

2.1 Technical data

Item		Value	Remarks
Work performance	Max. rated lifting capacity kg	160000	At 3 m radius
	Max. load moment of basic boom kN.m	5488	At 8 m radius
	Max. load moment of main boom (fully extended) kN.m	2979	At 32 m radius
	Max. lifting height of basic boom m	14.0	
	Max. lifting height of main boom m	64.0	The parameters do not include deflection of main boom and jib. The value in the brackets is the value with extensions installed.
	Max. lifting height of jib m	90.6 / (98.5)	
Work speeds	Max. hoist rope speed (Main winch) m/min	110	At the 5 th layer
	Max. hoist rope speed (Auxiliary winch) m/min	75	At the 3 rd layer
	Boom derricking up time s	80	
	Boom extending time min	11	
	Max. slewing speed r/min	1.5	
Driving	Max. driving speed km/h	75	
	Max. gradeability %	40	
	Min. turning diameter m	≤ 23	
	Min. ground clearance mm	325	
	Limits for exhaust pollutants and smoke	Conform to related standards	GB3847-2005 GB17691-2005 (National stage III)
	Oil consumption per hundred kilometers L	70	
Mass	Deadweight in driving condition kg	58400	
	Complete vehicle kerb mass kg	58205	
	Load on axles 1 and 2 kg	10800 / 10800	
	Load on axles 4, 5 and 6 kg	26000 (Tandem axle) / 10800	
Dimensions	Overall dimensions (L × W × H) mm	15600 × 3000 × 4000	
	Outrigger spread (L) m	8.05	
	Outrigger spread (W) m	8.5 m (completely extended), 6.5 m (intermediately extended)	
	Main boom length m	13.5 – 63	
	Boom angle °	-0.5 – 82	
	Jib length m	11, 18.6, 26.6	
	Length of jib + extensions m	34.6	
	Offset °	0, 30	

2.2 Lifting capacity tables

Table 1

Unit: Metric tons

Outriggers completely extended, with 55 t counterweight, over side and over rear														
Radius (m)	Boom length (m)												Radius (m)	
	13.5	18.0	22.5	27.0	31.5	36.0	40.5	45.0	49.5	54.0	58.5	63.0		
3.0	160*	130*											3.0	
3.5	140*	130*	110										3.5	
4.0	125*	120*	110	90									4.0	
4.5	114*	110	105	90	75								4.5	
5.0	105	102	100	90	75	64							5.0	
5.5	100	97	94	90	75	62							5.5	
6.0	92.5	90	88	85	75	60	52						6.0	
7.0	80	79	78	75	68	56	49	42					7.0	
8.0	69	68.5	68.5	67	63	52	46	40					8.0	
9.0	60	60	60	60	57	49	43	38	33				9.0	
10.0	53.5	53.5	53.5	53.5	52	46	40	35	31	27			10.0	
11.0		48	48	48	47.5	43	37	33	29	26	21		11.0	
12.0		43.5	43.5	43.5	44	40.5	35	31	27.5	24.5	21		12.0	
14.0		37	37	37	38	36.5	31	27	24.5	22	19.5	17	14.0	
16.0			31	31.5	33	32.5	27.5	24	22	20	18	16	16.0	
18.0			26	26.9	27.9	28.5	25	22	20	18.5	16.5	15	18.0	
20.0				22.7	23.6	24.5	22.4	20.1	18.2	17.1	15	14	20.0	
22.0				19.4	20.3	21.2	20	18.2	16.6	15.6	13.9	13	22.0	
24.0					17.6	18.5	18	16.6	15.2	14.4	12.8	12	24.0	
26.0					15.4	16.2	15.7	15.2	13.9	13.2	12	11.3	26.0	
28.0						14.4	13.9	13.9	12.8	12.1	11.3	10.6	28.0	
30.0						12.8	12.3	12.3	11.8	11.2	10.6	10	30.0	
32.0							10.9	11	10.9	10.3	10	9.5	32.0	
34.0							9.7	9.8	10	9.5	9.2	8.7	34.0	
36.0								8.7	9	8.8	8.6	8.1	36.0	
38.0								7.8	8.1	8.2	8	7.5	38.0	
40.0									7.2	7.6	7.4	7	40.0	
42.0									6.5	6.9	6.9	6.5	42.0	
44.0										6.2	6.4	6	44.0	
46.0										5.6	6	5.6	46.0	
48.0											5.5	5.2	48.0	
50.0											5	4.9	50.0	
52.0												4.6	52.0	
54.0												4.2	54.0	
56.0												3.8	56.0	
Reeving	14 (18)	14 (15)	13	10	9	7	6	5	4	3	3	2	Reeving	
Hook	110 t					70 t				70 t or 27 t				Hook
Telescoping mode	I	1	1	2	2	2	2	3	3	3	3	3	4	I
	II	1	2	2	2	2	2	2	3	3	3	3	4	II
	III	1	1	1	2	2	2	2	2	3	3	3	4	III
	IV	1	1	1	1	2	2	2	2	2	3	3	4	IV
	V	1	1	1	1	1	2	2	2	2	2	3	4	V



The values with * are suitable for 160 t hook, and 18 reevings are recommended.

Table 2

Unit: Metric tons

Outriggers completely extended, with 42 t counterweight, over side and over rear														
Radius (m)	Boom length (m)												Radius (m)	
	13.5	18.0	22.5	27.0	31.5	36.0	40.5	45.0	49.5	54.0	58.5	63.0		
3.0	140*	130*											3.0	
3.5	130*	130*	110										3.5	
4.0	120*	120*	110	90									4.0	
4.5	110	110	105	90	75								4.5	
5.0	103	102	100	90	75	64							5.0	
5.5	97	96	94	90	75	62							5.5	
6.0	90	89	88	85	75	60	52						6.0	
7.0	76	75	75	75	68	56	49	42					7.0	
8.0	65	65	65	65	63	52	46	40					8.0	
9.0	57	57	57	57	57	49	43	38	33				9.0	
10.0	51	51	51	51	52	46	40	35	31	27			10.0	
11.0		46	46	46	45.5	43	37	33	29	26	21		11.0	
12.0		41	41	41	41	40.5	35	31	27.5	24.5	21		12.0	
14.0		33	32	32.5	33.5	34	31	27	24.5	22	19.5	17	14.0	
16.0			25.5	26	27	27.5	27.5	24	22	20	18	16	16.0	
18.0			21	21.5	22.5	23.5	23	22	20	18.5	16.5	15	18.0	
20.0				18	19	20	19.4	19	18.2	17.1	15	14	20.0	
22.0				15	16	17	16.3	16.4	16.6	15.6	13.9	13	22.0	
24.0					14	14.6	14.2	14.3	14.5	14.4	12.8	12	24.0	
26.0					12	12.7	12.3	12.4	12.6	13.2	12	11.3	26.0	
28.0						11.2	10.6	10.7	11	11.4	11.3	10.6	28.0	
30.0						10	9.3	9.4	9.6	10	10.6	10	30.0	
32.0							8.2	8.3	8.5	9	9.5	9.5	32.0	
34.0							7.2	7.3	7.5	7.9	8.4	8.4	34.0	
36.0								6.5	6.7	7.1	7.6	7.6	36.0	
38.0								5.7	5.9	6.3	6.8	6.8	38.0	
40.0									5.2	5.6	6.1	6.1	40.0	
42.0									4.6	5	5.4	5.4	42.0	
44.0										4.4	4.9	4.9	44.0	
46.0										3.9	4.3	4.3	46.0	
48.0											3.8	3.8	48.0	
50.0											3.4	3.4	50.0	
52.0												3.1	52.0	
54.0												2.7	54.0	
56.0												2.3	56.0	
Reeving	14 (18)	14 (15)	13	10	9	7	6	5	4	3	3	2	Reeving	
Hook	110 t						70 t			70 t or 27 t			Hook	
Telescoping mode	I	1	1	2	2	2	2	3	3	3	3	3	4	I
	II	1	2	2	2	2	2	2	3	3	3	3	4	II
	III	1	1	1	2	2	2	2	2	3	3	3	4	III
	IV	1	1	1	1	2	2	2	2	2	3	3	4	IV
	V	1	1	1	1	1	2	2	2	2	2	3	4	V

NOTE

The values with * are suitable for 160 t hook.

Table 3

Unit: Metric tons

Outriggers completely extended, with 32 t counterweight, over side and over rear														
Radius (m)	Boom length (m)												Radius (m)	
	13.5	18.0	22.5	27.0	31.5	36.0	40.5	45.0	49.5	54.0	58.5	63.0		
3.0	140*	130*											3.0	
3.5	130*	130*	110										3.5	
4.0	120*	120*	110	90									4.0	
4.5	110	110	105	90	75								4.5	
5.0	101	100	100	90	75	64							5.0	
5.5	94	93	92	90	75	62							5.5	
6.0	87	86	85	85	75	60	52						6.0	
7.0	73	72	72	72	68	56	49	42					7.0	
8.0	62	62	62	62	62	52	46	40					8.0	
9.0	54	54	54	54	54	49	43	38	33				9.0	
10.0	48	48	48	48	48	46	40	35	31	27			10.0	
11.0		41.5	40	41.5	43	43	37	33	29	26	21		11.0	
12.0		36	35	36	37	38	35	31	27.5	24.5	21		12.0	
14.0		27.5	27	27.5	28.5	29.5	29	27	24.5	22	19.5	17	14.0	
16.0			21	22	23	24	23	23	22	20	18	16	16.0	
18.0			17	17.6	18.6	19.6	19	19	19.5	18.5	16.5	15	18.0	
20.0				14.5	15.5	16.5	16	16	16.2	16.5	15	14	20.0	
22.0				12	13	14	13.4	13.5	13.8	14.3	13.9	13	22.0	
24.0					11	12	11.4	11.4	11.7	12.2	12.5	12	24.0	
26.0					9.5	10.3	9.7	9.7	10	10.5	11	11	26.0	
28.0						9	8.5	8.5	8.8	9.2	9.5	9.7	28.0	
30.0						8	7.4	7.4	7.6	8	8.5	8.6	30.0	
32.0							6.4	6.4	6.6	7	7.5	7.6	32.0	
34.0							5.5	5.5	5.8	6.1	6.6	6.7	34.0	
36.0								4.7	5	5.3	5.8	5.9	36.0	
38.0								4	4.3	4.6	5.1	5.2	38.0	
40.0									3.7	4	4.5	4.6	40.0	
42.0									3.1	3.4	3.9	4	42.0	
44.0										2.9	3.4	3.5	44.0	
46.0										2.5	2.9	3	46.0	
48.0											2.5	2.6	48.0	
50.0											2.1	2.2	50.0	
52.0												1.8	52.0	
54.0												1.5	54.0	
56.0												1.2	56.0	
Reeving	14 (18)	14 (15)	13	10	9	7	6	5	4	3	3	2	Reeving	
Hook	110 t					70 t			70 t or 27 t				Hook	
Telescoping mode	I	1	1	2	2	2	2	3	3	3	3	3	4	I
	II	1	2	2	2	2	2	2	3	3	3	3	4	II
	III	1	1	1	2	2	2	2	2	3	3	3	4	III
	IV	1	1	1	1	2	2	2	2	2	3	3	4	IV
	V	1	1	1	1	1	2	2	2	2	2	3	4	V

NOTE

The values with * are suitable for 160 t hook.

Table 4

Unit: Metric tons

Outriggers completely extended, with 15 t counterweight, over side and over rear														
Radius (m)	Boom length (m)												Radius (m)	
	13.5	18.0	22.5	27.0	31.5	36.0	40.5	45.0	49.5	54.0	58.5	63.0		
3.0	130*	130*												3.0
3.5	125*	125*	110											3.5
4.0	115*	115*	110	90										4.0
4.5	104	103	103	90	75									4.5
5.0	94	93	93	90	75	64								5.0
5.5	85	84	83	81	75	62								5.5
6.0	77	76	75	73	73	60	52							6.0
7.0	65	64	63	62	62	56	49	42						7.0
8.0	53	53.5	52.5	54	54	52	46	40						8.0
9.0	42	42.5	41.5	43	44	45	43	38	33					9.0
10.0	34	35	34	35	36	37.5	37	35	31	27				10.0
11.0		29	28	29	30	31.5	31	31	29	26	21			11.0
12.0		25	24	25	26	27	26.6	26.5	27	24.5	21			12.0
14.0		18.5	17.7	18.7	19.7	20.7	20.2	20	20.5	21	19.5	17		14.0
16.0			13.5	14.3	15.3	16.3	15.8	15.8	16	16.5	17	16		16.0
18.0			10.5	11.2	12.2	13.2	12.6	12.7	13	13.4	14	14		18.0
20.0				9	9.8	10.7	10.2	10.3	10.5	11	11.5	11.5		20.0
22.0				7.4	8.2	9	8.4	8.5	8.7	9.2	9.6	9.6		22.0
24.0					6.7	7.5	6.9	7	7.3	7.7	8.1	8.2		24.0
26.0					5.5	6.3	5.7	5.8	6	6.4	6.9	7		26.0
28.0						5.3	4.7	4.8	5	5.4	5.8	5.9		28.0
30.0						4.3	3.8	3.9	4.1	4.5	4.9	5		30.0
32.0							3	3.1	3.3	3.7	4.1	4.2		32.0
34.0							2.4	2.5	2.7	3	3.4	3.5		34.0
36.0								1.9	2.1	2.4	2.8	2.9		36.0
38.0								1.3	1.6	1.9	2.3	2.4		38.0
40.0									1.1	1.4	1.8	1.9		40.0
42.0										1	1.4	1.5		42.0
44.0											1	1.1		44.0
46.0														46.0
48.0														48.0
50.0														50.0
52.0														52.0
54.0														54.0
56.0														56.0
Reeving	14 (15)	14 (15)	13	10	9	7	6	5	4	3	3	2		Reeving
Hook	110 t					70 t				70 t or 27 t				Hook
Telescoping mode	I	1	1	2	2	2	2	3	3	3	3	3	4	I
	II	1	2	2	2	2	2	2	3	3	3	3	4	II
	III	1	1	1	2	2	2	2	2	3	3	3	4	III
	IV	1	1	1	1	2	2	2	2	2	3	3	4	IV
	V	1	1	1	1	1	2	2	2	2	2	3	4	V



The values with * are suitable for 160 t hook.

Table 5

Unit: Metric tons

Outriggers completely extended, with 0 t counterweight, over side and over rear														
Radius (m)	Boom length (m)												Radius (m)	
	13.5	18.0	22.5	27.0	31.5	36.0	40.5	45.0	49.5	54.0	58.5	63.0		
3.0	120*	120*											3.0	
3.5	115*	115*	110										3.5	
4.0	105	105	105	90									4.0	
4.5	96	95	94	90	75								4.5	
5.0	85	84	84	84	75	64							5.0	
5.5	76	75	75	75	75	62							5.5	
6.0	65	65	65	65	66	60	50						6.0	
7.0	46	47	46	48	49	50	48	39					7.0	
8.0	34	35	34	35.5	37	38	37	37					8.0	
9.0	26	37	26	27.5	28.5	30	29	29	29				9.0	
10.0	21	22	21	22	23	24.5	24	24	24	24			10.0	
11.0		18	17	18	19	20	19.8	20	20	20	18		11.0	
12.0		15	14	15	16	17	16.5	16.5	17	17	17		12.0	
14.0		10.5	9.6	10.6	11.5	12.5	12	12	12.5	13	13	13	14.0	
16.0			7	7.8	8.6	9.5	9	9	9.3	9.8	10	10	16.0	
18.0			4.8	5.7	6.6	7.5	7	7	7.3	7.6	8	8	18.0	
20.0				4	5	5.8	5.3	5.3	5.6	6	6.4	6.4	20.0	
22.0				2.6	3.5	4.4	3.9	3.9	4.2	4.6	5	5	22.0	
24.0					2.4	3.3	2.8	2.8	3	3.4	3.9	4	24.0	
26.0					1.5	2.4	1.8	1.9	2.1	2.5	3	3.1	26.0	
28.0						1.6	1.1	1.1	1.3	1.7	2.2	2.3	28.0	
30.0										1.1	1.5	1.6	30.0	
32.0													32.0	
34.0													34.0	
36.0													36.0	
38.0													38.0	
40.0													40.0	
42.0													42.0	
44.0													44.0	
46.0													46.0	
48.0													48.0	
50.0													50.0	
52.0													52.0	
54.0													54.0	
56.0													56.0	
Reeving	14	14	13	10	9	7	6	5	4	3	3	2	Reeving	
Hook	110 t						70 t			70 t or 27 t				Hook
Telescoping mode	I	1	1	2	2	2	2	3	3	3	3	3	4	I
	II	1	2	2	2	2	2	2	3	3	3	3	4	II
	III	1	1	1	2	2	2	2	2	3	3	3	4	III
	IV	1	1	1	1	2	2	2	2	2	3	3	4	IV
	V	1	1	1	1	1	2	2	2	2	2	3	4	V



The values with * are suitable for 160 t hook.

Table 6

Unit: Metric tons

Outriggers intermediately extended, with 55 t counterweight, over side and over rear															
Radius (m)	Boom length (m)												Radius (m)		
	13.5	18.0	22.5	27.0	31.5	36.0	40.5	45.0	49.5	54.0	58.5	63.0			
3.0	140*	130*											3.0		
3.5	130*	130*	110										3.5		
4.0	120*	120*	110	90									4.0		
4.5	110	110	105	90	75								4.5		
5.0	100	100	100	90	75	64							5.0		
5.5	95	94	92	90	75	62							5.5		
6.0	88	87	85	85	75	60	52						6.0		
7.0	76	75	74	74	68	56	49	42					7.0		
8.0	64	64	64	64	60	52	46	40					8.0		
9.0	56	56	56	56	54	49	43	38	33				9.0		
10.0	49	49	49	50	50	46	40	35	31	27			10.0		
11.0		44	44	45	45	43	37	33	29	26	21		11.0		
12.0		40	40	41	41	40.5	35	31	27.5	24.5	21		12.0		
14.0		33	32.5	33.5	34	35	31	27	24.5	22	19.5	17	14.0		
16.0			26	27	27.5	28.5	27.5	24	22	20	18	16	16.0		
18.0			21	22	23	24	23	22	20	18.5	16.5	15	18.0		
20.0				18	19	20	19	19	18.2	17.1	15	14	20.0		
22.0				15.5	16.5	17.5	17	17	16.6	15.6	13.9	13	22.0		
24.0					14	15	14.5	14.5	14.5	14.4	12.8	12	24.0		
26.0					12.2	13.2	12.5	12.5	12.7	13	12	11.3	26.0		
28.0						11.5	11	11	11.2	11.3	11.3	10.6	28.0		
30.0						10.3	9.6	9.7	10	10.4	10.6	10	30.0		
32.0							8.7	8.7	9	9.2	9.4	9.5	32.0		
34.0							7.7	7.7	8	8.3	8.6	8.7	34.0		
36.0								6.8	7.1	7.5	7.9	8	36.0		
38.0								6	6.3	6.7	7.1	7.2	38.0		
40.0									5.6	5.9	6.4	6.5	40.0		
42.0									4.9	5.3	5.7	5.8	42.0		
44.0										4.7	5.1	5.2	44.0		
46.0										4.1	4.6	4.7	46.0		
48.0											4.1	4.2	48.0		
50.0											3.6	3.7	50.0		
52.0												3.3	52.0		
54.0												2.9	54.0		
56.0												2.5	56.0		
Reeving	14 (18)	14 (15)	13	10	9	7	6	5	4	3	3	2	Reeving		
Hook	110 t					70 t			70 t or 27 t				Hook		
Telescoping mode	I	1	1	2	2	2	2	3	3	3	3	3	4	I	Telescoping mode
	II	1	2	2	2	2	2	2	3	3	3	3	4	II	
	III	1	1	1	2	2	2	2	2	3	3	3	4	III	
	IV	1	1	1	1	2	2	2	2	2	3	3	4	IV	
	V	1	1	1	1	1	2	2	2	2	2	3	4	V	

NOTE

The values with * are suitable for 160 t hook.

Table 7

Unit: Metric tons

Outriggers intermediately extended, with 42 t counterweight, over side and over rear														
Radius (m)	Boom length (m)												Radius (m)	
	13.5	18.0	22.5	27.0	31.5	36.0	40.5	45.0	49.5	54.0	58.5	63.0		
3.0	130*	130*											3.0	
3.5	125*	125*	110										3.5	
4.0	115*	115*	110	90									4.0	
4.5	105	105	105	90	75								4.5	
5.0	95	95	95	90	75	64							5.0	
5.5	90	89	88	86	75	62							5.5	
6.0	83	82	81	80	75	60	52						6.0	
7.0	71	70	70	70	68	56	49	42					7.0	
8.0	60	59	59	59	60	52	46	40					8.0	
9.0	52	52	52	52	52	49	43	38	33				9.0	
10.0	45	45	45	46	46.5	46	40	35	31	27			10.0	
11.0		40	40	40	41	43	37	33	29	26	21		11.0	
12.0		34.5	34	35	36	36.5	35	31	27.5	24.5	21		12.0	
14.0		26.5	26	27	27.5	28.5	28	27	24.5	22	19.5	17	14.0	
16.0			20.5	21	22	23	22.5	22.5	22	20	18	16	16.0	
18.0			16.5	17	18	19	18.5	18.5	19	18.5	16.5	15	18.0	
20.0				14	15	16	15.5	15.5	16	16.5	15	14	20.0	
22.0				12	12.5	13.5	13	13	13.5	14	13.9	13	22.0	
24.0					11	11.5	11	11	11.5	12	12.8	12	24.0	
26.0					9.4	10	9.5	9.5	10	10.2	10.6	10.8	26.0	
28.0							8.8	8.4	8.5	8.7	9	9.5	9.5	28.0
30.0							7.8	7.2	7.3	7.5	7.9	8.4	8.4	30.0
32.0								6.2	6.3	6.5	6.9	7.4	7.5	32.0
34.0								5.3	5.4	5.6	6	6.5	6.6	34.0
36.0									4.6	4.9	5.3	5.7	5.8	36.0
38.0									4	4.2	4.6	5	5.1	38.0
40.0										3.6	4	4.4	4.5	40.0
42.0										3	3.4	3.8	3.9	42.0
44.0											2.9	3.4	3.5	44.0
46.0											2.4	2.9	2.9	46.0
48.0												2.5	2.5	48.0
50.0												2	2	50.0
52.0													1.7	52.0
54.0													1.3	54.0
56.0														56.0
Reeving	14 (15)	14 (15)	13	10	9	7	6	5	4	3	3	2	Reeving	
Hook	110 t					70 t				70 t or 27 t			Hook	
Telescoping mode	I	1	1	2	2	2	2	3	3	3	3	3	4	I
	II	1	2	2	2	2	2	2	3	3	3	3	4	II
	III	1	1	1	2	2	2	2	2	3	3	3	4	III
	IV	1	1	1	1	2	2	2	2	2	3	3	4	IV
	V	1	1	1	1	1	2	2	2	2	2	3	4	V

Table 8

Unit: Metric tons

Outriggers intermediately extended, with 32 t counterweight, over side and over rear															
Radius (m)	Boom length (m)												Radius (m)		
	13.5	18.0	22.5	27.0	31.5	36.0	40.5	45.0	49.5	54.0	58.5	63.0			
3.0	120*	120*											3.0		
3.5	120*	120*	110										3.5		
4.0	110	110	110	90									4.0		
4.5	100	100	100	90	75								4.5		
5.0	90	90	90	90	75	64							5.0		
5.5	85	84	83	82	75	62							5.5		
6.0	78	77	76	75	75	60	52						6.0		
7.0	66	65	65	63	63	56	49	42					7.0		
8.0	55	54	54	54	54	52	46	40					8.0		
9.0	46	46	46	46	47	47	43	38	33				9.0		
10.0	39	39	39	39	40	42	40	35	31	27			10.0		
11.0		33	32.5	33.5	34.5	35.5	35	33	29	26	21		11.0		
12.0		28	27.5	28.5	29.5	31	30	30	27.5	24.5	21		12.0		
14.0		21	21	21.5	22.5	24	23	23	23.5	22	19.5	17	14.0		
16.0			16	17	18	19	18.5	18.5	19	19.5	18	16	16.0		
18.0			12.5	13.5	14.5	15.5	15	15	15	16	16.5	15	18.0		
20.0				11	12	13	12.5	12.5	12.5	13	13.5	13.5	20.0		
22.0				9	10	11	10.2	10.2	10.5	11	11.5	11.5	22.0		
24.0					8.4	9.3	8.8	8.8	9	9.4	9.8	9.8	24.0		
26.0					7	8	7.3	7.4	7.7	8	8.5	8.5	26.0		
28.0						6.7	6.2	6.3	6.5	6.9	7.4	7.4	28.0		
30.0						5.6	5.2	5.3	5.4	5.9	6.4	6.4	30.0		
32.0							4.3	4.4	4.6	5	5.5	5.5	32.0		
34.0							3.5	3.6	3.9	4.3	4.7	4.7	34.0		
36.0								3	3.2	3.6	4	4	36.0		
38.0								2.4	2.6	3	3.4	3.4	38.0		
40.0									2.1	2.5	2.9	2.9	40.0		
42.0									1.5	2	2.4	2.4	42.0		
44.0										1.6	2	2	44.0		
46.0										1.2	1.6	1.6	46.0		
48.0											1.2	1.2	48.0		
50.0													50.0		
52.0													52.0		
54.0													54.0		
56.0													56.0		
Reeving	14	14	13	10	9	7	6	5	4	3	3	2	Reeving		
Hook	110 t					70 t				70 t or 27 t				Hook	
Telescoping mode	I	1	1	2	2	2	2	3	3	3	3	3	4	I	
	II	1	2	2	2	2	2	2	3	3	3	3	4	II	
	III	1	1	1	2	2	2	2	2	3	3	3	4	III	
	IV	1	1	1	1	2	2	2	2	2	2	3	3	4	IV
	V	1	1	1	1	1	2	2	2	2	2	2	3	4	V

NOTE

The values with * are suitable for 160 t hook.

Table 9

Unit: Metric tons

Outriggers intermediately extended, with 15 t counterweight, over side and over rear														
Radius (m)	Boom length (m)												Radius (m)	
	13.5	18.0	22.5	27.0	31.5	36.0	40.5	45.0	49.5	54.0	58.5	63.0		
3.0	120*	120*											3.0	
3.5	115*	115*	110										3.5	
4.0	105	105	105	90									4.0	
4.5	95	95	95	90	75								4.5	
5.0	85	85	84	84	75	64							5.0	
5.5	80	80	78	78	75	62							5.5	
6.0	73	72	70	69	68	60	52						6.0	
7.0	52	52	52	52	52	52	49	42					7.0	
8.0	39	40	39	40	41	41	40	40					8.0	
9.0	31	32	31	32	33	34.5	33	32	33				9.0	
10.0	25	26	25	26	27	28	27.5	27	27	27			10.0	
11.0		21.5	20.5	21.5	22.5	23.5	23	23	23	23	21		11.0	
12.0		18	17	18	19	20	19.5	19.5	20	20.5	21		12.0	
14.0		13	12	13	14	15	14.5	14.5	15	15.5	16	15	14.0	
16.0			9	10	11	12	11.5	11.5	11.5	12	12.5	12	16.0	
18.0			7	7.6	8.6	9.4	9	9	9.3	9.6	10	10	18.0	
20.0				6	6.7	7.6	7	7	7.4	7.8	8.3	8.3	20.0	
22.0				4.4	5.3	6.1	5.6	5.6	5.8	6.3	6.8	6.8	22.0	
24.0					4	4.9	4.3	4.4	4.6	5	5.5	5.5	24.0	
26.0					3	3.8	3.3	3.4	3.6	4	4.5	4.5	26.0	
28.0						3	2.5	2.6	2.8	3.2	3.6	3.6	28.0	
30.0						2.3	1.7	1.8	2	2.4	2.8	2.8	30.0	
32.0									1.4	1.7	2.2	2.2	32.0	
34.0										1.2	1.6	1.6	34.0	
36.0													36.0	
38.0													38.0	
40.0													40.0	
42.0													42.0	
44.0													44.0	
46.0													46.0	
48.0													48.0	
50.0													50.0	
52.0													52.0	
54.0													54.0	
56.0													56.0	
Reeving	14	14	13	10	9	7	6	5	4	3	3	2	Reeving	
Hook	110 t					70 t				70 t or 27 t			Hook	
Telescoping mode	I	1	1	2	2	2	2	3	3	3	3	3	4	I
	II	1	2	2	2	2	2	2	3	3	3	3	4	II
	III	1	1	1	2	2	2	2	2	3	3	3	4	III
	IV	1	1	1	1	2	2	2	2	2	3	3	4	IV
	V	1	1	1	1	1	2	2	2	2	2	3	4	V

NOTE

The values with * are suitable for 160 t hook.

Table 10

Unit: Metric tons

Outriggers completely extended, with 55 t counterweight, over side and over rear															
Jib length	11.0 m				18.6 m				26.6 m				34.6 m		
Boom length	58.5 m		63.0 m		58.5 m		63.0 m		58.5 m		63.0 m		58.5 m	63.0 m	
Reeving Hook	0°		30°		0°		30°		0°		30°		0°	0°	
	82°	9.0	5.5	8.0	5.3	5.5	3.0	5.0	2.5	3.6	1.7	3.2	1.6	2.5	2.2
80°	8.8	5.3	7.8	5.2	5.3	2.8	5.0	2.5	3.5	1.6	3.2	1.5	2.3	2.1	
78°	8.6	5.2	7.6	5.1	5.1	2.7	4.9	2.4	3.4	1.6	3.1	1.4	2.1	2.0	
76°	8.3	5.1	7.3	5.0	4.8	2.6	4.6	2.4	3.1	1.5	3.0	1.4	2.0	1.9	
74°	7.8	5.0	6.8	4.8	4.6	2.5	4.2	2.3	2.9	1.5	2.8	1.3	1.8	1.7	
72°	7.3	4.9	6.3	4.6	4.3	2.4	3.9	2.3	2.7	1.4	2.6	1.3	1.6	1.5	
70°	6.9	4.7	6.0	4.4	4.0	2.4	3.6	2.3	2.5	1.4	2.4	1.2	1.5	1.4	
68°	6.5	4.5	5.8	4.2	3.7	2.3	3.4	2.2	2.3	1.3	2.2	1.2	1.4	1.3	
66°	6.2	4.4	5.5	4.1	3.5	2.3	3.2	2.2	2.1	1.3	2.0	1.1	1.3	1.2	
64°	5.9	4.2	5.2	4.0	3.3	2.2	3.0	2.1	2.0	1.3	1.9	1.1	1.2	1.1	
62°	5.6	4.1	5.0	3.8	3.1	2.2	2.8	2.0	1.9	1.2	1.8	1.0	1.1	1.0	
60°	5.4	4.0	4.8	3.7	3.0	2.1	2.7	2.0	1.8	1.2	1.7	1.0	1.0		
58°	5.2	3.9	4.5	3.6	2.8	2.1	2.5	1.9	1.7	1.2	1.6				
56°	5.0	3.8	4.3	3.5	2.7	2.0	2.4	1.9	1.6	1.1	1.5				
54°	4.8	3.7	4.2	3.5	2.6	2.0	2.3	1.8	1.5	1.1	1.4				
52°	4.6	3.6	4.1	3.4	2.5	1.9	2.2	1.8	1.4	1.1	1.3				
50°	4.5	3.5	3.9	3.4	2.4	1.9	2.1	1.7	1.3	1.0	1.2				
48°	4.3	3.4	3.8	3.3	2.3	1.8	2.0	1.7	1.2	1.0	1.1				
46°	4.0	3.4	3.6	3.3	2.2	1.8	2.0	1.7	1.2		1.1				
44°	3.9	3.4	3.4	3.2	2.1	1.7	1.9	1.6	1.1		1.0				
42°	3.8	3.4	3.2	3.0	2.1	1.7	1.8	1.6	1.1		1.0				
40°	3.7	3.3	3.1	2.9	2.0	1.6	1.7	1.6	1.0		1.0				
35°	3.5	3.1	2.8	2.6	1.8	1.5	1.6	1.5							
Reeving	1														
Hook	9 t														
Telescoping mode	I	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	II	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	III	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	IV	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	V	3	4	3	4	3	4	3	4	3	4	3	4	3	4

Table 11

Unit: Metric tons

Outriggers completely extended, with 42 t counterweight, over side and over rear															
Jib length	11.0 m				18.6 m				26.6 m				34.6 m		
Boom length	58.5 m		63.0 m		58.5 m		63.0 m		58.5 m		63.0 m		58.5 m	63.0 m	
Room ∠f	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	0°	
82°	9.0	5.5	8.0	5.3	5.5	3.0	5.0	2.5	3.6	1.7	3.2	1.6	2.5	2.2	
80°	8.8	5.3	7.8	5.2	5.3	2.8	5.0	2.5	3.5	1.6	3.2	1.5	2.3	2.1	
78°	8.6	5.2	7.6	5.1	5.1	2.7	4.9	2.4	3.4	1.6	3.1	1.4	2.1	2.0	
76°	8.3	5.1	7.3	5.0	4.8	2.6	4.6	2.4	3.1	1.5	3.0	1.4	2.0	1.9	
74°	7.8	5.0	6.8	4.8	4.6	2.5	4.2	2.3	2.9	1.5	2.8	1.3	1.8	1.7	
72°	7.3	4.9	6.3	4.6	4.3	2.4	3.9	2.3	2.7	1.4	2.6	1.3	1.6	1.5	
70°	6.9	4.7	6.0	4.4	4.0	2.4	3.6	2.3	2.5	1.4	2.4	1.2	1.5	1.4	
68°	6.5	4.5	5.8	4.2	3.7	2.3	3.4	2.2	2.3	1.3	2.2	1.2	1.4	1.3	
66°	6.2	4.4	5.5	4.1	3.5	2.3	3.2	2.2	2.1	1.3	2.0	1.1	1.3	1.2	
64°	5.9	4.2	5.2	4.0	3.3	2.2	3.0	2.1	2.0	1.3	1.9	1.1	1.2	1.1	
62°	5.6	4.1	5.0	3.8	3.1	2.2	2.8	2.0	1.9	1.2	1.8	1.0	1.1	1.0	
60°	5.4	4.0	4.8	3.7	3.0	2.1	2.7	2.0	1.8	1.2	1.7	1.0	1.0		
58°	5.2	3.9	4.5	3.6	2.8	2.1	2.5	1.9	1.7	1.2	1.6				
56°	5.0	3.8	4.3	3.5	2.7	2.0	2.4	1.9	1.6	1.1	1.5				
54°	4.8	3.7	4.2	3.5	2.6	2.0	2.3	1.8	1.5	1.1	1.4				
52°	4.6	3.6	4.0	3.4	2.5	1.9	2.2	1.8	1.4	1.1	1.3				
50°	4.4	3.5	3.6	3.4	2.4	1.9	2.1	1.7	1.3	1.0	1.2				
48°	4.1	3.4	3.3	3.2	2.3	1.8	2.0	1.7	1.2	1.0	1.1				
46°	3.8	3.4	3.0	2.9	2.2	1.8	2.0	1.7	1.2		1.1				
44°	3.5	3.3	2.8	2.7	2.1	1.7	1.9	1.6	1.1		1.0				
42°	3.2	3.0	2.5	2.4	2.1	1.7	1.7	1.6	1.1		1.0				
40°	3.0	2.8	2.3	2.2	2.0	1.6	1.6	1.5	1.0		1.0				
35°	2.4	2.2	1.8	1.7	1.7	1.5	1.2	1.1							
Reeving	1														
Hook	9 t														
Telescoping mode	I	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	II	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	III	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	IV	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	V	3	4	3	4	3	4	3	4	3	4	3	4	3	4

Table 12

Unit: Metric tons

Outriggers completely extended, with 32 t counterweight, over side and over rear															
Jib length	11.0 m				18.6 m				26.6 m				34.6 m		
Boom length	58.5 m		63.0 m		58.5 m		63.0 m		58.5 m		63.0 m		58.5 m	63.0 m	
Roam	0°		30°		0°		30°		0°		30°		0°	0°	
	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	0°	
82°	9.0	5.5	8.0	5.3	5.5	3.0	5.0	2.5	3.6	1.7	3.2	1.6	2.5	2.2	
80°	8.8	5.3	7.8	5.2	5.3	2.8	5.0	2.5	3.5	1.6	3.2	1.5	2.3	2.1	
78°	8.6	5.2	7.6	5.1	5.1	2.7	4.9	2.4	3.4	1.6	3.1	1.4	2.1	2.0	
76°	8.3	5.1	7.3	5.0	4.8	2.6	4.6	2.4	3.1	1.5	3.0	1.4	2.0	1.9	
74°	7.8	5.0	6.8	4.8	4.6	2.5	4.2	2.3	2.9	1.5	2.8	1.3	1.8	1.7	
72°	7.3	4.9	6.3	4.6	4.3	2.4	3.9	2.3	2.7	1.4	2.6	1.3	1.6	1.5	
70°	6.9	4.7	6.0	4.4	4.0	2.4	3.6	2.3	2.5	1.4	2.4	1.2	1.5	1.4	
68°	6.5	4.5	5.8	4.2	3.7	2.3	3.4	2.2	2.3	1.3	2.2	1.2	1.4	1.3	
66°	6.2	4.4	5.5	4.1	3.5	2.3	3.2	2.2	2.1	1.3	2.0	1.1	1.3	1.2	
64°	5.9	4.2	5.2	4.0	3.3	2.2	3.0	2.1	2.0	1.3	1.9	1.1	1.2	1.1	
62°	5.6	4.1	5.0	3.8	3.1	2.2	2.8	2.0	1.9	1.2	1.8	1.0	1.1	1.0	
60°	5.4	4.0	4.6	3.7	3.0	2.1	2.7	2.0	1.8	1.2	1.7	1.0	1.0		
58°	5.0	3.9	4.1	3.6	2.8	2.1	2.5	1.9	1.7	1.2	1.6				
56°	4.5	3.8	3.7	3.5	2.7	2.0	2.4	1.9	1.6	1.1	1.5				
54°	4.1	3.7	3.3	3.2	2.6	2.0	2.3	1.8	1.5	1.1	1.4				
52°	3.7	3.4	3.0	2.8	2.5	1.9	2.1	1.8	1.4	1.1	1.3				
50°	3.3	3.1	2.6	2.5	2.4	1.9	1.9	1.6	1.3	1.0	1.2				
48°	3.0	2.8	2.3	2.2	2.2	1.8	1.6	1.4	1.2	1.0	1.0				
46°	2.7	2.5	2.1	2.0	1.9	1.7	1.4	1.2	1.2						
44°	2.4	2.3	1.8	1.7	1.7	1.5	1.2	1.0	1.1						
42°	2.2	2.1	1.6	1.5	1.5	1.3	1.0								
40°	2.0	1.8	1.4	1.3	1.3	1.2									
35°	1.5	1.4													
Reeving	1														
Hook	9 t														
Telescoping mode	I	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	II	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	III	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	IV	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	V	3	4	3	4	3	4	3	4	3	4	3	4	3	4

Table 13

Unit: Metric tons

Outriggers completely extended, with 15 t counterweight, over side and over rear															
Jib length	11.0 m				18.6 m				26.6 m				34.6 m		
Boom length	58.5 m		63.0 m		58.5 m		63.0 m		58.5 m		63.0 m		58.5 m	63.0 m	
Roof	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	0°	
82°	9.0	5.5	8.0	5.3	5.5	3.0	5.0	2.5	3.6	1.7	3.2	1.6	2.5	2.2	
80°	8.8	5.3	7.8	5.2	5.3	2.8	5.0	2.5	3.5	1.6	3.2	1.5	2.3	2.1	
78°	8.6	5.2	7.6	5.1	5.1	2.7	4.9	2.4	3.4	1.6	3.1	1.4	2.1	2.0	
76°	8.3	5.1	7.3	5.0	4.8	2.6	4.6	2.4	3.1	1.5	3.0	1.4	2.0	1.9	
74°	7.8	5.0	6.8	4.8	4.6	2.5	4.2	2.3	2.9	1.5	2.8	1.3	1.8	1.7	
72°	7.3	4.9	6.3	4.6	4.3	2.4	3.9	2.3	2.7	1.4	2.6	1.3	1.6	1.5	
70°	6.8	4.7	5.7	4.4	4.0	2.4	3.6	2.3	2.5	1.4	2.4	1.2	1.5	1.4	
68°	5.9	4.5	4.9	4.2	3.7	2.3	3.4	2.2	2.3	1.3	2.2	1.2	1.4	1.3	
66°	5.1	4.4	4.2	3.7	3.5	2.3	3.1	2.2	2.1	1.3	2.0	1.1	1.3	1.2	
64°	4.4	3.8	3.6	3.2	3.2	2.2	2.6	2.1	2.0	1.3	1.8	1.1	1.2	1.0	
62°	3.8	3.4	3.0	2.7	2.7	2.2	2.1	1.8	1.9	1.2	1.5	1.0	1.1		
60°	3.2	2.9	2.5	2.3	2.3	1.9	1.7	1.5	1.6	1.2	1.1				
58°	2.8	2.5	2.1	1.9	1.9	1.6	1.4	1.1	1.3	1.0					
56°	2.3	2.1	1.7	1.5	1.6	1.3	1.1		1.0						
54°	2.0	1.8	1.4	1.2	1.3	1.0									
52°	1.6	1.5	1.0	1.0	1.0										
50°	1.3	1.2													
48°	1.0	1.0													
Reeving	1														
Hook	9 t														
Telescoping mode	I	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	II	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	III	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	IV	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	V	3	4	3	4	3	4	3	4	3	4	3	4	3	4

Table 14

Unit: Metric tons

Outriggers intermediately extended, with 55 t counterweight, over side and over rear															
Jib length	11.0 m				18.6 m				26.6 m				34.6 m		
Boom length	58.5 m		63.0 m		58.5 m		63.0 m		58.5 m		63.0 m		58.5 m	63.0 m	
Roof	0°		30°		0°		30°		0°		30°		0°	0°	
	82°	9.0	5.5	8.0	5.3	5.5	3.0	5.0	2.5	3.6	1.7	3.2	1.6	2.5	2.2
80°	8.8	5.3	7.8	5.2	5.3	2.8	5.0	2.5	3.5	1.6	3.2	1.5	2.3	2.1	
78°	8.6	5.2	7.6	5.1	5.1	2.7	4.9	2.4	3.4	1.6	3.1	1.4	2.1	2.0	
76°	8.3	5.1	7.3	5.0	4.8	2.6	4.6	2.4	3.1	1.5	3.0	1.4	2.0	1.9	
74°	7.8	5.0	6.8	4.8	4.6	2.5	4.2	2.3	2.9	1.5	2.8	1.3	1.8	1.7	
72°	7.3	4.9	6.3	4.6	4.3	2.4	3.9	2.3	2.7	1.4	2.6	1.3	1.6	1.5	
70°	6.9	4.7	6.0	4.4	4.0	2.4	3.6	2.3	2.5	1.4	2.4	1.2	1.5	1.4	
68°	6.5	4.5	5.8	4.2	3.7	2.3	3.4	2.2	2.3	1.3	2.2	1.2	1.4	1.3	
66°	6.2	4.4	5.5	4.1	3.5	2.3	3.2	2.2	2.1	1.3	2.0	1.1	1.3	1.2	
64°	5.9	4.2	5.2	4.0	3.3	2.2	3.0	2.1	2.0	1.3	1.9	1.1	1.2	1.1	
62°	5.6	4.1	5.0	3.8	3.1	2.2	2.8	2.0	1.9	1.2	1.8	1.0	1.1	1.0	
60°	5.4	4.0	4.8	3.7	3.0	2.1	2.7	2.0	1.8	1.2	1.7	1.0	1.0		
58°	5.2	3.9	4.5	3.6	2.8	2.1	2.5	1.9	1.7	1.2	1.6				
56°	5.0	3.8	4.3	3.5	2.7	2.0	2.4	1.9	1.6	1.1	1.5				
54°	4.8	3.7	4.2	3.5	2.6	2.0	2.3	1.8	1.5	1.1	1.4				
52°	4.6	3.6	4.1	3.4	2.5	1.9	2.2	1.8	1.4	1.1	1.3				
50°	4.5	3.5	3.8	3.4	2.4	1.9	2.1	1.7	1.3	1.0	1.2				
48°	4.3	3.4	3.5	3.3	2.3	1.8	2.0	1.7	1.2	1.0	1.1				
46°	4.0	3.4	3.2	3.1	2.2	1.8	2.0	1.7	1.2		1.1				
44°	3.7	3.4	3.0	2.8	2.1	1.7	1.9	1.6	1.1		1.0				
42°	3.5	3.3	2.7	2.6	2.1	1.7	1.8	1.6	1.1		1.0				
40°	3.2	3.0	2.5	2.4	2.0	1.6	1.6	1.6	1.0		1.0				
35°	2.7	2.5	2.1	2.0	1.8	1.5	1.3	1.2							
Reeving	1														
Hook	9 t														
Telescoping mode	I	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	II	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	III	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	IV	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	V	3	4	3	4	3	4	3	4	3	4	3	4	3	4

Table 15

Unit: Metric tons

Outriggers intermediately extended, with 42 t counterweight, over side and over rear															
Jib length	11.0 m				18.6 m				26.6 m				34.6 m		
Boom length	58.5 m		63.0 m		58.5m		63.0 m		58.5 m		63.0 m		58.5 m	63.0 m	
Ro _o	α ^f														
	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	
82°	9.0	5.5	8.0	5.3	5.5	3.0	5.0	2.5	3.6	1.7	3.2	1.6	2.5	2.2	
80°	8.8	5.3	7.8	5.2	5.3	2.8	5.0	2.5	3.5	1.6	3.2	1.5	2.3	2.1	
78°	8.6	5.2	7.6	5.1	5.1	2.7	4.9	2.4	3.4	1.6	3.1	1.4	2.1	2.0	
76°	8.3	5.1	7.3	5.0	4.8	2.6	4.6	2.4	3.1	1.5	3.0	1.4	2.0	1.9	
74°	7.8	5.0	6.8	4.8	4.6	2.5	4.2	2.3	2.9	1.5	2.8	1.3	1.8	1.7	
72°	7.3	4.9	6.3	4.6	4.3	2.4	3.9	2.3	2.7	1.4	2.6	1.3	1.6	1.5	
70°	6.9	4.7	6.0	4.4	4.0	2.4	3.6	2.3	2.5	1.4	2.4	1.2	1.5	1.4	
68°	6.5	4.5	5.8	4.2	3.7	2.3	3.4	2.2	2.3	1.3	2.2	1.2	1.4	1.3	
66°	6.2	4.4	5.5	4.1	3.5	2.3	3.2	2.2	2.1	1.3	2.0	1.1	1.3	1.2	
64°	5.9	4.2	5.2	4.0	3.3	2.2	3.0	2.1	2.0	1.3	1.9	1.1	1.2	1.1	
62°	5.6	4.1	5.0	3.8	3.1	2.2	2.8	2.0	1.9	1.2	1.8	1.0	1.1	1.0	
60°	5.4	4.0	4.6	3.7	3.0	2.1	2.7	2.0	1.8	1.2	1.7	1.0	1.0		
58°	5.0	3.9	4.1	3.6	2.8	2.1	2.5	1.9	1.7	1.2	1.6				
56°	4.5	3.8	3.7	3.4	2.7	2.0	2.4	1.9	1.6	1.1	1.5				
54°	4.0	3.7	3.3	3.1	2.6	2.0	2.3	1.8	1.5	1.1	1.4				
52°	3.6	3.4	2.9	2.7	2.5	1.9	2.1	1.8	1.4	1.1	1.3				
50°	3.3	3.1	2.6	2.4	2.4	1.9	1.8	1.6	1.3	1.0	1.2				
48°	3.0	2.8	2.3	2.1	2.2	1.8	1.6	1.4	1.2	1.0	1.0				
46°	2.7	2.5	2.1	1.9	1.9	1.7	1.4	1.2	1.2						
44°	2.4	2.2	1.8	1.7	1.7	1.5	1.2	1.0	1.0						
42°	2.1	1.9	1.6	1.5	1.5	1.3	1.0								
40°	2.0	1.8	1.4	1.3	1.2	1.1									
35°	1.5	1.4													
Reeving	1														
Hook	9 t														
Telescoping mode	I	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	II	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	III	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	IV	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	V	3	4	3	4	3	4	3	4	3	4	3	4	3	4

Table 16

Unit: Metric tons

Outriggers intermediately extended, with 32 t counterweight, over side and over rear															
Jib length	11.0 m				18.6 m				26.6 m				34.6 m		
Boom length	58.5 m		63.0 m		58.5 m		63.0 m		58.5m		63.0 m		58.5 m	63.0 m	
Room \ α	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	0°	
82°	9.0	5.5	8.0	5.3	5.5	3.0	5.0	2.5	3.6	1.7	3.2	1.6	2.5	2.2	
80°	8.8	5.3	7.8	5.2	5.3	2.8	5.0	2.5	3.5	1.6	3.2	1.5	2.3	2.1	
78°	8.6	5.2	7.6	5.1	5.1	2.7	4.9	2.4	3.4	1.6	3.1	1.4	2.1	2.0	
76°	8.3	5.1	7.3	5.0	4.8	2.6	4.6	2.4	3.1	1.5	3.0	1.4	2.0	1.9	
74°	7.8	5.0	6.8	4.8	4.6	2.5	4.2	2.3	2.9	1.5	2.8	1.3	1.8	1.7	
72°	7.3	4.9	6.3	4.6	4.3	2.4	3.9	2.3	2.7	1.4	2.6	1.3	1.6	1.5	
70°	6.9	4.7	6.0	4.4	4.0	2.4	3.6	2.3	2.5	1.4	2.4	1.2	1.5	1.4	
68°	6.5	4.5	5.8	4.2	3.7	2.3	3.4	2.2	2.3	1.3	2.2	1.2	1.4	1.3	
66°	6.2	4.4	5.2	4.1	3.5	2.3	3.2	2.2	2.1	1.3	2.0	1.1	1.3	1.2	
64°	5.5	4.2	4.5	4.0	3.3	2.2	3.0	2.1	2.0	1.3	1.9	1.1	1.2	1.1	
62°	4.8	4.1	4.0	3.6	3.1	2.2	2.8	2.0	1.9	1.2	1.8	1.0	1.1	1.0	
60°	4.2	3.8	3.5	3.1	3.0	2.1	2.5	2.0	1.8	1.2	1.7	1.0	1.0		
58°	3.7	3.4	3.0	2.7	2.7	2.1	2.2	1.8	1.7	1.2	1.5				
56°	3.3	3.0	2.6	2.4	2.4	2.0	1.8	1.5	1.6	1.1	1.2				
54°	2.9	2.6	2.2	2.0	2.1	2.0	1.5	1.2	1.4	1.1					
52°	2.5	2.3	1.9	1.7	1.7	1.5	1.2	1.0	1.1						
50°	2.2	2.0	1.6	1.4	1.5	1.3	1.0								
48°	1.9	1.7	1.3	1.1	1.2	1.0									
46°	1.6	1.4	1.1		1.0										
44°	1.4	1.2													
42°	1.2	1.0													
40°	1.0														
Reeving	1														
Hook	9 t														
Telescoping mode	I	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	II	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	III	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	IV	3	4	3	4	3	4	3	4	3	4	3	4	3	4
	V	3	4	3	4	3	4	3	4	3	4	3	4	3	4

Table 17

Unit: Metric tons

Main boom + tip boom, outriggers completely extended, with 55 t counterweight, over side and over rear															
Radius (m)	Boom length (m)												Radius (m)		
	13.5	18.0	22.5	27.0	31.5	36.0	40.5	45.0	49.5	54.0	58.5	63.0			
3.0	28*													3.0	
3.5	28*	27												3.5	
4.0	27	27	27											4.0	
4.5	27	26.5	27											4.5	
5.0	26.5	26	27	27										5.0	
5.5	26	25.5	27	27										5.5	
6.0	25.5	25	26.5	27	27									6.0	
7.0	25	24.5	26	26	27	25								7.0	
8.0	24.2	24	25	25.5	26	25	25							8.0	
9.0	23.8	23.5	24.5	25	25.5	25	24	24						9.0	
10.0	23.4	23	24	24.5	25	24	23	23						10.0	
11.0	23.2	22.5	23.5	24	24.5	23.5	22.5	22.5	22					11.0	
12.0	23	22	23	23.5	24	22.5	22	22	21	19				12.0	
14.0		21.5	22.5	23	23.5	21.5	20.5	20.5	20	18.5	15			14.0	
16.0		21.2	22	22.5	23	20	19.5	19.5	19	17	14	13		16.0	
18.0			21.8	22	22	19	18.5	18.5	17.5	15.5	13.5	12.5		18.0	
20.0			21.6	19	21.5	18	17.5	17.5	16	14.5	13	12		20.0	
22.0				16.5	20.5	17.5	16.5	16.5	14.8	13.4	12	11		22.0	
24.0				14	18	17	16	15	13.8	12.5	11.2	10.2		24.0	
26.0				12	15.7	16	15	13.8	12.6	11.6	10.5	9.6		26.0	
28.0					13.8	14.5	13.8	12.7	11.6	10.8	9.8	9.2		28.0	
30.0					11.8	12.8	12.2	11.7	10.8	10	9.2	8.6		30.0	
32.0						11.5	11	10.8	9.8	9.4	8.6	8		32.0	
34.0						10	9.8	9.8	9.2	8.8	8.1	7.5		34.0	
36.0							8.8	8.9	8.5	8.2	7.6	7		36.0	
38.0							7.8	7.9	7.9	7.6	7.1	6.6		38.0	
40.0								7.1	7.3	7	6.8	6.2		40.0	
42.0								6.3	6.5	6.5	6.3	5.9		42.0	
44.0									5.8	6	5.9	5.5		44.0	
46.0									5.3	5.5	5.5	5.1		46.0	
48.0										5	5.1	4.7		48.0	
50.0										4.5	4.8	4.4		50.0	
52.0											4.4	4.1		52.0	
54.0											4	3.8		54.0	
56.0												3.5		56.0	
58.0												3.2		58.0	
Reeving	4	3	3	3	3	3	3	3	3	2	2	2		Reeving	
Hook	27 t												Hook		
Telescoping mode	I	1	1	2	2	2	2	3	3	3	3	3	4	I	Telescoping mode
	II	1	2	2	2	2	2	2	3	3	3	3	4	II	
	III	1	1	1	2	2	2	2	2	3	3	3	4	III	
	IV	1	1	1	1	2	2	2	2	2	3	3	4	IV	
	V	1	1	1	1	1	2	2	2	2	2	3	4	V	



The values with * are suitable for 70 t hook.

Table 18

Unit: Metric tons

Main boom + tip boom, outriggers completely extended, with 42 t counterweight, over side and over rear														
Radius (m)	Boom length (m)												Radius (m)	
	13.5	18.0	22.5	27.0	31.5	36.0	40.5	45.0	49.5	54.0	58.5	63.0		
3.0	28*												3.0	
3.5	28*	27											3.5	
4.0	27	27	27										4.0	
4.5	27	26.5	27										4.5	
5.0	26.5	26	27	27									5.0	
5.5	26	25.5	27	27									5.5	
6.0	25.5	25	26.5	27	27								6.0	
7.0	25	24.5	26	26	27	25							7.0	
8.0	24.2	24	25	25.5	26	25	25						8.0	
9.0	23.8	23.5	24.5	25	25.5	25	24	24					9.0	
10.0	23.4	23	24	24.5	25	24	23	23					10.0	
11.0	23.2	22.5	23.5	24	24.5	23.5	22.5	22.5	22				11.0	
12.0	23	22	23	23.5	24	22.5	22	22	21	19			12.0	
14.0		21.5	22.5	23	23.5	21.5	20.5	20.5	20	18.5	15		14.0	
16.0		21.2	22	22.5	23	20	19.5	19.5	19	17	14	13	16.0	
18.0			21.5	22	22	19	18.5	18.5	17.5	15.5	13.5	12.5	18.0	
20.0			18	19	19.5	18	17.5	17.5	16	14.5	13	12	20.0	
22.0				16	16.5	17.5	16.5	16.5	14.8	13.4	12	11	22.0	
24.0				13.5	14.2	15	14.5	14.5	13.8	12.5	11.2	10.2	24.0	
26.0				11.7	12.3	13	12.5	12.5	12.6	11.6	10.5	9.6	26.0	
28.0					10.8	11.5	11	11	11	10.8	9.8	9.2	28.0	
30.0					9.4	10	9.6	9.6	9.8	10	9.2	8.6	30.0	
32.0						9	8.5	8.5	8.7	9	8.6	8	32.0	
34.0						8	7.5	7.5	7.7	8	8.1	7.5	34.0	
36.0							6.6	6.6	6.7	7	7.6	7	36.0	
38.0							5.5	5.8	6	6.3	6.7	6.6	38.0	
40.0								5	5.2	5.6	6	6	40.0	
42.0								4.4	4.7	5	5.4	5.4	42.0	
44.0									4.1	4.4	4.8	4.8	44.0	
46.0									3.5	3.8	4.2	4.2	46.0	
48.0										3.4	3.8	3.8	48.0	
50.0										3	3.3	3.3	50.0	
52.0											3	3	52.0	
54.0											2.4	2.4	54.0	
56.0												2.2	56.0	
58.0												1.8	58.0	
Reeving	4	3	3	3	3	3	3	3	3	2	2	2	Reeving	
Hook	27 t												Hook	
Telescoping mode	I	1	1	2	2	2	2	3	3	3	3	3	4	Telescoping mode
	II	1	2	2	2	2	2	2	3	3	3	3	4	
	III	1	1	1	2	2	2	2	2	3	3	3	4	
	IV	1	1	1	1	2	2	2	2	2	3	3	4	
	V	1	1	1	1	1	2	2	2	2	2	3	4	



The values with * are suitable for 70 t hook.

Table 19

Unit: Metric tons

Main boom + tip boom, outriggers completely extended, with 32 t counterweight, over side and over rear															
Radius (m)	Boom length (m)												Radius (m)		
	13.5	18.0	22.5	27.0	31.5	36.0	40.5	45.0	49.5	54.0	58.5	63.0			
3.0	28*												3.0		
3.5	28*	27											3.5		
4.0	27	27	27										4.0		
4.5	27	26.5	27										4.5		
5.0	26.5	26	27	27									5.0		
5.5	26	25.5	27	27									5.5		
6.0	25.5	25	26.5	27	27								6.0		
7.0	25	24.5	26	26	27	25							7.0		
8.0	24.2	24	25	25.5	26	25	25						8.0		
9.0	23.8	23.5	24.5	25	25.5	25	24	24					9.0		
10.0	23.4	23	24	24.5	25	24	23	23					10.0		
11.0	23.2	22.5	23.5	24	24.5	23.5	22.5	22.5	22				11.0		
12.0	23	22	23	23.5	24	22.5	22	22	21	19			12.0		
14.0		21.5	22.5	23	23.5	21.5	20.5	20.5	20	18.5	15		14.0		
16.0		21.2	21.5	22.5	23	20	19.5	19.5	19	17	14	13	16.0		
18.0			18	19	19	19	18.5	18.5	17.5	15.5	13.5	12.5	18.0		
20.0			15	15.5	15.5	17	16.5	16.5	16	14.5	13	12	20.0		
22.0				13	13.5	14	13.8	13.8	14	13.4	12	11	22.0		
24.0				11	11.5	12.2	11.8	11.8	12	12.4	11.2	10.2	24.0		
26.0				9	10	10.5	10	10	10.2	10.5	10.5	9.6	26.0		
28.0					8.5	9.3	8.8	8.8	9	9.3	9.7	9.2	28.0		
30.0					7	8.2	7.6	7.6	7.8	8.1	8.5	8.5	30.0		
32.0						7.2	6.6	6.6	6.8	7.2	7.6	7.6	32.0		
34.0						6	5.7	5.7	6	6.3	6.6	6.6	34.0		
36.0							4.9	4.9	5.2	5.4	5.8	5.8	36.0		
38.0							4.2	4.2	4.5	4.8	5.1	5.1	38.0		
40.0								3.5	3.8	4.1	4.4	4.4	40.0		
42.0								2.8	3.2	3.5	3.9	3.9	42.0		
44.0									2.7	3	3.4	3.4	44.0		
46.0									2.2	2.5	2.9	2.9	46.0		
48.0										2.1	2.5	2.5	48.0		
50.0										1.7	2.1	2.1	50.0		
52.0											1.7	1.7	52.0		
54.0											1.4	1.4	54.0		
56.0													56.0		
58.0													58.0		
60.0													60.0		
62.0													62.0		
64.0													64.0		
Reeving	4	3	3	3	3	3	3	3	3	2	2	2	Reeving		
Hook	27 t												Hook		
Telescoping mode	I	1	1	2	2	2	2	3	3	3	3	3	4	Telescoping mode	
	II	1	2	2	2	2	2	2	3	3	3	3	4		II
	III	1	1	1	2	2	2	2	2	3	3	3	4		III
	IV	1	1	1	1	2	2	2	2	2	3	3	4		IV
	V	1	1	1	1	1	2	2	2	2	2	3	4		V



The values with * are suitable for 70 t hook.

Table 20

Unit: Metric tons

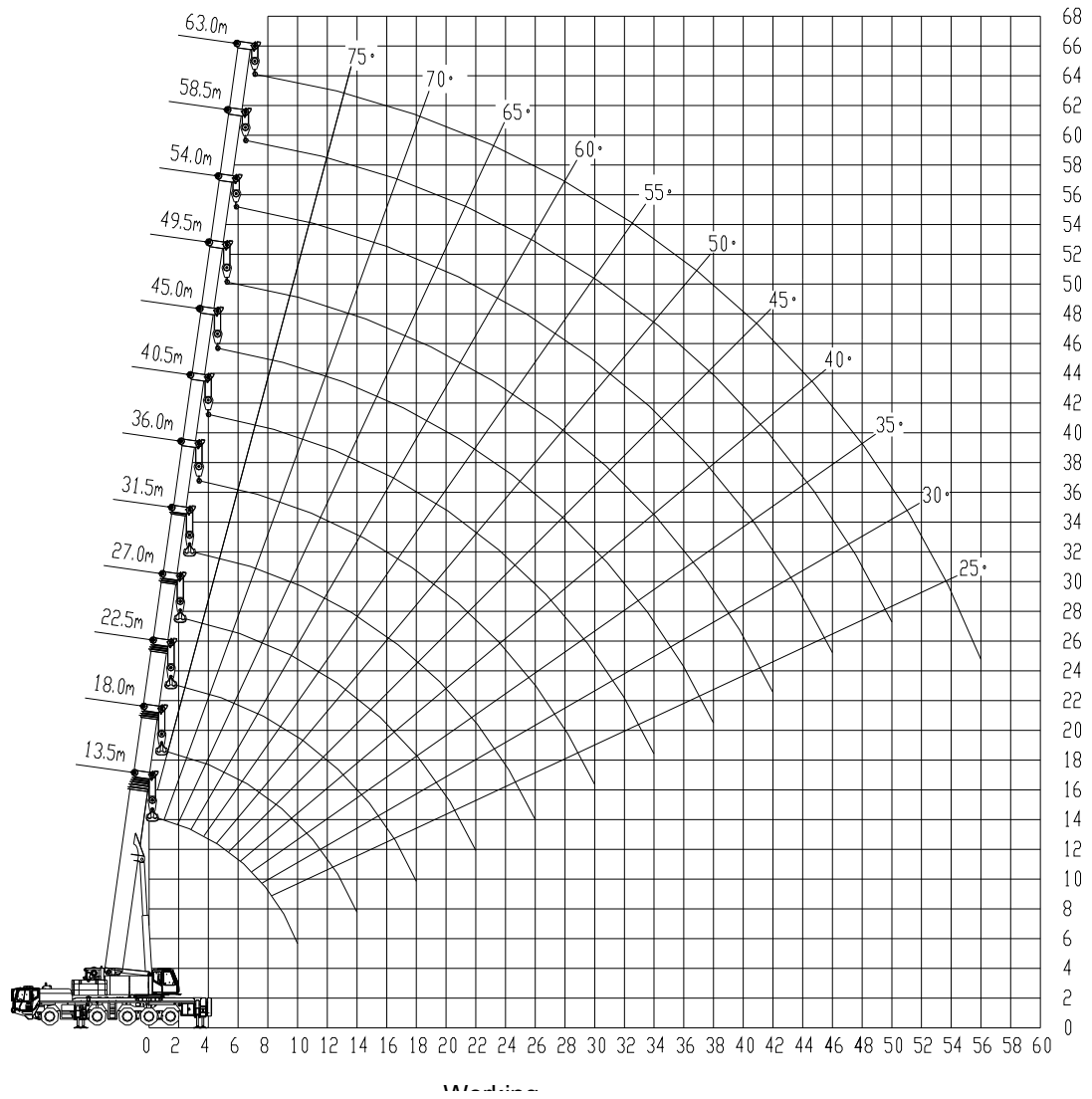
Main boom + tip boom, outriggers completely extended, with 15 t counterweight, over side and over rear																
Radius (m)	Boom length (m)												Radius (m)			
	13.5	18.0	22.5	27.0	31.5	36.0	40.5	45.0	49.5	54.0	58.5	63.0				
3.0	28*													3.0		
3.5	28*	27												3.5		
4.0	27	27	27											4.0		
4.5	27	26.5	27											4.5		
5.0	26.5	26	27	27										5.0		
5.5	26	25.5	27	27										5.5		
6.0	25.5	25	26.5	27	27									6.0		
7.0	25	24.5	26	26	27	25								7.0		
8.0	24.2	24	25	25.5	26	25	25							8.0		
9.0	23.8	23.5	24.5	25	25.5	25	24	24						9.0		
10.0	23.4	23	24	24.5	25	24	23	23						10.0		
11.0	23.2	22.5	23.5	24	24.5	23.5	22.5	22.5	22					11.0		
12.0	23	22	23	23.5	24	22.5	22	22	21	19				12.0		
14.0		20	19	20	21	21.5	20.5	20.5	20	18.5	15			14.0		
16.0		16	15	15.5	16.5	17	16.5	16.5	17	17	14	13		16.0		
18.0			12	12.5	13	13.7	13.2	13.2	13.5	13.8	13.5	12.5		18.0		
20.0			9.2	10	10.5	11	10.7	10.7	11	11.3	11.8	11.8		20.0		
22.0				8.2	8.7	9.3	8.7	8.7	9.2	9.5	10	10		22.0		
24.0				6.5	7.2	7.8	7.4	7.4	7.7	8	8.4	8.4		24.0		
26.0				5.2	5.8	6.6	6.1	6.1	6.3	6.7	7.1	7.1		26.0		
28.0					4.7	5.5	5.1	5.1	5.3	5.6	6	6		28.0		
30.0					3.8	4.6	4.2	4.2	4.4	4.7	5.1	5.1		30.0		
32.0						3.7	3.4	3.4	3.6	4	4.3	4.3		32.0		
34.0						3	2.7	2.7	2.9	3.2	3.5	3.5		34.0		
36.0							2	2	2.2	2.6	3	3		36.0		
38.0							1.4	1.4	1.7	2	2.4	2.4		38.0		
40.0									1.3	1.5	2	2		40.0		
42.0											1.4	1.4		42.0		
44.0														44.0		
46.0														46.0		
48.0														48.0		
50.0														50.0		
52.0														52.0		
54.0														54.0		
56.0														56.0		
58.0														58.0		
Reeving	4	3	3	3	3	3	3	3	3	2	2	2		Reeving		
Hook	27 t												Hook			
Telescoping mode	I	1	1	2	2	2	2	3	3	3	3	3	4	I	Telescoping mode	
	II	1	2	2	2	2	2	2	3	3	3	3	4	II		
	III	1	1	1	2	2	2	2	2	2	3	3	3	4		III
	IV	1	1	1	1	2	2	2	2	2	2	3	3	4		IV
	V	1	1	1	1	1	2	2	2	2	2	2	3	4		V



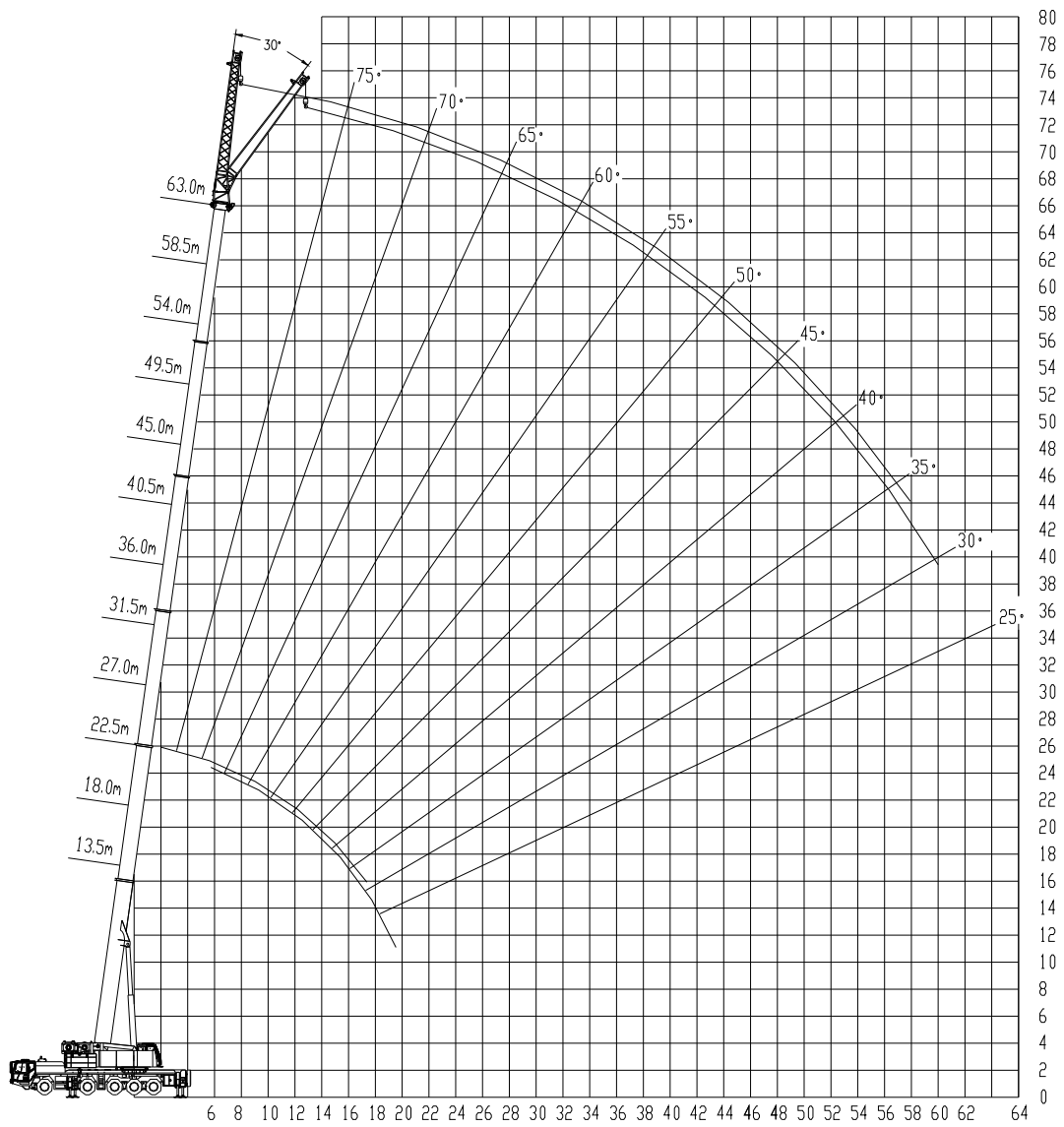
The values with * are suitable for 70 t hook.

2.3 Lifting height charts

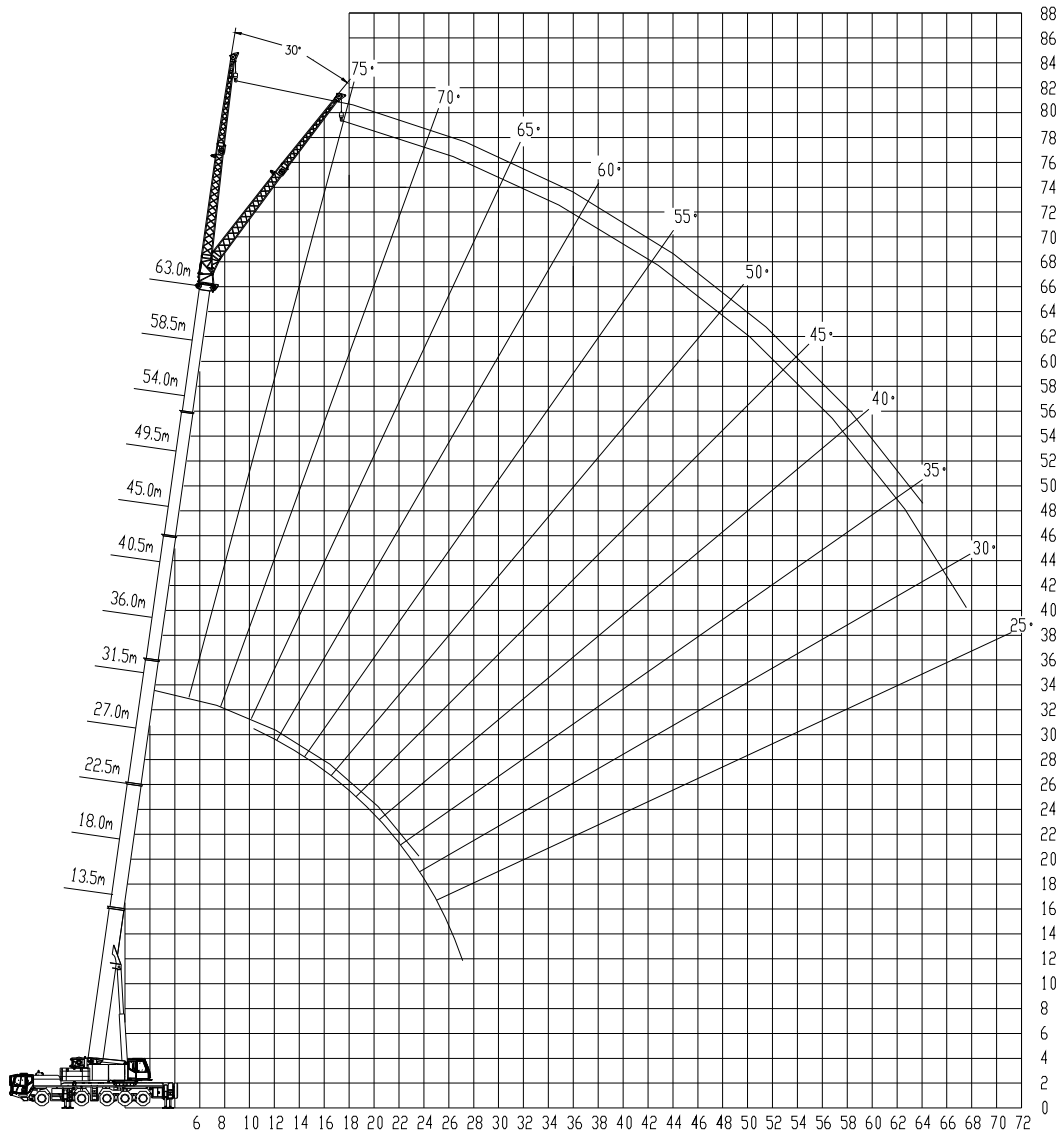
- Main boom



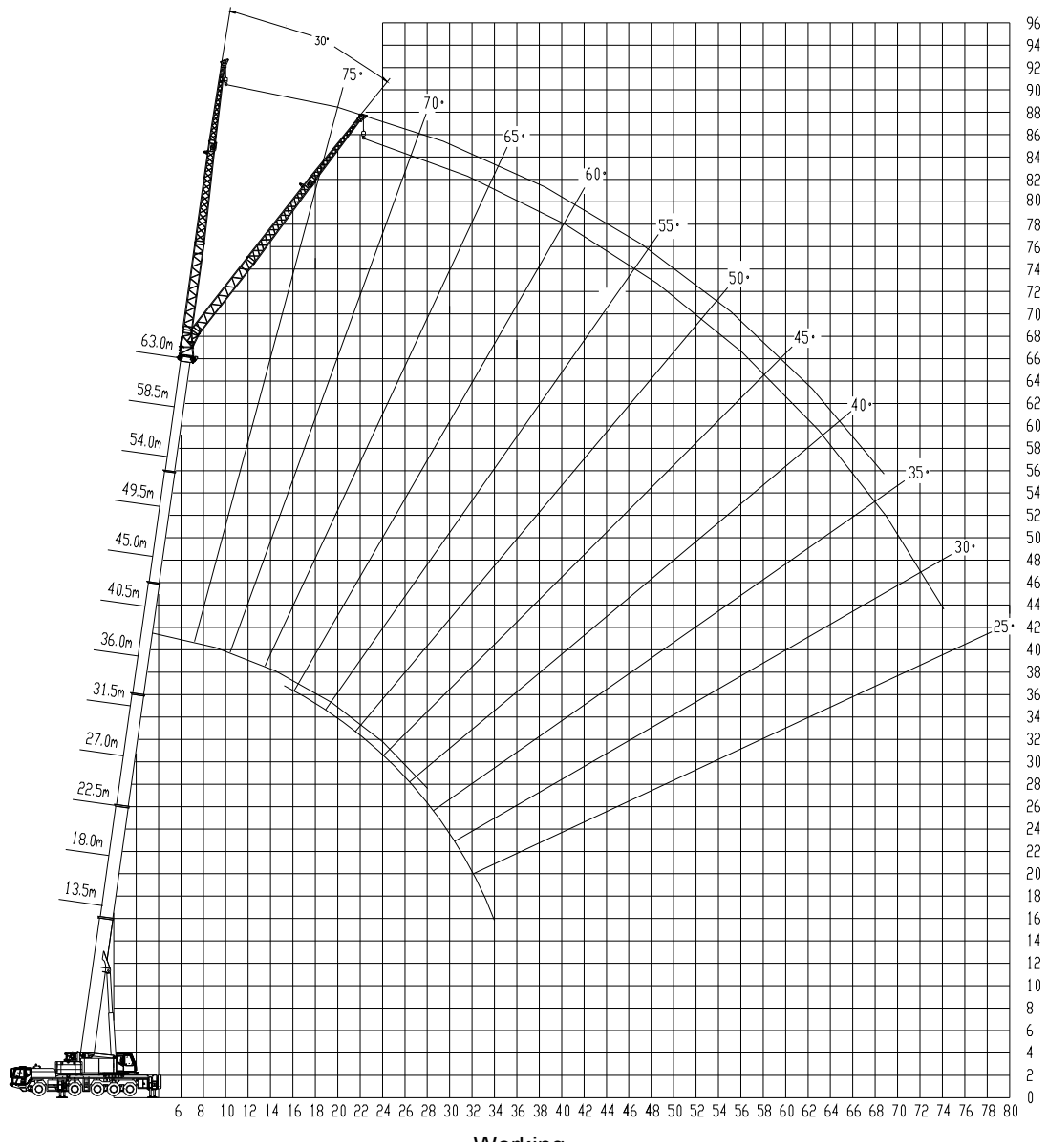
- Main boom + 11 m jib (jib section 1)



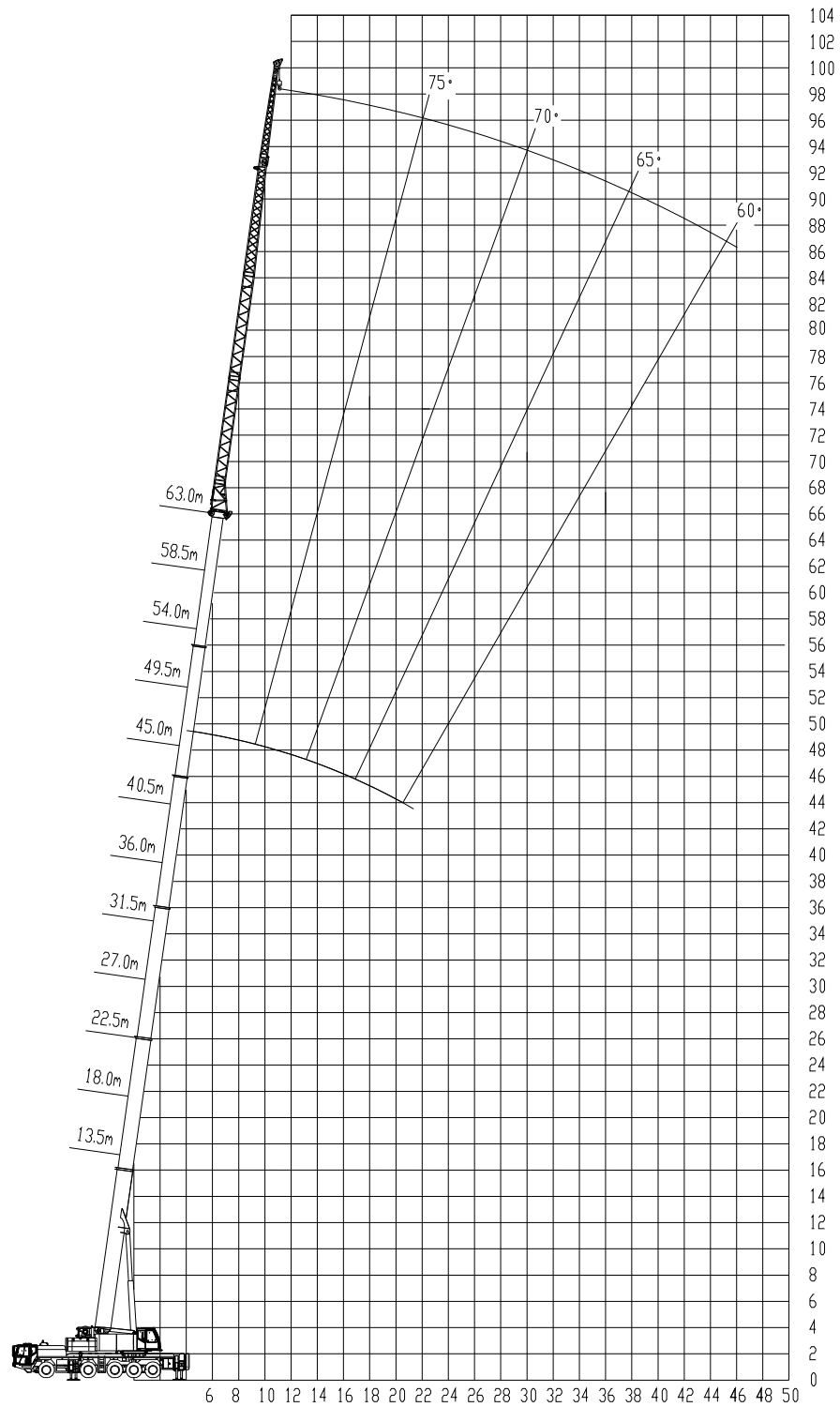
- Main boom + 18.6 m jib (jib section 1 + jib section 2)



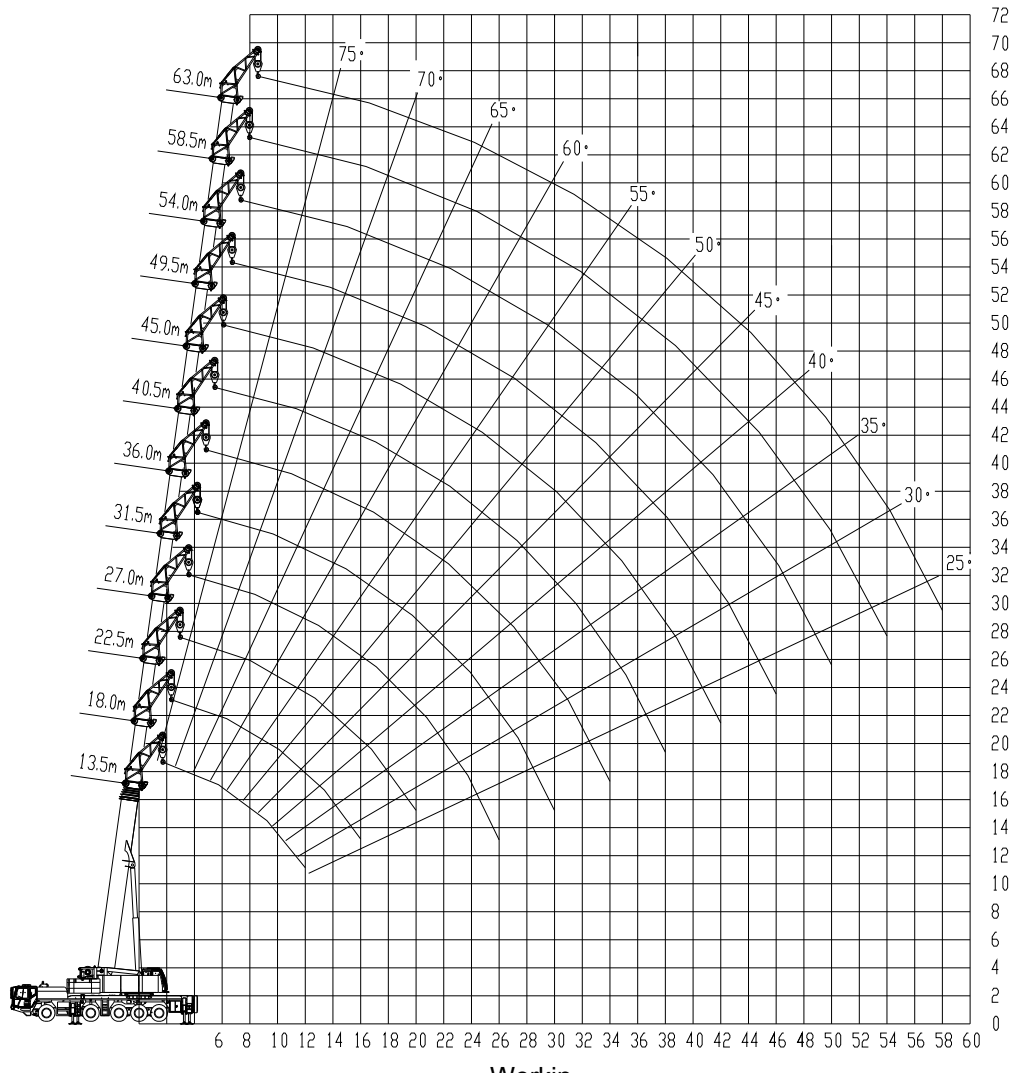
- Main boom + 26.6 m jib (extension 2 + jib section 1 + jib section 2)



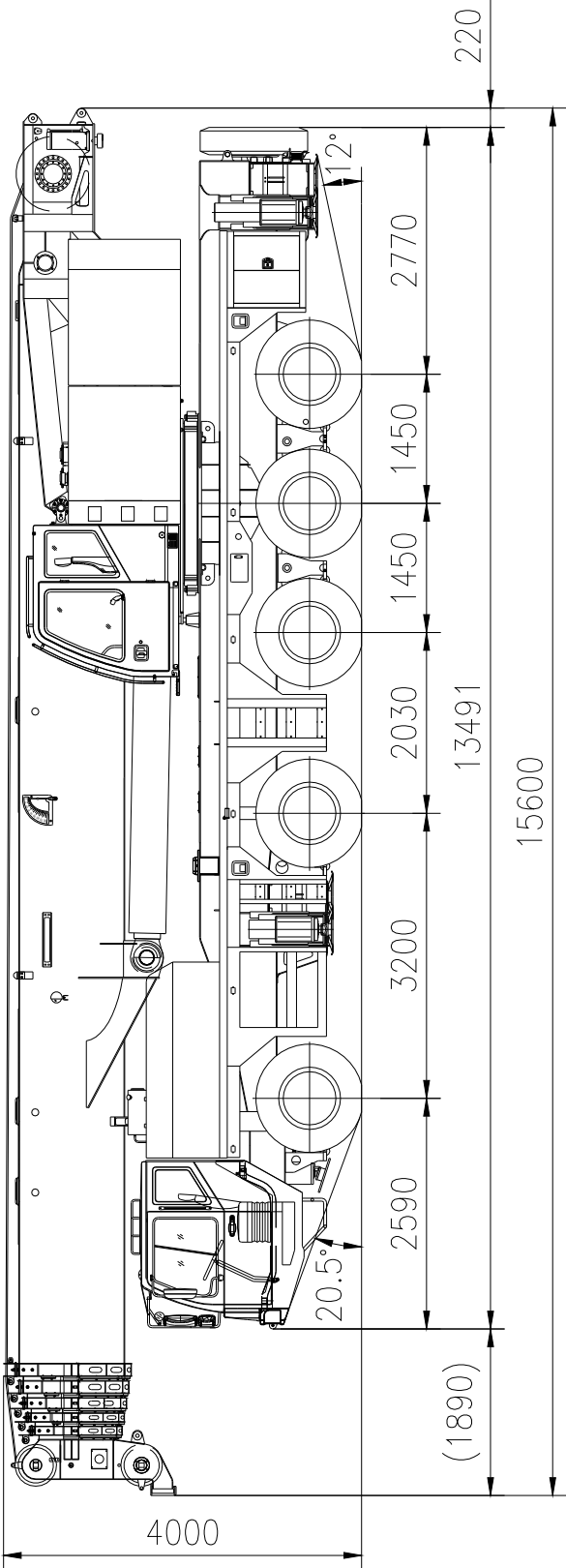
- Main boom + 34.6 m jib (extension 1 + extension 2 + jib section 1 + jib section 2)



- Main boom + tip boom



2.4 Overall view (Unit: Metric mm)



1 Specifications, superstructure

3.1 Main boom and telescoping system

One basic boom and 5 telescopic sections welded from imported WELDOX high-tensile steel ($\bar{\sigma}_s = 1100 \text{ MPa}$)

Optimal oviform boom profile for the super lifting capacities

15 reevings are recommended for the boom head pulley, providing a Max. lifting capacity of 130 t.

The Max. reeving number is 18 (with two additional pulleys), providing a Max. lifting capacity of 160 t.

In the automatic rapid-cycle telescoping system, all telescopic sections are driven by a telescopic cylinder and pinned mechanically, extendable independently of each other.

3.2 Jib

The jib consists of two jib sections and two jib extensions (one is standard and the other is optional). The jib sections are reducing and lattice structured and the jib extensions are constant and lattice structured.

The jib can be assembled below an angle of 0° or 30° to the telescopic boom via operating the pull bracket.

The jib cannot be attached with the vehicle during driving.

Jib variants: 11 m, 18.6 m, 26.6 m, 34.6 m

3.3 Tip boom

It consists of one adapter and one reducing lattice tip boom section (4 m long).

It works together with the main winch.

Max. number of reeving: 4

Max. lifting capacity: 28 t

The tip boom section can be assembled below an angle of 0° or 30° to the adapter via operating the pull bracket.

When the tip boom is not used, it is assembled below an angle of 0° to the adapter and then folded onto the side of main boom

When the tip boom is used, it is assembled below an angle of 30° to the adapter and then articulated with the telescopic boom section 5.

The utilization of tip boom enlarges the efficient work space of main boom.

It can not be attached with the vehicle during driving.

3.4 Slewing table

It is welded from high-tensile steel plate ($\bar{\sigma}_s = 960 \text{ MPa}$), providing super load bearing capacity.

The optimized design of 3 articulated points, making the slewing table in a novel style and offering reasonable stress distribution

The engine hood of a human-based layout is in beautiful figure.

The securing device installed in the front of the slewing table can prevent the superstructure from slewing during driving.

3.5 Rooster sheave

When it is not necessary to use the rooster sheave, make sure that it is attached to the side of the boom. When the crane is to lift a light load, rotate the rooster sheave around the shaft and pin it onto the boom head.

This option is set up for rapid hoists over the boom head to improve the work efficiency when the loads are light.

3.6 Derricking gear

One front-mounted hydraulic cylinder with balancing valve, providing the boom with smooth derricking movements from -0.5° to 82° .

3.7 Slewing gear

Two slewing gears, consisting of hydraulic motor and planetary reducer

Triple-roller slewing bearing provides big output torque and smooth slewing.

3.8 Hoist gear

a) Main and auxiliary winches

Main and auxiliary winches have the same parts, which include:

- Hydraulic motor
- Planetary reducer.

Main and auxiliary winches can be operated independently or simultaneously.

The models of reducers for main and auxiliary winches are the same. The main winch is driven by variable motor and auxiliary winch is driven by constant motor.

A hoisting limit switch is installed on the main winch.

b) Wire ropes

Torsion-resistant high-tensile main / auxiliary hoist rope

Rope diameter: \varnothing 21 mm

3.9 Main and auxiliary hooks

Ser. No.	Load (t)	Remarks
1	160	Ramshorn hook, optional
2	110	Ramshorn hook
3	70	Straight shank hooks with one point
4	27	Straight shank hooks with one point, optional
5	9 (1 reeving)	Rotatable, with hook latch

3.10 Operator's cab

The new V-series operator's cab in all-steel thin-wall construction, tiltable backwards for 20° to broaden the operator's field of vision, providing spacious operating space and luxurious equipment

It is equipped with air conditioning and cab heater.

3.11 Outriggers

H-type outriggers, hydraulically extendable into horizontal and vertical directions

Two-stage sliding beams extendable (fully or intermediately) simultaneously via one telescoping cylinder and extension / retraction rope.

Sliding beams in box-shaped sections are welded from high-tensile steel ($\delta_s = 960$ MPa).

A support control unit is attached to both sides of the vehicle for controlling the 4 outriggers to extend and retract simultaneously or independently.

With sliding beam illumination, support control unit illumination and electronic inclinometer (on the support control units)

The 5th outrigger is installed beneath the driver's cab, providing the crane with 360° unlimited slewing.

3.12 Hydraulic system

The superstructure is electro-hydraulic proportional controlled with computer system, providing comfortable operation, accurate micro-positioning performance and simultaneous movements.

Open / closed variable system offers little hydraulic pressure loss, high work efficiency, accurate movements, stable & reliable work and stepless speed regulation.

In addition, this crane is also of such functions as counterweight self-handling, operator's cab tilting angle regulation, providing stable brake performance and high system reliability.

3.13 Electrical system

The data bus technology effectively decreases the uses of cables and connections for improving the system reliability and the convenience of maintenance.

This system is of such functions as engine load limit control and RPM limit control.

The computer system is used to monitor the crane movements and display the relevant parameters in real time for analysis and treatment. It is also of self-diagnosis function.

Electron accelerator, easy for operation

3.14 Safety devices

This crane is equipped with an automatic load moment limiter whose display and warning devices are all fitted in the operator's cab.

If the actual load reaches 90% of the rated one, the warning light lights up and buzzer sends out slow acoustic warning.

If the actual load approaches 100% of the rated one, the warning light lights up, buzzer sends out fast acoustic warning and all dangerous crane movements are switched off.

The basic parameters, such as moment ratio, boom angle, boom length, working radius, actual lifting capacity, rated lifting capacity and maximum lifting height, will be displayed on the digital LCD.

This crane is also equipped with the following safety devices to ensure the crane safety:

- a) Boom angle indicator
- b) Hoisting limit switch
- c) Hook latch
- d) Lowering limit switch

- e) Fault self-diagnostic system
- f) The 5th outrigger overpressure protection device
- g) Bidirectional hydraulic lock
- h) Balancing valve
- i) Relief valve

3.15 Engine

Manufacturer: Weichai Power Co., Ltd.

Type: 6-cylinder in-line diesel, turbo-charged, intercooled (air – air)

Rated power / RPM: 176 kW at 2300 r/min

Max. output torque / RPM: 900 N.m at 1400 – 1600 r/min

Exhaust emission according to guidelines per EU Stage III

3.16 Air conditioning and cab heater

Both the driver's cab and operator's cab are equipped with special air conditioning and cab heater for vehicle.

3.17 Counterweight

Underslung self-handled multivariable counterweight system in a total weight of 55 t

Counterweight variants of 0 t, 15 t, 32 t, 42 t and 55 t, thus for a considerable application spectrum

Movable counterweight plates can be assembled and disassembled by the counterweight handler on the tail of slewing table.

3.18 Central lubricating system

All the lubricating points are automatically supplied with the correct grease quantity.

2 Specifications, chassis

Chassis	Model		ZLJ5580	Code: ZLJ5580V3	
	Type		II		
	Engine	Model		WP12.430N	
		Rated power	kW/r/min	316/1900	
		Max. output torque	N.m/r/min	2060/1000 – 1400	
Manufacturer		Zoomlion Heavy Industry Science and Technology Co., Ltd.			

For detailed information, please refer to *Technical Specifications, Special Purpose Chassis for Truck Crane*.