



QUALITY CHANGES THE WORLD

This manual was printed in June 2021, and the product information may have changed when you read it.

The products (including specific configuration, related details, etc.) are subject to the specific models and products applicable to mainland China as displayed and sold by agents.

For more details, please visit the local authorized agent of SANY Heavy Machinery Co., Ltd.



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SY870H Pro

Inclusive: generous but sharp



Extensive: composed but aggressive



Product highlights

SY870H Pro is a new generation of mining type excavator product built by SANY Heavy Machinery Co., Ltd with the company's advantageous resources in the field of large excavators, mainly for heavy-duty working conditions such as iron ore and various rock mines, while taking into account the working conditions such as earthwork and loose soil crushing, etc., aiming at strong heavy-duty working capacity and high reliability, and at the same time, through fine control matching technology, making the operation energy consumption reach the most optimized, to achieve the ultimate goal of improving the customer's investment assets.

Custom-made imported engine



Large capacity rock bucket as standard



One machine for several purposes



Automobile-grade intelligent cab

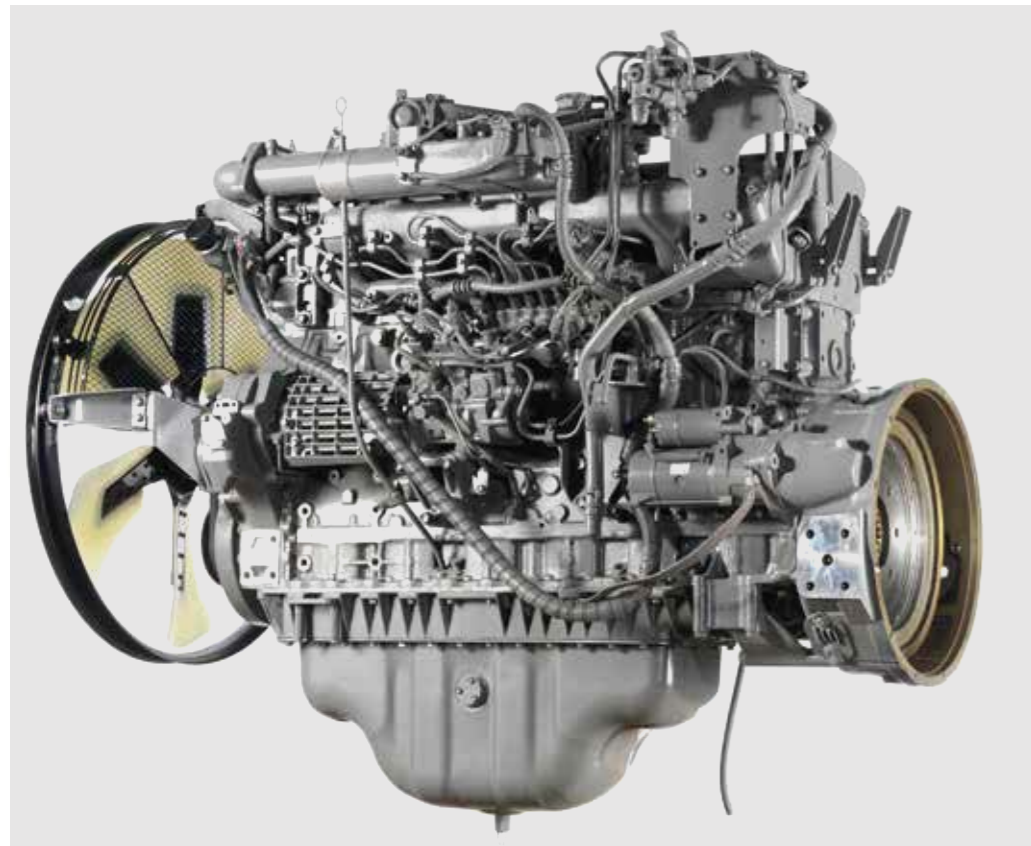


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Engine, main pump, main valve



• Sany custom-made imported **Isuzu 6WG1X** engine, with power of **377kW/rpm**, it can meet the high load demand of mine operation, optimize the engine universal curve, and with large economic fuel consumption area and the fuel consumption is reduced by **10%**.



The **Kawasaki K3V280** main pump is fully upgraded to electrically-controlled positive flow control type, which can fully utilize the flow and ensure that the flow will be provided as needed, and, as compared with negative flow system, can reduce the loss caused by middle-position reflux, increase the response speed and reduce the capacity loss.



川崎KMX36NA主阀，业界领先，通流能力比32NA主阀上升22%，协调性大幅提升。

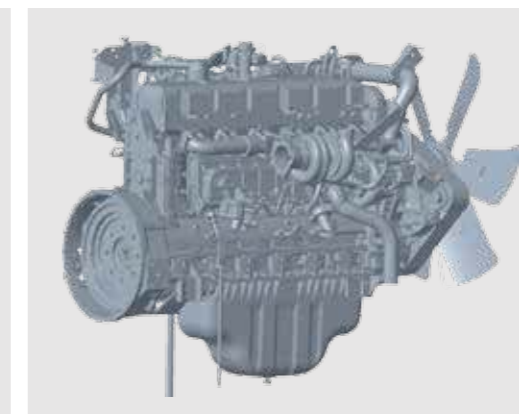
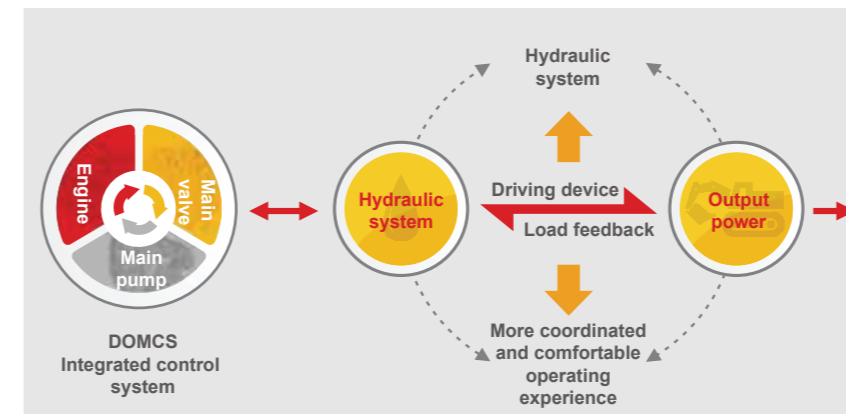


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Dynamic Optimization Intelligent Control System

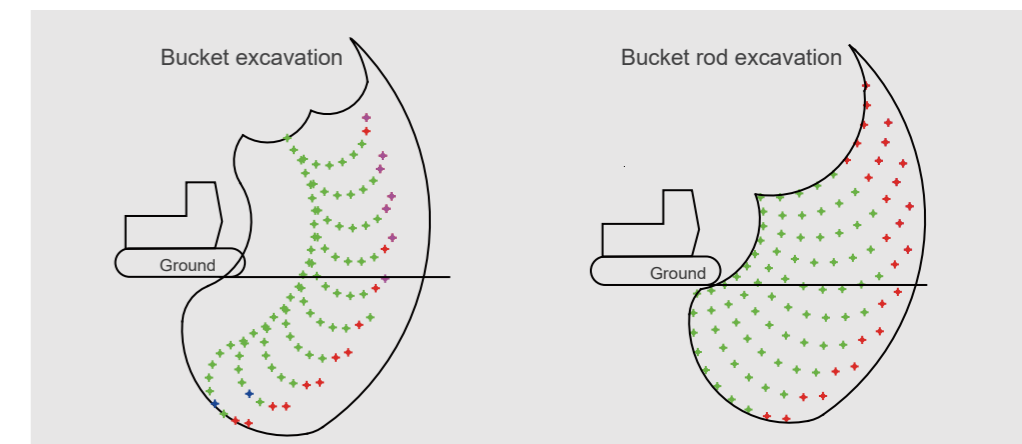
With “positive flow” system and main engine-main pump-valve integrated Dynamic Optimization Intelligent Control System (“DOMCS”) developed independently by SANY, all gears and modes work in the best fuel consumption area of the engine, with high efficiency and low consumption.



- Super power**
The rated power is 377kW, which meets the high load demand of mine operation
- Energy efficiency**
Dynamic Optimization Intelligent Control System, lower energy consumption and higher efficiency
- Exclusive customization**
Optimize the engine curve and match the best
- High stability**
Specially designed for domestic oil products, with stronger adaptability and low failure rate

Super high excavating force

Through the real-time power adjustment in the whole process of excavation and the curve analysis for excavation force under various operating conditions, the excavation force can be brought into full play, and the efficiency can be improved by **40%**. The green curve in the right figure indicates the excavation efficiency which is brought into full play, and the red curve indicates the excavation efficiency which is brought into partial play. Through the right figure, the excavation force of SY870HPro can be utilized by **90%**.



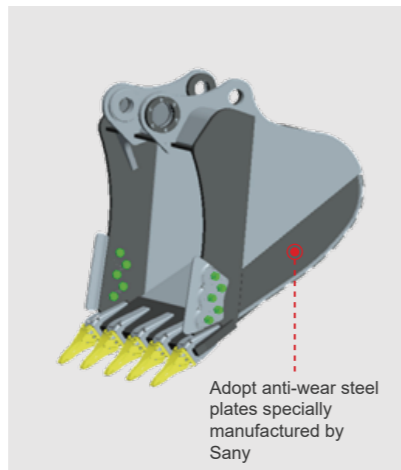
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Durable structural members

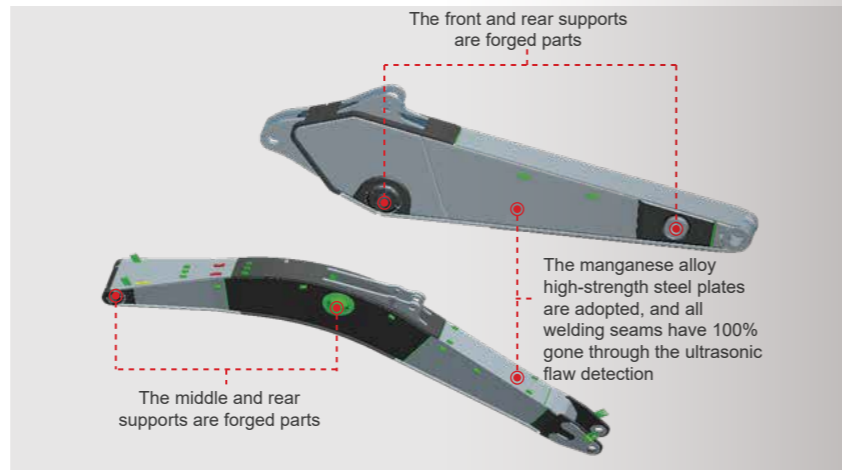
Bucket

The standard bucket bottom reinforcement plate adopts new imported high-strength wear-resistant steel plate, which greatly improves the wear resistance and is more durable. Daewoo bucket teeth and tooth seats are used, which is more durable..



Boom

Standard 7m boom, rear support and center support of the boom adopt forgings for avoiding concentrated local welding stress and improving the durability.

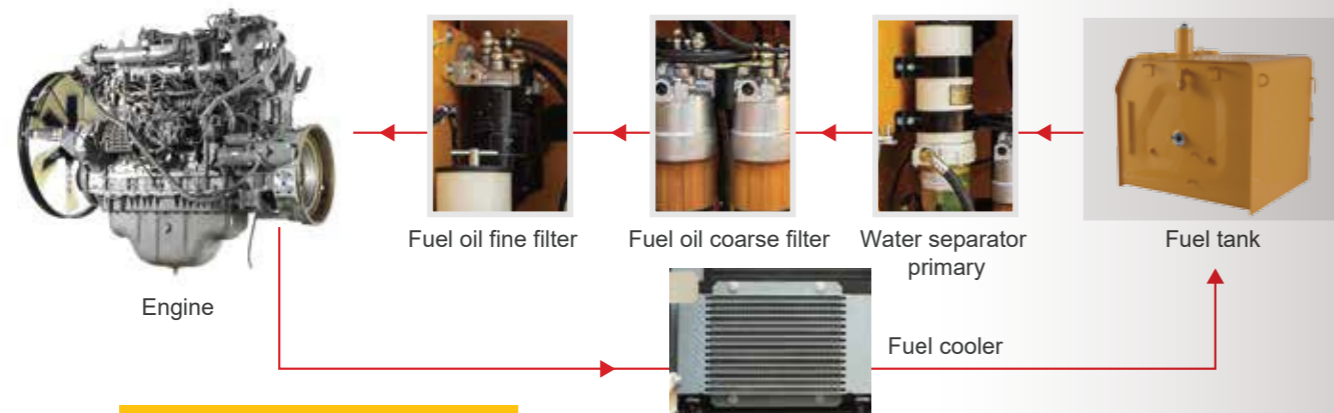


Bucket rod

Standard 2.6 m bucket rod, forgings are used for front support and center support, and copper sleeve is used at center support to prevent shaft sleeve from escaping; The new structure is adopted to reduce stress and make the performance more reliable.

High-capacity multi-stage filter system

“Initiative large-capacity multi-stage filter system” is introduced to cope with poor oil quality problem in China and meet emission requirements of National III standard. Filter precision of impurities reaches 99.9% and water separation efficiency is above 95%. Both are higher than industrial standard.



Brand new upgrade of cockpit

Automobile-grade intelligent cab

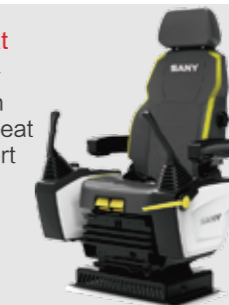
The cab, air conditioner and seat are newly upgraded, the sealing performance is greatly improved, the cooling effect is better, the inclination angle and seat depth of the new seat cushion are adjustable, and the mechanical waist support is more comfortable.

The new 7-inch touch screen, which integrates Bluetooth, air conditioner and other functions, has both technology and intelligence.



Comfortable seat

Larger and wider thicker seats with seat extension, seat tilt, lumbar support optional electric heating



One-button startup of multifunctional panel



Intelligent touch screen

Bluetooth, WIFI
Mobile phone call,
USB charging
Integrated radio
A/C control



The performance of the new cockpit has been greatly improved in terms of intelligence, comfort and reliability. The overall design is simple, modern and high quality, providing users with a physically and psychologically good environment in terms of visual, tactile and psychological feelings.



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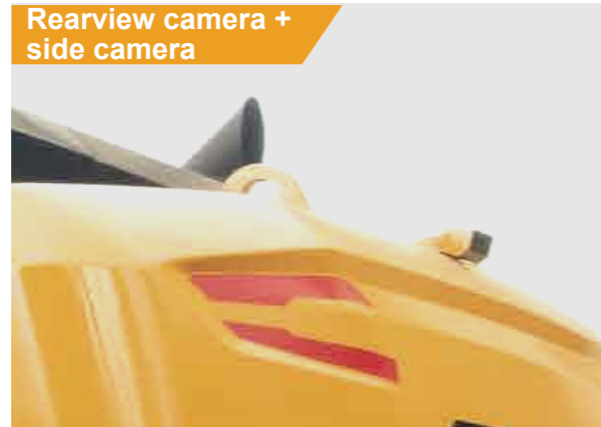
Brand new upgrade of cockpit

Safety enhanced cab

For mining conditions, the safety-enhanced cab that meets the FOPS requirements is adopted, and the safety can be increased by 30% compared with the ordinary cab, with top protective screen, emergency stop switch, brand new anti-slip cover plate, rear-view camera (standard) and alarm lamp (standard), the operating safety of the equipment is improved further under mining condition.



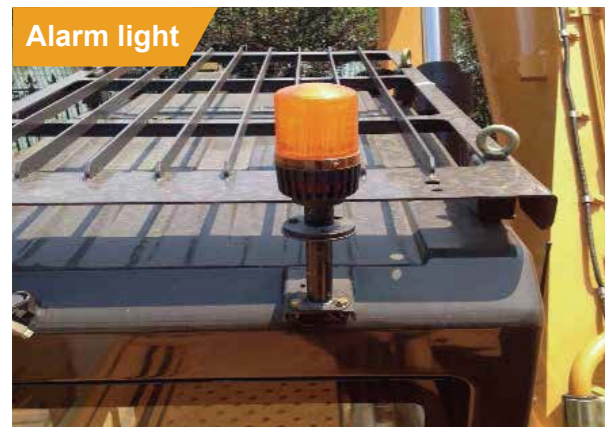
Protective mat



Rearview camera + side camera



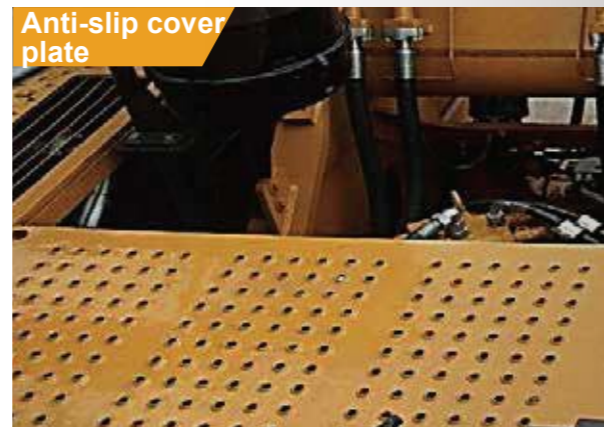
Armrest - walking platform



Alarm light



Emergency stop switch



Anti-slip cover plate



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One machine for several purposes

In allusion to individual demands of the customer, this product can provide a variety of working devices such as scarifier, crushing hammer and large capacity bucket, and various modified products to improve earning power of the customer.

| Model | SY870HPro工作装置配置表 | | |
|----------------|------------------|----------|------------------------|
| Boom (m) | 7 | | |
| Bucket rod (m) | 2.6 | | |
| Bucket (m3) | 4.6 | 5.0 | 5.4 |
| Is it standard | Optional | Optional | Standard configuration |

Example of special working device of SY870HPro



Convenient maintenance

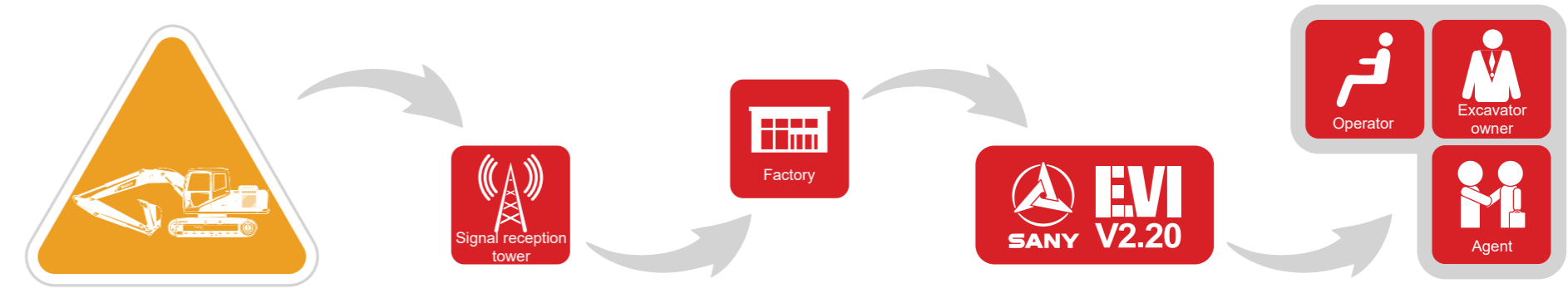
In allusion severe working conditions of the mine, the design of maintenance convenience of the maintainable parts is improved. "Big space, Easy to operate". Maintenance space for various maintainable parts increases by 20%-30% and makes the operation easier!

- Centralized maintenance channel design, the maintenance parts are concentrated near the maintenance channel.
- Electric reel concentrated lubrication greatly reduces maintenance intensity
- Fan reversal function, the dust removal operation is simple and convenient.



"EVI" Customer Management System

The machine is equipped with "EEVIA" system which is independently developed by SANY. SANY has established four-dimension construction management system including "factory- agent- owner- operator" for the purpose of minimizing mine construction management **cost and risks**, and **maximizing the efficiency**.



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Complete research, development and test system

- Complete research, development and rest system is the strong backup for excellent performance
- It has established complete machine endurance test center with full functions. Each model of excavator must be subjected to over 2,000h field excavating test.
- Important parts and components like working device, cab and hydraulic components etc. must be subject to fatigue test over 800,000 times.



Leading manufacturing technology

- Leading manufacturing technology is a reliable guarantee for producing excellent products
- SANY has RGV assembling line and full-automatic 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.



Technical Specifications

| Specification | | Main performance | |
|-----------------|--|--------------------------------------|---------------|
| Working weight | 78600kg | Traveling speed (high/low) | 4.5/2.9(km/h) |
| Bucket capacity | 5.0~6.5m³ | Swing speed | 7.7rpm |
| Engine | Isuzu | Gradeability | 70%/35° |
| Model | GH-6WG1X | Unit pressure of ground | 114kPa |
| Type | Direct injection, 6-cylinder, 4-stroke, turbocharged, inter-cooling and water-cooled | Bucket digging ability (booster) | 432kN |
| Rated power | 377kW | Bucket rod digging ability (booster) | 370kN |
| Maximum torque | 2138/1500Nm | | |
| Displacement | 15.681L | | |

| Oil and coolant capacity | | Traveling part | |
|--------------------------|---------|--------------------------------------|-------|
| Fuel tank | 940L | Number of crawler plates (each side) | 48 |
| Engine oil | 42~57L | Each carrier roller side | 3 |
| Cooling system | 70L | Each track roller side | 8 |
| Final drive | 2 x 20L | Standard caterpillar track | 650mm |



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Table of Lifting Capacity

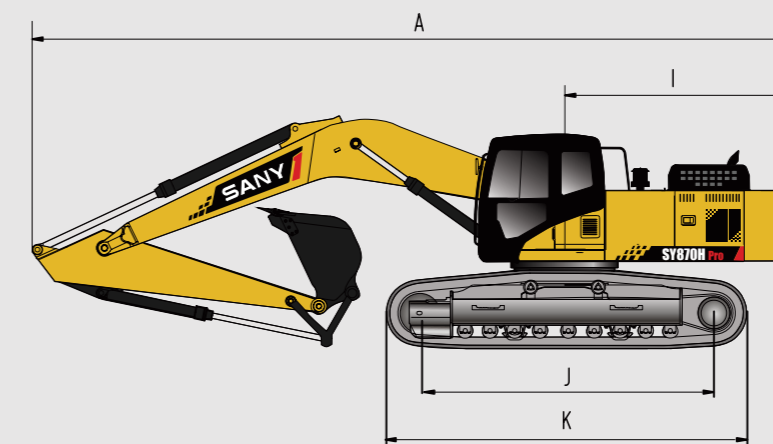
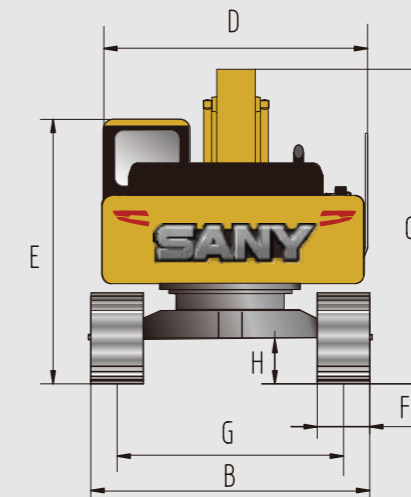


| Boom---7000mm | | Bucket rod---2600mm | | | | Track width---650mm | | | | Counterweight---12338kg | |
|---------------|----|---------------------|--------|--------|--------|---------------------|--------|--------|--------|-------------------------|--------|
| | | 装载点半径 (A) | | | | | | | | | |
| 装载点高度 (B) m | | 3.0m | | 4.5m | | 6.0m | | 7.5m | | 9.0m | |
| | | | | | | | | | | | |
| 7.5m | kg | | | | | | | *16937 | *16937 | | |
| 6.0m | kg | | | | | *31260 | 26514 | *17778 | *17778 | *16459 | *16459 |
| 4.5m | kg | | | | | *23021 | *23021 | *19131 | *19131 | *16948 | *16948 |
| 3.0m | kg | | | | | *25656 | *25656 | *20538 | *20538 | *17600 | 15061 |
| 1.5m | kg | | | | | *27281 | *27281 | *21560 | *21560 | *18059 | 14725 |
| Ground | kg | | | *29459 | *29459 | *27550 | *27550 | *21853 | 18609 | *17978 | 14524 |
| -1.5m | kg | *21665 | *21665 | *33823 | *33823 | *26471 | *26471 | *21120 | *21120 | | |
| -3.0m | kg | *36689 | *36689 | *29873 | *29873 | *23825 | *23825 | *18745 | *18745 | | |
| -4.5m | kg | | | *23394 | *23394 | *18491 | *18491 | | | | |

- 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;
- The item with the mark * is limited by hydraulic pressure and the item without the mark "*" is limited by stability;
- Lifting point is front support hole of bucket rod (excluding bucket weight). It is necessary to deduct from the above lifting capacity if additional accessory is installed such as bucket etc.

Overall dimensions (mm) SY870HPro

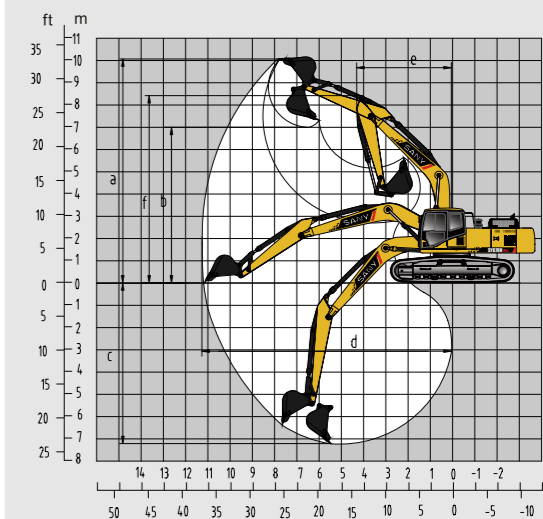
| | |
|---|-----------|
| A. Total length (during transport) | 13002 |
| B. Total width (operation) | 4320 |
| C. Total height (during transport) | 4742 |
| D. Upper structure width (excluding walking platform) | 3460 |
| E. Cab height | 3795 |
| F. Std. track shoe width | 650 |
| G. Track gauge (in operation/ transportation) | 3380/2780 |
| H. Minimum ground clearance | 880 |
| I. Tail swing radius | 4220 |
| J. Length to centers of rollers | 4770 |
| K. Track length | 5946 |



Note: the documents and technical specification will be changed without further notice due to continuous technical improvement. The machine in the picture might include additional equipment.

Operation range (mm) SY870HPro

| | |
|---|-------|
| a. Max. digging height | 11910 |
| b. Max. loading height | 7047 |
| c. Max. digging depth | 7247 |
| d. Max. digging reach | 11703 |
| e. Min. swing radius | 5586 |
| f. Maximum height at minimum swing radius | 9802 |



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Standard configuration

| Engine | Cab | Lower running body | Alarm system |
|--|--|--|--|
| Isolated mounted engine ● | Ultra-silence frame cab ● | Walking parking brake ● | Controller trouble ● |
| Dynamic optimizing mode control ● | Reinforced light-color glass window ● | Walking motor guard ● | Abnormal pump pressure ● |
| Radiator (with full protective screen) ● | Silicone oil rubber damper ● | H-type track guide mechanism ● | Pilot pressure of various movements abnormal ● |
| 24V/5.0kW starter motor ● | Openable top/front wall upper window and left side window ● | The track tensioning mechanism ● | Abnormal power supply voltage ● |
| 90AAC motors ● | Rear window emergency exit ● | Driving wheels connected by bolts ● | Abnormal hydraulic oil temperature ● |
| Oil-bath type air filter ● | Wiper (with washer) ● | Carrier roller and track roller ● | Engine oil pressure insufficient and engine coolant temperature too high ● |
| Desert-type air filter ● | Multi-direction adjustable air-suspended seat ● | Reinforced chain track with pin shaft seal ● | Throttle rotary knob failure ● |
| Engine oil filter ● | Radio (with digital clock) ● | 650mm double-rib crawler plate ● | Insufficient fuel oil quantity ● |
| Three-stage fuel oil filter ● | Footrest, floor cover ● | Reinforced side pedal ● | |
| Engine oil cooler ● | Loudspeaker, rearview mirror ● | Bottom cover plate ● | |
| Auxiliary radiator water tank ● | Seatbelt and fire extinguisher ● | | |
| Fan deflector ● | Cup holder, compartment light ● | | |
| Automatic idling system ● | Ashtray, escape hammer ● | | |
| | Storage compartment, storage pocket ● | | |
| | Pilot control cut-off lever ● | | |
| | Fully automatic air conditioning ● | | |
| | Emergency stop switch ● | | |
| | Falling object protect structure and front protective screen ● | | |

● indicates standard ○ indicates optional



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Standard configuration

| Hydraulic system | Front working equipment | Upper rotary platform |
|--|---|-----------------------------|
| Control valve with main overflow valve ● | Flange pin ● | Fuel level sensor ● |
| Spare oil port of control valve ● | Welded connecting rod ● | Hydraulic oil level gauge ● |
| Oil suction filter ● | Automatic concentrated lubrication system ○ | Toolbox ● |
| Oil drain filter ● | All bucket pins are provided with dust-proof seal rings ● | Slewing parking brake ● |
| Return filter ● | Enhanced all-welded box-type swing arm ● | Rearview mirror (right) ● |
| Leading filter ● | Enhanced all-welded box-type bucket rod ● | Rearview camera ● |
| Blanking pipe of hydraulic damper ● | Anti-collision guard plate ● | Cab warning lamp ● |
| Independent oil radiator ● | | |
| Crushing hammer pipeline ○ | | |

| Monitoring system instruments | Safety | Others |
|---|---|--|
| Global positioning system (GPS) ● | Emergency stop switch ● | High-capacity storage battery ● |
| 7" colored display screen ● | Signal/alarm horn ● | Lockable top cover ● |
| EEVIA system ● | Mirrors ● | Lockable fuel oil filler cap ● |
| Hour meter, fuel tank oil level gauge ● | Rear window emergency exit ● | Anti-slip pedal, armrest and sidewalk ● |
| Engine coolant temperature gauge ● | Negative pole switch of storage battery ● | Marks for walking direction on the walking frame ● |
| Engine oil pressure gauge ● | | Manual grease gun ● |
| | | Motor-driven diesel pump ○ |

● indicates standard ○ indicates optional



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