0	226,400	219,900	181,600 *	90
95	67.1	192.0	210,600	204,800	170,800 *	95
100	65.5	189.8	196,600	191,500	161,000 *	100
105	63.9	187.4	184,200	179,700	152,200 *	105
110	62.3	184.9	173,100	169,100	144,100 *	110
115	60.7	182.2	163,100	159,500	136,800 *	115
120	59.1	179.3	154,100	150,800	130,100 *	120
125	57.4	176.2	145,900	142,900	123,900 *	125
130	55.7	172.9	138,400	135,700	118,200 *	130
135	53.9	169.4	131,500	129,000	112,900 *	135
140	52.1	165.6	125,200	122,900	108,000 *	140
145	50.3	161.6	119,400	117,300	103,400 *	145
150	48.4	157.3	114,000	112,100	99,200 *	150
155	46.4	152.7	109,000	107,200	95,200 *	155
160	44.4	147.8	104,300	102,700	91,400 *	160
165	42.3	142.5	100,000	98,500	87,900 *	165
170	40.2	136.8	95,900	94,500	84,600 *	170
175	37.9	130.6	92,000 *	90,800	81,500 *	175
180	35.5	123.9	87,300 *	87,300 *	78,600 *	180
185	32.9	116.5	82,800 *	82,800 *	75,800 *	185
190	30.2	108.4	78,500 *	78,500 *	73,100 *	190
195	27.2	99.3	74,400 *	74,400 *	70,600 *	195
200	23.9	88.8	70,400 *	70,400 *	68,300 *	200



Liftcrane Boom Capacities

4100W

Boom No. 27A-27 With Open Throat Top
36 Ft. RINGER Attachment On Blocking
122,400 Lb. Crane Counterweight
275,000 Lb. Auxiliary Counterweight
Barge Mount - 1/2 Degree thru 2 Degree Machine List
85% Tipping - 360 Degree Rating

4100W SERIES 1
RINGER SERIES 3

Oper. Radius Feet	Boom Angle Deg.	Boom Point Elev. Feet	1/2 Degree List Boom Capacity Pounds	1 Degree List Boom Capacity Pounds	2 Degree List Boom Capacity Pounds	Oper. Radius Feet
220 Ft. Boom						
50	81.4	225.3	392,000 *			50
55	80.1	224.5	390,600 *	327,800 *		55
60	78.8	223.6	374,600 *	326,200 *	235,600 *	60
65	77.4	222.5	341,500 *	314,800 *	232,700 *	65
70	76.1	221.3	313,500 *	302,500	230,000 *	70
75	74.8	220.0	286,800	275,900	220,700 *	75
80	73.4	218.6	262,600	253,200	205,300 *	80
85	72.0	217.1	241,800	233,700	191,600 *	85
90	70.7	215.4	223,800	216,700	179,500 *	90
95	69.3	213.5	208,100	201,800	168,700 *	95
100	67.9	211.6	194,200	188,600	159,000 *	100
105	66.5	209.5	181,800	176,900	150,100 *	105
110	65.0	207.2	170,800	166,300	142,100 *	110
115	63.6	204.8	160,800	156,800	134,800 *	115
120	62.1	202.2	151,800	148,200	128,100 *	120
125	60.6	199.5	143,700	140,300	121,900 *	125
130	59.1	196.6	136,200	133,200	116,200 *	130
135	57.6	193.6	129,300	126,600	110,900 *	135
140	56.1	190.3	123,000	120,500	106,000 *	140
145	54.5	186.8	117,200	114,900	101,500 *	145
150	52.9	183.1	111,800	109,700	97,200 *	150
155	51.2	179.2	106,800	104,900	93,200 *	155
160	49.5	175.1	102,200	100,400	89,500 *	160
165	47.8	170.7	97,800	96,100	86,000 *	165
170	46.0	166.0	93,800	92,200	82,700 *	170
175	44.2	161.0	90,000	88,500	79,600 *	175
180	42.3	155.7	86,400	85,000	76,600 *	180
185	40.3	150.0	83,000	81,800	73,900 *	185
190	38.2	143.9	79,900	78,700	71,200 *	190
195	36.1	137.3	76,800 *	75,800	68,700 *	195
200	33.8	130.1	73,000 *	73,000 *	66,300 *	200
205	31.4	122.3	69,300 *	69,300 *	64,100 *	205
210	28.8	113.7	65,700 *	65,700 *	61,900 *	210
215	25.9	104.0	62,300 *	62,300 *	59,900 *	215
220	22.8	93.0	58,900 *	58,900 *	57,900 *	220



Liftcrane Boom Capacities

4100W

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 275,000 Lb. Auxiliary Counterweight
 Barge Mount - 1/2 Degree thru 2 Degree Machine List
 85% Tipping - 360 Degree Rating

4100W SERIES 1
RINGER SERIES 3

Oper. Radius Feet	Boom Angle Deg.	Boom Point Elev. Feet	1/2 Degree List Boom Capacity Pounds	1 Degree List Boom Capacity Pounds	2 Degree List Boom Capacity Pounds	Oper. Radius Feet
240 Ft. Boom						
55	80.9	244.8	357,300 *	300,400 *		55
60	79.7	243.9	343,400 *	300,400 *	217,200 *	60
65	78.5	242.9	313,400 *	299,400 *	214,600 *	65
70	77.3	241.9	288,600 *	288,600 *	212,100 *	70
75	76.1	240.7	267,600 *	267,600 *	209,800 *	75
80	74.8	239.4	249,600 *	249,600 *	204,300 *	80
85	73.6	238.0	233,800 *	231,600	190,700 *	85
90	72.3	236.4	219,800 *	214,800	178,600 *	90
95	71.1	234.8	206,700	200,000	167,800 *	95
100	69.8	233.0	192,900	186,900	158,000 *	100
105	68.5	231.1	180,600	175,300	149,200 *	105
110	67.2	229.1	169,600	164,800	141,200 *	110
115	65.9	226.9	159,700	155,300	133,900 *	115
120	64.6	224.6	150,700	146,800	127,200 *	120
125	63.3	222.2	142,600	139,000	121,000 *	125
130	62.0	219.6	135,100	131,800	115,300 *	130
135	60.6	216.9	128,300	125,300	110,100 *	135
140	59.2	213.9	122,000	119,200	105,200 *	140
145	57.8	210.9	116,200	113,600	100,600 *	145
150	56.4	207.6	110,800	108,500	96,400 *	150
155	54.9	204.2	105,800	103,700	92,400 *	155
160	53.5	200.6	101,200	99,200	88,600 *	160
165	52.0	196.8	96,900	95,000	85,100 *	165
170	50.4	192.8	92,800	91,100	81,800 *	170
175	48.9	188.6	89,000	87,400	78,700 *	175
180	47.3	184.1	85,400	83,900	75,800 *	180
185	45.6	179.3	82,100	80,700	73,000 *	185
190	43.9	174.3	78,900	77,600	70,400 *	190
195	42.2	168.9	75,900	74,700	67,900 *	195
200	40.4	163.2	73,100	71,900	65,500 *	200
205	38.5	157.2	70,400	69,300	63,300 *	205
210	36.5	150.6	67,900	66,900	61,100 *	210
215	34.5	143.6	65,400 *	64,500	59,100 *	215
220	32.3	136.1	62,200 *	62,200 *	57,100 *	220
225	30.0	127.8	59,100 *	59,100 *	55,200 *	225
230	27.5	118.7	56,100 *	56,100 *	53,500 *	230
235	24.8	108.5	53,200 *	53,200 *	51,700 *	235
240	21.8	96.9	50,300 *	50,300 *	50,100 *	240



Liftcrane Boom Capacities

4100W

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Barge Mount - 1/2 Degree thru 2 Degree Machine List
85% Tipping - 360 Degree Rating

4100W SERIES 1
RINGER SERIES 3

Oper. Radius Feet	Boom Angle Deg.	Boom Point Elev. Feet	1/2 Degree List Boom Capacity Pounds	1 Degree List Boom Capacity Pounds
260 Ft. Boom				
60	80.5	264.2	314,700 *	278,900 *
65	79.4	263.3	287,500 *	278,900 *
70	78.3	262.3	265,100 *	265,100 *
75	77.1	261.2	246,200 *	246,200 *
80	76.0	260.1	229,900 *	229,900 *
85	74.9	258.8	215,800 *	215,800 *
90	73.7	257.4	203,300 *	203,300 *
95	72.6	255.8	192,200 *	192,200 *
100	71.4	254.2	182,200 *	182,200 *
105	70.3	252.5	173,200 *	172,700 *
110	69.1	250.6	164,900 *	162,300 *
115	67.9	248.7	157,200 *	152,900 *
120	66.7	246.6	148,600 *	144,400 *
125	65.5	244.4	140,500 *	136,600 *
130	64.3	242.0	133,100 *	129,500 *
135	63.1	239.5	126,300 *	123,000 *
140	61.8	236.9	120,000 *	117,000 *
145	60.5	234.2	114,200 *	111,400 *
150	59.3	231.3	108,900 *	106,300 *
155	58.0	228.2	103,900 *	101,500 *
160	56.7	225.0	99,200 *	97,000 *
165	55.3	221.6	94,900 *	92,900 *
170	54.0	218.1	90,900 *	89,000 *
175	52.6	214.4	87,100 *	85,300 *
180	51.2	210.5	83,500 *	81,800 *
185	49.8	206.3	80,200 *	78,600 *
190	48.3	202.0	77,000 *	75,500 *
195	46.8	197.4	74,000 *	72,600 *
200	45.3	192.6	71,200 *	69,900 *
205	43.7	187.5	68,500 *	67,300 *
210	42.1	182.2	66,000 *	64,800 *
215	40.5	176.5	63,600 *	62,500 *
220	38.7	170.4	61,300 *	60,300 *
225	36.9	164.0	59,100 *	58,100 *
230	35.1	157.1	57,000 *	56,100 *
235	33.1	149.7	54,600 *	54,200 *
240	31.0	141.7	51,900 *	51,900 *
245	28.8	133.0	49,200 *	49,200 *
250	26.4	123.5	46,700 *	46,700 *
255	23.8	112.8	44,200 *	44,200 *
260	20.9	100.7	41,700 *	41,700 *

Oper. Radius Feet	Boom Angle Deg.	Boom Point Elev. Feet	1/2 Degree List Boom Capacity Pounds
280 Ft. Boom			
60	81.2	284.5	262,300 *
65	80.2	283.6	258,600 *
70	79.1	282.7	245,200 *
75	78.1	281.7	227,800 *
80	77.0	280.6	213,000 *
85	76.0	279.4	200,100 *
90	74.9	278.1	188,800 *
95	73.9	276.7	178,700 *
100	72.8	275.2	169,600 *
105	71.7	273.6	161,400 *
110	70.6	271.9	154,000 *
115	69.5	270.1	147,100 *
120	68.5	268.2	140,800 *
125	67.3	266.2	134,900 *
130	66.2	264.0	129,400 *
135	65.1	261.8	124,300 *
140	64.0	259.4	118,800 *
145	62.8	256.9	113,100 *
150	61.7	254.2	107,700 *
155	60.5	251.5	102,700 *
160	59.3	248.6	98,100 *
165	58.1	245.6	93,800 *
170	56.9	242.4	89,800 *
175	55.7	239.0	86,000 *
180	54.4	235.6	82,400 *
185	53.2	231.9	79,100 *
190	51.9	228.1	75,900 *
195	50.6	224.0	72,900 *
200	49.2	219.8	70,100 *
205	47.9	215.4	67,500 *
210	46.5	210.8	64,900 *
215	45.0	205.9	62,500 *
220	43.6	200.8	60,200 *
225	42.1	195.4	58,000 *
230	40.5	189.7	56,000 *
235	38.9	183.7	54,000 *
240	37.3	177.3	52,100 *
245	35.5	170.5	50,300 *
250	33.7	163.3	48,500 *
255	31.9	155.5	46,100 *
260	29.9	147.2	43,800 *
265	27.7	138.1	41,600 *
270	25.4	128.1	39,400 *
275	23.0	116.9	37,200 *
280	20.2	104.3	35,000 *