ZOOMLION

Vision Creates Future

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Contents

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The Mobile Crane Branch Company is one of the most important business divisions of Zoomlion, which enjoys high reputation in its technology, brand and management in class. It combines research, development, manufacturing and test as a whole and covers three industrial parks — QuanTang industrial park, GuanXi industrial park and LuGu industrial park. Its annual turnover exceeds 20 billion Chinese Yuan, providing four types of cranes, i.e. 12 tons to 220 tons truck cranes, 180 tons to 1000 tons all terrain cranes, 50 tons to 3200 tons crawler cranes and 35 tons 100 tons rough terrain cranes. Its products have been widely used in infrastructure construction, national large project, traffic engineering, oil field, large port, nuclear power and wind power engineering etc.

As a company of 40-year history in crane development and manufacturing, it has witnessed the development of Chinese crane industry, and participated in it honorably. Zoomlion is the first company that can develop and manufacture the crane superstructure and chassis. And it is also the first one to import and assimilate the all terrain crane technology from Europe. Furthermore, it is the first one to produce the largest truck crane and crawler crane in China. Zoomlion has become the leader in crane industry of China with its high product intelligence, core technology and good appearance.

Obedience to the core concept of "Sincere, ceasingless, large, substantial, far-reaching & long-enduring", the Mobile Crane Branch Company determines to become the first-class crane manufacturer in the world with its unceasing innovation and persistent pursuit to excellence.

ZOOMLION

Introduction of ten main highlights of the product:

01. Super overall stability, prominent performance of middle and long distance hoisting assembly;

02. Lifting working condition of boom added with jib, it can be switched easily between main hook and auxiliary one;

03. Being provided with counter weight self-loading & unloading, saving cost for auxiliary disassembly;

04. Swing-type outrigger mechanism at frame extension makes installation more convenient without manual outrigger pulling when track frame flexes;

05. Abundant combined actions and perfect single rope speed makes it easy to work effectively;

06. Modularized design and universalness of the parts will save maintenance cost for the user;

07. Optimization of pulley block of luffing mechanism makes excellent rope unwinding;

08. New type Boom stop is designed for jib, which makes it convenient for assembly and disassembly and more safe and reliable;

09. New-type machine shed, beautiful appearance, waterproof, heat and noise reduction;

10. New operation room with wide view, reasonable layout and comfortable environment;

01	02	03	
			04
05		06	
	08		
07		09	10
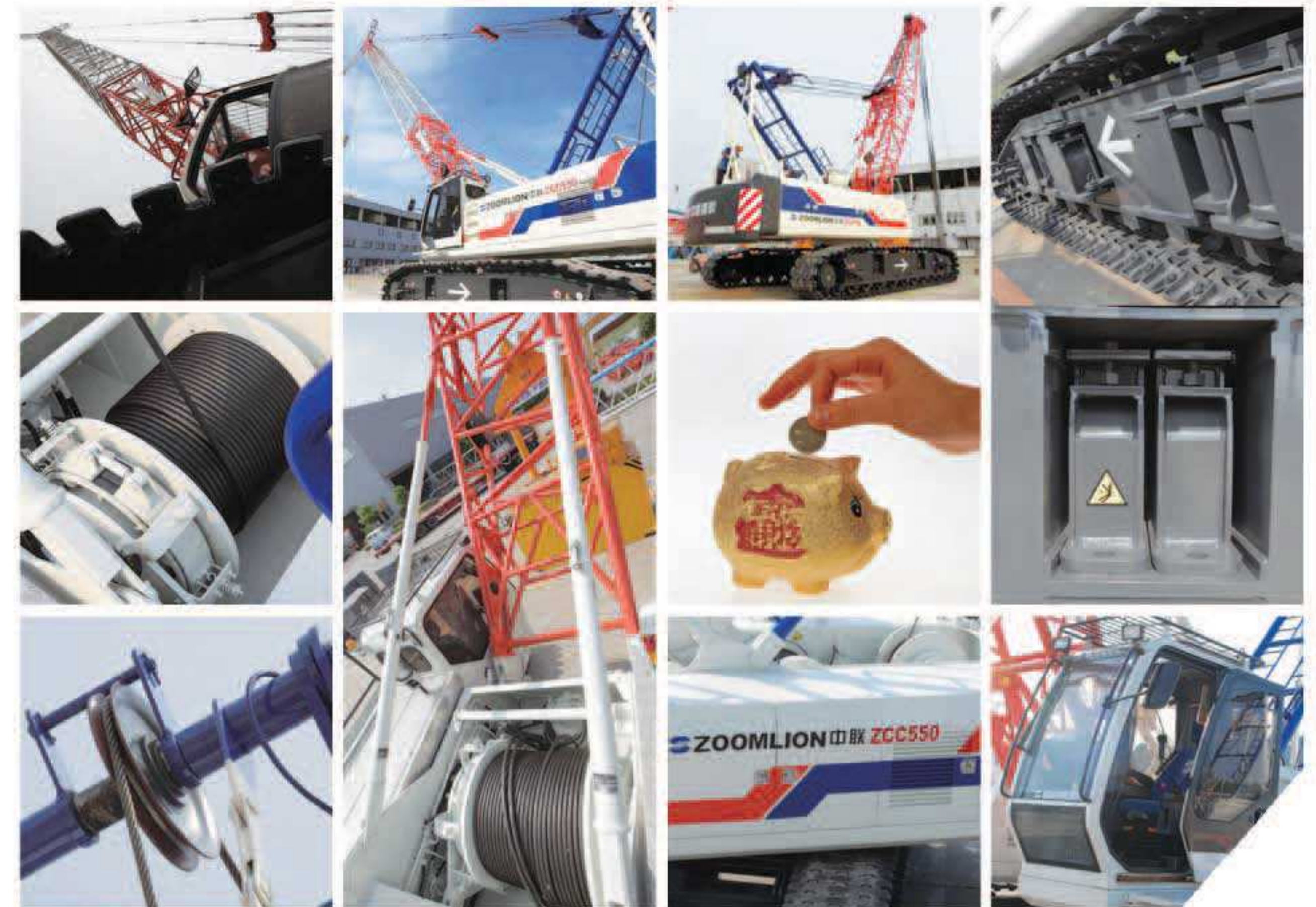
Easy Upgrade, Multiple Purposes

High reliably, high working level winch reducer with free fall hook can be equipped that meet H-Steel inserting construction requirement from SMW pile construction method(3 odds lifting 6t H-steel free falling hook insert into the mud ditch)

Selected accessory such as piling function and piling frame, they was used for piling, inspected and adjusted plumbness of piling frame, high quality sinking pile

1. Overall dimension of main boom working condition

Rearview mirror
(Remove A-frame, boom and jib frame)

2. Overall dimension of fixed jib working condition

ZCC550│Overall dimension and main parameter

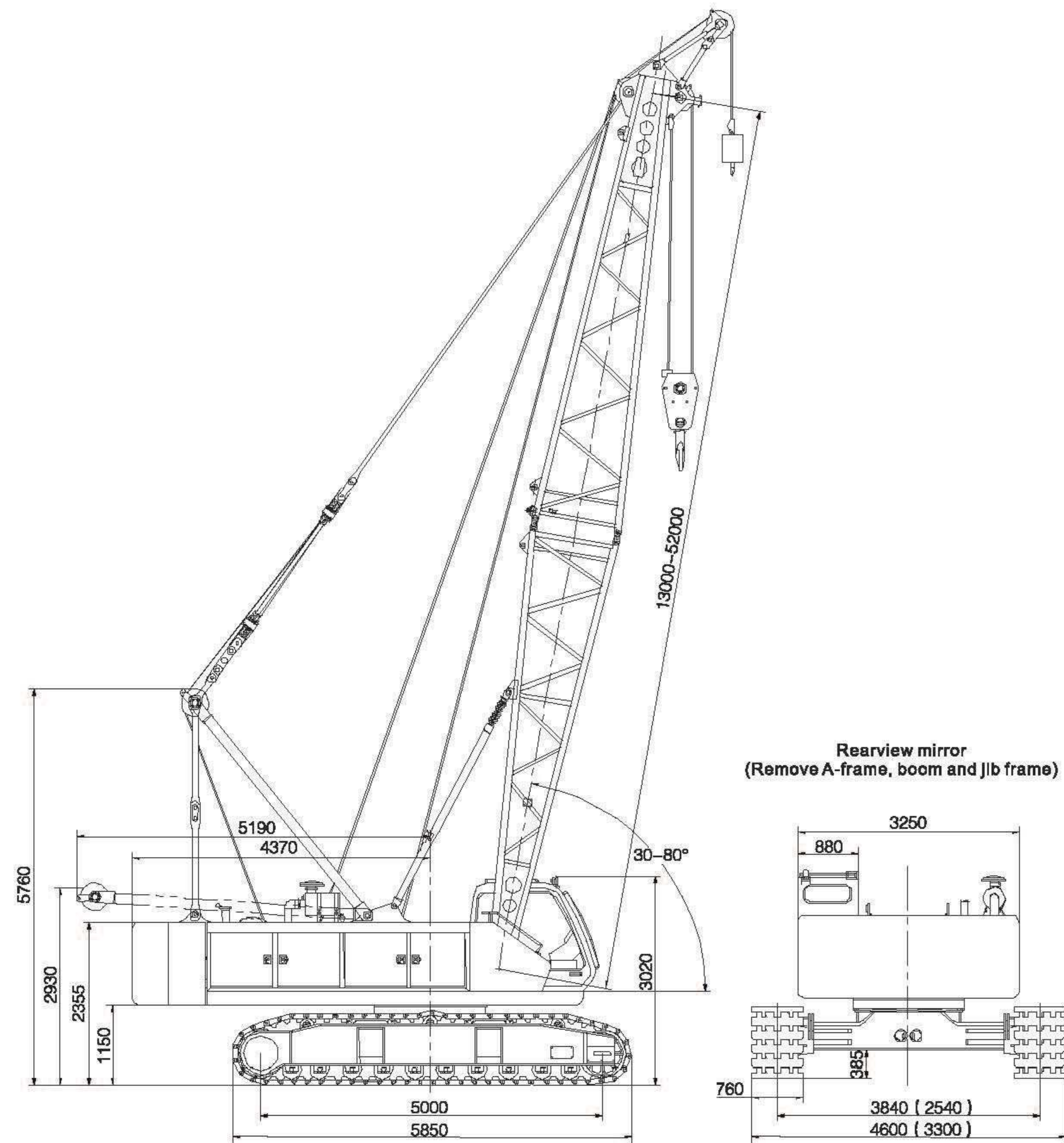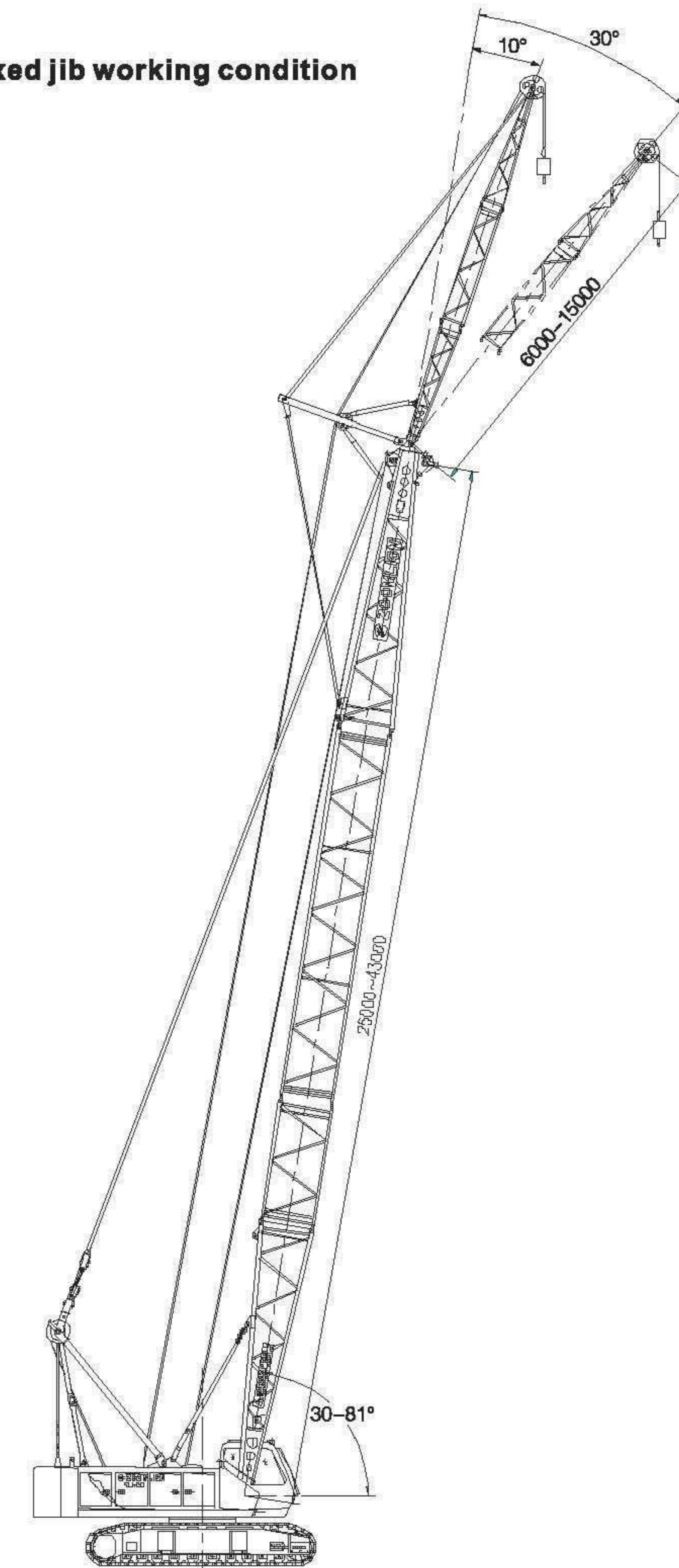| Item		Unit	Value	Remark
Max.lifting capacity ×radius		t × m	55 × 3.7	
Max. lifting capacity of fixed jib		t	5.5	
Boom length		m	13~52	
Fixed jib length		m	6~15	
Max. long beam +fixed jib		m	43+15	
Luffing angle		°	30~80	
Fixed jib set angle		°	10,30	
Winch single rope speed	Main lifting	m/min	120/100	Select and equip of Free falling hook function
	Auxiliary lifting	m/min	120	
	Luffing	m/min	54	
Slewing speed		rpm	0~2.1	
Travel speed		km/h	0~1.6	
Gadeability		%	30	Basic boom , counter-weight placed on the forward
Pressure to the ground		MPa	0.069	
Self-weight		t	51	Base section boom
Counter-weight		t	18	
Overall dimension length ×width×height		mm	12800 × 4600(3300) × 3120	A- frames Base section boom
Engine	Type		WP6G190E26	Weichai power
	Rated power/ rotating speed	kW/rpm	140/1900	
	Max.output torque/speed	Nm/rpm	830/1300	
	Emission standard	/	National standard II	
Crawler gauge×ground contact length×track shoe width mm		mm	2540 × 5000 × 760	Extended of pillar track
		mm	3840 × 5000 × 760	Retracted of pillar track
Noise	Environmental radiation noise with working	dB	≤107	
	Noise in the operation room with working	dB	≤85	

ZCC550│Boom and jib frame Combination specification

Code	Specification	Work parameter
S-1	Working condition of boom	Boom:13~52m
S-2	Working condition of boom (with fixed jib)	Boom:25~43m, Jib:6~15m
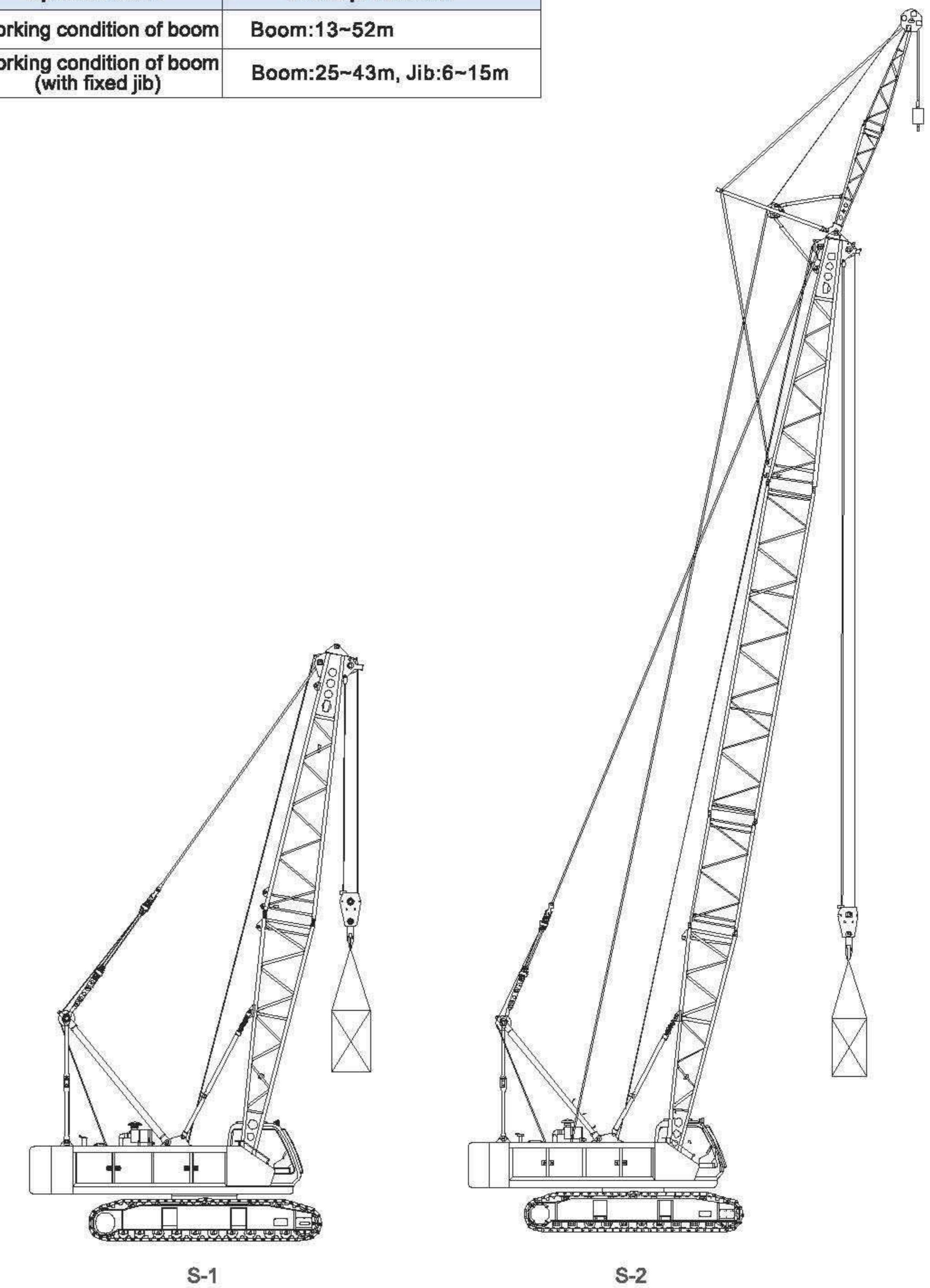
S-1   S-2

ZCC550 | Boom and jib frame combination specification

Code	Specification	Work parameter
SF-1	Working condition of fixed jib	Boom:25~43m, Jib:6~15m
SF-2	Working condition of fixed jib (with main hook)	Boom:25~43m, Jib:6~15m

SF-1

SF-2

ZCC550 | Overall dimension and weight of main transportation part

3140

12530
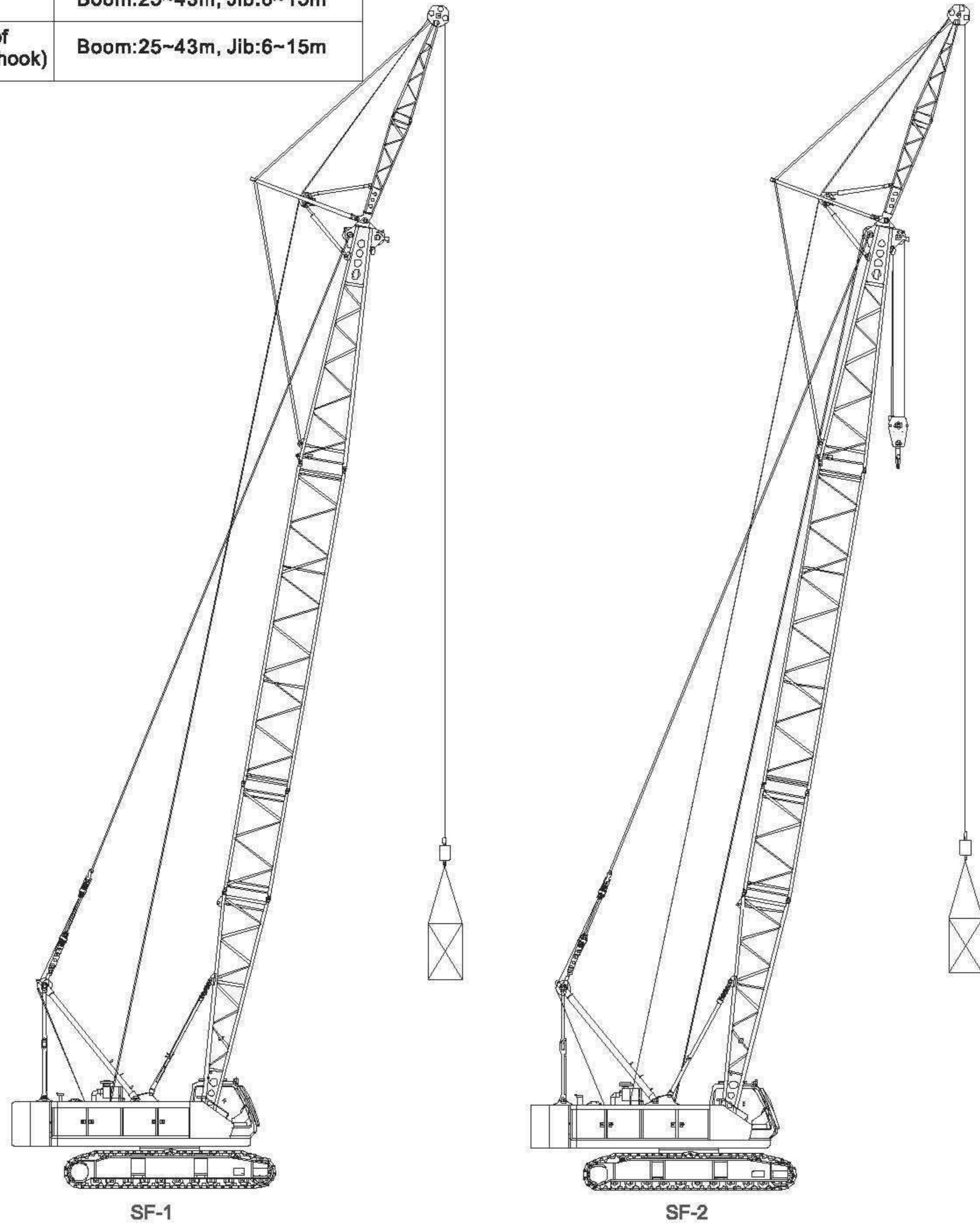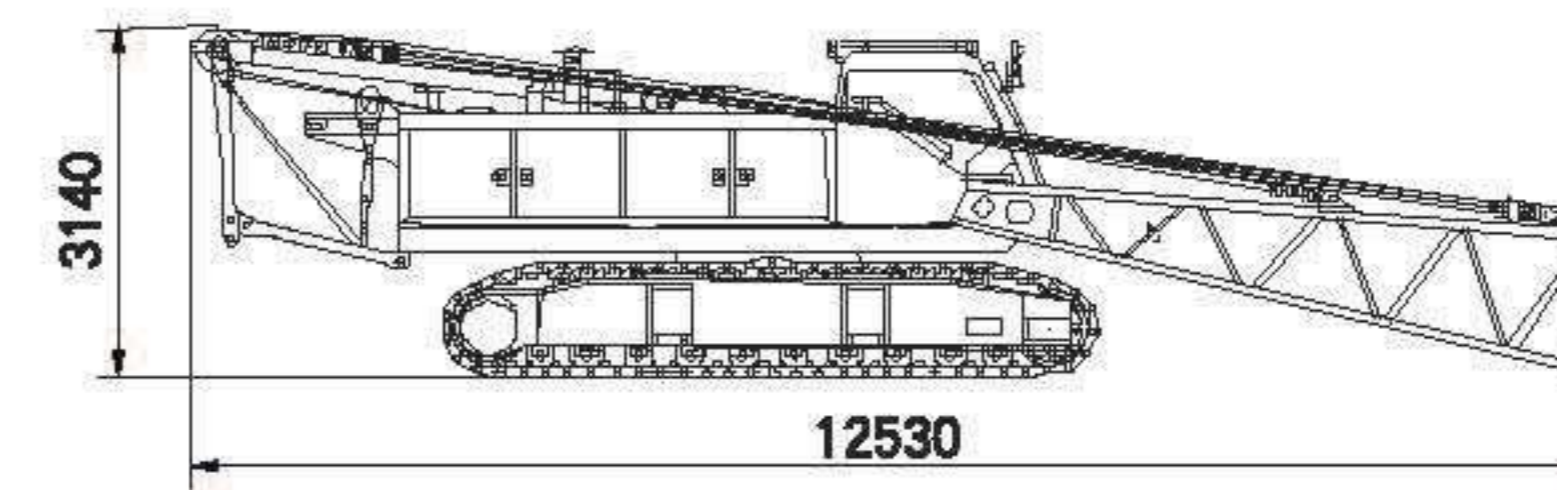
Main engine	
Weight	32t
Qty.	1
Width	3300mm
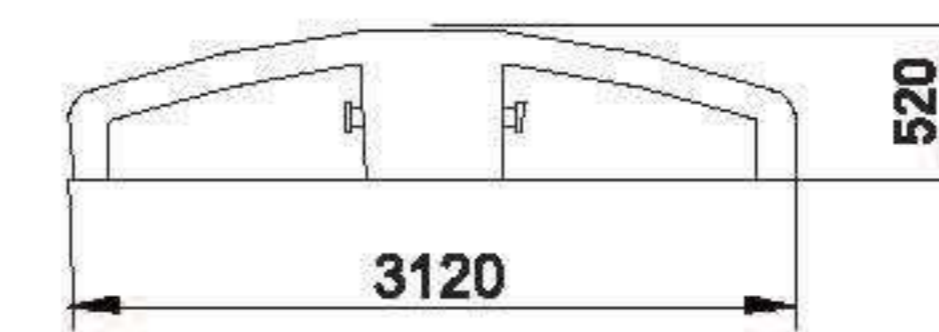
520

3120

Counter weight block	
Weight	9t
Qty	1
Height	1200mm

548

3120

Counter weight block	
Weight	9t
Qty	1
Height	1200mm

578

1457
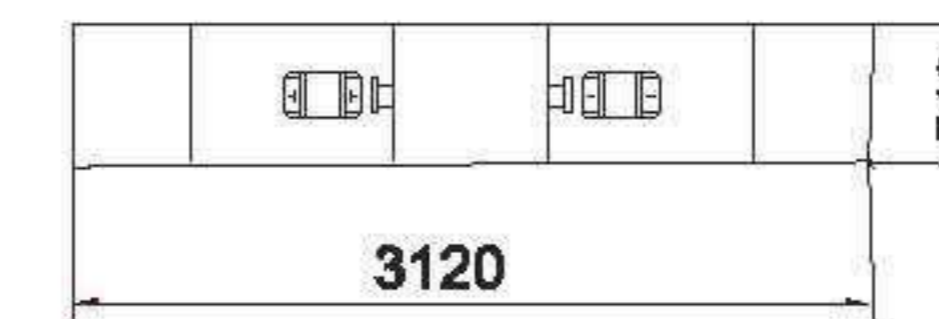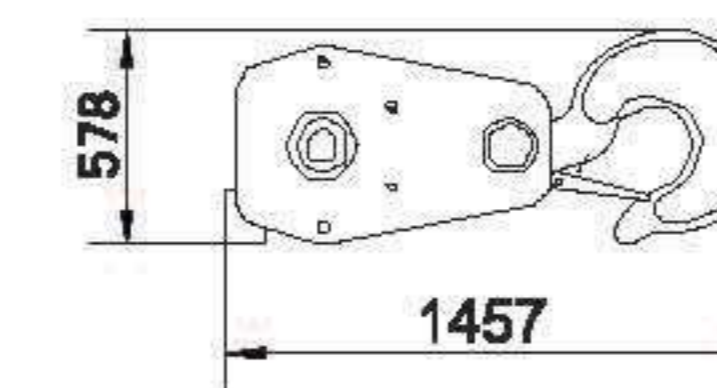
Lifting hook (55t)	
Weight	0.6t
Qty	1
Height	

540

1400
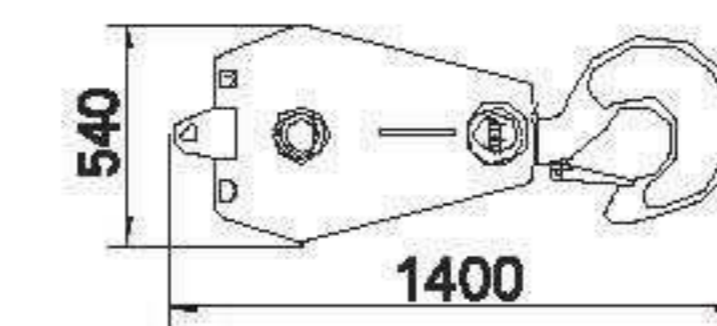
Lifting hook (30t)	
Weight	0.38t
Qty	1

538

1255
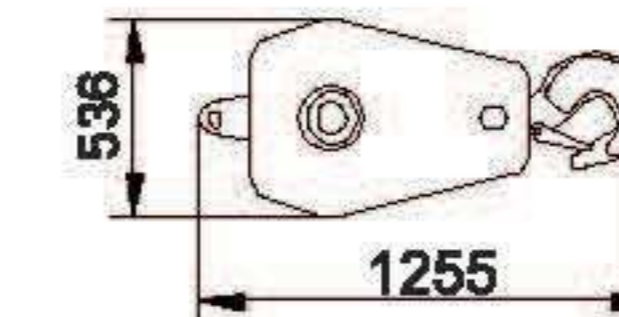
Lifting hook (16t)	
Weight	0.3
Qty	1

Ø300
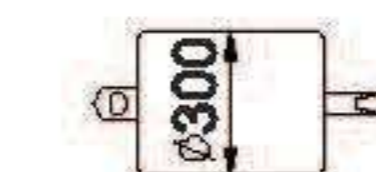
Lifting hook (6t)	
Weight	0.18
Qty	1

ZCC550 | Overall dimension and weight of main transportation part
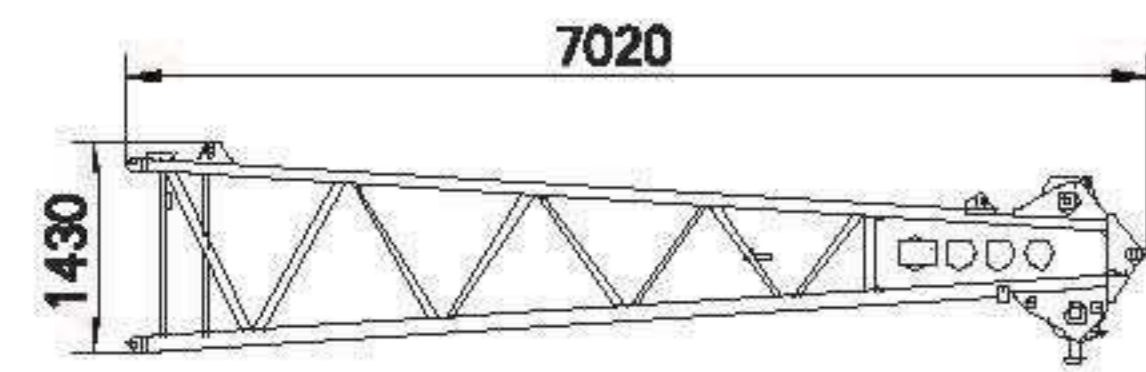
Tip boom section of boom	
Weight	0.74t
Qty	1
Width	1450mm
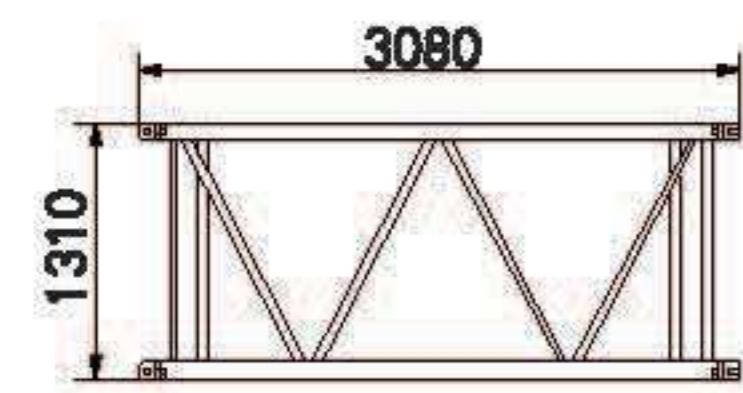
3m boom section of boom	
Weight	0.22t
Qty	1
Width	1450mm
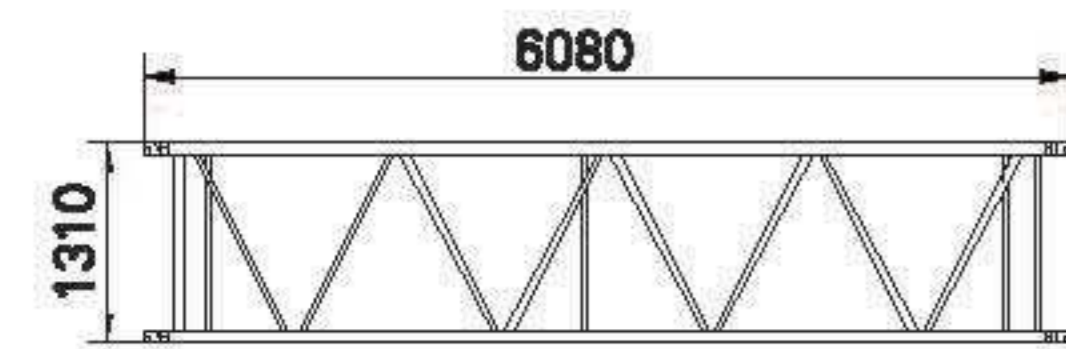
6m boom section of boom	
Weight	0.39t
Qty	3
Width	1450mm
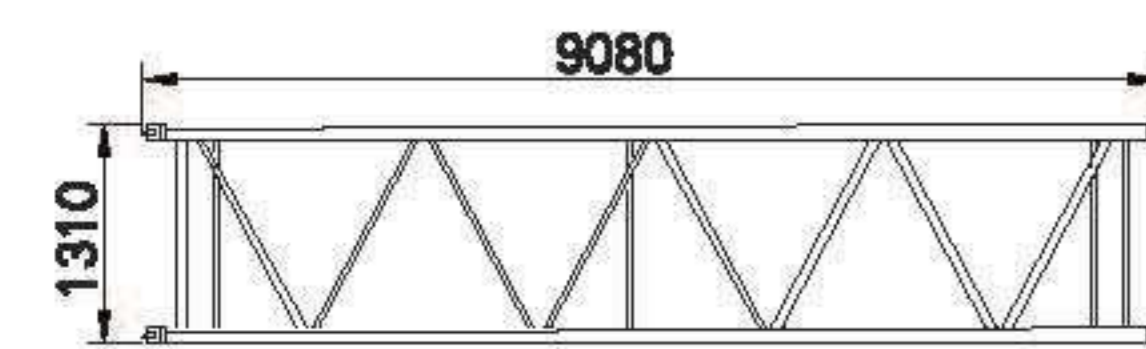
9m boom section of boom	
Weight	0.56t
Qty	2
Width	1450mm
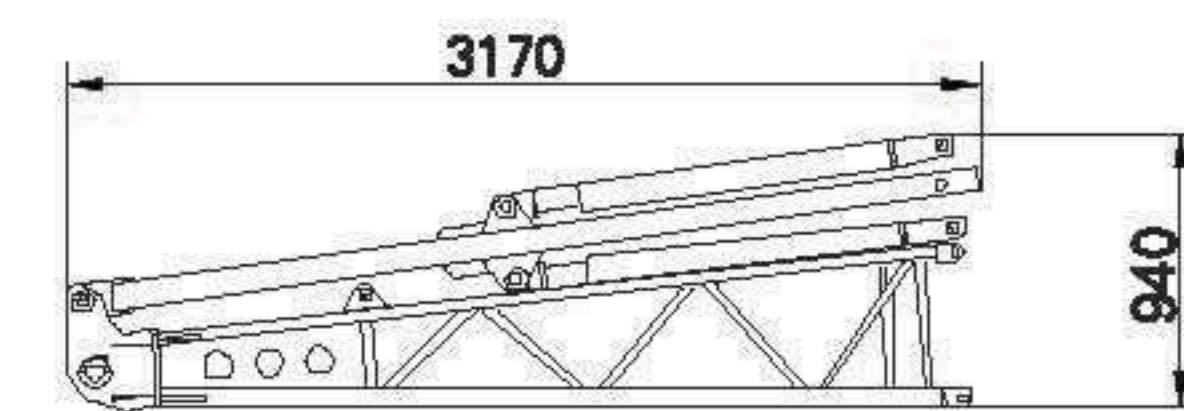
Base boom section of jib (Included jackstay)	
Weight	0.45t
Qty	1
Width	560mm
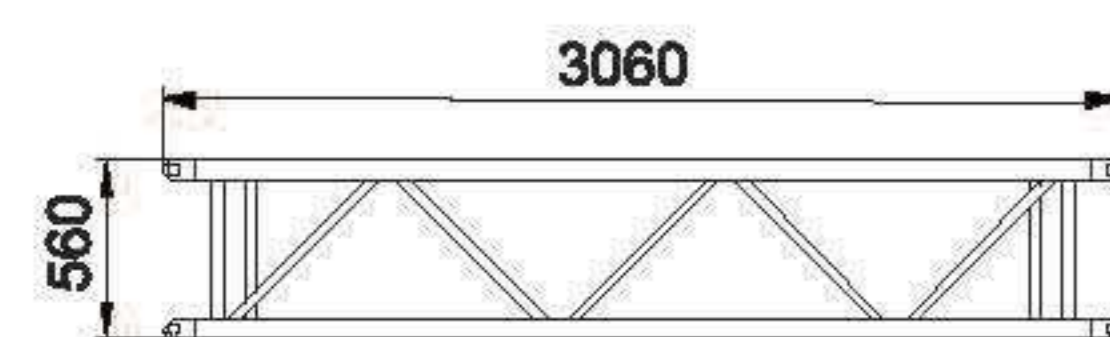
3m boom section of jib	
Weight	0.09t
Qty	3
Width	560mm
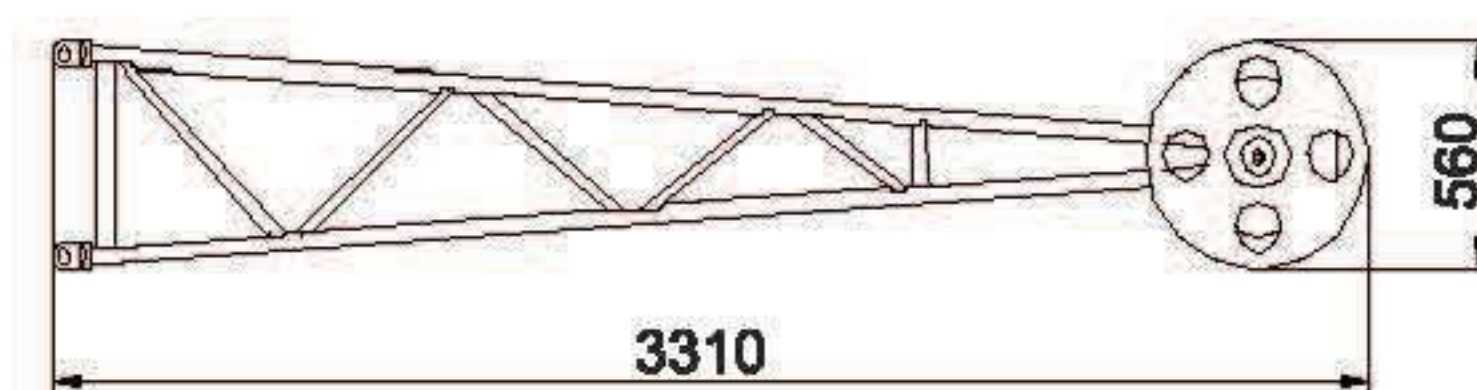
Top boom section of jib	
Weight	0.2t
Qty	1
Width	560mm

ZCC550 | Technique specification

1. Boom system:

It consists of boom, luffing frame, goose heads, Jackstay of fixed jib, fixed jib and pulling plate and so on, among which truss structure arm adopts steel pipe, Jackstay of fixed jib adopts steel plate and pulling plate adopts high strength board.

Boom

It is a space truss structure with uniform cross section in middle and variable cross section at two ends, and adopts high intensity steel pipe for welding.
Boom length: 13-52m
Components: Base section arm 6.5m, top section arm 6.5m, middle section arm of 3m, 6m and 9m.

Fixed jib:

It is a truss structure with uniform cross section in middle and variable cross section at two ends, and adopts high intensity steel pipe for welding.
Fixed jib length: 6~15m
Components: Base section arm 3m, top section arm 3m, middle section 3m.
Fixed jib set angle: angles with centerline of boom is 10° and 30° respectively.

2. Mechanism

Main lifting mechanism:

It consists of variable axial piston hydraulic motor, embedded reducer, brake control valve, balance valve, normally closed type brake and steel wire rope, and can be controlled independently of other mechanisms.
Rated single rope tensile force65KN
Single rope speed120m/min(4th layers of the winding drum)
Steel wire ropeDiameter of

Auxiliary lifting mechanism:

It consists of variable axial piston hydraulic motor, embedded reducer, brake control valve, balance valve, normally closed type brake and steel wire rope, and can be controlled independently of other mechanisms.
Rated single rope tensile force65KN
Single rope speed120m/min (4th layers of the drum)
Steel wire ropeDiameter of

Luffing mechanism:

It consists of variable axial piston hydraulic motor, build-in reducer, brake control valve, balance valve, normally closed type brake, wire rope and ratchet wheel mechanism, and can be controlled independently of other mechanisms.
It is provided with self-locking function, ratchet wheel self-locking protection mechanism can be used if the machine is to be stopped for a long term.
Rated single rope tensile force55KN
Single rope speed56m/min (4th layers of the drum)
Steel wire ropediameter of

Slewing mechanism:

It is driven by axial constant displacement hydraulic motor through planetary gear reducer. Pinion on its output shaft turns around slewing ring fixed on truck frame to bring all mechanisms on slewing platform to run in 360°.
Slewing mechanism adopts internal gearing slewing ring and slewing reducer, is with strong bearing capacity and high precision, and ensures a more stable and precise slewing.
Slewing mechanism is provided with free sliding function, which reduces side pull force of the boom.
Slewing speed :0~2.1r/min stepless speed regulation

Travel mechanism:

It adopts double-motor, double-reducer form, and through control lever and footplate, controls caterpillar track to travel in a straight line, turn from one side, turn with differential speed, turn from spot and steer with load, and with high flexibility.
Travel speed: 0~1.6km/h.
Gradeability: 30%

Telescopic mechanism of track frame

Track frame is controlled by one (1) hydraulic cylinder for stretching out and drawing back, oil cylinder reversing valve is equipped at rear of track frame for switching getting off actions.
Oil cylinder travel1350mm
Caterpillar track frame gauge (extension/contraction) 3840 mm/2540mm

Counter weight self- loading and unloading mechanism:

It consists of A-frame, counter weight pulling plate, luffing mechanism and base section arm and so on. It realizes self-loading and unloading of machine counter weight through A luffing.

3. System

Hydraulic system:

It adopts leading control hydraulic mode, and consists of main pump, combined control valve, main valve, hydraulic motor, hydraulic oil cylinder and cooler.
Main hydraulic pump: constant power variable piston pump, driven by engine.
Slewing mechanism oil pump: gear pump
Main valve: leading hydraulic pilot proportional valve.
Main loop control mode: valve controlled system
Combined control valve: to restrain overload, over-winding and over-unwinding of the system.
Action of stretching out and drawing back oil cylinder of track frame: operate reversing valve manually.
Hydraulic oil tank capacity: 450L
Oil filter: return oil filter
Cooler: aluminum radiator with large power
Hydraulic control lever: non-set one, applies to complex actions.
Overflow valves in hydraulic system can restrain abnormally high pressure in control loop to prevent hydraulic oil pump and motor from damage and to avoid system overload.

Electrical system:

24V DC, negative earth, two 200AH accumulators
Electrical appliance of the complete vehicle includes: power supply, engine startup and stop, indicator, annunciator, lighting, air fan, rain wiper, horn, lifting height limit, hydraulic oil cooling air fan, centralized display panel, moment limiter system and safety device, all of which ensure safety and favorable working environment for the crane. The complete crane is provided with GPS/GPRS global positioning system.

Boosting system:

Engine modelWP6G190E26, Weichai Power Co,. Ltd
TypeSix (6) cylinders in line, inter-cooling turbocharged diesel motor
Displacment6.23L
Rated output power:140KW, 1900rpm
Max. output torque:830Nm/1300 rpm
Fuel tank capacity300L

4. Safety device

This crane adopts multiple safety and alarm devices, including mechanical, electronic and hydraulic types, to ensure safety application of the machine.

Moment limiter:

Full automatic moment limiter is installed in control room. Alarm indicator gets on and buzzer sends out warning when lifting moment reaches to 90% of rated moment, and crane can stop automatically when lifting moment is close to rated one. As per demands, digital LED display board displays data as follows: moment rate, Boom elevation, boom length, working radius, actual lifting load and allowed lifting weight etc.

Boom angle indicator:

Boom elevation indicator is set under base section arm (that is, right side of control room), and the driver can see boom elevation clearly from control room.

Lifting height limiter:

Subassemblies as limit switch and hammer installed on top of working arm are used to avoid excessive hook lifting. When lifting hoist is lifted to a certain height, limit switch sends out signal, electrical system cuts off lifting action of lifting hook, and sends out aural and visual alarm through buzzer and indicator from control room to avoid excessive lifting.

Alarm and protection system of boom limit position:

It is controlled by limit switch installed near upper base section arm on slewing platform, and used for alarm and protection when the boom is at limit angle. When boom frame luffs to be at 81° with boom, it triggers limit switch of Base section arm, stops upward luffing and sends out aural and visual alarm through buzzer and indicator from control room.

Steel wire rope excessive unwinding protection device:

When steel wire rope in drum unwinds to the last three rings, protection device sends out signal, electrical system cuts off action of unwinding and lowering hook, and sends out aural and visual alarm though buzzer and indicator in control room

Anti-tipping tipping device of lifting boom:

Anti-tipping tipping devices are equipped for boom and fixed auxiliary jib.

Anti-slip device device of lifting hook

It avoids heavy dropping during lifting.

Anemoscope

Electronic anemoscope sensor can display real time air speed level on screen for the convenience of caution of hazardous working environment.

Each hydraulic overflow valve in hydraulic system:

It consists of main pump, control valve, hydraulic motor, hydraulic fuel cylinder and cooler. Overflow valves in hydraulic system can restrain abnormally high pressure in control loop to prevent hydraulic oil pump and motor from damage and to avoid system overload.

Self-locking protection mechanism of ratchet wheel of luffing winch:

It is used for locking of luffing winch when the machine is out of service.

Emergency stop button:

Press this button to stop engine and all actions under emergency.

Three-color caution light:

Caution light has three colors of red, yellow and green and displays loading status simultaneously, that is, green means load rate is lower than 90%, yellow means load rate is between 90% and 100%, and red means load exceeds 100% and machine is in overload state.

Slewing and travel alarm (select and equip)

It sends out aural and visual indication when crane slewing.

Travel alarm (selects and equip)

It sends out aural and visual indication when crane travels.

Video monitoring system (selects and equip)

Camera and video display screen can be selected and equipped to monitor real time working condition of lifting winch and blind spot behind the machine.

5. Control room

Streamline control room, steel structure for main body, full metal welding structure, and is modern streamline style. It adopts full coverage of soft internal decoration, equipped with instrument table, air conditioning device, instrument switches, and hydraulic vibration absorption chair and so on. The wide internal room embodies optimal design of man-machine engineering. Front window adopts a complete, arc glass. The control room is convenient for operation, comfortable to work as well as has a nice appearance and a wide view.

6. Counter weight

It consists of two pieces of 18t counter weight, and is hung vertically and firmly at backside of slewing platform.

7. Lifting hook

All the lifting hooks are with turntable lifting hook and Mousing-hook device of lifting hook.
55t lifting hook: 5 pulleys;
30t lifting hook: 2 pulleys;
18t lifting hook: 1 pulley;
6t lifting hook: ball type hook, no pulley.

ZCC550 | Lifting performance

1.Lifting height curve of boom working condition (S-1/S-2)
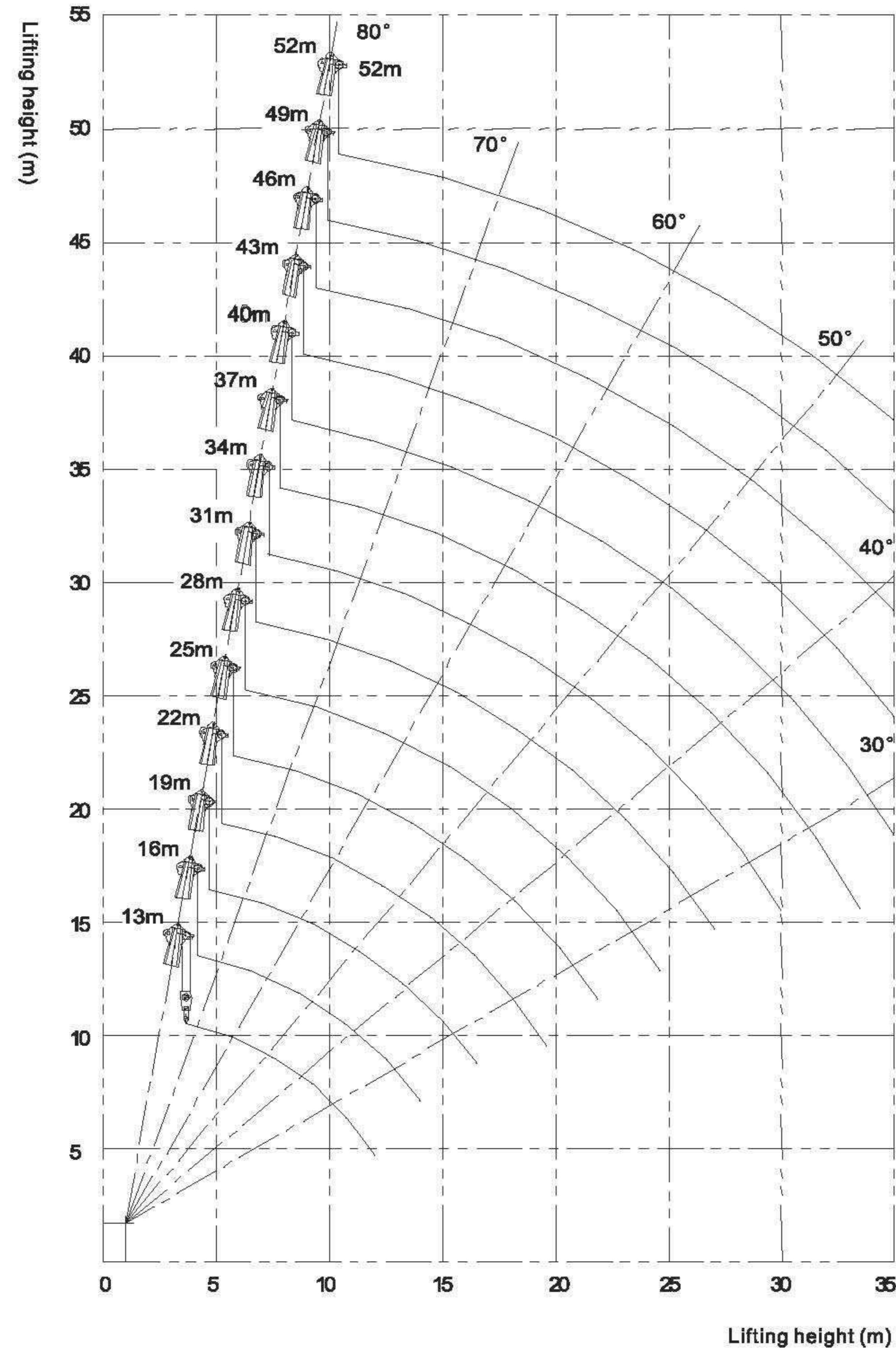
2.Lifting capacity table of boom working condition(S-1)

S—1 Boom radius (m)	Boom length (m)													
	13	16	19	22	25	28	31	34	37	40	43	46	49	49
3.7	55													
4	51	49												
4.5	42	42	40											
5	37	36	35	33										
5.5	33	31	31	30	29									
6	28	28	27	27	26	25								
7	23	23	22	22	22	21	21							
8	19	19	19	18	18	18	18	17	17					
9	16	16	16	16	16	15	15	15	14	14	13			
10	14	14	14	14	14	14	13	13	13	12	12	12	11	11.2
12	11	11	11	11	11	11	11	10	10	10	9.6	9.3	9.2	9.1
14		9.2	9.1	9.0	8.9	8.8	8.6	8.5	8.4	8.1	7.9	7.6	7.5	7.4
16			7.6	7.5	7.4	7.3	7.2	7.1	7.0	6.8	6.6	6.3	6.2	6.1
18				6.4	6.3	6.2	6.1	6.0	5.9	5.8	5.7	5.4	5.2	5.1
20				5.6	5.5	5.4	5.3	5.2	5.1	5.0	4.8	4.6	4.4	4.3
22					4.8	4.7	4.6	4.5	4.5	4.3	4.2	3.9	3.8	3.7
24						4.1	4.0	3.9	3.8	3.7	3.6	3.4	3.3	3.1
26							3.5	3.5	3.4	3.3	3.1	3.0	2.8	2.6
28								3.0	2.9	2.8	2.7	2.5	2.4	2.2
30									2.7	2.6	2.5	2.3	2.1	2	1.8
32										2.3	2.2	2.0	1.8	1.7	1.5
34											1.9	1.7	1.5	1.4	1.3

3.Lifting capacity table of boom working condition (S-2)

Working condition of 25m boom

S—2 Boom radius (m)	Jib length (m) 6		9		12		15	
	Jib set angle (°) 10	30	10	30	10	30	10	30
5.5	27.3	27.1	26.9	26.6	26.5	26	26.0	25.3
6	24.8	24.6	24.4	24.1	24.0	23.5	23.5	22.9
7	20.4	20.2	20.0	19.8	19.6	19.2	19.2	18.6
8	17.1	16.9	16.7	16.5	16.3	16.0	15.9	15.4
9	14.3	14.2	13.9	13.7	13.5	13.2	13.1	12.7
10	12.4	12.3	12	11.8	11.6	11.4	11.2	10.8
12	9.6	9.5	9.2	9.1	8.8	8.6	8.4	8.1
14	7.6	7.6	7.3	7.2	6.9	6.8	6.5	6.3
16	6.1	6.1	5.8	5.7	5.4	5.3	5.0	4.9
18	5.0	5.0	4.7	4.6	4.3	4.2	4.0	3.8
20	4.2	4.2	3.9	3.8	3.5	3.5	3.2	3.1
22	3.5	3.5	3.2	3.2	2.8	2.8	2.5	2.4

Working condition of 28m boom

S—2 Boom radius (m)	Jib length (m) 6		9		12		15	
	Jib set angle (°) 10	30	10	30	10	30	10	30
6	24.2	24.0	23.8	23.5	23.4	22.9	23	22.3
7	19.8	19.6	19.4	19.2	19.0	18.6	18.6	18.0
8	16.6	16.4	16.2	16.0	15.8	15.5	15.4	14.9
9	14.1	14.0	13.7	13.5	13.3	13.0	12.9	12.5
10	12.3	12.2	11.9	11.7	11.5	11.3	11.1	10.8
12	9.4	9.3	9	8.9	8.6	8.4	8.3	8.0
14	7.6	7.5	7.2	7.1	6.9	6.7	6.5	6.2
16	6.1	6.0	5.7	5.6	5.4	5.2	5.0	4.8
18	4.9	4.9	4.6	4.5	4.3	4.1	3.9	3.7
20	4.1	4.1	3.8	3.7	3.5	3.4	3.1	3.0
22	3.4	3.4	3.1	3.1	2.8	2.7	2.4	2.3
24	2.8	2.8	2.5	2.5	2.2	2.1	1.8	1.7

Working condition of 31m boom

S—2 Boom radius (m)	Jib length (m) 6		9		12		15	
	Jib set angle (°) 10	30	10	30	10	30	10	30
7	19.4	19.2	19	18.8	18.6	18.2	18.2	17.6
8	16.3	16.1	15.9	15.7	15.5	15.2	15.1	14.6
9	13.7	13.6	13.3	13.1	12.9	12.6	12.6	12.1
10	12	11.9	11.6	11.4	11.3	11.0	10.9	10.5
12	9.3	9.2	8.9	8.8	8.6	8.3	8.2	7.9
14	7.4	7.3	7.0	6.9	6.7	6.5	6.3	6
16	6.0	5.9	5.6	5.5	5.3	5.1	4.9	4.7
18	4.9	4.8	4.5	4.4	4.2	4.1	3.8	3.6
20	4.1	4.0	3.7	3.7	3.4	3.3	3.0	2.9
22	3.4	3.3	3.0	3.0	2.7	2.6	2.3	2.2
24	2.7	2.7	2.4	2.4	2.1	2.0	1.7	1.6
26	2.2	2.2	1.9	1.9	1.6	1.5	1.2	1.2
28	1.9	1.9	1.6	1.6	1.3	1.3		

Working condition of 34m boom

S—2 Boom radius (m)	Jib length (m) 6		9		12		15	
	Jib set angle (°) 10	30	10	30	10	30	10	30
7	15.9	15.7	15.5	15.3	15.2	14.8	14.8	14.3
8	13.4	13.3	13	12.8	12.7	12.4	12.3	11.8
9	11.8	11.7	11.4	11.2	11.1	10.8	10.7	10.3
10	9.2	9.1	8.8	8.7	8.5	8.3	8.1	7.8
12	7.3	7.2	6.9	6.8	6.6	6.4	6.2	6
14	5.9	5.8	5.5	5.4	5.2	5	4.8	4.6
16	4.8	4.7	4.4	4.3	4.1	4.0	3.7	3.6
18	4.0	3.9	3.6	3.6	3.3	3.2	3.0	2.8
20	3.3	3.2	2.9	2.9	2.6	2.5	2.3	2.1
22	2.7	2.6	2.3	2.3	2.0	1.9	1.7	1.6
24	2.3	2.2	1.9	1.9	1.6	1.5	1.3	1.2
26	1.7	1.7	1.4	1.4	1.1	1.1		
28	1.4	1.4	1.1	1.1				

Working condition of 31m boom

S—2 Boom radius (m)	Jib length (m) 6		9		12		15	
	Jib set angle (°) 10	30	10	30	10	30	10	30
8	15.6	15.4	15.2	15.0	14.9	14.5	14.5	14.0
9	13.1	13	12.7	12.5	12.4	12.1	12	11.5
10	11.5	11.4	11.1	10.9	10.8	10.5	10.4	10.0
12	9.0	8.9	8.6	8.5	8.3	8.1	7.9	7.6
14	7.2	7.1	6.8	6.7	6.5	6.3	6.1	5.9
16	5.8	5.7	5.4	5.3	5.1	4.9	4.8	4.5
18	4.7	4.6	4.3	4.2	4.0	3.9	3.7	3.5
20	3.9	3.8	3.5	3.5	3.2	3.1	2.9	2.7
22	3.3	3.2	2.9	2.9	2.6	2.5	2.3	2.1
24	2.6	2.5	2.2	2.2	1.9	1.8	1.6	1.5
26	2.2	2.1	1.8	1.8	1.5	1.4	1.2	1.1
28	1.7	1.6	1.3	1.3	1.0			
30	1.3	1.3	1.0	1.0				
32	1.0	1.0						

Working condition of 40m boom

S—2 Boom radius (m)	Jib length (m) 6		9		12		15	
	Jib set angle (°) 10	30	10	30	10	30	10	30
9	12.6	12.5	12.2	12	11.9	11.6	11.5	11.1
10	11.1	11.0	10.7	10.5	10.4	10.1	10.0	9.6
12	8.8	8.7	8.4	8.3	8.1	7.9	7.7	7.4
14	6.9	6.8	6.5	6.4	6.2	6.0	5.9	5.6
16	5.6	5.5	5.2	5.1	4.9	4.7	4.6	4.3
18	4.6	4.5	4.2	4.1	3.9	3.8	3.6	3.4
20	3.8	3.7	3.4	3.4	3.1	3.0	2.8	2.6
22	3.1	3.0	2.7	2.7	2.4	2.3	2.1	1.9
24	2.5	2.4	2.1	2.1	1.8	1.7	1.5	1.4
26	2.1	2.0	1.7	1.7	1.4	1.3	1.1	1
28	1.6	1.5	1.2	1.2				
30	1.3	1.2						

Working condition of 43m boom

S—1 Boom radius (m)	Jib length (m) 6		9		12		15	
	Jib set angle (°) 10	30	10	30	10	30	10	30
9	12.1	11.9	11.7	11.5	11.4	11.1	11	10.6
10	10.8	10.7	10.4	10.2	10.1	9.8	9.7	9.3
12	8.4	8.3	8.0	7.9	7.7	7.5	7.4	7.0
14	6.7	6.6	6.3	6.2	6.0	5.8	5.7	5.4
16	5.4	5.3	5.0	4.9	4.7	4.5	4.4	4.1
18	4.5	4.4	4.1	4.0	3.8	3.7	3.5	3.3
20	3.6	3.5	3.2	3.2	2.9	2.8	2.6	2.4
22	3.0	2.9	2.6	2.6	2.3	2.2	2.0	1.8
24	2.4	2.3	2.0	2.0	1.7	1.6	1.4	1.3
26	1.9	1.8	1.5	1.5	1.2	1.1		
28	1.5	1.4	1.2	1.1				
30	1	1						

ZCC550│Lifting performance

ZCC550│Lifting performance

1.Lifting capacity curve of fixed jib working condition (SF-1, SF-2)

2. Lifting performance of fixed jib working condition（SF-1）

25m boom length

SF—1 Jib Radius (m)	6 / 10°	6 / 30°	9 / 10°	9 / 30°	12 / 10°	12 / 30°	15 / 10°	15 / 30°
8.8	5.5							
10	5.5							
12	5.5	5.5	5.5	5.5	4.8	4.5	4	
14	5.5	5.5	5.5	5.5	4.8	4.5	4	
16	5.5	5.5	5.5	5.5	4.8	4.5	4	3.5
18	5.5	5.3	5.5	5.3	4.7	4.5	4	3.5
20	5	5	5	5	4.5	4	4	3.3
22	4.45	4.6	4.5	4.5	4.2	3.6	3.9	3.2
24	3.9	4	4.05	4.1	3.9	3.4	3.6	3.05
26	3.5	3.6	3.55	3.7	3.6	3.1	3.4	2.9
28	3.05	3.1	3.1	3.3	3.2	2.9	3.2	2.8
30			2.65	2.9	2.9	2.6	2.95	2.6
32					2.55	2.3	2.65	2.5
34							2.4	2.3

28m boom length

SF—1 Jib Radius (m)	6 / 10°	6 / 30°	9 / 10°	9 / 30°	12 / 10°	12 / 30°	15 / 10°	15 / 30°
12	5.5	5.5	5.5	5.5	4.8			
14	5.5	5.5	5.5	5.5	4.8	4	4	
16	5.5	5.5	5.5	5.5	4.8	4	4	
18	5.5	5.2	5.5	5.2	4.7	4	4	3.5
20	5.1	4.9	5.1	4.8	4.5	4	3.9	3.3
22	4.5	4.5	4.6	4.4	4.2	3.9	3.7	3.1
24	4	4	4.1	4	3.9	3.6	3.5	3
26	3.5	3.5	3.6	3.6	3.55	3.35	3.35	2.85
28	3	3.1	3.15	3.2	3.15	3.1	3.1	2.7
30	2.7	2.7	2.8	2.8	2.85	2.85	2.85	2.6
32			2.4	2.45	2.5	2.55	2.55	2.4
34			2.1	2.1	2.2	2.2	2.2	2.2

31m boom length

SF—1 Jib Radius (m)	6 / 10°	6 / 30°	9 / 10°	9 / 30°	12 / 10°	12 / 30°	15 / 10°	15 / 30°
12	5.5	5.5	5.5		4.8			
14	5.5	5.5	5.5	5.5	4.8		4	
16	5.5	5.5	5.5	5.5	4.8	4	4	
18	5.5	5.2	5.5	5.2	4.65	4	4	3.5
20	5	4.9	5	4.8	4.4	4	3.9	3.4
22	4.4	4.5	4.55	4.4	4.15	3.75	3.7	3.25
24	3.9	4	4	4	3.9	3.5	3.5	3.1
26	3.4	3.5	3.45	3.6	3.55	3.25	3.3	2.95
28	3	3.1	3.1	3.15	3.1	3	3.05	2.75
30	2.6	2.6	2.75	2.8	2.8	2.7	2.8	2.55
32	2.2	2.3	2.35	2.4	2.45	2.45	2.5	2.35
34		2	2	2	2.1	2.15	2.2	2.15

34m boom length

SF—1 Jib Radius (m)	6 / 10°	6 / 30°	9 / 10°	9 / 30°	12 / 10°	12 / 30°	15 / 10°	15 / 30°
12	5.5		5.5					
14	5.5	5.5	5.5	5.5	4.8		4	
16	5.5	5.5	5.5	5.5	5.5	4.8	4	4
18	5.5	5.2	5.5	5.1	4.65	4	4	
20	4.9	4.85	4.9	4.7	4.4	3.8	3.8	3.3
22	4.3	4.45	4.4	4.3	4.15	3.6	3.6	3.1
24	3.8	3.9	3.8	3.9	3.8	3.45	3.4	3
26	3.3	3.4	3.4	3.5	3.4	3.2	3.2	2.9
28	2.8	3	3	3.1	3	2.95	3	2.7
30	2.5	2.6	2.6	2.75	2.7	2.65	2.75	2.55
32	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.35
34	1.85	1.95	1.95	2	1.9	2.05	2.1	2.1

37m boom length

SF—1 Jib Radius (m)	6 / 10°	6 / 30°	9 / 10°	9 / 30°	12 / 10°	12 / 30°	15 / 10°	15 / 30°
12	5.5							
14	5.5	5.5	5.5		4.8			
16	5.5	5.5	5.5	5.2	4.8		4	
18	5.5	5.2	5.5	5.1	4.6	4	4	
20	4.7	4.8	4.8	4.7	4.35	4	3.75	3.3
22	4.2	4.3	4.2	4.25	4	3.7	3.55	3.1
24	3.6	3.8	3.6	3.85	3.7	3.45	3.45	3
26	3.2	3.3	3.2	3.45	3.2	3.2	3.1	2.85
28	2.8	2.8	2.8	3.05	2.8	2.9	2.8	2.7
30	2.4	2.5	2.45	2.7	2.5	2.6	2.45	2.5
32	2.1	2.1	2.2	2.25	2.2	2.35	2.2	2.3
34	1.8	1.8	1.85	1.95	1.9	2	2	2.05

40m boom length

SF—1 Jib Radius (m)	6 / 10°	6 / 30°	9 / 10°	9 / 30°	12 / 10°	12 / 30°	15 / 10°	15 / 30°
12	5.5							
14	5.5	5.5	5.5		4.8			
16	5.5	5.5	5.5	5.1	4.8		4	
18	5.2	5.1	5.3	5	4.6	4	4	
20	4.6	4.6	4.7	4.6	4.3	3.9	3.75	3.2
22	4	4.2	4	4.2	3.9	3.6	3.5	3.1
24	3.5	3.7	3.5	3.7	3.5	3.4	3.3	3
26	3	3.2	3.1	3.3	3.1	3.2	3.05	2.85
28	2.7	2.8	2.65	2.9	2.7	2.9	2.7	2.7
30	2.35	2.4	2.3	2.5	2.4	2.6	2.4	2.5
32	2	2.15	2.1	2.2	2.1	2.3	2.2	2.3
34	1.75	1.85	1.8	1.95	1.9	2	1.9	2.05

43m boom length

SF—1 Jib Radius (m)	6 / 10°	6 / 30°	9 / 10°	9 / 30°	12 / 10°	12 / 30°	15 / 10°	15 / 30°
14	5.5	5.5	5.5		4.8		4	
16	5.5	5.5	5.5		4.8		4	
18	5.2	5.1	5.2	4.9	4.6		3.9	
20	4.5	4.6	4.5	4.5	4.3	3.9	3.7	
22	3.9	4	3.9	4	3.85	3.7	3.5	3.1
24	3.4	3.5	3.4	3.5	3.4	3.4	3.25	3
26	2.9	3	2.9	3.1	2.9	3.2	2.9	2.85
28	2.6	2.6	2.6	2.7	2.5	2.8	2.6	2.7
30	2.2	2.3	2.2	2.4	2.2	2.5	2.3	2.5
32	1.9	2	2	2	1.9	2.1	2	2.2
34	1.7	1.7	1.7	1.8	1.7	1.9	1.7	1.9

25m boom length (SF—2)

Jib Radius (m)	6 (10°)	6 (30°)	9 (10°)	9 (30°)	12 (10°)	12 (30°)	15 (10°)	15 (30°)
8.8	4.2							
10	4.2							
12	4.2	4.2	4.2	4.2	3.5	4.5	2.7	
14	4.2	4.2	4.2	4.2	3.5	4.5	2.7	
16	4.2	4.2	4.2	4.2	3.5	4.5	2.7	2.2
18	4.2	4	4.2	4	3.4	4.5	2.7	2.2
20	3.7	3.7	3.7	3.7	3.2	4	2.7	2
22	3.2	3.3	3.2	3.2	2.9	3.6	2.6	1.9
24	2.6	2.7	2.7	2.8	2.6	3.4	2.3	1.7
26	2.2	2.3	2.2	2.4	2.3	3.1	2.1	1.6
28	1.7	1.8	1.8	2	1.9	2.9	1.9	1.5
30			1.3	1.6	1.6	2.6	1.7	1.3
32				1.2	1.2	2.3	1.3	1.2
34							1.1	1

28m boom length (SF—2)

Jib Radius (m)	6 (10°)	6 (30°)	9 (10°)	9 (30°)	12 (10°)	12 (30°)	15 (10°)	15 (30°)
12	4.2	4.2	4.2	4.2	3.5			
14	4.2	4.2	4.2	4.2	3.5	2.7	2.7	
16	4.2	4.2	4.2	4.2	3.5	2.7	2.7	
18	4.2	3.9	4.2	3.9	3.4	2.7	2.7	2.2
20	3.8	3.6	3.8	3.5	3.2	2.7	2.6	2
22	3.2	3.2	3.3	3.1	2.9	2.6	2.4	1.8
24	2.7	2.7	2.8	2.7	2.6	2.3	2.2	1.7
26	2.2	2.2	2.3	2.3	2.2	2.1	2.1	1.6
28	1.7	1.8	1.8	1.9	1.8	1.8	1.8	1.4
30	1.4	1.4	1.5	1.5	1.6	1.6	1.6	1.3
32			1.1	1.2	1.2	1.2	1.2	1.1
34			0.8	0.8	0.9	0.9	0.9	0.9

31m boom length (SF—2)

Jib Radius (m)	6 (10°)	6 (30°)	9 (10°)	9 (30°)	12 (10°)	12 (30°)	15 (10°)	15 (30°)
12	4.2	4.2	4.2		3.5			
14	4.2	4.2	4.2	4.2	3.5		2.7	
16	4.2	4.2	4.2	4.2	3.5	2.7	2.7	
18	4.2	3.9	4.2	3.9	3.4	2.7	2.7	2.2
20	3.7	3.6	3.7	3.5	3.1	2.7	2.6	2.1
22	3.1	3.2	3.2	3.1	2.9	2.5	2.4	2
24	2.6	2.7	2.7	2.7	2.6	2.2	2.2	1.8
26	2.1	2.2	2.2	2.3	2.2	2	2	1.7
28	1.7	1.8	1.8	1.8	1.8	1.7	1.7	1.5
30	1.3	1.3	1.5	1.5	1.5	1.4	1.5	1.2
32	0.9	1	1.1	1.1	1.2	1.2	1.2	1.1
34		0.7	0.7	0.7	0.8	0.8	0.9	0.8

34m boom length (SF—2)

Jib Radius (m)	6 (10°)	6 (30°)	9 (10°)	9 (30°)	12 (10°)	12 (30°)	15 (10°)	15 (30°)
12	4.2		4.2					
14	4.2	4.2	4.2	4.2	3.5		2.7	
16	4.2	4.2	4.2	4.2	3.5	2.7	2.7	
18	4.2	3.9	4.2	3.8	3.4	2.7	2.7	
20	3.6	3.5	3.6	3.4	3.1	2.5	2.5	2
22	3	3.2	3.1	3	2.9	2.3	2.3	1.8
24	2.5	2.6	2.5	2.6	2.5	2.2	2.1	1.7
26	2	2.1	2.1	2.2	2.1	1.9	1.9	1.6
28	1.5	1.7	1.7	1.8	1.7	1.7	1.7	1.4
30	1.2	1.3	1.3	1.5	1.4	1.3	1.5	1.2
32	0.9	0.9	1	1	1	1.1	1.1	1.1
34	0.6	0.7	0.7	0.7	0.6	0.7	0.8	0.8

37m boom length (SF—2)

Jib Radius (m)	6 (10°)	6 (30°)	9 (10°)	9 (30°)	12 (10°)	12 (30°)	15 (10°)	15 (30°)
12	4.22							
14	4.22	4.22	4.22		3.52			
16	4.22	4.22	4.22	3.92	3.52		2.72	
18	4.22	3.92	4.22	3.82	3.32	2.72	2.72	
20	3.42	3.52	3.52	3.42	3.02	2.72	2.52	2.02
22	2.92	3.02	2.92	3.02	2.72	2.42	2.22	1.82
24	2.32	2.52	2.32	2.62	2.42	2.22	2.22	1.72
26	1.92	2.02	1.92	2.22	1.92	1.92	1.82	1.62
28	1.52	1.52	1.52	1.72	1.52	1.62	1.52	1.42
30	1.12	1.22	1.22	1.42	1.22	1.32	1.22	1.22
32	0.82	0.82	0.92	1.02	0.92	1.12	0.92	1.02
34	0.52	0.52	0.62	0.72	0.62	0.72	0.72	0.72

40m boom length (SF—2)

Jib Radius (m)	6 (10°)	6 (30°)	9 (10°)	9 (30°)	12 (10°)	12 (30°)	15 (10°)	15 (30°)
12	4.22							
14	4.22	4.22	4.22					
16	4.22	4.22	4.22	3.82	3.52		2.72	
18	3.92	3.82	4.02	3.72	3.32	2.72	2.72	
20	3.32	3.32	3.42	3.32	3.02	2.62	2.52	1.92
22	2.72	2.92	2.72	2.92	2.62	2.32	2.22	1.82
24	2.22	2.42	2.22	2.42	2.22	2.12	2.02	1.72
26	1.72	1.92	1.82	2.02	1.82	1.92	1.72	1.62
28	1.42	1.52	1.32	1.62	1.42	1.62	1.42	1.42
30	1.12	1.12	1.02	1.22	1.12	1.32	1.12	1.22
32	0.72	0.82	0.82	0.92	0.82	1.02	0.92	1.02
34	0.52	0.62	0.52	0.72	0.62	0.72	0.62	0.72

43m boom length (SF—2)

Jib Radius (m)	6 (10°)	6 (30°)	9 (10°)	9 (30°)	12 (10°)	12 (30°)	15 (10°)	15 (30°)
14	4.22	4.22	4.22					
16	4.22	4.22	4.22		3.52		2.72	
18	3.92	3.82	3.92	3.62	3.32		2.62	
20	3.22	3.32	3.22	3.22	3.02	2.62	2.42	
22	2.62	2.72	2.62	2.72	2.62	2.42	2.22	1.82
24	2.12	2.22	2.12	2.22	2.12	2.12	2.02	1.72
26	1.62	1.72	1.62	1.82	1.62	1.92	1.62	1.62
28	1.32	1.32	1.32	1.42	1.22	1.52	1.32	1.42
30	0.92	1.02	0.92	1.12	0.92	1.22	1.02	1.22
32	0.62	0.72	0.72	0.72	0.62	0.82	0.72	0.92
34	0.42	0.42	0.42	0.52	0.42	0.62	0.42	0.62