

2.2 Technical data

Table 1

Item		Value	Remarks
Working performance	Max. rated lifting capacity	kg	55000
	Max. load moment of basic boom	kN.m	2009
	Max. load moment of Max. length main boom	kN.m	1050
	Max. lifting height of basic boom	m	12.6
	Max. lifting height of main boom	m	43.6
	Max. lifting height of jib	m	59.5
			These parameters do not include deflection of boom and jib.
Working speeds	Max. hoist rope speed (Main winch)	m/min	120
	Max. hoist rope speed (Auxiliary winch)	m/min	120
	Boom derricking up time	s	50
	Boom telescoping out time	s	95
	Slewing speed	r/min	0 - 2.2
Driving	Max. driving speed	km/h	76
	Max. gradeability	%	40
	Min. turning diameter	m	≤24
	Min. ground clearance	mm	260
	Oil consumption per hundred kilometer	L	43
Weight	Deadweight in driving condition	kg	42000
	Complete vehicle kerb mass	kg	41870
	Front axle load	kg	16000
	Rear axle load	kg	26000
Dimension	Overall dimensions (L×W×H)	mm	13700×2800×3650
	Longitudinal distance between outriggers	m	5.92
	Transversal distance between outriggers	m	Completely extended:7.10m, intermediately extended:4.80m
	Tail slewing radius	mm	3900
	Main boom length	m	11.4 - 43.0
	Main boom angle	°	-2 - 80
	Jib length	m	9.5, 16.0
	Offset	°	0, 30

2.3 Rated lifting capacity table

This crane is provided with 7 sheets of rated lifting capacity tables. The operator should select proper rated lifting load referring to resp. lifting capacity table according to actual working condition. For detailed values refer to Table 2 to Table 8.

The values in column "I" refer to the extendable length of telescopic cylinder I.

The values in column "II" refer to 3 times extendable length of telescopic cylinder II, namely, the total extendable length of boom section 3, 4 and 5.

Table 2

Unit: Metric kg

Working radius (m)	Main boom (m)						
	Outriggers and telescopic cylinder I completely extended, over side and over rear						
	11.4	15.3	19.3	25.2	31.1	37.0	43.0
3.0	55000	45000	35000				
3.5	51000	45000	35000				
4.0	48000	45000	35000	25000			
4.5	45000	43000	32500	25000			
5.0	41000	40000	30000	25000			
5.5	36000	36000	28000	24000	17500		
6.0	32500	32500	26500	22500	17500		
6.5	29500	29500	25000	21000	17500		
7.0	26500	26500	23500	20000	17500	14000	
7.5	23500	23500	22000	19000	16700	13500	
8.0	21000	21000	21000	18000	16000	13000	
9.0	16500	16500	16500	16500	14500	12200	9500
10.0		13500	13500	14500	13500	11500	9300
11.0		11000	11000	12000	12500	10700	9000
12.0		9000	9000	10000	10900	10100	8500
14.0			6300	7300	8100	8500	7500
16.0			4400	5400	6100	6500	6700
18.0				4000	4700	5100	5400
20.0				3000	3600	4000	4300
22.0				2200	2800	3200	3500
24.0					2100	2500	2800
26.0					1550	1950	2200
28.0						1500	1750
30.0						1100	1350
32.0							1000
I	0	3.9	7.9	7.9	7.9	7.9	7.9
II	0	0	0	5.9	11.8	17.7	23.7
Reeving	12	9	8	6	4	4	3

Table 3

Unit: Metric kg

Working radius (m)	Main boom (m)						
	Outriggers completely extended and telescopic cylinder I intermediately extended, over side and over rear						
	11.4	15.3	21.2	27.1	33.0	39.0	
3.0	55000	45000	25000				
3.5	51000	45000	25000				
4.0	48000	45000	25000				
4.5	45000	43000	25000	17500			
5.0	41000	40000	25000	17500			
5.5	36000	36000	25000	17500			
6.0	32500	32500	25000	17500	14000		
6.5	29500	29500	25000	17500	14000		
7.0	26500	26500	25000	17500	13500		
7.5	23500	23500	25000	17500	13000	9500	
8.0	21000	21000	23000	17000	12500	9500	
9.0	16500	16500	18500	16000	11500	9500	
10.0		13500	15100	15100	10500	9000	
11.0		11000	12500	13200	9700	8500	
12.0		9000	10500	11200	9000	8000	
14.0			7700	8400	7800	7000	
16.0			5800	6400	6800	6100	
18.0			4400	5000	5400	5400	
20.0				3900	4300	4600	
22.0				3100	3400	3700	
24.0					2700	3000	
26.0					2200	2500	
28.0					1700	2000	
30.0						1600	
32.0						1250	
I	0	3.9	3.9	3.9	3.9	3.9	
II	0	0	5.9	11.8	17.7	23.7	
Reeving	12	9	6	4	4	3	
Hook	55t hook						

Table 4

Unit: Metric kg

Working radius (m)	Main boom (m)						
	Outriggers completely extended and telescopic cylinder I completely retracted, over side and over						
	11.4	17.3	23.2	29.1	35.1		
3.0	55000	25000					
3.5	51000	25000	17500				
4.0	48000	25000	17500				
4.5	45000	25000	17500				
5.0	41000	25000	17500	14000			
5.5	36000	25000	17500	14000			
6.0	32500	25000	17000	13500			
6.5	29500	25000	16500	12900	9500		
7.0	26500	25000	16000	12300	9500		
7.5	23500	24000	15500	11800	9500		
8.0	21000	23000	15000	11300	9500		
9.0	16500	19000	14000	10400	9200		
10.0		15700	13000	9600	8500		
11.0		13000	12000	8900	7800		
12.0		11000	11500	8300	7300		
14.0		8200	8800	7300	6300		
16.0			6800	6400	5500		
18.0			5400	5700	4900		
20.0				4700	4300		
22.0				3800	3900		
24.0				3100	3400		
26.0					2800		
28.0					2300		
30.0					1900		
32.0							
I	0	0	0	0	0		
II	0	5.9	11.8	17.7	23.7		
Reeving	12	6	4	4	3		
Hook	55t hook						

Table 5

Unit: Metric kg

Working radius (m)	Main boom (m)						
	Outriggers intermediately extended and telescopic cylinder I completely extended, over side and over rear						
	11.4	15.3	19.3	25.2	31.1	37.0	43.0
3.0	50000	45000	35000				
3.5	50000	45000	35000				
4.0	45000	41000	35000	25000			
4.5	38000	37000	32500	25000			
5.0	30000	29500	29500	25000			
5.5	24500	24000	23800	24000	17500		
6.0	20500	20000	19700	21200	17500		
6.5	17500	17000	16700	18000	17500		
7.0	15000	14500	14300	15600	16500	14000	
7.5	13000	12500	12300	13600	14400	13500	
8.0	11500	11000	10800	12000	12800	13000	
9.0	9000	8500	8300	9500	10200	10700	9500
10.0		6700	6500	7600	8300	8800	9200
11.0		5300	5100	6200	6900	7300	7700
12.0		4200	4000	5000	5700	6100	6500
14.0			2400	3400	4000	4400	4700
16.0			1200	2200	2800	3200	3500
18.0				1300	1900	2300	2600
20.0					1200	1600	1900
22.0							1300
24.0							
26.0							
I	0	3.9	7.9	7.9	7.9	7.9	7.9
II	0	0	0	5.9	11.8	17.7	23.7
Reeving	12	9	8	6	4	4	3
Hook	55t hook						

Table 6

Unit: Metric kg

Working radius (m)	Main boom (m)						
	Outriggers and telescopic cylinder I intermediately extended, over side and over rear						
	11.4	15.3	21.2	27.1	33.0	39.0	
3.0	50000	45000	25000				
3.5	50000	45000	25000				
4.0	45000	41000	25000				
4.5	38000	37000	25000	17500			
5.0	30000	29500	25000	17500			
5.5	24500	24000	25000	17500			
6.0	20500	20000	21600	17500	14000		
6.5	17500	17000	18400	17500	14000		
7.0	15000	14500	15900	16800	13500		
7.5	13000	12500	13900	14800	13000	9500	
8.0	11500	11000	12300	13100	12500	9500	
9.0	9000	8500	9800	10500	11000	9500	
10.0		6700	7900	8600	9100	9000	
11.0		5300	6500	7200	7600	8000	
12.0		4200	5400	6000	6400	6800	
14.0			3700	4300	4600	5000	
16.0			2500	3100	3400	3700	
18.0			1600	2200	2500	2800	
20.0				1500	1800	2100	
22.0					1300	1600	
24.0							
26.0							
I	0	3.9	3.9	3.9	3.9	3.9	
II	0	0	5.9	11.8	17.7	23.7	
Reeving	12	9	6	4	4	3	
Hook	55t hook						

Table 7

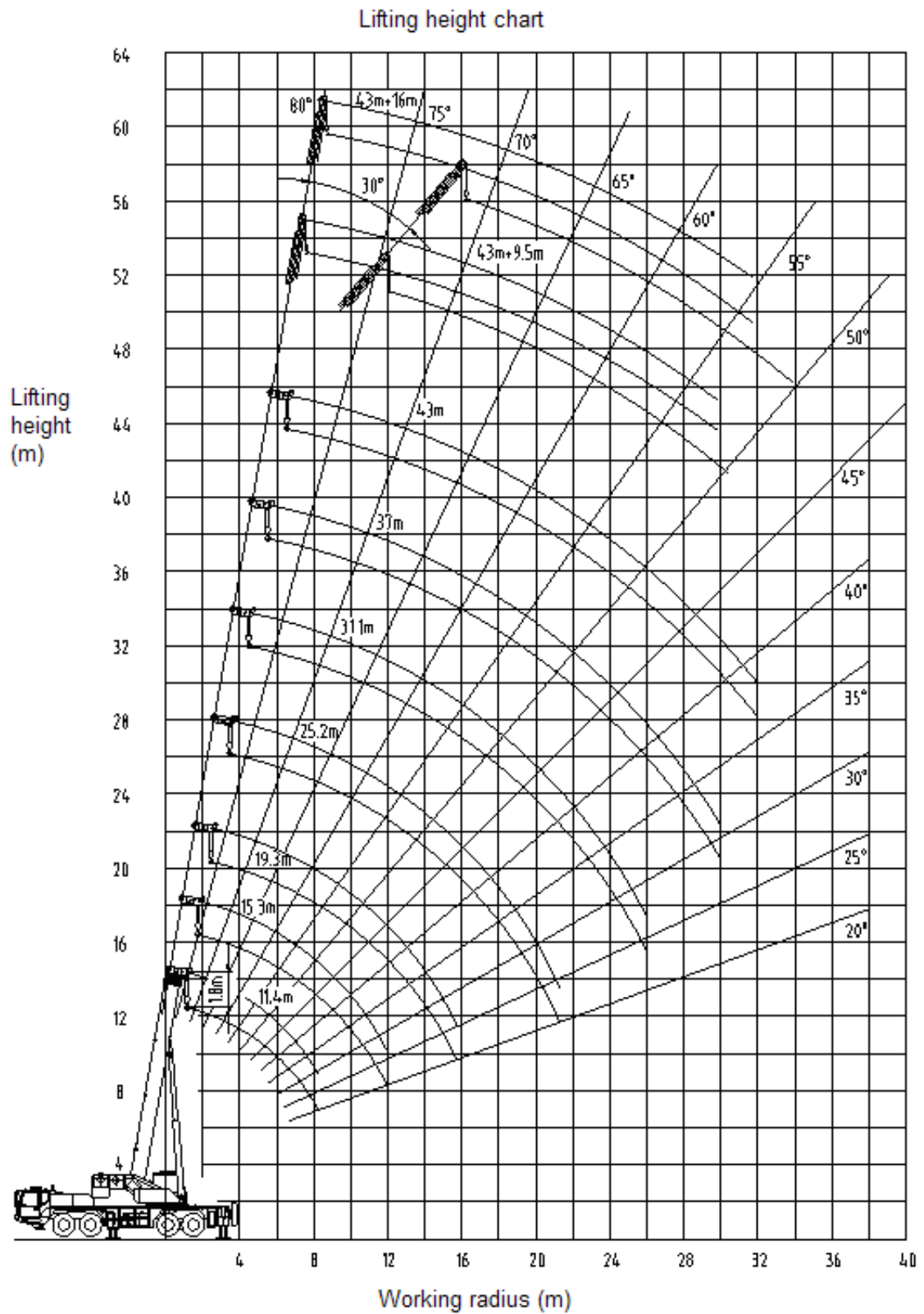
Unit: Metric kg

Working radius (m)	Main boom (m)						
	Outriggers intermediately extended and telescopic cylinder I completely retracted, over side and over rear						
	11.4	17.3	23.2	29.1	35.1		
3.0	50000	25000					
3.5	50000	25000	17500				
4.0	45000	25000	17500				
4.5	38000	25000	17500				
5.0	30000	25000	17500	14000			
5.5	24500	25000	17500	14000			
6.0	20500	22200	17000	13500			
6.5	17500	19100	16500	12900	9500		
7.0	15000	16600	16000	12300	9500		
7.5	13000	14600	15500	11800	9500		
8.0	11500	12900	13600	11300	9500		
9.0	9000	10300	11000	10400	9200		
10.0		8400	9100	9500	8500		
11.0		7000	7600	8000	7800		
12.0		5900	6400	6800	7100		
14.0		4200	4700	5000	5300		
16.0			3500	3800	4100		
18.0			2600	2900	3200		
20.0				2200	2500		
22.0				1600	1900		
24.0				1200	1400		
26.0							
28.0							
I	0	0	0	0	0		
II	0	5.9	11.8	17.7	23.7		
Reeving	12	6	4	4	3		
Hook	55t hook						

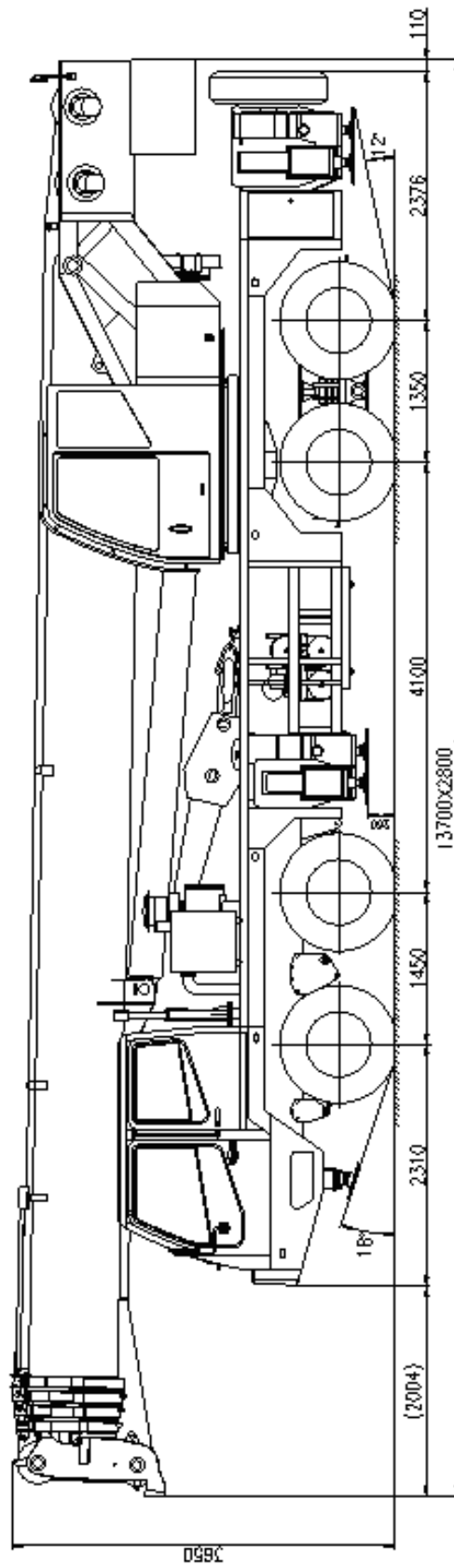
Table 8**Unit: Metric kg**

Main boom angle (°)	Main boom + Jib (m)			
	43+9.5		43+16	
	0°	30°	0°	30°
80	4500	2150	2800	1000
78	4500	2100	2600	1000
76	4200	2000	2300	1000
74	3800	1950	2150	1000
72	3500	1900	1900	1000
70	3200	1850	1750	950
68	3000	1800	1650	950
66	2700	1750	1550	900
64	2400	1700	1450	850
62	2100	1650	1350	800
60	1800	1500	1250	750
58	1500	1200	1100	700
56	1200	1000	900	600
54	1000	850	750	
52	800	550		
Reeving	1			
Hook	4.5t hook			

2.4 Lifting height chart



2.5 Overall view (unit: Metric mm)



1. Specifications, superstructure

3.1 Main boom and telescoping mechanism

Weight-optimized and distortion-resistant design of low-alloy and high-strength steel with U-type boom profile, 1 articulated piece and 4 telescopic sections, providing the boom with super load bearing capacity, large lateral stiffness and small end deflection. Self-created lower circular support structure of sliding block and a series of optimized design have the deadweight of the boom greatly decreased and the stress on the boom evenly distributed. Thus, boom deformation caused by uneven stress distribution will never occur. Furthermore, the boom has good guidance quality and adjustability.

The telescopic boom sections are telescoped in/out via 2 telescopic cylinders and 2 sets of boom extension / retraction wire rope. The 1st telescopic cylinder drives telescopic boom section 1 to telescope in/out; the 2nd telescopic cylinder drives telescopic boom sections 2, 3 and 4 to telescope in / out simultaneously via boom extension / retraction wire rope. This compact design makes the crane work reliably. Each cylinder is fitted with a balance valve.

3.2 Jib

2-section jib is folded side the main boom when it is not used and can be installed and removed by inserted pins.

Jib section 1, lattice structured, has good load bearing capacity.

Jib section 2, box shaped, can be pulled out from jib section 1 to form 2 kinds of jib length: 9.5m and 16m as required.

Jib section 1 can be attached to below 0° or 30° in relation to telescopic boom section 4. The offset can be conveniently changed via the pins and pull bracket.

3.3 Slewing table

Single ribbed plate structured and optimized slewing table made from high-strength steel plate makes the layout of articulated points of main boom and derricking mechanism more reasonable. It also has a novel style and beautiful figure.

The engine hood is of a human-based layout.

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

3.4 Rooster sheave

It is secured at the outside of the top boom section head when it is not used. It can be rotated around the shaft and inserted into the boom head when it is used. This option is set up for rapid

hoists over the boom head to improve the working efficiency when the loads are light.

3.5 Derricking mechanism

1 front-mounted hydraulic cylinder with balance valve provides the boom with smooth derricking movements from -2° to 80° .

3.6 Slewing mechanism

Via the planetary gear reducer, the axial plunger hydraulic motor drives the pinion gear on the output shaft to rotate the toothed ring of slewing ring fixed on chassis frame, providing superstructure with 360° unlimited slewing. The slewing mechanism is of controllable and aligning functions, which can make the load be aligned automatically during operation. Slewing cushion valve and normally-closed brake can ensure stable and reliable slewing operation of the crane. 4-point ball-type slewing ring ensures the slewing table with super-strong load bearing capability and long service life.

3.7 Hoist mechanism

It consists of main and auxiliary hoist mechanisms. The axial plunger hydraulic motor drives the grooved drum to lift and lower the hook via planetary gear reducer. A brake is fitted between the motor and reducer. The main winch and auxiliary winch can work independently or simultaneously. Models of main and auxiliary winch reducers are the same. Moreover, the main winch and auxiliary winch are driven by variable motors of same model. Spring-type hoist rope guide devices are attached on main and auxiliary winches. The main winch is also equipped with a lowering limit switch. The built-in two-stage planetary gear reducer has such advantages as compact structure, light deadweight and high reliability.

Specifications of high-tensile torsion resistant hoist rope:

Diameter: $\phi 17.0\text{mm}$

Strength grade: 1870 N/ mm^2

Main hoist rope length: 200m

Auxiliary hoist rope length: 130m

3.8 Main and auxiliary hooks

Rotatable main hook: 55 t, with 6 pulleys, press nipple and hook safety device.

Anti-rotating auxiliary hook (1 reeving): 4.5 t, with hook safety device.

The main hook can be 40T hook (optional) with 4 pulleys.

3.9 Operator's cab

It is of steel-structure welded with front-mounted instrument console and adjustable seat with headrest. It is equipped with 5 control levers, windshield wiper, washing system, optional air conditioning and heater. The arrangement provides spacious operating space, reasonable arrangement, human-based design, convenient and safe operation.

3.10 Outriggers

H-type outriggers in box structure are welded by low-alloy and high-strength steel. After simulation design by Pro/E and CAD software and actual-used calculation, the outriggers are of good sectional performance and strong load bearing capacity.

The horizontal sliding beam is extended / retracted with the horizontal cylinder. Large outrigger span ensures stability of the crane.

The outrigger pad is mounted at the bottom of vertical cylinder and can be pushed or pulled horizontally. When the outriggers are completely extended or retracted, they can be locked with retaining pins. The outrigger control levers, which are manual controlled, are installed on both sides of chassis frame and can be operated simultaneously or independently. Each vertical cylinder is equipped with a two-way hydraulic lock to ensure stable and reliable operation of the crane.

The 5th outrigger is installed beneath the driver's cab. When the 5th outrigger is set up, the crane can realize full range slewing operation.

3.11 Hydraulic system

It is an open hydraulic system. The five manual-operated control levers are used for controlling the slewing, telescoping, derricking and hoist mechanisms respectively. The adopted bite-type fitting ensures the high reliability of hydraulic system. The main power element is a quadruple gear pump. Among which, two pumps work together to supply hydraulic oil for main hoist mechanism, auxiliary hoist mechanism, derricking mechanism and telescoping mechanism; the third pump supplies hydraulic oil for chassis hydraulic system and slewing mechanism; and the minimum pump supplies stable hydraulic oil for the control oil lines, and thus open or close the brake of hoist mechanism and slewing mechanism etc.

The outrigger control valves are new-type manual multiple directional control valves to control the horizontal and vertical cylinders' movements. Each of them is fitted with a pressure limiting valve, thus, can prevent the piston rods of horizontal cylinders from bending. They can be operated independently or simultaneously on both sides of the vehicle

3.12 Electrical system

Single wire system, negative grounded, 24 Volt DC.

The electrical system includes the devices such as battery master switch, ignition starter switch,

engine off button, control light "Power source", warning light "Main / auxiliary winch approaching upper limit", warning light "Main / auxiliary winch approaching lower limit", warning light "The 5th outrigger pressure too high", hoisting limit switch, lowering limit switch, overload protection device, illumination, fan, windshield wiper, horn, load moment limiter, oil cooler fan and air conditioning device etc. These devices ensure safe operation and provide good working environment.

In an emergency, press the red emergency-off switch to cut off the power supply so as to ensure the safety of operation.

3.13 Safety devices

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

When the actual load approaches 90% of the rated one, the warning light will light up and buzzer will send out acoustic warning.

When the actual load reaches 100% of the rated one, the load moment limiter will send out a stop signal automatically and will cut off all dangerous crane movements via superstructure control circuit and control mechanism.

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

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

- a) Boom angle indicator
- b) Hoisting limit switch
- c) Hook safety device
- d) Lowering limit switch
- e) The 5th outrigger overpressure protection device
- f) Two-way hydraulic lock
- g) Balance valve
- h) Relief valve

3.14 Air conditioning and heater

The air conditioning special for vehicle and heater are optional.

2. Specifications, chassis

Chassis	Model		ZLJ5423JQZ	Code: ZLJ5423JQZD3	
	Type		II		
	Engine	Model		WP10.336	Weichai Power Co., Ltd.
		Rated power	kW/r/min	247/2200	
		Max. output torque	N.m/r/min	1250/1200 - 1600	
	Limits for exhaust pollutants and smoke		Comply with related standard	GB3847-2005 GB17691-2005(National stage III)	
	Manufacturer		Zoomlion Heavy Industry Science & Technology Co., Ltd.		

For detailed information, please refer to the *Technical Specifications, Special Purpose Chassis*