

o Standard configuration

Engine

- Isolated mounted engine
- Dynamic hunting mode control
- Radiator (with full protective screening)
- 24V/5.0kW 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 shroud
- Automatic idling system

Hydraulic system

- Operating mode selector switch
- Control valve with main overflow valve
- Spare oil port of control valve
- Oil suction filter
- Return oil filter
- Pilot filter
- Blanking pipe of hydraulic damper
- Crushing hammer pipeline

Slewing platform of superstructure

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

* Indicates optional configuration

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 air conditioner
- Emergency stop switch
- Falling object protect structure and front protective screening

Front-end working device

- Flange pin
- Welded connecting rod
- Central 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) as standard configuration
- 7" colored display screen
- EEVIA system
- Hour meter and 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 crawler guide mechanism
- Tensioning device of crawler
- Bolted driving wheel
- Thrust wheel and carrier wheel
- Reinforced chain trail with pin seal
- 600mm triple track shoes
- Reinforced side pedal
- Bottom cover plate
- 600mm double-rib crawler plate*

Alarm lamp

- Controller failure
- Pump pressure abnormal
- Pilot pressure of various movements abnormal
- Power supply voltage abnormal
- Hydraulic oil temperature abnormal
- 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 carriage
- Manual grease gun
- Motor-driven diesel pump



- o Rated power 257kW/2000rpm
- o Operation weight 41500kg
- o Bucket capacity 1.9m³

SY415H

Hydraulic excavator

BRAND NEW
QUALITY CHANGES THE WORLD
Leading Innovation Splendid SANY



Shanghai SANY Heavy Machinery Co., Ltd.

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Note

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SY415H

Powerful Tool for Mining Excavation Value Leader

New-generation Super Hydraulic Excavator for Mining



SELLING POINTS

SY415H is a brand new 35-40T-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. Compared with the previous generation model, the excavating force is increased by 10%, and the oil consumption is reduced by more than 10%. As compared with competitor brands, it has the advantages including "super excellent performance, super high adaptability, super long service life and super low maintenance cost".



Superior performance



Super high adaptability



Super long service life

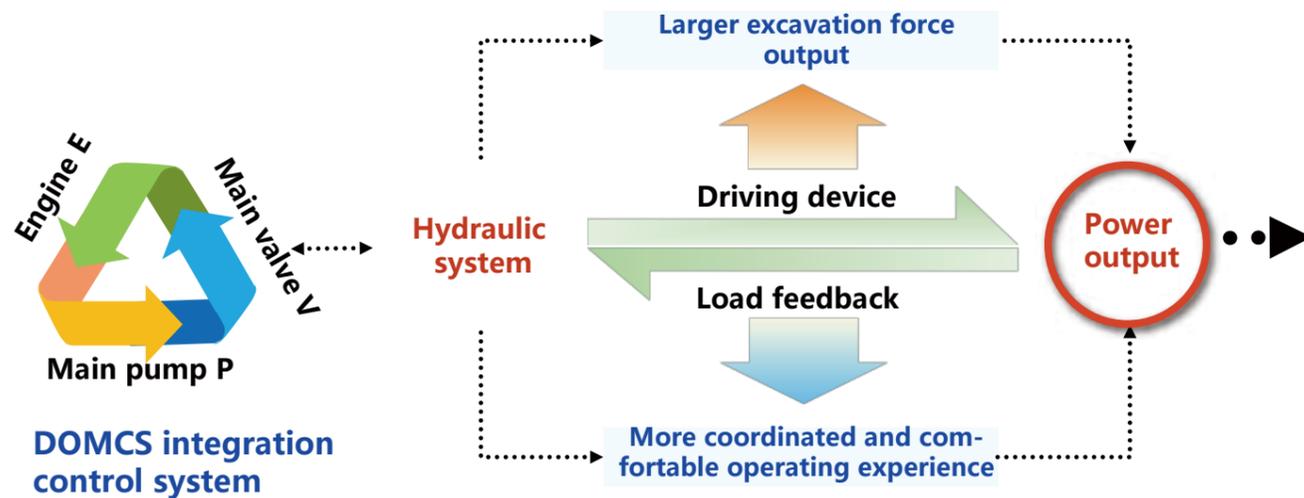


Super low maintenance cost

SUPERIOR PERFORMANCE

High efficiency and low consumption

With "positive flow" system and "DOMCS" engine-pump-valve integrated 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.



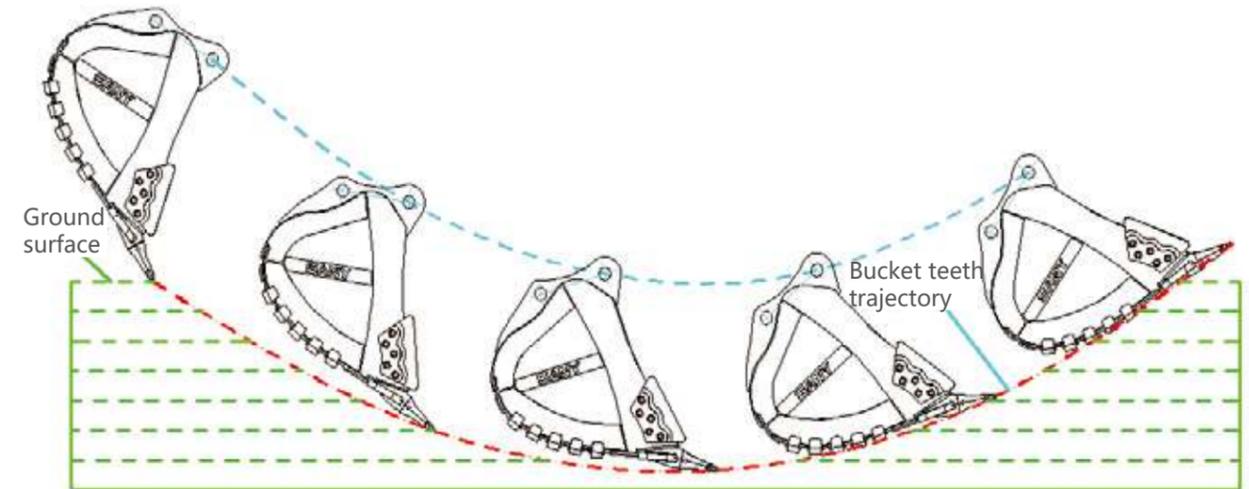
Customized 6UZ1X new-generation engine, with maximum power 257kW, maximum torque 1363Nm. Under heavy load conditions, it has outstanding advantages such as high efficiency, low oil consumption and large torque reserve, providing core power for new generation mining products.



Under the working condition of standard gear, the oil consumption is reduced by about 10% compared with that of the previous generation. According to the diesel 7 yuan /L, the annual working time is 3000H hours, and the annual oil consumption is saved by about 80,000 yuan.

Super high excavation force

By optimizing the hinge point, the functioning scope of excavation force becomes wider. By optimizing moving trajectory of the mechanism and bucket shape, the impact and resistance against the machine are reduced when excavating, excavating speed is improved and operating efficiency is increased by 10%! Service life of the bucket is doubled.



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 more 10 years of working experience in Huzhou on SY415H:

The SY415H mine excavator has higher operation rate and higher excavation force than same-tonnage excavators under other brands, can act smoothly, and achieves the human-machine interaction, so that the driver will feel comfortable when driving it!

Super high adaptability

By improving the safety and radiating capacity, adopting the high-efficiency large-capacity filtration system and corrosion-resistant coating and providing the crushing hammer pipeline as standard configuration, SY415H realizes the super high adaptability to environment, operating conditions and oil quality.

High corrosion-resistant coating

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

50%

High-capacity multi-stage filter system

The unique diesel oil filtration system can better deal with the problem that the domestic oil is of poor quality, so as to ensure the normal operation of engine.

Enlarged radiator system

The heat dissipation capacity is 20% higher than that of previous models. The equipment is always working under optimal temperature, the system efficiency is high and energy loss is low.

Crushing hammer pipeline (standard configuration)

Crushing hammer with 175mm drill rod can be configured

Standard working device connector

Reinforced wear-resistant materials. Special working devices including crushing hammer etc. can be modified randomly.

FOPS/ROPS cab

It is equipped with high-strength cab and protective screening etc. so that the operating safety is improved

30%

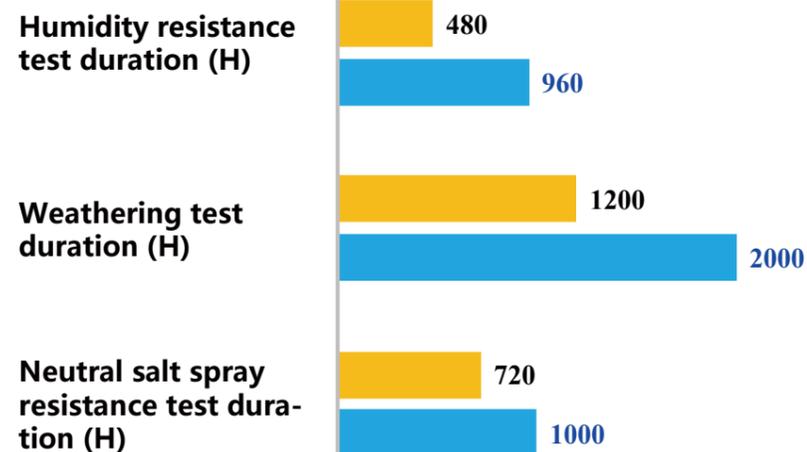


High corrosion-resistant coating

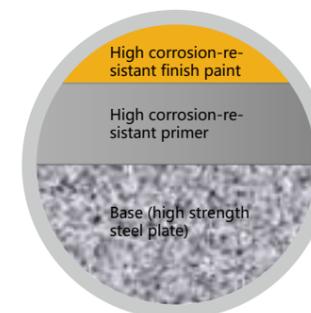
By cooperating with world known paint brands, aging life of the paint reaches the level of competitor brands and the adaptability is improved by 40%

Comparison of coating endurance test data

■ General coating ■ SANY' s coating



Coating distribution of SANY' s high corrosion-resistant paint

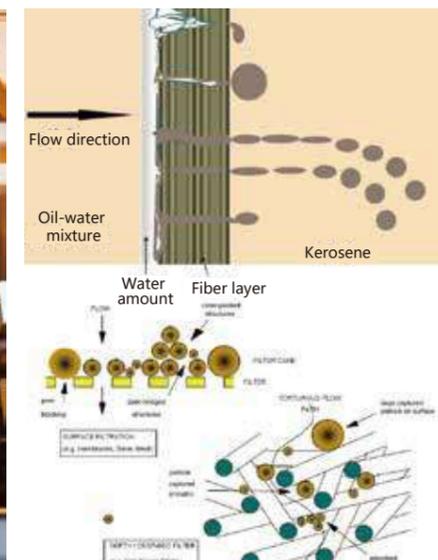


High-capacity Multi-stage Filtration System

Initiative large-capacity multi-stage filter system is introduced to cope with fuel oil of different quality levels, and meet emission requirements of national III standard. It provides top-level protection for the equipment!



High-capacity multi-stage filter system



Large-capacity multi-stage filter principle

○ Enlarged radiator system

The heat dissipation capacity is improved by 10%. The equipment is always working under optimal temperature, the system efficiency is high and energy loss is low.

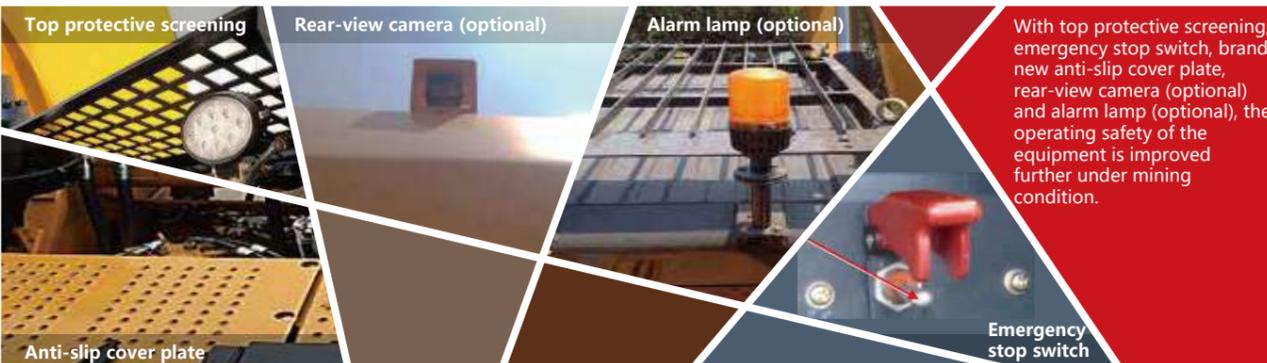


○ Safe & Comfortable

In light of the operating conditions in mine, the FOPS/ROPS cab and new-type dust-proof & noise-reducing technologies are adopted, so that the safety is increased by 5 times as compared with ordinary cab, and the noise in cab is reduced by 5dB. IN addition, the air-suspended seat is adopted, so that the driving comfortability is higher than other brands.



The FOPS/ROPS cab is adopted, and through finite element modal analysis, the steel structure and sealing property of cab are optimized, so that its strength is 5 times that of ordinary cab and the safety is improved; the high-power air conditioning system is provided, so that the refrigerating and heating effect can be achieved quickly and the driving/riding will be more comfortable.



With top protective screening, emergency stop switch, brand new anti-slip cover plate, rear-view camera (optional) and alarm lamp (optional), the operating safety of the equipment is improved further under mining condition.

○ One machine for several purposes

In allusion to individual demands of the customer for this tonnage, this product may work with several working devices, and various modified products like extension boom etc. to improve the earning power of the customer.

Configuration Table for SY415 Working Devices

Model	SY415BH	SY415H	Bucket capacity m ³
Boom	6.5m	6.5m	
Bucket rod	2.5m	2.9m	
Configuration situation		★	▲1.9
		●	▲2.2
	★	●	■2.5
Classification of bucket by use: ▲: bucket for stonework; ■: bucket for earthwork; ★ is recommended configuration while ● is optional configuration			

Super long service life

Through near 20 years' accumulation, by virtue of the three-in-one large-sized excavator testing system of Sany which is the first in China and on the basis of the matured technologies adopted for the product series, the designed service life of SY415H under operating conditions in mine exceeds 10,000 hours.

Five major structural members

The working device and underframe are reinforced. Add anti-collision beams to the slewing platform. The service life of structural parts is designed as more than 10,000 hours, and the base plate and teeth of bucket are reinforced.

Hydraulic system

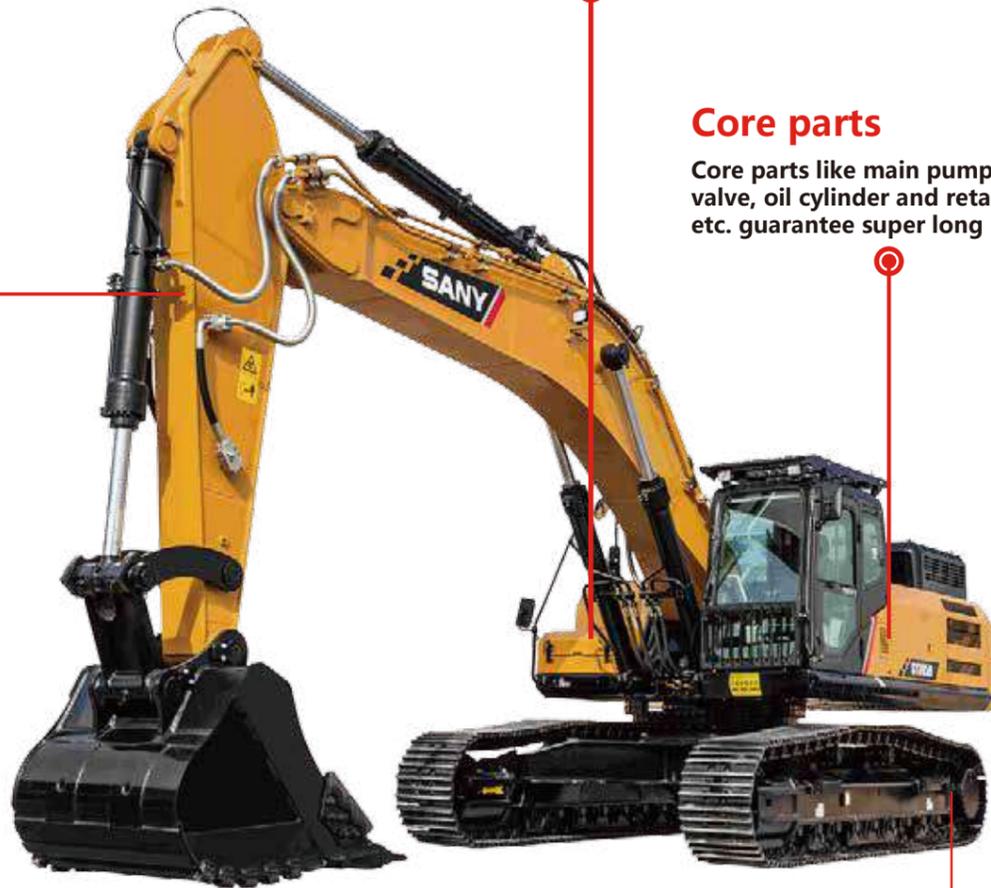
Delivery cleanliness of hydraulic system reaches NAS7 and is not only higher than competitor brands but also higher than industrial standard

Core parts

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

Reinforced four-wheel & one-belt

Lengthened undercarriage, reinforced heavy-duty four-wheel & one-belt, optional double-rib crawler



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.



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



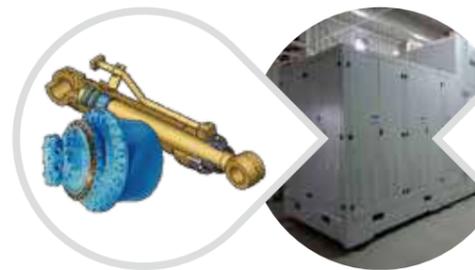
Motion trail of bucket bottom is optimized, excavation resistance is reduced, excavating speed is increased, working efficiency is improved by 10%. High-strength wear-resisting steel plate is used and bucket wear-resisting performance is improved by 2 times. With professional bucket design for stonework, it is more suitable for heavy-duty operation like quarry etc.



The quality of mining-type four-wheel & one-belt is improved, and the service life is doubled.

Core parts

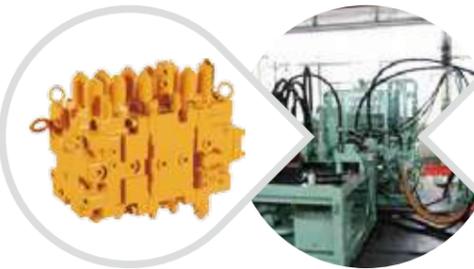
Relying on the only endurance test system for excavator parts in China, and through joint research with world famous research institutions, the research on service life of the parts is carried out for improving the service life of core parts comprehensively. The service life of components including pump, 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 bed

Pump-valve test bed



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.



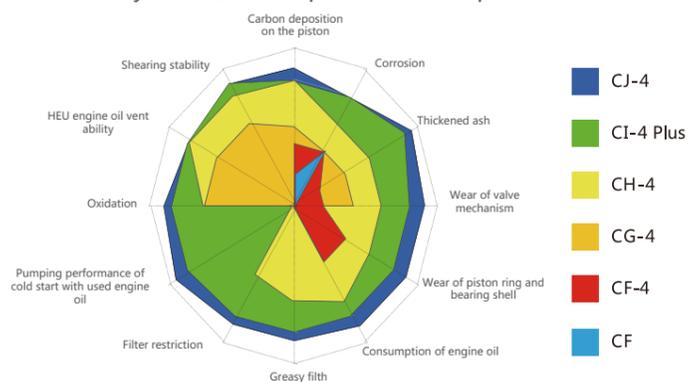
With vibration test bench and test bed, fuel tank and the cab has been tested by over hundreds of thousands of times on aspect of the vibration to improve the service life of the component by 50%.

Vibration test bench and test bed

Super low maintenance cost

○ Super 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; as compared with competitor brands, the maintenance cost is reduced by 40%.



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.

○ Super easy management

Four-dimensional construction management system independently developed by SANY is equipped to improve maintenance convenience of maintainable parts, and convenient maintenance design in allusion to severe mining conditions makes equipment management easier and simpler.

○ 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%

20%/30%

○ 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!



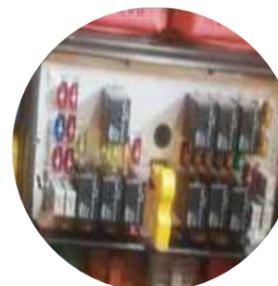
Easy to replace air filter element

Replace air filter element



Easy to replace diesel oil filter element

Replace diesel oil filter element



Independent electronic control cabinet



Electronic control cabinet out of the cab makes the maintenance convenient



Engine compartment



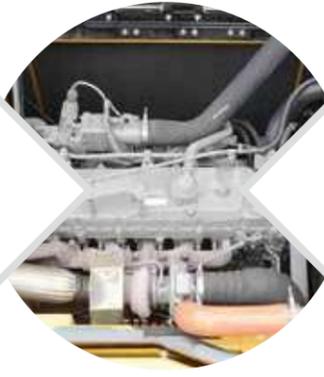
Water drain valve of fuel tank
Check valve

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

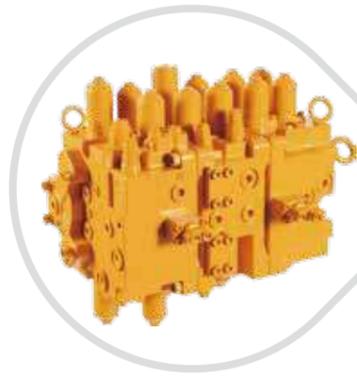
PRODUCT INTRODUCTION

○ 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



Isuzu 6UZ1X engine meets emission standard of national III and the displacement and the torque are generally higher than competitor brands. It outputs high power and helps the customer to solve the operating difficulties of heavy-duty working condition.



The large-diameter main valve customized for Sany is developed according to customer requirements and has outstanding advantages including "high reliability, low pressure loss, high flow distribution efficiency and smooth compound control action" .



Kawasaki 200cc dual-ratio positive-flow main pump takes full advantage of the flow and realizes demand equal to supply. As compared with negative flow system, it reduces the loss of neutral-position return, and meanwhile response speed is higher and capacity loss is reduced

○ Construction case

Comments of a customer from Huzhou on SY415H: "SY415H has robust and sustained excavating force, and has good stability."



Worksite: Inner Mongolia
Working condition: Ore
Operating type: excavation- loading
Work undertaken by SY415: Stone stripping, and loading



Worksite: Huzhou Tarmac Mining of Zhejiang Province
Working condition: Stonework (decomposed rock)
Operating type: excavation- loading
Work undertaken by SY415: Stone stripping, and loading



Worksite: Shanxi Province
Working condition: Ore
Operating type: excavation- loading
Work undertaken by SY415: Stone stripping, and loading

Technical specifications

Specification		Main performance	
Total weight	41500kg	Traveling speed (high/low)	5.3/3.2 (km/h)
Bucket capacity	1.9m ³	Slewing speed	8.3rpm
Counter weight	6350kg	Gradeability	70% (35°)
Engine	Isuzu	Ground pressure	75.3kPa
Model	6UZ1X	Excavation force of bucket	247kN
Type	Direct injection, 6-cylinder, 4-stroke, turbocharged, inter-cooling and water-cooled	Excavation force of bucket rod	218kN
Rated power	257kW/2000rpm		
Maximum torque	1363Nm / 1500rpm		
Displacement	9.839		

Capacity of oil and coolant		Traveling section	
Fuel tank	690L	Number of crawler plates	51
Engine oil	36L	Carrier wheel on each side	2
Radiator	28L	Thrust wheel on each side	9
Final drive	2×10L	Standard crawler	600mm

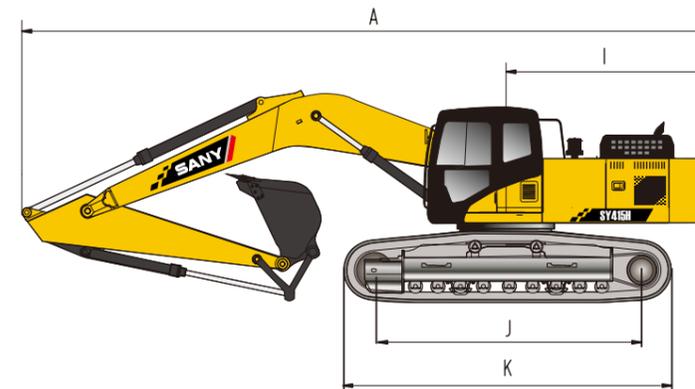
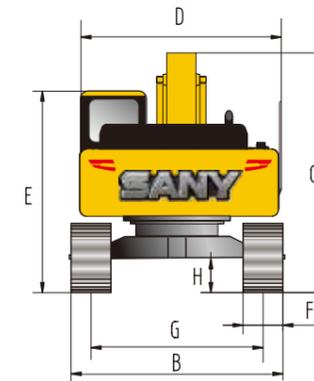
Boom--	6500mm	Bucket rod--		Width of crawler--				Counter weight--		6315kg
		2900mm		600mm		600mm				
		3.0m	4.5m	6.0m	7.5m	9.0m				
		Longitudinal	Transverse	Longitudinal	Transverse	Longitudinal	Transverse	Longitudinal	Transverse	
7.5m	kg									
6.0m	kg						*10720	6380		
4.5m	kg			*16928	13897	*13231	8737	*11392	6122	
3.0m	kg			*20635	12330	*14957	8075	*12251	5797	*10726 4359
1.5m	kg			*19587	11384	*16283	7536	*12980	5502	*10980 4221
Ground	kg			*22624	11085	*16810	7223	*13305	5303	
-1.5m	kg	*16054	*16054	*21462	11094	*16419	7127	*12963	5236	
-3.0m	kg	*24625	*24625	*19173	11309	*14926	7223	*11388	5350	
-4.5m	kg	*18873	*18873	*15117	11772	*11410	7581			

1. The lifting capacity is calculated in accordance with ISO10560 and SAE1097, 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)



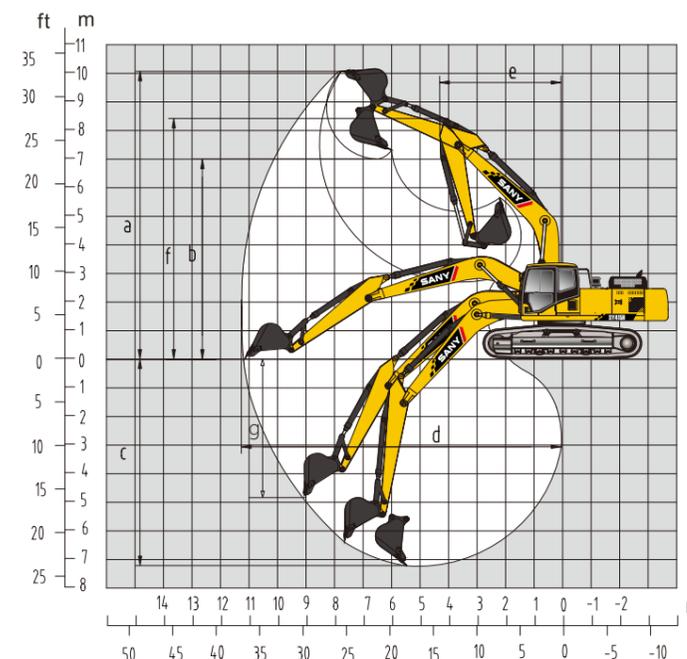
Overall dimensions: mm SY415H

A Overall length (in transportation state)	11700
B Overall width	3360
C Overall height (in transportation state)	3740
D Upper width	3265
E Overall height (cab top)	3470
F Width of standard crawler plate	600
G Track gauge	2740
H Minimum ground clearance	505
I Slewing radius of tail	3740
J Grounding length of crawler	4340
K Crawler length	5320

Performance parameters SY415H

Total weight, kg	41500
Bucket capacity m ³	1.9(2.2)
Rated power, kW/rpm	257/2000
Traveling speed (high/low), km/h	5.3/3.2
Slewing speed rpm	8.3
Gradeability	70%/35°
Ground pressure, kPa	75.3
Excavation force of bucket, kN	247
Excavation force of bucket rod, kN	218

Operating range (mm)



Operating range: mm SY415H

a. Maximum excavation height	9980
b. Maximum unloading height	6960
c. Maximum excavation depth	7045
d. Maximum excavation distance	10920
e. Minimum slewing radius	4750
f. Maximum height at minimum slewing radius	8785
g. Maximum vertical excavation depth	4710



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