

SPC120T

SANY Truck-mounted Crane
12 Ton Lifting Capacity



Max. Lifting Capacity: 12t
Max. Boom Length: 31.2m
Max. Lifting Height: 31.5m

Excellent lifting performance

- Max. lifting torque of 510N-m, U-shape telescopic boom, boom length of 31.2m, and max. hoist height of 31.5m, outrigger span 5.8m×4.9m.

Better drive capability

- 155kW Dongfeng Cummins engine, max. torque up to 800N-m, and max. speed up to 2,700rpm.
- FAST 8-gear transmission for higher adaptability.
- Max. travel speed up to 90km/h, and gradeability up to 45%.

Better interaction design

- 15.2*10.2cm color screen with fault diagnosis function for chassis conditions.
- 12.7*17.8cm color screen of standard configuration for the superstructure, with a moment limiter, providing overall information of superstructure conditions.

Wide driving cab with a sleeping berth

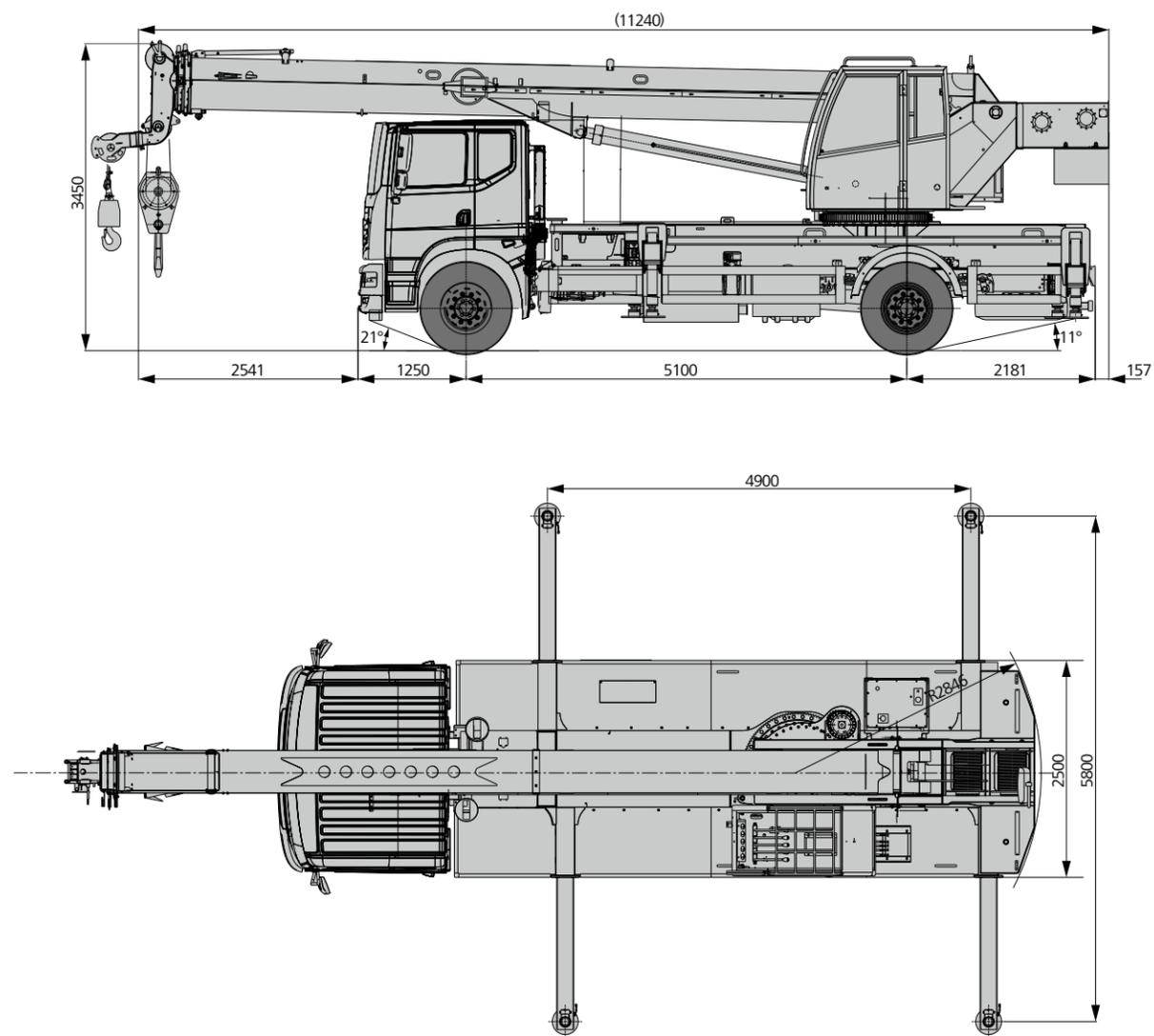
- Full-width cab, ensuring wide view and safe and comfortable traveling;
- A sleeping berth for rest after work.

More compact body size

- The whole crane has a length of 11.24m, a height of 3.45m, and an axle base of 5.1m.



Overall Dimensions



Technical Parameters

Parameter	Item	Unit	Value	
Dimensions	Full length	mm	11240	
	Full width	mm	2500	
	Full height	mm	3450	
	Axle base	No.1 and No.2 axle base	mm	5100
Power	Engine	Dongfeng Cummins ISD210 50 Euro V		
	Rated engine power	kW/rpm	155/2500	
	Max. engine torque	N-m/rpm	800/(1100-1700)	
Weight	Crane total weight	kg	17130	
Driving	Max. driving speed	km/h	>90	
	Min. steering radius	m	9	
	Min. steering radius of boom tip	m	10	
	Min. ground clearance	mm	250	
	Approach angle	°	21	
	Departure angle	°	11	
	Braking distance (drive at 30km/h)	m	8	
	Max. gradeability	%	45	
	Fuel consumption per 100 km	L	19	
	Main performance	Max. rated lifting capacity	t	12
Min. rated radius		m	3	
Max. lifting torque		Basic boom	kN-m	510
		Full-extend boom	kN-m	300
Outrigger span (vertical X horizontal)		m	5.8x4.9	
Lifting height		Basic boom	m	10
		Full-extend boom	m	31.5
Boom length	Basic boom	m	9.69	
	Full-extend boom	m	31.2	
Working speed	Max lifting speed of single rope of main winch(unloaded)	m/min	>120	
	Boom full extend and retract time	s	38/35	
	Boom full rise and lower time	s	50/38	
	Slewing speed	r/min	2.5	
	Horizontal outrigger extend/retract time	s	20/15	
	Vertical outrigger retract/extend time	s	20/15	

Technical Parameters



Axle Load

Axle	1	2	Total
Axle load/t	6.13	11	17.13



Hook

Rated load/t	Number of pulleys	Rate	Hook weight/kg
12	3	6	120
2	-	1	60



Main Working Parameters

Item	Parameter	Rope diameter / length	Max. single line pull
Main winch	Single rope speed 0-120m/min	14mm/135m	4.5t
Auxiliary winch	Single rope speed 0-120m/min	14mm/70m	4.5t
Slewing	0-2.5r/min		
Boom rise and lower	38s/50s(0-80°)		
Boom extend and retract	38s/35s(9.3m-30m)		
Vertical outrigger	Retract	20s	
	Extend	15s	
Horizontal outrigger	Retract	15s	
	Extend	20s	

Crane Introduction

Superstructure

Cab

- Innovative and unique moulding and ergonomic design, with safety glass, corrosion-resistant steel plate, fully covered softening interiors, ultra-large interior space, panoramic sunroof, adjustable seat and other human centered design. The cab is equipped with an electrical window wiper, , which is comfortable and easy to operate; and the moment limiter display screen is equipped, achieving dynamic integration between the master console and the operation display system, thereby making the all working condition data of hoisting works clear at a glance.

Hydraulic system

- The system is equipped with stable and top-quality main oil pump, main valve, winch motor, slewing motor, balance valve and other key hydraulic parts, ensuring high system reliability; and with accurate parameter matching, the excellent control performance is achieved. The main valve has a flow confluence function, which can achieve the stable and easy control of single action and any combined actions under various working conditions.
- Winching is achieved using the constant displacement motor, with high operation efficiency. The maximum speed of the single ropes of primary and secondary winches is up to 120m/min, with industry leading in hoisting efficiency;
- The new slewing system is used, with more stable startup and control of slewing, and more excellent micromotion.

Control system

- BUS instrument: The bus instrument of the integrated smart control electrical system is used, which can control traveling parameters at any time to ensure easy driving. Meanwhile, maintenance and troubleshooting are convenient and quick due to the engine fault prompting function;
- Moment limiter: The highly smart moment limiter system is used, which can protect hoisting works in an all-round manner, and ensure accurate operation, stability and comfort;

Telescopic system

- Four-section boom, with basic boom of 9.69m, full-telescoping boom 31.2, and hoisting height of 31.5m under the full extend of the main boom. It is made of high-strength welding structural steel, with U-shaped section, and adopts the telescoping way of single cylinder and rope row.

Luffing system

- The power luffing system is used, with uniform and controllable luffing speed. The system can reduce energy consumption, and improve the stability of luffing. Luffing angle: -2° to 80°.

Slewing system

- 360° slewing, maximum slewing speed of 2.5 r/min, stable action, reliable system and smooth braking.

Counterweight

- A fixed counterweight of 640 kg, without removable counterweight.

Hoisting system

- Winching is achieved using top-quality constant displacement piston motor, ensuring smooth rising and falling of weights.
- A main hook: 120Kg. Primary winch steel wire rope: 14mm-4V×39S-5FC-1960-U-zSGB8918-L135m.
- An auxiliary hook: 60 kg. Secondary winch steel wire rope: 14mm-4V×39S-5FC-1960-U-zSGB8918-L70m

Safety system

- Moment limiter: Through the analytical mechanics method, the moment limiter computing system based on sling load mechanical model is established; the rated sling load accuracy is up to -3% through on-line no-load calibration, which can protect hoisting works in an all-round manner. During overloading, the system may give an alarm automatically to provide security assurance for operation;
- The hydraulic system is equipped with a hydraulic balance valve, an overflow valve, a two-way hydraulic lock and other elements, achieving the stability and reliability of the hydraulic system;
- The height limiter is disposed at the end of the principal boom to protect the overwinding of the steel wire rope;
- The linear and angular sensor and the pressure sensor are disposed, displaying the working state of the crane in real time, automatically cutting off dangerous actions and giving a buzzing alarm.

Crane Introduction

Chassis

Driving cab

- All-steel material and rubber sealed structure, ergonomic design, and excellent property of shock absorption and closure. The driving cab is equipped with outward opening doors on two sides, pneumatic suspended driving's seat and co-driver's seat, sleeping berth, three-point safety belt, adjustable steering wheel, large-view rearview mirror, comfortable driving seat with headrest, anti-fog fan, air conditioner, stereo radio and other assemblies, with complete control instruments and apparatus, which is more comfortable, safe and humanized.

Carrier frame

- Designed by manufactured by Sany, anti-twist box-shaped structure formed by welding the fine grain high-strength steel plate, with a high load-carrying capacity

Outriggers

- H type outrigger, with 4-point bracing, easy to operate and high stability. The movable outrigger is made of fine grain high-strength steel plate, which is in full-hydraulic transverse telescoping.

Engine

- Type: inline six-cylinder, water-cooling, supercharge with inter-cooling diesel engine;
- Environmental protection property: Emission conforms to Euro V standard;
- Active volume of the fuel tank: 220L.

Transmission system

- Transmission: Manual transmission, with 8 gears, and large speed ratio range, meeting climbing on site at a low speed and driving at a high speed.
- Drive axle: Optimized arrangement of drive axle, and smooth and reliable drive of drive axle.
- Force transmission is optimized. The flat flange drive axle is used, with a large transfer torque.

Drive/Steer

- 4 x 2.

Axles

- Axle 2 is a drive axle, and axle 1 is a steering axle, and axle 2 is built-in, with interaxial deceleration; and the punching-welded axle housing technology is used, achieving a high load-carrying capacity.

Suspension system

- The whole axle suspension devices are suspension systems with steel plate springs. Leaf springs are subjected to fatigue tests for more than 100,000 times, and the performance parameters of front and rear leaf springs are optimized, taking strength and riding comfort into account.

Tyres

- 7*10.00R20 18PR.

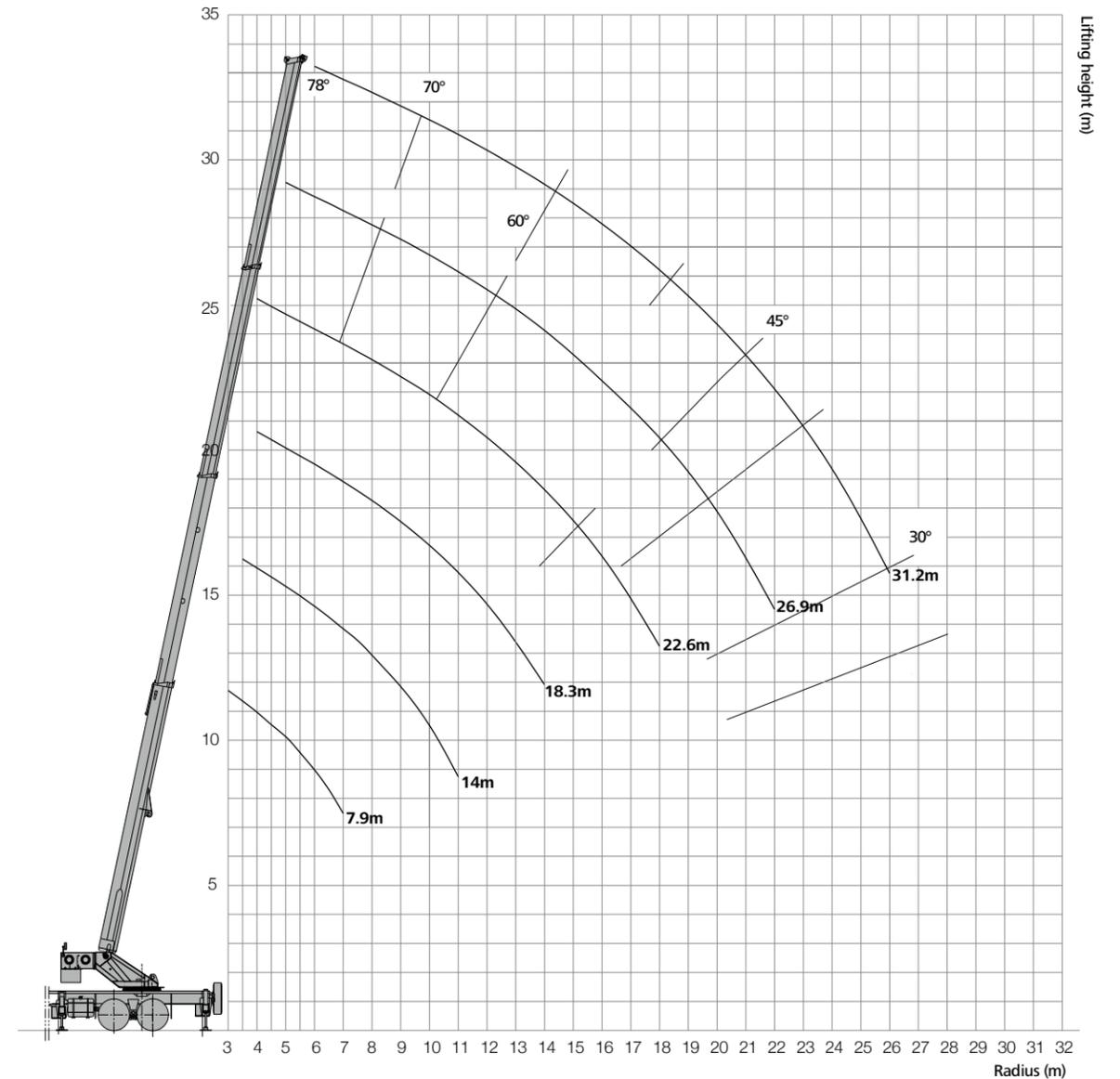
Brakes system

- Service brake: Double-loop air brake;
- Parking brake: Spring energy storage brake;
- Auxiliary brake: Engine exhaust brake.

Electrical system

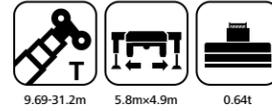
- Maintenance-free battery with capacity of 2*100Ah. The power supply of the crane can be cut off through the mechanical master power switch manually.

Boom Operating Range



Load Chart - Telescopic Boom

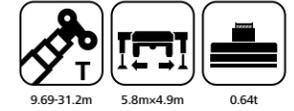
Unit: kg



Radius	Rear and side operation						Radius
	9.69	13.99	18.29	22.60	26.90	31.2	
3	12000	10500	9200				3
3.5	12000	10500	9000	7600			3.5
4	11000	10500	8900	7300			4
4.5	10500	10000	8700	6900	5600		4.5
5	10200	9700	8500	6500	5300		5
5.5	9000	8950	8100	6100	5000		5.5
6	8100	8200	7700	6000	4800	4400	6
6.5	7300	7500	7300	5700	4500	4100	6.5
7	6500	6700	6800	5300	4300	3900	7
8		5400	5600	4800	4000	3300	8
9		4400	4600	4400	3600	3000	9
10		3700	3900	4000	3300	2800	10
11		3200	3300	3400	3100	2700	11
12			2800	2900	2800	2500	12
14			2100	2200	2200	2000	14
16				1750	1750	1700	16
18				1400	1400	1350	18
20					950	1050	20
22					900	900	22
24						700	24
26						500	26
Rate	6	6	4	4	3	3	Rate
Cylinder expansion rate	0	20%	40%	60%	80%	100%	Cylinder expansion rate

Load Chart - Telescopic Boom

Unit: kg



Radius	Front operation						Radius
	9.69	13.992	18.294	22.596	26.898	31.2	
3	12000	9500	8800				3
3.5	12000	9500	8600	7000			3.5
4	11000	9500	8400	7000			4
4.5	10200	9500	8200	6500	5300		4.5
5	8000	7800	8000	6100	5000		5
5.5	6200	6400	6500	5700	4700	3900	5.5
6	5000	5200	5400	5000	4400	3700	6
6.5	4200	4250	4600	4500	4200	3500	6.5
7	3400	3600	3900	3900	3600	3300	7
8		2600	2900	3000	2900	2700	8
9		2050	2300	2250	2300	2300	9
10		1600	1800	1850	1850	1850	10
11		1300	1400	1500	1500	1500	11
12			1100	1200	1200	1200	12
14			800	850	900	900	14
16				600	600	600	16
18				400	450	450	18
20					300	300	20
Rate	6	6	4	4	3	3	Rate
Cylinder expansion rate	0	20%	40%	60%	80%	100%	Cylinder expansion rate

Remark :

- Numbers in the table refer to the max. capacity allowed, including hook and other tools.
- Radius in the table refer to the real radius in operation.
- Outdoor operation can be done when wind level is below 6 (10.8~13.8m/s).
- Data in the table are the max. capacity when the crane is in a level condition on solid ground. Data above the bold line are related to capacity; data below are related to crane stability.



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Reminder:

For safe and reliable operation of the diesel engines, please fill Grade IV machines with Grade IV diesel and urea solution conforming to related national standards. Please refer to the operating instructions and related standards for details.

Any change in the technical parameters and configuration due to advancement in technology may occur without prior notice. The machine in the figures may include auxiliary equipment. This brochure is for reference only, and goods in kind shall prevail.

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