

## ○ Standard configuration

### Engine

- Isolated mounted engine
- Dynamic optimizing mode control
- Radiator
- Independent self-filtering circulating system
- 24V/5.5KW starter motor
- 50A alternator
- Oil-bath type air filter
- Dry-type dual-element air filter
- Engine oil filter
- Three-stage fuel oil filter
- Engine oil cooler
- Radiator auxiliary water tank
- Fan deflector
- Automatic idling system
- Fuel filling pump and electronic pump

### Hydraulic system

- Operating mode selector switch
- Control valve with main overflow valve
- Control valve with spare oil port
- Oil suction filter
- Oil return filter
- Pilot filter
- Oil drain filter

### Upper slewing platform

- Fuel oil level sensor
- Hydraulic oil level gauge
- Toolbox
- Slewing parking brake
- Rearview mirror (right)
- Rearview camera \*
- Cab alarm lamp \*

### Cab

- Ultra-silence frame cab
- Reinforced light-color glass window
- Silicone oil rubber damper
- Openable top/front wall upper window and left side window
- Emergency exit on rear window
- Wiper (with washer)
- Multidirectional adjustable seat
- Radio (with digital clock)
- Foot rest and floor mat
- Loudspeaker and rearview mirror
- Seat belt and fire extinguisher
- Cup holder and compartment lamp
- Ash tray and escape hammer
- Storage box and sundries bag
- Pilot controlled cut-off lever
- Fully-automatic A/C
- Sun shade
- Emergency stop switch

### Front-end working device

- Flange pin
- Bucket clearance adjuster
- Welded connecting rod
- Integrated lubricating system
- All bucket pins are equipped with dustproof seal ring
- Reinforced all-welded box-type boom
- Reinforced all-welded box-type bucket rod
- Anti-collision guard plate

### Instruments of monitoring system

- Global positioning system (GPS)
- 7" colored display screen
- EEVIA system
- Hour meter, fuel tank oil level gauge
- Engine coolant temperature gauge
- Engine oil pressure gauge

### Traveling body of undercarriage

- Traveling parking brake
- Traveling motor guard plate
- H-shaped track guide mechanism
- Hydraulic tensioning device of track
- Bolted driving wheel
- Carrier roller and thrust wheel
- Reinforced chain track with pin shaft seal
- 600mm double-rib track plate
- Reinforced side pedal
- Bottom cover plate

### Alarm system

- Controller failure
- Abnormal pump pressure
- Pilot pressure of various movements abnormal
- Abnormal power supply voltage
- Starter motor relay abnormal
- Abnormal hydraulic oil temperature
- Engine oil pressure insufficient and engine coolant temperature too high
- Throttle rotary knob failure
- Fuel volume insufficient

### Others

- High-capacity storage battery
- Lockable engine hood
- Lockable fuel filler cap
- Anti-slip pedal, armrest and sidewalk
- Traveling direction sign on traveling frame
- Manual grease gun
- Motor-driven diesel pump

\* Indicates optional configuration



- Rated power  
300kW/1800rpm
- Overall weight  
52000kg
- Bucket capacity  
3.1~3.6m<sup>3</sup>

# SY550HD

## Hydraulic excavator

**BRAND NEW C10**  
**KING OF MINING EQUIPMENT**  
**ASSET OF GREAT VALUE**  
 Leading Innovation Splendid SANY



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**Note**

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# SY550HD

Powerful Tool for  
Mining Excavation  
Value Leader

New-generation Super Hydraulic  
Excavator for Mining



## SELLING POINTS

SY550HD is a new-generation 50T-level super hydraulic excavator product for mining produced by SANY Heavy Machinery. It is designed particularly for heavy-duty mining conditions and targets to improve customer's investment return. As compared with competitor brands, it has the advantages including "excellent performance, high adaptability, long service life and low maintenance cost".



Special working  
condition  
Dedicated design



High adaptability



Long service life

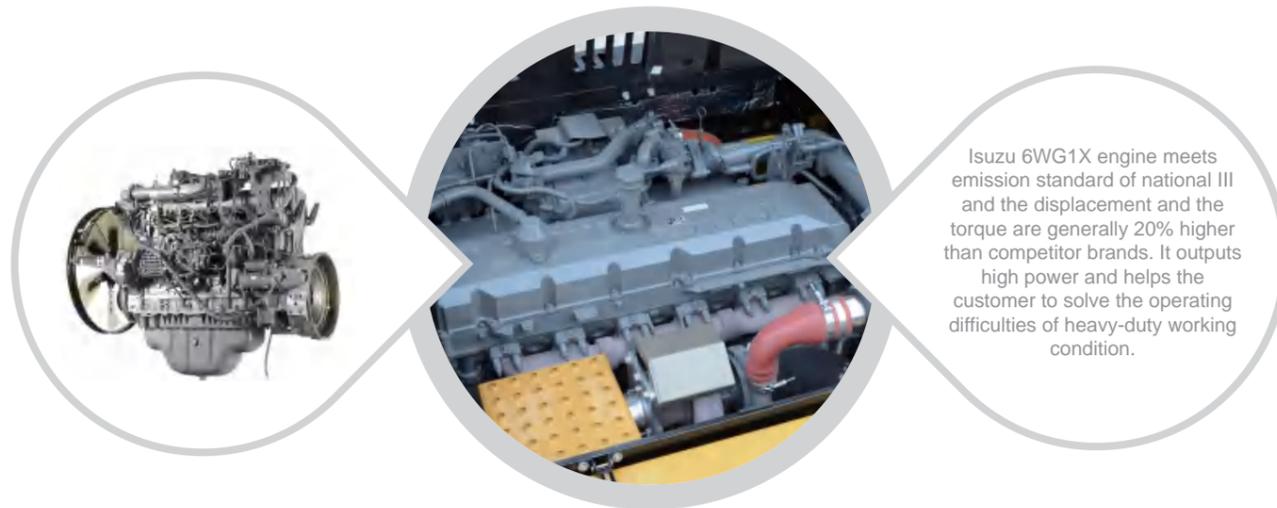
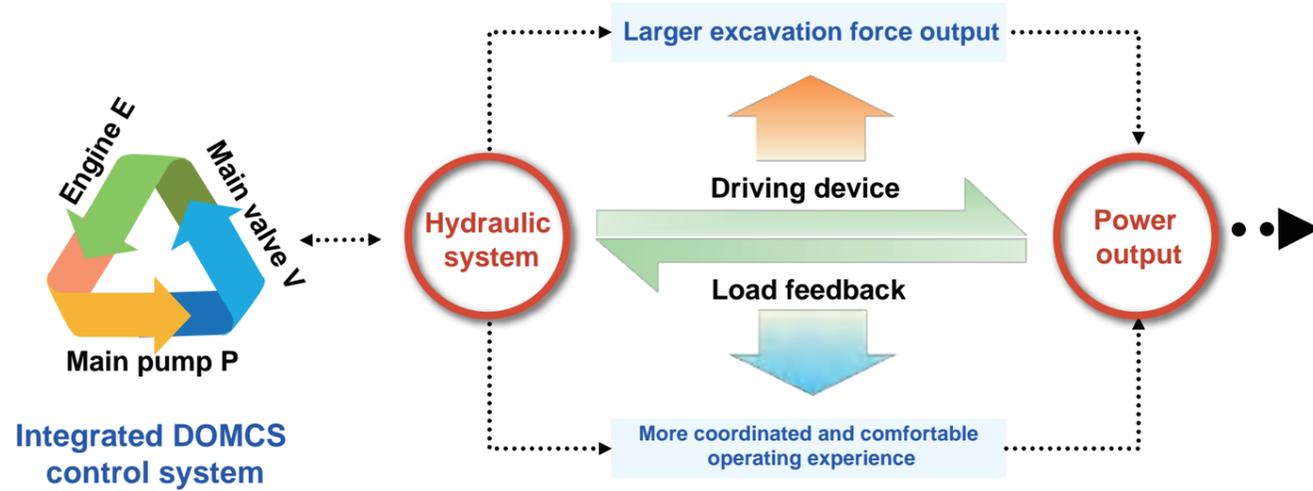


Low  
maintenance cost

# SUPERIOR PERFORMANCE

## Efficient low consumption

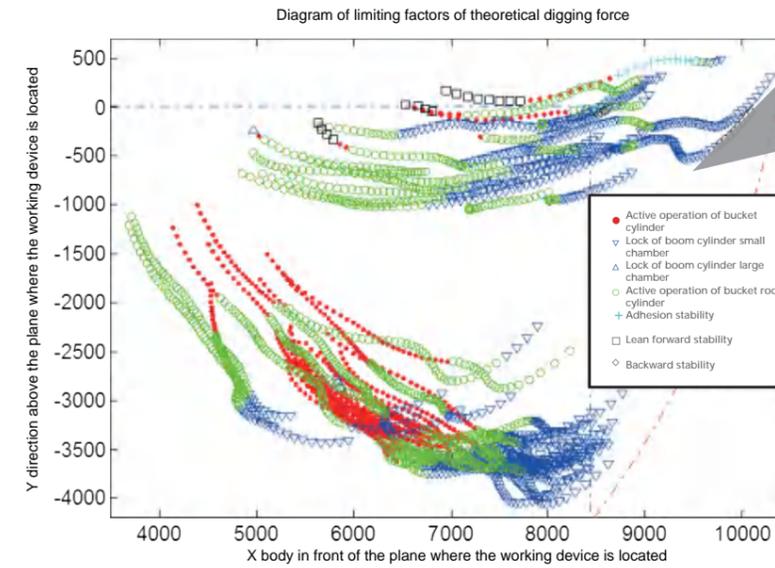
With "positive flow" system and "DOMCS" dynamic hunting intelligent matching control system developed independently by SANY, the efficiency and fuel consumption surpass competitor brands. The efficiency is 8% higher and the fuel consumption is 10% lower. The engine is exclusively for SANY, with strong power and high reliability. Thus, it can ensure the continuous operating stability in severe environment. As compared with foreign brands, it not only saves fuel but also works faster!



It could save 100,000 RMB every year according to the calculations as per annual working time of 3,000h and diesel oil price of 7 RMB/L under the condition that standard gear (S9) works.

## Big Mining Power

By way of regulating power in real time in excavating process and atlas analysis of excavating force under full working conditions, the excavating force is given into full play, and the efficient area of excavating force is improved by 40%.



Green curve in the diagram indicates that the digging efficiency is given into full play and blue curve indicates other digging efficiency. As shown in the diagram, the region in which the digging force of SY550HD is given into full play reaches 90% and others only reach 50%.

## Smooth controllability

With special handle, optimized valve core structure, regenerating channel and added intelligent interflow control etc. the pressure loss is reduced, operation coordination is improved and the equipment can be operated easily and smoothly.



**Comments of an excavator operator with over 12 years' of experience in Shandong Province on SY550HD:**

In this mine, we use 50T excavator of other brands on the surface layer and the second layer, and use SY550HD on the third layer. Only SY550HD can excavate the stonework on this layer!

# High adaptability

By improving safety & cooling capacity, and utilizing efficient filtering system and "highly corrosion-resistant" coating, SY550HD's adaptability to environment, working conditions and oils is improved.

## High corrosion-resistant coating

With new coating system, service life of the paint is improved

# 50%

## Standard working device connector

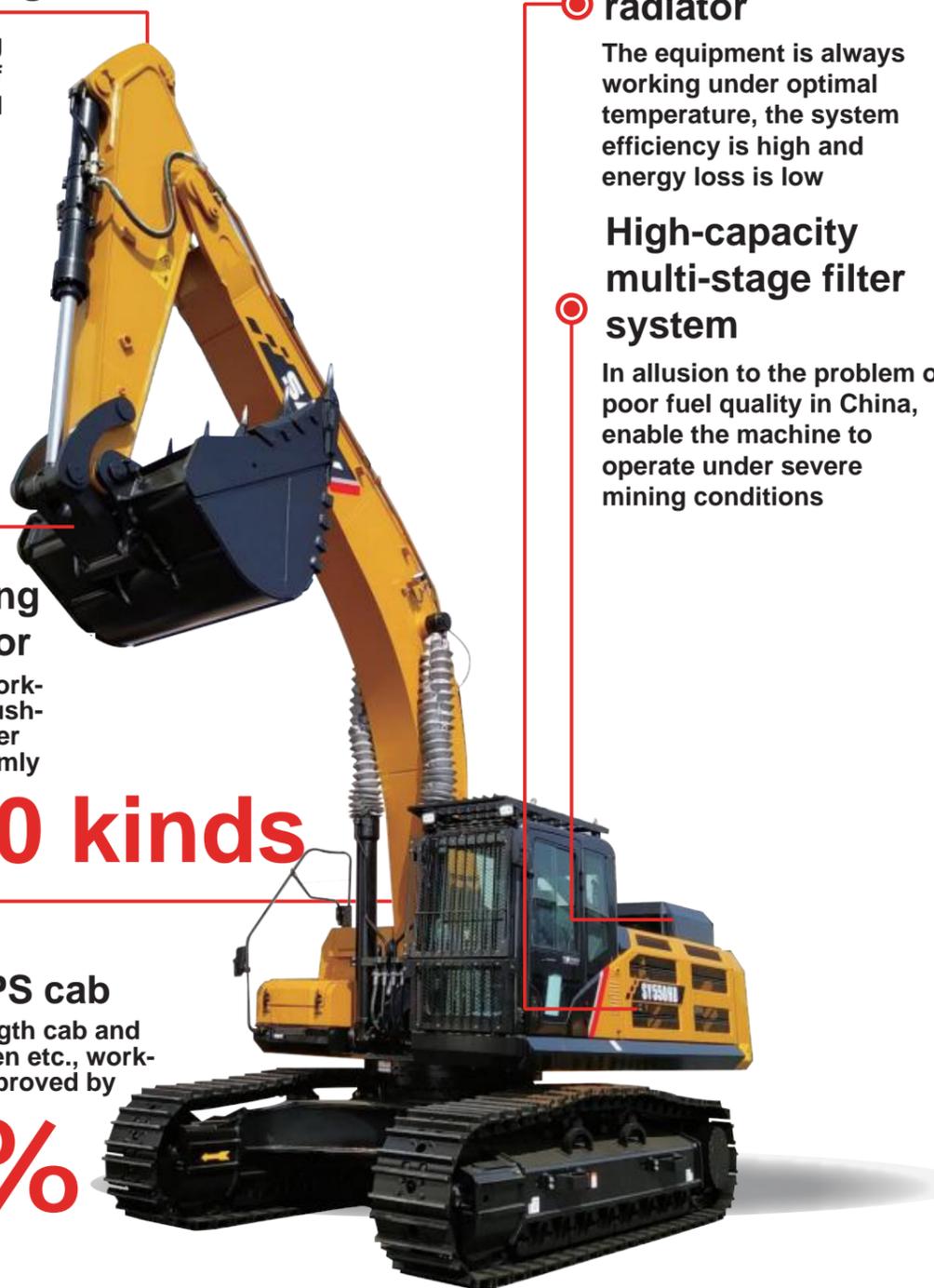
More than 20 special working devices such as crushing hammer and scarifier may be modified randomly

# Over 20 kinds

## FOPS/ROPS cab

With high-strength cab and protective screen etc., working safety is improved by

# 30%



## Independent oil radiator

The equipment is always working under optimal temperature, the system efficiency is high and energy loss is low

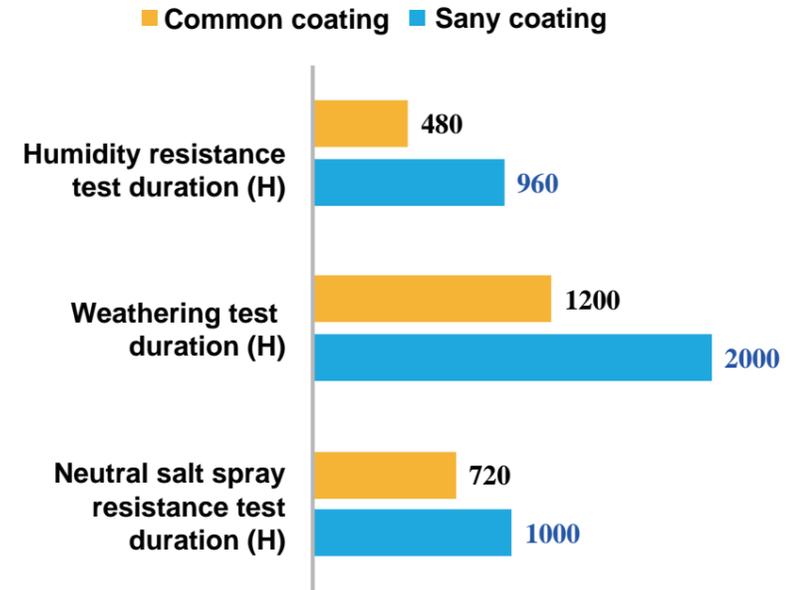
## High-capacity multi-stage filter system

In allusion to the problem of poor fuel quality in China, enable the machine to operate under severe mining conditions

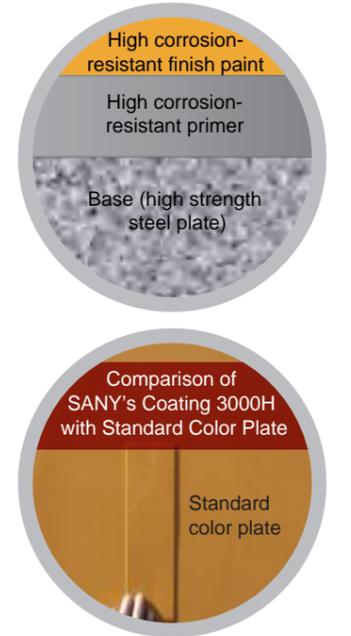
## High corrosion coating

By cooperating with world known paint brands, aging life of the paint reaches the highest level in the industry. The adaptability is improved by 40%

## Comparison of coating endurance test data



Coating distribution of SANY's high corrosion-resistant paint

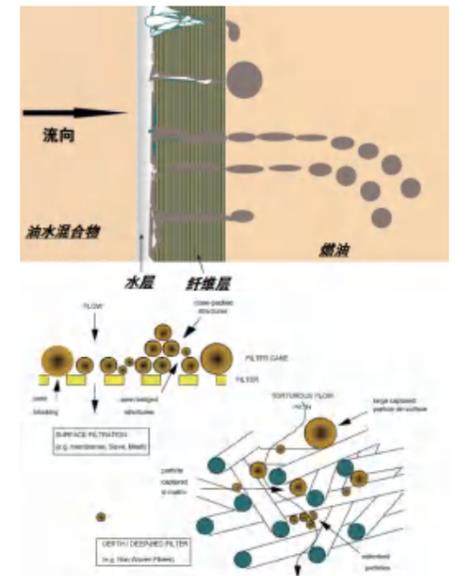


## High-capacity Multi-stage Filtration System

Domestically initiative self-circulation "large-capacity multi-stage filter system" is launched in allusion various oils and meets emission requirements of national III standard. Provide top-level protection for the equipment!



High-capacity multi-stage filter system



Large-capacity multi-stage filter principle

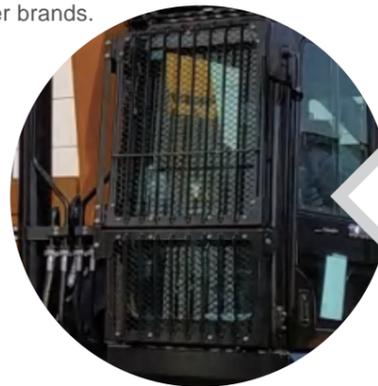
## ○ Independent oil radiator

Domestically initiative 50T independent oil radiator system is introduced. System operating temperature is 8-10°C lower than general excavator. The adaptability to high temperature environment is improved significantly. Service life of rubber parts is improved by 30%.

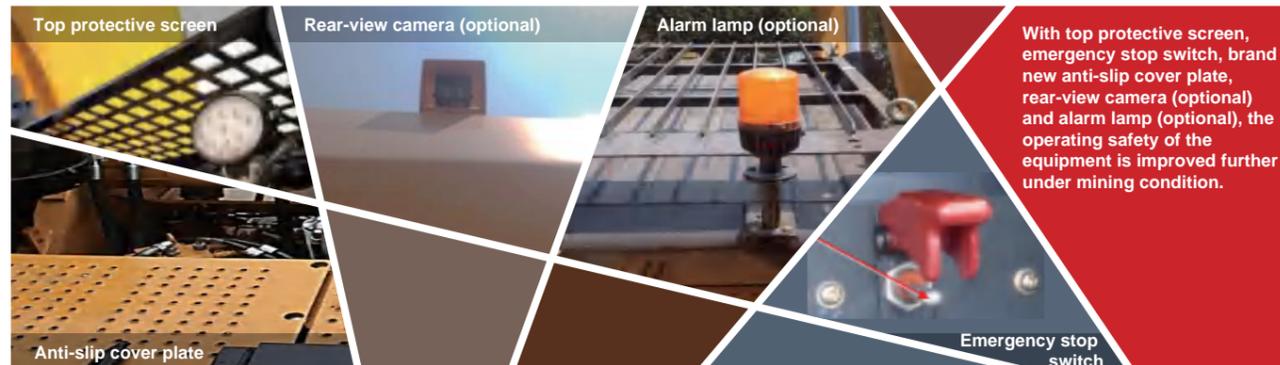


## ○ Safe and comfortable

In allusion to mining conditions, FOPS/ROPS cab and newly developed dust control & noise reduction technology are used so that the safety is improved by 5 times as compared with general cab. The noise in the cab is reduced by 5kB and is much better than that of other brands.



FOPS/ROPS cab is used. Through finite element modal analysis, steel structure and sealing performance of the cab are optimized; its strength is 5 times of general cab, the safety performance is extremely high and meanwhile the cab noise is reduced by 3-5dB, which makes the operation more comfortable.



## ○ Configuration of working devices

In allusion to individual demands of the customer, this product may match with a variety of working devices to improve earning power of the customer.

Configuration Table of Working Devices of SY550HD Excavator

| Model   | SY550HD | Bucket capacity m3 |
|---|---------|--------------------|
| Boom  | 7m      |                    |
| Bucket rod  | 2.8m    |                    |
| Bucket configuration  | ▲       | □3.5               |
|   | ◆       | □3.1               |
|   | ◆       | □2.9               |
|   | ■       | △2.7               |
|   | ●       | △2.5               |
| Maximum material density (Kg/m3): ●≤2000; ■≤1800; ◆≤1500; ▲≤1200; -Unavailable;<br>Classification of bucket by use: ○: bucket for heavy-duty stonework; △: bucket for stonework; □: bucket for earthwork; |         |                    |

# Long service life

Through the accumulation over 15 years, service life of SY550HD exceeds 20,000h under mining conditions, and surpasses competitor brands with the help of domestic "three-dimensional" design test system for large-scale excavator.

## Five major structural members

As compared with the product of previous generation, the service life of key structural members like boom, bucket rod, bucket, platform and undercarriage etc. is doubled

## Hydraulic system

Delivery cleanliness of hydraulic system reaches NAS7 and is not only higher than competitor brands but also higher than industrial standard

## Core components

Core components like main pump, main valve, oil cylinder and retarder etc. guarantee super long life



## Key structural members

With most advanced international methods including optimization design of structural members, stress test, research of welds and plates, endurance test, 100% UT detection for key components and fatigue test for two axles, the service life of key structural members is improved comprehensively.



The boom adopts box-type structure with higher strength and is made of high-strength steel plates through advanced welding and molding process. The service life under mining conditions is **four times** of general boom.



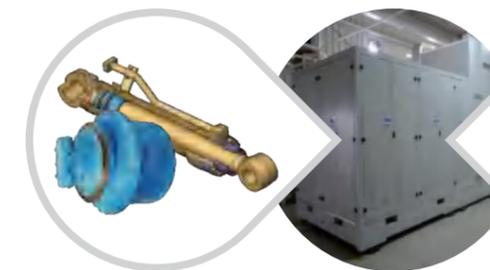
Bucket rod adopts bottom plate reinforcing bars and forging front support etc. As compared with competitor brands, the stress on main loading point is **30% lower**, and the service life is **30% higher** under mining conditions.

In allusion to the positions with concentrated stress such as oil cylinder connections and boom root etc., special welding process and protection structure are used. The stress on loading point is **20% lower** than the competitor.

Dedicated heavy-duty four-wheel & one-belt is used, and the service life is doubled. The guard plate is upgraded to multi-stage guard plate so that the service life is improved by **100%**.

## Core components

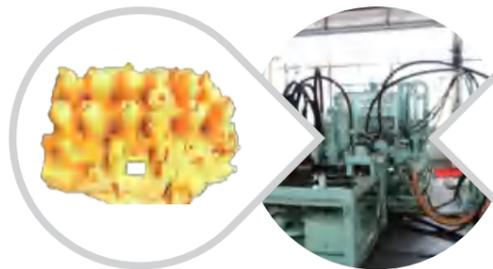
Relying on the only endurance test system for excavator parts in China, and through joint research with world famous research institutions, the research on service life of the parts is carried out for improving the service life of core parts comprehensively. The service life of components including pump, valve, oil cylinder, retarder, fuel tank and cab etc. is doubled.



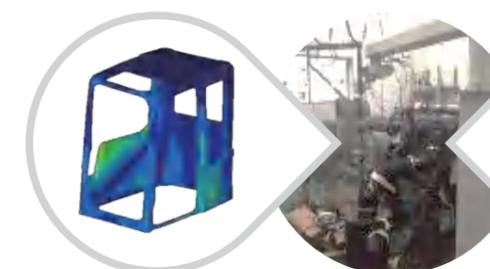
Hydraulic components like oil cylinder and retarder etc. must be subjected to impulse test according to the requirements higher than industrial standard. They can be put into operation only after reaching the requirements. Through this process, the service life of the components is **30% higher** than that of general brands.

## Oil cylinder impulse test bench

## Pump- valve test bench



With pump-valve endurance test bed, the service life of main pump and main valve are tested and analyzed. In combination with research achievements of long-life parts of the customer, the service life of the pumps and the valves is improved by **1 time**.



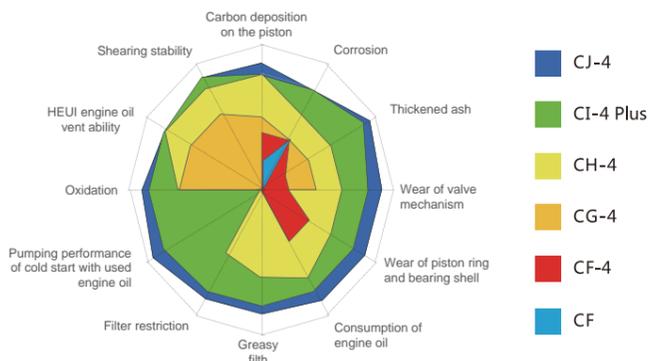
With vibration test bench, fuel tank and the cab has been tested by over hundreds of thousands of times on aspect of the vibration to improve the service life of the component by **50%**.

## Vibration test bench

# LOW MAINTENANCE COST

## Low maintenance cost

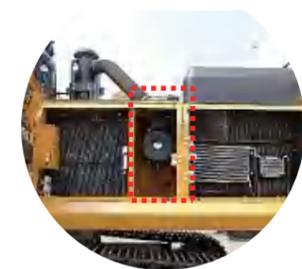
SANY is developing long-life engine oil, diesel oil filter and hydraulic oil jointly with professional manufacturers. Through two years' market verification, maintenance cost of the product is reduced by 50%, and maintenance interval is extended by 1 time;



Hydraulic oil: Service life of hydraulic oil is 4,000h and is extended by 1 time as compared with the competitor;  
 Engine oil: Replacement interval is 500h and is extended by 1 time as compared with the competitor;  
 Fuel filter element and engine oil filter element: Maintenance interval is extended from 250h to 500h;  
 Hydraulic oil suction filter element: Maintenance interval is extended from 1,000h to 2,000h.

## Maintenance convenience

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 easier!



Easy to replace air filter element

Replace air filter element



Easy to replace diesel oil filter element

Replace diesel oil filter element



Easy to inspect engine oil; pump oil by one push after engine goes off abnormally

Inspect the situation of engine oil

Pump oil by one push after engine goes off abnormally



Engine compartment volume is increased by 20%, and water drain valve and diesel oil check valve are added

Engine compartment

Check valve

## Super-easy management

Replacement space for maintainable parts is increased and the parts are designed in allusion to severe mining conditions for convenient maintenance. It is thus easier and simpler to manage the equipment. It is equipped with four-dimensional construction management system developed independently by SANY.



**Air filter element**  
 The space for replacing external air filter element is 30% larger than that of general excavator and the filter element can be replaced without the help of any tool.

**30%**

**Engine compartment**  
 Engine compartment volume is increased by 20% and electronic pump is added so that abnormal misfire can be solved rapidly

**20%**

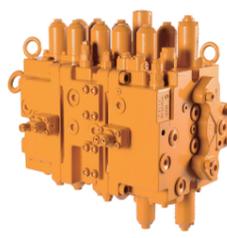
**Pump chamber**  
 Pump chamber volume is increased by 30%, and the operating space for filter element replacement is increased by 20%

**30%/20%**

# PRODUCT INTRODUCTION

## ○ Main configuration

Core components like pumps, valves and engine etc. are designed jointly with proprietary intellectual property rights, and are manufactured by world famous manufacturers to ensure high quality and satisfy professional demands of SANY's customers.

|   |   |  |
|---|---|--|
|    |    | <p>6WG1X engine meets emission standard of national III and the displacement and the torque are generally 20% higher than competitor brands. It outputs high power and helps the customer to solve the operating difficulties of heavy-duty working condition.</p>   |
|  |  | <p>32NA main valve is developed and designed according to customer requirements of SANY and has outstanding advantages including "high reliability, low pressure loss, high flow distribution efficiency and smooth compound control action". Its energy consumption is low and control performance is good.</p> |
|  |  | <p>212D main pump is parallel pump customized for SY550HD. As compared with traditional tandem pump, power output is improved by 10%, the arrangement is more compact and the maintenance is more convenient.</p>  |

## ○ Construction case

Comments of the customer from Inner Mongolia on SY550HD: In this mine, we use excavators of other brands on the surface layer and the second layer, and use SY550HD on the third layer. Only SY550HD can excavate the stonework on this layer!



Worksite: Inner Mongolia  
Working condition: earthwork  
Operating type: excavation- loading  
Work assumed by SY550HD: Loading



Worksite: Inner Mongolia  
Working condition: Stonework  
Operating type: Excavation- loading  
Work assumed by SY550HD: excavation and loading

## ○ Technical specification

| Specification   |  | Main performance               |               |
|-----------------|--|--------------------------------|---------------|
| Overall weight  | 52000kg  | Traveling speed (high/low)     | 5.4/3.1(km/h) |
| Bucket capacity | 3.1~3.6m <sup>3</sup>  | Slewing speed                  | 8 rpm         |
|                 |  | Gradeability                   | 70% (35°)     |
| Engine          |  | Ground pressure                | 87.1kPa       |
| Model           | 6WG1XKSC-01  | Excavating force of bucket     | 270kN         |
| Type            | Direct injection, 6-cylinder, 4-stroke, turbocharged, inter-cooling and water-cooled | Excavating force of bucket rod | 244kN         |
| Rated power     | 300kW/1800rpm  |                                |               |
| Maximum torque  | 1950Nm/1400rpm   |                                |               |
| Displacement    | 15.681L  |                                |               |

| Capacity of oil and coolant |       | Traveling part           |       |
|-----------------------------|-------|--------------------------|-------|
| Fuel tank                   | 680L  | Number of track plates   | 50    |
| Hydraulic oil tank          | 480L  | Each carrier roller side | 2     |
| Engine oil                  | 50L   | Each thrust wheel side   | 9     |
| Radiator                    | 24L   | Standard track           | 600mm |
| Final drive                 | 2×15L |                          |       |

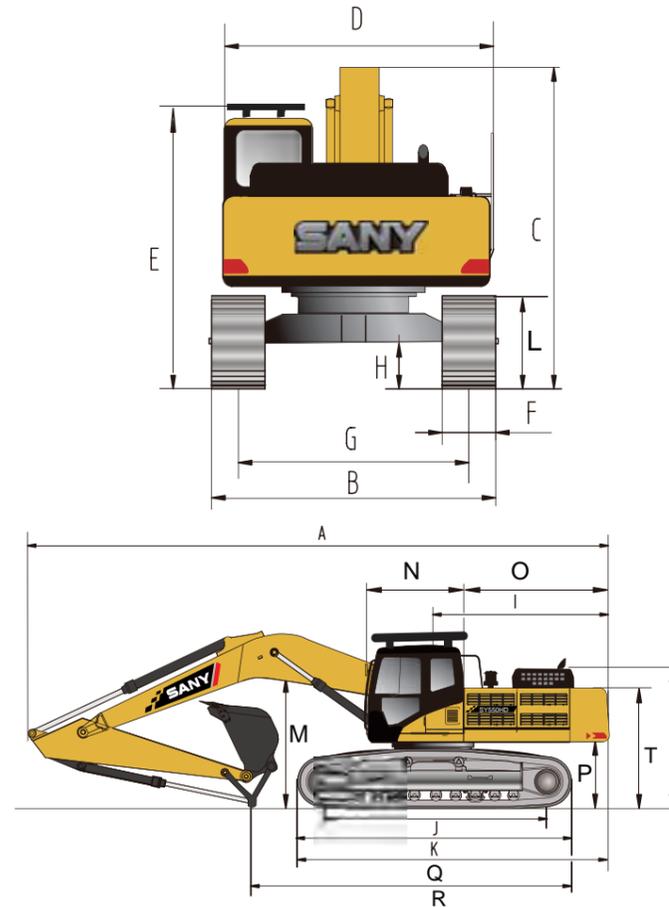
| Boom--- | 7000mm | Bucket rod--- |         | Track width--- |         | Counterweight--- |         |              |         |              |         |
|---------|--------|---------------|---------|----------------|---------|------------------|---------|--------------|---------|--------------|---------|
|         |        | 2800mm        |         | 600mm          |         | 10000Kg          |         |              |         |              |         |
|         |        | 3.0m          |         | 4.5m           |         | 6.0m             |         | 7.5m         |         | 9.0m         |         |
|         |        | Longitudinal  | Lateral | Longitudinal   | Lateral | Longitudinal     | Lateral | Longitudinal | Lateral | Longitudinal | Lateral |
|         |        |               |         |                |         |                  |         |              |         |              |         |
| 7.5m    | Kg     |               |         |                |         |                  |         | *10373       | *17373  |              |         |
| 6.0m    | Kg     |               |         |                |         |                  |         | *10863       | *10863  | *10504       | *10504  |
| 4.5m    | Kg     |               |         | *18882         | *18882  | *14005           | *14005  | *11834       | *11834  | *10759       | *10759  |
| 3.0m    | Kg     |               |         |                |         | *16082           | *16082  | *12949       | *12949  | *11291       | 10444   |
| 1.5m    | Kg     |               |         |                |         | *17614           | *17614  | *13905       | 13073   | *11793       | 10267   |
| Ground  | Kg     |               |         | *14639         | *14639  | *18300           | 17394   | *14461       | 12868   | *12033       | 10163   |
| -1.5m   | Kg     |               |         | *23664         | *23664  | *18149           | 17352   | *14432       | 12815   |              |         |
| -3.0m   | Kg     | *23840        | *23840  | *21857         | *21857  | *17075           | *17075  | *13472       | 12945   |              |         |

1. The lifting capacity is calculated in accordance with ISO10560 and SAEJ1097, where limit coefficient of hydraulic system is 0.87 and tilting limit coefficient is 0.75;

2. The item with the mark \* is limited by hydraulic pressure and the item without the mark "\*" is limited by stability;

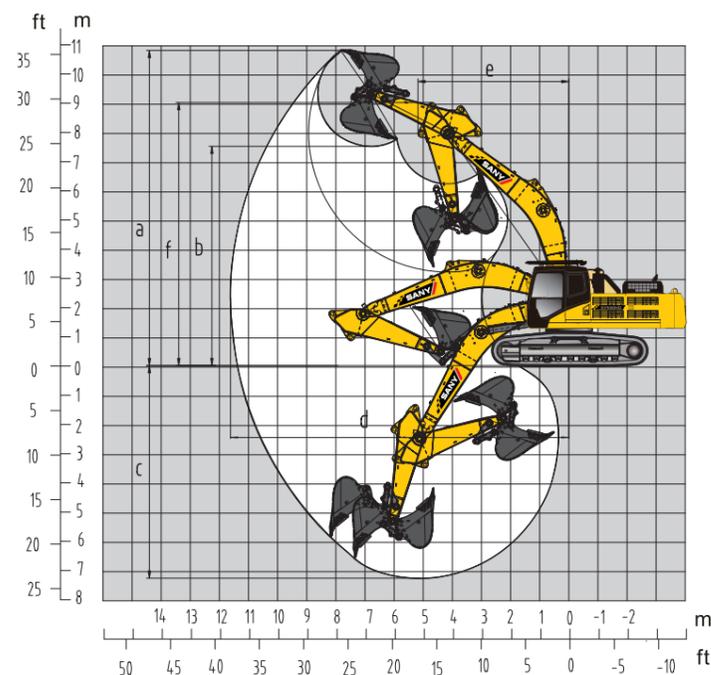
3. Lifting point is front support hole of bucket rod (excluding the weight of bucket). It is necessary to deduct from the above lifting capacity if additional accessory is installed such as bucket etc.;

## ○ Overall dimensions (mm)



| Name (Unit: mm)   | SY550HD |
|---|---------|
| A Overall length (in transportation state)                                      | 12076   |
| B Overall width   | 3360    |
| C Overall height (in transportation state)                                      | 3700    |
| D Upper width   | 3290    |
| E Overall height (cab top)  | 3470    |
| F Width of standard track plate   | 600     |
| G Track gauge   | 2740    |
| H Minimum ground clearance  | 560     |
| I Slewing radius of tail  | 3765    |
| J Grounding length of track   | 4415    |
| K Track length  | 5440    |
| L Trackheight   | 1220    |
| M Driver's height of slewing line (height of upper edge of seat off the ground) | 2915    |
| N Length of cab top   | 1950    |
| O Tail length   | 3465    |
| P Ground clearance of counter weight  | 1355    |
| Q Overall length (excluding working device)                                     | 6500    |
| R Length on the ground (in transportation mode)                                 | 6570    |
| S Overall height of engine hood   | 2995    |
| T Overall height of counter weight  | 2615    |

## ○ Operating range (mm)



| Name (Unit: mm)                            | SY550HD |
|--|---------|
| a Maximum excavating height                | 10936   |
| b Maximum unloading height                 | 7255    |
| c Maximum excavating depth                 | 7096    |
| d Maximum excavating distance              | 11489   |
| e Minimum slewing radius                   | 5251    |
| f Maximum height at minimum slewing radius | 9100    |



Powerful Tool **SY550HD**  
for Mining Excavation  
Value Leader

New-generation Super Hydraulic  
Excavator for Mining

