

# MANITOWOC ENGINEERING CO.

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



## LIFTCRANE CAPACITIES

MEETS  
ANSI B30.5  
REQUIREMENTS

## 4100W SERIES 2 X-TENDER SERIES 2

**BOOM NO. 67A**  
**66' X-TENDER ATTACHMENT**  
**WITH PIVOTING POWERED CRAWLERS**  
**146,400 LB. CRANE COUNTERWEIGHT**  
**60,000 LB. CARBODY COUNTERWEIGHT**

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 (\*).

WEIGHT OF ALL LOAD BLOCKS, HOOKS, WEIGHT BALL, SLINGS, HOIST LINES, ETC., BENEATH BOOM POINT SHEAVES, IS CONSIDERED PART OF THE 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 ON A FIRM UNIFORMLY SUPPORTING SURFACE WITH X-TENDER LEVEL WITHIN A TOLERANCE OF 3/4" IN 25' (1/4% GRADE), 4100W SERIES 2 LEVEL WITHIN A TOLERANCE OF 3" IN 25' (1% GRADE) AND WITHIN A VERTICAL TOLERANCE OF 7" TO THE X-TENDER FOR 66' STINGER. CENTER OF GRAVITY OF SUSPENDED LOAD MUST BE IN LINE WITH CENTERLINE OF BOOM WITHIN A TOLERANCE OF 1' IN 100'. LOAD RESTRAINTS ARE RECOMMENDED. REFER TO BOOM RIGGING NO. 173205. WIRE ROPE SPECIFICATION CHART NO. 7648-A, AND OPERATING INSTRUCTIONS FOLIO 1416. 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.

MACHINE MAY BE OPERATED WITHIN WIND LIMITS SHOWN IN TABLE PROVIDED CRANE OPERATOR'S JUDGMENT IS USED TO ALLOW FOR WIND EFFECT ON THE LIFTED LOAD AND OTHER CONSIDERATIONS NOTED ARE FOLLOWED. WIND WILL HAVE A CONSIDERABLE EFFECT ON A LOAD WITH A LARGE 'SAIL AREA' AND MUST BE COMPENSATED FOR ACCORDINGLY BY REDUCING LOAD RATINGS, REDUCING OPERATING SPEEDS OR BY A COMBINATION OF BOTH. RECOMMEND STOPPING OPERATION WHEN WIND EXCEEDS THOSE SHOWN IN TABLE AND LOWERING BOOM TO GROUND WHEN WIND IS ABOVE 50 MPH.

MACHINE TO TRAVEL ON A FIRM, LEVEL AND UNIFORMLY SUPPORTING SURFACE AND BOOM WITHIN THE BOOM ANGLE RANGE SHOWN IN CAPACITY CHART. LEVEL TOLERANCES PREVIOUSLY STATED ALSO APPLY TO TRAVEL.

OPERATING RADIUS IS THE HORIZONTAL DISTANCE FROM THE AXIS OF ROTATION OF THE X-TENDER TO THE CENTER OF VERTICAL HOIST LINE OR LOAD BLOCK. BOOM ANGLE IS THE 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 GROUND LEVEL TO CENTERLINE OF BOOM POINT SHAFT.

MACHINE EQUIPPED WITH 66' X-TENDER ATTACHMENT, 26'6" EXTENDIBLE CRAWLERS, 48" TREADS, 17' RETRACTABLE GANTRY, 160' MAST, 12 PART BOOM HOIST REEVING, FOUR 1-3/8" BOOM PENDANTS, 1ST COUNTERWEIGHT = 41,900 LBS., 2ND COUNTERWEIGHT = 41,500 LBS., 3RD COUNTERWEIGHT = 39,000 LBS., TWO 12,000 LB. SIDE COUNTERWEIGHTS, AND TWO 30,000 LB. CARBODY COUNTERWEIGHTS.

### WIND LIMITS DURING OPERATION

MAXIMUM WIND VELOCITY MPH	BOOM LENGTH FEET
25	150 - 200
20	225 - 350

BOOM LGTH. FEET	OPER. RAD. FEET	BOOM ANG. DEG.	BOOM POINT ELEV. FEET	CAPACITY POUNDS
150	90	81.8	158.6	845,000*
	95	79.9	157.7	845,000*
	100	77.9	156.6	723,200
	105	75.9	155.4	625,200
	110	74.0	153.9	549,800
	115	71.9	152.3	489,900
	120	69.9	150.5	441,200
	125	67.8	148.4	400,800
	130	65.8	146.2	366,800
	135	63.6	143.7	337,700
	140	61.5	141.0	312,600
	145	59.2	138.0	290,700
	150	57.0	134.8	271,400
	155	54.6	131.3	254,300
	160	52.2	127.4	239,000
	165	49.7	123.2	225,300
	170	47.1	118.6	212,900

BOOM LGTH. FEET	OPER. RAD. FEET	BOOM ANG. DEG.	BOOM POINT ELEV. FEET	CAPACITY POUNDS
150	175	44.4	113.6	201,600
	180	41.5	108.0	191,300
	185	38.5	101.8	181,900
	190	35.3	94.9	173,300
	195	31.7	87.0	165,300
	200	27.7	77.9	157,900
	205	23.1	66.9	151,000
210	17.3	52.5	143,600*	
175	90	83.0	183.9	845,000*
	95	81.3	183.1	845,000*
	100	79.7	182.2	720,800
	105	78.0	181.1	622,800
	110	76.3	179.9	547,300
	115	74.6	178.5	487,400
	120	72.9	177.0	438,700
	125	71.2	175.3	398,300
	130	69.4	173.4	364,200
	135	67.6	171.3	335,200
140	65.9	169.1	310,100	

BOOM LGTH. FEET	OPER. RAD. FEET	BOOM ANG. DEG.	BOOM POINT ELEV. FEET	CAPACITY POUNDS
175	145	64.0	166.7	288,100
	150	62.2	164.0	268,800
	155	60.3	161.2	251,700
	160	58.4	158.1	236,500
	165	56.4	154.8	222,700
	170	54.4	151.3	210,300
	175	52.3	147.4	199,000
	180	50.2	143.3	188,800
	185	48.0	138.8	179,400
	190	45.7	134.0	170,700
150	195	43.4	128.8	162,700
	200	40.9	123.1	155,400
	205	38.3	116.8	148,500
	210	35.5	109.9	142,100
	215	32.5	102.3	136,200
	220	29.2	93.6	130,600
	225	25.6	83.6	125,400
	230	21.3	71.6	120,500
	235	15.9	55.9	115,900

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## 4100W SERIES 2 X-TENDER SERIES 2

**BOOM NO. 67A**  
**66' X-TENDER ATTACHMENT**  
**WITH PIVOTING POWERED CRAWLERS**  
**146,400 LB. CRANE COUNTERWEIGHT**  
**60,000 LB. CARBODY COUNTERWEIGHT**

BOOM LGTH. FEET	OPER. RAD. FEET	BOOM ANG. DEG.	BOOM POINT ELEV. FEET	CAPACITY POUNDS
<b>200</b>	95	82.4	208.4	845,000*
	100	81.0	207.6	717,900
	105	79.5	206.7	619,900
	110	78.0	205.6	544,400
	115	76.6	204.4	484,400
	120	75.1	203.1	435,700
	125	73.6	201.6	395,300
	130	72.1	200.0	361,300
	135	70.6	198.2	332,200
	140	69.0	196.3	307,100
	145	67.5	194.2	285,100
	150	65.9	192.0	265,800
	155	64.3	189.6	248,700
	160	62.7	187.0	233,400
	165	61.1	184.3	219,700
170	59.4	181.3	207,300	
175	57.7	178.2	196,000	
180	56.0	174.8	185,800	
185	54.2	171.2	176,300	
190	52.4	167.4	167,700	
195	50.6	163.3	159,700	
200	48.7	159.0	152,300	
205	46.7	154.3	145,500	
210	44.7	149.3	139,100	
215	42.6	143.9	133,200	
220	40.4	138.1	127,600	
225	38.1	131.8	122,400	
230	35.7	125.0	117,500	
235	33.1	117.4	112,900	
240	30.3	109.1	108,600	
245	27.2	99.7	104,500	
250	23.8	88.9	100,600	
255	19.8	75.9	96,900	

BOOM LGTH. FEET	OPER. RAD. FEET	BOOM ANG. DEG.	BOOM POINT ELEV. FEET	CAPACITY POUNDS
<b>225</b>	100	82.0	232.9	715,300
	105	80.7	232.1	617,200
	110	79.4	231.2	541,700
	115	78.1	230.1	481,700
	120	76.8	228.9	433,000
	125	75.5	227.6	392,500
	130	74.1	226.2	358,500
	135	72.8	224.7	329,400
	140	71.5	223.0	304,300
	145	70.1	221.2	282,300
	150	68.8	219.2	263,000
	155	67.4	217.2	245,900
	160	66.0	214.9	230,600
	165	64.6	212.6	216,900
	170	63.1	210.0	204,500
175	61.7	207.3	193,200	
180	60.2	204.5	182,900	
185	58.7	201.5	173,500	
190	57.2	198.2	164,900	
195	55.7	194.8	156,900	
200	54.1	191.2	149,500	
205	52.5	187.4	142,700	
210	50.9	183.4	136,300	
215	49.2	179.1	130,300	
220	47.5	174.5	124,800	
225	45.7	169.7	119,600	
230	43.9	164.5	114,700	
235	42.0	159.0	110,100	
240	40.0	153.1	105,800	
245	38.0	146.8	101,700	
250	35.8	140.0	97,800	
255	33.5	132.6	94,100	
260	31.1	124.5	90,600	
265	28.5	115.5	87,300	
270	25.6	105.4	84,200	
275	22.4	93.8	81,200	
280	18.7	80.0	78,300	
<b>250</b>	100	82.8	258.2	712,300
	105	81.6	257.4	614,200
	110	80.5	256.6	538,600
	115	79.3	255.7	478,600
	120	78.1	254.6	429,900
	125	77.0	253.4	389,400
	130	75.8	252.2	355,400
	135	74.6	250.8	326,300
	140	73.4	249.3	301,100
	145	72.2	247.7	279,200
	150	71.0	246.0	259,900
	155	69.8	244.1	242,800
	160	68.5	242.2	227,500
	165	67.3	240.1	213,700
	170	66.0	237.8	201,300
175	64.8	235.5	190,000	
180	63.5	233.0	179,700	
185	62.2	230.4	170,300	
190	60.9	227.6	161,700	
195	59.5	224.6	153,700	
200	58.2	221.6	146,300	
205	56.8	218.3	139,500	
210	55.4	214.9	133,100	
215	54.0	211.2	127,100	
220	52.6	207.4	121,600	
225	51.1	203.4	116,400	
230	49.6	199.2	111,500	
235	48.1	194.7	106,900	

BOOM LGTH. FEET	OPER. RAD. FEET	BOOM ANG. DEG.	BOOM POINT ELEV. FEET	CAPACITY POUNDS
<b>250</b>	240	46.5	190.0	102,600
	245	44.9	185.0	98,500
	250	43.2	179.7	94,600
	255	41.5	174.1	90,900
	260	39.7	168.2	87,400
	265	37.9	161.8	84,100
	270	35.9	155.0	81,000
	275	33.9	147.7	78,000
	280	31.7	139.7	75,200
	285	29.4	131.1	72,400
	290	27.0	121.5	69,800
	295	24.3	110.8	67,300
	300	21.2	98.5	64,900
	305	17.7	83.8	62,700
	<b>275</b>	105	82.4	282.7
110		81.3	282.0	536,000
115		80.3	281.1	476,000
120		79.2	280.2	427,200
125		78.2	279.1	386,800
130		77.1	278.0	352,700
135		76.0	276.7	323,600
140		74.9	275.4	298,400
145		73.9	273.9	276,500
150		72.8	272.4	257,200
155		71.7	270.7	240,100
160		70.6	268.9	224,700
165		69.5	267.1	211,000
170		68.3	265.1	198,600
175		67.2	263.0	187,300
180	66.1	260.8	177,000	
185	64.9	258.4	167,600	
190	63.7	256.0	158,900	
195	62.6	253.4	151,000	
200	61.4	250.6	143,600	
205	60.2	247.8	136,700	
210	59.0	244.8	130,400	
215	57.7	241.6	124,400	
220	56.5	238.3	118,900	
225	55.2	234.9	113,600	
230	53.9	231.2	108,800	
235	52.6	227.4	104,200	
240	51.3	223.4	99,800	
245	49.9	219.3	95,700	
250	48.6	214.9	91,900	
255	47.1	210.3	88,200	
260	45.7	205.4	84,700	
265	44.2	200.3	81,400	
270	42.7	194.9	78,300	
275	41.1	189.2	75,300	
280	39.5	183.2	72,400	
285	37.8	176.8	69,700	
290	36.0	170.0	67,100	
295	34.2	162.7	64,600	
300	32.2	154.9	62,200	
305	30.2	146.5	60,000	
310	28.0	137.3	57,800	
315	25.7	127.2	55,700	
320	23.1	115.9	53,600	
325	20.2	102.9	51,700	
330	16.8	87.5	49,800	

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**BOOM NO. 87A**  
**66' X-TENDER ATTACHMENT**  
**WITH PIVOTING POWERED CRAWLERS**  
**148,400 LB. CRANE COUNTERWEIGHT**  
**60,000 LB. CARBODY COUNTERWEIGHT**

BOOM LGTH. FEET	OPER. RAD. FEET	BOOM ANG. DEG.	BOOM POINT ELEV. FEET	CAPACITY POUNDS
<b>3003</b>	105	83.0	308.0	552,900*
	110	82.1	307.3	533,000
	115	81.1	306.5	473,000
	120	80.1	305.6	424,100
	125	79.2	304.6	383,700
	130	78.2	303.6	349,600
	135	77.2	302.5	320,500
	140	76.2	301.2	295,300
	145	75.2	299.9	273,400
	150	74.2	298.5	254,000
	155	73.2	297.0	236,900
	160	72.2	295.4	221,600
	165	71.2	293.7	207,800
	170	70.2	291.9	195,400
	175	69.2	290.0	184,100
	180	68.2	288.0	173,800
	185	67.1	285.9	164,400
	190	66.1	283.7	155,800
	195	65.0	281.3	147,800
	200	64.0	278.9	140,400
	205	62.9	276.4	133,500
	210	61.8	273.7	127,200
	215	60.7	270.9	121,200
	220	59.6	268.0	115,700
	225	58.5	264.9	110,500
	230	57.4	261.7	105,600
	235	56.2	258.4	101,000
	240	55.1	254.9	96,600
	245	53.9	251.2	92,500
	250	52.7	247.4	88,700
	255	51.5	243.5	85,000
	260	50.2	239.3	81,500
	265	49.0	235.0	78,200
	270	47.7	230.5	75,100
	275	46.3	225.7	72,100
280	45.0	220.7	69,200	
285	43.6	215.5	66,500	
290	42.2	210.0	63,900	
295	40.7	204.3	61,400	
300	39.2	198.2	59,000	
305	37.7	191.8	56,800	
310	36.1	185.0	54,600	
315	34.4	177.8	52,500	
320	32.7	170.1	50,500	
325	30.8	161.9	48,500	
330	28.9	153.0	46,600	
335	26.8	143.3	44,800	
340	24.5	132.6	43,100	
345	22.1	120.7	41,400	
350	19.3	107.1	39,800	
355	16.1	90.9	38,200	

BOOM LGTH. FEET	OPER. RAD. FEET	BOOM ANG. DEG.	BOOM POINT ELEV. FEET	CAPACITY POUNDS
<b>3253</b>	110	82.7	332.5	461,600*
	115	81.8	331.8	461,600*
	120	80.9	331.0	421,400
	125	80.0	330.1	381,000
	130	79.1	329.1	346,900
	135	78.2	328.1	317,700
	140	77.3	327.0	292,600
	145	76.4	325.8	270,600
	150	75.5	324.5	251,300
	155	74.6	323.1	234,100
	160	73.7	321.6	218,800
	165	72.7	320.1	205,100
	170	71.8	318.4	192,600
	175	70.9	316.7	181,300
	180	69.9	314.9	171,100
	185	69.0	312.9	161,600
	190	68.0	310.9	153,000
	195	67.1	308.8	145,000
	200	66.1	306.6	137,600
	205	65.1	304.3	130,700
	210	64.2	301.9	124,400
	215	63.2	299.3	118,400
	220	62.2	296.7	112,900
	225	61.2	293.9	107,600
	230	60.2	291.1	102,800
	235	59.1	288.1	98,200
	240	58.1	285.0	93,800
	245	57.0	281.8	89,700
	250	56.0	278.4	85,800
	255	54.9	274.9	82,200
	260	53.8	271.2	78,700
	265	52.7	267.4	75,400
	270	51.6	263.5	72,300
	275	50.4	259.4	69,300
	280	49.3	255.1	66,400
285	48.1	250.6	63,700	
290	46.9	246.0	61,100	
295	45.7	241.1	58,600	
300	44.4	236.0	56,200	
305	43.1	230.7	54,000	
310	41.8	225.2	51,800	
315	40.5	219.3	49,700	
320	39.1	213.2	47,600	
325	37.6	206.8	45,700	
330	36.1	200.0	43,800	
335	34.6	192.9	42,000	
340	33.0	185.3	40,300	
345	31.3	177.2	38,600	
350	29.6	168.5	37,000	
355	27.7	159.1	35,500	
360	25.7	149.0	34,000	
365	23.5	137.8	32,500	
370	21.2	125.4	31,100	
375	18.5	111.2	29,700	
380	15.4	94.3	28,400	

BOOM LGTH. FEET	OPER. RAD. FEET	BOOM ANG. DEG.	BOOM POINT ELEV. FEET	CAPACITY POUNDS
<b>3503</b>	115	82.4	357.1	385,700*
	120	81.6	356.3	385,700*
	125	80.7	355.5	377,900
	130	79.9	354.6	343,800
	135	79.1	353.6	314,600
	140	78.2	352.6	289,400
	145	77.4	351.5	267,500
	150	76.5	350.3	248,100
	155	75.7	349.0	231,000
	160	74.9	347.6	215,700
	165	74.0	346.2	201,900
	170	73.1	344.7	189,500
	175	72.3	343.1	178,200
	180	71.4	341.4	167,900
	185	70.6	339.6	158,500
	190	69.7	337.8	149,800
	195	68.8	335.9	141,800
	200	67.9	333.8	134,400
	205	67.0	331.7	127,600
	210	66.1	329.5	121,200
	215	65.2	327.2	115,200
	220	64.3	324.8	109,700
	225	63.4	322.3	104,500
	230	62.5	319.7	99,600
	235	61.6	317.0	95,000
	240	60.6	314.2	90,600
	245	59.7	311.3	86,500
	250	58.7	308.2	82,700
	255	57.7	305.1	79,000
	260	56.8	301.8	75,500
	265	55.8	298.4	72,200
	270	54.8	294.9	69,100
	275	53.8	291.2	66,100
	280	52.7	287.4	63,200
	285	51.7	283.5	60,500
290	50.6	279.4	57,900	
295	49.6	275.2	55,400	
300	48.5	270.8	53,000	
305	47.4	266.2	50,800	
310	46.2	261.4	48,600	
315	45.1	256.5	46,500	
320	43.9	251.3	44,500	
325	42.7	245.9	42,500	
330	41.5	240.3	40,600	
335	40.2	234.4	38,800	
340	38.9	228.3	37,100	
345	37.6	221.8	35,400	
350	36.2	215.0	33,800	
355	34.8	207.9	32,300	
360	33.3	200.4	30,800	
365	31.8	192.4	29,300	
370	30.1	183.9	27,900	
375	28.4	174.8	26,600	
380	26.6	165.1	25,200	
385	24.7	154.5	24,000	
390	22.7	142.8	22,700	
395	20.4	129.9	21,500	
400	17.8	115.1	20,300	