

**ZOOMLION**

ZOOMLION ZCC3000 CRAWLER CRANE

# **TECHNICAL SPECIFICATIONS**

ZCC3000/27Y

Edition 1, Nov 2018

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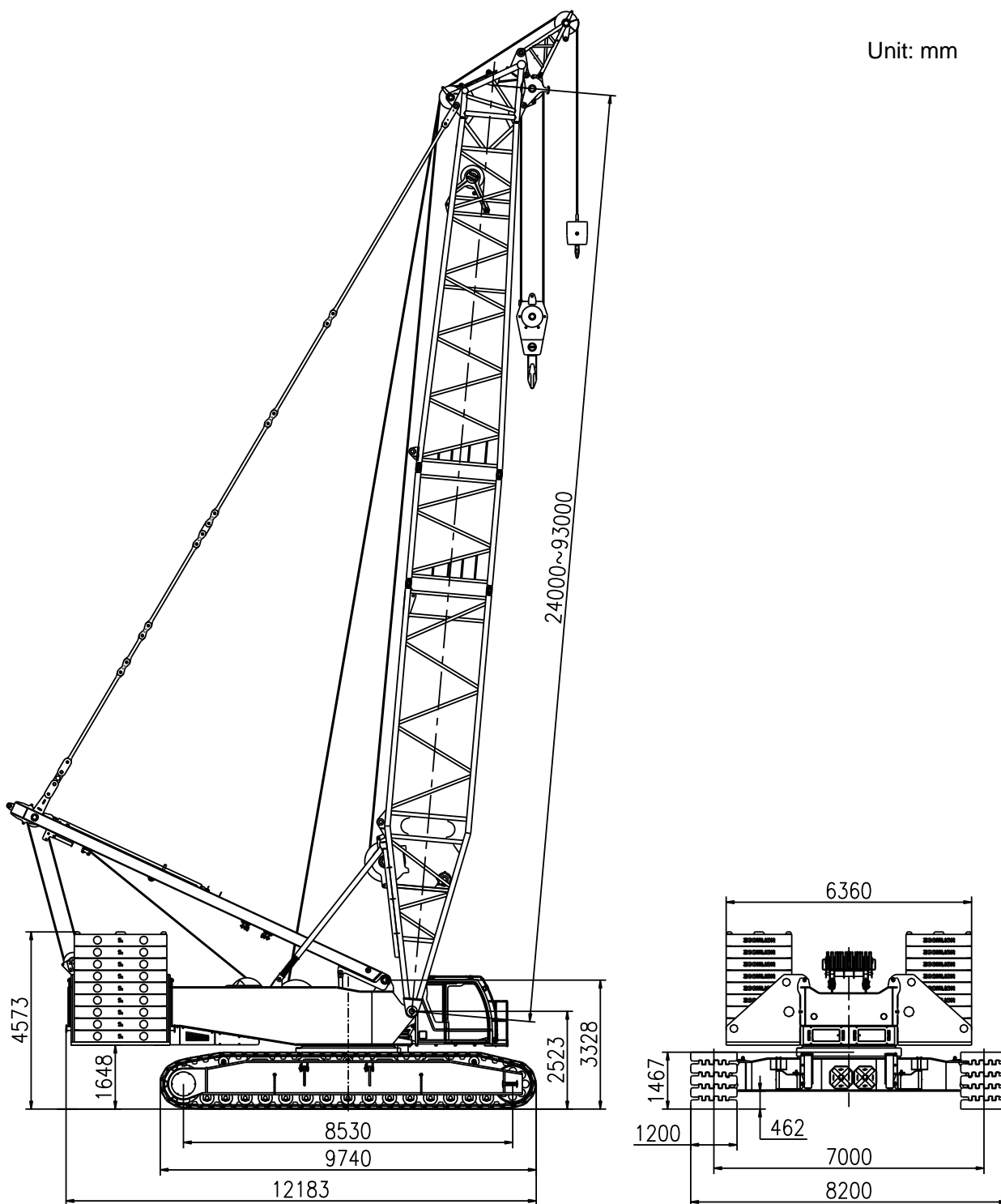
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# 1. Overall dimensions and main technical parameters

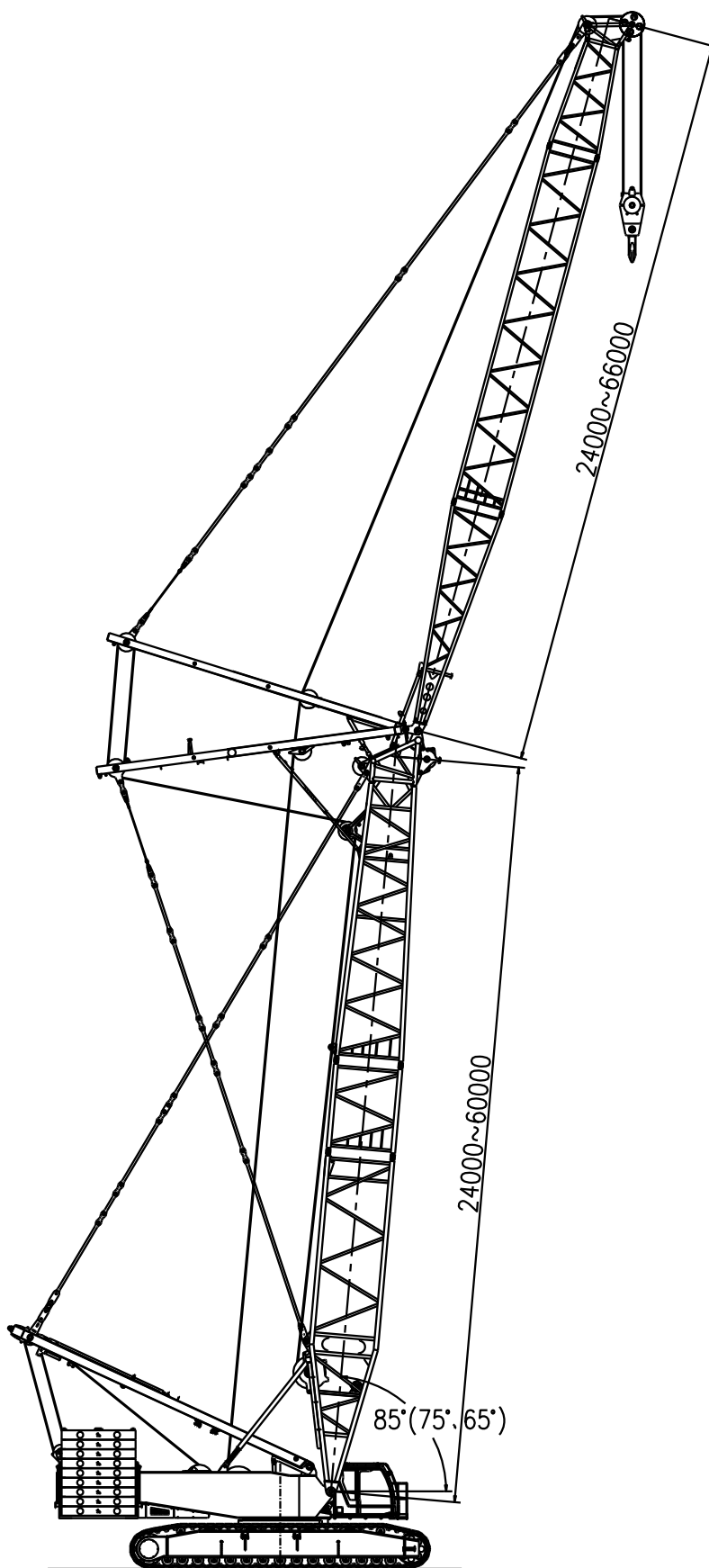
## 1.1 Dimensions of main boom configuration

Unit: mm



### 1.2 Dimensions of luffing jib configuration

Unit: mm



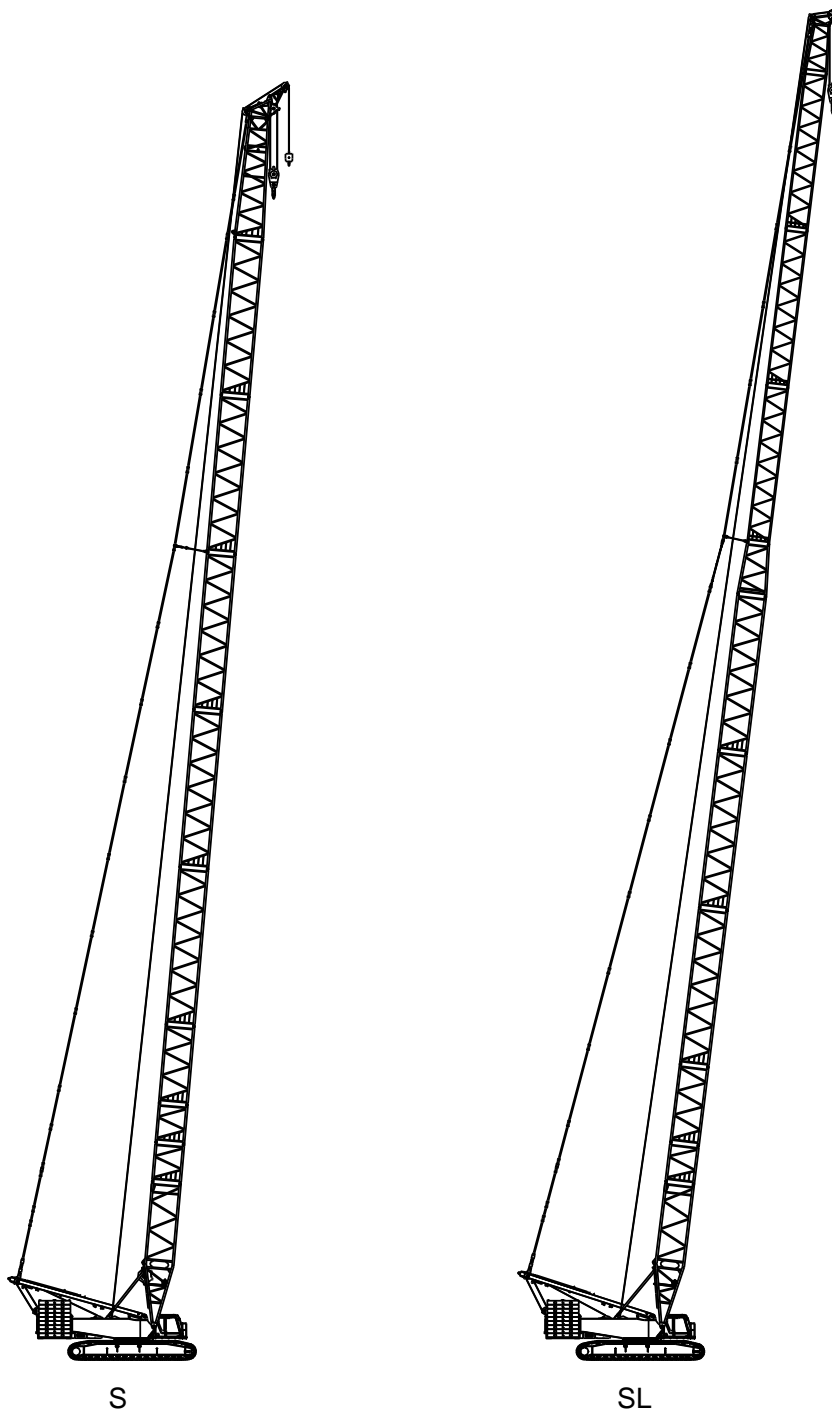
### 1.3 Main technical parameters

Items		Unit	ZCC3000	Remarks
Main boom	Max. lifting capacity × radius	t×m	300×5	
	Main boom length	m	24~93	87~93 (optional)
Light main boom	Max. lifting capacity × radius	t×m	110×11	
	Main boom length	m	67.5~106.5	
Fixed jib	Max. lifting capacity × radius	t×m	130×9	
	Fixed jib length	m	9~36	
	Main boom length (with fixed jib)	m	24~81	
	Max. length of main boom + fixed jib	m	81+9、66+36	
	Fixed jib angle	°	10°、20°、30°	
Luffing jib	Max. lifting capacity × radius	t×m	110×12	
	Luffing jib length	m	24~66	
	Main boom length (with luffing jib)	m	24~60	
	Max. length of main boom + luffing jib	m	60+66	
	Main boom angle	°	85°、75°、65°	
Speed of winch	Speed of hoisting winch 1	m/min	120	The 6 <sup>th</sup> layer
	Speed of hoisting winch 2	m/min	116	The 6 <sup>th</sup> layer
	Speed of derricking winch	m/min	2×50	The 6 <sup>th</sup> layer
Parameters of the whole machine	Slewing speed	rpm	0~1	
	Traveling speed	km/h	0~1	
	Rear counterweight	t	100	
	Central counterweight	t	32	
	Max. transport weight of a single component	t	43.5	With mast and winch
	Total weight with main boom	t	242	With a load hook of 260t
	Average ground pressure	Mpa	0.142	
	Max. dimensions for transport (length × width × height)	m	13.7×3×3.22	
Engine	Manufacturer / Model		WeiChai / WP10G336E344	
	Rated power / rotational speed	kw/rpm	247/1900	
	Max. output torque / rotational speed	Nm/rpm	1550/1400	

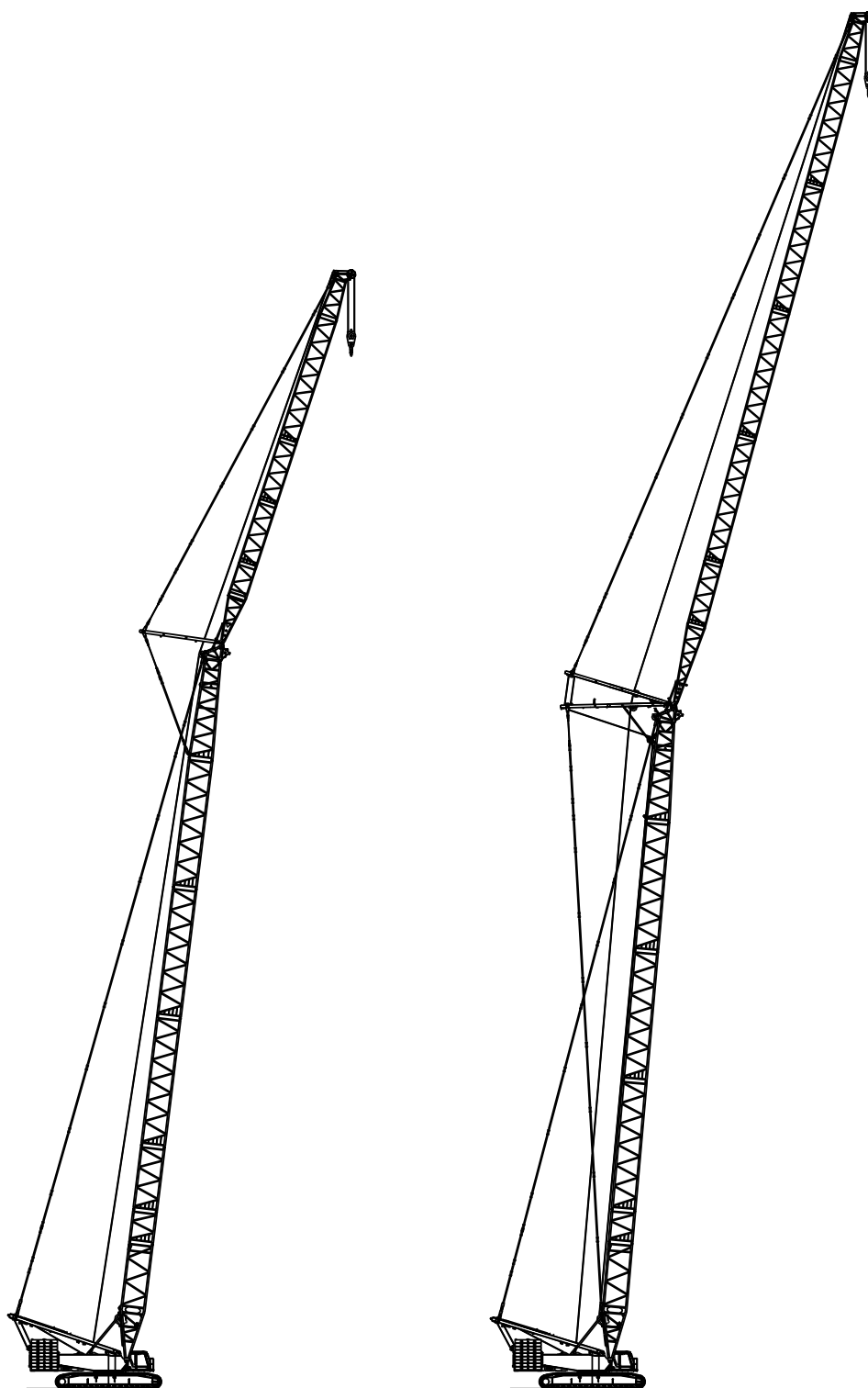
	Exhaust emission		GB III	
Distance between track center x crawler contact length x crawler width		mm	7000x8530x1200	

## 1.4 Description on boom configurations

Boom system is a lattice structure made of high-strength tubes. Anchoring rods are made of high-strength board.



Code	Configuration	Booms
S	Main boom	S=24~93 m
SL	Light main boom	SL=67.5~106.5 m

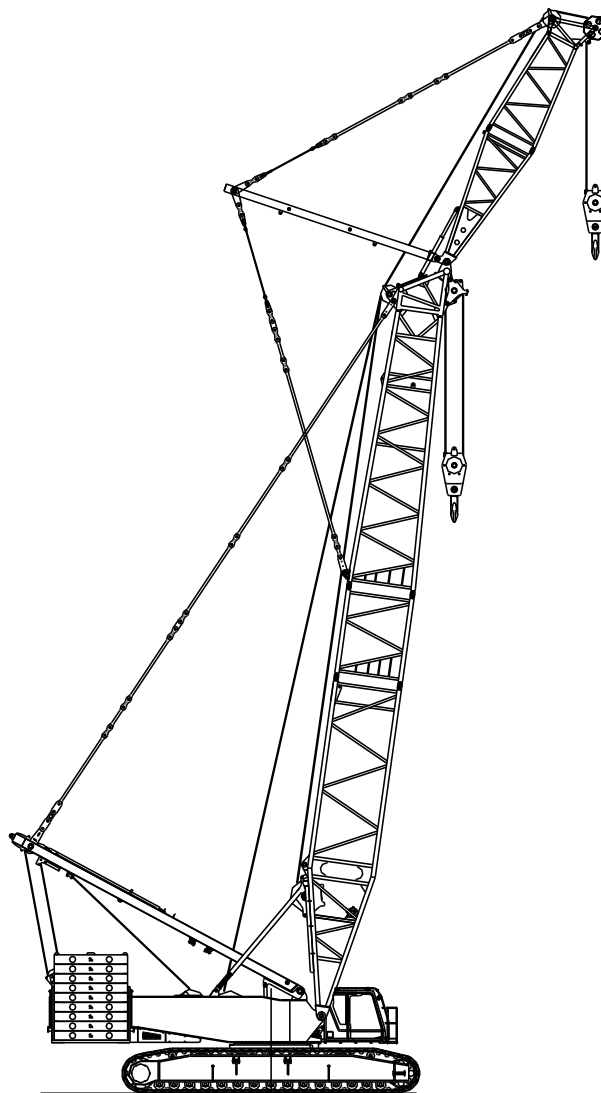


SF

SW

Code	Configuration	Booms
SF	Fixed jib	S=24~66m F=9~36m
SW	Luffing jib	S=24~60m W=24~66m

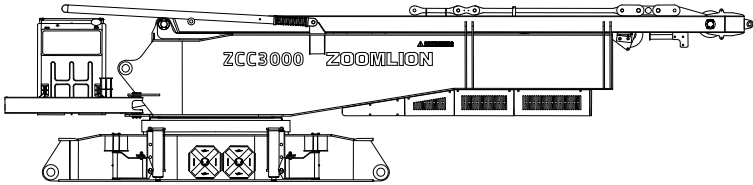
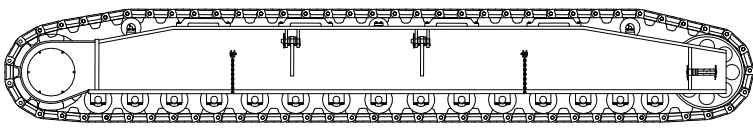
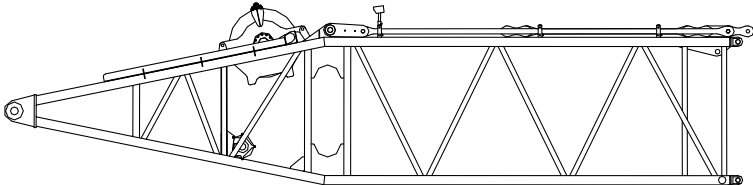
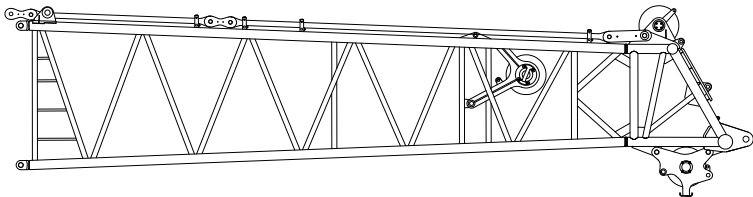
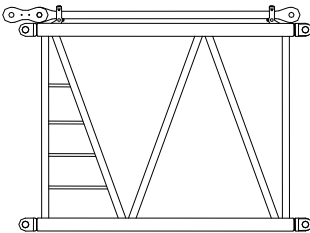


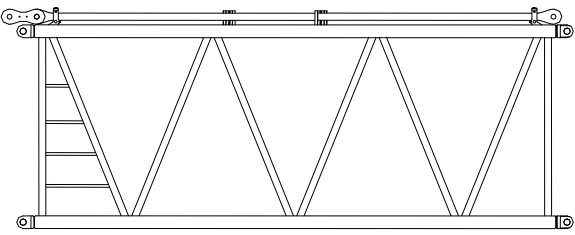
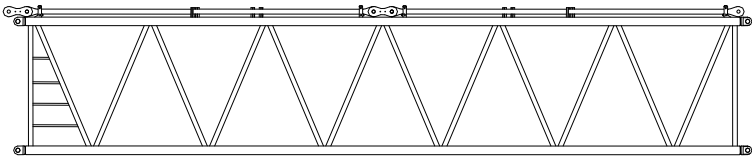
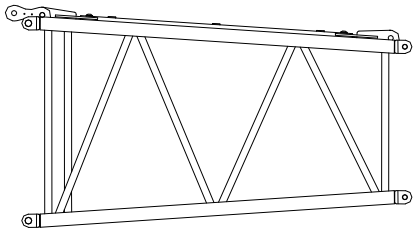
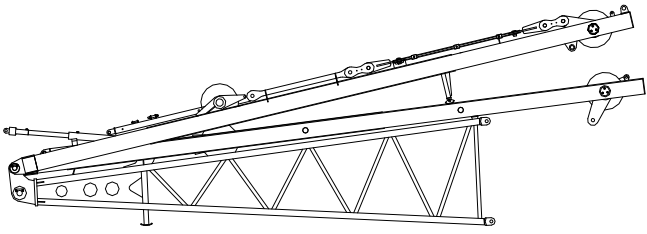
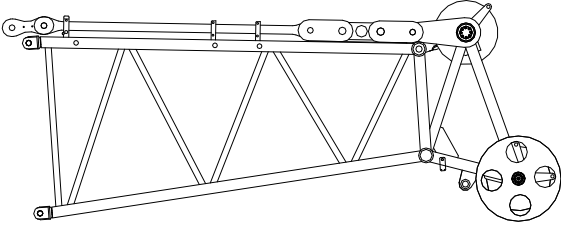
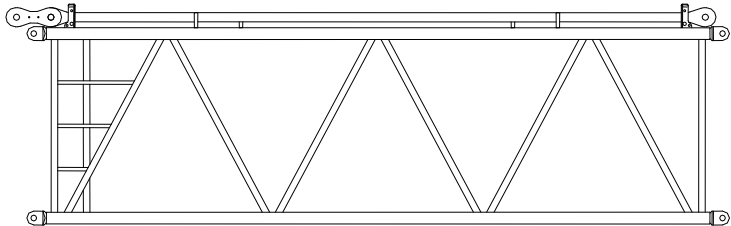


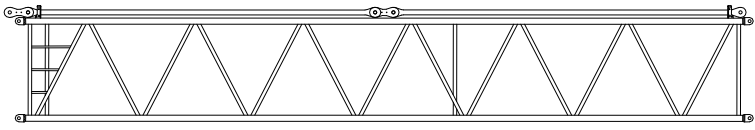
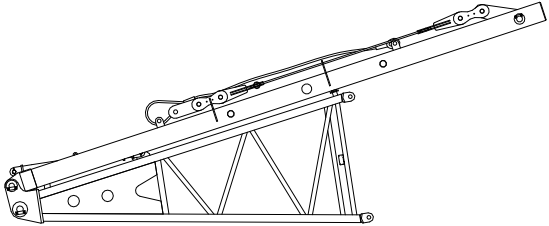
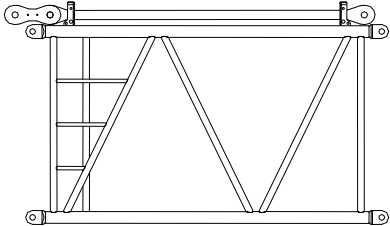
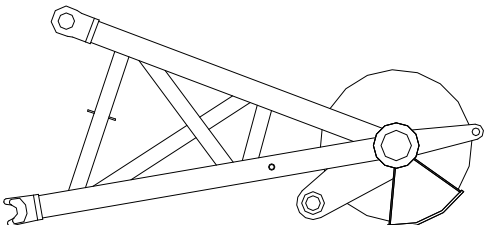
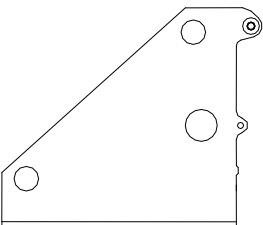

SFV

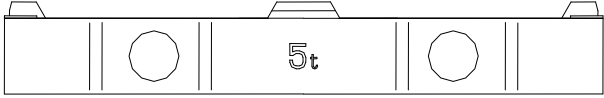
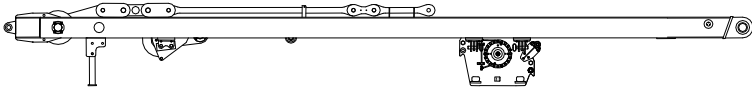
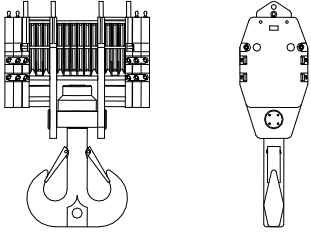
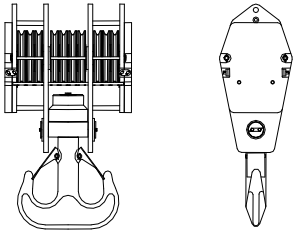
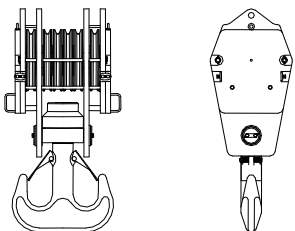
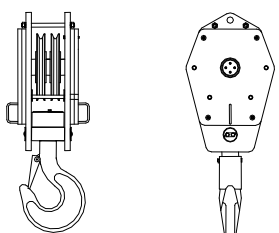
Code	Configuration	Booms
SFV	Configuration for turning over a shield tunneling machine	S=21~30m FV=9m

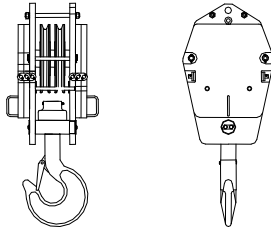
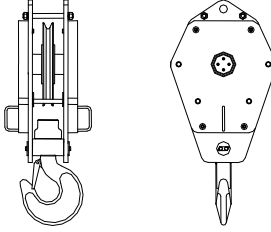
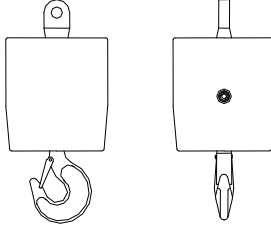
### 1.5 Overall dimensions and weights of major components in transport

Components in transport	Names	Weights/ dimensions
	Basic machine	x1
	Length	13700 mm
	Width	3000 mm
	Height	3220 mm
	Weight	43.5 t
Transport weight is 35.6t without mast		
	Crawler assy.	x2
	Length	9745 mm
	Width	1635 mm
	Height	1465mm
	Weight	25.3 t
	Main boom pivot section	x1
	Length	11400 mm
	Width	2740 mm
	Height	2765 mm
	Weight	8.39 t
With secondary hoisting mechanism (otherwise weights 6.75t)		
	Main boom head	x1
	Length	11250 mm
	Width	2740 mm
	Height	2870 mm
	Weight	5.46 t
	3m main boom intermediate section	x1
	Length	3310 mm
	Width	2740 mm
	Height	2425 mm
	Weight	1.15 t

	6m main boom intermediate section	×1
	Length	6310 mm
	Width	2740 mm
	Height	2425 mm
	Weight	1.95 t
	12m main boom intermediate section	×5
	Length	12310 mm
	Width	2740 mm
	Height	2425 mm
	Weight	3.58 t
	4m reducing section	×1
	Length	4320 mm
	Width	2740 mm
	Height	2360 mm
	Weight	1.31 t
	Luffing jib pivot section	×1
	Length	10240 mm
	Width	2205 mm
	Height	3510 mm
	Weight	6.88 t
With front and rear stays and tilting-back support of luffing jib		
	Luffing jib head	×1
	Length	5240 mm
	Width	2120 mm
	Height	2070 mm
	Weight	1.57 t
	6m luffing jib intermediate section	×1
	Length	6300 mm
	Width	2120 mm
	Height	1920 mm
	Weight	1.02 t

	12m luffing jib intermediate section	×4
	Length	12300 mm
	Width	2120 mm
	Height	1920 mm
	Weight	1.9 t
	Fixed jib pivot section	×1
	Length	7090 mm
	Width	2760 mm
	Height	2890 mm
	Weight	3.25 t
With FA-frame, tilting-back support, etc.		
	3m fixed jib intermediate section	×1
	Length	3300 mm
	Width	2120 mm
	Height	1920 mm
	Weight	0.6 t
	Tip boom	×1
	Length	1900 mm
	Width	1280 mm
	Height	875 mm
	Weight	0.3 t
	Counterweight frame	×2
	Length	2825 mm
	Width	2120 mm
	Height	1825 mm
	Weight	5 t
	Central counterweight	×2
	Length	5230 mm
	Width	1550 mm
	Height	630 mm
	Weight	16 t

	Counterweight plate	x18
	Length	2400 mm
	Width	1700 mm
	Height	365 mm
	Weight	5 t
	Mast + derricking mechanism	x1
	Length	10940 mm
	Width	2355 mm
	Height	1195 mm
	Weight	7.9 t
With main derricking rope		
	Load hook of 300t	x1
	Length	1705 mm
	Width	800 mm
	Height	2626 mm
	Weight	6.91 t
	Load hook of 260t	x1
	Length	1400 mm
	Width	805 mm
	Height	2480 mm
	Weight	4.24 t
	Load hook of 160/100t	x1
	Length	1130 mm
	Width	805 mm
	Height	2195 mm
	Weight	2.87 t
	Load hook of 65t	x1
	Length	746 mm
	Width	805 mm
	Height	1990 mm
	Weight	1.82 t

	Load hook of 50t	x1
	Length	802 mm
	Width	805 mm
	Height	1965 mm
	Weight	1.71 t
	Load hook of 30t	x1
	Length	630 mm
	Width	775 mm
	Height	1635 mm
	Weight	1.1 t
	Load hook of 16t	x1
	Length	530 mm
	Width	530 mm
	Weight	0.9 t

## 2. Technical instruction

### 2.1 Boom system

Boom system is a lattice structure, boom sections of which are made of high-strength seamless steel tubes and connected by pin spindles.

Boom system consists of main boom, luffing jib, fixed jib, luffing jib stay, FA-frame, and anchoring rod, etc. Lattice structure is made of high-strength steel tube; door-shaped structure is made of high-strength steel board; anchoring rod is made of high-strength board.

#### 2.1.1 Main boom

Main boom is a spatial lattice structure made of high-strength steel tubes with a uniform cross-section at the center and variable cross-sections at both ends.

Main boom length: 24~93 m

#### 2.1.2 Luffing jib

Luffing jib is a spatial lattice structure made of high-strength steel tubes with a uniform cross-section at the center and variable cross-sections at both ends.

Luffing jib length: 24~66 m

#### 2.1.3 Fixed jib

Fixed jib is a spatial lattice structure made of high-strength steel tubes with a uniform cross-section at the center and variable cross-sections at both ends.

Intermediate sections and boom heads of fixed jib and luffing jib can be commonly used.

Fixed jib length: 9~36 m

#### 2.1.4 Light boom

It consists of a main boom and a luffing jib, which is connected by a reducing section in the middle. The reducing section is a spatial lattice structure made of high-strength steel tubes with variable cross-section.

Light boom length: 67.5~106.5 m

#### 2.1.5 Front and rear stays of luffing jib

The stay is a door-shaped structure made of high-strength steel board.

Length of front stay of luffing jib: 9.5 m

Length of rear stay of luffing jib: 9.5 m

#### 2.1.6 FA-frame

FA-frame is a door-shaped structure made of high-strength steel board.

Length of FA-frame: 7 m

#### 2.1.7 Configuration for turning over a shield tunneling machine

Boom sections of the configuration for turning over a shield tunneling machine and the fixed jib configuration can be commonly used.

Main boom length: 21~30 m

Fixed jib length: 9 m

## 2.2 Mechanisms

### 2.2.1 Primary and secondary hoisting mechanisms

Primary and secondary hoisting mechanism consist of winch reducer, motor, normally-closed brake, wire rope, over-unwinding protection device, etc. Both mechanisms can be operated in high and low speeds. The drum has a LEBUS groove and the wire rope is an anti-twisting rope with a special structure.

Mechanism	Item	Parameter	Remarks
Primary hoisting winch	Wire rope diameter	28mm	
	Wire rope length	600m	
	Single rope tension	160kN	
	Max. speed	120m/min	(the 6 <sup>th</sup> layer)
Secondary hoisting winch	Wire rope diameter	28mm	
	Wire rope length	350m	
	Single rope tension	140kN	
	Max. speed	116m/min	(the 6 <sup>th</sup> layer)

### 2.2.2 Derricking mechanism

Derricking winch consists of winch reducer, motor, normally-closed brake, wire rope, over-unwinding protection device, etc. The drum has a duplex LEBUS groove and the wire rope is derricking rope of exclusive use.

Mechanism	Item	Parameter	Remarks
Derricking mechanism	Wire rope diameter	24mm	
	Wire rope length	490m	
	Single rope tension	10.4kN	
	Max. speed	2×50m/min	(the 6 <sup>th</sup> layer)

### 2.2.3 Slewing mechanism

Slewing mechanism consists of reducer, motor, normally-closed brake, slewing bearing, etc. Superstructure realizes continuous rotation for 360° through the slewing bearing driven by the pinion of slewing reducer. Slewing mechanism has the function of free swing, which reduces or eliminates lateral force on boom section caused by the fact that the central gravity of load and wire rope are not in the same vertical line.

Infinitely variable slewing speed: 0~1 rpm

For safety's sake, the slewing mechanism can be locked by mechanical locking device in the



front of slewing table during transportation.

#### **2.2.4 Slewing bearing**

The three-row roller external-gearing slewing bearing guarantees the stability and accuracy of slewing with its strong bearing capacity and high precision.

#### **2.2.5 Traveling mechanism**

Both the left and the right crawlers have their own traveling reducer and motor. Movements of the two crawlers, such as traveling straight, turning with one crawler, differential steering, pivot steering and traveling with a load, are controlled by two levers respectively. Both crawlers are of high mobility and flexibility.

Traveling speed: 0~1.0km/h

Gradeability: 30%

Crawler tensioning device: it is tensioned through a spiral lifting jack, which is fast, convenient and reliable.

#### **2.3.6 Mast erecting mechanism**

Mast erecting system is composed of mast, mast erecting cylinder, auxiliary hydraulic system, etc. When mast is used for self-assembly or dismantling (or transition), it must be erected for over 90° from the horizontal level so as to connect anchoring rods and assemble boom sections, crawler assembly and counterweight.

### **2.3 Systems**

#### **2.3.1 Hydraulic system**

Hydraulic system comprises main pump, slewing pump, constant pressure pump, gear pump, main valve, motor, radiator, and other hydraulic components. The main oil line is an open loop, controlling the primary hoisting winch, the secondary hoisting winch, derricking winch, and traveling mechanism. Different output speeds can be controlled proportionally by the lever. The oil line for slewing is a closed loop, which guarantees that the mechanism is steady and stable in slewing with good micro-motion performance. Cylinders are controlled by auxiliary oil lines.

Main pump and slewing pump are electro-hydraulic proportional piston pump

Constant pressure pump controls auxiliary movements while gear pump provides oil for controlling.

Main valve is an electro-hydraulic proportional pilot control valve, which controls flow proportionally for compound movement.

Hydraulic oil tank capacity: 720 L

Radiator is a cooling fan driven by motor.

#### **2.3.2 Control system**

Engine is controlled by an intelligent electronic control system independently. With CAN bussing technology, engine, PLC, moment limiter, digital display, encoder, and bus operation lever are connected effectively. It has such functions failure detection and diagnosis, GPS/GPRS positioning, and remote fault diagnosis.

### **2.3.3 Power system**

WeiChai electronic fuel injection engine with CAN bus interface

Model: WP10G336E344

Rated output power / rotational speed: 247 kw/1900 rpm

Max. output torque/rotational speed: 1550Nm/1400rpm

Exhaust emission standard: GB 20891-2014

Fuel oil tank: 700L (with a direct oil-filling pump )

### **2.3.4 Digital display system**

Large LCD, having Chinese and English versions, displays all parameters of engine and hydraulic system and monitors working state of the crane at all times. The system sends out yellow or red warning signal when abnormal conditions occur.

## **2.4 Safety devices**

### **2.4.1 Moment limiter**

It is composed of digital LCD, central unit, signal converter, sensor and so on. When actual load moment reaches 90% of the maximum permissible load moment, an acoustic alarm will sound. When actual load moment reaches the maximum permissible load moment, an acoustic alarm will sound, and the dangerous movements will be switched off automatically so as to avoid accidents caused by overloading of crane, thus ensuring normal and safe crane operation. The following data can be displayed on the digital LCD: moment ratio, main boom angle, main boom length, working radius, actual load, maximum permissible lifting load, maximum permissible lifting height, and wind speed at boom head.

### **2.4.2 Overflow valves of the hydraulic system**

Overflow valves of the hydraulic system restrain abnormal high pressure in the loop so as to avoid damage on hydraulic oil-pump and motor and prevent the system from being overloaded.

### **2.4.3 Hoisting limiter**

Components fixed on boom head, like limit switch and hoisting limit weight, are used to prevent over-hoisting of load hook. Limit switch will send out a signal when load hook is lifted to a certain height. Electrical system will cut off the lifting of load hook automatically and send out a sound-light alarm through buzzer and display in the operator's cab so as to avoid over-winding of load hook.

### **2.4.4 Angle indicator**

It is fitted at the lower rear end of boom pivot section (i.e. on the right side of the operator's cab). The operator can clearly see the boom angle from inside the cab.

### **2.4.5 Derricking limiter**

Controlled by load moment limiter and limit switch, it is able detect the limit elevation of the heavy boom and cut off derricking automatically with a sound-light alarm.

### **2.4.6 Main boom tilting-back support**

It is spring-loaded tilting-back support with the inner pipe inserted into the outer pipe. It is mounted on main boom pivot section to prevent main boom from tilting backward.

### **2.4.7 Crane inclinometer**

An electronic inclinometer is used to indicate the "leveled position" of the crane. The operator can observe the inclination of crane from the screen at all times. A bubble level is also equipped on the crane.

### **2.4.8 Safety catch**

It is a device used to protect the load from jumping out from the hook.

### **2.4.9 Lowering limiter**

It is a device ensuring that three windings of wire rope on the drum are maintained at all times

during operation. When there are only three windings of wire rope left on the drum, the lowering limit switch will be triggered, the buzzer will sound, and the crane movement “reel off winch” will be switched off.

#### **2.4.10 Anemometer**

An electronic device used to indicate the actual wind speed at boom head

#### **2.4.11 Emergency stop button**

The engine can be shut down and all movements can be stopped if the button is pressed down for emergent conditions.

#### **2.4.12 Tricolor warning light**

The warning light, by showing red, yellow and green colors, can indicate loading status. The green color means the load ratio is less than 90%, the yellow color means the load ratio is between 90% and 100%, and the red color means that the load ratio has exceeded 100% and the crane is overloaded.

#### **2.4.13 Monitoring system**

Three video cameras: monitor situations of the winch on slewing table, rear end of the crane and the winch on main boom pivot section.

A high-definition spherical camera: installed on main boom head is used to monitor the lifting condition.

Display: switch different monitoring screens through a press-key.

The system has the function of storing monitoring records.

### **2.5 Operator's cab**

The operator's cab is an all-steer structure with a width of 1250mm. It is equipped with tempering glasses all around and laminated glasses on the front and the top. It is also equipped with a right sun shield, an adjustable seat, a windscreen wiper, control levers, a display of load moment, a digital display system, all kinds of switches, an air-conditioner, a fan, a light, and a fire extinguisher, etc. The operator's cab can be pitched up for 20° with a broad view. With upgraded designs of ergonomics, the operation can be safe and comfortable.

### **2.6 吊钩 Load hook**

With load hooks and safety catch devices.

Load hook of 300t: equipped with 12 pulleys (optional);

Load hook of 260t: equipped with 10 pulleys (optional);

Load hook of 160/100t: equipped with 6 pulleys (optional);

Load hook of 300t: equipped with 12 pulleys (optional);

Load hook of 50t: equipped with 2 pulleys (optional);

Load hook of 30t: equipped with 1 pulley (optional);

Load hook of 16t: no pulley (optional).

## **2.7 Counterweight**

### **2.7.1 Rear counterweight**

It comprises counterweight frame and counterweight plate, weighting 100t.

Counterweight frame: 5t×2;

Counterweight plate: 5t×18.

(110t and 120t are optional specifications)

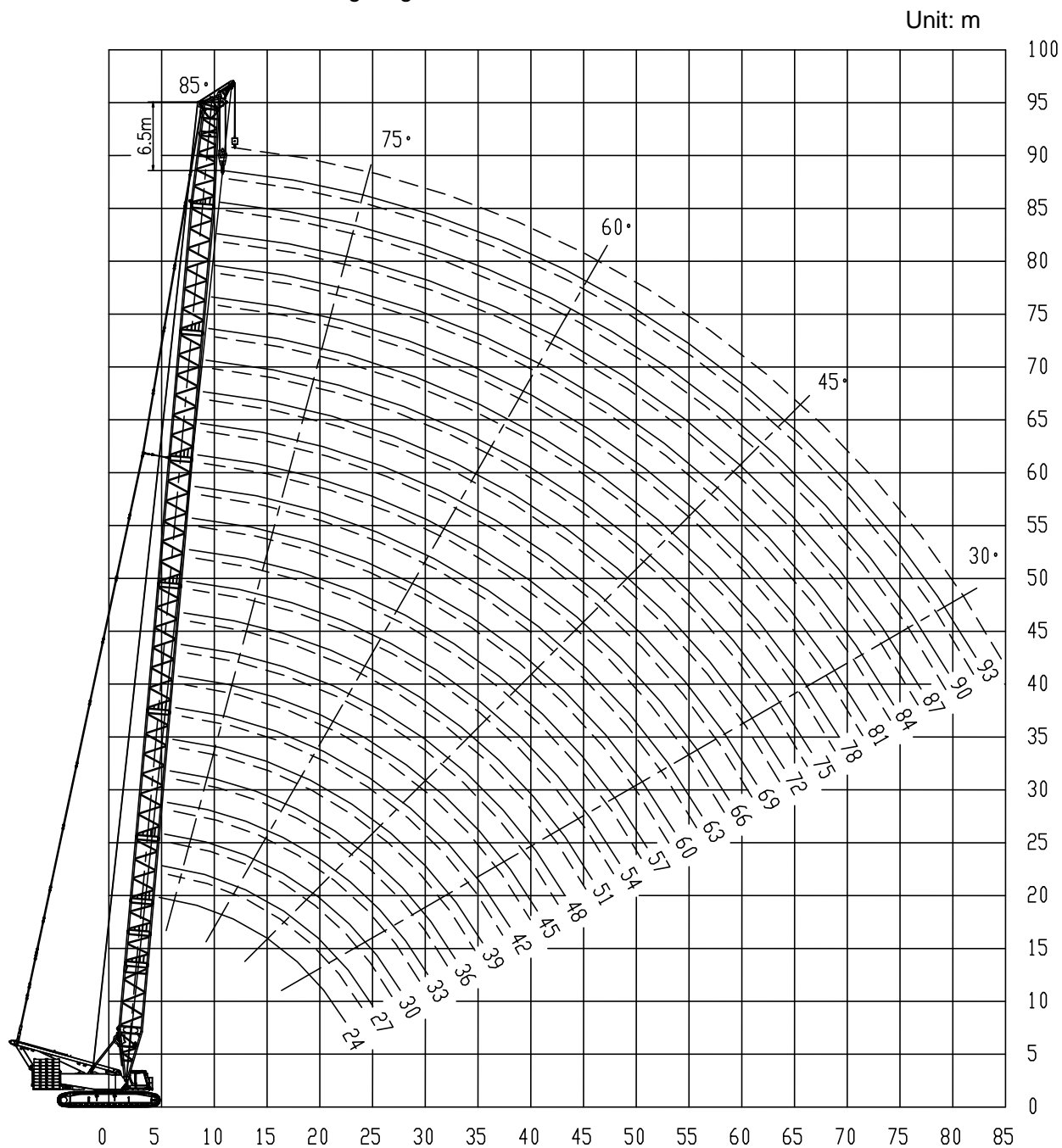
### **2.7.2 Central counterweight**

Central counterweight: 16t×2.

### 3. Lifting performance

#### 3.1 Main boom configuration

##### 3.1.1 Characteristic curve of lifting height of main boom



**Note:**

1. X-axis indicates the working radius in meters while Y-axis indicates the lifting height in meters.
2. Boom deflection is not considered in this curve.

## 3.1.2 Boom lengths of main boom configuration

Boom Main boom length	Main boom pivot section 11m	Main boom intermediate section 3m	Main boom intermediate section 6m	Main boom intermediate section 12m	Main boom head 10m
24	1	1	0	0	1
27	1	0	1	0	1
30	1	1	1	0	1
33	1	0	0	1	1
36	1	1	0	1	1
39	1	0	1	1	1
42	1	1	1	1	1
45	1	0	0	2	1
48	1	1	0	2	1
51	1	0	1	2	1
54	1	1	1	2	1
57	1	0	0	3	1
60	1	1	0	3	1
63	1	0	1	3	1
66	1	1	1	3	1
69	1	0	0	4	1
72	1	1	0	4	1
75	1	0	1	4	1
78	1	1	1	4	1
81	1	0	0	5	1
84	1	1	0	5	1
87*	1	0	1	5	1
90*	1	1	1	5	1
93*	1	0	2	5	1

**Note: 1. Main boom lengths of 87-93m are optional.**

**2. Intermediate tensioner is equipped for main boom lengths of 87-93m**

### 3.1.3 Lifting capacity chart for main boom configuration

Lifting capacity chart for main boom configuration  
Rear counterweight: 100t Central counterweight: 32t

Radius m	Main boom length m												Radius m
	24	27	30	33	36	39	42	45	48	51	54	57	
5	300												5
6	252	251	251	238	224								6
7	218	217	217	217	217	210	196	182	168				7
8	192	191	191	191	191	190	190	182	168	153	138	138	8
9	171	171	170	170	170	170	169	169	168	153	138	138	9
10	154	154	154	154	153	153	153	153	150	147	138	138	10
11	140	140	139	139	139	139	139	138	135	132	129	127	11
12	127	127	127	127	126	126	126	125	122	120	118	115	12
14	107	107	107	107	106	106	106	105	103	101	99.3	97.5	14
16	90	90	90	90	90	90	90	90	88.5	86.9	85.5	84.2	16
18	77.2	77.2	77.2	77.2	76.3	76.3	76.3	76.3	76.3	74.8	74.8	73.7	18
20	66.9	66.9	66.9	66.9	65.9	65.9	65.9	65.9	65.9	64.4	64.4	64.4	20
22	58	58	58	58	58	58	58	58	57.5	56.5	56.5	56.5	22
24		52.6	51.7	51.7	51.7	51.7	51.7	51.7	51.1	51.1	50.1	50.1	24
26			46.2	46.2	46.2	46.2	46.2	46.2	46.2	45.3	45.3	45.3	26
28			42.3	42.3	42.3	41.3	41.3	41.3	41.3	40.7	40.7	40.7	28
30				38.3	38.3	38.3	37.4	37.4	37.4	37.4	36.8	36.8	30
32					34.9	34.9	34.4	34.4	34.4	33.4	33.4	33.4	32
34						31.9	31.9	31.6	31	31	31	30.4	34
36						29.5	29.5	29.1	28.6	28.6	28	28	36
38							27	27	26.5	26.5	26.1	25.5	38
40								24.6	24.6	24.6	24	24	40
44										21.2	20.7	20.7	44
48											18	17.6	48



Lifting capacity chart for main boom configuration  
Rear counterweight: 100t Central counterweight: 32t

Radius m	Main boom length m												Radius m
	60	63	66	69	72	75	78	81	84	87	90	93	
8	124												8
9	124	124	109	109									9
10	124	124	109	109	109	93.6	93.6	93.6					10
11	124	122	109	109	109	93.6	93.6	93.6	93.3	78.4	78.4	76.6	11
12	113	111	109	107	105	93.6	93.6	93.6	91.7	78.4	78.4	75.3	12
14	95.9	94.3	92.6	91.1	89.6	88.2	86.8	85.4	84.1	78.4	77.1	72.5	14
16	82.8	81.5	80.2	78.9	77.8	76.5	75.3	74.2	73.1	72.1	71	69.7	16
18	72.5	71.5	70.4	69.3	68.3	67.2	66.3	65.4	64.3	63.5	62.5	61.6	18
20	64.3	63.4	62.4	61.5	60.6	59.8	58.8	58	57.2	56.4	55.5	54.8	20
22	56.5	56.5	55.6	55.1	54.3	53.5	52.7	52	51.2	50.5	49.7	49.1	22
24	50.1	49.2	49.2	49.2	48.9	48.2	47.5	46.8	46.1	45.5	44.8	44.2	24
26	44.7	43.8	43.8	43.8	43.8	42.8	42.8	42.4	41.8	41.2	40.5	39.8	26
28	39.8	39.8	39.8	38.9	38.9	38.9	38.3	38.3	37.4	37.4	36.8	35.9	28
30	35.9	35.9	35.9	35.9	34.9	34.9	34.9	34.4	34.4	33.4	33.4	32.5	30
32	33.1	32.5	32.5	32.5	31.9	31.9	31	31	31	30.4	30.4	29.5	32
34	30.4	30.1	29.5	29.5	29.1	28.6	28.6	28.6	28	27.6	27	27	34
36	28	27.6	27	27	26.5	26.5	26.1	25.5	25.5	25.2	24.6	24.6	36
38	25.5	25.5	24.6	24.6	24.6	24	24	23.7	23.1	23.1	22.7	22.2	38
40	23.7	23.1	23.1	22.7	22.2	22.2	21.6	21.6	21.2	20.7	20.7	20.1	40
44	20.1	20.1	19.7	19.2	19.2	18.8	18.2	18.2	17.6	17.6	17.3	16.7	44
48	17.6	17.3	16.7	16.7	16.4	15.8	15.8	15.2	15.2	14.8	14.3	14.3	48
52	15.2	14.8	14.6	14.3	14.1	13.7	13.3	13.3	12.8	12.8	12.2	11.8	52
56		12.8	12.8	12.4	12.2	11.8	11.3	11.3	10.9	10.7	10.3	10.1	56
60				10.9	10.3	10.1	9.8	9.4	9.2	8.8	8.5	8.5	60
64					8.8	8.8	8.5	7.9	7.9	7.3	7	7	64
68							7	7	6.4	6	5.8	5.5	68
72									5.8	5.5	4.9	4.7	72
76										4.2	3.9	3.7	76
80											3.2	3	80

## Lifting capacity chart for main boom configuration (with tip boom)

Rear counterweight: 100t Central counterweight: 32t

Radius m	Main boom length m												Radius m
	24	27	30	33	36	39	42	45	48	51	54	57	
7	28	28											7
8	28	28	28	28	28								8
9	28	28	28	28	28	28	28	28	28				9
10	28	28	28	28	28	28	28	28	28	28	28	28	10
11	28	28	28	28	28	28	28	28	28	28	28	28	11
12	28	28	28	28	28	28	28	28	28	28	28	28	12
14	28	28	28	28	28	28	28	28	28	28	28	28	14
16	28	28	28	28	28	28	28	28	28	28	28	28	16
18	28	28	28	28	28	28	28	28	28	28	28	28	18
20	28	28	28	28	28	28	28	28	28	28	28	28	20
22	28	28	28	28	28	28	28	28	28	28	28	28	22
24		28	28	28	28	28	28	28	28	28	28	28	24
26			28	28	28	28	28	28	28	28	28	28	26
28			28	28	28	28	28	28	28	28	28	28	28
30				28	28	28	28	28	28	28	28	28	30
32					28	28	28	28	28	28	27.4	27.4	27.4
34						26.4	25.9	25.6	25	25	25	24.4	34
36							24	23.5	23.1	22.6	22.6	22	22
38								21	21	20.5	20.5	20.1	19.5
40									18.6	18.6	18.6	18	18
44											15.2	14.7	14.7
48												12	11.6

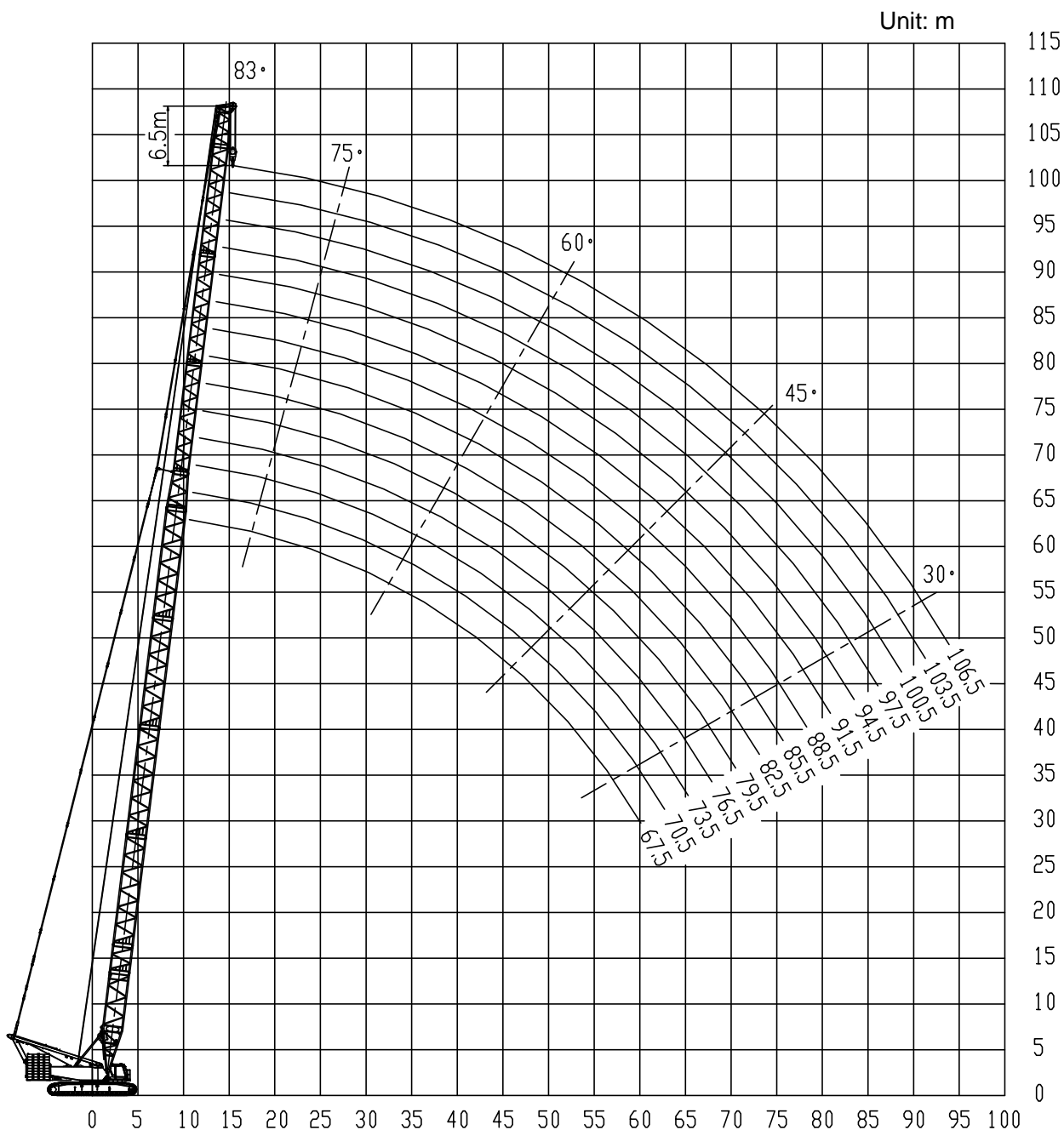
## Lifting capacity chart for main boom configuration (with tip boom)

Rear counterweight: 100t Central counterweight: 32t

Radius m	Main boom length m												Radius m
	60	63	66	69	72	75	78	81	84	87	90	93	
11	28	28	28										11
12	28	28	28	28	28	28							12
14	28	28	28	28	28	28	28	28	28	28	28	28	14
16	28	28	28	28	28	28	28	28	28	28	28	28	16
18	28	28	28	28	28	28	28	28	28	28	28	28	18
20	28	28	28	28	28	28	28	28	28	28	28	28	20
22	28	28	28	28	28	28	28	28	28	28	28	28	22
24	28	28	28	28	28	28	28	28	28	28	28	28	24
26	28	28	28	28	28	28	28	28	28	28	28	28	26
28	28	28	28	28	28	28	28	28	28	28	28	28	28
30	28	28	28	28	28	28	28	28	28	27.4	27.4	26.5	30
32	27.1	26.5	26.5	26.5	25.9	25.9	25	25	25	24.4	24.4	23.5	32
34	24.4	24.1	23.5	23.5	23.1	22.6	22.6	22.6	22	21.6	21	21	34
36	22	21.6	21	21	20.5	20.5	20.1	19.5	19.5	19.2	18.6	18.6	36
38	19.5	19.5	18.6	18.6	18.6	18	18	17.7	17.1	17.1	16.7	16.2	38
40	17.7	17.1	17.1	16.7	16.2	16.2	15.6	15.6	15.2	14.7	14.7	14.1	40
44	14.1	14.1	13.7	13.2	13.2	12.8	12.2	12.2	11.6	11.6	11.3	10.7	44
48	11.6	11.3	10.7	10.7	10.4	9.8	9.8	9.2	9.2	8.8	8.3	8.3	48
52	9.2	8.8	8.6	8.3	8.1	7.7	7.3	7.3	6.8	6.8	6.2	5.8	52
56		6.8	6.8	6.4	6.2	5.8	5.3	5.3	4.9	4.7	4.3	4.1	56
60				4.9	4.3	4.1	3.8	3.4	3.2	2.8	2.5	2.5	60
64					2.8	2.8	2.5						64

### 3.2 Light main boom configuration

#### 3.2.1 Characteristic curve of lifting height of light main boom



**Note:**

1. X-axis indicates the working radius in meters while Y-axis indicates the lifting height in meters.
2. Boom deflection is not considered in this curve.

## 3.2.2 Boom lengths of light main boom configuration

Boom Main boom length	Main boom pivot section 11m	Main boom intermediate section 3m	Main boom intermediate section 6m	Main boom intermediate section 12m	4m reducing section	6m derricking jib	12m derricking jib	4.5m derricking jib
67.5	1	0	0	4	1	0	0	1
70.5	1	1	0	4	1	0	0	1
73.5	1	0	0	4	1	1	0	1
76.5	1	1	0	4	1	1	0	1
79.5	1	0	0	4	1	0	1	1
82.5	1	1	0	4	1	0	1	1
85.5*	1	0	0	4	1	1	1	1
88.5*	1	1	0	4	1	1	1	1
91.5*	1	0	0	4	1	0	2	1
94.5*	1	1	0	4	1	0	2	1
97.5*	1	0	0	4	1	1	2	1
100.5*	1	1	0	4	1	1	2	1
103.5*	1	0	0	4	1	0	3	1
106.5*	1	1	0	4	1	0	3	1

Note: Intermediate tensioner is equipped for light main boom lengths of 85.5-106.5m.

### 3.2.3 Lifting capacity chart of light main boom configuration

Lifting capacity chart of light main boom configuration  
Rear counterweight: 100t Central counterweight: 32t

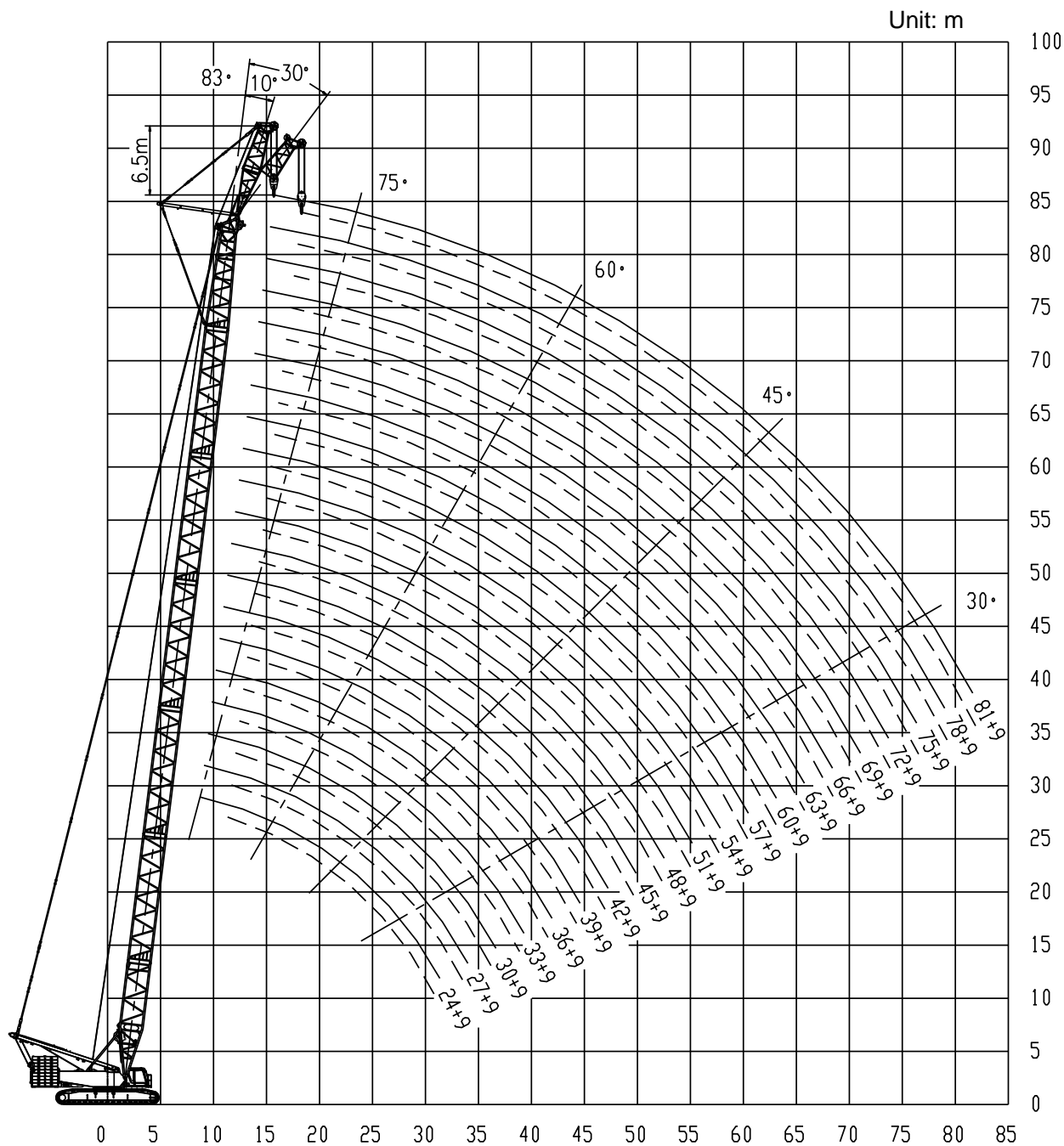
Radius m	Light main boom length m							Radius m
	67.5	70.5	73.5	76.5	79.5	82.5	85.5	
11	110	109						11
12	106	104	104	93.6	93.3			12
14	87.8	86.4	86.4	84	84	83.1	71.2	14
16	74.1	74.1	73.2	71.8	71.8	70.3	68.7	16
18	64.2	64.2	63.3	61.8	61.8	61.8	60.4	18
20	57.2	55.7	55.7	54.3	54.3	54.3	53.4	20
22	50.5	49.6	49.6	48.1	48.1	48.1	48.1	22
24	44.4	44.4	44.4	43.5	43.5	42.9	42.9	24
26	39.7	39.7	39.7	39.7	39.7	39.1	38.2	26
28	35.9	35.9	35.9	35.3	35.9	35.3	35.3	28
30	32.6	32.1	32.1	32.1	32.1	32.1	32.1	30
32	29.8	29.2	29.8	29.2	29.8	29.2	29.2	32
34	27.4	26.9	26.9	26.9	26.9	26.9	26.9	34
36	25.1	24.5	24.5	24.5	24.5	24.5	24.5	36
38	23.1	22.7	23.1	22.7	23.1	22.7	22.7	38
40	21.3	20.7	21.3	20.7	21.3	20.7	20.7	40
44	18.4	18	18.4	18	18	18	18	44
48	16	15.7	15.7	15.5	15.7	15.2	15.7	48
52	13.7	13.7	13.7	13.5	13.7	13.2	13.5	52
56	12.3	11.9	11.9	11.7	11.9	11.7	11.9	56
60		10.5	10.5	10.3	10.4	9.8	10.3	60
64			9.4	9	8.6	8	9	64
68					7	6.5	7.9	68
72						5	6.7	72

Lifting capacity chart of light main boom configuration  
Rear counterweight: 100t Central counterweight: 32t

Radius m	Light main boom length m							Radius m
	88.5	91.5	94.5	97.5	100.5	103.5	106.5	
14	69.3	52.6	53	41				14
16	67.1	49.6	50.1	38.2	38	30.1	30	16
18	60.4	47.4	47.9	35.8	35.9	27.7	27.9	18
20	53.4	44.9	45.5	33.7	33.8	25.9	26	20
22	47.2	42.8	43.7	31.7	31.8	24.2	24.4	22
24	42	40.8	41.1	30	30.3	22.6	22.9	24
26	38.2	38.2	37.3	28.4	28.7	21.3	21.5	26
28	34.4	34.4	33.5	26.9	27.3	20	20.4	28
30	31.2	31.2	31.2	25.6	26	18.9	19.1	30
32	29.2	29.2	28.3	24.5	24.9	17.9	18.2	32
34	26.5	26.9	26	23.3	23.5	17.1	17.3	34
36	24.5	24.5	24.2	22.4	21.8	16.2	16.4	36
38	22.2	22.7	22.2	21.5	20.2	15.4	15.7	38
40	20.7	20.7	20.4	20	18.8	14.7	14.9	40
44	17.5	18	17.5	17.5	16.3	13.4	12.9	44
48	15.2	15.2	15.2	15.2	14.3	12	11.2	48
52	13.2	13.2	13.2	13.2	12.5	10.4	9.7	52
56	11.4	11.7	11.4	11.4	11	9.1	8.4	56
60	9.9	10.3	9.9	9.9	9.7	7.9	7.2	60
64	8.5	8.8	8.5	8.5	8.1	6.9	6.2	64
68	7.6	7.6	7.4	7.6	7	6	5.3	68
72	6.5	6.7	6.5	6.5	6.1	5.2	4.5	72
76	5.6	5.8	5.6	5.6	5.2	4.4	3.8	76
80			4.7	4.7	4.3	3.8	3.2	80
84				4.1	3.8	3.2	2.6	84

### 3.3 Fixed jib configuration

#### 3.3.1 Characteristic curve of lifting height of fixed jib



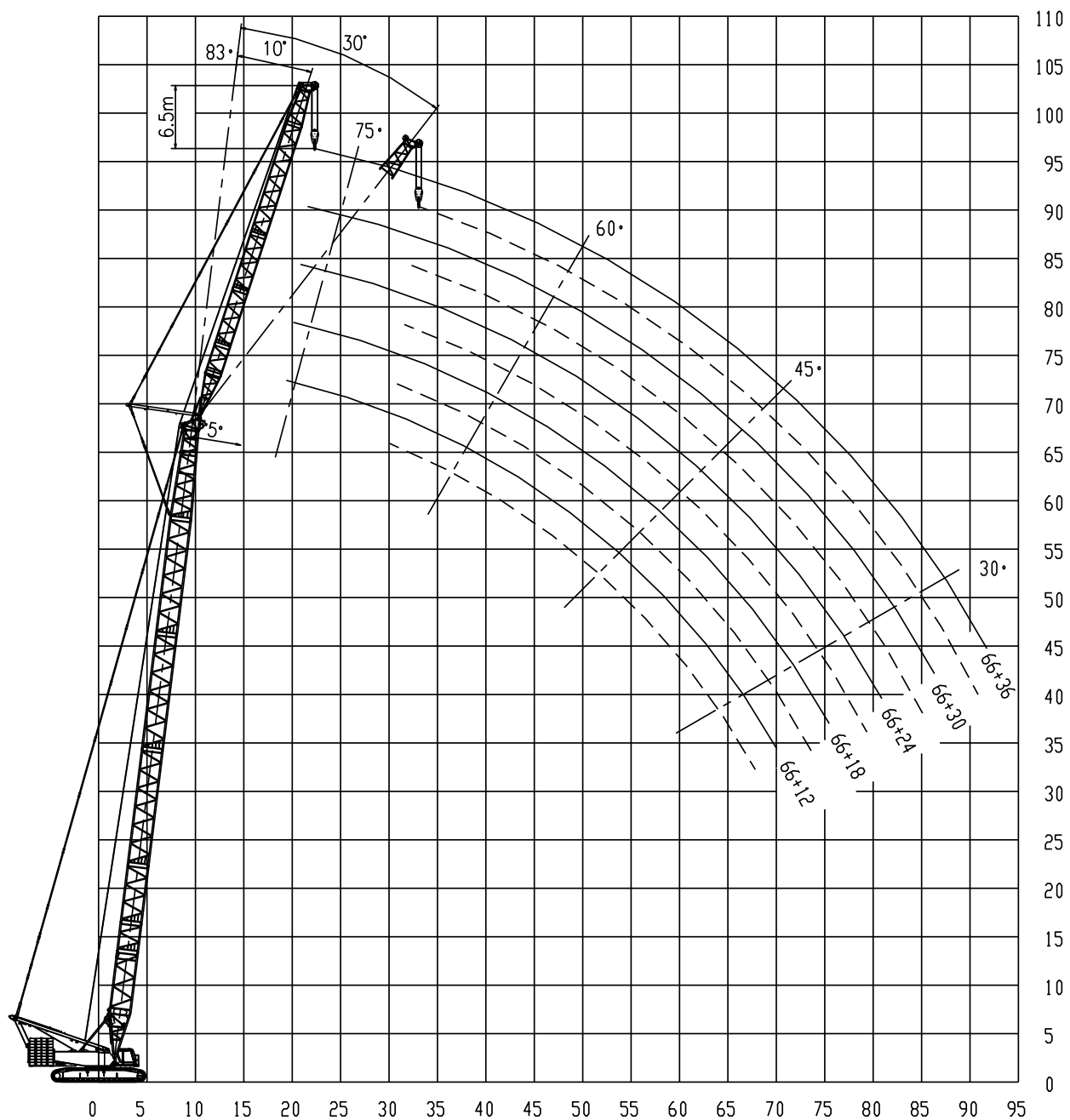
**Note:**

1. X-axis indicates the working radius in meters while Y-axis indicates the lifting height in meters.

2. Boom deflection is not considered in this curve.



Unit: m



**Note:**

1. X-axis indicates the working radius in meters while Y-axis indicates the lifting height in meters.
2. Boom deflection is not considered in this curve.

### 3.3.2 Boom lengths of fixed jib configuration

Fixed jib length \ Boom	Fixed jib pivot section 4.5m	Fixed jib intermediate section 3m	Fixed jib intermediate section 6m	Fixed jib intermediate section 12m	Fixed jib head 4.5m
9	1	0	0	0	1
12	1	1	0	0	1
18	1	1	1	0	1
24	1	1	0	1	1
30	1	1	1	1	1
36	1	1	0	2	1

### 3.3.3 Lifting capacity chart of fixed jib configuration

Lifting capacity chart of fixed jib configuration

Rear counterweight: 100t Central counterweight: 32t Included angle of main boom and fixed jib:

10° Fixed jib length: 9m

Radius m	Main boom length m										Radius m	
	24	27	30	33	36	39	42	45	48	51		
9	130	127.2										9
10	123.8	121.7	120	120								10
11	118.3	116.2	115.3	114.5	114.5	114.5	113.8					11
12	113.1	111.4	110.8	110.4	110.4	110.4	111	110.8	111.4	111.4		12
14	104.4	103.1	102.7	102.7	103.1	102.1	100.6	98.8	96.9	95.2		14
16	87.4	87.3	87.1	86.5	86.5	86.5	84.8	84.8	83.1	82.1		16
18	74.2	73.1	73.1	73.1	73.1	73.1	73.1	73	71.4	71.4		18
20	64.1	64.1	63.9	63.1	63.1	63.1	63.1	62.4	62.4	61.4		20
22	55.8	55.8	55.8	55.8	55.2	55.2	54.1	54.1	54.1	54.1		22
24	49.7	49.7	49.7	49.7	48.6	48.6	48.6	48.6	47.9	47.9		24
26	44.8	44.1	44.1	44.1	44.1	43.5	43.5	43.5	42.4	42.4		26
28	40.7	39.6	39.6	39.6	39.6	39	39	39	37.9	37.9		28
30	36.9	36.2	36.2	36.2	35.8	35.2	35.2	35.2	34.5	34.5		30
32		33.5	33	32.4	32.4	32.4	31.7	31.7	31.7	31.3		32
34			30	30	30	29.6	29	29	29	28.6		34
36			27.9	27.9	27.3	27.3	26.9	26.2	26.2	26.2		36
38				25.1	25.1	25.1	24.5	24.5	24.1	24.1		38
40					23.4	22.8	22.8	22.8	22.4	21.7		40
44						19.6	19.6	19	19	18.6		44
48								16.6	16.2	16.2		48
52									14.1	13.8		52

## Lifting capacity chart of fixed jib configuration

Rear counterweight: 100t Central counterweight: 32t Included angle of main boom and fixed jib:  
10° Fixed jib length: 9m

Radius m	Main boom length m										Radius m
	54	57	60	63	66	69	72	75	78	81	
14	92.7	91.2	89.7	88.1	86.5						14
16	80.8	79.5	78.2	77	75.9	73.9	72.7	71.5	70.1	65.8	16
18	70.3	68.6	68.6	67.6	65.8	65.4	64.5	63.5	62.6	61.7	18
20	61.4	60.7	59.7	59.7	58.6	56.9	56.9	55.8	55.2	54.1	20
22	54.1	53.5	52.4	52.4	51.4	50.7	49.7	49.7	48.6	47.9	22
24	46.9	46.9	46.9	46.9	45.2	45.2	44.1	44.1	43.5	42.4	24
26	42.4	42.4	41.8	41.8	40.7	40.7	39.6	39.6	39	37.9	26
28	37.9	37.9	36.9	36.9	36.9	36.9	36.2	35.2	35.2	34.5	28
30	34.1	33.5	33.5	33.5	33	32.4	32.4	32.4	31.7	30.7	30
32	30.7	30.7	30.7	30	30	29.6	29	29	28.6	27.9	32
34	27.9	27.9	27.9	27.3	27.3	26.9	26.2	26.2	26.2	25.1	34
36	25.8	25.1	25.1	25.1	24.5	24.5	24.1	24.1	23.4	23.4	36
38	23.4	23.4	22.8	22.8	22.4	22.4	21.7	21.7	21.3	21.3	38
40	21.7	21.3	21.3	20.7	20.7	20	20	19.6	19.6	19	40
44	18.6	17.9	17.9	17.7	17.3	17.3	16.8	16.2	16.2	15.9	44
48	15.5	15.5	15.1	14.9	14.5	14.5	14.1	13.8	13.4	13.2	48
52	13.4	13.2	12.8	12.8	12.4	12.1	11.7	11.5	11.1	11.1	52
56	11.5	11.1	11.1	10.7	10.4	10	10	9.6	9.4	9	56
60			9.4	9	8.7	8.3	8.3	7.9	7.6	7.2	60
64				7.6	7.2	7.1	6.8	6.6	6.2	5.9	64
68						5.8	5.5	5.1	4.9	4.9	68
72							4.5	4.2	4.1	3.8	72
76									3.2	3	76

## Lifting capacity chart of fixed jib configuration

Rear counterweight: 100t Central counterweight: 32t Included angle of main boom and fixed jib:  
10° Fixed jib length: 12m

Radius m	Main boom length m															Radius m
	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	
10	112.1	109.3														10
11	106.6	104.8	103.1	102.7	102.1											11
12	101.7	99.7	98.9	98.7	98.2	98	98.5	98.7								12
14	93.5	92.1	91.4	90.8	91	91.4	91.4	91.8	91.8	92.1	92.1	90.4	88.9			14
16	86.5	85.5	84.8	85.1	85.2	85.5	84.8	84.4	83	81.6	80.3	79	77.8	75.9	74.7	16
18	74.8	74.6	74.2	74.2	73.1	73.1	73.1	73.1	71.4	71.4	70.3	68.6	68.4	67.3	66.3	18
20	64.1	64.1	64.1	64.1	64	63.1	63.1	63.1	63.1	61.4	61.4	60.7	59.7	59.7	58.6	20
22	56.9	56.8	55.8	55.8	55.8	55.8	55.2	55.2	55.2	54.1	54.1	54.1	52.4	52.4	51.4	22
24	50.7	49.7	49.7	49.7	49.7	49.7	48.6	48.6	48.6	48.6	47.9	47.9	46.9	46.9	46.2	24
26	45.2	45.2	44.1	44.1	44.1	44.1	43.5	43.5	43.5	43.1	42.4	42.4	42.4	41.8	41.8	26
28	40.7	40.7	40.7	40.3	39.6	39.6	39.6	39	39	38.6	37.9	37.9	37.9	37.9	36.9	28
30	36.9	36.9	36.9	36.2	36.2	36.2	35.2	35.2	35.2	35.2	34.5	34.5	34.1	33.5	33.5	30
32	34.1	33.5	33.5	33.5	33	32.4	32.4	32.4	31.7	31.7	31.3	31.3	30.7	30.7	30	32
34	31.3	30.7	30.7	30.7	30	30	29.6	29.6	29	29	28.6	28.6	27.9	27.9	27.3	34
36		28.6	27.9	27.9	27.9	27.3	27.3	27.3	26.9	26.2	26.2	25.8	25.8	25.1	25.1	36
38			26.2	25.8	25.8	25.1	25.1	24.5	24.5	24.5	24.1	23.4	23.4	23.4	22.8	38
40				24.1	23.4	23.4	22.8	22.8	22.8	22.4	21.7	21.7	21.7	21.3	20.7	40
44					20.4	20	20	19.6	19.4	19	19	18.6	17.9	17.9	17.7	44
48							17.3	16.8	16.6	16.2	16.2	15.5	15.5	15.1	14.9	48
52								14.5	14.5	14.1	13.8	13.4	13.4	12.8	12.8	52
56										12.1	11.7	11.7	11.1	11.1	10.7	56
60											10	10	9.6	9.4	9	60
64													8.3	7.9	7.6	64
68															6.2	68

## Lifting capacity chart of fixed jib configuration

Rear counterweight: 100t Central counterweight: 32t Included angle of main boom and fixed jib:  
10° Fixed jib length: 18m

Radius m	Main boom length m															Radius m
	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	
12	86.8	84.6	83.5													12
14	79	77.2	76.3	75.5	75.2	75.5	75.5	75.5								14
16	72.8	71.4	70.3	70.1	70.1	70.1	70.3	70.3	70.6	70.7	71.4	71.8	72	72		16
18	67.6	66.3	65.6	65.4	65.2	65.6	65.6	66.3	66.5	66.8	67.2	67.6	67.3	66.3	64.6	18
20	62.8	61.6	61.1	61.1	61.3	61.1	61.6	61.8	62.4	61.4	61.4	59.7	59.7	58.6	58	20
22	56.9	56.9	56.9	56.8	55.8	55.8	55.8	55.8	55.8	54.1	54.1	53.5	52.4	52.4	51.4	22
24	50.7	50.7	50.7	49.7	49.7	49.7	49.7	48.6	48.6	48.6	48.6	47.9	46.9	46.9	46.2	24
26	45.2	45.2	45.2	45.2	44.1	44.1	44.1	44.1	43.5	43.5	43.5	42.4	42.4	41.8	40.7	26
28	41.3	40.7	40.7	40.7	40.3	39.6	39.6	39.6	39	39	39	38.6	37.9	37.9	36.9	28
30	37.5	36.9	36.9	36.9	36.2	36.2	36.2	35.8	35.2	35.2	35.2	34.5	34.5	34.5	33.5	30
32	34.5	34.1	33.5	33.5	33.5	33	32.4	32.4	32.4	31.7	31.7	31.7	31.3	30.7	30.7	32
34	31.7	31.3	30.7	30.7	30.7	30	30	30	29.6	29	29	28.6	28.6	27.9	27.9	34
36	29	29	28.6	28.6	27.9	27.9	27.3	27.3	26.9	26.9	26.2	26.2	25.8	25.8	25.1	36
38	26.9	26.9	26.2	26.2	25.8	25.8	25.1	25.1	24.5	24.5	24.1	24.1	23.4	23.4	22.8	38
40		24.5	24.5	24.5	24.1	23.4	23.4	23.2	22.8	22.8	22.4	21.7	21.7	21.3	21.3	40
44			21.3	21.1	20.7	20.4	20	20	19.6	19.4	19	18.6	18.6	17.9	17.9	44
48					17.9	17.9	17.3	17.3	16.8	16.6	16.2	16.2	15.5	15.5	15.1	48
52						15.5	15.1	14.9	14.5	14.1	14.1	13.8	13.4	13.2	12.8	52
56								12.8	12.8	12.4	12.1	11.7	11.5	11.1	10.7	56
60									11.1	10.7	10.4	10	9.6	9.6	9.4	60
64											9	8.7	8.3	7.9	7.6	64
68												7.2	7.1	6.8	6.4	68
72														5.5	5.1	72
76															4.5	76

## Lifting capacity chart of fixed jib configuration

Rear counterweight: 100t Central counterweight: 32t Included angle of main boom and fixed jib:  
10° Fixed jib length: 24m

Radius m	Main boom length m															Radius m
	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	
14	73.1	71.2	69.7													14
16	67.3	65.4	64.5	64.1	63.3	63.1	63.1	63.1	63.3							16
18	62	60.7	59.9	59.3	59.3	59	59.2	59.3	59.5	59.5	59.8	60.1	60.1	60.1		18
20	58	56.6	56.1	55.6	55.4	55.4	55.7	55.8	56.1	56.4	56.5	56.7	57.1	57.5	57.8	20
22	54.3	53.2	52.7	52.4	52.3	52.4	52.7	52.8	53	53.2	53.7	54.1	54.4	54.5	54.1	22
24	51.3	50.1	49.7	49.4	49.5	49.7	49.9	50.1	50.6	50.7	51.1	50.7	49.7	49.7	48.6	24
26	47.9	47.1	46.6	46.5	46.6	46.6	46.9	46.9	46.9	46.9	46.2	46.2	45.2	45.2	44.1	26
28	44.1	44.1	43.9	43.5	43.5	43.3	42.4	42.4	42.4	42.4	41.8	41.8	41.8	40.7	40.7	28
30	40.6	40.3	39.6	39.6	39.6	39.6	39	39	39	38.6	37.9	37.9	37.9	37.5	36.9	30
32	37.5	36.9	36.9	36.9	36.2	36.2	36.2	35.8	35.2	35.2	35.2	34.5	34.5	34.5	34.1	32
34	34.5	34.5	34.1	34.1	33.5	33.5	33.5	33	32.4	32.4	32.4	31.7	31.7	31.7	31.3	34
36	32.3	31.7	31.7	31.7	31.3	30.7	30.7	30.7	30	30	29.6	29.6	29	29	29	36
38	30	30	29.6	29.4	29	29	28.6	28.6	27.9	27.9	27.3	27.3	27.3	26.9	26.2	38
40	27.9	27.9	27.3	27.3	27.3	26.9	26.9	26.2	26.2	25.8	25.8	25.1	25.1	24.9	24.5	40
44	24.9	24.5	24.5	24.1	24.1	23.4	23.4	23.2	22.8	22.8	22.4	22.1	21.7	21.7	21.3	44
48			21.7	21.3	21.3	20.7	20.7	20.4	20	20	19.6	19.4	19	19	18.6	48
52				19	19	18.6	18.3	17.9	17.9	17.7	17.3	17.3	16.8	16.6	16.2	52
56						16.8	16.2	16.2	15.9	15.5	15.5	15.1	14.9	14.5	14.1	56
60							14.9	14.5	14.1	14.1	13.8	13.4	13.2	12.8	12.4	60
64									12.8	12.4	12.4	12.1	11.7	11.5	11.1	64
68										11.1	11.1	10.7	10.4	10	9.9	68
72												9.6	9.4	9	8.7	72
76													8.3	7.9	7.6	76
80															6.8	80

## Lifting capacity chart of fixed jib configuration

Rear counterweight: 100t Central counterweight: 32t Included angle of main boom and fixed jib:  
10° Fixed jib length: 30m

Radius m	Main boom length m															Radius m	
	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66		
16	61.5	59.7	58.6	57.8												16	
18	57	55.4	54.5	53.9	53.5	53.3	53.1	53.1	53.1	53.3						18	
20	53.1	51.8	50.9	50.5	50.2	50.1	50.1	50.1	50.1	50.3	50.3	50.6	50.6	50.6	50.9	20	
22	49.7	48.6	47.3	47	46.9	46.6	46.8	46.8	46.9	47.1	47.5	47.5	47.8	47.9	48.3	22	
24	46.5	45.3	44.7	44.4	44.3	44.1	44.4	44.4	44.5	44.8	45.2	45.3	45.4	45.3	45.5	24	
26	43.9	42.8	42.3	42	41.9	42	42	42.2	42.6	42.8	43.1	43.1	43.3	43.1	43.4	26	
28	41.6	40.7	40.2	39.9	39.9	39.9	40	40.3	40.5	40.7	41.1	41.3	41.3	40.7	40.7	28	
30	39.5	38.6	38.2	38.1	37.9	38.1	38.3	38.6	38.8	39	39	39	37.9	37.9	36.9	30	
32	37.7	36.9	36.5	36.4	36.5	36.5	36.2	36.2	36.2	35.8	35.2	35.2	35.2	34.5	34.5	32	
34	35.1	34.5	34.5	34.5	34.1	34.1	33.5	33.5	33.5	33	32.4	32.4	32.4	32.4	31.7	34	
36	32.4	32.4	32.3	31.7	31.7	31.7	31.3	30.7	30.7	30.7	30	30	30	29.6	29.6	36	
38	30.6	30	30	30	29.6	29	29	29	28.6	28.6	27.9	27.9	27.9	27.3	27.3	38	
40	28.6	28.5	27.9	27.9	27.7	27.3	27.3	26.9	26.9	26.2	26.2	25.8	25.8	25.1	25.1	40	
44	25.1	25.1	24.5	24.5	24.5	24.1	23.8	23.4	23.4	23.2	22.8	22.8	22.4	22.1	21.7	44	
48	22.8	22.4	22.1	21.7	21.7	21.3	21.3	20.7	20.7	20.4	20	20	19.6	19.4	19	48	
52		20	20	19.6	19.4	19	19	18.6	18.6	17.9	17.9	17.7	17.3	17.3	16.8	52	
56			17.9	17.9	17.3	17.3	16.8	16.8	16.6	16.2	15.9	15.5	15.5	15.1	14.9	56	
60					15.9	15.5	15.1	15.1	14.9	14.5	14.1	14.1	13.8	13.4	13.2	60	
64								13.8	13.4	13.4	13.2	12.8	12.4	12.4	12.1	11.7	64
68									12.4	12.1	11.7	11.5	11.1	11.1	10.7	10.4	68
72											10.7	10.4	10	9.9	9.6	9.4	72
76												9.4	9	8.7	8.5	8.3	76
80														7.9	7.6	7.2	80
84															6.8	6.4	84



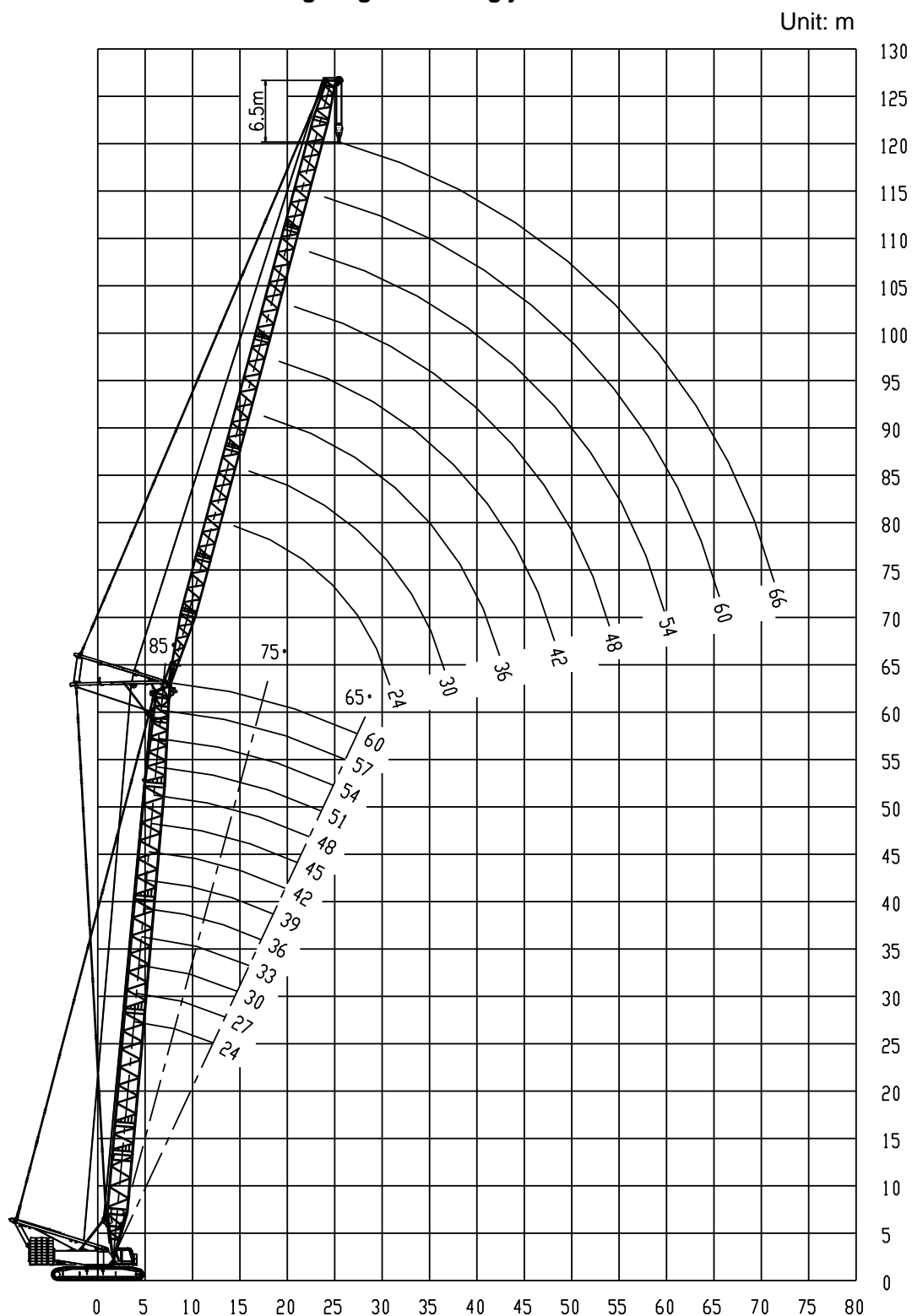
## Lifting capacity chart of fixed jib configuration

Rear counterweight: 100t Central counterweight: 32t Included angle of main boom and fixed jib:  
10° Fixed jib length: 36m

Radius m	Main boom length m															Radius m
	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	
18	53.3	51.6	50.6	49.7	49.2											18
20	49.5	47.7	46.9	46.1	45.7	45.6	45.6	45.6	45.4	45.4						20
22	46	44.7	43.9	43.3	43.1	43.1	43	42.8	43	43.1	43.2	43.2	42.6	42.1	42.5	22
24	43.2	42	41.3	40.9	40.7	40.5	40.5	40.7	40.7	40.8	40.9	41.3	40.4	40.2	40.4	24
26	40.8	39.8	39.1	38.7	38.6	38.5	38.5	38.6	38.7	38.8	39	39.1	38.4	38.2	38.4	26
28	38.7	37.7	37.1	36.8	36.6	36.6	36.6	36.8	36.9	37	37.3	37.5	36.6	36.4	36.7	28
30	36.8	35.8	35.3	35.1	34.9	34.9	34.9	35.2	35.2	35.4	35.6	35.9	34.9	34.8	35.2	30
32	35.1	34.1	33.7	33.5	33.3	33.4	33.5	33.6	33.9	33.9	34.3	34.5	33.6	33.3	33.9	32
34	33.5	32.6	31.7	31.5	31.5	31.5	31.6	31.7	32.4	32.5	32.8	33	32.2	32	31.7	34
36	31.5	30.7	30.4	30.2	30.1	30.3	30.4	30.4	30.7	30.7	30.7	30.7	30	30	29.6	36
38	30.2	29.5	29.1	29	29	29.1	29.2	29	29	29	28.6	28.6	27.9	27.9	27.9	38
40	29	28.4	28.1	27.9	27.9	27.9	27.3	27.3	27.3	26.9	26.9	26.2	26.2	26.2	25.8	40
44	25.8	25.1	25.1	25.1	24.5	24.5	24.5	24.1	23.8	23.4	23.4	23.2	22.8	22.8	22.4	44
48	22.8	22.8	22.4	22.4	22.1	21.7	21.7	21.3	21.1	20.7	20.7	20.4	20	20	19.6	48
52	20.7	20.7	20	20	19.6	19.6	19.4	19	19	18.6	18.3	17.9	17.9	17.7	17.3	52
56	18.6	18.6	18.3	17.9	17.9	17.7	17.3	17.3	16.8	16.6	16.2	16.2	15.9	15.5	15.1	56
60			16.6	16.6	16.2	15.9	15.5	15.5	15.1	14.9	14.5	14.5	14.1	13.8	13.4	60
64				15.1	14.9	14.5	14.1	14.1	13.8	13.4	13.2	12.8	12.8	12.4	12.1	64
68						13.2	12.8	12.8	12.4	12.1	11.7	11.7	11.5	11.1	10.9	68
72							11.7	11.7	11.3	11.1	10.7	10.7	10.3	10	9.6	72
76									10.4	10	9.6	9.6	9.4	9	8.7	76
80										9	9	8.7	8.3	8.1	7.6	80
84												7.6	7.5	7.2	6.8	84
88														6.4	6.2	88
92															5.5	92

### 3.4 Luffing jib configuration

#### 3.4.1 Characteristic curve of lifting height of luffing jib



**Note:**

1. X-axis indicates the working radius in meters while Y-axis indicates the lifting height in meters.
2. Boom deflection is not considered in this curve.

## 3.4.2 Boom lengths f luffing jib configuration

<b>Boom Luffing jib length</b>	<b>Luffing jib pivot section 7.5m</b>	<b>Luffing jib intermediate section 6m</b>	<b>Luffing jib intermediate section 12m</b>	<b>Luffing jib head 4.5m</b>
24	1	0	1	1
30	1	1	1	1
36	1	0	2	1
42	1	1	2	1
48	1	0	3	1
54	1	1	3	1
60	1	0	4	1
66	1	1	4	1

### 3.4.3 Lifting capacity chart of luffing jib configuration

Lifting capacity chart of luffing jib configuration (85°)  
Rear counterweight: 100t Central counterweight: 32t

Main boom length m	24								Main boom length m	
	Jib length m	24	30	36	42	48	54	60		66
Radius m										Radius m
12	110									12
14	106.1	95.7								14
16	91.5	88.7	76.1							16
18	77.9	77.9	71.2	61.6	53.2					18
20	68	68	67.1	58.3	50.5	43.4				20
22	60.4	60.4	60.2	55.2	47.8	41.2	35.3			22
24	54.3	54.3	54	52.1	45.5	39.2	33.5	28.6		24
26	49.4	49	48.9	48.1	43.1	37.3	32	27.3		26
28		44.4	44.4	44.4	41.1	35.5	30.4	26		28
30		41.1	41	40.6	39.1	33.9	29	24.7		30
32		38.2	37.9	37.3	36.9	31.9	27.3	23.1		32
34			35.2	34.4	34.4	29.7	25.3	21.3		34
36			32.6	32.1	32.1	27.6	23.5	19.6		36
38			30.6	30.3	29.8	25.8	21.8	18.1		38
40				28.3	28	24	20.2	16.7		40
44				25.1	24.9	20.9	17.4	14.2		44
48					22	18.3	15	12		48
52						16.1	12.9	10.1		52
56							11.2	8.7		56
60							9.7	7.5		60
64								6.5		64

Lifting capacity chart of luffing jib configuration (85°)  
Rear counterweight: 100t Central counterweight: 32t

Main boom length m	27								Main boom length m	
	Jib length m	24	30	36	42	48	54	60		66
Radius m										Radius m
12	108.1									12
14	105.7	96.3								14
16	91.4	89.1	76.8							16
18	77.9	77.9	72	62.2						18
20	68	68	67.6	58.6	50.8	43.7				20
22	60.4	60.4	60.2	55.5	48.1	41.5	35.5			22
24	54.3	54.2	54	52.5	45.8	39.5	33.8	28.9		24
26	49.4	49	48.9	48.1	43.5	37.5	32.2	27.5		26
28		44.4	44.4	44.3	41.3	35.8	30.6	26.2		28
30		41.1	41	40.6	39.3	34.1	29.2	24.9		30
32		38.1	37.3	37.3	37.2	32.2	27.6	23.4		32
34			35	34.4	34.4	30	25.6	21.6		34
36			32.6	32.1	32.1	27.9	23.8	19.8		36
38			30.6	30.3	29.8	26	22	18.3		38
40				28.3	28	24.2	20.4	16.9		40
44				25.1	24.5	21.1	17.6	14.3		44
48					22.2	18.5	15.2	12.1		48
52						16.3	13.1	10.3		52
56						14.4	11.3	8.8		56
60							9.8	7.6		60
64								6.6		64

Lifting capacity chart of luffing jib configuration (85°)  
Rear counterweight: 100t Central counterweight: 32t

Main boom length m	30								Main boom length m	
	Jib length m	24	30	36	42	48	54	60		66
Radius m										Radius m
14	103.7	96.6								14
16	90.7	87.6	77.3							16
18	77.9	77.9	72.7	62.7						18
20	68	68	67.8	59.2	51.2	44				20
22	60.4	60.4	60.1	55.9	48.5	41.8	35.8			22
24	54.3	54.2	53.9	52.8	46	39.7	34	29.1		24
26	49.4	49	48.1	48.1	43.8	37.8	32.4	27.6		26
28		44.4	44.4	44.3	41.7	36	30.9	26.3		28
30		41.1	41	40.6	39.7	34.3	29.4	25.1		30
32		38.1	37.3	37.3	36.8	32.6	28	23.6		32
34			35	34.4	34.4	30.2	25.9	21.8		34
36			32.6	32.1	32.1	28.2	24	20		36
38			30.6	30.3	29.8	26.2	22.2	18.5		38
40				28.3	28	24.4	20.6	17.1		40
44				25.1	24.5	21.3	17.8	14.5		44
48					22.2	18.6	15.3	12.3		48
52						16.4	13.2	10.3		52
56						14.5	11.4	8.9		56
60							9.8	7.7		60
64								6.6		64
68								5.7		68

Lifting capacity chart of luffing jib configuration (85°)  
Rear counterweight: 100t Central counterweight: 32t

Main boom length m	33								Main boom length m	
	Jib length m	24	30	36	42	48	54	60		66
Radius m									Radius m	
14	101.7	97.2								14
16	89.2	86.2	78.2							16
18	77.9	76.8	73.2	63.1						18
20	68	68	67.3	59.5	51.6					20
22	60.4	60.3	60	56.3	48.9	42	36			22
24	54.3	54.1	53.4	53.3	46.4	40	34.2	29.2		24
26	49.3	49	48.1	48.1	44	38.1	32.6	27.8		26
28		44.4	44.4	44.2	41.9	36.2	31	26.5		28
30		41.1	40.6	40.6	39.7	34.6	29.5	25.2		30
32		37.9	37.3	37.3	36.8	32.9	28.2	23.8		32
34			35	34.4	34.4	30.5	26.1	22		34
36			32.6	32.1	32.1	28.4	24.2	20.3		36
38			30.6	29.8	29.8	26.4	22.4	18.7		38
40				28.3	28	24.6	20.8	17.3		40
44				25.1	24.5	21.5	18	14.6		44
48					22.2	18.8	15.5	12.4		48
52						16.5	13.4	10.5		52
56						14.6	11.5	9		56
60							9.9	7.8		60
64								6.7		64
68								5.8		68

Lifting capacity chart of luffing jib configuration (85°)  
Rear counterweight: 100t Central counterweight: 32t

Main boom length m	36								Main boom length m	
	Jib length m	24	30	36	42	48	54	60		66
Radius m										Radius m
14	99.9									14
16	87.7	84.8	78.8							16
18	77.9	75.7	73.4	63.6						18
20	68	67.9	66.4	60.1	51.9					20
22	60.4	60.2	59.5	56.6	49.2	42.4	35.5			22
24	54.3	54.1	53.4	53.4	46.7	40.2	34.4	28.8		24
26	49	49	48.1	48.1	44.4	38.2	32.9	28		26
28	44.4	44.4	44.4	43.5	42.2	36.4	31.2	26.6		28
30		41.1	40.6	40.5	39.7	34.8	29.8	25.4		30
32		37.9	37.3	37.3	36.8	33.1	28.3	24.1		32
34			35	34.4	34.4	30.9	26.4	22.3		34
36			32.1	32.1	31.8	28.6	24.4	20.5		36
38			30.6	29.8	29.8	26.7	22.6	18.9		38
40				28.3	28	24.9	21	17.4		40
44				25.1	24.5	21.7	18.1	14.8		44
48					22.2	18.9	15.6	12.5		48
52						16.7	13.5	10.6		52
56						14.7	11.7	9.1		56
60							10	7.8		60
64								6.8		64
68								5.8		68



Lifting capacity chart of luffing jib configuration (85°)  
Rear counterweight: 100t Central counterweight: 32t

Main boom length m	39								Main boom length m	
	Jib length m	24	30	36	42	48	54	60		66
Radius m									Radius m	
14	96.3									14
16	84.9	82								16
18	75.8	73.4	71.2	64.5						18
20	68	66.4	64.5	61	51.8					20
22	60.4	60	58.9	57.2	49.9	41.8				22
24	54.2	53.4	53.4	52.7	47.2	40.8	33.8	27.5		24
26	49	48.1	48.1	48.1	44.9	38.8	33.2	27.2		26
28	44.4	44.4	44.3	43.5	42.8	37	31.7	26.9		28
30		41	40.6	39.7	39.7	35.2	30.1	25.7		30
32		37.3	37.3	37.3	36.8	33.5	28.7	24.5		32
34		35	34.4	34.4	34.1	31.4	26.9	22.7		34
36			32.1	32.1	31.8	29.2	24.9	20.9		36
38			30.3	29.8	29.8	27.2	23.1	19.3		38
40			28.3	28	27.4	25.3	21.4	17.8		40
44				25.1	24.5	22	18.5	15.2		44
48					21.8	19.3	15.9	12.8		48
52						16.9	13.7	10.8		52
56						14.9	11.8	9.2		56
60							10.2	8		60
64								6.9		64
68								5.9		68

Lifting capacity chart of luffing jib configuration (85°)  
Rear counterweight: 100t Central counterweight: 32t

Main boom length m	42								Main boom length m	
	Jib length m	24	30	36	42	48	54	60		66
Radius m										Radius m
14	96.3									14
16	84.9	82								16
18	75.8	73.4	71.2	64.5						18
20	68	66.4	64.5	61	51.8					20
22	60.4	60	58.9	57.2	49.9	41.8				22
24	54.2	53.4	53.4	52.7	47.2	40.8	33.8	27.5		24
26	49	48.1	48.1	48.1	44.9	38.8	33.2	27.2		26
28	44.4	44.4	44.3	43.5	42.8	37	31.7	26.9		28
30		41	40.6	39.7	39.7	35.2	30.1	25.7		30
32		37.3	37.3	37.3	36.8	33.5	28.7	24.5		32
34		35	34.4	34.4	34.1	31.4	26.9	22.7		34
36			32.1	32.1	31.8	29.2	24.9	20.9		36
38			30.3	29.8	29.8	27.2	23.1	19.3		38
40			28.3	28	27.4	25.3	21.4	17.8		40
44				25.1	24.5	22	18.5	15.2		44
48					21.8	19.3	15.9	12.8		48
52						16.9	13.7	10.8		52
56						14.9	11.8	9.2		56
60							10.2	8		60
64								6.9		64
68								5.9		68

Lifting capacity chart of luffing jib configuration (85°)  
Rear counterweight: 100t Central counterweight: 32t

Main boom length m	45								Main boom length m	
	Jib length m	24	30	36	42	48	54	60		66
Radius m										Radius m
14	94.6									14
16	83.5	80.7								16
18	74.7	72.3	70.2							18
20	67.5	65.4	63.6	61.3	50.3					20
22	60.2	59.5	58.1	56.5	50.1	40.8				22
24	54.1	53.4	53.4	52	47.6	40.6	32.9			24
26	49	48.1	48.1	48.1	45.2	39	32.6	26.6		26
28	44.4	44.4	44.2	43.5	42.9	37.1	31.9	26.3		28
30		40.6	40.6	39.7	39.7	35.3	30.3	25.9		30
32		37.3	37.3	36.8	36.8	33.8	28.9	24.6		32
34		35	34.4	34.4	33.5	31.8	27.2	22.9		34
36			32.1	32.1	31.2	29.4	25.2	21.2		36
38			30.3	29.8	29.2	27.4	23.3	19.5		38
40			28.3	28	27.4	25.5	21.6	18		40
44				24.5	24.5	22.3	18.6	15.3		44
48					21.8	19.5	16	12.9		48
52						17.1	13.8	10.9		52
56						15.1	12	9.3		56
60							10.3	8		60
64								6.9		64
68								6		68

Lifting capacity chart of luffing jib configuration (85°)  
Rear counterweight: 100t Central counterweight: 32t

Main boom length m	48								Main boom length m	
	Jib length m	24	30	36	42	48	54	60		66
Radius m										Radius m
14	92.8									14
16	82	79.3								16
18	73.4	71.2	69.1							18
20	66.5	64.5	62.7	60.3	48.8					20
22	60.1	59	57.3	55.7	48.3	39.6				22
24	54	53.4	52.8	51.3	47.8	39.4	31.9			24
26	48.9	48.1	48.1	47.2	45.6	39.3	31.7	25.9		26
28	44.4	44.4	43.5	43.5	43.1	37.5	31.5	25.7		28
30		40.6	40.5	39.7	39.7	35.7	30.5	25.4		30
32		37.3	37.3	36.8	36.8	33.9	29.1	24.8		32
34		34.4	34.4	34.4	33.5	32	27.4	23.2		34
36			32.1	32.1	31.2	29.8	25.4	21.4		36
38			29.8	29.8	29.2	27.6	23.5	19.8		38
40			28.3	28	27.4	25.8	21.8	18.2		40
44				24.5	24.5	22.5	18.9	15.4		44
48					21.8	19.6	16.3	13.1		48
52					19.1	17.2	14	11.1		52
56						15.2	12	9.4		56
60							10.4	8.1		60
64								7		64
68								6		68

Lifting capacity chart of luffing jib configuration (85°)  
Rear counterweight: 100t Central counterweight: 32t

Main boom length m	51								Main boom length m	
	Jib length m	24	30	36	42	48	54	60		66
Radius m										Radius m
14	91.3									14
16	80.7	78.1								16
18	72.3	70.1	68							18
20	65.6	63.5	61.8	58						20
22	59.5	58.1	56.5	55	47.3	38.2				22
24	53.4	53.4	52.1	50.6	47.2	38.1	31			24
26	48.1	48.1	48.1	46.9	45.7	38	30.8	25.8		26
28	44.4	44.3	43.5	43.5	42.6	37.7	30.6	25.6		28
30		40.6	40.2	39.7	39.7	35.9	30.4	25.3		30
32		37.3	37.3	36.8	36.4	34.2	29.2	24.9		32
34		34.4	34.4	34.1	33.5	32.3	27.8	23.4		34
36			32.1	31.8	31.2	30.1	25.6	21.6		36
38			29.8	29.8	29.2	28	23.8	20		38
40			28.3	28	27.4	26	22	18.4		40
44				24.5	24.5	22.6	19	15.6		44
48					21.8	19.8	16.4	13.2		48
52					18.4	17.4	14.2	11.2		52
56						15.3	12.2	9.5		56
60							10.5	8.2		60
64							9.2	7.1		64
68								6.1		68

Lifting capacity chart of luffing jib configuration (85°)  
Rear counterweight: 100t Central counterweight: 32t

Main boom length m	54								Main boom length m	
	Jib length m	24	30	36	42	48	54	60		66
Radius m										Radius m
16	79.3	76.8								16
18	71.2	69	67							18
20	64.6	62.6	60.9	55.7						20
22	59.1	57.3	55.7	54.1	45.5	36.9				22
24	53.4	52.8	51.4	49.9	45.5	36.8	30.1			24
26	48.1	48.1	47.7	46.4	45.1	36.7	29.9	25.1		26
28	44.4	43.5	43.5	43.2	42	36.6	29.8	24.9		28
30		40.6	39.7	39.7	39.1	36.1	29.6	24.7		30
32		37.3	37.3	36.8	35.9	34.4	29.4	24.5		32
34		34.4	34.4	33.5	33.5	32.6	28	23.8		34
36			32.1	31.8	31.2	30.3	26	21.8		36
38			29.8	29.8	29.2	28.2	24	20.2		38
40			28.3	27.4	27.4	26.3	22.3	18.6		40
44				24.5	24.2	22.9	19.1	15.8		44
48					21.8	20	16.5	13.4		48
52					17.9	17.5	14.3	11.3		52
56						15.4	12.3	9.6		56
60							10.6	8.3		60
64							9.3	7.2		64
68								6.1		68

Lifting capacity chart of luffing jib configuration (85°)  
Rear counterweight: 100t Central counterweight: 32t

Main boom length m	57								Main boom length m	
	Jib length m	24	30	36	42	48	54	60		66
Radius m										Radius m
16	78	75.6								16
18	70.1	67.9	64.5							18
20	63.6	61.6	60	53.3						20
22	58.3	56.5	55	52.8	43.6					22
24	53.4	52.1	50.7	49.2	43.1	35.5	29.2			24
26	48.1	48.1	47	45.7	42.7	35.5	29	24.5		26
28	44.4	43.5	43.5	42.6	41.5	35.3	28.9	24.3		28
30		40.5	39.7	39.7	38.9	35.2	28.7	24.1		30
32		37.3	36.8	36.8	35.9	34.6	28.6	23.9		32
34		34.4	34.4	33.5	33.5	33	28.2	23.7		34
36			32.1	31.2	31.2	30.6	26.2	22		36
38			29.8	29.2	29.2	28.3	24.3	20.4		38
40			28	27.4	27.4	26.5	22.5	18.7		40
44				24.5	24.2	23.1	19.4	15.9		44
48					21.6	20.2	16.7	13.5		48
52					17.3	17.7	14.4	11.4		52
56						15.6	12.5	9.7		56
60							10.7	8.3		60
64							9.4	7.2		64
68								6.2		68

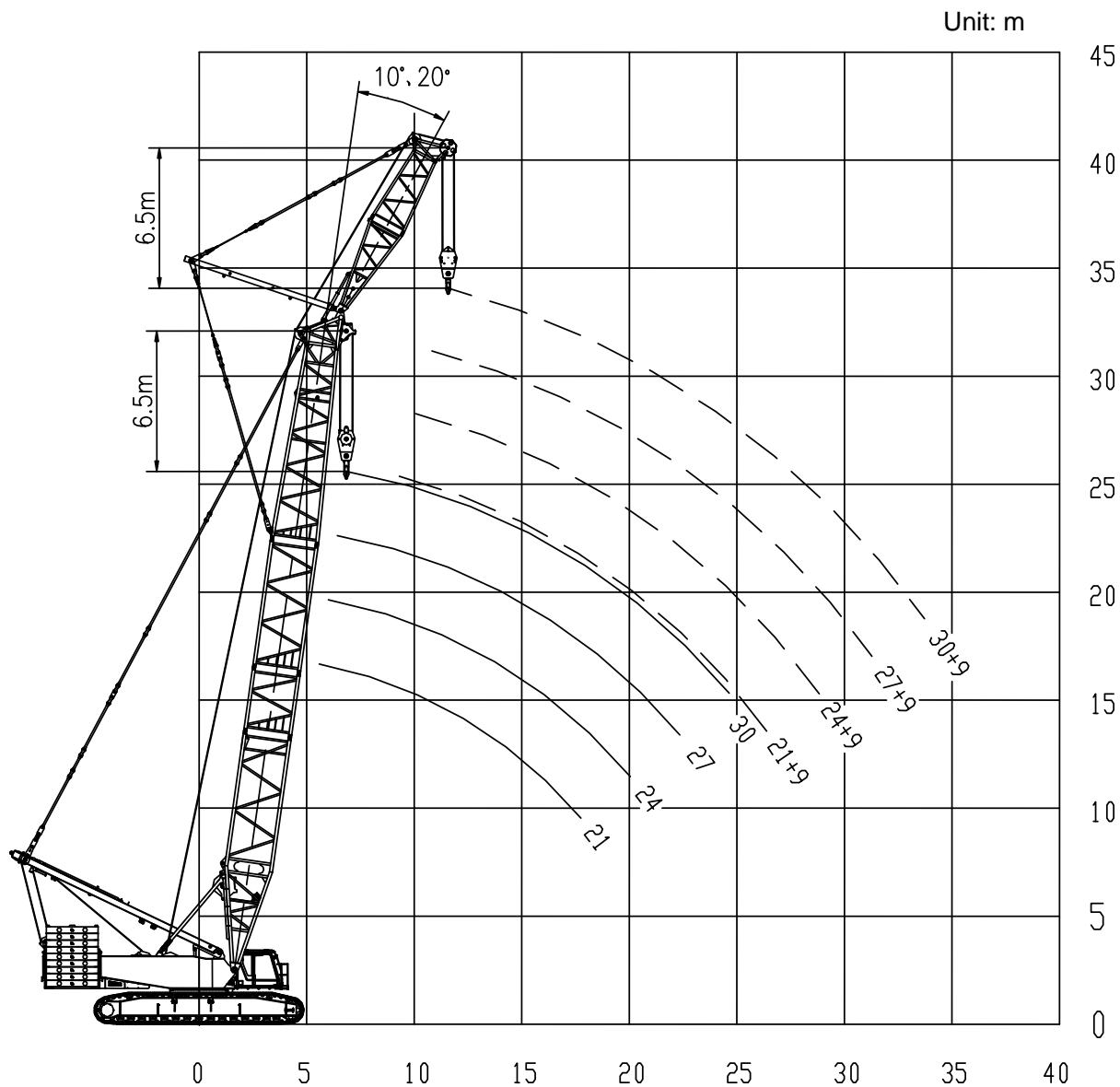
Lifting capacity chart of luffing jib configuration (85°)  
Rear counterweight: 100t Central counterweight: 32t

Main boom length m	60								Main boom length m	
	Jib length m	24	30	36	42	48	54	60		66
Radius m										Radius m
16	76.7									16
18	69	66.9	61.1							18
20	62.7	60.7	59.1	50.7						20
22	57.5	55.7	54.1	50.2	41.7					22
24	53	51.4	50	48.6	41.7	34.2	28.8			24
26	48.1	47.7	46.4	45.1	41.6	34.2	28.7	23.8		26
28	44.3	43.5	43.3	42.1	41	34.1	28.6	23.7		28
30	33.3	39.7	39.7	39.4	38.4	33.9	28.4	23.5		30
32		37.3	36.8	36.4	35.9	33.8	27.7	23.3		32
34		34.4	34.1	33.5	33.5	33	27.5	23.2		34
36			31.8	31.2	31.2	30.6	26.4	22.3		36
38			29.8	29.2	29.2	28.3	24.5	20.6		38
40			27.9	27.4	27.4	26.7	22.7	18.9		40
44				24.5	24.2	23.3	19.6	16.1		44
48					21.3	20.3	16.9	13.7		48
52					17.4	17.8	14.5	11.6		52
56						15.7	12.5	9.8		56
60							10.8	8.5		60
64							9.4	7.3		64
68								6.3		68



### 3.5 Configuration for turning over a shield tunneling machine

#### 3.5.1 Characteristic curve of lifting height



**Note:**

1. X-axis indicates the working radius in meters while Y-axis indicates the lifting height in meters.
2. Boom deflection is not considered in this curve.

### 3.5.2 Boom lengths of the configuration

Main boom lengths

<b>Boom</b> <b>Main boom length</b>	<b>Main boom pivot section</b> <b>11m</b>	<b>Main boom intermediate section</b> <b>3m</b>	<b>Main boom intermediate section</b> <b>6m</b>	<b>Main boom intermediate section</b> <b>10m</b>
21	1	0	0	1
24	1	1	0	1
27	1	0	1	1
30	1	1	1	1

Jib lengths

<b>Jib</b> <b>Luffing jib length</b>	<b>Fixed jib pivot section</b> <b>4.5m</b>	<b>Luffing jib head</b> <b>4.5m</b>
9	1	1

### 3.5.3 Lifting capacity chart

Lifting capacity chart

Main boom length: 21m Jib length: 9m Rear counterweight: 100t Central counterweight: 32t Fixing angle for main boom and jib: 10°						
Main boom angle (°)	Radius m			Lifting capacity t		
	Primary hook	Jib	Turning over	Primary hook	Auxiliary hook	Turning over
81	6	9.5	7.8	271.1	130.0	190.5
78.2	7	11.0	9.0	235.6	130.0	173.7
75.3	8	12.4	10.2	207.2	120.2	155.5
72.4	9	13.9	11.4	184.8	105.2	137.8
69.5	10	15.3	12.6	166.6	91.2	122.4
66.5	11	16.7	13.9	141.6	80.3	105.4
63.4	12	18.1	15.1	124.4	70.8	92.7
60.2	13	19.6	16.3	108.2	64.4	82.0
56.9	14	19.5	16.8	97.9	64.5	77.1
53.5	15	22.4	18.7	87.5	53.1	66.8
49.9	16	23.8	19.9	79.6	48.7	61.0
46.1	17	25.1	21.1	72.3	44.8	55.6
41.9	18	26.5	22.3	65.9	41.5	51.0
37.4	19	27.9	23.4	60.5	38.2	46.9

Note: The auxiliary hook weighs 2.9t when the primary hook works (for load hook of 160t). The primary hook weighs 4.3t when the auxiliary hook work (for load hook of 260t).

## Lifting capacity chart

Main boom length: 21m Jib length: 9m Rear counterweight: 110t Central counterweight: 32t Fixing angle for main boom and jib: 10°						
Main boom angle (°)	Radius m			Lifting capacity t		
	Primary hook	Jib	Turning over	Primary hook	Auxiliary hook	Turning over
81	6	9.5	7.8	277.2	130.0	193.4
78.2	7	11.0	9.0	241.0	130.0	176.2
75.3	8	12.4	10.2	212.1	124.7	160.0
72.4	9	13.9	11.4	189.1	110.0	142.1
69.5	10	15.3	12.6	170.4	97.1	127.0
66.5	11	16.7	13.9	152.0	85.5	112.8
63.4	12	18.1	15.1	131.3	76.7	98.8
60.2	13	19.6	16.3	117.0	68.3	88.0
56.9	14	19.5	16.8	104.2	68.4	82.0
53.5	15	22.4	18.7	93.9	57.0	71.7
49.9	16	23.8	19.9	85.1	52.1	65.1
46.1	17	25.1	21.1	77.2	48.3	59.6
41.9	18	26.5	22.3	70.8	44.8	54.9
37.4	19	27.9	23.4	65.9	41.6	51.0

Note: The auxiliary hook weighs 2.9t when the primary hook works (for load hook of 160t). The primary hook weighs 4.3t when the auxiliary hook work (for load hook of 260t).

## Lifting capacity chart

Main boom length: 21m Jib length: 9m Rear counterweight: 120t Central counterweight: 32t Fixing angle for main boom and jib: 10°						
Main boom angle (°)	Radius m			Lifting capacity t		
	Primary hook	Jib	Turning over	Primary hook	Auxiliary hook	Turning over
81	6	9.5	7.8	283.6	130.0	196.5
78.2	7	11.0	9.0	246.5	130.0	178.8
75.3	8	12.4	10.2	217.0	126.8	163.3
72.4	9	13.9	11.4	193.5	114.0	146.0
69.5	10	15.3	12.6	174.4	102.0	131.3
66.5	11	16.7	13.9	158.6	91.3	118.7
63.4	12	18.1	15.1	141.6	81.2	105.8
60.2	13	19.6	16.3	124.9	73.4	94.2
56.9	14	19.5	16.8	110.6	73.5	87.4
53.5	15	22.4	18.7	100.3	60.4	76.3
49.9	16	23.8	19.9	91.5	56.0	70.1
46.1	17	25.1	21.1	83.6	51.9	64.3
41.9	18	26.5	22.3	76.3	47.7	58.9
37.4	19	27.9	23.4	70.8	44.4	54.7

Note: The auxiliary hook weighs 2.9t when the primary hook works (for load hook of 160t). The primary hook weighs 4.3t when the auxiliary hook work (for load hook of 260t).

## **4. Working conditions and matters need attention**

### **4.1 Working environment**

1. Temperature of working environment ranges between  $-20^{\circ}\text{C}\sim 40^{\circ}\text{C}$ , and the elevation of working site shall not exceed 1000m.

2. Wind speed: It shall not exceed 14.1m/s when boom length  $\leq 50\text{m}$  or not exceed 9.8m/s when boom length  $> 50\text{m}$ .

3. The ground of working site must be solid and flat with an inclination of no larger than 1%. Bearing capacity of the ground or supporting surface must be larger than the maximum gradeability of the current configuration.

### **4.2 Load**

1. Value in lifting capacity charts includes the weight of slings and wire rope. The actual weight of load should be smaller than the value.

2. Values in lifting capacity charts are provided based on a working condition that the ground is solid and level and the load is freely suspended.

3. Empty-load area, not listed in lifting capacity charts, is a non-operation area.

4. This crane is able to travel with a load, the maximum traveling speed of which should be lower than 0.1m/s (6m/min).

### **4.3 Load hook and rope reeving**

The rated lifting capacity of the load hook must be larger than or equal to the actual weight of load (including slings and rope) in any condition.

Data in technical specifications will change with the improvement of product. Actual condition shall prevail.