



ALT	REVISION	DATE:
THIS DRAWING/DOCUMENT IS CONFIDENTIAL AND THE PROPERTY OF THOMAS M. FARRELL AND GARRETT NORTON AND MUST NOT BE USED FOR MANUFACTURE, COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT EXPRESS PERMISSION.		
<b>FARRELL &amp; NORTON NAVAL ARCHITECTS</b>		
NAVAL ARCHITECTS AND MARINE ENGINEERS		
PO BOX 66 (207) 563-3210 (THOMAS)		NEWCASTLE, ME 04553 (617) 308-1074 (GARRETT)
<b>GENERAL ARRANGEMENT WITH CRANE</b>		
PROJECT: 250'x76'x16'-8" DECK BARGE		
DRAWN BY: TMF	DATE: 03/14/22	
APPROVED BY: GJN	SCALE: 1/8" = 1'-0"	
DWG #: B-602-003	ALT: 0	



LIFTCRANE BOOM CAPACITIES

BOOM NO. 27 WITH OPEN THROAT TOP  
 36' 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  
 4100W SERIES 1  
 RINGER SERIES 3

CAPACITIES ARE FOR A CRAWLER MACHINE WHEN OPERATING ON A BARGE. MACHINE SHALL BE POSITIVELY SECURED TO PREVENT SHIFTING. 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 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.

MACHINE TO OPERATE WITH ROLLER PATH PROPERLY SUPPORTED AND MACHINE LIST NOT TO EXCEED DEGREES NOTED. REFER TO RIGGING NO. 50999 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.

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 IS VERTICAL DISTANCE FROM BARGE DECK TO CENTERLINE OF BOOM POINT SHAFT.

MACHINE EQUIPPED WITH 36' RINGER ATTACHMENT ON BLOCKING, 26'6" EXTENDIBLE CRAWLERS, 48" TREADS, 17' RETRACTABLE GANTRY, 130' MAST, 8 PART BOOM HOIST REEVING, FOUR 1-3/8" BOOM PENDANTS, 14" DIAMETER X 16" 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'
1 DEGREE	260'
2 DEGREE	240'

LOAD BLOCK, HOOK AND WEIGHT BALL ON BARGE AT START. JIB IS NOT TO BE USED ON MACHINE WHILE OPERATING ON A BARGE.

BOOM LGTH. FEET	OPER. RAD. FEET	BOOM ANG. DEG.	BOOM POINT ELEV. FEET	BOOM CAPACITY	BOOM CAPACITY	BOOM CAPACITY
				1/2 DEGREE LIST POUNDS	1 DEGREE LIST POUNDS	2 DEGREE LIST POUNDS
140	38	81.4	146.2	488,700*		
	40	80.6	145.9	488,700*	435,800*	
	45	78.5	145.0	488,700*	435,800*	358,700*
	50	76.4	143.9	488,700*	435,800*	356,100*
	55	74.3	142.6	462,200	434,000*	322,100*
	60	72.2	141.1	408,100	394,800	293,800*
	65	70.0	139.3	364,900	354,100	269,900*
	70	67.8	137.4	329,600	320,700	249,400*
	75	65.6	135.3	300,300	292,800	231,600*
	80	63.3	132.9	275,600	269,200	216,000*
	85	61.0	130.2	254,400	248,900	202,300*
	90	58.7	127.3	236,100	231,300	190,100*
	95	56.2	124.1	220,000	215,900	179,200*
	100	53.7	120.6	205,900	202,200	169,300*
	105	51.1	116.8	192,000*	190,100	160,400*
	110	48.5	112.6	179,200*	179,200*	152,400*
	115	45.7	107.9	167,600*	167,600*	145,000*
120	42.7	102.8	156,400*	156,400*	138,200*	
125	39.6	97.1	145,300*	145,300*	132,000*	
130	36.3	90.6	134,800*	134,800*	126,200*	
135	32.7	83.4	124,900*	124,900*	120,900*	
140	28.7	74.9	115,200*	115,200*	115,200*	



LIFTCRANE BOOM CAPACITIES

4100W

BOOM NO. 27 WITH OPEN THROAT TOP  
 36' 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

BOOM LGTH. FEET	OPER. RAD. FEET	BOOM ANG. DEG.	BOOM POINT ELEV. FEET	BOOM CAPACITY 1/2 DEGREE LIST POUNDS	BOOM CAPACITY 1 DEGREE LIST POUNDS	BOOM CAPACITY 2 DEGREE LIST POUNDS
160	45	80.0	165.3	431,400*	381,400*	310,000*
	50	78.2	164.4	431,400*	381,400*	310,000*
	55	76.3	163.2	431,400*	381,400*	310,000*
	60	74.5	161.9	405,000	381,400*	292,300*
	65	72.6	160.5	362,100	350,100	268,400*
	70	70.7	158.8	327,100	317,100	247,900*
	75	68.8	157.0	298,000	289,500	230,100*
	80	66.9	154.9	273,300	265,200	214,600*
	85	64.9	152.7	252,300	245,100	200,800*
	90	62.9	150.2	234,000	228,600	188,700*
	95	60.9	147.6	218,100	213,300	177,700*
	100	58.8	144.7	204,000	199,800	167,900*
	105	56.7	141.5	191,500	187,800	159,000*
	110	54.5	138.1	180,300	177,000	151,000*
	115	52.3	134.4	170,300	167,300	143,600*
	120	50.0	130.3	161,200	158,500	136,800*
125	47.6	126.0	153,000	150,600	130,600*	
130	45.2	121.2	145,400	143,300	124,900*	
135	42.6	116.0	137,100*	136,600	119,500*	
140	39.9	110.3	129,400*	129,400*	114,600*	
145	37.0	104.0	122,200*	122,200*	110,000*	
150	33.9	97.0	115,400*	115,400*	105,700*	
155	30.5	89.0	107,700*	107,700*	101,700*	
160	26.8	79.9	100,000*	100,000*	98,000*	
180	45	81.1	185.6	376,900*	331,700*	268,000*
	50	79.5	184.8	376,500*	331,300*	267,600*
	55	77.9	183.7	376,100*	330,800*	267,200*
	60	76.2	182.6	375,500*	330,800*	267,200*
	65	74.5	181.3	358,600	330,200*	265,100*
	70	72.9	179.8	323,900	312,900	245,600*
	75	71.3	178.2	294,900	285,600	227,800*
	80	69.6	176.4	270,500	262,500	212,300*
	85	67.9	174.5	249,500	242,600	198,600*
	90	66.1	172.4	231,300	225,300	186,500*
	95	64.4	170.1	215,400	210,200	175,600*
	100	62.6	167.6	201,400	195,800	165,800*
	105	60.8	164.9	189,000	184,800	156,900*
	110	59.0	162.0	177,900	174,100	148,800*
	115	57.1	158.9	167,900	164,500	141,500*
	120	55.2	155.5	158,800	155,800	134,700*
125	53.2	151.9	150,600	147,800	128,500*	
130	51.2	148.0	143,100	140,600	122,800*	
135	49.1	143.8	136,200	133,900	117,500*	
140	47.0	139.3	129,900	127,800	112,500*	
145	44.8	134.5	124,000	122,100	108,000*	
150	42.4	129.2	118,600	116,900	103,700*	
155	40.0	123.5	113,500*	112,000	99,700*	
160	37.5	117.3	107,500*	107,500	95,900*	
165	34.8	110.5	101,900*	101,900*	92,400*	
170	31.9	102.9	96,600*	96,600*	89,100*	
175	28.7	94.3	91,500*	91,500*	85,900*	
180	25.2	84.5	86,100*	86,100*	83,000*	



LIFTCRANE BOOM CAPACITIES

BOOM NO. 27 WITH OPEN THROAT TOP  
 36' 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  
 4100W SERIES 1  
 RINGER SERIES 3

BOOM LGTH. FEET	OPER. RAD. FEET	BOOM ANG. DEG.	BOOM POINT ELEV. FEET	BOOM CAPACITY 1/2 DEGREE LIST POUNDS	BOOM CAPACITY 1 DEGREE LIST POUNDS	BOOM CAPACITY 2 DEGREE LIST POUNDS
200	50	80.6	205.1	332,100*	291,800*	
	55	79.1	204.2	331,400*	291,200*	234,300*
	60	77.6	203.1	330,500*	290,500*	233,800*
	65	76.2	202.0	329,600*	289,800*	233,200*
	70	74.7	200.7	321,500	289,000*	232,500*
	75	73.2	199.2	292,800	282,600	226,500*
	80	71.7	197.6	268,400	259,700	211,000*
	85	70.2	195.9	247,600	240,000	197,300*
	90	68.6	194.0	229,500	222,900	185,100*
	95	67.1	192.0	213,700	207,900	174,300*
	100	65.5	189.8	199,700	194,600	164,500*
	105	63.9	187.5	187,300	182,700	155,600*
	110	62.3	184.9	176,300	172,100	147,600*
	115	60.7	182.2	166,300	162,500	140,200*
	120	59.1	179.3	157,300	153,900	133,500*
	125	57.4	176.2	149,000	146,000	127,300*
	130	55.7	172.9	141,600	138,800	121,500*
	135	53.9	169.4	134,700	132,100	116,200*
	140	52.1	165.6	128,400	126,000	111,300*
	145	50.3	161.6	122,600	120,400	106,700*
150	48.4	157.3	117,200	115,200	102,500*	
155	46.4	152.7	112,200	110,300	98,500*	
160	44.4	147.8	107,500	105,800	94,700*	
165	42.3	142.5	103,100	101,600	91,200*	
170	40.2	136.8	99,100	97,700	87,900*	
175	37.9	130.6	95,300	94,000	84,700*	
180	35.5	123.9	91,000*	90,500	81,800*	
185	32.9	116.5	86,500*	86,500*	79,000*	
190	30.2	108.4	82,200*	82,200*	76,300*	
195	27.2	99.3	78,100*	78,100*	73,800*	
200	23.9	88.8	74,100*	74,100*	71,500*	
220	50	81.4	225.3	293,300*		
	55	80.1	224.5	292,500*	256,500*	
	60	78.8	223.6	291,600*	255,800*	205,100*
	65	77.4	222.5	290,600*	255,000*	204,500*
	70	76.1	221.3	289,600*	254,200*	203,900*
	75	74.8	220.0	288,500*	253,300*	203,200*
	80	73.4	218.6	266,100	252,300*	202,400*
	85	72.0	217.1	245,300	237,100	195,600*
	90	70.7	215.4	227,300	220,200	183,500*
	95	69.3	213.5	211,600	205,300	172,600*
	100	67.9	211.6	197,700	192,100	162,800*
	105	66.5	209.5	185,300	180,300	154,000*
	110	65.0	207.2	174,300	169,800	145,900*
	115	63.6	204.8	164,400	160,300	138,600*
	120	62.1	202.3	155,400	151,700	131,900*
	125	60.6	199.5	147,200	143,800	125,700*
	130	59.1	196.5	139,700	136,600	119,900*
	135	57.6	193.6	132,900	130,100	114,700*
	140	56.1	190.3	126,600	124,000	109,700*
	145	54.5	186.8	120,800	118,400	105,200*
150	52.9	183.1	115,400	113,200	100,900*	
155	51.2	179.2	110,400	108,300	96,900*	
160	49.5	175.1	105,700	103,800	93,100*	
165	47.8	170.7	101,400	99,600	89,600*	
170	46.0	166.0	97,300	95,700	86,300*	
175	44.2	161.0	93,500	92,000	83,200*	
180	42.3	155.7	90,000	88,600	80,200*	
185	40.3	150.0	86,600	85,300	77,500*	
190	38.2	143.9	83,400	82,200	74,800*	
195	36.1	137.3	80,400	79,300	72,300*	
200	33.8	130.1	77,100*	76,600	69,900*	
205	31.4	122.3	73,400*	73,400*	67,700*	
210	28.8	113.7	69,900*	69,900*	65,500*	
215	25.9	104.0	66,400*	66,400*	63,400*	
220	22.8	93.0	63,100*	63,100*	61,500*	



LIFTCRANE BOOM CAPACITIES

4100W

4100W SERIES 1  
RINGER SERIES 3

BOOM NO. 27 WITH OPEN THROAT TOP  
36' 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

BOOM LGTH. FEET	OPER. RAD. FEET	BOOM ANG. DEG.	BOOM POINT ELEV. FEET	BOOM CAPACITY	BOOM CAPACITY	BOOM CAPACITY
				1/2 DEGREE LIST POUNDS	1 DEGREE LIST POUNDS	2 DEGREE LIST POUNDS
240	55	80.9	244.8	264,100*	230,900*	
	60	79.7	243.9	263,300*	230,200*	183,600*
	65	78.5	243.0	262,400*	229,500*	183,000*
	70	77.3	241.9	261,400*	228,700*	182,400*
	75	76.1	240.7	260,300*	227,800*	181,700*
	80	74.8	239.4	253,800*	226,900*	181,000*
	85	73.6	238.0	238,000*	226,000*	180,300*
	90	72.3	236.5	224,000*	217,500*	179,500*
	95	71.1	234.8	209,600	202,800	171,100*
	100	69.8	233.0	195,700	189,700	161,300*
	105	68.5	231.1	183,400	178,000	152,500*
	110	67.2	229.1	172,400	167,600	144,400*
	115	65.9	226.9	162,500	158,100	137,100*
	120	64.6	224.6	153,600	149,600	130,400*
	125	63.3	222.2	145,400	141,800	124,200*
	130	62.0	219.6	138,000	134,600	118,500*
	135	60.6	216.9	131,100	128,100	113,200*
	140	59.2	214.0	124,900	122,000	108,300*
	145	57.8	210.9	119,100	116,500	103,700*
	150	56.4	207.7	113,700	111,300	99,400*
	155	54.9	204.2	108,700	106,500	95,400*
	160	53.5	200.6	104,100	102,000	91,700*
	165	52.0	196.8	99,700	97,800	88,200*
	170	50.4	192.8	95,700	93,900	84,900*
	175	48.9	188.6	91,900	90,200	81,700*
	180	47.3	184.1	88,300	86,800	78,800*
	185	45.6	179.3	85,000	83,500	76,000*
	190	43.9	174.3	81,800	80,400	73,400*
	195	42.2	168.9	78,800	77,500	70,900*
	200	40.4	163.2	75,000	74,800	68,500*
205	38.5	157.2	73,300	72,200	66,200*	
210	36.5	150.7	70,800	69,700	64,100*	
215	34.5	143.6	68,400	67,400	62,000*	
220	32.3	136.1	65,500*	65,200	60,100*	
225	30.0	127.8	62,400*	62,400*	58,200*	
230	27.5	118.7	59,400*	59,400*	56,400*	
235	24.8	108.5	56,500*	56,500*	54,700*	
240	21.8	96.9	53,700*	53,700*	53,000*	

# MANITOWOC ENGINEERING CO.

Division of the Manitowoc Company, Inc. Manitowoc, Wisconsin 54220

SN: 10283



## LIFTCRANE BOOM CAPACITIES

4100W

4100W SERIES 1  
RINGER SERIES 3

BOOM NO. 27 WITH OPEN THROAT TOP  
36' 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

BOOM LGTH. FEET	OPER. RAD. FEET	BOOM ANG. DEG.	BOOM POINT ELEV. FEET	BOOM CAPACITY	BOOM CAPACITY
				1/2 DEGREE LIST POUNDS	1 DEGREE LIST POUNDS
260	60	80.5	264.2	233,300*	203,800*
	65	79.4	263.3	232,500*	203,200*
	70	78.3	262.3	231,600*	202,500*
	75	77.1	261.3	230,700*	201,700*
	80	76.0	260.1	229,700*	200,900*
	85	74.9	258.8	220,400*	200,000*
	90	73.7	257.4	207,900*	199,100*
	95	72.6	255.8	196,700*	196,700*
	100	71.4	254.2	186,700*	186,700*
	105	70.3	252.5	177,600*	175,800
	110	69.1	250.6	169,200*	165,400
	115	67.9	248.7	160,800	156,000
	120	66.7	246.6	151,800	147,500
	125	65.5	244.4	143,700	139,800
	130	64.3	242.0	136,300	132,700
	135	63.1	239.5	129,500	126,200
	140	61.8	236.9	123,200	120,200
	145	60.5	234.2	117,400	114,600
	150	59.3	231.3	112,100	109,500
	155	58.0	228.2	107,100	104,700
	160	56.7	225.0	102,500	100,200
	165	55.3	221.7	98,100	96,000
	170	54.0	218.1	94,100	92,100
	175	52.6	214.4	90,300	88,500
	180	51.2	210.5	86,700	85,000
	185	49.8	206.3	83,400	81,800
190	48.3	202.0	80,200	78,700	
195	46.8	197.4	77,300	75,800	
200	45.3	192.6	74,400	73,100	
205	43.7	187.5	71,800	70,500	
210	42.1	182.2	69,200	68,000	
215	40.5	176.5	66,800	65,700	
220	38.7	170.4	64,500	63,500	
225	36.9	164.0	62,300	61,400	
230	35.1	157.1	60,200	59,300	
235	33.1	149.7	58,300	57,400	
240	31.0	141.7	55,600*	55,600	
245	28.8	133.0	53,000*	53,000*	
250	26.4	123.5	50,500*	50,500*	
255	23.8	112.8	48,000*	48,000*	
260	20.9	100.7	45,500*	45,500*	



**LIFTCRANE BOOM CAPACITIES**

**4100W**

**4100W SERIES 1  
RINGER SERIES 3**

**BOOM NO. 27 WITH OPEN THROAT TOP  
36' 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**

BOOM LGTH. FEET	OPER. RAD. FEET	BOOM ANG. DEG.	BOOM POINT ELEV. FEET	BOOM CAPACITY 1/2 DEGREE LIST POUNDS
<b>280</b>	60	81.2	284.5	211,400*
	65	80.2	283.7	210,800*
	70	79.1	282.7	210,100*
	75	78.1	281.7	209,300*
	80	77.0	280.6	208,400*
	85	76.0	279.4	204,000*
	90	74.9	278.1	192,600*
	95	73.9	276.7	182,500*
	100	72.8	275.2	173,400*
	105	71.7	273.6	165,200*
	110	70.6	271.9	157,700*
	115	69.5	270.1	150,800*
	120	68.5	268.2	144,400*
	125	67.3	266.2	138,500*
	130	66.2	264.0	133,000*
	135	65.1	261.8	127,700
	140	64.0	259.4	121,500
	145	62.8	256.9	115,700
	150	61.7	254.3	110,400
	155	60.5	251.5	105,400
	160	59.3	248.6	100,800
	165	58.1	245.6	96,500
	170	56.9	242.4	92,500
	175	55.7	239.0	88,700
	180	54.4	235.6	85,100
	185	53.2	231.9	81,800
	190	51.9	228.1	78,600
	195	50.6	224.0	75,600
200	49.2	219.8	72,800	
205	47.9	215.4	70,100	
210	46.5	210.8	67,600	
215	45.0	205.9	65,200	
220	43.6	200.8	62,900	
225	42.1	195.4	60,700	
230	40.5	189.7	58,700	
235	38.9	183.7	56,700	
240	37.3	177.3	54,800	
245	35.5	170.5	53,000	
250	33.7	163.3	51,200	
255	31.9	155.5	49,300*	
260	29.9	147.2	47,000*	
265	27.7	138.1	44,700*	
270	25.4	128.1	42,500*	
275	23.0	117.0	40,300*	
280	20.2	104.3	38,200*	