



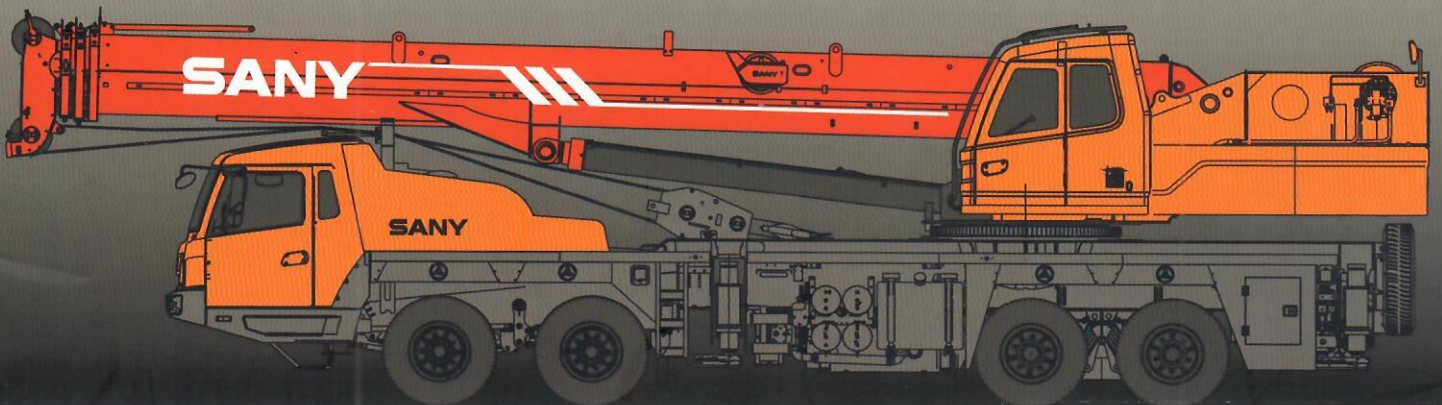
**Jindal Infrastructures Pvt. Ltd.**

# STC450

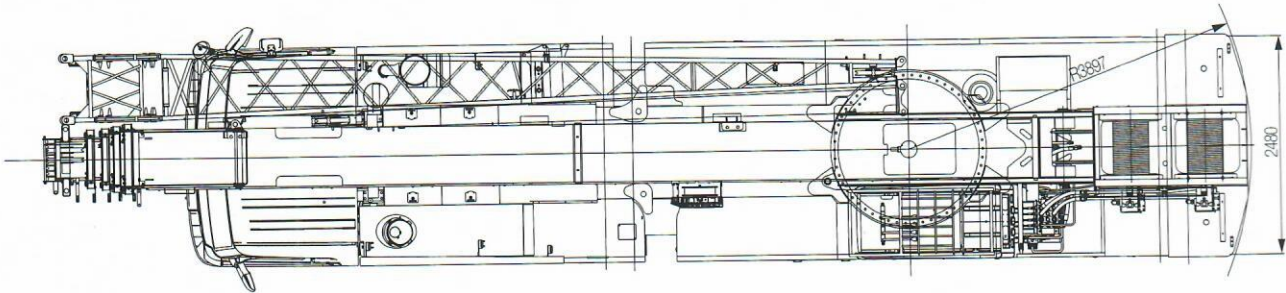
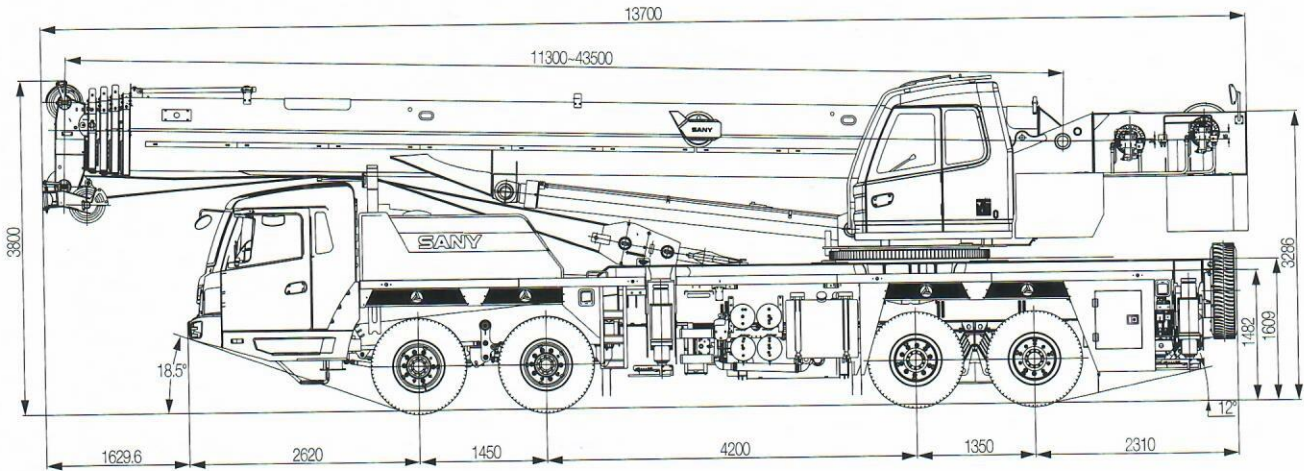
**STC450 TRUCK CRANE  
45 TONS LIFTING CAPACITY**

Quality Changes the World

**Max. Lifting Capacity: 45t  
Max. Boom Length: 43.5m  
Max. Boom + Fixed Jib  
Combination: 43.5 + 9.0m**



# SANY





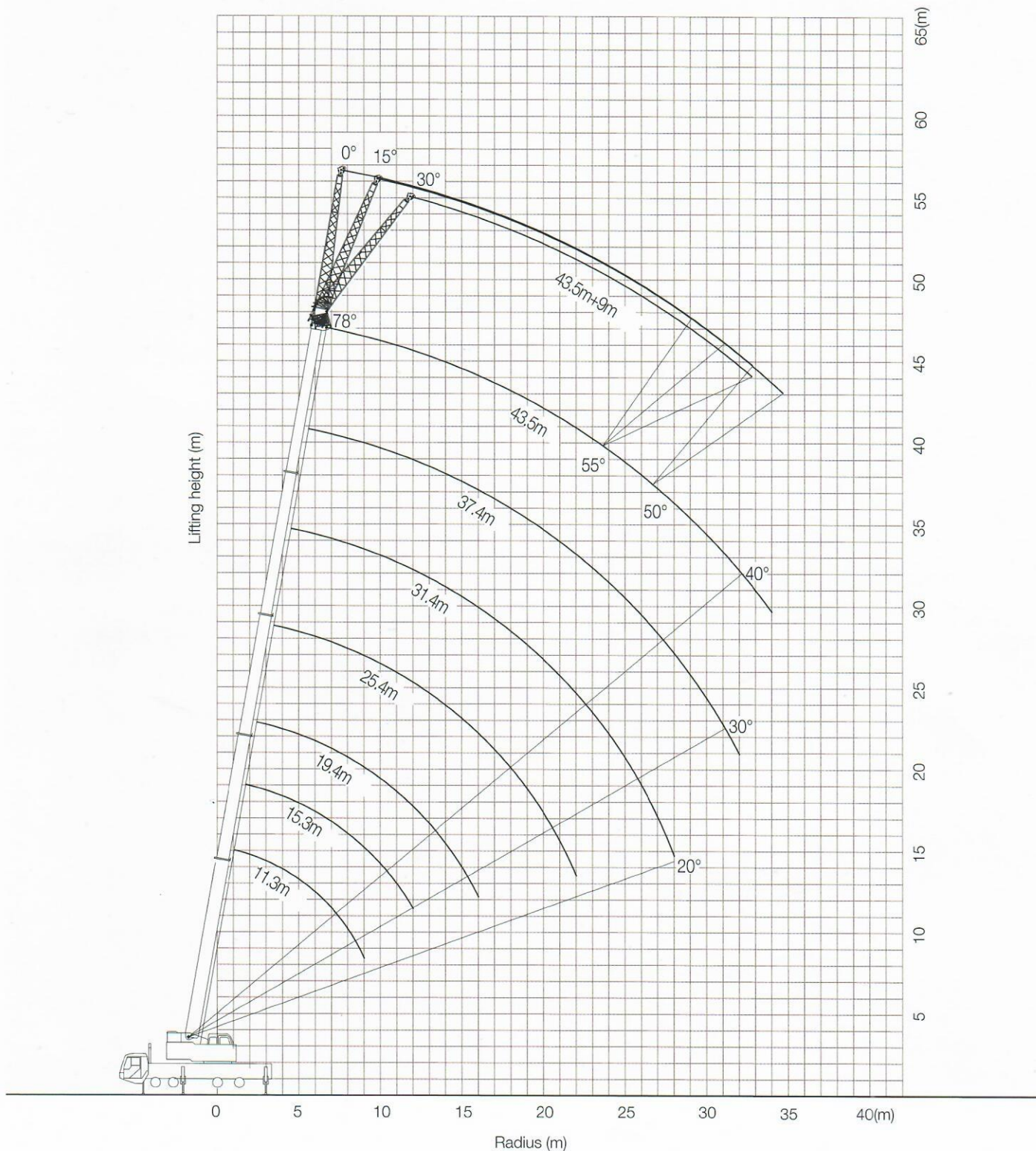


## STC450 TRUCK CRANE TECHNICAL PARAMETER

Type	Item	Parameter	
Capacity	Max. lifting capacity	45 t	
Dimensions	Overall length	13750 mm	
	Overall width	2600 mm	
	Overall height	3770 mm	
	Axle distance	Axle-1,2	1450 mm
Axle-2,3		4200 mm	
Axle-3,4		1350 mm	
Weight	Overall weight	39200 kg	
	Axle load	Axle load-1,2	14400 kg
		Axle load-3,4	24800 kg
Engine	Rated power	242 kW/ 2100 rpm	
	Rated torque	1385 N.m/ 1500 rpm	
Traveling	Max.traveling speed	48km/h	
	Turning radius	Min.turning radius	12 m
	Wheel formula	8 × 4	
	Min.ground clearance	220 mm	
	Approach angle	18.5 °	
	Departure angle	12 °	
	Max.gradeability	38%	
	Fuel consumption per 100km	-	
Main Performance Data	Temperature range	- 20 ° ~ + 40 °	
	Tail slewing radius of swingtable	3.9 m	
	Boom section	5	
	Boom shape	U-shaped	
	Max.lifting moment	Base boom	1660 kN·m
		Full-extend boom	780 kN·m
	Boom length	Base boom	11.3 m
Full-extend boom		43.5 m	
Outrigger span (Longitudinal×Transversal)	6 × 7.2 m		
Working speed	Max.single rope lifting speed of main winch (no load)	120 m/min	
	Full extension/retraction time of boom	140 / 125 s	
	Full lifting/descending time of boom	70 / 78 s	
	Slewing speed	0~2.0 r/min	
Air condition	Chassis	Heating/Cooling	



## STC450C Working Ranges







STC450 TRUCK CRANE  
**LOAD CHART**

Unit:Kg

**Prerequisites**

- ① Boom operating conditions (fully extended boom length), min. length is 11.3m and max. length is 43.5m
- ② The span of outriggers is 6m x 7.2m
- ③ 360° rotation is applied
- ④ Counterweight is 4T

Working Radius(m)	Fully-extended outriggers, over side and rear											Working Radius(m)
	11.3m	15.3m	17.3m	19.4m	23.4m	25.4m	29.4m	31.4m	35.4m	37.4m	43.5m	
3.0	45000	36000	17000									3.0
3.5	43000	36000	16500	28600	15500							3.5
4.0	40000	36000	15000	27500	15000							4.0
4.5	37000	33000	14000	26000	13700	22000	12350					4.5
5.0	34000	31000	13000	24000	13000	20000	12350					5.0
6.0	28000	26000	12500	22000	11700	18000	11000	15000	9500			6.0
7.0	23000	22500	12000	19000	11000	16500	10000	13500	8500	11500		7.0
8.0	19000	18000	11500	15000	10500	15000	9300	12500	7800	10500		8.0
9.0	16000	14500	11000	13000	9800	14000	8000	11500	7200	10000	7500	9.0
10.0		11000	10500	10900	9000	11500	7700	10500	6700	9000	7500	10.0
12.0		7000	8500	6900	8200	8000	7000	8500	6500	8000	6500	12.0
14.0			6000	4700	6800	5600	6500	6200	6000	6400	5500	14.0
16.0				3300	5400	4000	5000	4500	5500	4700	5000	16.0
18.0					4300	3000	4100	3300	4500	3500	3800	18.0
20.0					3300	2150	3400	2500	3700	2500	3000	20.0
22.0						1400	2700	1800	2800	1700	2400	22.0
24.0							2100	1200	2100	1200	1600	24.0
26.0							1700	800	1700	800	1200	26.0
28.0									1350	600	950	28.0
30.0									1000		600	30.0
Number of lines	10	8	4	7	4	5	3	4	3	3	3	Number of lines
<b>Telescoping Condition(%)</b>												
Elevation of boom	21.2°-68.3°	28.6°-74.3°	26.8°-76.2°	25.3°-76.1°	23°-78.5°	22.1°-77.1°	20.6°-79°	29.1°-76.9°	27.4°-77.8°	38.4°-78.4°	44°-76.5°	Elevation of boom
2nd boom	0%	50%	0%	100%	0	100%	0%	100%	0%	100%	100%	2nd boom
3rd boom	0%	0%	25%	0%	50%	25%	75%	50%	100%	75%	100%	3rd boom
4th boom	0%	0%	25%	0%	50%	25%	75%	50%	100%	75%	100%	4th boom
5th boom	0%	0%	25%	0%	50%	25%	75%	50%	100%	75%	100%	5th boom



Unit:Kg

### Load chart for jib

Boom angle ( ° )	Fully-extended outriggers, over side and rear			Boom angle ( ° )
	43.5m+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 500kg ) 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.

## SANY TRUCK CRANE CONTENT

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Cab



Carrier frame



Suspension system



Hydraulic system



Outriggers



Telescopic boom



Control system



Engine



Lattice jibs



Telescopic system



Transmission system



Superlift devices



Luffing system



Drive/Steer



Luffing lattice jib



Slewing



Axles



winch mechanism:



Counterweight



Tyres



Safety system



Brakes system

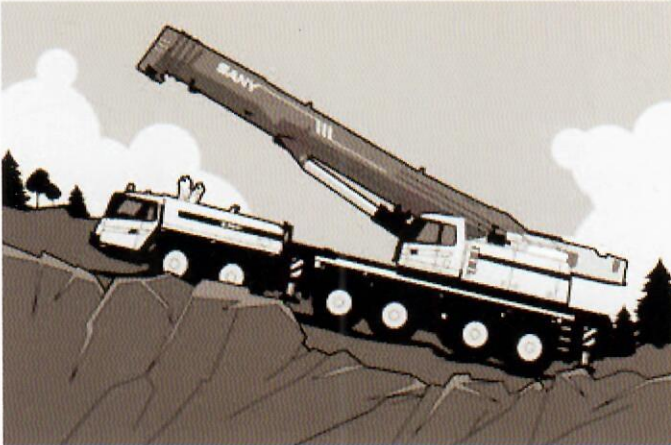


Hoist system



Electrical system

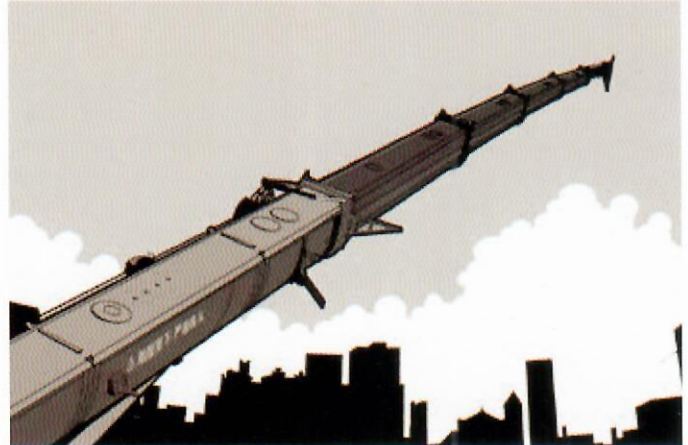




### Excellent and stable chassis performance / chassis system

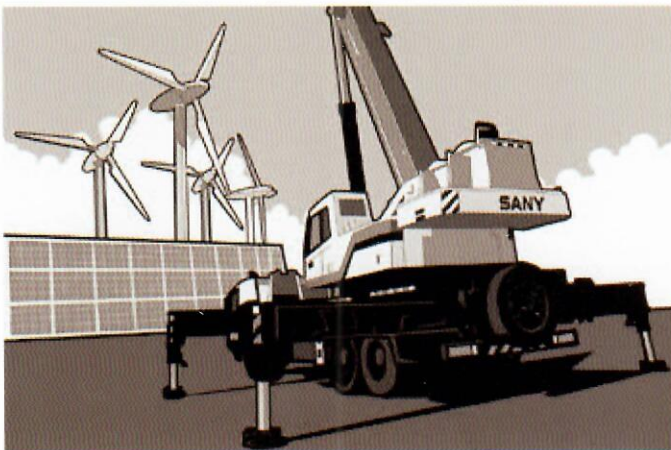
The original 45 tonnage crane of 2.5 width with compact structure, improving trafficability significantly. Double-axle drive is used, providing good trafficability and comfortableness under complex road condition with reliable traveling performance.

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.



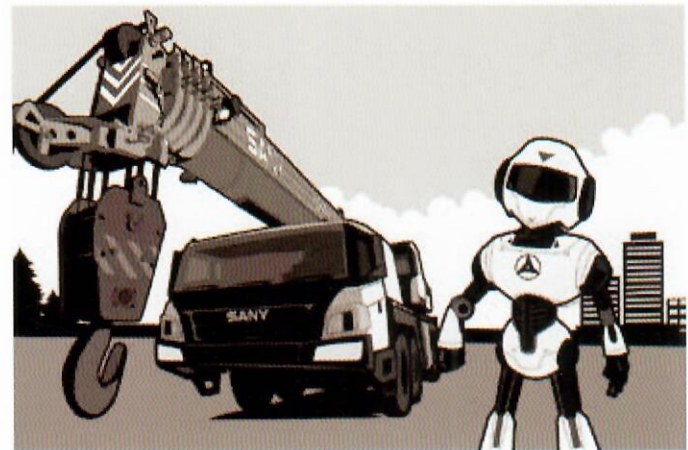
### Ultra long, super strong and highly sensitive load lifting capacity

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



### 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.



### 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 soft 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-rollback 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 11.3m, full-extended boom length of 43.5m and lifting height of fully extended boom length of 44m. 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

- $360^{\circ}$  rotation can be achieved with Max. slewing speed of 2.0r/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: 500Kg, 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 4000kg, 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: 242kw/2100r/min
- Environment-protection: Emission complies with EuroIII 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.