

Liftcrane Jib Capacities

Jib No. 117 on
 Boom No. B10:290
 33 120 kg Crane Counterweight
 10 500 kg Carbody Counterweight
 360 Degree Rating

MLC80A-1 SERIES 2



LIFTING CAPACITIES: Chart supplements Boom Capacity chart **No. 9771-AM**. Lifting capacities for various boom lengths, jib lengths, and jib operating radii are for freely suspended loads and may be based on percent of static tipping or strength of structural components. Capacities must be reduced by applicable deducts.

Weight of all load blocks, hooks, weight ball, slings, hoist lines, etc., beneath boom and jib point sheaves is considered part of load. Boom and jib are 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, level, and uniformly supporting surface. Refer to Boom Rigging **No. 80121888**, Jib Rigging **No. 84054323**, Wire Rope Specifications chart **No. 9780-A**, Counterweight Arrangements chart **No. 9769-A**, and Wind Conditions chart **No. 9779-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 the Operator Manual for operating guidelines.

MACHINE TRAVEL: Machine to travel on a firm, level, and uniformly supporting surface. Boom must be within boom angle range shown in capacity chart. Refer to Maximum Allowable Travel Specifications chart **No. 9778-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 ($^{\circ}$) 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.



JIB POINT ELEVATION: Jib point elevation is vertical distance from ground level to centerline of jib point shaft.

MACHINE EQUIPMENT: Machine equipped with 6 480 mm crawlers, 900 mm treads, 4 390 mm gantry, 8 part boom hoist reeving, two 32 mm boom pendants, 33 120 kg crane counterweight, and 10 500 kg carbody counterweight.

Refer to Tables 1 and 2 for raising ability with the maximum weight of all load blocks, hooks, weight ball, slings, and hoist lines beneath boom and jib point sheaves. For block weights shown with # or (a), load blocks, hooks, weight ball, and slings must remain on ground until combined weights are within rated capacity of chart. For block weights shown with (a), optional 3rd sheave in boom top wire rope guide and 2nd anti-two-block on boom top must be removed, and boom must be rigged with a maximum of 2 load hoist lead lines. Raising is not permitted in shaded areas of table.

Caution: Combined weight beneath boom and jib point sheaves must not exceed block weight shown. Total weight beneath jib point must not exceed 325 kg.

Table 1

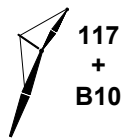


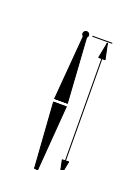
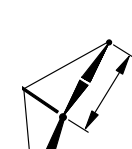

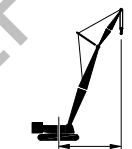
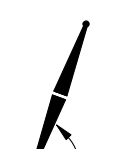
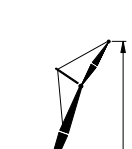

Over End or Side of Crawlers				
Boom Length (m)	Jib No. 117			
	9,1 m	12,2 m	15,2 m	18,3 m
	Block Weight (kg)			
19,0 - 43,0	1 725	1 725	1 725	1 725
46,0	1 725	1 200	1 200	1 200
49,0	1 200	325	325	325
52,0	325	325	325	#
55,0	325	325	a	a
58,0	a	a		

Table 2

Over End of Blocked Crawlers				
Boom Length (m)	Jib No. 117			
	9,1 m	12,2 m	15,2 m	18,3 m
	Block Weight (kg)			
19,0 - 43,0	1 725	1 725	1 725	1 725
46,0	1 725	1 200	1 200	1 200
49,0	1 200	325	325	325
52,0	325	325	325	#
55,0	325	325	a	a
58,0	a	a	a	a

Warning: Crane must remain in-line with crawlers when raising over end of blocked crawlers until operating radius is within 360 degree chart. *Crane tipping or structural damage can occur.*

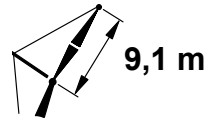
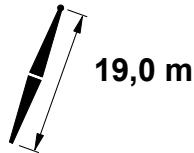
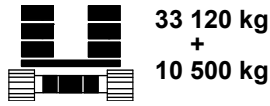
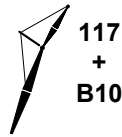
Explanation of Symbols

	Jib No. 117 + Boom No. B10:290
	Crane Counterweight + Carbody Counterweight
	360 Degree Rating
	Boom Length
	Jib Length
	Jib Offset Angle
	Operating Radius (see page 1)
	Boom Angle (see page 1)
	Jib Point Elevation (see page 1)
	Lifting Capacities (see page 1)

REFERENCE ONLY!

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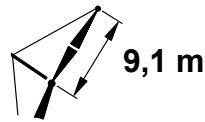
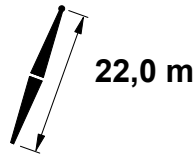
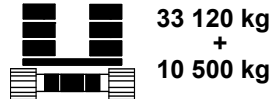
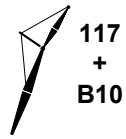


m	10°			30°			m
	o	m	kg	o	m	kg	
7,9	80,7	29,8	12 500				7,9
8,0	80,5	29,7	12 500				8,0
10,0	76,4	29,2	12 500				10,0
12,0	72,1	28,5	12 500	77,1	27,7	8 900	12,0
14,0	67,6	27,6	12 500	72,6	26,8	8 200	14,0
16,0	63,0	26,5	12 500	67,8	25,6	7 700	16,0
18,0	58,2	25,2	12 400	62,8	24,3	7 200	18,0
20,0	53,1	23,6	11 400	57,5	22,6	6 900	20,0
22,0	47,5	21,7	10 400	51,6	20,6	6 500	22,0
24,0	41,3	19,3	9 300	44,9	18,1	6 300	24,0
26,0	34,0	16,3	8 300				26,0

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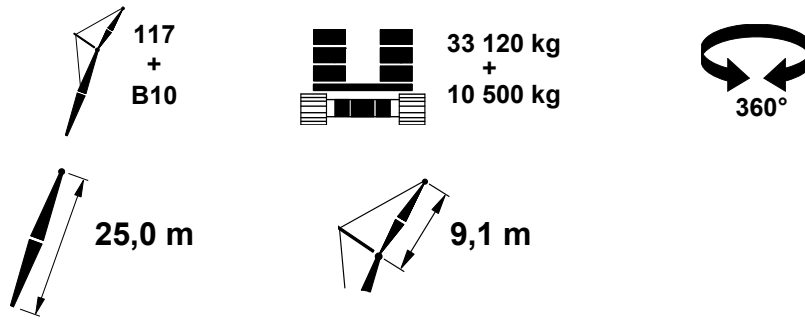


m	10°			30°			m
	°	m	kg	°	m	kg	
8,5	80,5	32,7	12 500				8,5
10,0	77,7	32,3	12 500				10,0
12,0	73,9	31,7	12 500	78,5	30,9	9 100	12,0
14,0	70,0	30,9	12 500	74,4	30,1	8 400	14,0
16,0	65,9	29,9	12 500	70,3	29,1	7 900	16,0
18,0	61,7	28,8	12 500	65,9	27,9	7 500	18,0
20,0	57,3	27,4	11 800	61,4	26,5	7 100	20,0
22,0	52,6	25,8	10 400	56,5	24,8	6 800	22,0
24,0	47,6	23,9	9 200	51,2	22,9	6 500	24,0
26,0	42,0	21,6	8 300	45,4	20,4	6 300	26,0
28,0	35,7	18,8	7 400	38,6	17,4	6 100	28,0
30,0	28,0	15,1	6 700				30,0

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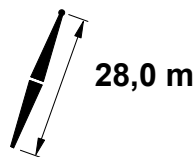
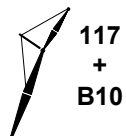


m	10°			30°			m
	°	m	kg	°	m	kg	
9,1	80,3	35,6	12 500				9,1
10,0	78,8	35,4	12 500				10,0
12,0	75,3	34,8	12 500	79,6	34,0	9 200	12,0
14,0	71,8	34,1	12 500	75,9	33,3	8 600	14,0
16,0	68,2	33,3	12 500	72,2	32,4	8 200	16,0
18,0	64,4	32,2	12 500	68,4	31,4	7 700	18,0
20,0	60,5	31,0	11 700	64,4	30,1	7 300	20,0
22,0	56,5	29,7	10 300	60,2	28,7	7 000	22,0
24,0	52,2	28,0	9 100	55,7	27,0	6 700	24,0
26,0	47,6	26,2	8 100	50,9	25,0	6 500	26,0
28,0	42,6	23,9	7 300	45,7	22,7	6 300	28,0
30,0	37,0	21,2	6 600	39,7	19,8	6 100	30,0
32,0	30,4	17,8	6 000	32,4	16,1	6 000	32,0

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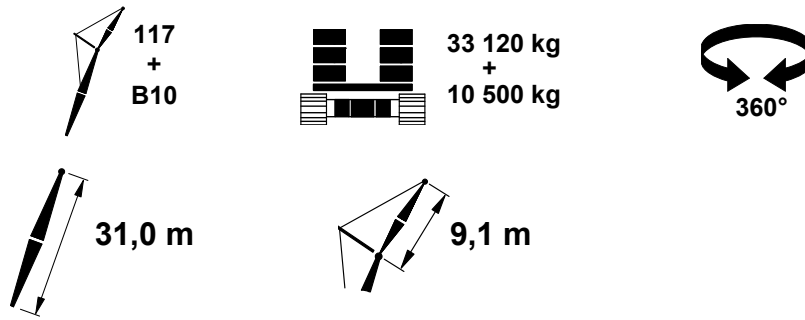


	10°			30°				
	Diagram	Diagram	Diagram	Diagram	Diagram	Diagram		
	m	°	m	kg	°	m	kg	m
9,8	80,1	38,6	12 500					9,8
10,0	79,7	38,5	12 500					10,0
12,0	76,6	38,0	12 500					12,0
14,0	73,3	37,3	12 500	77,2	36,5	8 800		14,0
16,0	70,0	36,6	12 500	73,8	35,7	8 300		16,0
18,0	66,7	35,6	12 500	70,3	34,8	7 900		18,0
20,0	63,2	34,6	11 600	66,8	33,7	7 600		20,0
22,0	59,6	33,3	10 200	63,0	32,4	7 200		22,0
24,0	55,9	31,9	9 000	59,2	30,9	6 900		24,0
26,0	51,9	30,3	8 100	55,1	29,2	6 700		26,0
28,0	47,7	28,4	7 300	50,7	27,3	6 500		28,0
30,0	43,2	26,2	6 600	45,9	25,0	6 300		30,0
32,0	38,1	23,6	5 900	40,6	22,2	6 000		32,0
34,0	32,4	20,5	5 400	34,4	18,8	5 400		34,0
36,0	25,4	16,3	4 900					36,0

REFERENCE ONLY

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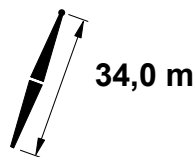
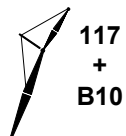
ASME B30.5



m	10°			30°			m
	°	m	kg	°	m	kg	
9,8	80,9	41,6	12 500				9,8
10,0	80,5	41,6	12 500				10,0
12,0	77,6	41,1	12 500				12,0
14,0	74,6	40,5	12 500	78,2	39,6	9 000	14,0
16,0	71,6	39,8	12 500	75,1	38,9	8 500	16,0
18,0	68,5	38,9	12 500	71,9	38,0	8 100	18,0
20,0	65,4	38,0	11 500	68,7	37,1	7 700	20,0
22,0	62,1	36,9	10 100	65,4	35,9	7 400	22,0
24,0	58,8	35,6	8 900	61,9	34,6	7 100	24,0
26,0	55,3	34,1	8 000	58,3	33,1	6 900	26,0
28,0	51,6	32,5	7 100	54,5	31,4	6 700	28,0
30,0	47,7	30,6	6 400	50,5	29,5	6 400	30,0
32,0	43,5	28,5	5 800	46,1	27,2	5 900	32,0
34,0	39,0	26,0	5 300	41,3	24,6	5 400	34,0
36,0	33,9	23,0	4 800	35,8	21,3	4 900	36,0
38,0	27,8	19,2	4 400				38,0

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ASME B30.5

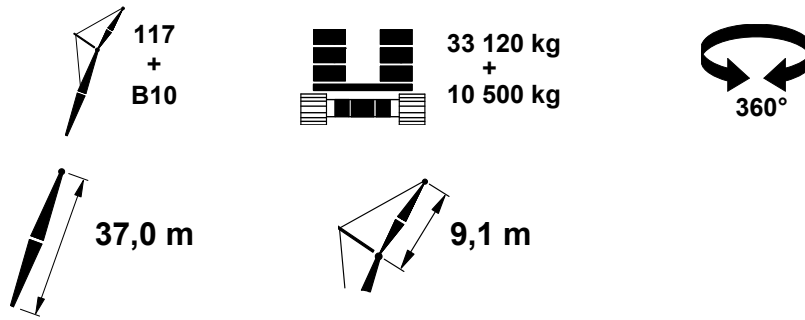


	10°			30°			
	°	m	kg	°	m	kg	m
10,4	80,7	44,6	12 500				10,4
12,0	78,5	44,2	12 500				12,0
14,0	75,7	43,6	12 500	79,0	42,8	9 100	14,0
16,0	72,9	43,0	12 500	76,2	42,1	8 700	16,0
18,0	70,1	42,2	12 500	73,3	41,3	8 300	18,0
20,0	67,2	41,3	11 400	70,3	40,4	7 900	20,0
22,0	64,2	40,3	10 000	67,3	39,3	7 600	22,0
24,0	61,2	39,1	8 800	64,2	38,2	7 300	24,0
26,0	58,1	37,8	7 800	60,9	36,8	7 100	26,0
28,0	54,8	36,4	7 000	57,6	35,3	6 800	28,0
30,0	51,3	34,7	6 300	54,0	33,6	6 400	30,0
32,0	47,7	32,9	5 700	50,3	31,7	5 800	32,0
34,0	43,9	30,7	5 200	46,3	29,5	5 300	34,0
36,0	39,7	28,3	4 700	41,9	26,9	4 800	36,0
38,0	35,1	25,4	4 300	36,9	23,8	4 300	38,0
40,0	29,7	21,9	3 900				40,0
42,0	23,2	17,4	3 600				42,0

REFERENCE ONLY

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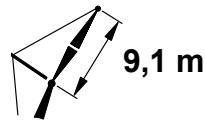
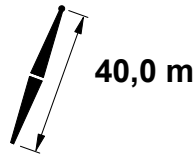
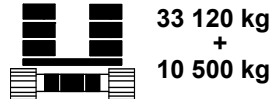
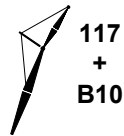
ASME B30.5



m	10°			30°			m
	°	m	kg	°	m	kg	
11,0	80,5	47,5	12 500				11,0
12,0	79,2	47,3	12 500				12,0
14,0	76,7	46,8	12 500	79,8	45,9	9 200	14,0
16,0	74,1	46,1	12 500	77,2	45,3	8 800	16,0
18,0	71,5	45,4	12 500	74,5	44,5	8 400	18,0
20,0	68,8	44,6	11 300	71,7	43,7	8 100	20,0
22,0	66,1	43,7	9 900	69,0	42,7	7 800	22,0
24,0	63,3	42,6	8 700	66,1	41,7	7 500	24,0
26,0	60,4	41,4	7 700	63,2	40,5	7 200	26,0
28,0	57,4	40,1	6 900	60,1	39,1	6 900	28,0
30,0	54,4	38,6	6 200	57,0	37,6	6 400	30,0
32,0	51,2	37,0	5 600	53,6	35,9	5 700	32,0
34,0	47,8	35,1	5 100	50,1	33,9	5 200	34,0
36,0	44,2	33,0	4 600	46,4	31,7	4 700	36,0
38,0	40,3	30,6	4 200	42,4	29,2	4 200	38,0
40,0	36,1	27,8	3 800	37,9	26,3	3 900	40,0
42,0	31,4	24,6	3 500	32,8	22,8	3 500	42,0
44,0	25,7	20,5	3 200				44,0

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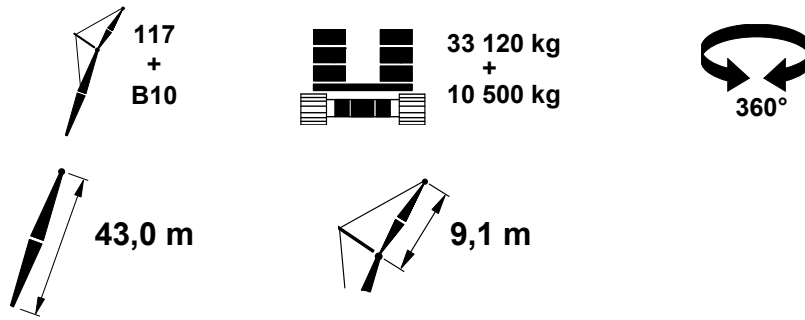
ASME B30.5



	10°			30°			
	m	°	m	kg	°	m	
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12,0	79,9	50,3	12 500				12,0
14,0	77,5	49,8	12 500	80,4	49,0	9 300	14,0
16,0	75,1	49,3	12 500	78,0	48,4	8 900	16,0
18,0	72,6	48,6	12 500	75,5	47,7	8 600	18,0
20,0	70,2	47,8	11 200	72,9	46,9	8 200	20,0
22,0	67,6	47,0	9 800	70,4	46,0	7 900	22,0
24,0	65,0	46,0	8 600	67,7	45,1	7 600	24,0
26,0	62,4	44,9	7 600	65,0	43,9	7 400	26,0
28,0	59,7	43,7	6 800	62,2	42,7	7 000	28,0
30,0	56,9	42,4	6 100	59,4	41,3	6 300	30,0
32,0	54,0	40,9	5 500	56,4	39,8	5 600	32,0
34,0	51,0	39,2	5 000	53,3	38,1	5 100	34,0
36,0	47,8	37,3	4 500	50,0	36,1	4 600	36,0
38,0	44,4	35,3	4 100	46,5	34,0	4 200	38,0
40,0	40,9	32,9	3 700	42,8	31,5	3 800	40,0
42,0	37,0	30,2	3 400	38,7	28,7	3 400	42,0
44,0	32,7	27,1	3 100	34,1	25,4	3 100	44,0
46,0	27,7	23,3	2 800				46,0

MLC80A-1 S-2

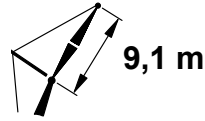
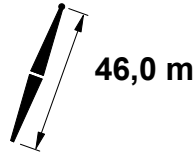
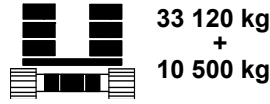
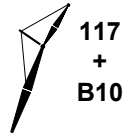
ASME B30.5



m	10°			30°			m
	°	m	kg	°	m	kg	
11,6	80,9	53,5	12 500				11,6
12,0	80,5	53,4	12 500				12,0
14,0	78,2	53,0	12 500	81,0	52,1	9 400	14,0
16,0	76,0	52,4	12 500	78,7	51,5	9 100	16,0
18,0	73,7	51,8	12 500	76,4	50,9	8 700	18,0
20,0	71,4	51,1	11 000	74,0	50,2	8 400	20,0
22,0	69,0	50,3	9 600	71,6	49,3	8 000	22,0
24,0	66,6	49,4	8 500	69,2	48,4	7 800	24,0
26,0	64,2	48,4	7 500	66,7	47,4	7 500	26,0
28,0	61,6	47,2	6 700	64,1	46,2	6 900	28,0
30,0	59,1	46,0	6 000	61,5	45,0	6 200	30,0
32,0	56,4	44,6	5 400	58,7	43,6	5 500	32,0
34,0	53,7	43,1	4 900	55,9	42,0	5 000	34,0
36,0	50,8	41,4	4 400	53,0	40,3	4 500	36,0
38,0	47,8	39,6	4 000	49,9	38,4	4 100	38,0
40,0	44,7	37,5	3 600	46,7	36,3	3 700	40,0
42,0	41,4	35,2	3 300	43,2	33,8	3 300	42,0
44,0	37,7	32,6	3 000	39,4	31,1	3 000	44,0
46,0	33,8	29,6	2 700	35,2	27,9	2 700	46,0
48,0	29,3	26,1	2 400				48,0
50,0	24,1	21,7	2 200				50,0

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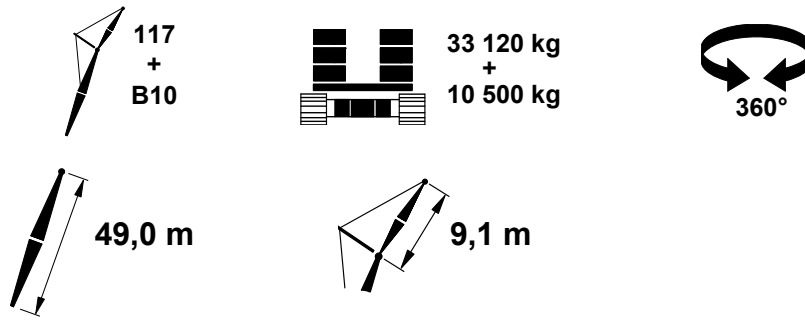
ASME B30.5



	10°			30°				
	Diagram	Diagram	Diagram	Diagram	Diagram	Diagram		
	m	°	m	kg	°	m	kg	m
12,2	80,8	56,4	12 500					12,2
14,0	78,9	56,0	12 500					14,0
16,0	76,8	55,5	12 500	79,3	54,6	9 200		16,0
18,0	74,6	54,9	12 400	77,2	54,0	8 800		18,0
20,0	72,4	54,3	10 900	74,9	53,3	8 500		20,0
22,0	70,2	53,5	9 500	72,7	52,6	8 200		22,0
24,0	68,0	52,7	8 400	70,4	51,7	7 900		24,0
26,0	65,7	51,7	7 400	68,1	50,8	7 600		26,0
28,0	63,3	50,7	6 600	65,7	49,7	6 800		28,0
30,0	60,9	49,5	5 900	63,2	48,5	6 100		30,0
32,0	58,5	48,3	5 300	60,7	47,2	5 500		32,0
34,0	56,0	46,9	4 800	58,1	45,8	4 900		34,0
36,0	53,4	45,3	4 300	55,5	44,2	4 400		36,0
38,0	50,7	43,7	3 900	52,7	42,5	4 000		38,0
40,0	47,8	41,8	3 500	49,8	40,6	3 600		40,0
42,0	44,9	39,8	3 200	46,7	38,5	3 200		42,0
44,0	41,7	37,5	2 900	43,5	36,1	2 900		44,0
46,0	38,4	34,9	2 600	40,0	33,4	2 600		46,0
48,0	34,7	32,0	2 300	36,1	30,4	2 400		48,0
50,0	30,7	28,7	2 100	31,8	26,8	2 100		50,0
52,0	26,0	24,6	1 900					52,0

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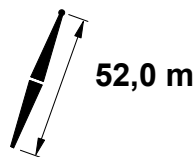
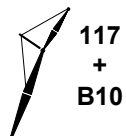
ASME B30.5



	10°			30°			
	m	°	m	kg	°	m	
12,8	80,7	59,4	12 500				12,8
14,0	79,5	59,1	12 500				14,0
16,0	77,5	58,6	12 500	79,9	57,7	9 300	16,0
18,0	75,4	58,1	12 300	77,9	57,2	8 900	18,0
20,0	73,4	57,5	10 800	75,8	56,5	8 600	20,0
22,0	71,3	56,7	9 400	73,6	55,8	8 300	22,0
24,0	69,2	55,9	8 300	71,5	55,0	8 000	24,0
26,0	67,0	55,1	7 300	69,3	54,1	7 500	26,0
28,0	64,8	54,1	6 500	67,1	53,1	6 700	28,0
30,0	62,6	53,0	5 800	64,8	52,0	6 000	30,0
32,0	60,3	51,8	5 200	62,5	50,8	5 300	32,0
34,0	58,0	50,6	4 700	60,1	49,5	4 800	34,0
36,0	55,6	49,1	4 200	57,6	48,1	4 300	36,0
38,0	53,1	47,6	3 800	55,1	46,5	3 900	38,0
40,0	50,6	45,9	3 400	52,5	44,8	3 500	40,0
42,0	47,9	44,1	3 100	49,7	42,9	3 100	42,0
44,0	45,1	42,0	2 700	46,8	40,8	2 800	44,0
46,0	42,1	39,8	2 500	43,8	38,4	2 500	46,0
48,0	39,0	37,3	2 200	40,5	35,8	2 300	48,0
50,0	35,6	34,5	2 000	37,0	32,9	2 000	50,0
52,0	31,9	31,3	1 800				52,0
54,0	27,7	27,5	1 500				54,0
56,0	22,7	22,8	1 200				56,0

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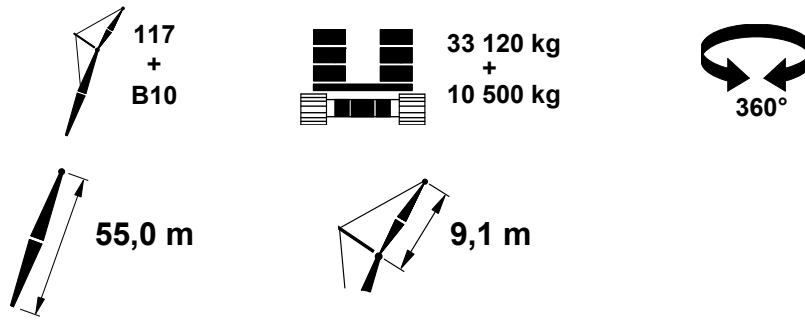
ASME B30.5



	10°			30°			
	m	°	m	kg	°	m	
13,4	80,6	62,3	12 500				13,4
14,0	80,0	62,2	12 500				14,0
16,0	78,1	61,7	12 500				16,0
18,0	76,1	61,2	12 200	78,5	60,3	9 000	18,0
20,0	74,2	60,6	10 700	76,5	59,7	8 700	20,0
22,0	72,2	59,9	9 300	74,5	59,0	8 400	22,0
24,0	70,2	59,2	8 200	72,5	58,2	8 100	24,0
26,0	68,2	58,3	7 200	70,4	57,4	7 400	26,0
28,0	66,2	57,4	6 400	68,3	56,4	6 600	28,0
30,0	64,1	56,4	5 700	66,2	55,4	5 900	30,0
32,0	61,9	55,3	5 100	64,0	54,3	5 300	32,0
34,0	59,8	54,1	4 600	61,8	53,1	4 700	34,0
36,0	57,5	52,8	4 100	59,5	51,7	4 200	36,0
38,0	55,2	51,4	3 700	57,2	50,3	3 800	38,0
40,0	52,9	49,8	3 300	54,7	48,7	3 400	40,0
42,0	50,4	48,1	3 000	52,2	47,0	3 100	42,0
44,0	47,9	46,3	2 700	49,6	45,1	2 700	44,0
46,0	45,2	44,3	2 400	46,9	43,0	2 500	46,0
48,0	42,4	42,1	2 100	44,0	40,7	2 200	48,0
50,0	39,5	39,6	1 900	40,9	38,1	1 900	50,0
52,0	36,3	36,8	1 700	37,6	35,3	1 700	52,0
54,0	32,9	33,7	1 400	34,0	32,0	1 500	54,0
56,0	29,0	30,1	1 200				56,0

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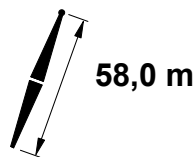
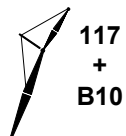
ASME B30.5



	10°			30°			
	m	°	m	kg	°	m	
14,0	80,4	65,2	12 500				14,0
16,0	78,6	64,8	12 500				16,0
18,0	76,8	64,3	12 100	79,0	63,4	9 100	18,0
20,0	75,0	63,7	10 600	77,2	62,8	8 800	20,0
22,0	73,1	63,1	9 200	75,3	62,1	8 500	22,0
24,0	71,2	62,4	8 000	73,3	61,4	8 200	24,0
26,0	69,3	61,6	7 100	71,4	60,6	7 300	26,0
28,0	67,3	60,7	6 300	69,4	59,7	6 500	28,0
30,0	65,4	59,8	5 600	67,4	58,8	5 800	30,0
32,0	63,4	58,7	5 000	65,4	57,7	5 200	32,0
34,0	61,3	57,6	4 400	63,3	56,6	4 600	34,0
36,0	59,2	56,4	4 000	61,2	55,3	4 100	36,0
38,0	57,1	55,1	3 500	59,0	54,0	3 700	38,0
40,0	54,9	53,6	3 200	56,7	52,5	3 300	40,0
42,0	52,6	52,1	2 800	54,4	50,9	3 000	42,0
44,0	50,3	50,4	2 500	52,0	49,2	2 600	44,0
46,0	47,9	48,5	2 300	49,5	47,3	2 300	46,0
48,0	45,4	46,5	2 000	47,0	45,2	2 100	48,0
50,0	42,7	44,3	1 800	44,2	42,9	1 800	50,0
52,0	39,9	41,9	1 600	41,3	40,4	1 600	52,0
54,0	36,9	39,2	1 300	38,2	37,6	1 400	54,0
56,0	33,7	36,2	1 100	34,8	34,5	1 100	56,0

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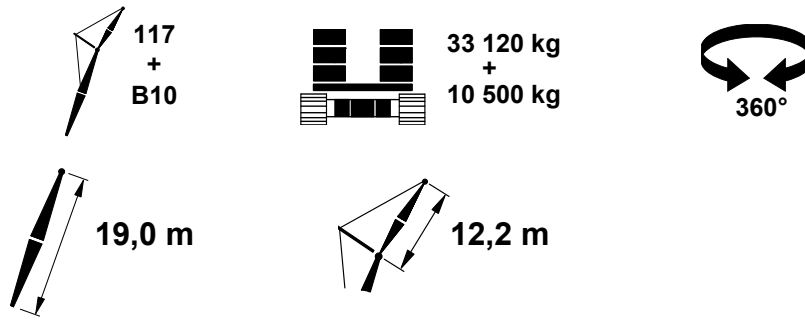
ASME B30.5



	10°			30°				
	Diagram	Diagram	Diagram	Diagram	Diagram	Diagram		
	m	o	m	kg	o	m	kg	m
14,0	80,9	68,3	12 500					14,0
16,0	79,2	67,9	12 300					16,0
18,0	77,4	67,4	11 900	79,5	66,5	9 200		18,0
20,0	75,7	66,9	10 500	77,8	65,9	8 900		20,0
22,0	73,9	66,3	9 100	76,0	65,3	8 600		22,0
24,0	72,1	65,6	7 900	74,1	64,6	8 100		24,0
26,0	70,3	64,8	6 900	72,3	63,9	7 200		26,0
28,0	68,4	64,0	6 100	70,4	63,0	6 400		28,0
30,0	66,6	63,1	5 400	68,5	62,1	5 700		30,0
32,0	64,7	62,1	4 800	66,6	61,1	5 000		32,0
34,0	62,7	61,1	4 300	64,6	60,1	4 500		34,0
36,0	60,8	59,9	3 800	62,6	58,9	4 000		36,0
38,0	58,8	58,7	3 400	60,6	57,6	3 600		38,0
40,0	56,7	57,3	3 000	58,5	56,2	3 200		40,0
42,0	54,6	55,9	2 700	56,4	54,8	2 800		42,0
44,0	52,5	54,3	2 400	54,1	53,2	2 500		44,0
46,0	50,2	52,6	2 100	51,9	51,4	2 200		46,0
48,0	47,9	50,8	1 900	49,5	49,5	2 000		48,0
50,0	45,5	48,8	1 600	47,0	47,5	1 700		50,0
52,0	43,0	46,6	1 400	44,4	45,2	1 500		52,0
54,0	40,4	44,2	1 200	41,7	42,8	1 300		54,0
56,0	37,5	41,6	1 000	38,8	40,0	1 000		56,0

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ASME B30.5

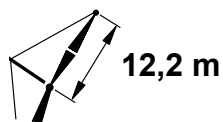
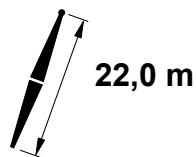
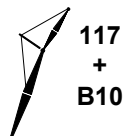


m	10°			30°			m
	°	m	kg	°	m	kg	
9,1	80,9	32,5	12 000				9,1
10,0	79,2	32,3	11 800				10,0
12,0	75,4	31,7	11 400				12,0
14,0	71,5	30,9	11 100	77,6	29,9	7 100	14,0
16,0	67,4	29,9	10 800	73,4	28,9	6 600	16,0
18,0	63,2	28,8	10 600	69,0	27,7	6 200	18,0
20,0	58,8	27,4	10 100	64,4	26,3	5 800	20,0
22,0	54,1	25,8	9 300	59,5	24,6	5 500	22,0
24,0	49,1	23,9	8 700	54,2	22,6	5 300	24,0
26,0	43,5	21,6	8 100	48,2	20,2	5 100	26,0
28,0	37,2	18,8	7 600	41,3	17,0	4 900	28,0
30,0	29,5	15,1	7 000				30,0

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ASME B30.5

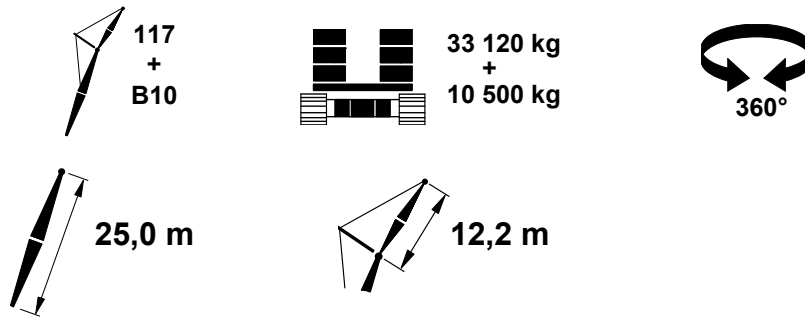


m	10°			30°			m
	°	m	kg	°	m	kg	
9,8	80,6	35,5	11 900				9,8
10,0	80,2	35,4	11 900				10,0
12,0	76,7	34,8	11 500				12,0
14,0	73,2	34,1	11 200	78,8	33,1	7 200	14,0
16,0	69,6	33,3	11 000	75,1	32,2	6 800	16,0
18,0	65,8	32,2	10 700	71,2	31,2	6 400	18,0
20,0	61,9	31,1	10 500	67,2	29,9	6 000	20,0
22,0	57,9	29,7	9 900	62,9	28,5	5 700	22,0
24,0	53,6	28,0	9 200	58,4	26,8	5 500	24,0
26,0	49,0	26,2	8 400	53,6	24,8	5 300	26,0
28,0	44,0	23,9	7 600	48,3	22,4	5 100	28,0
30,0	38,4	21,2	6 900	42,2	19,5	4 900	30,0
32,0	31,9	17,8	6 300	34,8	15,7	4 800	32,0

REFERENCE ONLY

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ASME B30.5

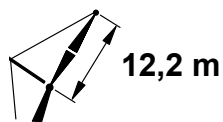
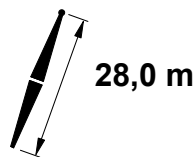
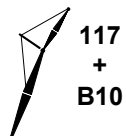


	10°			30°			
	m	°	m	kg	m	kg	
10,4	80,4	38,4	11 900				10,4
12,0	77,8	38,0	11 600				12,0
14,0	74,6	37,3	11 300	79,8	36,3	7 400	14,0
16,0	71,3	36,5	11 100	76,4	35,5	6 900	16,0
18,0	67,9	35,6	10 900	72,9	34,5	6 500	18,0
20,0	64,5	34,5	10 700	69,3	33,4	6 200	20,0
22,0	60,9	33,3	10 300	65,6	32,1	5 900	22,0
24,0	57,1	31,9	9 300	61,6	30,6	5 700	24,0
26,0	53,1	30,3	8 300	57,5	28,9	5 400	26,0
28,0	48,9	28,4	7 500	53,1	27,0	5 200	28,0
30,0	44,4	26,2	6 800	48,2	24,6	5 100	30,0
32,0	39,4	23,6	6 100	42,8	21,8	4 900	32,0
34,0	33,6	20,4	5 600	36,4	18,3	4 800	34,0
36,0	26,5	16,3	5 100				36,0

REFERENCED ONLY

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ASME B30.5

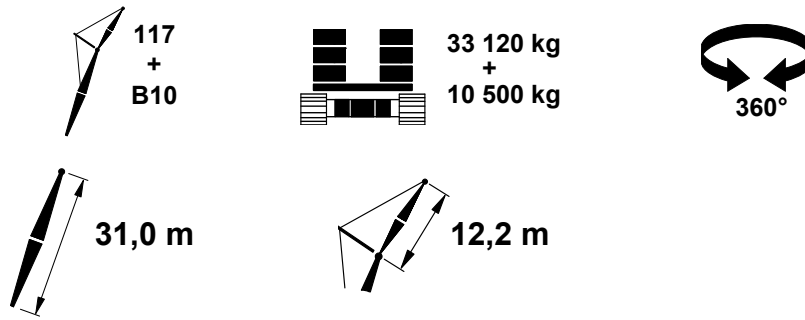


	10°			30°				
	Diagram	Diagram	Diagram	Diagram	Diagram	Diagram		
	m	°	m	kg	°	m	kg	m
11,0	80,3	41,3	11 800					11,0
12,0	78,8	41,1	11 700					12,0
14,0	75,8	40,5	11 400	80,6	39,4	7 500		14,0
16,0	72,8	39,8	11 200	77,5	38,7	7 100		16,0
18,0	69,7	38,9	11 000	74,3	37,8	6 700		18,0
20,0	66,6	38,0	10 800	71,1	36,8	6 400		20,0
22,0	63,3	36,9	10 300	67,7	35,7	6 100		22,0
24,0	60,0	35,6	9 200	64,2	34,4	5 800		24,0
26,0	56,5	34,1	8 200	60,6	32,9	5 600		26,0
28,0	52,8	32,5	7 400	56,8	31,1	5 400		28,0
30,0	48,9	30,6	6 700	52,7	29,2	5 200		30,0
32,0	44,7	28,5	6 100	48,3	26,9	5 100		32,0
34,0	40,2	26,0	5 500	43,4	24,2	4 900		34,0
36,0	35,0	22,9	5 100	37,8	20,9	4 900		36,0
38,0	29,0	19,2	4 600					38,0

REFERENCE ONLY

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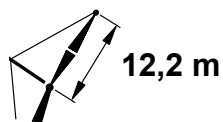
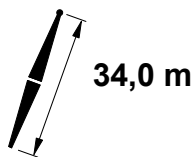
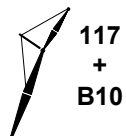
ASME B30.5



m	10°			30°			m
	°	m	kg	°	m	kg	
11,0	81,0	44,4	11 800				11,0
12,0	79,6	44,2	11 700				12,0
14,0	76,8	43,6	11 500				14,0
16,0	74,0	42,9	11 300	78,4	41,8	7 200	16,0
18,0	71,2	42,2	11 100	75,5	41,0	6 800	18,0
20,0	68,3	41,3	10 900	72,5	40,1	6 500	20,0
22,0	65,4	40,3	10 200	69,5	39,1	6 200	22,0
24,0	62,3	39,1	9 100	66,3	37,9	6 000	24,0
26,0	59,2	37,8	8 100	63,1	36,6	5 700	26,0
28,0	55,9	36,4	7 300	59,7	35,0	5 500	28,0
30,0	52,4	34,7	6 600	56,1	33,3	5 400	30,0
32,0	48,8	32,8	6 000	52,3	31,4	5 200	32,0
34,0	45,0	30,7	5 400	48,2	29,1	5 100	34,0
36,0	40,8	28,3	4 900	43,8	26,5	4 900	36,0
38,0	36,2	25,4	4 500	38,8	23,4	4 600	38,0
40,0	30,8	21,9	4 100				40,0
42,0	24,3	17,4	3 800				42,0

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ASME B30.5

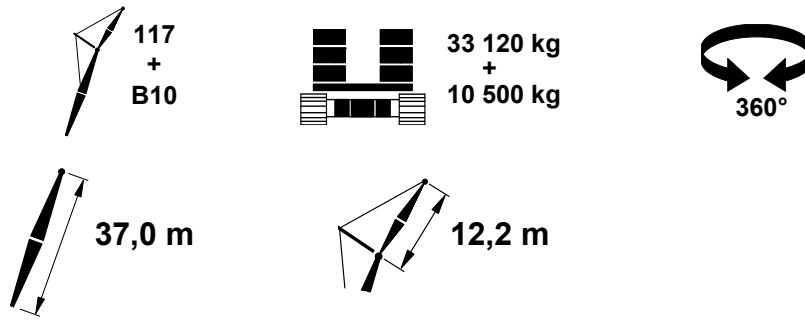


	10°			30°			
	°	m	kg	°	m	kg	m
11,6	80,8	47,3	11 800				11,6
12,0	80,3	47,2	11 700				12,0
14,0	77,7	46,7	11 500				14,0
16,0	75,1	46,1	11 300	79,2	45,0	7 300	16,0
18,0	72,5	45,4	11 200	76,5	44,2	6 900	18,0
20,0	69,8	44,6	11 000	73,8	43,4	6 600	20,0
22,0	67,1	43,6	10 100	71,0	42,4	6 300	22,0
24,0	64,3	42,6	9 000	68,1	41,3	6 100	24,0
26,0	61,4	41,4	8 000	65,1	40,1	5 900	26,0
28,0	58,5	40,1	7 200	62,1	38,8	5 700	28,0
30,0	55,4	38,6	6 500	58,9	37,2	5 500	30,0
32,0	52,2	36,9	5 900	55,5	35,5	5 300	32,0
34,0	48,8	35,1	5 300	52,0	33,5	5 200	34,0
36,0	45,2	33,0	4 800	48,2	31,3	4 900	36,0
38,0	41,3	30,6	4 400	44,1	28,8	4 500	38,0
40,0	37,1	27,8	4 000	39,6	25,8	4 100	40,0
42,0	32,3	24,5	3 700	34,3	22,2	3 700	42,0
44,0	26,7	20,4	3 400				44,0

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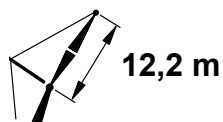
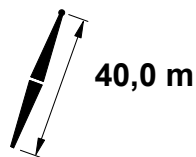
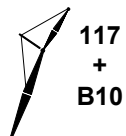
ASME B30.5





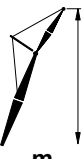



	10°			30°			
	m	°	m	kg	m	°	
12,2	80,6	50,3	11 700				12,2
14,0	78,5	49,8	11 500				14,0
16,0	76,1	49,3	11 400	79,9	48,1	7 400	16,0
18,0	73,6	48,6	11 200	77,4	47,4	7 000	18,0
20,0	71,1	47,8	11 000	74,9	46,7	6 700	20,0
22,0	68,6	47,0	10 000	72,3	45,8	6 500	22,0
24,0	66,0	46,0	8 800	69,6	44,8	6 200	24,0
26,0	63,4	44,9	7 900	66,9	43,6	6 000	26,0
28,0	60,7	43,7	7 100	64,1	42,4	5 800	28,0
30,0	57,9	42,3	6 400	61,2	41,0	5 600	30,0
32,0	54,9	40,8	5 700	58,2	39,4	5 500	32,0
34,0	51,9	39,2	5 200	55,1	37,7	5 300	34,0
36,0	48,8	37,3	4 700	51,8	35,8	4 900	36,0
38,0	45,4	35,2	4 300	48,2	33,6	4 400	38,0
40,0	41,8	32,9	3 900	44,4	31,1	4 000	40,0
42,0	37,9	30,2	3 600	40,3	28,2	3 600	42,0
44,0	33,6	27,1	3 300	35,6	24,8	3 300	44,0
46,0	28,6	23,3	3 000				46,0

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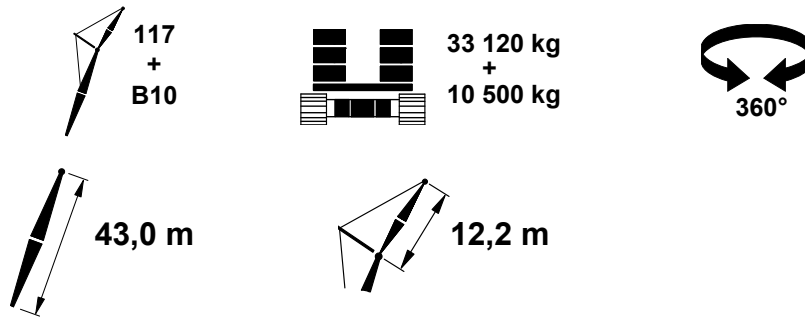
ASME B30.5



	10°			30°			
	 m	 m	 kg	 m	 m	 kg	
12,8	80,5	53,2	11 600				12,8
14,0	79,1	52,9	11 500				14,0
16,0	76,9	52,4	11 400				16,0
18,0	74,6	51,8	11 200	78,2	50,6	7 100	18,0
20,0	72,3	51,0	11 000	75,8	49,8	6 800	20,0
22,0	69,9	50,2	9 900	73,4	49,0	6 600	22,0
24,0	67,5	49,3	8 700	70,9	48,1	6 300	24,0
26,0	65,0	48,3	7 800	68,4	47,1	6 100	26,0
28,0	62,5	47,2	7 000	65,8	45,9	5 900	28,0
30,0	60,0	46,0	6 300	63,2	44,6	5 700	30,0
32,0	57,3	44,6	5 600	60,4	43,2	5 600	32,0
34,0	54,6	43,1	5 100	57,6	41,6	5 300	34,0
36,0	51,7	41,4	4 600	54,6	39,9	4 800	36,0
38,0	48,7	39,5	4 200	51,5	38,0	4 300	38,0
40,0	45,6	37,5	3 800	48,2	35,8	3 900	40,0
42,0	42,2	35,2	3 500	44,7	33,4	3 600	42,0
44,0	38,6	32,5	3 200	40,9	30,6	3 300	44,0
46,0	34,6	29,5	2 900	36,6	27,3	3 000	46,0
48,0	30,2	26,0	2 700				48,0
50,0	24,9	21,6	2 400				50,0

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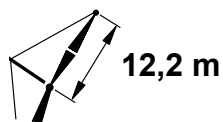
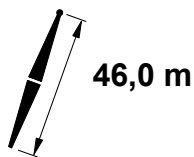
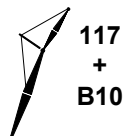
ASME B30.5



m	10°			30°			m
	°	m	kg	°	m	kg	
13,4	80,4	56,1	11 500				13,4
14,0	79,8	56,0	11 500				14,0
16,0	77,6	55,5	11 400				16,0
18,0	75,5	54,9	11 200	78,9	53,7	7 200	18,0
20,0	73,3	54,3	11 000	76,7	53,1	6 900	20,0
22,0	71,1	53,5	9 800	74,4	52,3	6 700	22,0
24,0	68,8	52,6	8 600	72,1	51,4	6 400	24,0
26,0	66,5	51,7	7 700	69,7	50,4	6 200	26,0
28,0	64,2	50,7	6 800	67,3	49,4	6 000	28,0
30,0	61,8	49,5	6 100	64,9	48,2	5 900	30,0
32,0	59,3	48,2	5 500	62,4	46,9	5 700	32,0
34,0	56,8	46,9	5 000	59,8	45,4	5 200	34,0
36,0	54,2	45,3	4 500	57,1	43,9	4 700	36,0
38,0	51,5	43,6	4 100	54,3	42,1	4 200	38,0
40,0	48,7	41,8	3 700	51,3	40,2	3 800	40,0
42,0	45,7	39,7	3 400	48,2	38,1	3 500	42,0
44,0	42,6	37,5	3 100	44,9	35,7	3 200	44,0
46,0	39,2	34,9	2 800	41,4	33,0	2 900	46,0
48,0	35,6	32,0	2 500	37,5	29,8	2 600	48,0
50,0	31,5	28,6	2 300	33,0	26,2	2 300	50,0
52,0	26,8	24,6	2 100				52,0

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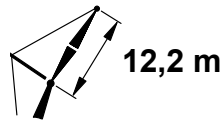
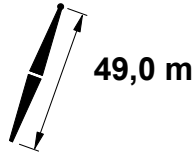
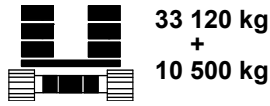
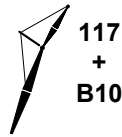
ASME B30.5



	10°			30°			
	m	°	m	kg	°	m	
13,4	80,9	59,2	11 500				13,4
14,0	80,3	59,1	11 400				14,0
16,0	78,3	58,6	11 300				16,0
18,0	76,2	58,0	11 200	79,5	56,8	7 300	18,0
20,0	74,2	57,4	11 000	77,4	56,2	7 000	20,0
22,0	72,1	56,7	9 700	75,3	55,5	6 800	22,0
24,0	70,0	55,9	8 500	73,1	54,7	6 500	24,0
26,0	67,8	55,0	7 600	70,9	53,7	6 300	26,0
28,0	65,6	54,0	6 700	68,6	52,7	6 100	28,0
30,0	63,4	53,0	6 000	66,4	51,6	6 000	30,0
32,0	61,1	51,8	5 400	64,0	50,4	5 600	32,0
34,0	58,8	50,5	4 900	61,6	49,1	5 100	34,0
36,0	56,4	49,1	4 400	59,1	47,7	4 600	36,0
38,0	53,9	47,5	4 000	56,6	46,1	4 100	38,0
40,0	51,3	45,9	3 600	53,9	44,3	3 800	40,0
42,0	48,7	44,0	3 300	51,1	42,4	3 400	42,0
44,0	45,9	42,0	3 000	48,2	40,3	3 100	44,0
46,0	42,9	39,7	2 700	45,1	37,9	2 800	46,0
48,0	39,7	37,2	2 400	41,8	35,3	2 500	48,0
50,0	36,3	34,4	2 200	38,2	32,3	2 200	50,0
52,0	32,6	31,2	2 000	34,2	28,8	2 000	52,0
54,0	28,4	27,4	1 800				54,0
56,0	23,4	22,7	1 500				56,0

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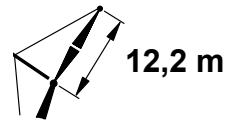
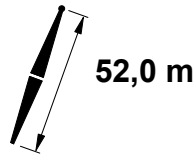
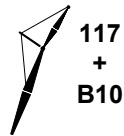
ASME B30.5



m	10°			30°			m
	°	m	kg	°	m	kg	
14,0	80,8	62,1	11 300				14,0
16,0	78,9	61,7	11 200				16,0
18,0	76,9	61,2	11 100				18,0
20,0	75,0	60,6	10 900	78,0	59,4	7 100	20,0
22,0	73,0	59,9	9 600	76,0	58,7	6 900	22,0
24,0	71,0	59,2	8 400	74,0	57,9	6 600	24,0
26,0	69,0	58,3	7 400	71,9	57,1	6 400	26,0
28,0	66,9	57,4	6 600	69,8	56,1	6 200	28,0
30,0	64,8	56,4	5 900	67,7	55,1	6 100	30,0
32,0	62,7	55,3	5 300	65,5	54,0	5 500	32,0
34,0	60,5	54,1	4 800	63,3	52,7	5 000	34,0
36,0	58,3	52,8	4 300	61,0	51,4	4 500	36,0
38,0	56,0	51,4	3 900	58,6	49,9	4 000	38,0
40,0	53,6	49,8	3 500	56,2	48,3	3 700	40,0
42,0	51,2	48,1	3 200	53,6	46,6	3 300	42,0
44,0	48,6	46,3	2 900	51,0	44,6	3 000	44,0
46,0	46,0	44,2	2 600	48,2	42,5	2 700	46,0
48,0	43,2	42,0	2 300	45,3	40,2	2 400	48,0
50,0	40,2	39,6	2 100	42,2	37,6	2 100	50,0
52,0	37,1	36,8	1 900	38,8	34,7	1 900	52,0
54,0	33,6	33,7	1 700	35,1	31,4	1 700	54,0
56,0	29,8	30,1	1 400				56,0
58,0	25,3	25,8	1 100				58,0

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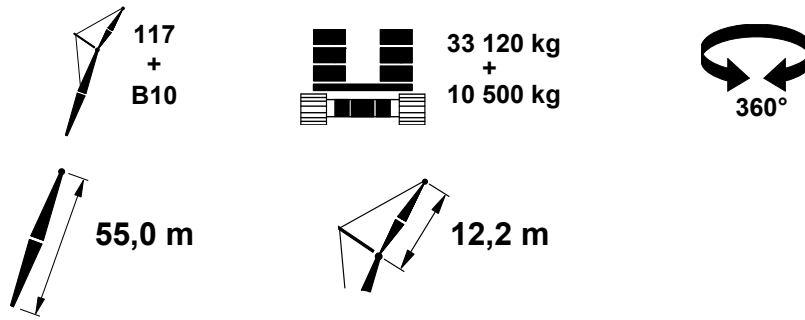
ASME B30.5



	10°			30°				
	Diagram	Diagram	Diagram	Diagram	Diagram	Diagram		
	m	°	m	kg	°	m	kg	m
14,6	80,6	65,1	11 200					14,6
16,0	79,4	64,8	11 100					16,0
18,0	77,5	64,3	11 000					18,0
20,0	75,7	63,7	10 800	78,6	62,5	7 200		20,0
22,0	73,8	63,1	9 500	76,7	61,8	6 900		22,0
24,0	71,9	62,4	8 300	74,8	61,1	6 700		24,0
26,0	70,0	61,6	7 300	72,8	60,3	6 500		26,0
28,0	68,1	60,7	6 500	70,9	59,4	6 300		28,0
30,0	66,1	59,7	5 800	68,8	58,4	6 000		30,0
32,0	64,1	58,7	5 200	66,8	57,4	5 500		32,0
34,0	62,1	57,6	4 700	64,7	56,2	4 900		34,0
36,0	60,0	56,4	4 200	62,5	55,0	4 400		36,0
38,0	57,8	55,0	3 800	60,3	53,6	4 000		38,0
40,0	55,6	53,6	3 400	58,1	52,1	3 600		40,0
42,0	53,4	52,0	3 100	55,8	50,5	3 200		42,0
44,0	51,0	50,3	2 800	53,4	48,8	2 900		44,0
46,0	48,6	48,5	2 500	50,8	46,8	2 600		46,0
48,0	46,1	46,5	2 200	48,2	44,8	2 300		48,0
50,0	43,4	44,3	2 000	45,5	42,5	2 100		50,0
52,0	40,6	41,9	1 800	42,5	39,9	1 800		52,0
54,0	37,7	39,2	1 600	39,4	37,1	1 600		54,0
56,0	34,4	36,2	1 400	35,9	33,9	1 400		56,0
58,0	30,9	32,7	1 100					58,0

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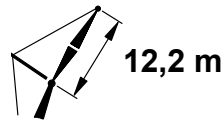
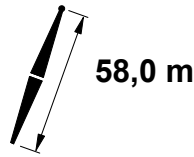
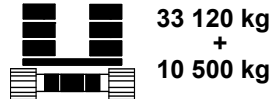
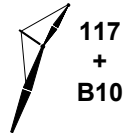
ASME B30.5



m	10°			30°			m
	°	m	kg	°	m	kg	
15,2	80,5	68,0	11 000				15,2
16,0	79,9	67,8	11 000				16,0
18,0	78,1	67,4	10 900				18,0
20,0	76,4	66,8	10 700	79,2	65,6	7 300	20,0
22,0	74,6	66,2	9 400	77,4	65,0	7 000	22,0
24,0	72,8	65,5	8 200	75,5	64,3	6 800	24,0
26,0	71,0	64,8	7 200	73,7	63,5	6 600	26,0
28,0	69,1	64,0	6 400	71,8	62,7	6 400	28,0
30,0	67,3	63,1	5 700	69,9	61,7	6 000	30,0
32,0	65,4	62,1	5 100	67,9	60,7	5 400	32,0
34,0	63,4	61,0	4 600	66,0	59,7	4 800	34,0
36,0	61,5	59,9	4 100	64,0	58,5	4 300	36,0
38,0	59,5	58,6	3 700	61,9	57,2	3 900	38,0
40,0	57,4	57,3	3 300	59,8	55,8	3 500	40,0
42,0	55,3	55,8	3 000	57,6	54,3	3 100	42,0
44,0	53,1	54,2	2 600	55,4	52,7	2 800	44,0
46,0	50,9	52,5	2 400	53,1	51,0	2 500	46,0
48,0	48,6	50,7	2 100	50,7	49,0	2 200	48,0
50,0	46,2	48,7	1 900	48,2	47,0	2 000	50,0
52,0	43,7	46,5	1 700	45,6	44,7	1 700	52,0
54,0	41,0	44,1	1 500	42,8	42,2	1 500	54,0
56,0	38,2	41,5	1 300	39,9	39,4	1 300	56,0
58,0				36,7	36,3	1 100	58,0

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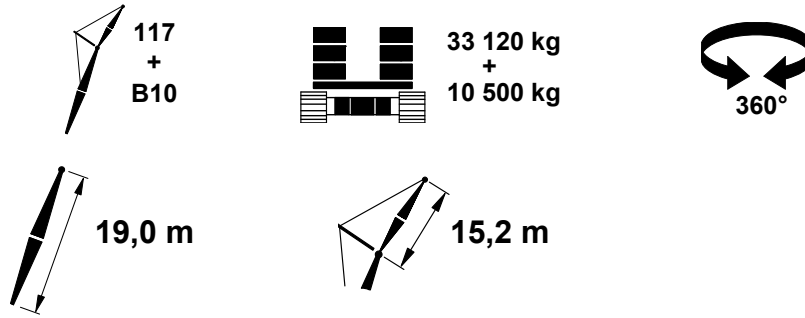
ASME B30.5



	10°			30°				
	Diagram	Diagram	Diagram	Diagram	Diagram	Diagram		
	m	o	m	kg	o	m	kg	m
15,2	80,9	71,1	10 800					15,2
16,0	80,3	70,9	10 800					16,0
18,0	78,6	70,5	10 700					18,0
20,0	77,0	69,9	10 400	79,7	68,7	7 300		20,0
22,0	75,3	69,4	9 200	77,9	68,1	7 100		22,0
24,0	73,5	68,7	8 100	76,2	67,5	6 900		24,0
26,0	71,8	68,0	7 100	74,4	66,7	6 700		26,0
28,0	70,1	67,2	6 300	72,6	65,9	6 400		28,0
30,0	68,3	66,4	5 600	70,8	65,1	5 900		30,0
32,0	66,5	65,4	5 000	69,0	64,1	5 200		32,0
34,0	64,7	64,4	4 400	67,1	63,1	4 700		34,0
36,0	62,8	63,4	4 000	65,2	62,0	4 200		36,0
38,0	60,9	62,2	3 500	63,3	60,8	3 700		38,0
40,0	59,0	60,9	3 200	61,3	59,5	3 400		40,0
42,0	57,0	59,6	2 800	59,3	58,1	3 000		42,0
44,0	55,0	58,1	2 500	57,2	56,6	2 700		44,0
46,0	52,9	56,5	2 200	55,1	55,0	2 400		46,0
48,0	50,8	54,8	2 000	52,9	53,2	2 100		48,0
50,0	48,6	53,0	1 700	50,6	51,3	1 900		50,0
52,0	46,3	51,0	1 500	48,2	49,2	1 600		52,0
54,0	43,9	48,8	1 300	45,7	47,0	1 400		54,0
56,0	41,4	46,5	1 100	43,1	44,5	1 200		56,0

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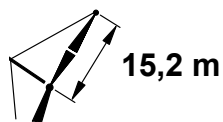
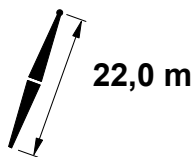
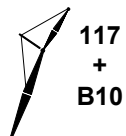


m	10°			30°			m
	°	m	kg	°	m	kg	
10,4	80,5	35,4	10 400				10,4
12,0	77,6	34,9	10 100				12,0
14,0	74,1	34,2	9 800				14,0
16,0	70,5	33,3	9 500	77,6	32,2	6 100	16,0
18,0	66,7	32,3	9 300	73,7	31,2	5 700	18,0
20,0	62,9	31,1	8 800	69,7	29,9	5 300	20,0
22,0	58,8	29,7	8 000	65,4	28,5	5 000	22,0
24,0	54,5	28,1	7 400	60,9	26,8	4 800	24,0
26,0	50,0	26,2	6 800	56,1	24,8	4 500	26,0
28,0	45,0	24,0	6 300	50,8	22,4	4 300	28,0
30,0	39,4	21,3	5 900	44,7	19,5	4 200	30,0
32,0	32,9	17,9	5 600	37,2	15,6	4 100	32,0

REFERENCE ONLY

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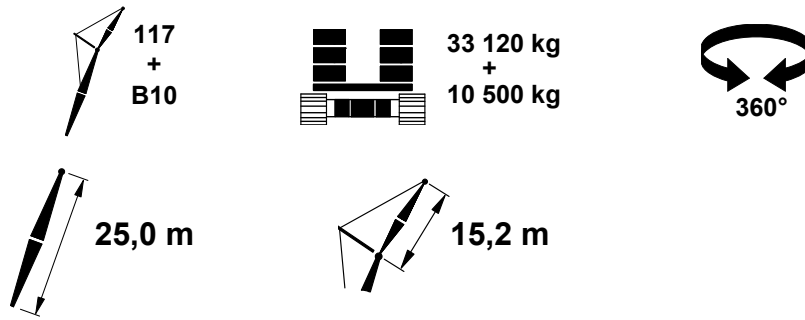


m	10°			30°			m
	°	m	kg	°	m	kg	
11,0	80,3	38,3	10 300				11,0
12,0	78,7	38,0	10 200				12,0
14,0	75,4	37,4	9 900				14,0
16,0	72,2	36,6	9 700	78,7	35,4	6 200	16,0
18,0	68,8	35,7	9 400	75,2	34,5	5 800	18,0
20,0	65,3	34,6	9 200	71,6	33,4	5 500	20,0
22,0	61,7	33,4	9 000	67,9	32,1	5 200	22,0
24,0	58,0	32,0	8 600	63,9	30,6	4 900	24,0
26,0	54,0	30,3	8 100	59,8	28,9	4 700	26,0
28,0	49,8	28,5	7 600	55,4	26,9	4 500	28,0
30,0	45,3	26,3	7 000	50,5	24,6	4 300	30,0
32,0	40,3	23,7	6 400	45,1	21,8	4 200	32,0
34,0	34,6	20,5	5 800	38,7	18,3	4 100	34,0
36,0	27,6	16,4	5 300				36,0

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ASME B30.5

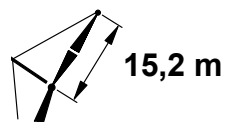
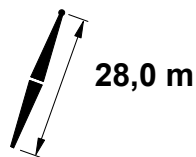
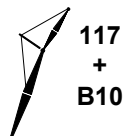


	10°			30°			
	m	°	m	kg	m	kg	
11,6	80,2	41,2	10 300				11,6
12,0	79,5	41,1	10 200				12,0
14,0	76,6	40,5	10 000				14,0
16,0	73,6	39,8	9 700	79,6	38,6	6 300	16,0
18,0	70,5	39,0	9 500	76,4	37,7	5 900	18,0
20,0	67,3	38,0	9 300	73,2	36,7	5 600	20,0
22,0	64,1	36,9	9 100	69,8	35,6	5 300	22,0
24,0	60,7	35,6	9 000	66,3	34,3	5 100	24,0
26,0	57,2	34,2	8 400	62,7	32,8	4 800	26,0
28,0	53,6	32,5	7 600	58,8	31,1	4 600	28,0
30,0	49,7	30,7	6 900	54,7	29,1	4 500	30,0
32,0	45,5	28,5	6 200	50,3	26,8	4 300	32,0
34,0	41,0	26,0	5 700	45,4	24,1	4 200	34,0
36,0	35,9	23,0	5 200	39,7	20,8	4 100	36,0
38,0	29,8	19,3	4 800	32,8	16,5	4 000	38,0

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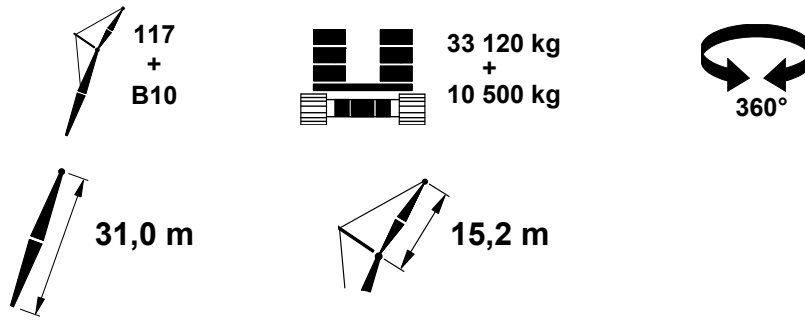


	10°			30°			
	Diagram	Diagram	Diagram	Diagram	Diagram	Diagram	
	m	°	m	kg	°	m	kg
11,6	80,9	44,3	10 300				11,6
12,0	80,3	44,2	10 300				12,0
14,0	77,5	43,7	10 100				14,0
16,0	74,8	43,0	9 800				16,0
18,0	71,9	42,2	9 600	77,5	41,0	6 100	18,0
20,0	69,0	41,4	9 500	74,5	40,1	5 700	20,0
22,0	66,1	40,3	9 300	71,4	39,0	5 500	22,0
24,0	63,0	39,2	9 100	68,3	37,8	5 200	24,0
26,0	59,9	37,9	8 300	65,0	36,5	5 000	26,0
28,0	56,6	36,4	7 500	61,6	35,0	4 800	28,0
30,0	53,2	34,8	6 800	58,0	33,2	4 600	30,0
32,0	49,6	32,9	6 200	54,2	31,3	4 400	32,0
34,0	45,8	30,8	5 600	50,1	29,0	4 300	34,0
36,0	41,6	28,4	5 200	45,7	26,4	4 200	36,0
38,0	37,0	25,5	4 700	40,6	23,3	4 100	38,0
40,0	31,7	22,0	4 300	34,7	19,4	4 000	40,0
42,0	25,2	17,5	4 000				42,0

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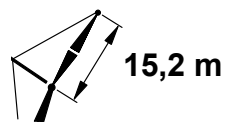
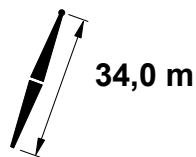
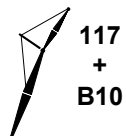
ASME B30.5



	10°			30°			
	m	°	m	kg	°	m	
12,2	80,7	47,2	10 300				12,2
14,0	78,4	46,8	10 100				14,0
16,0	75,8	46,2	9 900				16,0
18,0	73,2	45,4	9 700	78,4	44,2	6 200	18,0
20,0	70,5	44,6	9 500	75,6	43,3	5 800	20,0
22,0	67,8	43,7	9 400	72,8	42,4	5 600	22,0
24,0	65,0	42,6	9 000	69,9	41,3	5 300	24,0
26,0	62,1	41,5	8 200	66,9	40,1	5 100	26,0
28,0	59,1	40,1	7 400	63,9	38,7	4 900	28,0
30,0	56,1	38,7	6 700	60,7	37,1	4 700	30,0
32,0	52,9	37,0	6 000	57,3	35,4	4 600	32,0
34,0	49,5	35,1	5 500	53,8	33,4	4 400	34,0
36,0	45,9	33,0	5 000	50,0	31,2	4 300	36,0
38,0	42,1	30,6	4 600	45,9	28,7	4 200	38,0
40,0	37,8	27,9	4 200	41,3	25,7	4 100	40,0
42,0	33,1	24,6	3 900	36,0	22,0	3 900	42,0
44,0	27,5	20,5	3 600				44,0

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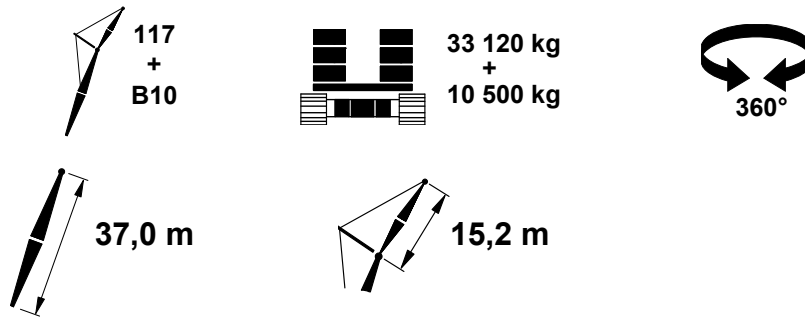
ASME B30.5



m	10°			30°			m
	°	m	kg	°	m	kg	
12,8	80,5	50,2	10 200				12,8
14,0	79,1	49,9	10 100				14,0
16,0	76,7	49,3	9 900				16,0
18,0	74,2	48,6	9 800	79,1	47,3	6 200	18,0
20,0	71,7	47,9	9 600	76,6	46,5	5 900	20,0
22,0	69,2	47,0	9 400	74,0	45,6	5 700	22,0
24,0	66,6	46,0	9 000	71,3	44,6	5 400	24,0
26,0	64,0	44,9	8 100	68,6	43,5	5 200	26,0
28,0	61,3	43,7	7 300	65,8	42,3	5 000	28,0
30,0	58,5	42,4	6 600	62,9	40,9	4 800	30,0
32,0	55,6	40,9	5 900	59,8	39,3	4 700	32,0
34,0	52,6	39,2	5 400	56,7	37,6	4 500	34,0
36,0	49,4	37,3	4 900	53,4	35,6	4 400	36,0
38,0	46,0	35,3	4 500	49,8	33,4	4 300	38,0
40,0	42,5	32,9	4 100	46,0	30,9	4 200	40,0
42,0	38,6	30,2	3 800	41,8	28,0	3 900	42,0
44,0	34,3	27,1	3 500	37,1	24,6	3 500	44,0
46,0	29,3	23,3	3 200				46,0
48,0	23,2	18,5	2 900				48,0

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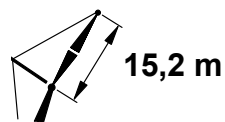
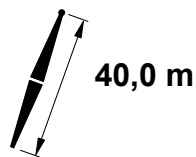
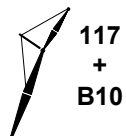
ASME B30.5



m	10°			30°			m
	°	m	kg	°	m	kg	
13,4	80,4	53,1	10 100				13,4
14,0	79,7	53,0	10 100				14,0
16,0	77,5	52,4	9 900				16,0
18,0	75,2	51,8	9 800				18,0
20,0	72,9	51,1	9 600	77,4	49,8	6 000	20,0
22,0	70,5	50,3	9 500	75,0	48,9	5 800	22,0
24,0	68,1	49,4	8 900	72,5	48,0	5 500	24,0
26,0	65,6	48,4	8 000	70,0	46,9	5 300	26,0
28,0	63,1	47,3	7 200	67,4	45,8	5 100	28,0
30,0	60,6	46,0	6 400	64,7	44,5	5 000	30,0
32,0	57,9	44,6	5 800	62,0	43,1	4 800	32,0
34,0	55,2	43,1	5 300	59,1	41,5	4 600	34,0
36,0	52,3	41,5	4 800	56,2	39,8	4 500	36,0
38,0	49,3	39,6	4 400	53,0	37,8	4 400	38,0
40,0	46,2	37,5	4 000	49,7	35,7	4 100	40,0
42,0	42,9	35,2	3 700	46,2	33,2	3 800	42,0
44,0	39,3	32,6	3 400	42,3	30,4	3 400	44,0
46,0	35,3	29,6	3 100	38,0	27,1	3 100	46,0
48,0	30,8	26,1	2 800	33,1	23,2	2 900	48,0
50,0	25,6	21,7	2 600				50,0

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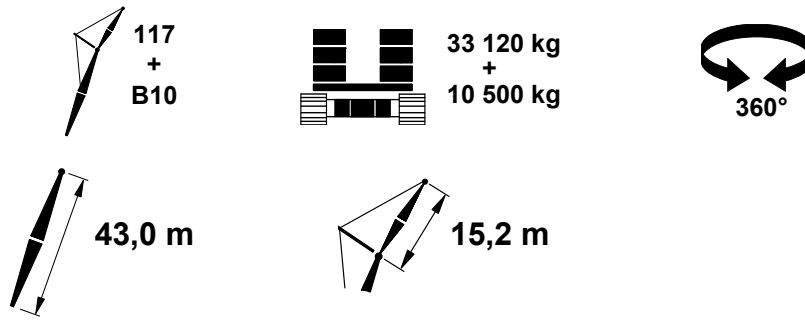
ASME B30.5



	10°			30°			
	°	m	kg	°	m	kg	
13,4	80,9	56,2	10 100				13,4
14,0	80,3	56,0	10 100				14,0
16,0	78,2	55,5	9 900				16,0
18,0	76,0	54,9	9 800				18,0
20,0	73,8	54,3	9 700			6 100	20,0
22,0	71,6	53,5	9 500	78,2	52,9	5 900	22,0
24,0	69,4	52,7	8 800	73,6	51,3	5 600	24,0
26,0	67,1	51,7	7 900	71,2	50,3	5 400	26,0
28,0	64,7	50,7	7 100	68,8	49,2	5 200	28,0
30,0	62,4	49,5	6 400	66,3	48,0	5 100	30,0
32,0	59,9	48,3	5 700	63,8	46,7	4 900	32,0
34,0	57,4	46,9	5 200	61,2	45,3	4 800	34,0
36,0	54,8	45,3	4 700	58,5	43,7	4 600	36,0
38,0	52,1	43,7	4 300	55,7	41,9	4 500	38,0
40,0	49,3	41,8	3 900	52,7	40,0	4 100	40,0
42,0	46,3	39,8	3 600	49,6	37,9	3 700	42,0
44,0	43,2	37,5	3 300	46,3	35,5	3 400	44,0
46,0	39,8	34,9	3 000	42,7	32,7	3 100	46,0
48,0	36,1	32,0	2 700	38,8	29,6	2 800	48,0
50,0	32,1	28,7	2 500	34,3	25,9	2 500	50,0
52,0	27,4	24,6	2 300				52,0

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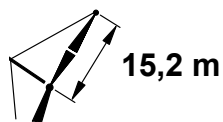
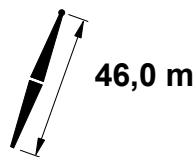
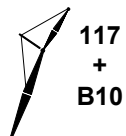
ASME B30.5



m	10°			30°			m
	°	m	kg	°	m	kg	
14,0	80,8	59,1	10 000				14,0
16,0	78,8	58,6	9 900				16,0
18,0	76,8	58,1	9 800				18,0
20,0	74,7	57,5	9 700	78,8	56,1	6 200	20,0
22,0	72,6	56,7	9 500	76,7	55,3	5 900	22,0
24,0	70,5	55,9	8 700	74,5	54,5	5 700	24,0
26,0	68,4	55,1	7 800	72,3	53,6	5 500	26,0
28,0	66,2	54,1	6 900	70,1	52,6	5 300	28,0
30,0	63,9	53,0	6 200	67,8	51,5	5 200	30,0
32,0	61,7	51,8	5 600	65,4	50,3	5 000	32,0
34,0	59,3	50,6	5 100	63,0	49,0	4 800	34,0
36,0	56,9	49,1	4 600	60,5	47,5	4 700	36,0
38,0	54,5	47,6	4 200	57,9	45,9	4 400	38,0
40,0	51,9	45,9	3 800	55,3	44,2	4 000	40,0
42,0	49,2	44,1	3 500	52,5	42,2	3 600	42,0
44,0	46,4	42,0	3 200	49,6	40,1	3 300	44,0
46,0	43,5	39,8	2 900	46,4	37,7	3 000	46,0
48,0	40,3	37,3	2 600	43,1	35,1	2 700	48,0
50,0	36,9	34,5	2 400	39,5	32,1	2 500	50,0
52,0	33,2	31,2	2 200	35,4	28,5	2 200	52,0
54,0	29,0	27,5	2 000				54,0
56,0	24,0	22,8	1 700				56,0

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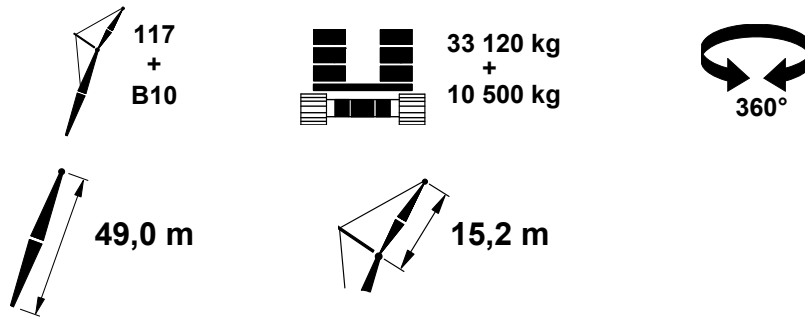
ASME B30.5



	10°			30°			
	m	°	m	kg	m	°	
14,6	80,7	62,0	9 900				14,6
16,0	79,4	61,7	9 800				16,0
18,0	77,4	61,2	9 700				18,0
20,0	75,5	60,6	9 600	79,4	59,2	6 300	20,0
22,0	73,5	59,9	9 400	77,4	58,5	6 000	22,0
24,0	71,5	59,2	8 600	75,3	57,7	5 800	24,0
26,0	69,5	58,3	7 700	73,3	56,9	5 600	26,0
28,0	67,4	57,4	6 800	71,1	55,9	5 400	28,0
30,0	65,3	56,4	6 100	69,0	54,9	5 200	30,0
32,0	63,2	55,3	5 500	66,8	53,8	5 100	32,0
34,0	61,0	54,1	5 000	64,6	52,5	4 900	34,0
36,0	58,8	52,8	4 500	62,2	51,2	4 700	36,0
38,0	56,5	51,4	4 100	59,9	49,7	4 300	38,0
40,0	54,1	49,8	3 700	57,4	48,1	3 900	40,0
42,0	51,7	48,1	3 400	54,9	46,4	3 500	42,0
44,0	49,2	46,3	3 100	52,2	44,4	3 200	44,0
46,0	46,5	44,3	2 800	49,5	42,3	2 900	46,0
48,0	43,7	42,0	2 500	46,5	40,0	2 600	48,0
50,0	40,7	39,6	2 300	43,4	37,4	2 400	50,0
52,0	37,6	36,8	2 100	40,0	34,4	2 100	52,0
54,0	34,1	33,7	1 900	36,3	31,1	1 900	54,0
56,0	30,3	30,1	1 700	32,0	27,1	1 700	56,0
58,0	25,9	25,8	1 400				58,0

MLC80A-1 S-2

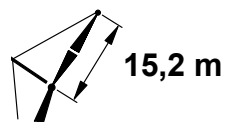
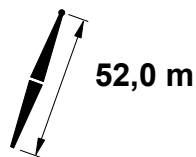
ASME B30.5



m	10°			30°			m
	°	m	kg	°	m	kg	
15,2	80,6	65,0	9 800				15,2
16,0	79,9	64,8	9 800				16,0
18,0	78,0	64,3	9 600				18,0
20,0	76,2	63,7	9 600	79,9	62,3	6 300	20,0
22,0	74,3	63,1	9 300	78,0	61,7	6 100	22,0
24,0	72,4	62,4	8 500	76,1	61,0	5 900	24,0
26,0	70,5	61,6	7 500	74,1	60,2	5 700	26,0
28,0	68,6	60,7	6 700	72,1	59,3	5 500	28,0
30,0	66,6	59,8	6 000	70,1	58,3	5 300	30,0
32,0	64,6	58,8	5 400	68,0	57,2	5 200	32,0
34,0	62,6	57,6	4 900	65,9	56,1	5 000	34,0
36,0	60,5	56,4	4 400	63,8	54,8	4 600	36,0
38,0	58,3	55,1	4 000	61,6	53,4	4 200	38,0
40,0	56,1	53,6	3 600	59,3	51,9	3 800	40,0
42,0	53,9	52,1	3 300	57,0	50,3	3 400	42,0
44,0	51,5	50,4	2 900	54,6	48,6	3 100	44,0
46,0	49,1	48,5	2 700	52,0	46,7	2 800	46,0
48,0	46,6	46,5	2 400	49,4	44,6	2 500	48,0
50,0	44,0	44,3	2 200	46,6	42,3	2 300	50,0
52,0	41,2	41,9	1 900	43,7	39,7	2 000	52,0
54,0	38,2	39,2	1 700	40,5	36,9	1 800	54,0
56,0	35,0	36,2	1 600	37,1	33,6	1 600	56,0
58,0	31,4	32,8	1 300				58,0
60,0	27,4	28,8	1 100				60,0

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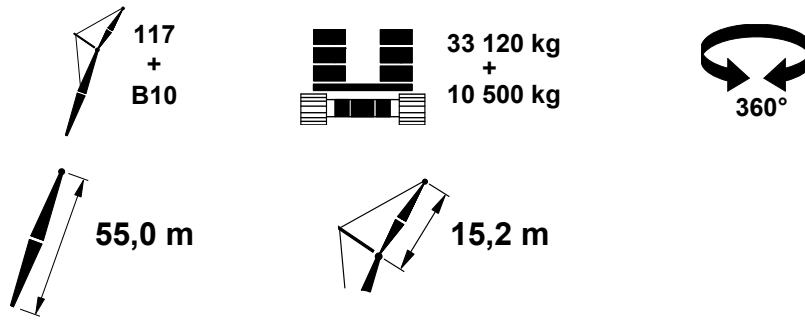
ASME B30.5



	10°			30°						
	m	°	m	kg	m	°		m	kg	m
15,2	81,0	68,0	9 700				15,2			
16,0	80,3	67,9	9 700				16,0			
18,0	78,6	67,4	9 600				18,0			
20,0	76,8	66,9	9 500	80,4	65,4	6 400	20,0			
22,0	75,0	66,3	9 300	78,6	64,8	6 200	22,0			
24,0	73,2	65,6	8 400	76,7	64,1	6 000	24,0			
26,0	71,4	64,8	7 400	74,9	63,4	5 800	26,0			
28,0	69,6	64,0	6 600	73,0	62,5	5 600	28,0			
30,0	67,7	63,1	5 900	71,1	61,6	5 400	30,0			
32,0	65,8	62,1	5 300	69,1	60,6	5 300	32,0			
34,0	63,9	61,1	4 800	67,2	59,5	5 000	34,0			
36,0	61,9	59,9	4 300	65,1	58,3	4 600	36,0			
38,0	59,9	58,7	3 900	63,1	57,0	4 100	38,0			
40,0	57,9	57,3	3 500	61,0	55,7	3 700	40,0			
42,0	55,8	55,9	3 200	58,8	54,2	3 400	42,0			
44,0	53,6	54,3	2 800	56,6	52,5	3 000	44,0			
46,0	51,4	52,6	2 600	54,3	50,8	2 700	46,0			
48,0	49,1	50,8	2 300	51,8	48,9	2 500	48,0			
50,0	46,7	48,8	2 100	49,3	46,8	2 200	50,0			
52,0	44,2	46,6	1 900	46,7	44,5	2 000	52,0			
54,0	41,5	44,2	1 700	43,9	42,0	1 700	54,0			
56,0	38,7	41,6	1 500	40,9	39,2	1 500	56,0			
58,0	35,7	38,6	1 300	37,7	36,1	1 300	58,0			
60,0	32,4	35,3	1 000	34,2	32,5	1 100	60,0			

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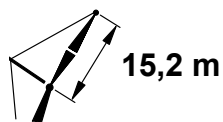
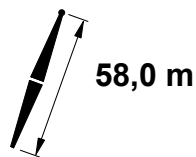
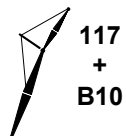
ASME B30.5



m	10°			30°			m
	°	m	kg	°	m	kg	
16,8	80,1	70,8	9 500				16,8
18,0	79,1	70,5	9 500				18,0
20,0	77,4	70,0	9 400	80,8	68,5	6 400	20,0
22,0	75,7	69,4	9 200	79,1	67,9	6 200	22,0
24,0	74,0	68,7	8 300	77,3	67,3	6 000	24,0
26,0	72,3	68,0	7 300	75,6	66,5	5 800	26,0
28,0	70,5	67,2	6 500	73,8	65,7	5 600	28,0
30,0	68,7	66,4	5 800	72,0	64,9	5 500	30,0
32,0	66,9	65,5	5 200	70,1	63,9	5 300	32,0
34,0	65,1	64,5	4 700	68,3	62,9	5 000	34,0
36,0	63,3	63,4	4 200	66,4	61,8	4 500	36,0
38,0	61,4	62,2	3 800	64,4	60,6	4 000	38,0
40,0	59,4	60,9	3 400	62,4	59,3	3 600	40,0
42,0	57,5	59,6	3 000	60,4	57,9	3 300	42,0
44,0	55,5	58,1	2 700	58,3	56,4	2 900	44,0
46,0	53,4	56,5	2 500	56,2	54,7	2 600	46,0
48,0	51,2	54,8	2 200	54,0	53,0	2 300	48,0
50,0	49,0	53,0	2 000	51,7	51,1	2 100	50,0
52,0	46,7	51,0	1 700	49,3	49,0	1 900	52,0
54,0	44,3	48,8	1 500	46,8	46,7	1 600	54,0
56,0	41,8	46,5	1 400	44,1	44,3	1 400	56,0
58,0	39,2	43,9	1 200	41,3	41,5	1 300	58,0
60,0				38,3	38,5	1 000	60,0

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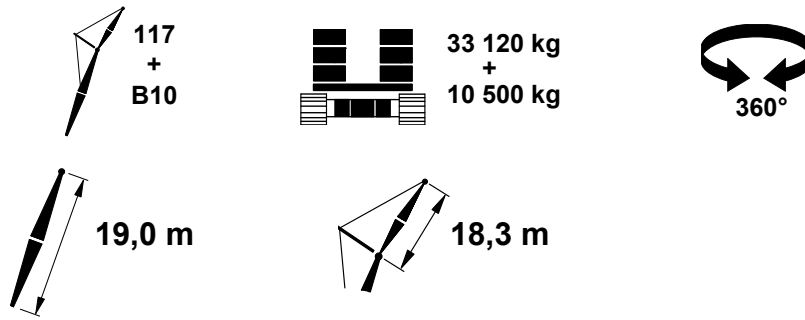
ASME B30.5



	10°			30°				
	Diagram	Diagram	Diagram	Diagram	Diagram	Diagram		
	m	o	m	kg	o	m	kg	m
16,8	80,5	73,8	9 300					16,8
18,0	79,5	73,6	9 200					18,0
20,0	77,9	73,1	9 100					20,0
22,0	76,3	72,5	8 900	79,6	71,1	6 300		22,0
24,0	74,7	71,9	8 200	77,9	70,4	6 100		24,0
26,0	73,0	71,2	7 200	76,2	69,7	5 900		26,0
28,0	71,3	70,5	6 400	74,5	69,0	5 700		28,0
30,0	69,7	69,7	5 700	72,8	68,2	5 600		30,0
32,0	68,0	68,8	5 100	71,0	67,3	5 400		32,0
34,0	66,2	67,8	4 500	69,3	66,3	4 900		34,0
36,0	64,5	66,8	4 100	67,5	65,2	4 400		36,0
38,0	62,7	65,7	3 600	65,6	64,1	3 900		38,0
40,0	60,9	64,5	3 300	63,8	62,9	3 500		40,0
42,0	59,0	63,2	2 900	61,9	61,5	3 100		42,0
44,0	57,1	61,8	2 600	59,9	60,1	2 800		44,0
46,0	55,2	60,4	2 300	57,9	58,6	2 500		46,0
48,0	53,2	58,8	2 100	55,8	57,0	2 200		48,0
50,0	51,1	57,1	1 800	53,7	55,2	2 000		50,0
52,0	49,0	55,2	1 600	51,5	53,3	1 800		52,0
54,0	46,8	53,3	1 400	49,2	51,2	1 500		54,0
56,0	44,5	51,1	1 200	46,9	49,0	1 300		56,0
58,0	42,1	48,8	1 000	44,3	46,6	1 100		58,0

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ASME B30.5

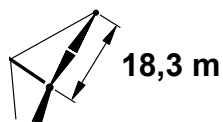
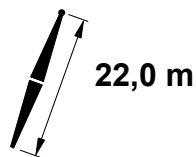
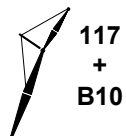


m	10°			30°			m
	°	m	kg	°	m	kg	
11,0	80,7	38,4	9 300				11,0
12,0	79,0	38,1	9 200				12,0
14,0	75,8	37,4	8 900				14,0
16,0	72,5	36,7	8 600				16,0
18,0	69,2	35,7	8 300	77,1	34,6	5 400	18,0
20,0	65,7	34,7	8 100	73,5	33,5	5 000	20,0
22,0	62,1	33,5	7 300	69,8	32,2	4 700	22,0
24,0	58,4	32,0	6 700	65,9	30,8	4 500	24,0
26,0	54,5	30,4	6 100	61,8	29,1	4 200	26,0
28,0	50,3	28,6	5 700	57,4	27,1	4 000	28,0
30,0	45,8	26,4	5 300	52,6	24,8	3 800	30,0
32,0	40,8	23,8	4 900	47,2	22,0	3 700	32,0
34,0	35,1	20,7	4 700	40,9	18,5	3 500	34,0
36,0	28,2	16,6	4 500	32,7	13,7	3 500	36,0

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ASME B30.5

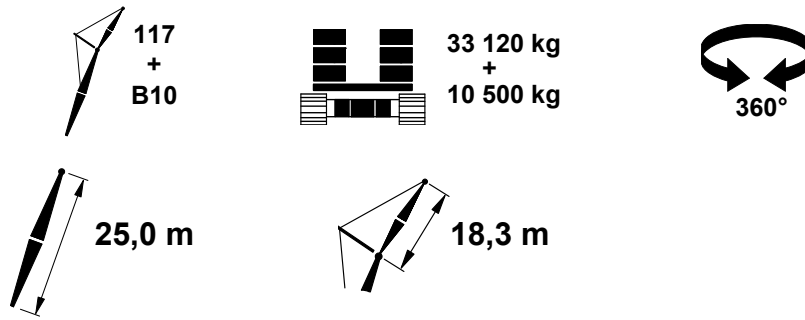


	10°			30°				
	Diagram	Diagram	Diagram	Diagram	Diagram	Diagram		
	m	°	m	kg	°	m	kg	m
11,6	80,5	41,3	9 300					11,6
12,0	79,9	41,2	9 200					12,0
14,0	76,9	40,6	8 900					14,0
16,0	73,9	39,9	8 700					16,0
18,0	70,9	39,1	8 500	78,2	37,9	5 500		18,0
20,0	67,7	38,1	8 200	74,9	36,9	5 200		20,0
22,0	64,5	37,0	8 000	71,6	35,7	4 900		22,0
24,0	61,1	35,7	7 800	68,1	34,4	4 600		24,0
26,0	57,7	34,3	7 600	64,5	32,9	4 400		26,0
28,0	54,0	32,7	7 100	60,7	31,2	4 200		28,0
30,0	50,1	30,8	6 600	56,6	29,2	4 000		30,0
32,0	46,0	28,7	6 200	52,2	27,0	3 800		32,0
34,0	41,5	26,2	5 800	47,3	24,3	3 700		34,0
36,0	36,4	23,2	5 400	41,7	21,0	3 600		36,0
38,0	30,4	19,5	5 000	34,9	16,8	3 500		38,0

REFERENCE ONLY

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ASME B30.5

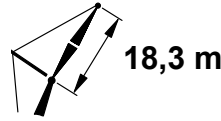
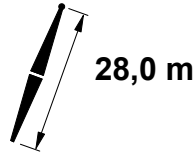
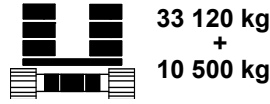
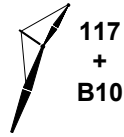


m	10°			30°			m
	°	m	kg	°	m	kg	
12,2	80,3	44,2	9 200				12,2
14,0	77,9	43,7	9 000				14,0
16,0	75,1	43,1	8 800				16,0
18,0	72,3	42,3	8 600	79,1	41,1	5 600	18,0
20,0	69,4	41,4	8 300	76,1	40,1	5 300	20,0
22,0	66,4	40,4	8 200	73,1	39,1	5 000	22,0
24,0	63,4	39,3	7 900	69,9	37,9	4 700	24,0
26,0	60,2	38,0	7 700	66,7	36,6	4 500	26,0
28,0	57,0	36,5	7 500	63,3	35,1	4 300	28,0
30,0	53,6	34,9	6 900	59,7	33,3	4 100	30,0
32,0	50,0	33,0	6 300	55,9	31,4	3 900	32,0
34,0	46,1	30,9	5 800	51,8	29,1	3 800	34,0
36,0	42,0	28,5	5 300	47,4	26,5	3 700	36,0
38,0	37,4	25,6	4 900	42,4	23,4	3 600	38,0
40,0	32,1	22,2	4 500	36,4	19,5	3 500	40,0
42,0	25,7	17,7	4 100				42,0

REFERENCE ONLY

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ASME B30.5

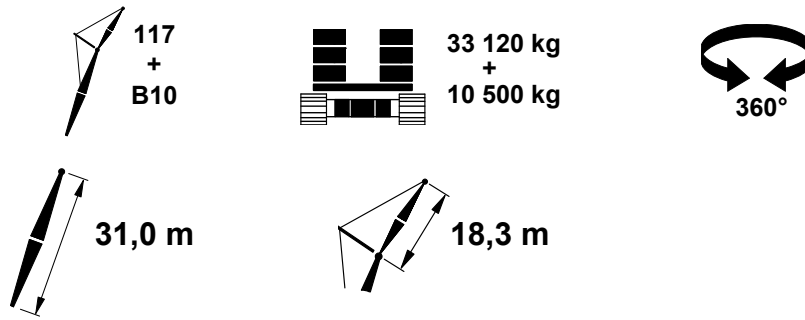


	10°			30°				
	Diagram	Diagram	Diagram	Diagram	Diagram	Diagram		
	m	°	m	kg	°	m	kg	m
12,2	81,0	47,3	9 200					12,2
14,0	78,7	46,9	9 000					14,0
16,0	76,1	46,3	8 800					16,0
18,0	73,5	45,5	8 600					18,0
20,0	70,8	44,7	8 400					20,0
22,0	68,1	43,8	8 300	77,1	43,4	5 400		22,0
24,0	65,3	42,7	8 100	74,3	42,4	5 100		24,0
26,0	62,5	41,6	7 900	71,4	41,4	4 800		26,0
28,0	59,5	40,3	7 500	68,5	40,1	4 600		28,0
30,0	56,4	38,8	6 800	65,4	38,8	4 400		30,0
32,0	53,2	37,1	6 200	62,2	37,2	4 200		32,0
34,0	49,9	35,3	5 700	58,9	35,5	4 100		34,0
36,0	46,3	33,2	5 200	55,3	33,6	3 900		36,0
38,0	42,5	30,8	4 800	51,6	31,3	3 800		38,0
40,0	38,3	28,0	4 400	47,5	28,8	3 700		40,0
42,0	33,6	24,8	4 100	42,9	25,8	3 600		42,0
44,0	28,0	20,8	3 800	37,7	22,2	3 500		44,0
				31,2	17,5	3 400		44,0

REFERENCE ONLY

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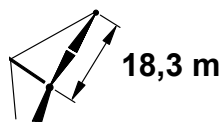
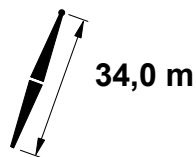
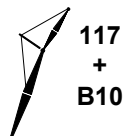
ASME B30.5



m	10°			30°			m
	°	m	kg	°	m	kg	
12,8	80,8	50,3	9 100				12,8
14,0	79,4	50,0	9 000				14,0
16,0	77,0	49,4	8 800				16,0
18,0	74,5	48,7	8 700				18,0
20,0	72,0	48,0	8 500	78,0	46,6	5 500	20,0
22,0	69,5	47,1	8 300	75,4	45,7	5 200	22,0
24,0	67,0	46,1	8 200	72,7	44,7	5 000	24,0
26,0	64,3	45,0	8 000	70,0	43,6	4 700	26,0
28,0	61,6	43,8	7 400	67,2	42,3	4 500	28,0
30,0	58,8	42,5	6 700	64,3	40,9	4 300	30,0
32,0	55,9	41,0	6 100	61,3	39,4	4 200	32,0
34,0	52,9	39,3	5 600	58,1	37,6	4 000	34,0
36,0	49,8	37,5	5 100	54,8	35,7	3 900	36,0
38,0	46,4	35,4	4 700	51,3	33,5	3 800	38,0
40,0	42,9	33,1	4 300	47,5	31,0	3 700	40,0
42,0	39,0	30,4	4 000	43,3	28,1	3 600	42,0
44,0	34,7	27,3	3 700	38,6	24,7	3 500	44,0
46,0	29,8	23,5	3 400				46,0
48,0	23,8	18,7	3 000				48,0

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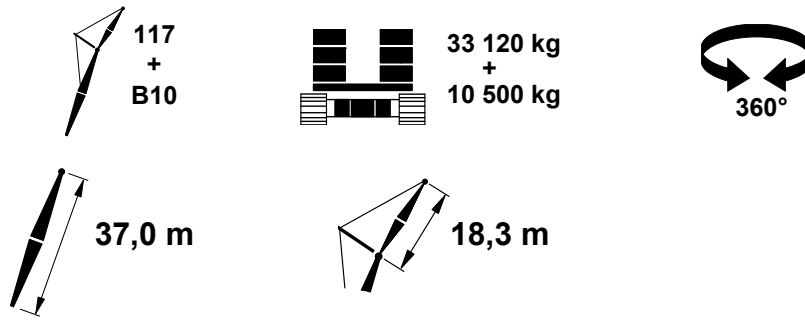
ASME B30.5



	10°			30°			
	°	m	kg	°	m	kg	
13,4	80,7	53,2	9 100				13,4
14,0	80,0	53,0	9 000				14,0
16,0	77,7	52,5	8 900				16,0
18,0	75,4	51,9	8 700				18,0
20,0	73,1	51,2	8 500				20,0
22,0	70,8	50,4	8 400	78,7	49,8	5 600	22,0
24,0	68,4	49,5	8 200	76,3	48,9	5 300	24,0
26,0	65,9	48,4	8 000	73,8	48,0	5 100	26,0
28,0	63,4	47,3	7 300	71,3	47,0	4 800	28,0
30,0	60,9	46,1	6 600	68,7	45,8	4 600	30,0
32,0	58,2	44,7	6 000	66,1	44,5	4 500	32,0
34,0	55,5	43,2	5 500	63,3	43,1	4 300	34,0
36,0	52,6	41,5	5 000	60,5	41,5	4 100	36,0
38,0	49,6	39,7	4 600	57,5	39,8	4 000	38,0
40,0	46,5	37,6	4 200	54,4	37,9	3 900	40,0
42,0	43,2	35,3	3 900	51,1	35,7	3 800	42,0
44,0	39,6	32,7	3 600	47,5	33,2	3 700	44,0
46,0	35,7	29,7	3 300	43,7	30,4	3 600	46,0
48,0	31,2	26,2	3 000	39,4	27,2	3 400	48,0
50,0	26,0	21,9	2 800	34,4	23,2	3 100	50,0

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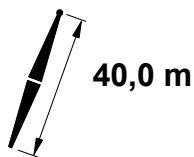
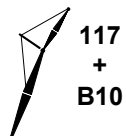
ASME B30.5

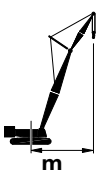
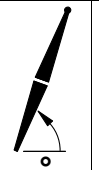

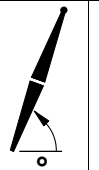




m	10°			30°			m
	°	m	kg	°	m	kg	
14,0	80,5	56,1	9 000				14,0
16,0	78,4	55,6	8 900				16,0
18,0	76,3	55,0	8 700				18,0
20,0	74,1	54,4	8 500	79,4	53,0	5 600	20,0
22,0	71,9	53,6	8 400	77,1	52,2	5 400	22,0
24,0	69,6	52,8	8 300	74,8	51,3	5 100	24,0
26,0	67,4	51,8	8 000	72,5	50,3	4 900	26,0
28,0	65,0	50,8	7 200	70,1	49,3	4 700	28,0
30,0	62,6	49,6	6 500	67,6	48,1	4 600	30,0
32,0	60,2	48,4	5 900	65,1	46,8	4 400	32,0
34,0	57,7	47,0	5 400	62,5	45,3	4 200	34,0
36,0	55,1	45,5	4 900	59,8	43,8	4 100	36,0
38,0	52,4	43,8	4 500	57,0	42,0	4 000	38,0
40,0	49,6	41,9	4 100	54,0	40,1	3 900	40,0
42,0	46,6	39,9	3 700	50,9	37,9	3 800	42,0
44,0	43,5	37,6	3 400	47,6	35,5	3 600	44,0
46,0	40,2	35,1	3 200	44,0	32,8	3 300	46,0
48,0	36,5	32,2	2 900	40,1	29,7	3 000	48,0
50,0	32,5	28,9	2 700	35,6	26,0	2 700	50,0
52,0	27,9	24,8	2 400				52,0

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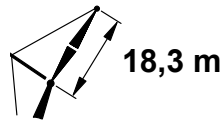
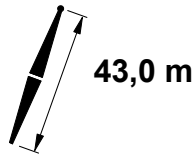
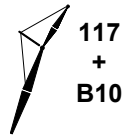
ASME B30.5



	10°			30°			
	 m	 m	 kg	 m	 m	 kg	
14,6	80,4	59,1	8 900				14,6
16,0	79,0	58,7	8 800				16,0
18,0	77,0	58,2	8 700				18,0
20,0	74,9	57,5	8 500	80,0	56,1	5 700	20,0
22,0	72,9	56,8	8 400	77,9	55,3	5 500	22,0
24,0	70,7	56,0	8 300	75,7	54,5	5 200	24,0
26,0	68,6	55,1	7 900	73,5	53,6	5 000	26,0
28,0	66,4	54,2	7 100	71,2	52,6	4 800	28,0
30,0	64,2	53,1	6 400	68,9	51,5	4 600	30,0
32,0	61,9	51,9	5 800	66,6	50,3	4 500	32,0
34,0	59,6	50,6	5 300	64,2	49,0	4 300	34,0
36,0	57,2	49,2	4 800	61,7	47,5	4 200	36,0
38,0	54,7	47,7	4 400	59,1	45,9	4 100	38,0
40,0	52,2	46,0	4 000	56,5	44,2	4 000	40,0
42,0	49,5	44,2	3 700	53,7	42,2	3 800	42,0
44,0	46,7	42,1	3 300	50,7	40,1	3 500	44,0
46,0	43,8	39,9	3 100	47,6	37,7	3 200	46,0
48,0	40,6	37,4	2 800	44,3	35,1	2 900	48,0
50,0	37,2	34,6	2 600	40,6	32,1	2 700	50,0
52,0	33,5	31,4	2 300	36,6	28,5	2 400	52,0
54,0	29,3	27,6	2 100	31,9	24,3	2 200	54,0
56,0	24,4	23,0	1 900				56,0

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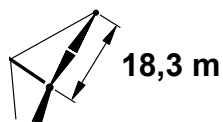
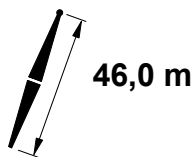
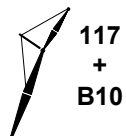
ASME B30.5



m	10°			30°			m
	°	m	kg	°	m	kg	
14,6	80,9	62,1	8 900				14,6
16,0	79,6	61,8	8 800				16,0
18,0	77,7	61,3	8 700				18,0
20,0	75,7	60,7	8 500	80,5	59,2	5 800	20,0
22,0	73,7	60,0	8 400	78,5	58,5	5 500	22,0
24,0	71,7	59,3	8 300	76,5	57,8	5 300	24,0
26,0	69,7	58,4	7 800	74,4	56,9	5 100	26,0
28,0	67,7	57,5	7 000	72,3	56,0	4 900	28,0
30,0	65,6	56,5	6 300	70,1	54,9	4 700	30,0
32,0	63,5	55,4	5 700	67,9	53,8	4 600	32,0
34,0	61,3	54,2	5 100	65,7	52,6	4 400	34,0
36,0	59,1	52,9	4 700	63,4	51,2	4 300	36,0
38,0	56,8	51,5	4 300	61,0	49,7	4 200	38,0
40,0	54,4	49,9	3 900	58,6	48,1	4 000	40,0
42,0	52,0	48,3	3 500	56,0	46,4	3 700	42,0
44,0	49,4	46,4	3 200	53,4	44,5	3 400	44,0
46,0	46,8	44,4	2 900	50,6	42,3	3 100	46,0
48,0	44,0	42,2	2 700	47,7	40,0	2 800	48,0
50,0	41,1	39,7	2 500	44,5	37,4	2 600	50,0
52,0	37,9	37,0	2 200	41,2	34,5	2 300	52,0
54,0	34,5	33,9	2 000	37,4	31,1	2 100	54,0
56,0	30,7	30,3	1 800	33,2	27,2	1 900	56,0
58,0	26,3	26,1	1 600				58,0

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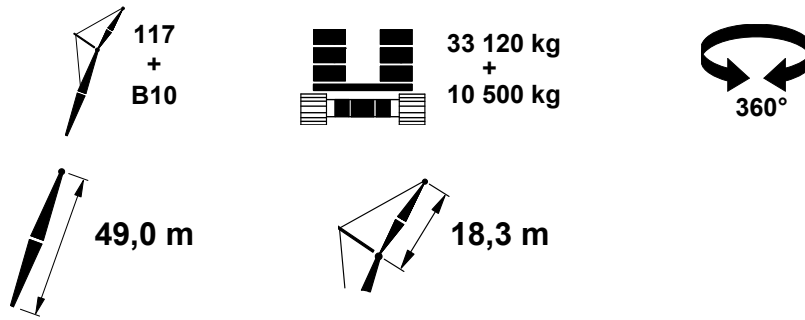
ASME B30.5



m	10°			30°			m
	°	m	kg	°	m	kg	
15,2	80,8	65,1	8 800				15,2
16,0	80,1	64,9	8 700				16,0
18,0	78,2	64,4	8 600				18,0
20,0	76,4	63,8	8 500				20,0
22,0	74,5	63,2	8 400	79,1	61,7	5 600	22,0
24,0	72,6	62,5	8 300	77,1	60,9	5 400	24,0
26,0	70,7	61,7	7 700	75,2	60,1	5 200	26,0
28,0	68,8	60,8	6 900	73,2	59,2	5 000	28,0
30,0	66,8	59,9	6 200	71,2	58,3	4 800	30,0
32,0	64,8	58,8	5 600	69,1	57,2	4 700	32,0
34,0	62,8	57,7	5 000	67,0	56,0	4 500	34,0
36,0	60,7	56,5	4 600	64,8	54,8	4 400	36,0
38,0	58,6	55,2	4 100	62,6	53,4	4 200	38,0
40,0	56,4	53,7	3 800	60,4	51,9	4 000	40,0
42,0	54,1	52,2	3 400	58,0	50,3	3 600	42,0
44,0	51,8	50,5	3 100	55,6	48,6	3 300	44,0
46,0	49,4	48,6	2 800	53,1	46,6	3 000	46,0
48,0	46,9	46,6	2 600	50,5	44,5	2 700	48,0
50,0	44,2	44,4	2 300	47,7	42,2	2 500	50,0
52,0	41,4	42,0	2 100	44,7	39,7	2 200	52,0
54,0	38,5	39,3	1 900	41,6	36,8	2 000	54,0
56,0	35,3	36,3	1 700	38,1	33,6	1 800	56,0
58,0	31,7	32,9	1 500	34,2	29,8	1 600	58,0
60,0	27,8	28,9	1 300				60,0
62,0	23,1	24,0	1 000				62,0

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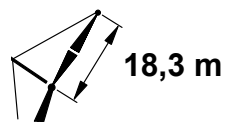
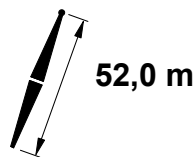
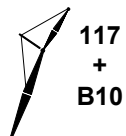
ASME B30.5



m	10°			30°			m
	°	m	kg	°	m	kg	
16,8	79,9	67,8	8 600				16,8
18,0	78,8	67,5	8 500				18,0
20,0	77,0	67,0	8 400				20,0
22,0	75,2	66,3	8 300	79,6	64,8	5 700	22,0
24,0	73,5	65,7	8 100	77,8	64,1	5 400	24,0
26,0	71,6	64,9	7 600	75,9	63,4	5 200	26,0
28,0	69,8	64,1	6 800	74,0	62,5	5 100	28,0
30,0	67,9	63,2	6 100	72,1	61,6	4 900	30,0
32,0	66,0	62,2	5 500	70,2	60,6	4 700	32,0
34,0	64,1	61,2	4 900	68,2	59,5	4 600	34,0
36,0	62,2	60,0	4 500	66,2	58,3	4 500	36,0
38,0	60,2	58,8	4 000	64,1	57,0	4 300	38,0
40,0	58,1	57,4	3 700	62,0	55,7	3 900	40,0
42,0	56,0	56,0	3 300	59,8	54,2	3 500	42,0
44,0	53,9	54,4	3 000	57,6	52,5	3 200	44,0
46,0	51,6	52,7	2 700	55,3	50,8	2 900	46,0
48,0	49,3	50,9	2 500	52,9	48,9	2 600	48,0
50,0	46,9	48,9	2 200	50,4	46,8	2 400	50,0
52,0	44,4	46,7	2 000	47,7	44,5	2 100	52,0
54,0	41,8	44,3	1 800	44,9	42,0	1 900	54,0
56,0	39,0	41,7	1 600	42,0	39,2	1 700	56,0
58,0	36,0	38,8	1 400	38,7	36,1	1 500	58,0
60,0	32,7	35,5	1 200	35,2	32,5	1 300	60,0
62,0	29,1	31,7	1 000	31,1	28,3	1 000	62,0

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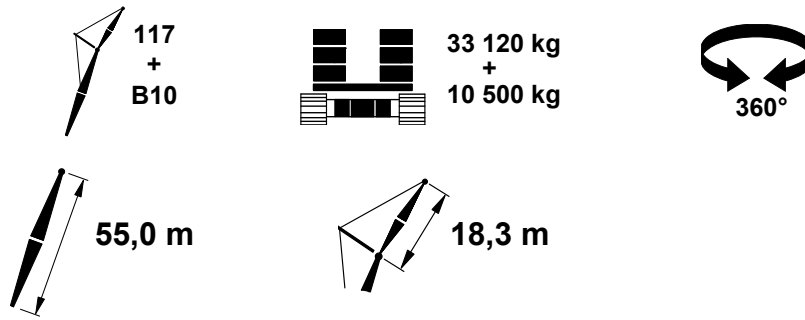
ASME B30.5



	10°			30°			
	Diagram	Diagram	kg	Diagram	Diagram	kg	
16,8	80,3	70,9	8 400				16,8
18,0	79,3	70,6	8 300				18,0
20,0	77,6	70,1	8 200				20,0
22,0	75,9	69,5	8 000	80,1	67,9	5 700	22,0
24,0	74,2	68,8	7 900	78,3	67,3	5 500	24,0
26,0	72,5	68,1	7 500	76,5	66,5	5 300	26,0
28,0	70,7	67,3	6 700	74,8	65,7	5 100	28,0
30,0	68,9	66,5	6 000	72,9	64,9	5 000	30,0
32,0	67,1	65,6	5 400	71,1	63,9	4 800	32,0
34,0	65,3	64,6	4 800	69,2	62,9	4 700	34,0
36,0	63,5	63,5	4 400	67,3	61,8	4 500	36,0
38,0	61,6	62,3	3 900	65,4	60,6	4 200	38,0
40,0	59,7	61,0	3 600	63,4	59,3	3 800	40,0
42,0	57,7	59,7	3 200	61,4	57,9	3 500	42,0
44,0	55,7	58,2	2 900	59,3	56,4	3 100	44,0
46,0	53,6	56,6	2 600	57,2	54,7	2 800	46,0
48,0	51,5	54,9	2 400	54,9	53,0	2 600	48,0
50,0	49,3	53,1	2 100	52,6	51,1	2 300	50,0
52,0	47,0	51,1	1 900	50,2	49,0	2 100	52,0
54,0	44,6	49,0	1 700	47,7	46,7	1 800	54,0
56,0	42,1	46,6	1 500	45,1	44,3	1 600	56,0
58,0	39,4	44,0	1 400	42,3	41,5	1 500	58,0
60,0	36,6	41,2	1 200	39,3	38,5	1 300	60,0
62,0	33,5	38,0	900	36,0	35,0	1 000	62,0

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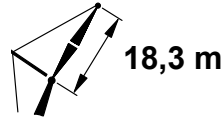
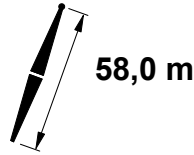
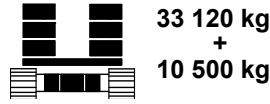
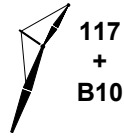
ASME B30.5

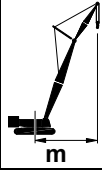
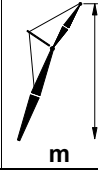

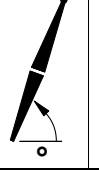




m	10°			30°			m
	°	m	kg	°	m	kg	
16,8	80,7	73,9	8 000				16,8
18,0	79,7	73,6	7 900				18,0
20,0	78,1	73,1	7 800				20,0
22,0	76,5	72,6	7 700				22,0
24,0	74,9	72,0	7 600	78,8	70,4	5 600	24,0
26,0	73,2	71,3	7 400	77,1	69,7	5 400	26,0
28,0	71,5	70,5	6 600	75,4	68,9	5 200	28,0
30,0	69,9	69,7	5 900	73,7	68,1	5 000	30,0
32,0	68,2	68,9	5 200	72,0	67,2	4 900	32,0
34,0	66,4	67,9	4 700	70,2	66,2	4 700	34,0
36,0	64,7	66,9	4 200	68,4	65,2	4 500	36,0
38,0	62,9	65,8	3 800	66,5	64,0	4 100	38,0
40,0	61,1	64,6	3 400	64,7	62,8	3 700	40,0
42,0	59,2	63,3	3 100	62,8	61,5	3 400	42,0
44,0	57,3	61,9	2 800	60,8	60,1	3 000	44,0
46,0	55,4	60,4	2 500	58,8	58,6	2 700	46,0
48,0	53,4	58,9	2 300	56,8	56,9	2 500	48,0
50,0	51,3	57,2	2 000	54,6	55,1	2 200	50,0
52,0	49,2	55,3	1 800	52,4	53,2	2 000	52,0
54,0	47,0	53,3	1 600	50,1	51,2	1 700	54,0
56,0	44,7	51,2	1 400	47,8	48,9	1 500	56,0
58,0	42,3	48,9	1 200	45,2	46,5	1 400	58,0
60,0	39,8	46,4	1 000	42,6	43,8	1 200	60,0
62,0				39,7	40,9	1 000	62,0

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	10°			30°			
	 m	 m	 kg	 m	 m	 kg	
18,3	79,9	76,7	7 500				18,3
20,0	78,6	76,3	7 500				20,0
22,0	77,0	75,7	7 400				22,0
24,0	75,5	75,1	7 300	79,3	73,6	5 600	24,0
26,0	73,9	74,5	7 100	77,7	72,9	5 400	26,0
28,0	72,3	73,8	6 400	76,1	72,2	5 300	28,0
30,0	70,7	73,0	5 700	74,4	71,4	5 100	30,0
32,0	69,1	72,2	5 100	72,7	70,5	4 900	32,0
34,0	67,4	71,2	4 600	71,1	69,6	4 800	34,0
36,0	65,8	70,3	4 100	69,3	68,6	4 500	36,0
38,0	64,1	69,2	3 700	67,6	67,5	4 000	38,0
40,0	62,3	68,1	3 300	65,8	66,3	3 600	40,0
42,0	60,6	66,9	3 000	64,0	65,1	3 300	42,0
44,0	58,8	65,6	2 700	62,2	63,8	2 900	44,0
46,0	57,0	64,2	2 400	60,3	62,3	2 600	46,0
48,0	55,1	62,7	2 100	58,4	60,8	2 400	48,0
50,0	53,2	61,1	1 900	56,4	59,1	2 100	50,0
52,0	51,2	59,4	1 700	54,4	57,4	1 900	52,0
54,0	49,2	57,6	1 500	52,3	55,5	1 600	54,0
56,0	47,1	55,6	1 300	50,1	53,4	1 400	56,0
58,0	44,9	53,5	1 100	47,8	51,2	1 200	58,0
60,0				45,4	48,8	1 100	60,0