

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)										
Feet	Pounds x 1000									
	Main Boom Only	Main Boom w/MegaWing Lift™	Main Boom Only	Main Boom w/MegaWing Lift™	Main Boom Only	Main Boom w/MegaWing Lift™	Main Boom Only	Main Boom w/MegaWing Lift™	Main Boom Only	Main Boom w/MegaWing Lift™
	114.8	114.8	130.9	130.9	147.0	147.0	163.0	163.0	179.1	179.1
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
45	172.00	168.00	132.00	165.00	115.00	158.00	105.00	153.00	97.00	147.00
50	154.00	151.00	122.00	152.00	106.00	147.00	98.00	141.00	91.00	135.00
55	139.00	137.00	114.00	138.00	97.00	137.00	91.00	131.00	85.00	126.00
60	126.00	125.00	106.00	125.00	90.00	125.00	85.00	123.00	79.00	117.00
65	114.00	113.00	99.00	114.00	84.00	114.00	79.00	113.00	74.00	110.00
70	104.00	103.00	94.00	104.00	78.00	104.00	75.00	104.00	70.00	103.00
75	95.00	94.00	89.00	95.00	73.00	95.00	70.00	95.00	65.00	94.00
80	87.00	86.00	84.00	87.00	69.00	87.00	67.00	87.00	62.00	86.00
85	81.00	79.00	80.00	80.00	65.00	80.00	63.00	80.00	58.00	79.00
90	75.00	73.00	76.00	74.00	62.00	74.00	60.00	73.00	55.00	73.00
95	68.00	64.00	71.00	68.00	59.00	68.00	57.00	68.00	52.00	67.00
100			67.00	64.00	56.00	63.00	54.00	63.00	50.00	62.00
105			62.00	59.00	54.00	59.00	51.00	58.00	47.00	58.00
110			57.00	51.00	51.00	55.00	48.00	54.00	45.00	54.00
115			54.00	47.00	49.00	51.00	46.00	51.00	43.20	50.00
120					47.00	47.00	43.80	47.00	41.40	47.00
125					46.00	41.40	41.80	44.00	39.60	43.40
130					44.00	38.00	39.80	41.60	37.80	40.60
135							38.20	37.60	36.20	38.00
140	THIS CHART						36.80	32.40	34.20	35.60
145	SHOULD NOT BE USED TO OPERATE THE CRANE.						35.20	30.60	33.20	33.20
150							29.80	22.00	32.00	29.20
155									30.80	25.80
160									29.40	23.60
165										24.00
170										22.80
175										21.80
180										20.80
										15.20
Increased capacity using MegaWingLift™ Decreased capacity using MegaWingLift™										
*Data taken from https://www.manitowocranes.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™					
					Feet
Main Boom w/MegaWingLift™					
130.9	147.0	163.0	179.1	196.9	
126%	140%				25
127%	140%	153%	160%		30
125%	138%	148%	158%	168%	35
125%	137%	146%	152%	157%	40
125%	139%	144%	148%	152%	45
121%	141%	144%	148%	151%	50
118%	139%	145%	148%	153%	55
115%	136%	143%	149%	154%	60
111%	133%	139%	147%	154%	65
107%	130%	136%	145%	154%	70
104%	126%	130%	139%	151%	75
	123%	127%	136%	146%	80
	119%	122%	133%	143%	85
	115%	119%	129%	142%	90
	113%	117%	124%	137%	95
	109%	114%	123%	134%	100
	108%	113%	120%	131%	105
	104%	111%	116%	128%	110
		107%	114%	126%	115
		105%	110%	123%	120
		105%	107%	121%	125
			105%	119%	130
			104%	118%	135
				115%	140
				114%	145
				112%	150
				110%	155
				102%	160
THIS CHART					165
SHOULD NOT BE USED TO OPERATE THE CRANE.					170
					175
					180
					0



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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 wings!