ZOOMLION

ZOOMLION ZCC4000VE5 CRAWLER CRANE

TECHNICAL SPECIFICATIONS

GQ0661902700100EN

Zoomlion Heavy Industry Science & Technology Co., Ltd

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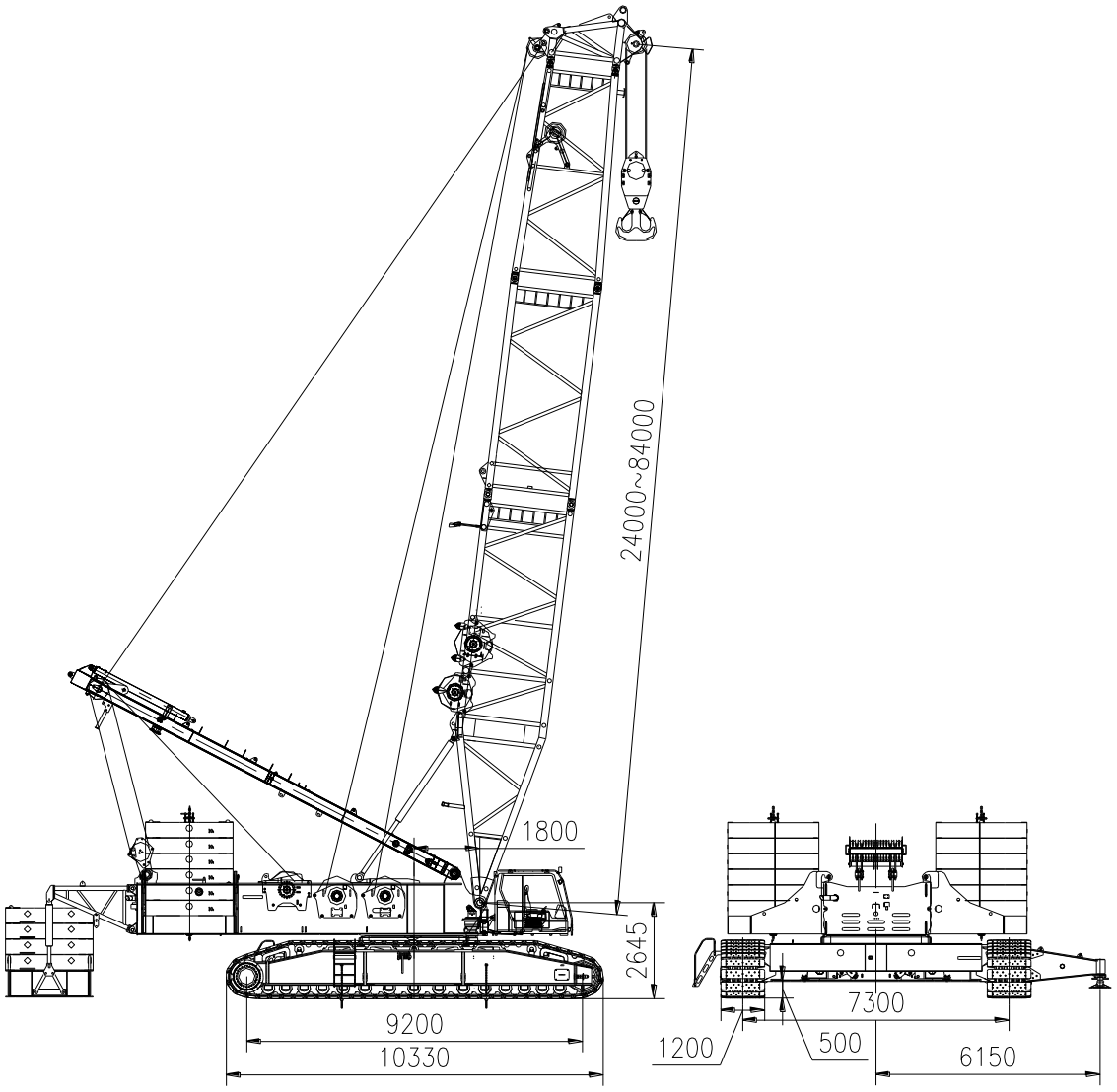
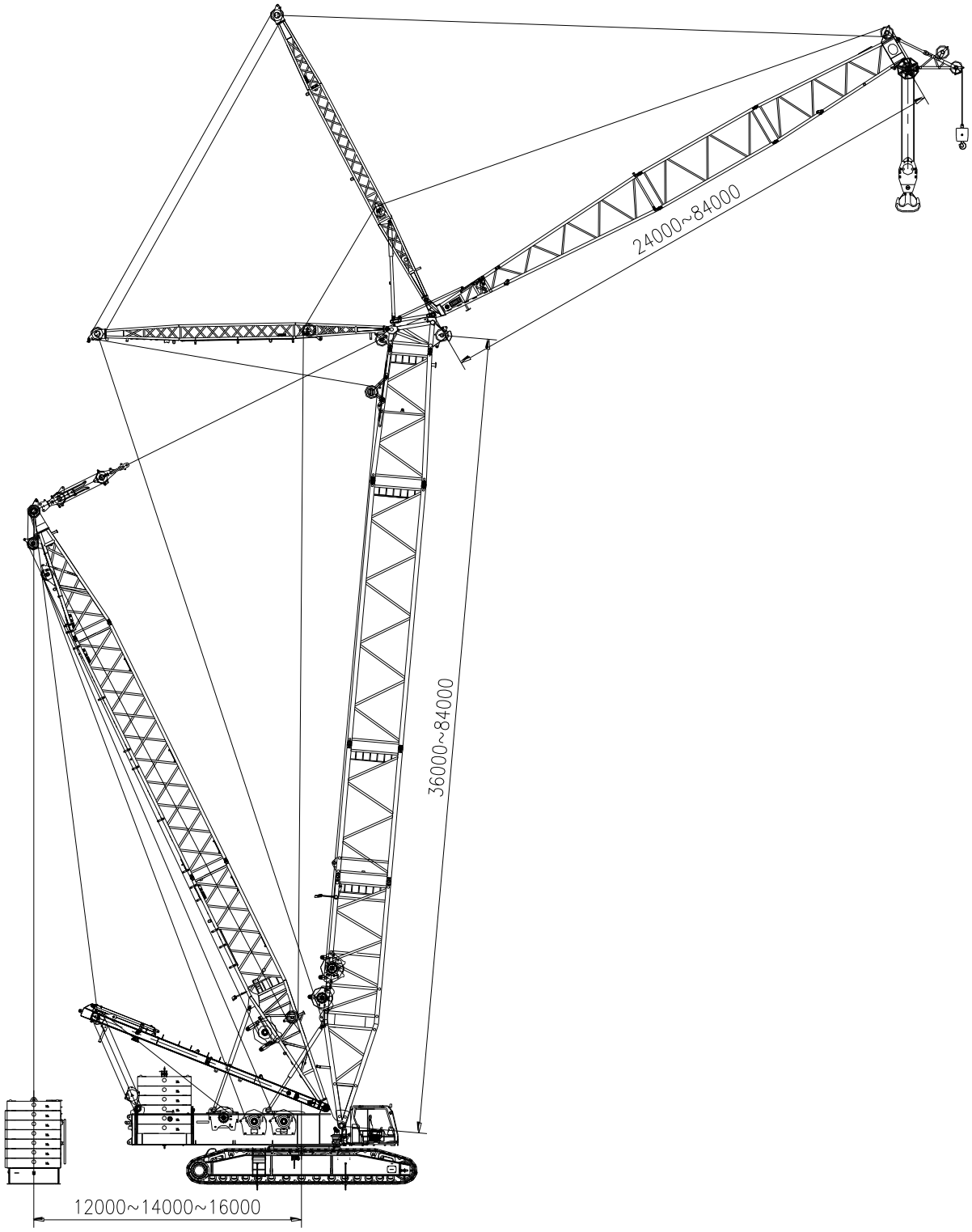
Content

1. Overall description

1. 1. Overall dimension of the basic machine



Main boom operating mode



Superlift luffing jib operating mode

1. 2. Major technical parameters

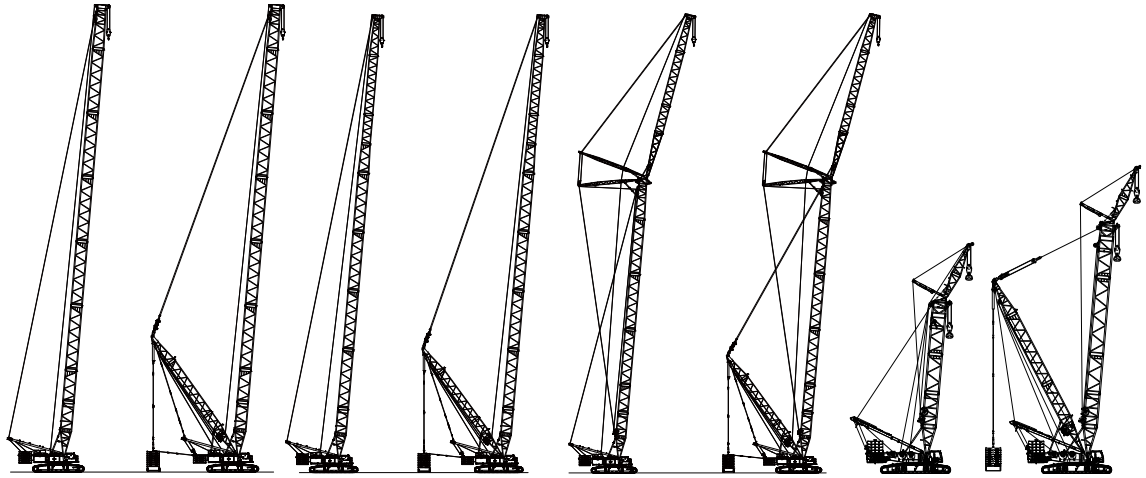
1) Items		Parameters
Max. lifting capacity (t) / radius (m) / boom length (m)		400/6/24 (standard), 400/12/36 (superlift)
Max. lifting moment (t.m)		5500
Main boom length (m)		24~84 (standard), 36~96 (superlift)
Light main boom length (m)		72~108(standard), 72~126 (superlift)
Length of SFV jib (for shield-tunneling machine) (m)		9~12
Max. lifting capacity of SFV/SFVDB jib (t)		200
Main boom length of operating mode SFV/SFVDB (m)		24 (standard), 36 (superlift)
Length of luffing jib (m)		24~72 (standard), 24~84 (superlift)
Max. lifting capacity of luffing jib (t)		150 (standard), 235 (superlift)
Main boom length of operating mode SW/SWDB (m)		30~60 (standard), 36~84 (superlift)
Max. length of main boom + luffing jib		60+72 (standard), 84+84 (superlift)
Speed of a single rope	Main hoisting winch (m/min)	160
	Secondary hoisting winch (m/min)	160
	Main derricking winch (m/min)	2×55
	Superlift derricking winch (m/min)	160
	Luffing jib derricking winch (m/min)	154
	Tip boom hoisting winch (m/min)	139
Max. slewing speed (rpm)		1.2
Max. crawling speed (km/h)		1.0
Gradeability (%)		20
Ground pressure (MPa)		0.17
Total weight with main boom (t)		340
Max transport weight of a single component (t)		42 (without A-frame and winches)
Engine	Manufacturer/model	Cummins X12-C450
	Rated power / rotational speed (kW/rpm)	336/1800
	Max. output torque / rotational speed (Nm/rpm)	2169/1400
	Emission standard	Euro V for Non-road Mobile Machinery

Note：

① single rope speed of winch, slewing speed, travelling speed will change as hoisting load changes;

② Unit of ground pressure is an average value. Actual maximum unit of ground pressure is subject to actual operating modes.

Operating modes



Code	Operating mode	Lengths
S	Standard heavy main boom	S=24m~84m
SA	heavy main boom with attached ballast	S=24m~84m
SDB	Superlift heavy main boom	S=36m~96m
SL	Standard light main boom	SL=72m ~108m
SLDB	Superlift light main boom	SL=72m ~126m
SW	Standard luffing jib	S=30m~ 60m W=24m~72m
SWDB	Superlift luffing jib	S=36m~84m W=24m~84m
SFV	Standard fixed jib for shield-tunneling machine	S=24m FV=9~12 m
SFVA	Fixed jib for shield-tunneling machine with attached ballast	S=24m FV=9~12 m
SFVDB	Superlift fixed jib for shield-tunneling machine	S=36m FV=9 ~12m

1. 3. Major technical highlights

1.3.1 efficiency and convenience

①efficiency: the crane comes with engine power matching technology which can not only increase engine power utilization rate, but can also ensure that the working of pump, motor, reducer is always placed in the coordinated optimal state. Working speed of mechanism is increased with single rope speed up to 160m/min

② Self-assembly efficiency: outrigger erection cylinder height can be 1.3m to realize the assembly/disassembly of basic machine without auxiliary padding; boom pin spindle is hydraulic plug-type pin spindle which brings convenience for assembly and disassembly; central ballast and track carrier is of self-mounting type; one-button boom erection, rope reeving and boom sections can be transported in nested state.

1.3.2 intelligent, safe and controllable

①functions such as crane management, statistics, maintenance, fault alarm, crane positioning and track replay is integrated into mobile phone APP to enhance equipment management and operation efficiency.
②Machine gravity center program can conduct real-time supervision on the center of gravity of the whole machine; real-time dynamic display of crawler track unit of ground pressure.

2.Technical instruction

2.1. Power system

Cummins engine

Rated output power/ rotational speed：336kw，1800r/min

Maximum output torque：2169Nm，1400r/min

Exhaust emission standard: Eueo V for Non-road Mobile Machinery

Fuel tank has a great capacity of 700 L, which ensures long working hours of engine.

2.2. Hydraulic system

The hydraulic system is composed of main pump, auxiliary valve, hydraulic motor, hydraulic oil tank, and oil cooler, etc.

It is equipped with a worldwide advanced pump-controlling system and a load-sensitive system. Main hydraulic elements are of famous brands both at home and abroad, which are energy-saving and highly reliable with a long service life.

Cooler: aluminum radiator with a hydraulic-driving fan.

2.3. Electric system

DC 24V, negative ground, two storage batteries of 195AH

The electrical system of machine includes power source, engine start, engine shutdown, indicating light, alarm device, illumination device, fan, wiper, horn, hoisting limiter, hydraulic oil cooling fan, digital display system, PLC controller, load moment limiter, engine preheating device, safety equipment etc. which not only ensure safe operation of the crane but also provide a good working environment. CAN bus control technology applied in the crane connects engine, PLC controller, load moment limiter and digital display efficiently. It possesses the function of fault detecting and self-diagnosis.

2.4. Digital display system

LCD with a large touch screen is able to display all kinds of signals of operating mode collected

by PLC in multiple languages, including rotational speed of engine, water temperature, fuel oil pressure, hydraulic pump pressure, major motor pressure, operational condition of the basic machine, etc. It also carries out real-time monitoring on working condition and sends out yellow or red alarm when the crane is in abnormal conditions.

2.5. Centralized lubricating system

The centralized lubricating system largely increases the service life of the crane.

2.6. Winch system

Main hoisting mechanism, secondary hoisting mechanism and tip boom hoisting mechanism.

Each of the mechanisms is composed of a built-in axial piston variable displacement motor, a balance valve, a reducer, a normally-closed brake and wire rope, which can be controlled independently.

High-quality and anti-rotation wire rope.

Main hoisting mechanism, secondary hoisting mechanism (luffing jib derricking mechanism) and tip boom hoisting mechanism are able to realize infinitely variable speeds from 0 to the maximum speed, largely improving the working efficiency.

Main hoisting mechanism	Speed of the outmost layer	160m/min
	Rope diameter	Φ26mm
	Rated single rope tension	14.5t

Secondary hoisting mechanism	Speed of the outmost layer	160m/min
	Rope diameter	Φ26mm
	Rated single rope tension	14.5t

Tip boom hoisting mechanism	Speed of the outmost layer	139m/min
	Rope diameter	Φ26mm
	Rated single rope tension	15t

Derricking mechanism

The derricking mechanism is composed of a built-in axial piston variable displacement motor, a balance valve, a reducer, a normally-closed brake and wire rope, which can be controlled independently.

High-quality and non-anti-rotation wire rope.

Main derricking mechanism	Speed of the outmost layer	2×55m/min
	Rope diameter	Φ26mm
	Rated single rope tension	14.5t

Luffing jib derricking mechanism	Speed of the outmost layer	154m/min
	Rope diameter	Φ26mm
	Rated single rope tension	14.5t

Superlift derricking mechanism	Speed of the outmost layer	160m/min
	Rope diameter	Φ26mm
	Rated single rope tension	14.5t

2.7. Slewing mechanism

It is composed of a built-in axial piston double-variable displacement motor, a dual-gear reducer, a normally closed slewing brake, a small gear, and a slewing bearing. It realizes slewing for 360° through the slewing bearing driven by the small gear, thus realizing the slewing of superstructure. The slewing mechanism is equipped with a controllable free slewing function, which reduces the impact on the crane and ensures that braking is smooth and steady.

A closed slewing system with less impact is used to make the starting and braking more stable.

The controllable free swing function make the slewing gear better fitted in operation.

Infinite slewing speed regulation: from 0 to 1.2r/min.

The slewing gear can be locked by the two mechanical locking devices in front of the slewing platform, which guarantees the safety during transportation.

2.8. Cab swiveling mechanism and pitching mechanism

To reduce the width of the basic machine during transport, the operator's cab can be swiveled for 90° from one side of the slewing platform to the front, which is then fixed with a locating pin. This is convenient for transportation.

Pitching-up or pitching-down is controlled by a cylinder. The operator's cab can be pitched up for 20° if the load is hoisted high, broadening the vision of the crane operator.

2.9. Counterweight and installation

The counterweight assy. is composed of counterweight frame, counterweight, bearing chain and fixing pin.

2.10. Crawling mechanism

The crawling mechanism is fitted with two variable displacement motors and two reducers. Each track is controlled by a joystick. It is able to make such movements as crawling in a straight line, turning with one track, differential steering, pivot steering, crawling with a load with a high level of maneuverability and flexibility.

Crawling speed: 0~1.0km/h;

Gradeability: 20%;

Tensioning of track: the track can be tensioned through a hydraulic cylinder quickly and conveniently.

2.11. A-frame erecting mechanism

The A-frame erecting mechanism is composed of A-frame, A-frame erecting cylinder, auxiliary hydraulic system, etc. It is mainly used during assembly, dismantling or transport.

It is safer and more reliable that cylinder is directly connected with plate-type balance valve.

After the A-frame is erected for over 90°, it can be used to connect anchoring rods, install boom sections and install tracks and counterweight.

2.12. Outrigger erecting and track self-assembly and dismantling mechanism

The outrigger erecting and track self-assembly/dismantling mechanism consists of undercarriage

outriggers, outrigger cylinders, undercarriage control valves, bolting pins, etc.

The outrigger erecting mechanism is the main load-bearing mechanism for self-assembly and dismantling of track. Track bolting cylinders are used to connect the track to the undercarriage center section. The track can be assembled /dismantled by the crane itself without help of an auxiliary crane, thus improving the working efficiency, reducing the labor intensity and guaranteeing the safe operation of crane.

2. 13. Safety device

Load moment limiter

It consists of a digital LCD screen, a host machine, a signal converter, a sensor, etc. When the lifting moment reaches 90% of the rated moment, the warning light is on and the buzzer sends out a warning. The operation will be stopped automatically when the rated moment is being approached so that accidents caused by overload can be avoided.

Data as follows can be displayed on the digital LCD screen:

Moment ratio

Elevation angle of main boom

Main boom length

Working radius

Actual load capacity of hook

Permitted lifting capacity

Permitted maximum lifting height

Overflow valves of hydraulic system

The overflow valve fitted in the hydraulic system can restrain the pressure in the oil circuit from rising irregularly, thus protecting such hydraulic elements as hydraulic oil pump and hydraulic motor against damage and preventing the hydraulic system from being overloaded.

Hoisting limiter

Devices like limit switch and limit weight installed on boom head are used to prevent over-hoisting of load hook. Limit switch sends out a signal if the load hook is hoisted to a certain height, and the electrical system will cut off the hoisting automatically. A sound-light alarm will be sent out through the buzzer and the display in operator’s cab to avoid over-hoisting of the hook.

Angle indicator

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

Derricking limiter

The protective device, controlled by load moment limiter and limit switch, realizes automatic cut-off of limit derricking of boom and sends out sound-light alarm.

Main boom tilting-back support

It is a hydraulic-structured tilting-back support with inner pipe inserted into the outer pipe. It is mounted on the main boom pivot section to prevent main boom from tilting backwards with the support of hydraulic pressure.

Crane inclinometer

An electronic inclinometer is used to indicate the "leveled position" of the crane. The operator can observe the inclination of crane in the screen at all times.

Mousing

It closes off the hook to prevent a load from slipping off.

Protective device for over-winding and over-unwinding of rope

A device ensuring that three windings of wire rope on the drum is 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.

Anemometer

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

Emergency stop button

It shuts down the engine and cuts off the whole power supply in emergent conditions.

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.

Monitoring system

Five video cameras: respectively monitor the working conditions of crane winches and the situation behind the crane.

Display: switch between the different screens via press-key.

Remote GPS monitoring system (optional)

It has such functions as global positioning, GPRS data transmission, inquiry and statistics of equipment status, remote fault diagnosis, etc.

2.14. Operator’s cab

It is an all-steel structured cab with tempered glass around. The top and front windows are laminated glasses. The cab is equipped with a right sun visor, an adjustable seat, a wiper, an electrical control lever, a load moment limiter, a digital display, a remote control box of various switches, an air conditioner, an electric fan, a head lamp, a cigarette lighter, a fire extinguisher, etc. The operator’s cab has a broad vision and a capacious and comfortable inner space.

2.15. Hook

All rotatable hooks are equipped with a mousing.

Hook for 400t (double rope hook): 2×8 pulleys

Hook for 300t: 12 pulleys

Hook for 200t: 8 pulleys

Hook for 160t (double rope hook): 2×3 pulleys

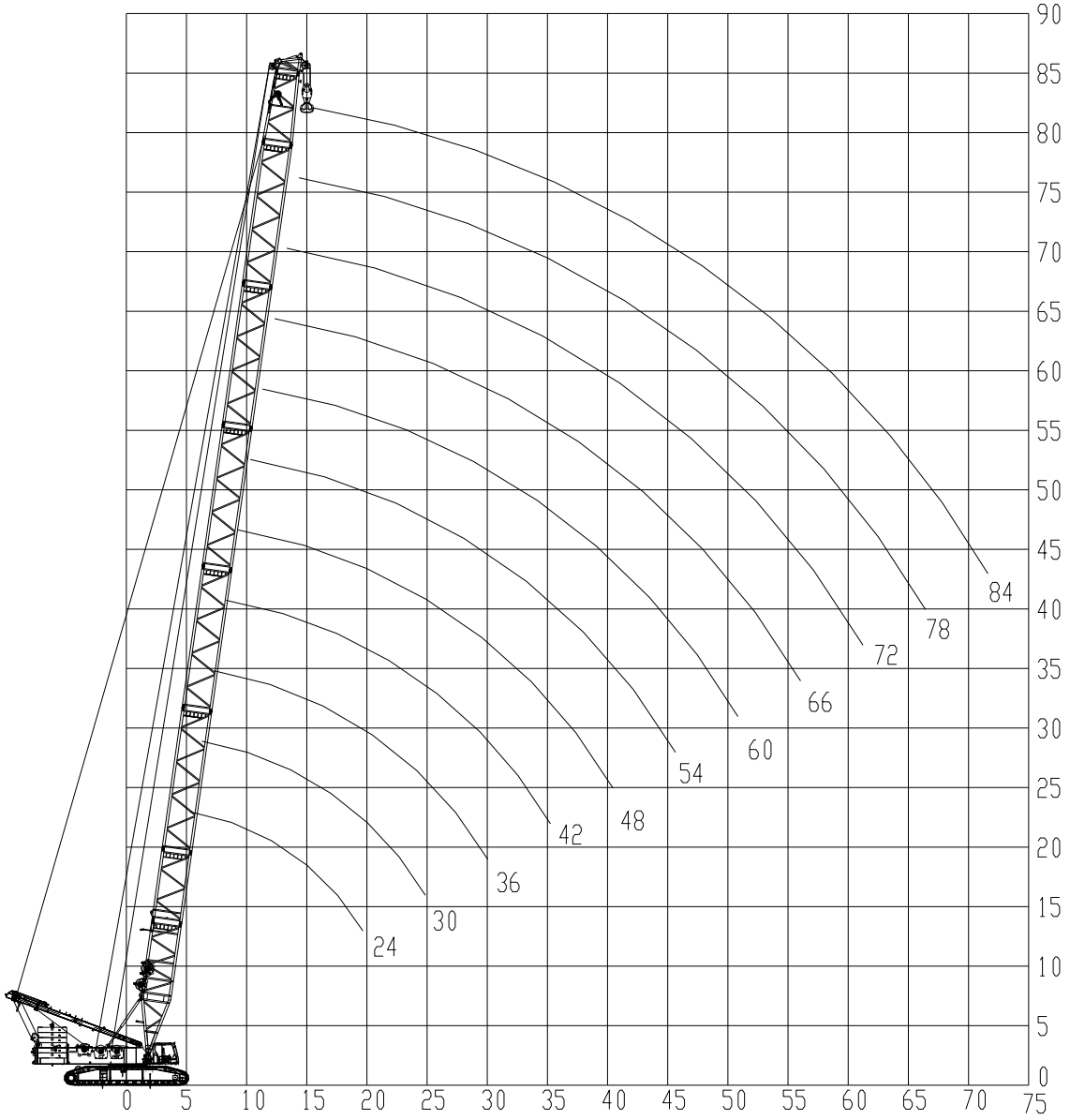
Hook for 100t: 4 pulleys

Hook for 50t: 2 pulleys

Hook for 16t: cylindrical hook

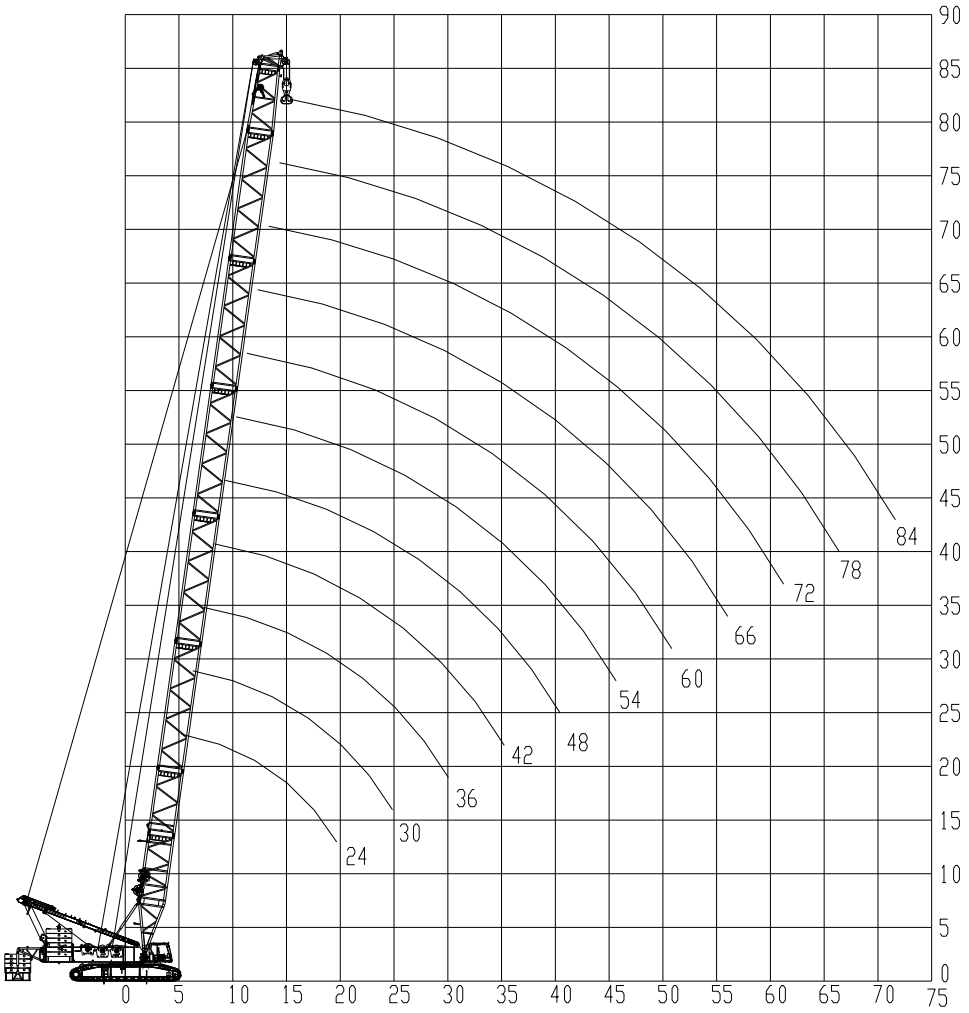
3. working radius and lifting performance

3.1. operating mode S



rear counterweight 150t, central ballast 40t												
radius	main boom length（m）											radius
（m）	24	30	36	42	48	54	60	66	72	78	84	（m）
6	400	400										6
7	372	372	369	355								7
8	319	319	319	314	305	297						8
9	283	283	283	281	275	268	261	244				9
10	252	252	250	245	239	233	227	221	215			10
11	224	225	220	215	210	205	200	195	191	182	157	11
12	195	196	196	191	187	183	179	175	171	167	155	12
14	155	155	155	155	153	150	147	144	141	138	135	14
16	127	128	128	127	127	126	124	121	119	117	114	16
18	108	108	108	108	107	107	106	105	102	101	98.6	18
20	93.1	93.7	93.3	93.1	92.5	92.1	91.4	91.1	89.7	88.1	86.2	20
22	81.5	82.1	81.7	81.5	80.9	80.4	79.7	79.4	78.7	77.9	76.1	22
24		72.8	72.4	72.2	71.5	71	70.3	70	69.2	68.8	67.8	24
26		65.1	64.7	64.5	63.8	63.4	62.6	62.3	61.5	61.1	60.3	26
28		58.6	58.3	58.1	57.4	56.9	56.2	55.9	55	54.6	53.8	28
30			52.9	52.7	52	51.5	50.7	50.4	49.6	49.1	48.3	30
32			48.2	48	47.3	46.8	46	45.7	44.8	44.4	43.5	32
34				44	43.2	42.8	41.9	41.6	40.8	40.3	39.4	34
36				40.4	39.7	39.2	38.4	38.1	37.2	36.7	35.8	36
38				37.2	36.5	36.1	35.2	34.9	34	33.6	32.7	38
40					33.7	33.2	32.4	32.1	31.2	30.8	29.8	40
44					28.9	28.4	27.6	27.3	26.4	26	25	44
48						24.5	23.7	23.4	22.5	22	21.1	48
52							20.3	20.1	19.2	18.7	17.8	52
56								17.3	16.3	15.9	15	56
60									13.9	13.5	12.6	60
64									11.8	11.4	10.5	64
68										9.6	8.6	68
72											7	72

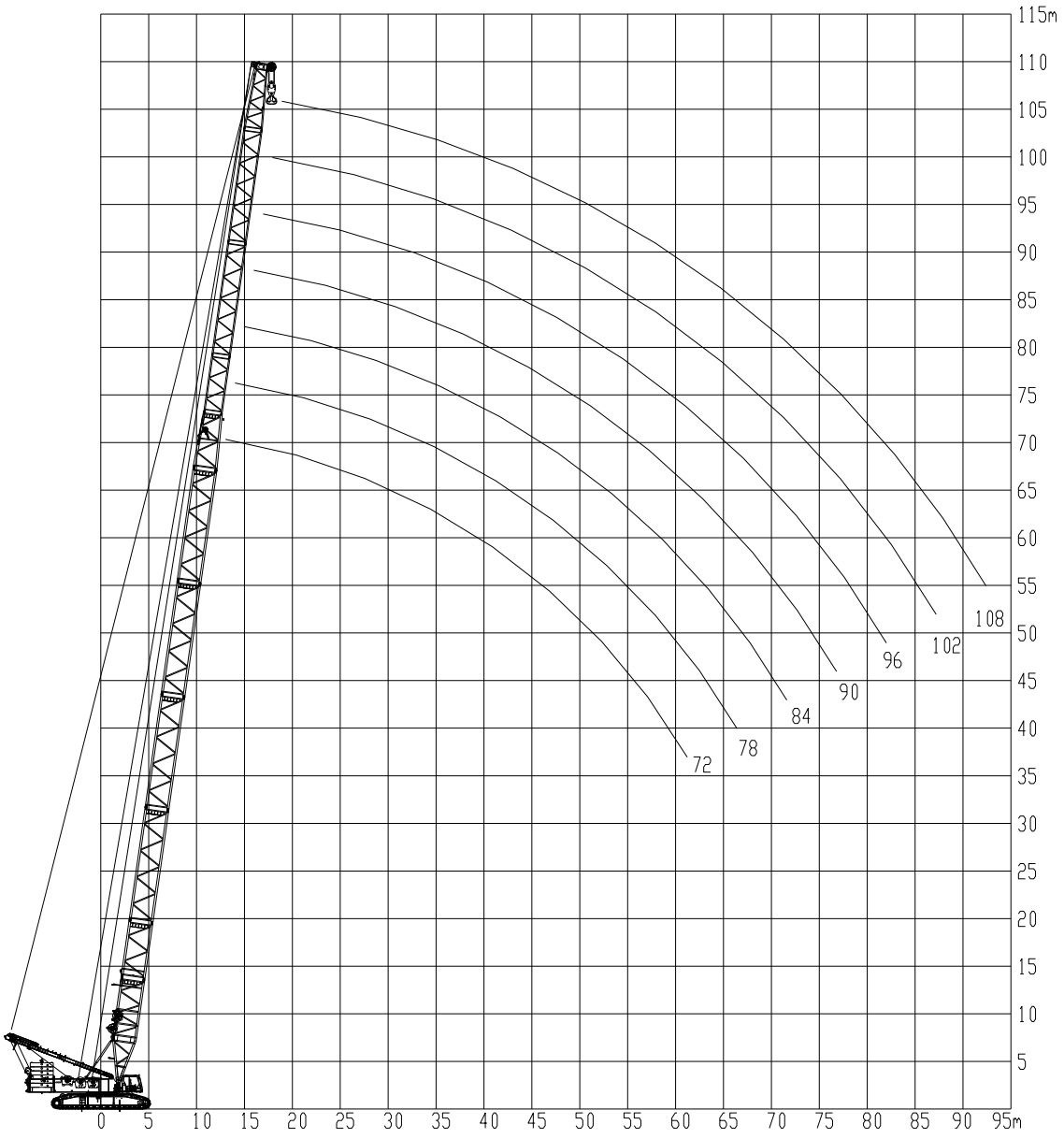
3.2. operating mode SA



rear counterweight 110t, attached ballast 110t, central ballast 40t												
radius	main boom length（m）											radius
（m）	24	30	36	42	48	54	60	66	72	78	84	（m）
6	400	400										6
7	400	400	400	392								7
8	372	361	349	338	327	314						8
9	324	315	306	297	288	280	272	244				9
10	286	280	272	264	257	250	243	237	215			10
11	257	251	244	238	232	226	220	214	208	182	157	11
12	232	228	222	216	211	205	200	195	190	179	155	12
14	194	191	187	183	178	174	169	166	161	158	150	14
16	167	165	161	157	153	150	146	143	139	136	133	16
18	145	144	141	138	135	132	128	126	122	120	116	18
20	128	128	125	123	119	117	114	111	108	106	103	20
22	115	114	112	110	107	105	102	100	97.4	95.3	92.6	22
24		103	101	99.7	97.1	94.9	92.3	90.5	88	86	83.5	24
26		94	92.4	90.8	88.4	86.4	84	82.3	79.9	78.1	75.8	26
28		85.8	84.6	83.2	81	79.2	76.8	75.3	73	71.4	69.1	28
30			77.8	76.6	74.5	72.8	70.6	69.2	67	65.5	63.3	30
32			71.7	70.8	68.9	67.3	65.2	63.9	61.8	60.3	58.2	32
34				65.6	63.9	62.4	60.4	59.1	57.1	55.7	53.7	34
36				61	59.4	58	56.1	54.9	53	51.6	49.7	36
38				56.9	55.4	54.1	52.3	51.2	49.3	48	46.1	38
40					51.8	50.6	48.8	47.8	45.9	44.7	42.8	40
44					45.3	44.4	42.8	41.9	40.1	39	37.2	44
48						39.2	37.7	36.9	35.2	34.2	32.5	48
52							33.4	32.7	31.1	30.1	28.4	52
56								29	27.5	26.6	25	56
60									24.3	23.5	22	60
64									21.5	20.8	19.3	64
68										18.3	16.9	68
72											14.8	72

rear counterweight 150t, attached ballast 70t, central ballast 40t												
radius	main boom length（m）											radius
（m）	24	30	36	42	48	54	60	66	72	78	84	（m）
6	400	400										6
7	400	400	400	392								7
8	372	361	349	338	327	314						8
9	324	315	306	297	288	280	272	244				9
10	286	280	272	264	257	250	243	237	215			10
11	257	251	244	238	232	226	220	214	208	182	157	11
12	232	228	222	216	211	205	200	195	190	179	155	12
14	194	191	187	183	178	174	169	166	161	158	150	14
16	167	165	161	157	153	150	146	143	139	136	133	16
18	145	144	141	138	135	132	128	126	122	120	116	18
20	128	128	125	123	119	117	114	111	108	106	103	20
22	115	114	112	110	107	105	102	100	97.4	95.3	92.6	22
24		103	101	99.7	97.1	94.9	92.3	90.5	88	86	83.5	24
26		94	92.4	90.8	88.4	86.4	84	82.3	79.9	78.1	75.8	26
28		85.8	84.6	83.2	81	79.2	76.8	75.3	73	71.4	69.1	28
30			77.8	76.6	74.5	72.8	70.6	69.2	67	65.5	63.3	30
32			71.7	70.8	68.9	67.3	65.2	63.9	61.8	60.3	58.2	32
34				65.6	63.9	62.4	60.4	59.1	57.1	55.7	53.7	34
36				61	59.4	58	56.1	54.9	53	51.6	49.7	36
38				56.9	55.4	54.1	52.3	51.2	49.3	48	46.1	38
40					51.8	50.6	48.8	47.8	45.9	44.7	42.8	40
44					45.3	44.4	42.8	41.9	40.1	39	37.2	44
48						39.2	37.7	36.9	35.2	34.2	32.5	48
52							33.4	32.7	31.1	30.1	28.4	52
56								29	27.5	26.6	25	56
60									24.3	23.5	22	60
64									21.5	20.8	19.3	64
68										18.3	16.9	68
72											14.8	72

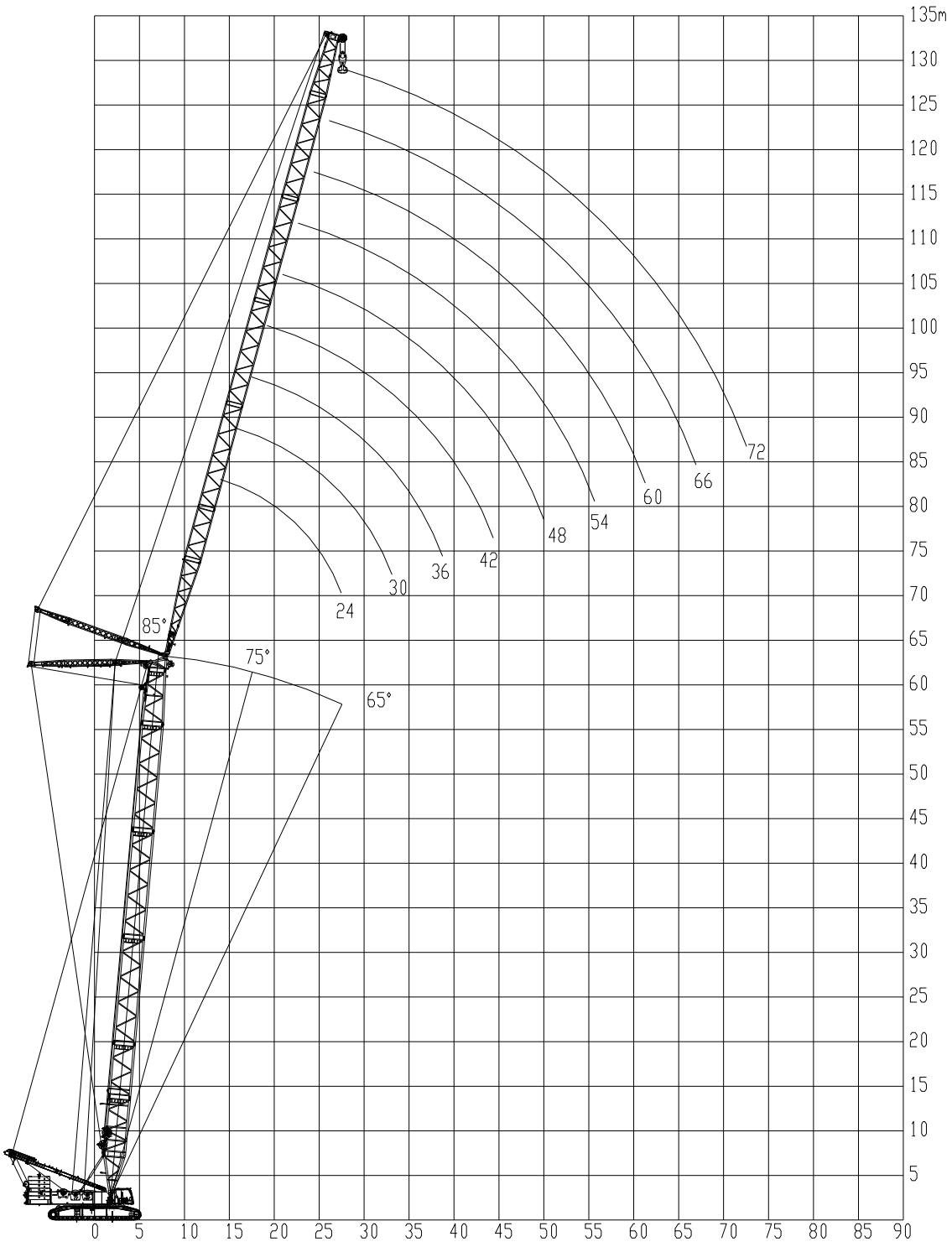
3.3. operating mode SL



rear counterweight 150t, central ballast 40t

radius（m）	main boom length（m）							radius（m）
	72	78	84	90	96	102	108	
10	215	195						10
11	192	187	165	145				11
12	172	168	163	143	127	101		12
14	142	139	136	133	123	97.7	86	14
16	120	117	115	113	111	94.5	80.6	16
18	104	101	99.7	97.6	96	91.1	75.7	18
20	91	89	87.4	85.4	84.1	83.3	70.9	20
22	80.1	78.8	77.4	75.6	74.5	73.8	66.1	22
24	70.7	69.9	69.2	67.5	66.4	66	61.9	24
26	63.1	62.2	61.7	60.6	59.7	59.4	57.9	26
28	56.6	55.7	55.3	54.4	54.1	53.9	53.2	28
30	51.1	50.3	49.8	48.9	48.7	49	48.5	30
32	46.5	45.6	45.1	44.2	44.1	44.6	44.3	32
34	42.4	41.5	41	40.1	39.9	40.6	40.6	34
36	38.8	37.9	37.5	36.5	36.3	36.9	37.1	36
38	35.7	34.8	34.3	33.3	33.1	33.8	33.8	38
40	32.9	32	31.4	30.5	30.4	30.9	31	40
44	28.1	27.2	26.7	25.8	25.5	26.1	26.2	44
48	24.2	23.3	22.7	21.8	21.6	22.2	22.2	48
52	20.9	20	19.5	18.5	18.3	18.9	18.9	52
56	18.2	17.2	16.7	15.7	15.5	16.1	15.5	56
60	15.7	14.8	14.3	13.3	13.1	13.7	11.7	60
64	13.6	12.7	12.2	11.2	11	11.6	8.2	64
68		10.9	10.4	9.4	9.2	9.8	4.9	68
72			8.7	7.8	7.6	8.2		72
76				6.3	6.1	6.7		76
80				5	4.8	5.4		80

3.4. operating mode SW

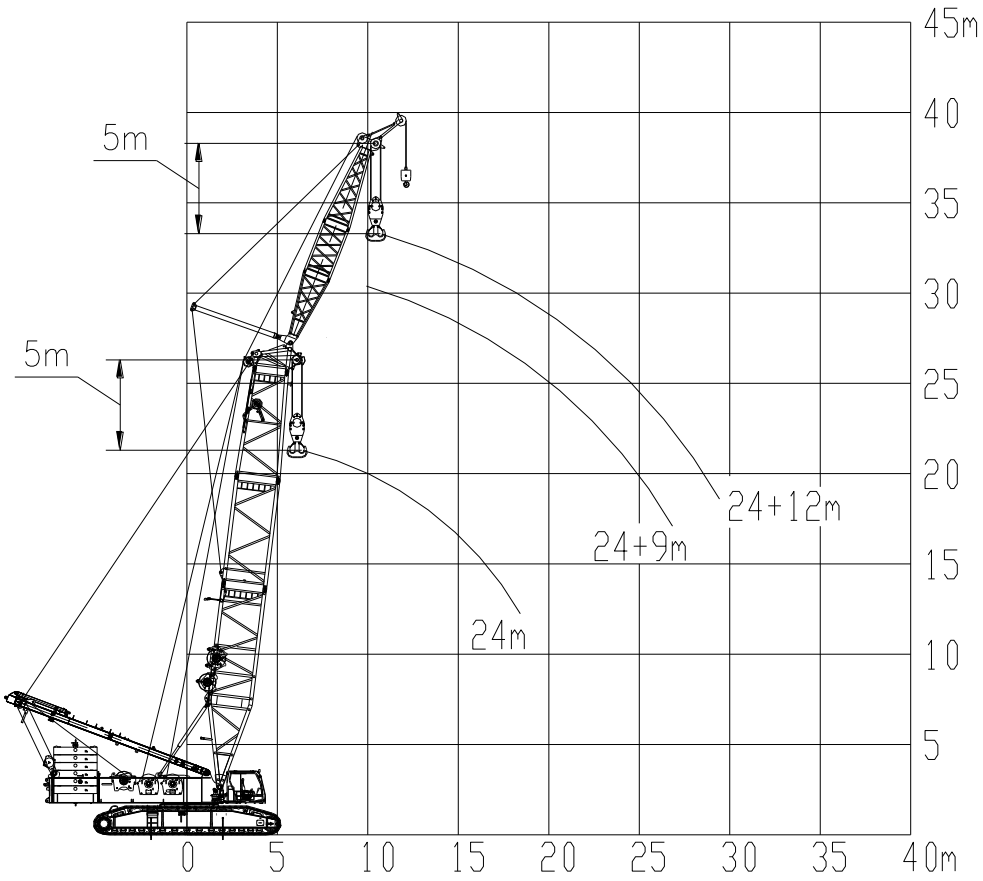


rear counterweight 150t, central ballast 40t,main boom length30m										
radius（m）	luffing jib length（m）									radius（m）
	24	30	36	42	48	54	60	66	72	
14	151									14
16	132	128	123							16
18	117	113	110	107						18
20	102	102	99.2	96.3	93.4					20
22	90.2	89.9	89.5	87.5	85	82.5	80.2			22
24	80.6	80.4	80	79.6	77.9	75.6	73.5	71.7		24
26	72.7	72.6	72.2	71.8	71.3	69.7	67.7	66.1	64.2	26
28	66.1	66	65.7	65.3	64.8	64.3	62.8	61.2	59.5	28
30		60.5	60.2	59.8	59.3	58.7	58.2	57	55.3	30
32		55.6	55.4	55	54.5	54	53.5	53.2	51.6	32
34		51.4	51.3	50.9	50.4	49.9	49.4	49	48.4	34
36			47.6	47.3	46.8	46.3	45.8	45.4	44.9	36
38			44.3	44.1	43.6	43.1	42.6	42.2	41.7	38
40			41.4	41.2	40.7	40.2	39.7	39.4	38.9	40
44				36.2	35.9	35.4	34.9	34.6	34	44
48					31.8	31.4	30.9	30.6	30.1	48
52					28.4	28	27.6	27.3	26.8	52
56						25.2	24.7	24.5	23.9	56
60							22.3	22	21.5	60
64								19.9	19.4	64
68								18	17.5	68
72									15.9	72

rear counterweight 150t, central ballast 40t,main boom length42m										
radius（m）	luffing jib length（m）									radius（m）
	24	30	36	42	48	54	60	66	72	
14	139									14
16	123	119								16
18	109	106	103							18
20	98.8	95.8	92.9	90.2	87.5					20
22	89.7	87.3	84.7	82.3	79.9	77.5				22
24	80.2	79.9	77.8	75.5	73.4	71.2	69.1			24
26	72.4	72.1	71.7	69.7	67.7	65.8	63.8	62.2		26
28	65.8	65.6	65.2	64.7	62.8	61	59.2	57.7	56	28
30		60.1	59.7	59.3	58.5	56.8	55.1	53.8	52.2	30
32		55.3	55	54.6	54.1	53.1	51.6	50.2	48.7	32
34		51.1	50.9	50.5	50	49.4	48.3	47.1	45.6	34
36			47.3	46.9	46.4	45.9	45.3	44.2	42.9	36
38			44.1	43.7	43.2	42.7	42.1	41.6	40.3	38
40			41.1	40.9	40.4	39.9	39.3	39	38	40
44				36	35.6	35.1	34.5	34.2	33.6	44
48					31.6	31.1	30.6	30.3	29.7	48
52					28.2	27.8	27.3	27	26.4	52
56						24.9	24.5	24.2	23.6	56
60							22	21.8	21.2	60
64							19.9	19.7	19.2	64
68								17.8	17.3	68
72									15.7	72
76									14.1	76

rear counterweight 150t, central ballast 40t,main boom length60m										
radius（m）	luffing jib length（m）									radius（m）
	24	30	36	42	48	54	60	66	72	
16	109									16
18	98.2	95								18
20	89.1	86.3	83.7	81.2						20
22	81.4	78.9	76.5	74.3	72					22
24	74.9	72.7	70.5	68.4	66.3	64.4				24
26	69.3	67.2	65.2	63.4	61.4	59.6	57.7			26
28	64.6	62.6	60.7	58.9	57.1	55.3	53.6	52.2	50.5	28
30	59.4	58.5	56.7	55	53.2	51.6	50	48.7	47.1	30
32		54.5	53.1	51.6	49.9	48.4	46.7	45.6	44	32
34		50.4	49.9	48.4	46.8	45.3	43.9	42.7	41.3	34
36		46.8	46.5	45.6	44.2	42.7	41.3	40.2	38.8	36
38			43.3	42.9	41.7	40.3	38.9	37.8	36.5	38
40			40.5	40.1	39.5	38.1	36.8	35.8	34.4	40
44				35.4	34.9	34.3	33	32	30.8	44
48				31.4	31	30.5	29.8	28.9	27.7	48
52					27.7	27.2	26.7	26.2	25.1	52
56						24.4	23.9	23.6	22.8	56
60						22	21.5	21.2	20.7	60
64							19.4	19.2	18.6	64
68								17.3	16.8	68
72								15.7	15.2	72
76									13.7	76

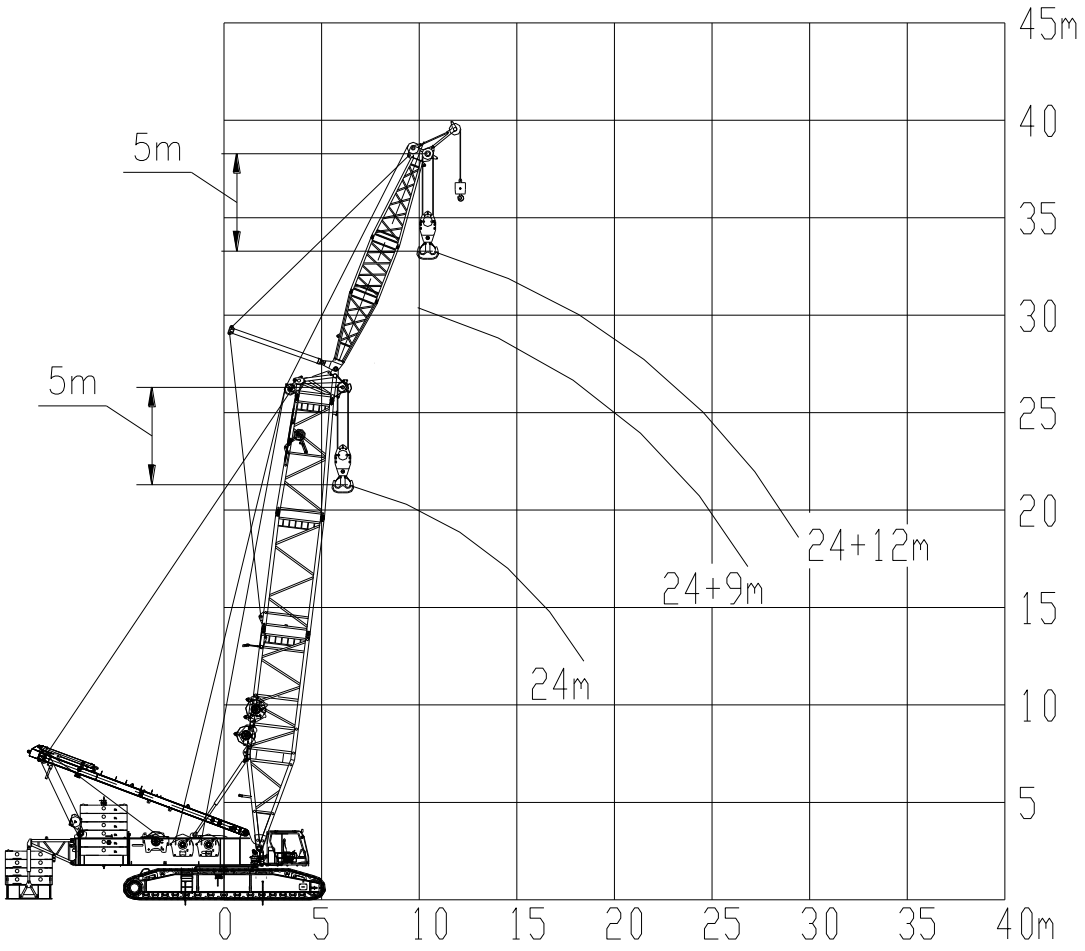
3.5. operating mode SFV



rear counterweight 150t, central ballast 40t main boom 24+jib 9						
main boom angle	main hook radius	radius of turning over	auxiliary hook radius	main hook load	radius of turning over	auxiliary hook load
80.83	7.0	8.5	10.0	364.0	282.0	200.0
80.77	7.0	8.5	10.0	364.0	282.0	200.0
79.07	7.7	9.3	11.0	329.3	264.6	200.0
78.32	8.0	9.7	11.4	314.0	255.9	197.9
77.30	8.4	10.2	12.0	299.2	247.1	195.0
75.84	9.0	10.9	12.8	278.0	228.1	178.2
73.71	9.8	11.9	14.0	250.1	202.0	154.0
73.32	10.0	12.1	14.2	245.0	198.0	151.0
70.77	11.0	13.3	15.6	214.0	172.8	131.5
70.03	11.3	13.6	16.0	205.7	165.9	126.0
68.16	12.0	14.5	17.0	185.0	150.5	116.1
66.23	12.7	15.4	18.0	170.5	138.2	106.0
62.77	14.0	16.9	19.8	145.0	118.9	92.8
62.29	14.2	17.1	20.0	142.6	116.8	91.0
58.17	15.6	18.8	22.0	122.3	100.8	79.2
57.06	16.0	19.3	22.5	117.0	96.9	76.7
53.82	17.1	20.5	24.0	106.7	88.2	69.7
50.90	18.0	21.6	25.3	97.8	81.3	64.8
49.15	18.5	22.3	26.0	93.8	77.9	61.9
44.06	20.0	24.0	28.0	82.9	69.1	55.3
44.06	20.0	24.0	28.0	82.9	69.1	55.3
38.33	21.5	25.7	30.0	74.3	62.0	49.7
36.10	22.0	26.4	30.7	71.2	59.5	47.7

rear counterweight 150t, central ballast 40t main boom 24+jib 12						
main boom angle	main hook radius	radius of turning over	auxiliary hook radius	main hook load	radius of turning over	auxiliary hook load
80.77	7.0	9.4	11.8	364.0	280.0	195.9
80.47	7.1	9.6	12.0	357.7	276.4	195.0
78.32	8.0	10.7	13.3	314.0	241.4	168.8
77.19	8.5	11.2	14.0	296.1	225.5	155.0
75.84	9.0	11.9	14.8	275.0	209.3	143.7
73.84	9.8	12.9	16.0	251.1	189.0	127.0
73.32	10.0	13.2	16.3	245.0	184.5	124.0
70.77	11.0	14.4	17.8	212.0	160.5	109.1
70.40	11.1	14.6	18.0	208.0	157.5	107.0
68.16	12.0	15.6	19.3	184.0	140.7	97.4
66.86	12.5	16.2	20.0	173.9	133.0	92.0
63.19	13.8	17.9	22.0	146.1	113.2	80.2
62.77	14.0	18.1	22.2	143.0	111.1	79.1
59.36	15.2	19.6	24.0	126.7	98.7	70.7
57.06	16.0	20.6	25.2	116.0	91.1	66.1
55.32	16.6	21.3	26.0	110.2	86.5	62.8
51.02	18.0	23.0	28.0	96.6	76.4	56.3
50.90	18.0	23.0	28.1	96.2	76.2	56.1
46.35	19.4	24.7	30.0	86.2	68.4	50.7
44.06	20.0	25.5	30.9	81.4	65.0	48.5
41.18	20.8	26.4	32.0	76.9	61.4	45.9
36.10	22.0	27.9	33.7	69.6	55.7	41.8

3.6. operating mode SFVA



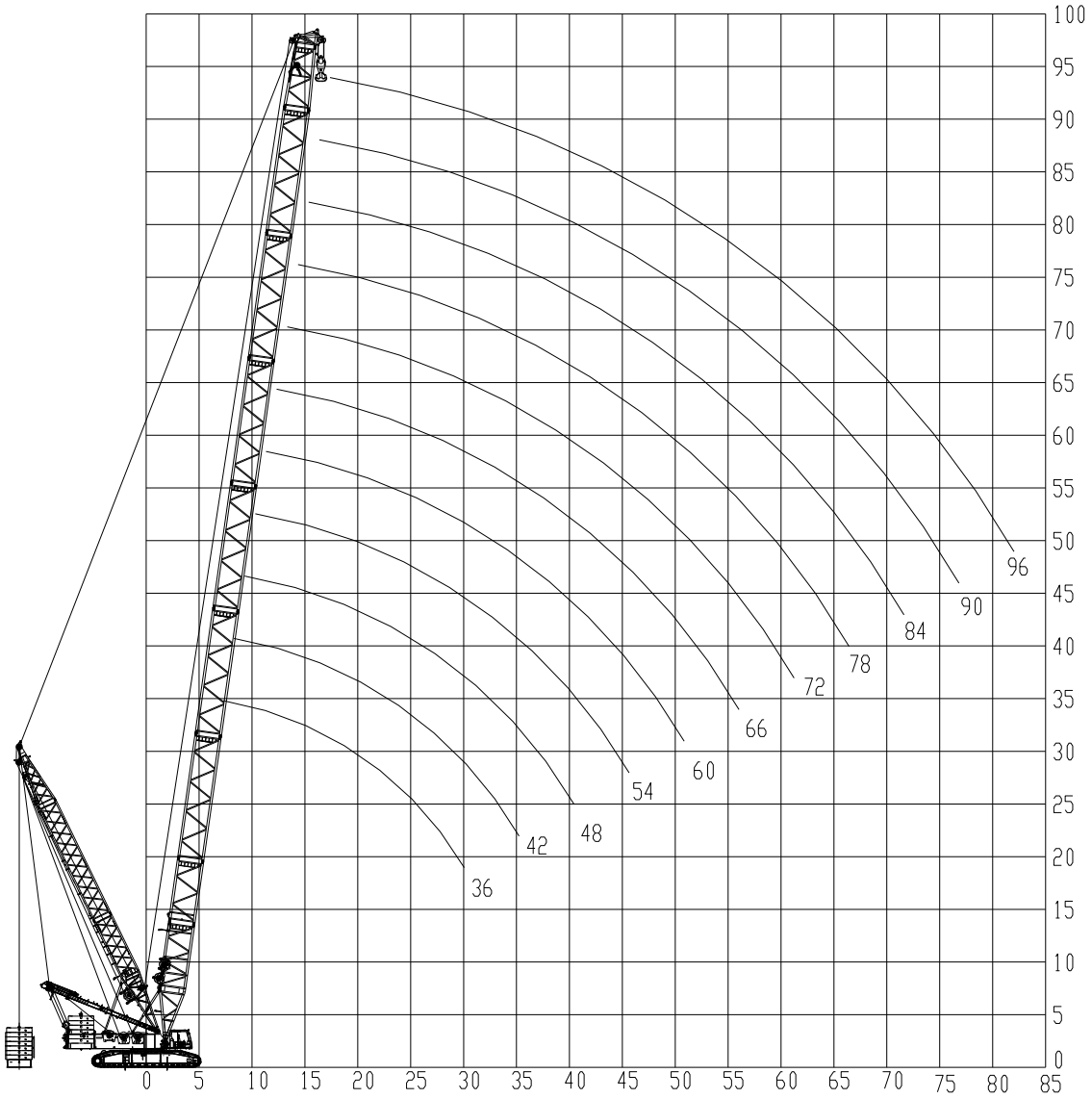
rear counterweight 110t, attached ballast 110t, central ballast 40t main boom 24+jib 9						
main boom angle	main hook radius	radius of turning over	auxiliary hook radius	main hook load	radius of turning over	auxiliary hook load
80.83	7.0	8.5	10.0	400.0	300.0	200.0
80.77	7.0	8.5	10.0	400.0	300.0	200.0
79.07	7.7	9.3	11.0	400.0	300.0	200.0
78.32	8.0	9.7	11.4	400.0	300.0	200.0
77.30	8.4	10.2	12.0	383.6	291.8	200.0
75.84	9.0	10.9	12.8	360.0	280.0	200.0
73.71	9.8	11.9	14.0	327.8	263.9	200.0
73.32	10.0	12.1	14.2	322.0	260.3	198.5
70.77	11.0	13.3	15.6	288.0	238.4	188.8
70.03	11.3	13.6	16.0	280.9	233.4	186.0
68.16	12.0	14.5	17.0	263.0	219.3	175.6
66.23	12.7	15.4	18.0	247.0	206.0	165.0
62.77	14.0	16.9	19.8	219.0	181.9	144.7
62.29	14.2	17.1	20.0	216.2	179.1	142.0
58.17	15.6	18.8	22.0	192.2	158.6	125.0
57.06	16.0	19.3	22.5	186.0	153.7	121.3
53.82	17.1	20.5	24.0	169.9	140.4	111.0
50.90	18.0	21.6	25.3	156.0	129.8	103.6
49.15	18.5	22.3	26.0	150.1	124.8	99.4
44.06	20.0	24.0	28.0	134.0	111.9	89.7
44.06	20.0	24.0	28.0	134.0	111.8	89.7
38.33	21.5	25.7	30.0	117.8	99.6	81.5
36.10	22.0	26.4	30.7	112.0	95.3	78.6

rear counterweight 110t, attached ballast 110t, central ballast 40t main boom 24+jib 12						
main boom angle	main hook radius	radius of turning over	auxiliary hook radius	main hook load	radius of turning over	auxiliary hook load
80.77	7.0	9.4	11.8	400.0	298.0	195.9
80.47	7.1	9.6	12.0	400.0	297.5	195.0
78.32	8.0	10.7	13.3	400.0	290.6	181.2
77.19	8.5	11.2	14.0	381.6	277.8	174.0
75.84	9.0	11.9	14.8	360.0	263.4	166.7
73.84	9.8	12.9	16.0	327.3	241.7	156.0
73.32	10.0	13.2	16.3	319.0	236.5	154.0
70.77	11.0	14.4	17.8	288.0	216.2	144.4
70.40	11.1	14.6	18.0	284.2	213.6	143.0
68.16	12.0	15.6	19.3	261.0	198.2	135.4
66.86	12.5	16.2	20.0	250.7	190.8	131.0
63.19	13.8	17.9	22.0	222.2	171.6	121.0
62.77	14.0	18.1	22.2	219.0	169.5	120.0
59.36	15.2	19.6	24.0	197.8	154.9	112.0
57.06	16.0	20.6	25.2	184.0	144.5	105.1
55.32	16.6	21.3	26.0	175.6	137.8	100.0
51.02	18.0	23.0	28.0	155.5	123.1	90.7
50.90	18.0	23.0	28.1	155.0	122.7	90.5
46.35	19.4	24.7	30.0	140.1	111.3	82.5
44.06	20.0	25.5	30.9	133.0	106.1	79.3
41.18	20.8	26.4	32.0	124.2	99.8	75.5
36.10	22.0	27.9	33.7	110.0	89.7	69.5

rear counterweight 150t, attached ballast 70t, central ballast 40t main boom 24+jib 9						
main boom angle	main hook radius	radius of turning over	auxiliary hook radius	main hook load	radius of turning over	auxiliary hook load
80.828	6.98	8.49	10.00	400.0	300.0	200.0
80.774	7.00	8.52	10.03	400.0	300.0	200.0
79.074	7.69	9.35	11.00	397.2	298.6	200.0
78.321	8.00	9.71	11.43	396.0	298.0	200.0
77.304	8.41	10.21	12.00	375.9	287.9	200.0
75.839	9.00	10.91	12.82	347.0	273.5	200.0
73.711	9.85	11.92	14.00	314.8	257.4	200.0
73.322	10.00	12.11	14.21	309.0	253.6	198.3
70.765	11.00	13.30	15.60	278.0	232.6	187.2
70.027	11.29	13.64	16.00	270.6	227.3	184.0
68.160	12.00	14.50	16.99	252.0	211.1	170.1
66.231	12.73	15.36	18.00	237.1	196.5	156.0
62.769	14.00	16.88	19.76	211.0	174.2	137.5
62.291	14.17	17.09	20.00	208.0	171.5	135.0
58.170	15.62	18.81	22.00	182.6	150.3	118.0
57.060	16.00	19.26	22.52	176.0	145.3	114.6
53.815	17.08	20.54	24.00	160.9	133.0	105.0
50.898	18.00	21.63	25.27	148.0	123.1	98.2
49.149	18.53	22.27	26.00	142.4	118.3	94.2
44.058	20.00	24.00	28.00	127.0	106.0	85.0
44.055	20.00	24.00	28.00	127.0	106.0	85.0
38.330	21.48	25.74	30.00	114.5	95.8	77.2
36.095	22.00	26.35	30.71	110.0	92.2	74.4

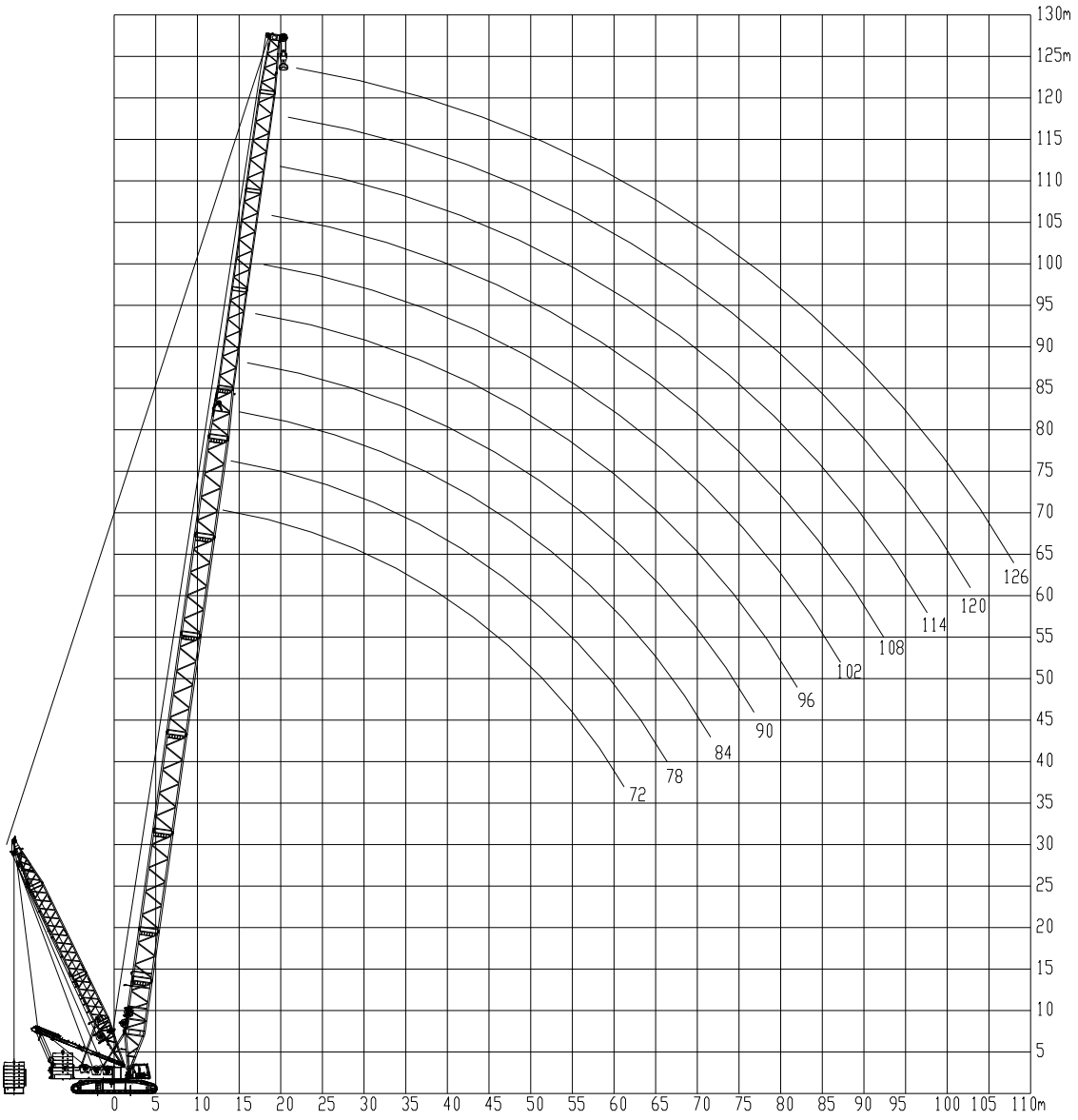
rear counterweight 150t, attached ballast 70t, central ballast 40t main boom 24+jib 12						
main boom angle	main hook radius	radius of turning over	auxiliary hook radius	main hook load	radius of turning over	auxiliary hook load
80.774	7.00	9.41	11.81	400.0	298.0	195.9
80.467	7.13	9.56	12.00	399.5	297.2	195.0
78.321	8.00	10.66	13.31	396.0	288.6	181.2
77.185	8.46	11.23	14.00	373.5	273.8	174.0
75.839	9.00	11.90	14.81	347.0	256.9	166.7
73.835	9.80	12.90	16.00	313.5	234.8	156.0
73.322	10.00	13.15	16.30	305.0	229.5	154.0
70.765	11.00	14.40	17.79	275.0	209.7	144.4
70.401	11.14	14.57	18.00	271.5	207.2	143.0
68.160	12.00	15.64	19.27	250.0	192.7	135.4
66.861	12.49	16.25	20.00	240.4	185.7	131.0
63.192	13.85	17.92	22.00	214.0	166.5	119.0
62.769	14.00	18.11	22.23	211.0	164.3	117.5
59.361	15.21	19.60	24.00	189.2	147.6	106.0
57.060	16.00	20.58	25.15	175.0	137.4	99.8
55.323	16.58	21.29	26.00	166.9	131.0	95.2
51.018	17.96	22.98	28.00	147.5	116.8	86.0
50.898	18.00	23.03	28.05	147.0	116.4	85.8
46.353	19.36	24.68	30.00	132.1	105.1	78.1
44.058	20.00	25.46	30.92	125.0	100.0	75.0
41.177	20.77	26.38	32.00	118.9	95.1	71.4
36.095	22.00	27.86	33.72	109.0	87.3	65.6
80.774	7.00	9.41	11.81	400.0	298.0	195.9

3.7. operating mode SDB



Derrick boom 30m suspended counterweight radius 16m rear counterweight 110t central ballast 40t suspended counterweight 230t												
radius（m）	main boom length（m）											radius（m）
	36	42	48	54	60	66	72	78	84	90	96	
7	400											7
8	400	400										8
9	400	400	400	367								9
10	400	400	400	367	350							10
11	400	400	400	367	350	298	262					11
12	400	400	400	367	350	298	262	232	206			12
14	393	393	392	367	350	298	262	232	206	176	155	14
16	341	339	340	340	340	297	262	230	204	175	154	16
18	300	300	299	299	297	296	259	228	203	174	154	18
20	268	268	266	266	266	266	256	226	200	172	154	20
22	242	242	241	241	239	239	239	223	199	170	152	22
24	219	219	220	218	218	218	216	216	197	169	151	24
26	201	202	201	201	199	199	199	197	194	167	149	26
28	181	185	186	185	184	184	182	182	182	166	148	28
30	163	172	172	171	170	170	169	169	168	164	145	30
32	147	160	159	159	158	158	157	157	156	156	137	32
34		146	148	147	147	147	146	145	145	144	132	34
36		133	138	137	137	136	136	135	134	134	127	36
38		122	129	129	128	128	127	126	126	125	122	38
40			121	121	120	120	119	118	118	117	116	40
44			103	107	106	106	105	105	104	104	103	44
48				95	95.2	95	94.1	93.7	92.9	92.4	91.5	48
52					86	85.7	84.9	84.5	83.6	83.2	82.3	52
56						77.9	77	76.6	75.8	75.3	74.4	56
60							70.3	69.9	69	68.6	67.6	60
64							64.4	64.1	63.2	62.7	61.8	64
68								58.9	58	57.6	56.6	68
72									53.5	53	50.5	72
76										49	45.5	76
80										45.3	39.3	80

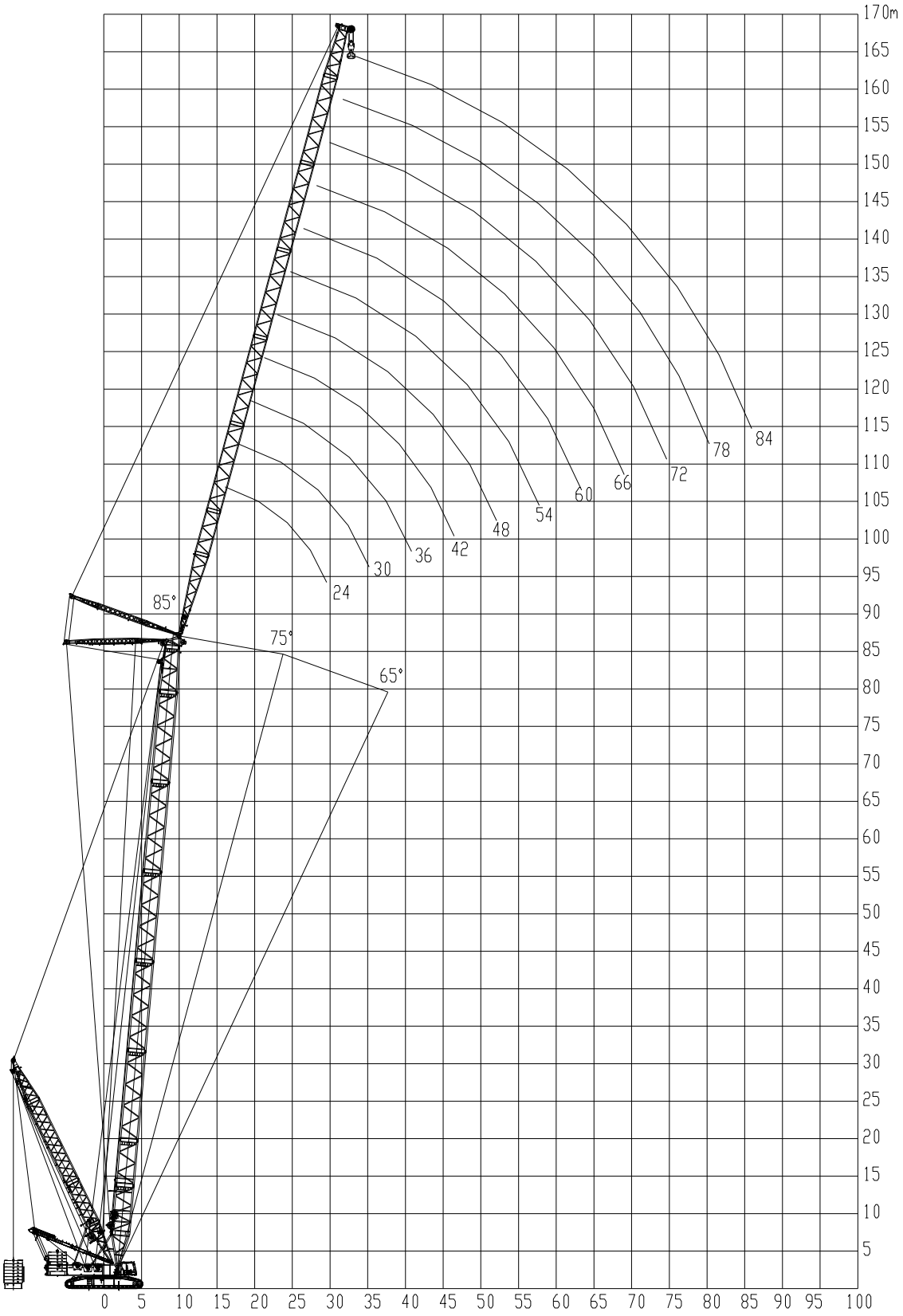
3.8. operating mode SLDB



derrick boom30m suspended counterweight radius 16m rear counterweight110t central ballast 40t suspended counterweight 230t											
radius（m）	main boom length（m）										radius（m）
	72	78	84	90	96	102	108	114	120	126	
11	235	217									11
12	235	217	197								12
14	235	217	197	177	155	124					14
16	235	217	197	177	155	124	107	96	84		16
18	235	217	195	176	155	124	105	94.9	81.5	69	18
20	235	217	194	174	154	124	102	92.1	78.6	66.8	20
22	235	217	192	173	154	124	99.8	89.7	76.1	64.3	22
24	219	214	190	171	153	123	96.7	87.6	74.1	62.3	24
26	201	199	189	169	152	121	94.8	84.5	71.5	59.7	26
28	185	184	182	169	150	119	91.7	82.4	68.7	56.8	28
30	171	169	169	166	145	116	89.8	80.5	66.5	54.8	30
32	159	158	157	156	137	114	86.7	78.1	64.5	53.5	32
34	148	146	146	145	132	112	84.7	76.1	62	51.4	34
36	137	136	136	135	127	110	81.7	74.2	59.9	49.4	36
38	129	127	127	126	122	108	79.7	72.1	58.6	47.3	38
40	121	119	119	118	116	106	78.6	70.1	56.6	46	40
44	107	106	106	105	105	102	73.6	65.8	53.2	42.6	44
48	96	95.1	94.7	93.8	93.7	93.7	70.5	62.6	50.3	40	48
52	86.7	85.9	85.4	84.5	84.4	84.4	67.8	59.4	47.1	37.2	52
56	78.9	78	77.6	76.7	76.5	76.5	65.5	57.4	44.5	35.2	56
60	72.1	71.3	70.8	69.9	69.8	69.8	62.4	54.9	42.4	33.5	60
64	66.3	65.4	65	64.1	63.6	63.9	60.5	53	41.1	31.8	64
68		60.3	59.8	58.9	57.4	58.8	58.5	51	39.1	30.5	68
72			55.3	54.4	50.5	54.2	54	49.8	37.8	29.2	72
76				50.4	45.5	50.2	49.9	48.2	36.2	27.7	76
80				46.7	39.3	46.5	46.3	46.2	35.7	26.8	80

84					34.3	43.3	43	42.9	34.4	25.8	84
88						40.3	40.1	39.9	33.7	25.1	88
92							37.4	37.2	33.7	24.7	92
96								34.8	32.9	24.3	96
100								32.5	32.2	23.8	100
104									30.1	23.4	104
108										23.4	108

3.9. operating mode SWDB



suspended counterweight 230t，superlift radius 16m ,rear counterweight 110t ,central ballast 40t main boom length36m												
radius（m）	luffing jib length（m）											radius（m）
	24	30	36	42	48	54	60	66	72	78	84	
14	235											14
16	220	212										16
18	217	210	183	155								18
20	195	202	182	155	125							20
22	172	180	172	155	125	103						22
24	153	160	160	150	125	103	85.5					24
26	137	142	144	143	125	103	85.1	70.8	59.8			26
28	115	126	130	130	121	102	84.7	70.3	59.3	49.8		28
30		112	117	118	117	102	84.2	69.8	58.8	49.2	42	30
32		99.7	106	107	108	99.5	83.6	69.3	58.2	48.6	41.4	32
34		87.1	96.7	98.5	99.7	95.9	83.1	68.8	57.7	48.1	40.9	34
36			87.6	90.3	91.9	90.5	81.4	68.2	57.1	47.5	40.3	36
38			79	82.9	85	83.8	78.3	66.6	56.5	46.4	39.8	38
40				76.1	78.7	77.8	75.2	63.9	54.5	44.4	38	40
44				63.4	67.6	67.4	68.2	59.2	50.2	40.8	34.8	44
48					57.8	58.5	59.8	54.7	46.6	37.6	31.9	48
52						50.6	52.6	49.3	43.4	33.8	29.4	52
56						43	46.1	44.6	39.6	30.3	26.1	56
60							40	40.5	35.7	27.2	23.2	60
64								36.6	32.5	24.3	20.6	64
68								31.9	29.6	21.8	18.3	68
72									27.1	19.6	16.2	72
76										17.5	14.3	76
80										15.8	12.6	80
84											11.1	84

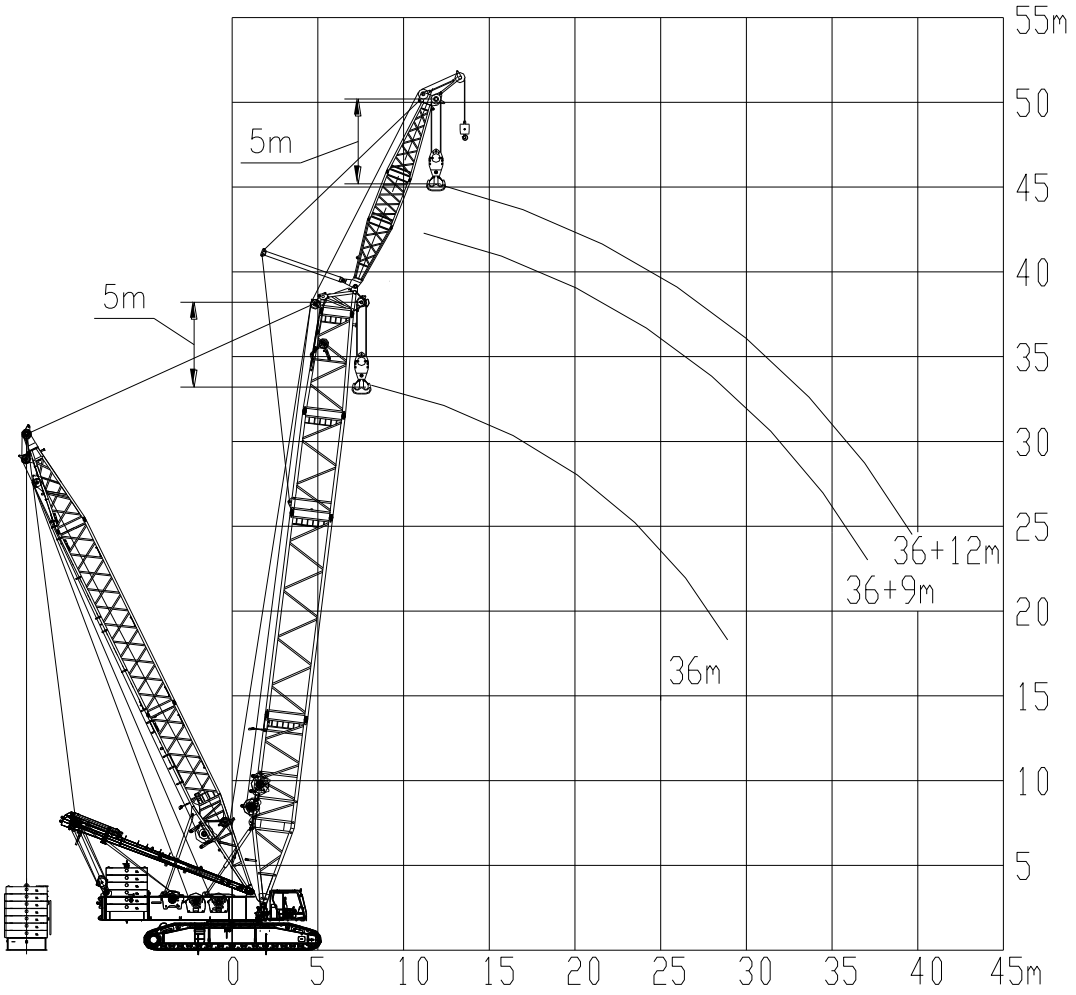
suspended counterweight 230t，superlift radius 16m ,rear counterweight 110t ,central ballast 40t main boom length48m												
radius（m）	luffing jib length（m）											radius（m）
	24	30	36	42	48	54	60	66	72	78	84	
16	222	200										16
18	222	199	166									18
20	212	198	166	135								20
22	184	193	166	135	111	93						22
24	163	170	166	135	111	93	77.9					24
26	146	153	152	135	111	93	77.8	65.2				26
28	130	136	138	134	111	92.2	77.6	65	55.1			28
30		121	125	125	110	91.3	77.4	64.7	54.8	46.2	39.5	30
32		108	113	114	109	90.4	77.1	64.4	54.4	45.8	39.1	32
34		95.3	103	104	105	89.5	76.8	64.1	54	45.4	38.7	34
36			93.5	95.5	96.6	88.6	76.4	63.7	53.7	45	38.2	36
38			84.7	87.7	89.3	87.7	76	63.3	53.2	44.6	37.8	38
40			76.2	80.6	82.7	81.6	75.6	62.8	52.7	44	37.3	40
44				67.7	71.2	70.7	70.5	59.7	50.7	41.7	34.9	44
48					61.2	61.5	62.5	55.5	47	38.4	32.1	48
52					51.6	53.4	55	50	43.7	34.9	29.6	52
56						45.8	48.4	45.3	40.2	31.2	26.5	56
60							42.2	41.1	36.4	28	23.5	60
64							36	37.2	33	25	20.9	64
68								33.5	30	22.5	18.5	68
72									27.4	20.2	16.5	72
76										18.1	14.6	76
80										16.3	12.8	80
84											11.3	84

suspended counterweight 230t，superlift radius 16m ,rear counterweight 110t ,central ballast 40t main boom length60m												
radius（m）	luffing jib length（m）											radius（m）
	24	30	36	42	48	54	60	66	72	78	84	
16	198											16
18	187	166										18
20	178	165	138	116								20
22	169	163	138	116	97.6							22
24	161	156	136	116	97.6	82.8						24
26	154	149	135	115	97.5	82.8	70.2					26
28	139	143	133	114	96.8	82	69.5	59.2	50.2			28
30	121	129	128	113	95.8	81.2	68.8	59.1	50.1	42.6		30
32		115	120	110	94.9	80.4	68.1	59.0	50	42.4	36.4	32
34		102	109	105	93.9	79.6	67.4	58.8	49.8	42.2	36.1	34
36		90.2	98.9	100	92.3	78.8	66.8	58.5	49.6	42	35.9	36
38			89.8	92.1	88.9	78	66.1	58.2	49.4	41.7	35.7	38
40			81.3	84.7	85.4	77.2	65.4	57.7	49	41.3	35.3	40
44				71.5	74.4	73.3	64.8	56.8	48	40.4	34.4	44
48					64.1	64.1	63	55.9	47.1	38.6	32.8	48
52					54.6	55.8	57.1	51.5	43.8	35.4	30.2	52
56						48.2	50.3	46.5	40.6	31.6	27.4	56
60							44.1	42.2	36.6	28.3	24.3	60
64							38	38.1	33.3	25.4	21.6	64
68								34.6	30.3	22.7	19.1	68
72									27.6	20.5	16.9	72
76									25.3	18.4	15	76
80										16.5	13.3	80
84											11.7	84
88											10.3	88

suspended counterweight 230t，superlift radius 16m ,rear counterweight 110t ,central ballast 40t main boom length72m												
radius（m）	luffing jib length（m）											radius（m）
	24	30	36	42	48	54	60	66	72	78	84	
18	146	129										18
20	138	127	110									20
22	131	124	108	94.4								22
24	124	120	106	93.5	81.2							24
26	118	114	104	92.3	80.6	69.5	59.2					26
28	112	109	101	90.8	79.8	69.3	59.2	50.7				28
30	106	104	98.6	89.1	78.8	69	59.1	50.6	43.4			30
32		99.3	95.6	87.1	77.6	68.6	58.9	50.5	43.3	37.2	32.1	32
34		94.8	90.6	85	76.3	68.1	58.6	50.3	43.2	37.1	32	34
36		90.8	86.1	81.2	74.9	67.3	58.3	50.1	43.1	36.9	31.9	36
38			81.6	77.4	71.9	66.4	57.9	49.9	42.9	36.7	31.7	38
40			77.4	73.8	70.4	65.3	57.4	49.6	42.7	36.6	31.5	40
44				66	63.7	60.3	56.4	48.9	42.2	36.2	31.2	44
48				59.1	57.5	55.1	52.4	48.2	41.7	35.7	30.6	48
52					51.8	50.2	48.3	46.2	41	35	29.7	52
56						45.6	44.3	42.8	40	32.5	27.5	56
60						41.5	40.5	39.4	37.6	29.1	24.4	60
64							37.1	36.2	34.2	26.1	21.6	64
68								33.5	31	23.4	19.3	68
72								30.9	28.3	21	17.1	72
76									25.9	18.8	15.2	76
80										16.9	13.4	80
84											11.8	84
88											10.4	88

suspended counterweight 230t，superlift radius 16m ,rear counterweight 110t ,central ballast 40t main boom length 84m												
radius（m）	luffing jib length（m）											radius（m）
	24	30	36	42	48	54	60	66	72	78	84	
18	113											18
20	109	98.4										20
22	103	95.4	85.4	76								22
24	97.7	92	83.2	74.8	65.4							24
26	92.7	88.3	80.7	73.2	64.7	56.7						26
28	88.1	84.5	78	71.4	63.9	56.3	49					28
30	83.8	80.8	75.2	69.5	62.8	55.7	48.7	42.4	36.9			30
32	79.5	77.1	72.4	67.4	61.5	55	48.3	42.2	36.8	32		32
34		73.6	69.5	65.3	59.9	54.3	47.8	42	36.6	31.9	27.8	34
36		70.2	66.7	63.1	58.3	53.4	47.3	41.6	36.4	31.7	27.6	36
38		67.2	63.9	60.9	56.7	52.5	46.7	41.3	36.2	31.5	27.5	38
40			61.3	58.7	55	51.3	46	40.8	35.9	31.3	27.4	40
44			56.4	54.5	51.5	48.8	44.6	39.9	35.2	30.9	27	44
48				49.6	48.2	46.1	42.8	38.8	34.5	30.4	26.6	48
52					44.1	42.6	40.7	37.6	33.7	29.8	26.1	52
56						39.1	37.8	36.1	32.7	29.1	25.7	56
60						35.7	34.8	33.7	31.8	27.9	24.4	60
64							31.9	31.2	29.7	26.2	22.4	64
68								28.8	27.8	23.5	19.9	68
72								26.8	26	21.1	17.6	72
76									24.5	18.9	15.6	76
80										17	13.8	80
84										15.3	12.2	84

3. 10. operating mode SFVDB



Rear counterweight 110t central ballast 40t superlift radius16m suspended counterweight 230t superlift main boom 36m shield tunneling jib 9m						
main boom angle	main hook radius	radius of turning over	auxiliary hook radius	main hook load	radius of turning over	auxiliary hook load
80.65	9.0	10.5	12.1	396.0	298.0	200.0
79.43	9.8	11.4	13.0	396.0	298.0	200.0
79.02	10.0	11.7	13.3	396.0	298.0	200.0
78.13	10.5	12.3	14.0	396.0	298.0	200.0
77.38	11.0	12.8	14.6	396.0	298.0	200.0
76.83	11.3	13.2	15.0	396.0	298.0	200.0
75.73	12.0	13.9	15.8	396.0	298.0	200.0
75.52	12.1	14.1	16.0	395.2	297.6	200.0
74.20	12.9	15.0	17.0	390.0	295.0	200.0
72.86	13.7	15.9	18.0	384.8	292.4	200.0
72.38	14.0	16.2	18.4	383.0	290.2	197.5
71.52	14.5	16.8	19.0	369.7	281.4	193.0
70.16	15.3	17.7	20.0	349.1	267.5	186.0
68.97	16.0	18.4	20.9	331.0	255.9	180.8
68.79	16.1	18.6	21.0	329.0	254.5	180.0
67.40	16.9	19.4	22.0	313.5	243.8	174.0
65.46	18.0	20.7	23.4	292.0	229.2	166.4
64.58	18.5	21.2	24.0	283.9	223.5	163.0
61.84	20.0	22.9	25.9	259.0	206.7	154.5
61.67	20.1	23.0	26.0	257.9	205.9	154.0
58.67	21.7	24.8	28.0	237.1	191.5	146.0
58.07	22.0	25.2	28.4	233.0	188.8	144.6
55.56	23.3	26.6	30.0	218.2	178.6	139.0
54.14	24.0	27.4	30.9	210.0	172.9	135.9
52.31	24.9	28.4	32.0	199.7	165.9	132.0
49.98	26.0	29.7	33.4	187.0	157.8	128.6
48.88	26.5	30.3	34.0	182.0	154.5	127.0

45.52	28.0	31.9	35.9	167.0	144.2	121.4

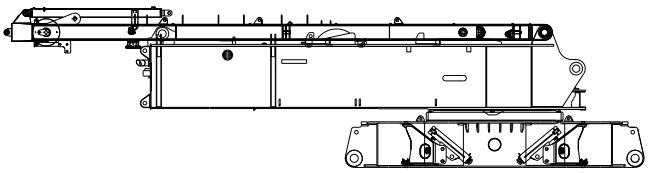
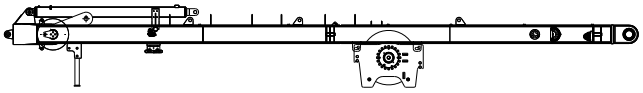
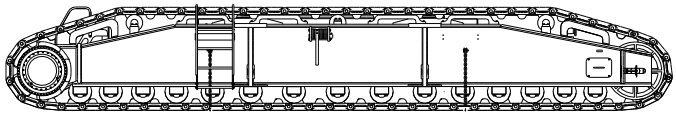
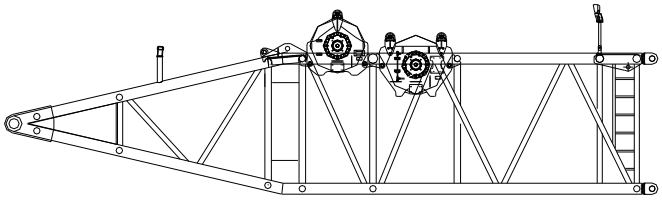
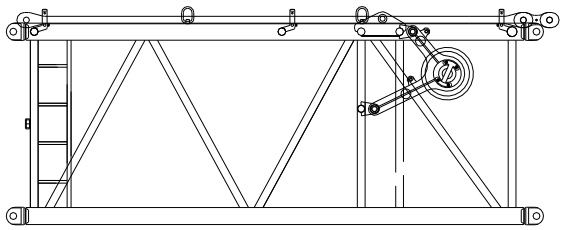
Rear counterweight110t central ballast 40t superlift radius16m suspended counterweight 230t

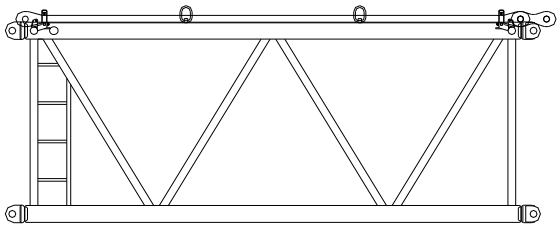
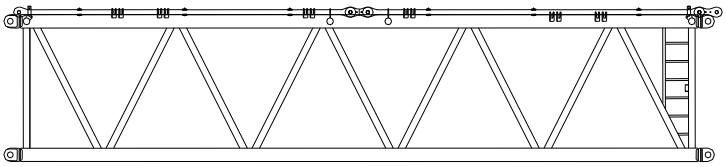
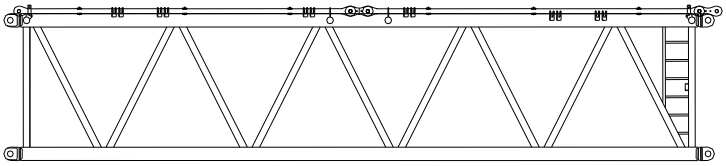
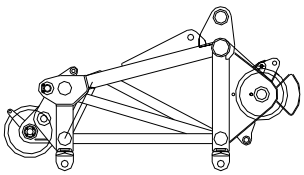
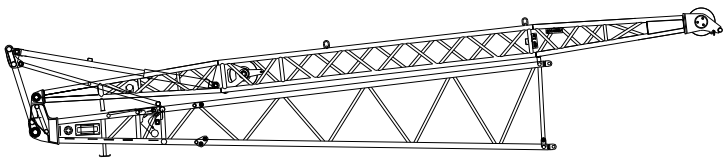
superlift main boom 36m shield tunneling jib12m						
main boom angle	main hook radius	radius of turning over	auxiliary hook radius	main hook load	radius of turning over	auxiliary hook load
80.65	9.0	11.4	13.8	384.0	291.2	198.3
80.45	9.1	11.6	14.0	384.0	291.0	198.0
79.23	9.9	12.4	15.0	384.0	286.5	189.0
79.02	10.0	12.6	15.2	384.0	285.8	187.6
78.00	10.6	13.3	16.0	384.0	282.5	181.0
77.38	11.0	13.8	16.5	384.0	280.5	177.0
76.77	11.4	14.2	17.0	384.0	278.5	173.0
75.73	12.0	14.9	17.8	384.0	275.6	167.2
75.52	12.1	15.1	18.0	383.9	275.0	166.0
74.27	12.9	15.9	19.0	383.6	271.8	160.0
73.00	13.6	16.8	20.0	383.2	268.6	154.0
72.38	14.0	17.2	20.5	383.0	267.3	151.6
71.72	14.4	17.7	21.0	372.8	260.9	149.0
70.43	15.1	18.6	22.0	353.2	248.6	144.0
68.97	16.0	19.6	23.1	331.0	235.0	138.9
67.81	16.7	20.3	24.0	317.4	226.2	135.0
65.46	18.0	21.9	25.8	290.0	209.0	128.0
65.13	18.2	22.1	26.0	287.0	207.0	127.0
62.37	19.7	23.9	28.0	261.8	190.9	120.0
61.84	20.0	24.2	28.4	257.0	187.9	118.8
59.53	21.2	25.6	30.0	241.5	177.8	114.0
58.07	22.0	26.5	31.0	232.0	171.5	111.0
56.58	22.8	27.4	32.0	223.1	165.6	108.0
54.14	24.0	28.8	33.6	209.0	156.5	104.0
53.50	24.3	29.2	34.0	205.4	154.2	103.0
50.27	25.9	30.9	36.0	187.6	143.3	99.0
49.98	26.0	31.1	36.2	186.0	142.3	98.6
46.85	27.4	32.7	38.0	171.8	133.4	95.0

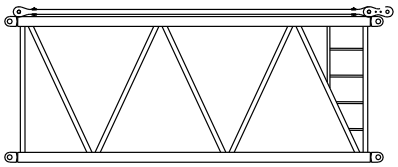
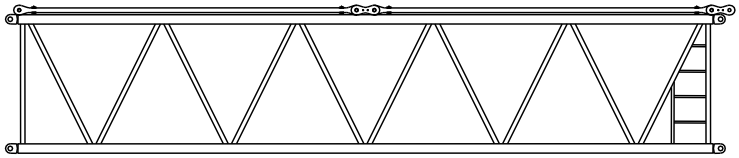
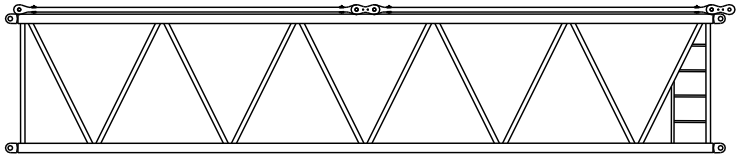
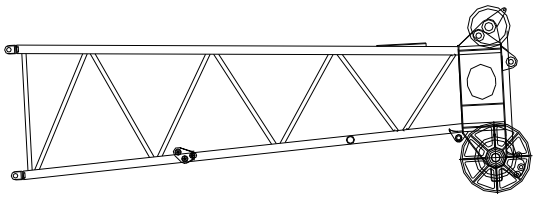
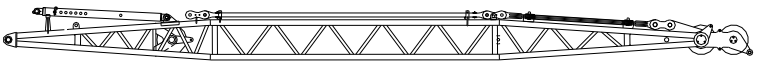
Note: ①Data in lifting capacity charts includes the weight of slings and wire rope. Actual weight of load to be lifted shall be less than this value.

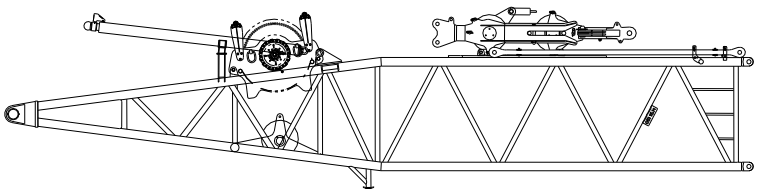
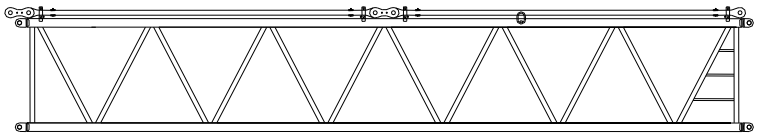
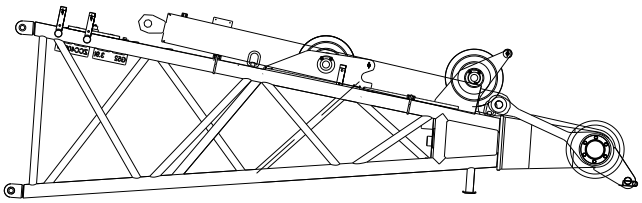
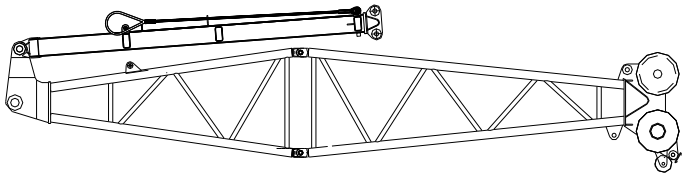
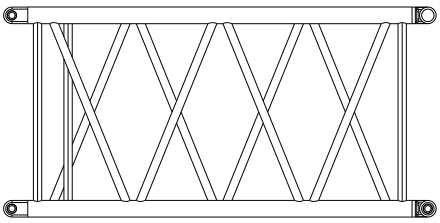
②Data in lifting capacity charts are provided on the basis of the fact that the ground is solid and flat and that the load is suspended freely and hoisted stably.

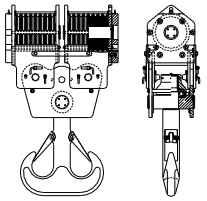
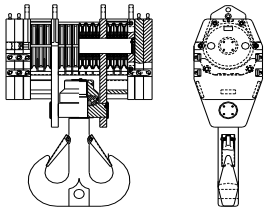
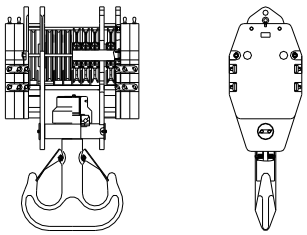
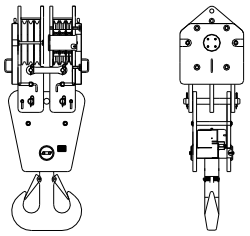
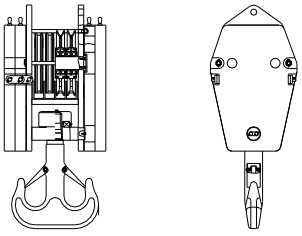
4. **Transport dimensions and weights of major components**

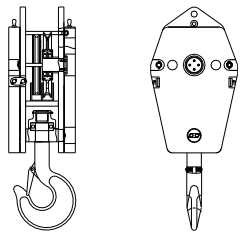
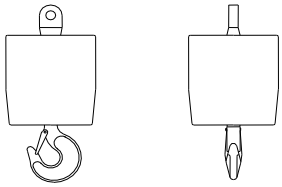
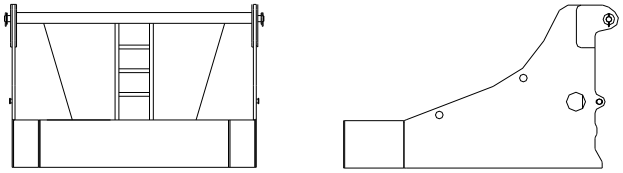
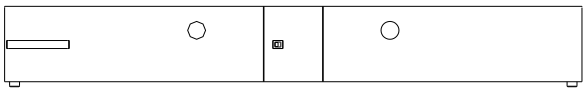
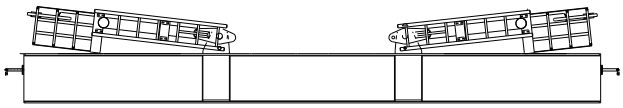
Components	Items	Values
	Slewing table	×1
	length	14200 mm
	width	3100 mm
	height	3530 mm
	weight	64.5 t
Transport weight excluding H1, H2 and A-frame is 42T, transportation height 3150mm		
	A-frame	×1
	length	12150 mm
	width	2200 mm
	height	1530 mm
	weight	11.1 t
	Track assy.	×2
	length	10330 mm
	width	1500 mm
	height	1600mm
	weight	25.7 t
	Main boom pivot section	×1
	length	11500 mm
	width	3000 mm
	height	3300mm
	weight	14.7 t
Including luffing jib derricking mechanism and tip boom hoisting winch, luffing jib derricking mechanism 4.8t, tip boom hoisting winch 3.5t		
	Main boom head section	×1
	length	6170mm
	width	3000 mm
	height	2650 mm
	weight	3.2 t

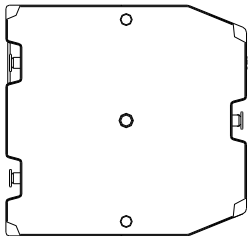
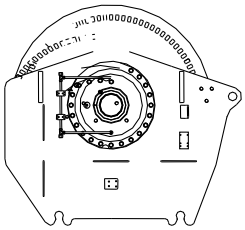
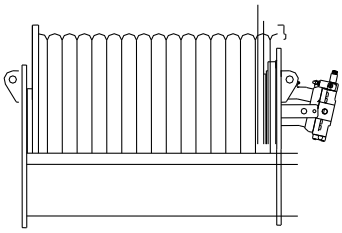
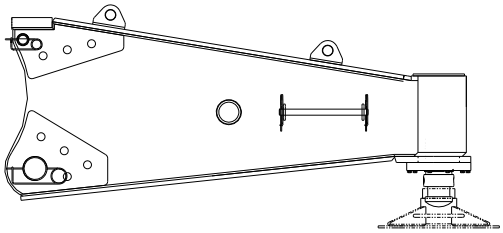
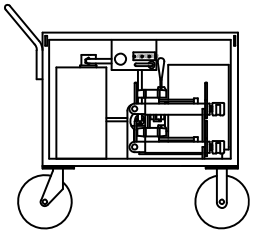
	Main boom 6m boom section G12	×1
	length	6250 mm
	width	3000mm
	height	2650 mm
	weight	3.3t
	Main boom 12m boom section G12 G15B	×3
	length	12300 mm
	width	3000mm
	height	2650 mm
	weight	5.1 t
	Main boom 12m boom section G12G15	×2
	length	12300 mm
	width	3000mm
	height	2650 mm
	weight	4.6t
	Main boom head adaptor	×1
	length	1900mm
	width	2600mm
	height	3450mm
	weight	3.3t
	Luffing jib pivot section+ WA-frame 1	×1
	length	15600 mm
	width	2500mm
	height	2900 mm
	weight	7.2 t

	Luffing jib 6m standard section	×1
	length	6150mm
	width	2450 mm
	height	2150mm
	weight	1.6 t
	Luffing jib 12m boom section G25	×3
	length	12300 mm
	width	2450 mm
	height	2150 mm
	weight	2.9 t
	Luffing jib 12m boom section G25A	×2
	length	12300 mm
	width	2450 mm
	height	2150 mm
	weight	2.7 t
	Luffing jib head section	×1
	length	7400 mm
	width	2410 mm
	height	2700mm
	weight	3.8t
	Luffing jib WA-frame 2	×1
	length	13600mm
	width	2420mm
	height	1045 mm
	weight	3.7 t

	derrick boom pivot section	×1
	length	12220 mm
	width	2950 mm
	height	2700 mm
	weight	13.2 t
Including superlift derricking pulley block (2.7t) and superlift derricking mechanism		
	derrick boom12m boom section	×1
	length	12140 mm
	width	2950 mm
	height	2100 mm
	weight	4.1 t
	derrick boom head section	×1
	length	6550mm
	width	2950 mm
	height	2100mm
	weight	6.0t
	Shield-tunneling jib 9m	×1
	length	9500 mm
	width	2500 mm
	height	2400mm
	weight	5.8 t
	Shield-tunneling jib 3m	×1
	length	3120 mm
	width	1750 mm
	height	1670mm
	weight	0.7 t

	Hook for 400t	×1
	length	2000 mm
	width	820mm
	height	3100mm
	weight	7.2 t
	Hook for 300t	×1
	length	1780 mm
	width	820mm
	height	2650 mm
	weight	6.9 t
	Hook for 200t	×1
	length	1480 mm
	width	820mm
	height	2470 mm
	weight	5.5 t
	Hook for 160t	×1
	length	1040mm
	width	860 mm
	height	3050 mm
	weight	5.3 t
	Hook for 100t	×1
	length	940 mm
	width	800 mm
	height	2010mm
	weight	3.6 t

	Hook for 50t	×1
	length	900 mm
	width	800 mm
	height	2010 mm
	weight	2.2t
	Hook for 16t	×1
	length	530 mm
	width	530 mm
	height	1140 mm
	weight	0.9 t
	Rear counterweight frame	×2
	length	2900 mm
	width	2700 mm
	height	1720mm
	weight	15 t
	Central ballast frame	×2
	length	5800 mm
	width	1670mm
	height	800 mm
	weight	20 t
	Suspended counterweight frame	×1
	length	9300 mm
	width	2650mm
	height	1500 mm
	weight	30t
Including part of suspended counterweight anchoring rod		
	10t counterweight block*	×28
	length	2500 mm
	width	2400 mm

	height	430 mm
	weight	10 t
 	H1	×2
	length	1950 mm
	width	1200 mm
	height	1200mm
	weight	5.7 t
	Including hoisting rope	
	Auxiliary outrigger	×2
	length	2350 mm
	width	320 mm
	height	1100 mm
	weight	0.7 t
	Without outrigger support pad	
	Hydraulic pump station	×1
	length	1400 mm
	width	800 mm
	height	1100 mm
	weight	0.4 t

Note：

① Sketch of components here is for illustration only;

②Weight in the table does not include package and may be subject to variations as a result of manufacturing tolerance

③Actual size and weight of the components is subject to change as a result of technology and manufacturing improvement;

④Quantity of component with "*" mark depends on the actual operation needs.