ZOOMLION

ZOOMLION ZTC600V5R TRUCK CRANE

TECHNICAL SPECIFICATIONS

GQ06383127005000EN

Zoomlion Heavy Industry Science & Technology Co.,Ltd.

ZOOMLION ZTC600V5R TRUCK CRANE

TECHNICAL SPECIFICATIONS

GQ06383127005000EN

1 Product characteristics

ZOOMLION ZTC600V5R truck crane, which integrates Zoomlion's decades' experience in designing and manufacturing mobile cranes with advanced technologies, is a new generation of high-performance product developed to meet oversea market demands. Its performances such as lifting height, boom length, working speed and lifting capacity, etc., have achieved advanced international level.

This product is a truck crane capable of full range slewing, installed with 5 boom sections and pilot-operated proportional controlled systems. The 4-axle (8 × 4 drive, offering convenient and flexible hydraulically powered steering) right-hand drive special purpose chassis conforming to Indian stage V emission standard provides wide vision, spacious cab and luxurious equipment.

The latest multiple unit directional control valve, variable pumps system ensure that each executive mechanism makes full use of its working capability.

The safety devices, such as the relief valve, balance valve, hydraulic lock and brake valve, etc. in the hydraulic system, can protect against rupture of pipes and hoses.

The complete lighting system and the safety devices, such as load moment limiter, can ensure operational safety and convenience for night work.

This crane has a novel style which makes it beautiful in figure, in contour and in color.

2 Specifications, complete vehicle

2.1 Product model

Model in auto industry:	-
Model in engineering industry:	ZTC600V5R
Product code:	ZTC600V552R

2.2 Technical data

Item		Value	Remarks
Working performance	Max. rated lifting capacity kg	60000	
	Max. load moment of basic boom kN.m	2009	
	Max. load moment of max. length boom kN.m	1305	
	Max. lifting height of basic boom m	13.1	
	Max. lifting height of boom m	46.7	These parameters do not include deflection of boom and jib.
	Max. lifting height of jib m	62.5	
Working speeds	Max. hoist rope speed (Main winch) m/min	140	Drum 4th layer
	Max. hoist rope speed (Auxiliary winch) m/min	140	Drum 4th layer
	Boom derricking up time s	45	
	Boom telescoping out time s	100	
	Slewing speed r/min	0-2.0	
Driving	Max. working altitude m	2000	
	Max. driving speed km/h	48	
	Max. gradeability %	50	
	Min. turning diameter m	≤24	
	Min. ground clearance mm	272	
	Oil consumption per hundred kilometer L	39	
Mass	Deadweight in driving condition kg	45100	Not including 3.5 t auxiliary counterweight
	Complete vehicle kerb mass kg	44970	
	Front axle load kg	14430	
	Rear axle load kg	30670	
Dimensions	Overall dimensions (L × W × H) mm	14550×2800×3780	
	Outrigger spread (L) m	6.35	
	Outrigger spread (W) m	Fully extended: 8.0 m Intermediately extended: 5.26 m	
	Tail slewing radius mm	4185	
	Boom length m	11.8-46.0	
	Boom angle °	-2 - 80	

	Jib length	m	9.5, 16.0	
	Jib angle	°	0, 15, 30	

2.3 Rated capacity charts

This crane is provided with the following rated capacity charts. The operator should select proper rated lifting capacity referring to resp. rated capacity charts according to actual working conditions. For details, please refer to Table 1 to Table 14.

The values in column “I” refer to the extendable length of telescoping cylinder I.

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

Table2 Rated capacity chart on outriggers fully extended Unit: t

Working radius (m)	Boom length (m) 10t counterweight														
	TELESCOPIC CYLINDER I FULLY EXTENDED, OVER FRONT AND REAR							TELESCOPIC CYLINDER I HALF EXTENDED, OVER FRONT AND REAR				TELESCOPIC CYLINDER I FULLY RETRACTED, OVER FRONT AND REAR			
	11.8	16.2	20.5	26.8	33.1	39.4	46	22.5	28.8	35.1	41.7	18.1	24.4	30.7	37.3
3	60.0	46.0										26.0			
3.5	50.0	46.0	34.0									26.0			
4	48.0	44.0	34.0					26.0				26.0	25.0		
4.5	44.0	42.5	34.0	26.0				26.0				26.0	25.0		
5	41.0	40.5	34.0	26.0				26.0	25.0			26.0	25.0		
5.5	37.0	36.4	33.0	26.0				26.0	25.0			26.0	24.5	17.0	
6	33.5	33.0	32.0	26.0	21.2			26.0	25.0			26.0	24.0	17.0	
7	28.0	27.5	27.2	25.5	21.2			25.0	25.0	16.0		25.0	22.5	16.0	11.6
8	24.0	23.7	23.5	23.5	20.2	15.5		23.5	23.0	15.5	11.6	24.0	21.2	14.6	11.6
9	21.0	20.5	20.3	21.0	18.5	15.0		21.0	21.0	14.5	11.6	21.2	19.8	13.6	11.6
10		18.5	18.2	18.5	17.0	14.2	10.5	19.0	19.0	14.0	11.2	19.0	18.0	12.5	10.8
11		15.5	15.2	16.0	15.6	13.3	10.3	17.0	17.5	13.0	10.6	17.5	17.0	11.6	10.0
12		13.3	13.0	14.2	14.6	12.5	10.2	14.5	15.0	12.0	10.0	15.0	15.7	10.7	9.40
13		11.0	11.0	12.0	12.8	11.6	9.70	12.5	13.1	11.3	9.50	13.2	13.7	10.0	8.80
14			9.60	10.6	11.3	11.0	9.10	10.8	11.5	10.8	8.60	11.6	12.0	9.50	8.20
15			8.30	9.40	10.0	10.3	8.60	9.50	10.2	10.0	8.30		10.8	9.00	7.70
16			7.20	8.20	8.90	9.40	8.10	8.50	9.20	9.50	7.80		9.70	8.40	7.20
18				6.40	7.10	7.60	7.40	6.70	7.40	7.80	7.00		7.80	7.50	6.30
20				5.10	5.75	6.20	6.50		6.00	6.40	6.30		6.50	6.80	5.70
22				4.00	4.65	5.10	5.45		4.90	5.30	5.50			5.80	5.20
24					3.80	4.20	4.50		4.00	4.40	4.70			4.80	4.70
26					3.05	3.50	3.80			3.70	4.00			4.20	4.30
28					2.45	2.85	3.20			3.10	3.40				3.80
30						2.35	2.65			2.60	2.80				3.30
32						1.90	2.20				2.40				2.80
34						1.50	1.80				2.00				
36							1.40				1.70				
38							1.15				1.40				
Ⅰ(m)	0	4.4	8.7	8.7	8.7	8.7	8.7	4.4	4.4	4.4	4.4	0	0	0	0
Ⅱ(m)	0	0	0	6.3	12.6	18.9	25.5	6.3	12.6	18.9	25.5	6.3	12.6	18.9	25.5
Reeving	12	10	8	6	5	4	3	6	5	4	3	6	5	4	3
Hook	60t														

Table 3 Rated capacity chart on outriggers intermediately extended Unit: t

Working radius (m)	Boom length (m) 10t counterweight														
	TELESCOPIC CYLINDER I FULLY EXTENDED, OVER FRONT AND REAR							TELESCOPIC CYLINDER I HALF EXTENDED, OVER FRONT AND REAR				TELESCOPIC CYLINDER I FULLY RETRACTED, OVER FRONT AND REAR			
	11.8	16.2	20.5	26.8	33.1	39.4	46	22.5	28.8	35.1	41.7	18.1	24.4	30.7	37.3
3	50.0	46.0	34.0									26.0			
3.5	45.0	46.0	34.0									26.0			
4	41.0	44.0	34.0	26.0				26.0				26.0	25.0		
4.5	37.0	42.5	34.0	26.0				26.0				26.0	25.0		
5	33.0	40.5	34.0	26.0				26.0	25.0			26.0	25.0		
5.5	29.0	33.5	32.0	26.0				25.5	25.0			26.0	24.5	17.0	
6	26.5	26.0	25.0	25.5	21.2			25.0	22.0			25.0	24.0	17.0	
7	20.5	19.5	19.5	21.0	21.0			21.5	21.5	16.0		21.8	21.5	16.0	11.6
8	16.5	15.0	15.0	16.2	17.0	15.3		17.0	17.5	15.0	11.6	17.5	18.0	14.6	11.6
9	13.0	12.0	12.0	13.0	14.1	14.8		13.8	14.0	14.5	11.6	14.5	14.8	13.0	11.6
10		10.0	9.60	10.8	11.3	12.2	10.5	11.2	12.0	12.5	11.0	11.8	12.5	12.3	10.8
11		8.20	7.90	9.00	9.70	10.2	10.3	9.30	10.0	10.3	10.0	10.0	10.5	11.0	9.80
12		6.50	6.50	7.50	8.20	8.80	9.10	8.00	8.60	9.00	9.50	8.50	9.10	9.50	9.20
13			5.20	6.30	7.00	7.50	7.80	6.60	7.40	7.80	8.20	7.20	7.80	8.20	8.60
14			4.30	5.30	6.00	6.50	6.80	5.70	6.40	6.80	7.20	6.40	6.90	7.20	7.60
15			3.50	4.50	5.20	5.60	6.00	4.90	5.50	6.00	6.30		6.10	6.40	6.70
16			2.80	3.80	4.40	5.00	5.30	4.30	4.80	5.30	5.60		5.40	5.70	6.00
18				2.80	3.30	3.80	4.10	3.00	3.70	4.10	4.40		4.20	4.50	4.70
20				1.90	2.40	2.90	3.20		2.80	3.20	3.50			3.60	3.80
22					1.70	2.10	2.50		2.10	2.50	2.80			2.90	3.20
24					1.20	1.60	1.90			1.90	2.20			2.30	2.60
26						1.10	1.40			1.40	1.70				2.10
28							1.00			0.95	1.30				1.60
30											0.90				1.30
Ⅰ(m)	0	4.4	8.7	8.7	8.7	8.7	8.7	4.4	4.4	4.4	4.4	0	0	0	0
Ⅱ(m)	0	0	0	6.3	12.6	18.9	25.5	6.3	12.6	18.9	25.5	6.3	12.6	18.9	25.5
Reeving	12	10	8	6	5	4	3	6	5	4	3	6	5	4	3
Hook	60t														

Table 4 Rated capacity chart on outriggers fully extended Unit: t

Working radius (m)	Boom length (m) 6.5t counterweight														
	TELESCOPIC CYLINDER I FULLY EXTENDED, OVER FRONT AND REAR							TELESCOPIC CYLINDER I HALF EXTENDED, OVER FRONT AND REAR				TELESCOPIC CYLINDER I FULLY RETRACTED, OVER FRONT AND REAR			
	11.8	16.2	20.5	26.8	33.1	39.4	46	22.5	28.8	35.1	41.7	18.1	24.4	30.7	37.3
3	60.0	46.0	34.0									26.0			
3.5	50.0	46.0	34.0									26.0			
4	47.0	44.0	34.0	26.0				26.0				26.0	25.0		
4.5	42.5	42.0	34.0	26.0				26.0				26.0	25.0		
5	39.0	39.0	34.0	26.0				26.0	25.0			26.0	25.0		
5.5	35.0	34.3	32.5	26.0	21.2			26.0	25.0			26.0	24.5	17.0	
6	32.0	31.5	31.5	26.0	21.2			26.0	25.0			26.0	24.0	17.0	
7	26.5	27.0	27.0	25.0	21.0			25.0	25.0	16.0		25.0	22.5	16.0	11.6
8	23.0	22.8	24.0	22.5	19.5	15.5		23.3	22.0	15.5	11.6	24.0	21.2	14.6	11.6
9	20.3	19.5	19.0	20.3	18.3	15.0		20.5	20.3	14.5	11.6	21.8	19.8	13.6	11.6
10		15.8	15.2	16.8	16.2	14.2	10.5	17.0	18.0	14.0	11.2	18.0	18.0	12.5	10.8
11		13.0	12.8	14.0	14.5	13.0	10.3	14.3	15.0	13.0	10.6	15.0	15.6	11.6	10.0
12		10.5	10.6	11.5	12.5	12.0	10.2	12.2	13.0	12.0	10.0	12.8	13.3	10.7	9.40
13			8.90	10.0	9.80	11.0	9.70	10.5	11.2	11.3	9.50	11.0	11.5	10.0	8.80
14			7.50	8.60	9.40	9.80	9.10	9.00	9.70	10.2	8.60	9.60	10.2	9.40	8.20
15			6.40	7.55	8.20	8.50	8.40	7.80	8.50	9.00	8.10		9.10	8.80	7.70
16			5.40	6.50	7.30	7.70	8.00	6.80	7.60	8.00	7.60		8.20	8.30	7.20
18				5.00	5.60	6.10	6.50	5.20	6.00	6.30	6.80		6.60	6.80	6.30
20				3.80	4.40	4.85	5.20		4.70	5.20	5.50		5.30	5.60	5.60
22				2.85	3.50	3.90	4.20		3.80	4.20	4.50			4.60	4.90
24					2.70	3.10	3.40		3.00	3.40	3.70			3.80	4.10
26					2.10	2.50	2.80			2.80	3.10			3.20	3.50
28					1.55	1.95	2.30			2.30	2.50				2.90
30						1.55	1.85			1.85	2.00				2.50
32						1.10	1.45				1.75				2.10
34						0.80	1.10				1.40				
36							0.80				1.05				
Ⅰ(m)	0	4.4	8.7	8.7	8.7	8.7	8.7	4.4	4.4	4.4	4.4	0	0	0	0
Ⅱ(m)	0	0	0	6.3	12.6	18.9	25.5	6.3	12.6	18.9	25.5	6.3	12.6	18.9	25.5
Reeving	12	10	8	6	5	4	3	6	5	4	3	6	5	4	3
Hook	60t														

Table 5 Rated capacity chart on outriggers intermediately extended

Unit: t

Working radius (m)	Boom length (m) 6.5t counterweight														
	TELESCOPIC CYLINDER I FULLY EXTENDED, OVER FRONT AND REAR							TELESCOPIC CYLINDER I HALF EXTENDED, OVER FRONT AND REAR				TELESCOPIC CYLINDER I FULLY RETRACTED, OVER FRONT AND REAR			
	11.8	16.2	20.5	26.8	33.1	39.4	46	22.5	28.8	35.1	41.7	18.1	24.4	30.7	37.3
3	50.0	46.0										26.0			
3.5	45.0	46.0	34.0									26.0			
4	41.0	44.0	34.0					26.0				26.0	25.0		
4.5	35.0	42.5	34.0	26.0				26.0				26.0	25.0		
5	32.0	30.0	32.5	26.0				26.0	25.0			26.0	25.0		
5.5	28.0	25.5	27.0	25.5				25.0	22.0			25.0	24.5	17.0	
6	24.0	22.8	23.0	23.5	21.2			24.5	22.0	16.0		24.5	22.5	17.0	
7	17.0	16.5	16.0	17.5	18.0			18.0	18.5	15.4		18.5	19.5	15.5	11.6
8	13.0	12.5	12.0	13.5	14.3	15.0		14.0	14.8	15.0	10.5	14.5	15.5	14.5	11.6
9	10.0	9.90	9.50	10.5	11.5	12.0		11.0	12.0	12.5	10.5	11.5	12.5	13.0	11.5
10		7.80	7.60	8.50	9.50	9.90	10.3	9.30	10.0	10.4	10.0	9.50	10.5	10.8	10.0
11		6.30	6.00	7.10	7.80	8.20	8.80	7.50	8.20	8.70	9.10	8.20	8.80	9.20	9.40
12		5.00	4.80	5.80	6.50	7.00	7.40	6.20	6.90	7.40	7.70	6.80	7.50	7.90	8.20
13			3.80	4.80	5.50	5.90	6.30	5.20	5.90	6.30	6.60	5.80	6.40	6.80	7.10
14			3.00	4.00	4.60	5.00	5.40	4.40	5.00	5.40	5.80	5.00	5.50	5.80	6.20
15			2.40	3.20	4.00	4.30	4.70	3.60	4.20	4.70	5.00		4.80	5.10	5.40
16			1.70	2.70	3.30	3.70	4.00	3.00	3.70	4.10	4.40		4.20	4.50	4.80
18				1.70	2.30	2.70	3.00	2.10	2.70	3.10	3.40		3.20	3.50	3.70
20				1.00	1.60	2.00	2.20		1.90	2.30	2.60			2.70	2.90
22					1.00	1.30	1.60		1.20	1.70	1.90			2.10	2.30
24						0.90	1.10			1.20	1.40			1.50	1.80
26							0.75			0.75	1.00				1.40
28											0.80				1.00
30															0.80
Ⅰ(m)	0	4.4	8.7	8.7	8.7	8.7	8.7	4.4	4.4	4.4	4.4	0	0	0	0
Ⅱ(m)	0	0	0	6.3	12.6	18.9	25.5	6.3	12.6	18.9	25.5	6.3	12.6	18.9	25.5
Reeving	12	10	8	6	5	4	3	6	5	4	3	6	5	4	3
Hook	60t														

Table 6　Rated capacity chart

Unit: t

Boom angle (°)	Boom (m) ＋ jib (m) 46＋9.5			10t counterweight 46＋16		
	0°	15°	30°	0°	15°	30°
80	5.00	3.30	2.50	3.00	2.00	1.50
78	4.80	3.30	2.50	2.80	2.00	1.45
76	4.50	3.20	2.50	2.70	1.90	1.40
74	4.30	3.10	2.50	2.50	1.80	1.35
72	4.00	3.00	2.50	2.30	1.70	1.30
70	3.60	2.80	2.40	2.10	1.60	1.25
68	3.30	2.70	2.30	2.00	1.50	1.25
66	3.10	2.60	2.20	1.85	1.45	1.20
64	2.90	2.50	2.10	1.70	1.40	1.20
62	2.70	2.40	2.00	1.60	1.30	1.15
60	2.40	2.40	1.95	1.55	1.25	1.10
58	2.10	2.10	1.95	1.50	1.20	1.10
56	1.90	1.90	1.70	1.45	1.20	1.05
54	1.65	1.60	1.45	1.35	1.15	1.00
52	1.45	1.40	1.30	1.30	1.00	1.00
50	1.30	1.20	1.05	1.10	0.90	0.85
48	1.10	1.00	0.95	0.95	0.80	0.75
46	0.90	0.90	0.75	0.75	0.70	
44	0.70	0.70	0.65			
Reeving	1					
Hook	5t					

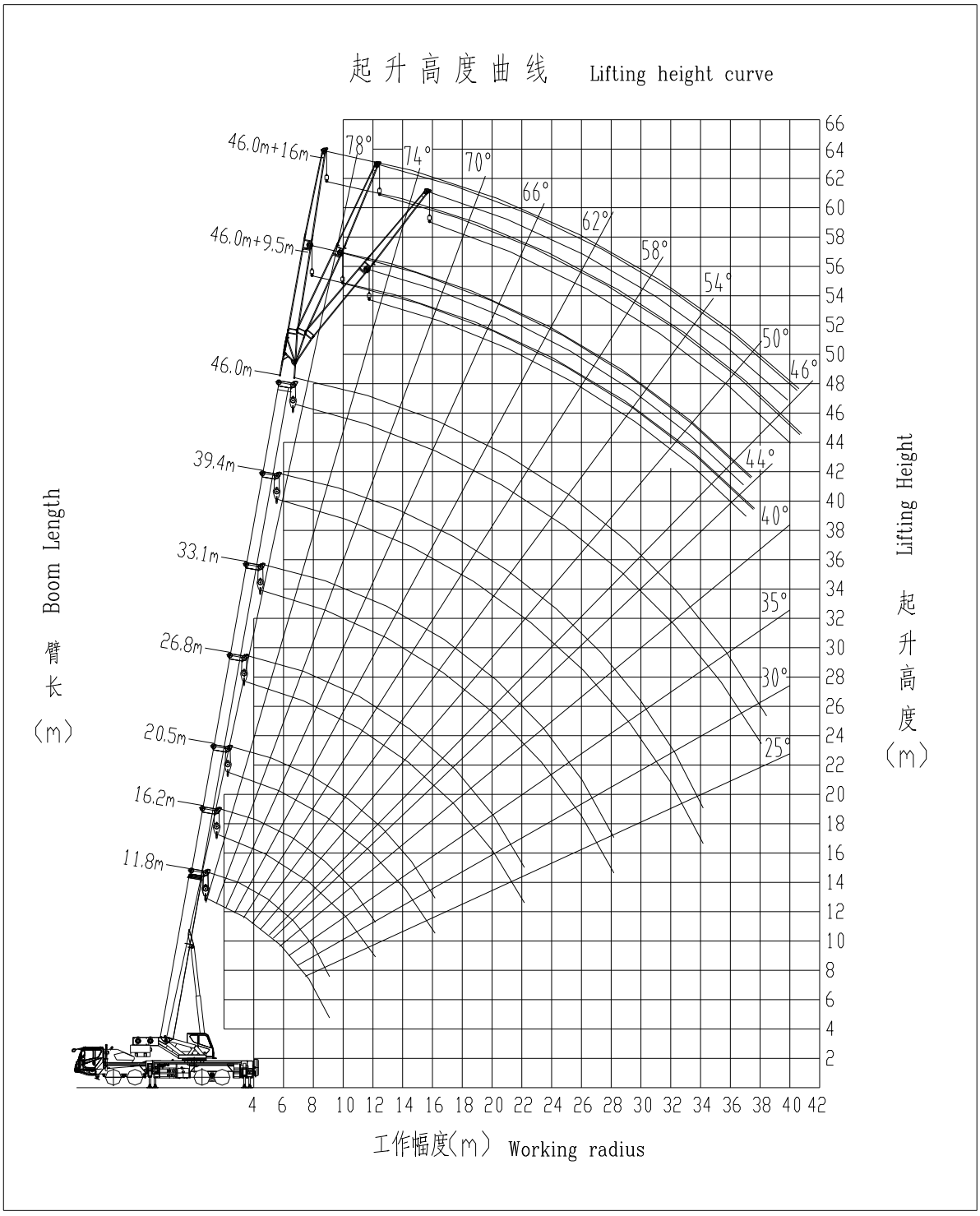
Table 7　Rated capacity chart

Unit: t

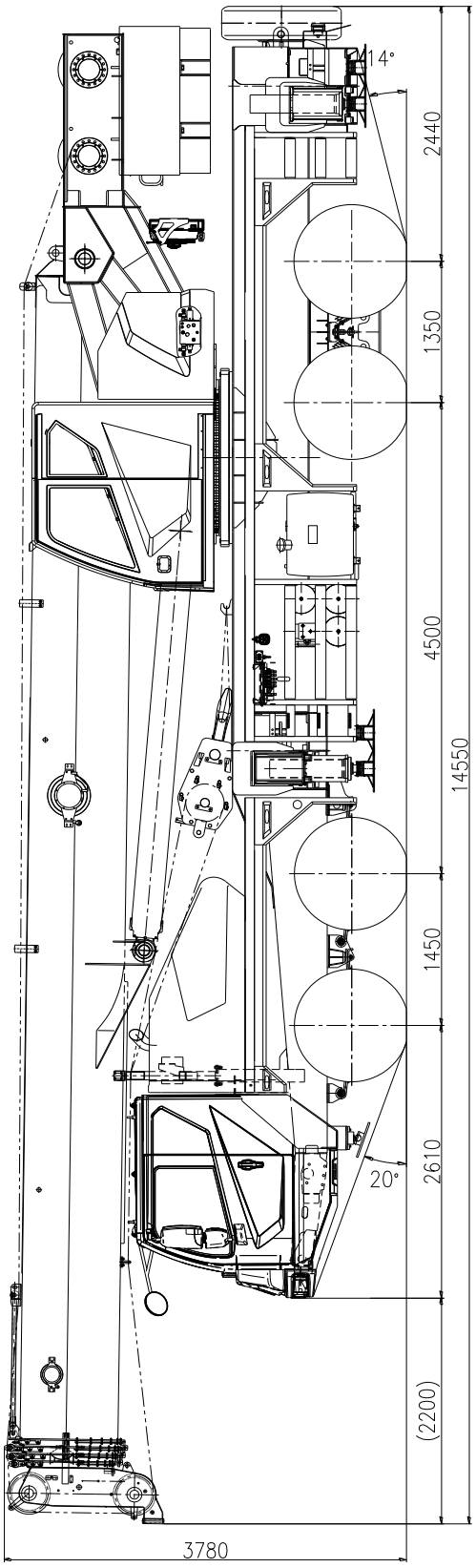
Boom angle (°)	Boom (m) ＋ jib (m) 6.5t counterweight					
	46＋9.5			46＋16		
	0°	15°	30°	0°	15°	30°
80	5.00	3.30	2.50	3.00	2.00	1.50
78	4.80	3.30	2.50	2.80	2.00	1.45
76	4.50	3.20	2.50	2.70	1.90	1.40
74	4.35	3.10	2.50	2.50	1.80	1.35
72	4.10	3.00	2.50	2.30	1.70	1.30
70	3.80	2.80	2.40	2.10	1.60	1.25
68	3.50	2.70	2.30	2.00	1.50	1.25
66	3.10	2.70	2.30	1.80	1.45	1.20
64	2.70	2.60	2.20	1.70	1.40	1.20
62	2.30	2.20	2.00	1.60	1.30	1.15
60	1.90	1.90	1.70	1.55	1.25	1.10
58	1.60	1.60	1.50	1.40	1.10	1.00
56	1.40	1.30	1.15	1.20	1.00	0.90
54	1.10	1.10	1.00	0.95	0.85	0.80
52	1.00	0.95	0.85	0.80	0.70	
50	0.80	0.75	0.70			
Reeving	1					
Hook	5t					

2.4

2.4 Lifting height chart



2.5 Overall view (Unit: Metric mm)



3 Components, superstructure

3.1 Boom and telescoping mechanism

The box-shaped boom consists of 5 U-type boom sections made of low-alloy high-strength steel plate, providing the boom with excellent bending-resistance capacity, super load bearing capacity, light deadweight, large lateral stiffness and small end deflection. A new type of plate structure is adopted for the boom head, achieving a larger overlapping ratio between boom sections and matching the embedded sliding blocks. A series of optimized design have the deadweight of the boom greatly decreased and the stress on the boom evenly distributed to avoid partial distortion. Furthermore, the boom has good guidance quality and adjustability.

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

3.2 Jib

It consists of two jib sections and can be installed and removed by pins.

Both jib sections are of a quadrilateral lattice structure.

Jib section 1 is articulated on the head of top boom section with pins and can be assembled at an angle of 0°, 15° or 30° to the telescopic boom according to your needs. The offset can be conveniently changed via the pins and pull bracket.

It can be folded on the side of boom when being used.

Jib length:

- With jib section 1: 9.5 m
- With jib section 1 + jib section 2: 16 m

3.3 Slewing platform

Profile structures with optimized designs; scientific layout of articulated points of the boom and derricking mechanism contributes to reasonable force distribution. It also has a distinctive structure and beautiful contour.

The engine hood is designed ergonomically.

3.4 Rooster sheave

It is secured at the outside of the boom head when not used. It can be rotated around the shaft

and pinned onto the boom head before being used.

It is used to increase the lifting efficiency for light load hoisting.

3.5 Derricking mechanism

One front-mounted hydraulic cylinder with a balance valve provides the boom with smooth derricking range 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 bearing fixed on the chassis frame, providing superstructure with 360° unlimited slewing capability.

The slewing mechanism is capable of controllable free swing, which can align the boom with the center of the load. The slewing valve and normally-closed brake can ensure stable and reliable slewing operation of the crane. 4-point contact ball-type slewing bearing ensures the slewing platform with super-strong load bearing capability and long service life.

3.7 Hoist mechanism

It consists of a main hoist mechanism and an auxiliary hoist mechanism.

The two hoist mechanisms are driven by an axial plunger hydraulic motor with a built-in planetary gear reducer to lift or lower the hook.

A brake is fitted between the motor and reducer.

The two winch mechanisms can be controlled independently and also can carry out simultaneous movements.

The two-stage planetary reducer is of a compact structure, light deadweight and high reliability.

Specifications for high-tensile torsion resistant hoist rope:

Diameter: φ17.0 mm

Strength grade: 1870 N/mm^2

Length of main hoist rope: 230 m

Length of auxiliary hoist rope: 140 m

3.8 Main and auxiliary hooks

Main hook: 60 t, with 6 pulleys, a press nipple and a hook latch

Auxiliary hook (1 reeving): 5 t, with hook latch

3.9 Operator's cab

The operator's cab is of steel-structure with front-mounted instrument console and adjustable seat with a headrest. Two joysticks are located at both sides of the seat to control superstructure movements. The ergonomically designed arrangement provides spacious operating space, reasonable arrangement, beautiful appearance and convenient & safe operation.

The cab can be tilted up or down by maximum 20 degrees by the cab tilting mechanism.

3.10 Outriggers

H-type outriggers, which are in box-shaped structure and welded of low-alloy and high-strength steel plate, can provide good sectional performance and strong load bearing capability via NX simulated design and actual-used calculation.

2-section horizontal sliding beam can be extended and retracted with a horizontal cylinder and a set of outrigger extension / retraction rope. Large outrigger span ensures stability of the crane.

Outrigger control levers are fitted on both sides of the vehicle for controlling the outriggers to extend or retract simultaneously or independently. Each vertical cylinder is equipped with a two-way hydraulic lock to ensure stable and reliable operation of the crane.

In addition, the crane also can work with outriggers intermediately extended for narrow area operation.

The 5^{th} outrigger is installed beneath the driver's cab. The crane can realize full range slewing operation with the 5^{th} outrigger set up.

3.11 Hydraulic system

The open-type hydraulic system adopts advanced pilot-operated proportional joysticks, hydraulic proportional control system and anti-pollution bite-type fitting to ensure high reliability of the system.

The main drive component is one variable pump and one gear pump. The variable pump supplies hydraulic oil for the main winch, auxiliary winch, derricking mechanism and telescoping mechanism. The gear pump supplies hydraulic oil for the chassis hydraulic system and slewing mechanism.

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.

The 5th outrigger can retract with the vertical cylinders synchronously and thus efficiently prevent its cylinder from being damaged due to it is being forgotten to be retracted.

The outrigger control valve is a manual multi-way directional change valve. The outriggers can be operated independently or simultaneously from the outrigger control mechanism at the both sides of the chassis.

3.12 Electrical system

Double wire system, negative grounded, 24 Volt DC.

The electrical system consists of the superstructure electrical system and the chassis electrical system.

The electrical system of superstructure includes devices such as warning light “Main / auxiliary winch approaching upper limit”, warning light “Main / auxiliary winch approaching lower limit”, hoisting limit switch, lowering limit switch, overload protection device, emergency off switch, control lights and signals etc., ensuring safe operation and providing good working environment.

The electrical system of chassis includes the USB / SD / MP3 player, air conditioning and heater etc, ensuring the safety driving performance and providing comfortable driving environment.

3.13 Safety devices

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

When the actual load reaches 90% of the rated one, the warning light lights up and the buzzer sends out slow acoustic warning.

When the actual load exceeds 100% of the rated one, the warning light lights up, the buzzer sends out fast acoustic warning and all dangerous movements are switched off.

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 the crane safety:

a) Hoisting limit switch

b) Hook latch

c) Lowering limit switch

d) Two-way hydraulic lock

e) Balance valve

f) Relief valve

3.14 Air conditioning and heater

The operator's cab and the driver's cab are equipped with special air conditioning and heater for vehicle

3.15 Counterweight

The counterweight consists of one 6.5 t fixed counterweight plate and one 3.5 t auxiliary counterweight plate.

4 Specifications, chassis

Chassis	Engine	Model	YCK10360-B500
		Rated power kW/r/min	265/1900
		Max. output torque N.m/r/min	1600/(1100-1450)
		Manufacturer	Guangxi Yuchai Engine Co., Ltd.
	Model		ZLJ5420JQZV5
	Type		II
	Code		ZLJ5420JQZV5.2R
	Limits for exhaust pollutants and smoke		Comply with Indian Stage V emission standard
	Manufacturer		Zoomlion Heavy Industry Science & Technology Co., Ltd.

For detailed information, please refer to *Technical Specifications, Special Purpose Chassis for Truck Crane*.

5 Working environment

5.1 Temperature

The ambient temperature for the crane to work is -20℃-40℃.

5.2. Wind speed

The working wind speed should not exceed 14.1m/s at the working height. The working wind speed is calculated from the average wind speed for 10 min at 10 m above ground which is multiplied by a coefficient of 1.3 and produces the 3 s instantaneous wind speed.

When the wind speed exceeds 14.1m/s, stop working immediately and retract the boom to its driving status.

5.3 Altitude

The altitude for the crane to work should not exceed 2000m.

Appendix

Table of main purchased parts

Ser. No.	Description	Manufacturer	Remarks
1	Main valve	Changde Zoomlion Heavy Industry Science & Technology Hydraulic Co., Ltd.	
2	Plunger pump (variable pump)	Hi-tech Hydraulic Co., Ltd.	
		Avic Liyuan Hydraulic Co., Ltd.	
	Gear pump	Hefei Wanye Hydraulic Component Co., Ltd.	
3	Winch motor	Beijing Huade Hydraulic Industrial Group Co., Ltd.	
		Hi-tech Hydraulic Co., Ltd.	
		Avic Liyuan Hydraulic Co., Ltd.	
4	Winch reducer	Xuzhou Jincheng Planetary Transmission Co., LTD.	
		Qidong Wanhui Machinery Co., Ltd.	
		Zhuzhou Gear Co., Ltd.	
		Taian Taishan Fushen Gearbox Co, Ltd.	
5	Slewing motor	Shanghai Electric Co, LTD.	
		Hi-tech Hydraulic Co., Ltd.	
		Avic Liyuan Hydraulic Co., Ltd.	
		Beijing Huade Hydraulic Industrial Group Co., Ltd.	
6	Slewing reducer	Xuzhou Jincheng Planetary Transmission Co., LTD.	
		Qidong Wanhui Machinery Co., Ltd.	
		Zhuzhou Gear Co., Ltd.	
		Taian Taishan Fushen Gearbox Co, Ltd.	
7	Slewing ring	Ma’anshan Jingwei Slewing Bearing Co., Ltd.	
		Ma’anshan Fangyuan Fine Machinery Co., LTD.	
8	Telescopic cylinder	Hunan Teli Hydraulic Co., Ltd.	
		Hubei Jiaheng Technology Co., Ltd.	
9	Derricking cylinder	Hunan Teli Hydraulic Co., Ltd.	
		Hubei Jiaheng Technology Co., Ltd.	
10	Horizontal cylinder	Hunan Teli Hydraulic Co., Ltd.	
		Hubei Jiaheng Technology Co., Ltd.	
11	Vertical cylinder	Hunan Teli Hydraulic Co., Ltd.	
		Hubei Jiaheng Technology Co., Ltd.	

Ser. No.	Description	Manufacturer	Remarks
12	Balance valve – telescoping mechanism	Changde Zoomlion Heavy Industry Science & Technology Hydraulic Co., Ltd.	
13	Balance valve – derricking mechanism	Changde Zoomlion Heavy Industry Science & Technology Hydraulic Co., Ltd.	
14	Balance valve – hoist mechanism	Changde Zoomlion Heavy Industry Science & Technology Hydraulic Co., Ltd.	
15	Wire rope	Hubei Fuxing Science and Technology Co., Ltd.	
		Shanghai Junwei Sling Co., Ltd.	
		Jiangsu SAFETY Steel Wire Rope Co., Ltd.	
16	Hook	Zhangqiu Heavy Forge Co., Ltd.	
		Henan Purui Fine Machinery Co., Ltd.	
		Changsha Lanying Industry Co., Ltd.	
17	Load moment limiter	Zoomlion Electrical Appliance Company	
		Changsha Huade Technology Development Co., Ltd.	
18	Operator’s cab	Yangzhou Shenzhou Automobile Interiors Co., Ltd	

Note:

The equipment fitted in the crane is subject to change due to design improvements or other reasons. Therefore, the above table is for reference only.