ZOOMLION

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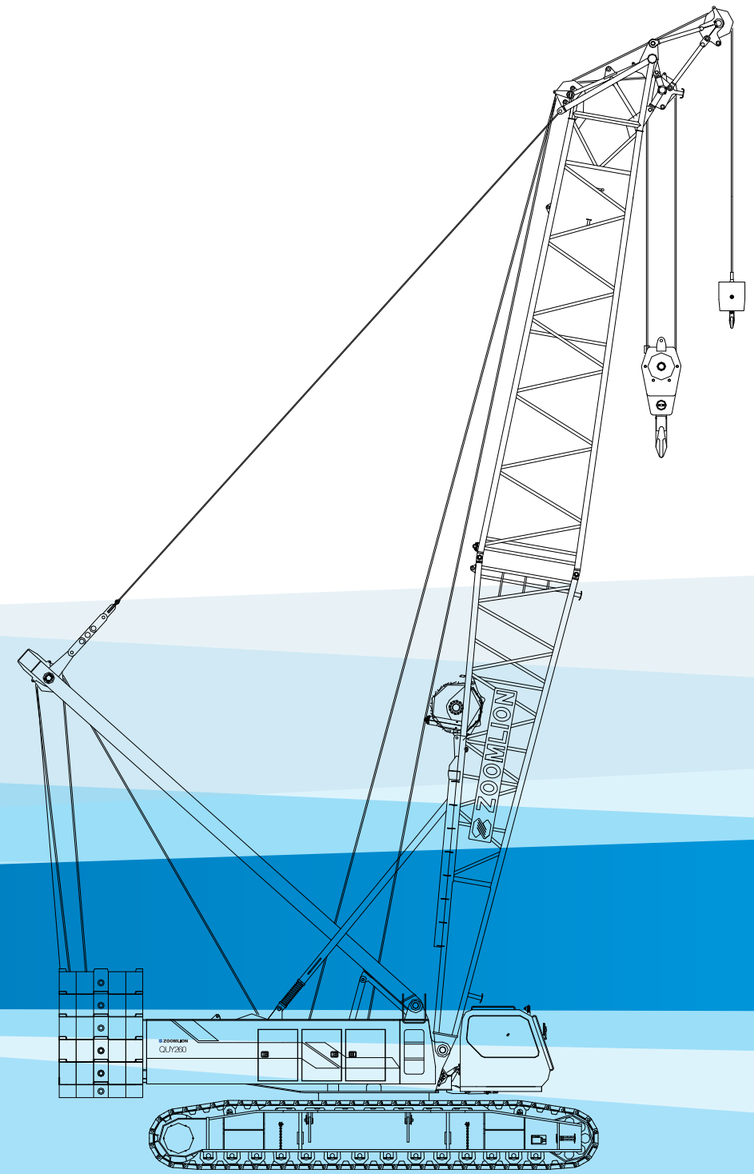
QUY260

Zoomlion QUY260 Crawler Crane



2010.4

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Expertise Heavy Industry Sci-Tech

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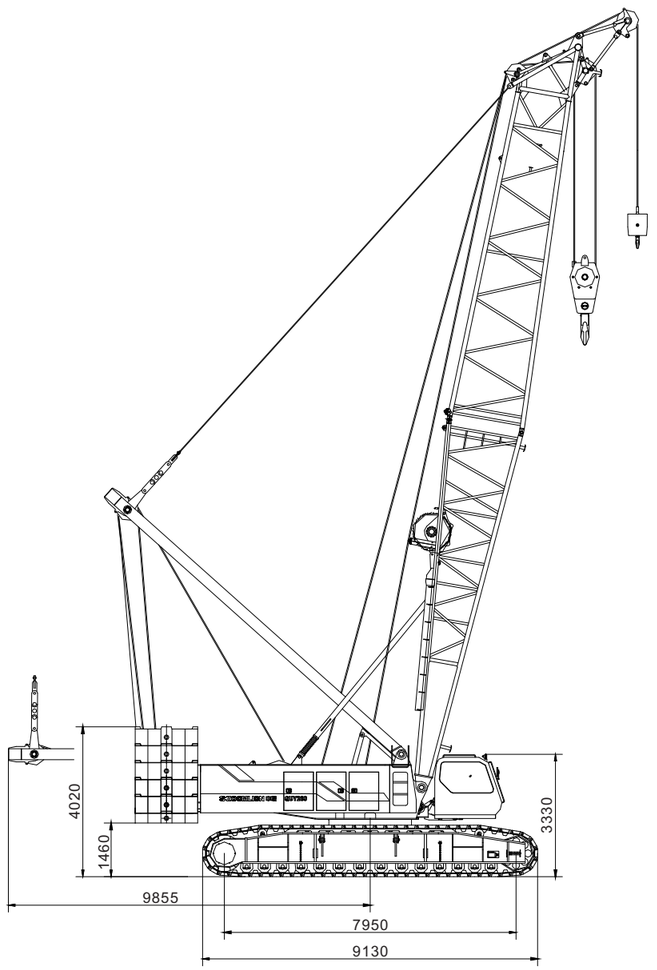
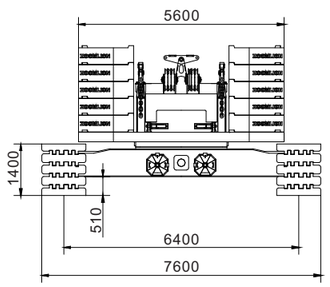
I. External Dimensions and Main Parameters

1 . External Dimensions of Entire Crane, including Basic Boom

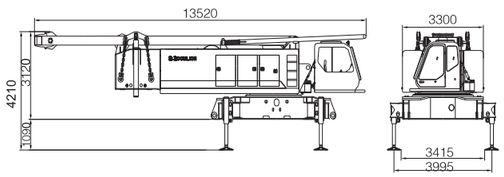




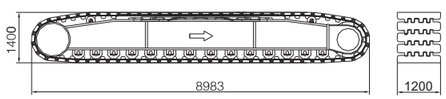
2 . Main Performance Parameters

Items		Unit of measurement	Values	Remarks
Maximum lifting capacity x radius		t × m	260 × 5	
Deadweight of crane with basic boom		t	210	
Length of main boom		m	20~83	
Length of light duty boom		m	86~95	
Length of fixed jib		m	12~30	
Maximum lifting capacity with fixed jib		t	34	
Setting angle of fixed jib		°	10, 30	
Maximum length of main boom + fixed jib		m	77 + 30	
Length of luffing jib		m	21~60	
Maximum lifting capacity with luffing jib		t	73.5	
Working angle of main boom in crane operation with luffing jib		°	65, 75, 85	
Maximum length of main boom + luffing jib		m	62 + 60	
Speed of single rope on drum	Primary lifting	m/min	110	Sixth layer of drum
	Secondary lifting	m/min	110	Sixth layer of drum
	Main luffing	m/min	29 × 2	Fifth layer of drum
	Luffing of luffing jib	m/min	46	Sixth layer of drum (optional)
Swiveling speed		rpm	0~1.2	
Traveling speed		km/h	0~1.0	
Gradeability		%	30	
Ground pressure		Mpa	0.115	
Overall dimensions L x W x H		mm	10.9 × 7.6 × 3.3	Excluding mast boom
Engine	Manufacturer		Cummins (USA)	
	Rated power/rotational speed	kW/rpm	227/2000	
	Maximum output torque/rotational speed	Nm/rpm	1505/1400	
	Emissions standard		U.S. EPA Tier 3 and EU Stage III A	
Distance between track centers × crawler contact length × crawler shoe width		mm	6400 × 8000 × 1200	

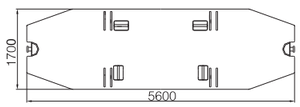
3 . External Dimensions and Weight of Main Transport Components



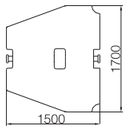
Name	Main machine
Weight (t)	48



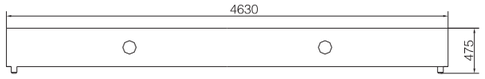
Name	Crawler assembly
Weight (t)	24.5t × 2



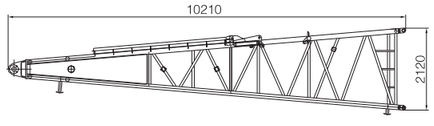
Name	Counterweight base plate
Weight (t)	18.98t × 1 (thickness 260)



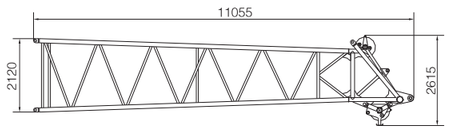
Name	Counterweight
Weight (t)	6.6t × 10 (thickness 450)



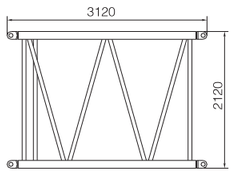
Name	Ballast weight of vehicle body
Weight (t)	16t × 2



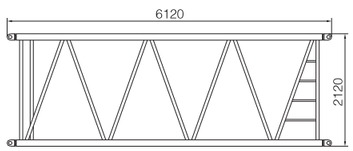
Name	Base section of main boom
Weight (t)	3.02t × 1 (width 2365)



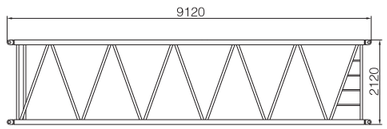
Name	Top section of main boom
Weight (t)	3.38t × 1 (width 2320)



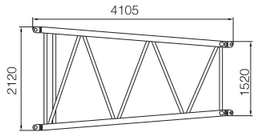
Name	3m section of main boom
Weight (t)	0.72t × 1 (width 2320)



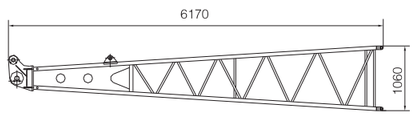
Name	6m section of main boom
Weight (t)	1.2t × 1 (width 2320)



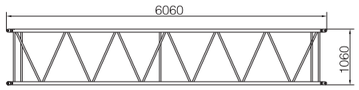
Name	9m section of main boom
Weight (t)	1.78t × 6 (width 2320)



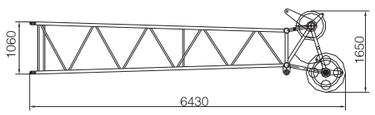
Name	4m transition section of main boom
Weight (t)	0.82t × 1 (width 2320)



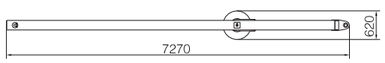
Name	Base section of fixed jib
Weight (t)	0.47t × 1 (width 1540)



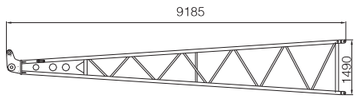
Name	6m section of fixed jib
Weight (t)	0.5t × 3 (width 1270)



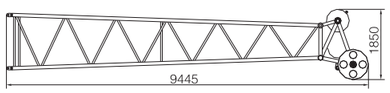
Name	Top section of fixed jib
Weight (t)	0.64t × 1 (width 1270)



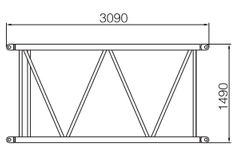
Name	Bracing pole of fixed jib
Weight (t)	0.75t × 1 (width 1500)



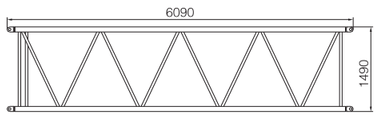
Name	Base section of luffing jib
Weight (t)	10.5t × 1 (width 1690)



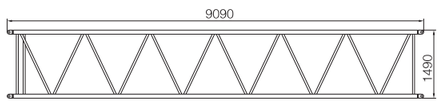
Name	Top section of luffing jib
Weight (t)	1.1t × 1 (width 1690)



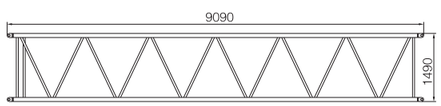
Name	3m section of luffing jib
Weight (t)	0.32t × 1 (width 1690)



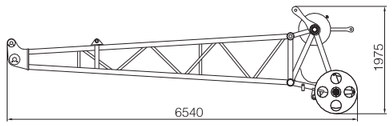
Name	6m section of luffing jib
Weight (t)	0.59t × 2 (width 1690)



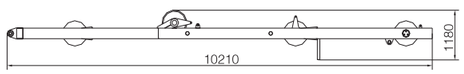
Name	9m section of luffing jib (A)
Weight (t)	0.82t × 1 (width 1690)



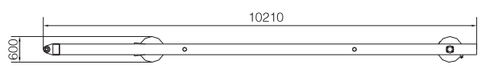
Name	9m section of luffing jib (B)
Weight (t)	0.68t × 2 (width 1690)



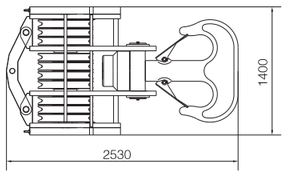
Name	Heavy fixed jib
Weight (t)	1.0t × 1 (width 1565)



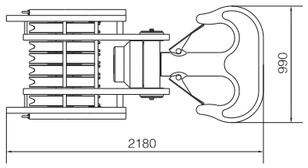
Name	Rear bracing pole of luffing jib
Weight (t)	1.74t × 1 (width 1750)



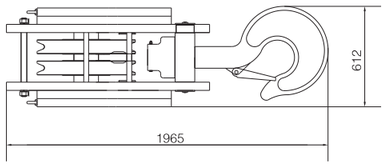
Name	Front bracing pole of luffing jib
Weight (t)	1.52t × 1 (width 1385)



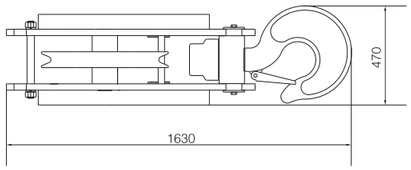
Name	Main hook (260t hook)
Weight (t)	4.2t × 1



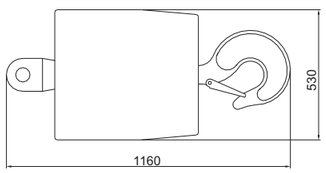
Name	160t/100t hook
Weight (t)	2.8t × 1



Name	50t hook
Weight (t)	1.7t × 1



Name	30t hook
Weight (t)	1.07t × 1



Name	16t hook
Weight (t)	0.8t × 1

II. Technical Descriptions

4. Boom System (Truss-Type Structure)

Main boom

Length of main boom: 20m~83m

Length of additional adjustable section of main boom: 3m, 6m, and 9m

Length of light duty boom: 86m~95m

Table of Heavy Duty Boom Length Combinations

Length of main boom (m)	Number of standard section kits for corresponding lengths of main boom (pieces)		
	3m standard section of main boom	6m standard section of main boom	9m standard section of main boom
23	1	0	0
26	2	0	0
29	1	1	0
32	2	1	0
35	1	2	0
38	1	1	1
41	2	1	1
44	1	2	1
47	1	1	2
50	2	1	2
53	1	2	2
56	1	1	3
59	2	1	3
62	1	2	3
65	1	1	4
68	2	1	4
71	1	2	4
74	1	1	5
77	2	1	5
80	1	2	5
83	1	1	6

Table of Light Duty Boom Length Combinations

Length of main boom (m)		86	89	92	95
Standard section of heavy duty boom	3m standard section of main boom	1	1	1	1
	6m standard section of main boom	1	1	1	1
	9m standard section of main boom	6	6	6	6
	4m transition section	1	1	1	1
Standard section of light duty boom	3m standard section of luffing jib	0	1	0	0
	6m standard section of luffing jib	0	0	1	0
	9m standard section of luffing jib	0	0	0	1

Fixed jib

Length of fixed jib: 12m~30m

Length of additional adjustable section of fixed jib: 6m

Maximum length of main boom + fixed jib: 77m + 30m

Table of Fixed Jib Length Combinations

Length of fixed jib (m)	Number of standard sections of fixed jib (piece)
	6m section kit
12	0
18	1
24	2
30	3

Luffing jib

Length of luffing jib: 21m~60m

Length of additional adjustable section of luffing jib: 3m, 6m, and 9m

Maximum length of main boom + luffing jib: 62m + 60m

Table of Luffing Jib Length Combinations

Length of luffing jib (m)	Number of standard section kits for corresponding lengths of luffing jib (piece)		
	3m standard section of luffing jib	6m standard section of luffing jib	9m standard section of luffing jib
21	1	0	0
24	2	0	0
27	1	1	0
30	2	1	0
33	1	2	0
36	1	1	1
39	2	1	1
42	1	2	1
45	1	1	2
48	2	1	2
51	1	2	2
54	1	1	3
57	2	1	3
60	1	2	3

5. Mechanisms

Primary and secondary lifting mechanisms

The primary and secondary lifting mechanisms are both comprised of an internal variable displacement axial plunger hydraulic motor, balance valve, speed reducer, normally closed brake, and wire ropes; they can be controlled independently of other mechanisms.

The wire ropes used are imported from Germany; they are of the highest quality and are anti-rotating.

The primary and secondary lifting mechanisms allow for stepless speed regulation from zero all the way up to the maximum speed, thus dramatically enhancing operational efficiency.

Primary and secondary lifting mechanisms	Drum diameter	650mm
	Operating speed of the outermost layer	110m/min
	Diameter of primary and secondary lifting mechanisms' wire ropes	Φ28mm
	Length of primary and secondary lifting mechanisms' wire ropes	480m/370m
	Rated single rope tension	15t

Luffing mechanism

The luffing mechanism is comprised of an internal fixed-displacement axial plunger hydraulic motor, balance valve, speed reducer, normally closed brake, and wire ropes; it can be controlled independently of other mechanisms.
The wire ropes used are imported from Germany and they are not anti-rotation.

Luffing mechanism	Drum diameter	610mm × 2
	Operating speed of the outermost layer	29m/min × 2
	Diameter of primary and secondary lifting mechanisms' wire ropes	Φ28mm × 2
	Length of primary and secondary lifting mechanisms' wire ropes	140m × 2
	Rated single rope tension	15t

Slewing mechanism

The slewing mechanism is comprised of an internal dual-variable displacement axial plunger hydraulic motor, double gear speed reducers, normally closed slewing brake, pinions and slewing bearings; the pinion-driven slewing bearing allows for full 360° slewing movements, thereby providing slewing functionality to the upper machinery.

The slewing mechanism is equipped with a controllable slip-turn function to reduce shock and allow for higher stability during initiation and braking.

The slewing mechanism adopts a closed-type slewing system to reduce shock and allow for better stability during initiation and braking of slewing operations; the controllable free slip-turn function of the slewing mechanism more fully meets operational requirements.

The slewing mechanism offers stepless speed regulation within the range of 0~1.2r/min.

During transport, the slewing mechanism is lockable through two mechanical locking devices located at the front of the rotating platform, thereby ensuring safe transportation.

Traveling mechanism

The traveling mechanism is a dual-variable motor dual-reducer type; the hydraulic motor, traveling speed reducer and traveling brake valve are all imported products. The two crawlers are controlled by two different control handles, allowing for a variety of traveling actions such as straight line traveling, unilateral steering, differential steering, pivotal steering, driving with load, etc., thus offering a high level of mobility, maneuverability and flexibility.

Traveling speed: 0~1.0km/h.

Gradeability: 30%.

Crawler tensioning: crawlers are tensioned through jacks, making adjustment is fast, easy and reliable.

Mast jack-up mechanism

This mechanism is comprised of the mast, mast jack-up oil cylinder, auxiliary hydraulic system, etc.; this mechanism is used during self-assembling/disassembling (or relocating) of the whole machine.

Plate connection is employed between the oil cylinder and balance valve to provide higher safety and reliability.

The anchoring rods can be connected, the boom can be assembled, and the crawler assembly and counterweight can be mounted by jacking the mast up beyond 90°perpendicular from its horizontal position.

Control room swiveling and luffing mechanism

The control room can rotate by 90° from the side of the rotating platform to the front of the rotating platform and be fixed there using locating pins, thus reducing the width of the overall crane and making it easier to transport.

The control room's luffing is controlled through oil cylinders; when lifting to especially high heights, the control room can luff upwards by 20°, thereby dramatically expanding the driver's field of vision.

Counterweight and counterweight loading/ unloading mechanism

This mechanism is comprised of the counterweight base plate, counterweight, counterweight jack-up oil cylinder, load bearing chain, and fixing pin oil cylinder.

It allows for complete self-mounting and dismounting of the counterweight, thereby dramatically improving the crane's utility and reducing the risks involved in manual installation.

Outrigger lifting and crawler self-mounting and dismounting mechanism

The outrigger jack-up and crawler self-mounting and dismounting mechanism is comprised of the undercarriage outriggers, outrigger oil cylinders, undercarriage operating valves, and crawler power pin, etc.

The outrigger jack-up mechanism serves as the primary load carrying mechanism during the crawler self-mounting and dismounting process, while the crawler self-mounting and dismounting mechanism lifts and installs the crawler assembly through the mast and mast jack-up mechanism, and uses the power pin to connect the chassis frame and the crawler assembly together.

When no auxiliary lifting equipment is available, the outrigger jack-up and crawler self mounting and dismounting mechanism can independently mount and dismount the crawler assembly, thereby improving operational efficiency, reducing the manual work intensity, and avoiding the risks involved in manual control.

6. Systems

Hydraulic system

The hydraulic system is comprised of a main pump, control valve, hydraulic motor, hydraulic oil tank, and cooler, etc.

The hydraulic system employs one of the world's most advanced pump control systems and load sensitive systems; imported products are used for all major components to save energy, and ensure high efficiency, high reliability, and long service life.

Capacity of hydraulic oil tank: 700L.

Cooler: aluminium radiator, where the fan is powered by the electric motor.

Electrical system

DC 24V, negative ground, 2 x 195AH batteries.

The electrical components of the vehicle primarily include: power supply, engine starter, engine misfiring, indicator lights, alarms, lighting devices, fans, windshield wipers, horn, lifting height limiters, hydraulic oil cooling fans, digital display monitor, PLC controller, engine preheater, safety devices, etc.; these appliances ensure that the crane will operate safely and provide a comfortable working environment for the driver and other workers. The whole vehicle employs CAN bus technology, which connects the engine, PLC controller and digital display together with fault detection and self-diagnosis functions.

Power system

Engine: US Cummins QSL9-C305

Rated output power (kw /rpm): 227/2000

Maximum output torque (Nm/rpm): 1505/1400

Emissions standard: U.S. EPA Tier 3 and EU Stage III

For the fuel tank, a large-volume 700L tank is used to ensure a sufficiently long working time of the engine.

Digitalized display system

The 10.4-in LCD monitor, with multi-language display capabilities, can centrally display the various operating mode signals collected by the PLC controller, including engine's rotating speed, water temperature, engine oil pressure, hydraulic pump pressure, motor pressure, level of the main machine operations, etc. It can monitor working conditions in realtime; when the crane is working abnormally, the system will emit a yellow or red alarm.

Centralized lubrication system

The German-imported Beka centralized lubrication system is incorporated to significantly prolong the service life of the whole vehicle.

7. Safety Devices

Load moment limiter

The limiter is comprised of a digital LCD monitor, host computer, signal converter, sensors, etc. When the lifting load reaches 90% of the rated load moment, an alarm lamp will light up and a buzzer alarm will sound; operation of the crane will stop automatically when the lifting load moment approaches the rated load moment in order to prevent any incidents that may occur as a result of crane overloading during construction operations, thus helping to ensure normal and safe operation of the crane.

The digital LCD monitor can display the following data:

Moment ratio
Working radius
Maximum allowed lifting height
Main boom elevation angle
Actual hook load
Length of main boom
Allowed lifting load

Various overflow valves in the hydraulic system

These valves can suppress abnormally high pressures in the circuit, preventing damage to the hydraulic oil pump and motor, and preventing system overload.

Height limiter devices

The limit switch, movement weight and other components are mounted on the top section boom, and are used to prevent excessive lifting of the hook. When the hook is lifted to a certain height, the limit switch signals the electrical system to automatically stop the lifting of the hook, also setting off an acoustooptic warning through the buzzer and display screen in the control room to prevent overwinding of the hook.

Angle indicator

The boom angle indicator is located along the lower rear part of the boom's bottom section (right side of control room), allowing the driver convenient, clear visibility of the elevation angle of the boom from the control room.

Working boom limiting position alarm and protection system

This protection system has a load moment limiter and limit switch for dual-level control, enabling automatic termination of luffing movements of the boom's limited elevation angle position, while also simultaneously triggering an acoustooptic warning.

Boom overturn protection device

The brace poles, which are of a nested steel tube and spring structure, are mounted at the base section of the main boom. They employ spring-loaded compression force to provide support and to prevent the main boom from overturning.

Whole machine level sensor

This electronic level meter displays in realtime the inclination angle of the whole machine and sends an alarm to the digital display screen in order to ensure safe operation of the vehicle.

Hook safety latch

This device prevents the load from unhooking when lifting heavy loads.

Wire rope overwinding and over-release protection device

When the wire rope in the drum has been released until only three single wound coils remain, this protection device signals the electrical system to automatically cut off the releasing of rope and the descending hook, also setting off an acoustooptic warning through the buzzer and display screen in the control room.

Emergency stop button

In case of emergency, press this button to switch off the engine and the whole machine.

Wind speed indicator

The electronic wind speed sensor can indicate wind speed levels on digital display screen in realtime, conveniently alerting workers of potentially dangerous working conditions.

Tri-color warning light

With three different colors, red, yellow and green, the warning light can synchronously indicate current overload status. Green indicates that the load factor is below 90%, yellow informs operators that the load factor is between 90% and 100%, while the red color warns that the load factor has exceeded 100% and that the crane is in danger of overloading.

Monitoring system

This system includes 2 cameras for monitoring conditions at the rears of the winch mechanism and of the whole machine.

Monitor: with the press of a button you can toggle between different monitoring feeds.

Remote GPS monitoring system (optional)

This system allows for GPS satellite positioning, GPRS data transmission, equipment use status inquiry, statistical information, remote fault diagnosis and other functions.

8. Control Room

The structure of the control room is made entirely of steel, is surrounded by reinforced glass on all four sides, and has laminated glass for its sunroof and windshield. The interior is equipped with a sun shield on the right side, adjustable seat, windshield wipers, electronic control handle, load moment indicator, digitalized display monitor, various switches, auxiliary remote control box operating assembly, air conditioners, electric fans, illuminating lamps, CD player (DVD player optional), cigarette lighters, and fire extinguishers, etc. The control room offers a broad field of vision, and a spacious and comfortable interior.

9. Hook

All hooks have a rotating hook and safety latch

260t hook (optional), with 10 pulleys.

160t/100t hook, with 6 pulleys.

50t hook, with 2 pulleys.

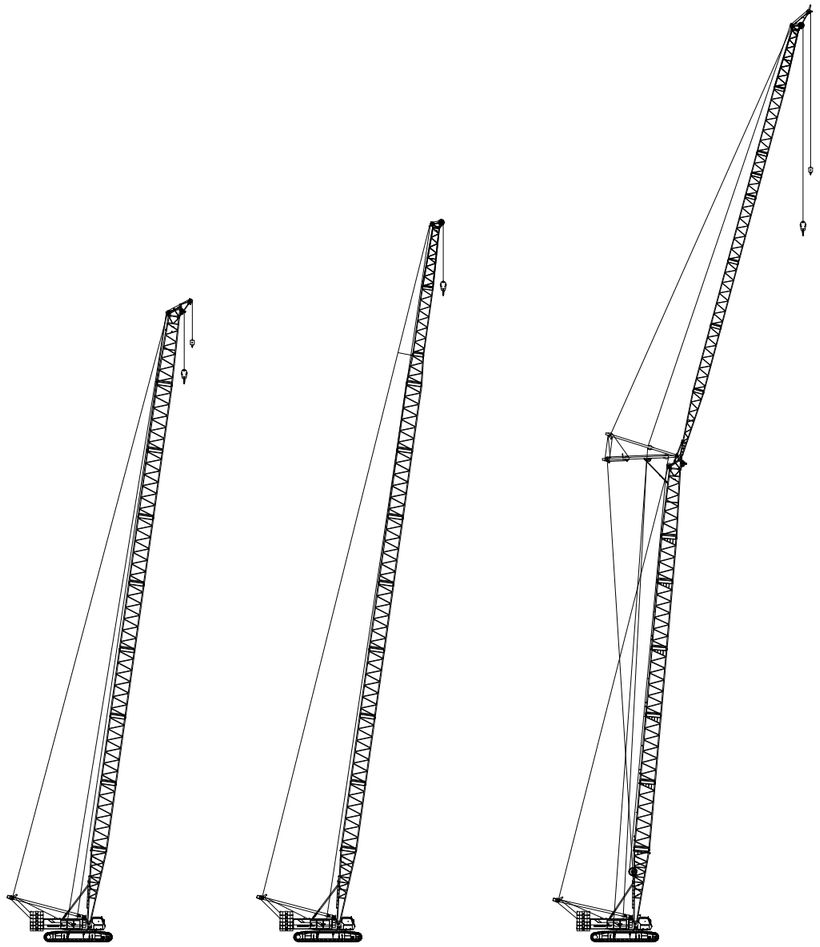
30t hook, with 1 pulley.

16t hook, which is a single hook.

III. Description of Boom Assembly

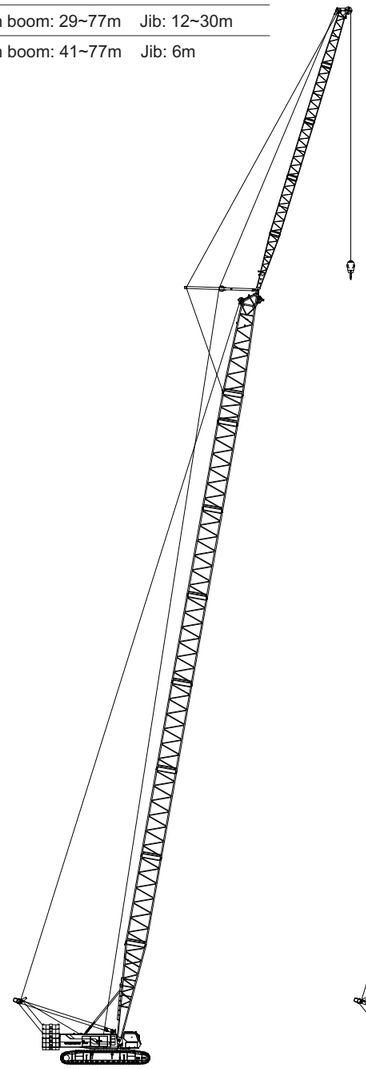
Descriptions of Boom Assembly Codes

Code	Type	Operation mode parameters
S	Heavy duty boom	20 ~ 83m
SL	Light duty boom	86 ~ 95m
SW	Luffing jib	Main boom: 23~62m Jib: 21~60m

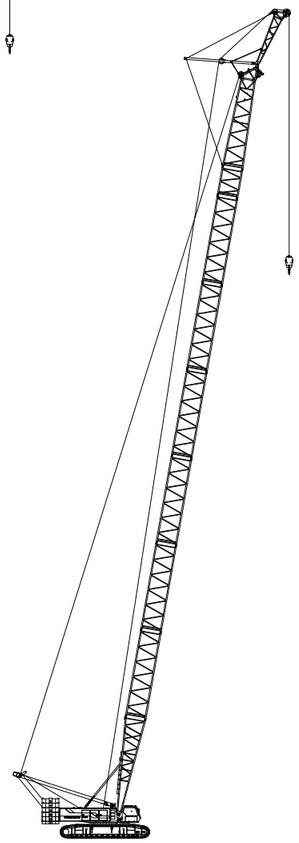


Descriptions of Boom Assembly Codes

Code	Type	Operation mode parameters
SF	Fixed jib	Main boom: 29~77m Jib: 12~30m
SFV	Heavy fixed jib	Main boom: 41~77m Jib: 6m



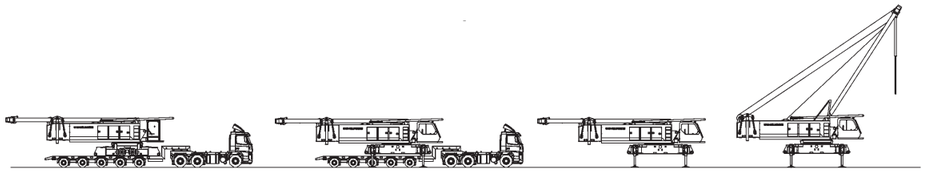
SF



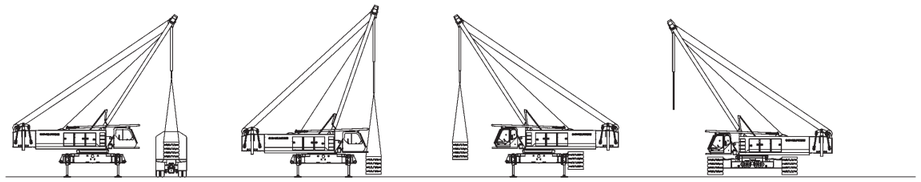
SFV

IV. Self-Mounting and Dismounting Functions

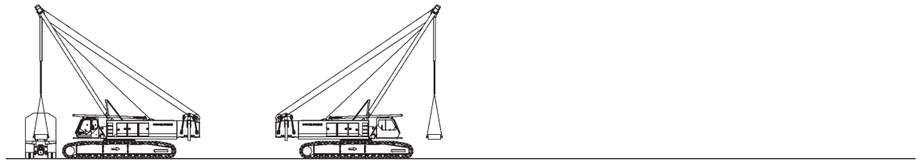
(Taking the self-mounting process of the crane operation with luffing jib as an example)



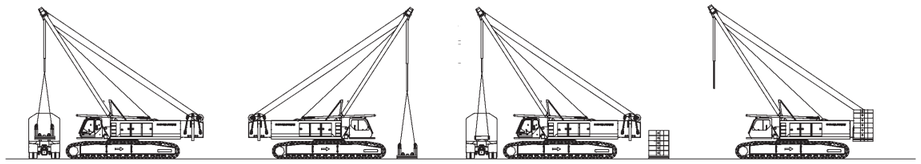
Unloading of main machine



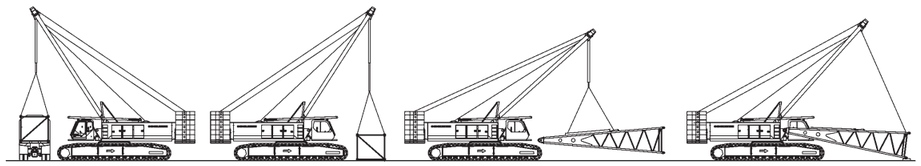
Unloading and assembling of crawler carrier



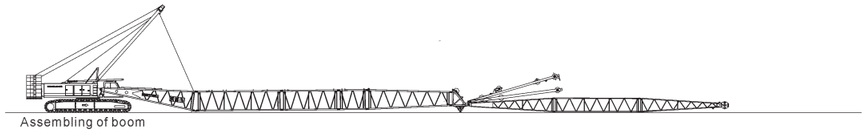
Unloading and assembling of vehicle body ballast weight

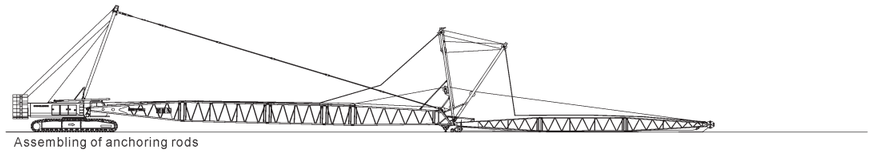


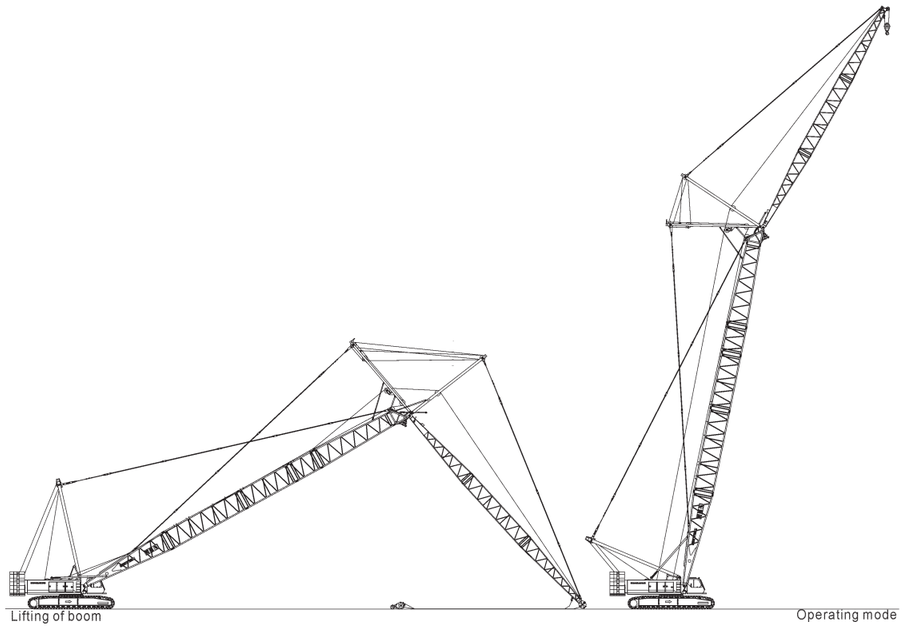
Unloading and assembling of counterweight base plate and counterweight



Unloading and assembling of boom


Assembling of boom


Assembling of anchoring rods


Lifting of boom

Operating mode

V. Lifting Performance

10. Lifting Characteristics of Main Boom

Main Boom Lifting Height Characteristics Curve

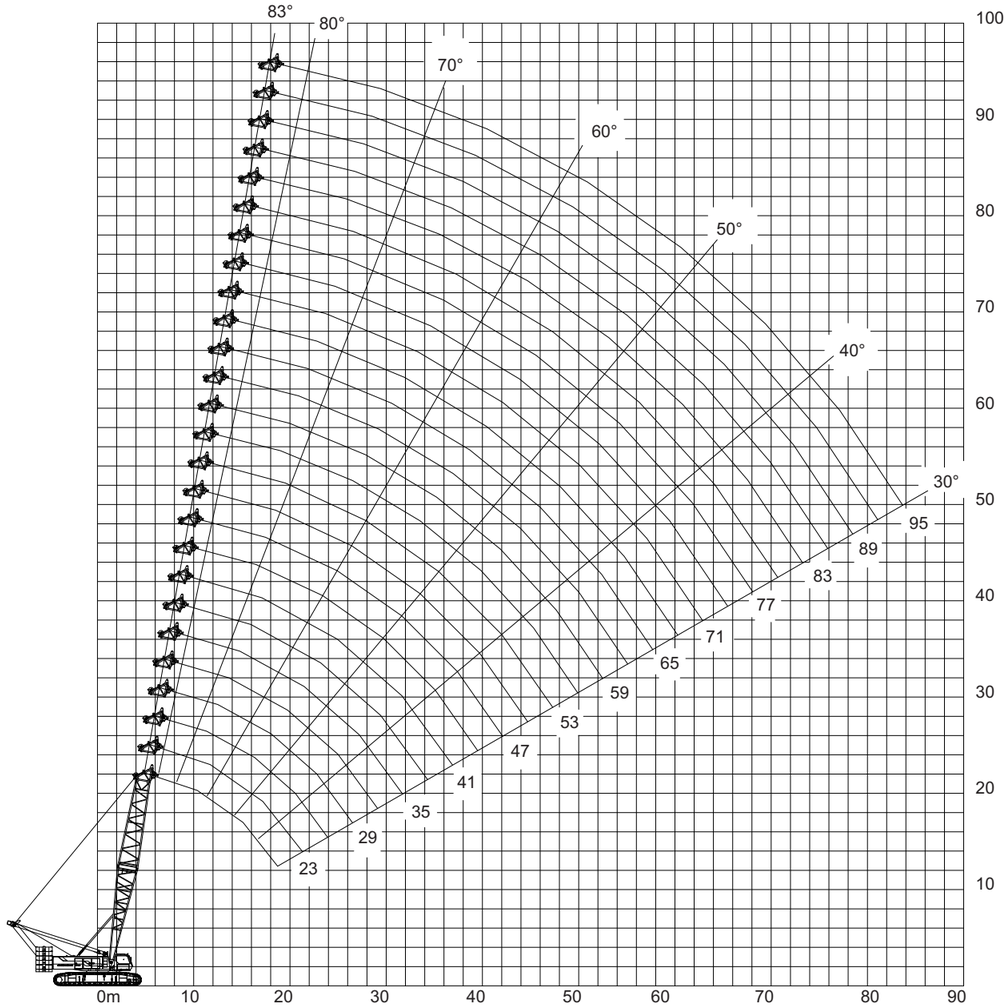


Table of Main Boom Lifting Performance (I)

Unit of measurement: t

Radius (m)	Boom length (m)										
	20	23	26	29	32	35	38	41	44	47	50
5	260										
6	227	200.8	193.1	184							
7	190.7	190.5	189	174	163	161					
8	175	166.6	164.5	162.5	158.4	149	149	135	118		
9	134.6	134.6	134.6	134.6	134.6	134.6	134.1	124	112	112	
10	132	130	128	125.9	123.9	121.9	121.9	119.8	110	110	102
12	102.9	103	103.1	103.1	103	101.6	99.5	97.5	97.5	95.5	93.4
14	83	83	83.1	83.1	83	83	82.8	82.7	81.3	81.3	79.2
16	69.1	69.3	69.3	69.3	69.3	69.1	69	68.9	68.9	68.7	68.6
18	59.1	59.2	59.2	59.2	59.2	59.1	59	58.8	58.7	58.6	58.5
20		51.5	51.6	51.6	51.5	51.5	51.4	51.2	51.1	51	50.8
22			45.6	45.6	45.5	45.5	45.4	45.3	45.1	45	44.8
24			40.7	40.7	40.7	40.6	40.4	40.3	40.2	40.1	39.9
26				36.6	36.6	36.6	36.5	36.4	36.2	36.1	35.9
28					33.2	33.2	33.1	32.9	32.8	32.7	32.6
30						30.3	30.3	30.2	30	29.9	29.6
32						27.9	27.7	27.6	27.5	27.4	27.2
34							25.6	25.5	25.3	25.2	24.9
36								23.5	23.4	23	22.8
38									21.7	21.4	21.1
40									20	19.8	19.4
42										18.3	18
44											16.7

Table of Main Boom Lifting Performance (II)

Unit of measurement: t

Radius (m)	Boom length (m)										
	53	56	59	62	65	68	71	74	77	80	83
10	98	86									
12	93.4	85	83	80	70	68	60.9	55.4	50.3		
14	79.2	77.2	77.2	70	69	66.5	59.2	53.8	49	43.2	39.4
16	67	67	67	65	65	64	57.4	52.2	47.4	41.9	38
18	58.3	58.2	58	57.2	56.6	55.9	54.8	50.4	44.7	40.6	36.8
20	50.7	50.5	50.3	50.2	49.4	48.9	48.4	47.7	43.4	39.4	35.8
22	44.6	44.5	44.4	44.1	43.8	43.3	42.7	42.1	41.5	38.1	34.5
24	39.8	39.5	39.4	39.3	39.1	38.5	38	37.4	37	36.5	33.4
26	35.7	35.6	35.4	35.2	34.8	34.5	34.2	33.6	33.2	32.6	32.1
28	32.4	32.2	31.8	31.5	31.2	30.8	30.5	30.1	29.7	29.3	28.9
30	29.5	29.2	28.8	28.4	28.1	27.8	27.3	27	26.7	26.3	25.9
32	26.5	26.5	26.1	25.8	25.3	25	24.6	24.4	23.9	23.6	23.3
34	24.5	24.2	23.8	23.5	23	22.7	22.4	21.9	21.6	21.3	21
36	22.5	22.1	21.7	21.4	21.1	20.6	20.3	20	19.6	19.2	18.9
38	20.5	20.3	20	19.5	19.2	18.9	18.5	18.1	17.8	17.4	17.1
40	19	18.7	18.3	18	17.7	17.2	16.9	16.6	16.1	15.8	15.5
42	17.6	17.2	16.9	16.6	16.1	15.8	15.5	15	14.7	14.4	14
44	16.3	15.9	15.6	15.2	14.8	14.5	14.1	13.8	13.4	13.1	13
46	15.1	14.8	14.4	14	13.7	13.3	12.9	12.6	12.4	12.2	12
48		13.7	13.4	12.9	12.6	12.3	11.8	11.7	11.5	11.3	11
50		12.7	12.4	11.9	11.6	11.3	11	10.9	10.7	10.5	10
52			11.4	11.1	10.7	10.3	10.3	10.1	9.9	9.7	9.3
54				10.2	9.9	9.5	9.1	9.4	9.2	8.9	8.5
56					9.1	8.9	8.8	8.7	8.5	8.2	8.2
58					8.4	8	8.3	8.1	7.9	7.6	7.3
60						7.4	7.7	7.5	7.3	7	6.6
62							7.2	7	6.8	6.5	6.2
64								6.5	6.3	6	5.6
66								5.7	5.8	5.5	5.1
68									5.2	5.1	4.4
70										4.7	4.5
72											3.8

Note: during crane operation with a gooseneck boom (auxiliary jib): the lifting capacity is equal to the lifting capacity of the main boom at the same radius, but must not exceed a maximum of 25 tons.

Table of Main Boom Lifting Performance (III)
(with Light Duty Boom)

Unit of measurement: t

Radius (m)	Boom length (m)			
	86	89	92	95
16	30.9/16.3	28.1/16.9	25.3/17.4	
18	30	27.3	24.9	21
20	29.9	25.9	24	20.4
22	27.9	24.6	22.8	19.7
24	27	23.9	21.7	19
26	26.1	23	20.6	18
28	25.2	22	19.8	17
30	23.1	21	19.2	16
32	21.2	20.3	18.3	15.8
34	19.4	18.6	17.7	14.4
36	17.8	17.1	16.5	13
38	16.3	15.7	15.7	11.9
40	14.9	14.6	14.5	10.8
42	13.8	13.5	13.4	9.8
44	12.7	12.4	12.3	9
46	11.7	11.5	11.4	8.2
48	10.8	10.5	10.4	7.4
50	9.9	9.6	9.5	6.7
52	9.1	8.8	8.7	6
54	8.4	8.1	8	5.3
56	7.7	7.4	7.3	4.8
58	7.1	6.7	6.6	4.3
60	6.5	6.1	6	3.8
62	5.9	5.6	5.5	3.3
64	5.4	5.1	5	2.9
66	5	4.6	4.5	2.7
68	4.5	4	3.9	2.6
70	4.1	3.4	2.8	2.5
72	3.7	2.8	2.7	2.4
74	3.4	2.7	2.6	2.3
76		2.6	2.5	2.3
78		2.5	2.4	2.2
80			2.2	2.1
82				2

11. Lifting Characteristics of Fixed Jib

Fixed Jib Lifting Height Curve

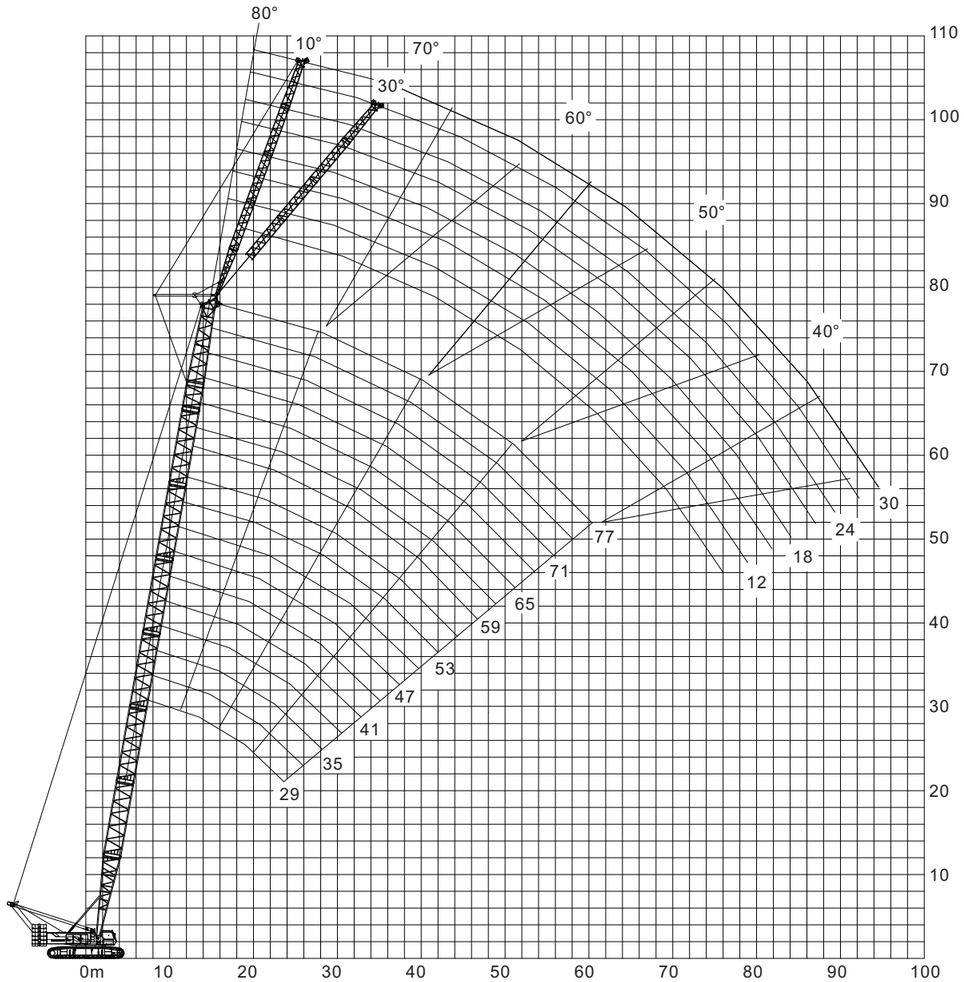


Table of Fixed Jib Lifting Performance (I)

Unit of measurement: t

Length of main boom	29							
Length of jib	12		18		24		30	
Radius (m)	Working angle of main boom (°)							
	10	30	10	30	10	30	10	30
10	34/10.5							
12	33.0							
14	32.5		27.0					
16	32.0	28.8	26.8		18.2			
18	31.3	26.8	25.7	20.5	18.1		13.0	
20	30.7	25.6	24.9	20.1	17.8		12.9	
22	30.0	24.5	24.2	19.1	17.3	14.1	12.6	
24	29.0	23.4	23.4	18.3	16.9	14.0	12.5	
26	28.0	22.4	22.8	17.5	16.6	13.9	12.3	10.0
28	27.0	21.6	22.1	16.8	16.2	13.6	12.0	9.9
30	25.5	20.9	21.2	16.2	15.9	13.0	11.7	9.8
32	24.0	20.2	20.7	15.6	15.5	12.5	11.5	9.6
34	22.6	19.6	20.0	15.0	15.2	12.0	11.2	9.4
36	21.7	19.2	18.9	14.6	14.9	11.6	10.9	9.2
38		18.8	18.0	14.1	14.7	11.1	10.6	9.0
40			17.1	13.6	14.1	10.8	10.4	8.7
42			16.1	13.2	13.8	10.5	10.2	8.4
44				12.9	13.5	10.1	10.0	8.2
46					13.0	9.8	9.8	8.0
48					12.2	9.6	9.5	7.8
50						9.0	9.4	7.5
52							9.2	7.4
54							9.1	7.2
56								7.2
58								

Table of Fixed Jib Lifting Performance (II)

Unit of measurement: t

Length of main boom	38							
Length of jib	12		18		24		30	
Radius (m)	Working angle of main boom (°)							
	10	30	10	30	10	30	10	30
14	32.5							
16	32.0	28.5	26.0					
18	31.3	28.1	24.9		17.8			
20	30.7	26.9	24.2	19.8	17.5		12.8	
22	30.0	25.9	23.5	19.5	17.1		12.5	
24	29.0	24.8	22.7	19.2	16.6	14.0	12.3	
26	28.0	23.9	22.2	18.4	16.3	13.9	12.0	
28	27.0	23.0	21.4	17.7	15.9	13.7	11.7	9.7
30	25.5	22.2	20.6	17.1	15.6	13.5	11.3	9.6
32	24.0	21.5	20.1	16.5	15.3	13.2	11.1	9.4
34	22.6	20.8	19.4	15.9	14.9	12.7	10.8	9.3
36	21.7	20.3	18.3	15.4	14.6	12.3	10.6	9.1
38	20.9	19.5	17.5	14.9	14.4	11.8	10.3	8.9
40	19.4	18.6	16.6	14.3	13.9	11.4	10.1	8.8
42	18.3	17.4	15.7	13.7	13.6	11.1	9.9	8.6
44	17.1	16.5	14.9	12.8	13.3	10.7	9.7	8.6
46		15.7	14.4	12.1	12.8	10.4	9.5	8.3
48			13.9	11.6	12.0	10.1	9.3	8.1
50			13.4	10.8	11.3	9.8	9.2	7.9
52				10.3	10.7	9.5	8.9	7.7
54					10.1	9.2	8.8	7.5
56					9.6	9.1	8.6	7.4
58						8.7	8.3	7.2
60							8.2	7.1
62							8.0	7.0
64								7.0
66								

Table of Fixed Jib Lifting Performance (III)

Unit of measurement: t

Length of main boom	47							
Length of jib	12		18		24		30	
Radius (m)	Working angle of main boom (°)							
	10	30	10	30	10	30	10	30
14	32.5							
16	32.0		25.2					
18	31.3	27.5	24.2		17.3			
20	30.7	27.1	23.5		17.0		12.4	
22	30.0	26.9	22.8	19.2	16.6		12.1	
24	29.0	26.0	22.0	18.9	16.2		11.9	
26	28.0	25.0	21.5	18.7	15.9	13.7	11.6	
28	27.0	24.2	20.8	18.3	15.5	13.5	11.3	
30	25.5	23.1	20.0	17.9	15.2	13.3	11.0	9.3
32	24.0	22.2	19.5	17.3	14.8	13.1	10.8	9.1
34	22.3	21.3	18.8	16.8	14.5	12.8	10.5	9.0
36	21.4	20.5	17.8	16.2	14.2	12.5	10.3	8.8
38	20.5	19.1	17.0	15.7	14.0	12.0	10.0	8.7
40	19.1	18.2	16.1	15.2	13.5	11.7	9.8	8.6
42	17.8	17.1	15.2	14.2	13.2	11.5	9.6	8.4
44	16.6	16.2	14.5	13.3	12.9	11.0	9.4	8.4
46	15.4	15.4	14.0	12.4	12.4	10.6	9.2	8.2
48	14.4	14.6	13.5	11.7	11.6	10.2	9.0	8.1
50	13.5	13.7	13.0	11.3	11.0	9.8	8.9	7.9
52	12.6	12.8	12.5	10.5	10.4	9.5	8.7	7.8
54		12.0	12.0	10.0	9.8	9.1	8.6	7.7
56			11.6	9.2	9.3	9.0	8.3	7.6
58			10.8	9.0	8.8	8.6	8.1	7.5
60				8.0	8.4	8.3	8.0	7.4
62					8.0	8.0	7.8	7.2
64					7.5	7.5	7.5	7.1
66						7.0	7.3	7.0
68							7.0	6.9
70							6.8	6.4
72								5.6
74								

Table of Fixed Jib Lifting Performance (IV)

Unit of measurement: t

Length of main boom	56							
Length of jib	12		18		24		30	
Radius (m)	Working angle of main boom (°)							
	10	30	10	30	10	30	10	30
16	32.0							
18	31.5		25.1					
20	30.9	27.0	24.2		16.8			
22	30.4	26.6	23.4		16.6		12.1	
24	28.3	26.5	22.7	18.9	16.4		12	
26	27.0	26.0	22.0	18.7	16.1		11.8	
28	26.3	23.5	21.4	18.6	15.8	13.5	11.5	
30	25.6	21.4	20.8	18.3	15.5	13.4	11.3	
32	24.8	19.5	20.2	18.1	15.2	13.2	11	9.2
34	23.5	18.6	19.7	17.8	15	13.1	10.8	9.1
36	21.6	18.1	19.2	17.1	14.7	12.9	10.5	8.9
38	19.9	17.6	18.7	15.8	14.4	12.8	10.3	8.8
40	18.4	17.2	17.9	14.7	14.2	12.6	10.2	8.6
42	17	16.8	17.0	13.7	13.5	12.4	9.9	8.6
44	15.8	16.2	16.2	12.7	12.6	12.1	9.7	8.4
46	14.7	15.1	15.1	12.5	11.8	11.9	9.5	8.3
48	13.7	14.0	14	12.1	11.1	11.4	9.3	8.3
50	12.7	13.0	13.1	11.9	10.4	10.8	9.2	8.1
52	11.9	12.1	12.2	11.6	9.8	10.2	9	8
54	11.1	11.3	11.4	11.4	9.2	9.6	8.9	7.8
56	10.4	10.6	10.7	11.1	9.0	9.0	8.7	7.7
58	9.7	9.9	10	10.4	8.8	8.6	8.4	7.7
60	9.1	9.2	9.4	9.7	8.6	8.0	8	7.5
62			8.8	9.1	8.5	7.6	7.5	7.4
64			8.3	8.5	8.3	7.3	7.1	7.4
66			7.7	7.9	8	7.2	6.8	7.1
68					7.5	7.1	6.5	6.7
70					7	7.0	6	6.4
72					6.6	6.5	5.5	6
74							5	5.6
76							4.4	5
78							3.6	4.4
80								

Table of Fixed Jib Lifting Performance (V)

Unit of measurement: t

Length of main boom	71							
Length of jib	12		18		24		30	
Radius (m)	Working angle of main boom (°)							
	10	30	10	30	10	30	10	30
18	32.0							
20	31.8		25.3					
22	30.4	27.0	24.5		17.7			
24	27.5	26.5	23.8		17.1			
26	27.0	25.3	23.2	18.9	16.7		12.1	
28	26.3	22.9	22.5	18.7	16.1		12	
30	25.8	21.1	21.8	18.6	15.6	13.5	11.7	
32	24.5	20.5	21.0	18.5	15.3	13.4	11.5	
34	22.3	19.9	19.8	17.9	15.5	13.3	11.3	9.2
36	20.4	19.4	19.2	16.5	16.2	13.2	11.1	9.1
38	18.7	19.0	18.8	15.2	16.5	13.1	10.8	9
40	17.2	17.8	17.6	14.4	16.2	12.9	10.7	8.9
42	15.8	16.4	16.2	14.0	16	12.9	10.5	8.8
44	14.6	15.1	15	13.7	15.3	12.6	10.3	8.6
46	13.4	14.0	13.8	13.4	14.2	11.7	10.1	8.6
48	12.4	12.9	12.8	13.1	13.1	10.9	9.9	8.5
50	11.5	11.9	11.9	12.6	12.2	10.2	9.8	8.4
52	10.6	11.0	11	11.7	11.3	9.5	9.2	8.3
54	9.8	10.2	10.2	10.8	10.5	8.9	8.6	8.3
56	9.1	9.5	9.5	10.0	9.8	8.4	8.1	8.1
58	8.4	8.8	8.8	9.3	9.1	7.9	7.7	8
60	7.8	8.1	8.2	8.6	8.4	7.7	7.2	7.7
62	7.2	7.5	7.6	8.0	7.8	7.6	6.8	7.3
64	6.7	6.9	7	7.4	7.2	7.6	6.4	6.8
66	6.1	6.4	6.4	6.8	6.6	7.4	6	6.5
68	5.6	5.8	5.8	6.2	6	7.3	5.6	6.1
70	5	5.2	5.3	5.6	5.5	6.7	5.3	5.7
72	4.6	4.7	4.8	5.1	5	6.2	5	5.4
74	4.3	4.3	4.4	4.6	4.6	5.8	4.7	5.1
76			4.1	4.3	4.3	5.3	4.4	4.8
78			3.9	4.0	4	4.9	4.1	4.4
80				3.7	3.8	4.4	3.8	4.2
82					3.5	4.1	3.6	3.9
84						3.7	3.3	3.7
86						3.4		3.5
88								3.2
90								

Table of Fixed Jib Lifting Performance (VI)

Unit of measurement: t

Length of main boom	77							
Length of jib	12		18		24		30	
Radius (m)	Working angle of main boom (°)							
	10	30	10	30	10	30	10	30
20	32.0							
22	31.8		25.0					
24	30.4	22.7	24.2		14.3			
26	27.5	22.4	23.6		13.9		8.3	
28	27.0	22.1	23.0	16.2	13.6		8.0	
30	26.0	21.6	22.4	16.1	13.3		7.8	
32	23.9	21.0	22.0	15.8	13.0	9.5	7.5	
34	21.8	20.4	21.5	15.7	12.7	9.4	7.4	
36	19.9	19.9	20.4	15.5	12.4	9.2	7.1	6.9
38	18.2	19.4	18.6	15.2	12.1	9.0	6.7	6.8
40	16.7	17.9	17.1	14.8	11.9	8.9	6.5	6.7
42	15.3	16.3	15.7	14.4	11.6	8.8	6.4	6.7
44	14.1	15.0	14.5	14.0	11.4	8.6	6.1	6.5
46	12.9	13.8	13.3	13.8	11.2	8.5	6.0	6.5
48	11.9	12.6	12.3	13.4	10.9	8.4	5.9	6.4
50	11	11.6	11.4	12.2	10.7	8.3	5.8	6.3
52	10.1	10.7	10.5	11.2	10.4	8.2	5.5	6.3
54	9.3	9.8	9.7	10.4	10	8.0	5.4	6.2
56	8.6	9.0	9	9.6	9.2	8.0	5.3	6.1
58	7.9	8.3	8.3	8.9	8.4	7.9	5.2	6.1
60	7.3	7.6	7.6	8.1	7.7	7.8	5.0	6.1
62	6.7	7.0	6.9	7.5	7.1	7.7	4.9	5.6
64	6	6.4	6.3	6.8	6.5	7.7	4.8	5.1
66	5.5	5.8	5.7	6.2	5.9	7.3	4.7	4.7
68	4.9	5.2	5.1	5.6	5.3	6.8	4.6	4.3
70	4.5	4.7	4.6	5.0	4.8	6.2	4.6	3.9
72	4.2	4.2	4.3	4.6	4.4	5.8	4.4	3.5
74	3.9	3.8	4	4.3	4.2	5.3	4.3	3.4
76	3.6	3.4	3.7	4.0	3.9	4.8	4.2	3.4
78	3.3	3.0	3.4	3.7	3.6	4.4	4.2	3.4
80		2.6	3.0	3.2	3.4	4.0	4.0	3.2
82			2.6	2.9	3.1	3.6	3.6	3.2
84			2.3	2.5	2.8	3.2	3.2	3.2
86				2.2	2.5	2.9	3.0	3.2
88					2.2	2.5	2.6	3.1
90					2.0	2.2	2.4	2.8
92						1.9	2.0	2.4
94								2.0
96								

12. Lifting Characteristics of Main Boom + Luffing Jib

Main Boom + Luffing Jib Lifting Height Characteristics Curve

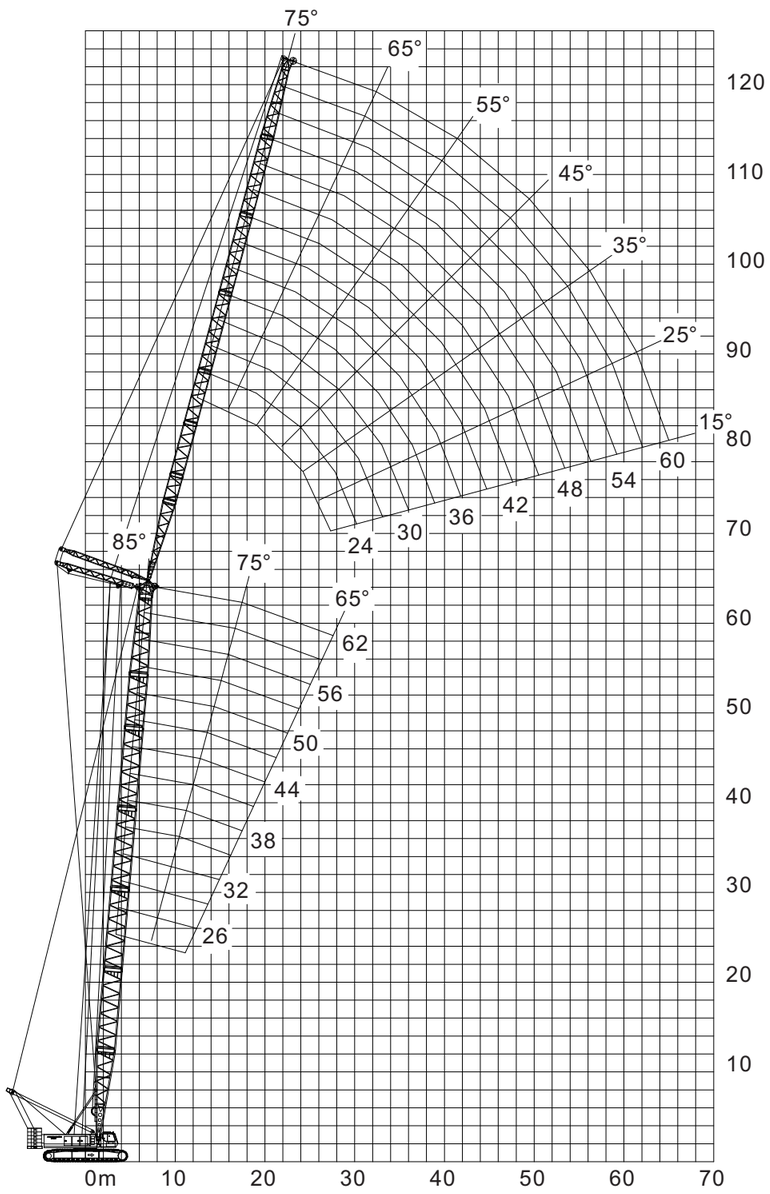


Table of Luffing Jib Lifting Performance (I)

Unit of measurement: t

Length of main boom	29								
Length of jib	27			33			39		
Radius (m)	Main boom elevation angle (°)								
	85	75	65	85	75	65	85	75	65
14	68.1			57.3					
16	62.5			54.7			42.7		
18	57.2			50.9			41.4		
20	53.3			47.7			40		
22	48.8			43.9			38.6		
24	44.1	42.1		41.4			37.3		
26	40	38.4		39.2	38		35.8		
28	33.1	35.1		35.6	34.9		34		
30	25.6	32.3		32.5	32.1		31.9	32	
32		29.9	27.3	30.5	29.8		29.4	29.6	
34		27.9	25.3	25.6	27.7		27.8	26.9	
36		26	23.6	20.6	25.9	23	26.3	24.9	
38			22.1		24.3	21.5	23.8	23.3	
40			20.7		22.9	20.2	20	21.8	19.5
42						18.9	16.3	20.4	18.4
44						17.7		19.3	17.2
46						16.8		18.2	16.3
48									15.3
50									14.5
52									13.8
54									
56									
58									
60									
62									
64									
66									
68									
70									
72									

Table of Luffing Jib Lifting Performance (II)

Unit of measurement: t

Length of main boom	29								
Length of jib	45			51			60		
Radius (m)	Main boom elevation angle (°)								
	85	75	65	85	75	65	85	75	65
14									
16									
18	31.7								
20	29.8			22.7					
22	29.1			22					
24	28.6			21.4			11.4		
26	28			20.9			11		
28	27.3			20.4			10.7		
30	26.7			19.8			10.3		
32	25.9	27.7		19.4			10		
34	24.8	27		18.9			9.7		
36	23.7	24.5		18.6	16.3		9.4		
38	22.6	22.8		18	15.8		9.1	9.8	
40	21.6	21.3		17.2	15.4		8.9	9.4	
42	20.5	20		16.3	15		8.6	9.2	
44	18.8	18.7	16.7	15.5	14.7		8.4	8.9	
46	15.9	17.7	15.8	13.9	14.2		8.1	8.6	
48	13.1	16.7	14.8	13.3	12.8	14.3	7.7	8.4	
50		15.7	14	12.7	12.3	13.4	7.4	8.2	
52		15	13.2	12.2	11.7	12.7	6.9	7.9	8.4
54			12.5	10.6	11.1	12.1	6.6	7.6	8.2
56			11.9		10.6	11.3	6.3	7.1	7.9
58			11.3		10.1	10.8	6.1	6.8	7.6
60						10.3	5.7	6.5	7.2
62						9.8	5.5	6.2	6.8
64						9.2		5.9	6.5
66								5.6	6
68									6
70									5.6
72									5.4

Table of Luffing Jib Lifting Performance (III)

Unit of measurement: t

Length of main boom	41								
Length of jib	27			33			39		
Radius (m)	Main boom elevation angle (°)								
	85	75	65	85	75	65	85	75	65
16	62.5			56.2					
18	55.6			52.8			42		
20	50			49.1			40.8		
22	45.6			45			39.4		
24	41.6			40.9			38		
26	38.1			37.5			36.6		
28	35.3	32.2		34.7			34.1		
30	31.3	29.7		32.2	29		31.6		
32		27.4		30.3	27.8		29.7	26.3	
34		25.5		28.4	25		27.8	24.5	
36		23.7		24.4	23.2		25.9	22.7	
38		22.3	20		21.7		24.4	21.2	
40			18.7		20.4		23.1	19.8	
42			17.6		19.1	18	20	18.7	
44			16.6		18.1	17		17.5	
46						16.1		16.6	14.6
48						15.1		15.6	13.8
50						14.3		14.8	13
52						13.5			12.4
54									11.8
56									11.1
58									
60									
62									
64									
66									
68									
70									
72									
74									
76									

Table of Luffing Jib Lifting Performance (IV)

Unit of measurement: t

Length of main boom	41								
Length of jib	45			51			60		
Radius (m)	Main boom elevation angle (°)								
	85	75	65	85	75	65	85	75	65
16									
18	32.2								
20	31.3			23					
22	29.4			22.3					
24	28.9			21.7			11.7		
26	28.3			21.1			11.2		
28	27.7			20.6			10.9		
30	27			20.2			10.6		
32	26.3			19.6			10.2		
34	25.5	23.1		19.1			9.8		
36	24.2	22.2		18.8			9.5		
38	23.1	20.7		18.4	19.3		9.2		
40	22	19.3		17.6	18.8		9		
42	21.1	18.2		16.8	17.6		8.8	9.3	
44	20	17.1		15.9	16.6		8.6	9	
46	18.8	16.1		15.2	15.6		8.4	8.8	
48	16.3	15.2	13.2	13.6	14.7		7.9	8.5	
50		14.4	12.5	13	13.9		7.6	8.3	
52		13.7	11.9	12.4	13.1	11.3	7.2	8.1	
54		12.9	11.2	12	12.5	10.7	6.8	7.9	
56			10.6		11.8	10.1	6.5	7.6	
58			10.1		11.2	9.6	6.2	7.1	8.1
60			9.6		10.7	9.1	5.9	6.8	7.8
62			9.1			8.6	5.6	6.5	7.4
64						8.2		6.2	7
66						7.8		5.9	6.7
68						7.5		5.7	6.3
70								5.5	6
72									5.7
74									5.4
76									5.4

Table of Luffing Jib Lifting Performance (V)

Unit of measurement: t

Length of main boom	47								
Length of jib	27			33			39		
Radius (m)	Main boom elevation angle (°)								
	85	75	65	85	75	65	85	75	65
16	58.8								
18	52.5			51.3			42.3		
20	46.9			46.1			41.2		
22	42.8			41.9			39.7		
24	39.1			38.1			37.5		
26	35.9			35			34.4		
28	33.1	30.9		32.5			31.9		
30	30.6	28.7		30.3	26.8		30		
32		26.7		28.4	25.8		27.8		
34		24.7		26.6	24.2		25.9	23.4	
36		23		25	22.5		24.4	21.9	
38		21.5			21		22.8	20.5	
40		20.2	17.6		19.7		21.6	19.2	
42			16.6		18.5		20.5	18.1	
44			15.6		17.4	15		16.9	
46			14.7			14.2		16	
48						13.4		15.1	12.8
50						12.9		14.3	12.2
52						12.1			11.6
54									10.9
56									10.4
58									9.9
60									
62									
64									
66									
68									
70									
72									
74									
76									
78									

Table of Luffing Jib Lifting Performance (V)

Unit of measurement: t

Length of main boom	47								
Length of jib	45			51			60		
Radius (m)	Main boom elevation angle (°)								
	85	75	65	85	75	65	85	75	65
16									
18									
20									
22	29.5			22.5					
24	29.1			21.9					
26	28.4			21.3			11.3		
28	27.8			20.8			10.9		
30	27.2			20.2			10.7		
32	26.5			19.8			10.3		
34	25.6			19.3			9.9		
36	23.8	21.2		18.8			9.6		
38	22.5	19.8		18.5	19.2		9.2		
40	21.3	18.7		17.9	18.1		9		
42	20	17.5		17	17		8.8	9.6	
44	18.9	16.5		16.2	16		8.6	9.2	
46	18	15.5		15.4	15		8.4	8.9	
48	17	14.6		13.8	14.2		8	8.7	
50		13.9		13.2	13.3		7.7	8.5	
52		13.1	10.9	12.6	12.6		7.3	8.3	
54		12.4	10.4	12.1	12	9.9	6.9	8.1	
56		11.8	9.9		11.3	9.3	6.6	7.9	
58			9.3		10.7	8.8	6.3	7.5	
60			8.8		10.2	8.3	5.9	7	7.1
62			8.4		9.7	7.9	5.7	6.7	6.7
64			8			7.5		6.4	6.4
66						7.1		6.1	6
68						6.7		5.8	5.7
70						6.4		5.6	5.4
72									5
74									4.8
76									4.5
78									4.4

Table of Luffing Jib Lifting Performance (VI)

Unit of measurement: t

Length of main boom	53								
Length of jib	27			33			39		
Radius (m)	Main boom elevation angle (°)								
	85	75	65	85	75	65	85	75	65
16	55			54.1					
18	49.1			48.1			42.7		
20	44.4			43.4			41.6		
22	40.3			39.4			38.3		
24	36.9			35.9			35.3		
26	33.8			33.1			32.5		
28	31.3			30.6			30.3		
30	29.4	27.8		28.8			28.1		
32	27.2	25.9		26.6	25.1		26.3		
34		24.3		25	23.4		24.4	21.6	
36		22.7		23.4	22		22.8	21.2	
38		21.2		22	20.7		21.6	19.9	
40		19.9			19.4		20.3	18.8	
42			15.4		18.2		19.2	17.7	
44			14.6		17.1		18.1	16.6	
46			13.8		16.2	13.1		15.6	
48			13			12.4		14.8	
50			12.3			11.8		14	11.2
52						11.1		13.3	10.6
54						10.6			10
56						10.1			9.5
58									9
60									8.6
62									
64									
66									
68									
70									
72									
74									
76									
78									
80									

Table of Luffing Jib Lifting Performance (VII)

Unit of measurement: t

Length of main boom	53								
Length of jib	45			51			60		
Radius (m)	Main boom elevation angle (°)								
	85	75	65	85	75	65	85	75	65
16									
18									
20	31.8								
22	29.8			22.7					
24	29.2			22			12		
26	28.6			21.4			11.4		
28	28			20.9			11		
30	27.3			20.4			10.7		
32	25.6			19.9			10.3		
34	23.9			19.4			10		
36	22.5	20.5		18.9			9.7		
38	20.9	19.3		18.6			9.4		
40	19.8	18.1		18	17.3		9.1		
42	18.8	17		17.2	16.4		8.9		
44	17.8	16.1		16.3	15.4		8.7	9.7	
46	16.9	15.4		15.5	14.6		8.5	9.3	
48	15.9	14.2		13.9	13.8		8.1	9.1	
50		13.5		13.4	12.9		7.7	8.9	
52		12.7		12.7	12.3		7.4	8.7	
54		12.1	9.5	12.3	11.6		6.9	8.3	
56		11.4	8.9		11		6.6	8.1	
58		10.9	8.5		10.4	8	6.3	7.9	
60			8.1		10	7.5	6.1	7.5	
62			7.7		9.4	7.1	5.7	7.2	6
64			7.2		9	6.7	5.5	6.7	5.6
66			6.9			6.4		6.4	5.3
68			6.5			6		6.1	4.9
70						5.7		5.9	4.6
72						5.5		5.7	4.4
74									4.1
76									3.9
78									3.7
80									3.5

Table of Luffing Jib Lifting Performance (VIII)

Unit of measurement: t

Length of main boom	59								
Length of jib	27			33			39		
Radius (m)	Main boom elevation angle (°)								
	85	75	65	85	75	65	85	75	65
16	51.9								
18	46.3			45.6			43		
20	41.9			40.9			40		
22	38.1			37.2			36.3		
24	34.7			33.8			33.1		
26	31.9			31			30.6		
28	29.2			28.3			27.6		
30	26.7			25.9			25.2		
32	24.6	24.7		23.8			23.1		
34		23.1		22	22.3		21.2		
36		21.6		20.4	20.9		19.6	19.8	
38		20.3		18.9	19.6		18.2	18.8	
40		19.2			18.5		16.8	17.8	
42		18			17.4		15.6	16.8	
44			13.1		16.4		14.5	15.8	
46			12.6		15.5			15	
48			12		14.7			14.1	
50			11.3			10.7		13.4	
52			10.7			10.2		12.6	9.6
54						9.7		12	9
56						9.1			8.6
58						8.7			8.1
60									7.8
62									7.4
64									6.9
66									
68									
70									
72									
74									
76									
78									
80									
82									

Table of Luffing Jib Lifting Performance (IX)

Unit of measurement: t

Length of main boom	59								
Length of jib	45			51			60		
Radius (m)	Main boom elevation angle (°)								
	85	75	65	85	75	65	85	75	65
16									
18									
20	32								
22	30								
24	29.4			22.2					
26	28.8			21.6			11.6		
28	26.7			21			11.1		
30	25.9			20.5			10.8		
32	24.1			20			10.5		
34	22.5			19.5			10.1		
36	20.9			18			9.8		
38	19.7			16.6			9.5		
40	18.8	17		15.3			9.1		
42	17.5	16.1		14.1	15.4		8.9		
44	16.6	15.2		13.1	14.6		8.7		
46	15.8	14.3		12.1	13.7		8.5	9.7	
48	15	13.6		11.2	12.9		8.3	9.4	
50		12.8		10.3	12.3		7.8	9	
52		12.2		9.9	11.7		7.5	8.8	
54		11.6		9.4	11		7	8.6	
56		10.9	8		10.4		6.7	8.3	
58		10.4	7.6		9.8		6.4	8.1	
60		9.8	7.1		9.3	6.6	6.1	7.8	
62			6.8		8.9	6.2	5.8	7.4	
64			6.4		8.5	5.9	5.6	7.1	4.7
66			6.1		8	5.6		6.7	4.4
68			5.8			5.3		6.4	4.2
70			5.5			4.9		6.1	3.9
72						4.7		5.8	3.7
74						4.4		5.6	3.5
76						4.2			3.2
78									3.1
80									3.1
82									3

13. Lifting Characteristics of Main Boom + Heavy Fixed Jib

Heavy Fixed Jib Lifting Height Curve

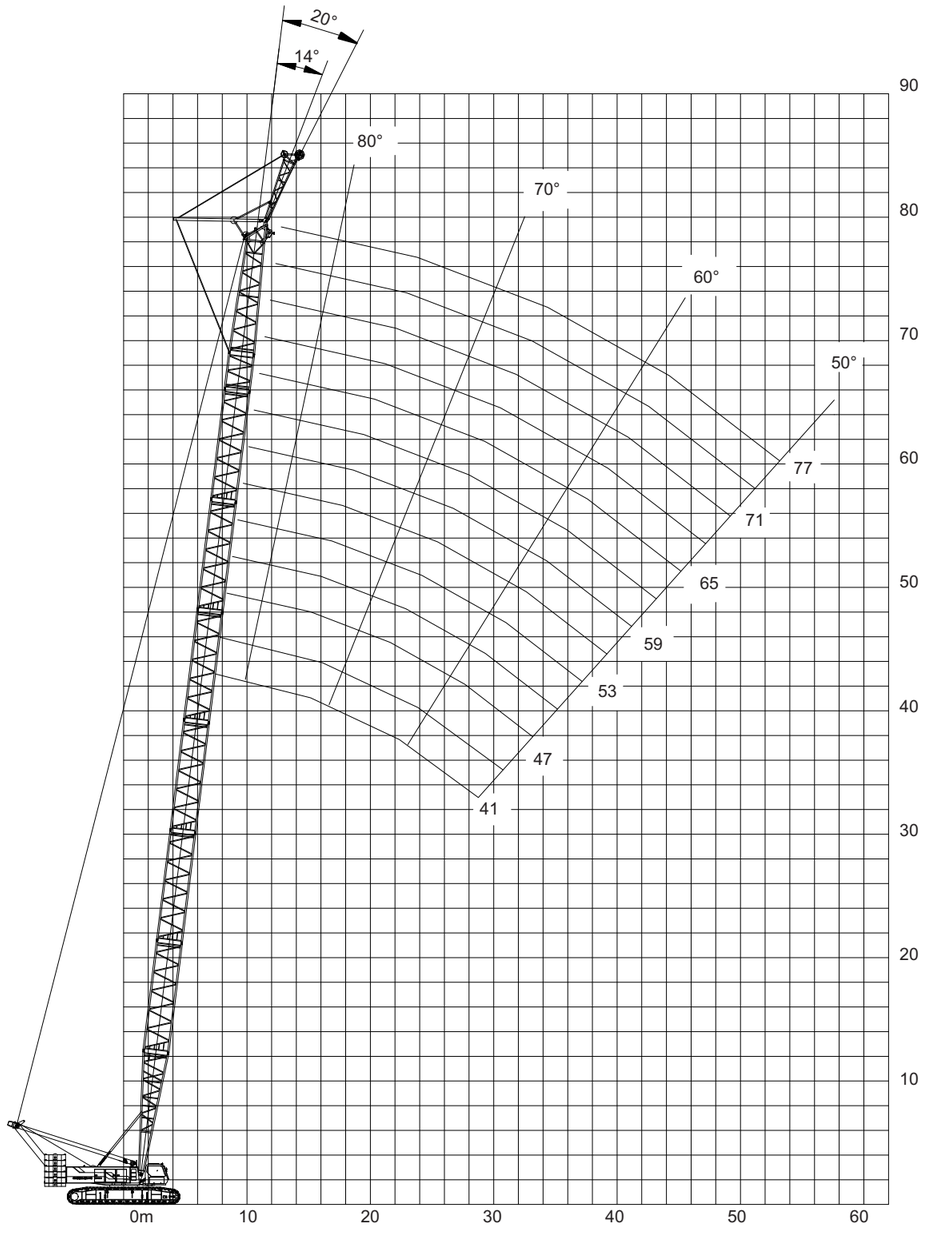


Table of Heavy Fixed Jib Lifting Performance (I)

Unit of measurement: t

Radius (m)	Length of main boom (m)							
	41		44		47		50	
	Jib set angle (°)							
	14	20	14	20	14	20	14	20
10	60.0	56.9	60.0	56.9/11	60.0/11	56.9/11		
12	60.0	54.7	60.0	54.7	60.0	54.7	60.0/11	
14	60.0	50.3	60.0	52.5	60.0	52.5	60	56.9
16	58	48.1	59.1	48.1	60.0	50.3	60	52.5
18	54.7	45.9	56.9	45.9	56.9	48.1	60	50.3
20	51.4	43.8	52.4	43.8	51.9	45.9	58	48.1
22	47.2	41.6	46.7	42.7	46.1	43.8	51.2	45.9
24	42	39.4	41.9	41.6	41.5	41.6	45.6	43.8
26	37.8	37.8	37.7	37.7	37.4	37.5	40.9	41.1
28	34.1	34.2	34.1	34.1	33.8	34	37	37.1
30	31.1	31.1	31	31.1	30.8	30.8	33.6	33.7
32	28.5	28.5	28.4	28.4	28.1	28.2	30.6	30.6
34	27.3/33	27.3/33	26	26	25.8	25.9	27.8	28
36			25/35	25/35	23.9	23.9	25.5	25.6
38					22.9/37	22.9/37	23.6	23.6
40							21.7/39	21.8/39
42								

Notes:

1. The unit of measurement for the lifting capacity is t, and "*/*" signifies "lifting capacity/radius". Among these, values in grey colored cells are determined by the strength of the boom, and values in white colored cells are determined by the overall stability.
2. The working angle of the main boom is between 50~83°, the setting angle of the heavy fixed jib is 14° and 20°; the heavy fixed jib is 6m long.

Table of Heavy Fixed Jib Lifting Performance (II)

Unit of measurement: t

Radius (m)	Length of main boom (m)							
	53		56		59		62	
	Jib set angle (°)							
	14	20	14	20	14	20	14	20
11	60.0							
12	60.0	56.9	60.0	56.9	60.0	56.9/13	60.0	56.9/13
14	60.0	54.7	60.0	54.7	60.0	54.7	60.0	55.8
16	60.0	51.4	60.0	52.5	59.1	52.5	56.9	52.5
18	57.4	49.2	56.9	50.3	55.8	50.3	53.6	50.3
20	51.2	47	50.3	48.1	49.2	48.1	48.1	49.2
22	45.6	44.8	44.8	44.8	43.8	43.8	43.2	43.8
24	40.9	41.1	40.4	40.5	39.9	40	39.4	39.4
26	37	37.1	36.6	36.7	36	36.1	35	35.5
28	33.4	33.4	33.2	33.3	32.7	32.8	31.7	32.3
30	30.3	30.4	30.1	30.1	29.5	29.9	29.5	29.5
32	27.7	27.7	27.4	27.5	27.1	27.3	27	27
34	25.4	25.4	25.1	25.2	24.8	25	24.7	24.7
36	23.3	23.4	23.2	23.2	22.8	22.9	22.6	22.6
38	21.5	21.5	21.3	21.4	21	21.1	20.8	20.8
40	19.9	19.9	19.8	19.8	19.5	19.5	19.2	19.2
42	19.2/41	19.2/41	18.3	18.3	18	18	17.7	17.8
44			17.6/43	17.6/43	16.6	16.7	16.5	16.5
46					16.1/45	16.1/45	15.2	15.2
48							14.7/47	14.7/47
50								

Table of Heavy Fixed Jib Lifting Performance (III)

Unit of measurement: t

Radius (m)	Length of main boom (m)									
	65		68		71		74		77	
	Jib set angle (°)									
	14	20	14	20	14	20	14	20	14	20
13	55.2	54.1	49.2		44.6					
14	55	53.9	48.7	47.9	42.4	41.6	38	37.2	33.6	32.5/15
16	53.9	53	47.6	46.8	41.6	41	37.1	36.5	32.9	32.4
18	50.9	50.3	46.8	45.9	40.5	39.9	36.4	35.8	32.3	31.7
20	48.1	47.6	45.7	45.1	39.6	39.1	35.3	35	31.3	30.9
22	42.7	42.7	41.6	42.7	38.8	38.3	34.3	33.9	30.6	30.2
24	38.3	38.3	37.2	37.7	37.2	37.2	33.5	33.1	29.7	29.4
26	35	35	33.9	33.9	33.4	33.4	32.7	32.4	28.7	28.4
28	31.7	31.7	30.6	30.6	30.1	30.1	29.5	29.5	26.9	26.7
30	28.4	28.4	28.2	28.2	27.9	27.9	27.3	27.3	26.3	26
32	26.3	26.8	25.7	26.3	25.2	25.2	24.6	24.6	24.1	24.1
34	24.1	24.5	23.5	23.5	23	23	22.4	22.4	21.9	21.9
36	22.4	22.4	21.9	21.9	21.3	21.3	20.8	20.8	19.7	20.2
38	20.6	20.7	19.7	19.7	19.1	19.7	18.6	19.1	18	18.6
40	18.9	19.1	18	18.6	18	18	17.5	17.5	17	17
42	17.5	17.5	17	17	16.4	16.4	15.9	15.9	15.3	15.3
44	16.2	16.2	15.3	15.6	15.3	15.3	14.8	14.8	14.2	14.2
46	15	15	14.2	14.2	13.7	13.9	13.4	13.7	13.1	13.1
48	13.9	13.9	13.4	13.4	13.1	13.1	12.6	12.6	12	12
50		13.4/49	12.6	12.6	12	12	11.5	11.5	10.9	10.9
52				12/51	11.2	11.2	10.7	10.9	10.4	10.4
54						10.9/53	9.8	9.8	9.3	9.3
56								9.3/55	8.5	8.5
58										

14. Table of Lifting Performance during Crane Operations with Heavy Fixed Jib - Shield Machine Operation

1. Table of Lifting Capacity during Crane Operations including Main Boom with Heavy Fixed Jib Attached

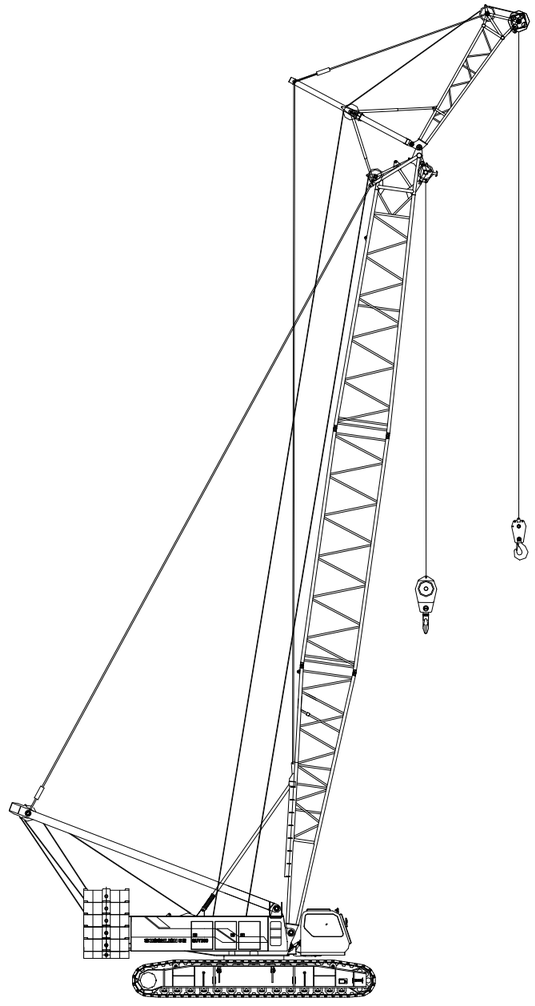


Table of Lifting Capacity

Unit of measurement: t

Main hook radius (m)	Length of main boom (m)			
	20	23	26	29
6	221	194.8	187.1	166/6.5
7	184.3	175.8	165.8	161.7
8	169	145.8	140.6	141.2
9	128.6	127.1	127	127
10	113.6	109.3	114	112.1
12	89.3	86.5	86.8	86.1
14	70.1	68.9	68.2	68.2
16	57.7	57.5	57.3	57
18	48.8	48.5	47.7	47.5
20		41.6	40.6	40.7
22		38.8	35.6	35.4
24			31	31
26				27.5

The length of the main boom with heavy fixed jib (6m) ranges from 20m~29m, where the jib set angle is 25°; the load is lifted on the hook of the main boom, and no load is lifted on the hook of the fixed jib.

2. Table of Lifting Capacity during Crane Operations with Heavy Fixed Jib

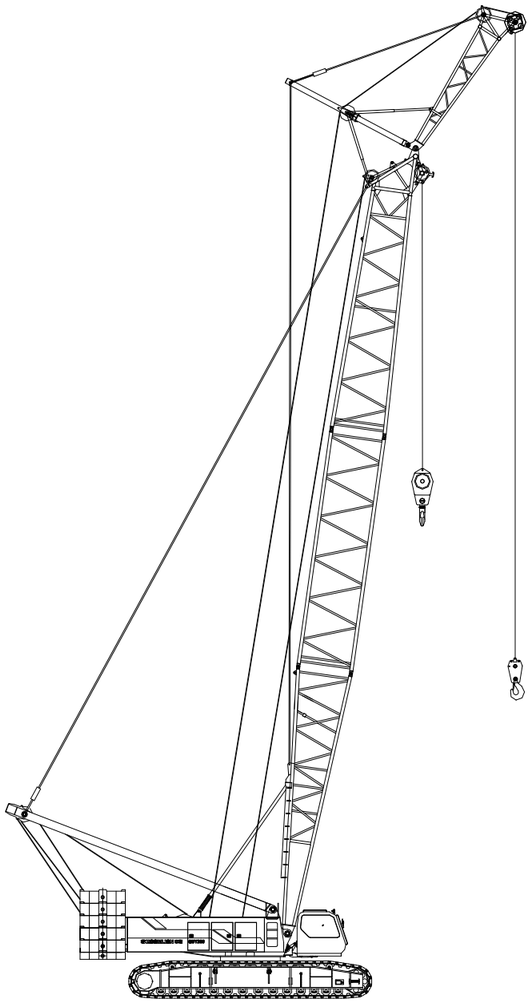


Table of Lifting Capacity

Unit of measurement: t

Main hook radius (m)	Length of main boom (m)			
	20	23	26	29
8	70			
9	68.9	70	70	70
10	65.6	70	70	70
12	61.3	68.9	70	70
14	56.9	65.6	66.7	67.8
16	53.6	61.3	63.4	64.5
18	50.3	58	59.3	59.1
20	48.1	51.6	51.6	51.5
22	45.6	45.6	45.6	45.5
24	40.7	40.7	40.7	40.5
26	38.5/25	36.6	36.6	36.6
28		34.8/27	33.2	33.2
30			30.3	30.1
32				27.7

The length of the main boom with 260t hook ranges between 20m~29m, and the weight of the hook is 4.2t; no load is lifted on the hook of the main boom, and a load is lifted on the hook of the auxiliary hook.

3. Table of Lifting Capacity during Crane Operations especially Tailored for Turnover of Shield Machine

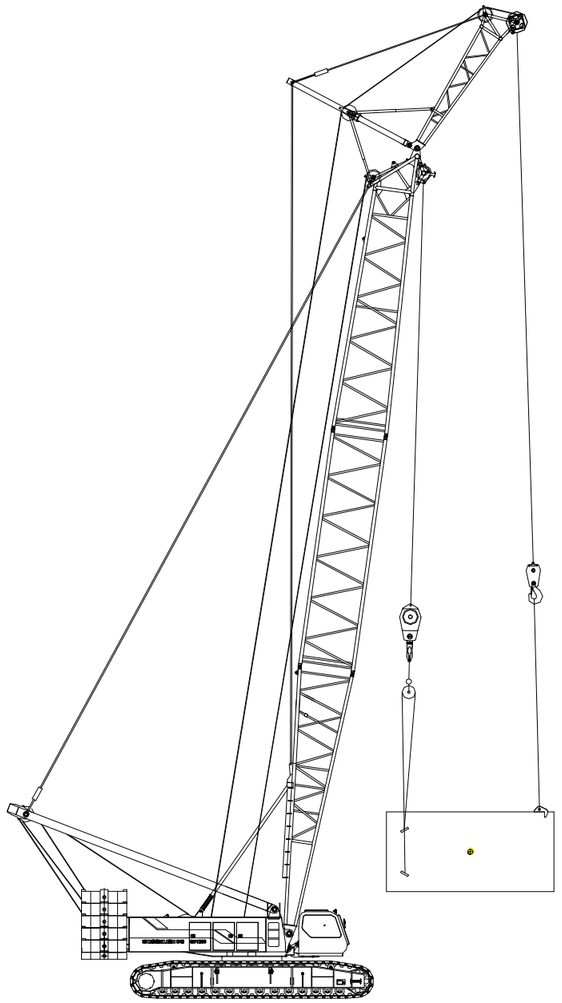


Table of Lifting Capacity

Unit of measurement: t

Length of main boom 29m					
Main boom angle	Main hook radius (m)	Auxiliary hook radius (m)	Main hook load	Auxiliary hook load	Total load of main hook + auxiliary hook
82°	6.5	10	166	70	138
80°	7.5	11.2	150	70	125

Length of main boom 26m					
Main boom angle	Main hook radius (m)	Auxiliary hook radius (m)	Main hook load	Auxiliary hook load	Total load of main hook + auxiliary hook
81°	6.5	10	175	70	138
78.7°	7.5	11.3	151	70	125

Length of main boom 23m					
Main boom angle	Main hook radius (m)	Auxiliary hook radius (m)	Main hook load	Auxiliary hook load	Total load of main hook + auxiliary hook
79.7°	6.5	10.3	184	69	138
77.2°	7.5	11.5	155	68	125

Length of main boom 20m					
Main boom angle	Main hook radius (m)	Auxiliary hook radius (m)	Main hook load	Auxiliary hook load	Total load of main hook + auxiliary hook
78.2°	6.5	10.6	200	63	126
75.2°	7.5	11.7	175	61	122

With main and auxiliary hooks lifting the load simultaneously