

# 85 ton capacity ZCC850V-1



**ZOOMLION**

**4.0**  
PRODUCTS

**ZOOMLION**

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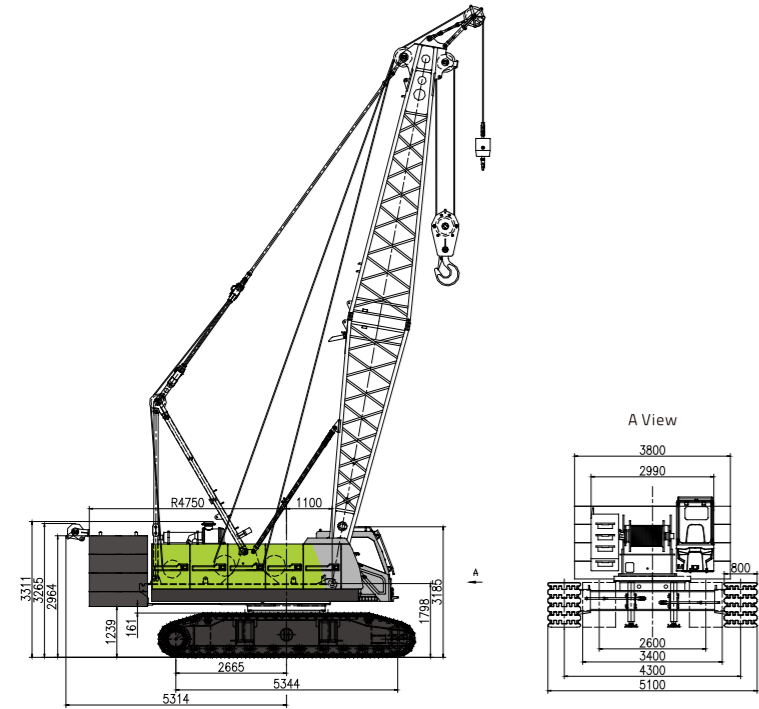
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## DIMENSIONS

Basic machine with undercarriage



### Operating weight

The operating weight includes the basic machine with crawlers, 2 main winches including wire ropes (240m and 150m) and 13m main boom, consisting of FA-frame, boom foot (6.5m), boom head (6.5m), 28.5 t rear counterweight, and 85t hook block.

Total weight -----approx. 74.8t

### Equipment

Main boom Max. Length ----- 61m

Fixed jib ----- 7-19m

Max. combination ----- main boom 49m

----- fixed jib 19m

Max. lifting moment ----- 363t.m

Max. lifting capacity on fixed jib ----- 15t

## TECHNICAL FEATURE

### High working efficiency

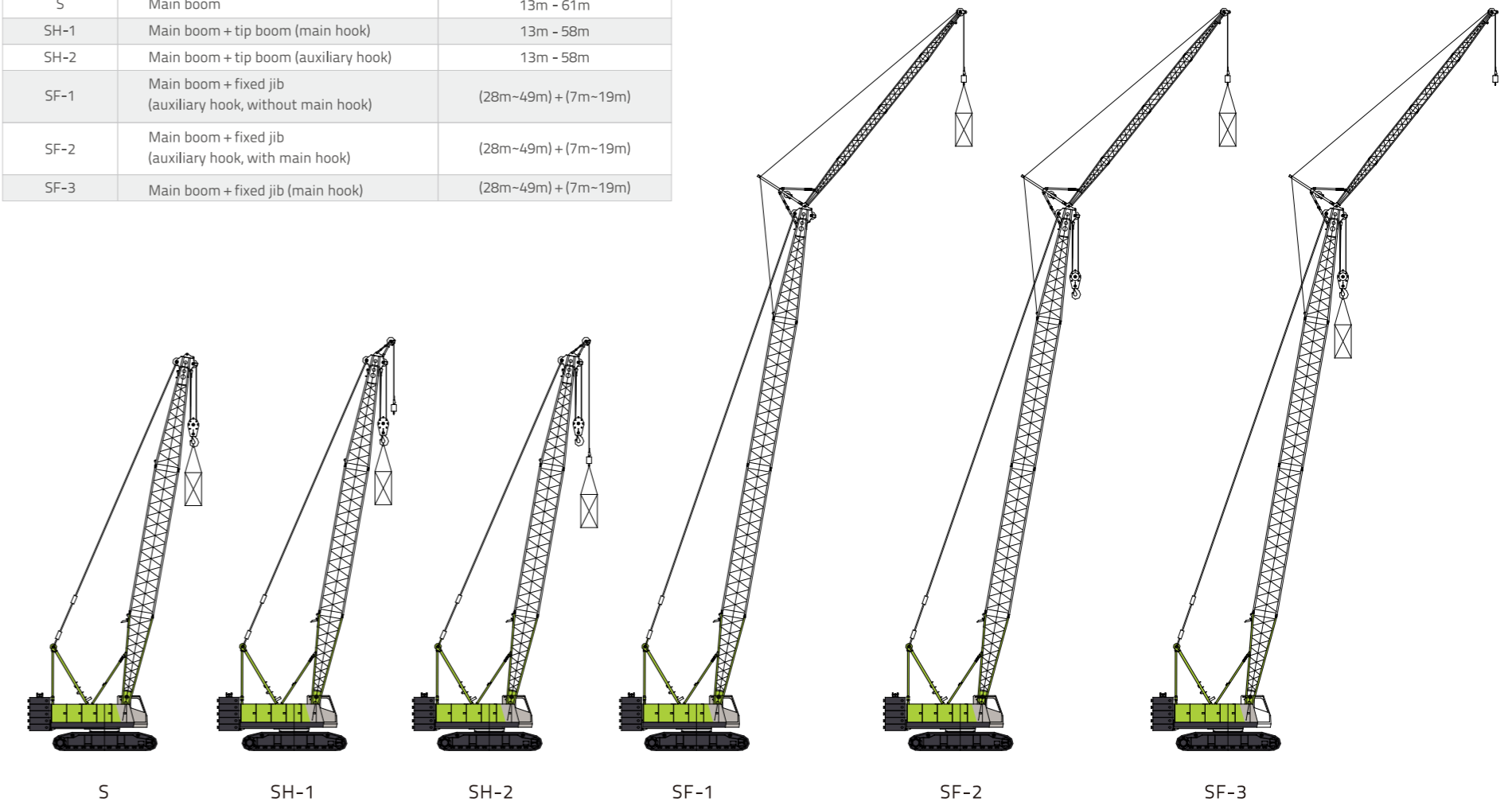
- Single rope speed of H1 and H2 reaches 150m/min (the 4<sup>th</sup> layer).
- The optional free-fall winch helps improve the efficiency of hoisting.

### Optimization in transport and dismantling

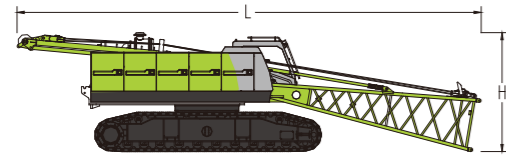
- Tracks can be extended or retracted. The maximum width for transport is 3.4m, or less than 3.0m when tracks are dismantled.
- Weight of a single counterweight slab ≤ 7t. Counterweight can be assembled simply by a small-sized auxiliary hoisting equipment.
- Optional vertical outriggers are convenient for the assembly and dismantling of track carriers.

## BOOM COMBINATION

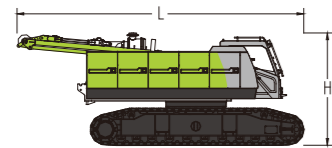
Code	Operating mode	Boom combination
S	Main boom	13m - 61m
SH-1	Main boom + tip boom (main hook)	13m - 58m
SH-2	Main boom + tip boom (auxiliary hook)	13m - 58m
SF-1	Main boom + fixed jib (auxiliary hook, without main hook)	(28m-49m) + (7m-19m)
SF-2	Main boom + fixed jib (auxiliary hook, with main hook)	(28m-49m) + (7m-19m)
SF-3	Main boom + fixed jib (main hook)	(28m-49m) + (7m-19m)



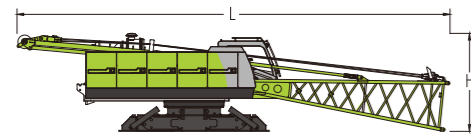
## TRANSPORT DIMENSIONS AND WEIGHTS



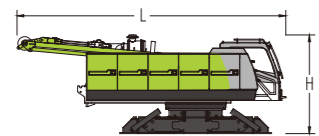
<b>Basic machine 1 (with pivot section and tracks on)</b>	<b>1 piece*</b>
Length (L)	13000 mm
Width (W)	3400 mm
Height (H)	3340 mm
Weight	35040 kg



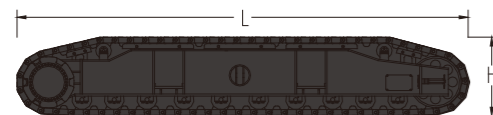
<b>Basic machine 2 (with tracks on)</b>	<b>1 piece*</b>
Length (L)	8230 mm
Width (W)	3400 mm
Height (H)	3340 mm
Weight	34120 kg



<b>Basic machine 3 (with pivot section on)</b>	<b>1 piece*</b>
Length (L)	13000 mm
Width (W)	2990 mm
Height (H)	2940 mm
Weight	20020 kg
	Outriggers are optional

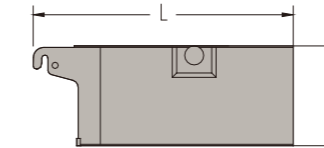


<b>Basic machine 4 (without pivot section and tracks)</b>	<b>1 piece*</b>
Length (L)	8000 mm
Width (W)	2990 mm
Height (H)	2940 mm
Weight	19100 kg
	Outriggers are optional

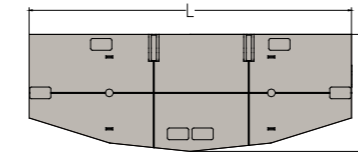


<b>Track assy</b>	<b>2 pieces*</b>
Length (L)	6340 mm
Width (W)	1040 mm
Height (H)	1120 mm
Weight	7510 kg

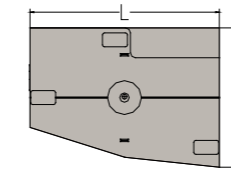
## TRANSPORT DIMENSIONS AND WEIGHTS



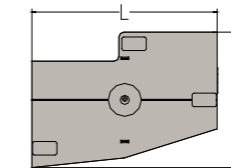
<b>Central ballast</b>	<b>2 pieces</b>
Length (L)	1810 mm
Width (W)	1210 mm
Height (H)	700 mm
Weight	4500 kg



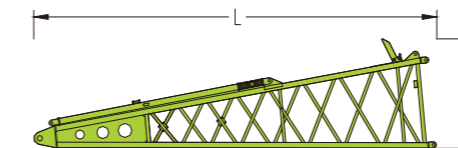
<b>Counterweight base</b>	<b>1 piece</b>
Length (L)	3800 mm
Width (W)	1400 mm
Height (H)	616 mm
Weight	6600 kg



<b>Counterweight slab (left)</b>	<b>3 pieces</b>
Length (L)	1895 mm
Width (W)	1400 mm
Height (H)	525 mm
Weight	3650 kg

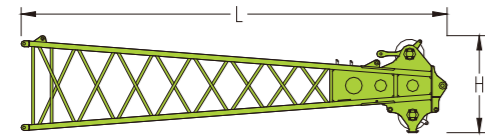


<b>Counterweight slab (right)</b>	<b>3 pieces</b>
Length (L)	1895 mm
Width (W)	1400 mm
Height (H)	525 mm
Weight	3650 kg

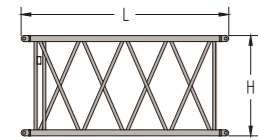


<b>Main boom pivot section</b>	<b>1 piece*</b>
Length (L)	6700 mm
Width (W)	1690 mm
Height (H)	1800 mm
Weight	920 kg

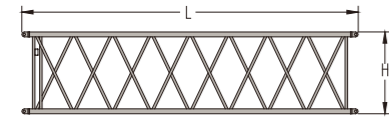
## TRANSPORT DIMENSIONS AND WEIGHTS



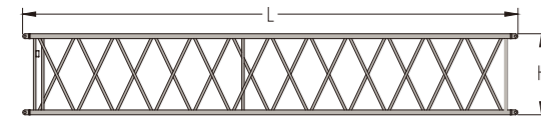
<b>Main boom head</b>	1 piece
Length (L)	7130 mm
Width (W)	1690 mm
Height (H)	1630 mm
Weight	1022 kg



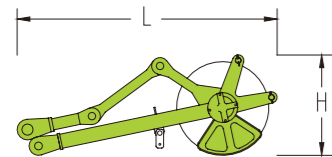
<b>Main boom intermediate section (3m)</b>	2 piece*
Length (L)	3090 mm
Width (W)	1690 mm
Height (H)	1500 mm
Weight	255 kg



<b>Main boom intermediate section (6m)</b>	1 piece*
Length (L)	6090 mm
Width (W)	1690 mm
Height (H)	1500 mm
Weight	449 kg

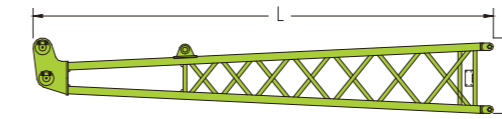


<b>Main boom intermediate section (9m)</b>	4 pieces*
Length (L)	9090 mm
Width (W)	1690 mm
Height (H)	1500 mm
Weight	643 kg

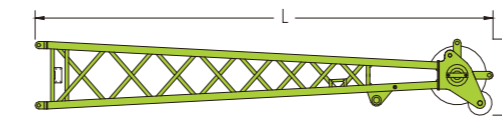


<b>Tip boom</b>	1 piece
Length (L)	1390 mm
Width (W)	590 mm
Height (H)	540 mm
Weight	130 kg

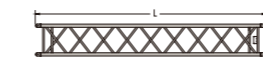
## TRANSPORT DIMENSIONS AND WEIGHTS



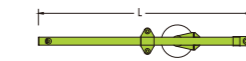
<b>Fixed jib pivot section</b>	1 piece*
Length (L)	3640 mm
Width (W)	570 mm
Height (H)	570 mm
Weight	165 kg



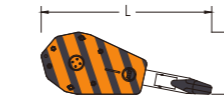
<b>Fixed jib head</b>	1 piece*
Length (L)	3820 mm
Width (W)	570 mm
Height (H)	570 mm
Weight	220 kg



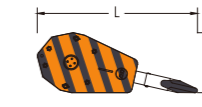
<b>Fixed jib intermediate section (4m)</b>	3 pieces*
Length (L)	4060 mm
Width (W)	570 mm
Height (H)	570 mm
Weight	120 kg



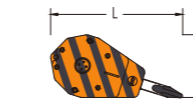
<b>FA-frame</b>	1 piece*
Length (L)	3230 mm
Width (W)	730 mm
Height (H)	490 mm
Weight	280 kg



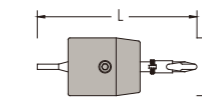
<b>Hook for 80t</b>	1 piece*
Length (L)	1650 mm
Width (W)	630 mm
Height (H)	650 mm
Weight	765 kg



<b>Hook for 45t</b>	1 piece*
Length (L)	1550 mm
Width (W)	500 mm
Height (H)	650 mm
Weight	480 kg



<b>Hook for 16t</b>	1 piece*
Length (L)	1250 mm
Width (W)	410 mm
Height (H)	650 mm
Weight	270 kg



<b>Hook for 9t</b>	1 piece*
Length (L)	910mm
Width (W)	310mm
Height (H)	310mm
Weight	180kg

**Attention:**

- Figures in the above table are schematic diagrams that are not drawn in fixed proportions. Dimensions shown are general boundary dimensions.
- Packaging weight is not included. Weights might be different from what are listed in the above table due to manufacturing error.
- Dimensions of actual products shall prevail if dimensions and weights differ from what are listed above due to parts improvement.
- Numbers of components marked \* are determined by the actual need.

## TECHNICAL DESCRIPTION



### Engine

Model: WeiChai WP7G270E301.  
 Type: in-line six-cylinder, intercooling supercharged diesel engine.  
 Displacement: 7.47L.  
 Rated power: 199kW/2000r/min.  
 Maximum torque: 1200N.m/(1200-1500)r/min.  
 Emission standard: China III for non-road mobile machinery.  
 Volume of fuel oil tank: 400L.



### Hydraulic system

Hydraulic pump: The main pump, a large-displacement plunger pump, drives winches and the crawling mechanism. The dual gear pump is used for slewing and heat dissipation.  
 Control system: pilot proportional control hydraulic system. The motor of hoisting winch is a variable plunger pump. Two cross hydraulic-control joysticks and a dual control valve of crawling pedal are used for controlling different executive components.  
 Volume of hydraulic oil tank: 410L



### Swing

The slewing gear is driven by an axial constant-displacement piston hydraulic motor through a planetary gear reducer. Small gear of the output shaft rotates around the slewing ring fixed on the chassis so that the slewing platform makes a full-range slewing of 360°. Lateral pulling force on boom can be effectively reduced through the function of free slewing.  
 Slewing ring  
 Single-row-roller and four-point-contact slewing ring; internal gearing  
 Slewing speed  
 The maximum slewing speed is 2.3 rpm.



### Boom winch

The derricking winch is driven by an axial piston motor through a built-in planetary reducer and braked through the spring on the motor end.  
 Cable drum lock: The winch is locked by ratchet wheel and ratchet pawl.

	Derricking mechanism
Rated single line pull	7.0t (the 1 <sup>st</sup> layer)
Rope diameter	20mm
Rope length	130m
Speed	82m/min (the 3 <sup>rd</sup> layer)



### Hoisting winch

Both the main hoisting winch and the auxiliary hoisting winch are driven by an axial hydraulic variable-displacement piston motor through a built-in planetary reducer. Spring braking of winch motor is controlled by a balance valve. The drum with double-rope grooves ensures that multiple layers of rope never intertwine together.

	H1	H2
Rated single line pull	8.5t (the 4 <sup>th</sup> layer)	8.5t (the 4 <sup>th</sup> layer)
Rope diameter	22mm	22mm
Rope length	240m	150m
Speed	150m/min (the 4th layer)	150m/min (the 3rd layer)

Free-fall hook is optional for both hoisting winches.

## TECHNICAL DESCRIPTION



### Main boom

Main boom length ranges between 13m-61m. Components of a main boom include: a pivot section of 6.5m, a boom head of 6.5m, intermediate sections of 3m, 6m and 9m, and a tip boom.



### Fixed jib

Fixed jib length ranges between 7m-19m. Components of a fixed jib include: a pivot section of 3.5m, a jib head of 3.5m, and intermediate sections of 4m.  
 The length of the main boom with a fixed jib on ranges between 28m-49m.



### Hooks

Four types of hooks are available:

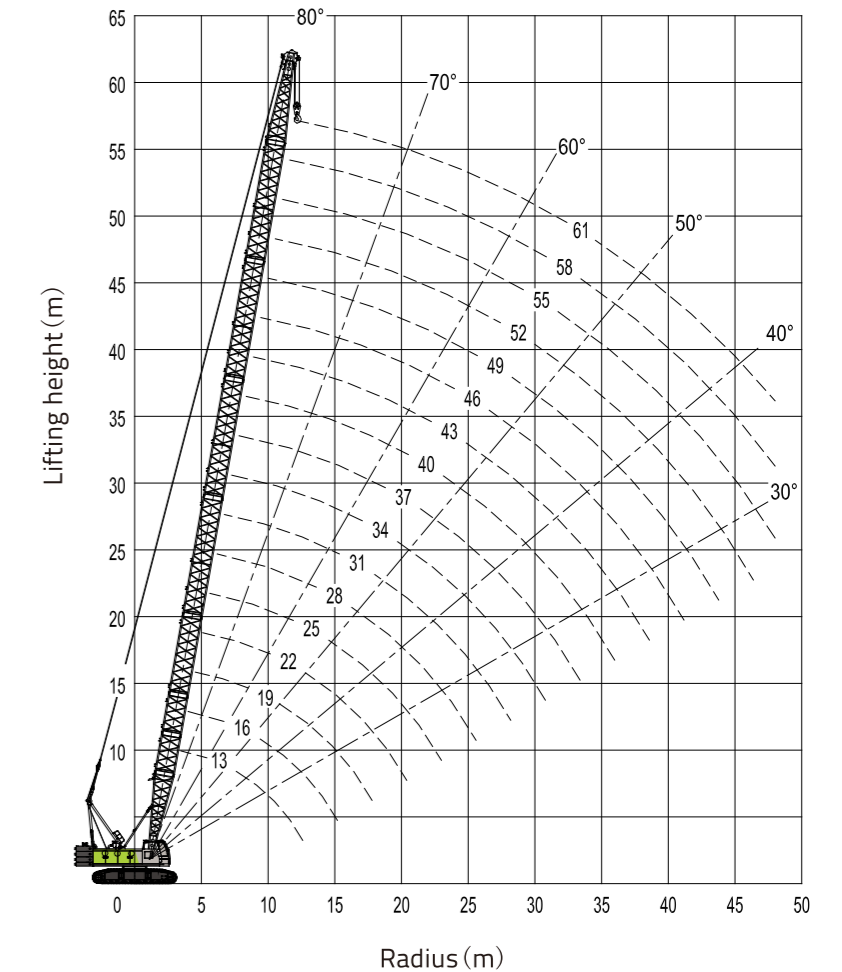
Specification of hook	Number of pulleys
80 t	5
45 t	3
16 t	1
9 t	0

## LIFTING PERFORMANCE

Main boom configuration

### LIFTING HEIGHT ON SF-1 BOOM

Unit:m

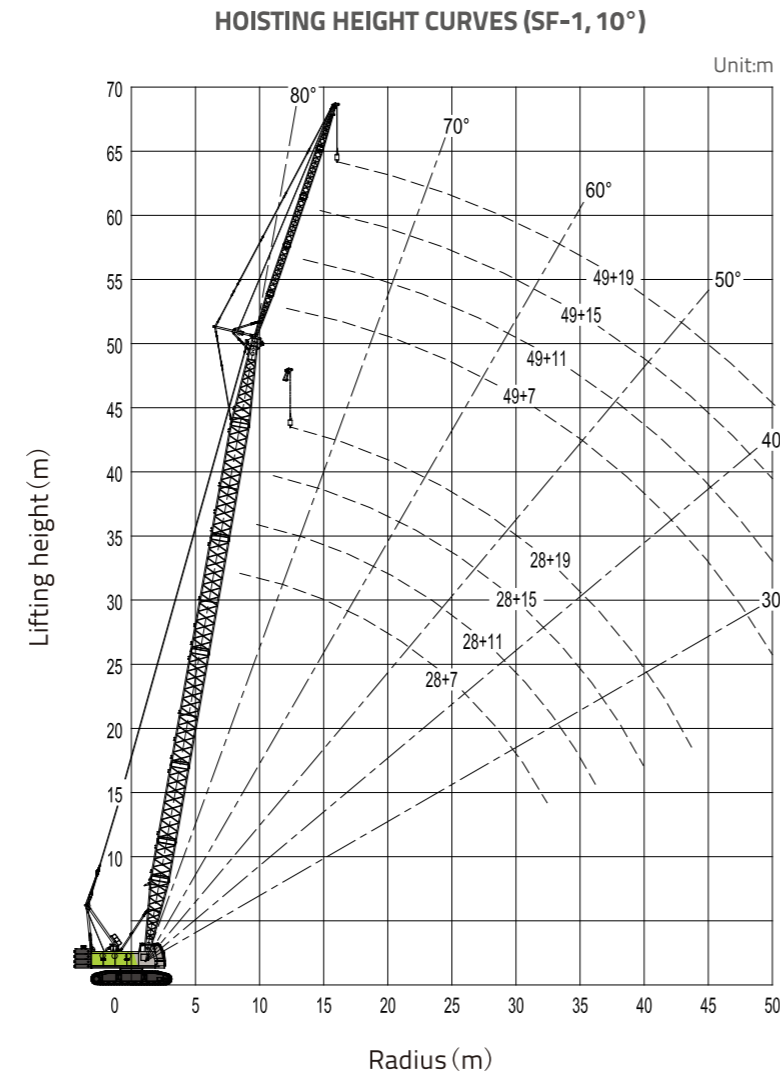


## LIFTING PERFORMANCE

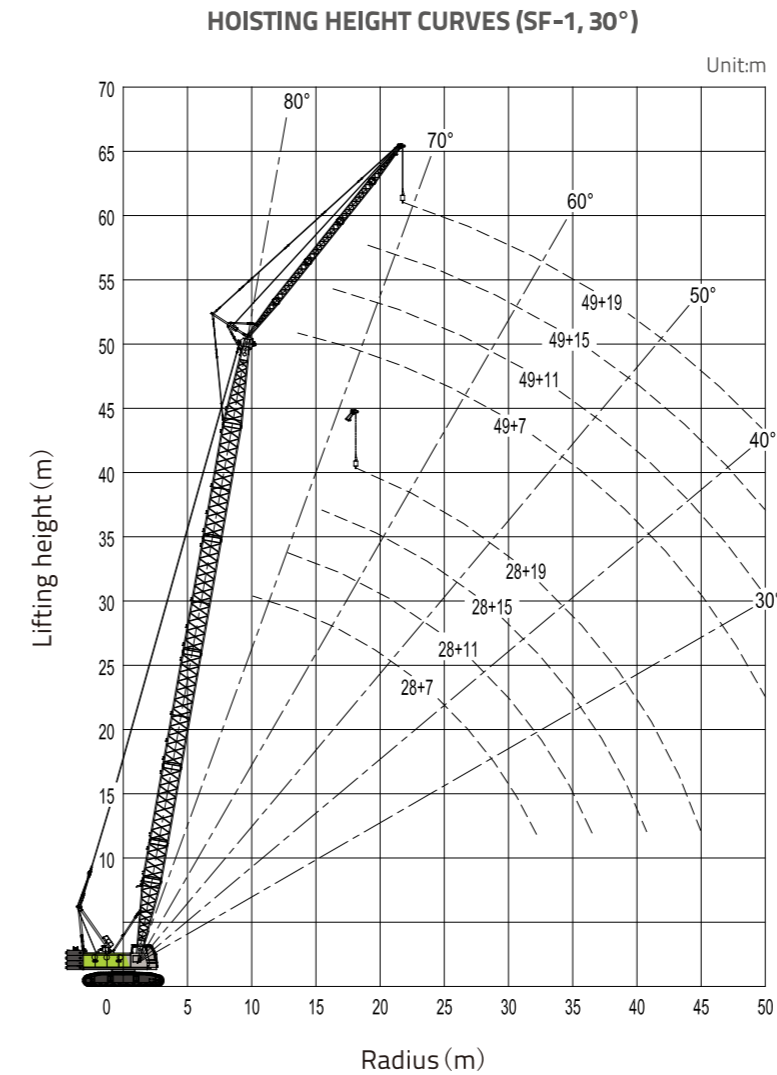
Lifting capacity chart (S)																			
Counterweight: 28.5t										Central ballast: 9t							UNIT:T		
Radius (m)	MAIN BOOM LENGTH (M)																		
	13	16	19	22	25	28	31	34	37	40	43	46	49	52	55	58	61		
4	85																		
5	72.6	72.6	68.8																
6	57.3	56.6	55.5	53.6	52.5														
7	44.9	44.9	44.9	44.2	44.2	43.9													
8	37.2	37.2	37.2	37.2	36.5	36.2	36	35.3											
9	31.8	31.3	31.3	31.3	31.3	30.7	30.5	30.5	30.1	29.5									
10	27.3	27.3	27.3	27.3	27.3	27	26.6	26.3	26.3	25.9	25.5	24.8							
11	24.1	24.1	24.1	23.7	23.7	23.7	23.7	23.4	23	23	22.6	22.6	21.9	21.6					
12	21.6	21.6	21.2	21.2	21.2	21.2	21.2	20.8	20.8	20.5	20.5	20.1	19.6	19.4	18	16.1			
14		17.6	17.6	17.6	17.4	17.1	17.1	17.1	17.1	16.9	16.7	16.4	16.4	16	15.8	15.2	12.4		
16			14.9	14.6	14.6	14.6	14.5	14.2	14.2	14.2	14.2	13.9	13.8	13.5	13.4	13.1	11.7		
18				12.7	12.7	12.4	12.4	12.4	12.1	12.1	12.1	12	11.7	11.5	11.4	11.1	10.6		
20				11	11	10.9	10.9	10.6	10.6	10.6	10.4	10.3	10.2	9.9	9.8	9.6	9.2		
22				9.7	9.6	9.5	9.5	9.4	9.2	9.2	9	8.9	8.8	8.6	8.4	8.1			
24					8.6	8.5	8.4	8.4	8.1	8.1	7.9	7.9	7.8	7.7	7.5	7.2			
26						7.7	7.5	7.5	7.3	7.2	7.1	7	7	6.8	6.7	6.5			
28							6.8	6.8	6.7	6.5	6.5	6.4	6.3	6.1	6.1	6	5.9		
30								6.1	6.1	6	5.9	5.7	5.7	5.6	5.4	5.3	5.2		
32									5.6	5.4	5.3	5.2	5.2	5	4.9	4.7	4.7		
34										5	4.9	4.7	4.6	4.5	4.5	4.3	4.2		
36											4.5	4.5	4.3	4.2	4	4	3.9	3.8	
38												4	3.9	3.9	3.8	3.6	3.5	3.4	
40													3.6	3.5	3.4	3.3	3.2	3.1	
42														3.2	3.1	3	2.9	2.8	
44															2.8	2.8	2.6	2.5	
46																2.6	2.5	2.4	2.2
48																	2.2	2.1	2
50																		1.9	1.8
52																			1.6
54																			1.4

## LIFTING PERFORMANCE

Operating mode SF



## LIFTING PERFORMANCE



## LIFTING PERFORMANCE

Lifting capacity chart (SF-1, 1/4)																		
Counterweight: 28.5t										Central ballast: 9t							UNIT:T	
Main boom length	28								31									
Jin length	7	11	15	19	7	11	15	19	7	11	15	19	7	11	15	19		
Angle	10°	30°	10°	30°	10°	30°	10°	30°	10°	30°	10°	30°	10°	30°	10°	30°		
9	15																	
10	15		13.7						15									
11	15	14.7	13.4						15		13.3							
12	15	14.2	13.1		8.5				15	14.5	13.1		8.5					
14	15	13.4	12.4	9.2	8.5		5.7		15	13.7	12.5	9.4	8.5		5.7			
16	14	12.7	12.4	8.7	8.4	6.7	5.5		13.6	12.9	12.3	8.9	8.3		5.5			
18	12	12	11.6	8.3	8	6.3	5.3		11.8	12	11.8	8.5	8.2	6.4	5.4			
20	10.3	10.4	10.4	7.8	7.7	6	5.1	4.5	10.1	10.4	10.3	8	7.7	6.1	5.2	4.5		
22	9.1	9.1	9.1	7.5	7.6	5.7	4.9	4.4	8.8	9.1	9.1	7.7	7.7	5.8	5	4.5		
24	7.9	8.1	8.1	7.2	7.2	5.5	4.8	4.3	7.9	7.9	7.9	7.4	7.4	5.6	4.9	4.4		
26	7.1	7.1	7.3	7	7.1	5.3	4.7	4.2	6.9	7.1	7.1	7.1	7.2	5.4	4.8	4.3		
28	6.4	6.4	6.4	6.6	6.6	5.1	4.5	4	6.2	6.2	6.4	6.6	6.4	5.2	4.6	4.1		
30	5.7	5.7	5.9	5.9	5.9	4.9	4.5	3.9	5.6	5.7	5.7	5.9	5.7	5	4.5	4		
32			5.3	5.4	5.4	4.7	4.4	3.7	5.1	5.1	5.2	5.2	5.2	4.9	4.4	3.8		
34				4.8	4.9	4.9	4.6	4.3	3.6	4.6	4.6	4.7	4.8	4.8	4.7	3.7		
36					4.5	4.5	4.2	3.5			4.3	4.4	4.4	4.5	4.3	3.6		
38						4.1	4.2	4.1	3.4			3.9	4	4.1	4.1	3.5		
40								3.9	3.4				3.7	3.7	3.7	3.4		
42									3.5	3.3				3.3	3.3	3.4		
44															3.1	3.2		
46																2.9		

