

The Zoomlion logo consists of a green parallelogram with the word "ZOOMLION" in white, bold, uppercase letters inside it.

ZOOMLION

ZOOMLION ZTC550R TRUCK CRANE

TECHNICAL SPECIFICATIONS

ZTC550R532/27Y

Zoomlion Heavy Industry Science & Technology Co.,Ltd.

TECHNICAL SPECIFICATIONS

ZTC550R532/27Y

1. Product characteristics

ZOOMLION ZTC550R532 truck crane, which integrates our many years' experience in designing and manufacturing mobile cranes with internationally advanced technology, is a new-generation and high-performance product developed to meet the market demands. Its performances such as lifting height, main boom length, working speed and lifting capacity, etc., have achieved advanced international level.

This product is a truck crane of full range slewing function and 4 telescopic boom sections and pilot-operated proportional controlled systems. The crane adopts self-made 4-axle special purpose chassis with full-width right-hand drive cab (8 × 4 drive, offering convenient and flexible steering), providing wide vision and simple decoration.

The latest directional control valve and gear pump system ensure that each executive mechanism makes full use of its working capability and the reliability and safety of systems are improved. 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 safety devices such as load moment limiter, and the complete lighting system fitted in the crane ensure your safety during operation and are convenient for night work.

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

2. Specifications, complete vehicle

2.1 Product model

Model in engineering industry: ZTC550R

Product code: ZTC550R532

2.2 Technical data

Table 1 Technical data

Item		Value	Remarks
Working performance	Max. rated lifting capacity kg	55000	
	Max. load moment of basic boom kN.m	1568	
	Max. load moment of Max. length main boom kN.m	940.8	
	Max. lifting height of basic boom m	11.8	
	Max. lifting height of main boom m	44	These parameters do not include deflection of boom and jib.
	Max. lifting height of jib m	60	
Working speeds	Max. hoist rope speed (Main winch) m/min	135	At 4 th layer
	Max. hoist rope speed (Auxiliary winch) m/min	120	At 2 nd layer
	Boom derricking up time s	45	
	Boom telescoping out time s	95	
	Slewing speed r/min	0 - 2.2	
Driving	Max. working altitude m	2000	
	Max. driving speed km/h	74	
	Max. gradeability %	40	
	Min. turning diameter m	≤ 24	
	Min. ground clearance mm	260	
	Oil consumption per hundred kilometer L	40	
Weight	Deadweight in driving condition kg	39000	Excluded 1.5 t auxiliary counterweight
	Complete vehicle kerb mass kg	38805	
	Front axle load kg	13000	
	Rear axle load kg	26000	
Dimension	Overall dimensions (L×W×H) mm	13530×2600×3700	
	Outrigger spread (W)	7.3	
	Outrigger spread (L) m	5.95	
	Outrigger spread (W) (Intermediately extended) m	4.8	
	Tail slewing radius mm	3690	
	Main boom length m	11.2 - 44	
	Main boom angle °	-2 - 80	
	Jib length m	9.5,16	
	Offset °	0,15,30	

2.3 Rated lifting capacity tables

This crane is provided with 14 sheets of rated lifting capacity tables. The operator should select proper rated lifting load 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 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.

The working condition marked with asterisk (*) indicates that the number of lines is 11 and a special device should be installed when the lifting load is equal to or more than 50 t.

Table 2

Unit: Metric kg

Working radius (m)	Main boom (m)						
	Telescopic cylinder I and outriggers completely extended, over sides and rear, with 7 T counterweight assembled.						
	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	27000	23000			
5.5	29000	28500	25500	22000	18000		
6.0	26000	26000	24000	21000	17200		
6.5	24000	24000	22500	20000	16600		
7.0	22000	21500	21000	19000	16000	12500	
8.0	18200	18500	19000	17000	14500	11700	
9.0	14500	15300	15800	15200	13300	11000	8500
10.0		13000	12800	13800	12100	10400	8200
11.0		10800	10600	11600	11100	9800	7900
12.0		9100	8900	9900	10200	9200	7600
13.0			7500	8500	9200	8400	7200
14.0			6400	7400	8000	7800	6800
15.0			5500	6400	7000	7200	6400
16.0			4700	5600	6200	6600	6000
18.0				4300	4900	5200	5200
20.0				3300	3900	4200	4500
22.0					3100	3400	3700
24.0					2400	2750	3050
26.0					1900	2200	2500
28.0						1750	2050
30.0						1350	1650
32.0						1050	1350
34.0							1050
36.0							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
Reevings	10	8	7	6	5	3	3
Hook	55 t						

Table 3

Unit: Metric kg

Working radius (m)	Main boom (m)					
	Telescopic cylinder I intermediately extended and outriggers completely extended, over sides and rear, with 7 T counterweight assembled					
	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	
6.5	24000	24000	22000	19000	12800	
7.0	22000	21500	21000	18500	12500	
8.0	18200	18500	19000	18000	12000	9200
9.0	14500	15300	16000	16500	11300	8600
10.0		13000	14000	14500	10600	8300
11.0		10800	12000	12500	9800	8000
12.0		9100	10200	10800	9300	7600
13.0			8800	9500	8700	7200
14.0			7700	8300	8200	6700
15.0			6700	7300	7700	6300
16.0			5900	6500	6800	5900
18.0			4500	5100	5400	5300
20.0				4100	4400	4700
22.0				3300	3600	3900
24.0					2900	3200
26.0					2400	2700
28.0					2000	2200
30.0						1800
32.0						1500
34.0						1200
I (m)	0	4.2	4.2	4.2	4.2	4.2
II (m)	0	0	6	12	18	24.5
Reevings	10	8	6	5	3	3
Hook	55 t					

Table 4

Unit: Metric kg

Working radius (m)	Main boom (m)				
	Telescopic cylinder I completely retracted and outriggers completely extended, over sides and rear, with 7 T counterweight assembled				
	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	32000	23000	19000	14000	
5.5	29000	23000	19000	13500	
6.0	26000	23000	19000	13000	
6.5	24000	23000	18500	12500	10200
7.0	22000	21500	17500	12000	9800
8.0	18200	19000	16000	11400	9000
9.0	14500	16000	15000	10500	8500
10.0		14500	13800	9800	8200
11.0		12200	12700	9100	7800
12.0		10500	11300	8500	7300
13.0		9000	9900	7900	6800
14.0		8000	8700	7400	6400
15.0			7700	7000	6000
16.0			6800	6600	5600
18.0			5500	5800	5000
20.0				4800	4400
22.0				4000	3900
24.0				3300	3500
26.0					3000
28.0					2500
30.0					2100
I (m)	0	0	0	0	0
II (m)	0	6	12	18	24.5
Reevings	10	6	5	4	3
Hook	55 t				

Table 5

Unit: Metric kg

Working radius (m)	Main boom (m)						
	Telescopic cylinder I and outriggers completely extended, over sides and rear, with 5.5 T counterweight assembled						
	11.2	15.4	19.5	25.5	31.5	37.5	44
2.5	50000*						
3.0	42000	35000					
3.5	35000	34500	28000				
4.0	34500	34000	28000	23000			
4.5	33500	33000	28000	23000			
5.0	32000	31500	27000	23000			
5.5	29000	28500	25500	22000	18000		
6.0	26000	26000	24000	21000	17200		
6.5	24000	24000	22500	20000	16600		
7.0	22000	21500	21000	19000	16000	12500	
8.0	18200	18500	18500	17000	14500	11700	
9.0	14500	14800	14800	15200	13300	11000	8500
10.0		12100	12000	13000	12100	10400	8200
11.0		10000	9900	10900	11100	9800	7900
12.0		8400	8200	9200	9900	9200	7600
13.0			6900	7900	8500	8400	7200
14.0			5800	6800	7400	7800	6800
15.0			5000	5900	6500	6900	6400
16.0			4200	5100	5700	6100	6000
18.0				3800	4400	4800	5200
20.0				2900	3500	3900	4200
22.0					2700	3100	3400
24.0					2100	2500	2800
26.0					1600	1950	2250
28.0						1500	1750
30.0						1100	1350
32.0						800	1050
34.0							800
36.0							550
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
Reevings	10	8	7	6	5	3	3
Hook	55 t						

Table 6

Unit: Metric kg

Working radius (m)	Main boom (m)					
	Telescopic cylinder I intermediately extended and outriggers completely extended, over sides and rear, with 5.5 T counterweight assembled					
	11.2	15.4	21.4	27.4	33.4	39.9
2.5	50000*					
3.0	42000	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	
6.5	24000	24000	22000	19000	12800	
7.0	22000	21500	21000	18500	12500	
8.0	18200	18500	19000	18000	12000	9200
9.0	14500	14800	16000	16500	11300	8600
10.0		12100	13400	14000	10600	8300
11.0		10000	11200	11900	9800	8000
12.0		8400	9600	10200	9300	7600
13.0			8200	8800	8700	7200
14.0			7100	7700	8100	6700
15.0			6200	6800	7200	6300
16.0			5400	6000	6400	5900
18.0			4100	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
Reevings	10	8	6	5	3	3
Hook	55 t					

Table 7

Unit: Metric kg

Working radius (m)	Main boom (m)				
	Telescopic cylinder I completely retracted and outriggers completely extended, over sides and rear, with 5.5 T counterweight assembled				
	11.2	17.2	23.2	29.2	35.7
2.5	50000*				
3.0	42000	23000			
3.5	35000	23000	19000		
4.0	34500	23000	19000		
4.5	33500	23000	19000		
5.0	32000	23000	19000	14000	
5.5	29000	23000	19000	13500	
6.0	26000	23000	19000	13000	
6.5	24000	23000	18500	12500	10200
7.0	22000	21500	17500	12000	9800
8.0	18200	19000	16000	11400	9000
9.0	14500	16000	15000	10500	8500
10.0		13500	13800	9800	8200
11.0		11500	12400	9100	7800
12.0		10000	10700	8500	7300
13.0		8600	9300	7900	6800
14.0			8100	7400	6400
15.0			7200	7000	6000
16.0			6400	6600	5600
18.0			5100	5500	5000
20.0				4500	4400
22.0				3700	3900
24.0				3000	3300
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
Reevings	10	6	5	4	3
Hook	55 t				

Table 8

Unit: Metric kg

Working radius (m)	Main boom (m)						
	Telescopic cylinder I completely extended and outriggers intermediately extended, over sides and rear, with 7 T counterweight assembled						
	11.2	15.4	19.5	25.5	31.5	37.5	44
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	26000	22000			
5.5	24500	24000	23500	21000	18000		
6.0	20500	20000	19500	20000	17200		
6.5	17400	17000	16500	18000	16600		
7.0	15000	14600	14400	15600	16000	12500	
8.0	11500	11200	10900	12100	12700	11700	
9.0	9000	8800	8600	9600	10300	10800	8500
10.0		7000	6800	7700	8400	9000	8200
11.0		5600	5400	6400	7000	7500	7900
12.0		4500	4300	5300	5900	6300	6700
13.0			3400	4400	5000	5400	5800
14.0			2700	3600	4200	4600	5000
15.0			2100	3000	3500	3900	4300
16.0			1600	2500	3000	3400	3700
18.0				1600	2100	2500	2800
20.0				900	1400	1800	2100
22.0					900	1200	1500
24.0						800	1100
26.0							700
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
Reevings	8	8	7	6	5	3	3
Hook	55 t						

Table 9

Unit: Metric kg

Working radius (m)	Main boom (m)					
	Telescopic cylinder I and outriggers intermediately extended, over sides and rear, with 7 T counterweight assembled					
	11.2	15.4	21.4	27.4	33.4	39.9
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	24500	24000	22000	19000		
6.0	20500	20000	21000	18500	13000	
6.5	17400	17000	18400	18000	12800	
7.0	15000	14600	16000	16800	12500	
8.0	11500	11200	12400	13100	12000	9200
9.0	9000	8800	9900	10600	11000	8600
10.0		7000	8100	8800	9200	8300
11.0		5600	6700	7300	7700	8000
12.0		4500	5600	6200	6600	7000
13.0			4700	5300	5700	6000
14.0			3900	4500	4900	5200
15.0			3300	3900	4200	4500
16.0			2700	3300	3600	3900
18.0			1800	2400	2700	3000
20.0				1700	2000	2300
22.0				1200	1500	1800
24.0					1000	1300
26.0					700	900
28.0						600
I (m)	0	4.2	4.2	4.2	4.2	4.2
II (m)	0	0	6	12	18	24.5
Reevings	8	8	6	5	3	3
Hook	55 t					

Table 10

Unit: Metric kg

Working radius (m)	Main boom (m)				
	Telescopic cylinder I completely retracted and outriggers intermediately extended, over sides and rear, with 7 T counterweight assembled				
	11.2	17.2	23.2	29.2	35.7
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	24500	23000	19000	13500	
6.0	20500	21500	19000	13000	
6.5	17400	18500	18000	12500	10200
7.0	15000	16500	17000	12000	9800
8.0	11500	13000	13600	11300	9000
9.0	9000	10500	11100	10500	8500
10.0		8700	9300	9700	8200
11.0		7200	7800	8200	7800
12.0		6100	6600	7000	7300
13.0		5200	5700	6100	6400
14.0		4400	4900	5300	5600
15.0			4300	4600	4900
16.0			3700	4000	4300
18.0			2800	3100	3400
20.0				2400	2700
22.0				1900	2100
24.0				1400	1600
26.0					1200
28.0					900
30.0					600
I (m)	0	0	0	0	0
II (m)	0	6	12	18	24.5
Reevings	8	6	5	4	3
Hook	55 t				

Table 11

Unit: Metric kg

Working radius (m)	Main boom (m)						
	Telescopic cylinder I completely extended and outriggers intermediately extended, over sides and rear, with 5.5 T counterweight assembled						
	11.2	15.4	19.5	25.5	31.5	37.5	44
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	22000			
5.5	22500	22000	21800	21000	18000		
6.0	18800	18300	18100	19000	17200		
6.5	16000	15500	15300	16500	16600		
7.0	13700	13200	13000	14000	14500	12500	
8.0	10500	10100	9900	11000	11700	11700	
9.0	8200	7900	7700	8700	9400	9900	8500
10.0		6200	6000	7000	7600	8100	8200
11.0		4900	4700	5700	6300	6800	7100
12.0		3900	3700	4600	5200	5700	6000
13.0			2900	3800	4400	4800	5100
14.0			2200	3100	3700	4100	4400
15.0			1600	2500	3100	3500	3800
16.0			1100	2000	2600	3000	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
Reevings	8	8	7	6	5	3	3
Hook	55 t						

Table 12

Unit: Metric kg

Working radius (m)	Main boom (m)					
	Telescopic cylinder I and outriggers intermediately extended, over sides and rear, with 5.5 T counterweight assembled.					
	11.2	15.4	21.4	27.4	33.4	39.9
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	22000	19000		
6.0	18800	18300	19800	18500	13000	
6.5	16000	15500	17000	17500	12800	
7.0	13700	13200	14600	15300	12500	
8.0	10500	10100	11400	12100	12000	9200
9.0	8200	7900	9000	9700	10200	8600
10.0		6200	7300	8000	8400	8300
11.0		4900	6000	6600	7000	7400
12.0		3900	5000	5600	6000	6300
13.0			4100	4700	5100	5400
14.0			3400	4000	4400	4700
15.0			2800	3300	3700	4000
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
Reevings	8	8	6	5	3	3
Hook	55 t					

Table 13

Unit: Metric kg

Working radius (m)	Main boom (m)				
	Telescopic cylinder I completely retracted and outriggers intermediately extended, over sides and rear, with 5.5 T counterweight assembled				
	11.2	17.2	23.2	29.2	35.7
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	
6.5	16000	17500	18000	12500	10200
7.0	13700	15300	16000	12000	9800
8.0	10500	12000	12500	11300	9000
9.0	8200	9600	10100	10500	8500
10.0		7900	8400	8800	8200
11.0		6500	7000	7400	7800
12.0		5400	5900	6300	6600
13.0		4600	5100	5500	5800
14.0		3800	4300	4700	5000
15.0			3700	4100	4400
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
Reevings	8	6	5	4	3
Hook	55 t				

Table 14

Unit: Metric kg

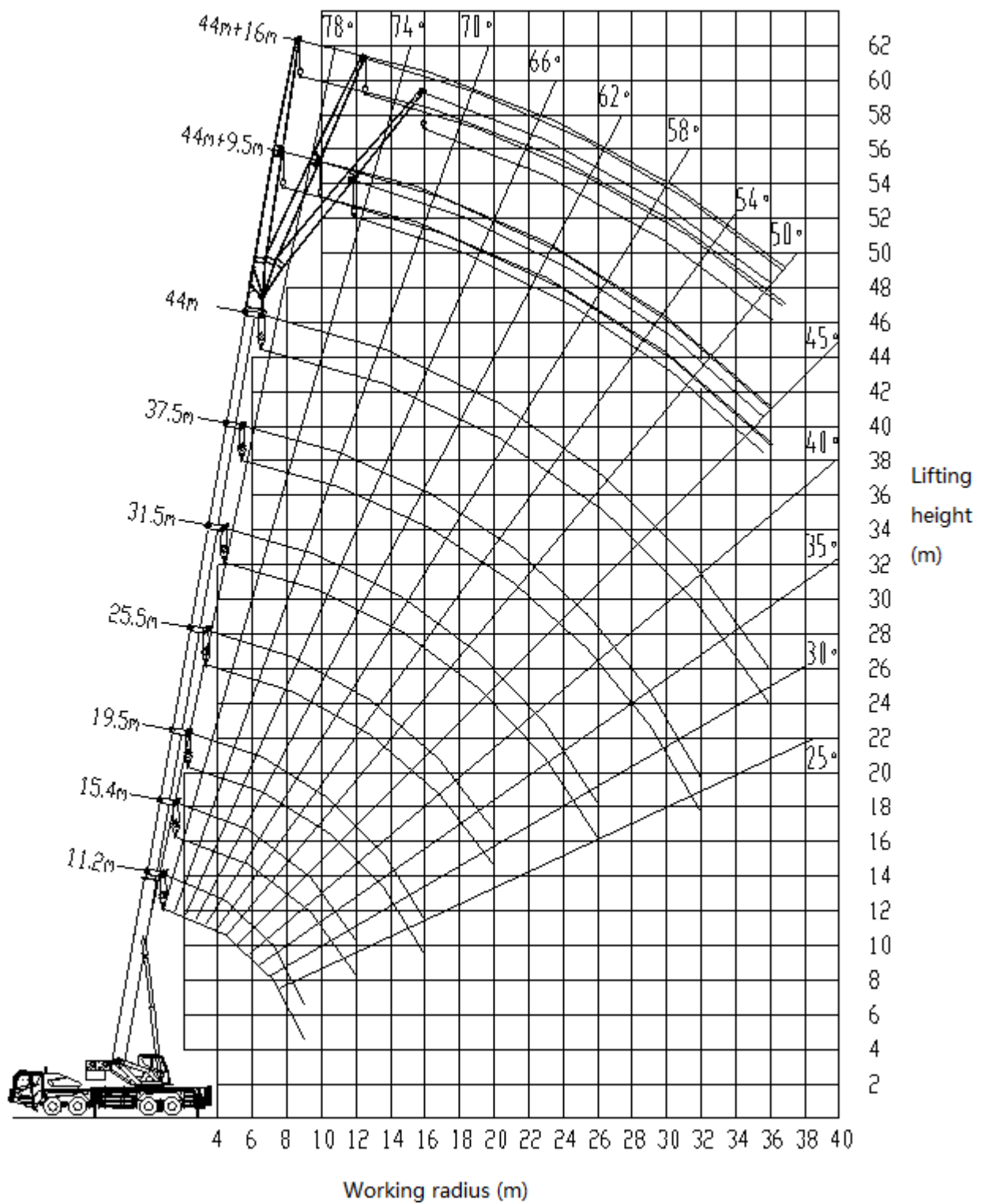
Main boom angle (°)	Main boom (m) + Jib (m) Outriggers completely extended, with 5.5 T counterweight					
	44 + 9.5			44 + 16		
	0°	15°	30°	0°	15°	30°
80	4000	2800	2000	2500	1600	1200
78	3800	2600	1900	2400	1550	1150
76	3500	2450	1800	2200	1450	1100
74	3200	2200	1750	2000	1400	1050
72	2900	2050	1700	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					
Reevings	1					
Hook	4 t					

Table 15

Unit: Metric kg

Main boom angle (°)	Main boom (m) + Jib (m) Outriggers completely extended, with 7 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				
Reevings	1					
Hook	4 t					

2.4 Lifting height chart



2.5 Overall view (unit: Metric mm)

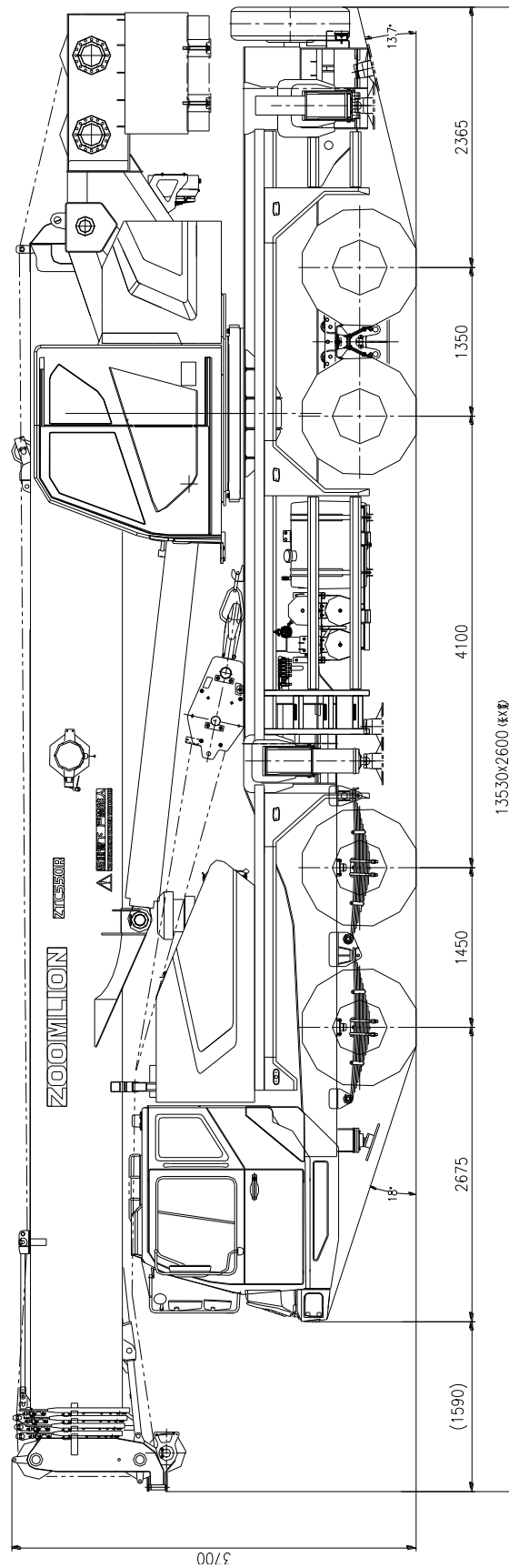


Figure 2 Overall view

3 Components, superstructure

3.1 Main boom and telescoping mechanism

The box-shaped main 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. Self-created 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.

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 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 below 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 main 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 table

Plate structured and optimized slewing table makes the layout of articulated points of main boom and derricking mechanism more reasonable. It also has a distinctive structure and beautiful appearance.

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° 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 chassis frame, providing superstructure with 360° unlimited slewing.

The slewing mechanism is of controllable aligning function, which can make the load be aligned automatically during operation. 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 table with super-strong load bearing capability and long service life.

3.7 Hoist mechanism

It consists of main and auxiliary hoist mechanisms.

The two hoist mechanisms are driven by axial plunger hydraulic motor with 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 reducers and the motors of main and auxiliary hoist mechanisms are of the same model.

Main and auxiliary hoist mechanisms adopt variable motors.

The winch is also equipped with a lowering limit switch.

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

Specifications for high-tensile torsion resistant hoist rope:

Diameter: $\phi 17.0$ mm

Strength grade: 1870 N/mm^2

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 and hook latch

Auxiliary hook (1 reeving): 4 t, with hook latch

3.9 Operator's cab

Operator's cab is of steel-structure with front-mounted instrument console and adjustable seat with headrest. 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 and heater.

The cab can also be tilted backwards for 20° via the tilting cylinder to broaden the operator's field of vision during operation.

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

3.11 Hydraulic system

The open-type hydraulic system adopts advanced pilot-operated proportional joysticks and hydraulic proportional control system. It separately controls the movements of slewing, telescoping, derricking and hoisting. Anti-pollution bite-type fitting ensures the high reliability of the system. The main power element is the quadruple gear pump. Among which two pumps flow together to supply hydraulic oil for hoist mechanisms, derricking mechanism and telescoping mechanism. One pump supplies hydraulic oil for chassis hydraulic system, slewing system and A/C system. The smallest pump supplies stable oil source for control oil circuit.

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 and swinging cylinders from bending.

The outrigger control valves are manual multiple directional control valves which can control the outriggers to extend or retract simultaneously or independently.

3.12 Electrical system

Two-wire system, 24 Volt DC.

The superstructure electrical system includes the devices such as superstructure power source, superstructure start, superstructure shutdown, superstructure power source control light, lowering limit control light, hoisting limit control light, overpressure control light, hoisting limit switch, lowering limit switch, overload alarm, illumination, fan, wiper, horn and oil cooler fan 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 latch
- d) Lowering limit switch
- e) The 5th outrigger overpressure warning device
- f) Two-way hydraulic lock
- g) Balance valve
- h) Relief valve

3.14 Air conditioning and heater

The operator's cab is equipped with special air conditioning and heater for vehicle.

4. Specifications, chassis

Table 16 Main data of special purpose 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		ZLJ5390JQZR3
	Classification		II
	Code		ZLJ5390JQZR3
	Limits for exhaust pollutants and smoke		GB3847-2005, GB17691-2005 (National Stage III)
	Manufacturer		Zoomlion Heavy Industry Science and Technology Co., Ltd.

For the details about its chassis, please refer to the corresponding *Special Purpose Chassis Technical Specifications*.

5 Working conditions

5.1 Temperature

Do not operate the crane if the temperature at the job-site is not in the proper range from -20°C to 40°C.

5.2 Wind speed

During operation, the instantaneous wind speed should be taken as the actual one. Wind speed during crane operation should not exceed 14.1 m/s.

The wind speed during crane operation (3 s instantaneous wind speed) = average value of wind speed for 10 minutes of 10 m above the ground × conversion coefficient 1.5.

If the instantaneous wind speed is greater than the permissible value of 14.1 m/s (beaufort 5), while the crane is in operation, do the tasks that follow:

- (1) Stop the work (safely lower the load).
- (2) Retract the boom.
- (3) Correctly stow the boom.

5.3 Height above sea level

During crane operation, height above sea level should not be higher than 2000 m.

Appendix

Table – Main purchased parts and manufacturers

Ser. No.	Description	Manufacturer	Remarks
1	Main valve	Changde Zoomlion 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.	
		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.	
		Zhuzhou Gear Limited Liability Company	
7	Slewing ring	Xuzhou Rothe Erde Slewing Ring 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 mechanism	Changde Zoomlion Hydraulic Co., Ltd.	
13	Balance valve – derricking mechanism	Changde Zoomlion Hydraulic Co., Ltd.	
14	Balance valve – hoist mechanism	Changde Zoomlion Hydraulic Co., Ltd.	
15	Wire rope	Changsha City Yongxin Metal Product Limited Liability Company	
		Juli Sling Co., Ltd.	

Table – Main purchased parts and manufacturers (continued)

Ser. No.	Description	Manufacturer	Remarks
15	Wire rope	Jiangsu Safety Steel Rope Co., Ltd.	
16	Hook	Juli Sling Co., Ltd.	
		Changsha Lanying Industry Co., Ltd.	
17	Load moment limiter	Zoomlion Electric OEM supply Company	
		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.