



ZOOMLION ZMC85 TRUCK CRANE

TECHNICAL SPECIFICATIONS

ZMC85/27Y

ZOOMLION HEAVY INDUSTRY SCIENCE AND TECHNOLOGY CO., LTD

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TECHNICAL SPECIFICATIONS

ZMC85/27Y

1. Product characteristics

ZOOMLION ZMC85 truck crane, which integrates our many years' experience in designing and manufacturing mobile cranes with 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, have achieved advanced international level.

This product is a truck crane of full range slewing function, telescopic boom sections and pilot-operated proportional controlled systems. The crane adopts self-manufactured full-width 4-axle special purpose chassis (8×4 drive, offering convenient and flexible steering, 8×8 steer, providing small turning radius), providing wide vision, spacious cab and luxurious equipment.

The latest pilot-operated proportional directional control valve and variable pump + 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 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: ZMC85

2.2 Technical data

Item		Value	Remarks
Working performance	Max. rated lifting capacity	kg	85000
	Max. load moment of basic boom	kN.m	2764
	Max. load moment of max. length main boom	kN.m	1376
	Max. lifting height of basic boom	m	12.8
	Max. lifting height of main boom	m	46.4
	Max. lifting height of jib	m	62.5
			These parameters do not include deflection of boom and jib.
Working speeds	Max. hoist rope speed (main winch)	m/min	140
	Max. hoist rope speed (auxiliary winch)	m/min	120
	Boom derricking up time	s	55
	Boom telescoping out time	s	110
	Slewing speed	r/min	0 - 1.7
Driving	Max. driving speed	km/h	75
	Max. gradeability	%	37
	Min. turning diameter	m	≤20
	Min. ground clearance	mm	300
	Oil consumption per hundred kilometers	L	48
Mass	Deadweight in driving condition	kg	48000
	Complete vehicle kerb mass	kg	47870
	Front axle load	kg	24000
	Rear axle load	kg	24000
Dimensions	Overall dimensions (L×W×H)	mm	14500×2800×3850
	Outrigger spread (L)	m	6.15
	Outrigger spread (W)	m	Completely extended: 7.8 m Intermediately extended: 5.17 m
	Tail slewing radius	mm	4300
	Main boom length	m	12.0 - 46.0
	Main boom angle	°	-2 - 80
	Jib length	m	9.5, 16.0
	Offset	°	0, 15, 30

2.3 Rated lifting capacity tables

This crane is provided with 21 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 2-1 to Table 2-21.

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 2-1

Unit: Metric kg

Working radius (m)	Main boom (m)						
	Telescopic cylinder I and outriggers completely extended, over side and over rear, with 3T fixed counterweight assembled						
	12.0	16.2	20.4	26.8	33.2	39.6	46.0
3.0	85000*	55000					
3.5	70000*	53000	43500				
4.0	61500*	52000	43500				
4.5	55000	49000	42000	31000			
5.0	50000	46000	41000	31000			
5.5	46000	43000	40000	30000			
6.0	43000	39000	38000	29000	23000		
7.0	33500	32500	31500	28000	22000		
8.0	25000	24000	23000	23500	21000	16500	
9.0	20000	19000	18500	20500	19500	15500	
10.0		15500	15200	16500	17500	14500	11500
11.0		12900	12500	14000	14500	13500	11500
12.0		10500	10200	11500	12500	12500	10500
14.0			7200	8500	9200	9600	9800
16.0			4900	6100	7000	7500	7900
18.0				4500	5200	5800	6200
20.0				3300	4000	4500	4800
22.0				2300	3100	3500	3900
24.0					2200	2700	3000
26.0					1600	2000	2400
28.0						1500	1800
30.0						1100	1400
32.0							1000
34.0							
36.0							
I	0	4.2	8.4	8.4	8.4	8.4	8.4
II	0	0	0	6.4	12.8	19.2	25.6
Reevings	12	10	8	6	5	4	3
Hook	60t hook						

Table 2-2

Unit: Metric kg

Working radius (m)	Main boom (m)					
	Telescopic cylinder I intermediately extended and outriggers completely extended, over side and over rear, with 3T fixed counterweight assembled					
	12.0	16.2	22.6	29.0	35.4	41.8
3.0	85000*	55000				
3.5	70000*	53000	30000			
4.0	61500*	52000	30000			
4.5	55000	49000	30000			
5.0	50000	46000	30000	23000		
5.5	46000	43000	30000	23000		
6.0	43000	39000	29000	23000		
7.0	33500	32500	28000	22000	16500	
8.0	25000	24000	23500	21000	16500	11500
9.0	20000	19000	20800	19500	15500	11500
10.0		15500	17000	18000	14500	11500
11.0		12700	14200	15000	13500	11500
12.0		10500	12000	12800	12500	10500
14.0			8700	9500	10000	9800
16.0			6400	7200	7700	8200
18.0			4800	5500	6000	6500
20.0				4300	4800	5200
22.0				3300	3800	4200
24.0					3000	3400
26.0					2300	2700
28.0					1800	2150
30.0						1700
32.0						1300
34.0						
36.0						
I	0	4.2	4.2	4.2	4.2	4.2
II	0	0	6.4	12.8	19.2	25.6
Reevings	12	10	6	5	4	3
Hook	60t hook					

Table 2-3

Unit: Metric kg

Working radius (m)	Main boom (m)				
	Telescopic cylinder I completely retracted and outriggers completely extended, over side and over rear, with 3T fixed counterweight assembled				
	12.0	18.4	24.8	31.2	37.6
3.0	85000*	30000			
3.5	70000*	30000			
4.0	61500*	30000	23000		
4.5	55000	30000	23000		
5.0	50000	30000	23000		
5.5	46000	30000	23000	16500	
6.0	43000	29000	23000	16500	
7.0	33500	28000	22000	16500	11500
8.0	25000	24000	21000	15500	11500
9.0	20000	21500	19500	14500	11500
10.0		17500	18000	13500	11500
11.0		14500	15500	12500	11000
12.0		12500	13300	12000	10500
14.0		9200	10000	10500	9300
16.0			7800	8100	8300
18.0			6100	6500	6800
20.0			4800	5200	5500
22.0				4200	4500
24.0				3400	3700
26.0					3000
28.0					2500
30.0					2000
32.0					
34.0					
36.0					
I	0	0	0	0	0
II	0	6.4	12.8	19.2	25.6
Reevings	12	6	5	4	3
Hook	60t hook				

Table 2-4

Unit: Metric kg

Working radius (m)	Main boom (m)						
	Telescopic cylinder I completely extended and outriggers intermediately extended, over side and over rear, with 3T fixed counterweight assembled						
	12.0	16.2	20.4	26.8	33.2	39.6	46.0
3.0	62000*	52000					
3.5	52000	48000	42000				
4.0	45000	43000	40000				
4.5	40000	38000	37000	30000			
5.0	35000	33000	31500	30000			
5.5	28000	27500	26000	26500			
6.0	23000	22500	22000	22500	22000		
7.0	16600	16000	15500	17000	17500		
8.0	12500	12000	11500	13000	13500	14000	
9.0	9600	9200	8900	10000	11000	11500	
10.0		7100	6900	8100	9000	9500	10000
11.0		5500	5300	6500	7300	7900	8300
12.0		4300	4100	5300	6000	6600	7000
14.0			2300	3400	4100	4600	5000
16.0			1000	2100	2800	3200	3600
18.0				1100	1800	2200	2600
20.0					1000	1500	1800
22.0						900	1200
24.0							
26.0							
28.0							
I	0	4.2	8.4	8.4	8.4	8.4	8.4
II	0	0	0	6.4	12.8	19.2	25.6
Reevings	12	10	8	6	5	4	3
Hook	60t hook						

Table 2-5

Unit: Metric kg

Working radius (m)	Main boom (m)					
	Telescopic cylinder I and outriggers intermediately extended, over side and over rear, with 3T fixed counterweight assembled					
	12.0	16.2	22.6	29.0	35.4	41.8
3.0	62000*	52000				
3.5	52000	48000	30000			
4.0	45000	43000	30000			
4.5	40000	38000	30000			
5.0	35000	33000	30000	23000		
5.5	28000	27500	28500	23000		
6.0	23000	22500	23500	22000		
7.0	16600	16000	17800	18500	16500	
8.0	12500	12000	13500	14500	14800	11500
9.0	9600	9200	10600	11500	12000	11500
10.0		7100	8600	9400	9800	10300
11.0		5500	6900	7700	8300	8700
12.0		4300	5700	6400	6900	7300
14.0			3800	4500	5000	5300
16.0			2500	3100	3600	3900
18.0				2200	2600	2900
20.0				1400	1800	2100
22.0					1200	1500
24.0						1000
26.0						
28.0						
I	0	4.2	4.2	4.2	4.2	4.2
II	0	0	6.4	12.8	19.2	25.6
Reevings	12	10	6	5	4	3
Hook	60t hook					

Table 2-6

Unit: Metric kg

Working radius (m)	Main boom (m)				
	Telescopic cylinder I completely retracted and outriggers intermediately extended, over side and over rear, with 3T fixed counterweight assembled				
	12.0	18.4	24.8	31.2	37.6
3.0	62000*	30000			
3.5	52000	30000			
4.0	45000	30000	23000		
4.5	40000	30000	23000		
5.0	35000	30000	23000		
5.5	28000	29000	23000	16500	
6.0	23000	25000	23000 900	16500	
7.0	16600	18500	19600	16500	11500
8.0	12500	14300	15200	15500	11500
9.0	9600	11300	12200	12700	11500
10.0		9200	10000	10500	10800
11.0		7600	8300	8800	9100
12.0		6300	7000	7400	7800
14.0		4400	5000	5500	5800
16.0			3700	4000	4300
18.0			2700	3000	3300
20.0			1800	2300	2500
22.0				1600	1900
24.0				1100	1400
26.0					1000
28.0					
I	0	0	0	0	0
II	0	6.4	12.8	19.2	25.6
Reevings	12	6	5	4	3
Hook	60t hook				

Table 2-7

Unit: Metric kg

Working radius (m)	Main boom (m)						
	Telescopic cylinder I and outriggers completely extended, over side and over rear, with 3T fixed counterweight + 4T movable counterweight assembled						
	12.0	16.2	20.4	26.8	33.2	39.6	46.0
3.0	85000*	55000					
3.5	71000*	53000	43500				
4.0	63000*	52000	43500				
4.5	56000	49000	42000	31000			
5.0	51500	46000	41000	31000			
5.5	48000	43000	40000	30000			
6.0	45500	40000	38000	29000	23000		
7.0	37500	34500	33000	28000	22000		
8.0	29000	28000	27000	25000	21000	16500	
9.0	23000	22500	22000	22500	19500	15500	
10.0		18500	18000	19500	18000	14500	11500
11.0		15000	15000	16500	16500	13500	11500
12.0		13200	12900	14000	14500	12500	10500
14.0			9300	10500	11000	11500	9800
16.0			6800	8100	8700	9300	8700
18.0				6200	6900	7400	7800
20.0				4750	5500	5900	6300
22.0				3650	4300	4800	5200
24.0					3400	3900	4300
26.0					2700	3200	3500
28.0						2500	2900
30.0						2000	2300
32.0						1500	1900
34.0							1500
36.0							1100
I	0	4.2	8.4	8.4	8.4	8.4	8.4
II	0	0	0	6.4	12.8	19.2	25.6
Reevings	12	10	8	6	5	4	3
Hook	60t hook						

Table 2-8

Unit: Metric kg

Working radius (m)	Main boom (m)					
	Telescopic cylinder I intermediately extended and outriggers completely extended, over side and over rear, with 3T fixed counterweight + 4T movable counterweight assembled					
	12.0	16.2	22.6	29.0	35.4	41.8
3.0	85000*	55000				
3.5	71000*	53000	30000			
4.0	63000*	52000	30000			
4.5	56000	49000	30000			
5.0	51500	46000	30000	23000		
5.5	48000	43000	30000	23000		
6.0	45500	40000	29000	23000		
7.0	37500	34500	28000	22000	16500	
8.0	29000	28000	25000	21000	16500	11500
9.0	23000	22500	23500	19500	15500	11500
10.0		18500	20000	18000	14500	11500
11.0		15000	16800	17000	13500	11500
12.0		13200	14300	15000	12500	10500
14.0			10500	11500	11500	9800
16.0			8200	9000	9500	8700
18.0			6300	7100	7600	7800
20.0				5600	6100	6500
22.0				4500	5000	5300
24.0					4000	4400
26.0					3300	3600
28.0					2700	3000
30.0						2500
32.0						2000
34.0						1600
36.0						
I	0	4.2	4.2	4.2	4.2	4.2
II	0	0	6.4	12.8	19.2	25.6
Reevings	12	10	6	5	4	3
Hook	60t hook					

Table 2-9

Unit: Metric kg

Working radius (m)	Main boom (m)				
	Telescopic cylinder I completely retracted and outriggers completely extended, over side and over rear, with 3T fixed counterweight + 4T movable counterweight assembled				
	12.0	18.4	24.8	31.2	37.6
3.0	85000*	30000			
3.5	71000*	30000			
4.0	63000*	30000	23000		
4.5	56000	30000	23000		
5.0	51500	30000	23000		
5.5	48000	30000	23000	16500	
6.0	45500	29000	23000	16500	
7.0	37500	28000	22000	16500	11500
8.0	29000	25000	21000	15500	11500
9.0	23000	24000	19500	14500	11500
10.0		20500	18000	13500	11500
11.0		17500	17000	12500	11000
12.0		14800	15500	12000	10500
14.0		11200	12000	10500	9300
16.0			9500	9600	8300
18.0			7600	8000	7400
20.0			6200	6500	6700
22.0				5400	5700
24.0				4500	4800
26.0					4000
28.0					3400
30.0					2800
32.0					
34.0					
36.0					
I	0	0	0	0	0
II	0	6.4	12.8	19.2	25.6
Reevings	12	6	5	4	3
Hook	60t hook				

Table 2-10

Unit: Metric kg

Working radius (m)	Main boom (m)						
	Telescopic cylinder I completely extended and outriggers intermediately extended, over side and over rear, with 3T fixed counterweight + 4T movable counterweight assembled						
	12.0	16.2	20.4	26.8	33.2	39.6	46.0
3.0	62000*	52000					
3.5	52000	48000	42000				
4.0	45000	43000	40000				
4.5	40000	38000	37000	30000			
5.0	38000	36000	34000	30000			
5.5	34500	33500	31500	30000			
6.0	28500	27500	25000	26000	23000		
7.0	20800	20000	19500	21000	21500		
8.0	15800	15000	15000	16500	17000	16500	
9.0	12500	12000	11500	13000	14000	14500	
10.0		9500	9300	10500	11500	12000	11500
11.0		7600	7400	8700	9500	10000	10500
12.0		6300	6000	7200	8000	8500	9000
14.0			3900	5000	5700	6200	6600
16.0			2300	3000	4100	4600	5000
18.0				2300	3000	3500	3800
20.0				1400	2100	2500	2800
22.0					1400	1800	2100
24.0						1200	1500
26.0							1000
28.0							
I	0	4.2	8.4	8.4	8.4	8.4	8.4
II	0	0	0	6.4	12.8	19.2	25.6
Reevings	12	10	8	6	5	4	3
Hook	60t hook						

Table 2-11

Unit: Metric kg

Working radius (m)	Main boom (m)					
	Telescopic cylinder I and outriggers intermediately extended, over side and over rear, with 3T fixed counterweight + 4T movable counterweight assembled					
	12.0	16.2	22.6	29.0	35.4	41.8
3.0	62000*	52000				
3.5	52000	48000	30000			
4.0	45000	43000	30000			
4.5	40000	38000	30000			
5.0	38000	36000	30000	23000		
5.5	34500	33500	30000	23000		
6.0	28500	27500	26000	23000		
7.0	20800	20000	21500	22000	16500	
8.0	15800	15000	16500	18800	16500	11500
9.0	12500	12000	13500	14300	15000	11500
10.0		9500	11000	11800	12500	11500
11.0		7600	9100	9800	10500	10800
12.0		6300	7600	8400	8900	9300
14.0			5400	6100	6600	7000
16.0			3800	4500	5000	5300
18.0				3400	3800	4100
20.0				2400	2900	3200
22.0					2100	2400
24.0					1500	1800
26.0						1300
28.0						
I	0	4.2	4.2	4.2	4.2	4.2
II	0	0	6.4	12.8	19.2	25.6
Reevings	12	10	6	5	4	3
Hook	60t hook					

Table 2-12

Unit: Metric kg

Working radius (m)	Main boom (m)				
	Telescopic cylinder I completely retracted and outriggers intermediately extended, over side and over rear, with 3T fixed counterweight + 4T movable counterweight assembled				
	12.0	18.4	24.8	31.2	37.6
3.0	62000*	30000			
3.5	52000	30000			
4.0	45000	30000	23000		
4.5	40000	30000	23000		
5.0	38000	30000	23000		
5.5	34500	30000	23000	16500	
6.0	28500	29000	23000	16500	
7.0	20800	22500	22000	16500	11500
8.0	15800	17600	18500	15500	11500
9.0	12500	14200	15000	14500	11500
10.0		11700	12500	13000	11500
11.0		9700	10500	11000	11000
12.0		8200	8900	9400	9700
14.0		6000	6600	7100	7400
16.0			5000	5400	5700
18.0			3900	4300	4500
20.0			2800	3300	3600
22.0				2600	2800
24.0				2000	2200
26.0					1700
28.0					1300
I	0	0	0	0	0
II	0	6.4	12.8	19.2	25.6
Reevings	12	6	5	4	3
Hook	60t hook				

Table 2-13

Unit: Metric kg

Working radius (m)	Main boom (m)						
	Telescopic cylinder I and outriggers completely extended, over side and over rear, with 3T fixed counterweight + 6T movable counterweight assembled						
	12.0	16.2	20.4	26.8	33.2	39.6	46.0
3.0	85000*	55000					
3.5	72000*	53000	43500				
4.0	64000*	52000	43500				
4.5	57000	49000	42000	31000			
5.0	52500	46000	41000	31000			
5.5	49000	44000	40000	30000			
6.0	47000	41000	38000	29000	23000		
7.0	38500	36000	33000	28000	22000		
8.0	30000	29000	28000	25000	21000	16500	
9.0	24000	23500	23000	22500	19500	15500	
10.0		20000	19800	21000	18000	14500	11500
11.0		16500	16500	17500	16500	13500	11500
12.0		14200	14000	15000	15500	12500	10500
14.0			10200	11300	12000	11500	9800
16.0			7600	8800	9500	10000	8700
18.0				6900	7600	8200	7800
20.0				5400	6100	6600	7000
22.0				4200	4900	5400	5700
24.0					3900	4400	4700
26.0					3200	3600	3900
28.0					2500	2950	3300
30.0						2400	2700
32.0						1900	2250
34.0							1800
36.0							1400
I	0	4.2	8.4	8.4	8.4	8.4	8.4
II	0	0	0	6.4	12.8	19.2	25.6
Reevings	12	10	8	6	5	4	3
Hook	60t hook						

Table 2-14

Unit: Metric kg

Working radius (m)	Main boom (m)					
	Telescopic cylinder I intermediately extended and outriggers completely extended, over side and over rear, with 3T fixed counterweight + 6T movable counterweight assembled					
	12.0	16.2	22.6	29.0	35.4	41.8
3.0	85000*	55000				
3.5	72000*	53000	30000			
4.0	64000*	52000	30000			
4.5	57000	49000	30000			
5.0	52500	46000	30000	23000		
5.5	49000	44000	30000	23000		
6.0	47000	41000	29000	23000		
7.0	38500	36000	28000	22000	16500	
8.0	30000	29000	26000	21000	16500	11500
9.0	24000	23500	25000	19500	15500	11500
10.0		20000	21500	18000	14500	11500
11.0		16500	18000	17500	13500	11500
12.0		14200	15500	16300	12500	10500
14.0			11500	12400	11500	9800
16.0			9000	9800	10000	8700
18.0			7100	7900	8400	7800
20.0				6400	6800	7000
22.0				5200	5600	6000
24.0					4600	5000
26.0					3800	4100
28.0					3200	3500
30.0						2900
32.0						2400
34.0						2000
36.0						
I	0	4.2	4.2	4.2	4.2	4.2
II	0	0	6.4	12.8	19.2	25.6
Reevings	12	10	6	5	4	3
Hook	60t hook					

Table 2-15

Unit: Metric kg

Working radius (m)	Main boom (m)				
	Telescopic cylinder I completely retracted and outriggers completely extended, over side and over rear, with 3T fixed counterweight + 6T movable counterweight assembled				
	12.0	18.4	24.8	31.2	37.6
3.0	85000*	30000			
3.5	72000*	30000			
4.0	64000*	30000	23000		
4.5	57000	30000	23000		
5.0	52500	30000	23000		
5.5	49000	30000	23000	16500	
6.0	47000	29000	23000	16500	
7.0	38500	28000	22000	16500	11500
8.0	30000	26000	21000	16000	11500
9.0	24000	25000	19500	14500	11500
10.0		22000	18000	13500	11500
11.0		18800	17500	12500	11000
12.0		16000	16800	12000	10500
14.0		12000	13000	10500	9300
16.0			10300	9500	8300
18.0			8400	8700	7400
20.0			6900	7300	6700
22.0				6100	6100
24.0				5100	5400
26.0					4600
28.0					3900
30.0					3300
32.0					
34.0					
36.0					
I	0	0	0	0	0
II	0	6.4	12.8	19.2	25.6
Reevings	12	6	5	4	3
Hook	60t hook				

Table 2-16

Unit: Metric kg

Working radius (m)	Main boom (m)						
	Telescopic cylinder I completely extended and outriggers intermediately extended, over side and over rear, with 3T fixed counterweight + 6T movable counterweight assembled						
	12.0	16.2	20.4	26.8	33.2	39.6	46.0
3.0	62000*	52000					
3.5	52000	48000	42000				
4.0	45000	43000	40000				
4.5	43000	40000	38000	30000			
5.0	40000	38000	36000	30000			
5.5	37000	36000	35000	30000			
6.0	31000	30000	29000	28000	23000		
7.0	22800	22000	21500	23000	22500		
8.0	17500	17000	16500	18000	19000	16500	
9.0	13800	13300	13000	14500	15500	15500	
10.0		10800	10500	11500	12500	13000	11500
11.0		8800	8500	9600	10500	11000	11000
12.0		7200	7000	8200	9000	9500	10000
14.0			4600	5800	6500	7000	7500
16.0			3000	4100	4800	5300	5700
18.0				2800	3600	4000	4400
20.0				1800	2600	3000	3400
22.0					1800	2300	2600
24.0					1200	1600	1900
26.0						1000	1400
28.0							1000
I	0	4.2	8.4	8.4	8.4	8.4	8.4
II	0	0	0	6.4	12.8	19.2	25.6
Reevings	12	10	8	6	5	4	3
Hook	60t hook						

Table 2-17

Unit: Metric kg

Working radius (m)	Main boom (m)					
	Telescopic cylinder I and outriggers intermediately extended, over side and over rear, with 3T fixed counterweight + 6T movable counterweight assembled					
	12.0	16.2	22.6	29.0	35.4	41.8
3.0	62000*	52000				
3.5	52000	48000	30000			
4.0	45000	43000	30000 00			
4.5	43000	40000	30000			
5.0	40000	38000	30000	23000		
5.5	37000	36000	30000	23000		
6.0	31000	30000	29000	23000		
7.0	22800	22000	24000	22000	16500	
8.0	17500	17000	18700	19700	16500	11500
9.0	13800	13300	15000	15800	15500	11500
10.0		10800	12300	13000	13700	11500
11.0		8800	10200	11000	11500	11500
12.0		7200	8600	9400	10800	10200
14.0			6200	6900	7400	7800
16.0			4500	5200	5600	6000
18.0				3900	4400	4700
20.0				3000	3400	3700
22.0				2200	2600	2900
24.0					2000	2300
26.0					1500	1700
28.0						1300
I	0	4.2	4.2	4.2	4.2	4.2
II	0	0	6.4	12.8	19.2	25.6
Reevings	12	10	6	5	4	3
Hook	60t hook					

Table 2-18

Unit: Metric kg

Working radius (m)	Main boom (m)				
	Telescopic cylinder I completely retracted and outriggers intermediately extended, over side and over rear, with 3T fixed counterweight + 6T movable counterweight assembled				
	12.0	18.4	24.8	31.2	37.6
3.0	62000*	30000			
3.5	52000	30000			
4.0	45000	30000 00	23000		
4.5	43000	30000	23000		
5.0	40000	30000	23000		
5.5	37000	30000	23000	16500	
6.0	31000	29000	23000	16500	
7.0	22800	24000	22000	16500	11500
8.0	17500	19300	20300	15500	11500
9.0	13800	15600	16500	14500	11500
10.0		12800	13700	13700	11500
11.0		10800	11500	12000	11000
12.0		9200	9900	10300	10500
14.0		6800	7400	7900	8200
16.0			5700	6100	6400
18.0			4400	4800	5100
20.0			3400	3800	4100
22.0				3000	3300
24.0				2400	2700
26.0					2100
28.0					1600
I	0	0	0	0	0
II	0	6.4	12.8	19.2	25.6
Reevings	12	6	5	4	3
Hook	60t hook				

Table 2-19

Unit: Metric kg

Main boom angle (°)	Main boom (m) + Jib (m)					
	Outriggers completely extended, over side and over rear, with 3T fixed counterweight assembled					
	46+9.5			46+16		
	0°	15°	30°	0°	15°	30°
80	5000	3500	3000	3000	1700	1300
78	4700	3300	2800	2700	1600	1200
76	4400	3200	2600	2400	1500	1150
74	4100	3000	2500	2100	1400	1100
72	3800	2800	2400	1950	1300	1050
70	3500	2700	2300	1850	1250	1000
68	3200	2600	2200	1700	1200	1000
66	3000	2500	2150	1600	1150	1000
64	2600	2400	2100	1500	1100	950
62	2100	2300	2050	1400	1050	950
60	1800	1900	1600	1300	1050	900
58	1600	1400	1300	1250	1000	900
56	1200	1200	1100	1000	900	900
54	1000	900	900	800		
52	800					
Reevings	1					
Hook	5t hook					

Table 2-20

Unit: Metric kg

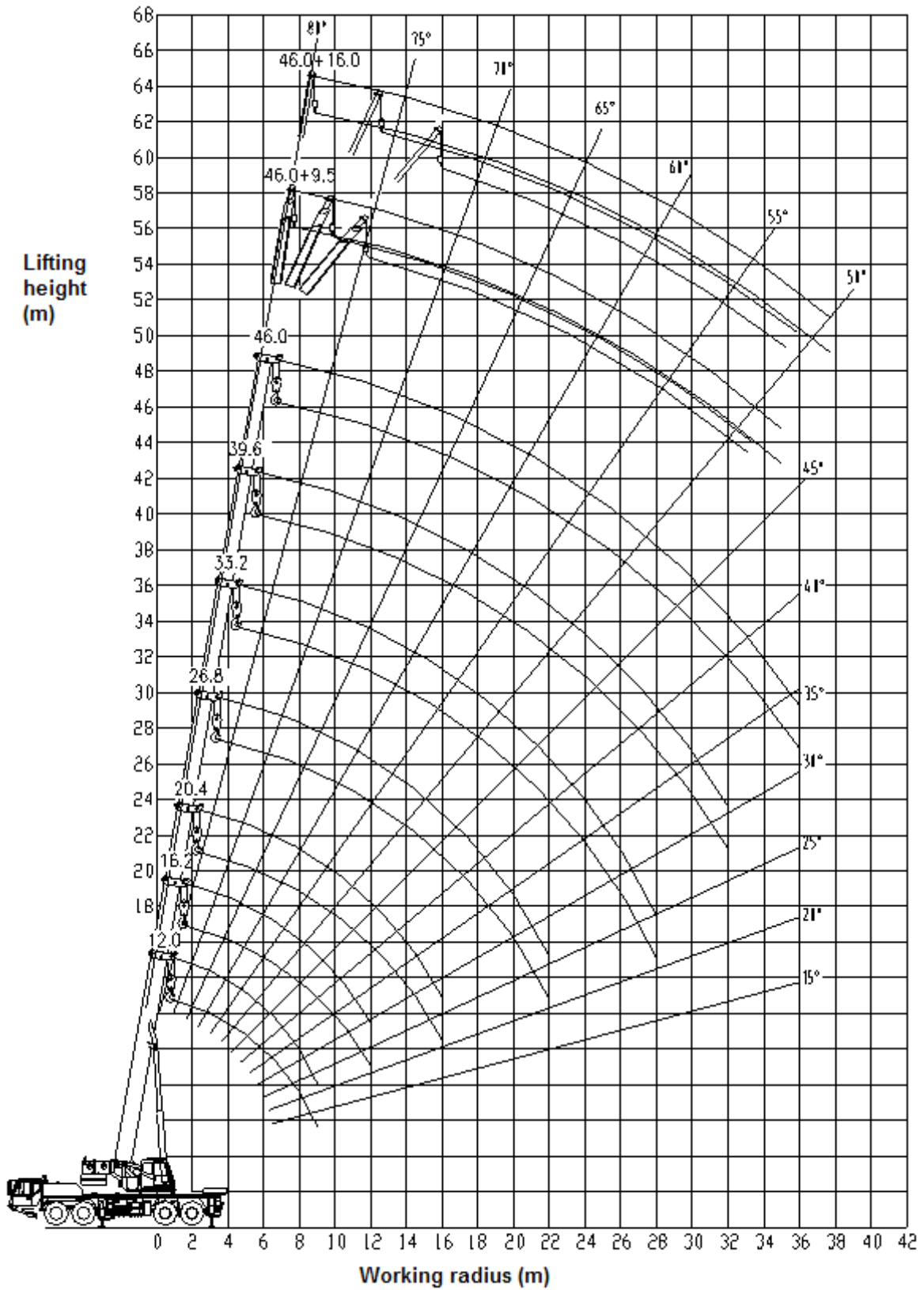
Main boom angle (°)	Main boom (m) + Jib (m)					
	Outriggers completely extended, over side and over rear, with 3T fixed counterweight + 4T movable counterweight assembled					
	46+9.5			46+16		
	0°	15°	30°	0°	15°	30°
80	5000	3500	3000	3000	1700	1300
78	4700	3300	2800	2700	1600	1200
76	4400	3200	2600	2400	1500	1150
74	4100	3000	2500	2100	1400	1100
72	3800	2800	2400	1950	1300	1050
70	3500	2700	2300	1850	1250	1000
68	3200	2600	2200	1700	1200	1000
66	3000	2500	2150	1600	1150	1000
64	2800	2400	2100	1500	1100	950
62	2600	2300	2050	1400	1050	950
60	2400	2100	1900	1300	1050	900
58	2200	2050	1800	1250	1000	900
56	2000	1850	1700	1200	1000	900
54	1600	1550	1500	1150	950	850
52	1500	1400	1250	1100		
50	1400					
Reevings	1					
Hook	5t hook					

Table 2-21

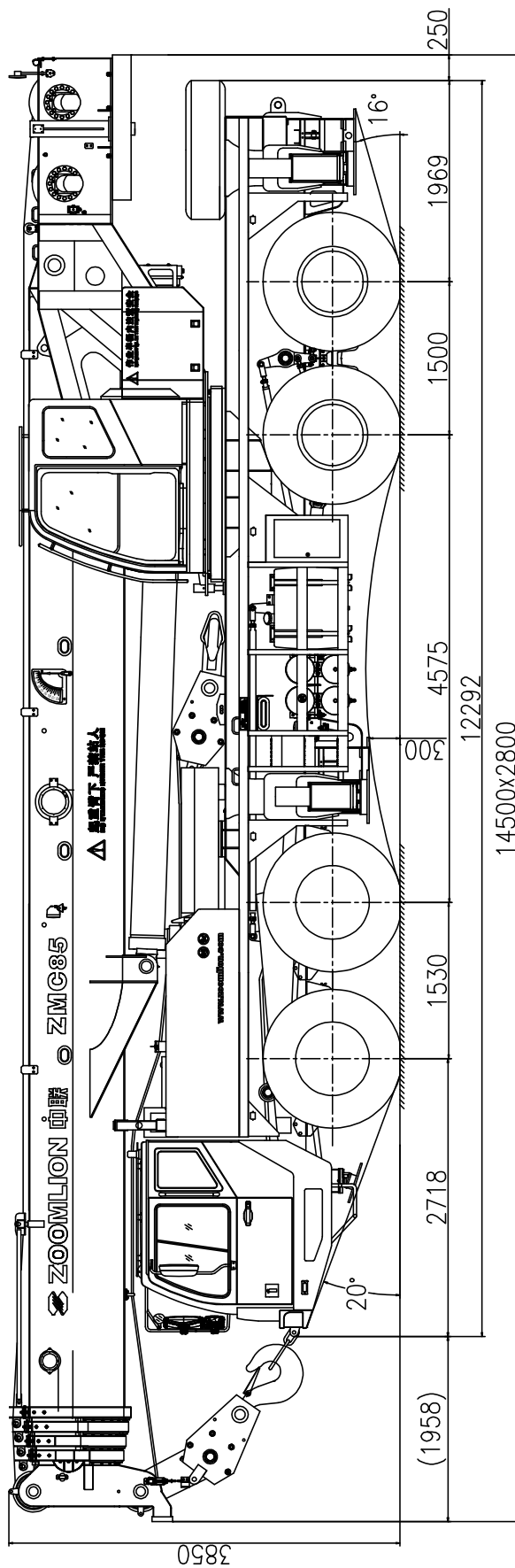
Unit: Metric kg

Main boom angle (°)	Main boom (m) + Jib (m)					
	Outriggers completely extended, over side and over rear, with 3T fixed counterweight + 6T movable counterweight assembled					
	46+9.5			46+16		
	0°	15°	30°	0°	15°	30°
80	5000	3500	3000	3000	1700	1300
78	4700	3300	2800	2700	1600	1200
76	4400	3200	2600	2400	1500	1150
74	4100	3000	2500	2100	1400	1100
72	3800	2800	2400	1950	1300	1050
70	3500	2700	2300	1850	1250	1000
68	3200	2600	2200	1700	1200	1000
66	3000	2500	2150	1600	1150	1000
64	2800	2400	2100	1500	1100	950
62	2700	2300	2050	1400	1050	950
60	2600	2200	1950	1300	1050	900
58	2500	2100	1900	1250	1000	900
56	2400	2000	1850	1200	1000	900
54	2000	1900	1800	1150	950	850
52	1700	1600	1500	1100	950	850
50	1500	1400	1300	1050		
48	1300					
Reevings	1					
Hook	5t hook					

2.4 Lifting height chart



2.5 Overall view (unit: Metric mm)



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 built-in sliding block and optimized design make 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 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

It consists of two jib sections and is folded on the side of boom when it is not used and can be installed and removed by inserted pins.

Jib section I, reducing and lattice structured, has good load bearing capacity and well stress distribution.

Jib section 2, box-shaped, can be pulled out from jib section 1 to form 2 kinds of jib length (9.5 m and 16.0 m) as required.

Jib section I can be attached below 0°, 15° or 30° in relation to top boom section. The offset can be conveniently changed via the pin and pull bracket.

3.3 Slewing table

Single ribbed plate structured and optimized slewing table made of high-strength steel plate makes the layout of articulated points of main 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 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 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

Single slewing mechanism is adopted.

Via the planetary gear reducer, the hydraulic motor drives the pinion gear on the output shaft to rotate the exterior toothed ring of slewing ring 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 cushion valve and normally-closed brake can ensure stable and reliable slewing operation of the crane. 4-point contact 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 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.

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: $\varnothing 20.0$ mm

Strength grade: 1870 N/mm²

Length of main hoist rope: 220 m

Length of auxiliary hoist rope: 130 m

3.8 Main and auxiliary hooks

Rotatable main hook: 60 t, with 6 pulleys, press nipple and hook safety device

Anti-rotating auxiliary hook (1 reeving): 5 t, with hook safety device

3.9 Operator's cab

It is of steel-structure welded 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. It is equipped with control levers, windshield wiper, washing system, 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, 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 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 ropes. Large outrigger span ensures stability of the crane.

The outrigger pad which is mounted at the bottom of vertical cylinder can be pushed inwards (to avoid the complete vehicle from being over-wide during driving) and pulled outwards (for convenient operation) to greatly reduce the labor intensity. After the outriggers are completely extended or retracted, the outrigger pads can be locked 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 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. When the 5th outrigger is set up, the crane can realize full range slewing operation.

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 the variable pump with gear pump. Among which, the variable pump supplies hydraulic oil for main winch, auxiliary winch, derricking mechanism and telescoping mechanism. The tandem gear pump is composed of two gear pumps. One supplies hydraulic oil for chassis hydraulic system, slewing mechanism, the other supplies hydraulic oil for air conditioning system and counterweight handler.

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 5th outrigger cylinder and vertical cylinder can be also controlled to retract simultaneously, so damage of the 5th outrigger cylinder can be avoided.

3.12 Electrical system

Single wire system, negative grounded, 24 Volt DC.

The superstructure 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 and oil cooler fan etc. These devices ensure safe operation and provide good working environment.

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 warning device
- f) Two-way hydraulic lock
- g) Balance valve
- h) Relief valve

3.14 Air conditioning and heater

A single-cooling air conditioning and heater special for auto are available.

3.15 Counterweight

The underslung counterweights can be assembled according to different working conditions.

It is composed of 3 counterweights: 3T fixed counterweight, 4T movable counterweight and 2T upper movable counterweight. They totally weigh 9T.

There are 3 options for counterweight assembly:

- 1) 3T fixed counterweight
- 2) 3T fixed counterweight + 4T movable counterweight
- 3) 3T fixed counterweight + 4T movable counterweight + 2T upper movable counterweight

4. Specifications, chassis

Chassis	Engine	Model	WP10.375
		Rated power kW/r/min	276/2200
		Max. output torque N.m/r/min	1460/1200 - 1600
		Manufacturer	Weichai Power Co., Ltd
	Model	ZLJ5480	
	Type	III	
	Code	ZLJ5480V3	
	Limits for exhaust pollutants and smoke	GB3847-2005、 GB17691-2005(National Stage III)	
	Manufacturer	Zoomlion Heavy Industry Science and Technology Co., Ltd.	

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

Appendix

Table – Main purchased parts and manufacturers

Ser. No.	Description	Manufacturer	Remarks
1	Main valve	Changde Zoomlion Hydraulic Co., Ltd.	
2	Plunger pump (variable pump)	Hi-tech Hydraulic Co., Ltd.	
	Gear pump	Jinan Hydraulic Pump Co., Ltd.	
3	Winch motor	Avic Liyuan Hydraulic Co., Ltd.	
		Beijing Huade Hydraulic Industrial Co., Ltd.	
4	Winch reducer	Xuzhou Keyuan Hydraulic Co., Ltd. Tongshan County Branch Company	
		Shanghai Wanhui Mechanical Manufacture Co., Ltd.	
5	Slewing motor	Avic Liyuan Hydraulic Co., Ltd.	
		Shanghai Electric Hydraulic and Pneumatic Co., Ltd. Hydraulic Pump Factory	
		Beijing Huade Hydraulic Industrial Co., Ltd.	
		Hi-tech Hydraulic Co., Ltd.	
6	Slewing reducer	Xuzhou Keyuan Hydraulic Co., Ltd. Tongshan County Branch Company	
		Shanghai Wanhui Mechanical Manufacture Co., Ltd.	
7	Slewing ring	Xuzhou Rothe Erde Slewing Ring Co., Ltd.	
		Yantai Haoyang Mechanical Co., Ltd.	
		Luoyang LYC Bearing 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 Heavy Industry Science & Technology Hydraulic Co., Ltd.	
13	Balance valve – derricking mechanism	Germany Bucher Hydraulic	
14	Balance valve – hoist mechanism	Shanghai Bosch Rexroth Hydraulic and Automatic Co., Ltd.	
		Shenzhen Sangte Hydraulic Technology Co., Ltd.	

15	Wire rope	Hubei Fuxing Science and Technology Co., Ltd.	
		Juli Sling Co., Ltd.	
		Jiangsu Safety Steel Rope Co., Ltd.	
		Xianyang Baoshi Steel Pipe and Steel Rope Co., Ltd.	
16	Hook	Shandong Hong Ruida Mechanical Co., Ltd.	
		Xuzhou Da Changshi Construction Mechanical Co., Ltd.	
		Changsha Lanying Industry Co., Ltd.	
17	Load moment limiter	Changsha WIDE Technology Development Co., Ltd.	
		Zoomlion Electric OEM supply Company	
		Hirschmann Electronics (Shanghai) Co., Ltd.	
18	Operator's cab assy.	Yangzhou Shenzhou Vehicle Interior Decorative Parts Ltd., Co.	

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.