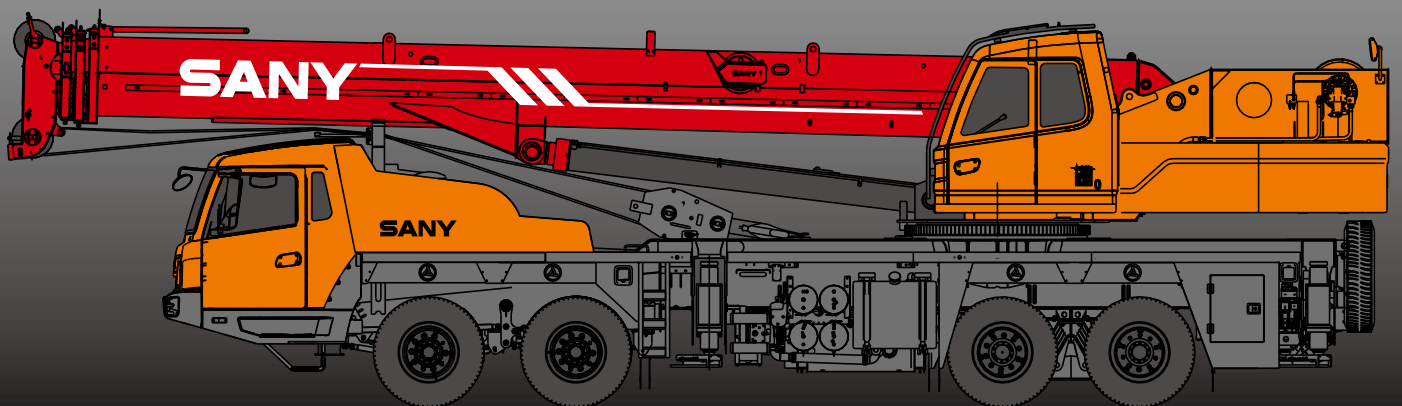


STC450C

STC450C TRUCK CRANE
45 TONS LIFTING CAPACITY

Quality Changes the World



SANY

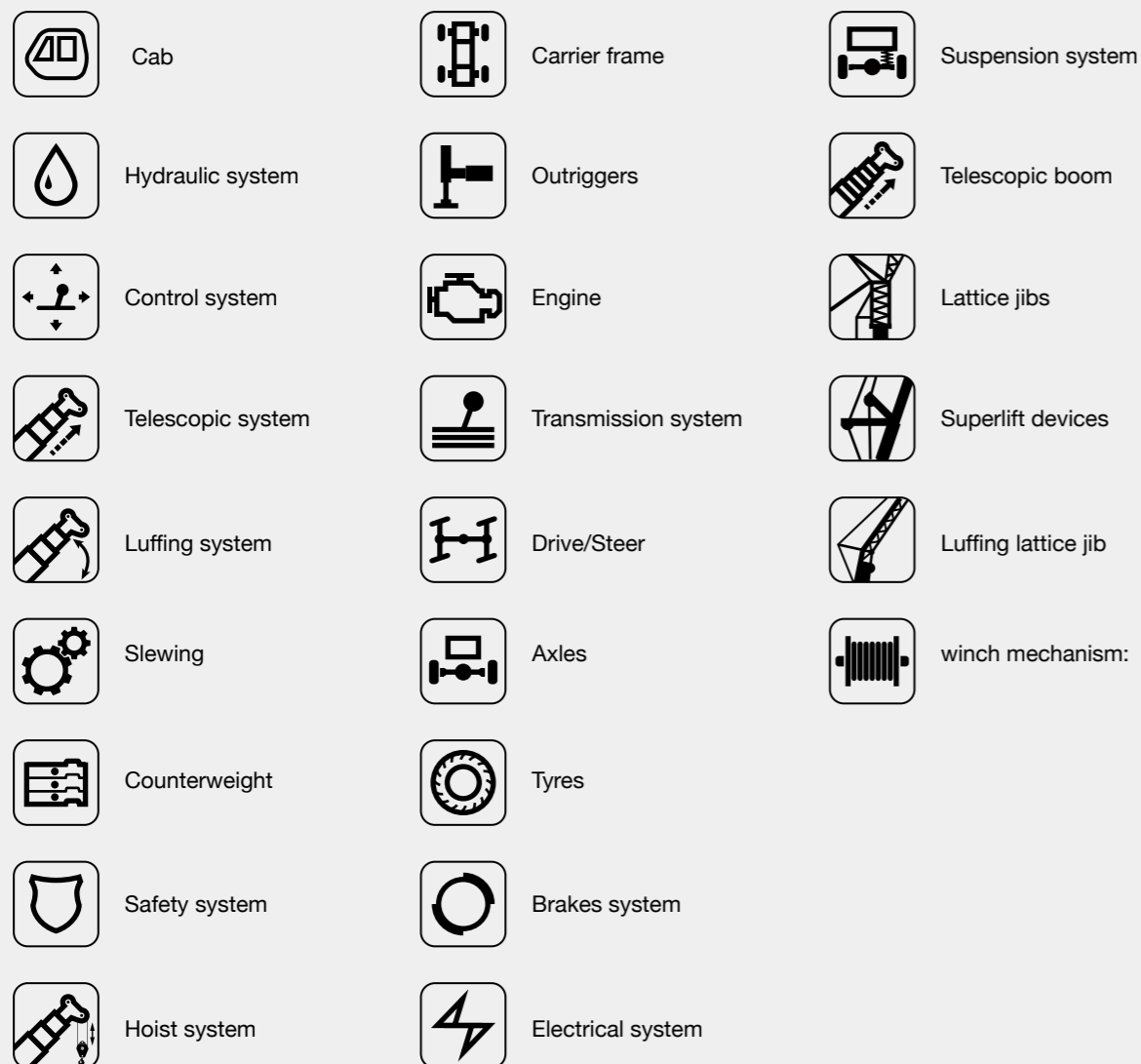
■ SANY Automobile Hoisting Machinery is one of the core business unit of Sany Heavy Industry, mainly engaged in the research and development of high end, mid to large tonnage crane series, including mobile crane, crawler crane, tower crane and loader crane. It has two industrial parks in Ningxiang and Huzhou, since entering the market, the products of Sany Automobile Hoisting Machinery have received worldwide recognition with advanced technology, lean manufacturing, high reliability and excellent service.



SANY TRUCK CRANE

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Excellent and stable chassis performance / chassis system

The original 45 tonnage crane of 2.5 width with compact structure, improving trafficability significantly.

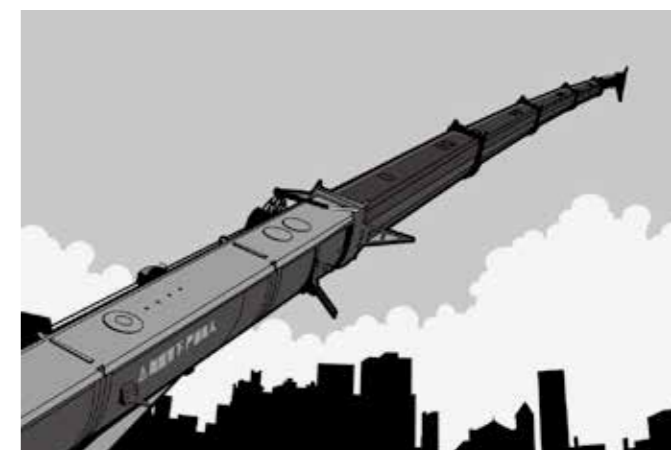
Double-axle drive is used, providing good trafficability and comfortableness under complex road condition with reliable traveling performance.

Engine has the multimode power output function, which reduces power consumption. The use of tipping over early-warning technology provides high stability and safety of the overall operation.



Highly efficient, stable, energy-saving, and adjustable hydraulic system

Hydraulic system load feedback and constant power control is applied to provide strong lifting capacity and good micro-mobility. Unique steering buffer design is adopted to ensure stable braking operation.



Ultra long, super strong and highly sensitive load lifting capacity







Five-section boom of high strength steel structure and optimized U-shaped cross section reduces weight significantly with higher safety rates.






Safe, stable, advanced, and intelligent electric control system

Self-developed controller SYMC specially for engineering machinery is configured. The adoption of CAN-bus full-digital network control technology ensures stable control signal, simple harness, and high reliability. Timely feedback of data information can achieve the monitoring of the overall working status in real-time; the load moment limiter equipped with the comprehensive intelligent protection system is used with accuracy within 3% to provide a comprehensive logic and interlock control, thus ensuring more safe and reliable operation.





Superstructure

-  **Cab**
- It is made of anti-corrosion steel plate with ergonomic design such as full-coverage soften interior, panoramic sunroof and, adjustable seats etc., and humanized design providing more comfortable and relaxing operation experience. The display of load moment limiter integrates main console and operation display system, which clearly show the data of all operating superstructure conditions for lifting operation.
-  **Hydraulic system**
- High-quality key hydraulic components such as main oil pump, rotary pump, main valve, winch motor, and balancing parts etc. are adopted to achieve stable and reliable operation of the hydraulic system. Superior operation performance is guaranteed by accurate parameter matching.
 - Main valve has flow compensation and load feedback control function, enabling stable and convenient control of single action and combined action under different operation conditions
 - Winch adopts the electronically controlled variable motor to ensure high operation efficiency. Max. single line speeds of main and auxiliary winches is up to 120m/min.
 - Slewing system is equipped with the integrated slewing buffer valve with free slipping function to ensure more stable starting and control of the slewing operation and excellent micro-mobility.
 - Hydraulic oil tank capacity: 840L.
-  **Control system**
- CAN-bus instrument: CAN-bus instrument with a combined intelligent control electrical system is used for easy reading of the traveling parameters at any time. The engine fault warning function is applied to ensure convenient and fast troubleshooting.
 - With fully security protection system, main and auxiliary winches are equipped with over-roll out limiter and height limiters to prevent over-rolling out and over-hoisting of steel rope, including tip-over and limit angle protection.
 - Load moment limiter: The adoption of high intelligent load moment limiter system can comprehensively protect lifting operation, ensuring accurate, stable and comfort operation.
 - The fault diagnosis system can detect superstructure electricity, hydraulic action, chassis (for major safety failure), engine and gearbox for fault to ensure reliable operation of the crane.
-  **Luffing system**
- Dead-weight luffing provides more stable luffing operation at low energy loss.
 - Luffing angle: $-2^{\circ} \sim 80^{\circ}$.
-  **Telescopic system**
- Five-section boom is applied with basic boom length of 11m, full-extended boom length of 43m and lifting height of fully extended boom length of 43.5m. It is made of fine grain high-strength steel with U-shaped cross section and with telescopic operation controlled independent by dual- cylinder rope.
-  **Slewing system**
- 360° rotation can be achieved with Max. slewing speed of 1.9r/min. Hydraulic controlled proportional speed adjustment is applied to provide stable and reliable operation of the system. Unique rotary buffer design ensures more stable braking.

Superstructure

-  **Hoisting system**
- The adoption of pump and motor double variable speed control ensures high efficiency and excellent energy saving functionality. With perfect combination of winch balance valve and unique anti-slip technology, heavy load can lift and lower smoothly. Closed winch brake and winch balance valve effectively prevent imbalance of the hook.
 - One main hook: 550Kg, and the Max. lifting capacity is 45t. Wire rope of main winch: left-handed wire rope 18-35W×7-1960USZ 220m.
-  **Safety system**
- Load moment limiter: Load moment limiter calculation system based on lifting load mechanical model is established using an analytical mechanics method with rated lifting accuracy up to $\pm 3\%$ through on-line non-load calibration, providing full protection to lifting operation. In case of overload operation, system will automatically issue an alarm to provide safety protection for manipulation.
 - Hydraulic system is configured with the balance valve, overflow valve and two-way hydraulic lock etc. components, thus achieving stable and reliable operation of the hydraulic system.
 - Winches are equipped with over roll-out limiter to prevent over rolling-out of wire rope.
 - Boom ends are equipped with height limiters to prevent over-hoisting of wire rope.
 - Length and Angle sensor and pressure sensor are equipped to indicate the working condition of whole crane in real-time, giving an alarm and cutting off the dangerous action automatically.
-  **Counterweight**
- Counterweight is 4500kg, no flexible counterweight.

Chassis

-  **Cab**
- Cab is made of new steel structure self-developed by SANY, featuring excellent shock absorption and tightness, which is configured with swing-out doors at both sides, pneumatically suspended right-hand driver's seat and passenger seat, adjustable steering wheel, large rearview mirror, comfort driver chair having a headrest, anti-fog fan, air conditioner, stereo radio, and complete control instruments and meters, providing more comfortable, safe, and humanized operation experience.
-  **Carrier frame**
- Designed and manufactured by SANY, anti-torsion box structure is welded by fine-grain high-strength steel plate, to provide strong load bearing capacity.
-  **Axles**
- Axles 3 and 4 are drive axles and axles 1 and 2 are steering axles. The use of welding process for axle housing provides stronger load bearing capacity.
-  **Engine**
- Type: Inline six-cylinder, water cooled, supercharged and inter-cooling diesel engine
 - Rated power: 220kw/2300r/min
 - Environment-protection: Emission complies with BS-III standard
 - Capacity of fuel tank: 300L

Chassis



Transmission system

- Gearbox: Manual gearbox is adopted with 9-gear and large speed ratio range applied, which meets the requirements of low gradeability speed and high traveling speed.
- Transmission shaft: With optimized arrangement of the transmission shaft, the transmission is stable and reliable. For most optimized transmission, face-tooth coupling transmission shaft is used with large transmission torque .



Brakes system

- Air servo brakes are used for all wheels with dual-circuit brake system applied, engine is equipped with an exhaust brake.
- Brakes system includes traveling brake, parking brake, emergency brake and auxiliary brake.
- Traveling brake: All wheels use the air servo brakes and dual-circuit brake system.
- Parking brake: Force driven by accumulator is applied on the third to fourth axle.
- For emergency brake, accumulator is used not only for cutting-off brake but also for emergency brake.
- Auxiliary brake is exhaust brake with brake safety ensured while travelling downhill.



Suspension system

- The 1st and 2nd front axles adopt plate spring suspension systems and the 3rd and 4th rear axles adopt rubber suspension system. With 100,000 fatigue tests and optimization of performance parameters of the front and rear suspension, the strength and comfort are ensured.



Steering system

- Hydraulic power mechanical steering systems are applied for axles 1 and 2 with unloading valve installed in the steering gear.



Outriggers

- Four-point supporting of the H-shaped outriggers ensures easy operation and strong stability with max. span up to 6m×7.2m. They are made of fine-grain high-strength steel sheet with horizontal single-cylinder rope line telescoping for first and second outriggers. Vertical cylinder of outrigger adopts bi- directional hydraulic locks to improve safety.



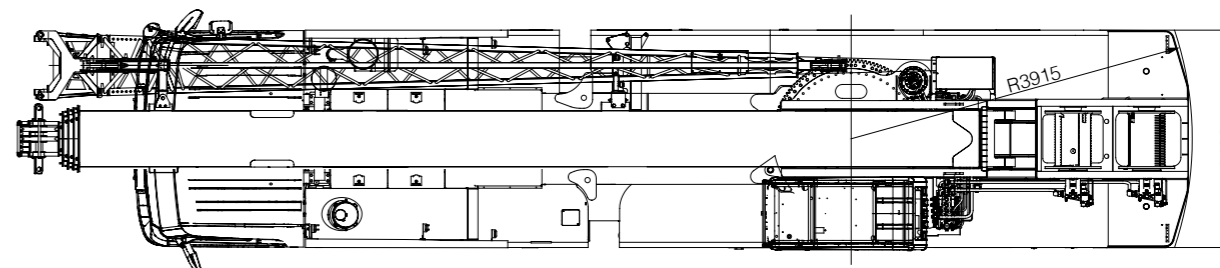
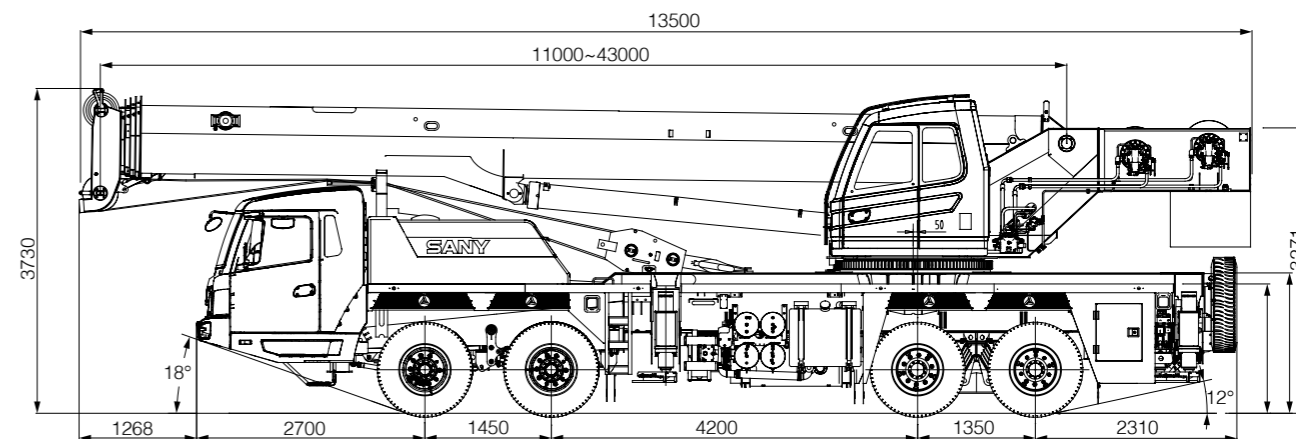
Tyres

- 11.00R20



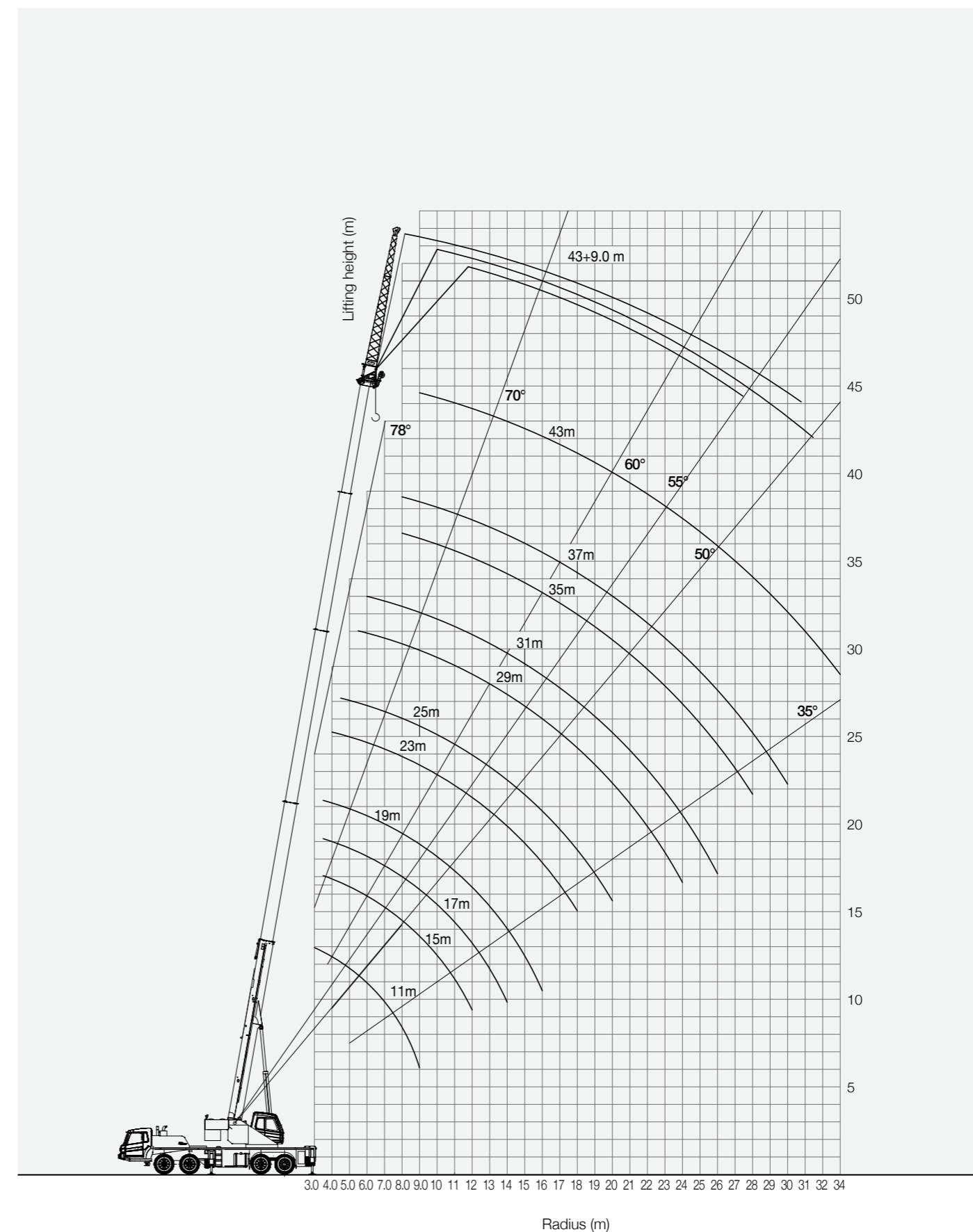
Electrical system

- With 2*12V maintenance-free batteries, the crane power can be cut off manually via a mechanical master power switch. The use of CAN-bus control system can achieve information interaction between superstructure and undercarriage.



Type	Item	Parameter		
Capacity	Max. lifting capacity	45 t		
Dimension	Overall length of vehicle	13500 mm		
	Overall width of vehicle	2490 mm		
	Overall height of vehicle	3730 mm		
	Wheel base	Between axle 1 and axle 2	1450 mm	
Between axle 2 and axle 3		4200 mm		
Between axle 3 and axle 4		1350 mm		
Weight	Total mass of vehicle	38200 kg		
	Axle load	Load on axle 1 and axle 2	13900 kg	
Load on axle 3 and axle 4		24300 kg		
Power	Max power of engine	Weichai P7G300E300	220kW/2300rpm	
	Max torque of engine	Weichai P7G300E300	1200N.m/1200-1500rpm	
Traveling parameter	Max. traveling speed	50 km/h		
	Min. turning diameter	24 m		
	Swing radius of turntable tail	3915 mm		
	Min. ground clearance	220 mm		
	Angle of approach	≥18 °		
	Angle of departure	≥12 °		
	Braking distance (vehicle speed at 30km/h)	10 m		
	Max. gradeability	38 %		
	Fuel consumption/100km	40 L		
Main performance parameters	Max. rated hoisting capacity	45 t		
	Min. rated range	3 m		
	Max. rated hoisting moment	1660 kN·m		
	Outrigger span	Longitudinal	6.0 m	
		Transversal	7.2 m	
	Boom length	Base boom	11.0 m	
Longest boom		43.0 m		
Offset angle of swingaway boom extension	0°, 15°, 30°			
Operating speed parameters	Luffing time of boom	Luffing up	70 s	
		Luffing down	75 s	
	Telescoping time of boom	Full extending	100 s	
		Full retracting	100 s	
	Max. swing speed	1.9 r/min		
	Max. hoisting speed (Single rope)	Main hoist	Idle load	120 m/min
		Auxiliary hoist	Idle load	120 m/min
	Telescoping time of outrigger	Outrigger beam	Simultaneous extending	<25 s
Simultaneous retracting			<25 s	
Outrigger jack		Simultaneous extending	<30 s	
		Simultaneous retracting	<30 s	

STC450C Working Ranges



Unit:Kg

Prerequisites

- ① Boom operating conditions(fully extended boom length),min. length is 11m and max.length is 43m
- ② The span of outriggers is 6m×7.2m
- ③ 360° rotation is applied
- ④ Counterweight is 4500kg
- ⑤ The rated load indicated in the table is the value computed by taking 75% of the tip over load when the wind speed is below 9.8m/s.

Working Radius(m)	Fully-extended outriggers, over side and rear											Working Radius(m)
	11	15	17	19	23	25	29	31	35	37	43	
3	45000	34000										3
3.5	43000	34000	20000	28000	15000							3.5
4	40000	32800	19900	27500	15000	19000						4
4.5	37000	30500	19800	27500	14500	19000						4.5
5	34000	29000	19700	26000	14300	19000	11000					5
6	28000	24600	18800	23000	14000	16800	11000	15000				6
7	23000	21000	17500	19800	13800	15000	10500	14500	7800	11000		7
8	19000	17500	16000	16600	13000	14200	9500	13000	7800	10000		8
9	16000	14000	14600	14000	12000	13200	9200	12300	7400	9300	7600	9
10		12000	12500	12000	11200	11600	8600	11200	7300	8800	7100	10
12		8200	9000	8200	9200	8300	7200	9600	6400	7600	6800	12
14			6600	5600	7700	6100	6500	7300	5500	6900	6100	14
16				4000	5500	4650	5500	5500	5000	5700	5500	16
18					4300	3600	4900	4300	4350	4500	4800	18
20							2650	4100	3250	3650	3600	20
22								3200	2600	3200	2850	22
24									2700	1950	2750	24
26										1450	2350	26
28											1900	28
30											1050	30
32												32
Cylinder 1	0%	50%	0%	100%	0%	100%	0%	100%	0%	100%	100%	Cylinder 1
Cylinder 2	0%	0%	25%	0%	50%	25%	75%	50%	100%	75%	100%	Cylinder 2
Number of lines	10	8	6	7	4	5	3	4	3	3	3	Number of lines

Unit:Kg

Load chart for jib



















The rated load indicated in the table is the value computed by taking 75% of the tip over load when the wind speed is below 9.8m/s.

Boom angle (°)	Fully-extended outriggers, over side and rear			Boom angle (°)
	43m+9m			
	Compensation angle 0°	Compensation angle 15°	Compensation angle 30°	
78	2800	2400	1800	78
75	2500	2200	1750	75
72	2150	1800	1500	72
70	1900	1570	1350	70
65	1450	1240	1000	65
60	1080	1000	750	60
55	800	700	500	55
50	580	500		50
Min. boom angle		50°		Min. boom angle

1. Radius shown in the table are the actual radius when working.
2. Rated lifting capacities in the stability area comply with ISO 4305.
3. The total rated lifting load in the table includes the weight of hook block (main hook is 550kg) and slings.
4. When the 5th outrigger is in use, it is suitable for 360 operation.
5. When actual boom length and working radius are between two values, determine lifting capacity according to the bigger boom and radius.

STC450C TRUCK CRANE
WHEEL CRANE FAMILY MAP

■ TRUCK CRANE

 STC200 Maximum Load Capacity: 20t Telescopic Boom: 4 Sections, 10.6-33m	 STC250 Maximum Load Capacity: 25t Telescopic Boom: 4 Sections, 10.65-33.5m	 STC250H Maximum Load Capacity: 25t Telescopic Boom: 5 Sections, 10.5-39.5m	 STC300S Maximum Load Capacity: 30t Telescopic Boom: 5 Sections, 10.6-40.5m	 STC300TH Maximum Load Capacity: 30t Telescopic Boom: 4 Sections, 10.6-33.5m
 STC300H Maximum Load Capacity: 30t Telescopic Boom: 5 Sections, 10.5-39.2m	 STC500 Maximum Load Capacity: 50t Telescopic Boom: 5 Sections, 11.5-43m	 STC550 Maximum Load Capacity: 55t Telescopic Boom: 5 Sections, 11.5-43m	 STC600S Maximum Load Capacity: 60t Telescopic Boom: 5 Sections, 11.3-43.5m	 STC750 Maximum Load Capacity: 75t Telescopic Boom: 5 Sections, 11.8-49m
 STC800S Maximum Load Capacity: 80t Telescopic Boom: 5 Sections, 12.2-47m	 STC1000 Maximum Load Capacity: 100t Telescopic Boom: 5 Sections, 13.5-52m	 STC1000C Maximum Load Capacity: 100t Telescopic Boom: 6 Sections, 13.25-60m	 STC1000S Maximum Load Capacity: 100t Telescopic Boom: 5 Sections, 12.26-56m	 STC1200S Maximum Load Capacity: 120t Telescopic Boom: 7 Sections, 12.6-63.5m
 STC1300C Maximum Load Capacity: 130t Telescopic Boom: 5 Sections, 13.3-69m	 STC1600 Maximum Load Capacity: 160t Telescopic Boom: 5 Sections, 13.4-62m	 STC2200 Maximum Load Capacity: 220t Telescopic Boom: 6 Sections, 14.56-68m		

■ ALL TERRAIN CRANE

 SAC1800 Maximum Load Capacity: 180t Telescopic Boom: 6 Sections, 15.5-62m	 SAC2200 Maximum Load Capacity: 220t Telescopic Boom: 6 Sections, 15.5-62m	 SAC2600 Maximum Load Capacity: 260t Telescopic Boom: 6 Sections, 15.66-73m	 SAC3000 Maximum Load Capacity: 300t Telescopic Boom: 7 Sections, 15.4-80m
 SAC3500 Maximum Load Capacity: 350t Telescopic Boom: 6 Sections, 15.2-70m	 SAC6000 Maximum Load Capacity: 600t Telescopic Boom: 7 Sections, 17.1-90m		

■ ROUGH-TERRAIN CRANE

 SRC250 Maximum Load Capacity: 25t Telescopic Boom: 4 Sections, 9.9-31.5m	 SRC350 Maximum Load Capacity: 35t Telescopic Boom: 4 Sections, 10-31.5m	 SRC660 Maximum Load Capacity: 66t Telescopic Boom: 4 Sections, 11.25-34.5m	 SRC550H Maximum Load Capacity: 55t Telescopic Boom: 5 Sections, 11.5-43m	 SRC750 Maximum Load Capacity: 75t Telescopic Boom: 5 Sections, 11.8-45m
 SRC1200 Maximum Load Capacity: 120t Telescopic Boom: 5 Sections, 13-48m				



Quality Changes the World

SANY AUTOMOBILE HOISTING MACHINERY

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