SRC300C

SANY Rough-Terrain Crane
30 Tons Lifting Capacity

Main boom length: 9.9~31.5 m
Max lifting torque: 976 KN.m
Max gradability: 65%

Basic performance

- Key structural parts are optimized in design, and the lifting performance is at the leading position in the product industry with the same tonnage.
- Basic boom length is 9.9 m and the full extension length of boom is 31.5 m, which are at the leading position in the industry.
- Fully optimized lifting boom of structural steel with U-shape section and high strength is used in four sections, so that the lifting boom has a more uniform force and a lighter weight. The installation angles of jib of 0°, 15° and 30° facilitate the switching of working condition and improvement of operation efficiency.
- Four-wheel drive can adopt 4 steering modes, with a good maneuvering performance. The minimum turning radius of four wheels of no more than 5.4 m promotes the passing ability and comfort in complex road conditions.

High quality

- The stable and high-quality main oil pump, main valve, winch motor, slewing motor, balance valve and other key hydraulic elements are used, and the system has high reliability; moreover, it has excellent operation and control performance based on accurate parameter matching.
- With integrated slewing buffer valve, the slewing system has free trackslip function to realize steady rotary start and control, showing outstanding micro-mobility.
- With the bus instrument of integrated intelligent control electrical system, drivers can grasp running parameters and realize easy driving at any time; moreover, it has engine fault prompt function, bringing in easy and rapid maintenance and troubleshooting.
- With safety glass and corrosion resistant steel plate, soften interior, super-large internal space, panoramic skylight, adjustable seats and other humanization design, air conditioner and electric wiper, it is more comfortable and relaxing for operation in control cabin.

Energy conservation and environmental protection

- The load and constant power of hydraulic system are respectively fed back and controlled, and dual variable speed governing pumps and motors are adopted to realize economic energy conservation.

Safety and reliability

- A moment limiter calculation system based on gravity model is established, and the rated loading accuracy is 0-10% through online no-load calibration to protect suspending and loading operation in all dimensions; during overload operation, the system will alarm and prompt automatically to provide safety guarantee for control and operation.
- Hydraulic balance valve, overflow valve, two-way hydraulic lock and other elements are provided for hydraulic system to realize stability and reliability.
- Three-circle protectors are equipped for main and auxiliary winches, and height limiters are equipped at the ends of boom and jib to avoid overfall and overwind of wire rope.
- Length, angle and pressure sensors are arranged to display the crane status in real time, so as to automatically stop dangerous operation and perform buzzer alarm.

GCP system

- The first remote monitoring and management system for equipment at home has a powerful acquisition function for equipment operation condition and operation parameters, and can diagnose and manage remote faults.
- Customers can master the operation of equipment as well as the query and ordering of accessories at home.

Overall Dimensions
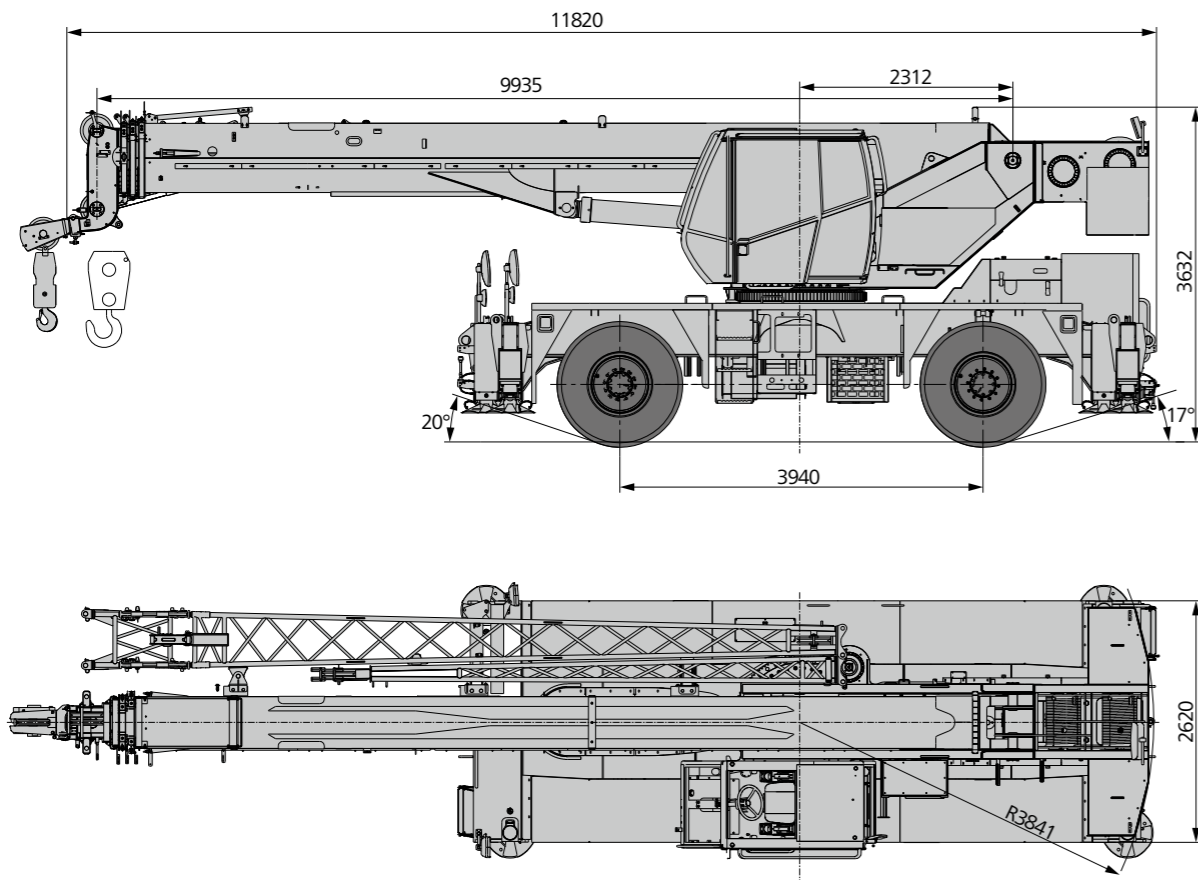
Technical Parameters

Classification	Item		Unit	Parameter
Dimension Parameter	Full length of the whole crane		mm	11820
	Full width of the whole crane		mm	2620
	Full height of the whole crane		mm	3632
	Wheel base		mm	3940
	Wheel track		mm	2170
Weight parameter	Gross mass of the whole crane		kg	28000
	Load	Front axle load	kg	14000
		Rear axle load	kg	14000
Power parameters	Engine model			Dongfeng Cummins ISDe 270 30 Stage Ⅲ
	Maximum power of engine		kw/rpm	198/2500
	Maximum output torque of engine		N.m/rpm	970/1400
Running parameter	Maximum running speed		Km/h	46
	Approach angle/departure angle		°	20/17
	Maximum gradient		%	65
Operating speed	Maximum speed of single rope of main and auxiliary winches (no load)		m/min	125
	Full extension/retraction time of lifting boom		s	50/40
	Full rising/falling time of lifting boom		s	20/50
	Slewing speed		r/min	3.2
Main performance parameters	Maximum total rated lifting capacity		t	30
	Maximum lifting moment	Basic boom	kN.m	976
		Longest boom	kN.m	637
	Outrigger span (transverse × longitudinal)		m	6.5×6.7
	Boom length	Basic boom	m	9.9
		Longest boom + jib	m	31.5+13.7
	Jib setting angle		°	0, 15, 30

Technical Parameters

Standard Equipment

Number	Name	Number	Name
1	Engine	14	Telescope balance vlave
2	Gear box	15	Swing buffer valve
3	Front axle assembly	16	Telescope cylinder
4	Rear axle assembly	17	Luffing cylinder
5	Torque converter radiator	18	Cab
6	Tire	19	Air condition system
7	Piston pump	20	Swing bearing
8	Gear pump	21	Swing reducer
9	Main valve	22	Hoisting reducer
10	Hoisiting motor	23	Main hook
11	Swing motor	24	Auxiliary hook
12	Luffing balance vlave	25	Motion controller
13	Hoisting balance vlave		

Crane Introduction

Temperature: -20°C to +46°C
Road condition: Operations can be performed under poor road conditions in desert, oil field, gobi, etc.

Frame	▪ The frame is a double-girder structure welded with steel plate of high strength, with strong bearing capacity.
Chassis engine	▪ Modle: Dongfeng Cummins ISDe 270 30 Stage III; ▪ Type: straight-six cylinders, water cooling, supercharging and inter-cooling and diesel engine; ▪ Rated power: 198 kw/2500 r/min; ▪ Environmental protection: The emission conforms to the national III standard; ▪ Effective volume of fuel tank: 300 L.
Gearbox	▪ Gearbox: Automatic gearbox has 6 forward gears and 3 backward gears with a wide speed ratio range, which can meet the requirements of climbing at low speed and driving at high speed.
Axle	▪ The chassis is designed with two flexible axles. Driven by the front and rear axles, it shows good dynamic performance.
Axle suspension	▪ The front axle adopts rigid connection while the rear axle is arranged with locking pivot type swing suspension that has oil cylinder.
Tyre	▪ Off-the-highway tires of large diameter are used, with great ground clearance and high off-road performance. The model of tire is 17.50R25.
Braking system	▪ The dual -circuit braking system is used. When a circuit is in fault, the other one can work normally, which improves the safety and reliability of braking system.
Hydraulic system of chassis	▪ The stable and high-quality main oil pump, main valve, winch motor, slewing motor, balance valve and other key hydraulic elements are used, and the system has high reliability; moreover, it has excellent operation and control performance based on accurate parameter matching. The main valve has flow compensation and load feedback control functions to easily realize stable control of a single action and combined action in all conditions.
Hydraulic outrigger	▪ H-shaped telescopic outrigger is used. It is supported at 4 points, with longitudinal and transversal span of 6.7 m × 6.5 m.
Control system	▪ Busbar instrument: with the bus instrument of integrated intelligent control electrical system, drivers can grasp running parameters and realize easy driving at any time; moreover, it has engine fault prompt function, bringing in easy and rapid maintenance and troubleshooting. ▪ All-around safety protection system is provided. Three-circle protectors and height limiters are equipped for main and auxiliary winches to avoid overfall and overwind of steel wire rope, prevent rollover and protect limit angle. ▪ Moment limiter: high intelligent moment limiter is used to protect suspending and loading operation in all dimensions and ensure accurate, steady and comfortable operation;

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Technical Specifications

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Technical Specifications

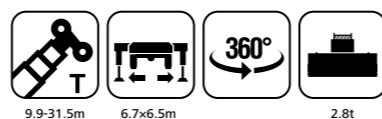# Crane Introduction

🖥	**Control room**	▪ With independently researched and developed ergonomics design of SANY, sliding door, safety glass, corrosion resistant steel plate, soften interior, super-large internal space, panoramic skylight, adjustable seats and other humanization design, air conditioner and electric wiper, it is more comfortable and relaxing for operation; moment limiter display screen is equipped, which realizes organic combination of main console with operation and display system and provides open-and-shut data of all conditions during hoisting.
🏗	**Boom system**	▪ Boom: There are four sections, including basic boom of 9.9 m and fully extended boom of 31.5 m; they are made of welded structural steel with high strength, with U-shape section. ▪ Jib: There are two jibs of 7.9 m and 13.7 m respectively at the setting angle of 0°, 15° and 30°. ▪ Telescoping mechanism: It is subject to dual-cylinder rope row type telescopic mode, with the full extension/retraction time of 50/40 s only. The telescoping mechanism is simple, efficient, safe and reliable.
⚙	**Slewing bearing**	▪ The slewing bearing made by SANY is used. The high reliability of SANY is inherited.
🛞	**Slewing table structure**	▪ It is designed independently by SANY, with more optimized structure, and made of fine-grained high-strength steel.
🛢	**Superstructure hydraulic system**	▪ With load-sensitive variable plunger pump, it can adjust the displacement of oil pump in real time to realize the flow control with high accuracy and reduce the energy loss greatly. ▪ Electric control variable motor is used for winch, so high operation efficiency is ensured; the maximum speed of single rope of main and auxiliary winch reaches 125 m/min. ▪ With integrated slewing buffer valve, the slewing system has free trackslip function to realize steady rotary start and control, showing outstanding micro-mobility.
🏗	**Lifting mechanism**	▪ With double-variable speed governing pump and motor, high efficiency and energy conservation can be realized. Winch balance valve is perfectly integrated with the unique anti-slip technology, thus weight can be lifted and dropped steadily. The anti-rotating steel wire rope of high strength is provided to realize accurate lifting and positioning. The steel wire ropes of main and auxiliary winches have the same diameter of 16 mm and the length of 175 m and 105 m respectively.
🏗	**Derricking mechanism**	▪ Double acting single piston rod hydraulic cylinder, fitted with safety balance valve, derricking angle: -2°-80°, adopting dead-weight luffing system to reduce the energy consumption and improve the stationarity of luffing operation.
🔄	**Slewing mechanism**	▪ With 360° rotating, the maximum slewing speed is 3.2 r/min. The hydraulic proportional speed controller is used to realize stable movement and reliable system. The unique slewing buffer design is adopted for more stable braking work.
🚨	**Safety device**	▪ Moment limiter: a moment limiter calculation system based on gravity model is established with the method of analysis mechanics, and the rated loading accuracy is 0-10% through online no-load calibration to protect suspending and loading operation in all dimensions; during overload operation, the system will alarm and prompt automatically to provide safety guarantee for control and operation. ▪ Hydraulic balance valve, overflow valve, two-way hydraulic lock and other elements are provided for hydraulic system to realize stable and reliable hydraulic system. ▪ Three-circle protector is equipped for main and auxiliary winches to avoid overfall of wire rope. ▪ Height limiter is equipped at the ends of boom and jib to avoid overwind of wire rope. ▪ Length, angle and pressure sensors are arranged to display the crane status in real time, so as to automatically stop dangerous operation and perform buzzer alarm.
⚖	**Counterweight**	▪ The fixed counterweight is 2800 kg.

Boom Operating Range

Load Chart - Telescopic Boom

Unit: t

9.9-31.5m   6.7×6.5m   2.8t

Working radius (m)	Full extension outrigger 6.5m				Working radius (m)
	9.9	17.1	24.3	31.5	
3	30.00				3
3.5	27.20	19.00			3.5
4	23.40	19.00	12.50		4
4.5	21.30	18.00	12.50		4.5
5	19.60	16.70	12.50	8.40	5
5.5	18.10	15.60	12.50	8.40	5.5
6	16.60	14.60	12.50	8.40	6
6.5	15.20	13.80	11.50	8.40	6.5
7	14.10	13.00	10.50	8.10	7
8		11.00	9.50	7.50	8
9		8.90	8.50	6.80	9
10		7.40	7.60	6.20	10
11		6.10	6.70	5.80	11
12		5.20	5.70	5.40	12
13		4.40	5.00	5.00	13
14		3.70	4.30	4.40	14
15			3.70	4.00	15
16			3.30	3.60	16
17			2.90	3.20	17
18			2.50	2.80	18
19			2.20	2.50	19
20			2.00	2.30	20
21			1.80	2.00	21
22				1.70	22
24				1.40	24
26				1.05	26
28				0.70	28
Min angle	0	0	0	0	Min angle
Load at min. angle	10.00	3.00	1.00	0.50	Load at min. angle
Rope rate	8	6	4	3	Rope rate

Load Chart - Telescopic Boom

Unit: t

9.9-31.5m   6.7×4.5m   2.8t

Working radius (m)	Half Extension outrigger 5m				Working radius (m)
	9.9	17.1	24.3	31.5	
3	25.00				3
3.5	25.00	19.00			3.5
4	23.00	19.00			4
4.5	21.20	18.00			4.5
5	18.60	16.70	12.50		5
5.5	15.50	15.20	11.75		5.5
6	12.90	12.70	11.10		6
6.5	10.80	10.90	10.50	7.00	6.5
7	9.30	9.50	10.00	7.00	7
8		7.40	8.20	7.00	8
9		5.90	6.60	6.30	9
10		4.80	5.50	5.60	10
11		4.00	4.60	4.80	11
12		3.30	3.90	4.10	12
13		2.70	3.30	3.50	13
14			2.85	3.00	14
15			2.40	2.60	15
16			2.00	2.20	16
17			1.70	1.90	17
18			1.50	1.60	18
19			1.30	1.40	19
20				1.20	20
Min angle	0	0	25	43	Min angle
Load at min. angle	7.00	1.00	-	-	Load at min. angle
Rope rate	8	6	4	3	Rope rate

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Technical Specifications

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Technical Specifications

Load Chart - Telescopic Boom

Unit: t

9.9-31.5m   6.7×2.4m   360°   2.8t
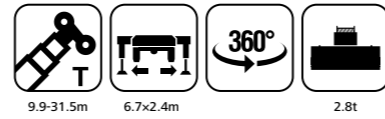
Working radius (m)	0% extension outrigger 2.4m				Working radius (m)
	9.9	17.1	24.3	31.5	
3	12.00				3
3.5	9.80	10.00			3.5
4	7.60	8.00			4
4.5	6.10	6.70			4.5
5	5.00	5.50	5.80		5
5.5	4.10	4.60	4.90		5.5
6	3.40	4.00	4.25		6
6.5	2.90	3.40	3.65	3.75	6.5
7		2.95	3.15	3.30	7
8		2.20	2.40	2.50	8
9			1.85	1.95	9
10				1.50	10
Min angle	0	30	55	65	Min angle
Load at min. angle	1	-	-	-	Load at min. angle
Rope rate	8	6	4	3	Rope rate

Load Chart - Fixed Jib

Unit: t

9.9-31.5m   31.5+7.9m   6.7×6.5m   360°   2.8t
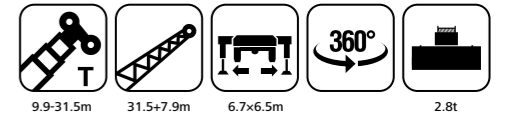
Boom angle	100% extension outrigger 6.5m						Boom angle
	31.5m+7.9m			31.5m+13.7m			
	Jib offset angle			Jib offset angle			
	0°	15°	30°	0°	15°	30°	
80	3.50	2.15	1.65	2.25	1.25	0.90	80
78	3.50	2.10	1.60	2.15	1.20	0.90	78
75	3.10	2.00	1.55	1.95	1.15	0.85	75
73	2.80	1.90	1.50	1.75	1.10	0.80	73
71	2.60	1.80	1.40	1.60	1.05	0.75	71
68	2.30	1.65	1.25	1.45	1.00	0.70	68
66	2.10	1.55	1.15	1.35	0.95	0.66	66
63	1.80	1.35	1.00	1.15	0.85	0.60	63
61	1.50	1.20	0.85	1.05	0.75	0.55	61
58	1.10	0.95	0.65	0.65	0.60	0.50	58
56	0.70	0.65	0.50	0.50			56
56	50.00	52.00	52.00	52.00	55.00	55.00	56
Min angle	1.8	1.6	1.4	1.2	1	0.9	Min angle

Load Chart - On tire

Unit: t

9.9-31.5m   2.8t

Working radius (m)	SANY SRC300C load chart on tire (ton)								Working radius (m)
	STATION					CREEP(1.6KM/H)			
	9.9m		17.1m		24.3m	9.9m	17.1m	24.3m	
	Over front	360° slewing	Over front	360° slewing	Over front	Over front	Over front	Over front	
3.5	12.5	5.8				8			3.5
4	11	4.3	7.5	5.2		7.2	6		4
4.5	9.8	3.2	7.5	4.1	6	6.6	6	4.4	4.5
5	8.5	2.4	6.8	3.2	5.8	6	5.6	4.4	5
5.5	7	1.8	6	2.6	5.3	5.4	4.9	4.1	5.5
6	5.8	1.3	5.4	2.1	4.8	4.6	4.4	3.8	6
6.5	5		4.8	1.6	4.4	4	3.9	3.5	6.5
7			4.2	1.3	4		3.5	3.3	7
8			3.3		3.4		2.7	2.8	8
9			2.6		2.9		2.1	2.3	9
10			2.1		2.5		1.7	1.9	10
11			1.7		2.1		1.3	1.6	11
12			1.4		1.8		1	1.3	12
13					1.5			1.1	13
14					1.25				14

• The values given in the table are rated load lifting capacities of crane when the whole crane is leveled on the flat and hard ground;

• The values above heavy line are determined by the strength of crane, while the values below heavy line are determined by the stability of crane;

• The rated load values determined by stability follow ISO 4305;

• The rated load lifting capacity in the table includes the weights of main hook and sling (main hook of 320 kg and auxiliary hook 85 kg);

• The rated load lifting capacity shall be no more than 3,500 kg when the boom tip pulley is applied;

• If the actual boom length and amplitude are within the two values in the table, the lifting capacity for operation shall be determined by the larger value;

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