

**ZOOMLION**

ZOOMLION ZTC550R TRUCK CRANE

# **TECHNICAL SPECIFICATIONS**

**GQ0638112700100EN**

**Zoomlion Heavy Industry Science & Technology Co.,Ltd.**

# ZOOMLION ZTC550R TRUCK CRANE

## TECHNICAL SPECIFICATIONS

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### 1 Product characteristics

ZOOMLION ZTC550R truck crane, which makes good use of Zoomlion's years of experience in designing and manufacturing mobile cranes combined with advanced technologies, is a new generation of high-performance product designed and developed to meet the Southeast Asia 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 of full range slewing function, telescopic boom sections and pilot-operated (right hand driving) proportional controlled systems. The self-made full-width 4-axle (8 × 4 drive, offering convenient and flexible hydraulically powered steering) special purpose chassis (conforming to EU stage III emission standard) provides wide vision, spacious cab and luxurious equipment.

The latest pilot proportional directional control valve, variable pump as well as gear pump system ensure that each executive mechanism makes full use of its working capability. The easy-controlled, flexible, reliable and stepless speed regulated joysticks (L / R) can provide the crane with smooth simultaneous movements between "Spool winches up", "Reel winches off", "Derricking", "Slewing" and "Telescope boom in / out", which greatly improve the crane's working efficiency. The safety devices such as relief valve, balance valve, hydraulic lock and brake valve fitted in hydraulic system prevent the accidents caused by oil line overload and oil pipe ruptures.

The complete lighting systems and the safety devices, such as load moment limiter, can ensure your safety during operation and are convenient for night work.

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

### 2 Specifications, complete vehicle

#### 2.1 Product model

Model in engineering industry: ZTC550R

Product code: ZTC550R532-1

## 2.2 Technical data

	Item	Value	Remarks
Working performance	Max. rated lifting capacity kg	55000	
	Max. load moment of basic boom kN.m	1595	
	Max. load moment of max. length boom kN.m	995.6	
	Max. lifting height of basic boom m	11.8	
	Max. lifting height of boom m	44	Deflection of boom and jib not included.
	Max. lifting height of jib m	60	
Working speeds	Max. hoist rope speed (Main winch) m/min	140	Unloaded, drum 4 <sup>th</sup> layer
	Max. hoist rope speed (Auxiliary winch) m/min	140	Unloaded, drum 4 <sup>th</sup> layer
	Boom derricking up time s	42	
	Boom telescoping out time s	85	
	Slewing speed r/min	0 – 2.3	
Driving	Max. working altitude m	2000	
	Max. driving speed km/h	85	
	Max. gradeability %	40	
	Min. turning diameter m	≤ 24	
	Min. ground clearance mm	260	
	Fuel consumption per hundred kilometer L	38	
Mass	Deadweight in driving condition kg	39000	Not including 2.5 t auxiliary counterweight
	Complete vehicle kerb mass kg	38870	
	Front axle load kg	13000	
	Rear axle load kg	26000	
Dimensions	Overall dimensions (L × W × H) mm	13530×2600×3700	
	Outrigger spread (L) m	5.95	
	Outrigger spread (W) m	Fully extended: 7.3 m Intermediately extended: 4.8 m	
	Tail slewing radius mm	3690	
	Boom length m	11.2-44	
	Boom angle °	-2-80	
	Jib length m	9.5 and 16	
	Jib angle °	0, 15 and 30	

### **2.3 Rate capacity charts**

This crane is provided with various rate capacity charts. The operator should select proper rated lifting capacity referring to resp. lifting capacity tables according to actual working conditions. For details, please refer to Table 2 to Table 15.

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

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

For the working conditions marked with \*, special facilities are needed when the crane is to lift a load over 50t at a reeving of 11.

Table 2 Rated capacity chart

Unit: Kg

Working radius (m)	Boom length (m)						
	Telescopic cylinder I fully extended, outriggers fully extended, over side or rear working area, with 8 t counterweight						
	11.2	15.4	19.5	25.5	31.5	37.5	44
2.5	55000*						
3.0	50000*	35000					
3.5	35000	34500	28000				
4.0	34500	34000	28000	23000			
4.5	33500	33000	28000	23000			
5.0	32500	32000	27200	23000			
5.5	29600	29000	25500	22000	18000		
6.0	26500	26000	24300	21000	18000		
7.0	22500	22000	21200	19000	16500	13000	
8.0	19000	19000	19000	17000	14800	12200	
9.0	15200	16000	16200	15200	13600	11400	8800
10.0		13600	13400	13800	12300	10600	8300
12.0		9600	9400	10400	10400	9200	7800
14.0			6800	7800	8400	7850	7000
16.0			5000	5950	6500	6800	6350
18.0				4600	5200	5550	5500
20.0				3550	4100	4500	4700
22.0				2700	3300	3650	4000
24.0					2600	3000	3300
26.0					2050	2450	2750
28.0						1950	2250
30.0						1550	1850
32.0						1200	1500
34.0							1200
36.0							900
I(m)	0	4.2	8.3	8.3	8.3	8.3	8.3
II(m)	0	0	0	6	12	18	24.5
Reeving	11	8	7	6	5	3	3
Hook	55t						

Table 3 Rated capacity chart

Unit: Kg

Working radius (m)	Boom length (m)					
	Telescopic cylinder I intermediately extended, outriggers fully extended, over side or rear working area, with 8 t counterweight					
	11.2	15.4	21.4	27.4	33.4	39.9
2.5	55000*					
3.0	50000*	35000	23000			
3.5	35000	34500	23000			
4.0	34500	34000	23000			
4.5	33500	33000	23000	19000		
5.0	32500	32000	23000	19000		
5.5	29600	29000	23000	19000		
6.0	26500	26000	23000	19000	13200	
7.0	22500	22000	21000	19000	13200	
8.0	19000	19000	19000	18500	12500	9200
9.0	15200	16000	16000	16500	11500	9200
10.0		13600	14500	15000	10600	8500
12.0		9600	10600	11200	9400	7800
14.0			8000	8650	8300	6800
16.0			6200	6800	7100	6100
18.0			4800	5400	5800	5400
20.0				4300	4700	4800
22.0				3500	3850	4100
24.0					3200	3400
26.0					2600	2900
28.0					2150	2400
30.0						2000
32.0						1650
34.0						1350
I(m)	0	4.2	4.2	4.2	4.2	4.2
II(m)	0	0	6	12	18	24.5
Reeving	11	8	6	5	4	3
Hook	55t					

Table 4 Rated capacity chart

Unit: Kg

Working radius (m)	Boom length (m)				
	Telescopic cylinder I fully retracted, outriggers fully extended, over side or rear working area, with 8 t counterweight				
	11.2	17.2	23.2	29.2	35.7
2.5	55000*				
3.0	50000*	23000			
3.5	35000	23000	19000		
4.0	34500	23000	19000		
4.5	33500	23000	19000		
5.0	32500	23000	19000	14000	
5.5	29600	23000	19000	14000	
6.0	26500	23000	19000	13500	
7.0	22500	21500	18000	12500	10000
8.0	19000	19300	16400	11400	9500
9.0	15200	16500	15000	10500	9000
10.0		15000	13800	9800	8500
12.0		11000	11700	8500	7400
14.0		8400	9100	7400	6500
16.0			7200	6600	5700
18.0			5800	6000	5000
20.0			4700	5100	4500
22.0				4200	4000
24.0				3500	3600
26.0					3200
28.0					2700
30.0					2300
I(m)	0	0	0	0	0
II(m)	0	6	12	18	24.5
Reeving	11	6	5	4	3
Hook	55t				

Table 5 Rated capacity chart

Unit: Kg

Working radius (m)	Boom length (m)						
	Telescopic cylinder I fully extended, outriggers intermediately extended, over side or rear working area, with 8 t counterweight						
	11.2	15.4	19.5	25.5	31.5	37.5	44
2.5	50000*						
3.0	35000	35000					
3.5	35000	34500	28000				
4.0	34000	34000	28000	23000			
4.5	31000	31000	27000	23000			
5.0	28000	28000	26500	23000			
5.5	26000	25300	24500	22000	18000		
6.0	21700	21100	20800	21000	18000		
7.0	16000	15500	15200	16500	16400	13000	
8.0	12300	11900	11600	12800	13500	12000	
9.0	9700	9300	9100	10200	10900	11000	8800
10.0		7500	7300	8300	8900	9400	<b>8300</b>
12.0		4900	4700	5700	6300	6700	7100
14.0			3000	4000	4500	4900	5300
16.0			1800	2700	3300	3700	4000
18.0				1850	2350	2750	3050
20.0				1100	1600	2000	2300
22.0					1100	1400	1700
24.0						1000	1300
26.0							850
I(m)	0	4.2	8.3	8.3	8.3	8.3	8.3
II(m)	0	0	0	6	12	18	24.5
Reeving	11	8	7	6	5	3	3
Hook	55t						



Table 6 Rated capacity chart

Unit: Kg

Working radius (m)	Boom length (m)					
	Telescopic cylinder I intermediately extended, outriggers intermediately extended, over side or rear working area, with 8 t counterweight					
	11.2	15.4	21.4	27.4	33.4	39.9
2.5	50000*					
3.0	35000	35000	23000			
3.5	35000	34500	23000			
4.0	34000	34000	23000			
4.5	31000	31000	23000	19000		
5.0	28000	28000	23000	19000		
5.5	26000	25300	23000	19000		
6.0	21700	21100	22500	19000	13200	
7.0	16000	15500	16800	17600	12700	
8.0	12300	11900	13100	13800	12400	9200
9.0	9700	9300	10500	11200	11400	8800
10.0		7500	8600	9300	9700	8500
12.0		4900	6000	6600	7000	7400
14.0			4200	4800	5200	5500
16.0			3000	3600	3900	4200
18.0			2100	2700	3000	3300
20.0				1900	2200	2500
22.0				1400	1700	2000
24.0					1200	1500
26.0					850	1050
28.0						750
I(m)	0	4.2	4.2	4.2	4.2	4.2
II(m)	0	0	6	12	18	24.5
Reeving	11	8	6	5	4	3
Hook	55t					

Table 7 Rated capacity chart

Unit: Kg

Working radius (m)	Boom length (m)				
	Telescopic cylinder I fully retracted, outriggers intermediately extended, over side or rear working area, with 8 t counterweight				
	11.2	17.2	23.2	29.2	35.7
2.5	50000*				
3.0	35000	23000			
3.5	35000	23000	19000		
4.0	34000	23000	19000		
4.5	31000	23000	19000		
5.0	28000	23000	19000	14000	
5.5	26000	23000	19000	13500	
6.0	21700	21500	19000	13000	
7.0	16000	17500	17500	12000	10000
8.0	12300	13800	14400	11400	9200
9.0	9700	11100	11700	10500	8600
10.0		9200	9700	9800	8200
12.0		6500	7000	7400	7300
14.0		4800	5300	5600	6000
16.0			4000	4300	4600
18.0			3100	3400	3700
20.0				2600	2900
22.0				2100	2300
24.0				1600	1800
26.0					1350
28.0					1050
30.0					750
I (m)	0	0	0	0	0
II (m)	0	6	12	18	24.5
Reeving	11	6	5	4	3
Hook	55t				

Table 8 Rated capacity chart

Unit: Kg

Working radius (m)	Boom length (m)						
	Telescopic cylinder I fully extended, outriggers fully extended, over side or rear working area, with 5.5 t counterweight						
	11.2	15.4	19.5	25.5	31.5	37.5	44
2.5	55000*						
3.0	50000*	35000					
3.5	35000	34500	28000				
4.0	34500	34000	28000	23000			
4.5	33500	33000	28000	23000			
5.0	32000	31500	27200	23000			
5.5	29000	28500	25500	22000	18000		
6.0	26000	26000	24000	21000	18000		
7.0	22000	21500	21000	19000	16500	13000	
8.0	18200	18600	18300	17000	14800	12200	
9.0	14500	14700	14500	15200	13600	11400	8800
10.0		11900	11700	12800	12100	10600	8300
12.0		8200	8100	9000	9700	9200	7800
14.0			5700	6600	7250	7700	7000
16.0			4100	5000	5500	6000	6100
18.0				3700	4300	4700	5000
20.0				2800	3350	3700	4000
22.0					2600	3000	3300
24.0					2000	2350	2700
26.0					1450	1850	2200
28.0						1400	1700
30.0						1000	1300
32.0						750	1000
34.0							750
36.0							
I (m)	0	4.2	8.3	8.3	8.3	8.3	8.3
II (m)	0	0	0	6	12	18	24.5
Reeving	11	8	7	6	5	3	3
Hook	55t						

Table 9 Rated capacity chart

Unit: Kg

Working radius (m)	Boom length (m)					
	Telescopic cylinder I intermediately extended, outriggers fully extended, over side or rear working area, with 5.5 t counterweight					
	11.2	15.4	21.4	27.4	33.4	39.9
2.5	55000*					
3.0	50000*	35000	23000			
3.5	35000	34500	23000			
4.0	34500	34000	23000			
4.5	33500	33000	23000	19000		
5.0	32000	31500	23000	19000		
5.5	29000	28500	23000	19000		
6.0	26000	26000	23000	19000	13200	
7.0	22000	21500	21000	19000	13200	
8.0	18200	18600	19000	18000	12500	9200
9.0	14500	14700	16000	16500	11500	9200
10.0		11900	13200	14000	10600	8500
12.0		8200	9400	10200	9400	7800
14.0			7000	7700	8100	6800
16.0			5300	6000	6400	6000
18.0			4000	4700	5100	5300
20.0				3700	4100	4400
22.0				2900	3300	3600
24.0					2600	2900
26.0					2100	2400
28.0					1700	2000
30.0						1600
32.0						1250
34.0						950
I (m)	0	4.2	4.2	4.2	4.2	4.2
II (m)	0	0	6	12	18	24.5
Reeving	11	8	6	5	4	3
Hook	55t					

Table 10 Rated capacity chart

Unit: Kg

Working radius (m)	Boom length (m)				
	Telescopic cylinder I fully retracted, outriggers fully extended, over side or rear working area, with 5.5 t counterweight				
	11.2	17.2	23.2	29.2	35.7
2.5	55000*				
3.0	50000*	23000			
3.5	35000	23000	19000		
4.0	34500	23000	19000		
4.5	33500	23000	19000		
5.0	32500	23000	19000	14000	
5.5	29600	23000	19000	14000	
6.0	26500	23000	19000	13500	
7.0	22500	21500	18000	12500	10000
8.0	19000	19300	16400	11400	9500
9.0	15200	16500	15000	10500	9000
10.0		13700	13800	9800	8500
12.0		9800	10600	8500	7400
14.0		7400	8100	7400	6500
16.0			6300	6600	5700
18.0			5000	5500	5000
20.0				4500	4500
22.0				3700	3900
24.0				3000	3200
26.0					2700
28.0					2300
30.0					1900
32.0					1500
I (m)	0	0	0	0	0
II (m)	0	6	12	18	24.5
Reeving	11	6	5	4	3
Hook	55t				

Table 11 Rated capacity chart

Unit: Kg

Working radius (m)	Boom length (m)						
	Telescopic cylinder I fully extended, outriggers intermediately extended, over side or rear working area, with 5.5 t counterweight						
	11.2	15.4	19.5	25.5	31.5	37.5	44
2.5	50000*						
3.0	35000	35000					
3.5	35000	34500	28000				
4.0	34000	34000	28000	23000			
4.5	31000	31000	27000	23000			
5.0	27500	27000	26000	23000			
5.5	22500	22000	21600	21500	18000		
6.0	18800	18300	18000	19000	18000		
7.0	13700	13200	13000	13900	14500	13000	
8.0	10500	10000	9800	10900	11700	12000	
9.0	8200	7800	7600	8600	9300	9800	8800
10.0		6100	5900	6900	7600	8100	8300
12.0		3800	3700	4600	5200	5600	6000
14.0			2200	3100	3600	4000	4400
16.0			1100	2000	2500	2900	3300
18.0				1200	1700	2100	2400
20.0					1100	1400	1700
22.0						900	1200
24.0							800
I (m)	0	4.2	8.3	8.3	8.3	8.3	8.3
II (m)	0	0	0	6	12	18	24.5
Reeving	11	8	7	6	5	3	3
Hook	55t						

Table 12 Rated capacity chart

Unit: Kg

Working radius (m)	Boom length (m)					
	Telescopic cylinder I intermediately extended, outriggers intermediately extended, over side or rear working area, with 5.5 t counterweight					
	11.2	15.4	21.4	27.4	33.4	39.9
2.5	50000*					
3.0	35000	35000	23000			
3.5	35000	34500	23000			
4.0	34000	34000	23000			
4.5	31000	31000	23000	19000		
5.0	27500	27000	23000	19000		
5.5	22500	22000	22500	19000		
6.0	18800	18300	19800	19000	13200	
7.0	13700	13200	14600	15300	12700	
8.0	10500	10000	11300	12000	12400	9200
9.0	8200	7800	9000	9700	10100	8800
10.0		6100	7300	7900	8400	8500
12.0		3800	4900	5500	5900	6300
14.0			3400	4000	4300	4600
16.0			2300	2800	3200	3500
18.0			1500	2000	2400	2700
20.0				1400	1700	2000
22.0				900	1200	1500
24.0					800	1000
26.0						700
I (m)	0	4.2	4.2	4.2	4.2	4.2
II (m)	0	0	6	12	18	24.5
Reeving	11	8	6	5	4	3
Hook	55t					

Table 13 Rated capacity chart

Unit: Kg

Working radius (m)	Boom length (m)				
	Telescopic cylinder I fully retracted, outriggers intermediately extended, over side or rear working area, with 5.5 t counterweight				
	11.2	17.2	23.2	29.2	35.7
2.5	50000*				
3.0	35000	23000			
3.5	35000	23000	19000		
4.0	34000	23000	19000		
4.5	31000	23000	19000		
5.0	27500	23000	19000	14000	
5.5	22500	23000	19000	13500	
6.0	18800	20000	18000	13000	
7.0	13700	15300	16000	12000	10000
8.0	10500	12000	12500	11400	9200
9.0	8200	9600	10100	10500	8600
10.0		7900	8400	8800	8200
12.0		5400	5900	6300	6600
14.0		3800	4300	4700	5000
16.0			3200	3600	3800
18.0			2400	2800	3000
20.0				2100	2300
22.0				1600	1800
24.0				1100	1300
26.0					1000
28.0					700
I (m)	0	0	0	0	0
II (m)	0	6	12	18	24.5
Reeving	11	6	5	4	3
Hook	55t				



Table 14 Rated capacity chart

Unit: Kg

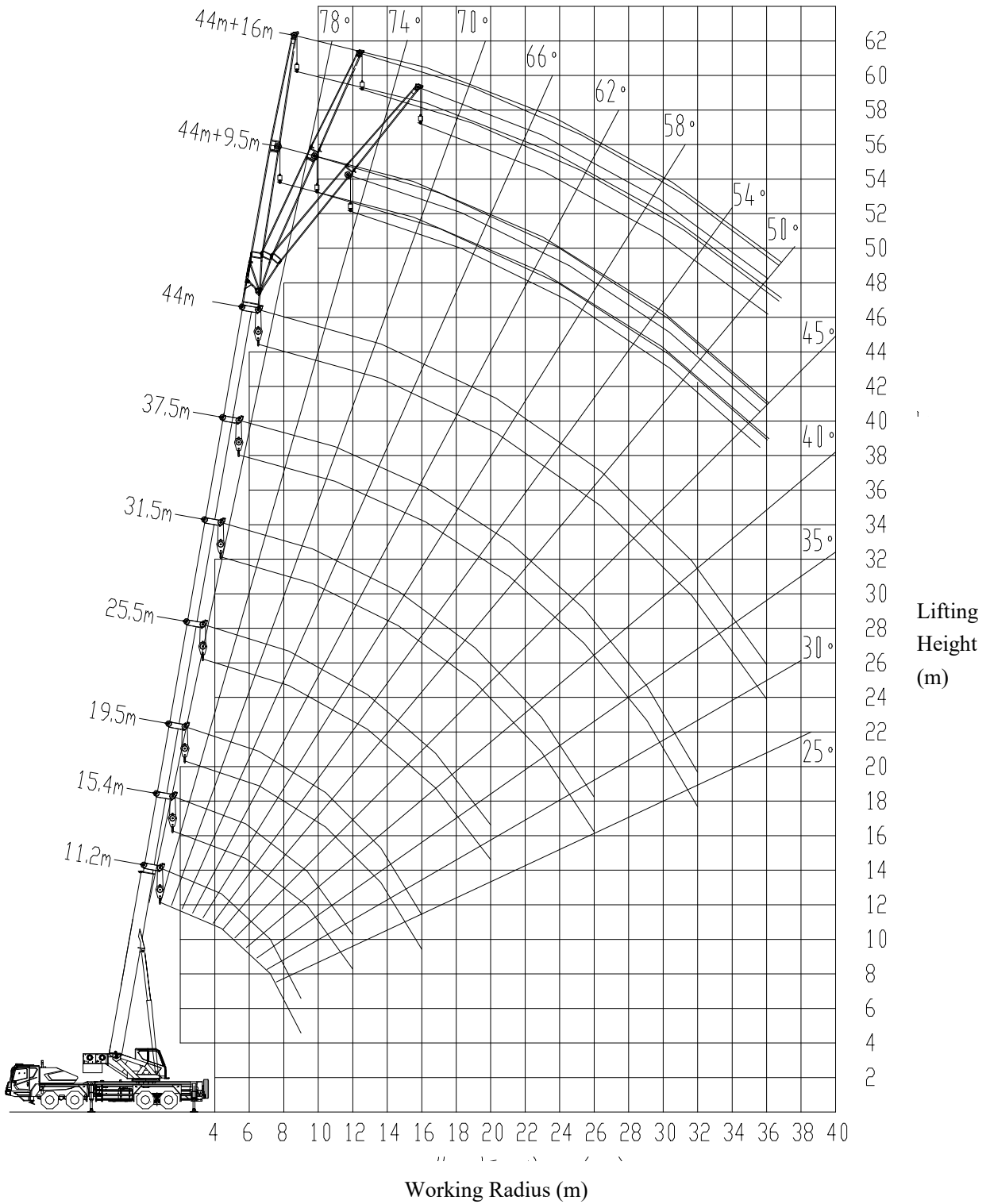
Boom angle (°)	Boom (m) + jib (m) Outriggers fully extended, with 8 t counterweight					
	44+9.5			44+16		
	0°	15°	30°	0°	15°	30°
80	4000	2800	2000	2500	1600	1200
78	3800	2600	1900	2400	1550	1150
76	3500	2450	1800	2200	1450	1100
74	3200	2200	1750	2000	1400	1050
72	2900	2050	1700	1900	1350	1000
70	2600	2000	1600	1750	1250	950
68	2400	1900	1550	1600	1200	950
66	2300	1800	1500	1500	1150	900
64	2200	1700	1400	1400	1100	850
62	2050	1600	1350	1300	1050	850
60	1900	1550	1300	1250	1000	800
58	1700	1450	1250	1150	950	800
56	1500	1350	1200	1050	900	800
54	1300	1200	1100	900	800	750
52	1100	1000	950	750	700	650
50	900	850	800	600	550	500
45	550	500				
Reeving	1					
Hook	4t					

Table 15 Rated capacity chart

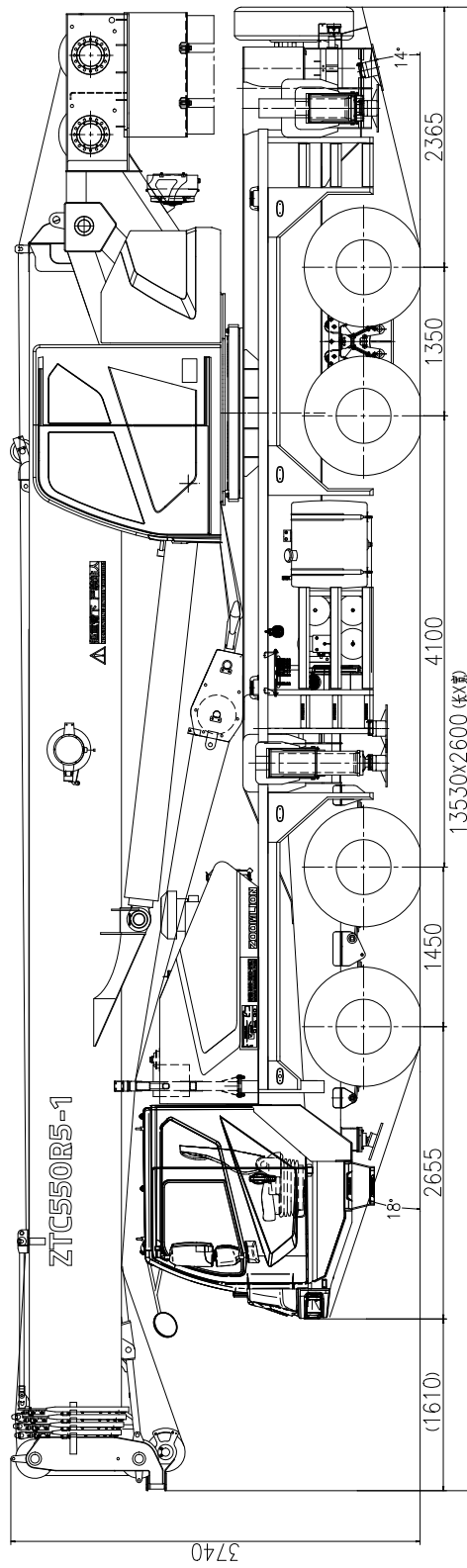
Unit: Kg

Boom angle (°)	Outriggers fully extended, with 5.5 t counterweight					
	44+9.5			44+16		
	0°	15°	30°	0°	15°	30°
80	4000	2800	2000	2500	1600	1200
78	3800	2600	1900	2400	1550	1150
76	3500	2450	1800	2200	1450	1100
74	3200	2200	1750	2000	1400	1050
72	2900	2050	1700	1900	1350	1000
70	2600	2000	1600	1750	1250	950
68	2400	1900	1550	1600	1200	950
66	2300	1800	1500	1500	1150	900
64	2200	1700	1400	1400	1100	850
62	2050	1600	1350	1300	1050	850
60	1800	1550	1300	1250	1000	800
58	1550	1450	1250	1150	950	800
56	1300	1200	1150	1000	850	750
54	1100	1000	950	800	700	650
52	900	850	800	650	600	550
50	700	650	600	500	450	400
45	400					
Reeving	1					
Hook	4t					

2.4 Lifting height chart



2.5 Overall view (Unit: Metric mm)



### **3 Components, superstructure**

#### **3.1 Boom and telescoping system**

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. The boom head applies new plate type structure which makes the connection ratio among boom sections large. Self-created built-in sliding block support structure and 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 Telescopic 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 Telescopic cylinder is fitted with a balance valve.

#### **3.2 Jib**

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

Jib section 1, quadrilateral lattice structured.

Jib section 2, triangle lattice structured.

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 angle can be conveniently changed via the pins and pull bracket.

It can be folded on the side of boom when it is not used.

Jib length:

Jib section 1: 9.5 m

Jib section 1 + jib section 2: 16 m

#### **3.3 Slewing platform**

Single ribbed plate structured and optimized slewing platform made from high-strength steel plate makes the layout of articulated points of boom and derricking mechanism more reasonable. It also has a distinctive structure and beautiful appearance.

The engine hood is of a designed ergonomically.

The securing device installed in the front of the slewing platform can prevent the superstructure

from slewing during driving.

### **3.4 Rooster sheave**

It is secured at the outside of the boom head when it is not used. It can be rotated around the shaft and pinned onto 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  $-2^{\circ}$  to  $80^{\circ}$ .

### **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 chassis frame, providing superstructure with  $360^{\circ}$  unlimited slewing.

The slewing mechanism is of controllable aligning function, 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 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 the main and auxiliary hoist mechanisms.

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

Models of main and auxiliary winch reducers are the same.

Also, the main winch and auxiliary winch are driven by the variable displacement motor.

The main winch is also equipped with a lowering limit switch.

The built-in planetary reducer is of compact structure, light deadweight and high reliability.

Specifications for high-tensile torsion resistant hoist rope:

Diameter:  $\varphi 17.0$  mm

Strength grade: 1870 N/mm<sup>2</sup>

Length of main hoist rope: 200 m

Length of auxiliary hoist rope: 130 m

### **3.8 Main and auxiliary hooks**

Main hook: 55 t, with 6 pulleys, press nipple, rotatable hook and hook latch

Auxiliary hook (1 reeving): 4t, with anti-rotation device and hook latch

### **3.9 Operator's cab**

It is of steel-structure with instrument console and adjustable seat with headrest. The instrument consoles are located in right hand side of operator's cab and right ceiling side of operator's cab. Two joysticks are located at either side of the seat to control the superstructure movements. The ergonomically designed arrangement provides spacious operating space, reasonable arrangement, beautiful appearance and convenient & safe operation.

It is equipped with windshield wiper, washing system, air conditioning (standard configuration) and cab heater.

### **3.10 Outriggers**

H-type outriggers, which are in box-shaped structure and welded of low-alloy and high-strength steel plate, are of good sectional performance and strong load bearing capability via Pro/E and CAD simulated design as well as actual-used calculation.

1-section horizontal outrigger 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.

The outrigger pad which is mounted at the bottom of vertical cylinder can be pushed inwards and pulled outwards. After the outriggers are fully extended or retracted, the outrigger pads can be secured with retaining pins.

Outrigger control levers are fitted on both sides of the vehicle for controlling the outriggers to extend or retract simultaneously or independently. Each vertical Telescopic 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<sup>th</sup> outrigger is installed beneath the driver's cab. The crane can realize full range slewing operation with the 5<sup>th</sup> 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 the high reliability of the system. The main power element is four pumps. Among which, the two pumps supply hydraulic oil for main winch, auxiliary winch, derricking mechanism and telescoping system; another pump supplies hydraulic oil for chassis hydraulic system, slewing mechanism and AC; the last one supplies hydraulic oil to the control oil circuit.

The outrigger control valves are new-type manual chassis 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 outrigger control valve is a manual multi-way directional change valve. Outriggers can be operated independently or simultaneously through the control mechanism at the two sides of the chassis.

### **3.12 Electrical system**

Double wire system, 24 Volt DC.

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

The electrical system of superstructure includes such devices 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.

Under emergency cases, the red emergency stop button can be pressed to cut off the power of the whole crane, so as to ensure safety.

### **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 approaches 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) Boom angle indicator
- b) Hoisting limit switch
- c) Hook latch
- d) Lowering limit switch
- e) The 5<sup>th</sup> outrigger overpressure protection device
- f) Two-way hydraulic lock
- g) Balance valve
- h) Relief valve

### **3.14 Air conditioning and cab heater**

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

#### 4 Specifications, chassis

Chassis	Engine	Model	WP10.336
		Rated power	kW/r/min 247/2200
		Max. output torque	N.m/r/min 1300/(1200-1600)
		Manufacturer	Weichai Power Co., Ltd.
	Model	ZLJ5391JQZR3	
	Type	II	
	Code	ZLJ5391JQZR3	
	Limits for exhaust pollutants and smoke	Comply with GB3847-2018 / GB17691-2005 (Chinese National Stage III)	
	Manufacturer	Zoomlion Heavy Industry Science & Technology Co., Ltd.	

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

#### 5 Main environmental factors for crane operations

##### 5.1 Ambient working temperature

Ambient working temperature range of the crane is -20°C - 40°C.

##### 5.2. Wind speed

The wind speed during lifting should be the transient one at the crane's working height. The wind speed should not exceed 14.1m/s. The working wind speed is obtained by multiplying the average wind speed at a 10m working height by a conversion factor 1.5. The result is regarded as the transient wind speed for 3s.

Stop crane operation once the wind speed reaches Class V, i.e. exceeds 14.1m/s. Retract the boom to its driving position.

##### 5.3 Altitude

The crane should not work in a location where its altitude exceeds 2000m.

**Appendix**  
**Main purchased parts and manufacturers**

Ser. No.	Description	Manufacturer	Remarks
1	Main valve	Changde Zoomlion Heavy Industry Science & Technology Hydraulic Co., Ltd.	
2	Main pump	Jinan Hydraulic Pump Limited Liability Company	
		Xuzhou Keyuan Hydraulic Co., Ltd.	
3	Winch motor	Avic Liyuan Hydraulic Co., Ltd.	
		Hi-tech Hydraulic Co., Ltd.	
		Beijing Huade Hydraulic Industrial Co., Ltd.	
4	Winch reducer	Xuzhou Keyuan Hydraulic Co., Ltd. Tongshan County Branch Company	
		Qidong Wanhui Mechanical Manufacture Co., Ltd.	
		Zhuzhou Gear Limited Liability Company	
5	Slewing motor	Avic Liyuan Hydraulic Co., Ltd.	
		Beijing Huade Hydraulic Industrial Co., Ltd.	
6	Slewing reducer	Qidong Wanhui Mechanical Manufacture Co., Ltd.	
		Xuzhou Keyuan Hydraulic Co., Ltd. Tongshan County Branch Company	
		Zhuzhou Gear Limited Liability Company	
7	Slewing bearing	Xuzhou Rothe Erde Slewing Bearing Co., Ltd.	
		Yantai Haoyang Mechanical Co., Ltd.	
8	Telescopic cylinder	Hunan Teli Hydraulic Co., Ltd.	
9	Derricking cylinder	Hunan Teli Hydraulic Co., Ltd.	
10	Horizontal cylinder	Hunan Teli Hydraulic Co., Ltd.	
11	Vertical cylinder	Hunan Teli Hydraulic Co., Ltd.	
12	Balance valve, telescoping	Changde Zoomlion Hydraulic Co., Ltd.	
13	Balance valve, derricking	Changde Zoomlion Hydraulic Co., Ltd.	

**Appendix**  
**Main purchased parts and manufacturers (continued)**

Ser. No.	Description	Manufacturer	Remarks
14	Balance valve, hoisting	Changde Zoomlion Hydraulic Co., Ltd.	
15	Wire rope	Changsha Yongxin Metalware Co., Ltd.	
		Juli Sling Co., Ltd.	
		Jiangsu Safety Steel Rope Co., Ltd.	
16	Hook	Juli Sling Co., Ltd.	
		Changsha Lanying Industry Co., Ltd.	
17	Load moment limiter	Hunan Zoomlion Intelligent Technology Co., Ltd.	
		Changsha WIDE Technology Development Co., Ltd.	
18	Operator's cab assy.	Yangzhou Shenzhou Vehicle Interior	

**Note:**

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