XCR120 Rough Terrain Crane

Technical specifications

CAMC VIAL
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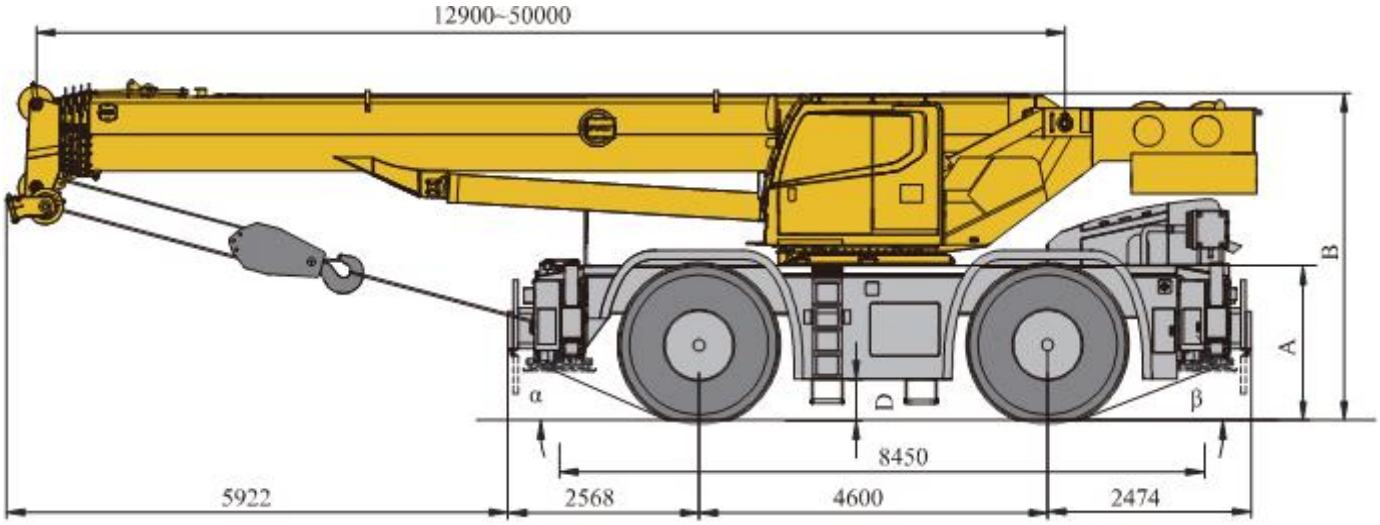
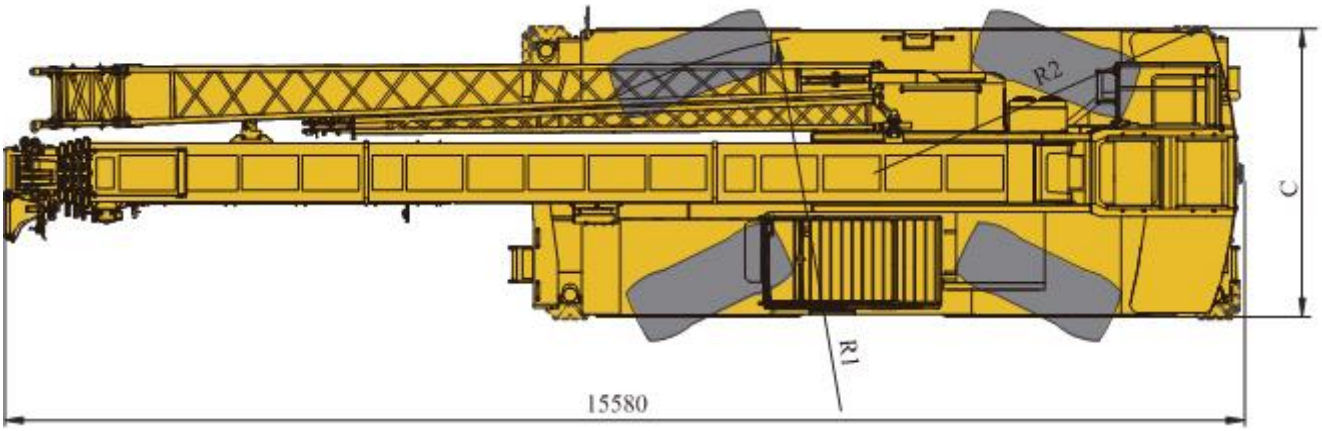
max	120t		50m	m	64.8m

Contents

Dimensions





		α	β	A	B	C	D	R1	R2
875/65R29	16t	21°	22°	2050	3980	3490	574	8400	4890
875/65R29	16t+7t	21°	22°	2050	3980	4700	574	8400	4890

Technical specifications

		
Boom	1 basic boom and 4-telescoping sections, U-shape cross section welding structure. Double cylinder plus ropes telescoping mechanism. 6 pulleys on boom head are standard. Boom length:12.9 m ~ 50 m.	●
Jib	Two-section lattice structure. Three offset angles of 0°, 15° and 30° are available. It is stowed along the side of the boom. Jib length 10.8m~18.3 m.	●
Frame	Made of high strength fine grained steel, welded torsion-resistant frame type construction with large cross-section, high load-bearing capacity.	●
Outrigger	4 outriggers, H-shaped arrangement, which are controlled by electrical and hydraulic and located at both sides of chassis frame.	●
Engine	SC9DF300G3, in line, six-cylinder water-cooled compression ignition diesel engine, manufactured by Shangchai, with rated power of 221/2200(kW/(r/min)), max. torque of 1300/(1300-1600)(N.m/(r/min), off-road EU Stage IIIA emission standard compliant Fuel tank capacity: approx. 305 L	●
Transmission	6WG260, automatic transmission from ZF Germany, with 6 forward and 3 reverse gears	●
Axles	Both front and rear axles are for driving and steering, and the axles have features of great load bearing capacity	●
Suspensions	Front axle is rigidly connected with frame; rear axle is equipped with swing hydraulic suspensions, which have cushioning function when driving on roads; the rear suspension cylinder may be locked to rigid state so as to meet the requirement for travel with a load suspended, increasing operation stability.	●
Tires	4 specialized off-road, large bearing capacity. Tire specifications: 875/65R29.	●
Steering	Front axle independent steering, tight turning radius steering, crab walk steering and rear axle independent steering modes are available. The steering angle can be self-adjusted when changing mode.	●
Brakes	Service brake: double-circuit hydraulic disc brake, acting on all wheels. Automatically braking and alarm are available when the pressure in braking system is too low. Parking brake: spring-loaded brake, acting on front axles and rear axles, hydraulic-released independent disc brake.	●

Hydraulic system	A dual-variable displacement pump, used for hoisting, elevating and telescoping operations, and a gear pump, used for slewing, outrigger, steering and braking operations; a load sensitive proportional multi-way change valve is used as main valve; an independent hydraulic oil radiator. Tank capacity: approx. 1225L.	●
Operating mode	Electrically controlled operating system is equipped with two levers controlling the main movements of the crane.	●
Electrical System	24 V DC, two sets of 12 V battery in series.	●
Main winch system	The system is driven by a hydraulic motor through a planetary gear reducer, with a normally closed brake and a balance valve equipped.	●
Auxiliary winch system	The system is driven by a hydraulic motor through a planetary gear reducer, with a normally closed brake and a balance valve equipped.	○
Slewing system	Single-row four-point ball contact slewing ring, driven by a hydraulic motor through planetary gear reducer, and with a normally closed brake fitted.	●
Operator's cab	Tiltable cab, with sliding door and adjustable seat equipped. It is equipped with safe glass and roof protective grille. Sun shade is available for windshield and roof window. Heater and air conditioner, radio, 12 V and 24 V DC outlets are standard.	●
Safety devices	Hydraulic balance valve, hydraulic relief valve, hydraulic double-way valve and LMI. Lowering limiter is equipped in winch to prevent rope over-releasing. Anti-two block is fitted on the boom head to prevent rope over-winding.	●
Counterweight	16 t.	●
	7t.	○
Hook Block	60t hook block，7 t hook block.	●
	110t hook block.	○

Product parts list is as mentioned above. Please refer to the product quotation for specific parts. Symbol explanation:

● ——it means the standard configuration;

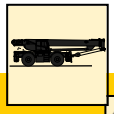
○ ——it means the optional configuration.

Weight

Axle	1	2	Total weight
t	35.167	34.881	70.048 (16t counterweight)
	32.759	44.290	77.049 (16t counterweight +Optional 7t counterweight)

Hook	No. of lines	Weight(kg)	Remarks
110t	13	1018	Double hook
60t	6	500	Single hook
7t	1	257	Single hook

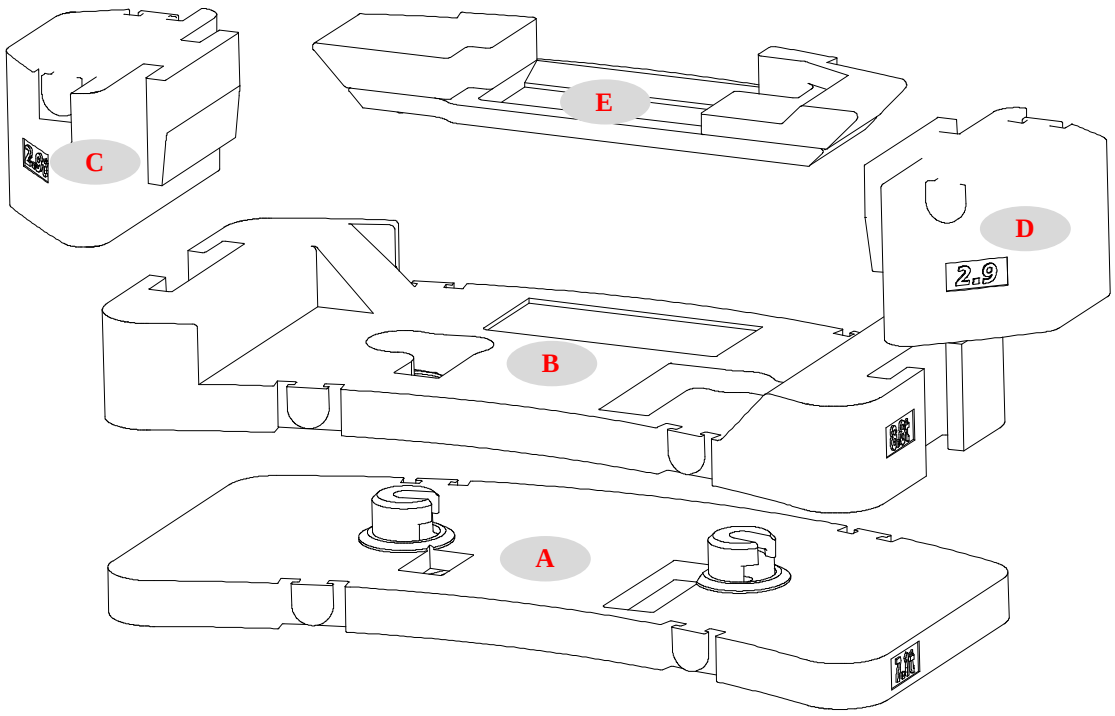
Working speeds



875/65R29	30	80%

Drive	Working speed	Max. single line pull	Rope diameter/length
	0-145 m/min,noload,4thlayer	99kN	22mm/250m
	0-90 m/min,noload,3thlayer	71kN	22mm/150m
	0-1.8r/min		
	Approx. 55s for boom elevation from 20° to 80°		
	Approx. 125s for boom extension from 12.9m to 50m		

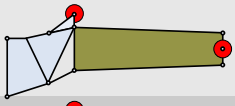
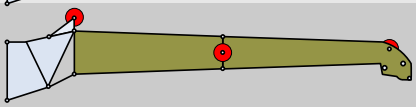
Counterweight

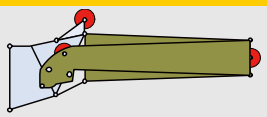


Counterweight	A	B	C（optional）	D（optional）	E（optional）
Size（L×W×H）mm	3480×1850×224	3480×1850×455	1241×787×655	1241×787×655	2158×720×636
Weight t	7.2	8.8	2.9	2.9	1.2

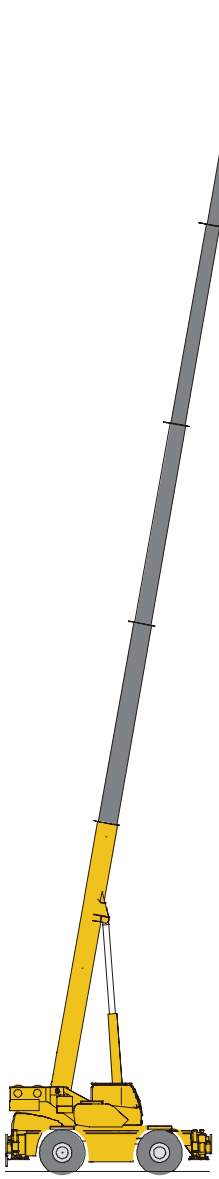
Working mode	0t	16t	16t+7t（optional）
Combinations	——	A+B	A+B+C+D+E

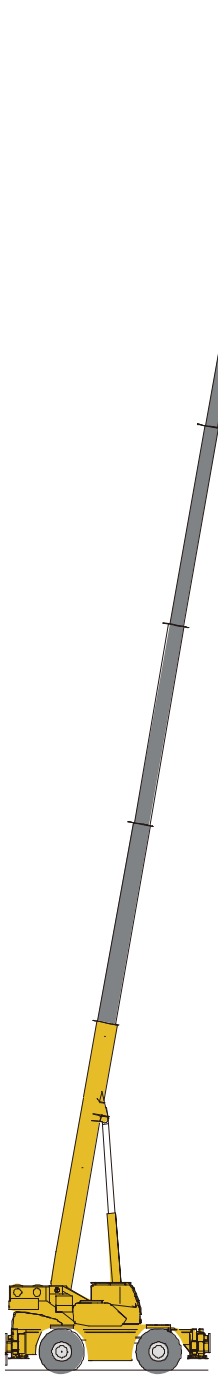
Boom/Jib combinations

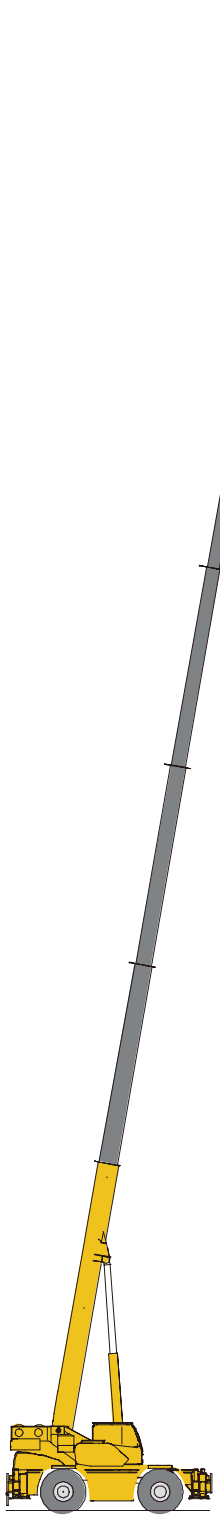
Jib–10.8m	
Jib–18.3m	

Component	Structure	Size（L×W×H） mm	（Weight kg）
First and second jib section assembly + Connecting bracket		Folded：11100×900×1350	1330

Boom / Jib combinations

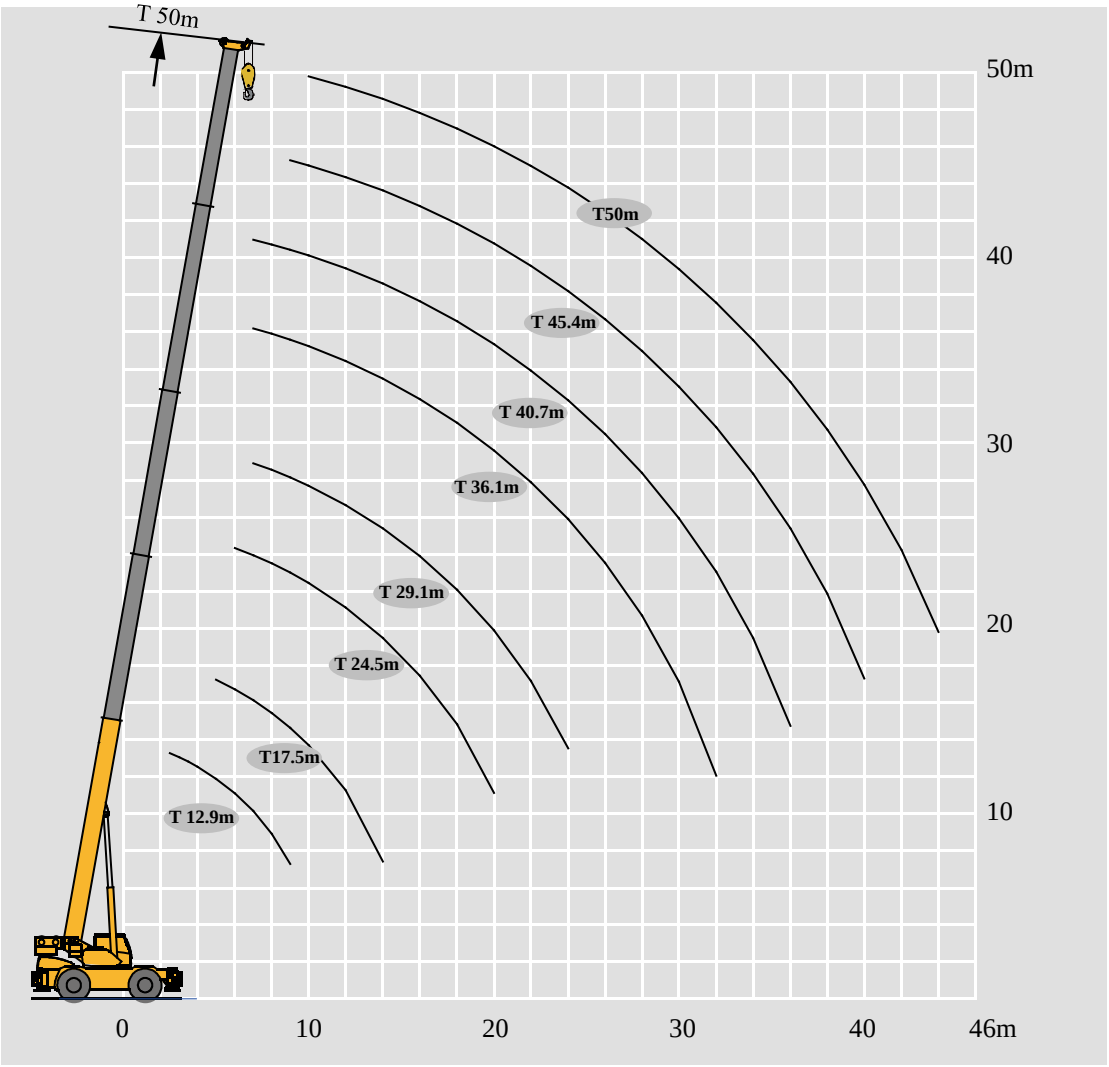






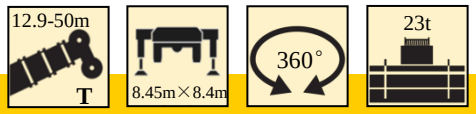
Telescopic boom	Telescopic boom + First jib section	Telescopic boom + First and second jib sections
12.9~50m	50m+10.8m	50m+18.3m

Lifting heights



Lifting capacities

T12.9~50m

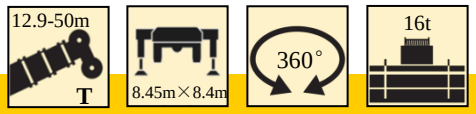


m	12.9m	17.5m	22.2m	29.1m	36.1m	43.0m	50.0m	19.9m	26.8m	33.8m	40.7m	24.5m	31.5m	38.4m	45.4m	m
2.5	120*															2.5
3	110															3
4	90															4
5	72	70.0						39.2								5
6	60	59.5	56.0					40.3	39.2			37.5				6
7	52	52	52	37.0	31.0			41.3	40.0	28.0		38.6	30.1			7
8	45.5	45.5	45.0	37.0	30.5			42.3	37.5	26.3	20.6	39.1	30.5	22.5		8
9	39	40.3	39.6	35.0	27.5	19.5		40.0	35.2	24.7	19.8	40.1	28.0	21.6		9
10		35.1	34.5	31.0	27.6	18.9		34.8	33.1	23.4	18.7	35.5	26.5	20.4	17.4	10
12		24.6	24.2	25.9	24.4	17.3	13.9	24.4	28.2	21.2	17.2	26.5	22.4	18.5	17.0	12
14		18.2	17.8	19.3	20.2	15.7	13.4	18.0	20.4	19.2	15.2	19.9	20.3	16.6	15.9	14
16			13.6	15.0	15.8	14.0	12.4	15.2	15.9	17.5	13.5	15.5	16.4	14.9	14.1	16
18			10.5	11.9	12.7	12.6	12.0		13.9	14.3	12.2	12.4	13.2	13.4	12.7	18
20				9.6	10.4	10.9	10.8		11.5	12.0	11.1	10.1	10.9	11.4	11.5	20
22				7.8	8.6	9.1	9.5		9.7	10.1	10.0		9.1	9.6	9.9	22
24				6.4	7.2	7.6	8.0			8.6	9.0		7.6	8.1	8.4	24
26					6.0	6.5	6.8			7.5	7.8		6.5	6.9	7.2	26
28					5.0	5.5	5.8			6.5	6.8			5.9	6.2	28
30					4.2	4.6	5.0				6.0			5.1	5.4	30
32						3.9	4.3				5.2			4.4	4.7	32
34						3.3	3.6				4.6			3.8	4.0	34
36						2.8	3.1				4.1				3.5	36
38						2.3	2.6								3.0	38
40							2.2								2.6	40
42							1.8									42
44							1.5									44
2nd	0%	50%	100%	100%	100%	100%	100%	0%	0%	0%	0%	50%	50%	50%	50%	2nd
3rd	0%	0%	0%	25%	50%	75%	100%	25%	50%	75%	100%	25%	50%	75%	100%	3rd
4th	0%	0%	0%	25%	50%	75%	100%	25%	50%	75%	100%	25%	50%	75%	100%	4th
5th	0%	0%	0%	25%	50%	75%	100%	25%	50%	75%	100%	25%	50%	75%	100%	5th

*The lifting load with a * followed is available only when the boom sheave block is used together with the single top, with 14 parts of line.

Lifting capacities

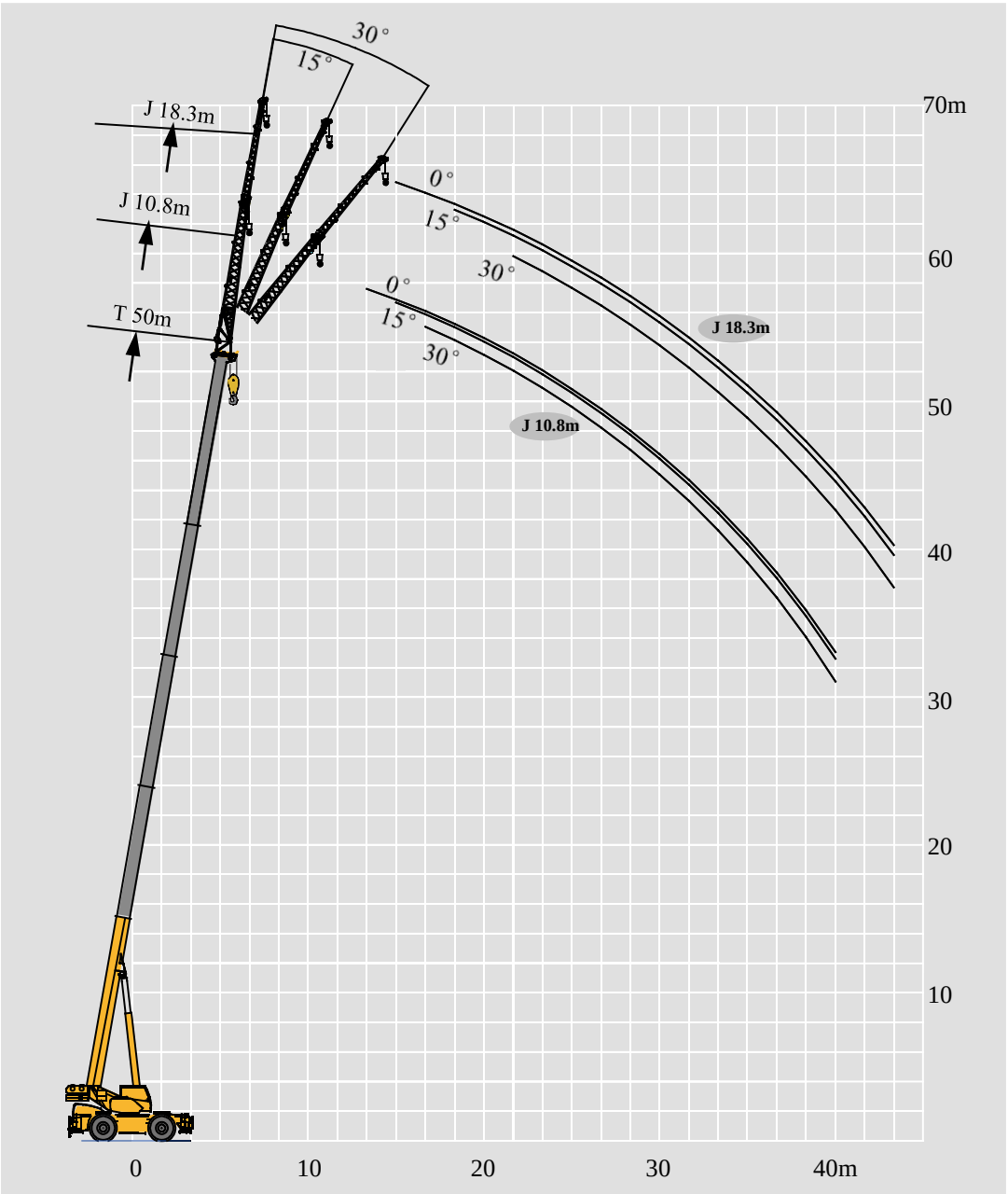
T12.9~50m



m	12.9m	17.5m	22.2m	29.1m	36.1m	43.0m	50.0m	19.9m	26.8m	33.8m	40.7m	24.5m	31.5m	38.4m	45.4m	m
2.5	120*															2.5
3	110															3
4	85															4
5	70	70						39.2								5
6	58.5	58.5	55					40.3	39.2			37.5				6
7	49	49	47.5	37.0	31.0			41.3	40.0	28.0		38.6	30.1			7
8	42.5	42.2	40.3	37.0	30.5			42.1	37.5	26.3	20.6	39.1	30.5	22.5		8
9	37	35.7	34.1	35.0	27.5	19.5		37.1	35.2	24.7	19.8	36.5	28.0	21.6		9
10		29.9	29.4	31.0	27.6	18.9		33.0	33.1	23.4	18.7	32.0	26.5	20.4	17.4	10
12		20.3	19.9	21.6	22.7	17.3	13.9	23.1	24.1	21.2	17.2	22.2	22.4	18.5	17.0	12
14		14.7	14.3	15.9	16.8	15.7	13.4	17.2	18.1	18.7	15.2	16.5	17.4	16.6	15.9	14
16			10.7	12.1	13.0	13.6	12.4	13.4	14.2	14.7	13.5	12.6	13.5	14.1	14.1	16
18			8.0	9.4	10.3	10.8	11.2		11.5	11.9	12.2	9.9	10.8	11.3	11.7	18
20				7.4	8.2	8.8	9.1		9.4	9.8	10.2	7.9	8.7	9.2	9.6	20
22				5.9	6.6	7.2	7.5		7.8	8.2	8.6		7.2	7.6	8.0	22
24				4.6	5.4	5.9	6.3			6.9	7.3		5.9	6.4	6.7	24
26					4.4	4.9	5.2			5.9	6.2		4.9	5.3	5.6	26
28					3.5	4.0	4.3			5	5.4			4.5	4.8	28
30					2.7	3.3	3.6				4.6			3.7	4.0	30
32						2.7	3.0				4.0			3.1	3.4	32
34						1.9	2.4				3.4			2.5	2.9	34
36						1.4	1.9				3.0				2.4	36
38							1.4								1.9	38
40							1.0									40
2nd	0%	50%	100%	100%	100%	100%	100%	0%	0%	0%	0%	50%	50%	50%	50%	2nd
3rd	0%	0%	0%	25%	50%	75%	100%	25%	50%	75%	100%	25%	50%	75%	100%	3rd
4th	0%	0%	0%	25%	50%	75%	100%	25%	50%	75%	100%	25%	50%	75%	100%	4th
5th	0%	0%	0%	25%	50%	75%	100%	25%	50%	75%	100%	25%	50%	75%	100%	5th

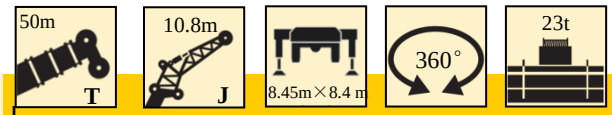
*The lifting load with a * followed is available only when the boom sheave block is used together with the single top, with 14 parts of line.

Lifting heights



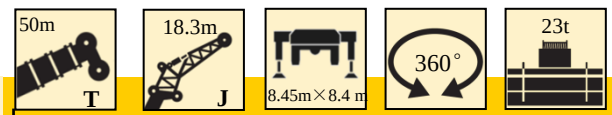
Lifting capacities

J 10.8-18.3m



50m+10.8m

m	0°	15°	30°	m
16	6.2			16
18	6.1	5.3		18
20	6.0	5.1	3.5	20
22	6.0	5.1	3.3	22
24	5.4	4.9	3.2	24
26	4.6	4.6	3.1	26
28	4.0	4.2	3.0	28
30	3.4	3.6	2.9	30
32	3.0	3.2	2.7	32
34	2.5	2.7	2.6	34
36	2.2	2.3	2.5	36
38	1.9	2.0	2.2	38
40	1.6	1.7	1.8	40
42	1.4	1.4	1.5	42
44	1.1	1.3	1.3	44
46	0.9	1.0	1.1	46
48	0.7	0.8	0.9	48

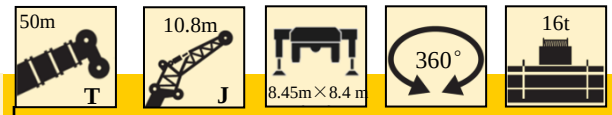


50 m+18.3m

m	0°	15°	30°	m
18	3.0			18
20	3.1			20
22	3.1	2.4		22
24	3.1	2.2		24
26	3.1	2.1	1.6	26
28	2.9	2.0	1.5	28
30	2.8	1.9	1.4	30
32	2.7	1.8	1.3	32
34	2.6	1.7	1.2	34
36	2.4	1.6	1.2	36
38	2.2	1.5	1.1	38
40	1.8	1.4	1.1	40
42	1.6	1.4	1.0	42
44	1.4	1.3	1.1	44
46	1.2	1.2	1.0	46
48	1.0	1.2	1.0	48
50	0.8	1.0	1.0	50
52	0.6	0.8	0.9	52

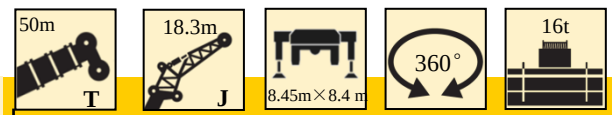
Lifting capacities

J 10.8-18.3m



50m+10.8m

m	0°	15°	30°	m
16	6.2			16
18	6.1	5.3		18
20	5.9	5.1	3.5	20
22	5.0	5.1	3.3	22
24	4.1	4.5	3.2	24
26	3.5	3.8	3.1	26
28	2.9	3.2	3.0	28
30	2.4	2.7	2.9	30
32	2.1	2.3	2.4	32
34	1.7	1.9	2.1	34
36	1.4	1.5	1.7	36
38	1.2	1.3	1.4	38
40	0.9	1.0	1.2	40
42	0.7	0.8	0.9	42
44			0.7	44

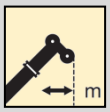


50 m+18.3m

m	0°	15°	30°	m
18	3.0			18
20	3.1			20
22	3.1	2.4		22
24	3.1	2.2		24
26	3.1	2.1	1.6	26
28	2.9	2.0	1.5	28
30	2.7	1.9	1.4	30
32	2.3	1.8	1.3	32
34	2.0	1.7	1.2	34
36	1.6	1.6	1.2	36
38	1.4	1.5	1.1	38
40	1.2	1.4	1.1	40
42	0.9	1.2	1.0	42
44	0.7	1.0	1.1	44
46		0.7	0.9	46
48			0.7	48

Description of symbols

Symbol glossary

	Outriggers		Axle
	Radius		Driving speed
	Boom angle		Grade ability
	Boom length		Tires
	Hook block		Counterweight
	360° rotation		Superstructure
	Winch		Rough terrain crane

Crane specific symbols

	Boom		Jib

Table of main technical parameters

Category	Item		Unit	Parameter	Allowance
Dimensions	Outline size（length × width × height）		mm	15580×3490×3980(16t counterweight)	±1%
	Wheel base		mm	4600	±1%
	Track（Front/ Rear ）		mm	2590/2590	±1%
	Front/ Rear overhang		mm	2568/2474	±1%
	Front/ Rear extension		mm	5922/16	±1%
Weight	Total vehicle mass in travel configuration		kg	70048 (16t counterweight)	±3%
	Axle load	1st axle	kg	35167	±3%
		2nd axle	kg	34881	±3%
Power	Engine model		——	QSL8.9-C295-30	—
	Engine rated power/rpm		kW/(r/min)	220/2100	—
	Engine rated torque/rpm		N.m/(r/min)	1350/1500	—
Travel	Max. travel speed		km/h	≥30	—
	Min. travel speed		km/h	1.8	—
	Min. turning diameter		m	≤8.4	—
	Min. ground clearance		mm	465	±1%
	Approach angle		°	21	±1°
	Departure angle		°	22	±1°
	Braking distance (at 24 km/h)		m	≤9	—
	Max. grade ability		%	≥80	—

Note: With counterweight of 16 t+7 t attached, jobsite transfer for a short distance is allowed, but travel speed is not more than 5 km/h.

Table of main technical parameters

Category	Item			Unit	Parameter	Allowance
Main performance	Max. total rated lifting capacity			t	120	±5%
	Min. rated working radius			m	2.5	±1%
	Turning radius at turntable tail	Counterweight		mm	4890	±1%
	Max. load moment	Base boom		kN.m	3567	±5%
		Fully-extended boom		kN.m	2117	±5%
	Outrigger span	Longitudinal		m	8.45	±1%
		Lateral		m	8.4	±1%
	Hoist height	Base boom		m	13.3	±1%
		Fully-extended boom		m	49.8	±1%
		Fully-extended boom + Jib		m	64.8	±1%
	Boom length	Base boom		m	12.9	±1%
		Fully-extended boom		m	50	±1%
		Fully-extended boom + Jib		m	68.3	±1%
	Jib offset angle			°	0°、15°、30°	—
Working speed	Boom raising time			s	≤55	—
	Boom fully extending time			s	≤125	—
	Max. slewing speed			r/min	≥1.8	—
	Outrigger extending and retracting time	Outrigger beam	Retracting	s	≤40	—
			Extending	s	≤40	—
		Outrigger jack	Retracting	s	≤55	—
			Extending	s	≤45	—
	Hoisting speed (single line, 4th layer, no load)	Main winch		m/min	≥145	—
		Auxiliary winch		m/min	≥90	—

Notes

1. The total rated loads given in the rated load charts are the maximum lifting capacity when the crane is set up on firm and level ground, which includes the weight of the hook block and slings. The weight of above-mentioned devices should be deducted from the rated lifting load.
2. The working radius shown in the rated load charts is the radius when the load is lifted off the ground, and it is the actual value including loaded boom deflection. Take boom deflection into consideration before beginning a lifting operation.
3. A lifting operation is permissible only when the wind force is below grade 5 (instantaneous wind speed is 14.1 m/s, wind pressure is 125 N/m^2).
4. Before beginning lifting operation, the operator should know the weight of the load to be lifted and its working range, and then select proper working conditions. Never operate the crane beyond the limit shown in the chart. Use the lower value from the chart when the boom length or working radius is between the range of values.
5. Observe the boom angle limit. Never operate the crane with the boom angle beyond the recommended limit even if a load is not being carried. Otherwise, the crane will tip.
6. The boom should be extended according to the telescoping code shown by digits, which means the percentage of boom sections extended.