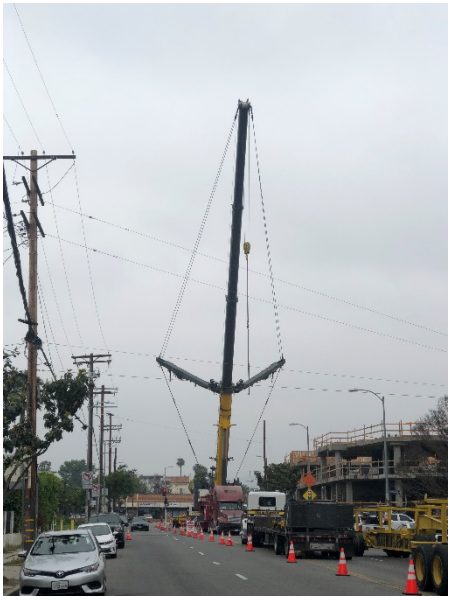
A Crane with Wings!

Executive Summary. Construction equipment is always evolving in its attempt to increase safety and efficiency of construction. One newer technology is the use of "wings" on construction cranes. Learn more about the wings on the Manitowoc® Grove GMK6400 MegaWingLift™ crane here. Our partial analysis showed a lifting capacity increase of up to 68%.



What are "wings"? Shown in the adjacent picture, these wings attach to the main boom and are provided to increase the lifting capacity of the crane. They can be installed without the use of an auxiliary crane. The transport weight of the wings is 24,000 pounds.

How much more capacity? We did not consult Manitowoc®, but based on our analysis of their 297,600 lb counterweight load chart, we calculated up to 68% increased lift capacity.

Manitowoc GMK6400 Grove Main Boom v. MegaWingLift™ Comparison* (297,600 lb counterweight)

	Pounds x 1000											
Feet	Main Boom Only 114.8	Main Boom w/MegaWing Lift™ 114.8	Main Boom Only 130.9	Main Boom w/MegaWing Lift™ 130.9	Main Boom Only 147.0	Main Boom w/MegaWing Lift™ 147.0	Main Boom Only 163.0	Main Boom w/MegaWing Lift™ 163.0	Main Boom Only 179.1	Main Boom w/MegaWing Lift™ 179.1	Main Boom Only 196.9	Main Boom w/MegaWing Lift™ 196.9
25				240.00								
30		226.00	168.00	212.00	147.00	206.00		203.00				
35	206.00	204.00	154.00	196.00	136.00	190.00	120.00	184.00	105.00	168.00		
40	189.00	187.00	143.00	179.00	125.00	172.00	113.00	167.00	102.00	161.00	84.00	141.00
45	172.00	168.00	132.00	165.00	115.00	158.00	105.00	153.00	97.00	147.00	84.00	132.00
50	154.00	151.00	122.00	152.00	106.00	147.00	98.00	141.00	91.00	135.00	82.00	125.00
55	139.00	137.00	114.00	138.00	97.00	137.00	91.00	131.00	85.00	126.00	78.00	118.00
60	126.00	125.00	106.00	125.00	90.00	125.00	85.00	123.00	79.00	117.00	73.00	112.00
65	114.00	113.00	99.00	114.00	84.00	114.00	79.00	113.00	74.00	110.00	69.00	106.00
70	104.00	103.00	94.00	104.00	78.00	104.00	75.00	104.00	70.00	103.00	65.00	100.00
75	95.00	94.00	89.00	95.00	73.00	95.00	70.00	95.00	65.00	94.00	61.00	94.00
80	87.00	86.00	84.00	87.00	69.00	87.00	67.00	87.00	62.00	86.00	57.00	86.00
85	81.00	79.00	80.00	80.00	65.00	80.00	63.00	80.00	58.00	79.00	54.00	79.00
90	75.00	73.00	76.00	74.00	62.00	74.00	60.00	73.00	55.00	73.00	51.00	73.00
95	68.00	64.00	71.00	68.00	59.00	68.00	57.00	68.00	52.00	67.00	48.00	68.00
100			67.00	64.00	56.00	63.00	54.00	63.00	50.00	62.00	46.00	63.00
105			62.00	59.00	54.00	59.00	51.00	58.00	47.00	58.00	43.40	58.00
110			57.00	51.00	51.00	55.00	48.00	54.00	45.00	54.00	41.20	54.00
115			54.00	47.00	49.00	51.00	46.00	51.00	43.20	50.00	39.20	50.00
120					47.00	47.00	43.80	47.00	41.40	47.00	37.40	47.00
125					46.00	41.40	41.80	44.00	39.60	43.40	35.80	44.00
130					44.00	38.00	39.80	41.60	37.80	40.60	34.00	41.20
135							38.20	37.60	36.20	38.00	32.40	38.60
140	THIS CHART						36.80	32.40	34.20	35.60	30.80	36.20
145	SHOULD NOT BE USED TO OPERATE THE CRANE.						35.20	30.60	33.20	33.20	29.40	33.80
150							29.80	22.00	32.00	29.20	28.00	31.80
155									30.80	25.80	26.60	29.80
160									29.40	23.60	25.20	27.60
165											24.00	24.40
170											22.80	20.80
175											21.80	20.40
180											20.80	15.20

Increased capacity using MegaWingLift™ | Decreased capacity using MegaWingLift™

*Data taken from https://www.manitowoccranes.com/~/media/Files/MTW%20Direct/Grove/All%20Terrain/GMK6400/Product%20Guides/GMK6400%20Product%20Guide%20Imperial.pdf.

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% Increase in Load Capacity using MegaWingLift™					
Main Boom w/MegaWingLift™					
130.9	147.0	163.0	179.1	196.9	Feet
					25
126%	140%				30
127%	140%	153%	160%		35
125%	138%	148%	158%	168%	40
125%	137%	146%	152%	157%	45
125%	139%	144%	148%	152%	50
121%	141%	144%	148%	151%	55
118%	139%	145%	148%	153%	60
115%	136%	143%	149%	154%	65
111%	133%	139%	147%	154%	70
107%	130%	136%	145%	154%	75
104%	126%	130%	139%	151%	80
	123%	127%	136%	146%	85
	119%	122%	133%	143%	90
	115%	119%	129%	142%	95
	113%	117%	124%	137%	100
	109%	114%	123%	134%	105
	108%	113%	120%	131%	110
	104%	111%	116%	128%	115
		107%	114%	126%	120
		105%	110%	123%	125
		105%	107%	121%	130
			105%	119%	135
			104%	118%	140
				115%	145
				114%	150
				112%	155
				110%	160
THIS CHART				102%	165
SHOULD NOT BE USED TO OPERATE THE CRANE.					170
					175
					180
					0

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wings!

See our analysis here:

My Story. I was in Koreatown, Los Angeles recently and came upon this beauty shown on the previous page – best hour of my week sipping on coffee and watching these guys set up the rig!

I've used Manitowoc® and Grove products in my career and had fantastic experiences. I've never used this "batwing"-type crane before as some call it. Beyond the added capacity it brings, it is definitely a benefit to not need an additional crane to install this attachment. Without the need for the additional crane just to erect the wings, the customer saves on cost and time of crane erection. Not to mention the savings in time on **not** having to run additional calculations on the addition of crane pick(s) for installing the

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