

Liftcrane Boom Capacities With Luffing Jib Attached

Boom No. 76
Luffing Jib No. 135
127,000 lb Crane Counterweight
0 lb Carbody Counterweight
360 Degree Rating



14000 SERIES 1



LIFTING CAPACITIES: Lifting 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 main boom load. Weight of luffing jib and 2,825 lbs suspended beneath luffing jib point sheaves have been included in capacity determination. 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 on a firm uniformly supporting surface with gantry up and bearing turntable level within tolerance of 1/2 in. in 10 ft and properly supported. During operation, luffing jib must be maintained at proper boom to luffing jib angle shown in table. Refer to luffing jib assembly **No. A18387**, Wire Rope Specification chart **No. 8822-A**, Luffing Jib Raising Procedure chart **No. 8799-A**, and Wind Conditions chart **No. 8790-A**. 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. Refer to Operator's Manual for operating guidelines.

MACHINE TRAVEL: Machine to travel on a firm, level and uniformly supporting surface with boom and luffing jib within angle range shown in capacity chart. Refer to Maximum Allowable Travel Specification chart **No. 8809-A**.



OPERATING RADIUS: Operating radius is horizontal distance from axis of rotation to center of vertical hoist line or load block.



BOOM ANGLE: Boom angle in degrees (°) 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 ground level to centerline of boom point shaft.

MACHINE EQUIPMENT: Machine equipped with 27 ft 2 in. crawlers, 48 in. treads, 10 ft 3 in. retractable gantry, 27 ft live mast, 20 part boom hoist reeving, boom support straps, 8 part luffing jib hoist reeving, two 1-1/2 in. luffing jib pendants and backstays, 127,000 lb crane counterweight, and 0 lb carbody counterweight.

Consult Chart **No. 8805-A** for main luffing jib capacities.

Fixed jib No. 138 must be removed before use of this chart.



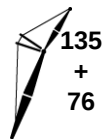
127,000 lb Crane Counterweight
6 Side Boxes - No Center Box

Luffing Jib Position During Operation	
 Luffing Jib Length Feet	 Boom-to-Luffing Jib Angle Degrees
70	140
80 - 90	150
100 - 120	160
130 - 170	168

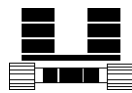
Boom Catwalks Deduct

Deduct 400 lb from capacities when boom catwalks are attached.

Explanation of Symbols



Luffing Jib No. 135
+
Boom No. 76



Crane Counterweight
+
Carbody Counterweight



360 Degree Rating



Operating Radius
(see page 1)



Boom Angle
(see page 1)

**Explanation of Symbols
(continued)**



Boom Point Elevation
(see page 1)



Lifting Capacities
(see page 1)



Boom Length



Luffing Jib Length

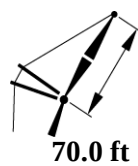
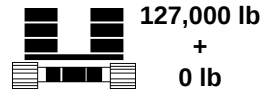
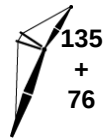


Boom-to-Luffing Jib Angle

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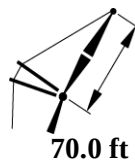
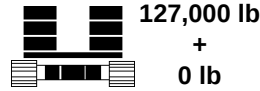
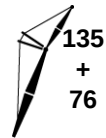
ASME B30.5



ft	°	ft	lb
65.6 ft			
15	82.3	72.7	354,400*
16	81.4	72.5	332,300*
17	80.5	72.3	312,200*
18	79.7	72.1	294,100*
19	78.8	71.9	277,800*
20	77.9	71.7	262,900*
22	76.1	71.1	237,000*
24	74.2	70.5	203,200
26	72.4	69.8	174,300
28	70.5	69.1	151,600

ft	°	ft	lb
75.5 ft			
16	82.6	82.5	332,400*
17	81.8	82.4	312,300*
18	81.0	82.2	294,300*
19	80.2	82.0	277,900*
20	79.5	81.8	263,100*
22	77.9	81.3	237,200*
24	76.3	80.8	204,600
26	74.8	80.2	175,600
28	73.2	79.6	152,900
30	71.6	78.9	134,600

ft	°	ft	lb
85.3 ft			
17	82.7	92.3	305,200*
18	82.1	92.2	294,600*
19	81.4	92.0	278,300*
20	80.7	91.8	263,400*
22	79.3	91.4	237,500*
24	78.0	90.9	205,800
26	76.6	90.4	176,700
28	75.2	89.9	153,900
30	73.8	89.3	135,500
32	72.4	88.6	120,400
34	70.9	87.9	107,800



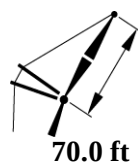
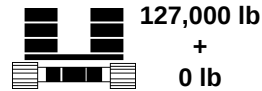
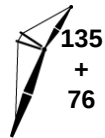
ft	°	ft	lb
95.1 ft			
18	82.9	102.1	293,800*
19	82.3	102.0	278,100*
20	81.7	101.8	263,300*
22	80.5	101.4	237,400*
24	79.2	101.0	206,800
26	78.0	100.6	177,500
28	76.7	100.1	154,600
30	75.5	99.5	136,200
32	74.2	98.9	121,000
34	73.0	98.3	108,400
36	71.7	97.6	97,600
38	70.4	96.9	88,300

ft	°	ft	lb
105.0 ft			
20	82.5	111.8	263,600*
22	81.4	111.4	237,700*
24	80.2	111.1	207,500
26	79.1	110.7	178,200
28	78.0	110.2	155,300
30	76.9	109.7	136,800
32	75.8	109.2	121,600
34	74.6	108.6	108,900
36	73.5	108.0	98,200
38	72.3	107.3	88,900
40	71.2	106.6	80,800

ft	°	ft	lb
114.8 ft			
22	82.1	121.4	237,400*
24	81.1	121.1	208,100
26	80.1	120.7	178,800
28	79.1	120.3	155,700
30	78.0	119.9	137,200
32	77.0	119.4	122,000
34	76.0	118.9	109,200
36	74.9	118.3	98,400
38	73.9	117.7	89,100
40	72.9	117.1	81,000
45	70.2	115.3	64,800

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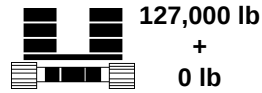
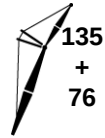
ASME B30.5



ft	°	ft	lb
22	82.7	131.4	234,300*
24	81.8	131.1	208,600
26	80.9	130.7	179,200
28	79.9	130.3	156,100
30	79.0	129.9	137,500
32	78.1	129.5	122,300
34	77.1	129.0	109,500
36	76.2	128.5	98,600
38	75.2	128.0	89,300
40	74.3	127.4	81,200
45	71.8	125.7	65,000

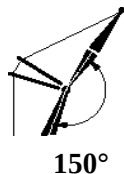
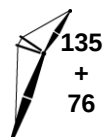
ft	°	ft	lb
24	82.4	141.0	209,100
26	81.5	140.7	179,600
28	80.7	140.4	156,400
30	79.8	140.0	137,800
32	78.9	139.6	122,500
34	78.1	139.1	109,600
36	77.2	138.7	98,800
38	76.3	138.2	89,400
40	75.4	137.6	81,300
45	73.2	136.1	65,000
50	71.0	134.4	52,700

ft	°	ft	lb
24	82.9	151.0	196,600*
26	82.1	150.7	179,800
28	81.3	150.4	156,600
30	80.5	150.0	138,000
32	79.7	149.6	122,600
34	78.9	149.2	109,800
36	78.1	148.8	98,900
38	77.3	148.3	89,600
40	76.5	147.8	81,400
45	74.4	146.4	65,100
50	72.3	144.8	52,800
55	70.2	143.1	43,200



 ft	 °	 ft	 lb
 154.2 ft			
26	82.6	160.6	180,100
28	81.9	160.3	156,900
30	81.1	160.0	138,200
32	80.4	159.6	122,800
34	79.6	159.3	109,900
36	78.9	158.8	99,000
38	78.1	158.4	89,600
40	77.3	157.9	81,400
45	75.4	156.7	65,100
50	73.5	155.2	52,700
55	71.5	153.5	43,100

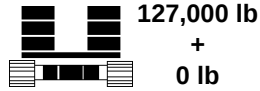
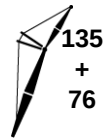
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ft	°	ft	lb
65.6 ft			
15	82.3	72.7	354,500*
16	81.4	72.5	332,200*
17	80.5	72.3	312,000*
18	79.7	72.1	293,800*
19	78.8	71.9	277,300*
20	77.9	71.7	262,300*
22	76.1	71.1	236,100*
24	74.2	70.5	202,300
26	72.4	69.8	173,200
28	70.5	69.1	150,400
30	68.6	68.3	132,100
32	66.7	67.4	117,000
34	64.8	66.4	104,400

ft	°	ft	lb
75.5 ft			
16	82.6	82.5	332,500*
17	81.8	82.4	312,300*
18	81.0	82.2	294,100*
19	80.2	82.0	277,700*
20	79.5	81.8	262,700*
22	77.9	81.3	236,600*
24	76.3	80.8	204,100
26	74.8	80.2	174,900
28	73.2	79.6	152,000
30	71.6	78.9	133,500
32	69.9	78.1	118,400
34	68.3	77.3	105,700
36	66.6	76.4	94,900
38	64.9	75.4	85,700

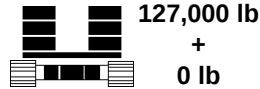
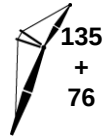
ft	°	ft	lb
85.3 ft			
17	82.7	92.3	305,000*
18	82.1	92.2	294,600*
19	81.4	92.0	278,100*
20	80.7	91.8	263,200*
22	79.3	91.4	237,100*
24	78.0	90.9	205,500
26	76.6	90.4	176,200
28	75.2	89.9	153,200
30	73.8	89.3	134,700
32	72.4	88.6	119,500
34	70.9	87.9	106,800
36	69.5	87.1	96,000
38	68.0	86.3	86,700
40	66.6	85.4	78,600



ft	°	ft	lb
95.1 ft			
18	82.9	102.1	293,500*
19	82.3	102.0	278,100*
20	81.7	101.8	263,100*
22	80.5	101.4	237,100*
24	79.2	101.0	206,600
26	78.0	100.6	177,200
28	76.7	100.1	154,100
30	75.5	99.5	135,600
32	74.2	98.9	120,300
34	73.0	98.3	107,500
36	71.7	97.6	96,700
38	70.4	96.9	87,300
40	69.1	96.1	79,200
45	65.8	93.9	63,000

ft	°	ft	lb
105.0 ft			
20	82.5	111.8	263,600*
22	81.4	111.4	237,500*
24	80.2	111.1	207,500
26	79.1	110.7	178,000
28	78.0	110.2	154,900
30	76.9	109.7	136,300
32	75.8	109.2	121,000
34	74.6	108.6	108,200
36	73.5	108.0	97,400
38	72.3	107.3	88,000
40	71.2	106.6	79,900
45	68.2	104.7	63,600
50	65.2	102.4	51,300

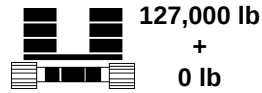
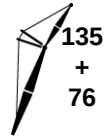
ft	°	ft	lb
114.8 ft			
22	82.1	121.4	237,200*
24	81.1	121.1	208,300
26	80.1	120.7	178,700
28	79.1	120.3	155,500
30	78.0	119.9	136,800
32	77.0	119.4	121,500
34	76.0	118.9	108,600
36	74.9	118.3	97,700
38	73.9	117.7	88,400
40	72.9	117.1	80,200
45	70.2	115.3	63,900
50	67.5	113.2	51,500
55	64.8	110.9	41,900

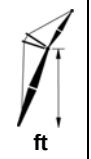


ft	°	ft	lb
124.7 ft			
22	82.7	131.4	234,500*
24	81.8	131.1	208,900
26	80.9	130.7	179,200
28	79.9	130.3	156,000
30	79.0	129.9	137,200
32	78.1	129.5	121,900
34	77.1	129.0	109,000
36	76.2	128.5	98,000
38	75.2	128.0	88,700
40	74.3	127.4	80,500
45	71.8	125.7	64,100
50	69.4	123.9	51,800
55	66.9	121.8	42,100
60	64.3	119.4	34,400

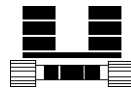
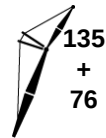
ft	°	ft	lb
134.5 ft			
24	82.4	141.0	209,500
26	81.5	140.7	179,700
28	80.7	140.4	156,400
30	79.8	140.0	137,600
32	78.9	139.6	122,100
34	78.1	139.1	109,200
36	77.2	138.7	98,300
38	76.3	138.2	88,800
40	75.4	137.6	80,600
45	73.2	136.1	64,200
50	71.0	134.4	51,800
55	68.7	132.5	42,100
60	66.4	130.3	34,400

ft	°	ft	lb
144.4 ft			
24	82.9	151.0	196,600*
26	82.1	150.7	179,900
28	81.3	150.4	156,600
30	80.5	150.0	137,800
32	79.7	149.6	122,400
34	78.9	149.2	109,500
36	78.1	148.8	98,500
38	77.3	148.3	89,100
40	76.5	147.8	80,900
45	74.4	146.4	64,400
50	72.3	144.8	52,000
55	70.2	143.1	42,300
60	68.1	141.1	34,600
65	65.9	138.8	28,200



 ft	 °	 ft	 lb
 154.2 ft			
26	82.6	160.6	180,300
28	81.9	160.3	156,900
30	81.1	160.0	138,100
32	80.4	159.6	122,600
34	79.6	159.3	109,600
36	78.9	158.8	98,600
38	78.1	158.4	89,100
40	77.3	157.9	80,900
45	75.4	156.7	64,400
50	73.5	155.2	52,000
55	71.5	153.5	42,300
60	69.5	151.7	34,500
65	67.5	149.6	28,100
70	65.5	147.4	22,800

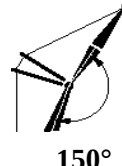
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127,000 lb
+
0 lb



90.0 ft

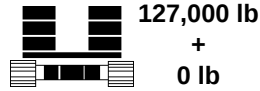
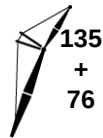


150°

ft	°	ft	lb
65.6 ft			
15	82.3	72.7	350,300*
16	81.4	72.5	327,800*
17	80.5	72.3	307,600*
18	79.7	72.1	289,500*
19	78.8	71.9	273,200*
20	77.9	71.7	258,300*
22	76.1	71.1	232,300*
24	74.2	70.5	197,700
26	72.4	69.8	169,000
28	70.5	69.1	146,500
30	68.6	68.3	128,400
32	66.7	67.4	113,600
34	64.8	66.4	101,100

ft	°	ft	lb
75.5 ft			
16	82.6	82.5	328,100*
17	81.8	82.4	308,000*
18	81.0	82.2	290,000*
19	80.2	82.0	273,600*
20	79.5	81.8	258,800*
22	77.9	81.3	232,800*
24	76.3	80.8	199,600
26	74.8	80.2	170,800
28	73.2	79.6	148,200
30	71.6	78.9	130,000
32	69.9	78.1	115,100
34	68.3	77.3	102,600
36	66.6	76.4	91,900
38	64.9	75.4	82,800

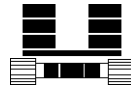
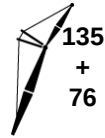
ft	°	ft	lb
85.3 ft			
17	82.7	92.3	302,500*
18	82.1	92.2	290,500*
19	81.4	92.0	274,200*
20	80.7	91.8	259,400*
22	79.3	91.4	233,400*
24	78.0	90.9	201,200
26	76.6	90.4	172,200
28	75.2	89.9	149,600
30	73.8	89.3	131,300
32	72.4	88.6	116,300
34	70.9	87.9	103,700
36	69.5	87.1	93,100
38	68.0	86.3	83,900
40	66.6	85.4	76,000



ft	°	ft	lb
95.1 ft			
18	82.9	102.1	290,500*
19	82.3	102.0	274,200*
20	81.7	101.8	259,400*
22	80.5	101.4	233,500*
24	79.2	101.0	202,400
26	78.0	100.6	173,300
28	76.7	100.1	150,600
30	75.5	99.5	132,200
32	74.2	98.9	117,200
34	73.0	98.3	104,600
36	71.7	97.6	93,900
38	70.4	96.9	84,700
40	69.1	96.1	76,700
45	65.8	93.9	60,600

ft	°	ft	lb
105.0 ft			
20	82.5	111.8	259,900*
22	81.4	111.4	234,000*
24	80.2	111.1	203,300
26	79.1	110.7	174,200
28	78.0	110.2	151,400
30	76.9	109.7	133,100
32	75.8	109.2	118,000
34	74.6	108.6	105,300
36	73.5	108.0	94,600
38	72.3	107.3	85,400
40	71.2	106.6	77,400
45	68.2	104.7	61,300
50	65.2	102.4	49,200

ft	°	ft	lb
114.8 ft			
22	82.1	121.4	233,800*
24	81.1	121.1	204,200
26	80.1	120.7	175,000
28	79.1	120.3	152,100
30	78.0	119.9	133,700
32	77.0	119.4	118,500
34	76.0	118.9	105,800
36	74.9	118.3	95,100
38	73.9	117.7	85,800
40	72.9	117.1	77,800
45	70.2	115.3	61,600
50	67.5	113.2	49,500
55	64.8	110.9	40,000



127,000 lb
+
0 lb



90.0 ft

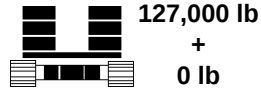
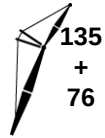


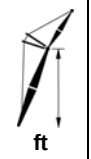
150°

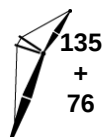
ft	°	ft	lb
124.7 ft			
22	82.7	131.4	232,000*
24	81.8	131.1	204,800
26	80.9	130.7	175,500
28	79.9	130.3	152,600
30	79.0	129.9	134,100
32	78.1	129.5	118,900
34	77.1	129.0	106,200
36	76.2	128.5	95,400
38	75.2	128.0	86,200
40	74.3	127.4	78,100
45	71.8	125.7	61,900
50	69.4	123.9	49,700
55	66.9	121.8	40,200
60	64.3	119.4	32,600

ft	°	ft	lb
134.5 ft			
24	82.4	141.0	205,500
26	81.5	140.7	176,100
28	80.7	140.4	153,000
30	79.8	140.0	134,500
32	78.9	139.6	119,300
34	78.1	139.1	106,500
36	77.2	138.7	95,700
38	76.3	138.2	86,400
40	75.4	137.6	78,300
45	73.2	136.1	62,000
50	71.0	134.4	49,800
55	68.7	132.5	40,300
60	66.4	130.3	32,600

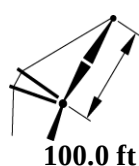
ft	°	ft	lb
144.4 ft			
24	82.9	151.0	194,400*
26	82.1	150.7	176,400
28	81.3	150.4	153,300
30	80.5	150.0	134,800
32	79.7	149.6	119,500
34	78.9	149.2	106,800
36	78.1	148.8	95,900
38	77.3	148.3	86,600
40	76.5	147.8	78,500
45	74.4	146.4	62,300
50	72.3	144.8	50,100
55	70.2	143.1	40,500
60	68.1	141.1	32,900
65	65.9	138.8	26,600



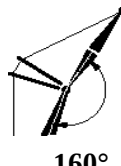
 ft	 °	 ft	 lb
 154.2 ft			
26	82.6	160.6	176,800
28	81.9	160.3	153,700
30	81.1	160.0	135,100
32	80.4	159.6	119,800
34	79.6	159.3	107,000
36	78.9	158.8	96,100
38	78.1	158.4	86,800
40	77.3	157.9	78,600
45	75.4	156.7	62,300
50	73.5	155.2	50,100
55	71.5	153.5	40,500
60	69.5	151.7	32,800
65	67.5	149.6	26,500
70	65.5	147.4	21,200



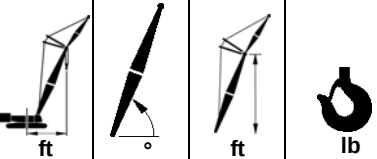
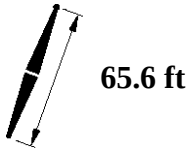
127,000 lb
+
0 lb

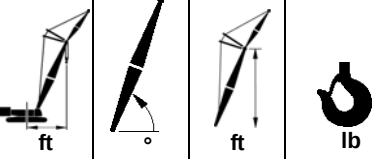
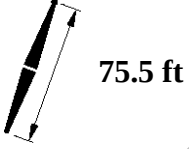


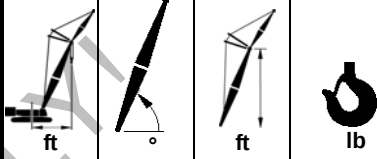
100.0 ft

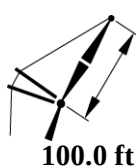
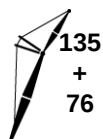


160°

			
			
15	82.3	72.7	353,600*
16	81.4	72.5	330,800*
17	80.5	72.3	310,300*
18	79.7	72.1	291,900*
19	78.8	71.9	275,200*
20	77.9	71.7	260,100*
22	76.1	71.1	233,600*
24	74.2	70.5	199,500
26	72.4	69.8	170,200
28	70.5	69.1	147,200
30	68.6	68.3	128,800
32	66.7	67.4	113,600
34	64.8	66.4	100,900
36	62.8	65.3	90,100
38	60.8	64.2	80,800
40	58.7	62.9	72,800

			
			
16	82.6	82.5	331,400*
17	81.8	82.4	310,900*
18	81.0	82.2	292,500*
19	80.2	82.0	275,900*
20	79.5	81.8	260,800*
22	77.9	81.3	234,400*
24	76.3	80.8	201,800
26	74.8	80.2	172,300
28	73.2	79.6	149,300
30	71.6	78.9	130,700
32	69.9	78.1	115,500
34	68.3	77.3	102,700
36	66.6	76.4	91,900
38	64.9	75.4	82,500
40	63.2	74.3	74,400
45	58.8	71.4	58,200

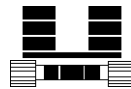
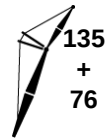
			
			
17	82.7	92.3	304,200*
18	82.1	92.2	293,300*
19	81.4	92.0	276,700*
20	80.7	91.8	261,600*
22	79.3	91.4	235,200*
24	78.0	90.9	203,600
26	76.6	90.4	174,100
28	75.2	89.9	150,900
30	73.8	89.3	132,300
32	72.4	88.6	117,000
34	70.9	87.9	104,200
36	69.5	87.1	93,300
38	68.0	86.3	83,900
40	66.6	85.4	75,800
45	62.8	82.8	59,500
50	58.9	79.9	47,200



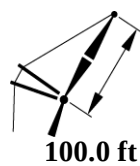
ft	°	ft	lb
95.1 ft			
18	82.9	102.1	292,600*
19	82.3	102.0	276,800*
20	81.7	101.8	261,800*
22	80.5	101.4	235,400*
24	79.2	101.0	205,000
26	78.0	100.6	175,400
28	76.7	100.1	152,200
30	75.5	99.5	133,500
32	74.2	98.9	118,100
34	73.0	98.3	105,200
36	71.7	97.6	94,300
38	70.4	96.9	84,900
40	69.1	96.1	76,700
45	65.8	93.9	60,300
50	62.5	91.3	48,000
55	59.0	88.3	38,400

ft	°	ft	lb
105.0 ft			
20	82.5	111.8	262,400*
22	81.4	111.4	236,100*
24	80.2	111.1	206,100
26	79.1	110.7	176,400
28	78.0	110.2	153,200
30	76.9	109.7	134,400
32	75.8	109.2	119,100
34	74.6	108.6	106,200
36	73.5	108.0	95,200
38	72.3	107.3	85,800
40	71.2	106.6	77,600
45	68.2	104.7	61,200
50	65.2	102.4	48,900
55	62.2	99.8	39,200
60	59.0	96.8	31,500

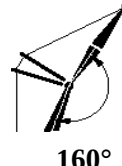
ft	°	ft	lb
114.8 ft			
22	82.1	121.4	235,900*
24	81.1	121.1	207,100
26	80.1	120.7	177,300
28	79.1	120.3	154,000
30	78.0	119.9	135,200
32	77.0	119.4	119,700
34	76.0	118.9	106,800
36	74.9	118.3	95,800
38	73.9	117.7	86,400
40	72.9	117.1	78,200
45	70.2	115.3	61,700
50	67.5	113.2	49,300
55	64.8	110.9	39,600
60	61.9	108.3	31,800
65	59.0	105.3	25,400



127,000 lb
+
0 lb



100.0 ft

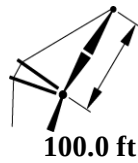
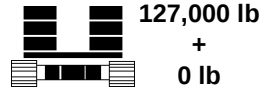
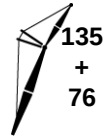


160°

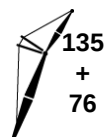
ft	°	ft	lb
22	82.7	131.4	233,900*
24	81.8	131.1	207,900
26	80.9	130.7	178,000
28	79.9	130.3	154,600
30	79.0	129.9	135,800
32	78.1	129.5	120,300
34	77.1	129.0	107,300
36	76.2	128.5	96,300
38	75.2	128.0	86,800
40	74.3	127.4	78,600
45	71.8	125.7	62,100
50	69.4	123.9	49,600
55	66.9	121.8	39,900
60	64.3	119.4	32,100
65	61.7	116.7	25,800
70	59.1	113.8	20,400

ft	°	ft	lb
24	82.4	141.0	208,600
26	81.5	140.7	178,700
28	80.7	140.4	155,200
30	79.8	140.0	136,200
32	78.9	139.6	120,700
34	78.1	139.1	107,700
36	77.2	138.7	96,600
38	76.3	138.2	87,100
40	75.4	137.6	78,900
45	73.2	136.1	62,300
50	71.0	134.4	49,800
55	68.7	132.5	40,100
60	66.4	130.3	32,300
65	64.0	127.9	25,900
70	61.6	125.2	20,500
75	59.1	122.3	16,000

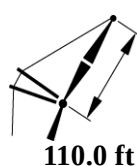
ft	°	ft	lb
24	82.9	151.0	196,000*
26	82.1	150.7	179,000
28	81.3	150.4	155,500
30	80.5	150.0	136,600
32	79.7	149.6	121,100
34	78.9	149.2	108,000
36	78.1	148.8	97,000
38	77.3	148.3	87,500
40	76.5	147.8	79,200
45	74.4	146.4	62,700
50	72.3	144.8	50,200
55	70.2	143.1	40,400
60	68.1	141.1	32,600
65	65.9	138.8	26,200
70	63.7	136.4	20,800
75	61.4	133.7	16,300
80	59.1	130.7	12,400



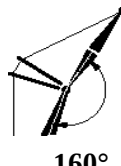
			
 154.2 ft			
26	82.6	160.6	179,600
28	81.9	160.3	156,000
30	81.1	160.0	137,000
32	80.4	159.6	121,400
34	79.6	159.3	108,300
36	78.9	158.8	97,200
38	78.1	158.4	87,700
40	77.3	157.9	79,400
45	75.4	156.7	62,800
50	73.5	155.2	50,200
55	71.5	153.5	40,500
60	69.5	151.7	32,600
65	67.5	149.6	26,200
70	65.5	147.4	20,800
75	63.4	144.9	16,300



127,000 lb
+
0 lb



110.0 ft

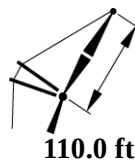
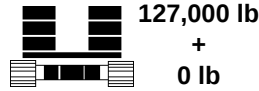
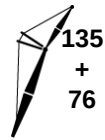


160°

ft	°	ft	lb
15	82.3	72.7	350,500*
16	81.4	72.5	327,700*
17	80.5	72.3	307,300*
18	79.7	72.1	289,000*
19	78.8	71.9	272,400*
20	77.9	71.7	257,300*
22	76.1	71.1	230,900*
24	74.2	70.5	196,000
26	72.4	69.8	167,000
28	70.5	69.1	144,300
30	68.6	68.3	126,100
32	66.7	67.4	111,000
34	64.8	66.4	98,400
36	62.8	65.3	87,800
38	60.8	64.2	78,600
40	58.7	62.9	70,600

ft	°	ft	lb
16	82.6	82.5	328,400*
17	81.8	82.4	308,000*
18	81.0	82.2	289,700*
19	80.2	82.0	273,200*
20	79.5	81.8	258,200*
22	77.9	81.3	231,900*
24	76.3	80.8	198,500
26	74.8	80.2	169,400
28	73.2	79.6	146,500
30	71.6	78.9	128,200
32	69.9	78.1	113,000
34	68.3	77.3	100,400
36	66.6	76.4	89,700
38	64.9	75.4	80,400
40	63.2	74.3	72,400
45	58.8	71.4	56,300

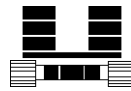
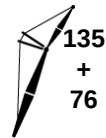
ft	°	ft	lb
17	82.7	92.3	302,000*
18	82.1	92.2	290,500*
19	81.4	92.0	274,000*
20	80.7	91.8	259,000*
22	79.3	91.4	232,800*
24	78.0	90.9	200,400
26	76.6	90.4	171,200
28	75.2	89.9	148,300
30	73.8	89.3	129,800
32	72.4	88.6	114,700
34	70.9	87.9	102,000
36	69.5	87.1	91,200
38	68.0	86.3	81,900
40	66.6	85.4	73,900
45	62.8	82.8	57,700
50	58.9	79.9	45,600



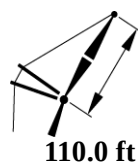
ft	°	ft	lb
95.1 ft			
18	82.9	102.1	290,600*
19	82.3	102.0	274,200*
20	81.7	101.8	259,200*
22	80.5	101.4	233,000*
24	79.2	101.0	202,000
26	78.0	100.6	172,600
28	76.7	100.1	149,600
30	75.5	99.5	131,100
32	74.2	98.9	115,900
34	73.0	98.3	103,100
36	71.7	97.6	92,300
38	70.4	96.9	83,000
40	69.1	96.1	74,900
45	65.8	93.9	58,700
50	62.5	91.3	46,500
55	59.0	88.3	36,900

ft	°	ft	lb
105.0 ft			
20	82.5	111.8	259,900*
22	81.4	111.4	233,700*
24	80.2	111.1	203,200
26	79.1	110.7	173,800
28	78.0	110.2	150,700
30	76.9	109.7	132,200
32	75.8	109.2	116,900
34	74.6	108.6	104,100
36	73.5	108.0	93,300
38	72.3	107.3	84,000
40	71.2	106.6	75,900
45	68.2	104.7	59,600
50	65.2	102.4	47,400
55	62.2	99.8	37,800
60	59.0	96.8	30,200

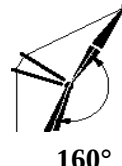
ft	°	ft	lb
114.8 ft			
22	82.1	121.4	233,700*
24	81.1	121.1	204,200
26	80.1	120.7	174,700
28	79.1	120.3	151,600
30	78.0	119.9	133,000
32	77.0	119.4	117,600
34	76.0	118.9	104,800
36	74.9	118.3	93,900
38	73.9	117.7	84,600
40	72.9	117.1	76,500
45	70.2	115.3	60,100
50	67.5	113.2	47,800
55	64.8	110.9	38,300
60	61.9	108.3	30,600
65	59.0	105.3	24,300



127,000 lb
+
0 lb



110.0 ft

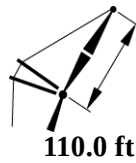
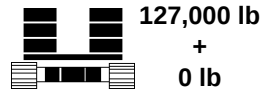
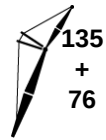


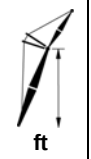
160°

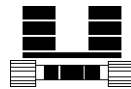
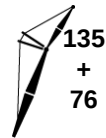
ft	°	ft	lb
124.7 ft			
22	82.7	131.4	231,700*
24	81.8	131.1	205,100
26	80.9	130.7	175,500
28	79.9	130.3	152,300
30	79.0	129.9	133,600
32	78.1	129.5	118,200
34	77.1	129.0	105,400
36	76.2	128.5	94,500
38	75.2	128.0	85,100
40	74.3	127.4	76,900
45	71.8	125.7	60,600
50	69.4	123.9	48,300
55	66.9	121.8	38,600
60	64.3	119.4	30,900
65	61.7	116.7	24,600
70	59.1	113.8	19,300

ft	°	ft	lb
134.5 ft			
24	82.4	141.0	205,900
26	81.5	140.7	176,200
28	80.7	140.4	152,900
30	79.8	140.0	134,100
32	78.9	139.6	118,700
34	78.1	139.1	105,800
36	77.2	138.7	94,900
38	76.3	138.2	85,400
40	75.4	137.6	77,300
45	73.2	136.1	60,800
50	71.0	134.4	48,500
55	68.7	132.5	38,800
60	66.4	130.3	31,100
65	64.0	127.9	24,700
70	61.6	125.2	19,400
75	59.1	122.3	15,000

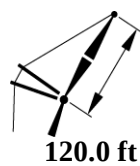
ft	°	ft	lb
144.4 ft			
24	82.9	151.0	194,000*
26	82.1	150.7	176,600
28	81.3	150.4	153,300
30	80.5	150.0	134,500
32	79.7	149.6	119,100
34	78.9	149.2	106,200
36	78.1	148.8	95,300
38	77.3	148.3	85,800
40	76.5	147.8	77,700
45	74.4	146.4	61,200
50	72.3	144.8	48,900
55	70.2	143.1	39,200
60	68.1	141.1	31,500
65	65.9	138.8	25,100
70	63.7	136.4	19,800
75	61.4	133.7	15,300



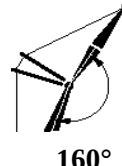
			
ft	°	ft	lb
 154.2 ft			
26	82.6	160.6	177,100
28	81.9	160.3	153,800
30	81.1	160.0	134,900
32	80.4	159.6	119,500
34	79.6	159.3	106,500
36	78.9	158.8	95,500
38	78.1	158.4	86,100
40	77.3	157.9	77,900
45	75.4	156.7	61,400
50	73.5	155.2	49,000
55	71.5	153.5	39,300
60	69.5	151.7	31,500
65	67.5	149.6	25,100
70	65.5	147.4	19,800
75	63.4	144.9	15,300



127,000 lb
+
0 lb



120.0 ft

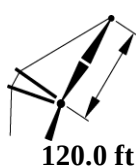
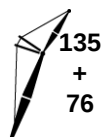


160°

ft	°	ft	lb
65.6 ft			
15	82.3	72.7	345,800*
16	81.4	72.5	323,100*
17	80.5	72.3	302,800*
18	79.7	72.1	284,500*
19	78.8	71.9	268,000*
20	77.9	71.7	253,000*
22	76.1	71.1	226,800*
24	74.2	70.5	191,100
26	72.4	69.8	162,500
28	70.5	69.1	140,000
30	68.6	68.3	122,000
32	66.7	67.4	107,100
34	64.8	66.4	94,700
36	62.8	65.3	84,100
38	60.8	64.2	75,100
40	58.7	62.9	67,200

ft	°	ft	lb
75.5 ft			
16	82.6	82.5	323,900*
17	81.8	82.4	303,700*
18	81.0	82.2	285,500*
19	80.2	82.0	269,000*
20	79.5	81.8	254,000*
22	77.9	81.3	227,900*
24	76.3	80.8	193,800
26	74.8	80.2	165,000
28	73.2	79.6	142,400
30	71.6	78.9	124,300
32	69.9	78.1	109,300
34	68.3	77.3	96,800
36	66.6	76.4	86,200
38	64.9	75.4	77,100
40	63.2	74.3	69,200
45	58.8	71.4	53,300

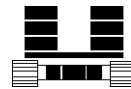
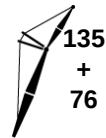
ft	°	ft	lb
85.3 ft			
17	82.7	92.3	299,000*
18	82.1	92.2	286,400*
19	81.4	92.0	269,900*
20	80.7	91.8	255,000*
22	79.3	91.4	228,900*
24	78.0	90.9	195,900
26	76.6	90.4	167,000
28	75.2	89.9	144,400
30	73.8	89.3	126,100
32	72.4	88.6	111,100
34	70.9	87.9	98,600
36	69.5	87.1	87,900
38	68.0	86.3	78,800
40	66.6	85.4	70,800
45	62.8	82.8	54,900
50	58.9	79.9	42,800



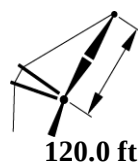
18	82.9	102.1	286,700*
19	82.3	102.0	270,300*
20	81.7	101.8	255,400*
22	80.5	101.4	229,300*
24	79.2	101.0	197,600
26	78.0	100.6	168,600
28	76.7	100.1	145,800
30	75.5	99.5	127,500
32	74.2	98.9	112,500
34	73.0	98.3	99,800
36	71.7	97.6	89,100
38	70.4	96.9	79,900
40	69.1	96.1	72,000
45	65.8	93.9	55,900
50	62.5	91.3	43,800
55	59.0	88.3	34,400

20	82.5	111.8	256,100*
22	81.4	111.4	230,100*
24	80.2	111.1	199,000
26	79.1	110.7	169,900
28	78.0	110.2	147,100
30	76.9	109.7	128,700
32	75.8	109.2	113,600
34	74.6	108.6	101,000
36	73.5	108.0	90,300
38	72.3	107.3	81,000
40	71.2	106.6	73,000
45	68.2	104.7	57,000
50	65.2	102.4	44,900
55	62.2	99.8	35,400
60	59.0	96.8	27,800

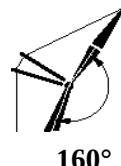
22	82.1	121.4	230,000*
24	81.1	121.1	200,100
26	80.1	120.7	170,900
28	79.1	120.3	148,000
30	78.0	119.9	129,600
32	77.0	119.4	114,400
34	76.0	118.9	101,800
36	74.9	118.3	91,000
38	73.9	117.7	81,700
40	72.9	117.1	73,700
45	70.2	115.3	57,600
50	67.5	113.2	45,400
55	64.8	110.9	35,900
60	61.9	108.3	28,300
65	59.0	105.3	22,100



127,000 lb
+
0 lb



120.0 ft

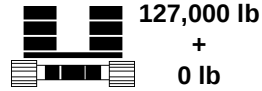
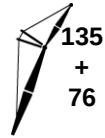


160°

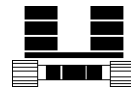
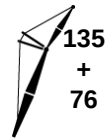
ft	°	ft	lb
22	82.7	131.4	228,800*
24	81.8	131.1	201,000
26	80.9	130.7	171,700
28	79.9	130.3	148,800
30	79.0	129.9	130,300
32	78.1	129.5	115,100
34	77.1	129.0	102,400
36	76.2	128.5	91,600
38	75.2	128.0	82,300
40	74.3	127.4	74,300
45	71.8	125.7	58,100
50	69.4	123.9	45,900
55	66.9	121.8	36,400
60	64.3	119.4	28,700
65	61.7	116.7	22,500
70	59.1	113.8	17,300

ft	°	ft	lb
24	82.4	141.0	201,900
26	81.5	140.7	172,500
28	80.7	140.4	149,400
30	79.8	140.0	130,900
32	78.9	139.6	115,600
34	78.1	139.1	102,900
36	77.2	138.7	92,000
38	76.3	138.2	82,700
40	75.4	137.6	74,600
45	73.2	136.1	58,400
50	71.0	134.4	46,200
55	68.7	132.5	36,600
60	66.4	130.3	29,000
65	64.0	127.9	22,700
70	61.6	125.2	17,400
75	59.1	122.3	13,000

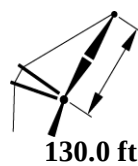
ft	°	ft	lb
24	82.9	151.0	191,300*
26	82.1	150.7	173,000
28	81.3	150.4	149,900
30	80.5	150.0	131,400
32	79.7	149.6	116,100
34	78.9	149.2	103,300
36	78.1	148.8	92,500
38	77.3	148.3	83,200
40	76.5	147.8	75,100
45	74.4	146.4	58,800
50	72.3	144.8	46,600
55	70.2	143.1	37,000
60	68.1	141.1	29,400
65	65.9	138.8	23,100
70	63.7	136.4	17,900
75	61.4	133.7	13,400



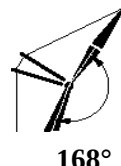
			
 154.2 ft			
26	82.6	160.6	173,600
28	81.9	160.3	150,500
30	81.1	160.0	131,800
32	80.4	159.6	116,500
34	79.6	159.3	103,700
36	78.9	158.8	92,800
38	78.1	158.4	83,500
40	77.3	157.9	75,300
45	75.4	156.7	59,000
50	73.5	155.2	46,700
55	71.5	153.5	37,200
60	69.5	151.7	29,500
65	67.5	149.6	23,200
70	65.5	147.4	17,900



127,000 lb
+
0 lb



130.0 ft

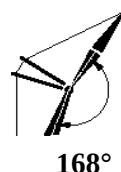
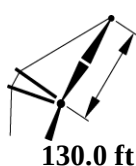
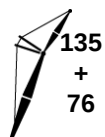


168°

ft	°	ft	lb
15	82.3	72.7	352,100*
16	81.4	72.5	328,900*
17	80.5	72.3	308,100*
18	79.7	72.1	289,400*
19	78.8	71.9	272,500*
20	77.9	71.7	257,100*
22	76.1	71.1	230,200*
24	74.2	70.5	195,300
26	72.4	69.8	165,800
28	70.5	69.1	142,700
30	68.6	68.3	124,100
32	66.7	67.4	108,800
34	64.8	66.4	96,000
36	62.8	65.3	85,100
38	60.8	64.2	75,700
40	58.7	62.9	67,600
45	53.3	59.3	51,200

ft	°	ft	lb
16	82.6	82.5	329,900*
17	81.8	82.4	309,200*
18	81.0	82.2	290,500*
19	80.2	82.0	273,700*
20	79.5	81.8	258,400*
22	77.9	81.3	231,600*
24	76.3	80.8	198,400
26	74.8	80.2	168,700
28	73.2	79.6	145,500
30	71.6	78.9	126,800
32	69.9	78.1	111,400
34	68.3	77.3	98,500
36	66.6	76.4	87,600
38	64.9	75.4	78,200
40	63.2	74.3	70,000
45	58.8	71.4	53,600
50	54.2	67.8	41,200

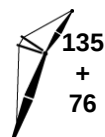
ft	°	ft	lb
17	82.7	92.3	302,700*
18	82.1	92.2	291,600*
19	81.4	92.0	274,800*
20	80.7	91.8	259,500*
22	79.3	91.4	232,800*
24	78.0	90.9	200,800
26	76.6	90.4	171,000
28	75.2	89.9	147,700
30	73.8	89.3	128,900
32	72.4	88.6	113,500
34	70.9	87.9	100,600
36	69.5	87.1	89,600
38	68.0	86.3	80,100
40	66.6	85.4	71,900
45	62.8	82.8	55,500
50	58.9	79.9	43,000
55	54.8	76.4	33,300



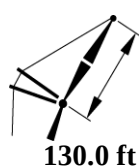
ft	°	ft	lb
95.1 ft			
18	82.9	102.1	291,200*
19	82.3	102.0	275,300*
20	81.7	101.8	260,000*
22	80.5	101.4	233,300*
24	79.2	101.0	202,700
26	78.0	100.6	172,800
28	76.7	100.1	149,400
30	75.5	99.5	130,500
32	74.2	98.9	115,000
34	73.0	98.3	102,000
36	71.7	97.6	91,000
38	70.4	96.9	81,500
40	69.1	96.1	73,300
45	65.8	93.9	56,800
50	62.5	91.3	44,300
55	59.0	88.3	34,600
60	55.3	84.9	26,700
65	51.5	81.0	20,300

ft	°	ft	lb
105.0 ft			
20	82.5	111.8	260,900*
22	81.4	111.4	234,300*
24	80.2	111.1	204,200
26	79.1	110.7	174,300
28	78.0	110.2	150,800
30	76.9	109.7	131,900
32	75.8	109.2	116,400
34	74.6	108.6	103,400
36	73.5	108.0	92,300
38	72.3	107.3	82,800
40	71.2	106.6	74,600
45	68.2	104.7	58,000
50	65.2	102.4	45,500
55	62.2	99.8	35,800
60	59.0	96.8	28,000
65	55.7	93.5	21,500
70	52.3	89.7	16,200

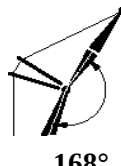
ft	°	ft	lb
114.8 ft			
22	82.1	121.4	234,300*
24	81.1	121.1	205,500
26	80.1	120.7	175,500
28	79.1	120.3	151,900
30	78.0	119.9	132,900
32	77.0	119.4	117,300
34	76.0	118.9	104,300
36	74.9	118.3	93,200
38	73.9	117.7	83,700
40	72.9	117.1	75,400
45	70.2	115.3	58,700
50	67.5	113.2	46,200
55	64.8	110.9	36,400
60	61.9	108.3	28,600
65	59.0	105.3	22,100
70	56.0	102.0	16,800
75	52.9	98.3	12,200



127,000 lb
+
0 lb



130.0 ft

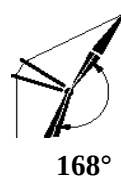
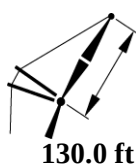
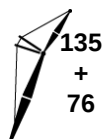


168°

ft	°	ft	lb
124.7 ft			
22	82.7	131.4	232,600*
24	81.8	131.1	206,600
26	80.9	130.7	176,400
28	79.9	130.3	152,800
30	79.0	129.9	133,800
32	78.1	129.5	118,100
34	77.1	129.0	105,000
36	76.2	128.5	93,900
38	75.2	128.0	84,400
40	74.3	127.4	76,100
45	71.8	125.7	59,400
50	69.4	123.9	46,800
55	66.9	121.8	37,000
60	64.3	119.4	29,200
65	61.7	116.7	22,700
70	59.1	113.8	17,300
75	56.3	110.5	12,700

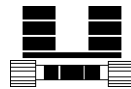
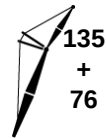
ft	°	ft	lb
134.5 ft			
24	82.4	141.0	207,500
26	81.5	140.7	177,300
28	80.7	140.4	153,500
30	79.8	140.0	134,500
32	78.9	139.6	118,800
34	78.1	139.1	105,600
36	77.2	138.7	94,500
38	76.3	138.2	84,900
40	75.4	137.6	76,500
45	73.2	136.1	59,800
50	71.0	134.4	47,200
55	68.7	132.5	37,400
60	66.4	130.3	29,500
65	64.0	127.9	23,000
70	61.6	125.2	17,600
75	59.1	122.3	13,000

ft	°	ft	lb
144.4 ft			
24	82.9	151.0	194,700*
26	82.1	150.7	177,800
28	81.3	150.4	154,100
30	80.5	150.0	135,000
32	79.7	149.6	119,300
34	78.9	149.2	106,200
36	78.1	148.8	95,000
38	77.3	148.3	85,400
40	76.5	147.8	77,100
45	74.4	146.4	60,300
50	72.3	144.8	47,700
55	70.2	143.1	37,900
60	68.1	141.1	30,000
65	65.9	138.8	23,500
70	63.7	136.4	18,100
75	61.4	133.7	13,500

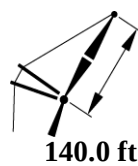


ft	°	ft	lb
154.2 ft			
26	82.6	160.6	178,500
28	81.9	160.3	154,700
30	81.1	160.0	135,500
32	80.4	159.6	119,800
34	79.6	159.3	106,600
36	78.9	158.8	95,400
38	78.1	158.4	85,800
40	77.3	157.9	77,400
45	75.4	156.7	60,600
50	73.5	155.2	48,000
55	71.5	153.5	38,100
60	69.5	151.7	30,200
65	67.5	149.6	23,700
70	65.5	147.4	18,200

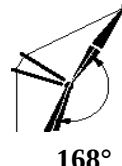
REFERENCE ONLY!



127,000 lb
+
0 lb



140.0 ft

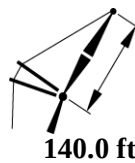
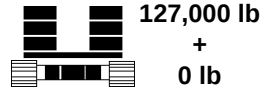
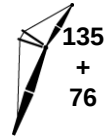


168°

ft	°	ft	lb
65.6 ft			
15	82.3	72.7	348,300*
16	81.4	72.5	325,000*
17	80.5	72.3	304,300*
18	79.7	72.1	285,600*
19	78.8	71.9	268,700*
20	77.9	71.7	253,400*
22	76.1	71.1	226,500*
24	74.2	70.5	190,900
26	72.4	69.8	161,700
28	70.5	69.1	138,800
30	68.6	68.3	120,300
32	66.7	67.4	105,100
34	64.8	66.4	92,400
36	62.8	65.3	81,600
38	60.8	64.2	72,300
40	58.7	62.9	64,300
45	53.3	59.3	48,000

ft	°	ft	lb
75.5 ft			
16	82.6	82.5	326,300*
17	81.8	82.4	305,600*
18	81.0	82.2	287,000*
19	80.2	82.0	270,100*
20	79.5	81.8	254,800*
22	77.9	81.3	228,100*
24	76.3	80.8	194,300
26	74.8	80.2	164,900
28	73.2	79.6	141,800
30	71.6	78.9	123,300
32	69.9	78.1	108,000
34	68.3	77.3	95,200
36	66.6	76.4	84,400
38	64.9	75.4	75,000
40	63.2	74.3	66,900
45	58.8	71.4	50,600
50	54.2	67.8	38,400

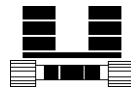
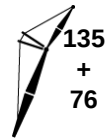
ft	°	ft	lb
85.3 ft			
17	82.7	92.3	300,100*
18	82.1	92.2	288,200*
19	81.4	92.0	271,400*
20	80.7	91.8	256,100*
22	79.3	91.4	229,500*
24	78.0	90.9	196,900
26	76.6	90.4	167,400
28	75.2	89.9	144,200
30	73.8	89.3	125,600
32	72.4	88.6	110,300
34	70.9	87.9	97,500
36	69.5	87.1	86,600
38	68.0	86.3	77,200
40	66.6	85.4	69,100
45	62.8	82.8	52,700
50	58.9	79.9	40,400
55	54.8	76.4	30,800



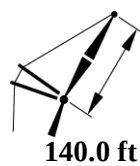
ft	°	ft	lb
95.1 ft			
18	82.9	102.1	288,700*
19	82.3	102.0	272,000*
20	81.7	101.8	256,800*
22	80.5	101.4	230,100*
24	79.2	101.0	199,000
26	78.0	100.6	169,400
28	76.7	100.1	146,100
30	75.5	99.5	127,400
32	74.2	98.9	112,000
34	73.0	98.3	99,100
36	71.7	97.6	88,200
38	70.4	96.9	78,700
40	69.1	96.1	70,600
45	65.8	93.9	54,200
50	62.5	91.3	41,800
55	59.0	88.3	32,100
60	55.3	84.9	24,400
65	51.5	81.0	18,000

ft	°	ft	lb
105.0 ft			
20	82.5	111.8	257,700*
22	81.4	111.4	231,100*
24	80.2	111.1	200,700
26	79.1	110.7	170,900
28	78.0	110.2	147,600
30	76.9	109.7	128,900
32	75.8	109.2	113,400
34	74.6	108.6	100,500
36	73.5	108.0	89,600
38	72.3	107.3	80,100
40	71.2	106.6	72,000
45	68.2	104.7	55,500
50	65.2	102.4	43,100
55	62.2	99.8	33,500
60	59.0	96.8	25,700
65	55.7	93.5	19,300
70	52.3	89.7	14,000

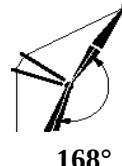
ft	°	ft	lb
114.8 ft			
22	82.1	121.4	231,300*
24	81.1	121.1	202,100
26	80.1	120.7	172,200
28	79.1	120.3	148,800
30	78.0	119.9	130,000
32	77.0	119.4	114,500
34	76.0	118.9	101,600
36	74.9	118.3	90,500
38	73.9	117.7	81,100
40	72.9	117.1	72,900
45	70.2	115.3	56,400
50	67.5	113.2	43,900
55	64.8	110.9	34,200
60	61.9	108.3	26,400
65	59.0	105.3	20,000
70	56.0	102.0	14,700



127,000 lb
+
0 lb



140.0 ft

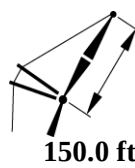
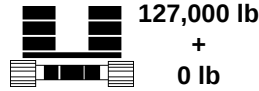
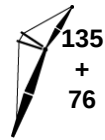


168°

ft	°	ft	lb
124.7 ft			
22	82.7	131.4	230,100*
24	81.8	131.1	203,200
26	80.9	130.7	173,300
28	79.9	130.3	149,800
30	79.0	129.9	130,900
32	78.1	129.5	115,400
34	77.1	129.0	102,400
36	76.2	128.5	91,400
38	75.2	128.0	81,900
40	74.3	127.4	73,600
45	71.8	125.7	57,100
50	69.4	123.9	44,600
55	66.9	121.8	34,900
60	64.3	119.4	27,100
65	61.7	116.7	20,700
70	59.1	113.8	15,300

ft	°	ft	lb
134.5 ft			
24	82.4	141.0	204,300
26	81.5	140.7	174,200
28	80.7	140.4	150,700
30	79.8	140.0	131,700
32	78.9	139.6	116,100
34	78.1	139.1	103,100
36	77.2	138.7	92,000
38	76.3	138.2	82,500
40	75.4	137.6	74,200
45	73.2	136.1	57,600
50	71.0	134.4	45,100
55	68.7	132.5	35,300
60	66.4	130.3	27,500
65	64.0	127.9	21,000
70	61.6	125.2	15,700

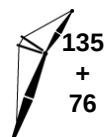
ft	°	ft	lb
144.4 ft			
24	82.9	151.0	192,400*
26	82.1	150.7	174,900
28	81.3	150.4	151,300
30	80.5	150.0	132,300
32	79.7	149.6	116,700
34	78.9	149.2	103,700
36	78.1	148.8	92,600
38	77.3	148.3	83,100
40	76.5	147.8	74,800
45	74.4	146.4	58,200
50	72.3	144.8	45,700
55	70.2	143.1	35,900
60	68.1	141.1	28,000
65	65.9	138.8	21,600



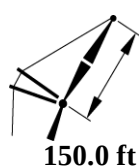
			
ft	°	ft	lb
 65.6 ft			
15	82.3	72.7	345,400*
16	81.4	72.5	322,200*
17	80.5	72.3	301,500*
18	79.7	72.1	282,800*
19	78.8	71.9	266,000*
20	77.9	71.7	250,700*
22	76.1	71.1	223,900*
24	74.2	70.5	187,600
26	72.4	69.8	158,500
28	70.5	69.1	135,800
30	68.6	68.3	117,500
32	66.7	67.4	102,400
34	64.8	66.4	89,800
36	62.8	65.3	79,100
38	60.8	64.2	69,900
40	58.7	62.9	61,900
45	53.3	59.3	45,800

			
ft	°	ft	lb
 75.5 ft			
16	82.6	82.5	323,500*
17	81.8	82.4	302,900*
18	81.0	82.2	284,300*
19	80.2	82.0	267,500*
20	79.5	81.8	252,300*
22	77.9	81.3	225,600*
24	76.3	80.8	191,200
26	74.8	80.2	162,000
28	73.2	79.6	139,100
30	71.6	78.9	120,700
32	69.9	78.1	105,500
34	68.3	77.3	92,800
36	66.6	76.4	82,100
38	64.9	75.4	72,800
40	63.2	74.3	64,700
45	58.8	71.4	48,600
50	54.2	67.8	36,400

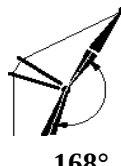
			
ft	°	ft	lb
 85.3 ft			
17	82.7	92.3	298,200*
18	82.1	92.2	285,700*
19	81.4	92.0	268,900*
20	80.7	91.8	253,700*
22	79.3	91.4	227,100*
24	78.0	90.9	194,000
26	76.6	90.4	164,600
28	75.2	89.9	141,700
30	73.8	89.3	123,200
32	72.4	88.6	107,900
34	70.9	87.9	95,200
36	69.5	87.1	84,400
38	68.0	86.3	75,100
40	66.6	85.4	67,000
45	62.8	82.8	50,800
50	58.9	79.9	38,600
55	54.8	76.4	29,000



127,000 lb
+
0 lb



150.0 ft

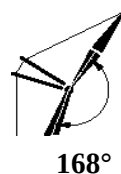
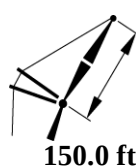
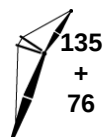


168°

ft	°	ft	lb
18	82.9	102.1	286,300*
19	82.3	102.0	269,600*
20	81.7	101.8	254,400*
22	80.5	101.4	227,900*
24	79.2	101.0	196,200
26	78.0	100.6	166,700
28	76.7	100.1	143,600
30	75.5	99.5	125,000
32	74.2	98.9	109,800
34	73.0	98.3	97,000
36	71.7	97.6	86,100
38	70.4	96.9	76,800
40	69.1	96.1	68,700
45	65.8	93.9	52,400
50	62.5	91.3	40,100
55	59.0	88.3	30,500
60	55.3	84.9	22,800
65	51.5	81.0	16,500

ft	°	ft	lb
20	82.5	111.8	255,500*
22	81.4	111.4	229,000*
24	80.2	111.1	197,900
26	79.1	110.7	168,400
28	78.0	110.2	145,300
30	76.9	109.7	126,600
32	75.8	109.2	111,300
34	74.6	108.6	98,500
36	73.5	108.0	87,600
38	72.3	107.3	78,300
40	71.2	106.6	70,100
45	68.2	104.7	53,800
50	65.2	102.4	41,500
55	62.2	99.8	31,900
60	59.0	96.8	24,200
65	55.7	93.5	17,900
70	52.3	89.7	12,600

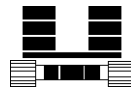
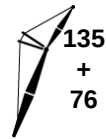
ft	°	ft	lb
22	82.1	121.4	229,200*
24	81.1	121.1	199,400
26	80.1	120.7	169,800
28	79.1	120.3	146,600
30	78.0	119.9	127,900
32	77.0	119.4	112,500
34	76.0	118.9	99,600
36	74.9	118.3	88,700
38	73.9	117.7	79,300
40	72.9	117.1	71,100
45	70.2	115.3	54,700
50	67.5	113.2	42,400
55	64.8	110.9	32,800
60	61.9	108.3	25,000
65	59.0	105.3	18,700
70	56.0	102.0	13,400



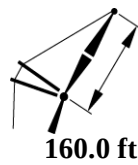
ft	°	ft	lb
124.7 ft			
22	82.7	131.4	228,200*
24	81.8	131.1	200,700
26	80.9	130.7	170,900
28	79.9	130.3	147,600
30	79.0	129.9	128,900
32	78.1	129.5	113,400
34	77.1	129.0	100,500
36	76.2	128.5	89,600
38	75.2	128.0	80,200
40	74.3	127.4	72,000
45	71.8	125.7	55,500
50	69.4	123.9	43,200
55	66.9	121.8	33,500
60	64.3	119.4	25,700
65	61.7	116.7	19,400
70	59.1	113.8	14,100

ft	°	ft	lb
134.5 ft			
24	82.4	141.0	201,800
26	81.5	140.7	171,900
28	80.7	140.4	148,500
30	79.8	140.0	129,700
32	78.9	139.6	114,200
34	78.1	139.1	101,300
36	77.2	138.7	90,300
38	76.3	138.2	80,800
40	75.4	137.6	72,600
45	73.2	136.1	56,100
50	71.0	134.4	43,700
55	68.7	132.5	34,000
60	66.4	130.3	26,200
65	64.0	127.9	19,800

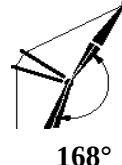
ft	°	ft	lb
144.4 ft			
24	82.9	151.0	190,600*
26	82.1	150.7	172,600
28	81.3	150.4	149,200
30	80.5	150.0	130,400
32	79.7	149.6	114,900
34	78.9	149.2	101,900
36	78.1	148.8	90,900
38	77.3	148.3	81,500
40	76.5	147.8	73,200
45	74.4	146.4	56,700
50	72.3	144.8	44,300
55	70.2	143.1	34,600
60	68.1	141.1	26,800
65	65.9	138.8	20,400



127,000 lb
+
0 lb



160.0 ft

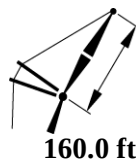
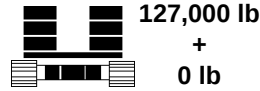
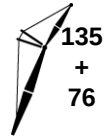


168°

ft	°	ft	lb
65.6 ft			
15	82.3	72.7	341,300*
16	81.4	72.5	318,200*
17	80.5	72.3	297,500*
18	79.7	72.1	278,900*
19	78.8	71.9	262,000*
20	77.9	71.7	246,700*
22	76.1	71.1	220,000*
24	74.2	70.5	183,000
26	72.4	69.8	154,200
28	70.5	69.1	131,600
30	68.6	68.3	113,500
32	66.7	67.4	98,600
34	64.8	66.4	86,100
36	62.8	65.3	75,500
38	60.8	64.2	66,300
40	58.7	62.9	58,400
45	53.3	59.3	42,500

ft	°	ft	lb
75.5 ft			
16	82.6	82.5	319,700*
17	81.8	82.4	299,100*
18	81.0	82.2	280,500*
19	80.2	82.0	263,800*
20	79.5	81.8	248,600*
22	77.9	81.3	221,900*
24	76.3	80.8	186,900
26	74.8	80.2	157,900
28	73.2	79.6	135,200
30	71.6	78.9	116,900
32	69.9	78.1	101,900
34	68.3	77.3	89,300
36	66.6	76.4	78,700
38	64.9	75.4	69,500
40	63.2	74.3	61,500
45	58.8	71.4	45,500
50	54.2	67.8	33,400

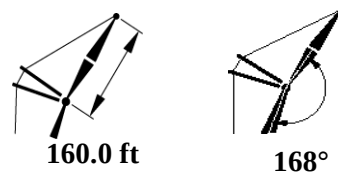
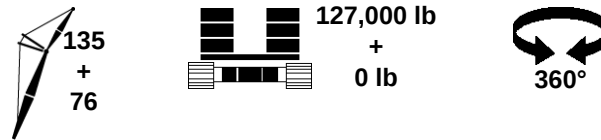
ft	°	ft	lb
85.3 ft			
17	82.7	92.3	295,400*
18	82.1	92.2	282,000*
19	81.4	92.0	265,300*
20	80.7	91.8	250,100*
22	79.3	91.4	223,600*
24	78.0	90.9	189,900
26	76.6	90.4	160,800
28	75.2	89.9	138,000
30	73.8	89.3	119,700
32	72.4	88.6	104,600
34	70.9	87.9	91,900
36	69.5	87.1	81,200
38	68.0	86.3	72,000
40	66.6	85.4	64,000
45	62.8	82.8	47,900
50	58.9	79.9	35,800
55	54.8	76.4	26,300



ft	°	ft	lb
18	82.9	102.1	282,800*
19	82.3	102.0	266,100*
20	81.7	101.8	251,000*
22	80.5	101.4	224,500*
24	79.2	101.0	192,300
26	78.0	100.6	163,100
28	76.7	100.1	140,200
30	75.5	99.5	121,700
32	74.2	98.9	106,600
34	73.0	98.3	93,900
36	71.7	97.6	83,100
38	70.4	96.9	73,800
40	69.1	96.1	65,800
45	65.8	93.9	49,600
50	62.5	91.3	37,500
55	59.0	88.3	27,900
60	55.3	84.9	20,300
65	51.5	81.0	14,100

ft	°	ft	lb
20	82.5	111.8	252,100*
22	81.4	111.4	225,700*
24	80.2	111.1	194,200
26	79.1	110.7	164,900
28	78.0	110.2	141,900
30	76.9	109.7	123,500
32	75.8	109.2	108,300
34	74.6	108.6	95,500
36	73.5	108.0	84,700
38	72.3	107.3	75,500
40	71.2	106.6	67,400
45	68.2	104.7	51,200
50	65.2	102.4	39,000
55	62.2	99.8	29,500
60	59.0	96.8	21,900
65	55.7	93.5	15,600

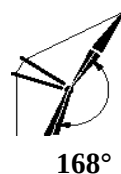
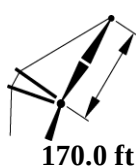
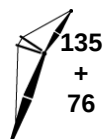
ft	°	ft	lb
22	82.1	121.4	226,000*
24	81.1	121.1	195,800
26	80.1	120.7	166,400
28	79.1	120.3	143,400
30	78.0	119.9	124,800
32	77.0	119.4	109,500
34	76.0	118.9	96,800
36	74.9	118.3	85,900
38	73.9	117.7	76,600
40	72.9	117.1	68,500
45	70.2	115.3	52,200
50	67.5	113.2	40,000
55	64.8	110.9	30,400
60	61.9	108.3	22,800
65	59.0	105.3	16,500



ft	°	ft	lb
124.7 ft			
22	82.7	131.4	225,500*
24	81.8	131.1	197,100
26	80.9	130.7	167,600
28	79.9	130.3	144,500
30	79.0	129.9	125,900
32	78.1	129.5	110,600
34	77.1	129.0	97,800
36	76.2	128.5	86,900
38	75.2	128.0	77,500
40	74.3	127.4	69,400
45	71.8	125.7	53,100
50	69.4	123.9	40,800
55	66.9	121.8	31,200
60	64.3	119.4	23,600
65	61.7	116.7	17,200

ft	°	ft	lb
134.5 ft			
24	82.4	141.0	198,400
26	81.5	140.7	168,700
28	80.7	140.4	145,500
30	79.8	140.0	126,800
32	78.9	139.6	111,400
34	78.1	139.1	98,600
36	77.2	138.7	87,700
38	76.3	138.2	78,300
40	75.4	137.6	70,100
45	73.2	136.1	53,800
50	71.0	134.4	41,400
55	68.7	132.5	31,800
60	66.4	130.3	24,100
65	64.0	127.9	17,700

ft	°	ft	lb
144.4 ft			
24	82.9	151.0	188,200*
26	82.1	150.7	169,500
28	81.3	150.4	146,300
30	80.5	150.0	127,600
32	79.7	149.6	112,200
34	78.9	149.2	99,300
36	78.1	148.8	88,400
38	77.3	148.3	79,000
40	76.5	147.8	70,800
45	74.4	146.4	54,500
50	72.3	144.8	42,100
55	70.2	143.1	32,500
60	68.1	141.1	24,800
65	65.9	138.8	18,400



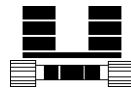
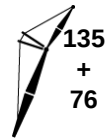
			
ft	°	ft	lb
 65.6 ft			
15	82.3	72.7	337,500*
16	81.4	72.5	314,400*
17	80.5	72.3	293,700*
18	79.7	72.1	275,200*
19	78.8	71.9	258,400*
20	77.9	71.7	243,100*
22	76.1	71.1	216,200
24	74.2	70.5	178,600
26	72.4	69.8	150,100
28	70.5	69.1	127,700
30	68.6	68.3	109,800
32	66.7	67.4	95,000
34	64.8	66.4	82,600
36	62.8	65.3	72,100
38	60.8	64.2	63,100
40	58.7	62.9	55,200
45	53.3	59.3	39,500

			
ft	°	ft	lb
 75.5 ft			
16	82.6	82.5	316,100*
17	81.8	82.4	295,500*
18	81.0	82.2	277,000*
19	80.2	82.0	260,300*
20	79.5	81.8	245,100*
22	77.9	81.3	218,600*
24	76.3	80.8	182,800
26	74.8	80.2	154,100
28	73.2	79.6	131,600
30	71.6	78.9	113,500
32	69.9	78.1	98,600
34	68.3	77.3	86,100
36	66.6	76.4	75,600
38	64.9	75.4	66,500
40	63.2	74.3	58,600
45	58.8	71.4	42,700
50	54.2	67.8	30,800

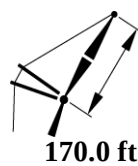
			
ft	°	ft	lb
 85.3 ft			
17	82.7	92.3	293,200*
18	82.1	92.2	278,700*
19	81.4	92.0	262,000*
20	80.7	91.8	246,900*
22	79.3	91.4	220,400*
24	78.0	90.9	186,000
26	76.6	90.4	157,200
28	75.2	89.9	134,600
30	73.8	89.3	116,400
32	72.4	88.6	101,400
34	70.9	87.9	88,900
36	69.5	87.1	78,300
38	68.0	86.3	69,200
40	66.6	85.4	61,200
45	62.8	82.8	45,300
50	58.9	79.9	33,300
55	54.8	76.4	23,900

14000 S-1

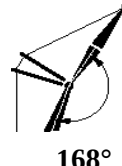
ASME B30.5



127,000 lb
+
0 lb



170.0 ft

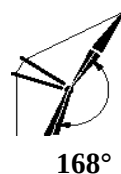
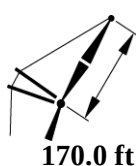
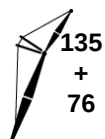


168°

ft	°	ft	lb
18	82.9	102.1	279,500*
19	82.3	102.0	262,900*
20	81.7	101.8	247,800*
22	80.5	101.4	221,400*
24	79.2	101.0	188,600
26	78.0	100.6	159,600
28	76.7	100.1	136,900
30	75.5	99.5	118,600
32	74.2	98.9	103,600
34	73.0	98.3	91,000
36	71.7	97.6	80,300
38	70.4	96.9	71,200
40	69.1	96.1	63,200
45	65.8	93.9	47,200
50	62.5	91.3	35,100
55	59.0	88.3	25,700
60	55.3	84.9	18,100

ft	°	ft	lb
20	82.5	111.8	249,100*
22	81.4	111.4	222,700*
24	80.2	111.1	190,600
26	79.1	110.7	161,600
28	78.0	110.2	138,800
30	76.9	109.7	120,500
32	75.8	109.2	105,400
34	74.6	108.6	92,800
36	73.5	108.0	82,100
38	72.3	107.3	72,900
40	71.2	106.6	64,900
45	68.2	104.7	48,900
50	65.2	102.4	36,800
55	62.2	99.8	27,300
60	59.0	96.8	19,800

ft	°	ft	lb
22	82.1	121.4	223,200*
24	81.1	121.1	192,400
26	80.1	120.7	163,200
28	79.1	120.3	140,300
30	78.0	119.9	121,900
32	77.0	119.4	106,800
34	76.0	118.9	94,100
36	74.9	118.3	83,400
38	73.9	117.7	74,100
40	72.9	117.1	66,100
45	70.2	115.3	50,000
50	67.5	113.2	37,900
55	64.8	110.9	28,400
60	61.9	108.3	20,800



ft	°	ft	lb
124.7 ft			
22	82.7	131.4	223,400*
24	81.8	131.1	193,800
26	80.9	130.7	164,500
28	79.9	130.3	141,600
30	79.0	129.9	123,100
32	78.1	129.5	108,000
34	77.1	129.0	95,300
36	76.2	128.5	84,500
38	75.2	128.0	75,200
40	74.3	127.4	67,100
45	71.8	125.7	51,000
50	69.4	123.9	38,800
55	66.9	121.8	29,300
60	64.3	119.4	21,700

ft	°	ft	lb
134.5 ft			
24	82.4	141.0	195,100
26	81.5	140.7	165,700
28	80.7	140.4	142,700
30	79.8	140.0	124,100
32	78.9	139.6	108,900
34	78.1	139.1	96,100
36	77.2	138.7	85,300
38	76.3	138.2	76,000
40	75.4	137.6	67,900
45	73.2	136.1	51,700
50	71.0	134.4	39,400
55	68.7	132.5	29,900
60	66.4	130.3	22,200

ft	°	ft	lb
144.4 ft			
24	82.9	151.0	186,200*
26	82.1	150.7	166,600
28	81.3	150.4	143,500
30	80.5	150.0	125,000
32	79.7	149.6	109,700
34	78.9	149.2	96,900
36	78.1	148.8	86,100
38	77.3	148.3	76,800
40	76.5	147.8	68,700
45	74.4	146.4	52,400
50	72.3	144.8	40,200
55	70.2	143.1	30,700
60	68.1	141.1	23,000