

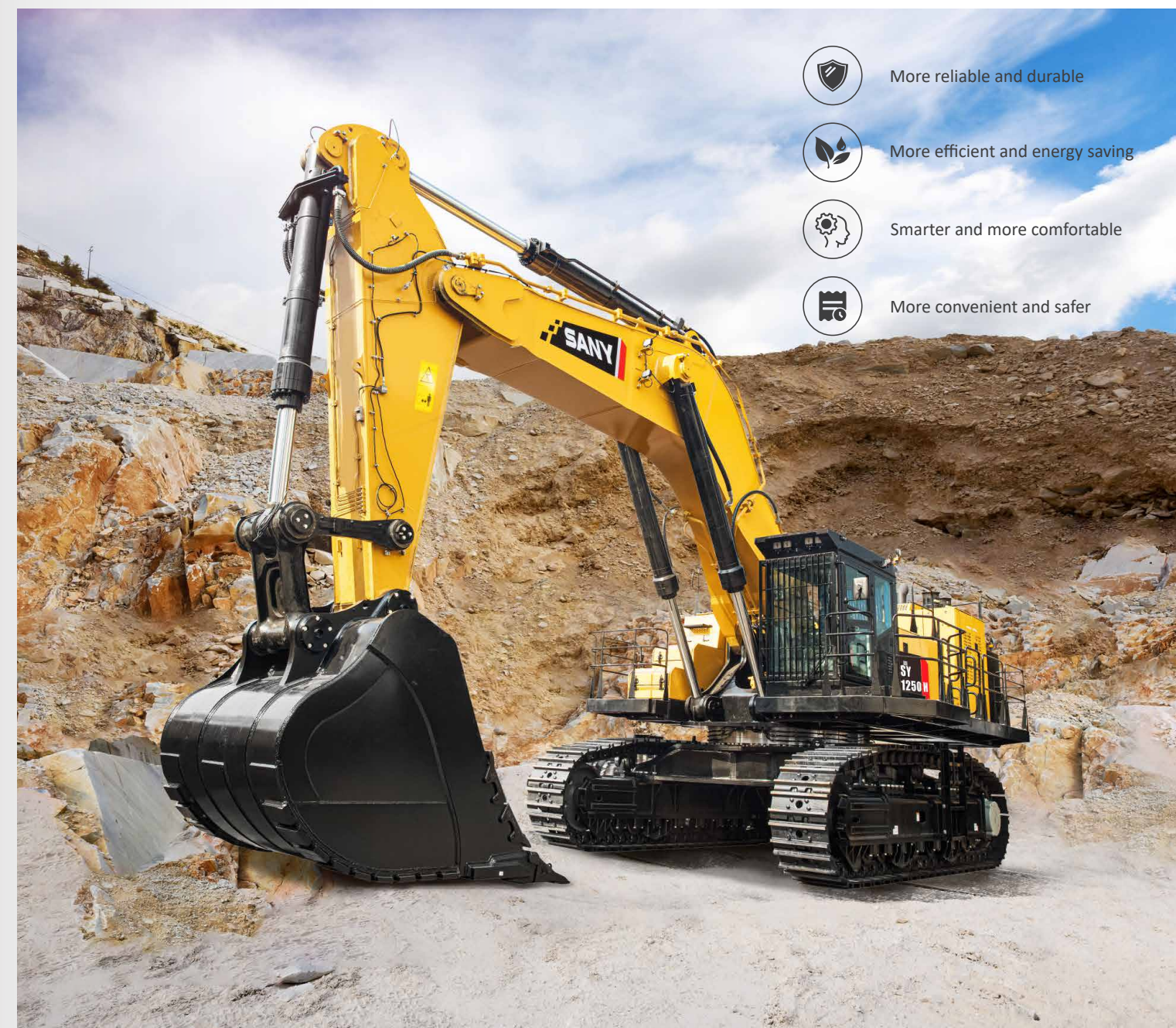


SY1250H

Engine power
567kW/1800rpm

Bucket capacity
7 - 8 m³

Operating weight
127,000kg



More reliable and durable



More efficient and energy saving



Smarter and more comfortable



More convenient and safer



SANY HEAVY MACHINERY LTD

<http://www.sanyglobal.com>

This manual was printed in 2023. Revised in 2025.01. The product information may have been changed when you read it. Products (including specific configuration, detail, etc.) are based on the specific models and products applicable to markets outside China, which are displayed and sold by agents. For more details, please visit the local authorized agent of SANY Heavy Machinery Ltd.

Mine sharp weapon Digging in all directions

SY1250H is a new generation of mining excavator manufactured by SANY Heavy Machinery Co., Ltd in the field of large excavators. It adopts a high-pressure, large-flow fully-electrically-controlled hydraulic system. It is mainly aimed at heavy-duty mining conditions such as stone, coal, and metal. With strong heavy-duty operation capability and high reliability as the first goal, the operation energy consumption can be optimized through sophisticated matching control technology.

More reliable and durable

High-strength and long-life structural member World-famous brands of engines and hydraulic components. Relying on the trinity test system, the service life of the whole machine is greatly improved.

More efficient and energy saving

Fully electronically controlled large-diameter hydraulic main valve, no median flow loss; Four-pump four-loop hydraulic system, intelligent flow distribution and precise control; Independent heat dissipation based on temperature, unpowered boom descent technology, etc., make the fuel consumption lower.

Smarter and more comfortable

Advanced full electronic control system, higher control accuracy and faster response; On-line detection of hydraulic oil cleanliness and life prediction technology of filter element; Large space cab, high-power automatic air conditioner, heated and ventilated air suspension seat

More convenient and safer

Centralized design of maintenance parts, intermediate passage and online detection of hydraulic oil cleanliness make maintenance more convenient; Long life hydraulic oil and oil filter, lower maintenance cost; 360 panoramic camera and safety fence, higher security.



Strong power

SY1250 is a super-large digging product designed by Sany for mine. It adopts fully electronically controlled hydraulic system and Cummins power that have passed the market test, with high reliability and better operability.

High strength and long service life structural parts



Electric lubrication system



8 m³ reinforced backhoe bucket for mine



Double-support structure platform
Three-row roller slewing bearing



Large diameter electric control main valve



Large-flow electronically controlled main pump



360-degree panoramic camera



Omni-directional safety fence



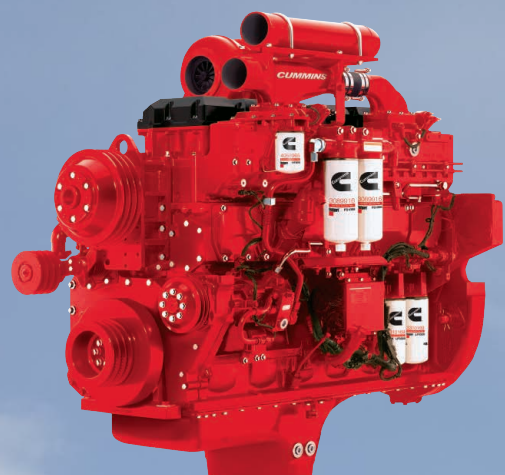
150-ton alighting structural member

Roller meeting the low temperature of minus 42 degrees

Large-space FOPS safety cab, electrically heated and ventilated suspension seat, customized software



Dynamic system



Engine : Cummins QSK23 567 kW
 Engine power: 567 kW / 1800 rpm
 Maximum torque: 3468 N.m / 1350 rpm
 Displacement: 23 L

► Strong motivation

Equipped with the top Cummins QSK23 engine in the industry, meeting EU stage A emission standard, with rated power of 567kW and strong power, it helps customers solve the difficult problems in harsh and heavy-duty working conditions.

► Energy-efficient

Optimize the engine universal characteristic curve, Sany's original self-optimizing control technology, match the best fuel consumption area and control the fluctuation of speed, with lower fuel consumption and more stable work.

► Equipment operation monitoring

The display screen displays the engine operation, maintenance and alarm information in real time, reminding and protecting in time, making maintenance more convenient.

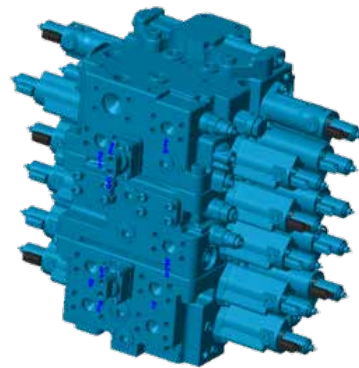
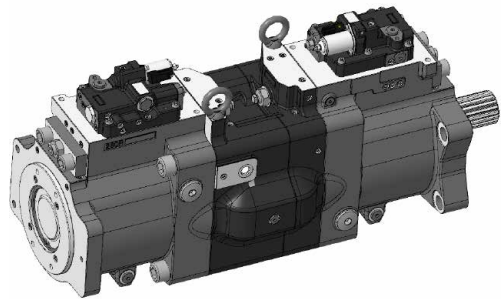


Hydraulic system

Fully electronically controlled hydraulic system: imported 280cc electronically controlled main pump+imported fully electronically controlled main valve form a fully electronically controlled hydraulic system, which is energy-saving, efficient and soft to operate; The conventional pump valve is used to form a parallel circuit, which increases the system flow, meets the requirements of super-large digging and large flow, ensures mature application and greatly reduces the failure rate.

Use a number of new technologies:

- ▶ 1. Multi-pump volume speed regulation technology-minimize fuel consumption rate;
- ▶ 2. Step-by-step control technology of multi-pump operation-soft and smooth action, zero impact when starting;
- ▶ 3. Rotary energy-saving control technology-rotary energy-saving and lower fuel consumption.



▶ Main pump

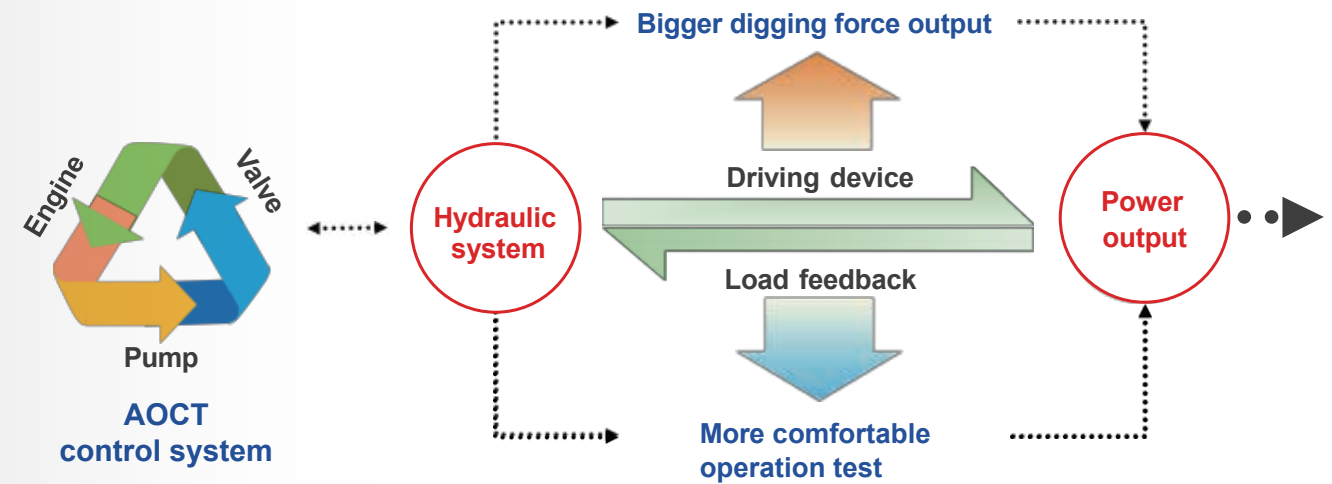
Adopt 4x280cc imported main pump, with the maximum flow of 4x540L/min, larger flow and faster speed.

The pump works in the optimal fuel consumption area of the engine and the high volumetric efficiency area of the main pump, thus achieving high efficiency and low consumption.

▶ Main valve

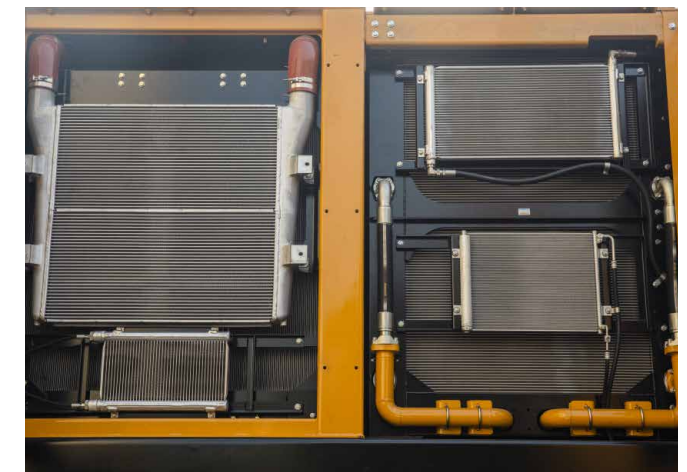
Adopt imported large-diameter fully electrically controlled main valve, with high responsiveness and lower pressure loss.

Sany's original E-P-V and AOCT integrated control system realizes that the equipment works in the optimal fuel consumption area of the engine and the high volumetric efficiency area of the main pump in all gears. According to the universal characteristic curve of the engine, adjust the power matching of the main pump, the main valve and the engine to ensure that all gears work in the optimal fuel consumption area.



Independent control system of oil dispersion and water dispersion has better heat dissipation effect.

Fan speed and volume speed control technology: automatically adjust the fan speed according to the water temperature and oil temperature, which is more energy-saving.



Electrical and control systems



▶ Fully electronically controlled hydraulic multi-pump multi-loop control system

Adopts multi-pump operation step-by-step control technology, rotary energy-saving control technology, load sensing control and other control technologies, which provides absolute help to improve the performance of the whole machine. The newly developed speed coupling control technology adopts a brand-new coupling control algorithm, which completely fits and improves the dynamic response of the engine and exerts the high efficiency of the high-horsepower engine.

▶ Engine variable speed power matching technology,

Through automatic optimization algorithm, adjusts the engine speed to the best fuel consumption point, matches the pump displacement to improve the volumetric efficiency of the pump, and greatly reduces the system fuel consumption.

▶ Self-diagnosis function of the controller

Real-time self-detection of the whole machine fault. The detection equipment realizes real-time and visualization of fault diagnosis through wireless mode.

Durable structural members

Strengthened backhoe bucket: for the harsh working conditions, increased capacity, optimized bucket type.

Increase bucket capacity

Configure 8m³ square buckets.

Bucket capacity strengthening

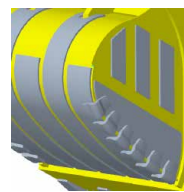
The bucket is strengthened in all directions. CAE simulation analysis is carried out on the bucket based on the actual working conditions, and the stress at key points is reduced by about 20%.

Bucket optimization

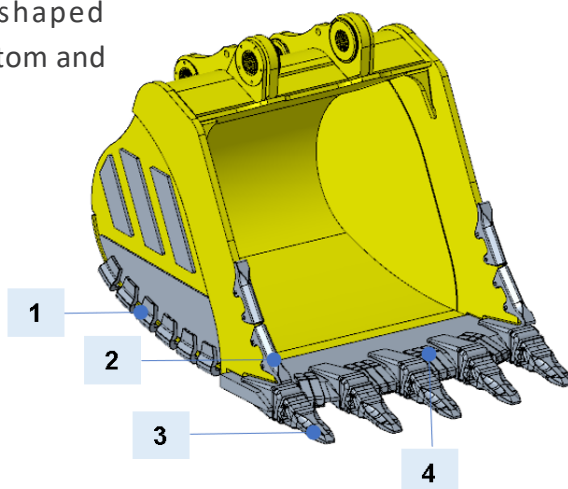
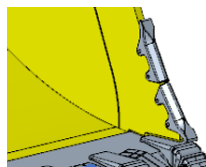
Through the optimization of hinge points, the excavation force can be exerted more widely, the running track and bucket shape of the mechanism can be optimized, and the impact and resistance to the machine during excavation can be reduced.

Bucket reinforcement details

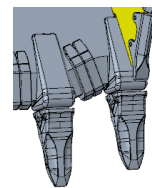
1. wear strip and L-shaped wear plates at the bottom and both sides are added.



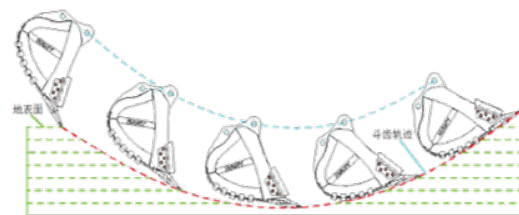
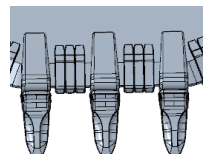
2. Bilateral teeth



3. Rock bucket teeth are standard, and pointed bucket teeth can be selected.



4. Customize the wear-resistant blade, and add the welding bucket lip sheath at the front of the blade.



Suitable operating object density for different bucket capacities

Bucket Capacity	Bucket Weight	Maximum Material Density
7.0 m ³	7225 kg	≤2.2 t/m ³
8.0 m ³	8000 kg	≤1.8 t/m ³

Bucket capacity based on ISO 7451:2007
Heaped material with a 1:1 angle of repose

The working device adopts a brand-new design structure, the manufacturing process is comprehensively improved, and the strength and durability are greatly improved.

Based on the real working conditions, the static simulation of the boom arm and the comprehensive CAE multi-body dynamics simulation of 16 postures are carried out, and the stress at the key optimization points is reduced by more than 30% through harsh impact measurement.

Strengthening pin shaft

Alloy steel pin shaft, surface high-frequency quenching, enhance wear resistance.

Customized shaft sleeve

The shaft sleeve has a special oil groove structure, which helps to store grease.

Wearing ring

Wear-resistant rings are installed at the joint of the second support of the bucket rod and the connecting rod rocker, and the surface is quenched at high frequency to enhance wear resistance.

Strengthening connecting rod

Integral casting structure, strong impact resistance.



Durable structural members

The longest chassis of the same tonnage model adopts a 150-ton four-wheel belt with a large cross-section and high strength frame, which has the best long service life and stability.

Middle support sprocket

The middle support is more stable, which can better solve the bending problem of the cantilever axle of the sprocket.



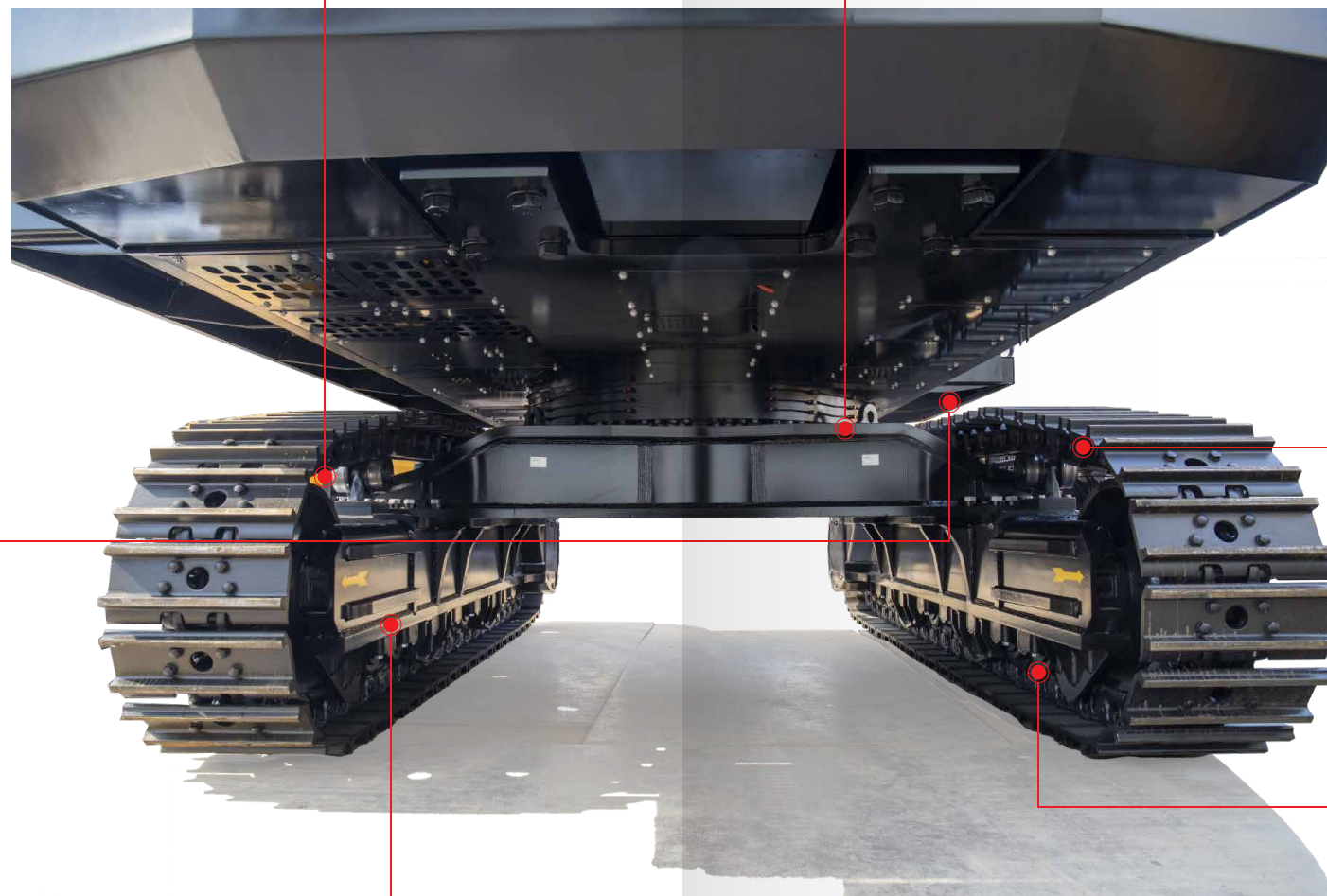
Up-and-down escalator

Effectively improving anti-collision ability.



Reinforced guide seat

Two reinforcing ribs are added to the outer side of the guide seat, which can better solve the problem of impact deformation of the guide seat.



Large-section frame

Through CAE statics, multi-body dynamics simulation and harsh impact measurement, the stress of key optimization points decreased by 15%.



Large-section frame

Customized reinforced track links, focusing on stonework conditions, more wear-resistant.



Low temperature roller

Develop ultra-low temperature roller, which can adapt to extremely cold weather of -42℃.



Convenient passage for both upper and lower

.01

Channels are connected left and right, and you can work from any side of the machine.

.02

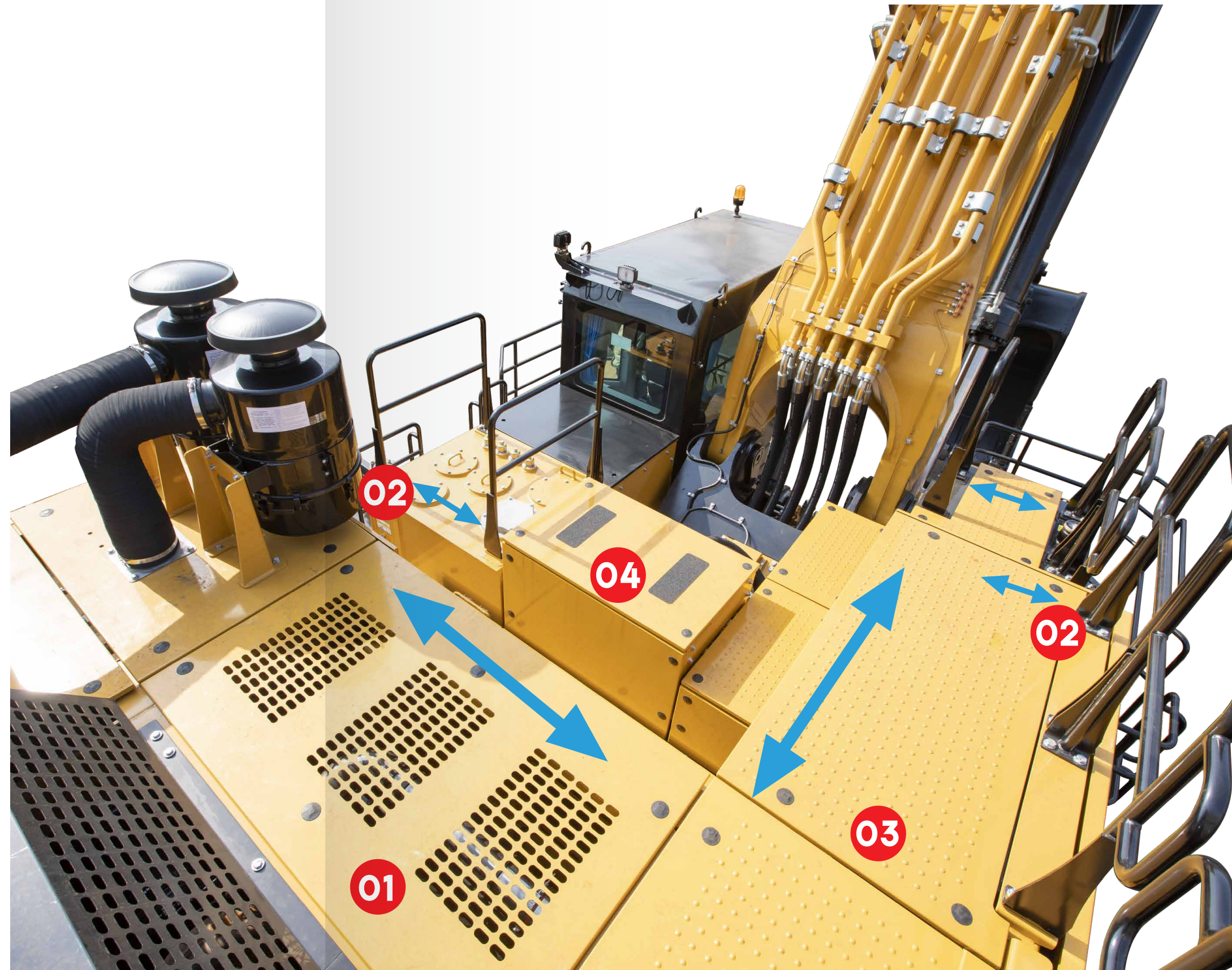
Climbing ladders on both sides are arranged around the rotation center, and the whole machine rotates 180 degrees, so the climbing ladders on getting on and off can still correspond to the upper position, which does not affect people's up and down operations.

.03

The anti skid convex points of the cover plate are integrally extruded, with stable structure and outstanding anti skid effect.

.04

Cover plates are arranged above and on the side of the main valve, which effectively protects the main valve from accidental impact.



PRODUCT COMPETITIVENESS

Comfortable driving

High-comfort cockpit

Top shield conforming to OPG*II standard (ISO 10262).The cab is widened and lengthened by 100mm and raised by 200mm.Equipped with parallel heavy rain wiper, rainy day operation is worry-free. Looking around 360, the field of vision in the operation area is clear and safe. Multifunctional adjustable electric-heated and ventilated luxury air-suspension seat. Automatic air conditioning system with large refrigeration capacity.

High-tech intelligent cockpit

10 inch LCD touch screen displayed with machine's useful status and operational information, setting parameters conveniently, one-key start and stop and digital multifunctional panel,looking around 360, the surrounding environment of the construction is unobstructed.

4G/GPRS/Bluetooth /WIFI/GPS

Device-mobile phone-cloud, data interconnection, Intelligent Service and Big Data Platform System,Centralized power management,Fault detection and alarm,Intelligent debugging and diagnosis.



Comfortable driving

The vehicle-mounted IOT terminal is added to this machine, which can track the running information of equipment in real time and display it visually. For example, you can see the current status of the machine in the cloud and present the workload of the operator.

Example 1: Device Status Presentation

- ◆ Present the working time, position and idle time of the machine;
- ◆ Showing the machine power usage, current gear, etc.
- ◆ Present the current alarm information of the machine, etc.

Example 2: Statistics of workload

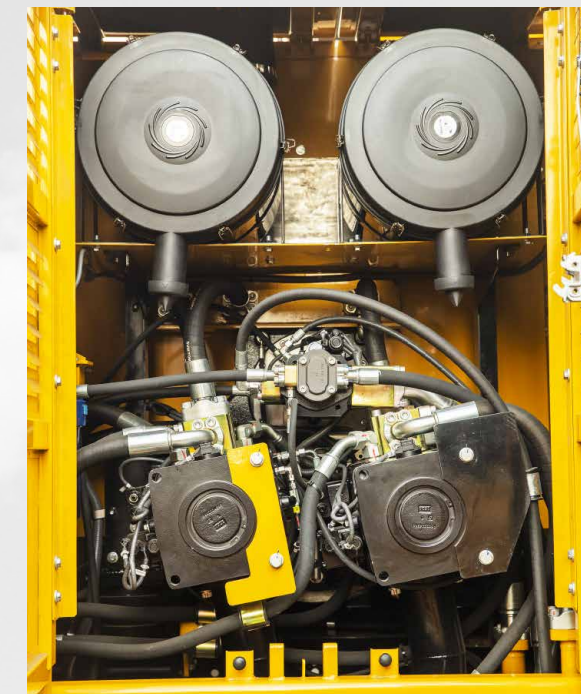
- ◆ According to the machine statistics completed workload;
- ◆ According to the operator statistics has completed the workload;
- ◆ According to the time (day, week, month) to present the completed workload.



Convenient maintenance

In allusion severe working conditions of the mine, the design of maintenance convenience of the maintainable parts is improved. "Big space, Easy to operate". Maintenance space for various maintainable parts increases by 20%-30% and makes the operation & equipment management easier and simpler.

Maintenance filter element: the long-life oil suction/oil return filter element customized and developed by Sany prolongs the maintenance time and reduces the maintenance cost. Filter plug sensing: a new differential pressure sensor, which can check the state of oil return filter in real time to achieve the purpose of early warning.



Safety performance

According to the operating conditions of the mine, the safety enhanced cab meeting the requirements of FOPS is used, and the safety is 30% higher than that of the ordinary cab. The cab grid guard certified with OPG Level (ISO 10262), emergency stop switch, 360° full protective guardrail, 360° panoramic camera, alarm light, platform lighting, etc. are used to further improve the safety of equipment mine operations.

360° full protective handrail



360° full protective handrail



Safety grid guard



Emergency stop switch



360° panoramic camera(rear + right side camera)

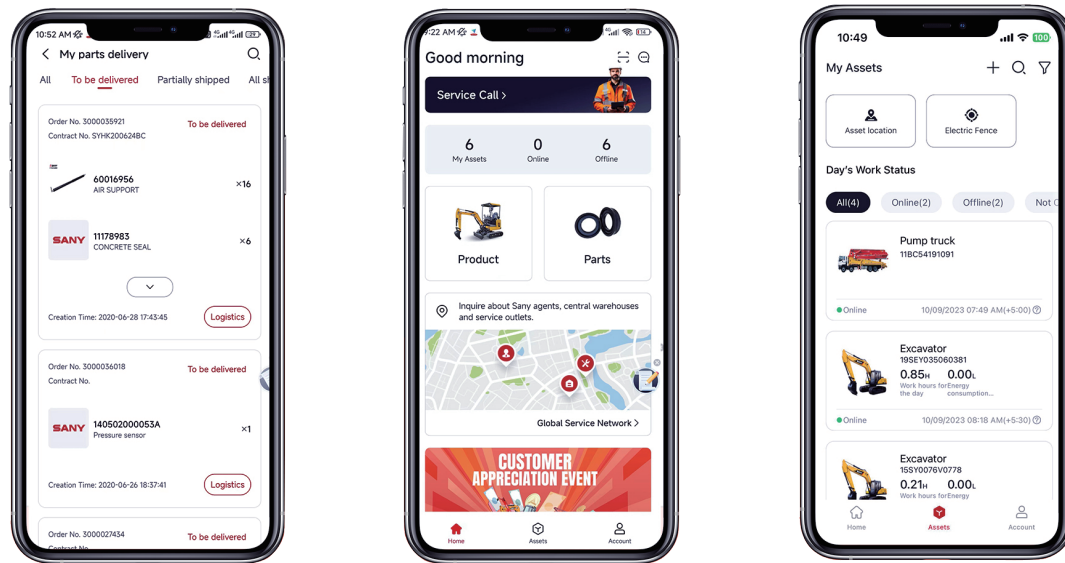


Alarm light + go-home lighting



MySANY APP

Easy use, quick response



Quick Parts Access

- View parts manuals
- View parts availability
- Check equipment & parts order status

Fleet Management

- Check equipment working condition
- Monitor equipment energy consumption
- Set up e-fence

Streamlined Service

- One-click to initiate service request
- Check global service network
- View local service team's phone number & email



Scan to download!

Complete research & development and test system

SANY has established complete machine endurance test center with full functions. Each model of excavator must be subjected to over 2,000h field excavating test.

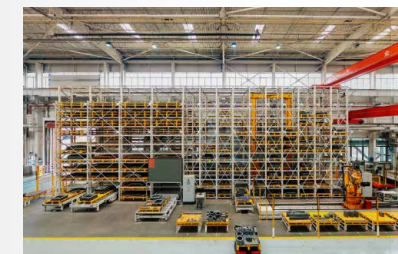
Key components like working device, cab and hydraulic components etc., must be subject to fatigue test over 800,000 times.



Advanced manufacturing technology

SANY has RGV assembling line and fullautomatic welding robots, and possesses high precision machining equipment and precise machining center.

SANY's manufacturing and assembling lines won five-star national site in 2013 and national quality award in 2014. In 2023, SANY Mini Excavator Factory was awarded as the intelligent factory.



Technical specifications

Specification		Main performance	
Operating weight	127,000 kg (including boom, arm and 8.0m ³ bucket)	Traveling speed (high/low)	3.5/2.4 (km/h)
Bucket capacity (ISO 7451)	7 m ³ @2.2 t/m ³ 8 m ³ @1.8 t/m ³	Slewing speed	5.8 rpm
Engine	Cummins	Grade ability	70%/35°
Model	QSK23	Ground pressure	148 kPa (1.51 kgf/cm ²)
Diesel engine emission	EU Stage IIIA compliant	Bucket digging force (ISO 6015)	573 kN
Type	Direct injection, 6-cylinder, 4-stroke, turbocharged, inter-cooling and water-cooled	Arm crowd force (ISO 6015)	532 kN
Engine power (ISO 9249)	567 kW/1,800 rpm		
Maximum torque	3,468 Nm/1,350 rpm		
Displacement	23 L		

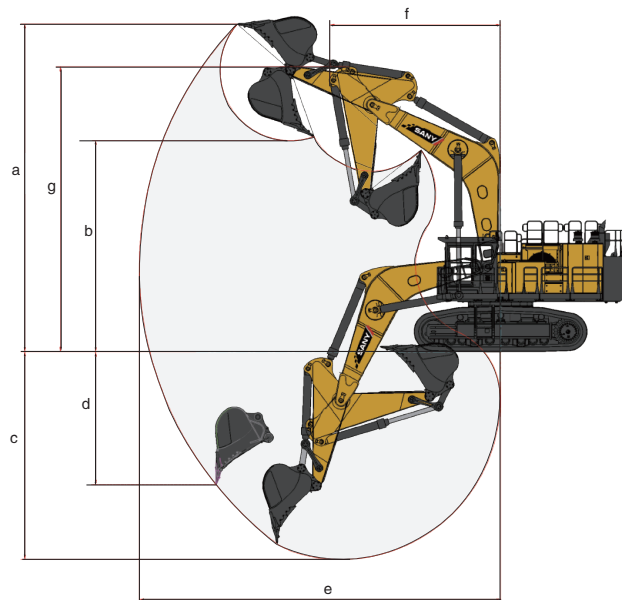
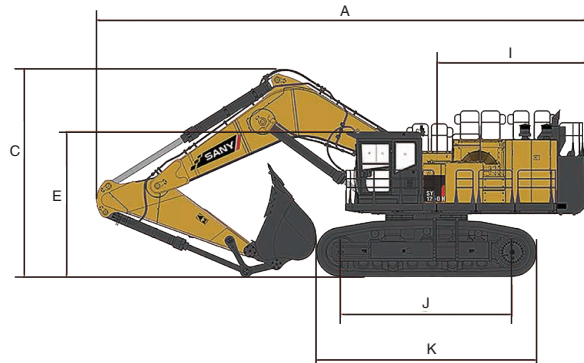
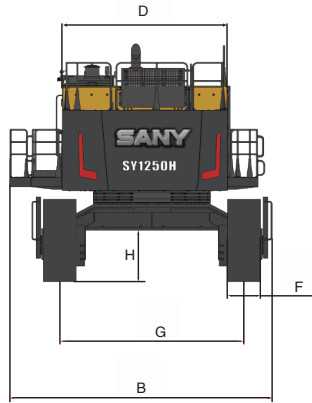
Service refill capacities		Traveling part	
Fuel tank	1,560 L	Number of track plates	52
Engine oil	65 L	Each carrier roller side	3
Radiator	90 L	Each supporting wheel side	9
Final drive	2×18 L	Standard track	700 mm

Table of lifting capacity

	Boom-7600mm		Arm-3400mm		Track width-700mm		Counterweight-17500kg								
Height of loading point (B)m	4.0m	5.0m	6.0m	7.0m	8.0m	9.0m	10.0m	11.0m							
11.0m kg						*24961	19158	*22410	17993						
10.0m kg					*28274	*28274	*25184	18954	*24812	17898	*13736	*13736			
9.0m kg			*40250	*40250	*31260	26514	*28700	17941	*28145	18795	*23700	13461			
8.0m kg					*38824	23361	*31331	16479	*28301	18619	*24786	15269			
7.0m kg					*42938	20780	*30908	22194	*28956	18227	*27612	15143			
6.0m kg			*41234	33734	*36001	26417	*32444	21390	*29906	17702	*28073	14842			
5.0m kg		*53690	*53690	*45254	31604	*38562	25085	*34129	20506	*30998	17106	*28704	14458		
4.0m kg		*21665	*21665	*48862	29605	*40970	23788	*35760	19623	*23085	16494	*29365	14043	*27266	12033
3.0m kg		*30673	*30673	*51422	28014	*42899	22659	*37139	18817	*33023	15917	*29932	13640	*27446	11783
2.0m kg			*52667	26927	*44127	21775	*38099	18142	*33682	15416	*30285	13283	*27412	11560	
1.0m kg			*52702	26270	*44560	21151	*38520	17628	*33943	15019	*30300	12999			
Ground kg		*44858	34641	*51737	25929	*44181	20763	*38313	17281	*33686	14745	*29813	12813		
-1.0m kg	*38990	*38990	*58045	34711	*49865	25822	*42970	20581	*37381	17099	*32758	14606	*28542	12757	
-2.0m kg	*54153	*54153	*54212	34955	*47044	25910	*40836	20587	*35563	17086	*30883	14627	*23700	13461	
-3.0m kg	*55546	*55546	*49191	35392	*43077	26191	*37553	20783	*32521	17263	*27338	14876	*24378	13062	
-4.0m kg	*47388	*47388	*42543	36068	*37541	26699	*32598	21212	*27333	17719	*27348	11513	*25010	12619	
-5.0m kg		*33454	*33454	*29484	*29484	*24432	*24432	*32414	14400	*25149	12257	*25149	12257		
-6.0m kg		*53690	*53690	*43615	32379	*33708	20193	*29878	15580	*24315	12063	*24315	12063		
-7.0m kg		*21665	*21665	*41716	*41716	*34344	21737	*27737	15529	*26739	14823	*17685	*17685		
-8.0m kg		*30673	*30673	*34814	*34814	*29176	22108	*23087	15834	*21941	15145	*15706	*15706		

- The lifting capacity is calculated in accordance with ISO10567 and SAEJ1097, where the limit coefficient of hydraulic system is 0.87 and tilting limit coefficient is 0.75;
 - Item with * is limited by hydraulic pressure and item without "*" is limited by stability;
 - Lifting point is front support hole of arm (excluding the weight of bucket).
- It is necessary to deduct from the above lifting capacity if additional accessory is installed such as bucket etc.;

Machine dimensions



Dimensions (mm)	SY1250H
A. Overall length (during transportation)	14710
B. Total width (including traveling platform)	5560
C. Overall height (during transportation)	6260
D. Upperstructure width (excluding walking platform)	3500
E. Overall height (cab top)	4375
F. Standard track shoe width	700
G. Gauge (operation/transportation)	3900
H. Minimum ground clearance	1085
I. Tail swing radius	4950
J. Length to centers of rollers	5150
K. Track length	6630

Working range (mm)	SY1250H
a. Max.digging height	12550
b. Max. unloading height	8100
c. Max.digging depth	8065
d. Maximum excavation depth of vertical excavation arm	5085
e. Max.digging reach	13335
f. Min.swing radius	6550
g. Maximum height at min.swing radius	10950

Standard configuration

Engine	Cabin	Undercarriage
Mining heavy-load engine	• OPG Level (ISO 10262)	• Traveling parking brake
Dynamic optimizing mode control	• Ultra-silence frame cab	• Traveling motor guard plate
Radiator (with full protective screen)	• Reinforced light-color glass window	• H-shaped track guide mechanism
24V 7.5kW starter motor	• Silicone rubber shock absorber	• Tensioning mechanism of track
140A alternator	• Openable left window	• Bolted driving wheel
Double air filter	• Emergency exit on rear window	• Carrier roller and supporting wheel
Dry-type dual-element air filter	• Windscreen wiper (with washer)	• Reinforced chain track with pin shaft seal
Engine oil filter	• Multi-directional electric-heated and ventilated adjustable air-suspension seat	• 700mm double-rib track shoe
Large capacity fuel filter	• Radio (with digital clock)	• Reinforced ladder stand
Fuel cooler	• Foot rest and floor mat	• Bottom cover plate
Auxiliary radiator water tank	• Loudspeaker and rearview mirror	
Fan deflector	• Seatbelt and fire extinguisher	
Automatic idling system	• Cup holder and compartment lamp	
Independent water radiator with reverse rotation function	• Ash tray and emergency hammer	
Cooling water filter	• Storage box and sundries bag	
	• Pilot control cut-off lever	
	• Fully-automatic A/C	
	• Emergency stop switch	
	• Front protective screen	
	• One - key start button	

Standard configuration

Double slewing reducer		Alarm system	
Fully-electrically-controlled main pump	•	Controller failure	•
Fully electrically-controlled main valve	•	Abnormal pump pressure	•
Double oil suction filter	•	Abnormal hydraulic oil cleanliness	•
Oil drain filter	•	Abnormal power supply voltage	•
Double oil return filter	•	Abnormal hydraulic oil temperature	•
On-line detection device for hydraulic oil cleanliness	•	Engine oil pressure insufficient and engine coolant temperature too high	•
Blanking pipe of hydraulic damper	•	Throttle rotary knob failure	•
Independent oil radiator	•	Insufficient fuel volume	•
		Abnormal inclination of the whole machine	•

Front-end working device		Upper rotary platform	
Flange pin	•	Fuel oil level sensor	•
Welded connecting rod	•	Hydraulic oil level gauge	•
Integrated lubricating system	○	Toolbox	•
Hammer-free bucket tooth	•	Slewing parking brake	•
Reinforced all-welded box-type boom	•	Platform lighting lamp	•
Reinforced all-welded box-type arm	•	360° panoramic imaging system (rear + right side camera)	•
Anti-collision guard plate	•	Cab warning lamp	•

• indicates standard ○ Indicates optional configuration

Monitoring system instruments	Safety	Others
Global positioning system (GPS)	• Emergency stop switch	• High-capacity storage battery
10" color LCD touch screen	• Signal/alarm horn	• Lockable engine hood
EVI system	• Rearview mirror	• Lockable fuel filler cap
Hour meter, fuel tank oil level gauge	• Emergency exit on rear window	• Anti-slip pedal, armrest and sidewalk
Engine coolant temperature gauge	• Negative pole switch of storage battery	• Traveling direction sign on traveling frame
Engine oil pressure gauge	• Travel alarm	• Fully-automatic lubrication system
		○ Fuel refilling pump
		○ Electric lubrication pump

• indicates standard ○ Indicates optional configuration